

### Stanislaus County Employees' Retirement Association

832 12th Street, Ste. 600, Modesto, CA 95354 • PO Box 3150, Modesto, CA 95353 • www.stancera.org • 209-525-6393 • 209-558-4976 Fax

#### **AGENDA**

#### BOARD OF RETIREMENT 832 12<sup>th</sup> Street Ste. 600, **Wesley W. Hall Board Room** Modesto, CA 95354

February 25, 2020 1:30 p.m.

The Board of Retirement welcomes you to its meetings, which are regularly held on the fourth Tuesday of each month. Your interest is encouraged and appreciated.

**CONSENT/ACTION ITEMS**: Consent matters include routine administrative actions and are identified under the Consent Items heading. All other items are considered to be action items "Action" means that the Board may dispose of any item by any action, including but not limited to the following acts: approve, disapprove, authorize, modify, defer, table, take no action, or receive and file.

**PUBLIC COMMENT:** Matters under jurisdiction of the Board, may be addressed by the general public before or during the regular agenda. However, California law prohibits the Board from taking action on any matter which is not on the posted agenda unless it is determined an emergency by the Board of Retirement. Any member of the public wishing to address the Board during the "Public Comment," period shall be permitted to be heard once up to three minutes. Please complete a Public Comment Form and give it to the Chair of the Board. Any person wishing to make a presentation to the Board must submit the presentation in written form, with copies furnished to all Board members. Presentations are limited to three minutes.

**BOARD AGENDAS & MINUTES:** Board agendas, minutes and copies of items to be considered by the Board of Retirement are customarily posted on the Internet by Friday afternoon preceding a meeting at the following website: www.stancera.org.

Materials related to an item on this Agenda submitted to the Board after distribution of the agenda packet are available for public inspection at StanCERA, 832 12th Street, Suite 600, Modesto, CA 95354, during normal business hours.

**AUDIO/VIDEO:** All Board of Retirement regular meetings are audio and visually recorded. Audio/Video recordings of the meetings are available after the meetings at <a href="http://www.stancera.org/agenda">http://www.stancera.org/agenda</a>.

**NOTICE REGARDING NON-ENGLISH SPEAKERS**: Board of Retirement meetings are conducted in English and translation to other languages is not provided. Please make arrangements for an interpreter if necessary.

**REASONABLE ACCOMMODATIONS**: In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Board Secretary at (209) 525-6393. Notification 72 hours prior to the meeting will enable StanCERA to make reasonable arrangements to ensure accessibility to this meeting.

- Call Meeting to Order
- 2. Pledge of Allegiance
- 3. Roll Call
- 4. Announcements
- 5. Public Comment
- 6. Consent Items
  - a. Approval of the January 28, 2020 Meeting Minutes View
  - b. Conference Report View
  - c. Fiscal year 2019-2020 Mid-Year Budget Review Agenda Item <u>View</u> Attachment 1 <u>View</u>
  - d. Information Technology Solutions (ITS) Project
    Agenda Item <u>View</u> Attachment 1 <u>View</u>
  - e. Private Markets Commitment Notice Vista Foundation Fund IV (VFF IV) Agenda Item <u>View</u>
  - f. Investment MatrixAgenda Item <u>View</u>

#### 6. Consent Items (Cont.)

- g. Applications for Service Retirement(s) **Government Code Sections 31499.14, 31670, 31662.2 & 31810** 
  - 1. Baker, Norma CEO Effective 02-29-20
  - 2. Beyer, Thomas City of Ceres Effective 02-26-2020 \*
  - 3. Cavazos, Diana Superior Courts Effective 01-18-2020
  - 4. Correa, Patrick Probation Effective 02-07-2020 \*
  - 5. Crowley, Geoffrey Sheriff Effective 02-27-2020 \*
  - 6. Fischer, Randolph DA Effective 02-29-2020
  - 7. Fortner-Tiura, Vickie Sheriff Effective 02-29-2020
  - Hamasaki, Mike Probation Effective 02-29-20 \*
  - 9. Hoke, Jack Sheriff Effective 02-07-2020 \*
  - 10. Hutchinson, David DA Effective 02-04-2020 \*
  - 11. Lozano, Nancy Assessor Effective 02-01-2020
  - 12. Moses, Michael BHRS Effective 02-14-2020
  - 13. Papadopoulos, George DA Effective 02-08-2020 \*
  - 14. Reed, Timothy Sheriff Effective 02-11-2020 \*
  - 15. Sargent, Kenneth Sheriff Effective 02-15-2020 \*
  - 16. Shadel, Terrance Sherriff Effective 02-01-2020 \*

- h. Applications for Deferred Retirement(s) **Government Code Section 31700** 
  - 1. Aguiniga, Julie BHRS Effective 07-31-19
  - 2. Chukwuka, Origram BHRS Effective 10-11-19
  - 3. Hardenbrook, Craig CSA Effective 01-24-19
  - 4. Johnson, Jill CSA Effective 01-04-14
  - 5. Ruiz, Antonio Parks and Recreation Effective 12-13-19
  - 6. Tobias, Marily Auditor Controller Effective 10-27-19

- Application for Reciprocal Disability Retirement Government Code Section 31838.5
  - Watson, David Sheriff Service-Connected Effective 08-02-19 \*

#### 7. VERUS – Investment Consultant

- a. January Flash Report View
- b. Investment Performance 2019 Quarter 4 Review View
- c. Asset/Liability Study Education: Growth Sub-Portfolio & Asset Class Implementation Philosophy.
   Agenda Item <u>View</u> Attachment 1 <u>View</u>

#### 8. Investment

None

<sup>\*</sup> Indicates Safety Personnel

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<sup>\*</sup> Indicates Safety Personnel

#### 9. Administrative

- a. June 30, 2019 Actuarial Valuation
  Agenda Item View Attachment 1 View
- b. Quarterly Staff Update
- c. 2020 NCPRS Legislative Conference Summary NCPRS Agenda Item View

#### 10. Closed Session

- a. Conference with Legal Counsel Pending Litigation One Case:
   O'Neal et al v. Stanislaus County Employees' Retirement Association
   Stanislaus County Superior Court Case No. 648469
   Government Code Section 54956.9(d)(1)
- b. Conference with Legal Counsel Pending Litigation One Case: Stanislaus County Employees' Retirement Association v. Buck Consultants, LLC, Mediation Pursuant to Evidence Code Sections 1115, 1119, 1152 Government Code Section 54956.9(d)(4)
- c. Disability Retirement Application Government Code Section 31725
   Butler, Cara City of Ceres Service-Connected Application filed 12-30-2019
- e. San Joaquin County Employees' Retirement Association ("SJCERA") v. Travelers Casualty and Surety Company of America. Case No. 2:18-cv-02042-JAM-CKD. Government Code Section 54956.9(d)(4)
- d. Executive Director's Annual Review Public Employment Government Code Section 54957(b) (1)(2)
- 11. Members' Forum (Information and Future Agenda Requests Only)
- 12. Adjournment

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#### BOARD OF RETIREMENT MINUTES January 28, 2020

#### Call Meeting to Order

Meeting called to order 1:30 p.m. by Trustee Sam Sharpe, Chair

2. Pledge of Allegiance

Roll Call

Trustees Present: Darin Gharat, Mike Lynch, Sam Sharpe, Jim DeMartini, Donna Riley,

Michael O'Neal, Jeff Mangar and Mandip Dhillon

Trustees Absent: Jeff Grover

Alternate Trustee Absent: Rhonda Biesemeier, Alternate Retiree Representative

Staff Present: Rick Santos, Executive Director

Natalie Elliott, Fiscal Services Manager Stan Conwell, Retirement Investment Officer Kellie Gomes, Executive Board Assistant

Others Present: Fred A. Silva, General Legal Counsel

#### 4. Announcements

Kellie Gomes announced the Rotation of Officers: - Pursuant to Bylaws Section 1.5, Trustee Sam Sharpe is the Chair of the 2020 Board of Retirement and Trustee Michael O'Neal is Vice-Chair.

Fred Silva, General Counsel announced that he was distributing a memorandum regarding campaign contribution rules for contributing to Trustee's running for Superior Court Judge.

Trustee Sharpe announced that the meeting on February 25, 2020 will be his last Board of Retirement meeting as a Safety Trustee since he has accepted a position in Probation that is not a safety position and therefore will be unable to finish his term as a Trustee for safety members on StanCERA's Board.

Rick Santos, Director ask for volunteers to sit on the Ad Hoc Investment Consultant RFP Committee.

#### 5. Public Comment

None

#### 6. Consent Items

- a. Approval of the December 17, 2019 Meeting Minutes
- b. Investment Matrix
- c. 2020 Cost of Living Adjustment

Agenda Item Attachment 1

#### d. Legislation Update

#### e. Applications for Service Retirement(s) – Government Code Sections 31499.14, 31670, 31662.2 & 31810

- 1. Broughton, Marisa - Sheriff - Effective 01-01-20
- 2. Campidonica, Jon – Public Works – Effective 01-01-20
- Cerecerez, Elsa BHRS– Effective 01-04-20 3.
- 4. Conser, Carolyn – CSA – Effective 01-22-20
- 5. Davis, Kevin - Sheriff - Effective 01-18-20 \*
- Fincher, Philip CSA Effective 12-014-19 6.
- 7. Holly, Eric - Fire Warden OES - Effective 08-17-19 \*
- Kincheole, Kathy CSA Effective 01-17-20 8.
- Lambaren, Jeffrey CSA Effective 01-04-20 9.
- 10. Lawrence, Marlene BHRS Effective 01-04-20
- Meisner, Janine CSA Effective 01-04-20 11.
- 12. Moebs, Thomas Sheriff Effective 01-18-20 \*
- 13. Moore, Barbara BHRS Effective 01-18-20
- 14. Obando, Virginia HSA Effective 01-04-20
- 15. Santoyo, Maria CSA Effective 12-18-19
- 16. Seeman, Dora CEO Effective 01-18-20
- 17. Sissle, Jayne Public Works Effective 01-04-20
- 18. Soares, Edward Public Works Effective 01-16-20
- 19. Stobb, Sondra Probation Effective 01-04-20
- 20. Walsh, James Sheriff Effective 01-18-20 \*
- 21. Wapnowski, Michael Fire Engineer Effective 12-31-19
- 22. Wolfe, Thomas DER Effective 01-10-20

#### Applications for Deferred Retirement(s) – Government Code Section 31700

- 1. Brinkman, Kimberly – Workforce Development – Effective 08-16-19
- 2. Cooley, Stacy - HSA - Effective 09-13-19
- Dhaliwal, Sukhdeep Environmental Resources Effective 11-29-19 3.
- 4. Galos, Walter - Probation - Effective 10-25-19
- Garrett-Scott, Melissa CSA Effective 10-08-19 5.
- 6. Fabela, Jeanette - CSA - Effective 11-29-19
- Herrema, Brian CSA Effective 09-03-19 7.
- 8. Khan, Bilal - HSA - Effective 08-26-19
- McLane, Blythe DA Effective 12-06-19 Tagge, Hilary - CSA - Effective 12-02-19 10.
- 11. Tummunello, Nathaniel – Public Works – Effective 07-12-19
- Valencia, Anjelica HSA Effective 11-15-19 12.
- 13. Von de Ahe, Diane DA Effective 09-09-19

9.

#### g. Application for Death Benefit – Government Code Section 31781, 31781.1, 31781.3

1. Pimentel, Lindsey - Probation - Non-Service Connected - Effective December 19, 2019 -**Active Member** 

<sup>\*</sup> Indicates Safety Personnel

<sup>\*</sup> Indicates Safety Personnel

- h. Application for Disability Retirement Government Code Section 31724
  - Collins, Ronald City of Ceres Police Service-Connected Effective 10-20-2019 \*
  - \* Indicates Safety Personnel
- i. Information Technology Solutions (ITS) Project Update Agenda Item View Attachment 1 View
- j. 2019 Qtr. 4 Executive Director Goals Update

Agenda Item Attachment 1

Motion was made by Trustee Gharat and seconded by Trustee O'Neal to approve consent items as presented.

Motion carried unanimously

1:39 p.m. Trustee Mangar arrived

- 7. Verus Investment Consultant
  - a. Asset Allocation Process Education
  - b. December Flash Report
- 8. Investment

None

- 9. Administrative
  - a. Executive Director Goals for 2020

Agenda Item <u>View</u> Attachment 1 <u>View</u>

Motion was made by Trustee Riley and seconded by Trustee Dhillon to approve the Executive Director Goals for 2020 as presented.

Motion carried unanimously

#### b. StanCERA Complaint Log

Agenda Item Attachment 1

Motion was made by Trustee Gharat and seconded by Trustee O'Neal to approve staff recommendation to discontinue the complaint log that is currently in place with the matter to be revisited once the new Web Portal is up and running.

#### Roll Call Vote as follows:

Trustee Gharat	Υ
Trustee Lynch	Ν
Trustee DeMartini	Ν
Trustee Sharpe	Υ
Trustee Riley	Ν
Trustee O'Neal	Υ
Trustee Mangar	Υ
Trustee Dhillon	Υ

Motion Passed 5/3

#### 10 Closed Session

- a. Discussion and Action regarding the Executive Director's Annual Review Public Employment Government Code Section 54954.5
- b. Conference with Legal Counsel Pending Litigation One Case:
   O'Neal et al v. Stanislaus County Employees' Retirement Association
   Stanislaus County Superior Court Case No. 648469
   Government Code Section 54956.9(d)(1)
- c. Conference with Legal Counsel Pending Litigation One Case: Stanislaus County Employees' Retirement Association v. Buck Consultants, LLC, Mediation Pursuant to Evidence Code Sections 1115, 1119, 1152 Government Code Section 54956.9d)(4)

No Closed Session

#### 11. Members' Forum (Information and Future Agenda Requests Only)

Trustee O'Neal noted that he heard that Modesto Junior College is discussing a bond offering and he is wondering if it is possible for StanCERA to invest in these type bonds.

3:03p.m. Trustee Gharat recused himself from the discussion and left the room.

Trustee Riley discussed some of the pros and cons of these types of investments. The board was asked if they would like this matter brought back to the full board as an agenda item at the next meeting and it was not the pleasure of the board at this time.

3:06p.m. Trustee Gharat rejoined members forum.

Trustee DeMartini remarked on the call to question made by Trustee Gharat and pointed out a vote should have been made to determine if discussion should have ended. Instead, a roll call vote was taken on the main motion. It was determined the roll call vote on the motion still stands and Trustee DeMartini was thanked for bringing the matter to the attention of the board.

#### 11. Adjournment

Meeting adjourned at 3:08p.m.

Respectfully submitted,

Rick Santos, Executive Director

APPROVED AS TO FORM:

Fred Silva, GENERAL LEGAL COUNSEL

ву:\_\_\_\_

Fred A. Silva, General Legal Counsel



### **Conference Summary**

1. Attendee Name: Rhonda Biesemeier

**2. Event Name:** Opal Alternative Investing Summit

**3. Event Date:** 12/4/19 – 12/6/19

**4. Event Location:** Dana Point, CA

5. Describe what was good about the event:

There was a good variety of topics & presenters. It was interesting to learn about the myriad choices available for investment opportunities.

6. Would you recommend this event to other trustees/staff?

Perhaps, but many of the topics/presentations pertained to personal investments (E.g., Family Trusts, etc.). At many of the sessions, the message was that if investments failed to produce alpha, the trust might be disappointed, but could live with the loss. There were very few trustees in attendance, however, one trustee in the audience stood up & noted that for a Public Pension fund, we must fulfill our pension obligations whether or not we make good investment decisions. This somewhat limits our ability to take on less conservative investments.

#### 7. Number of Education Credits:

Unknown



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#### February 25, 2020

Retirement Board Agenda Item

TO: Retirement Board

FROM: Natalie Davis, Fiscal Services Manager

I. SUBJECT: Fiscal Year 2019-2020 Mid-Year Budget Review

II. ITEM NUMBER: 6.c.

III. ITEM TYPE: Consent

IV. STAFF RECOMMENDATION: Accept Mid-Year Administrative Budget Review for Fiscal Year 2019-2020 (Attachment 1)

V. EXECUTIVE SUMMARY: Each year staff prepares a budget of general operating expenses for review and approval by the Board of Retirement (Board). Typically, there were few unexpected expenses and one budget presentation annually had been sufficient. With the Board's 2014 directive to move forward with updating the information systems, a formal mid-year review was put into place. The Fiscal Year 2019-2020 budget of \$5,212,930 was approved on May 28, 2019. The formal mid-year review with Fiscal Year 2019-2020 expenses as of December 31, 2019 is shown below.

STANISLAUS COUNTY EMPLOYEES RETIREMENT ASSOCIATION				
FISCAL YEAR 2019-2020 Mid-Year Budget Review				
1100/12 12/11/ 2010 2020	Fiscal Year	Fiscal Year	Percent of	
	2019-2020	2019-2020	2019-2020	
ADMINISTRATIVE EXPENDITURES	Final Budget	Mid-Year Actual	Budget	
Salaries & Benefits	1,953,491	883,336	<u> </u>	
Technology	311,340	138,951		
I.T.S. PAS Project	50,000	11,960		
Legal Counsel & Services	426,500	184,058		
County Support Services	226,950	91,557		
Communication & Printing	75,000	29,715		
General Operations	43,250	35,964		
Education & Travel	206,700	56,839		
Total Administrative Expenses	3,293,231	1,432,380	43.49%	
CAPITAL EXPENDITURES				
Cubicle Redesign	-	8,833		
Pension Administration System	1,060,316	505,061		
I.T.S. Project Management & Oversight	695,000	222,322		
Board Room Tenant Improvements	-	17,008		
12th Street Lobby Upgrade	50,000	-		
Website Redesign & Implementation	50,000	24,922		
Total Capital Expenditures	1,855,316	778,146	41.94%	
Capital Depreciation	170,000	-		
6th Floor Lease Revenue	(105,617)	(59,759)		
TOTAL BUDGET	5,212,930	2,150,767	41.26%	

#### VI. ANALYSIS:

StanCERA's budget is within expected ranges for mid-year. Salary and benefits are tracking as expected with two budgeted positions not filled as of December 31, 2019. Expenditures are expected to stay within budget.

The Technology budget includes the maintenance, support, and disaster recovery for the current pension software system as well as County Information Technology (I.T.) services, computers and other I.T. related equipment used by StanCERA staff and is within range of approved funding. With the budgeted Software Developer/Analyst III position not filled, the Information Technology Solutions (I.T.S.) Project required the procurement of an Information Technology Consultant. This consultant also provides support for StanCERA's current pension system and those costs are included in the Technology section of the mid-year expenditures.

StanCERA contracts with several specialized legal service providers which are utilized as needed, (fiduciary, litigation, real estate, information technology, disability administration, tax, domestic relations and general governance). These mid-year expenditures are well below the approved funding due to a large reimbursement from Travelers Insurance Company.

County Support Services includes building maintenance utilities, security, and mailroom services as well as some administrative services provided by the County, such as purchasing, some insurances, auditor, and personnel. StanCERA is well within budget in these areas.

Communication & Printing are basically funds set aside for postage and trustee elections, mass production of annual reports, member statements, and retiree payroll. These expenditures are expected to stay within budget.

General Operation funds are used for office supplies, 6th floor building expenses and other professional services such as our financial auditor or other professional consultants. This category of expenditures is over budget mainly due to the rebalancing of the 6<sup>th</sup> floor HVAC and unexpected maintenance performed for StanCERA's tenants per the two year lease renewal.

Fiduciary Education & Travel includes fiduciary insurance, education, and educational travel for trustees, executive, and general staff. These expenditures are expected to stay within budget.

The pension software budget, project consulting services budget, and the new website budget approved by the Board are listed as capital expenditures and will be depreciated accordingly.

#### Non- Administrative Expenses

Section 31596.1 of the CERL states: The following expenses shall not be considered a cost of administration to the retirement system, but shall be considered as a reduction in earnings from those investments or a charge against the assets of the retirement system as determined by the Board. These expenses are governed by individual agreements and are reported in the audited financial statements presented to the Board of Retirement in the Comprehensive Annual Financial Report. The Other Investment Fees consist of mainly other professional fees and interest expense for the alternative assets, and Northern Trust sweep fees. The un-audited mid-year expenses are listed below.

Retirement Board – February 25, 2020 Fiscal Year 2019-2020 Mid-Year Budget Review Page 3

Actuarial Fees	4,064
Investment Consultant Fees	256,506
Attorney Fees - directly related to investments	82,362
Investment Manager Fees	2,277,182
Custodial Bank Fees	170,766
Other Investment Fees	549,812

- VII. RISK: Government Code section 31580.2 allows for expenditures for administrative services (other than software, hardware and computer technology consulting services) to be the greater of 0.21% of the accrued actuarial liability or \$2,000,000. In Fiscal Year 2019-2020, we continued to exercise prudence in budgeting administrative expenses and are monitoring expenses to ensure StanCERA stays within allotted appropriations.
- VIII. STRATEGIC PLAN: Strategic Objective #4: Develop a formalized Operational Risk Management Plan.
- IX. ADMINISTRATIVE BUDGET IMPACT: A total of \$5,212,930 was approved for the Fiscal Year 2019-2020 Administrative budget. No additional administrative funds are being requested at this time.

Natalie Davis, Fiscal Services Manager
Rick Santos, Executive Director

FISCAL YEAR 2019-2020 M		IENT ASSOCIA	ATION
. 1007E 1EAN 2013-2020 W	Fiscal Year 2019-2020 Final Budget	Fiscal Year 2019-2020 Mid Year Expenditures	Percent of 2019-2020 Budget
ALARIES & BENEFITS		Lapendiules	
Salary and Wages	1,180,000	527,279	
Project Help Wages	82,000	30,991	
Employee Benefits	691,491	325,066	
Salaries & Benefits	1,953,491	883,336	45.22
ECHNOLOGY			
Tyler Software Maint	54,440	26,638	
Tyler Disaster Maint	13,500	0	
Tegrit Hosting Fees	78,000	39,000	
I.T. Consulting Services (PAS RFP - Procurer		11,960	
Software Licenses & Fees	10,000	726	
StanCERA Website	2,500	100	
SBT - Data Processing Services	52,700	22,878	
SBT - Telecommunications	7,600 57,600	3,740	
SBT - Embedded Employees Computers & Office Equipment	57,600 25,000	28,800 9,740	
Conjuters & Office Equipment Copier Lease & Maint	10,000	7,329	
Technology	361,340	7,329 150,911	41.76
egal & Professional Services	301,340	130,911	41.70
Legal Counsel - Disability	120,000	55,149	
Legal Counsel - O'Neal vs StanCERA	150,000	8,674	
Reimbursement from Travelers Ins	(60,000)	(14,541)	
Legal Counsel - Nasrawi vs StanCERA	0	864	
Legal Counsel - General	60,000	36,917	
Legal Counsel - Domestic Relation Orders	50,000	15,297	
Legal Counsel - StanCERA vs Buck	20,000	29,718	
Medical Exams, Reviews, Hearings	30,000	6,500	
Auditing Services	46,500	39,107	
Other Professional Services	10,000	6,373	
Legal & Other Professional & Services	426,500	184,058	43.16
ENERAL OPERATIONS & CONDOMINIUM			45.10
Office Supplies	7,000	3,804	
Other Office Expense	8,000	4,570	
6th Floor Maint	1,500	5,450	
6th Floor Janitorial & Supplies	25,000	12,858	
6th Floor Security	500	173	
6th Floor taxes (Downtown Redevelopment) Rebalance & Correction of 6th floor HVAC	1,250 0	1,218 7,891	
General Operations & Condominium	43,250	35,964	83.15
OMMUNICATION & PRINTING	10,200	00,007	30.10
	30,000	0.000	
Member Statements, Trustee Elections Postage	30,000 45,000	9,080 20,635	
Communication & Printing	75,000	29,715	39.62
COUNTY SUPPORT & BUILDING SERVICES	7 3,000	20,110	39.02
Building Maintenance	45,000	11,664	
Building Janitorial	20,000	5,459	
Building Security	45,000	27,182	
Building Utilities	40,000	17,842	
Auditor	12,000	6,172	
CEO/Personnel (true up)	18,500	6,915	
Central Services, Mail Room	20,000	7,128	
General Services Agency	0	205	
Purchasing	1,500	358	
Risk Management	3,650	378	
Salvage & Disposal	1,500	288	
Insurance (General Liability & Auto)	19,800	7,966	
County Support Services & Building Services	226,950	91,557	40.34
DUCIARY EDUCATION & TRAVEL Professional Publications & Subscriptions	6 600	0	
Staff Education & Travel	6,600 35,000	32,117	
Professional Memberships	12,100	5,140	
Trustee Education & Travel	66,000	14,782	
Trustee Meeting Allowance	14,500	4,800	
Insurance (Fiduciary & Auto)	72,500	0	
		50.000	07.50
Fiduciary Education & Travel APITAL EXPENDITURES	206,700	56,839	27.50
Cubicle Redesign	0	8,833	
Pension Administration System	1,060,316	505,061	
PAS Project Management & Oversite	695,000	222,322	
12th St Lobby Upgrade	50,000	0	
Board Room Tenant Improvements	0	17,008	
Website redesign & implementation	50,000	24,922	
		778,146	41.94
Capital Expenditures	1,855,316	110,140	11.01
Capital Expenditures  Capital Depreciation 6th Floor Lease Revenue	1,855,316 170,000 (105,617)	(59,759)	11.01

Attachment 1

STANISLAUS COUNTY EMPLOYEES' RETIREMENT ASSOCIATION FISCAL YEAR 2019-2020 MID YEAR BUDGET REVIEW_					
	Fiscal Year 2019-2020 Final Budget	Fiscal Year 2019-2020 Mid Year Expenditures	Percent of 2019-2020 Budget		



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#### February 25, 2020

Retirement Board Agenda Item

TO: Retirement Board

FROM: Jamie Borba, Member and Employer Services Specialist

Lisa Frazer, Member and Employer Services Manager

I. SUBJECT: Information Technology Solutions (ITS) Project

II. ITEM NUMBER: 6.d.

III. ITEM TYPE: Information Only

IV. STAFF RECOMMENDATION: None

ANALYSIS: The scheduled go-live date for the new pension system is readily approaching. In preparation, Tegrit has created a weekly timeline listing items to be finalized. Beginning mid-March, the Project Managers will meet twice a week to track the progress of the incomplete items to ensure they are finished by the deadline.

Staff is currently reviewing one (1) Business and Systems Requirement Document (BSRD) for the OTC (Over The Counter) Payment Workflow and the testing and sign-off has been completed on the following processes: Disposition Workflow, Buyback Request Workflow, Member Statements and General Ledger Intergration – Interest Process.

Staff is continuing to parallel test employer reporting from the three (3) Plan Sponsors who will be using the upload reporting feature. This test period has been successful and will continue through the go-live date.

StanCERA has made an additional commitment with Linea for an additional part-time consultant (5-15 hours per week) to assist with the increased workload as the go-live date approaches. The part-time consultant will work off-site and will be assigned generic tasks from Linea's primary resource allowing greater focus on tasks that require project-specific background knowledge. This additional resource will be of minimal cost; the project is currently 77% complete has used 44% of the budget allocated. In actual dollars, StanCERA is approximately \$420,000 under budget for its Linea resources.

V. RISK: None

- VI. STRATEGIC PLAN: Strategic Objective IV: Refine StanCERA's business and policy practices in ways that enhance stakeholder awareness, the delivery of member services and the ability of the Organization to administer the System effectively and efficiently.
- VII. ADMINISTRATIVE BUDGET IMPACT: None

Jamie Borba, Member and Employer Services Specialist

Lisa Frazer, Member and Employer Services Manager

Rick Santos, Executive Director



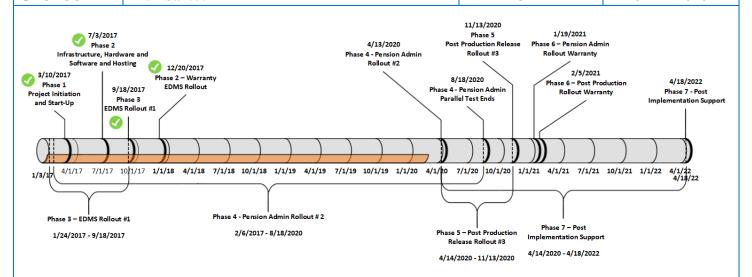
## PAS IMPLEMENTATION LINEA BI-WEEKLY STATUS UPDATE



SPONSOR: Rick Santos

REPORT DATE:

02-21-2020



#### Baseline 12/01/2016 **STATUS** ■ Expended ■ Remaining 100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0% Budget Duration

Linea Budget as of 01/31/2020

#### **Risks & Issues:**

Two months remain until projected go-live.

A new risk to the go-live date is an issue with service and purchase calculations related to alternate schedule employees. Tegrit is currently pursuing options for StanCERA's consideration.

Risk level (low/medium/high) of known project risks may increase as go-live approaches. Risks and issues are being continuously reviewed by the project team.

Additional risks currently of concern for go-live:

- StanCERA Resource Allocation/Availability
- Employer Reporting Transmittal Files
- Resources for Testing
- Sufficient Staff Training

### **Accomplishments:**

- Continued employer reporting parallel testing.
- Continued go-live planning and development of weekly tasks lists for completion until go-live.
- Scheduling of additional StanCERA staff training dates and further planning for employer training.
- Progress made on multiple data clean-up projects and resolution of outstanding project action items.

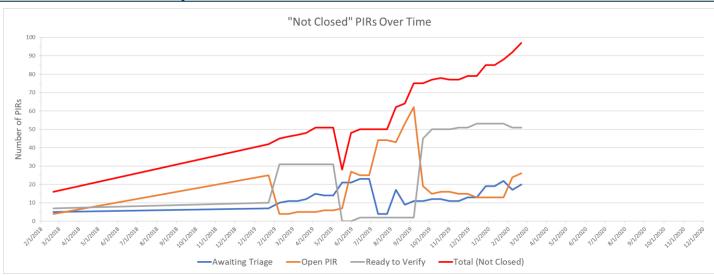
#### **Upcoming:**

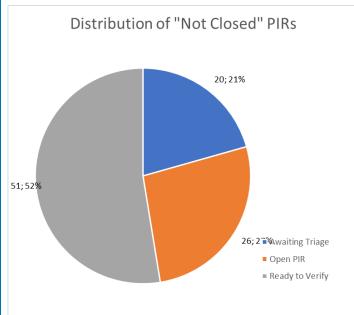
- Completion of R18 UAT and continued retesting of resolved PIRs.
- Initiation of employer training and continued staff training.
- > StanCERA to begin parallel payroll testing.
- ➤ R19 UAT release and testing to begin 03/02/20.

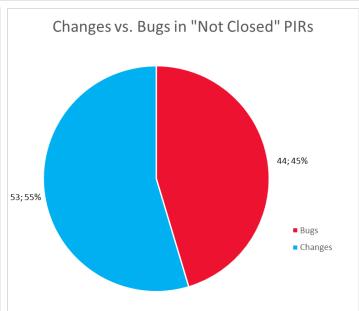
### **Ongoing Project Contributions**

- Facilitate weekly Project Manager's meetings and create meeting minutes.
- ➤ Facilitate monthly Steering Committee Meetings and create meeting minutes.
- Participate in Tegrit work sessions, review meeting minutes, and compile resulting decision logs and action items.
- Regularly review action items for follow up and completion.
- ➤ Review and hold group review sessions for BSRD deliverables made by Tegrit (BSR077).
- Track requirements, as discussed in work sessions and BSRDs, using the RTM and meet with StanCERA PM to update requirements confirmation.
- Manage and participate in system testing efforts, including review of test scripts, compiling of results, input of PIRs, and tracking of issue resolution.

### **Current PIR Summary**









### Stanislaus County Employees' Retirement Association

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#### February 25, 2020

Retirement Board Agenda Item

TO: Retirement Board

FROM: Stan Conwell, Retirement Investment Officer

I. SUBJECT: Private Markets Commitment Notice

II. ITEM NUMBER: 6.e

III. ITEM TYPE: Information Only

IV. STAFF RECOMMENDATION: None.

V. EXECUTIVE SUMMARY:

On February 12, 2020 StanCERA committed up to \$20 million to the Vista Foundation Fund IV (VFF IV). (The actual commitment level could be less than \$20 million and is influenced by available capacity at the final fund closing date.) Vista Equity Partners is a private equity buyout firm focusing on the technology sector. Globally, Vista is one of the largest and most active investment firms dedicated to investing in the enterprise software sector. The Vista Foundation Fund IV will focus on acquiring controlling interest in established middle-market enterprise software and technology-enabled solutions companies with significant value creation opportunities. Vista will target companies that provide mission critical solutions that can benefit from the implementation of operational best practices to drive growth and create lasting value.

StanCERA has a 6.0% target allocation to the private equity asset class with a sub-asset class target allocation of 4% to buyouts and 2% to venture capital. The commitment to the Vista Foundation Fund IV will be allocated to the buyout sub-asset class and is in compliance with StanCERA's Private Markets Investment Policy Statement. For each private market investment, several due diligence reports are completed by the investment consultant and staff. These reports contain confidential information and are available to Trustees for review upon request.

Vista Due Diligence Reports:

Attachment 1 - Executive Summary (Staff)

Attachment 2 - Compliance Checklist (Staff)

Attachment 3 - Executive Summary and Comprehensive Due Diligence Report (Consultant)

Attachment 4 - Recommendation/Approval Memo (Consultant)

Attachment 5 - Manager Pitchbook

VI. RISK: None

VII. STRATEGIC PLAN: N/A

VIII. ADMINISTRATIVE BUDGET IMPACT: None.

Stan Conwell, Retirement Investment Officer



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#### February 25, 2020

Retirement Board Agenda Item

TO: Retirement Board

FROM: Stan Conwell, Retirement Investment Officer

I. SUBJECT: Investment Matrix

II. ITEM NUMBER: 6.f

III. ITEM TYPE: Information Only

IV. STAFF RECOMMENDATION: None.

#### V. ANALYSIS:

#### a) Investment Program Activities & Governance:

In January, staff met with Verus to discuss and develop the work plan for the first half of 2020. As you know, StanCERA is scheduled for an asset/liability study in 2020 and much of the Staff's and the Board time will be dedicated to reviewing the process and setting the foundation to select the strategic asset allocation. Private Markets due diligence continued through January into February resulting in StanCERA's first commitment to a private equity fund. Staff participated in a few investment manager quarterly review calls.

Staff was provided additional details on the potential fund changes to Greenfield VIII recently. While the proposed amendment is a natural continuation of the firm's transition from Greenfield to Grandview, a review of the benefits and potential risks of the changes need to be fully explored. Staff with the assistance from Verus are currently evaluating the details of the proposed amendments.

#### b) Money Transfer Report:

From			То		
Manager	Asset Class	Amount	Manager	Asset Class	Amount
StanCERA Cash	Cash	\$-1,456,045	Raven Opportunity Fund III	Private Credit	\$1,456,045

Retirement Board – February 25, 2020 Investment Matrix Page 2

#### c) Manager Meeting Notes:

Insight

Staff participated with a call with Insight, StanCERA's liquidity sub-portfolio manager, for a portfolio update and year ahead outlook. Insight manages a portfolio of high quality, highly liquid bonds structured in a way to match the cash flow needs of the plan that stem from the monthly benefit payment obligations. The main topic of the call was to review how the implementation of the annual refunding of the liquidity portfolio went. Changes in the portfolio characteristics and various portfolio exposures were discussed. A review of the implementation process including how initial cash infusions in the portfolio are handled was provided. A conversation about other potential alternative ways structuring the portfolio to match cash flow also took place. At the conclusion of the call, developments in the treasury market during 2019 were discussed as well as potential fed actions in 2020.

#### d) Investment Consultant RFP:

Shortly after the January Board meeting the ad hoc General Investment Consultant RFP Committee was formed. The Committee includes the following Trustee members: Jeff Grover, Michael O'neal, Mike Lynch, and Rhonda Biesemeier. Staff members Rick Santos, Natalie Davis and Stan Conwell are also on the Committee. On February 6, 2020, the Committee met to review the draft RFP document, discuss the evaluation process, and provide guidance to staff.

The RFP was made public on StanCERA's website on February 14 and the submission deadline for proposal responses is on March 27, 2020. The selection of finalists by the Committee will occur the week of April 6 and the selection of a winner following finalist presentations is scheduled for April 21. The Committee is expected to provide its recommendation to the Board at the April 28 meeting.

While the Committee will perform the work of selecting the General Investment Consultant, any Board member who has the desire to observe the process and provide input is welcome to sit in on any Committee meeting.

e) Trainings/Conferences:
None

VI. RISK: None

VII. STRATEGIC PLAN: N/A

VIII. ADMINISTRATIVE BUDGET IMPACT: None.

Stan Conwell, Retirement Investment Officer

### Total Fund Flash Report (Net of Fees) - Preliminary

### Period Ending: January 31, 2020

	Market Value	% of Portfolio	1 Mo	Fiscal YTD
Total Fund	2,293,469,664	100.0	-0.5	5.4
Policy Index			-0.5	5.3
Liquidity Sub-Portfolio	249,797,124	10.9	1.3	3.8
StanCERA Liquidity Blended BM			0.5	1.8
Cash	32,080,019	1.4	0.1	1.2
FTSE T-Bill 1 Month TR			0.1	1.1
Short-Term Gov't/Credit	217,717,105	9.5	1.5	4.2
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.8
Insight	217,717,105	9.5	1.5	4.2
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.8
Growth Sub-Portfolio	1,794,000,816	78.2	-1.0	6.0
StanCERA Growth Blended BM			-0.9	6.1
US Large	340,900,062	14.9	-0.2	10.7
Russell 1000			0.1	10.7
BlackRock Russell 1000 Growth	175,140,316	7.6	2.2	14.8
Russell 1000 Growth			2.2	14.8
BlackRock Russell 1000 Value	82,652,610	3.6	-2.1	6.6
Russell 1000 Value			-2.2	6.5
Dodge & Cox-Equity	83,107,136	3.6	-3.3	6.5
Russell 1000 Value			-2.2	6.5
US Small	79,680,211	3.5	-4.6	1.8
Russell 2000			-3.2	3.9
Capital Prospects	79,680,211	3.5	-4.6	1.8
Russell 2000 Value			-5.4	2.1
Private Equity Proxy	145,579,926	6.3	-0.1	10.2
Russell 3000 +3%			0.1	12.4
Northern Trust Russell 3000	145,579,926	6.3	-0.1	10.2
Russell 3000			-0.1	10.2

	Current	%	Policy	%
Liquidity Sub-Portfolio	\$249,797,124	10.9%	\$275,216,360	12.0%
Cash	\$32,080,019	1.4%	\$22,934,697	1.0%
Short-Term Gov't/Credit	\$217,717,105	9.5%	\$252,281,663	11.0%
Growth Sub-Portfolio	\$1,794,000,816	78.2%	\$1,765,971,641	77.0%
US Large	\$340,900,062	14.9%	\$321,085,753	14.0%
US Small	\$79,680,211	3.5%	\$68,804,090	3.0%
Private Equity Proxy	\$145,579,926	6.3%	\$137,608,180	6.0%
Int'l Developed	\$527,084,109	23.0%	\$527,498,023	23.0%
Core Real Estate	\$147,672,586	6.4%	\$114,673,483	5.0%
Value Add Real Estate	\$89,896,378	3.9%	\$114,673,483	5.0%
Risk Parity	\$327,612,840	14.3%	\$298,151,056	13.0%
Infrastructure	\$40,196,420	1.8%	\$45,869,393	2.0%
Private Credit	\$95,378,284	4.2%	\$137,608,180	6.0%
Risk-Diversifying Sub- Portfolio	\$249,671,724	10.9%	\$252,281,663	11.0%
US Treasury	\$65,397,517	2.9%	\$68,804,090	3.0%
Short Term Gov't/Credit	\$184,274,207	8.0%	\$183,477,573	8.0%
Total	\$2,293,469,664	100.0%	\$2,293,469,664	100.0%



Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 1% Citi 1 Month T-Bills. All data is preliminary.



	Market Value	% of Portfolio	1 Mo	Fiscal YTD
Int'l Developed	527,084,109	23.0	-3.0	4.6
MSCI ACWI ex USA			-2.7	4.1
LSV Asset Mgt	263,391,298	11.5	-4.0	5.0
MSCI ACWI ex USA			-2.7	4.1
Fidelity	263,692,811	11.5	-2.1	4.3
MSCI ACWI ex USA			-2.7	4.1
Core Real Estate	147,672,586	6.4	0.1	3.7
NCREIF Property Index			N/A	N/A
Prime Property Fund	58,942,128	2.6	N/A	N/A
NCREIF-ODCE			N/A	N/A
BlackRock US Real Estate	30,997,010	1.4	0.4	5.9
DJ US Select RESI TR USD			0.4	6.0
PGIM Real Estate US Debt Fund	57,733,448	2.5	N/A	N/A
BBgBarc CMBS IG TR USD			2.5	4.1
Value Add Real Estate	89,896,378	3.9	N/A	N/A
NCREIF Property Index +2%			N/A	N/A
American Strategic Value Realty	60,616,097	2.6	N/A	N/A
NCREIF Property Index			N/A	N/A
Greenfield Gap VII	9,986,855	0.4	N/A	N/A
NCREIF ODCE + 1%			N/A	N/A
Greenfield Gap VIII	19,293,426	0.8	N/A	N/A
NCREIF ODCE + 1%			N/A	N/A
Risk Parity	327,612,840	14.3	1.1	5.8
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			-0.2	5.7
AQR Global Risk Premium - EL	165,264,399	7.2	0.6	6.0
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			-0.2	5.7
PanAgora Risk Parity Multi Asset	162,348,441	7.1	1.6	5.6
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			-0.2	5.7

	Current	%	Policy	%
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Growth Sub-Portfolio	\$1,794,000,816	78.2%	\$1,765,971,641	77.0%
US Large	\$340,900,062	14.9%	\$321,085,753	14.0%
US Small	\$79,680,211	3.5%	\$68,804,090	3.0%
Private Equity Proxy	\$145,579,926	6.3%	\$137,608,180	6.0%
Int'l Developed	\$527,084,109	23.0%	\$527,498,023	23.0%
Core Real Estate	\$147,672,586	6.4%	\$114,673,483	5.0%
Value Add Real Estate	\$89,896,378	3.9%	\$114,673,483	5.0%
Risk Parity	\$327,612,840	14.3%	\$298,151,056	13.0%
Infrastructure	\$40,196,420	1.8%	\$45,869,393	2.0%
Private Credit	\$95,378,284	4.2%	\$137,608,180	6.0%
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	Market Value	% of Portfolio	1 Mo	Fiscal YTD
Infrastructure	40,196,420	1.8	N/A	N/A
CPI + 5%			N/A	N/A
MS Infrastructure Partners II	40,196,420	1.8	N/A	N/A
CPI + 5%			N/A	N/A
Private Credit	95,378,284	4.2	N/A	N/A
S&P/LSTA Leveraged Loan Index+2%			0.7	4.5
Medley Capital	10,505,757	0.5	N/A	N/A
S&P/LSTA Leveraged Loan Index+2%			0.7	4.5
Owl Rock First Lien Fund	4,025,720	0.2	N/A	N/A
S&P/LSTA Leveraged Loan Index+2%			0.7	
Raven Capital	14,330,002	0.6	N/A	N/A
S&P/LSTA Leveraged Loan Index+2%			0.7	4.5
Raven Opportunity III	40,325,843	1.8	N/A	N/A
S&P/LSTA Leveraged Loan Index+2%			0.7	4.5
White Oak Pinnacle	26,190,963	1.1	N/A	N/A
S&P/LSTA Leveraged Loan Index+2%			0.7	4.5
Risk-Diversifying Sub-Portfolio	249,671,724	10.9	1.1	2.8
StanCERA Risk-Diversifying Blended BM	-		1.3	2.6
US Treasury	65,397,517	2.9	2.9	4.7
BBgBarc US Treasury 7-10 Yr TR			3.2	4.7
Northern Trust Intermediate Gov't Bond	47,135,127	2.1	1.4	2.6
BBgBarc US Govt Int TR			1.4	2.6
Northern Trust Long Term Gov't Bond	18,262,390	0.8	6.8	10.5
BBgBarc US Govt Long TR	-		6.8	10.5
Short-Term Gov't/Credit	184,274,207	8.0	0.4	2.1
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.8
DFA	184,274,207	8.0	0.4	2.1
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.8

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### **Blended Benchmark Compositions**

- StanCERA Liquidity Blended BM (8/31/2019): 92% BBgBarc US Govt/Credit 1-3 Yr. TR and
   8% FTSE T-Bill 1 Month TR.
- StanCERA Growth Blended BM (8/31/2019): 18% Russell 1000, 4% Russell 2000, 8%
  Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private
  Value Add Real Estate returns, 17% 60% MSCI ACWI/40% BBgBarc Global Aggregate, 3%
  actual Infrastructure returns, and 8% actual Private Credit returns.
- StanCERA Risk-Diversifying Blended BM (8/31/2019): 27% BBgBarc US Treasury 7-10 Yr. TR
   and 73% BBgBarc US Govt/Credit 1-3 Yr. TR.







PERIOD ENDING: DECEMBER 31, 2019

Investment Performance Review for

**Stanislaus County Employees' Retirement Association** 

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Investment Performance Review TAB II

TAB I



## Recent Verus research

Visit: <a href="https://www.verusinvestments.com/insights/">https://www.verusinvestments.com/insights/</a>

### Annual outlooks

#### CAPITAL MARKET ASSUMPTIONS

Some important developments occurred in the last year. During our 2020 Capital Market Assumptions webinar, we discussed:

- Market movements of 2019 and how these shifts have affected our long-term outlook
- The impact of falling interest rates on fixed income expectations
- Why it is important to differentiate between shorter-term and longer-term forecasting exercises

### **Topics of interests**

#### WHY BENCHMARKS MATTER

In this Topics of Interest paper, we seek to outline the importance of benchmark selection within the investment process. The white paper addresses the following points:

- Benchmarks which appear similar can behave very differently, even over long periods of time
- Unconsidered benchmark selection can introduce uncompensated tracking error
- Tools available to investors to assist in determining appropriate benchmark indexes

#### **RISK IN MANAGER SELECTION**

In our latest Topics of Interest paper, we provide a framework for assessing the candidacy of a manager for portfolio inclusion and consider the implications of one manager versus alternatives. It addresses the following questions:

- Does the manager add a desired exposure?
- Does the manager exhibit skill?
- What does the manager add to the broader portfolio relative to other candidates?

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#### **VERUSINVESTMENTS.COM**

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## 4<sup>th</sup> quarter summary

#### THE ECONOMIC CLIMATE

- Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.1% quarterly annualized rate). Falling imports and weak fixed investment (-0.2% contribution) acted as a drag on growth, while personal consumption continued to as the greatest driver of growth. p. 7
- U.S. and Chinese negotiators signed the "phase one" trade agreement, and Boris Johnson's Conservative Party in the U.K. won a decisive victory. These events appear to have removed some uncertainty from the geopolitical landscape over the short- to intermediate-term. p. 15

#### PORTFOLIO IMPACTS

- Global equity markets exhibited strong performance through Q4, and U.S. equity performance was in-line (MSCI ACWI +9.0%, S&P 500 +9.1%). Emerging markets were the top performing asset class (+11.8%). *p. 40*
- U.S. headline inflation increased 2.3% YoY in December, alongside the core inflation growth figure, and up from 1.7% in September. Although this was a notable jump in the inflation rate, investors appear more concerned about global deflationary forces, as indicated by the 10yr U.S. TIPS Breakeven Inflation Rate of 1.73%. Cyclical price pressures remain surprisingly absent from the current environment. p. 9

#### THE INVESTMENT CLIMATE

- In October, the Federal Open Market Committee cut interest rates by 0.25% to a new range of 1.50 1.75%.
   This marked the third consecutive rate cut by the committee. p. 18
- Global sovereign bond yields picked up modestly in Q4, on higher inflation and growth prospects. The dollar value of negative-yielding outstanding debt fell from nearly \$15 trillion to just above \$11 trillion. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion. p. 18

### ASSET ALLOCATION ISSUES

- Most risk assets provided sizable gains in Q4. Global equities delivered +9.0%, U.S. high yield increased +2.6%, and Emerging Market Local Debt rose +5.2%. Longer duration fixed income saw losses as interest rates rebounded. *p. 40*
- The U.S. dollar weakened -0.5% against both developed and emerging currencies in Q4, reversing moves of the prior quarter. Dollar volatility remains low relative to the big swings that occurred throughout 2014-2018. p. 35
- Although risk assets appear to have rocketed higher in 2019, which may create concerns over valuations, it is important to note that much of this performance was due to assets recovering from a sharp fall in late-2018. p. 25

A neutral risk stance may be appropriate in today's environment

## What drove the market in Q4?

### "U.S. trade deficit falls 7.6% in October to 16-month low on decline in Chinese imports"

#### U.S. FEDERAL TRADE DEFICIT (\$BILLIONS)

Jun	Jul	Aug	Sep	Oct	Nov
53.7	52.7	53.5	51.1	46.9	43.1

Article Source: MarketWatch, December 5<sup>th</sup>, 2019

#### "As markets climb higher, are stocks becoming overvalued?"

#### BLENDED FORWARD 12-MONTH P/E RATIO OF THE S&P 500 INDEX

Jul	Aug	Sep	Oct	Nov	Dec
17.0x	16.6x	16.9x	17.3x	17.8x	18.3x

Article Source: CNBC, December 30th, 2019

#### "Fed 'prepared to adjust' balance sheet to prevent repo market flare-up"

#### MONTHLY CHANGE IN THE SIZE OF THE FED BALANCE SHEET (\$BILLIONS)

Jul	Aug	Sep	Oct	Nov	Dec
-47.7	-19.2	97.8	162.1	33.1	112.7

Article Source: Yahoo Canada Finance, December 11th, 2019

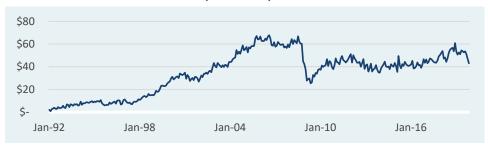
### "China's pork price jumps 110 per cent, sending consumer inflation rocketing to eight-year high"

#### **CHINA CPI INFLATION (YoY % CHANGE)**

Jul	Aug	Sep	Oct	Nov	Dec
2.8	2.8	3.0	3.8	4.5	4.5

Article Source: South China Morning Post, December 10th, 2019

#### U.S. MONTHLY TRADE DEFICIT (BILLIONS)



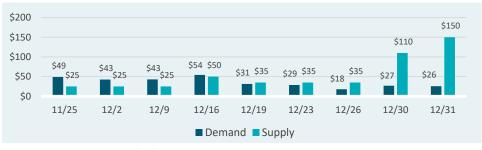
Source: Bloomberg, as of 11/30/19

#### FORWARD PRICE/EARNINGS RATIO (BLENDED 12-MONTH EARNINGS)



Source: Bloomberg, as of 12/31/19.

#### YEAR-END LIQUIDITY OFFERED UP BY THE NEW YORK FED (BILLIONS)



Source: New York Fed, as of 12/31/19.



# Economic environment



## U.S. economics summary

- Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.0% quarterly annualized rate). Falling imports and weak fixed investment (-0.2% contribution) acted as a drag on growth, while personal consumption continued to be the greatest driver of growth.
- U.S. headline inflation came in at 2.3% YoY in December, in line with the core inflation growth figure.
   Despite more than 10 years of economic expansion, cyclical price pressures seem surprisingly absent from the current environment.
   Investors appear more concerned about global deflationary forces.
- The U.S. labor market showed further strength in the fourth quarter and unemployment remained at 50-year lows of 3.5%.
- Consumer sentiment indicators remain near all-time-highs and improved slightly over the quarter.
- American households are in a

- strong financial position, with balance sheets that appear increasingly robust. At the end of Q3, U.S. household debt outstanding was equal to about 74% of GDP, the healthiest level since Q4 2001.
- U.S. and Chinese negotiators signed the "phase one" agreement on trade, and Boris Johnson's Conservative Party won a decisive victory in the U.K. These developments may ease some of the economic uncertainty across the global economy, providing a tailwind to future growth.
- Existing home sales grew +2.7% YoY in November. New home sales, a far smaller portion of the overall market, grew at a stronger rate of +16.9% YoY, as construction activity further accelerated. Rising homebuilder activity in recent years may ease some of the low inventory pressures in the current market environment.

	Most Recent	12 Months Prior
GDP (YoY)	2.1% 9/30/19	3.1% 9/30/18
Inflation (CPI YoY, Core)	2.3% 12/31/19	2.2% 12/31/18
Expected Inflation (5yr-5yr forward)	1.8% 12/31/19	1.8% 12/31/18
Fed Funds Target Range	1.50 – 1.75% 12/31/19	2.25 – 2.50% 12/31/18
10 Year Rate	1.9% 12/31/19	2.7% 12/31/18
U-3 Unemployment	3.5% 12/31/19	3.9% 12/31/18
U-6 Unemployment	6.7% 12/31/19	7.6% 12/31/18



## GDP growth

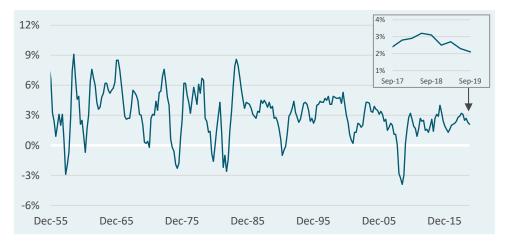
Real GDP grew at a 2.1% rate year-over-year in the third quarter (2.1% quarterly annualized rate). Falling imports detracted -0.3% from the overall GDP print, along with weak fixed investment (-0.2% contribution). Personal consumption, the largest component of gross domestic product, continued to drive the economy forward. The U.S. economy is pacing near the 2.0% rate that economists generally expect for full year 2020.

While trade policies and conflict likely resulted in a mild drag on economic growth in 2019, the U.S. and China have signed

the "phase one" trade deal. A partial trade resolution, or at least an indication that negotiations are headed in a more positive direction, could provide a lift to the economy and markets.

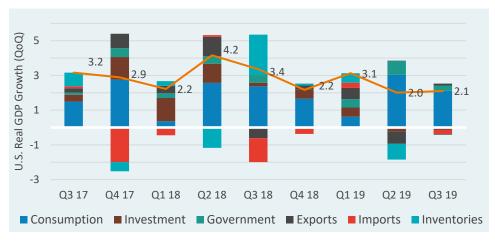
On January 17<sup>th</sup>, the Federal Reserve Bank of Atlanta GDPNow forecast indicated GDP growth of 1.8% in the fourth quarter. This forecast dipped recently due to weak personal consumption expenditures.

#### U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 9/30/19

#### U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 9/30/19



## Inflation

U.S. headline inflation increased 2.3% YoY in December, in line with the core inflation growth figure, and up from 1.7% in September. Although this is a notable jump in the inflation rate, investors appear more concerned about global deflationary forces. Cyclical price pressures remain surprisingly absent from the current environment.

During the quarter, the market's pricing of inflation increased from a low of 1.48% to 1.73%. While the breakeven rate has risen materially from its cycle low of 1.18% achieved in February 2016, it remains depressed by historical standards.

Consumer expectations moved in the opposite direction, falling from 2.7% at the beginning of the year to 2.3% in December.

We believe it is likely that inflation will remain subdued. But it is also worth noting that if inflation or inflation fears returned to the markets, this might place central banks in a perilous position. It is doubtful that central banks could hike interest rates for any sustained period of time without risking recession.

#### U.S. CPI (YOY)



#### U.S. BREAKEVEN INFLATION RATE



#### INFLATION EXPECTATIONS



Source: FRED, as of 12/31/19

Source: Bloomberg, as of 12/31/19



Source: Bloomberg, as of 12/31/19

# Labor market

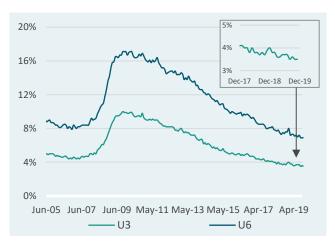
The U.S. labor market continued to show strength in Q4 and unemployment remained at 50-year lows of 3.5%. Year-over-year growth in non-farm payroll additions slowed to its lowest level since September 2017 at 1.4%. Nearly 1.24 jobs are now available per unemployed worker in the labor force, which suggests there is a limited remaining supply of workers to meet business hiring demands.

Average hourly earnings for production and nonsupervisory employees grew 3.0% year-over-year in December, outpacing inflation (2.3%). Sustained real wage growth would support sentiment, which is near cycle highs.

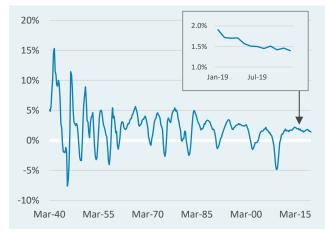
One plausible case for strong consumption to continue hinges on the fact that several key unemployment rates are near historic lows. The unemployment rate for workers who are at least 25 years old and lack high school diplomas (5.3%) is at an at all-time-low level since the data was first recorded in the year 2000. Typically, workers with less education earn less in nominal terms, but have a higher marginal propensity to consume per each dollar earned. These recent increases in employment for those workers who are more likely to spend may lead to outsized positive impacts on economic growth.

U.S. labor market remains strong, though further upside may be limited

#### U.S. UNEMPLOYMENT



#### NON-FARM PAYROLL GROWTH (YOY)



#### U.S. WAGE GROWTH



Source: BLS, as 12/31/19 Source: FRED, as of 11/30/19



Source: FRED, as of 12/31/19

# U.S. unemployment



The U.S. job market is very strong, for all levels of education

Source: FRED, as of 11/30/19



# The consumer

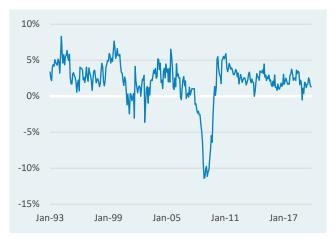
The U.S. consumer continued to push the U.S. economy forward, supported by low unemployment, solid wage gains, and high sentiment. American households are in a strong financial position, with balance sheets that appear robust. At the end of Q3, U.S. household debt outstanding was equal to about 74% of GDP, the healthiest level since Q4 2001.

Retail sales growth slid a bit in real terms, but much of this move was due to a pickup in inflation. The price of a barrel of WTI crude oil rose from \$53 to \$61, helping to propel year-over-year growth in headline inflation from 1.7% to 2.3%. Overall, retail sales growth remains solid, and has been boosted

recently by a surge in e-commerce sales. Cyber Monday sales grew nearly 20% this year, hitting a record \$9.4 billion U.S. dollars according to data from Adobe Analytics. Shoppers' carts were also about 6% larger at checkout than they were last year, perhaps hinting at a more optimistic consumer outlook.

Credit conditions remain benign. Credit-card borrowing ticked down slightly and was offset by faster growth in auto and student loans. Some might consider credit-card debt "worse debt" and auto and student loan debt "better debt" in that prudent investments in transportation and human capital are likely higher-returning than ultra-short-term consumption.

#### REAL RETAIL SALES GROWTH (YOY)



### E-COMMERCE SALES GROWTH (QUARTERLY YOY)



Source: U.S. Census Bureau, Bloomberg, as of 9/30/19

#### 12-MONTH GROWTH IN CONSUMER CREDIT



Source: Federal Reserve, Bloomberg, as of 11/30/19



Source: FRED, as of 11/30/19

# Sentiment

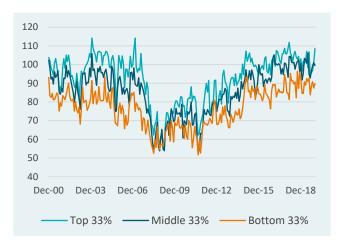
Consumer sentiment indicators remain near all-time-highs and improved slightly as a number of closely-followed geopolitical storylines appeared to move closer to resolution. The U.S. and China "phase one" trade deal, and the victory of Boris Johnson's Conservative Party in the U.K. appears to have at least removed some uncertainty from the geopolitical landscape over the short- to intermediate-term.

Over the quarter, the difference between the sentiment reading for the top third of income earners and the bottom

third of income earners moved from the 10<sup>th</sup> percentile to the 65<sup>th</sup> percentile of monthly periods since 2001, indicating a widening in the gap between the "haves" and "have-nots".

Consumers view the economic conditions for buying bigticket household items such as furniture, refrigerators and televisions as close to as favorable as they have been over the course of the expansion. This belief appears to be rooted in dual expectations for job security and real wage gains.

#### CONSUMER SENTIMENT BY INCOME BRACKET



Source: University of Michigan, as of 12/31/19

#### CONDITIONS FOR BUYING BIG-TICKET ITEMS (%)



Source: University of Michigan, as of 12/31/19

#### **CONSUMER FEAR GAUGE**



Source: University of Michigan, as of 12/31/19



# Housing

In the first half of 2019 the housing market appeared to be cooling off, coming down from a strong boom throughout the recent economic expansion. The average home sales price is down -8% from the highs of late-2017, although other variables such as the types and location of homes sold can impact these numbers. Homebuilding activity ticked up in the second half of the year as homebuilder sentiment jolted higher in 2019.

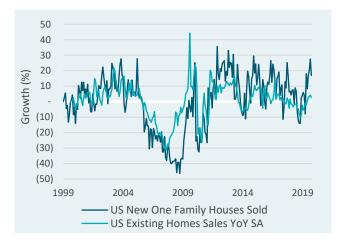
Existing home sales grew +2.7% YoY in November. New home sales, a far smaller portion of the overall market, grew at a stronger rate of +16.9% YoY, as construction activity further accelerated. Rising homebuilder activity in recent years may

ease some of the low inventory pressures in the current market environment.

The housing boom has contributed to a rebound in the U.S. homeownership rate. A decade-long trend away from buying and towards renting appears to have reversed in mid-2016. Since that time, the rate of homeownership has risen to 64.7% from a low of 63.1%.

It is always helpful to remember that home price trends can vary meaningfully by location, which means national statistics are sometimes difficult to interpret at a local level.

#### U.S. HOME SALES (YOY)



#### Source: FRED, as of 11/30/19

#### **HOUSING STARTS & PERMITS**



#### Source: Bloomberg, NAHB, as of 11/30/19 (see appendix)

#### HOMEOWNERSHIP RATE



Source: FRED, as of 9/30/19



# International economics summary

- The growth of international developed economies remains in a range of 0.5% to 2.0%, near the 2.1% growth rate of the slowing U.S. economy.
- In January, the IMF forecasted 2.9% global growth in 2019 and an acceleration to 3.3% in 2020. These growth expectations were 0.1% lower than the previous quarter's report, and were mostly a result of downward adjustments to emerging markets expectations.
- Inflation continues to be muted across international developed markets, keeping more options on the table for central banks to step in as needed with accommodative policy.
- The U.K. general election in December resulted in a landslide victory for Boris Johnson. The election, through a consolidation of Tory party power, effectively guarantees that Brexit will ultimately be carried out.

- While the global economy has exhibited mild growth, labor markets continue to tighten across the board. By traditional unemployment measures, job markets are now stronger than pre-2008 levels in most major economies.
- U.S. and Chinese negotiators signed the "phase one" agreement on trade, and the decisive victory of Boris Johnson's Conservative Party in the U.K. appears to have at least removed some uncertainty from the geopolitical landscape over the short- to intermediate-term.
- China has experienced a significant jump in inflation to 4.5% as an outbreak of African swine fever resulted in a doubling of pork prices. This compares to a 5-year average inflation rate of 1.9%. An acceleration of inflation may create issues for Chinese leadership in an already-slowing economy.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.1% 9/30/19	2.3% 12/31/19	3.5% 12/31/19
Eurozone	1.2% 9/30/19	1.3% 12/31/19	<b>7.5%</b> 11/30/19
Japan	1.7% 9/30/19	0.9% 12/31/19	2.2% 11/30/19
BRICS Nations	4.9% 9/30/19	<b>4.4%</b> 12/31/19	5.1% 9/30/19
Brazil	1.2% 9/30/19	4.3% 12/31/19	<b>11.2%</b> <i>11/30/19</i>
Russia	1.7% 9/30/19	3.1% 12/31/19	<b>4.6</b> % 11/30/19
India	4.5% 9/30/19	<b>7.4%</b> 12/31/19	8.5% 12/31/17
China	6.0% 9/30/19	<b>4.5%</b> 12/31/19	3.6% 9/30/19



# International economics

The United States grew at a pace of 2.1% year-over-year in the third quarter, moving more closely in line with other developed nations which have posted growth of 1.0%-2.0%.

While the global economy has exhibited mild growth, labor markets continue to tighten across the board. By traditional unemployment measures, job markets are now stronger than pre-2008 levels in most major economies.

Inflation has remained subdued across international developed markets, and many pundits have viewed the mild inflation data as a cue for central banks to step in and

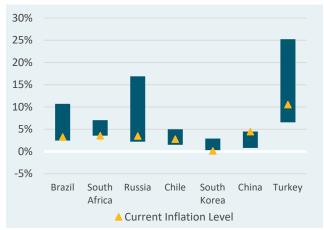
attempt to bolster economic growth through more accommodative policy. Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average.

China's inflation rate has become an outlier, jumping to 4.5% as an outbreak of African swine fever resulted in a doubling of pork prices in the country during the year. This compares to a 5-year average inflation rate of 1.9%. Prices of other meats in China have also increased on heightened demand for pork substitutes. An acceleration of inflation may create issues for Chinese leadership in an already-slowing economy.

#### REAL GDP GROWTH (YOY)

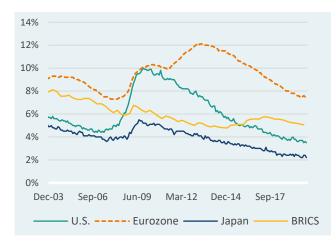


#### **INFLATION (CPI YOY)**



#### Source: Bloomberg, inflation range of past 5 years, as of 11/30/19

#### **UNEMPLOYMENT RATE**



Source: Bloomberg, as of 11/30/19 or most recent release



Source: Bloomberg, as of 9/30/19

# Fixed income rates & credit



# Interest rate environment

- The global sovereign bond rally lost steam in Q4 as inflation and growth prospects mildly reflated. Central bankers at the European Central Bank and the Federal Reserve signaled that policy would likely remain on hold in the absence of significant economic developments.
- Global ten-year sovereign bond yields picked up moderately, most significantly in Europe. Over the quarter, the U.S.-dollar value of global outstanding negative-yielding debt fell from nearly \$15 trillion to just above \$11 trillion.
- In October, the Federal Open
   Market Committee cut the range for its benchmark interest rate by 0.25% to a new range of 1.50 to 1.75%.
- Diversity of opinion among FOMC participants about the path of interest rates has faded. Most members now expect rates to remain flat in 2020, and move back toward 2.50% over the longer term.

- The New York Fed conducted a series of term repurchase operations aimed at providing sufficient liquidity for firms to get through the year-end turn when demand for cash typically surges. The Fed balance sheet grew by \$300B in Q4, and analysts continue to debate whether the Fed's involvement in repo markets should be considered "technical" or "stimulative" in nature.
- The Governing Council of the ECB decided to leave key interest rates unchanged and confirmed that net asset purchases to the tune of €20 billion per month had begun in November.
- In Christine Lagarde's first major move as President, she announced the ECB's first Strategic Policy review since 2003, which will begin in January and will address a wide range of topics, including: low inflation, the price-stability goal, climate change, and cryptocurrency.

Area	Short Term (3M)	10-Year
United States	1.54%	1.92%
Germany	(0.78%)	(0.19%)
France	(0.65%)	0.12%
Spain	(0.61%)	0.47%
Italy	(0.34%)	1.41%
Greece	0.26%	1.47%
U.K.	0.69%	0.82%
Japan	(0.10%)	(0.01%)
Australia	0.94%	1.37%
China	2.43%	3.14%
Brazil	4.30%	6.79%
Russia	4.95%	6.36%

Source: Bloomberg, as of 12/31/19

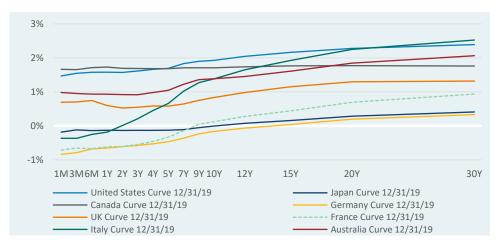


# Yield environment

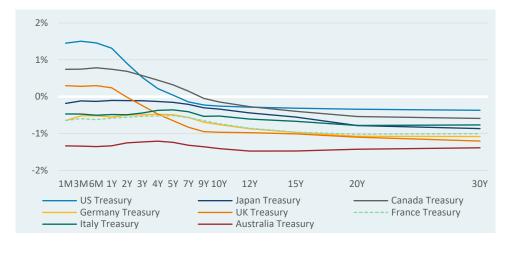
#### **U.S. YIELD CURVE**



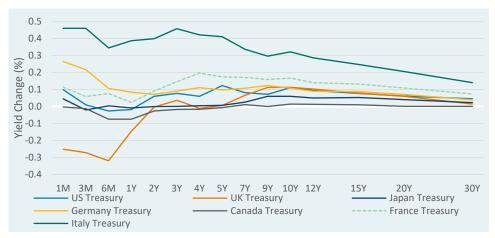
#### **GLOBAL GOVERNMENT YIELD CURVES**



#### YIELD CURVE CHANGES OVER LAST FIVE YEARS



#### **IMPLIED CHANGES OVER NEXT YEAR**



Source: Bloomberg, as of 12/31/19



# Credit environment

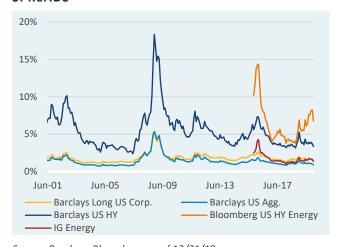
Credit enjoyed a positive 2019 driven by tightening spreads. Both investment grade and below-investment grade assets remained somewhat stable over the period. In high yield, CCCs and energy-related bonds were the best performers during Q4. High yield spreads tightened meaningfully over the year and the quarter (190 bps and 37 bps, respectively). Investment grade bonds also enjoyed positive performance fueled by this year's rate rally, attractive profit margins, and continued demand from investors for higher quality credit.

In the fourth quarter, high yield bonds have returned +3.4%, materially outperforming bank loans (+1.7%) and investment grade credit (+1.1%). In 2019, high yield bonds have returned +14.4%, materially outperforming bank loans (+8.6%) and slightly

outperforming investment grade credit (+13.8%). Bank loans have experienced outflows for much of the year driven by lessening demand for the asset class.

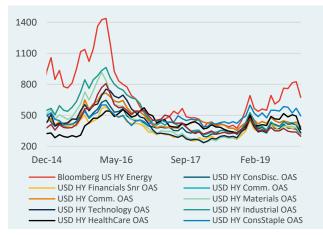
Based on concerns over late-cycle behavior in credit markets, we do not believe investors are being adequately compensated for credit risk. Late-cycle volatility tends to coincide with widening credit spreads and higher propensity for default activity. An underweight to U.S. investment grade, high yield credit, and bank loans may be warranted, with an overweight to emerging market debt which appears to offer more attractive value. This positioning should result in an overall neutral credit risk stance. Within U.S. markets, higher quality and more liquid assets appear most attractive.

#### **SPREADS**



Source: Barclays, Bloomberg, as of 12/31/19

#### HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 12/31/19

	Credit Spread (OAS)					
Market	12/31/19	12/31/18				
Long U.S. Corp	1.4%	2.0%				
U.S. Inv Grade Corp	0.9%	1.5%				
U.S. High Yield	3.4%	5.3%				
U.S. Bank Loans*	4.4%	5.1%				

Source: Barclays, Credit Suisse, Bloomberg, as of 12/31/19



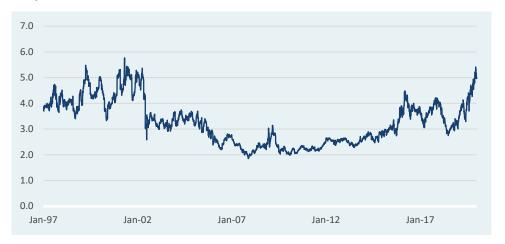
<sup>\*</sup>Discount margin (4-year life)

# High yield – what's in it?

The high yield market rallied in 2019 to provide double digit positive returns for only the fourth time since the 2008-2009 global financial crisis. However, the market was characterized by significant divergences as investors rotated into upper-tier credits relative to lower-tier credits due to volatility and geopolitical uncertainty picking up during the year. This was evidenced by the ratio of CCC/BB credit spread levels, which climbed to levels last seen two decades ago. Investors generally see CCC credits as a proxy for less liquid and/or more complex situations and risks, especially relative to the BB segment.

The distressed market was negatively impacted by investor distaste for less liquid risk during the year. This was particularly true in the energy sector, and in certain retail and healthcare industries. Selling pressures peaked in November as the riskiest segment of the high yield market suffered losses in excess of those experienced during the 2018 year-end drawdown. Market participants pulled money from the space, which resulted in significant redemptions amongst distressed-focused hedge funds and even closures of hedge funds that had previously successfully navigated the global financial crisis.

#### CCC/BB SPREAD RATIO



#### HIGH YIELD VS. HIGH YIELD DISTRESSED (INDEXED 12/31/2018=100)



Source: Standard & Poor's, J.P. Morgan, Wall Street Journal, as of 12/31/19



# Default & issuance

Default activity for 2019 was slightly higher than 2018 by roughly 0.8%. This was mainly due to elevated defaults in commodity-related industries such as energy and metals/mining. The par-weighted default rate for high yield ended the year at 2.6% and remained below its long-term average range of 3.0-3.5%.

For loans, the par-weighted default rate for 2019 was 1.6% and remained below the long-term average of 3.1%, according to data from J.P. Morgan. Notably, defaults in commodity-related sectors accounted for essentially half of the year's default/distressed activity.

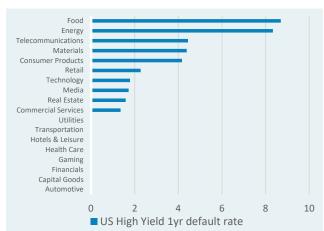
Gross high yield issue activity for 2019 was \$287 billion which was up 52% from a year ago. Loan market issuance is significantly behind last year's pace, likely influenced by lower demand for floating rate securities now that the Federal Reserve has paused monetary tightening. Gross loan issuance is essentially down 44% from a year ago although there was an increase in issuance at the end of December.

#### HY DEFAULT RATE (ROLLING 1-YEAR)



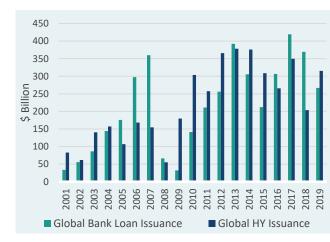
Source: BofA Merrill Lynch, as of 12/31/19

#### U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)



Source: BofA Merrill Lynch, as of 12/31/19 – par weighted

#### **GLOBAL ISSUANCE (\$ BILLIONS)**



Source: Bloomberg, BofA Merrill Lynch, as of 12/31/19



# Equity



# Equity environment

- Global equity markets exhibited strong performance through Q4, and U.S. equity performance was in-line (MSCI ACWI +9.0%, S&P 500 +9.1%). Emerging markets were the top performing asset class (+11.8%).
- Global currency volatility has been muted over the last few years, which has made ignoring currency exposure less consequential.
   Expecting low currency volatility to persist may be an assumption that gets investors into trouble.
- Unhedged U.S. investors in U.K. equities outperformed their hedged peers by 7.8% in Q4, as a stronger pound sterling dominated the U.K. equity return narrative.
- Based on price-to-forward earnings ratios international equity valuations appear elevated, but unlike in the U.S., they do not yet appear stretched.

- The outlook for monetary policy remains supportive of global equity price movement in 2020. Of the five major global central banks (Federal Reserve, European Central Bank, Bank of England, Bank of Japan, People's Bank of China), four out of five are providing accommodation through their respective balance sheets. Futures imply better than 50/50 odds that the Bank of England cuts its main rate 0.25% at the end of January and China has continued to cut its benchmark lending rate.
- Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average. Central bank policy has remained accommodative in many major countries within the universe such as China, South Korea, Brazil, and South Africa. This accommodation could provide a boost for equity market pricing as we move further into 2020.

	QTD TOTA	L RETURN	1 YEAR TOT	AL RETURN			
	(unhedged)	(hedged)	(unhedged)	(hedged)			
US Large Cap (S&P 500)	9.1	1%	31.	5%			
US Small Cap (Russell 2000)	9.9	9%	25.	25.5%			
US Large Value (Russell 1000 Value)	7.4	1%	26.5%				
US Large Growth (Russell 1000 Growth)	10.	6%	36.4%				
International Large (MSCI EAFE)	8.2%	5.8%	22.0%	24.6%			
Eurozone (Euro Stoxx 50)	8.3%	5.9%	25.9%	32.1%			
U.K. (FTSE 100)	10.8%	3.0%	22.1%	19.5%			
Japan (NIKKEI 225)	8.2%	9.6%	21.9%	23.5%			
Emerging Markets (MSCI Emerging Markets)	11.8%	9.5%	18.4%	17.7%			

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/19

# A different look at 2019 performance



Most of the high returns of 2019 were due to markets recovering from the 2018 drop

Adjusting for this effect shows us that 2019 was a fairly average year

Source: Standard & Poor's, MSCI, Verus, as of 12/31/19 – "Drawdown" defined as the total market fall in 2018, "Rebound" defined as the total % return from the low point of the fall to the end of 2019. "Net Change" defined as the % market return from the 2018 high point to the end of 2019.



# Domestic equity

U.S. equities outpaced international in the third quarter (S&P 500 + 9.1%, MSCI EAFE +8.2%) as domestic markets continued to lead.

Falling interest rates in 2019 have supported stock prices, as fixed income becomes less attractive on a relative basis, and cheaper borrowing should bolster future corporate earnings. As the dividend yield of U.S. stocks is once again higher than U.S. Treasury yields, investors may feel pressure to maintain greater exposure to equities in order to meet return objectives.

The S&P 500 delivered a 31.5% total return in calendar year

2019, while underlying corporate profits are expected to be flat at +0.3%. This of course means that performance has been driven by higher stock multiples rather than fundamentals. It is worth noting that a significant portion of 2019 performance was a recovery from the late-2018 sell-off of nearly -20%.

U.S. markets may continue to outperform over the shorterterm due to relative economic and market strength, and prices may certainly rise further. But history suggests that a widening gap between U.S. and international stock valuations will constrain U.S. performance over the longer-term.



EARNINGS



RELATIVE YIELDS



Source: FactSet, as of 12/20/19

Source: Standard & Poor's, as of 11/30/19



Source: Standard & Poor's, as of 12/31/19

# Domestic equity size & style

Value stocks lagged growth stocks during the fourth quarter (Russell 1000 Growth +10.6%, Russell 1000 Value +7.4%) while small cap stocks outperformed large stocks (Russell 2000 +9.9%, Russell 1000 +9.0%). During calendar year 2019, both size and value factors significantly underperformed (Russell 1000 +31.4%, Russell 2000 +25.5%; Russell 3000 Growth +35.8%, Russell 3000 Value +26.2%).

The impact of sector performance on the value premium was significant, once again, in 2019. Information Technology delivered very high returns (+50.3%) – a sector which tends to contains more growth stocks. Energy (+11.8%) and Materials (+24.6%) – industries which traditionally contain more value stocks – lagged

the overall index (S&P 500 +31.5%).

In mid-2016 we argued that there were clear and economic reasons for long-term value factor underperformance, and that a tactical overweight to the value factor did not appear warranted. This view has continued to be correct, as those who bought into value anytime of the past three years would have underperformed. While value continues to be historically cheap, price itself is not a catalyst for outperformance. We remain watchful of value stocks, but do not yet see clear signs of opportunity. As always, attempting to time factors is extremely difficult. We believe this should be done only rarely, if at all, and only when market conditions are particularly compelling.

#### SMALL CAP VS LARGE CAP (YOY)



#### **VALUE VS GROWTH (YOY)**



#### *Source: FTSE, as of 12/31/19*

#### VALUE CONTINUES TO LOOK CHEAP



Source: Russell, Bloomberg, as of 12/31/19



Source: FTSE, as of 12/31/19

# International developed equity

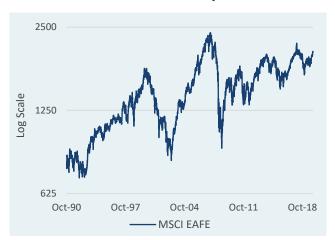
Equities in Europe and Japan posted strong performance for the quarter but failed to keep up with stocks in the U.S. and emerging markets. The U.S. dollar appreciated slightly against the yen, providing headwinds (-1.4%) for unhedged U.S. investors in Japanese stocks. Conversely, a slightly weaker U.S. dollar against the euro put some additional wind in the sails (+2.4%) of U.S. investors in European equities.

When investing in international equities, the "which currency should my assets be denominated?" question has been nearly equally as important as the "what assets should I hold?" question. Over the last three years however, global

currency volatility has been muted, which has made it much easier for investors to avoid thinking about their various currency exposures. Verus' view remains that currency risk is not compensated, and that it tends to result in increased risk without necessarily adding to return.

International equity valuations remain elevated, but unlike in the U.S., they do not yet appear stretched. Forward price-to-earnings ratios for the MSCI U.K. and Italy indices rank in the 59<sup>th</sup> and 52<sup>nd</sup> percentiles respectively, relative to the monthly expansion average. Valuations are a bit richer in the rest of the EAFE complex, but they may still have room to run.

#### INTERNATIONAL DEVELOPED EQUITIES



#### **EFFECT OF CURRENCY (1-YEAR ROLLING)**



#### Source: MSCI, as of 12/31/19

#### BLENDED FORWARD 12-MONTH P/E RATIOS



Source: MSCI, Bloomberg, as of 12/31/19



Source: MSCI, as of 12/31/19

# Emerging market equity

Emerging market equities (+11.8%) outperformed both U.S. (+9.1%) and international developed equities (+8.2%) over the quarter, but still lagged over the full calendar year. In 2019, emerging market equities delivered a total return of 18.4%, and trailed the total return of international developed equities by 3.6%. Regionally, the Asian segment (+12.5%) of the emerging market complex performed better than the Latin American (+10.5%) segment in both Q4 and in 2019.

Emerging market equities saw multiple expansion in Q4: the forward P/E of the MSCI EM Index expanded from a level in

line with the 5-year average to a bit higher than average levels. We do not yet view pricing in this space as rich and see there being more room for multiple expansion.

Inflation remains muted in emerging economies, and most economies are experiencing CPI below the 5-year average. Central bank policy has remained accommodative in many major countries within the universe such as China, South Korea, Brazil, and South Africa. This accommodation could provide a boost for equity market pricing as we move further into 2020.

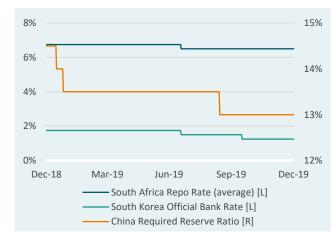
#### **EMERGING MARKET EQUITY**



#### FORWARD P/E



#### CENTRAL BANK ACCOMODATION



Source: MSCI, as of 12/31/19 Source: MSCI, as of 12/31/19



Source: MSCI, as of 12/31/19

# Equity earnings growth



Source: Bloomberg, as of 12/31/19



# Equity valuations

Equity valuations expanded materially in 2019 as prices recovered from their year-end 2018 fall and then continued climbing through the fourth quarter. U.S. equities are expensive relative to their long-run average and prices may become more difficult to justify in an environment of flat earnings growth. International and emerging equity valuations are near average levels. We remain watchful of earnings trends in 2020, which may have important implications for the future path of equities.

In the United States, stocks within the Information Technology

(22.7x) and Communication Services (19.5x) sectors have retained forward P/E ratios elevated well above their respective 5- and 10-year averages. Last year, growing concerns over data privacy, support for anti-trust regulation, and several idiosyncratic scandals weighed on the tech sector. Over the course of this election year, we expect the issue of mega-cap tech regulation to remain beneath the microscope.

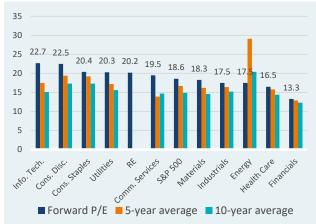
Compared to U.S. and EM equities, international developed equities offer the greatest yield at present, offering a three-month average trailing dividend yield of 3.4%.

#### FORWARD P/E RATIOS



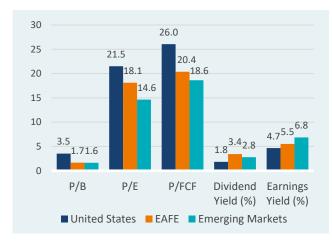
Source: MSCI, 12m forward P/E, as of 12/31/19

#### S&P 500 INDEX FORWARD SECTOR P/E RATIOS



Source: Standard & Poor's, FactSet, as of 1/17/20

#### VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 12/31/19 - trailing P/E



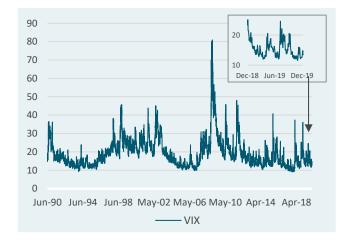
# Equity volatility

The implied volatility of large-cap U.S. stocks returned to a subdued level. The CBOE VIX Index, which calculates the market's expectation for volatility implied by S&P 500 Index options, declined from 16.2 to 13.8, a reading which lies in the 15th percentile of weekly readings over the last thirty years. Net non-commercial short VIX positioning reached new all-time-highs in the 4<sup>th</sup> quarter, meaning that many people are betting on volatility to remain low and push lower. Some investors view this assumption as concerning, and as a signal that the market may be ready for a correction.

U.S. large-cap and emerging market stocks have experienced a higher degree of volatility than international developed stocks over the last several years. Some of the divergence may be attributable to the impacts of the ever-changing U.S.-China trade narrative which has held the full attention of market participants for much of the prior two years.

The MSCI EM Index touched new all-time highs in April and did not eclipse that level for another 174 days. In 2019, the S&P 500 and MSCI EAFE indices spent a maximum of 65 and 82 trading days between fresh all-time highs, respectively.

#### U.S. IMPLIED VOLATILITY (VIX)



Source: CBOE, as of 12/31/19 Source: Standard & Poor's, MSCI, Bloomberg, as of 12/31/19

#### **ROLLING 1-YEAR REALIZED VOLATILITY**



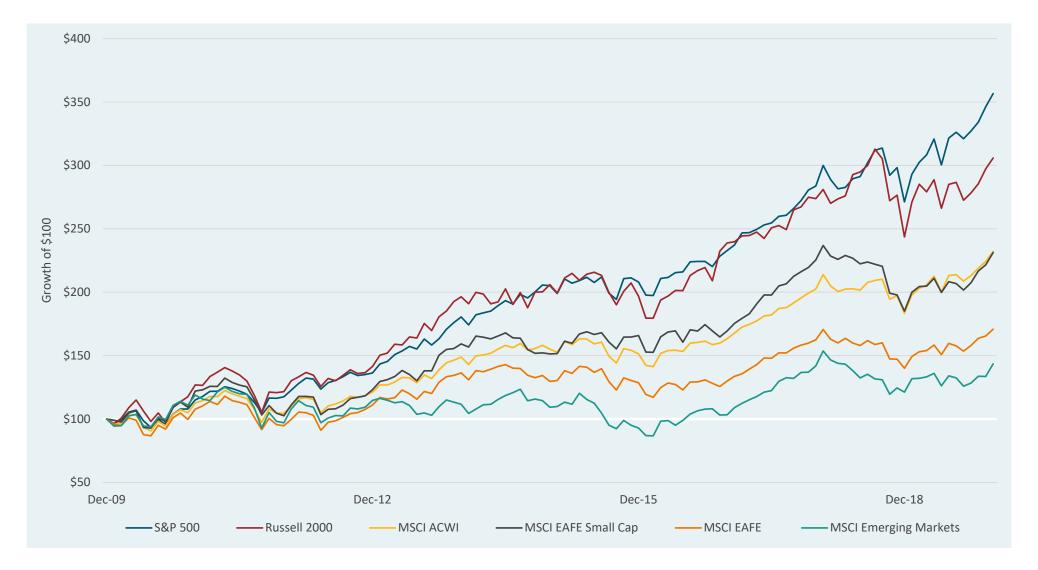
#### 2019 MAX DRAWDOWNS FROM PREVIOUS ALL-TIME-HIGH INDEX LEVELS



Source: Standard & Poor's, MSCI, Bloomberg, as of 12/31/19



# Long-term equity performance



Source: Standard & Poor's, Russell, MSCI, Bloomberg, as of 12/31/19



# Other assets



# Currency

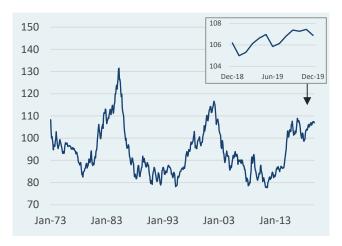
The U.S. dollar weakened versus both developed and emerging market currency baskets in the 4<sup>th</sup> quarter, fading some of the strong relative performance it had experienced back in Q3 2019. An index tracking the weighted average of the foreign exchange value of the U.S. dollar against major currencies fell 0.5%.

J.P. Morgan's Emerging Market Currency Index fell -1.4% in 2019. Many analysts have argued that global disinflationary pressures have eased some long-standing concerns over the risk of capital flight within the emerging market complex. So

long as inflationary risks are muted, then higher nominal interest rates in the emerging market complex should afford emerging market central bankers' further room to cut rates than their developed market peers. If implemented, the relative accommodation supplied may fuel both growth and currency depreciation.

The British pound sterling bounced back sharply in Q4, rising from \$1.23 to \$1.33. Prime Minister Boris Johnson's Conservative Party secured a firm majority in Parliament, lifting the shroud of "Brexit" from the geopolitical landscape.

#### U.S. DOLLAR TRADE WEIGHTED INDEX



Source: Federal Reserve, Verus, as of 12/31/19

#### JP MORGAN EMCI CONSTITUENT 2019 RETURNS



Source: J.P. Morgan, Bloomberg, as of 12/31/19

#### GBP/USD



Source: Bloomberg, as of 12/31/19



# Appendix



# Periodic table of returns

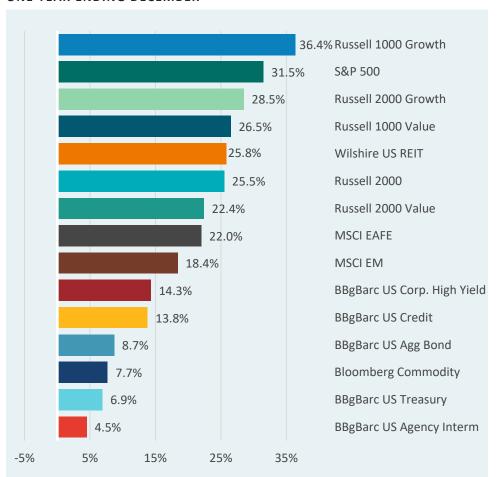
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	14.6	15.2
Large Cap Equity	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	11.5	13.5
Small Cap Growth	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	9.3	13.0
Large Cap Value	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	8.6	11.8
Small Cap Equity	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	8.3	11.8
Small Cap Value	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.4	8.2	10.6
International Equity	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.0	7.0	9.8
60/40 Global Portfolio	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	6.1	6.4
Emerging Markets Equity	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	5.7	5.5
US Bonds	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	5.6	3.7
Hedge Funds of Funds	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	3.0	3.7
Commodities	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	2.2	2.8
Real Estate	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	4.8	1.1	0.6
Cash	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-3.9	-4.7
			Large	Cap Equ	ity			9	Small C	ap Grov	vth			Commodities										
			Large	Cap Val	ue			I	nterna	tional E	quity			Re	eal Esta	te								
			Large	Cap Gro	wth			E	Emergir	ng Mark	ets Equ	ity		Н	edge Fu	nds of I	unds							
			Small	Cap Equ	ity			U	JS Bond	ls				60% MSCI ACWI/40% BBgBarc Global Bond										
			Small	Cap Val	ue			(	Cash															

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 9/30/19.

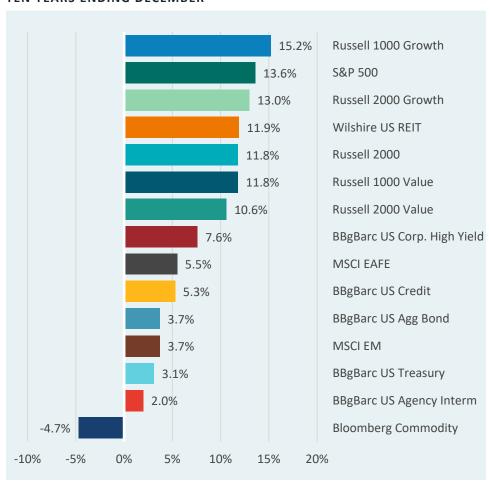


# Major asset class returns

#### ONE YEAR ENDING DECEMBER



#### TEN YEARS ENDING DECEMBER



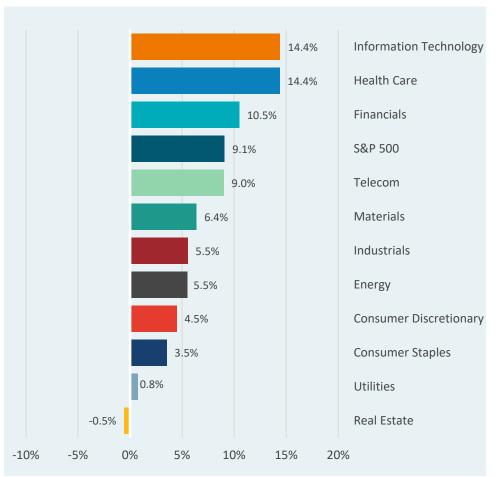
Source: Morningstar, as of 12/31/19

Source: Morningstar, as of 12/31/19

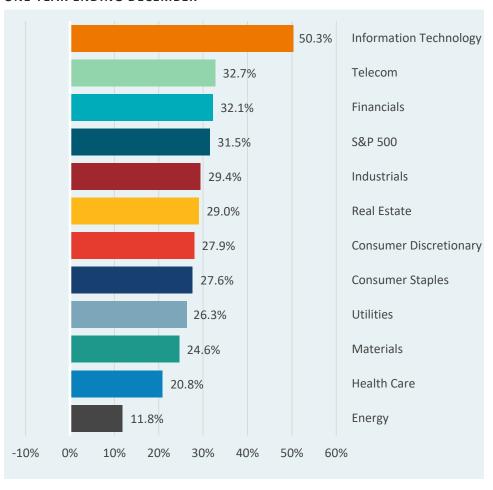


# S&P 500 sector returns

#### Q4 2019



#### ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/19

Source: Morningstar, as of 12/31/19



# Detailed index returns

DOMESTIC EQUITY								FIXED INCOME							
	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year		Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index								Broad Index							
S&P 500	3.0	9.1	31.5	31.5	15.3	11.7	13.6	BBgBarc US TIPS	0.4	0.8	8.4	8.4	3.3	2.6	3.4
S&P 500 Equal Weighted	2.8	7.6	29.2	29.2	12.4	9.8	13.5	BBgBarc US Treasury Bills	0.1	0.5	2.3	2.3	1.7	1.1	0.6
DJ Industrial Average	1.9	6.7	25.3	25.3	15.7	12.6	13.4	BBgBarc US Agg Bond	(0.1)	0.2	8.7	8.7	4.0	3.0	3.7
Russell Top 200	3.1	9.8	31.8	31.8	16.2	12.3	13.7	Duration							
Russell 1000	2.9	9.0	31.4	31.4	15.0	11.5	13.5	BBgBarc US Treasury 1-3 Yr	0.2	0.5	3.6	3.6	1.9	1.4	1.2
Russell 2000	2.9	9.9	25.5	25.5	8.6	8.2	11.8	BBgBarc US Treasury Long	(2.8)	(4.1)	14.8	14.8	6.9	4.1	7.0
Russell 3000	2.9	9.1	31.0	31.0	14.6	11.2	13.4	BBgBarc US Treasury	(0.6)	(8.0)	6.9	6.9	3.3	2.4	3.1
Russell Mid Cap	2.3	7.1	30.5	30.5	12.1	9.3	13.2	Issuer							
Style Index								BBgBarc US MBS	0.3	0.7	6.4	6.4	3.2	2.6	3.2
Russell 1000 Growth	3.0	10.6	36.4	36.4	20.5	14.6	15.2	BBgBarc US Corp. High Yield	2.0	2.6	14.3	14.3	6.4	6.1	7.6
Russell 1000 Value	2.8	7.4	26.5	26.5	9.7	8.3	11.8	BBgBarc US Agency Interm	0.1	0.3	4.5	4.5	2.4	1.9	2.0
Russell 2000 Growth	2.3	11.4	28.5	28.5	12.5	9.3	13.0	BBgBarc US Credit	0.3	1.1	13.8	13.8	5.8	4.4	5.3
Russell 2000 Value	3.5	8.5	22.4	22.4	4.8	7.0	10.6								
INTERNATIONAL EQUITY								OTHER							
Broad Index								Index							
MSCI ACWI	3.5	9.0	26.6	26.6	12.4	8.4	8.8	Bloomberg Commodity	5.0	4.4	7.7	7.7	(0.9)	(3.9)	(4.7)
MSCI ACWI ex US	4.3	8.9	21.5	21.5	9.9	5.5	5.0	Wilshire US REIT	(0.7)	(1.1)	25.8	25.8	7.6	6.9	11.9
MSCI EAFE	3.2	8.2	22.0	22.0	9.6	5.7	5.5	CS Leveraged Loans	1.6	1.7	8.2	8.2	4.5	4.5	5.2
MSCI EM	7.5	11.8	18.4	18.4	11.6	5.6	3.7	Alerian MLP	8.9	(4.6)	6.7	6.7	(5.0)	(7.0)	4.8
MSCI EAFE Small Cap	4.4	11.5	25.0	25.0	10.9	8.9	8.7	Regional Index							
Style Index								JPM EMBI Global Div	2.0	1.8	15.0	15.0	6.7	6.2	6.9
MSCI EAFE Growth	2.9	8.4	27.9	27.9	12.8	7.7	6.9	JPM GBI-EM Global Div	4.1	5.2	13.5	13.5	7.0	2.8	2.7
MSCI EAFE Value	3.7	7.8	16.1	16.1	6.3	3.5	4.0	Hedge Funds							
Regional Index								HFRI Composite	1.8	3.5	10.4	10.4	4.5	3.5	4.0
MSCI UK	5.2	10.0	21.0	21.0	8.3	3.3	5.0	HFRI FOF Composite	1.3	2.5	7.8	7.8	3.7	2.2	2.8
MSCI Japan	2.1	7.6	19.6	19.6	8.9	7.7	6.6	Currency (Spot)							
MSCI Euro	2.9	7.9	22.9	22.9	9.1	5.1	3.7	Euro	1.8	3.0	(1.8)	(1.8)	2.1	(1.5)	(2.4)
MSCI EM Asia	7.1	12.5	19.2	19.2	12.9	6.6	5.8	Pound	2.4	7.5	4.0	4.0	2.3	(3.2)	(2.0)

Source: Morningstar, HFR, as of 12/31/19



MSCI EM Latin American

(1.5)

# **Definitions**

Bloomberg US Weekly Consumer Comfort Index - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. (www.langerresearch.com)

**University of Michigan Consumer Sentiment Index** - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. (www.Bloomberg.com)

NFIB Small Business Outlook - Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (<a href="http://www.nfib-sbet.org/about/">http://www.nfib-sbet.org/about/</a>)

NAHB Housing Market Index – the housing market index is a weighted average of separate diffusion induces for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula "(Good-Poor + 100)/2" to the present and future sales series and "(High/Very High-Low/Very Low + 100)/2" to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.

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## **Stanislaus County Employees' Retirement Association**

**Investment Performance Review** 

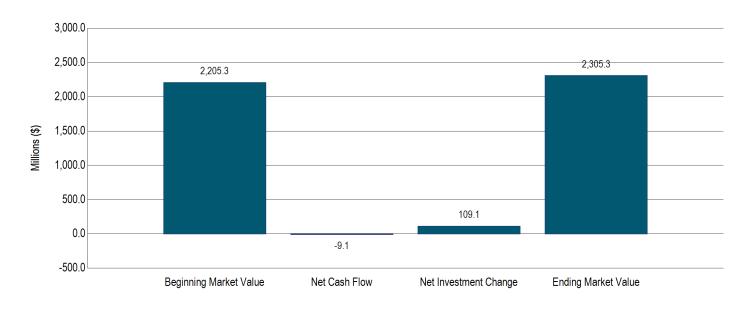
Period Ending: December 31, 2019



#### **Portfolio Reconciliation**

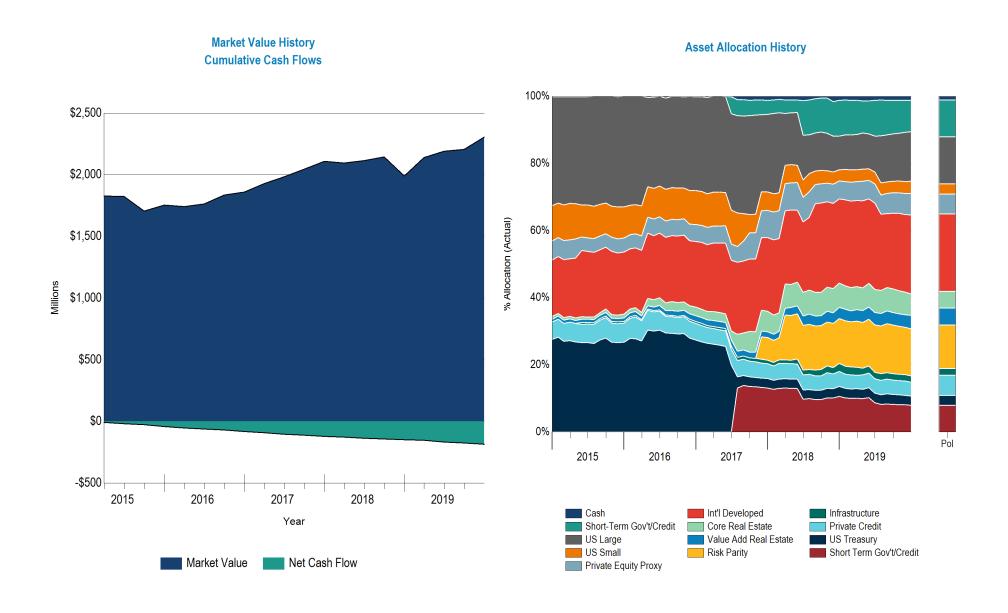
	Last Three Months	Fiscal Year-To-Date	Year-To-Date
Beginning Market Value	\$2,205,344,636	\$2,190,456,401	\$1,989,872,398
Net Cash Flow	-\$9,103,724	-\$15,545,017	-\$32,806,633
Net Investment Change	\$109,050,818	\$130,380,346	\$348,225,965
Ending Market Value	\$2,305,291,730	\$2,305,291,730	\$2,305,291,730

### Change in Market Value Last Three Months



Contributions and withdrawals may include intra-account transfers between managers/funds.







Current		Policy
1.2%	I	1.0%
9.3%		11.0%
14.8%		14.0%
3.6%		3.0%
6.3%		6.0%
23.6%		23.0%
6.4%		5.0%
4.0%		5.0%
14.1%		13.0%
		2.0%
1.9% 4.1%		6.0%
2.8%		3.0%
8.0%		8.0%

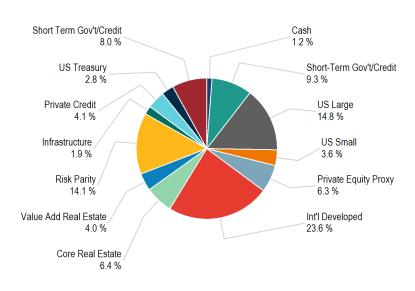
	Current	%	Policy	%
Liquidity Sub-Portfolio	\$242,763,981	10.5%	\$276,635,008	12.0%
Cash	\$28,165,783	1.2%	\$23,052,917	1.0%
Short-Term Gov't/Credit	\$214,598,198	9.3%	\$253,582,090	11.0%
Growth Sub-Portfolio	\$1,815,460,069	78.8%	\$1,775,074,632	77.0%
US Large	\$341,656,803	14.8%	\$322,740,842	14.0%
US Small	\$83,482,336	3.6%	\$69,158,752	3.0%
Private Equity Proxy	\$145,752,551	6.3%	\$138,317,504	6.0%
Int'l Developed	\$543,519,419	23.6%	\$530,217,098	23.0%
Core Real Estate	\$147,541,346	6.4%	\$115,264,587	5.0%
Value Add Real Estate	\$92,031,518	4.0%	\$115,264,587	5.0%
Risk Parity	\$324,180,593	14.1%	\$299,687,925	13.0%
Infrastructure	\$43,310,598	1.9%	\$46,105,835	2.0%
Private Credit	\$93,984,904	4.1%	\$138,317,504	6.0%
Risk-Diversifying Sub-Portfolio	\$247,067,681	10.7%	\$253,582,090	11.0%
US Treasury	\$63,572,025	2.8%	\$69,158,752	3.0%
Short Term Gov't/Credit	\$183,495,656	8.0%	\$184,423,338	8.0%
Total	\$2,305,291,730	100.0%	\$2,305,291,730	100.0%

Russell 3000 Index serving as proxy for Private Equity while capital is being called. International Equity policy target consists of 21% international developed and 6% emerging markets.



	QTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	4.9	5.9	17.4	9.0	6.8	8.5
Policy Index	5.3	5.8	16.9	8.7	6.9	8.4
InvMetrics Public DB Net Rank	71	62	75	64	58	30
Liquidity Sub-Portfolio	1.0	2.5	7.7	2.9	2.2	
StanCERA Liquidity Blended BM	0.6	1.3	3.9	2.1	1.6	
Cash	0.5	1.1	1.6	1.4	1.3	
FTSE T-Bill 1 Month TR	0.4	1.0	2.2	1.6	1.0	
Short-Term Gov't/Credit	1.1	2.7	8.5			
BBgBarc US Govt/Credit 1-3 Yr. TR	0.6	1.3	4.0			
eV US Government Fixed Inc Net Rank	1	1	1			
Growth Sub-Portfolio	6.2	7.0	20.9	10.6	7.9	
StanCERA Growth Blended BM	6.7	7.1	20.7	11.0		
US Large	9.6	11.0	30.6	14.9	11.1	
Russell 1000	9.0	10.6	31.4	15.0	11.5	-
eV US Large Cap Equity Net Rank	29	22	39	38	35	
US Small	9.2	6.8	25.1	6.1	5.8	11.0
Russell 2000	9.9	7.3	25.5	8.6	8.2	11.8
eV US Small Cap Value Equity Net Rank	22	59	35	36	63	50
Private Equity Proxy	9.1	10.4	31.1	16.6	12.4	13.9
Russell 3000 +3%	9.8	12.3	34.0	17.6	14.3	16.4
eV US Large Cap Equity Net Rank	36	32	37	28	22	19

#### **Current Allocation**

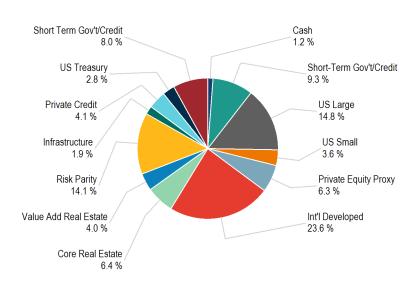


Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, and 1% Citi 1 Month T-Bills. StanCERA Liquidity Blended BM (8/31/2019): 92% BBgbarc US Govt/Credit 1-3 Yr. TR and 8% FTSE T-Bill 1 month TR. StanCERA Growth Blended BM (8/31/2019): 18% Russell 1000, 4% Russell 2000, 8% Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private Value Add Real Estate returns, 17% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 3% actual Infrastructure returns, and 8% actual Private Credit returns.



	QTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Int'l Developed	9.5	7.9	21.8	9.3	5.8	5.7
MSCI ACWI ex USA	8.9	7.0	21.5	9.9	5.5	5.0
eV ACWI ex-US Large Cap Equity Net Rank	55	49	66	59	51	64
Core Real Estate	0.8	3.6	10.0	5.5	4.2	5.5
NCREIF Property Index	1.6	3.0	6.4	6.7	8.2	10.2
eV US REIT Net Rank	23	99	99	94	99	99
Value Add Real Estate	1.7	5.0	9.0	10.9	12.0	
NCREIF Property Index +2%	2.1	4.0	8.5	8.8	10.4	
Risk Parity	1.6	4.7	22.0		-	
60% MSCI ACWI Net/40% BBgBarc Global Aggregate	5.5	5.8	18.6			
Infrastructure	2.0	5.3	13.1	14.0	-	
CPI + 5%	1.3	2.8	7.4	7.2		
eV Infrastructure Net Rank	99	83	99	12		
Private Credit	0.8	1.3	4.8	2.8	3.2	
S&P/LSTA Leveraged Loan Index+2%	2.2	3.8	10.8	6.4	6.5	
Risk-Diversifying Sub-Portfolio	0.2	1.7	5.9	3.6	3.2	4.3
StanCERA Risk-Diversifying Blended BM	0.1	1.3	5.3	2.6	2.0	2.4
US Treasury	-1.1	1.8	7.6	4.4	3.7	4.6
BBgBarc US Treasury 7-10 Yr TR	-1.2	1.5	8.5	3.9	2.9	4.5
eV US Government Fixed Inc Net Rank	99	26	1	1	1	1
Short-Term Gov't/Credit	0.7	1.6	5.4		-	
BBgBarc US Govt/Credit 1-3 Yr. TR	0.6	1.3	4.0			
eV US Short Duration Fixed Inc Net Rank	14	11	11			

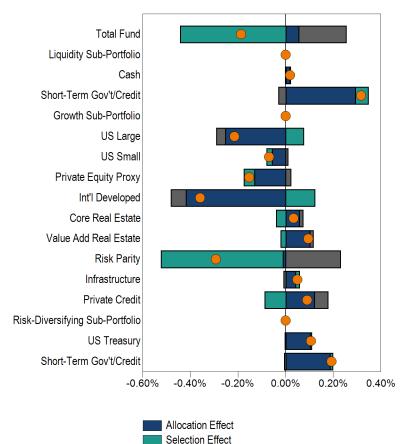
#### **Current Allocation**



Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, and 1% Citi 1 Month T-Bills. StanCERA Liquidity Blended BM (8/31/2019): 92% BBgbarc US Govt/Credit 1-3 Yr. TR and 8% FTSE T-Bill 1 month TR. StanCERA Growth Blended BM (8/31/2019): 18% Russell 1000, 4% Russell 2000, 8% Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private Value Add Real Estate returns, 17% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 3% actual Infrastructure returns, and 8% actual Private Credit returns.



# Attribution Effects Last Three Months



Interaction Effects
Total Effect

# **Performance Attribution**

Wtd. Actual Return	4.93%
Wtd. Index Return *	5.30%
Excess Return	-0.37%
Selection Effect	-0.44%
Allocation Effect	0.06%
Interaction Effect	0.20%

<sup>\*</sup>Calculated from benchmark returns and weightings of each component.

# Attribution Summary Last Three Months

	Wtd. Actual	Wtd. Index	Excess	Selection	Allocation	Interaction	Total
	Return	Return	Return	Effect	Effect	Effects	Effects
Liquidity Sub-Portfolio	1.0%	0.6%	0.4%				
Cash	0.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Short-Term Gov't/Credit	1.1%	0.6%	0.5%	0.1%	0.3%	0.0%	0.3%
Growth Sub-Portfolio	6.2%	6.7%	-0.5%				
US Large	9.6%	9.0%	0.5%	0.1%	-0.3%	0.0%	-0.2%
US Small	9.2%	9.9%	-0.7%	0.0%	-0.1%	0.0%	-0.1%
Private Equity Proxy	9.1%	9.8%	-0.7%	0.0%	-0.1%	0.0%	-0.2%
Int'l Developed	9.5%	8.9%	0.5%	0.1%	-0.4%	-0.1%	-0.4%
Core Real Estate	0.8%	1.6%	-0.7%	0.0%	0.1%	0.0%	0.0%
Value Add Real Estate	1.7%	2.1%	-0.4%	0.0%	0.1%	0.0%	0.1%
Risk Parity	1.6%	5.5%	-3.9%	-0.5%	0.0%	0.2%	-0.3%
Infrastructure	2.0%	1.3%	0.7%	0.0%	0.0%	0.0%	0.0%
Private Credit	0.8%	2.2%	-1.4%	-0.1%	0.1%	0.1%	0.1%
Risk-Diversifying Sub- Portfolio	0.2%	0.1%	0.1%				
US Treasury	-1.1%	-1.2%	0.1%	0.0%	0.1%	0.0%	0.1%
Short-Term Gov't/Credit	0.7%	0.6%	0.1%	0.0%	0.2%	0.0%	0.2%
Total	4.9%	5.3%	-0.4%	-0.4%	0.1%	0.2%	-0.2%

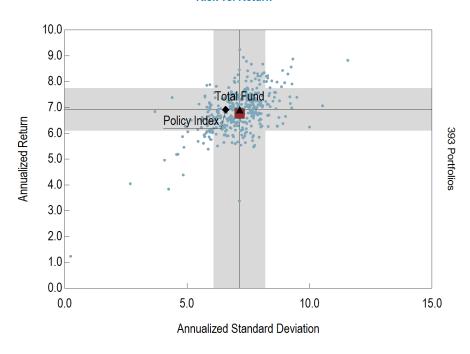
Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, and 1% Citi 1 Month T-Bills. StanCERA Liquidity Blended BM (8/31/2019): 92% BBgbarc US Govt/Credit 1-3 Yr. TR and 8% FTSE T-Bill 1 month TR. StanCERA Growth Blended BM (8/31/2019): 18% Russell 1000, 4% Russell 2000, 8% Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private Value Add Real Estate returns, 17% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 3% actual Infrastructure returns, and 8% actual Private Credit returns. Private Credit, Infrastructure, and the Greenfield Gap funds' market values as of 9/30/2019, adjusted for any cash flows.



Quarter

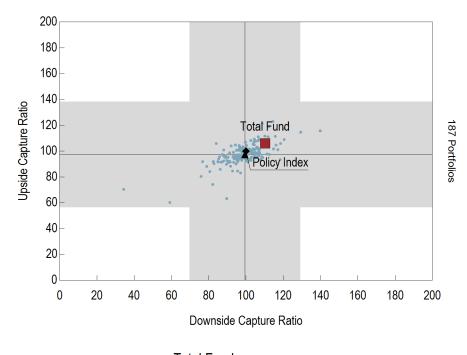
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	6.77%	-0.15%	7.15%	-0.63%	1.07	1.38%	0.97	0.80	-0.11	105.98%	110.20%
Policy Index	6.92%	0.00%	6.57%	0.00%	1.00	0.00%	1.00	0.89		100.00%	100.00%

### Risk vs. Return



- Total Fund
- Policy Index
- Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Net

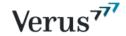
# Up Markets vs. Down Markets



- Total Fund
- Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Net

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Fund	2,305,291,730	100.0	4.9	5.9	17.4	9.0	6.8	8.5	17.4	-4.4	15.3	7.8	-0.6	9.0	Dec-94
Policy Index			5.3	5.8	16.9	8.7	6.9	8.4	16.9	-3.7	14.3	8.5	0.2	8.1	Dec-94
InvMetrics Public DB Net Rank			73	64	77	67	61	34	77	51	36	36	55		
Liquidity Sub-Portfolio	242,763,981	10.5	1.0	2.5	7.7	2.9	2.2		7.7	0.8	0.4	1.3	1.0	9.5	Apr-11
StanCERA Liquidity Blended BM			0.6	1.3	3.9	2.1	1.6		3.9	1.6	0.8	1.2	0.6	1.3	Apr-11
Cash	28,165,783	1.2	0.5	1.1	1.6	1.4	1.3		1.6	1.6	0.9	1.3	1.0	8.9	Apr-11
FTSE T-Bill 1 Month TR			0.4	1.0	2.2	1.6	1.0		2.2	1.8	0.8	0.2	0.0	0.6	Apr-11
Short-Term Gov't/Credit	214,598,198	9.3	1.1	2.7	8.5	-			8.5	0.6		-		3.9	Jun-17
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.3	4.0				4.0	1.6				2.3	Jun-17
eV US Government Fixed Inc Net Rank			1	1	1				1	87					
Insight	214,598,198	9.3	1.1	2.7	8.5				8.5	0.6				3.9	Jun-17
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.3	4.0				4.0	1.6				2.3	Jun-17
eV US Short Duration Fixed Inc Net Rank			1	1	1				1	96					
Growth Sub-Portfolio	1,815,460,069	78.8	6.2	7.0	20.9	10.6	7.9		20.9	-6.1	19.3	8.9	-0.8	8.0	Jul-15
StanCERA Growth Blended BM			6.7	7.1	20.7	11.0			20.7	-4.9	19.1	8.1		8.5	Jul-15
US Large	341,656,803	14.8	9.6	10.9	30.6	14.9	11.1		30.6	-4.0	21.1	10.8	0.5	11.5	Jul-15
Russell 1000			9.0	10.6	31.4	15.0	11.5		31.4	-4.8	21.7	12.1	0.9	12.2	Jul-15
eV US Large Cap Equity Net Rank			29	22	39	38	35		39	36	50	39	47		
BlackRock Russell 1000 Growth	171,322,717	7.4	10.6	12.3	36.4	20.5	14.6		36.4	-1.5	30.2	7.2	5.7	17.1	Jun-10
Russell 1000 Growth			10.6	12.3	36.4	20.5	14.6		36.4	-1.5	30.2	7.1	5.7	17.1	Jun-10
eV US Large Cap Growth Equity Net Rank			29	10	28	37	20		28	52	39	19	35		
BlackRock Russell 1000 Value	84,448,120	3.7	7.4	8.9	26.7	9.8	8.4	11.9	26.7	-8.2	13.8	17.3	-3.6	12.8	Jul-09
Russell 1000 Value			7.4	8.9	26.5	9.7	8.3	11.8	26.5	-8.3	13.7	17.3	-3.8	12.7	Jul-09
eV US Large Cap Value Equity Net Rank			56	60	47	58	47	36	47	41	83	20	57		
Dodge & Cox-Equity	85,885,966	3.7	9.7	10.1	23.9	10.7	9.5	12.6	23.9	-6.5	16.9	21.2	-4.0	12.0	Dec-94
Russell 1000 Value			7.4	8.9	26.5	9.7	8.3	11.8	26.5	-8.3	13.7	17.3	-3.8	10.1	Dec-94
eV US Large Cap Value Equity Net Rank			18	36	74	46	25	16	74	27	49	6	59		

Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, and 1% Citi 1 Month T-Bills. StanCERA Liquidity Blended BM (8/31/2019): 92% BBgbarc US Govt/Credit 1-3 Yr. TR and 8% FTSE T-Bill 1 month TR. StanCERA Growth Blended BM (8/31/2019): 18% Russell 1000, 4% Russell 2000, 8% Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private Value Add Real Estate returns, 17% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 3% actual Infrastructure returns, and 8% actual Private Credit returns.



	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
US Small	83,482,336	3.6	9.2	6.8	25.1	6.1	5.8	11.0	25.1	-16.7	14.8	16.2	-4.5	12.7	Dec-08
Russell 2000			9.9	7.3	25.5	8.6	8.2	11.8	25.5	-11.0	14.6	21.3	-4.4	13.1	Dec-08
eV US Small Cap Value Equity Net Rank			22	59	35	36	63	50	35	67	16	95	48		
Capital Prospects	83,482,336	3.6	9.2	6.8	25.1	6.1	7.0	11.4	25.1	-16.7	14.7	27.1	-7.5	12.9	Dec-08
Russell 2000 Value			8.5	7.9	22.4	4.8	7.0	10.6	22.4	-12.9	7.8	31.7	-7.5	11.4	Dec-08
eV US Small Cap Value Equity Net Rank	_		22	59	35	36	39	38	35	67	17	39	73		
Private Equity Proxy	145,752,551	6.3	9.1	10.4	31.1	16.6	12.4	13.9	31.1	-0.2	21.2	11.7	1.4	9.6	Nov-03
Russell 3000 +3%			9.8	12.3	34.0	17.6	14.3	16.4	34.0	-2.2	24.1	15.7	3.5	12.5	Nov-03
eV US Large Cap Equity Net Rank			36	32	37	28	22	19	37	14	50	34	40		
Northern Trust Russell 3000	145,752,551	6.3	9.1	10.4	31.1	-			31.1					31.1	Dec-18
Russell 3000			9.1	10.4	31.0				31.0					31.0	Dec-18
eV US Large Cap Equity Net Rank			36	32	37				37						
Int'l Developed	543,519,419	23.6	9.5	7.9	21.8	9.3	5.8	5.7	21.8	-15.8	27.4	5.3	-3.8	6.6	Sep-04
MSCI ACWI ex USA			8.9	7.0	21.5	9.9	5.5	5.0	21.5	-14.2	27.2	4.5	-5.7	6.2	Sep-04
eV ACWI ex-US Large Cap Equity Net Rank			55	49	66	59	51	64	66	58	61	17	68		
LSV Asset Mgt	274,235,603	11.9	10.3	9.3	20.8	8.6	5.5	5.5	20.8	-16.9	27.5	8.2	-5.4	6.5	Aug-04
MSCI ACWI ex USA			8.9	7.0	21.5	9.9	5.5	5.0	21.5	-14.2	27.2	4.5	-5.7	6.3	Aug-04
eV ACWI ex-US Large Cap Equity Net Rank			40	23	75	78	59	65	75	74	61	3	80		
Fidelity	269,283,817	11.7	8.7	6.5	22.8	10.0	5.7	5.7	22.8	-14.7	27.0	1.8	-2.3	4.0	Apr-06
MSCI ACWI ex USA			8.9	7.0	21.5	9.9	5.5	5.0	21.5	-14.2	27.2	4.5	-5.7	3.5	Apr-06
eV ACWI ex-US Large Cap Equity Net Rank			73	76	56	50	53	64	56	48	66	44	47		
Core Real Estate	147,541,346	6.4	0.8	3.6	10.0	5.5	4.2	5.5	10.0	1.6	5.2	5.2	-0.8	2.4	Mar-08
NCREIF Property Index			1.6	3.0	6.4	6.7	8.2	10.2	6.4	6.7	7.0	8.0	13.3	6.2	Mar-08
InvMetrics Public DB Real Estate Priv Net Rank			82	8	6	80	99	99	6	99	89	94	98		
Prime Property Fund	58,942,128	2.6	1.5	3.0	6.2	7.6			6.2	8.0	8.8	9.2		8.3	Sep-15
NCREIF-ODCE			1.5	2.8	5.3	7.1			5.3	8.3	7.6	8.8		7.9	Sep-15
InvMetrics Public DB Real Estate Priv Net Rank			29	29	31	26			31	29	12	9			
BlackRock US Real Estate	30,865,770	1.3	-1.2	5.5	23.1	6.9	6.3		23.1	-4.2	3.7	6.6	4.4	8.9	Sep-12
DJ US Select RESI TR USD			-1.2	5.5	23.1	7.0	6.4		23.1	-4.2	3.8	6.6	4.5	9.0	Sep-12
PGIM Real Estate US Debt Fund	57,733,448	2.5	1.4	2.9	6.0	-			6.0					5.7	Sep-18
BBgBarc CMBS IG TR USD			-0.3	1.6	8.3				8.3					7.1	Sep-18
InvMetrics Public DB Real Estate Priv Net Rank			46	35	37				37				-		

Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, and 1% Citi 1 Month T-Bills. StanCERA Liquidity Blended BM (8/31/2019): 92% BBgbarc US Govt/Credit 1-3 Yr. TR and 8% FTSE T-Bill 1 month TR. StanCERA Growth Blended BM (8/31/2019): 18% Russell 1000, 4% Russell 2000, 8% Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private Value Add Real Estate returns, 17% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 3% actual Infrastructure returns, and 8% actual Private Credit returns.



	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Value Add Real Estate	92,031,518	4.0	1.7	5.0	9.0	10.9	12.0		9.0	11.7	11.9	8.8	18.9	10.4	Jul-14
NCREIF Property Index +2%			2.1	4.0	8.5	8.8	10.4		8.5	8.8	9.1	10.1	15.6	10.9	Jul-14
American Strategic Value Realty	60,616,097	2.6	2.3	4.3	8.5	9.3	11.5		8.5	9.2	10.1	11.7	18.3	11.5	Dec-14
NCREIF Property Index			1.6	3.0	6.4	6.7	8.2		6.4	6.7	7.0	8.0	13.3	8.2	Dec-14
Greenfield Gap VII	10,182,961	0.4	1.0	10.6	15.4	14.3	13.6		15.4	12.9	14.7	6.1	19.4	11.8	Jul-14
NCREIF ODCE + 1%			1.8	3.4	6.4	8.2	10.1		6.4	9.4	8.7	9.8	16.2	10.6	Jul-14
Greenfield Gap VIII	21,232,460	0.9	0.3	3.9	6.4				6.4					14.5	Apr-18
NCREIF ODCE + 1%			1.8	3.4	6.4				6.4					7.6	Apr-18
Risk Parity	324,180,593	14.1	1.6	4.7	22.0				22.0	-7.0				6.9	Nov-17
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			5.5	5.8	18.6				18.6	-6.0				5.9	Nov-17
AQR Global Risk Premium - EL	164,315,559	7.1	3.5	5.4	21.9				21.9					9.2	Mar-18
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			5.5	5.8	18.6				18.6					5.9	Mar-18
PanAgora Risk Parity Multi Asset	159,865,034	6.9	-0.2	4.0	22.1				22.1	-7.6				6.6	Nov-17
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			5.5	5.8	18.6				18.6	-6.0				5.9	Nov-17
Infrastructure	43,310,598	1.9	2.0	5.3	13.1	14.0	-		13.1	8.3	20.9	4.1		7.5	May-15
CPI + 5%			1.3	2.8	7.4	7.2			7.4	7.0	7.2	7.2		6.8	May-15
eV Infrastructure Net Rank			99	83	99	12			99	1	25	99			
MS Infrastructure Partners II	43,310,598	1.9	2.0	5.3	13.1	14.0			13.1	8.3	20.9	4.1		7.5	May-15
CPI + 5%			1.0	2.4	7.0	7.1			7.0	7.0	7.2	7.2		6.7	May-15
eV Infrastructure Net Rank			99	83	99	12			99	1	25	99			
Private Credit	93,984,904	4.1	0.8	1.3	4.8	2.8	3.2		4.8	4.2	-0.4	1.9	5.4	4.2	May-13
S&P/LSTA Leveraged Loan Index+2%			2.2	3.8	10.8	6.4	6.5		10.8	2.4	6.2	12.3	1.3	6.0	May-13
Medley Capital	10,505,757	0.5	-6.3	-10.9	-14.3	-8.2	-3.3		-14.3	-12.7	3.4	3.4	5.4	-0.2	May-13
S&P/LSTA Leveraged Loan Index+2%			2.2	3.8	10.8	6.4	6.5		10.8	2.4	6.2	12.3	1.3	6.0	May-13
Owl Rock First Lien Fund	4,088,385	0.2	0.0											0.0	Oct-19
S&P/LSTA Leveraged Loan Index+2%			2.2											2.2	Oct-19
Raven Capital	14,330,002	0.6	1.1	3.3	8.3	2.3	0.9		8.3	5.3	-6.1	-3.6	1.2	-0.7	May-13
S&P/LSTA Leveraged Loan Index+2%			2.2	3.8	10.8	6.4	6.5		10.8	2.4	6.2	12.3	1.3	6.0	May-13
Raven Opportunity III	38,869,797	1.7	2.5	3.3	9.9	4.1			9.9	11.0	-7.4	-4.5		1.9	Jul-15
S&P/LSTA Leveraged Loan Index+2%			2.2	3.8	10.8	6.4			10.8	2.4	6.2	12.3		6.5	Jul-15
White Oak Pinnacle	26,190,963	1.1	1.8	3.7	6.9	5.7	6.3		6.9	8.4	2.0	5.9	8.6	10.8	Aug-13
S&P/LSTA Leveraged Loan Index+2%			2.2	3.8	10.8	6.4	6.5		10.8	2.4	6.2	12.3	1.3	6.1	Aug-13



	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Risk-Diversifying Sub-Portfolio	247,067,681	10.7	0.2	1.7	5.9	3.6	3.2	4.3	5.9	1.1	3.8	5.2	0.2	4.9	Nov-03
StanCERA Risk-Diversifying Blended BM			0.1	1.3	5.3	2.6	2.0	2.4	5.3	1.4	1.3	1.3	0.9		Nov-03
US Treasury	63,572,025	2.8	-1.1	1.8	7.6	4.4	3.7	4.6	7.6	0.7	5.0	5.2	0.2	5.0	Nov-03
BBgBarc US Treasury 7-10 Yr TR			-1.2	1.5	8.5	3.9	2.9	4.5	8.5	0.9	2.6	1.1	1.6	4.7	Nov-03
eV US Government Fixed Inc Net Rank			99	26	1	1	1	1	1	86	1	1	78		
Northern Trust Intermediate Gov't Bond	46,479,024	2.0	0.0	1.2	5.2				5.2	1.4				2.6	Jul-17
BBgBarc US Govt Int TR			0.0	1.2	5.2				5.2	1.4				2.6	Jul-17
eV US Government Fixed Inc Net Rank			31	73	79				79	1					
Northern Trust Long Term Gov't Bond	17,093,001	0.7	-4.1	3.5	14.7				14.7	-1.7				6.6	Jul-17
BBgBarc US Govt Long TR			-4.1	3.5	14.7				14.7	-1.8				6.6	Jul-17
US Long Duration Fixed Income Rank			89	74	72				72	25					
Short-Term Gov't/Credit	183,495,656	8.0	0.7	1.6	5.4				5.4	1.2				2.1	May-17
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.3	4.0				4.0	1.6				2.2	May-17
eV US Short Duration Fixed Inc Net Rank			14	11	11				11	75					
DFA	183,495,656	8.0	0.7	1.6	5.4				5.4	1.2				2.7	Jul-17
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.3	4.0				4.0	1.6				2.3	Jul-17
eV US Short Duration Fixed Inc Net Rank			14	11	11				11	75					

Policy Index (5/31/2019): 14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury 7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40% BBgBarc Global Aggregate, 1% Citi 1 Month T-Bills. StanCERA Risk-Diversifying Blended BM (8/31/2019): 27% BBgBarc US Treasury 7-10 Yr. TR and 73% BBgBarc US Govt/Credit 1-3 Yr. TR.



					V	erus Internal Ana	alysis				
Inception Date	Manager Name/Fund Name	Estimated Market Value as of 12/31/2019 <sup>3</sup>	Total Commitment	Capital Called	% Called	Remaining Commitment	Total Distributions	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	IRR Since Inception <sup>5</sup>	Latest Valuation
<b>Real Estate</b>											
7/31/2014	Greenfield Gap VII NCREIF-ODCE PME	\$10,182,961	\$15,000,000	\$14,335,328	96%	\$664,672	\$11,617,011	81.0%	152.1%	13.7% 9.2%	9/30/2019 9/30/2019
6/30/2018	Greenfield Gap VIII NCREIF-ODCE PME	\$21,232,460	\$40,000,000	\$19,201,369	48%	\$20,798,631	\$0	N/A	110.6%	12.9% 6.7%	9/30/2019 9/30/2019
	Total Real Estat	e \$31,415,421	\$55,000,000	\$33,536,697	61%	\$21,463,303	\$11,617,011	34.6%	128.3%		
	% of Portfolio (Market Value	1.4%									
<b>Direct Lend</b>	ling										
5/31/2013	Medley Capital S&P/LSTA Leveraged Loan Index PME	\$10,505,757	\$30,000,000	\$29,000,453	97%	\$999,547	\$24,492,888	84.5%	120.7%	1.3% 3.4%	6/30/2019 6/30/2019
10/31/2019	Owl Rock First Lien Fund	\$4,088,385	\$10,000,000	\$4,141,193	41%	\$5,858,807	\$52,808	1.3%	100.0%	N/A	N/A
5/31/2013	Raven Capital S&P/LSTA Leveraged Loan Index PME	\$14,330,002	\$40,000,000	\$34,505,763	86%	\$5,494,237	\$23,560,780	68.3%	109.8%	2.7% 3.7%	9/30/2019 9/30/2019
7/31/2015	Raven Opportunity III S&P/LSTA Leveraged Loan Index PME	\$38,869,797	\$50,000,000	\$42,884,101	86%	\$7,115,899	\$9,149,635	21.3%	112.0%	6.0% 4.8%	9/30/2019 9/30/2019
8/31/2013	White Oak Pinnacle S&P/LSTA Leveraged Loan Index PME	\$26,190,963	\$40,000,000	\$40,000,000	100%	\$0	\$43,582,467	109.0%	174.4%	7.5% 3.9%	9/30/2019 9/30/2019
	Total Direct Lendin	g \$93,984,904	\$170,000,000	\$150,531,510	89%	\$19,468,490	\$100,838,579	67.0%	129.4%		
	% of Portfolio (Market Value	4.1%									
Infrastructu	ire										
5/31/2015	MS Infrastructure Partners II CPI PME	\$43,310,598	\$50,000,000	\$50,536,641	101%	-\$536,641	\$18,608,746	36.8%	122.5%	11.8% 1.9%	9/30/2019 9/30/2019
	Total Infrastructure	\$43,310,598	\$50,000,000	\$50,536,641	101%	-\$536,641	\$18,608,746	36.8%	122.5%		

<sup>4</sup> Includes redeemed contributions, which are amounts withheld from distributions and applied to fulfill capital calls
5 Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each funds' IRR figure is provided by its respective manager. Benchmark IRRs are calculated using Long-Nickels ICM Methodology.



<sup>1 (</sup>DPI) is equal to (capital returned / capital called)

<sup>2 (</sup>TVPI) is equal to (market value + capital returned)/ capital called

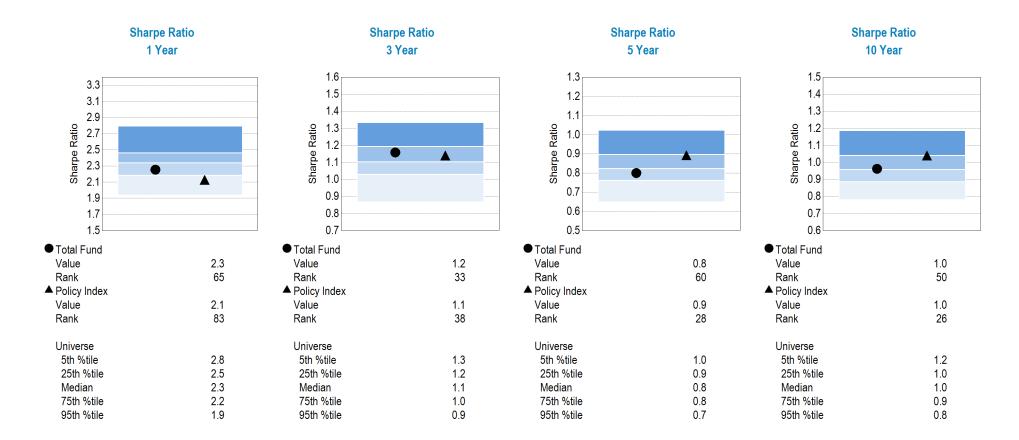
<sup>3</sup> Last known market value + capital calls - distributions

					3 Years						
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
BlackRock Russell 1000 Growth	20.48%	-0.01%	13.25%	0.00%	1.00	0.04%	1.00	1.42	-0.23	99.98%	100.02%
BlackRock Russell 1000 Value	9.80%	0.12%	12.00%	0.14%	1.00	0.05%	1.00	0.68	2.42	100.39%	99.63%
Dodge & Cox-Equity	10.66%	0.98%	12.89%	0.61%	1.04	3.24%	0.94	0.70	0.30	113.74%	108.36%
Capital Prospects	6.09%	1.32%	16.44%	1.24%	1.02	3.15%	0.96	0.27	0.42	100.94%	95.49%
LSV Asset Mgt	8.60%	-1.27%	12.69%	-2.06%	1.08	2.72%	0.96	0.55	-0.47	104.98%	113.05%
Fidelity	9.97%	0.10%	11.15%	0.56%	0.95	2.10%	0.97	0.75	0.05	96.05%	94.94%
Prime Property Fund	7.62%	0.53%	3.13%	0.26%	1.04	0.65%	0.96	1.91	0.81	107.96%	-
American Strategic Value Realty	9.27%	2.57%	3.80%	0.07%	1.37	1.21%	0.97	2.01	2.13	141.81%	
BlackRock US Real Estate	6.93%	-0.02%	12.05%	-0.01%	1.00	0.05%	1.00	0.44	-0.47	99.68%	99.83%

					5 Years						
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
BlackRock Russell 1000 Growth	14.64%	0.01%	12.92%	0.02%	1.00	0.04%	1.00	1.05	0.31	100.08%	100.01%
BlackRock Russell 1000 Value	8.38%	0.10%	11.96%	0.11%	1.00	0.06%	1.00	0.61	1.63	100.30%	99.68%
Dodge & Cox-Equity	9.54%	1.25%	13.64%	0.50%	1.09	4.07%	0.92	0.62	0.31	120.00%	107.24%
Capital Prospects	7.02%	0.03%	16.08%	0.05%	1.00	2.89%	0.97	0.37	0.01	95.84%	97.79%
LSV Asset Mgt	5.55%	0.04%	13.77%	-0.38%	1.08	2.86%	0.96	0.33	0.02	113.50%	107.00%
Fidelity	5.74%	0.24%	11.86%	0.61%	0.93	2.19%	0.97	0.40	0.11	90.61%	93.15%
BlackRock US Real Estate	6.34%	-0.05%	13.68%	-0.04%	1.00	0.04%	1.00	0.39	-1.19	99.54%	99.96%

Performance Analysis excludes closed end funds and those funds without 3 years of performance.



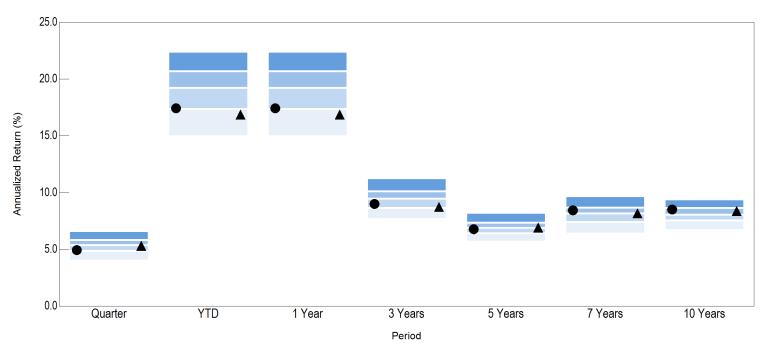


Name	Asset Class	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Cash Account	Cash and Equivalents	0.10% of Assets	\$28,165,724	\$28,166	0.10%
Insight	Domestic Fixed Income	0.12% of Assets	\$214,598,198	\$257,518	0.12%
BlackRock Russell 1000 Growth	Domestic Equity	0.02% of Assets	\$171,322,717	\$34,265	0.02%
BlackRock Russell 1000 Value	Domestic Equity	0.02% of Assets	\$84,448,120	\$16,890	0.02%
Dodge & Cox-Equity	Domestic Equity	0.40% of First 10.0 Mil, 0.20% of Next 90.0 Mil, 0.15% Thereafter	\$85,885,966	\$191,772	0.22%
Capital Prospects	Domestic Equity	0.75% of Assets	\$83,482,336	\$626,117	0.75%
Northern Trust Russell 3000	Domestic Equity	0.02% of Assets	\$145,752,551	\$29,151	0.02%
LSV Asset Mgt	International Equity	0.75% of First 25.0 Mil, 0.65% of Next 25.0 Mil, 0.55% of Next 50.0 Mil, 0.45% Thereafter	\$274,235,603	\$1,409,060	0.51%
Fidelity	International Equity	0.25% of Assets	\$269,283,817	\$673,210	0.25%
Prime Property Fund	Real Estate	0.84% of Assets	\$58,942,128	\$495,114	0.84%
BlackRock US Real Estate	Real Estate	0.09% of First 100.0 Mil, 0.07% Thereafter	\$30,865,770	\$27,779	0.09%
American Strategic Value Realty	Real Estate	1.25% of First 10.0 Mil, 1.20% of Next 15.0 Mil, 1.10% of Next 25.0 Mil, 1.00% Thereafter	\$60,616,097	\$686,161	1.13%
AQR Global Risk Premium - EL	Alternatives	0.38% of Assets	\$164,315,559	\$624,399	0.38%
PanAgora Risk Parity Multi Asset	Alternatives	0.35% of Assets	\$159,865,034	\$559,528	0.35%
Owl Rock First Lien Fund	Alternatives	0.70% of Assets	\$4,088,385	\$28,619	0.70%
Northern Trust Intermediate Gov't Bond	Domestic Fixed Income	0.05% of First 25.0 Mil, 0.04% Thereafter	\$46,479,024	\$21,092	0.05%
Northern Trust Long Term Gov't Bond	Domestic Fixed Income	0.05% of First 25.0 Mil, 0.04% Thereafter	\$17,093,001	\$8,547	0.05%
DFA	Domestic Fixed Income	0.20% of First 25.0 Mil, 0.10% Thereafter	\$183,495,656	\$208,496	0.11%
Total			\$1,999,453,349	\$5,299,763	0.30%

Closed end funds excluded from fee analysis. Fidelity has performance based fees which are not included in the analysis above; fee shown is the annual base fee only. Northern Trust aggregates StanCERA's Northern Trust Bond Funds.



Total Fund Cumulative Performance vs. InvMetrics Public DB Net



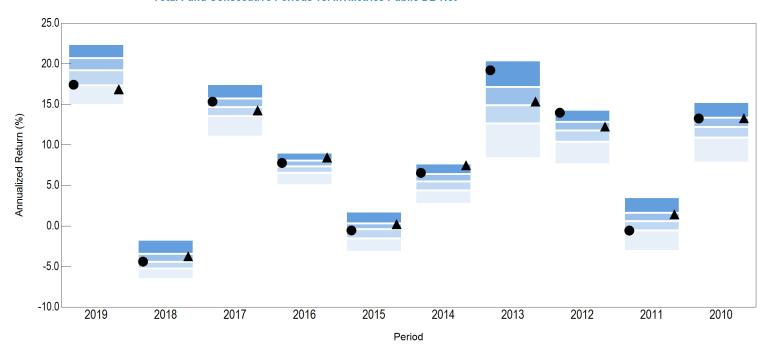
5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
# of Portfolios

Total FundPolicy Index

Return (Ran	ık)												
6.6		22.4		22.4		11.3		8.2		9.7		9.4	
5.8		20.7		20.7		10.1		7.4		8.7		8.6	
5.4		19.2		19.2		9.5		6.9		8.2		8.0	
4.9		17.4		17.4		8.7		6.4		7.4		7.5	
4.0		15.0		15.0		7.7		5.7		6.4		6.7	
445		442		442		427		393		373		323	
4.9	(71)	17.4	(75)	17.4	(75)	9.0	(64)	6.8	(58)	8.4	(37)	8.5	(30)
5.3	(51)	16.9	(81)	16.9	(81)	8.7	(72)	6.9	(50)	8.2	(51)	8.4	(34)



Total Fund Consecutive Periods vs. InvMetrics Public DB Net

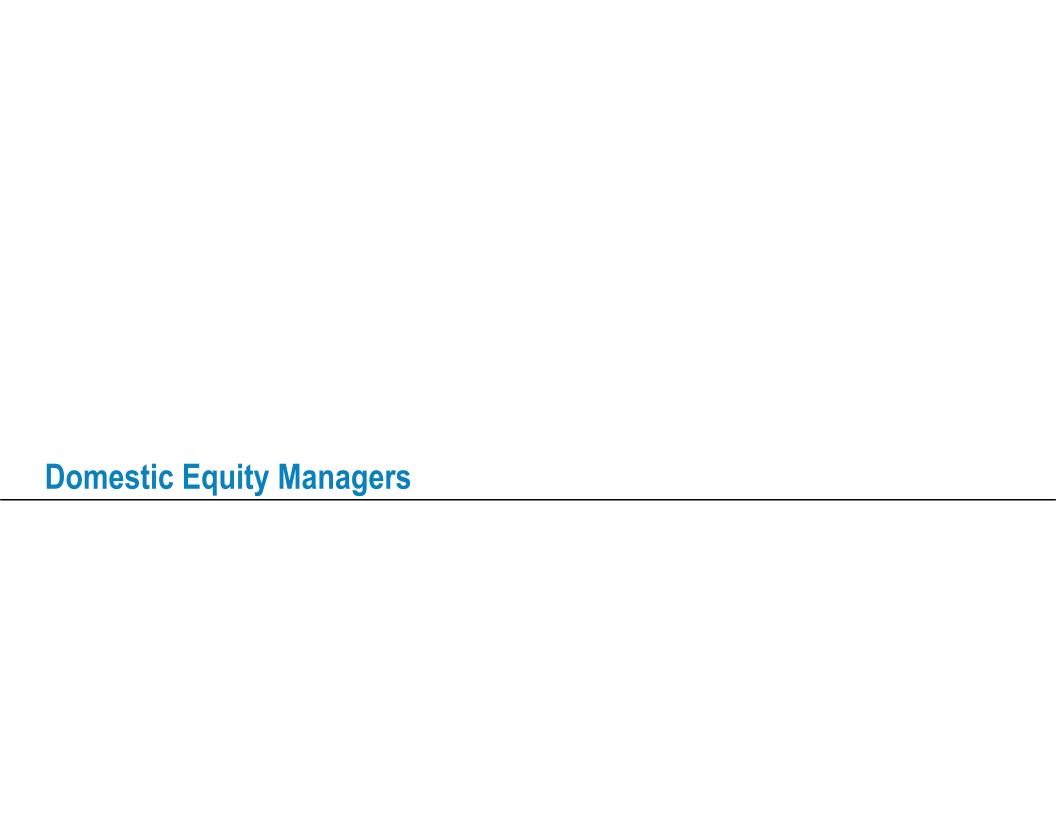


5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
# of Portfolios

Total FundPolicy Index

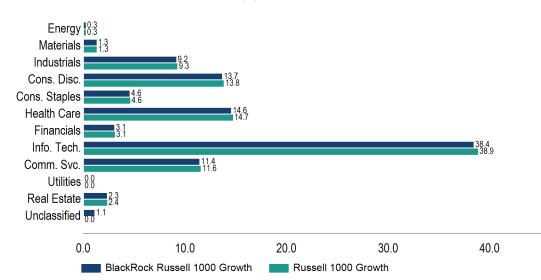
Return (Rai	nk)								
22.4	-1.7	17.5	9.0	1.7	7.7	20.4	14.3	3.6	15.3
20.7	-3.4	15.8	8.1	0.4	6.4	17.2	12.9	1.6	13.4
19.2	-4.4	14.7	7.4	-0.4	5.5	14.9	11.8	0.6	12.2
17.4	-5.2	13.6	6.6	-1.5	4.4	12.7	10.4	-0.5	10.9
15.0	-6.5	11.1	5.0	-3.2	2.7	8.4	7.6	-3.1	7.9
442	496	269	269	262	210	191	159	137	131
17.4 (75	5) -4.4 (51	) 15.3 (36)	7.8 (36)	-0.6 (55)	6.5 (22)	19.2 (12)	14.0 (9)	-0.6 (77)	13.3 (27)
16.9 (81	) -3.7 (34	14.3 (60)	8.5 (18)	0.2 (29)	7.5 (8)	15.4 (45)	12.3 (41)	1.4 (30)	13.3 (27)





	Portfolio	Russell 1000 Growth
Number of Holdings	530	530
Weighted Avg. Market Cap. (\$B)	359.70	362.87
Median Market Cap. (\$B)	13.11	13.03
Price To Earnings	29.74	29.74
Price To Book	8.82	8.79
Price To Sales	3.14	3.14
Return on Equity (%)	34.61	34.60
Yield (%)	1.17	1.17
Beta	1.00	1.00

# Sector Allocation (%) vs Russell 1000 Growth



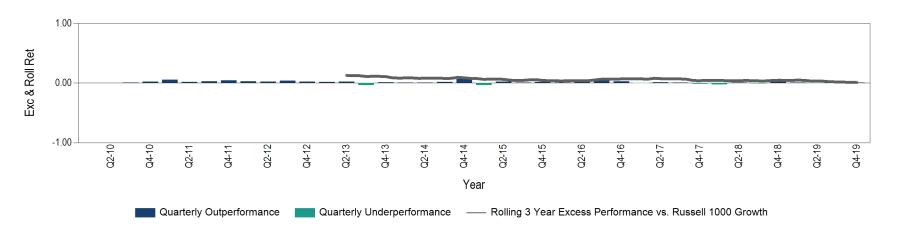
Largest Holdings

Bottom Contributors

#### Ton Contributors

Largest Holdings			DOLLOTTI COTTUIDULOTS				Top Contributors				
	En	d Weight	Return		Avg Wgt	Return	Contribution	1	Avg Wgt	Return	Contribution
APPLE		8.45	31.50	BOEING	0.48	-13.89	-0.07	APPLE	2.39	31.50	0.75
MICROSOFT		7.72	13.82	HOME DEPOT	0.34	-5.28	-0.02	MICROSOFT	2.48	13.82	0.34
AMAZON.COM		4.95	6.45	TWITTER	0.07	-22.21	-0.02	UNITEDHEALTH GROUP	0.49	35.80	0.17
FACEBOOK CLASS A		3.17	15.26	INTERNATIONAL	0.18	-6.74	-0.01	FACEBOOK CLASS A	1.01	15.26	0.15
ALPHABET A		2.60	9.68	BUS.MCHS.				AMAZON.COM	1.70	6.45	0.11
ALPHABET 'C'		2.59	9.68	CISCO SYSTEMS	0.50	-2.21	-0.01	ALPHABET 'C'	0.88	9.68	0.08
VISA 'A'		2.08	9.42	NORTHROP GRUMMAN	0.14	-7.88	-0.01	NVIDIA	0.24	35.27	0.08
UNITEDHEALTH GRO	UP	1.80	35.80	ORACLE	0.29	-3.30	-0.01	ALPHABET A	0.86	9.68	0.08
MASTERCARD		1.71	10.09	SAGE THERAPEUTICS	0.02	-48.54	-0.01	VISA 'A'	0.71	9.42	0.07
MERCK & COMPANY		1.42	8.78	PUBLIC STORAGE	0.06	-12.32	-0.01	AMGEN	0.25	25.40	0.06
				YUM! BRANDS	0.07	-10.82	-0.01				



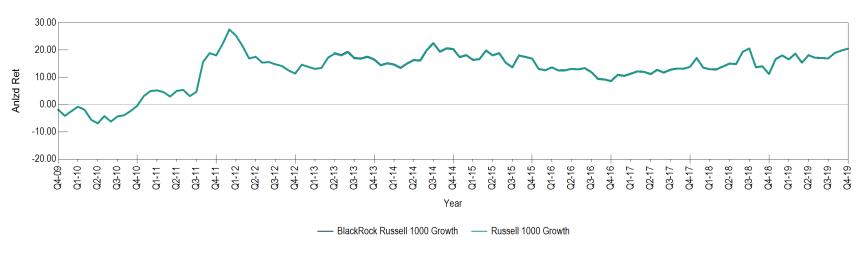


### BlackRock Russell 1000 Growth vs. eV US Large Cap Growth Equity Net Universe

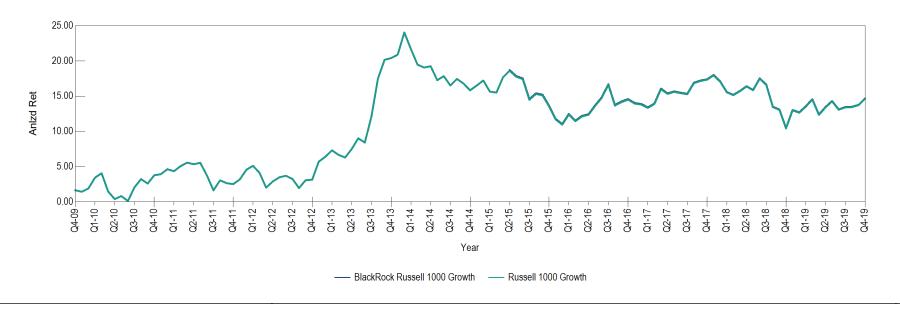




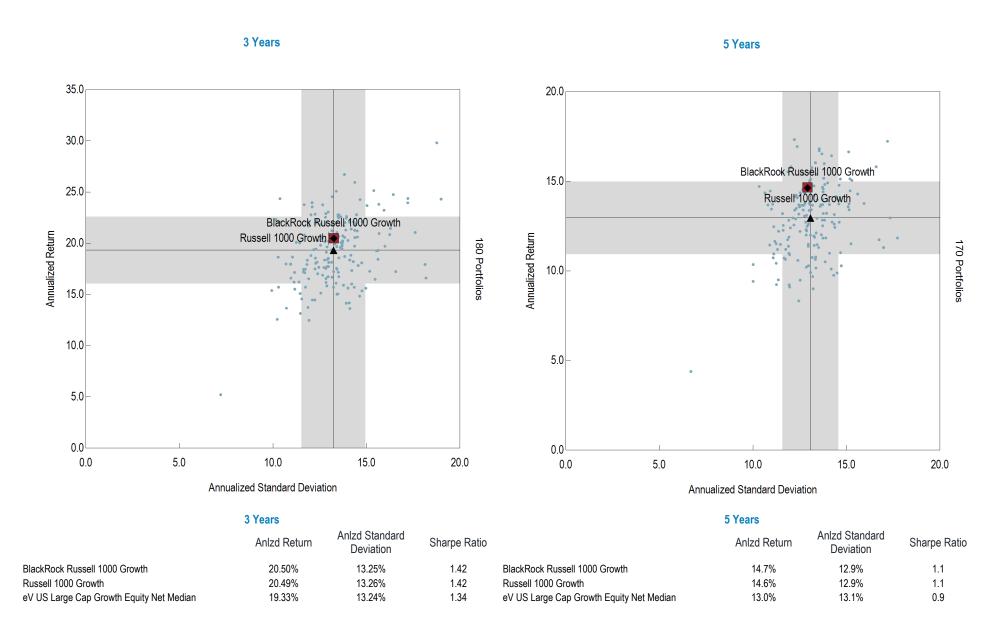
Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)



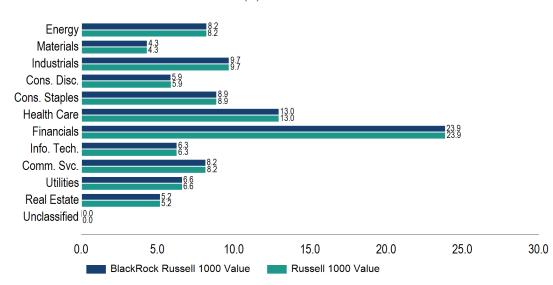






	Portfolio	Russell 1000 Value
Number of Holdings	763	764
Weighted Avg. Market Cap. (\$B)	123.40	123.34
Median Market Cap. (\$B)	9.65	9.64
Price To Earnings	18.48	18.48
Price To Book	2.32	2.32
Price To Sales	1.51	1.51
Return on Equity (%)	13.96	13.97
Yield (%)	2.49	2.49
Beta	1.00	1.00

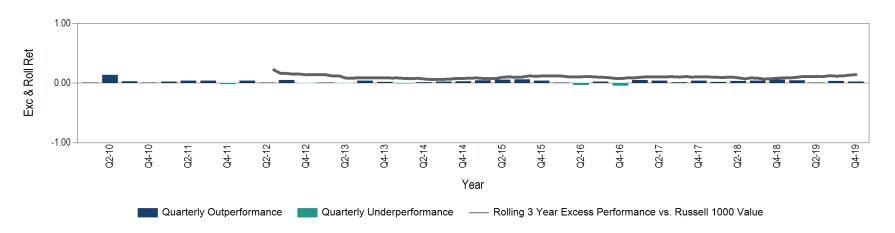
# Sector Allocation (%) vs Russell 1000 Value



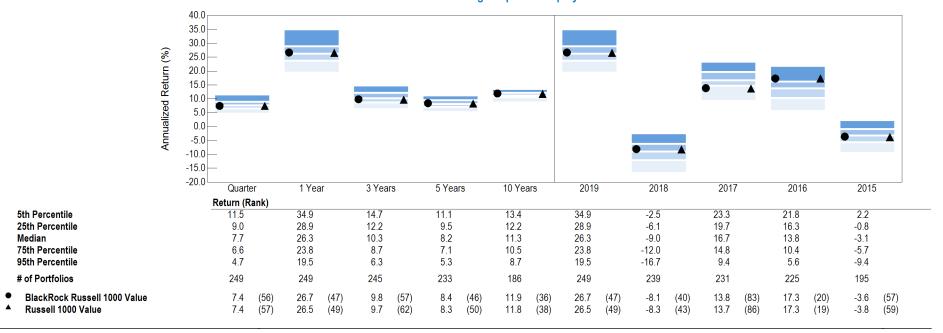
Largest Holdings Bottom Contributors Top Contributors

	<b>End Weight</b>	Return		Avg Wgt	Return	Contributio	n	Avg Wgt	Return	Contribution
BERKSHIRE HATHAWAY 'B'	3.08	8.88	MCDONALDS	0.34	-7.37	-0.03	JP MORGAN CHASE &	0.92	19.40	0.18
JP MORGAN CHASE & CO.	3.02	19.40	HOME DEPOT	0.27	-5.28	-0.01	CO.	0.52	15.40	0.10
JOHNSON & JOHNSON	2.29	13.53	VENTAS	0.07	-19.85	-0.01	BANK OF AMERICA	0.60	21.40	0.13
EXXON MOBIL	2.05	0.04	DUPONT DE NEMOURS	0.13	-9.56	-0.01	JOHNSON & JOHNSON	0.72	13.53	0.10
PROCTER & GAMBLE	2.02	1.06	COLGATE-PALM.	0.15	-5.75	-0.01	INTEL	0.56	16.78	0.09
BANK OF AMERICA	1.99	21.40	AMERICAN INTL.GP.	0.12	-7.26	-0.01	BERKSHIRE HATHAWAY	1.00	8.88	0.09
AT&T	1.98	4.70	INTERNATIONAL	0.13	-6.74	-0.01	'B' WALT DISNEY	0.50	44.05	0.07
INTEL	1.81	16.78	BUS.MCHS.	0.10	0.7 4	0.01		0.56	11.65	0.07
VERIZON COMMUNICATIONS	1.77	2.78	WELLTOWER	0.09	-8.83	-0.01	CITIGROUP	0.38	16.45	0.06
			DUKE ENERGY	0.17	-3.83	-0.01	PFIZER	0.49	10.11	0.05
WALT DISNEY	1.75	11.65	CONSTELLATION	0.17	0.00	0.01	GENERAL ELECTRIC	0.19	24.95	0.05
			BRANDS 'A'	0.08	-8.10	-0.01	PHILIP MORRIS INTL.	0.29	13.59	0.04



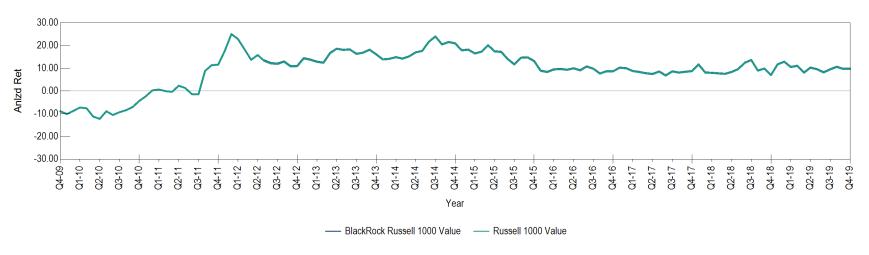


### BlackRock Russell 1000 Value vs. eV US Large Cap Value Equity Net Universe

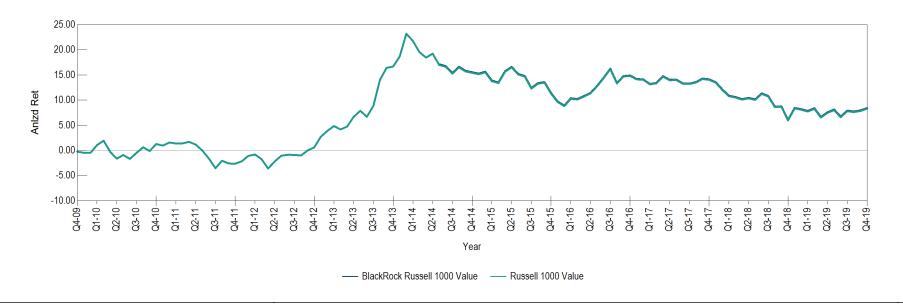




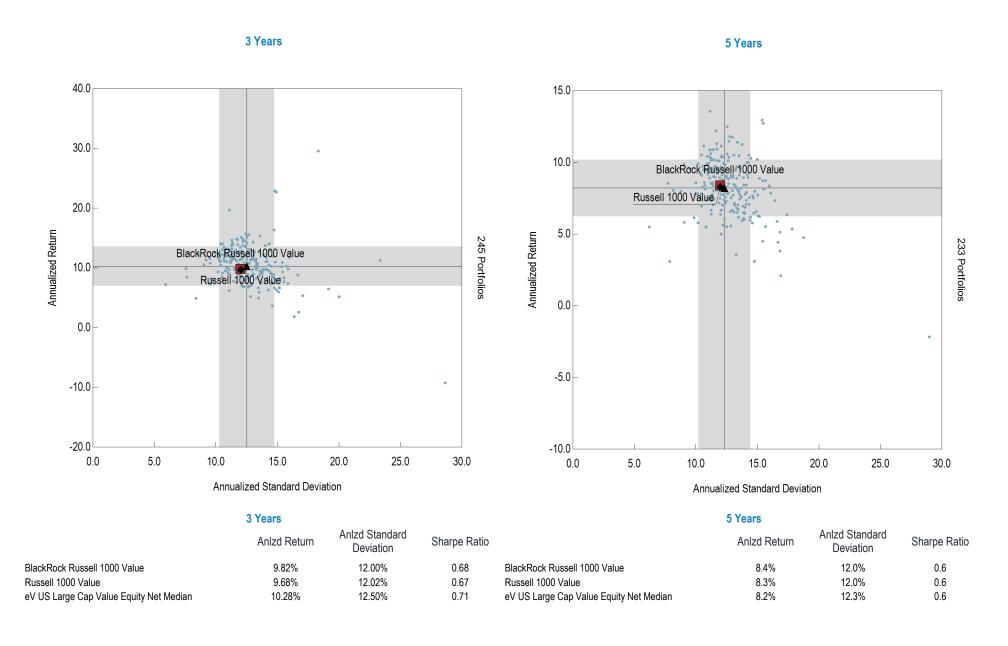
Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)



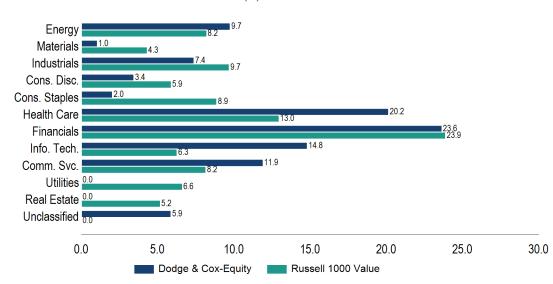






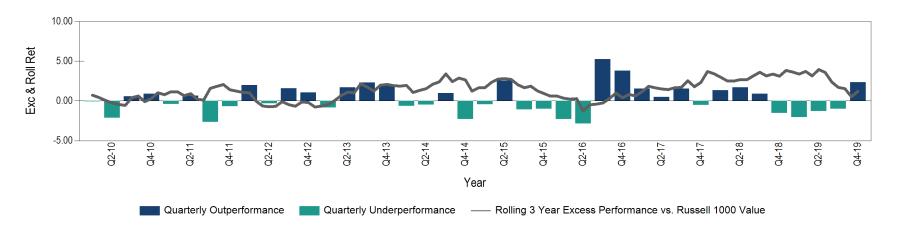
	Portfolio	Russell 1000 Value
Number of Holdings	67	764
Weighted Avg. Market Cap. (\$B)	112.70	123.34
Median Market Cap. (\$B)	31.73	9.64
Price To Earnings	16.83	18.48
Price To Book	2.27	2.32
Price To Sales	1.42	1.51
Return on Equity (%)	14.44	13.97
Yield (%)	2.31	2.49
Beta	1.02	1.00

# Sector Allocation (%) vs Russell 1000 Value

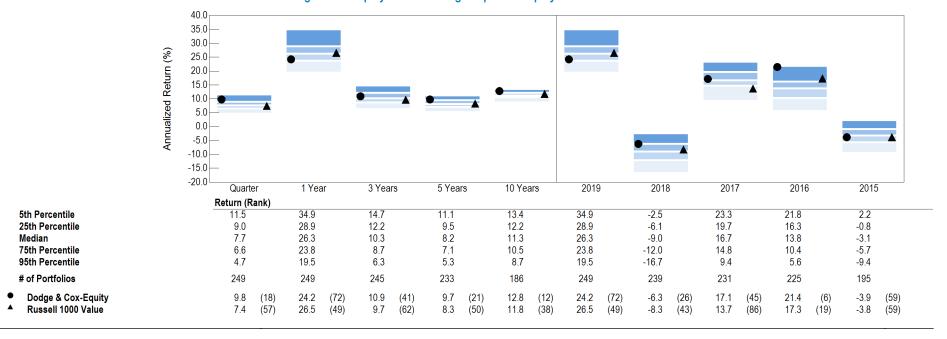


Largest Holdings			<b>Bottom Contributors</b>				Top Contributors			
	End Weight	Return		Avg Wgt	Return	Contributio	n	Avg Wgt	Return	Contribution
WELLS FARGO & CO	3.63	7.67	JOHNSON CONTROLS	2.53	-6.65	-0.17	CIGNA	2.47	34.72	0.86
CHARLES SCHWAB	3.46	14.14	INTL.			0.11	BRISTOL MYERS SQUIBB	2.56	27.63	0.71
CAPITAL ONE FINL.	3.33	13.58	OCCIDENTAL PTL.	2.90	-5.37	-0.16	BANK OF AMERICA	3.01	21.40	0.64
ALPHABET 'C'	3.19	9.68	QURATE RETAIL SERIES	0.49	-18.27	-0.09	CHARTER COMMS.CL.A	3.20	17.70	0.57
BANK OF AMERICA	3.18	21.40	A SPRINT	0.40	1E EC	0.07	UNITEDHEALTH GROUP	1.52	35.80	0.55
CHARTER COMMS.CL.A	3.12	17.70	_	0.48	-15.56	-0.07	CHARLES SCHWAB	3.41	14.14	0.48
FEDEX	3.09	4.31	MOLSON COORS BEVERAGE COMPANY B	0.76	-5.20	-0.04	CAPITAL ONE FINL.	3.29	13.58	0.45
BRISTOL MYERS SQUIBB	2.99	27.63	CISCO SYSTEMS	0.86	-2.21	-0.02	JP MORGAN CHASE &	2.12	19.40	0.41
COMCAST A	2.95	0.23	BRIGHTHOUSE	0.07	2.00	0.04	CO.	0.04	0.00	0.04
OCCIDENTAL PTL.	2.79	-5.37	FINANCIAL	0.37	-3.06	-0.01	ALPHABET 'C'	3.21	9.68	0.31
			DELL TECHNOLOGIES C	0.98	-0.91	-0.01	WELLS FARGO & CO	3.70	7.67	0.28
			MICRO FOCUS INTL.SPN.ADR 1:1	0.43	-0.85	0.00				
			ZAYO GROUP HOLDINGS	0.03	2.21	0.00				

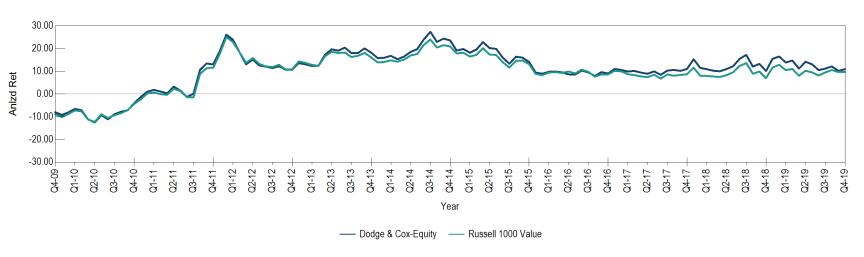




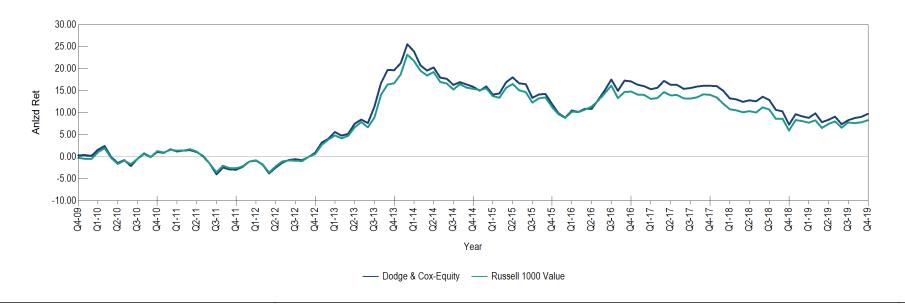
Dodge & Cox-Equity vs. eV US Large Cap Value Equity Net Universe



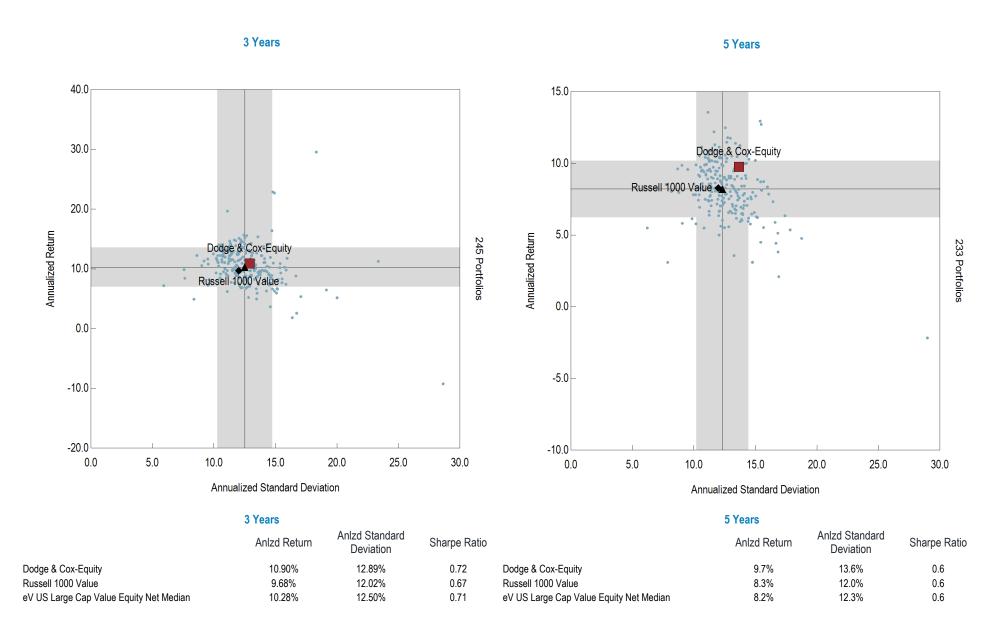




Rolling 5 Year Annualized Return (%)



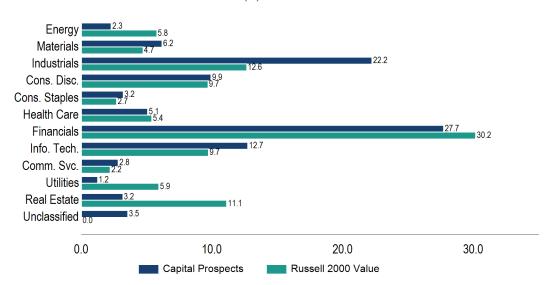






	Portfolio	Russell 2000 Value
Number of Holdings	285	1,402
Weighted Avg. Market Cap. (\$B)	2.51	2.17
Median Market Cap. (\$B)	1.52	0.70
Price To Earnings	18.83	16.29
Price To Book	1.98	1.71
Price To Sales	1.01	0.92
Return on Equity (%)	9.45	5.31
Yield (%)	1.71	2.13
Beta	1.09	1.00

# Sector Allocation (%) vs Russell 2000 Value



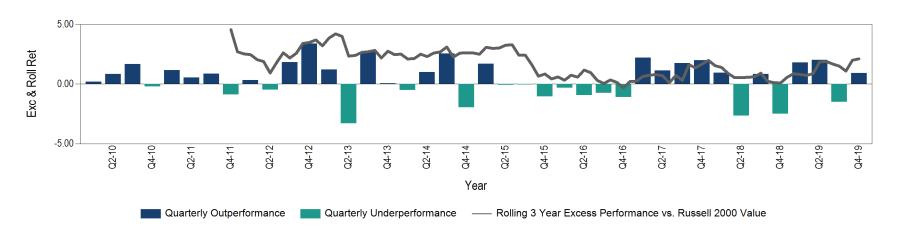
Largest Holdings

**Bottom Contributors** 

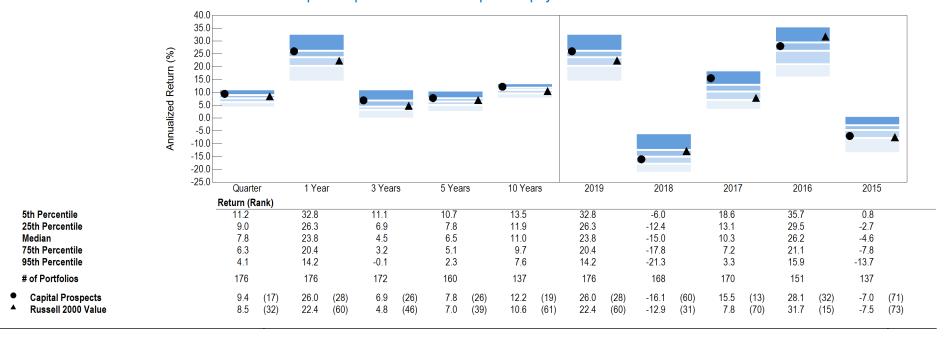
#### **Top Contributors**

Largest Holanigs			Bottom Contributors				Top Contributors			
	<b>End Weight</b>	Return		Avg Wgt	Return	Contribution	1	Avg Wgt	Return	Contribution
AIR LEASE	1.31	13.99	MODINE	0.69	-32.28	-0.22	ULTRA CLEAN HOLDINGS	0.65	60.37	0.39
CROWN HDG.	1.26	9.81	MANUFACTURING	0.00	02.20	0.22	VERSO 'A'	0.83	45.64	0.38
OFG BANCORP	1.24	8.13	FREIGHTCAR AMERICA	0.21	-57.32	-0.12	ARCONIC	1.71	18.43	0.31
CINEMARK HOLDINGS	1.17	-11.52	CINEMARK HOLDINGS	0.74	-11.52	-0.09	COHU	0.40	69.70	0.28
LITTELFUSE	1.11	8.18	MISTRAS GROUP	0.63	-12.99	-0.08	DARLING INGREDIENTS	0.58	46.79	0.27
HOSTESS BRANDS CL.A	1.00	3.97	SPIRIT AEROSYSTEMS	0.63	-11.25	-0.07	PENN NAT.GAMING	0.53	37.24	0.20
ARCONIC	0.98	18.43	CL.A	0.00	47.00	0.00	BOTTOMLINE TECHS.	0.54	36.21	0.19
DARLING INGREDIENTS	0.96	46.79	MICHAELS COMPANIES	0.36	-17.36	-0.06	AMERICAN	0.73	24.94	0.18
VERSO 'A'	0.93	45.64	TREEHOUSE FOODS	0.48	-12.53	-0.06	EQ.INV.LF.HLDG.	0.73	24.94	0.10
HILLENBRAND	0.92	8.56	HEXCEL	0.54	-10.54	-0.06	AIR LEASE	1.29	13.99	0.18
	V.V.2	0.00	DEL TACO RESTAURANTS	0.20	-22.69	-0.04	DOUGLAS DYNAMICS	0.73	24.02	0.18
			LIFETIME BRANDS	0.21	-21.05	-0.04				



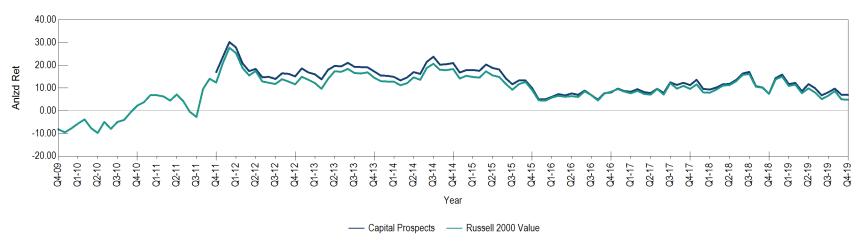


### Capital Prospects vs. eV US Small Cap Value Equity Net Universe

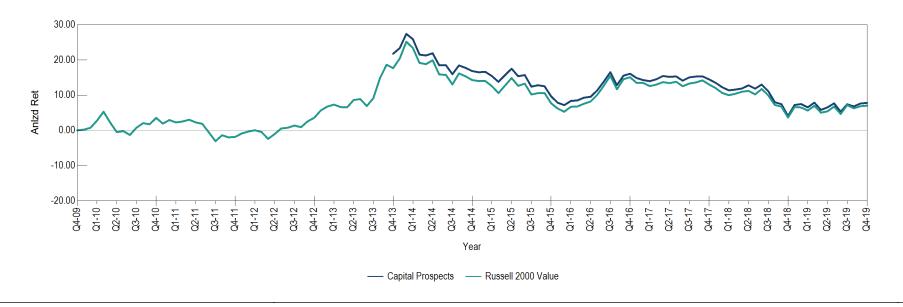




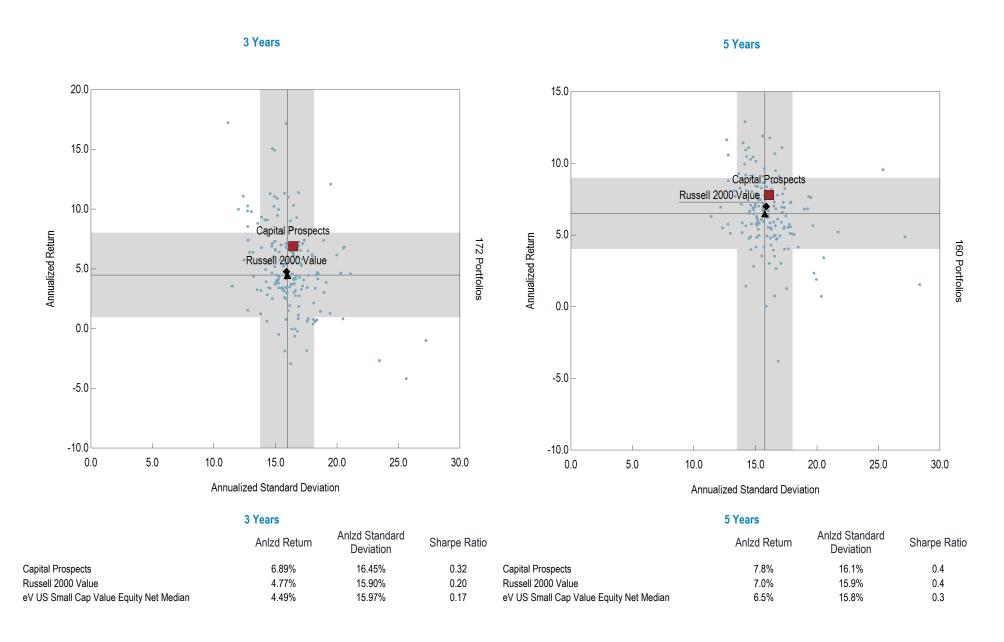
Rolling 3 Year Annualized Return (%)



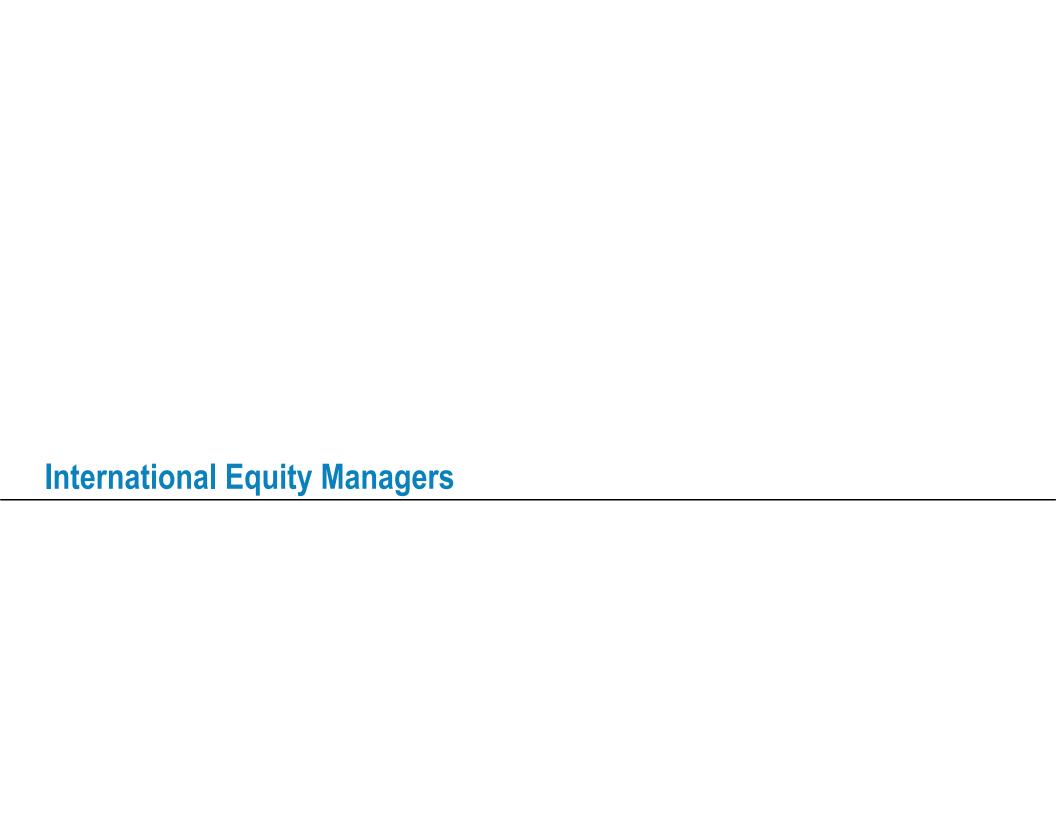
Rolling 5 Year Annualized Return (%)





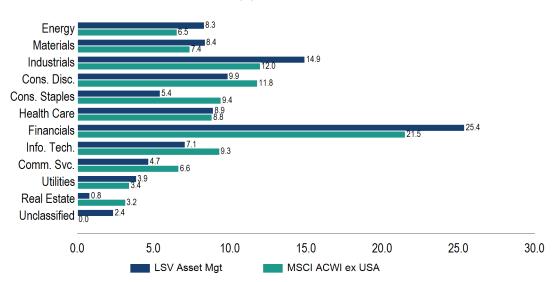






#### MSCI Portfolio ACWI ex USA Number of Holdings 2,379 278 Weighted Avg. Market Cap. (\$B) 39.22 74.06 Median Market Cap. (\$B) 6.58 8.17 Price To Earnings 10.79 16.25 2.41 Price To Book 1.66 Price To Sales 0.61 1.18 Return on Equity (%) 13.17 15.06 Yield (%) 4.25 3.05 Beta 1.05 1.00

# Sector Allocation (%) vs MSCI ACWI ex USA



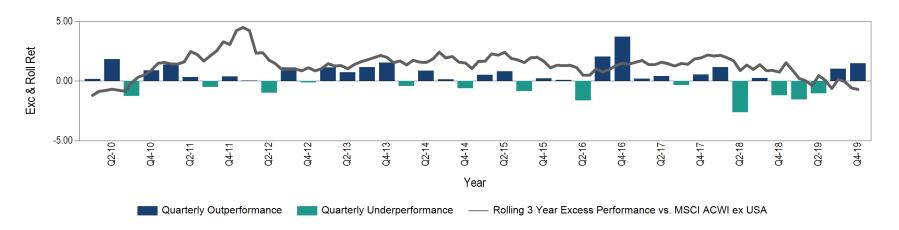
Largest Holdings

**Bottom Contributors** 

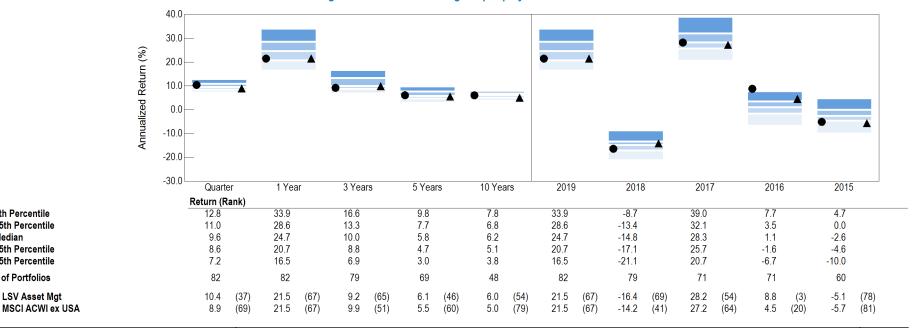
**Top Contributors** 

Largest Holdings			Bottom Contributors				Top Contributors			
	<b>End Weight</b>	Return		Avg Wgt	Return	Contribution	1	Avg Wgt	Return	Contribution
ROCHE HOLDING	2.54	11.32	JBS ON	0.42	-18.53	-0.08	CIA PARANAENSE DE	0.69	49.48	0.34
SAMSUNG ELECTRONICS	1.82	17.67	RHEINMETALL	0.61	-9.86	-0.06	ENERGIA COPEL PN	0.00	45.40	0.04
SANOFI	1.66	8.48	CHINA TELECOM 'H'	0.62	-9.53	-0.06	SAMSUNG ELECTRONICS	1.70	17.67	0.30
GLAXOSMITHKLINE	1.47	10.85	KT & G	0.54	-8.04	-0.04	ROCHE HOLDING	2.49	11.32	0.28
TOTAL	1.40	5.79	RENAULT	0.19	-17.53	-0.03	LUKOIL OAO SPN.ADR 1:1	0.86	23.03	0.20
ENEL	1.39	6.42	BANK OF QLND.	0.11	-21.14	-0.02	KDDI	1.33	14.51	0.19
KDDI	1.34	14.51	COVESTRO (XET)	0.39	-5.99	-0.02	VOLVO B	0.94	19.20	0.18
KONINKLIJKE AHOLD DELHAIZE	1.25	0.00	DAISHIN SECURITIES	0.35	-6.01	-0.02	BARRATT	0.55	31.63	0.17
ROYAL DUTCH SHELL B	1.24	2.09	METCASH	0.25	-8.43	-0.02	DEVELOPMENTS			
NIPPON TELG. & TEL.	1.16	6.35	SUMITOMO	0.45	-4.32	-0.02	GLAXOSMITHKLINE	1.48	10.85	0.16
1111 1 011 1220. Q 122.	1.10	0.00	COMITOMO	0.10	1.02	0.02	SINOTRUK (HONG KONG)	0.36	43.90	0.16
							MMC NORILSK NICKEL (LON) SPN.ADR 10:1	0.52	29.96	0.16





### LSV Asset Mgt vs. eV ACWI ex-US Large Cap Equity Net Universe





5th Percentile

25th Percentile

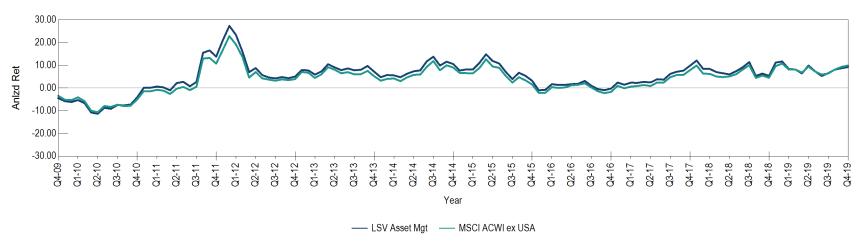
75th Percentile

95th Percentile

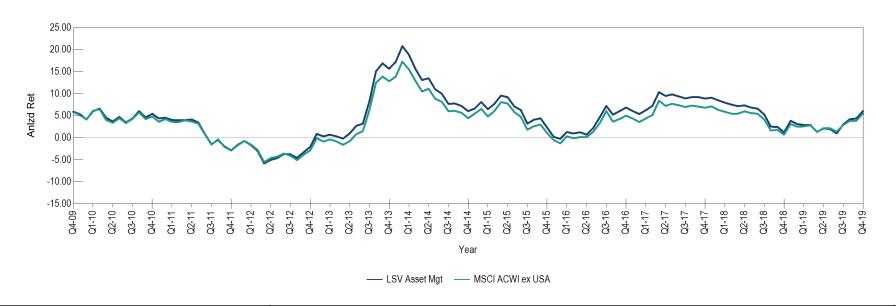
# of Portfolios LSV Asset Mgt

Median

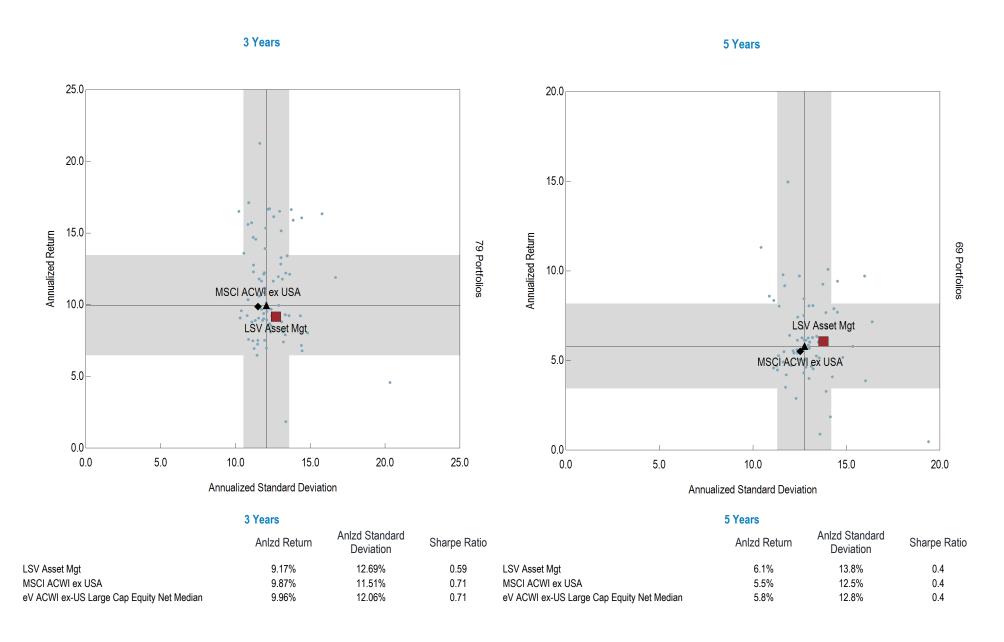
Rolling 3 Year Annualized Return (%)



Rolling 5 Year Annualized Return (%)



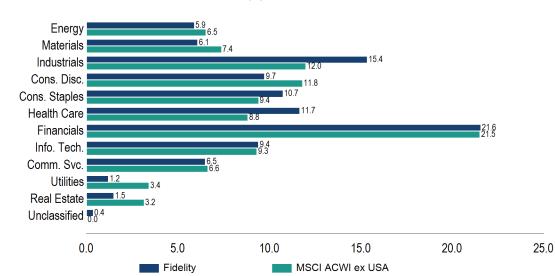




### **Characteristics**

### MSCI Portfolio ACWI ex USA Number of Holdings 222 2,379 Weighted Avg. Market Cap. (\$B) 69.41 74.06 Median Market Cap. (\$B) 15.09 8.17 Price To Earnings 19.69 16.25 Price To Book 2.70 2.41 Price To Sales 1.30 1.18 Return on Equity (%) 16.33 15.06 Yield (%) 2.56 3.05 Beta 1.03 1.00

# Sector Allocation (%) vs MSCI ACWI ex USA



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### Ton Contributors

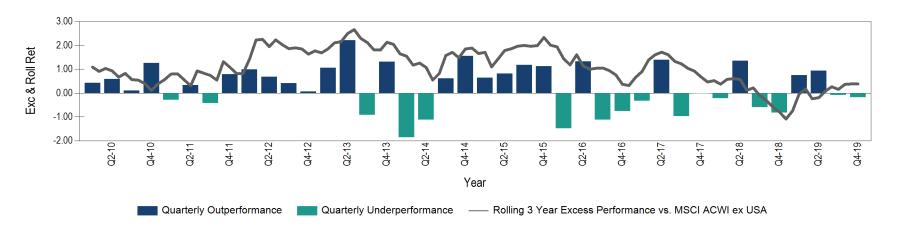
Larges	st noidings		Dolle	udi Contribu	lors	Top Continuators							
	<b>End Weight</b>	Return		Avg Wgt	Return	Contribution	1	Avg Wgt	Return	Contribution			
AIA GROUP	2.28	11.14	TREASURY WINE	1.13	-8.85	-0.10	SAP	1.86	14.60	0.27			
NESTLE 'R'	2.00	-0.36	ESTATES	1.10		0.10	TECHTRONIC INDS.	1.34	17.21	0.23			
ROCHE HOLDING	1.90	11.32	SUBARU	0.58	-11.23	-0.06	MINEBEA MITSUMI	0.67	32.35	0.22			
SAP	1.86	14.60	SHISEIDO	0.50	-9.97	-0.05	AIA GROUP	1.94	11.14	0.22			
TENCENT HOLDINGS	1.80	14.44	ASAHI GROUP HOLDINGS	0.66	-6.49	-0.04	ROCHE HOLDING	1.80	11.32	0.20			
ROYAL DUTCH SHELL A	1.52	1.74	ACE HARDWARE	0.26	-13.64	-0.04	SIEMENS	0.81	22.20	0.18			
TECHTRONIC INDS.	1.43	17.21	INDONESIA	0.00	0.04	0.00	ASML HOLDING	0.86	19.99	0.17			
TAIWAN SEMICON.MNFG.	1.40	26.88	UNILEVER	0.60	-3.61	-0.02	PRUDENTIAL	0.71	23.67	0.17			
SANOFI	1.37	8.48	TORONTO-DOMINION BANK	0.76	-2.76	-0.02	TAIWAN SEMICON.MNFG.	0.57	26.88	0.15			
AXA	1.11	10.35	ZENSAR TECHNOLOGIES	0.10	-20.95	-0.02	BNP PARIBAS	0.70	21.77	0.15			
			DELFI	0.14	-14.29	-0.02							
			S H KELKAR & CO	0.08	-20.56	-0.02							

**Rottom Contributors** 

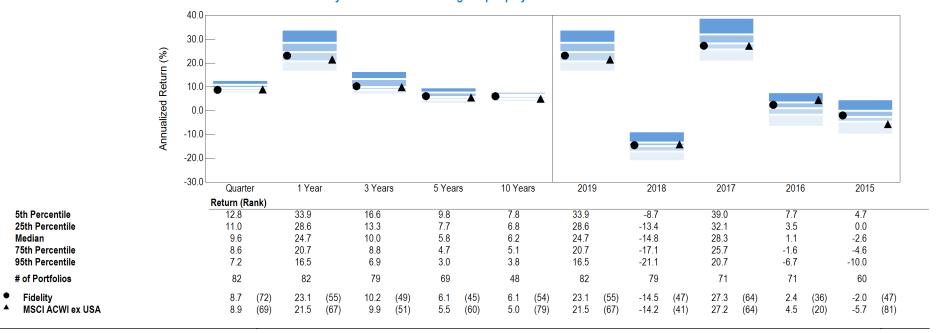
Unclassified sector allocation includes cash allocations.



### **Rolling Annualized Excess Performance**

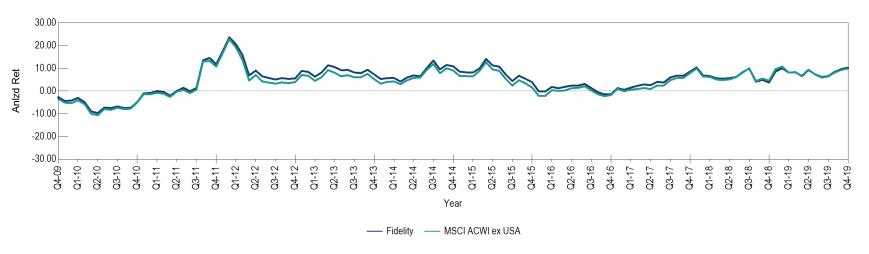


# Fidelity vs. eV ACWI ex-US Large Cap Equity Net Universe





Rolling 3 Year Annualized Return (%)

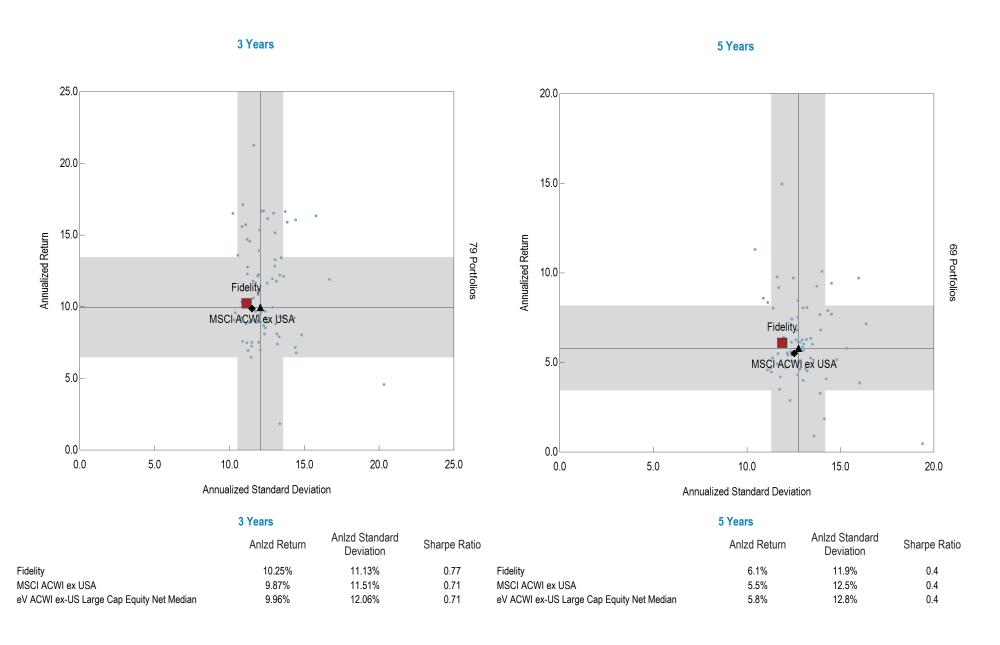


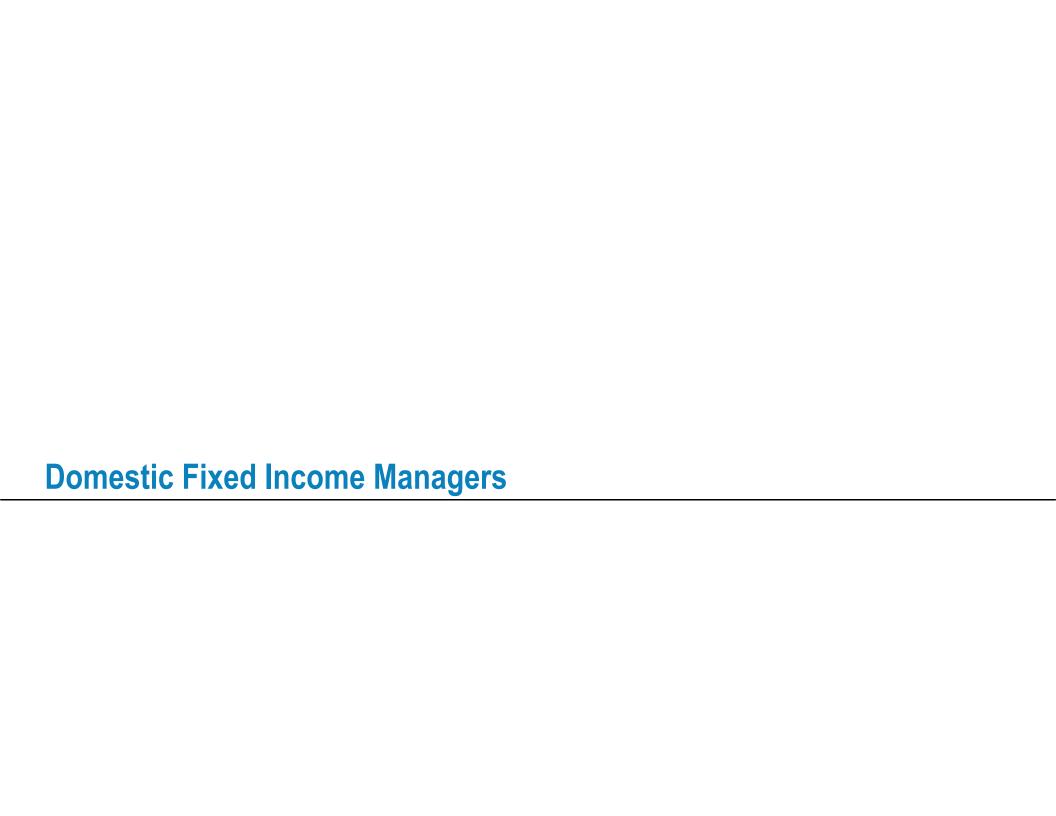
Rolling 5 Year Annualized Return (%)



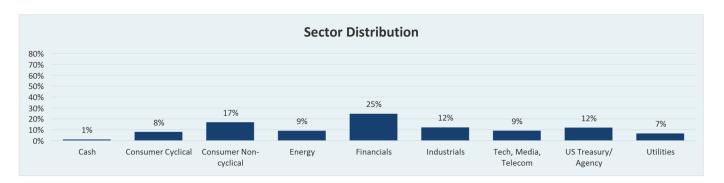


Risk vs. Return 3 & 5 Year (Gross of Fees)





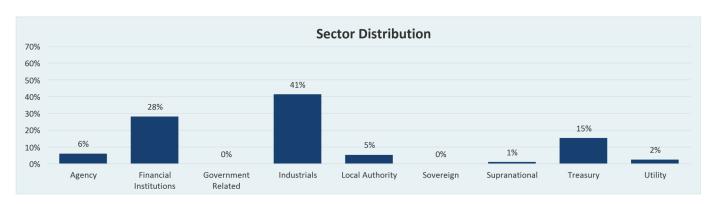
Summary	Portfolio
Average Quality	Α
Effective duration (years)	4.08
Average Coupon	3.59%
Yield to Worst	2.40%



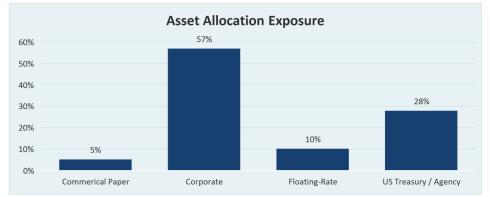




	la
Summary	Portfolio
Average Quality	A+
Effective duration (years)	1.06
Average Coupon	2.58%
Yield to Worst	2.05%







### Performance Return Calculations

Performance is calculated using Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

### Data Source

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

### Illiquid Alternatives

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

Manager Line Up					
<u>Manager</u>	Fund_Incepted	Data_Source	<u>Manager</u>	Fund_Incepted	Data_Source
Northern Trust Russell 3000	12/31/2018	Northern Trust	American Strategic Value Realty	12/31/2014	American Realty
BlackRock Russell 1000 Growth	6/30/2010	BlackRock	BlackRock US Real Estate	9/30/2012	BlackRock
BlackRock Russell 1000 Value	7/31/2009	BlackRock	Greenfield Gap	7/31/2014	Greenfield
Dodge & Cox - Equity	12/31/1994	Northern Trust	Medley Capital	5/31/2013	Medley Capital
Capital Prospects	12/31/2008	Northern Trust	Raven Capital	5/31/2013	Raven Capital
LSV Asset Mgt	8/31/2004	Northern Trust	Raven Opportunity III	7/31/2015	Raven Capital
Fidelity	4/30/2006	Northern Trust	White Oak Pinnacle	8/31/2013	White Oak
Insight	6/29/2017	Northern Trust	PanAgora Risk Parity Multi Asset	11/30/2017	PanAgora
DFA	7/31/2017	Northern Trust	AQR Global Risk Premium - EL	3/5/2018	AQR
Northern Trust Intermediate Gov't Bond	7/31/2017	Northern Trust	MS Infrastructure	5/31/2015	Morgan Stanley
Northern Trust Long Term Gov't Bond	7/31/2017	Northern Trust	PGIM Real Estate US Debt Fund	9/28/2018	Prudential
Prime Property Fund	9/30/2015	Prime Property	Owl Rock First Lien Fund	10/31/2019	Owl Rock
Policy & Custom Index Composition					

Policy Index (5/31/2019):	14% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 23% MSCI ACWI ex-USA, 19% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury

7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 2% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40%

BBgBarc Global Aggregate, 1% Citi 1 Month T-Bills.

**US Equity Blended:** 60% Russell 1000. 15% Russell 2000. 25% Russell 3000 + 3%.

10% Russell 1000, 3% Russell 2000, 6% Russell 3000 + 3%, 27% MSCI ACWI ex-USA, 20% BBgBarc US Gov't/Credit 1-3 Yr, 3% BBgBarc US Treasury Prior Policy Index:

7-10 Yr, 5% NCREIF Property, 5% NCREIF Property +2%, 1% CPI +5%, 6% S&P/LSTA Leveraged Loan Index + 2%, 13% 60% MSCI ACWI / 40%

BBgBarc Global Aggregate, 1% Citi 1 Month T-Bills.

BM (8/31/2019):

StanCERA Liquidity Blended 92% BBgBarc US Govt/Credit 1-3 Yr. TR and 8% FTSE T-Bill 1 Month TR.

StanCERA Growth Blended 18% Russell 1000, 4% Russell 2000, 8% Russell 3000 + 3%, 30% MSCI ACWI ex-US Gross, 6% NCREIF Property, 6% actual private Value Add Real BM (8/31/2019):

Estate returns, 17% 60% MSCI ACWI/40% BBgBarc Global Aggregate, 3% actual Infrastructure returns, and 8% actual Private Credit returns.

Blended BM (8/31/2019):

StanCERA Risk-Diversifying 27% BBgBarc US Treasury 7-10 Yr. TR and 73% BBgBarc US Govt/Credit 1-3 Yr. TR.



### Other Disclosures

Fiscal Year End: 6/30

Cash Account includes cash held at Northern Trust for all closed end funds and cash held by BlackRock.

Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

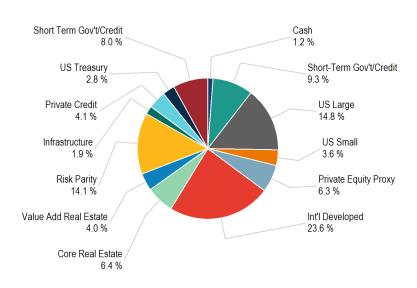
All data prior to 6/30/2015 provided by the previous consultant.





	QTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	5.0	6.1	17.8	9.3	7.1	8.9
Policy Index	5.3	5.8	16.9	8.7	6.9	8.4
Liquidity Sub-Portfolio	1.0	2.6	7.9	3.0	2.3	
StanCERA Liquidity Blended BM	0.6	1.3	3.9	2.1	1.6	
Cash	0.5	1.1	1.7	1.5	1.4	
FTSE T-Bill 1 Month TR	0.4	1.0	2.2	1.6	1.0	
Short-Term Gov't/Credit	1.1	2.7	8.7			
BBgBarc US Govt/Credit 1-3 Yr. TR	0.6	1.3	4.0			
Growth Sub-Portfolio	6.3	7.2	21.4	11.0	8.3	
StanCERA Growth Blended BM	6.7	7.1	20.7	11.0		
US Large	9.6	11.0	30.7	15.1	11.2	
Russell 1000	9.0	10.6	31.4	15.0	11.5	
US Small	9.4	7.2	26.0	6.9	6.6	11.9
Russell 2000	9.9	7.3	25.5	8.6	8.2	11.8
Private Equity Proxy	9.1	10.4	31.1	16.6	12.4	13.9
Russell 3000 +3%	9.8	12.3	34.0	17.6	14.3	16.4
Int'l Developed	9.6	8.1	22.3	9.8	6.2	6.1
MSCI ACWI ex USA	8.9	7.0	21.5	9.9	5.5	5.0

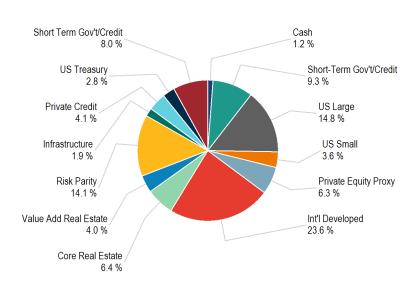
# **Current Allocation**





	QTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Core Real Estate	0.9	3.9	10.7	5.9	4.6	6.2
NCREIF Property Index	1.6	3.0	6.4	6.7	8.2	10.2
Value Add Real Estate	1.9	5.5	10.1	12.1	13.6	
NCREIF Property Index +2%	2.1	4.0	8.5	8.8	10.4	
Risk Parity	1.7	4.9	22.4			
60% MSCI ACWI Net/40% BBgBarc Global Aggregate	5.5	5.8	18.6			
Infrastructure	2.0	5.3	13.1	14.0		
CPI + 5%	1.3	2.8	7.4	7.2		
Private Credit	0.9	1.4	5.3	3.5	4.2	
S&P/LSTA Leveraged Loan Index+2%	2.2	3.8	10.8	6.4	6.5	
Risk-Diversifying Sub-Portfolio	0.3	1.7	6.0	3.7	3.4	4.5
StanCERA Risk-Diversifying Blended BM	0.1	1.3	5.3	2.6	2.0	2.4
US Treasury	-1.1	1.8	7.7	4.4	3.8	4.7
BBgBarc US Treasury 7-10 Yr TR	-1.2	1.5	8.5	3.9	2.9	4.5
Short-Term Gov't/Credit	0.7	1.7	5.5			
BBgBarc US Govt/Credit 1-3 Yr. TR	0.6	1.3	4.0			

# **Current Allocation**





	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Total Fund	2,305,291,730	100.0	5.0	6.1	17.8	9.3	7.1	8.9	17.8	-4.1	15.7	8.3	-0.2	9.3	Dec-94
Policy Index			5.3	5.8	16.9	8.7	6.9	8.4	16.9	-3.7	14.3	8.5	0.2	8.1	Dec-94
Liquidity Sub-Portfolio	242,763,981	10.5	1.0	2.6	7.9	3.0	2.3		7.9	0.9	0.5	1.5	1.0	9.6	Apr-11
StanCERA Liquidity Blended BM			0.6	1.3	3.9	2.1	1.6		3.9	1.6	0.8	1.2	0.6	1.3	Apr-11
Cash	28,165,783	1.2	0.5	1.1	1.7	1.5	1.4		1.7	1.7	1.1	1.5	1.0	9.0	Apr-11
FTSE T-Bill 1 Month TR			0.4	1.0	2.2	1.6	1.0		2.2	1.8	0.8	0.2	0.0	0.6	Apr-11
Short-Term Gov't/Credit	214,598,198	9.3	1.1	2.7	8.7				8.7	0.7				4.0	Jun-17
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.3	4.0				4.0	1.6				2.3	Jun-17
Insight	214,598,198	9.3	1.1	2.7	8.7				8.7	0.7				4.0	Jun-17
BBgBarc US Govt/Credit 1-3 Yr. TR	_		0.6	1.3	4.0				4.0	1.6				2.3	Jun-17
Growth Sub-Portfolio	1,815,460,069	78.8	6.3	7.2	21.4	11.0	8.3		21.4	-5.8	19.7	9.5	-0.4	8.5	Jul-15
StanCERA Growth Blended BM			6.7	7.1	20.7	11.0			20.7	-4.9	19.1	8.1		8.5	Jul-15
US Large	341,656,803	14.8	9.6	11.0	30.7	15.1	11.2		30.7	-3.9	21.3	11.0	0.7	11.7	Jul-15
Russell 1000			9.0	10.6	31.4	15.0	11.5		31.4	-4.8	21.7	12.1	0.9	12.2	Jul-15
BlackRock Russell 1000 Growth	171,322,717	7.4	10.6	12.3	36.4	20.5	14.7		36.4	-1.5	30.2	7.2	5.7	17.1	Jun-10
Russell 1000 Growth			10.6	12.3	36.4	20.5	14.6		36.4	-1.5	30.2	7.1	5.7	17.1	Jun-10
BlackRock Russell 1000 Value	84,448,120	3.7	7.4	8.9	26.7	9.8	8.4	11.9	26.7	-8.1	13.8	17.3	-3.6	12.8	Jul-09
Russell 1000 Value			7.4	8.9	26.5	9.7	8.3	11.8	26.5	-8.3	13.7	17.3	-3.8	12.7	Jul-09
Dodge & Cox-Equity	85,885,966	3.7	9.8	10.2	24.2	10.9	9.7	12.8	24.2	-6.3	17.1	21.4	-3.9	12.2	Dec-94
Russell 1000 Value			7.4	8.9	26.5	9.7	8.3	11.8	26.5	-8.3	13.7	17.3	-3.8	10.1	Dec-94
US Small	83,482,336	3.6	9.4	7.2	26.0	6.9	6.6	11.9	26.0	-16.1	15.7	17.1	-3.9	13.5	Dec-08
Russell 2000			9.9	7.3	25.5	8.6	8.2	11.8	25.5	-11.0	14.6	21.3	-4.4	13.1	Dec-08
Capital Prospects	83,482,336	3.6	9.4	7.2	26.0	6.9	7.8	12.2	26.0	-16.1	15.5	28.1	-7.0	13.7	Dec-08
Russell 2000 Value			8.5	7.9	22.4	4.8	7.0	10.6	22.4	-12.9	7.8	31.7	-7.5	11.4	Dec-08
Private Equity Proxy	145,752,551	6.3	9.1	10.4	31.1	16.6	12.4	13.9	31.1	-0.2	21.2	11.8	1.4	9.7	Nov-03
Russell 3000 +3%			9.8	12.3	34.0	17.6	14.3	16.4	34.0	-2.2	24.1	15.7	3.5	12.5	Nov-03
Northern Trust Russell 3000	145,752,551	6.3	9.1	10.4	31.1				31.1					31.1	Dec-18
Russell 3000			9.1	10.4	31.0				31.0					31.0	Dec-18



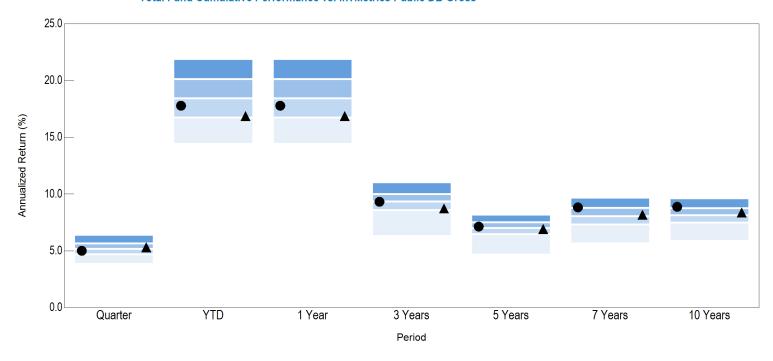
	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
Int'l Developed	543,519,419	23.6	9.6	8.1	22.3	9.8	6.2	6.1	22.3	-15.5	27.9	6.0	-3.4	7.1	Sep-04
MSCI ACWI ex USA			8.9	7.0	21.5	9.9	5.5	5.0	21.5	-14.2	27.2	4.5	-5.7	6.2	Sep-04
LSV Asset Mgt	274,235,603	11.9	10.4	9.6	21.5	9.2	6.1	6.0	21.5	-16.4	28.2	8.8	-5.1	7.0	Aug-04
MSCI ACWI ex USA			8.9	7.0	21.5	9.9	5.5	5.0	21.5	-14.2	27.2	4.5	-5.7	6.3	Aug-04
Fidelity	269,283,817	11.7	8.7	6.7	23.1	10.2	6.1	6.1	23.1	-14.5	27.3	2.4	-2.0	4.5	Apr-06
MSCI ACWI ex USA			8.9	7.0	21.5	9.9	5.5	5.0	21.5	-14.2	27.2	4.5	-5.7	3.5	Apr-06
Core Real Estate	147,541,346	6.4	0.9	3.9	10.7	5.9	4.6	6.2	10.7	1.9	5.5	5.8	-0.5	3.1	Mar-08
NCREIF Property Index			1.6	3.0	6.4	6.7	8.2	10.2	6.4	6.7	7.0	8.0	13.3	6.2	Mar-08
Prime Property Fund	58,942,128	2.6	1.8	3.5	7.4	8.8			7.4	9.1	9.9	10.4		9.5	Sep-15
NCREIF-ODCE			1.5	2.8	5.3	7.1			5.3	8.3	7.6	8.8		7.9	Sep-15
BlackRock US Real Estate	30,865,770	1.3	-1.2	5.5	23.1	7.0	6.4		23.1	-4.1	3.8	6.6	4.4	9.0	Sep-12
DJ US Select RESI TR USD			-1.2	5.5	23.1	7.0	6.4		23.1	-4.2	3.8	6.6	4.5	9.0	Sep-12
PGIM Real Estate US Debt Fund	57,733,448	2.5	1.4	3.0	6.4				6.4					6.1	Sep-18
BBgBarc CMBS IG TR USD			-0.3	1.6	8.3				8.3					7.1	Sep-18
Value Add Real Estate	92,031,518	4.0	1.9	5.5	10.1	12.1	13.6		10.1	12.9	13.5	10.3	21.7	12.6	Jul-14
NCREIF Property Index +2%			2.1	4.0	8.5	8.8	10.4		8.5	8.8	9.1	10.1	15.6	10.9	Jul-14
American Strategic Value Realty	60,616,097	2.6	2.6	4.8	9.6	10.4	13.1		9.6	10.2	11.5	13.1	21.4	13.1	Dec-14
NCREIF Property Index			1.6	3.0	6.4	6.7	8.2		6.4	6.7	7.0	8.0	13.3	8.2	Dec-14
Greenfield Gap VII	10,182,961	0.4	1.0	11.2	16.8	16.0	15.4		16.8	14.6	16.5	7.7	22.0	14.6	Jul-14
NCREIF ODCE + 1%			1.8	3.4	6.4	8.2	10.1		6.4	9.4	8.7	9.8	16.2	10.6	Jul-14
Greenfield Gap VIII	21,232,460	0.9	0.3	4.3	7.6				7.6					15.7	Apr-18
NCREIF ODCE + 1%			1.8	3.4	6.4				6.4					7.6	Apr-18
Risk Parity	324,180,593	14.1	1.7	4.9	22.4				22.4	-6.6				7.3	Nov-17
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			5.5	5.8	18.6				18.6	-6.0				5.9	Nov-17
AQR Global Risk Premium - EL	164,315,559	7.1	3.6	5.6	22.3				22.3					9.6	Mar-18
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			5.5	5.8	18.6				18.6				-	5.9	Mar-18
PanAgora Risk Parity Multi Asset	159,865,034	6.9	-0.1	4.1	22.6		-		22.6	-7.3				6.9	Nov-17
60% MSCI ACWI Net/40% BBgBarc Global Aggregate			5.5	5.8	18.6				18.6	-6.0				5.9	Nov-17



	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception	nception Date
Infrastructure	43,310,598	1.9	2.0	5.3	13.1	14.0			13.1	8.3	20.9	12.8		10.4	May-15
CPI + 5%			1.3	2.8	7.4	7.2			7.4	7.0	7.2	7.2	-	6.8	May-15
MS Infrastructure Partners II	43,310,598	1.9	2.0	5.3	13.1	14.0			13.1	8.3	20.9	12.8		10.3	May-15
CPI + 5%			1.0	2.4	7.0	7.1			7.0	7.0	7.2	7.2		6.7	May-15
Private Credit	93,984,904	4.1	0.9	1.4	5.3	3.5	4.2		5.3	4.9	0.4	3.9	6.6	7.1	May-13
S&P/LSTA Leveraged Loan Index+2%			2.2	3.8	10.8	6.4	6.5		10.8	2.4	6.2	12.3	1.3	6.0	May-13
Medley Capital	10,505,757	0.5	-6.1	-10.5	-13.4	-7.3	-2.4		-13.4	-11.9	4.5	4.4	6.5	1.6	May-13
S&P/LSTA Leveraged Loan Index+2%			2.2	3.8	10.8	6.4	6.5		10.8	2.4	6.2	12.3	1.3	6.0	May-13
Owl Rock First Lien Fund	4,088,385	0.2	0.0											0.0	Oct-19
S&P/LSTA Leveraged Loan Index+2%			2.2											2.2	Oct-19
Raven Capital	14,330,002	0.6	1.1	3.3	8.3	2.3	1.5		8.3	5.3	-6.1	-2.1	2.7	2.4	May-13
S&P/LSTA Leveraged Loan Index+2%			2.2	3.8	10.8	6.4	6.5		10.8	2.4	6.2	12.3	1.3	6.0	May-13
Raven Opportunity III	38,869,797	1.7	2.5	3.3	9.9	4.1			9.9	11.0	-7.4	5.6		5.9	Jul-15
S&P/LSTA Leveraged Loan Index+2%			2.2	3.8	10.8	6.4			10.8	2.4	6.2	12.3		6.5	Jul-15
White Oak Pinnacle	26,190,963	1.1	1.8	4.1	8.1	7.2	7.5		8.1	10.0	3.6	6.8	9.3	14.1	Aug-13
S&P/LSTA Leveraged Loan Index+2%			2.2	3.8	10.8	6.4	6.5		10.8	2.4	6.2	12.3	1.3	6.1	Aug-13
Risk-Diversifying Sub-Portfolio	247,067,681	10.7	0.3	1.7	6.0	3.7	3.4	4.5	6.0	1.2	4.0	5.4	0.3	5.0	Nov-03
StanCERA Risk-Diversifying Blended BM			0.1	1.3	5.3	2.6	2.0	2.4	5.3	1.4	1.3	1.3	0.9		Nov-03
US Treasury	63,572,025	2.8	-1.1	1.8	7.7	4.4	3.8	4.7	7.7	0.7	5.1	5.4	0.3	5.1	Nov-03
BBgBarc US Treasury 7-10 Yr TR			-1.2	1.5	8.5	3.9	2.9	4.5	8.5	0.9	2.6	1.1	1.6	4.7	Nov-03
Northern Trust Intermediate Gov't Bond	46,479,024	2.0	0.0	1.2	5.3				5.3	1.5				2.6	Jul-17
BBgBarc US Govt Int TR			0.0	1.2	5.2				5.2	1.4				2.6	Jul-17
Northern Trust Long Term Gov't Bond	17,093,001	0.7	-4.0	3.5	14.8	-			14.8	-1.7				6.7	Jul-17
BBgBarc US Govt Long TR			-4.1	3.5	14.7				14.7	-1.8				6.6	Jul-17
Short-Term Gov't/Credit	183,495,656	8.0	0.7	1.7	5.5				5.5	1.3				2.2	May-17
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.3	4.0				4.0	1.6				2.2	May-17
DFA	183,495,656	8.0	0.7	1.7	5.5				5.5	1.3				2.8	Jul-17
BBgBarc US Govt/Credit 1-3 Yr. TR			0.6	1.3	4.0				4.0	1.6				2.3	Jul-17



### Total Fund Cumulative Performance vs. InvMetrics Public DB Gross



5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
# of Portfolios

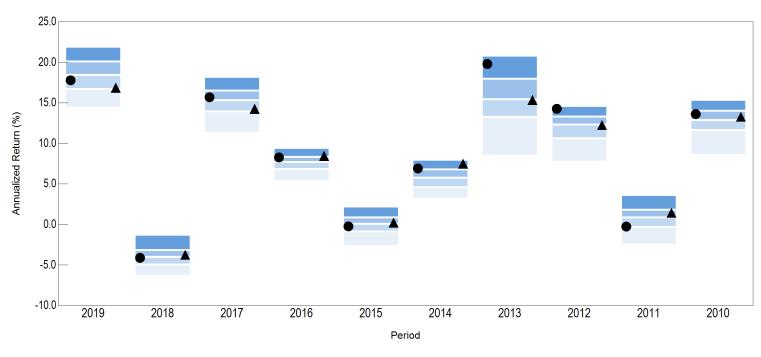
Total FundPolicy Index

Return (Rai	nk)												
6.4	·	21.9		21.9		11.0		8.2		9.7		9.6	
5.7		20.1		20.1		10.0		7.5		8.8		8.8	
5.2		18.5		18.5		9.4		7.0		8.1		8.1	
4.7		16.8		16.8		8.6		6.5		7.3		7.5	
3.9		14.4		14.4		6.3		4.7		5.7		5.9	
293		289		289		281		268		254		228	
5.0	(62)	17.8	(61)	17.8	(61)	9.3	(53)	7.1	(44)	8.8	(25)	8.9	(19)
5.3	(42)	16.9	(73)	16.9	(73)	8.7	(72)	6.9	(58)	8.2	(47)	8.4	(40)



Return (Rank)

Total Fund Consecutive Periods vs. InvMetrics Public DB Gross



5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
# of Portfolios

Total FundPolicy Index

ivernii (ivalik)	,									
21.9	-1.3	18.2	9.4	2.2	8.0	20.8	14.6	3.6	15.4	
20.1	-3.1	16.5	8.4	0.9	6.8	18.0	13.4	1.9	14.0	
18.5	-4.0	15.3	7.7	0.1	5.8	15.5	12.4	0.9	12.9	
16.8	-4.9	14.0	6.9	-0.9	4.6	13.3	10.7	-0.3	11.7	
14.4	-6.3	11.3	5.3	-2.6	3.2	8.5	7.8	-2.5	8.6	
289	319	304	305	316	248	231	236	206	188	
17.8 (61) 16.9 (73)	-4.1 (53 -3.7 (43	, ,	, ,	-0.2 (60) 0.2 (46)	6.9 (23) 7.5 (12)	19.8 (12) 15.4 (52)	14.3 (10) 12.3 (53)	-0.3 (75) 1.4 (35)	13.6 (35) 13.3 (42)	



# Glossary

Allocation Effect: An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

Alpha: The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as: Portfolio Return - [Risk-free Rate + Portfolio Beta x (Market Return - Risk-free Rate)].

**Beachmark R-squared:** Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager. **Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

**Book-to-Market:** The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios. Capture Ratio: A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

Correlation: A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

Excess Return: A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

Information Ratio: A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

**Interaction Effect:** An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

**Portfolio Turnover:** The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

**Price-to-Earnings Ratio (P/E):** Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

**R-Squared:** Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

Selection Effect: An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

Sharpe Ratio: A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as: Portfolio Excess Return / Portfolio Standard Deviation.

**Sortino Ratio:** Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

**Standard Deviation:** A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

Style Analysis: A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

**Style Map:** A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

# Glossary

Long-Nickels ICM: IRR-based methodology developed by Austin Long and Craig Nickels that makes meaningful comparisons between private capital investments and indexes like the S&P 500 Total Return; known as Index Comparison Method (ICM), or Public Market Equivalent (PME). The methodology assumes buying and selling the index according to the timing and size of the cash flows between the investor and the private investment.

The direct opportunity cost comparison of how net funds invested in the private investment would have performed had they been invested in the stated index over the life of the particular investment. In calculation of the IRRICM, the private capital valuation is ignored and substituted instead with a ValuationICM. ValuationICM is essentially a sum of private capital contributions and distributions grown to the analysis date using the respective index values; contributions are treated as purchases into the index and are used to increase the ValuationICM, while distributions are treated as sales and are applied to reduce ValuationICM; the IRRICM then becomes a standard IRR calculation, using the original private capital transactions and ValuationICM substituted for the original private capital valuation.

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Verus receives universe data from InvMetrics, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.



# Stanislaus County Employees' Retirement Association

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# February 25, 2020

Retirement Board Agenda Item

TO: Retirement Board

FROM: Stan Conwell, Retirement Investment Officer

I. SUBJECT: Asset/Liability Study Education: Growth Sub-Portfolio & Asset Class Implementation Philosophy.

II. ITEM NUMBER: 7.c

III. ITEM TYPE: Information Only

IV. STAFF RECOMMENDATION: None.

## V. ANALYSIS:

At today's meeting Eileen Neill will continue the discussion about Verus's approach to the asset/liability study scheduled for June this year. At the last meeting in January, some of the foundational concepts and best practices regarding risk and asset allocation were covered. An overview of investment philosophy and the liquidity sub-portfolio were also covered. Today we will focus on the growth sub-portfolio and review the role various public market asset classes play within the sub-portfolio. The growth assets are an central part of the portfolio because provide the returns necessary to pay future benefits. Public market assets are particularly important to the long-term objectives of the investment program, as they make up the majority of assets in the growth sub-portfolio.

We will also discuss asset class implementation philosophy and search for input and consensus from the Board for the development of investment belief statements for recommendation to the Board at the March meeting. The discussion today will seek to answer the following three questions:

- 1. How much public equity allocation should be invested in U.S. versus non-U.S. Equities?
- 2. How much of U.S. equity allocation should be invested in large cap versus small cap equities?
- 3. What strategies should be passively versus actively managed?

Please review each of these questions and come prepared to share how you would answer them. Our goal is to form Board consensus by not only reviewing the investment theory around these questions, but also soliciting your thoughts, concerns, questions, and comments.

VI. RISK: None

VII. STRATEGIC PLAN: N/A

VIII. ADMINISTRATIVE BUDGET IMPACT: None.

Stan Conwell, Retirement Investment Officer







**FEBRUARY 25, 2020** 

Growth Sub-Portfolio Review and Implementation Philosophy Discussion

**Stanislaus County Employees Retirement Association** 

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# Goal for today

- Develop Board consensus on investment philosophy regarding asset class implementation
- We will answer the following questions:
  - How much of public equity allocation should be invested in U.S versus non-U.S. equities?
  - How much of U.S. equity allocation should be invested in large cap versus small cap equities?
  - What strategies should be passively versus actively managed?



# Growth sub-portfolio review – public markets



# The role of asset classes

	RETURN ROLES				DIVERSIFIC	ATION & VOLATI	LITY ROLES	HOW MACRO OUTLOOK/GDP AFFECTS ROLE		
	Benefit from GDP Growth	Earn Risk Premium	Produce Stable Income	Hedge Against Inflation	Low Absolute Volatility	Low Corr. To Other Assets	Reduce Portfolio Volatility	Elements of Return for Asset Class	Sensitivity to GDP	
Public Equities					$\bigcirc$	$\bigcirc$		PEs, Dividends, Earnings Growth		
Private Equities								PEs (exits), Financing, Opportunity Set		
Fixed (Treasury)	$\bigcirc$							Direct Link to Yields		
Fixed (Credit)								Direct Link to Yields, Credit Spreads		
Real Estate								Unemployment, Vacancies, Cap Rates		
MAGNITUDE	High	Med-High	Medium	Low	None					



# Domestic equity

# **ROLE**

- Provides exposure to broad economic growth
- Returns via dividends & appreciation
- A primary driver of portfolio returns

- + Inflation
- + Dividend yield
- + Real earnings growth
- + Change in valuations (Price/Earnings ratio)
- = Expected nominal return

# International equity

# **ROLE**

- Provides exposure to broad international economic growth
- Provides diversification within a broader equity portfolio
- Returns via dividends and appreciation
- A primary driver of portfolio returns

- + Inflation
- + Dividend yield
- + Real earnings growth
- + Change in valuations (Price/Earnings ratio)
- + Implied currency effect
- = Expected nominal return

# REITs

# **ROLE**

- Same as Real estate plus:
- More liquid method for gaining Real Estate exposure
- Public REITS exhibit equity like volatility given public market trading

- + Capitalization rate
- Capital expenditures
- + Inflation
- = Expected nominal return

# Risk parity

# **ROLE**

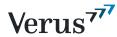
- Provides exposure to most asset classes
- Seeks to provide higher risk-adjusted returns through factor-balanced investment approaches
- Adjustments to current market conditions varies by strategy
- Typically employs leverage

- + Expected Sharpe Ratio \* Target volatility
- + Cash rate
- = Expected nominal return

# 2020 Verus capital market assumptions

	US Lg Cap Eq	US SC Eq	ACWI ex-US	Global Eq	REITS	Risk Parity
Expected Return	5.5	5.7	7.2	6.4	6.6	6.9
Std Dev	15.4	21.1	19.8	16.8	19.1	10.0
Correlations						
US Lg Cap Eq	1.00					
US SC Eq	0.89	1.00				
ACWI ex-US	0.86	0.72	1.00			
Global Eq	0.96	0.83	0.98	1.00		
REITS	0.64	0.62	0.60	0.62	1.00	
Risk Parity	0.54	0.42	0.57	0.59	0.54	1.00

- With exception of Risk Parity, public markets assets are highly correlated, particularly U.S. and non-U.S equities
- Given high correlations between U.S. and non-U.S. equities, most plan sponsors combine these for purposes of modeling asset classes within asset allocation and asset/liability studies
- Verus will employ the combined Global Equity capital market assumptions for forthcoming StanCERA asset/liability study



# Current Growth Sub-Portfolio structure – public markets performance

						Since	Inception
Asset Class/Benchmark	FYTD	1-year	3-year	5-year	10-year	Inception	Date
US LARGE CAP EQUITY	11.0	30.6	14.9	11.1		11.5	Jul-15
Russell 1000	10.6	31.4	15.0	11.5		12.2	
US SMALL CAP EQUITY	6.8	25.1	6.1	5.8	11.0	12.7	Dec-08
Russell 2000	7.3	25.5	8.6	8.2	11.8	13.1	
PRIVATE EQUITY PROXY	10.4	31.1	16.6	12.4	13.9	9.6	Nov-03
Russell 3000 + 3%	12.3	34.0	17.6	14.3	16.4	12.5	
ACWI EX-US	7.9	21.8	9.3	5.8	5.7	6.6	Sep-04
MSCI ACWI ex-US	7.1	22.1	10.4	6.0	5.4	6.6	
REITS	3.6	10.0	5.5	4.2	5.5	2.4	Mar-08
NCREIF Property Index	3.0	6.4	6.7	8.2	10.2	6.2	
RISK PARITY	4.7	22.0				6.9	Nov-17
60% ACWI/40% Global Agg	5.8	18.6				5.9	

As of 12/31/19

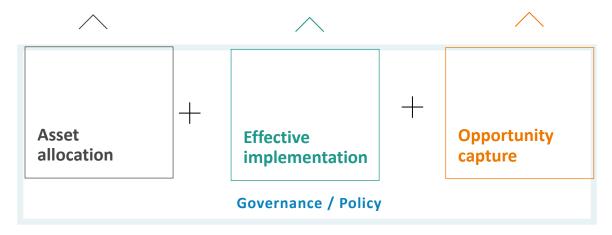


# Implementation philosophy discussion



# Fiduciary decision-making process

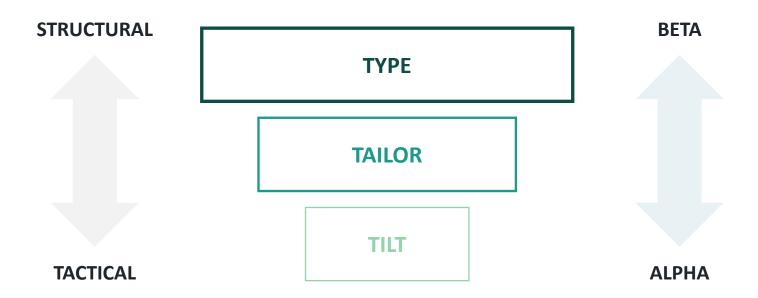
Return goal: Based on objectives and enterprise risk tolerance



- Strategic asset allocation balances risk and reward based on StanCERA's enterprise objectives and risk tolerance – primary decision
- Implementation balances risk and reward based on StanCERA's investment philosophy and beliefs – secondary decision

# Asset allocation is the most important decision

We divide investment decisions into three sub-topics



- Asset allocation drives approximately 90% of Fund's performance experience, return and risk
- Implementation drives remaining 10% and is separate process conducted post- asset allocation process

# U.S. equities versus non-U.S. equities

— Question: How much of public equity allocation should be invested in U.S versus non-U.S. equities?

#### Investment theory

- Purchasing Power Parity/Interest Rate Parity
  - Over long term (10 years+), global equity markets should produce similar returns due to Purchasing Power Parity and Interest Rate Parity
  - Goods and services (hence, investments) flow to and from low priced/high priced; low yield/high yield economies
  - Only difference is due to currency

#### Annualized Returns as of 1/31/20

	10-year	20-year	30-year	40-year
S&P 500	14.0%	6.3%	10.2%	11.6%
MSCI EAFE	5.8%	3.5%	4.6%	8.5%
ACWI ex USA	5.8%	4.5%	5.0%	
MSCI ACWI ex USA Hedged	7.2%	4.0%		

- Capital Asset Pricing Model ("CAPM")
  - Market portfolio is most diversified portfolio
  - Under Capital Asset Pricing Model ("CAPM"), market benchmark has highest Sharpe Ratio (i.e., risk adjusted return)
  - CAPM assumes only market risk is rewarded risks taken away from the market portfolio will not compensated over time



#### U.S. equities versus non-U.S. equities

- Today, most institutional investors view public equities through global lens given very high correlations between U.S. and non-U.S. equities
- In StanCERA asset/liability study, Verus will model public equities as global equity asset class. Market benchmark proxy for this asset class is MSCI All-Country World Index ("ACWI")
- StanCERA can continue to implement flexibly utilizing large cap and small cap, active and passive and U.S. and non-U.S. strategies
  - However, allocation between U.S. and non-U.S. equities should approximate market benchmark
  - Current market benchmark weightings for U.S. equities versus non-U.S. equities is approximately 55% U.S./45% non-U.S.
    - StanCERA allocation to U.S. equities versus non-U.S. equities is 44%/56%
- If StanCERA Board wishes to be guided in its investment decision making by widely accepted financial and investment theory, then should adopt market benchmark allocation for U.S. and non-U.S equity allocations



#### Large cap equities versus small cap equities

— Question: How much of U.S. equity allocation should be invested in large cap versus small cap equities?



#### Investment theory

- Capital Asset Pricing Model ("CAPM")
  - Under Capital Asset Pricing Model ("CAPM"), market benchmark has highest Sharpe Ratio (i.e., risk adjusted return)
  - CAPM assumes only market risk is rewarded risks taken away from the market portfolio will not compensated over time
- Equity market returns (and risk) are driven by two primary risk factors:
  - Size (i.e., market capitalization (large cap or small cap))
  - Style (valuation and momentum (i.e., value and growth))
- There is no return premium to one factor versus the other
  - No expectation that large cap should outperform small cap over time and vice versa. Same is true for value vs. growth stocks
- Putting these two theories together, we can say that size and style "tilts" take away from the market portfolio will not consistently be rewarded over time

### Large cap equity market versus small cap equity market

- U.S. equity market proxy is Russell 3000 ("R3000")
- R3000 is 90%/10% large cap/small cap and 50%/50% value/growth
  - StanCERA portfolio is 75%/25% large cap/small cap and roughly 50%/50% value/growth
- Verus expected returns for large cap and small cap stocks are essentially the same when implementation costs taken into account
- If StanCERA Board wishes to be guided in its investment decision making by widely accepted financial and investment theory, then should adopt market benchmark allocation for large cap and small cap equity allocations



#### Active versus passive

— Question: What strategies do you believe should be passively versus actively managed?

#### Active versus passive

- Public fund boards often articulate beliefs about where they intend to deploy assets in actively managed strategies versus passively managed strategies
- View about market efficiency tend to inform these beliefs
- Common views about market efficiency:

Asset class	Very efficient	<b>Modestly efficient</b>	Not efficient
Public equities	U.S. large cap	U.S. small cap Non-U.S. developed markets	Emerging markets
Private markets			All private markets
Public fixed income	Treasuries Government/Agency	Corporates Mortgage- and asset- backed	High yield Emerging market debt
Real assets	TIPS Commodities	REITs	MLPs
Other	Traditional balanced strategies		Hedge funds/absolute return Risk parity



# Next steps



#### Next steps

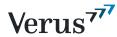
- March: Adopt language for IPS regarding investment philosophy
  - Review and discussion of role of private markets strategies within Growth portfolio
    - · Benchmarking private markets
    - Current pacing plan
    - Initiate Board survey to gather input for asset/liability study
- April: Review and discussion of role of Diversifying Sub-Portfolio
  - Review draft Board investment philosophy
- May: Present initial asset/liability study results; elicit Board feedback
  - Finalize Board investment philosophy
- June: Present final asset/liability study results and recommendations

# Appendix – Sample investment philosophy language



#### Sample investment philosophy language

- The Board relies on prevailing investment theory for institutional investors to guide its investment decisions.
- The Board is willing to take risks for which it expects to be compensated and to avoid those which may not be consistently rewarded.
- The Board intends to gain exposure to the entire investable opportunity set and to capture the greatest depth of available investment options which should maximize diversification potential and benefits. Thus, asset class and sub-asset class benchmarks will be broad and reflective of this intent.
- The Board will employ industry-accepted benchmarks for all major asset classes. Preference
  is for published market indices which are investable and meet industry guidelines for
  benchmarking standards where feasible.
- The Board recognizes the role an allocation to passive investments within major public markets asset classes can serve is to provide an efficient way to achieve benchmark returns as well as provide liquid and low cost implementation which can also facilitate rebalancing activities
- Active management can provide positive value-added returns which can supplement returns earned from passive investments.

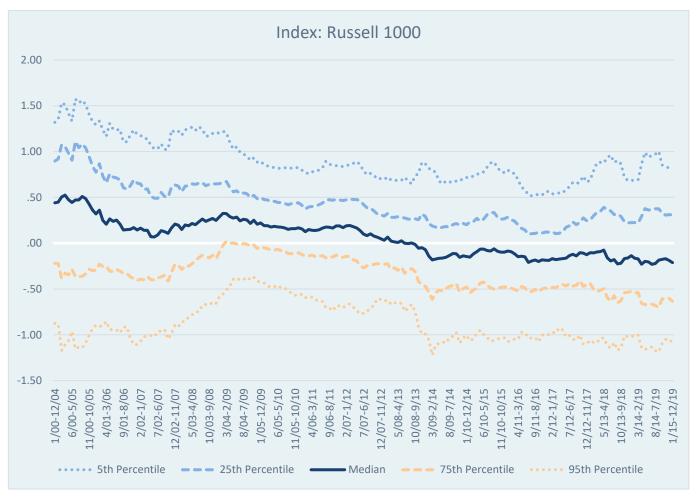


# Appendix – Historical peer universe and index returns over last 20 years



### Rolling 5-year information ratio — Large cap core

**UNIVERSE: US LARGE CAP EQUITY** 



- Active managers have not been able to consistently beat benchmark on gross of fee basis
- Implementation favors passive



#### Manager peer comparisons – Large cap core





### Rolling 5-year information ratio — Large cap growth

UNIVERSE: US LARGE CAP GROWTH EQUITY



- Active managers have not been able to consistently beat benchmark on gross of fee basis
- Implementation favors passive



Manager peer comparisons – Large cap growth

Excess Returns as of: December 31, 2019

Russell Index: Russell 1000 Growth

Russell Index: Russell Index: Russell 1000 Growth

Russell Index: Russell In

		D. 4	3 Years		5 Years		10 Years		15 Years		20 Years	
	VT	RM		Rk		Rk		Rk		Rk		Rk
5th percentile			4.51		2.02		1.44		1.89		4.43	
25th percentile			1.53		0.35		0.35		0.50		2.51	
Median			-0.84		-1.16		-0.63		-0.14		1.56	
75th percentile			-2.96		-2.48		-1.61		-0.72		0.82	
95th percentile			-6.34		-4.81		-3.38		-2.39		-0.62	
# of Observations			313		303		269		216		144	
<ul> <li>Russell Index</li> </ul>	IX	IX	0.00	43	0.00	30	0.00	30	0.00	41	0.00	88

Results displayed in USD using Spot Rate (SR).

Russell 1000 Growth



### Rolling 5-year information ratio — Large cap value

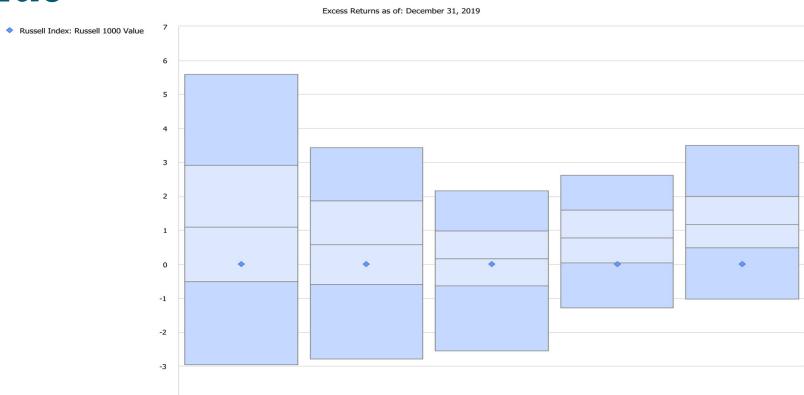
UNIVERSE: US LARGE CAP VALUE EQUITY



- Although relative results are better versus large cap core and growth managers, there has still been an inability of active managers to consistently add value gross of fees
- Attribution shows
   value managers have
   been adding value
   through creeping into
   growth stocks, which
   have performed better
   over last 10 years due
   to Technology stock
   performance



#### Manager peer comparisons – Large cap value



Universe: eVestment US Large Cap Value Equity

			3 Years		5 Years		10 Years		15 Years		20 Years	
	VT	RM		Rk		Rk		Rk		Rk		Rk
5th percentile			5.58		3.43		2.16		2.61		3.49	
25th percentile			2.91		1.86		0.97		1.59		1.99	
Median			1.09		0.57		0.16		0.77		1.17	
75th percentile			-0.52		-0.60		-0.64		0.04		0.48	
95th percentile			-2.96		-2.79		-2.56		-1.29		-1.03	
# of Observations			387		373		321		256		142	
<ul> <li>Russell Index</li> </ul>	IX	IX	0.00	67	0.00	63	0.00	57	0.00	76	0.00	83

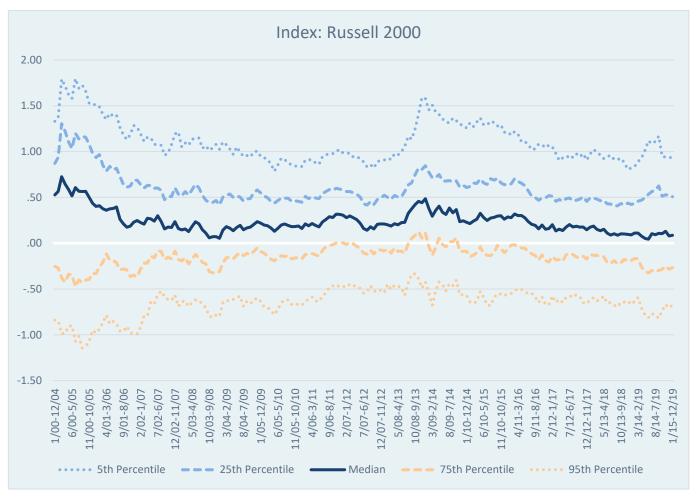
Results displayed in USD using Spot Rate (SR).

Russell 1000 Value



### Rolling 5-year information ratio – Small cap core

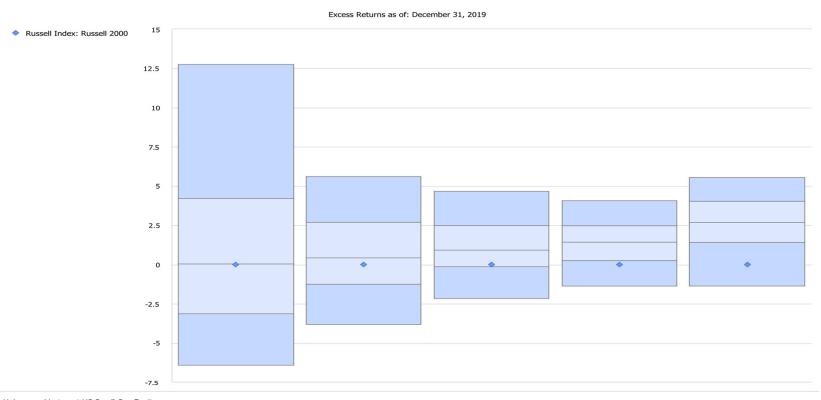
**UNIVERSE: US SMALL CAP EQUITY** 



- Managers can more consistently add value gross of fees versus large cap managers
- Implementation can be active or passive



#### Manager peer comparisons – Small cap core



Universe: eVestment US Small Cap Equity

	\	D14	3 Years		5 Years		10 Years		15 Years		20 Years	
	VT	RM		Rk		Rk		Rk		Rk		Rk
5th percentile			12.75		5.61		4.67		4.07		5.54	
25th percentile			4.21		2.69		2.48		2.47		4.03	
Median			0.04		0.43		0.92		1.43		2.68	
75th percentile			-3.14		-1.25		-0.13		0.25		1.41	
95th percentile			-6.41		-3.82		-2.16		-1.37		-1.37	
# of Observations			613		585		511		374		241	
Russell Index	IX	IX	0.00	50	0.00	57	0.00	73	0.00	81	0.00	85

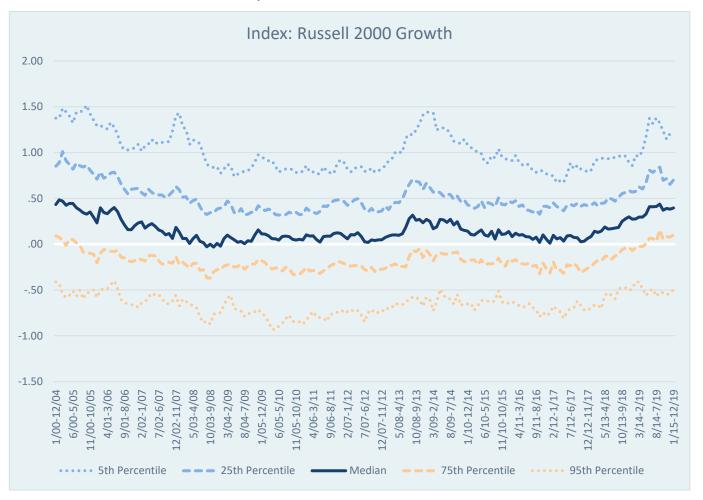
Results displayed in USD using Spot Rate (SR).

Russell 2000



### Rolling 5-year information ratio – Small cap growth

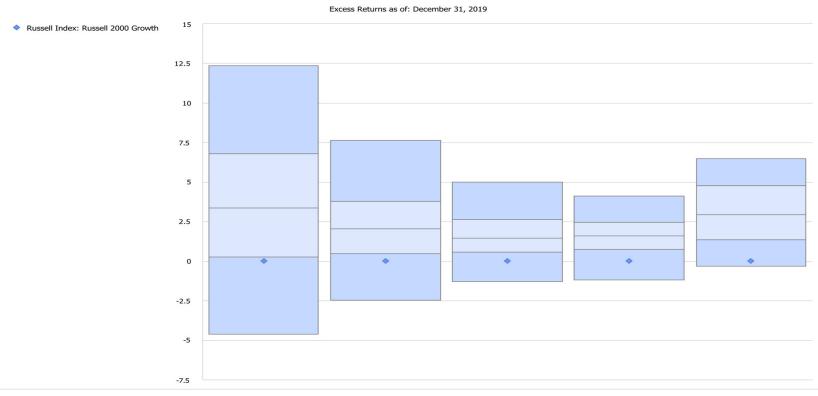
UNIVERSE: US SMALL CAP GROWTH EQUITY



- Managers can more consistently add value gross of fees versus large cap managers
- Implementation can be active or passive



## $\begin{array}{c} Manager\ peer\ comparisons-Small\ cap\\ growth \end{array}$



Universe: eVestment US Small Cap Growth Equity

			3 Years		5 Years		10 Years		15 Years		20 Years	
	VT	RM		Rk		Rk		Rk		Rk		Rk
5th percentile			12.35		7.63		4.99		4.11		6.47	
25th percentile			6.78		3.77		2.62		2.44		4.76	
Median			3.35		2.03		1.44		1.58		2.93	
75th percentile			0.25		0.46		0.56		0.73		1.34	
95th percentile			-4.63		-2.48		-1.31		-1.20		-0.33	
# of Observations			178		169		154		115		69	
Russell Index	IX	IX	0.00	78	0.00	81	0.00	83	0.00	85	0.00	91

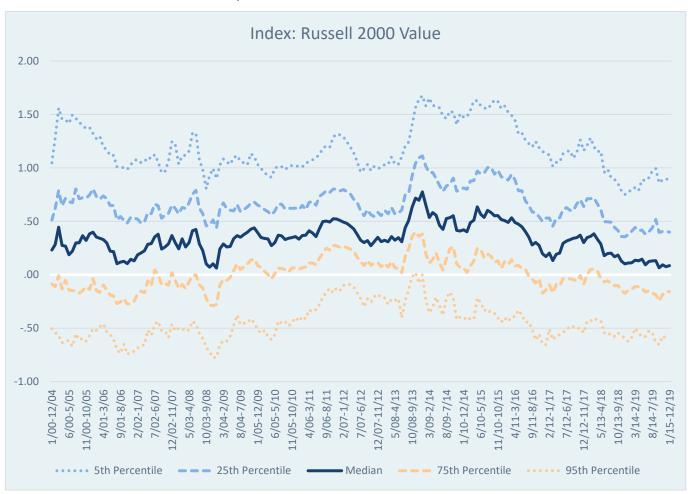
Results displayed in USD using Spot Rate (SR).

Russell 2000 Growth



### Rolling 5-year information ratio – Small cap value

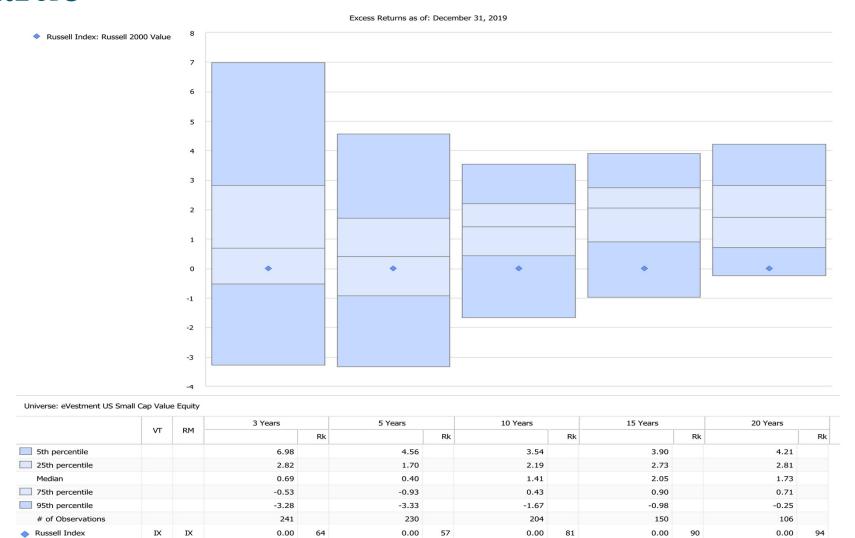
UNIVERSE: US SMALL CAP VALUE EQUITY



- Managers can consistently add value gross of fees
- Implementation favors active



#### Manager peer comparisons – Small cap value



Results displayed in USD using Spot Rate (SR).

Russell 2000 Value



#### Rolling 5-year information ratio — Non-U.S. core

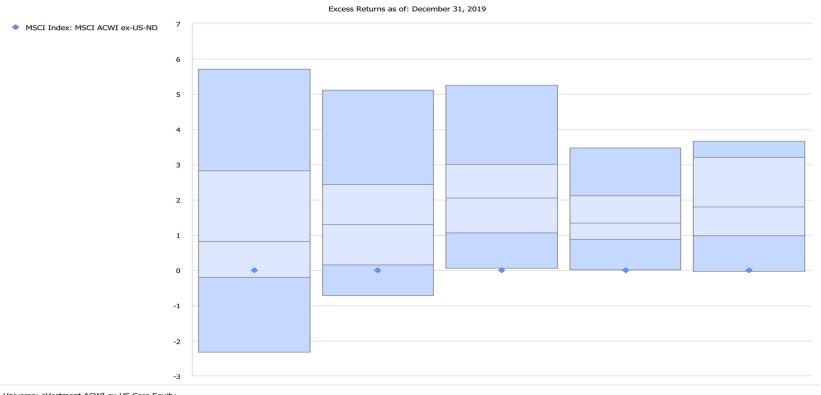
#### UNIVERSE: EVESTMENT ACWI EX-US CORE EQUITY



- Managers can more consistently add value gross of fees versus U.S. core managers
- Implementation can be active or passive



#### Manager peer comparisons - Non-U.S. core



Universe: eVestment ACWI ex-US Core Equity

			3 Years		5 Years		10 Years		15 Years		20 Years	
	VT	RM		Rk		Rk		Rk		Rk		Rk
5th percentile			5.70		5.11		5.25		3.47		3.66	
25th percentile			2.82		2.43		3.00		2.11		3.20	
Median			0.82		1.29		2.05		1.34		1.80	
75th percentile			-0.20		0.15		1.06		0.88		0.98	
95th percentile			-2.32		-0.72		0.06		0.01		-0.03	
# of Observations			146		131		86		44		24	
MSCI Index	IX	IX	0.00	70	0.00	81	0.00	95	0.00	95	0.00	94

Results displayed in USD using Spot Rate (SR).

MSCI ACWI ex-US-ND



#### Rolling 5-year information ratio — Non-U.S. value

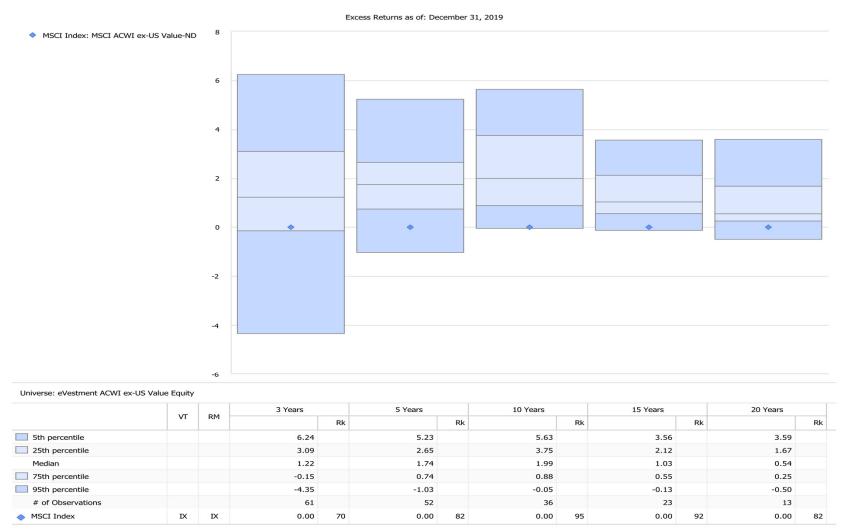
#### UNIVERSE: EVESTMENT ACWI EX-US VALUE EQUITY



- Managers can consistently add value gross of fees
- Implementation favors active



#### Manager peer comparisons – Non-U.S. value



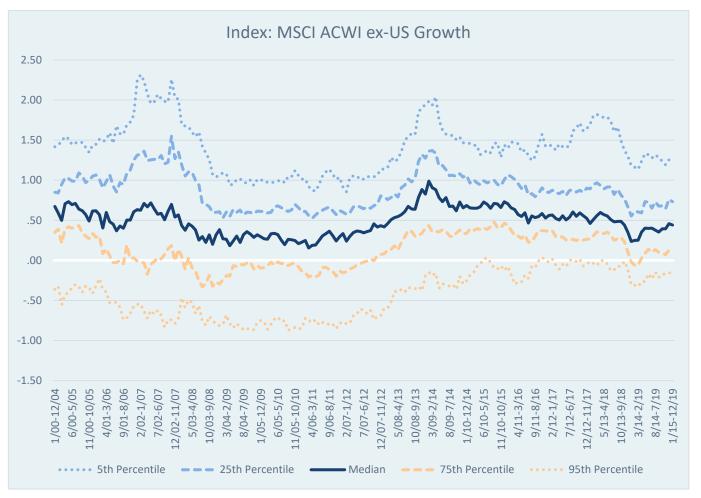
Results displayed in USD using Spot Rate (SR).

MSCI ACWI ex-US Value-ND



#### Rolling 5-year information ratio — Non-U.S. growth

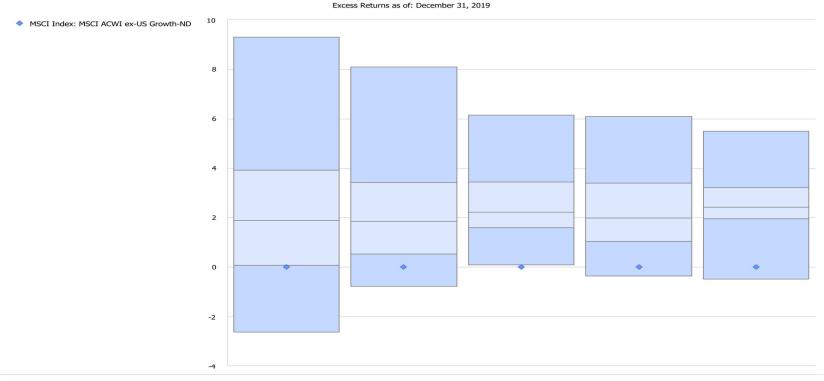
UNIVERSE: EVESTMENT ACWI EX-US GROWTH EQUITY



- Managers can consistently add value gross of fees
- Implementation favors active



#### Manager peer comparisons – Non-U.S. growth



Universe:	eVestment	<b>ACWI</b>	ex-US	Growth	Equity
-----------	-----------	-------------	-------	--------	--------

			3 Years		5 Years		10 Years		15 Years		20 Years	
	VT	RM		Rk		Rk		Rk		Rk		Rk
5th percentile			9.29		8.09		6.14		6.08		5.49	
25th percentile			3.91		3.42		3.43		3.39		3.21	
Median			1.88		1.84		2.21		1.98		2.42	
75th percentile			0.07		0.52		1.59		1.03		1.95	
95th percentile			-2.63		-0.78		0.08		-0.36		-0.49	
# of Observations			102		93		63		43		20	
MSCI Index	IX	IX	0.00	76	0.00	85	0.00	96	0.00	92	0.00	93

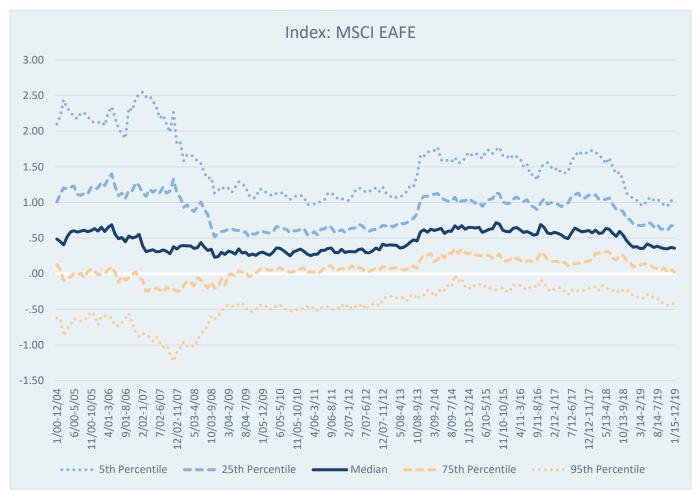
Results displayed in USD using Spot Rate (SR).

MSCI ACWI ex-US Growth-ND



## Rolling 5-year information ratio – Non-U.S. developed markets (core)

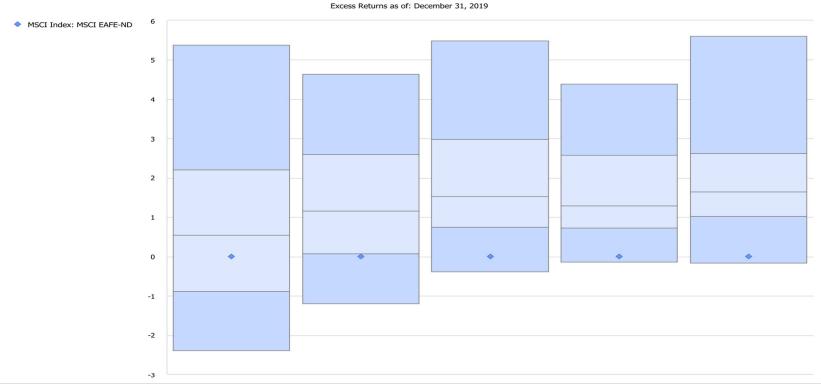
UNIVERSE: EVESTMENT EAFE CORE EQUITY



- Managers can consistently add value gross of fees
- Implementation favors active



## Manager peer comparisons – Non-U.S. developed markets (core)



Universe: eVestment EAFE Core Equity

	\ <i>T</i>	DM	3 Years		5 Years		10 Years		15 Years		20 Years	
	VT	RM		Rk		Rk		Rk		Rk		Rk
5th percentile			5.37		4.63		5.48		4.38		5.60	
25th percentile			2.20		2.59		2.97		2.57		2.62	
Median			0.54		1.15		1.52		1.28		1.64	
75th percentile			-0.89		0.07		0.74		0.72		1.02	
95th percentile			-2.39		-1.20		-0.39		-0.14		-0.17	
# of Observations			258		225		174		109		63	
<ul> <li>MSCI Index</li> </ul>	IX	IX	0.00	61	0.00	76	0.00	91	0.00	93	0.00	91

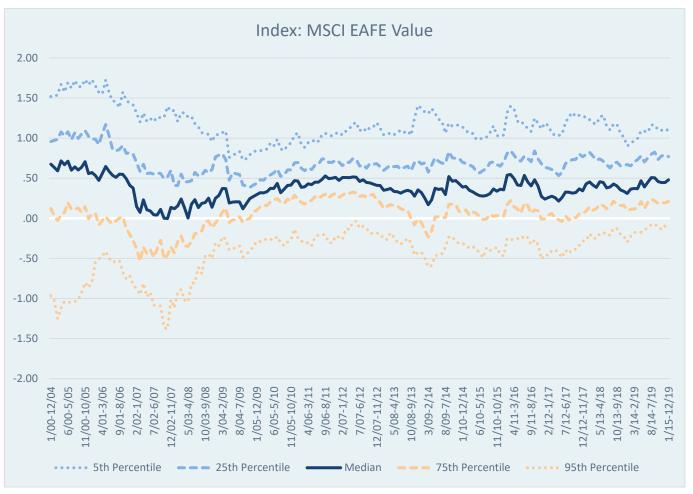
Results displayed in USD using Spot Rate (SR).

MSCI EAFE-ND



## Rolling 5-year information ratio – Non-U.S. developed markets (value)

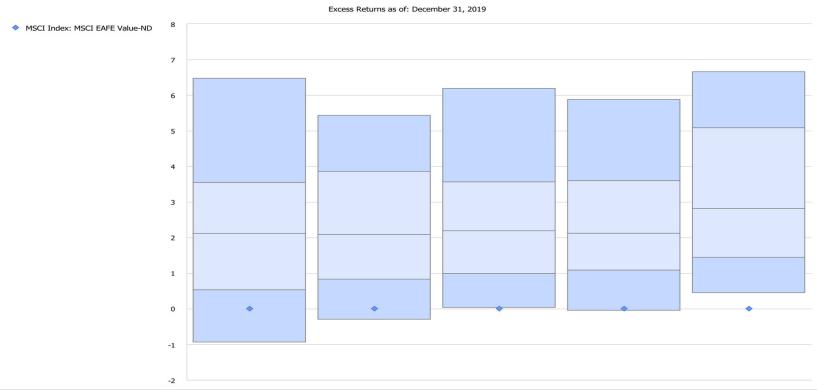
#### UNIVERSE: EVESTMENT EAFE VALUE EQUITY



- Managers can consistently add value gross of fees
- Implementation favors active



# Manager peer comparisons – Non-U.S. developed markets (value)



Universe: eVestment EAFE Value Equity

	_	D14	3 Years		5 Years		10 Years		15 Years		20 Years	
	VT	RM		Rk		Rk		Rk		Rk		Rk
5th percentile			6.47		5.43		6.19		5.88		6.66	
25th percentile			3.54		3.85		3.56		3.59		5.08	
Median			2.11		2.08		2.19		2.12		2.81	
75th percentile			0.53		0.83		0.99		1.08		1.44	
95th percentile			-0.94		-0.30		0.03		-0.05		0.45	
# of Observations			93		82		67		50		29	
MSCI Index	IX	IX	0.00	84	0.00	92	0.00	95	0.00	94	0.00	100

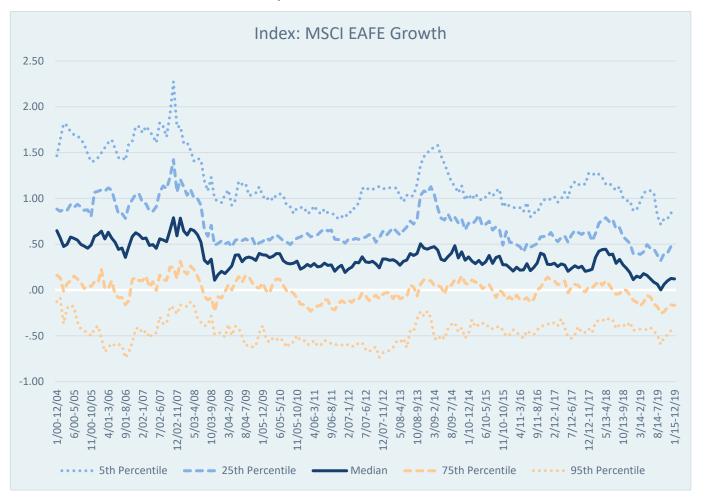
Results displayed in USD using Spot Rate (SR).

MSCI EAFE Value-ND



## Rolling 5-year information ratio – Non-U.S. developed markets (growth)

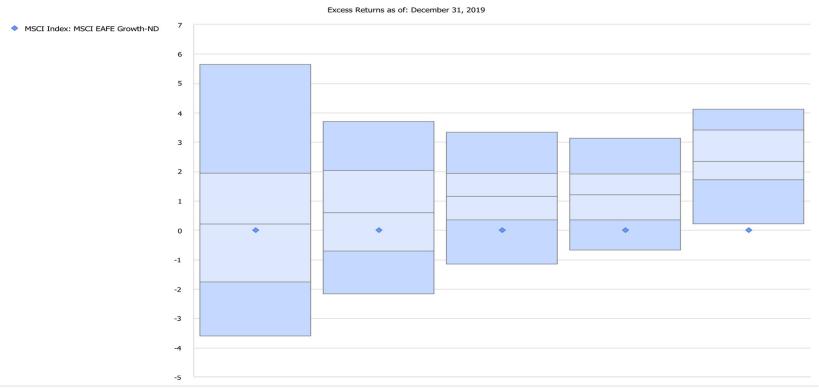
UNIVERSE: EVESTMENT EAFE GROWTH EQUITY



- Managers can add value gross of fees, but not consistently
- Implementation can be active or passive



# Manager peer comparisons – Non-U.S. developed markets (growth)



Universe:	<b>eVestment</b>	FAFF	Growth	Equity

		RM	3 Years		5 Years		10 Years		15 Years		20 Years	
	VT			Rk		Rk		Rk		Rk		Rk
5th percentile			5.64		3.70		3.33		3.13		4.11	
25th percentile			1.94		2.03		1.93		1.91		3.41	
Median			0.21		0.59		1.15		1.20		2.34	
75th percentile			-1.76		-0.71		0.35		0.35		1.71	
95th percentile			-3.60		-2.17		-1.15		-0.68		0.22	
# of Observations			68		64		47		31		22	
MSCI Index	IX	IX	0.00	51	0.00	58	0.00	83	0.00	84	0.00	96

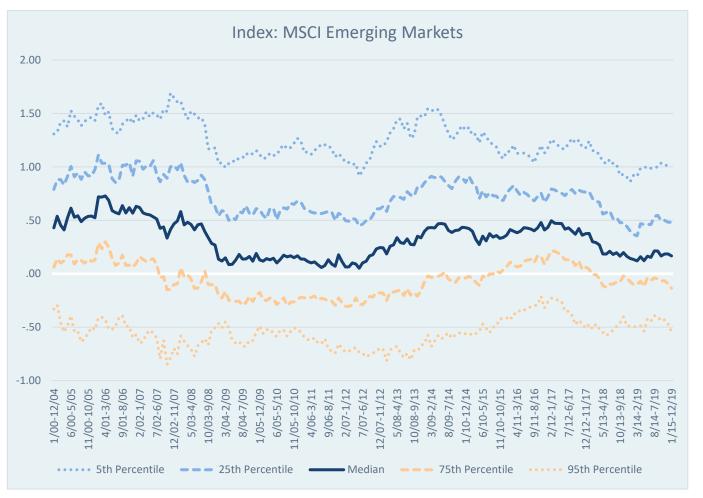
Results displayed in USD using Spot Rate (SR).

MSCI EAFE Growth-ND



# Rolling 5-year information ratio – Emerging markets core

UNIVERSE: EVESTMENT GLOBAL EMERGING MARKET EQUITY



- Managers can consistently add value gross of fees
- Implementation favors active

Source: eVestment



# Manager peer comparisons – Emerging markets (core)



0.00

60

0.00

Results displayed in USD using Spot Rate (SR).

IX

0.00

MSCI EM-ND

95

0.00



MSCI Index

0.00

89

# Rolling 5-year information ratio – Emerging markets value

UNIVERSE: EVESTMENT GLOBAL EMERGING MARKETS ALL CAP VALUE EQUITY

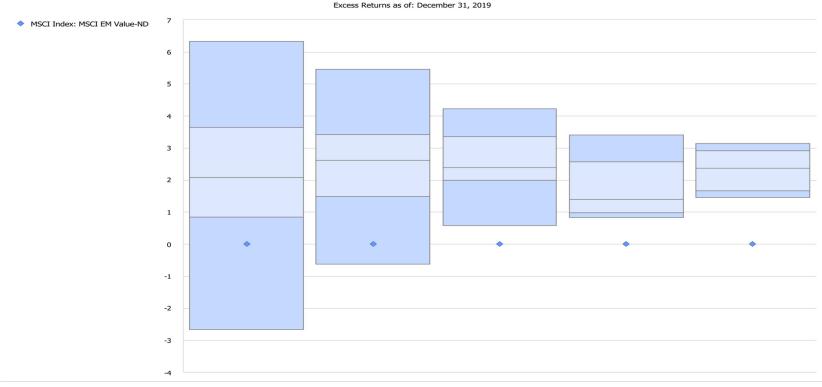


- Managers can consistently add value gross of fees
- Implementation favors active

Source: eVestment



# Manager peer comparisons – Emerging markets (value)



Universe: eVestment Global Emerging Mkts All Cap Value Equity

				3 Years		5 Years		10 Years		15 Years		20 Years	
	VT	RM		Rk		Rk		Rk		Rk		Rk	
5th percentile			6.33		5.46		4.22		3.40		3.14		
25th percentile			3.64		3.41		3.35		2.56		2.91		
Median			2.07		2.61		2.38		1.39		2.36		
75th percentile			0.84		1.48		1.99		0.98		1.66		
95th percentile			-2.67		-0.63		0.57		0.83		1.45		
# of Observations			41		36		17		10		6		
MSCI Index	IX	IX	0.00	88	0.00	91	0.00	99	0.00	100	0.00	100	

Results displayed in USD using Spot Rate (SR).

MSCI EM Value-ND



# Rolling 5-year information ratio – Emerging markets growth

UNIVERSE: EVESTMENT GLOBAL EMERGING MARKETS ALL CAP GROWTH EQUITY

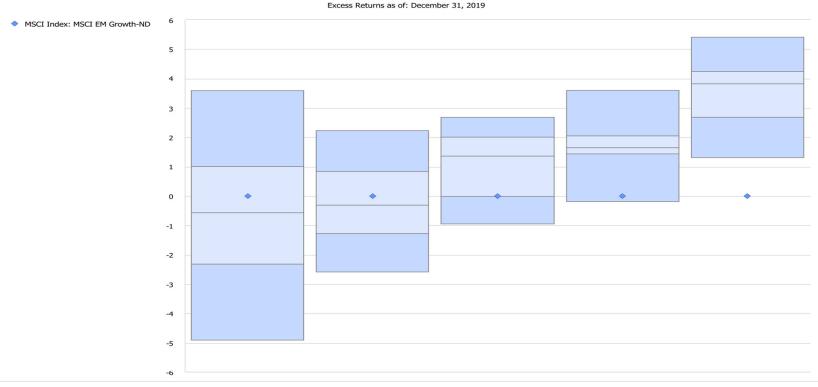


- Managers can consistently add value gross of fees
- Implementation favors active

Source: eVestment



# Manager peer comparisons – Emerging markets (growth)



Universe: eVestment Global Emerging Mkts All Cap Growth Equity

	١		3 Years		5 Years		10 Years		15 Years		20 Years	
	VT	RM		Rk		Rk		Rk		Rk		Rk
5th percentile			3.59		2.23		2.68		3.60		5.41	
25th percentile			1.01		0.84		2.01		2.05		4.24	
Median			-0.57		-0.31		1.36		1.65		3.82	
75th percentile			-2.32		-1.28		-0.01		1.44		2.69	
95th percentile			-4.91		-2.58		-0.95		-0.19		1.31	
# of Observations			54		49		23		15		12	
MSCI Index	IX	IX	0.00	43	0.00	46	0.00	75	0.00	93	0.00	100

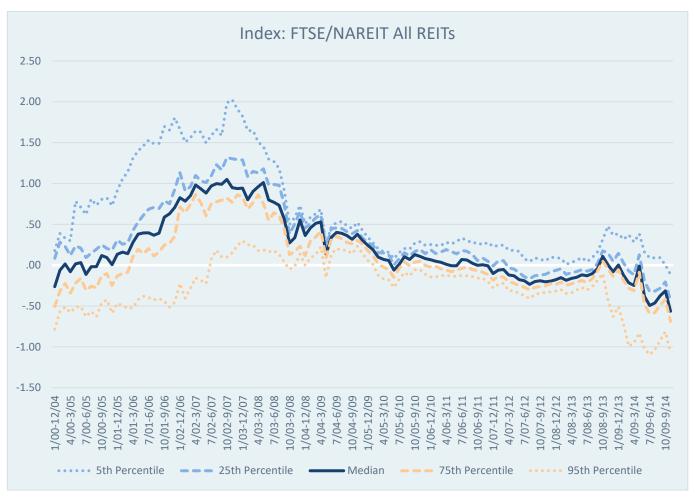
Results displayed in USD using Spot Rate (SR).

MSCI EM Growth-ND



# Rolling 5-year information ratio – REITS

#### UNIVERSE: EVESTMENT GLOBAL REIT

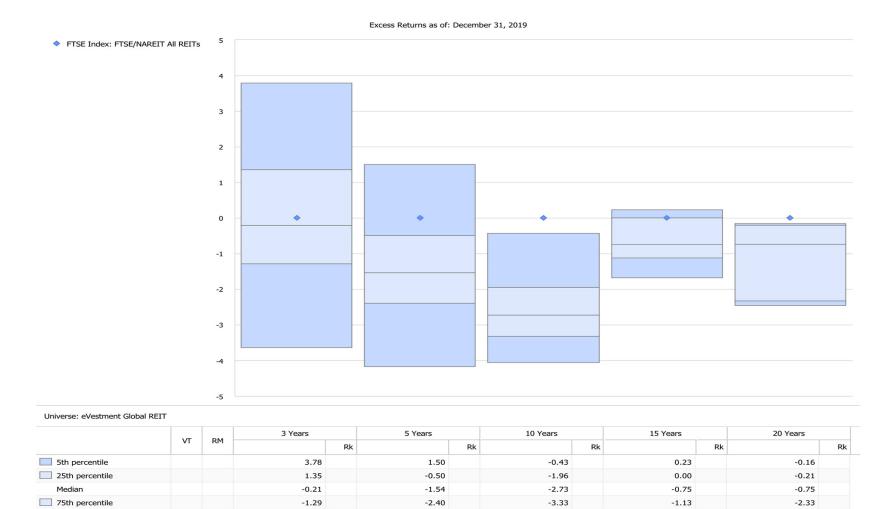


- Active managers have not been able to consistently beat benchmark on gross of fee basis
- Implementation favors passive

Source: eVestment



# Manager peer comparisons – REITS



-4.18

0.00

-4.06

0.00

-3.64

0.00

Results displayed in USD using Spot Rate (SR).

0.00 1

FTSE/NAREIT All REITS

-2.46



95th percentile

FTSE Index

# of Observations

-1.68

16

0.00



#### Stanislaus County Employees' Retirement Association

832 12th Street, Ste. 600, Modesto, CA 95354 • PO Box 3150, Modesto, CA 95353 • www.stancera.org • 209-525-6393 • 209-558-4976 Fax

#### February 25, 2020

Retirement Board Agenda Item

TO: Retirement Board

FROM: Rick Santos, Executive Director

I. SUBJECT: Approval of the 2019 Actuarial Valuation - Final

II. ITEM NUMBER: 9.a.

III. ITEM TYPE: Discussion and Action

IV. STAFF RECOMMENDATION: Accept the 2019 Actuarial Valuation as presented

#### V. EXECUTIVE SUMMARY

This agenda item seeks approval for the 2019 Actuarial Valuation which sets funded status for the System as of June 30, 2019 and employer and employee rates for fiscal year 2020-2021. Some notable statistics from this and the prior year valuation include (all figures except percentages in millions):

	2018 Valuation	2019 Valuation
Market Value Unfunded Liability	\$644.0	\$712.4
Funded Status	76.60%	75.90%
Aggregate Employer Rate	30.38%	31.45%
Asset Gain/(Loss)	\$12.4	(\$28.7)
Liability Gain/(Loss)	(\$16.8)	(\$30.8)
Aggregate Employer Payroll	\$285.0	\$298.9

As of the fiscal year 2020-2021, the unfunded amortization period for the System is at 16 years. Most likely, staff and the StanCERA system actuary will be coming to the Board in a couple years to discuss a revised amortization schedule which would be designed to reduce rate volatility as we move forward.

Additionally, the Inactive to Active ratio continues to increase upwards, however, at a lower pace than what the System experienced roughly 10 years ago. The Inactive to Active ratio can be considered a "support ratio" in that it is a theoretical measure of the financial support from contributing active members to help fund current beneficiaries. It is entirely natural for a system to move into a state where current contributions do not exceed benefit payments.

This measure does not have the same connotations as our Social Security System, since all proceeds from those active members are being used to support benefits paid to Social Security recipients. StanCERA mitigates the support risk by maintaining a large pool of asset reserves and insures short-term retiree benefit payments through current contributions and safe fixed income investments designed to throw off cash at just the right time to pay benefits.

Retirement Board – February 25, 2020 Approval of the 2019 Actuarial Valuation - Final Page 2

VI. RISK: None

VII. STRATEGIC PLAN: N/A

VIII. ADMINISTRATIVE BUDGET IMPACT: None

Rick Santos, Executive Director



# **DRAFT**



Stanislaus County
Employees' Retirement
Association

Actuarial Valuation as of June 30, 2019

**Produced by Cheiron** 

February 2020

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February 6, 2020

Board of Retirement Stanislaus County Employees' Retirement Association 832 12<sup>th</sup> Street, Suite 600 Modesto, CA 95353

Dear Members of the Board:

At your request, we have conducted an actuarial valuation of the Stanislaus County Employees' Retirement Association (StanCERA, the Fund, the Plan) as of June 30, 2019. This report contains information on the Plan's assets and liabilities. This report also discloses employer contribution levels and required disclosures for the Plan's CAFR. Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report.

The purpose of this report is to present the results of the annual actuarial valuation of StanCERA. This report is for the use of StanCERA and its auditors in preparing financial reports in accordance with applicable law and accounting requirements. Any other user of this report is not an intended user and is considered a third party.

Cheiron's report was prepared solely for StanCERA for the purposes described herein, except that the Plan auditor may rely on this report solely for completing an audit related to the matters herein. It is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Sincerely, Cheiron

Graham A. Schmidt, ASA, FCA, MAAA, EA Consulting Actuary Jonathan Chipko, FSA, MAAA, EA Consulting Actuary

#### **FOREWORD**

Cheiron has performed the actuarial valuation of the Stanislaus County Employees' Retirement Association as of June 30, 2019. The valuation is organized as follows:

- In Section I, the **Executive Summary**, we describe the purpose of an actuarial valuation, summarize the key results found in this valuation, and disclose important trends;
- The **Main Body** of the report presents details on the Plan's
  - Section II Identification and Assessment of Risks
  - o Section III Assets
  - Section IV Liabilities
  - Section V- Contributions
  - Section VI- Required CAFR Exhibits
- In the **Appendices** we conclude our report with detailed information describing Plan membership (Appendix A), actuarial assumptions and methods employed in the valuation (Appendix B), a summary of pertinent Plan provisions (Appendix C), a glossary of key actuarial terms (Appendix D), and tables containing member contribution rates (Appendix E).

Future results may differ significantly from the current projections presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

In preparing our report, we relied on information (some oral and some written) supplied by the StanCERA staff. This information includes, but is not limited to, Plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.



#### SECTION I – EXECUTIVE SUMMARY

The primary purpose of the actuarial valuation and this report is to measure, describe, and identify the following as of the valuation date:

- The funded status of the Plan,
- Past and expected trends in the funding progress of the Plan, and
- Employer and employee contribution rates for Plan Year 2020-2021, and
- An assessment and disclosure of key risks.

In the balance of this Executive Summary, we present (A) the basis upon which this year's valuation was completed, (B) the key findings of this valuation including a summary of all key results, (C) an examination of the historical trends, and (D) the projected outlook for the Plan.

#### A. Valuation Basis

This valuation determines the employer contributions required for the employers' fiscal years beginning July 1, 2020. The employers include the County of Stanislaus and related employers, the City of Ceres, and other participating Special Districts.

The Plan's funding policy is to collect contributions from the employers and employees equal to the sum of:

- The Normal Cost under the Entry Age Normal Cost Method,
- Amortization of the Unfunded Actuarial Liability (UAL), and
- The Fund's expected administrative expenses.

The UAL payment is determined as the amount needed to fund the outstanding UAL as of June 30, 2019 over a period of 17 years as a level percentage of pay.

This valuation was prepared based on the Plan provisions shown in Appendix C.

Actuarial experience studies are performed every three years. This valuation was performed based on the economic and demographic assumptions that were determined in the Actuarial Experience Study performed by Cheiron as of June 30, 2018 and reviewed by the Board on January 22, 2019. This valuation is the second to use the assumptions determined in the above experience study. A summary of the assumptions and methods used in the current valuation is shown in Appendix B.



#### SECTION I – EXECUTIVE SUMMARY

#### **B.** Key Findings of this Valuation

The key results of the June 30, 2019 actuarial valuation are as follows:

- The actuarially determined employer contribution rate increased from 30.38% of payroll to 31.45% of payroll for the current valuation.
- The Plan's funded ratio, the ratio of Actuarial Assets over Actuarial Liability, decreased from 76.4% to 75.9%. Likewise, the Plan's funded ratio on a market value basis decreased from 76.6% to 75.4%.
- The Unfunded Actuarial Liability (UAL) is the excess of the Plan's Actuarial Liability over the Actuarial Value of Assets. The Plan experienced an increase in the UAL from \$648.8 million to \$697.3 million as of June 30, 2019. This increase in UAL was largely due to investment and demographic experience losses.
- During the year ending June 30, 2019, the return on Plan assets was 4.69% on a market value basis net of investment (but not administrative) expenses, as compared to the 7.00% assumption. The Actuarial Value of Assets recognizes 20% of the difference between the expected and actual return on the Market Value of Assets (MVA). This method of smoothing the asset gains and losses returned 5.64% on the smoothed value of assets, an actuarial asset loss of \$28.7 million. The loss in the Actuarial Value of Assets reflects the continued recognition of past investment gains and losses, with past investment gains offsetting the impact of the loss for the current year and leading to a higher actuarial value return than market value return.
- During the 2018-19 Plan Year, the actuarial liabilities of the Plan increased more than expected, with key factors being larger pay increases than expected for continuing actives and larger Cost of Living Adjustments (COLAs) than expected for members in pay status. These and other unexpected changes resulted in a liability loss of \$30.8 million.
- Overall participant membership increased compared to last year. There were 480 new hires and rehires during 2018-2019 and the total active population increased from 4,452 to 4,504, or 1.17%. Total projected payroll increased from \$284,969,342 to \$298,900,309, or 4.89%.

In Tables I-1 and I-2 on the next page, we summarize the key results of the valuation with respect to assets and liabilities, contributions and membership. The results are presented and compared for both the current and prior Plan year.



#### **SECTION I – EXECUTIVE SUMMARY**

Table I-1 Stanislaus County Employees' Retirement Association Summary of Key Valuation Results (in millions)									
Valuation Date Fiscal Year End	June 30, 2018 2020	June 30, 2019 2021							
Actuarial Liability Actuarial Value of Assets <sup>1</sup>	\$ 2,749.1 \$ 2,100.3	\$ 2,897.2 \$ 2,200.0							
Unfunded Actuarial Liability (Actuarial Value) Funding Ratio (Actuarial Value)	\$ 648.8 76.4%	\$ 697.3 75.9%							
Market Value of Assets <sup>1</sup> Unfunded Actuarial Liability (Market Value) Funding Ratio (Market Value)	\$ 2,105.1 \$ 644.0 76.6%	\$ 712.4							
Net Employer Contribution Rate	30.38%	31.45%							

<sup>&</sup>lt;sup>1</sup> Net of non-valuation reserves.

Table I-2 Membership Total								
Item		30, 2018	Jı	ane 30, 2019	% Change			
Actives		4,452		4,504	1.2%			
Deferred Members		1,105		1,122	1.5%			
Retired Members		3,856		4,001	<u>3.8%</u>			
Total Members		9,413		9,627	2.3%			
Ratio of Inactive Members to Active Members		111.4%		113.7%				
Active Member Payroll (FYE 2019/2020)	\$ 284	,969,342	\$	298,900,309	4.9%			
Average Pay per Active	\$	64,009	\$	66,363	3.7%			

The ratio of inactive members (i.e. those receiving benefits or those entitled to a deferred benefit) to active members is a measure of the maturity of the plan. It shows how many inactive members are supported by each active member. A higher ratio indicates a more mature plan and potentially higher risk since the retiree benefits are larger relative to the contribution base, i.e. the active member payroll. Table I-2 shows that the ratio of inactive members to active members increased this year due to a higher increase in inactives than in the active workforce, indicating the ongoing maturation of the Plan.



#### SECTION I – EXECUTIVE SUMMARY

#### **Changes in UAL**

The Unfunded Actuarial Liability (UAL) for StanCERA increased by \$48.5 million, from \$648.8 million to \$697.3 million. Table I-3 below presents the specific components of the change in the UAL.

As noted above, the return on the actuarial assets used to compute the UAL and the employer contribution rate was 5.64% during the 2018-19 Plan Year. Investment returns less than the assumed rate of 7.00% increased the UAL by \$28.7 million.

Liability losses increased the UAL by \$30.8 million, driven by higher than expected pay increases for continuing actives (contributing approximately \$14.5 million to the increase in the liability), as well as higher than expected retiree COLAs (approximately \$6.4 million).

The UAL also decreased by \$4.2 million due to contributions larger than the actuarially determined amount. This is a result of the 12-month lag in the implementation of contribution rates and higher than expected payroll growth.

The expected change in the UAL due to the yearly amortization of the UAL balance – a decrease of \$6.8 million, as a result of the amortization schedule for the current year – combined with the above UAL changes to produce an overall increase of \$48.5 million.

	Change in	Table I-3 Unfunded Actuarial Liability		
	Experience		in 1	millions
1	1. Unfunded actuarial liabi	lity, 6/30/2018	\$	648.8
2	2. Expected change in unfu	anded actuarial liability	\$	(6.8)
3	3. Unfunded increase due to	o investment loss		28.7
4	4. Unfunded decrease due t	to contribution surplus		(4.2)
5	5. Unfunded increase due to	o liability loss		30.8
6	6. Unfunded decrease due t	to assumption changes		0
7	7. Total change in unfunde	d actuarial liability	\$	48.5
8	8. Unfunded actuarial liabi	lity, 6/30/2019	\$	697.3



#### SECTION I – EXECUTIVE SUMMARY

#### **Changes in Employer Contributions**

Thus far, the experience of the 2018-19 Plan year has been presented in terms of the UAL and funded ratio. Table I-4 below summarizes the impact of actuarial experience and changes in assumptions on the employer contribution rate.

Table I-4 Employer Contribution Reconciliation								
Normal Admi								
Item	Total	Cost	Amortization	Expense				
FYE 2020 Net Employer Contribution Rate	30.38%	11.65%	17.74%	0.99%				
Change Due to Asset Loss	0.79%	0.00%	0.79%	0.00%				
Change Due to Contribution Surplus	-0.12%	0.00%	-0.12%	0.00%				
Change Due to Demographic Changes	0.77%	-0.09%	0.86%	0.00%				
Change Due to Effect of Payroll on Amortization	-0.37%	0.00%	-0.35%	-0.02%				
Change Due to Assumption Changes	0.00%	0.00%	0.00%	0.00%				
FYE 2021 Net Employer Contribution Rate	31.45%	11.56%	18.92%	0.97%				

• Asset experience produced an investment loss on a smoothed basis, as described earlier. The smoothed loss increased the contribution rate by 0.79% of pay.

The ratio of Actuarial to Market Value of Assets is 100.7%. There are now \$15.2 million in net deferred losses as of June 30, 2019, as well as \$21.3 million in a non-valuation Contingency Reserve.

- The Plan received a larger contribution than the actuarially determined amount. The net impact of the excess was a decrease in the employer contribution rate by 0.12% of pay.
- The demographic experience of the Plan rates of retirement, death, disability, and termination, as well as salary and COLA changes caused an increase in employer contribution rate of 0.77% of pay. Higher than expected pay increases for returning members was the largest factor contributing to an increase in the Unfunded Actuarial Liability and the associated amortization payment. New entrants and losses associated with new retirees and COLA increases also contributed to the loss. The increase in the amortization payment was offset somewhat by a reduction in the employer-paid Normal Cost as a result of the continued transition of the active workforce to membership in the new PEPRA tiers, which reflect lower benefit levels for new hires.
- Overall payroll was higher than expected by about \$5.4 million, increasing 4.89% compared to the 3.00% assumption. As a result, the unfunded liability amortization payment and administrative expenses were spread over a larger payroll base than expected, and the employer contribution rate decreased by 0.37% of pay.



#### **SECTION I – EXECUTIVE SUMMARY**

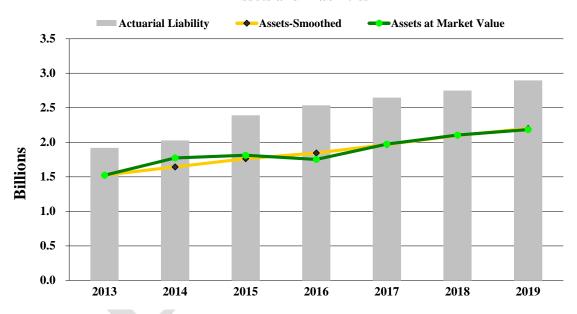
#### C. Historical Trends

Despite the fact that for most retirement plans the greatest attention is given to the current valuation results and in particular, the size of the current Unfunded Actuarial Liability and the employer contribution, it is important to remember that each valuation is merely a snapshot in the long-term progress of a pension fund. It is more important to judge a current year's valuation result relative to historical trends, as well as trends expected into the future.

#### **Assets and Liabilities**

The chart below compares the Market Value of Assets (MVA) and Actuarial Value of Assets (AVA) to the Actuarial Liabilities. The percentage shown in the table below the graph is the ratio of the Actuarial Value of Assets to the Actuarial Liability (the funded ratio). The funded ratio has decreased from 79.4% in 2013 to 75.9% as of June 30, 2019. The large drop in the funded ratio in 2015 was primarily due to changes in assumptions. The drop in the funded ratio from last year to this year was a result of investment and liability losses.

#### **Assets and Liabilities**



Valuation Year	2013	2014	2015	2016	2017	2018	2019	
<b>Funded Ratio</b>	79.4%	81.1%	73.7%	72.8%	74.3%	76.4%	75.9%	
UAL (Billions)	\$ 0.40	\$ 0.38	\$ 0.63	\$ 0.69	\$ 0.68	\$ 0.65	\$ 0.70	

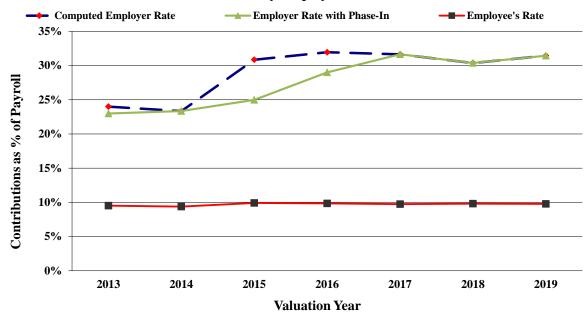


#### SECTION I – EXECUTIVE SUMMARY

#### **Contribution Trends**

In the chart below, we present the historical trends for the StanCERA contribution rates. The employer contribution rates have risen since 2013, primarily as a result of changes to the actuarial assumptions. The average employee contribution rates have also increased as the Plan's economic and demographic assumptions have changed. The phase-in recognizes significant changes in the computed employer rate over a set period to help manage the financial impact.

#### **Stanislaus County Employees' Retirement Association**





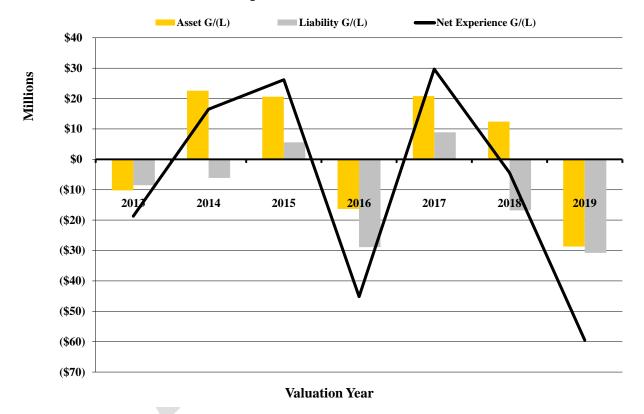
#### **SECTION I – EXECUTIVE SUMMARY**

#### **Gains and Losses**

The following chart for StanCERA presents the pattern of annual gains and losses, broken into the investment and liability components. The investment gains and losses represent the changes on a smoothed basis (i.e. based on the Actuarial Value of Assets). The chart does not include any changes in StanCERA's assets and liabilities attributable to changes to actuarial methods, procedures, or assumptions.

From July 1, 2012 through the current valuation, the plan has experienced both net gains and losses in individual years, with the current valuation year experiencing both an asset and liability loss.

#### **Experience Gains and Losses**





#### SECTION I – EXECUTIVE SUMMARY

#### **D. Future Expected Financial Trends**

The analysis of projected financial trends is an important component of this valuation. In this Section, we present our assessment of the implications of the June 30, 2019 valuation results in terms of benefit security (assets over liabilities). All the projections in this section are based on the current investment return assumption of 7.00%. We have assumed future total payroll increases of 3.00% per year.

The graph below shows the expected employer and employee contribution rates based on achieving the 7.00% assumption **each year** for the next 20 years. This scenario is highly unlikely: even if the Plan does achieve an **average** return of 7.00% over this time period, the returns in each given year will certainly vary. The expected total contribution rates based on the prior year valuation as of June 30, 2018 are shown (in the dashed line) for comparison.

The contribution rate graph shows that employer contribution rates are expected to stay relatively stable until the current unfunded liability amortization period (17 years) ends.

#### 45% **Employer Contribution Rate** -Prior Year Member Rate 40% 35% 30% 25% 20% 15% 10% 2021 2031 2035 2037 2039

#### Projection of Contributions, 7.00% Return Each Year

The total contribution rate (employer plus employee) is approximately 41% of member payroll for the June 30, 2019 valuation; it is expected to gradually decline to approximately 40% if all actuarial assumptions are met. The gradual decline is due to the expected hiring of new PEPRA members to replace the legacy employees as they retire, thus lowering the average normal cost of the Plan.

After 17 years, the total contribution rate is expected to drop due to the end of the current unfunded liability amortization period, to a level around 20% of pay, representing the expected Normal Cost plus administrative expenses. The end of the amortization period only affects the employer contribution rate. It has no impact on the employee contribution rate.



#### **SECTION I – EXECUTIVE SUMMARY**

#### **Asset and Liability Projections:**

The following graph shows the projection of assets and liabilities assuming that assets will earn the 7.00% assumption each year during the projection period. The funded ratio shown is based on the Actuarial Value of Assets. The Actuarial Value of Assets is slightly greater than the Market Value of Assets as of June 30, 2019; under the five-year smoothing policy, the two are assumed to be equal past 2022 if there are no additional asset gains/losses.

# **Projection of Assets And Liabilities, 7.00% Return Each Year** (\$ millions)



The graph above shows that the projected funded status increases over the next 17 years to gradually reach 100%, as can be expected based on the amortization policy, assuming the actuarial assumptions are achieved. However, it is the **actual** return on Plan assets that will determine the future funding status and contribution rate to the Fund.



#### SECTION II – DISCLOSURES RELATED TO RISK

Actuarial valuations are based on a set of assumptions about future economic and demographic experience. These assumptions represent a reasonable estimate of future experience, but actual future experience will undoubtedly be different and may vary significantly.

A new Actuarial Standard of Practice (ASOP 51) has been issued which requires actuaries to identify and assess risks that "may reasonably be anticipated to significantly affect the plan's future financial condition." This section of the report is intended to identify the primary risks to the Plan, provide some background information about those risks, and provide an assessment of those risks.

#### **Identification of Risks**

A fundamental risk to a pension plan is that the contributions needed to pay the benefits become unaffordable. Even in the case that the Plan remains affordable, the contributions needed to support the Plan may differ significantly from expectations. While there are a number of factors that could lead to contribution amounts deviating from expectations, we believe the primary risks are:

- Investment risk,
- Assumption change risk, and
- Contribution risk.

Other risks that we have not identified may also turn out to be important.

Investment Risk is the potential for investment returns to be different than expected. Lower investment returns than anticipated will increase the unfunded actuarial liability necessitating higher contributions in the future unless there are other gains that offset these investment losses. The potential volatility of future investment returns is determined by the Plan's asset allocation and the affordability of the investment risk is determined by the amount of assets invested relative to the size of the plan sponsors or other contribution base.

Assumption change risk is the potential for the environment to change such that future valuation assumptions are different than the current assumptions. For example, declines in interest rates over the last three decades resulted in higher investment returns for fixed income investments but lower expected future returns, necessitating either a change in investment policy, a reduction in discount rate, or some combination of the two. Assumption change risk is an extension of the other risks identified, but rather than capturing the risk as it is experienced, it captures the cost of recognizing a change in environment when the current assumption is no longer reasonable.

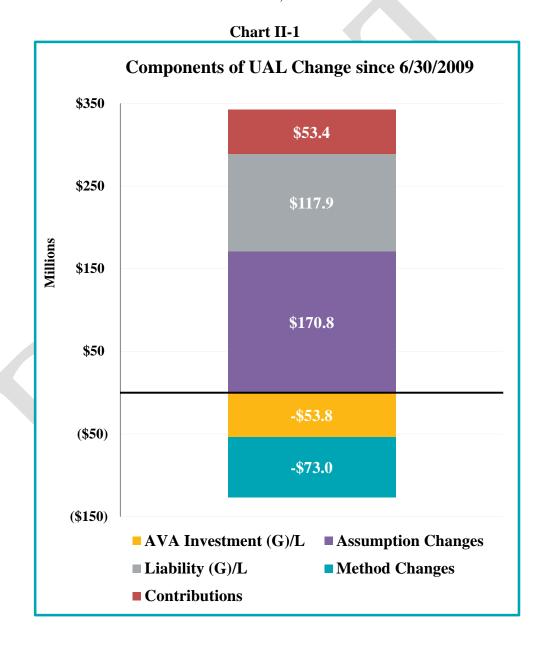
Contribution risk is the potential for actual future contributions to deviate from expected future contributions. There are different sources of contribution risk such as the sponsor failing to make contributions in accordance with the funding policy or the contribution requirement becoming such a financial strain on the sponsor as a result of material changes in the contribution base



#### SECTION II – DISCLOSURES RELATED TO RISK

(e.g., covered employees, covered payroll) that it affects the amount of contributions the Plan can collect.

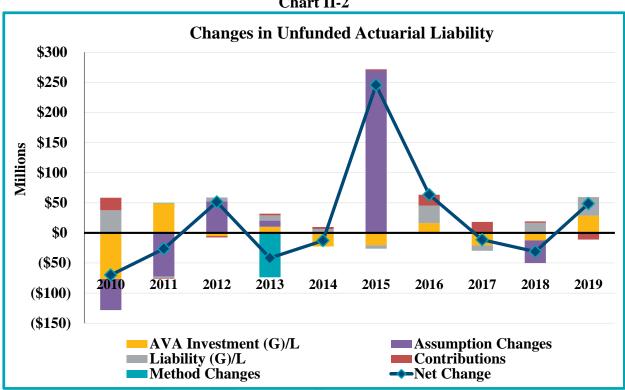
The chart below shows the components contributing to the change in Unfunded Actuarial Liability (UAL) from June 30, 2009 through June 30, 2019. Over the last 10 years, the UAL has increased by approximately \$215 million. The net liability losses (gray bar) of \$118 million, assumption changes (purple bar) of \$171 million, and contributions below the "tread water" level (red bar) of \$53 million resulting in a total UAL increase of \$342 million are the primary sources in the UAL growth. Investment gains (gold bar) of \$54 million and method changes (teal bar) of \$73 million have decreased the UAL since June 30, 2009.



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#### SECTION II – DISCLOSURES RELATED TO RISK

Chart II-2 below details the annual sources of the UAL change (colored bars) for the plan years ending June 30. The net UAL change for each year is represented by the blue diamonds.



**Chart II-2** 

Effective with the June 30, 2013, the actuarial cost method was modified from the Entry Age Normal-to-Decrement method to the Entry Age Normal-to-Final-Decrement method to comply with the accounting standards issued by the Government Accounting Standards Board. The impact of this was to shift some of the liability from past service to future, thereby decreasing the actuarial accrued liability (by approximately \$74 million) and increasing the normal cost. This is represented by the teal bar.

On a market value basis, the average annual geometric return over the 10-year period has been 9.6% with investment gains on the AVA in six years of those years decreasing the UAL, but investment losses in the other four years of the last decade. As of July 1, 2019, there are approximately \$15 million of deferred losses that will be recognized over the next four years.

Over the same time period, the assumed rate of return decreased from 8.16% to 7.00%. It is important to note that these changes simply reflect a downward revision to the estimate of future investment earnings and ultimately costs will be determined by actual investment earnings. Future expectations of investment returns may continue to decline necessitating further reductions in the discount rate.



#### SECTION II – DISCLOSURES RELATED TO RISK

The impact of all assumption changes is represented by the purple bars and also includes decreases in mortality rates projected in the future, as well as changes in pay growth assumptions to anticipate the wage freezes that occurred after the Great Recession. The assumption changes effective with the July 1, 2018 valuation changed the expected rate of return from 7.25% to 7.00%, but also contained demographic changes, which reduced the UAL.

Each year the UAL is expected to increase for benefits earned in the current year (the normal cost), administrative expenses, and interest on the UAL. This expected increase is referred to as the tread water level. If contributions are greater than the tread water level, the UAL is expected to decrease. Conversely, if contributions are less than the tread water level, the UAL is expected to increase. The amortization policy (as well as the contribution-timing lag) can impact whether or not the contributions exceed the tread water level. The contribution shortfalls in 2016 and 2017 were due to the phase-in of the 2015 assumption change impact.

For StanCERA, the liability for each valuation group is amortized as a level percentage of payroll over a closed period, 17 years as of the current valuation. Contributions have not met the tread water level in seven of ten years, resulting in \$53 million of increases to the UAL over the last decade. Table II-1 below numerically summarizes the changes in the UAL for each year by source over the last ten years.

Table II-1

Unfunded Actuarial Liability (UAL) Change by Source										
June 30,	Investment Experience	Liability Experience	Assumption Changes	Method Changes	Contributions	Total UAL Change				
2010	(\$76,507,000)	\$37,493,000	(\$51,744,000)	\$0	\$20,832,000	(\$69,926,000)				
2011	49,205,000	(2,387,000)	(72,739,000)	653,000	(1,083,000)	(26,351,000)				
2012	(5,284,000)	6,191,000	52,606,000	0	(2,235,000)	51,278,000				
2013	10,200,000	8,500,000	10,300,000	(73,700,000)	2,901,000	(41,799,000)				
2014	(22,600,000)	6,100,000	400,000	0	3,243,000	(12,857,000)				
2015	(20,600,000)	(5,600,000)	269,800,000	0	1,999,000	245,599,000				
2016	16,300,000	28,900,000	0	0	18,210,000	63,410,000				
2017	(20,800,000)	(8,900,000)	0	0	18,328,000	(11,372,000)				
2018	(12,400,000)	16,800,000	(37,800,000)	0	2,260,000	(31,140,000)				
2019	28,700,000	30,800,000	0	0	(11,023,000)	48,477,000				
Total	(\$53,786,000)	\$117,897,000	\$170,823,000	(\$73,047,000)	\$53,432,000	\$215,319,000				



#### SECTION II – DISCLOSURES RELATED TO RISK

#### **Assessing Costs and Risks**

#### **Sensitivity to Investment Returns**

The chart below compares assets to the present value of all projected future benefits discounted at the current expected rate of return and at discount rates 100 basis points above and below the expected rate of return. The present value of future benefits is shown as a bar with the portion attributable to past service in dark blue (Actuarial Liability) and the portion attributable to future service in teal (Present Value of Future Normal Costs). The Market Value of Assets is shown by the gold line.

#### **Present Value of Future Benefits versus Assets** ■Actuarial Liability ■ PV Future Normal Costs → Market Value of Assets 5,000 4,500 \$4,010 4,000 \$3,401 3,500 \$2,931 3,000 2,500 2,000 1,500 1,000 500 0 6.00% 7.00% 8.00% **Expected Return on Assets**

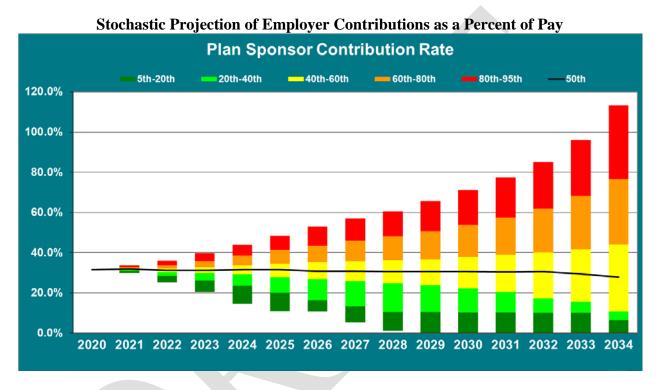
If investments return 7.00% annually, the Plan would need approximately \$3.4 billion in assets today to pay all projected benefits compared to current assets of \$2.1 billion. If investment returns are only 6.00%, the Plan would need approximately \$4.0 billion in assets today, and if investment returns are 8.00%, the Plan would need approximately \$2.9 billion in assets today.



#### SECTION II – DISCLOSURES RELATED TO RISK

#### **Sensitivity to Investment Returns - Stochastic Projections**

Stochastic projections serve to show the range of probable outcomes of various measurements. The graphs below and on the following page show the projected range of the employer contribution rate and of the funded ratio on an actuarial value of assets basis. The range in both scenarios is driven by the volatility of investment returns (assumed to be based on a 10% standard deviation of annual returns, as indicated in Verus' 2019 capital market assumptions).



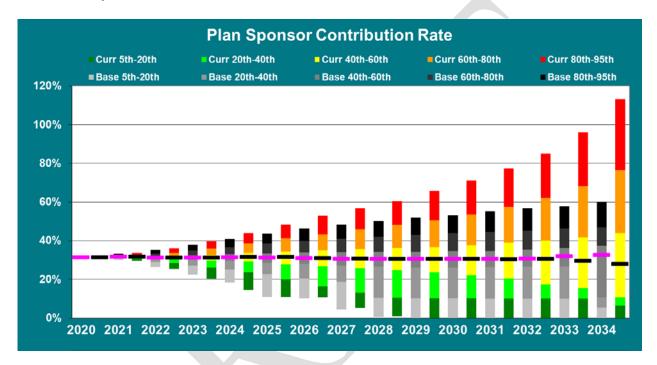
The stochastic projection of employer contributions as a percent of pay shows the probable range of future contribution rates. The baseline contribution rate (black line), which is based on the median of the simulations using an average return of 7.00%, aligns closely with the projections discussed in subsection D. of the Executive Summary of this report. In the most pessimistic scenario shown, the 95<sup>th</sup> percentile, the projected employer contribution rate exceeds 115% of pay in 2034. Conversely, the most optimistic scenario shown, the 5<sup>th</sup> percentile, the projected employer contribution rate declines to 0% by 2029. We note that these projections allow the employer contribution to drop below the normal cost only if the Plan becomes extremely overfunded (above 120%), as required under PEPRA.

We also note that the extreme level of volatility in the contribution rates towards the end of the projection period is driven by the declining amortization period. If the Board takes action to modify the amortization period – either by freezing/restarting the amortization schedule, or moving towards a layered amortization policy wherein changes in the UAL are amortized over individual fixed/closed periods based on when the change occurs – the volatility in rates could be reduced significantly.



#### SECTION II – DISCLOSURES RELATED TO RISK

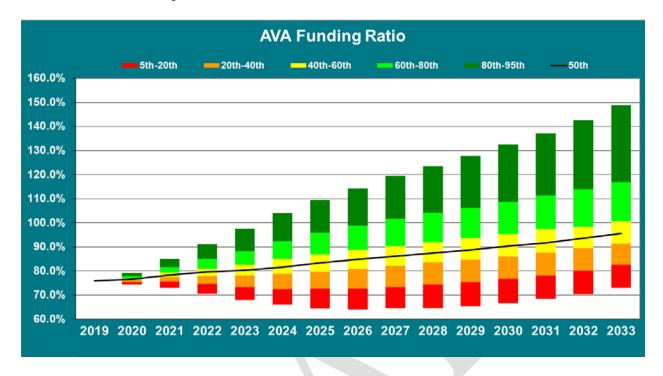
For example, the chart below shows the projected contributions rates under two different amortization policies: the black/gray bars represent a layered amortization policy, where each future year's gain or loss is amortized over a closed 20-year period. The colored bars represent the projected costs under the current closed 17-year amortization policy (matching the projections shown in the chart on the prior page). As can clearly be seen, the expected impact of the change in amortization policy is a significant reduction in the volatility of contribution rates in future years. We encourage the Board to consider modifications to the funding policy within the next few years.





#### SECTION II – DISCLOSURES RELATED TO RISK

#### Stochastic Projection of Funded Ratio on an Actuarial Value of Assets Basis



The graph above shows the projection of the funded ratio based on the actuarial value of assets. It is based on the current amortization policy. While the baseline-funded ratio (black line) is projected to be approximately 95% at the end of the 15-year period shown here, there is a wide range of potential outcomes. Good investment returns have the likelihood of bringing the funded ratio well over 100%.

Due to the current funding policy of the Plan, even in scenarios with unfavorable investment returns, the Plan is projected to remain over 64% funded on an actuarial value of assets basis, as long as the actuarially determined contributions continue to be made. As with the contribution projection, the declining amortization policy also drives the funded ratio higher, as any unfunded liability that develops toward the end of the projection period would be amortized over a very short period (forcing the contribution rates to increase significantly).

#### **Contribution Risk**

While investment returns are typically the dominant factor in volatility, contribution rates can also be sensitive to future salary increases and the hiring of new members. When member payroll growth stagnates or even declines, the dollar level of contributions made to the Plan also stagnates or declines since contributions are based on payroll levels, though this will generally only present a funding issue if there is an extended period of payroll reductions.

There is also a risk of the contribution rate increasing even higher when payroll decreases since the Plan's funding policy amortizes the UAL as a level percentage of pay. This means that the



#### SECTION II – DISCLOSURES RELATED TO RISK

UAL payments increase at the assumed payroll growth rate of 3.00%, so that the payment is expected to remain constant as a percentage of payroll. If payroll growth is less than the expected 3.00% or there is a decline in payroll, the UAL payments are spread over a smaller payroll base and the contribution rate as a percentage of pay increases, making the Plan less affordable for those sponsors with declining payroll bases.

For example, the UAL Amortization rate as of June 30, 2019 for the FYE 2020 is 18.92%. If the projected payroll for FYE 2020 were 3.00% lower, all else being equal, the UAL Amortization rate would increase 19.49%.

#### **Plan Maturity Measures**

The future financial condition of a mature pension plan is more sensitive to each of the risks identified above than a less mature plan. It is important to understand how the maturity has changed over time.

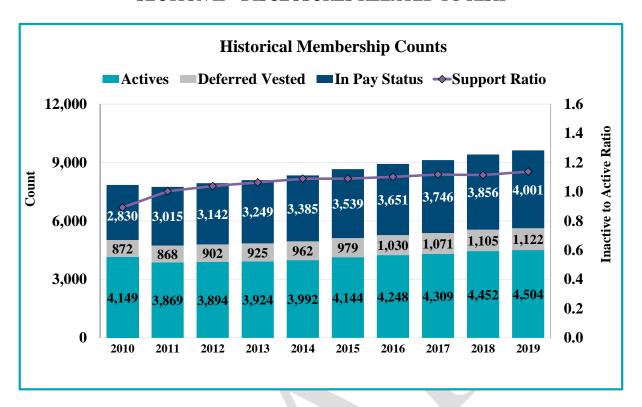
Plan maturity can be measured in a variety of ways, but they all get at one basic dynamic - the larger the plan is compared to the contribution or revenue base that supports it, the more sensitive the plan will be to risk. The measures below have been selected as the most important in understanding the primary risks identified for the Plan.

#### **Inactives per Active (Support Ratio)**

One simple measure of plan maturity is the ratio of the number of inactive members to the number of active members. The Support Ratio is expected to increase gradually as a plan matures. The chart below shows the growth in the Support Ratio from 2010 to 2019 as the number of active members declined and then increased slower than the number of retirees and deferred members.



#### SECTION II – DISCLOSURES RELATED TO RISK



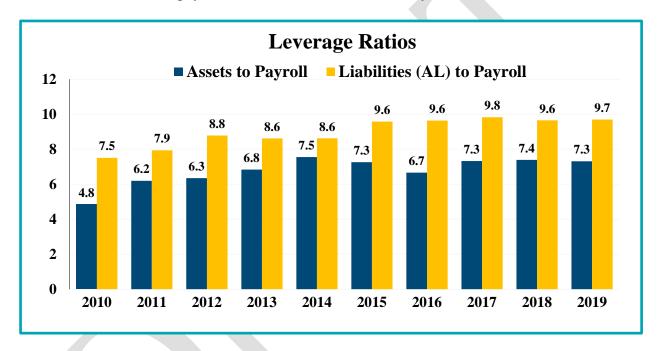


#### SECTION II – DISCLOSURES RELATED TO RISK

#### **Leverage Ratios**

Leverage or volatility ratios measure the size of the plan compared to its revenue base more directly. The asset leverage ratio is simply the market value of assets to active member payroll and indicates the sensitivity of the Plan to investment returns. The liability leverage ratio is the plan's actuarial liability to active member payroll and indicates the sensitivity of the Plan to assumption changes or demographic experience.

The chart below shows the historical leverage ratios of the Plan. Both leverage ratios have gradually increased since 2010, but the asset to payroll ratio has remained at or above 7.0 - assets are seven times member payroll - for all but one of the last six years.



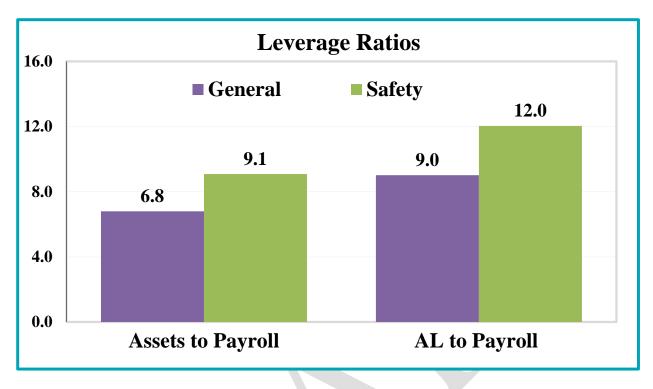
To appreciate the impact of the ratio of assets to payroll on plan cost, consider the situation for a new plan with almost no assets. Even if the assets suffer a bad year of investment returns, the impact on the plan cost is nil, because the asset level is so small.

As the Plan becomes better funded, the asset leverage ratio will increase, and if it was 100% funded, the asset leverage ratio would be close to 10 times payroll, or the Actuarial Liability (AL) leverage ratio.

We note that the ratio of both assets and liabilities to payroll, and therefore the sensitivity to investment returns, is higher for the Safety members compared to the General members, because of the higher benefit amounts and the earlier average retirement ages for Safety.



#### SECTION II – DISCLOSURES RELATED TO RISK



The General asset leverage ratio of 6.8 means that if the Plan's assets lose 10% of their value, which is a 17.00% actuarial loss compared to the expected return of 7.00%, the loss would be equivalent to 116% of payroll (17.00% times 6.8). The same investment loss for the Safety group with an asset ratio of 9.1 would be equivalent to just over 155% of payroll. There is only one source of funding to make up for these investment losses: contributions. Consequently, barring future offsetting investment gains, the employer has to make up the asset loss in additional future contributions. In this example of a one-year loss of 10%, the shortfall will eventually require an additional annual amortization payment of approximately 9% and 13% of payroll for General and Safety, respectively, if amortized over 17 years. Contribution rates for the Safety members will generally be more volatile than those of the General members.

If the Plan were full funded, the 10% loss discussed above would translate to a loss of 153% of payroll for General and 204% of payroll for Safety. When amortized over 17 years, employer contributions would increase approximately 12% and 17% of payroll, respectively. Therefore, the Plan may become significantly more sensitive to market variations in the future than it is today.

#### **More Detailed Assessment**

While a more detailed assessment is always valuable to enhance the understanding of the risks identified above, we believe the scenarios illustrated above cover the primary risks facing the Plan at this time. We would be happy to provide the Board with a more in-depth analysis at their request.



#### **SECTION III – ASSETS**

Pension Plan assets play a key role in the financial operation of the Plan and in the decisions the Board may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact benefit levels, employer contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on Plan assets including:

- **Disclosure** of Plan assets as of June 30, 2018 and June 30, 2019,
- Statement of the **changes** in market values during the year,
- Development of the Actuarial Value of Assets,
- An assessment of historical investment performance versus inflation, and
- An allocation of the unfunded liability between the **valuation subgroups**.

#### **Disclosure**

There are two types of asset values disclosed in the valuation, the Market Value of Assets, and the Actuarial Value of Assets. The market value represents "snap-shot" or "cash-out" values, which provide the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace. As a result, market values are usually not as suitable for long-range planning as are the Actuarial Value of Assets, which reflects smoothing of annual investment returns.

Table III-1 on the next page discloses and compares each asset class as of June 30, 2018 and June 30, 2019.



#### **SECTION III – ASSETS**

	Γable III			
Statement of		t Market Value cal Year ending	Fis	cal Year ending
		J		_
Assets		June 30, 2018		June 30, 2019
Cash and Cash Equivalents	\$	195,650,852	\$	56,243,082
Total Cash and Cash Equivalents	\$	195,650,852	\$	56,243,082
Receivables				
Interest and Dividends	\$	5,372,554	\$	6,791,291
Contributions		5,897,011		6,666,983
Securities Transactions		31,426,661		966,581
Total Receivables	\$	42,696,226	\$	14,424,855
Fixed Assets				
Capitalized Software	\$	32,344	\$	0
Real Estate Occupied		1,650,968		1,630,546
Real Estate Leased		1,100,863		1,087,753
Other		2,542,616		3,891,574
Total Fixed Assets	\$	5,326,791	\$	6,609,873
Investments at Market Value				
Fixed Income	\$	335,655,061	\$	479,716,064
Equities		1,103,761,404		1,020,306,300
Collateral on Loaned Securities		85,288,212		144,376,536
Other		488,072,923		646,075,887
Total Investments	\$	2,012,777,600	\$	2,290,474,787
Liabilities				
Accounts Payable	\$	(12,052,811)	\$	(12,596,100)
Security Transactions Payable		(31,754,701)		(2,143,529)
Collateral Held for Loaned Securities		(85,288,212)		(144,376,536)
Other		(395,000)		(395,000)
Total Liabilities	\$	(129,490,724)	\$	(159,511,165)
Market Value of Assets	\$	2,126,960,745	\$	2,208,241,432



#### **SECTION III – ASSETS**

#### **Changes in Market Value**

The components of asset change are:

- Contributions (employers and employee)
- Benefit payments
- Expenses (investment and administrative)
- Investment income (realized and unrealized)

Table III-2 on the next page shows the components of change in the Market Value of Assets during the fiscal years ending June 30, 2018 and June 30, 2019.



#### **SECTION III – ASSETS**

Ta	ble III-2			
Changes in	Market '	Values		
	Fi	iscal Year ending	F	iscal Year ending
<u>Additions</u>		<u>June 30, 2018</u>		<u>June 30, 2019</u>
Contributions				
Employer's Contribution	\$	76,966,471	\$	88,589,381
Members' Contributions		26,746,289		27,742,863
Total Contributions	\$	103,712,760	\$	116,332,244
Net Investment Income				
Net Appreciation/(Depreciation) in				
Fair Value of Investments	\$	124,664,847	\$	54,084,769
Interest and Dividends		40,576,311		53,382,923
Commission Recapture		15,091		22,395
Other Investment Income		303,437		324,140
Total Investment Income	\$	165,559,686	<b>\$</b>	107,814,227
Investment Expense		(11,120,770)		(9,008,420)
Net Investment Income	\$	154,438,916	\$	98,805,807
Securities Lending Activities				
Securities Lending Income	\$	784,420	\$	677,888
Expenses from Securities Lending Activities		(235,137)		(203,170)
Net Securities Lending Income		549,283		474,718
Total Net Investment Income	\$	154,988,199	\$	99,280,525
<b>Total Additions</b>	\$	258,700,959	\$	215,612,769
<u>Deductions</u>				
Benefits	\$	120,978,337	\$	129,100,668
Refunds		2,193,779		2,674,023
Administrative Costs		2,791,409	_	2,557,391
<b>Total Deductions</b>	\$	125,963,525	<b>\$</b>	134,332,082
Net Increase/(Decrease)	\$	132,737,434	\$	81,280,687
Net Assets Beginning of Year	\$	1,994,223,311	\$	2,126,960,745
Net Assets End of Year	\$	2,126,960,745	\$	2,208,241,432
Approximate Return		7.82%		4.69%



#### **SECTION III - ASSETS**

#### **Actuarial Value of Assets (AVA)**

The Actuarial Value of Assets represents a "smoothed" value developed by the actuary to reduce the volatile results that could develop due to short-term fluctuations in the Market Value of Assets. For this Plan, the Actuarial Value of Assets is calculated on a modified market-related value. The Market Value of Assets is adjusted to recognize, over a five-year period, investment earnings which are greater than (or less than) the assumed investment return. However, in no event will the Actuarial Value of Assets be less than 80% or more than 120% of market value on the valuation date.

The Valuation Assets are the portion of the Actuarial Assets dedicated to funding the basic pension benefits. The Valuation Assets exclude the value of any non-valuation reserves, such as reserves established for legal contingencies. The Valuation Assets also exclude the value of any non-valuation contingency reserves, which have been established according to the Board's funding policy. In valuations prior to the June 30, 2014 valuation, a reserve associated with the Burial Allowance was excluded from the Valuation Assets; both the assets and liabilities associated with this benefit are included in this valuation.

The table on the following page shows the development of the Actuarial Asset and Valuation Assets values.



#### **SECTION III – ASSETS**

Table III-3  Development of Actuaried Value of Access for 60	20/201	0
Development of Actuarial Value of Assets for 6/3 Item	3U/2U1	.9 Total
1. Market Value as of 6/30/2018	\$	2,126,960,745
2. Non-Investment Cash Flow for 2018-2019		(17,999,838)
3. Expected Return in 2018-2019		148,267,913
4. Expected Market Value as of 6/30/2019: (1 + 2 + 3)	\$	2,257,228,820
5. Actual Return in 2018-2019		99,280,525
6. Actual Return Above Expected in 2018-2019: (5 - 3)		(48,987,388)
7. Market Value as of 6/30/2019	\$	2,208,241,432
8. Deferred Recognition of Returns Above Expected		
A. 2018-2019 (80% of -\$48,987,388)		(39,189,910)
B. 2017-2018 (60% of \$11,199,487)		6,719,692
C. 2016-2017 (40% of \$124,877,553)		49,951,021
D. 2015-2016 (20% of -\$163,175,725)		(32,635,145)
E. Total	\$	(15,154,342)
9. Preliminary Actuarial Value of Assets: (7 - 8E)	\$	2,223,395,774
10. Corridor Limit		
A. 80% of Net Market Value		1,766,593,146
B. 120% of Net Market Value		2,649,889,718
11. Actuarial Value after Corridor as of 6/30/2019	\$	2,223,395,774
12. Rate of Return on Actuarial Value of Assets	4	5.64%
13. Ratio of Actuarial Value to Market Value: (11 ÷ 7)		100.7%
14. Special (Non Valuation) Reserves:		
A. Health Insurance Reserves		0
B. Special COL Reserve		0
C. Legal Contingency Reserve		2,076,541
D. Tier 3 Disability Reserve		1,560
E. Contingency Reserve		21,347,701
F. Total Special Reserves (Market Value)	\$	23,425,802
15. Adjusted Total Special Reserves (100.7% of Market, Except Contingency)	\$	23,440,063
16. Pension Reserves at Actuarial Value (Valuation Assets): (11 - 15)	\$	2,199,955,711



#### **SECTION III – ASSETS**

#### **Historical Investment Performance**

The table shows the historical annual asset returns on a Market Value, Actuarial Value, and Valuation Asset basis, as well as the increase in the Consumer Price Index (CPI) since 1997. Note that the returns prior to 2013 are expressed net of investment and administrative expenses; the returns for 2013 and all following years are expressed net of investment expenses only.

Net 1		Table III-4 . Increase in Consum	ner Price Index	
Year Ended June 30	Net Return at Market Value	Net Return at Actuarial Value	Net Return at Valuation Assets	Increase in Consumer Price Index <sup>1</sup>
1997	20.4%			2.3%
1998	13.4%			1.7%
1999	10.6%			2.0%
2000	6.3%			3.7%
2001	7.0%			3.2%
2002	-4.5%			1.1%
2003	5.2%		4.9%	2.1%
2004	6.1%		6.3%	3.3%
2005	8.2%		5.5%	2.5%
2006	9.9%		10.8%	4.3%
2007	16.0%	10.8%	0.6%	2.7%
2008	-8.5%	8.0%	16.7%	5.0%
2009	-17.2%	-9.6%	-9.4%	-1.4%
2010	15.6%	13.0%	14.7%	1.1%
2011	22.1%	3.5%	4.2%	3.6%
2012	0.1%	6.4%	6.5%	1.7%
2013	13.9%	7.0%	7.2%	1.8%
2014	18.0%	9.4%	9.5%	2.1%
2015	3.9%	9.1%	9.0%	0.1%
2016	-1.7%	6.3%	6.3%	1.0%
2017	14.4%	8.3%	8.4%	1.6%
2018	7.8%	7.9%	7.9%	2.9%
2019	4.7%	5.6%	5.6%	1.6%
20-Year Compound Average	5.9%	N/A	N/A	2.2%
15-Year Compound Average	6.6%	N/A	6.7%	2.0%
10-Year Compound Average	9.6%	7.6%	7.9%	1.7%
5-Year Compound Average	<b>5.7%</b>	7.4%	7.4%	1.5%

<sup>&</sup>lt;sup>1</sup> Based on All Urban Consumers - U.S. City Average, June indices.



#### Allocation of Unfunded Actuarial Liability by Valuation Subgroup

The following table shows the allocation of the Unfunded Actuarial Liability between the two valuation subgroups (County / Former County Members and City of Ceres / Special District Members). The Valuation Assets are reduced by the liability associated with the inactive members and the refundable contribution balances for active members, and the remaining assets are allocated to each subgroup based on their share of the active liability. These UAL balances are used to calculate each subgroup's amortization payment.

		Table 1	III-5			
	Allocation of	6/30/2019	Unfunded Lia	ability		
			ands) ounty and mer County		s and Other Districts	Total
1.	Actuarial Value of Assets					\$ 2,199,956
2.	Accumulated Employee Contributions		205,764		13,605	219,369
3.	Inactive Actuarial Liability		1,776,761		83,976	 1,860,738
4.	Net Assets for Distribution [1 - 2 - 3]		_	,		\$ 119,849
5.	Active Actuarial Liability	\$	971,934	\$	64,551	\$ 1,036,485
6.	Allocation of Remaining Assets		93.77%		6.23%	100.00%
7.	Remaining Assets		112,385		7,464	119,849
8.	Total Assets for Actives [2 + 7]		318,148		21,069	339,218
9.	Active Funded Ratio [8 ÷ 5]		32.7%		32.6%	32.7%
10.	Actuarial Value of Assets [3 + 8]	\$	2,094,910	\$	105,046	\$ 2,199,956
11.	AVA Funded Ratio $[10 \div (3+5)]$		76.21471%		70.72471%	75.9%
12.	Unfunded Actuarial Liability [5 - 8]	\$	653,785	\$	43,482	\$ 697,267

Within the two valuation subgroups (County / Former County Members and City of Ceres / Special District Members), the Actuarial Value of Assets and the Unfunded Actuarial Liability are allocated between Safety and General based on each groups' share of the Actuarial Liability, as show in Table IV-1.



#### **SECTION IV – LIABILITIES**

In this section, we present detailed information on Plan liabilities including:

- **Disclosure** of Plan liabilities at June 30, 2018 and June 30, 2019,
- Statement of **changes** in these liabilities during the year.

#### **Disclosure**

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them. Note that these liabilities are not applicable for settlement purposes, including the purchase of annuities and the payment of lump sums.

- **Present Value of Future Benefits:** Used for measuring all future Plan obligations, represents the amount of money needed today to fully fund all benefits of the Plan both earned as of the valuation date and those to be earned in the future by current Plan participants, under the current Plan provisions.
- Actuarial Liability: Used for funding calculations, this liability is calculated taking
  the Present Value of Future Benefits and subtracting the present value of future
  Member Contributions and future Employer Normal Costs under an acceptable
  actuarial funding method. The method used for this Plan is called the Entry Age
  Normal (EAN) funding method.
- **Unfunded Actuarial Liability:** The excess of the Actuarial Liability over the Valuation Assets.

Table IV-1 on the following page discloses each of these liabilities for the current and prior valuations. With respect to each disclosure, a subtraction of the appropriate value of Plan assets yields, for each respective type, a **net surplus**, or an **Unfunded Actuarial Liability**.



Pr	ese:	nt Value of	Fut	Table IV- ure Benefits (in thousand	and	l Actuarial	Lial	bility	Ju	ne 30, 2019	Ju	ne 30, 2018
		Ger	iero	1		Sa	fety			Total		Total
	C	ounty and			Co	ounty and	•	eres and	-	Total	_	Total
		Former		Other		Former		Other				
		County	]	Districts	County		Districts					
Present Value of Future Benefits												
Actives	\$	1,056,577	\$	42,083	\$	389,301	\$	52,369	\$	1,540,330	\$	1,483,059
Terminated Vested		115,716		5,953		34,160		9,425		165,253		153,411
Retirees		1,083,312		29,709		325,149		27,873		1,466,042		1,367,014
Disabled		47,050		1,929		78,461		6,820		134,260		133,254
Beneficiaries		62,737		725		30,178		1,543		95,183		89,810
Total StanCERA	\$	2,365,392	\$	80,398	\$	857,248	\$	98,030	\$	3,401,067	\$	3,226,548
Actuarial Liability												
Total Present Value of Benefits	\$	2,365,392	\$	80,398	\$	857,248	\$	98,030	\$	3,401,067	\$	3,226,548
Present Value of Future Normal Costs												
Employer Portion		184,748		7,980		72,948		9,269		274,944		261,745
Employee Portion		156,210		6,018		60,039		6,634		228,901		215,73 <u>5</u>
Actuarial Liability	\$	2,024,434	\$	66,401	\$	724,261	\$	82,127	\$	2,897,223	\$	2,749,068
Actuarial Value of Assets	\$	1,542,917	\$	46,962	\$	551,993	\$	58,084	\$	2,199,956	\$	2,100,278
Funded Ratio		76.2%		70.7%		76.2%		70.7%		75.9%		76.4%
Unfunded Actuarial Liability/(Surplus)	\$	481,518	\$	19,439	\$	172,268	\$	24,043	\$	697,267	\$	648,790



The table shows the Actuarial Liabilities for each of the valuation subgroups (General and Safety), split by members' status.

	Li	abilities by	Grou	le IV-2 up as of Jun ousands)	ne 30	), 2019			
		Ger	ieral			Sa	fety		Total
	C	Gene County and Former County		Ceres and Other Districts		ounty and Former County		eres and Other Districts	
Actuarial Liability									
Actives	\$	715,620	\$	28,085	\$	256,314	\$	36,466	\$ 1,036,485
Terminated Vested		115,716		5,953		34,160		9,425	165,253
Retirees		1,083,312		29,709		325,149		27,873	1,466,042
Disabled Beneficiaries		47,050 62,737		1,929 725		78,461 30,178		6,820 1,543	 134,260 95,183
Total	\$	2,024,434	\$	66,401	\$	724,261	\$	82,127	\$ 2,897,223



#### **Changes in Liabilities**

Each of the Liabilities disclosed in the prior tables are expected to change at each valuation. The components of that change, depending upon which liability is analyzed, can include:

- New hires since the last valuation
- Benefits accrued since the last valuation
- Plan amendments increasing benefits
- Passage of time which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, or dying at rates different than expected
- A change in actuarial or investment assumptions
- A change in the actuarial funding method

Unfunded liabilities will change because of all of the above, and also due to changes in Plan assets resulting from:

- Employer contributions different than expected
- Investment earnings different than expected
- A change in the method used to measure Plan assets

	Table IV-3		
	Development of 2019 Experience Gain/(Loss)		
	(in millions)		
	Item		Cost
1.	Unfunded Actuarial Liability at June 30, 2018	\$	648.8
2.	Middle of year actuarial liability payment		(50.5)
3.	Interest to end of year on 1 and 2		43.7
4.	Expected Unfunded Actuarial Liability at June 30, 2019 (1+2+3)	\$	642.0
5.	Actual Unfunded Liability at June 30, 2019		697.3
6.	Difference: (4 - 5)	\$	(55.3)
7.	Portion of difference due to:		
	A. Investment experience	\$	(28.7)
	B. Contribution (shortfall)/excess		4.2
	C. Assumption changes		0
	D. New entrant loss		(2.1)
	E. Other experience	_	(28.6)
	F. Total		(55.3)



#### **SECTION V – CONTRIBUTIONS**

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level of contributions is needed to properly maintain the funding status of the Plan. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

For this Plan, the actuarial funding method used to determine the Normal Cost and the Unfunded Actuarial Liability is the **Entry Age Normal (EAN)** cost method. There are three components to the total contribution: the **Normal Cost rate** (employee and employer), the **Unfunded Actuarial Liability rate** (UAL rate), and the **Administrative Expense** contribution.

The Normal Cost rate is determined in the following steps. First, an individual Normal Cost rate is determined by taking the value, as of entry age into the Plan, of each member's projected future benefits. This value is then divided by the value, also at entry age, of the member's expected future salary producing a Normal Cost rate that should remain relatively constant over a member's career.

The total Normal Cost is computed by adding the expected dollar amount of each active member's Normal Cost for the current year – known as the Individual Entry Age Method. The total Normal Cost is adjusted with interest to the middle of the year, to reflect the fact that the Normal Cost contributions are paid throughout the year as member payroll payments are made. Finally, the total Normal Cost rate is reduced by the member contribution rate to produce the employer Normal Cost rate. The member contribution rate for each subgroup is determined by adding the expected contributions for each member and dividing by the projected pay for each subgroup.

The EAN Actuarial Liability is calculated by subtracting the present value of future total Normal Cost from the Present Value of Future Benefits (as described at the beginning of Section IV).

The Unfunded Actuarial Liability (UAL) is the difference between the EAN Actuarial Liability and the Actuarial Value of Assets. The UAL payment is determined as the amount needed to fund the UAL over a closed 17-year period as a level percentage of payroll.

Beginning with the June 30, 2012 actuarial valuation, the Board adopted a policy of adding an amount equal to the expected annual administrative expense to the employer's required contribution. Prior to the June 30, 2012 actuarial valuation, the administrative expenses were included as an offset to the assumed earnings rate, and were shared between the employees and employers. For the June 30, 2019 valuation, this amount is estimated to be \$2.90 million.



The table below presents the calculation of the contribution rates for the Plan for this valuation and compares the total contribution rate with the prior year rate. The tables on the following pages contain more details on the calculation of the UAL amortization payments, as well as details on the calculation of the contribution rates for each group and tier.

Development of the	e Net Employer	Table V-1 Contribution	Rate as of June June 30, 2019	30, 2019 for F	YE 2021	June 30, 2018
	Gen	neral	Saf	ety	COMPOSITE	COMPOSITE
	County and Former County	Ceres and Other Districts	County and Former County	Ceres and Other Districts		
1. Total Normal Cost Rate	19.14%	21.00%	28.46%	30.81%	21.34%	21.47%
2. Member Contribution Rate	<u>8.92%</u>	<u>9.24%</u>	12.70%	12.83%	<u>9.78%</u>	<u>9.82%</u>
3. Employer Normal Cost Rate (1-2)	10.22%	11.76%	15.76%	17.98%	11.56%	11.65%
4. UAL Amortization	17.50%	17.94%	23.30%	27.83%	18.92%	17.74%
5. Administrative Expense Rate	0.88%	0.94%	<u>1.25%</u>	1.46%	<u>0.97%</u>	<u>0.99%</u>
6. Net Employer Contribution Rate (3+4+5)	28.60%	30.64%	40.31%	47.27%	31.45%	30.38%



#### **SECTION V – CONTRIBUTIONS**

Table V-2 contains the details of the calculations of the UAL rates for the Plan and its subgroups.

#### Table V-2 **Development of UAL Amortization Rates** General Safety TOTAL **County and Ceres and Other County and Ceres and Other Former County Districts Former County Districts** Salary Scale: 2020+3.00% 3.00% 3.00% 3.00% N/A **Amortization Factor** 12.3289 12.3289 12.3289 12.3289 N/A Payroll 223,133,953 \$ 8,786,579 59,972,576 \$ 7,007,201 298,900,309 481,517,646 \$ Unfunded Actuarial Liability (AVA) 19,438,952 172,267,511 \$ 24,043,016 697,267,126 **UAL** Amortization 39,056,103 \$ 1,576,702 13,972,692 \$ 1,950,139 56,555,636 17.94% 23.30% **UAL Amortization Rate** 17.50% 27.83% 18.92%



#### **SECTION V – CONTRIBUTIONS**

Tables V-3 and V-4 contain the calculations of the employer contribution rates for each group and tier.

	Table	V-3					
Development of the General M	lember Contrib	ution Rate as	s of June 30,	2019 for FYE	E 2021		
	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	PEPRA	TOTAL
<b>County and Former County</b>							
A. Total Normal Cost Rate	22.23%	18.69%	2.99%	16.31%	20.65%	17.46%	19.14%
B. Member Contribution Rate	<u>8.64</u> %	<u>8.19</u> %	0.00%	0.58%	<u>9.28</u> %	<u>8.73</u> %	<u>8.92%</u>
C. Employer Normal Cost Rate (A-B)	13.59%	10.50%	2.99%	15.73%	11.37%	8.73%	10.22%
D. UAL Amortization Rate	17.50%	17.50%	17.50%	17.50%	17.50%	17.50%	17.50%
E. Administrative Expense Rate	<u>0.99</u> %	0.89%	<u>0.65</u> %	<u>1.06</u> %	0.92%	<u>0.84</u> %	<u>0.88%</u>
F. Net June 30, 2019 Contribution Rate (C+D+E)	32.08%	28.89%	21.14%	34.29%	29.79%	27.07%	28.60%
Ceres and Other Districts							
A. Total Normal Cost Rate		17.10%		0.00%	22.57%	18.49%	21.00%
B. Member Contribution Rate		8.09%		0.00%	9.29%	9.24%	9.24%
C. Employer Normal Cost Rate (A-B)		9.01%		$\frac{0.00}{0.00}$ %	13.28%	9.25%	11.76%
e. Zimprojer rioriniur cost riute (i.i. 2)		7.0170		0.0070	10.2070	y. <b>2</b> 0 70	110.070
D. UAL Amortization Rate		17.94%		17.94%	17.94%	17.94%	17.94%
E. Administrative Expense Rate		0.86%		0.57%	0.99%	<u>0.87</u> %	<u>0.94%</u>
F. Net June 30, 2019 Contribution Rate (C+D+E)		27.81%		18.51%	32.21%	28.06%	30.64%

Administrative expenses allocated based on projected Employer Normal Cost and UAL Amortization contributions. See Table V-5.

For Ceres and the other Districts, the remaining Tier 4 General member is assumed to retire immediately, therefore there is no Normal Cost for this member; only a UAL payment is calculated for this tier.



#### **SECTION V – CONTRIBUTIONS**

Table V-4				
Development of the Safety Member Contribution	Rate as of Jun Tier 2	e 30, 2019 fo Tier 5	r FYE 2021 PEPRA	TOTAL
County and Former County				
A. Total Normal Cost Rate	26.89%	31.80%	24.68%	28.46%
B. Member Contribution Rate	<u>12.17</u> %	<u>13.06</u> %	<u>12.34</u> %	<u>12.70%</u>
C. Employer Normal Cost Rate (A-B)	14.72%	18.74%	12.34%	15.76%
D. UAL Amortization Rate	23.30%	23.30%	23.30%	23.30%
E. Administrative Expense Rate	<u>1.21</u> %	<u>1.34</u> %	<u>1.14</u> %	<u>1.25%</u>
F. Net June 30, 2019 Contribution Rate (C+D+E)	39.23%	43.38%	36.78%	40.31%
Ceres and Other Districts				
A. Total Normal Cost Rate		31.84%	27.44%	30.81%
B. Member Contribution Rate		12.56%	13.72%	<u>12.83%</u>
C. Employer Normal Cost Rate (A-B)		19.28%	13.72%	17.98%
D. UAL Amortization Rate		27.83%	27.83%	27.83%
E. Administrative Expense Rate		<u>1.50</u> %	<u>1.32</u> %	<u>1.46%</u>
F. Net June 30, 2019 Contribution Rate (C+D+E)		48.61%	42.87%	47.27%

Administrative expenses allocated based on projected Employer Normal Cost and UAL Amortization contributions. See Table V-6.



#### **SECTION V – CONTRIBUTIONS**

Tables V-5 and V-6 show the allocation of the administrative expense for each group and tier. The administrative expense is allocated to each group and tier based on their share of the projected employer contributions prior to inclusion of the administrative expense.

				Table V-										
Development of the Ger			dm		lхрє				19 f			DEDD 4		TOTAL T
Saveter and Farmer Country		Tier 1		Tier 2		Tier 3		Tier 4		Tier 5		PEPRA		TOTAL
County and Former County  A. Projected Payroll for FYE 2021	\$	52 774	Ф	15 905 121	Ф	452 207	Ф	967 901	Ф	112 565 022	¢ (	02 208 047	Φ	222 122 05
A. Projected Payroll for FTE 2021	Ф	53,774	Ф	15,895,121	\$	452,297	\$	867,891	Ф	113,565,923	Ф.	92,298,947	Þ	223,133,95
B. Employer Normal Cost Rate		13.59%		10.50%		2.99%		15.73%		11.37%		8.73%		
C. UAL Amortization Rate		17.50%		17.50%		17.50%		17.50%		17.50%		17.50%		
D. Employer Contribution Rate														
Prior to Administrative Expense (B+C)		31.09%		28.00%		20.49%		33.23%		28.87%		26.23%		
E. Projected Employer Contribution for FYE 2021														
Prior to Administrative Expense														
1. Normal Cost (A*B)	\$	7,308	\$	1,668,988	\$	13,524	\$	136,519	\$	12,912,445	\$	8,057,698	\$	22,796,4
2. UAL Amortization (A*C)		9,410		2,781,646		79,152		151,881		19,874,037		16,152,316		39,048,4
3. Total Prior to Administrative Expense (A*D)	\$	16,718	\$	4,450,634	\$	92,676	\$	288,400	\$	32,786,482	\$ 2	24,210,014	\$	61,844,9
F. Allocated Administrative Expense	\$	533	\$	141,823	\$	2,953	\$	9,190	\$	1,044,768	\$	771,766	\$	1,971,0
G. Administrative Expense Rate (F÷A)		0.99%	·	0.89%	·	0.65%		1.06%		0.92%	·	0.84%	•	-,- : -,-
H. Projected Employer Contribution for FYE 2021														
Due to Administrative Expense (A*G)	\$	532	\$	141,467	\$	2,940	\$	9,200	\$	1,044,806	\$	775,311	\$	1,974,2
eres and Other Districts														
A. Projected Payroll for FYE 2021			\$	251,262			\$	60,505	\$	5,474,031	\$	3,000,781	\$	8,786,5
B. Employer Normal Cost Rate				9.01%				0.00%		13.28%		9.25%		
C. UAL Amortization Rate				<u>17.94</u> %				<u>17.94</u> %		17.94%		17.94%		
D. Employer Contribution Rate														
Prior to Administrative Expense (B+C)				26.95%				17.94%		31.22%		27.19%		
E. Projected Employer Contribution for FYE 2021														
Prior to Administrative Expense														
1. Normal Cost (A*B)			\$	22,639			\$		\$	726,951	\$	277,572	\$	1,027,1
2. UAL Amortization (A*C)				45,076				10,855		982,041		538,340		1,576,3
3. Total Prior to Administrative Expense (A*D)			\$	67,715			\$	10,855	\$	1,708,992	\$	815,912	\$	2,603,4
F. Allocated Administrative Expense			\$	2,158			\$	346	\$	54,458	\$	26,000	\$	82,9
G. Administrative Expense Rate (F÷A)				0.86%				0.57%		0.99%		0.87%		ĺ
H. Projected Employer Contribution for FYE 2021														
Due to Administrative Expense (A*G)			\$	2,161			\$	345	\$	54,193	\$	26,107	\$	82,8



#### **SECTION V – CONTRIBUTIONS**

Tabl	le V-	6					
Development of the Safety Member Administrati			te a				
		Tier 2		Tier 5	PEPRA		TOTAL
County and Former County							
A. Projected Payroll for FYE 2021	\$ 3	3,556,748	\$	30,984,655	\$ 25,431,173	\$	59,972,576
B. Employer Normal Cost Rate		14.72%		18.74%	12.34%		
C. UAL Amortization Rate		<u>23.30</u> %		23.30%	23.30%		
D. Employer Contribution Rate							
Prior to Administrative Expense (B+C)		38.02%		42.04%	35.64%		
E. Projected Employer Contribution for FYE 2021							
Prior to Administrative Expense							
1. Normal Cost (A*B)	\$	523,554	\$	5,806,524	\$ 3,138,207	\$	9,468,285
2. UAL Amortization (A*C)		828,722	_	7,219,425	 5,925,463	_	13,973,610
3. Total Prior to Administrative Expense (A*D)	\$ 1	1,352,276	\$	13,025,949	\$ 9,063,670	\$	23,441,895
F. Allocated Administrative Expense	\$	43,091	\$	415,082	\$ 288,902	\$	747,076
G. Administrative Expense Rate (F÷A)		1.21%		1.34%	1.14%		,
H. Projected Employer Contribution for FYE 2021							
Due to Administrative Expense (A*G)	\$	43,037	\$	415,194	\$ 289,915	\$	748,146
Ceres and Other Districts							
A. Projected Payroll for FYE 2021			\$	5,352,293	\$ 1,654,908	\$	7,007,201
B. Employer Normal Cost Rate				19.28%	13.72%		
C. UAL Amortization Rate				<u>27.83</u> %	<u>27.83</u> %		
D. Employer Contribution Rate							
Prior to Administrative Expense (B+C)				47.11%	41.55%		
E. Projected Employer Contribution for FYE 2021							
Prior to Administrative Expense							
1. Normal Cost (A*B)			\$	1,031,922	\$ 227,053	\$	1,258,975
2. UAL Amortization (A*C)			_	1,489,543	 460,561	_	1,950,104
3. Total Prior to Administrative Expense (A*D)			\$	2,521,465	\$ 687,614	\$	3,209,079
F. Allocated Administrative Expense			\$	80,349	\$ 21,911	\$	102,260
G. Administrative Expense Rate (F÷A)				1.50%	1.32%		
H. Projected Employer Contribution for FYE 2021							
Due to Administrative Expense (A*G)			\$	80,284	\$ 21,845	\$	102,129



#### **SECTION VI – REQUIRED CAFR EXHIBITS**

The GASB adopted Statement Nos. 67 and 68, which replaced GASB Statement Nos. 25, and 27. The disclosures needed to satisfy GASB requirements can be found in the StanCERA GASB 67/68 Report as of June 30, 2019.

In accordance with Government Finance Officers Association (GFOA) and their recommended checklist for Comprehensive Annual Financial Reports (CAFRs), we continue to prepare several schedules for the Plan that are not included in the GASB report.

The Schedule of Funded Liabilities by Type (Table VI-1, formerly referred to as the Solvency Test) shows the portion of actuarial liabilities for active member contributions, inactive members, and the employer-financed portion of the active members covered by the Actuarial Value of Assets. The accrued liability is determined assuming that the Plan is ongoing and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions, including a 7.00% discount rate for the most recent valuation.

The information needed to prepare the Actuarial Gain/Loss exhibit can now be found in Table II-1 (Unfunded Actuarial Liability Change by Source) in the Disclosures Related to Risk section. Each year there will be a gain or loss due to both assets and liabilities. In addition, there can be gains or losses due to changes in plan provisions or due to the adoption of new assumptions or methods. Finally, the unfunded liability will change based on whether the contributions exceed the interest on the unfunded liability plus the normal cost. A negative number in this column ("Contributions") indicates that the contributions in the given year are greater than the interest on the unfunded liability plus the normal cost, and thus reduce the unfunded liability.

We have also included a Schedule of Funding Progress (Table VI-2) this year, showing the historical assets, liabilities, and funded ratios for the Plan, along with the covered payroll and the unfunded actuarial liability as a percent of payroll.



#### **SECTION VI – REQUIRED CAFR EXHIBITS**

	Table VI-1 SCHEDULE OF FUNDED LIABILITIES BY TYPE										
Valuation Date	(1) Active Member	(2) Retirees And	(dollars i (3) Active And Terminated	n thousands)  Actuarial  Accrued	Valuation	Liabil	n of Actua lities Cover	red			
June 30,	Contributions	Beneficiaries	Members	Liabilities	Assets	(1)	(2)	(3)			
2003	\$ 176,622	\$ 455,784	\$ 325,689	\$ 958,095	\$ 928,022	100%	100%	91%			
2004	166,806	518,922	349,617	1,035,345	993,180	100%	100%	88%			
2005	205,556	551,810	358,994	1,116,310	1,049,691	100%	100%	81%			
$2006^{1}$	219,907	619,109	355,888	1,194,904	1,154,048	100%	100%	89%			
$2008^{2}$	272,657	739,838	536,329	1,548,824	1,317,167	100%	100%	57%			
2009	298,342	781,082	574,292	1,653,716	1,171,767	100%	100%	16%			
2010	323,940	829,323	584,561	1,737,824	1,325,801	100%	100%	30%			
2011	337,201	897,384	523,133	1,757,718	1,372,046	100%	100%	26%			
2012	351,569	987,546	549,598	1,888,713	1,451,764	100%	100%	20%			
2013 <sup>3</sup>	191,968	1,065,792	661,466	1,919,227	1,524,076	100%	100%	40%			
2014	193,301	1,144,734	688,335	2,026,371	1,644,077	100%	100%	44%			
2015	196,074	1,337,781	857,667	2,391,522	1,763,629	100%	100%	27%			
2016	200,960	1,427,166	908,941	2,537,067	1,845,764	100%	100%	24%			
2017	206,386	1,510,151	931,625	2,648,162	1,968,231	100%	100%	27%			
2018	213,223	1,590,078	945,767	2,749,068	2,100,278	100%	100%	31%			
2019	219,369	1,695,484	982,369	2,897,223	2,199,956	100%	100%	29%			

<sup>&</sup>lt;sup>1</sup> Results recalculated, reflecting Level 1 assumption changes (new retirement, termination and withdrawal decrements) & new EFI EAN methodology.

<sup>&</sup>lt;sup>3</sup> Reflects change to include only refundable contribution balance.



<sup>&</sup>lt;sup>2</sup> Reflects transfer as of June 30, 2008 of \$50 million from Non-Valuation to Valuation Reserves.

#### **SECTION VI – REQUIRED CAFR EXHIBITS**

Table VI-2 Schedule of Funding Progress Actuarial Actuarial Accrued Actuary Unfunded AAL as a %												
Actuarial Valuation Date <sup>1</sup>	Valuation Date 1 Valuation Assets Liability (AAL) Unfunded AAL Funded Ratio Covered Pa											
2008 2	\$	1,317,167,000	\$	1,548,824,000	\$ 231,657,000	85.0%	\$	275,580,000	84.1%			
2009		1,171,767,000		1,653,716,000	481,949,000	70.9%		248,316,000	194.1%			
2010		1,325,801,000		1,737,824,000	412,023,000	76.3%		248,830,473	165.6%			
2011		1,372,046,000		1,757,718,000	385,672,000	78.1%		226,706,796	170.1%			
2012		1,451,764,000		1,888,713,000	436,949,000	76.9%		220,918,009	197.8%			
2013		1,524,076,000		1,919,227,000	395,151,000	79.4%		219,028,318	180.4%			
2014		1,644,077,000		2,026,371,000	382,294,000	81.1%		223,028,288	171.4%			
2015		1,763,629,000		2,391,522,000	627,893,000	73.7%		237,717,727	264.1%			
2016		1,845,764,000		2,537,067,000	691,303,000	72.8%		250,447,580	276.0%			
2017		1,968,231,000		2,648,162,000	679,931,000	74.3%		256,143,684	265.4%			
2018		2,100,278,000		2,749,068,000	648,790,000	76.4%		270,755,220	239.6%			
2019		2,199,956,000		2,897,223,000	697,267,000	75.9%		284,008,303	245.5%			

<sup>&</sup>lt;sup>1</sup> Excludes value of Non-Valuation Reserves.



<sup>&</sup>lt;sup>2</sup> Includes \$50 million transferred from Non-Valuation Reserves as of June 30, 2008.

#### **APPENDIX A – MEMBERSHIP INFORMATION**

The data for this valuation was provided by StanCERA as of June 30, 2019. Cheiron did not audit any of the data. However, we performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

	General N	Members	Safety M	embers	Tot	al
	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019
Active Participants						
Number	3,658	3,690	794	814	4,452	4,504
Average Age	44.80	44.72	37.44	37.42	43.49	43.40
Average Service	10.44	10.30	9.82	9.87	10.33	10.22
Average Pay (does not reflect	\$ 57,933	\$ 59,727	\$ 74,100	\$ 78,151	\$ 60,817	\$ 63,057
impact of furloughs)						
Service Retired						
Number	2,694	2,797	413	434	3,107	3,231
Average Age	70.13	70.27	64.81	64.75	69.42	69.53
Average Annual Total Benefit	\$ 30,912	\$ 31,900	\$ 56,445	\$ 57,721	\$ 34,306	\$ 35,368
Beneficiaries						
Number	348	368	96	101	444	469
Average Age	72.59	72.79	67.11	67.16	71.41	71.58
Average Annual Total Benefit	\$ 18,617	\$ 19,160	\$ 30,886	\$ 31,349	\$ 21,270	\$ 21,785
Duty Disabled						
Number	96	89	127	130	223	219
Average Age	68.65	69.24	58.71	58.98	62.99	63.15
Average Annual Total Benefit	\$ 25,940	\$ 26,767	\$ 39,182	\$ 39,697	\$ 33,482	\$ 34,442
Ordinary Disabled						
Number	75	75	7	7	82	82
Average Age	64.04	64.23	60.00	61.00	63.70	63.95
Average Annual Total Benefit	\$ 17,686	\$ 18,551	\$ 24,414	\$ 25,147	\$ 18,261	\$ 19,114
Total In Pay						
Number	3,213	3,329	643	672	3,856	4,001
Average Age	70.21	70.39	63.90	63.96	69.15	69.31
Average Annual Total Benefit	\$ 29,123	\$ 30,054	\$ 48,871	\$ 49,931	\$ 32,416	\$ 33,392
Terminated Vested						
Number	396	381	74	66	470	447
Average Age	49.60	50.35	43.62	43.06	48.66	49.27
Average Service	10.48	10.73	9.75	9.74	10.37	10.58
Transfers						
Number	470	502	165	173	635	675
Average Age	46.34	46.10	41.42	41.75	45.06	44.98
Average Service	7.17	7.26	7.21	7.39	7.18	7.29
Total Deferred						
Number	866	883	239	239	1,105	1,122
Average Age	47.83	47.93	42.10	42.11	46.59	46.69
Average Service	8.69	8.76	7.99	8.04	8.54	8.60



Plan Year Ending	Added During Year	Ι	Allowance Added	Removed During Year	Allowance Removed	At End of Year	Annual Allowance	% Increase in Retiree Allowance	I	verage Annual lowance
2008	369	\$	9,084,777	(148)	\$ (1,731,738)	2,666	\$ 63,296,000	19.18%	\$	23,742
2009	156	\$	2,168,425	(71)	\$ (647,870)	2,751	\$ 66,720,003	5.41%	\$	24,253
2010	159	\$	3,349,900	(80)	\$ (751,427)	2,830	\$ 71,464,735	7.11%	\$	25,334
2011	263	\$	4,724,416	(78)	\$ (1,194,042)	3,015	\$ 74,826,404	4.70%	\$	25,732
2012	226	\$	3,565,634	(99)	\$ (978,729)	3,142	\$ 80,157,222	7.12%	\$	26,737
2013	198	\$	6,036,138	(91)	\$ (1,144,584)	3,249	\$ 89,975,736	12.25%	\$	27,694
2014	222	\$	6,703,273	(86)	\$ (1,725,066)	3,385	\$ 96,405,454	7.15%	\$	28,480
2015	237	\$	7,778,716	(83)	\$ (2,043,313)	3,539	\$ 104,052,097	7.93%	\$	29,402
2016	211	\$	7,066,750	(99)	\$ (2,160,689)	3,651	\$ 111,260,240	6.93%	\$	30,474
2017	202	\$	6,749,973	(107)	\$ (2,471,229)	3,746	\$ 117,901,627	5.97%	\$	31,474
2018	233	\$	7,555,825	(123)	\$ (3,109,178)	3,856	\$ 124,995,337	6.02%	\$	32,416
2019	242	\$	8,421,538	(97)	\$ (2,580,158)	4,001	\$ 133,601,799	6.89%	\$	33,392



Active and Vested Participant Data as of July 1, 2019

		Cou	inty and Fo	ormer Cou	nty		Ceres and Other Districts  General Members Safety Members Total						Total County and Former County, Ceres and Other Districts		
	General I	Members	Safety M	Iembers	To	tal	General l	Members	Safety M	<b>Iembers</b>	To	tal			
	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	
Active Participants															
Number	3,536	3,557	721	735	4,257	4,292	122	133	73	79	195	212	4,452	4,504	
Average Age	44.76	44.68	37.18	37.23	43.48	43.41	45.97	45.74	40.10	39.22	43.77	43.31	43.49	43.40	
Average Service	10.41	10.26	9.54	9.67	10.26	10.16	11.29	11.37	12.57	11.70	11.77	11.49	10.33	10.22	
Average Pay <sup>1</sup>	\$ 57,946	\$ 59,610	\$ 73,132	\$ 77,442	\$ 60,518	\$ 62,664	\$ 57,557	\$ 62,846	\$ 83,657	\$ 84,750	\$ 67,328	\$ 71,008	\$ 60,817	\$ 63,057	
Terminated Vested															
Number	380	369	64	59	444	428	16	12	10	7	26	19	470	447	
Average Age	49.57	50.27	43.78	43.00	48.74	49.26	50.31	52.83	42.60	43.57	47.35	49.42	48.66	49.27	
Average Service	10.46	10.70	9.72	9.67	10.36	10.56	10.98	11.69	9.94	10.32	10.58	11.19	10.37	10.58	
Transfers															
Number	432	460	130	139	562	599	38	42	35	34	73	76	635	675	
Average Age	46.71	46.43	40.95	41.30	45.37	45.24	42.18	42.43	43.20	43.62	42.67	42.96	45.06	44.98	
Average Service	7.08	7.20	6.81	7.07	7.01	7.17	8.29	7.86	8.70	8.70	8.48	8.24	7.18	7.29	
Total Deferred															
Number	812	829	194	198	1,006	1,027	54	54	45	41	99	95	1,105	1,122	
Average Age	48.05	48.14	41.88	41.80	46.86	46.92	44.59	44.74	43.07	43.61	43.90	44.25	46.59	46.69	
Average Service	8.66	8.76	7.77	7.85	8.49	8.58	9.09	8.71	8.97	8.98	9.03	8.83	8.54	8.60	

<sup>&</sup>lt;sup>1</sup> All payroll figures shown are annual.



**County and Former County Members** 

						General 1	Members					Safety M	<b>1</b> embers					
	Tie	r 1	Tie	r 2	Tie	r 3	Tie	er 4	Tie	r 5	PEP	RA	Tiers	1 & 4	Tiers	2 & 5	PEP	RA
	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019
Active Participants																		
Number	1	1	233	227	11	8	14	7	1,773	1,614	1,504	1,700	1	0	391	372	329	363
Average Age	59.00	60.00	41.70	42.76	53.18	51.25	62.64	62.14	50.88	51.29	37.79	38.55	64.00	0.00	43.37	44.06	29.74	30.22
Average Service	19.80	20.74	7.62	8.71	19.74	19.65	37.44	37.25	17.23	18.03	2.48	2.92	23.73	0.00	15.43	16.14	2.49	3.04
Average Pay <sup>1</sup>	\$ 46,903	\$ 51,948	\$ 62,886	\$ 66,711	\$ 54,906	\$ 54,617	\$ 95,516	\$ 119,774	\$ 65,829	\$ 67,946	\$ 47,568	\$ 50,529	\$ 89,216	\$ 0	\$ 84,008	\$ 89,587	\$ 60,158	\$ 64,996
Terminated Vested																		
Number	5	4	57	53	16	17	1	0	298	287	3	8	1	0	63	56	0	3
Average Age	63.60	65.75	53.40	53.47	57.75	58.94	69.00	0.00	48.23	49.17	36.00	42.13	70.00	0.00	43.37	43.71	0.00	29.67
Average Service	8.76	8.87	8.05	7.74	12.74	14.15	5.55	0.00	10.90	11.21	5.01	5.49	15.43	0.00	9.63	9.89	0.00	5.60
Transfers																		
Number	5	1	122	125	13	12	0	0	228	237	64	85	0	0	113	116	17	23
Average Age	63.80	64.00	48.52	48.68	52.08	52.33	0.00	0.00	47.75	48.09	37.09	37.46	0.00	0.00	42.19	43.00	32.65	32.70
Average Service	11.60	5.95	3.19	3.56	15.86	17.67	0.00	0.00	10.00	10.42	1.91	2.12	0.00	0.00	7.48	7.96	2.33	2.61
Total Deferred																		
Number	10	5	179	178	29	29	1	0	526	524	67	93	1	0	176	172	17	26
Average Age	63.70	65.40	50.07	50.11	55.21	56.21	69.00	0.00	48.03	48.68	37.04	37.86	70.00	0.00	42.61	43.23	32.65	32.35
Average Service	10.18	8.29	4.74	4.81	14.14	15.61	5.55	0.00	10.51	10.85	2.05	2.41	15.43	0.00	8.25	8.59	2.33	2.96

All payroll figures shown are annual.

#### **CERES and Other District Members**

		General Members											Safety Members Tiers 1 & 4 Tiers 2 & 5 PEPRA					
	Tie	r 1	Tie	r 2	Tie	r 3	Tie	r 4	Tie	r 5	PEP	RA	Tiers	1 & 4	Tiers	2 & 5	PEI	PRA
	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019	7/1/2018	7/1/2019
Active Participants																		
Number	0	0	4	4	0	0	1	1	67	69	50	59	0	0	58	54	15	25
Average Age	0.00	0.00	47.00	48.00	0.00	0.00	71.00	72.00	50.10	50.68	39.84	39.37	0.00	0.00	41.34	41.67	35.27	33.92
Average Service	0.00	0.00	12.58	13.54	0.00	0.00	49.87	50.87	17.21	18.11	2.47	2.67	0.00	0.00	14.82	15.55	3.85	3.37
Average Pay <sup>1</sup>	\$ 0	\$ 0	\$ 57,540	\$ 60,682	\$ 0	\$ 0	\$ 55,657	\$ 58,451	\$ 66,661	\$ 76,458	\$ 45,397	\$ 47,149	\$ 0	\$ 0	\$ 88,969	\$ 95,583	\$ 63,119	\$ 61,350
Terminated Vested																		
Number	1	0	4	4	0	0	0	0	9	6	2	2	0	0	10	7	0	0
Average Age	64.00	0.00	58.25	59.25	0.00	0.00	0.00	0.00	47.22	52.00	41.50	42.50	0.00	0.00	42.60	43.57	0.00	0.00
Average Service	5.32	0.00	7.59	7.59	0.00	0.00	0.00	0.00	12.68	14.03	12.90	12.90	0.00	0.00	9.94	10.32	0.00	0.00
Transfers																		
Number	0	1	5	5	0	0	0	0	27	28	6	8	0	0	33	32	2	2
Average Age	0.00	65.00	52.00	53.00	0.00	0.00	0.00	0.00	42.26	41.79	33.67	35.25	0.00	0.00	44.09	44.50	28.50	29.50
Average Service	0.00	19.81	2.11	2.11	0.00	0.00	0.00	0.00	10.60	9.76	3.03	3.31	0.00	0.00	9.09	9.11	2.18	2.18
Total Deferred																		
Number	1	1	9	9	0	0	0	0	36	34	8	10	0	0	43	39	2	2
Average Age	64.00	65.00	54.78	55.78	0.00	0.00	0.00	0.00	43.50	43.59	35.63	36.70	0.00	0.00	43.74	44.33	28.50	29.50
Average Service	5.32	19.81	4.55	4.55	0.00	0.00	0.00	0.00	11.12	10.52	5.50	5.23	0.00	0.00	9.29	9.33	2.18	2.18

<sup>&</sup>lt;sup>1</sup> All payroll figures shown are annual.



<b>Valuation Date</b>	Plan Type	Number	<b>Annual Payroll</b>	Average Annual Salary	Increase in Average Pay
June 30, 2003	General	3,626	\$163,505,000	\$45,092	6.76%
ŕ	Safety	637	\$34,159,000	\$53,625	3.98%
	Total	4,263	\$197,664,000	\$46,367	5.23%
June 30, 2004	General	3,618	\$164,462,000	\$45,457	0.81%
·	Safety	630	\$35,501,000	\$56,351	5.08%
	Total	4,248	\$199,963,000	\$47,072	1.52%
June 30, 2005	General	3,651	\$173,399,000	\$47,494	4.48%
ŕ	Safety	687	\$38,282,000	\$55,723	-1.11%
	Total	4,338	\$211,681,000	\$48,797	3.66%
June 30, 2006	General	3,702	\$179,767,000	\$48,559	2.24%
ŕ	Safety	689	\$40,001,000	\$58,057	4.19%
	Total	4,391	\$219,768,000	\$50,050	2.57%
June 30, 2008	General	3,719	\$230,942,000	\$62,098	27.88%
	Safety	731	\$44,638,000	\$61,064	5.18%
	Total	4,450	\$275,580,000	\$61,928	23.73%
June 30, 2009	General	3,627	\$201,144,000	\$55,457	-10.69%
ŕ	Safety	739	\$47,172,000	\$63,832	4.53%
	Total	4,366	\$248,316,000	\$56,875	-8.16%
June 30, 2010	General	3,464	\$202,200,198	\$58,372	5.26%
ĺ	Safety	685	\$46,630,275	\$68,073	6.64%
	Total	4,149	\$248,830,473	\$59,974	5.45%
June 30, 2011		3,232	\$184,906,498	\$57,211	-1.99%
ŕ	Safety	637	\$41,800,298	\$65,621	-3.60%
	Total	3,869	\$226,706,796	\$58,596	-2.30%
June 30, 2012	General	3,233	\$179,260,736	\$55,447	-3.08%
ŕ	Safety	661	\$41,657,273	\$63,022	-3.96%
	Total	3,894	\$220,918,009	\$56,733	-3.18%
June 30, 2013	General	3,230	\$176,437,755	\$54,625	-1.48%
·	Safety	694	\$42,590,563	\$61,370	-2.62%
	Total	3,924	\$219,028,318	\$55,818	-1.61%
June 30, 2014	General	3,303	\$179,606,090	\$54,377	-0.45%
	Safety	689	\$43,422,198	\$63,022	2.69%
	Total	3,992	\$223,028,288	\$55,869	0.09%
June 30, 2015	General	3,421	\$188,550,804	\$55,116	1.36%
	Safety	723	\$49,166,923	\$68,004	7.91%
	Total	4,144	\$237,717,727	\$57,364	2.68%
June 30, 2016	General	3,521	\$198,457,059	\$56,364	2.26%
	Safety	727	\$52,020,521	\$71,555	5.22%
	Total	4,248	\$250,477,580	\$58,964	2.79%
June 30, 2017	General	3,552	\$201,758,423	\$56,801	0.78%
	Safety	757	\$54,385,261	\$71,843	0.40%
	Total	4,309	\$256,143,684	\$59,444	0.81%
June 30, 2018	General	3,658	\$211,919,963	\$57,933	1.99%
	Safety	794	\$58,835,257	\$74,100	3.14%
	Total	4,452	\$270,755,220	\$60,817	2.31%
June 30, 2019	General	3,690	\$220,393,008	\$59,727	3.10%
	Safety	814	\$63,615,295	\$78,151	5.47%
	Total	4,504	\$284,008,303	\$63,057	3.68%

Actuarial valuation was not performed for fiscal year ending June 30, 2007.



StanCERA Membership – Retired Members as of June 30, 2019

	Co	unty and Fo	ormer Count	y	C	eres and Ot	her Districts	S	Tot	al
Age	General M Number	Members Annual Average Benefit	Safety M Number	lembers Annual Average Benefit	General N	Members Annual Average Benefit	Safety M Number	lembers Annual Average Benefit	Number	Annual Average Benefit
35-39	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
40-44	0	\$0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
45-49	0	\$ 0	3	\$ 53,268	0	\$ 0	0	\$ 0	3	\$ 53,268
50-54	45	\$ 19,412	64	\$ 60,657	0	\$ 0	6	\$ 61,368	115	\$ 44,555
55-59	201	\$ 29,054	66	\$ 61,242	4	\$ 32,571	6	\$ 64,395	277	\$ 37,539
60-64	418	\$ 32,381	72	\$ 51,331	14	\$ 32,637	5	\$ 119,014	509	\$ 35,919
65-69	689	\$ 33,816	71	\$ 51,370	22	\$ 25,673	5	\$ 87,825	787	\$ 35,515
70-74	627	\$ 35,942	68	\$ 62,190	19	\$ 34,582	0	\$ 0	714	\$ 38,406
75-79	370	\$ 31,290	36	\$ 52,303	9	\$ 35,939	0	\$ 0	415	\$ 33,213
80-84	182	\$ 25,236	20	\$ 62,465	4	\$ 52,512	0	\$ 0	206	\$ 29,380
85-89	124	\$ 25,873	6	\$ 52,583	1	\$ 9,079	0	\$ 0	131	\$ 26,968
90-94	50	\$ 18,497	5	\$ 27,294	0	\$ 0	0	\$ 0	55	\$ 19,297
95+	18	\$ 26,954	1	\$ 21,991	0	\$ 0	0	\$ 0	19	\$ 26,693
All Ages	2,724	\$ 31,891	412	\$ 56,461	73	\$ 32,214	22	\$ 81,308	3,231	\$ 35,368



StanCERA Membership – Service-Connected Disabled Members as of June 30, 2019

	Co	unty and Fo	ormer Count	$\mathbf{y}$	C	eres and Ot	her Districts	;	Tot	al
	General N	<u> Iembers</u>	Safety M	embers	General N	<u> Iembers</u>	Safety M	<u>lembers</u>		
		Annual		Annual		Annual		Annual		Annual
		Average		Average		Average		Average		Average
Age	Number	Benefit	Number	Benefit	Number	Benefit	Number	Benefit	Number	Benefit
25-29	0	\$0	0	\$0	0	\$ 0	0	\$0	0	\$ 0
30-34	0	\$0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
35-39	0	\$0	7	\$ 26,941	0	\$ 0	1	\$ 40,291	8	\$ 28,610
40-44	1	\$ 16,399	5	\$ 31,338	0	\$ 0	2	\$ 29,650	8	\$ 29,049
45-49	1	\$ 22,285	17	\$ 32,953	0	\$ 0	0	\$ 0	18	\$ 32,361
50-54	2	\$ 29,788	12	\$ 41,496	0	\$ 0	1	\$ 32,473	15	\$ 39,333
55-59	4	\$ 30,609	19	\$ 35,215	1	\$ 32,113	1	\$ 100,454	25	\$ 36,964
60-64	12	\$ 24,083	19	\$ 42,022	1	\$ 0	0	\$ 0	32	\$ 33,982
65-69	24	\$ 24,778	17	\$ 42,767	1	\$ 25,156	3	\$ 43,063	45	\$ 32,802
70-74	20	\$ 28,090	17	\$ 49,267	2	\$ 22,603	0	\$ 0	39	\$ 37,040
75-79	8	\$ 31,072	6	\$ 41,389	0	\$ 0	0	\$ 0	14	\$ 35,494
80-84	9	\$ 29,357	1	\$ 35,855	0	\$0	0	\$ 0	10	\$ 30,007
85-89	2	\$ 40,893	2	\$ 39,617	0	\$ 0	0	\$ 0	4	\$ 40,255
90-94	1	\$ 18,995	0	\$ 0	0	\$ 0	0	\$ 0	1	\$ 18,995
95+	0	\$0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
All Ages	84	\$ 27,140	122	\$ 39,336	5	\$ 20,495	8	\$ 45,214	219	\$ 34,442



StanCERA Membership - Nonservice-Connected Disabled Members as of June 30, 2019

	Co	ounty and Fo	ormer Count	y	C	eres and Ot	her Districts		Tot	al
Age	General N Number	<u>Members</u> Annual Average Benefit	Safety M Number	<u>lembers</u> Annual Average Benefit	General N	Members Annual Average Benefit	Safety M Number	embers Annual Average Benefit	Number	Annual Average Benefit
35-39	0	\$ 0	0	\$ 0	1	\$ 23,610	0	\$ 0	1	\$ 23,610
40-44	3	\$ 16,784	0	\$ 0	0	\$ 0	0	\$ 0	3	\$ 16,784
45-49	5	\$ 20,369	1	\$ 24,320	0	\$ 0	1	\$ 38,216	7	\$ 23,483
50-54	9	\$ 18,056	0	\$ 0	0	\$ 0	0	\$ 0	9	\$ 18,056
55-59	7	\$ 18,484	0	\$ 0	0	\$ 0	0	\$ 0	7	\$ 18,484
60-64	10	\$ 20,198	3	\$ 25,332	0	\$ 0	0	\$ 0	13	\$ 21,383
65-69	12	\$ 18,223	1	\$ 15,531	0	\$0	0	\$ 0	13	\$ 18,016
70-74	13	\$ 21,031	0	\$ 0	0	\$0	0	\$ 0	13	\$ 21,031
75-79	10	\$ 14,482	1	\$ 21,964	0	\$0	0	\$ 0	11	\$ 15,162
80-84	3	\$ 16,543	0	\$ 0	0	\$0	0	\$ 0	3	\$ 16,543
85-89	2	\$ 17,544	0	\$ 0	0	\$0	0	\$ 0	2	\$ 17,544
90-94	0	\$0	0	\$ 0	0	\$0	0	\$ 0	0	\$ 0
95+	0	\$0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
All Ages	74	\$ 18,482	6	\$ 22,968	1	\$ 23,610	1	\$ 38,216	82	\$ 19,114



StanCERA Membership – Beneficiaries as of June 30, 2019

	Co	ounty and Fo	ormer Count	ty	C	eres and Ot	her Districts	S	Tot	tal
	General N	<u>Members</u> Annual Average	Safety M	lembers Annual Average	General N	<u>Members</u> Annual Average	<u>Safety M</u>	lembers Annual Average		Annual Average
Age	Number	Benefit	Number	Benefit	Number	Benefit	Number	Benefit	Number	Benefit
0-24	1	\$ 33,047	2	\$ 19,434	0	\$0	0	\$0	3	\$ 23,971
25-29	0	\$0	0	\$ 0	0	\$0	0	\$ 0	0	\$ 0
30-34	0	\$0	0	\$ 0	0	\$0	0	\$ 0	0	\$ 0
35-39	1	\$ 39,949	1	\$ 16,186	0	\$0	0	\$ 0	2	\$ 28,068
40-44	5	\$ 10,921	3	\$ 14,255	0	\$0	0	\$ 0	8	\$ 12,171
45-49	9	\$ 10,914	4	\$ 25,021	0	\$0	0	\$ 0	13	\$ 15,255
50-54	17	\$ 13,640	6	\$ 28,882	0	\$0	0	\$ 0	23	\$ 17,616
55-59	17	\$ 14,872	9	\$ 24,668	1	\$ 23,762	1	\$ 29,091	28	\$ 18,846
60-64	26	\$ 17,362	11	\$ 29,172	0	\$0	1	\$ 38,292	38	\$ 21,331
65-69	52	\$ 19,591	16	\$ 26,968	2	\$ 12,634	0	\$ 0	70	\$ 21,078
70-74	84	\$ 19,105	15	\$ 42,026	0	\$0	1	\$ 86,953	100	\$ 23,221
75-79	41	\$ 21,265	11	\$ 35,780	0	\$0	0	\$ 0	52	\$ 24,336
80-84	38	\$ 20,182	12	\$ 31,081	1	\$ 19,014	0	\$ 0	51	\$ 22,724
85-89	36	\$ 23,878	7	\$ 33,179	0	\$0	0	\$ 0	43	\$ 25,392
90-94	23	\$ 20,156	1	\$ 37,135	0	\$0	0	\$ 0	24	\$ 20,863
95+	14	\$ 16,821	0	\$ 0	0	\$0	0	\$ 0	14	\$ 16,821
All Ages	364	\$ 19,184	98	\$ 30,734	4	\$ 17,011	3	\$ 51,445	469	\$ 21,785



StanCERA Membership – Benefit Form Elections as of June 30, 2019

Suite Elect Weinbership - Benefit Form			Ceres and Ot	her Districts	
	General	Safety	General	Safety	Total
Service Retired					
Option #0 (Unmodified 60% to Spouse)	2,255	365	56	20	2,696
Option #1 (Cash Refund)	216	10	7	0	233
Option #2 (100% Continuance)	220	31	10	1	262
Option #3 (50% Continuance)	31	5	0	1	37
Option #4 (Other)	2	1	0	0	3
Total Service Retired	2,724	412	73	22	3,231
Ordinary Disability					
Option #0 (Unmodified 60% to Spouse)	65	4	1	1	71
Option #1 (Cash Refund)	5	2	0	0	7
Option #2 (100% Continuance)	4	0	0	0	4
Option #3 (50% Continuance)	0	0	0	0	0
Total Ordinary Disability	74	6	1	1	82
Duty Disability					
Option #0 (Unmodified 60% to Spouse)	74	109	5	7	195
Option #1 (Cash Refund)	1	1	0	0	2
Option #2 (100% Continuance)	6	10	0	1	17
Option #3 (50% Continuance)	3	2	0	0	5
Total Duty Disability	84	122	5	8	219
Total	2,882	540	79	31	3,532



Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2019 General Members (County and Former County)

#### Count

						Years o	f Service						
Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	<b>Total Count</b>
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	20	10	3	2	0	0	0	0	0	0	0	0	35
25-29	93	93	55	46	28	11	0	0	0	0	0	0	326
30-34	76	72	54	72	55	96	18	0	0	0	0	0	443
35-39	58	47	48	55	54	119	106	18	0	0	0	0	505
40-44	44	34	32	27	40	74	118	104	18	0	0	0	491
45-49	27	20	21	21	26	62	110	112	62	7	0	0	468
50-54	27	20	15	26	27	37	83	83	84	35	8	0	445
55-59	14	20	19	15	13	42	77	84	86	50	31	6	457
60-64	15	6	7	14	8	16	51	69	44	31	15	8	284
65-69	3	1	1	5	0	8	25	18	9	4	3	1	78
70 & Over	0	1	0	1	0	1	4	9	5	4	0	0	25
Total Count	377	324	255	284	251	466	592	497	308	131	57	15	3,557

Years of Service													
Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Avg. Comp.
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	34,719	37,210	43,584	40,389	0	0	0	0	0	0	0	0	36,515
25-29	42,198	40,821	45,253	48,682	51,177	51,627	0	0	0	0	0	0	44,325
30-34	45,876	46,346	50,213	52,494	55,146	58,413	50,420	0	0	0	0	0	51,609
35-39	48,419	52,953	49,966	50,828	59,508	59,234	63,837	64,523	0	0	0	0	56,795
40-44	47,948	52,704	52,524	57,258	52,160	58,775	64,307	64,783	61,701	0	0	0	59,064
45-49	50,507	44,106	55,328	54,465	52,077	61,844	64,558	70,097	77,932	71,925	0	0	64,161
50-54	62,632	47,414	50,815	52,573	55,984	55,932	71,992	67,866	73,596	74,239	86,785	0	66,140
55-59	57,240	48,162	73,674	58,473	57,332	68,529	65,859	65,123	67,174	76,054	77,114	59,571	66,814
60-64	70,156	53,765	66,995	51,482	46,113	60,493	57,647	64,938	71,994	83,243	87,776	106,553	67,745
65-69	61,648	50,309	48,434	64,271	0	74,694	54,468	56,592	56,935	96,519	67,618	105,055	61,402
70 & Over	0	32,267	0	124,282	0	92,269	121,868	55,588	51,305	61,516	0	0	69,567
Average	48,055	46,250	51,967	52,801	54,763	60,115	64,526	66,102	70,903	77,231	80,778	87,661	59,610

Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2019



#### **General Members (Ceres and Other Districts)**

#### Count

						Years o	f Service						
Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	<b>Total Count</b>
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	1	0	0	0	0	0	0	0	0	0	0	0	1
25-29	3	4	3	1	1	2	0	0	0	0	0	0	14
30-34	2	1	0	2	1	3	0	0	0	0	0	0	9
35-39	4	2	1	2	1	4	1	2	0	0	0	0	17
40-44	4	3	0	0	2	2	2	5	1	0	0	0	19
45-49	2	1	0	2	1	1	4	4	1	0	0	0	16
50-54	2	3	1	0	1	1	4	8	2	0	2	0	24
55-59	2	1	1	0	1	2	3	2	2	3	1	0	18
60-64	1	0	0	0	0	2	3	3	0	1	1	0	11
65-69	0	0	0	0	0	1	0	0	0	1	0	0	2
70 & Over	0	0	0	0	0	0	1	0	0	0	0	1	2
Total Count	21	15	6	7	8	18	18	24	6	5	4	1	133

						Years of	Service						
Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Avg. Comp.
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	30,597	0	0	0	0	0	0	0	0	0	0	0	30,597
25-29	37,863	40,696	43,056	41,244	43,508	51,340	0	0	0	0	0	0	42,355
30-34	34,077	46,190	0	41,335	47,983	56,874	0	0	0	0	0	0	46,180
35-39	39,275	36,575	43,470	50,768	43,077	65,883	54,040	60,330	0	0	0	0	50,386
40-44	98,896	53,650	0	0	50,445	50,773	54,132	66,780	62,948	0	0	0	66,531
45-49	46,483	36,762	0	90,268	68,984	200,576	60,297	78,828	74,169	0	0	0	75,656
50-54	90,888	49,448	104,989	0	40,199	53,838	86,700	68,511	103,477	0	84,606	0	75,009
55-59	76,577	34,863	87,706	0	53,368	56,084	87,223	62,337	74,757	65,739	63,888	0	68,790
60-64	43,896	0	0	0	0	43,025	58,982	61,183	0	140,778	51,921	0	62,104
65-69	0	0	0	0	0	53,964	0	0	0	48,798	0	0	51,381
70 & Over	0	0	0	0	0	0	105,455	0	0	0	0	58,451	81,953
Average	58,896	44,203	60,889	57,998	49,751	63,610	71,909	67,758	82,264	77,359	71,255	58,451	62,846



#### Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2019 Safety Members (County and Former County)

#### Count

						Years o	f Service						
Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	<b>Total Count</b>
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	18	17	4	0	0	0	0	0	0	0	0	0	39
25-29	26	31	38	23	22	23	0	0	0	0	0	0	163
30-34	9	16	17	19	19	42	11	0	0	0	0	0	133
35-39	5	9	6	7	11	20	42	12	0	0	0	0	112
40-44	0	2	1	1	3	13	33	49	10	0	0	0	112
45-49	0	2	1	0	1	1	17	32	35	2	0	0	91
50-54	2	0	1	1	1	0	7	8	17	9	0	0	46
55-59	0	1	0	1	2	2	5	6	4	3	0	0	24
60-64	0	0	0	0	0	1	5	4	0	1	0	0	11
65-69	0	0	0	0	0	2	0	0	1	0	0	0	3
70 & Over	0	0	0	0	0	0	1	0	0	0	0	0	1
Total Count	60	78	68	52	59	104	121	111	67	15	0	0	735

Years of Service													
Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Avg. Comp.
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	54,508	62,990	65,683	0	0	0	0	0	0	0	0	0	59,352
25-29	57,304	59,981	59,886	66,090	71,237	74,596	0	0	0	0	0	0	63,975
30-34	56,360	60,019	64,022	66,884	70,134	74,448	86,170	0	0	0	0	0	69,428
35-39	64,940	64,173	61,320	65,515	76,138	78,780	86,831	88,355	0	0	0	0	79,009
40-44	0	75,397	52,910	68,020	76,156	76,731	83,013	92,256	94,929	0	0	0	86,669
45-49	0	62,519	62,993	0	78,935	57,291	85,804	85,003	101,836	83,226	0	0	90,481
50-54	84,052	0	82,198	88,421	98,246	0	95,856	90,717	109,216	95,953	0	0	98,999
55-59	0	138,736	0	83,100	79,333	92,591	76,022	82,938	95,630	127,521	0	0	92,021
60-64	0	0	0	0	0	78,598	79,651	94,055	0	82,343	0	0	85,038
65-69	0	0	0	0	0	93,367	0	0	99,167	0	0	0	95,300
70 & Over	0	0	0	0	0	0	169,938	0	0	0	0	0	169,938
Average	57,851	62,599	61,659	67,096	72,908	76,187	86,051	89,193	102,267	99,662	0	0	77,442



# Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2019 Safety Members (Ceres and Other Districts)

#### Count

						Years o	f Service						
Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	<b>Total Count</b>
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0	0	0
25-29	6	2	0	0	2	1	0	0	0	0	0	0	11
30-34	2	0	1	6	0	3	4	0	0	0	0	0	16
35-39	0	0	0	1	1	2	8	2	0	0	0	0	14
40-44	0	0	1	0	0	1	5	2	3	0	0	0	12
45-49	1	1	1	1	1	1	2	4	5	1	1	0	19
50-54	0	0	0	0	0	0	1	2	1	0	0	0	4
55-59	0	0	0	0	1	0	0	0	2	0	0	0	3
60-64	0	0	0	0	0	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0	0	0	0	0	0
70 & Over	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Count	9	3	3	8	5	8	20	10	11	1	1	0	79

						Years of	f Service						
Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Avg. Comp.
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0	0	0
25-29	52,914	62,851	0	0	71,193	74,209	0	0	0	0	0	0	59,980
30-34	55,896	0	68,253	62,035	0	77,711	89,774	0	0	0	0	0	71,530
35-39	0	0	0	69,003	88,213	79,212	84,009	92,655	0	0	0	0	83,788
40-44	0	0	46,067	0	0	93,460	92,615	99,614	116,338	0	0	0	95,903
45-49	133,636	65,960	78,113	73,686	74,484	76,630	87,400	104,088	122,043	114,877	96,415	0	100,798
50-54	0	0	0	0	0	0	78,739	95,492	110,303	0	0	0	95,006
55-59	0	0	0	0	74,887	0	0	0	98,504	0	0	0	90,631
60-64	0	0	0	0	0	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0	0	0	0	0	0
70 & Over	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	62,546	63,887	64,145	64,362	75,994	79,482	87,389	99,187	115,140	114,877	96,415	0	84,750



## Reconciliation of Plan Membership Since Prior Valuation All Members

#### All Members

	Actives	Transfers	Non Vested Terminations due Refunds	Vested Terminations	Ordinary Disabled	Duty Disabled	Retired	Beneficiaries	Total
July 1, 2018	4,452	635	432	470	82	223	3,107	444	9,845
New Entrants	459	1	0	0	0	0	0	0	460
Rehires	21	(4)	(9)	(7)	0	0	0	0	1
Duty Disabilities	(2)	(2)	0	0	0	4	0	0	0
Ordinary Disabilities	(1)	0	0	(1)	2	0	0	0	0
Retirements	(136)	(24)	0	(36)	0	0	195	0	(1)
Retirements from General with Safety Service	0	0	0	0	0	0	1	0	1
Vested Terminations	(45)	(3)	0	48	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	(1)	0	0	0	(1)	(3)	(28)	33	0
Died, Without Beneficiary, and Other Terminations	(92)	0	83	(1)	(1)	(5)	(44)	0	(60)
Transfers	(40)	74	(13)	(18)	0	0	0	0	3
Beneficiary Deaths	0	0	0	0	0	0	0	(14)	(14)
Domestic Relations Orders	0	0	0	0	0	0	0	6	6
Withdrawals Paid	(111)	0	(52)	(8)	0	0	0	(1)	(172)
Member Reclassifications	0	(2)	(1)	0	0	0	0	1	(2)
July 1, 2019	4,504	675	440	447	82	219	3,231	469	10,067



## Reconciliation of Plan Membership Since Prior Valuation General Members (County and Former County)

	Actives	Transfers	Non Vested Terminations due Refunds	Vested Terminations	Ordinary Disabled	Duty Disabled	Retired	Beneficiaries	Total
July 1, 2018	3,536	432	362	380	74	89	2,626	345	7,844
New Entrants	367	0	0	0	0	0	0	0	367
Rehires	17	(3)	(7)	(6)	0	0	0	0	1
Duty Disabilities	0	0	0	0	0	0	0	0	0
Ordinary Disabilities	(1)	0	0	(1)	2	0	0	0	0
Retirements	(114)	(19)	0	(29)	0	0	161	0	(1)
Retirements from General with Safety Service	0	0	0	0	0	0	0	0	0
Vested Terminations	(39)	(2)	0	41	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	(1)	0	0	0	(1)	(1)	(25)	28	0
Died, Without Beneficiary, and Other Terminations	(76)	0	69	0	(1)	(4)	(38)	0	(50)
Transfers	(34)	54	(9)	(9)	0	0	0	0	2
Beneficiary Deaths	0	0	0	0	0	0	0	(12)	(12)
Domestic Relations Orders	0	0	0	0	0	0	0	3	3
Withdrawals Paid	(97)	0	(40)	(7)	0	0	0	(1)	(145)
Member Reclassifications	(1)	(2)	0	0	0	0	0	1	(2)
July 1, 2019	3,557	460	375	369	74	84	2,724	364	8,007



## Reconciliation of Plan Membership Since Prior Valuation Safety Members (County and Former County)

	Actives	Transfers	Non Vested Terminations due Refunds	Vested Terminations	Ordinary Disabled	Duty Disabled	Retired	Beneficiaries	Total
July 1, 2018	721	130	49	64	6	121	397	93	1,581
New Entrants	60	1	0	0	0	0	0	0	61
Rehires	1	0	0	(1)	0	0	0	0	0
Duty Disabilities	(1)	(1)	0	0	0	2	0	0	0
Ordinary Disabilities	0	0	0	0	0	0	0	0	0
Retirements	(15)	(3)	0	(6)	0	0	24	0	0
Retirements from General with Safety Service	0	0	0	0	0	0	0	0	0
Vested Terminations	(5)	(1)	0	6	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	0	0	0	(1)	(3)	4	0
Died, Without Beneficiary, and Other Terminations	(11)	0	10	0	0	0	(6)	0	(7)
Transfers	(6)	13	(2)	(4)	0	0	0	0	1
Beneficiary Deaths	0	0	0	0	0	0	0	(2)	(2)
Domestic Relations Orders	0	0	0	0	0	0	0	3	3
Withdrawals Paid	(10)	0	(10)	(1)	0	0	0	0	(21)
Member Reclassifications	1	0	(1)	1	0	0	0	0	1
July 1, 2019	735	139	46	59	6	122	412	98	1,617



## Reconciliation of Plan Membership Since Prior Valuation General Members (Ceres and Other Districts)

	Actives	Transfers	Non Vested Terminations due Refunds	Vested Terminations	Ordinary Disabled	Duty Disabled	Retired	Beneficiaries	Total
July 1, 2018	122	38	8	16	1	7	68	3	263
New Entrants	22	0	0	0	0	0	0	0	22
Rehires	1	(1)	0	0	0	0	0	0	0
Duty Disabilities	0	0	0	0	0	0	0	0	0
Ordinary Disabilities	0	0	0	0	0	0	0	0	0
Retirements	(3)	(1)	0	0	0	0	4	0	0
Retirements from General with Safety Service	0	0	0	0	0	0	1	0	1
Vested Terminations	(1)	0	0	1	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	0	0	0	(1)	0	1	0
Died, Without Beneficiary, and Other Terminations	(4)	0	3	(1)	0	(1)	0	0	(3)
Transfers	0	6	(2)	(4)	0	0	0	0	0
Beneficiary Deaths	0	0	0	0	0	0	0	0	0
Domestic Relations Orders	0	0	0	0	0	0	0	0	0
Withdrawals Paid	(4)	0	(1)	0	0	0	0	0	(5)
Member Reclassifications	0	0	0	0	0	0	0	0	0
July 1, 2019	133	42	8	12	1	5	73	4	278



## Reconciliation of Plan Membership Since Prior Valuation Safety Members (Ceres and Other Districts)

	Actives	Transfers	Non Vested Terminations due Refunds	Vested Terminations	Ordinary Disabled	Duty Disabled	Retired	Beneficiaries	Total
July 1, 2018	73	35	13	10	1	6	16	3	157
New Entrants	10	0	0	0	0	0	0	0	10
Rehires	2	0	(2)	0	0	0	0	0	0
Duty Disabilities	(1)	(1)	0	0	0	2	0	0	0
Ordinary Disabilities	0	0	0	0	0	0	0	0	0
Retirements	(4)	(1)	0	(1)	0	0	6	0	0
Retirements from General with Safety Service	0	0	0	0	0	0	0	0	0
Vested Terminations	0	0	0	0	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	0	0	0	0	0	0	0
Died, Without Beneficiary, and Other Terminations	(1)	0	1	0	0	0	0	0	0
Transfers	0	1	0	(1)	0	0	0	0	0
Beneficiary Deaths	0	0	0	0	0	0	0	0	0
Domestic Relations Orders	0	0	0	0	0	0	0	0	0
Withdrawals Paid	0	0	(1)	0	0	0	0	0	(1)
Member Reclassifications	0	0	0	(1)	0	0	0	0	(1)
July 1, 2019	79	34	11	7	1	8	22	3	165



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions and methods used in the actuarial valuation as of July 1, 2019 are:

#### **Actuarial Methods**

#### 1. Actuarial Cost Method

Annual contributions to the Stanislaus County Employees' Retirement Association (the Plan) are computed under the Entry Age Normal Actuarial Cost Method, computed to the final decrement.

Under this Cost Method, the Normal Cost is calculated as the amount necessary to fund Members' benefits as a level percentage of total payroll over their projected working lives. At each valuation date, the Actuarial Liability is equal to the difference between the liability for the Members' total projected benefit and the present value of future Normal Cost contributions.

The excess of the Actuarial Liability over Plan assets is the Unfunded Actuarial Liability, and the liability for each valuation group is amortized as a level percentage of payroll over a closed period (17 years as of the current valuation).

Amounts may be added to or subtracted from the Unfunded Actuarial Liability due to Plan amendments or changes in actuarial assumptions.

The total Plan cost is the sum of the Normal Cost (computed on an Individual basis), the amortization of the Unfunded Actuarial Liability, and the expected Administrative Expenses.

#### 2. Actuarial Value of Plan Assets

The Actuarial Value of Plan assets is a modified market-related value. The Market Value of Assets is adjusted to recognize, over a five-year period, differences between actual investment earnings and the assumed investment return. The Actuarial Value of Assets is limited to no less than 80% and no more than 120% of the market value.

The detailed calculations of the Actuarial Value of Plan assets are shown in Section II.

#### 3. Changes in Actuarial Methods

None



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

#### **Actuarial Assumptions**

All actuarial assumptions are based on the Actuarial Experience Study Report for the period covering July 1, 2015 through June 30, 2018 report. The proposed assumptions were summarized and reviewed with the Board at the January 22, 2019 Board meeting, at which the Board provided direction to proceed with the valuation based on those assumptions. Final adoption of these assumptions was effective with the June 30, 2018 report.

#### 4. Rate of Return

The annual rate of return on all Plan assets is assumed to be 7.00%, net of investment expenses.

#### 5. Cost of Living

The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 2.75% per year.

### 6. Administrative Expenses

An allowance of \$2,903,330 for Plan administrative expenses for the current year has been included in the annual cost calculated. The administrative expense amount has been assumed to increase in future years at the rate of the Cost of Living assumption (2.75%).

### 7. Interest Credited to Employee Accounts

The employee accounts are credited with 0.25% interest annually.

#### 8. Increases in Pay

Base salary increase: 3.00%

Assumed pay increases for active Members consist of increases due to base salary adjustments (as noted above), plus service-based increases due to longevity and promotion, as shown on the next page.



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Longevity & Promotion Increases							
Service	General	Safety					
0	5.00%	7.00%					
1	5.00%	6.00%					
2	5.00%	5.00%					
3	5.00%	4.00%					
4	5.00%	3.00%					
5	3.50%	2.00%					
6	2.50%	1.75%					
7	1.50%	1.50%					
8	1.25%	1.25%					
9	1.00%	1.00%					
10	0.75%	0.75%					
11+	0.50%	0.50%					

#### 9. PEPRA Compensation Limit

The assumption used for increasing the compensation limit that applies to PEPRA members is 2.75%

#### 10. Post Retirement COLA

For those with the 3% COLA benefit (i.e. 100% of CPI up to 3% annually with banking), 2.60% annual increases are assumed. Increases are assumed to occur on April 1.

#### 11. Social Security Wage Base

General Plan 3 members have their benefits offset by an assumed Social Security Benefit. For projecting the Social Security Benefit, the annual Social Security Wage Base increase is assumed to be 3.00% per year.

#### 12. Internal Revenue Code Section 415 Limit

The Internal Revenue Code (IRC) Section 415 maximum benefit limitations have been applied to the benefits for members currently in pay status, as the limited benefits have been provided by StanCERA for valuation purposes. Future projected benefits for members in active and deferred statuses have not been reduced for potential Section 415 limits in the current valuation, though any actual limitations for these members will result in actuarial gains upon their actual retirement, which will reduce future contributions.

#### 13. Internal Revenue Code Section 401(a)(17)

The IRC Section 401(a)(17) maximum compensation limitation for active members is not reflected in the valuation for funding purposes; limitations are reflected after retirement.

#### 14. Family Composition



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Percentage married for all active members who retire, become disabled, or die during active service is shown in the following table.

Percentage Married					
Gender Percentage					
Males	80%				
Females	50%				

Spouses of male members are assumed to be three years younger than the member and spouses of female members are assumed to be two years older than the member.

#### 15. Accumulated Vacation Time Load

Active members' service retirement and related benefits are loaded by 1.75% for Safety Members and 1.00% for General Members for conversion of vacation time. 1/3 of this load applies for members with a 36-month final average service period. No other adjustment is made to the liabilities for anticipated future service purchases.

#### 16. Rates of Separation

Rates of termination apply to all active Members who terminate their employment.

Separate rates of termination are assumed among Safety and General Members.

	Termination Rates							
	Years of	General	Safety					
	Service	All	All					
ſ	0	18.0%	18.0%					
	1	14.0%	12.0%					
	2	11.7%	9.0%					
	3	9.4%	7.0%					
	4	7.1%	6.0%					
	5	5.0%	5.0%					
	10	3.5%	5.0%					
	15	2.9%	3.4%					
	20	1.5%	0.0%					
	25	1.3%	0.0%					
	30+	0.0%	0.0%					

Termination rates do not apply once a member is eligible for retirement.

#### 17. Withdrawal



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Rates of withdrawal apply to active Members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future Plan benefits. Separate rates of withdrawal are assumed among Safety and General Members, and are based on service. The rates do not overlap with the service retirement rates.

50% of all General Member terminations with less than 10 years of service are assumed to take a refund of contributions, as well as 20% of those with 10 or more years of service.

35% of all Safety Member terminations with less than 10 years of service are assumed to take a refund of contributions, and 10% of those with 10 or more years are assumed to take a refund.

#### 18. Vested Termination and Reciprocal Transfers

Rates of vested termination apply to active Members who terminate their employment after five years of service and leave their member contributions on deposit with the Plan. Alternatively, those who terminate their employment with less than five years of service can leave their member contributions with the Plan and transfer to a reciprocal employer, therefore retaining entitlement to future Plan benefits.

Vested terminated Tier 3 General Members are assumed to begin receiving benefits at age 65 while all other General Members are assumed to begin at age 58, unless they have reciprocity, in which case they are assumed to begin at age 61; terminated Safety Members are assumed to begin receiving benefits at age 53. 50% of vested terminated General Members are assumed to be reciprocal; 65% of vested terminated Safety Members are assumed to be reciprocal.

Reciprocal members are assumed to receive 3.75% annual pay increases from the date of transfer to the assumed retirement date.

#### 19. Form of Benefit

Upon retirement, all married members are assumed to elect the normal payment form (joint & 50% survivor annuity for Tier 3 and joint & 60% survivor annuity for all other tiers). Non-married members are assumed to elect a single life annuity. Actual form elections are not anticipated to materially affect results due to the actuarially equivalent optional form factors.



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

### 20. Rates of Service-Connected Disability

Separate rates of duty disability are assumed among Safety and General Members; rates for both sexes for Safety Members are combined. Safety members are assumed to follow the CALPERS State Safety rates. Sample rates are shown below:

Rates of Service-Connected Disability								
	Gen	eral	Safety					
Age	Male	Female	All					
20	0.0043%	0.0002%	0.0020%					
25	0.0102%	0.0004%	0.0760%					
30	0.0211%	0.0008%	0.1700%					
35	0.0284%	0.0024%	0.2640%					
40	0.0401%	0.0056%	0.3600%					
45	0.0613%	0.0101%	0.4570%					
50	0.0897%	0.0162%	0.5570%					
55	0.1227%	0.0249%	0.6580%					
60	0.1637%	0.0349%	0.7620%					
65	0.0000%	0.0000%	0.8690%					

### 21. Rates of Nonservice-Connected Disability

Separate rates of ordinary disability are assumed among Safety and General Members. Rates of ordinary disability for Safety Members are assumed to follow the CalPERS Public Agency Police Non-Industrial Disability table; rates of ordinary disability for General Members are assumed to follow the 2018 CalPERS Public Agency Miscellaneous Non-Industrial Disability table. The rates shown are applied after five Years of Service. On the next page are sample rates:



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Rates of Non Service-Connected								
Disability								
	Gen	eral						
Age	Male	Female						
20	0.0170%	0.0100%						
25	0.0170%	0.0100%						
30	0.0190%	0.0240%						
35	0.0390%	0.0710%						
40	0.1020%	0.1350%						
45	0.1510%	0.1880%						
50	0.1580%	0.1990%						
55	0.1580%	0.1490%						
60	0.1530%	0.1050%						
65	0.1280%	0.0880%						
70+	0.1020%	0.0840%						

Rates of Non Service-							
Connected Disability							
	Safety						
Age	All						
20	0.0100%						
25	0.0100%						
30	0.0200%						
35	0.0300%						
40	0.0400%						
45	0.0500%						
50	0.0800%						
55	0.1300%						
60	0.2000%						
65+	0.2000%						

## 22. Rates of Mortality for Non-Annuitants

Rates of ordinary death for active Members are specified by the CalPERS Pre-Retirement Non-Industrial Mortality table, adjusted by 97.2% for males and 101.6% for females, with generational mortality improvements projected from 2009 using SOA Scale MP-2018. Duty related mortality rates are only applicable for Safety Active Members, and are based on the CalPERS Pre-Retirement Individual Death table without adjustment or projection.

The table on the following page provides a sample of the base mortality rates including adjustments but prior to any projections for mortality improvements.



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Non-Annuitant Mortality Rates									
	Ordinary Death - General and Safety Duty Death								
Age	Male	Female	Safety All						
20	0.0320%	0.0215%	0.0030%						
25	0.0413%	0.0248%	0.0070%						
30	0.0505%	0.0269%	0.0100%						
35	0.0588%	0.0378%	0.0120%						
40	0.0774%	0.0539%	0.0130%						
45	0.1094%	0.0766%	0.0140%						
50	0.1600%	0.1079%	0.0150%						
55	0.2353%	0.1550%	0.0160%						
60	0.3446%	0.2261%	0.0170%						
65	0.4949%	0.3324%	0.0180%						
70	0.6891%	0.4747%	0.0190%						

### 23. Rates of Mortality for Nonservice-Connected Disabled Retirees

Rates of mortality for current nonservice-connected disabled Members are specified by the CalPERS Non-Industrially Disabled Annuitant Mortality table, adjusted by 104.5% for females (no adjustment for males), with generational mortality improvements projected from 2009 using SOA Scale MP-2018.

The table provides a sample of the base mortality rates including adjustments but prior to any projections for mortality improvements.

	Nonservice-Connected								
	Disabled Mortality Rates								
	Age	Male	Female						
	45	1.297%	0.892%						
١	50	1.784%	1.285%						
	55	2.095%	1.327%						
	60	2.634%	1.578%						
	65	3.120%	2.138%						
	70	3.890%	2.941%						
	75	5.398%	4.041%						
	80	8.230%	6.287%						
	85	13.166%	10.327%						
	90	18.469%	16.806%						



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

#### 24. Rates of Mortality for Service-Connected Disabled Retirees

Rates of mortality for current service-connected disabled Members are specified by the CalPERS Industrially Disabled Annuitant Mortality table, adjusted by 101.9% for males (no adjustment for females), with generational mortality improvements projected from 2009 using SOA Scale MP-2018.

The table provides a sample of the base mortality rates including adjustments but prior to any projections for mortality improvements.

Service-Connected									
Disabled Mortality Rates									
Age	Male	Female							
45	0.344%	0.298%							
50	0.542%	0.495%							
55	0.648%	0.460%							
60	0.884%	0.633%							
65	1.455%	1.066%							
70	2.254%	1.775%							
75	3.908%	2.952%							
80	6.754%	4.978%							
85	10.587%	7.959%							
90	16.493%	12.335%							

### 25. Rates of Mortality for Emerging Disabled Retirees

Rates of mortality for future General disabled retirees, both nonservice- and service-connected, are specified by mortality tables consisting of blends of the mortality assumptions for current nonservice- and service-connected disabled retirees. The blend for future disabled General retirees is 75% and 25%, respectively. The proportions reflect the expected splits in future disabled retirees between nonservice- and service-connected disablements.

Future disabled Safety retirees are assumed to follow the same rates of mortality as the service-connected disabled retirees indicated in the prior bullet.



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

### **26.** Rates of Mortality for Healthy Annuitants

Rates of mortality for retired Members and their beneficiaries are specified by the CalPERS Healthy Annuitant table, adjusted by 97.2% for males and 104.1% for females, with generational mortality improvements projected from 2009 using SOA Scale MP-2018.

The table below provides a sample of the base mortality rates including adjustments but prior to any projections for mortality improvements.

Healthy A	Healthy Annuitant Mortality Rates								
Age	Male	Female							
45	0.234%	0.221%							
50	0.517%	0.515%							
55	0.618%	0.479%							
60	0.794%	0.556%							
65	1.026%	0.779%							
70	1.717%	1.317%							
75	2.900%	2.283%							
80	5.128%	3.847%							
85	9.165%	6.949%							
90	15.733%	12.841%							

### 27. Mortality Improvement

As mentioned above, the mortality assumptions employ a fully generational mortality improvement projection from base year 2009 using SOA Scale MP-2018.



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

### 28. Rates of Retirement

Retirement for members in non-PEPRA Tiers (Tier 6) are assumed to occur among eligible members in accordance with the tables below:

	General (N	Retirement on-PEPRA) f Service			Safety (No	Retirement on-PEPRA) f Service	
Age	0-9	10-29	30+	Age	0-9	10-19	20+
40-44	0.00%	0.00%	0.00%	40-48	0.00%	0.00%	5.00%
45-49	0.00%	0.00%	10.00%	49	0.00%	0.00%	20.00%
50-54	0.00%	5.00%	10.00%	50	0.00%	10.00%	30.00%
55	0.00%	7.50%	20.00%	51	0.00%	10.00%	20.00%
56	0.00%	7.50%	20.00%	52	0.00%	10.00%	20.00%
57	0.00%	7.50%	20.00%	53	0.00%	10.00%	20.00%
58	0.00%	12.50%	20.00%	54	0.00%	10.00%	20.00%
59	0.00%	12.50%	20.00%	55	0.00%	10.00%	30.00%
60	0.00%	12.50%	25.00%	56	0.00%	10.00%	30.00%
61	0.00%	20.00%	25.00%	57	0.00%	10.00%	30.00%
62	0.00%	25.00%	40.00%	58	0.00%	10.00%	30.00%
63	0.00%	20.00%	25.00%	59	0.00%	10.00%	30.00%
64	0.00%	25.00%	25.00%	60	0.00%	25.00%	100.00%
65	0.00%	35.00%	35.00%	61	0.00%	25.00%	100.00%
66	0.00%	45.00%	45.00%	62	0.00%	25.00%	100.00%
67	0.00%	20.00%	25.00%	63	0.00%	25.00%	100.00%
68	0.00%	20.00%	25.00%	64	0.00%	25.00%	100.00%
69	0.00%	20.00%	25.00%	65	0.00%	100.00%	100.00%
70	50.00%	50.00%	100.00%	66	0.00%	100.00%	100.00%
71	50.00%	50.00%	100.00%	67	0.00%	100.00%	100.00%
72	50.00%	50.00%	100.00%	68	0.00%	100.00%	100.00%
73	50.00%	50.00%	100.00%	69	0.00%	100.00%	100.00%
74	50.00%	50.00%	100.00%	70+	100.00%	100.00%	100.00%
75+	100.00%	100.00%	100.00%				



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Retirement for members in PEPRA, Tier 6, are assumed to occur among eligible members in accordance with the sample rates below, from the full tables CALPERS Public Agency Miscellaneous 2% @ 62 table for General and the CALPERS Public Agency Safety Police 2.7% @ 57 table for Safety:

Rates of Retirement											
	General (PEPRA)										
	Years of Service										
Age	5 10 25 35										
50-51	0.00%	0.00%	0.00%	0.00%							
52	0.50%	0.80%	1.90%	3.80%							
53	0.70%	1.10%	2.10%	4.80%							
54	0.70%	1.10%	2.30%	5.40%							
55	1.00%	1.90%	6.10%	15.20%							
56	1.40%	2.60%	7.50%	16.70%							
57	1.80%	2.90%	7.40%	14.30%							
58	2.30%	3.50%	7.30%	13.50%							
59	2.50%	3.80%	9.20%	17.50%							
60	3.10%	5.10%	11.10%	18.30%							
61	3.80%	5.80%	12.10%	23.20%							
62	4.40%	7.40%	16.40%	27.10%							
63	7.70%	10.50%	19.20%	26.60%							
64	7.20%	10.10%	18.70%	27.60%							
65	10.80%	14.10%	23.90%	34.80%							
66	13.20%	17.20%	29.20%	42.60%							
67	13.20%	17.20%	29.20%	40.50%							
68	12.00%	15.60%	26.50%	38.70%							
69	12.00%	15.60%	26.50%	36.80%							
70	12.00%	15.60%	26.50%	38.70%							
71	12.00%	15.60%	26.50%	38.70%							
72	12.00%	15.60%	26.50%	38.70%							
73	12.00%	15.60%	26.50%	38.70%							
74	12.00%	15.60%	26.50%	38.70%							
75+	100.00%	100.00%	100.00%	100.00%							



# APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Rates of Retirement										
Safety (PEPRA)										
Years of Service										
Age	Age 5 10 25 35									
50	5.00%	5.00%	5.00%	11.00%						
51	4.00%	4.00%	5.75%	13.92%						
52	3.80%	3.80%	5.80%	13.21%						
53	3.80%	3.80%	7.74%	28.98%						
54	3.80%	3.80%	9.31%	33.25%						
55	6.84%	6.84%	13.40%	38.76%						
56	6.27%	6.27%	12.28%	34.49%						
57	6.00%	6.00%	11.75%	32.00%						
58	8.00%	8.00%	13.75%	35.00%						
59	8.00%	8.00%	14.00%	40.00%						
60	15.00%	15.00%	15.00%	35.00%						
61	14.40%	14.40%	14.40%	26.40%						
62	15.00%	15.00%	15.00%	33.00%						
63	15.00%	15.00%	15.00%	40.00%						
64	15.00%	15.00%	15.00%	52.50%						
65+	100.00%	100.00%	100.00%	100.00%						

## 29. Changes in Actuarial Assumptions

The administrative expenses assumption increased by 2.75% from \$2,825,625 to \$2,903,330, per the procedure established in the Actuarial Experience Study Report for the period covering July 1, 2015 through June 30, 2018.



#### APPENDIX C – SUMMARY OF PLAN PROVISIONS

All actuarial calculations are based on our understanding of the statutes governing the StanCERA as contained in the County Employees Retirement Law (CERL) of 1937, with provisions adopted by the County Board of Supervisors, a district Board of Directors, or the StanCERA Board, effective through June 30, 2019. The benefit and contribution provisions of this law are summarized briefly below, along with corresponding references to the State Code. This summary does not attempt to cover all the detailed provisions of the law.

#### A. Definitions

#### **Compensation:**

Compensation means the cash remuneration for services paid by the employer. It includes base pay and certain differential, incentive, and special pay allowances defined by the Board of Retirement. Overtime is excluded, with the exception of overtime paid under the Fair Labor Standards Act that is regular and recurring.

For Tier 6 (PEPRA) members, only pensionable compensation up to the PEPRA Compensation Limit will count for computing Plan benefits and employee contributions and employer contributions. For those participating in Social Security, the compensation cap is \$124,180 for calendar year 2019. For those not participating in Social Security, the compensation cap is \$149,016 for calendar year 2019. In addition, it is possible that some sources of compensation, such as any payments deemed to be terminal or special pays, may be excluded from the benefit and contribution computations for PEPRA members.

Credited Service: In general, Credited Service is earned for the period during which Member Contributions are paid. Since Tier 3 Members participate in a non-contributory Plan, their Credited Service is calculated based on their date of Membership only.

Temporary service for which the Member was not credited, or service for which the Member withdrew his or her Member Contributions, may be purchased by paying or repaying the Member Contributions with interest. The categories of services that credit may be purchased for are listed below:

- **Prior Part-time Service**: If a Member worked for an employer within the Association on a part-time or 'extra help' basis before his membership in the Retirement Association, the Member may buyback this service.
- Intermittent Part-time Service
- **Prior full time Service:** Member may buyback full time service that may have been cashed out upon termination.



#### APPENDIX C – SUMMARY OF PLAN PROVISIONS

- Leave of Absence (Including absence with State Disability or Worker's Compensation): No unpaid leave of absence can be bought back except for absence due to medical reasons of up to one year.
- **Public Service:** Only Tier 1 and 4 Members may buy back this service.
- **Military Time:** Only Tier 1 and 4 Members may buy back this service.
- Enhance Prior Tier Service: Applies to certain active and deferred Members with Tier 1, 2, or 3 service.
- Military "call up"
- **AB 2766:** Only Safety Employees can buy back this service.

A percentage of credited sick leave may be credited according to the Member's applicable bargaining unit.

#### Final

**Compensation:** 

For Members belonging to Tier 2, Tier 3, and Tier 6, Final Compensation means the highest Compensation earned during any 36 consecutive months of the Member's employment. For all others, it is the highest Compensation earned during any twelve months of employment.

**General Member**: Any Member who is not a Safety Member is a General Member.

**Safety Member**: Any sworn Member engaged in law enforcement, probation, or fire suppression is a Safety Member.

#### B. Membership

Eligibility:

All full-time, permanent employees of Stanislaus County, City of Ceres, Stanislaus County Superior Court, Salida Sanitary District, East Side Mosquito Abatement, Keyes Community Services, Hills Ferry Cemetery, and StanCOG hired on or after October 1, 1988 become Members on their date of appointment. All others hired before October 1, 1988 became Members on the first day of the calendar month following their date of appointment.

Detailed membership eligibility according to Tier and membership date is shown in Table 1 on the following page.



#### APPENDIX C – SUMMARY OF PLAN PROVISIONS

#### C. Service Retirement

Eligibility:

New members who meet the requirements to enter a legacy tier under PEPRA will enter Tier 2; all other new members will enter Tier 6.

Tier 3 General Members are eligible to retire at age 55 if they have earned 10 years of Credited Service. Tier 6 (PEPRA) General Members are eligible to retire at age 52 if they have earned five years of Credited Service. All other General Members are eligible to retire at age 50 if they have earned five years of Credited Service and have been an Association member for at least 10 years. Alternatively, General non-PEPRA Members are eligible to retire at any age after having earned 30 years of Credited Service, or upon reaching age 70 with no service requirement.

Safety Members are eligible to retire at age 50 if they have earned five years of Credited Service and have been an Association member for at least 10 years. Alternatively, Safety Members are eligible to retire at any age after having earned 20 years of Credited Service, or upon reaching age 70 with no service requirement. The 20-year Credited Service retirement eligibility is not applicable to Tier 6 (PEPRA) Safety Members, nor is the 10-year Association membership requirement.

Benefit Amount: The Service Retirement Benefit payable to the Member is equal to the Member's Final Compensation multiplied by credited service, the benefit factor from Table 1 and the age factor from Table 2 corresponding to the Member's code section. The appropriate code sections for each group are listed in Table 1. For Tier 3 members, the age factors are applied after the benefit amount as determined under Table 1 has been offset by the designated fraction of the member's projected age 65 Social Security benefit.

> For Tier 3 Members with Credited Service up to 35 years, the percentage of Final Compensation may not exceed 70% and for those with more than 35 years, it may not exceed 80%. For all other non-PEPRA Members, the percentage of Final Compensation may not exceed 100%. For those members integrated with Social Security (other than Tiers 3 and 6), Retirement Benefits based on the first \$350 of monthly Final Average Compensation are reduced by one-third.



### APPENDIX C – SUMMARY OF PLAN PROVISIONS

**Table 1: Member Group Descriptions** 

	Open					Тор	
	or		Max	Code		Retirement	
Group	Closed	FAP	Cola	Section	Description	<b>Factor Age</b>	Benefit Factor
General Tier I	Closed	1	3	31676.12	2% at 57	62	2.00%
General Tier II	Open	3	3	31676.1	2% at 62	65	1.67%
General Tier III	Closed	3	0	31499.14	Non- Contributory	65	First 35 Years: 2.0% of FAS less 1/35 <sup>th</sup> of Social Security benefit at age 65. Next 10 Years: 1% of FAS
General Tier IV	Closed	1	3	31676.14	2% at 55	65	1.67%
General Tier V	Closed	1	3	31676.14	2% at 55	65	1.67%
General Tier VI	Open	3	3	7522.2	PEPRA	67	1.00%
Safety Tier II	Open	3	3	31664	2% at 50	50	2.00%
Safety Tier IV	Closed	1	3	31664.1	3% at 50	50	3.00%
Safety Tier V	Closed	1	3	31664.1	3% at 50	50	3.00%
Safety Tier VI	Open	3	3	7522.25 (2)	PEPRA	57	1.00%

	Table 2: Age Factors										
	Safety	Safety	Safety	General	General	General	General	General			
A	2% at Age 50 CERL §: 31664	3% at Age 50 CERL §: 31664.1	PEPRA GC §: 7522.25 Opt2	2% at Age 62	2% at Age 57 CERL §: 31676.12	2% at Age 55	2% at Age 65	PEPRA			
Age	· · · · · · · · · · · · · · · · · · ·	0.6258		N/A	N/A	N/A	· · · · · · · · · · · · · · · · · · ·				
41	0.6258		N/A				N/A	N/A			
42	0.6625	0.6625	N/A	N/A	N/A	N/A	N/A	N/A			
43	0.7004	0.7004	N/A	N/A	N/A	N/A	N/A	N/A			
44	0.7397	0.7397	N/A	N/A	N/A	N/A	N/A	N/A			
45	0.7805	0.7805	N/A	N/A	N/A	N/A	N/A	N/A			
46	0.8226	0.8226	N/A	N/A	N/A	N/A	N/A	N/A			
47	0.8678	0.8678	N/A	N/A	N/A	N/A	N/A	N/A			
48	0.9085	0.9085	N/A	N/A	N/A	N/A	N/A	N/A			
49	0.9522	0.9522	N/A	N/A	N/A	N/A	N/A	N/A			
50	1.0000	1.0000	2.0000	0.7091	0.6681	0.8850	N/A	N/A			
51	1.0516	1.0000	2.1000	0.7457	0.7056	0.9399	N/A	N/A			
52	1.1078	1.0000	2.2000	0.7816	0.7454	1.0000	N/A	1.0000			
53	1.1692	1.0000	2.3000	0.8181	0.7882	1.0447	N/A	1.1000			
54	1.2366	1.0000	2.4000	0.8556	0.8346	1.1048	N/A	1.2000			
55	1.3099	1.0000	2.5000	0.8954	0.8850	1.1686	0.3900	1.3000			
56	1.3099	1.0000	2.6000	0.9382	0.9399	1.2365	0.4300	1.4000			
57	1.3099	1.0000	2.7000	0.9846	1.0000	1.3093	0.4700	1.5000			
58	1.3099	1.0000	2.7000	1.0350	1.0447	1.3608	0.5100	1.6000			
59	1.3099	1.0000	2.7000	1.0899	1.1048	1.4123	0.5600	1.7000			
60	1.3099	1.0000	2.7000	1.1500	1.1686	1.4638	0.6100	1.8000			
61	1.3099	1.0000	2.7000	1.1947	1.2365	1.5153	0.6700	1.9000			
62	1.3099	1.0000	2.7000	1.2548	1.3093	1.5668	0.7400	2.0000			
63	1.3099	1.0000	2.7000	1.3186	1.3093	1.5668	0.8200	2.1000			
64	1.3099	1.0000	2.7000	1.3865	1.3093	1.5668	0.9000	2.2000			
65	1.3099	1.0000	2.7000	1.4593	1.3093	1.5668	1.0000	2.3000			
66	1.3099	1.0000	2.7000	1.4593	1.3093	1.5668	1.0000	2.4000			
67	1.3099	1.0000	2.7000	1.4593	1.3093	1.5668	1.0000	2.5000			

Form of Benefit:

The Service Retirement Benefit will be paid monthly beginning at retirement and for the life of the Member. If the member selects the unmodified benefit form, in the event of the Member's death 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. For Tier 3 Members, the benefit payable to beneficiary is limited to 50%. In the event there is no surviving spouse or minor children, any unpaid remainder of



#### APPENDIX C – SUMMARY OF PLAN PROVISIONS

the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

Annually on April 1, benefits for all retired members other than those in Tier 3 are adjusted to reflect changes in the CPI for the San Francisco Bay Area since the prior year. Benefits may be increased or decreased, but the cumulative changes shall never reduce the benefit below the original monthly allowance. Annual increases may not exceed the COLA figures shown in Table 1, but CPI increases above this figure are "banked" and used for future increases when the CPI increases by less than the figures shown.

In addition, ad hoc cost of living adjustments have been granted in the past and may be granted in the future.

A lump sum benefit of \$5,000 will be payable upon the death of a retired member. No death benefit is payable for Tier 3 retired members.

#### **D. Service-Connected Disability**

Eligibility: All non-Tier 3 Members are eligible for Service-Connected Disability

> Retirement benefits at any age if they are permanently disabled as a result of injuries or illness sustained in the line of duty. Tier 3 Members are not

eligible to receive disability benefits.

Benefit Amount: The Service-Connected Disability Retirement Benefit payable to Members

is equal to the greater of 50% of their Final Compensation or - if the Member is eligible at disability for a Service Retirement Benefit – the

Service Retirement Benefit accrued on the date of disability.

Form of Benefit:

The Service-Connected Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement and for the life of the Member; in the event of the Member's death, 100% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's

designated beneficiary.

Actuarially equivalent optional benefit forms and COLA adjustments (as described for the Service Retirement benefit) are also available. A lump sum benefit of \$5,000 will be payable upon the death of the member.



#### APPENDIX C – SUMMARY OF PLAN PROVISIONS

#### E. Nonservice-Connected Disability

Eligibility:

Tier 3 Members are not eligible to receive disability benefits. All other Members are eligible for Nonservice-Connected Disability Retirement benefits if they are permanently disabled at any age after earning five years of Credited Service.

Benefit Amount: The Nonservice-Connected Disability Retirement Benefit payable to Tier 1 General Members is equal to the greatest of:

- 1.8% of Final Compensation at disability multiplied by years of Credited Service at disability;
- 1.8% of Final Compensation at disability multiplied by years of Credited Service projected to age 62, but not to exceed onethird of Final Compensation; or
- If the Member is eligible at disability for a Service Retirement Benefit, the Service Retirement Benefit accrued on the date of disability.

The Nonservice-Connected Disability Retirement Benefit payable to Tiers 2, 4, 5, and 6 General Members is equal to the greatest of:

- 1.5% of Final Compensation at disability multiplied by years of Credited Service at disability;
- 1.5% of Final Compensation at disability multiplied by years of Credited Service projected to age 65, but not to exceed onethird of Final Compensation; or
- If the Member is eligible at disability for a Service Retirement Benefit, the Service Retirement Benefit accrued on the date of disability.

The Nonservice-Connected Disability Retirement Benefit payable to Safety Members is equal to the greatest of:

- 1.8% of Final Compensation at disability multiplied by years of Credited Service at disability;
- 1.8% of Final Compensation at disability multiplied by years of Credited Service projected to age 55, but not to exceed onethird of Final Compensation; or
- If the Member is eligible at disability for a Service Retirement Benefit, the Service Retirement Benefit accrued on the date of disability.

Form of Benefit: The Nonservice-Connected Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement, and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. In the event there is no



#### APPENDIX C – SUMMARY OF PLAN PROVISIONS

surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms and COLA adjustments (as described for the Service Retirement benefit) are also available. A lump sum benefit of \$5,000 will be payable upon the death of the member.

#### F. Death Benefit

Eligibility: A Tier 3 Member's survivors are not eligible to receive death benefits. All

other Members' survivors are eligible to receive different Death benefits

dependent on the Member's cause of death and retirement eligibility.

Benefit Amount: In the event the Member's death resulted from injury or illness sustained

in connection with the Member's duties, the Death Benefit payable to a surviving spouse, domestic partner, or eligible dependent children will be the greater of 50% of the Member's Final Compensation at the time of

death or the Service Retirement Benefit.

In the event the Member's death did not result from injury or illness sustained in connection with the Member's duties and at the time of death, the Member was eligible for Service Retirement or Non-Service Connected Disability (i.e. the employee was employed at least five years), the Death Benefit payable to the spouse, partner or children will be 60% of the survivor benefit based on benefit due on Member's date of death.

In all other cases, the designated beneficiary (not necessarily a spouse/partner/child) will receive a refund of the Member's contributions with interest plus one month of Final Compensation for each year of service to a maximum of six years.

Form of Benefit: Annuity death benefits will be paid monthly beginning at the Member's death and for the life of the surviving spouse/partner or to the age of majority of dependent minor children if there is no spouse/partner. Lump sum benefits will be paid as described above.

> COLA adjustments (as described for the annuity benefits) are also available.

#### G. Withdrawal Benefits

Eligibility:

Tier 3 Members are not eligible to receive withdrawal benefits. All other Members are eligible for a Withdrawal Benefit upon termination of employment, if not eligible to receive or electing to waive a monthly benefit.



#### APPENDIX C – SUMMARY OF PLAN PROVISIONS

Benefit Amount: The Withdrawal Benefit is a refund of the Member's accumulated

Contributions with interest. Upon receipt of the Withdrawal Benefit, the

Member forfeits all Credited Service.

Form of Benefit: The Withdrawal Benefit is paid in a lump sum upon election by the

Member.

#### H. Deferred Vested Benefit

Eligibility: A Member is eligible for a Deferred Vested Benefit upon termination of

employment after earning five years of Credited Service, including reciprocity service from another system. For Tier 3 Members, the vesting

requirement is 10 years of Credited Service.

The Member must leave his or her Member Contributions with interest on

deposit with the Plan. This requirement does not apply to Tier 3 Members

since they participate in a non-contributory Plan.

Benefit Amount: The Deferred Vested Benefit is computed in the same manner as the

Service Retirement Benefit, but it is based on Credited Service and Final

Compensation on the date of termination.

Form of Benefit: The Deferred Vested Benefit will be paid monthly beginning at retirement

and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. For Tier 3 Members, the benefit payable to beneficiary is limited to 50%. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the

Member's designated beneficiary.

Actuarially equivalent optional benefit forms and COLA adjustments (as described for the Service Retirement benefit) are also available. A lump sum benefit of \$5,000 will be payable upon the death of the member. No

death benefit is payable for Tier 3 retired members.

#### I. Reciprocal Benefit

Eligibility: A Member is eligible for a Reciprocal Benefit upon termination of

employment after earning five years of Credited Service and entry, within a specified period of time, into another retirement system recognized as a reciprocal system by the Plan. For Tier 3 Members, the vesting

requirement is 10 years of Credited Service.



#### APPENDIX C – SUMMARY OF PLAN PROVISIONS

The Member must leave his or her Member Contributions with interest on deposit with the Plan. This requirement does not apply to Tier 3 Members since they participate in a non-contributory Plan.

Benefit Amount: The Reciprocal Benefit is computed in the same manner as the Service Retirement Benefit, but it is based on Credited Service on the date of termination and Final Compensation on the date of retirement; Final Compensation is based on the highest of the Compensation earned under this Plan or the reciprocal plan.

Form of Benefit: The Reciprocal Benefit will be paid monthly beginning at retirement and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. For Tier 3 Members, the benefit payable to beneficiary is limited to 50%. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

> Actuarially equivalent optional benefit forms and COLA adjustments (as described for the Service Retirement benefit) are also available.

> A lump sum benefit of \$5,000 will be payable upon the death of the member. No death benefit is payable for Tier 3 retired members.

#### J. Optional Benefit Forms

Prior to retirement, a member may elect to convert his retirement allowance into a benefit of equivalent Actuarial Value in accordance with one of the optional forms described below.

- 1. A reduced retirement allowance payable during his life with the provision that on his death the excess, if any, of his accumulated deductions at the time of retirement over the annuity payments made to him will be paid to his designated beneficiary or estate; or
- 2. A reduced retirement allowance payable during his life with the provision that after his death the reduced allowance will be continued for life to the beneficiary designated by him at the time of his retirement: or
- 3. A reduced retirement allowance payable during his life with the provision that after his death an allowance of one-half of his reduced allowance will be continued for life to the beneficiary designated by him at the time of his retirement.

In addition, a member participating in Social Security may elect to receive an increased monthly allowance before age 62 (earliest possible receipt of Social Security benefits) and then take a reduced monthly allowance at age 62 and after. This option will not affect any



#### APPENDIX C – SUMMARY OF PLAN PROVISIONS

monthly payments payable to a beneficiary. This option is not available to those receiving a disability benefit.

#### **K.** Member Contributions

Other than Tiers 3 and 6, all Members contribute a percentage of Compensation to the Plan through payroll deduction. The percentage contributed depends on the Member's nearest age upon joining the Plan. Members do not contribute after earning 30 years of Credited Service.

Tier 6 (PEPRA) Members must contribute half of the Normal Cost of the Plan. Contributions for these members will be based on the Normal Cost associated with their benefits, including COLA; General and Safety members will pay different rates. Members will continue to contribute after earnings 30 years of service.

City of Ceres members in Tiers 1 and 4 pay the Tier 2 and 5 rates ("Full" rates), rather than the rates for their respective Tiers ("Half" rates).

Interest is credited semiannually to each Member's accumulated contributions. The crediting rate is set by the Board; the current annual rate is 0.25%.

The employee contribution rates are shown in the Appendix E.

#### L. Changes in Plan Provisions

No change



#### APPENDIX D – GLOSSARY

### 1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs such as mortality, withdrawal, disability, retirement, changes in compensation and rates of investment return.

### 2. Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a Normal Cost and an Actuarial Liability.

### 3. Actuarial Gain (Loss)

The difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

### 4. Actuarial Liability

The portion of the Actuarial Present Value of Projected Benefits that will not be paid by future Normal Costs. It represents the value of the past Normal Costs with interest to the valuation date.

## 5. Actuarial Present Value (Present Value)

The value as of a given date of a future amount or series of payments. The Actuarial Present Value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made.

#### 6. Actuarial Valuation

The determination, as of a specified date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

#### 7. Actuarial Value of Assets

The value of cash, investments, and other property belonging to a pension plan as used by the actuary for the purpose of an Actuarial Valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values.



#### APPENDIX D – GLOSSARY

### 8. Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date, with each value based on the same set of actuarial assumptions.

### 9. Amortization Payment

The portion of the pension plan contribution, which is designed to pay interest and principal on the Unfunded Actuarial Liability in order to pay for that liability in a given number of years.

## 10.Entry Age Normal Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages.

#### 11.Funded Ratio

The ratio of the Actuarial Value of Assets to the Actuarial Liability.

#### 12.Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses that is allocated to a valuation year by the Actuarial Cost Method.

## 13. Projected Benefits

Those pension plan benefit amounts which are expected to be paid in the future under a particular set of Actuarial Assumptions, taking into account such items as increases in future compensation and service credits.

## 14. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets. The Unfunded Actuarial Liability is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling StanCERA's benefit obligation in the event of a plan termination or other similar action. However, it is an appropriate measure for assessing the need for or the amount of future contributions.



#### **APPENDIX E – MEMBER CONTRIBUTION RATES**

Employee Normal contribution rates vary by benefit formula as defined in the CERL and described in the table below, with the exception that City of Ceres members in Tiers 1 and 4 pay the Tier 2 and 5 rates ("Full" rates), rather than the rates for their respective Tiers ("Half" rates).

	Code	
Plan/Tier	Section	Member Contribution Provides Average Annuity
General Tier 1	31621.5	1/200th of Final Average Salary (FAS) at age 60
General Tier 2	31621	1/120th of Final Average Salary (FAS) at age 60
General Tier 3	NA	NA
General Tier 4	31621.3	1/240th of Final Average Salary (FAS) at age 55
General Tier 5	31621.9	1/120th of Final Average Salary (FAS) at age 55
Safety Tier 2	31639.25	1/100th of Final Average Salary (FAS) at age 50
Safety Tier 4	31639.5	1/200th of Final Average Salary (FAS) at age 50
Safety Tier 5	31639.25	1/100th of Final Average Salary (FAS) at age 50

Employee COLA contribution rates are determined based on 50% of the normal cost associated with the expected COLA benefits, including all forms of decrement and the value of any assumed joint and survivor benefits, determined for each individual entry age. Similar to the benefit formulas, for those members integrated with Social Security (other than Tiers 3 and 6), contributions based on the first \$350 of monthly compensation are reduced by one-third.

The rates were changed following the Experience Study covering the period June 30, 2015 through June 30, 2018. The current employee contribution rates are shown in the following tables, and were determined based on the assumptions used in the current actuarial valuation. These assumptions include an interest rate of 7.00% per annum, an average salary increase of 3.00% per year (plus longevity and promotion increases), and the CalPERS mortality tables with adjustment as specified in the Appendix B and projected using Scale MP-2018 from 2009 to 2040 for General members and to 2040 for Safety members. The projection periods are based upon the duration of liabilities for the respective groups as of June 30, 2018. The rates are blended using a male/female weighting of 25% male / 75% female for General members, and 80% male / 20% female for Safety members.

Basic and COLA rates were determined based on an assumption that members would cease making contributions after 30 years of service. Basic and COLA rates include the value of the accumulated vacation time load, except that the load is not applied when calculating the Basic rates for members with less than three years of service.

Employee contribution rates for Tier 6 (PEPRA) members are determined based on half the Normal Cost (including COLA) for the PEPRA members, computed separately for General and Safety members, and for County and Ceres / Other District members. Due to the passage of SB13, contribution rates for PEPRA members are not rounded, and are recomputed each year.

The member contribution rates shown in this appendix apply only to pensionable compensation (up to the PEPRA Compensation Limits for PEPRA members).



			General Tie	er 1		
Entry	Basic	Basic	COL	COL	Total	Total
Age	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
16	2.30%	3.45%	1.16%	1.74%	3.46%	5.19%
17	2.30%	3.45%	1.16%	1.74%	3.46%	5.19%
18	2.30%	3.45%	1.16%	1.74%	3.46%	5.19%
19	2.30%	3.45%	1.16%	1.74%	3.46%	5.19%
20	2.30%	3.45%	1.16%	1.74%	3.46%	5.19%
21	2.32%	3.48%	1.19%	1.78%	3.51%	5.26%
22	2.34%	3.51%	1.21%	1.82%	3.55%	5.33%
23	2.35%	3.53%	1.24%	1.86%	3.59%	5.39%
24	2.37%	3.55%	1.27%	1.91%	3.64%	5.46%
25	2.38%	3.57%	1.30%	1.95%	3.68%	5.52%
26	2.39%	3.58%	1.33%	1.99%	3.71%	5.57%
27	2.40%	3.59%	1.36%	2.04%	3.76%	5.63%
28	2.40%	3.60%	1.39%	2.08%	3.79%	5.68%
29	2.40%	3.61%	1.41%	2.12%	3.82%	5.73%
30	2.41%	3.61%	1.44%	2.16%	3.85%	5.77%
31	2.45%	3.68%	1.47%	2.20%	3.92%	5.88%
32	2.51%	3.76%	1.50%	2.25%	4.01%	6.01%
33	2.56%	3.84%	1.53%	2.29%	4.08%	6.13%
34	2.61%	3.91%	1.56%	2.34%	4.17%	6.25%
35	2.66%	3.99%	1.60%	2.40%	4.26%	6.39%
36	2.72%	4.08%	1.64%	2.46%	4.36%	6.54%
37	2.77%	4.16%	1.69%	2.53%	4.46%	6.69%
38	2.83%	4.25%	1.73%	2.59%	4.56%	6.84%
39	2.89%	4.34%	1.77%	2.66%	4.66%	7.00%
40	2.95%	4.43%	1.81%	2.72%	4.77%	7.15%
41	3.01%	4.52%	1.85%	2.77%	4.86%	7.29%
42	3.08%	4.62%	1.88%	2.82%	4.96%	7.44%
43	3.15%	4.72%	1.91%	2.87%	5.06%	7.59%
44	3.22%	4.82%	1.94%	2.91%	5.16%	7.73%
45	3.29%	4.93%	1.97%	2.95%	5.26%	7.88%
46	3.37%	5.05%	2.00%	3.00%	5.37%	8.05%
47	3.45%	5.17%	2.02%	3.03%	5.47%	8.20%
48	3.53%	5.30%	2.05%	3.07%	5.58%	8.37%
49	3.62%	5.42%	2.06%	3.09%	5.68%	8.51%
50	3.70%	5.55%	2.07%	3.11%	5.77%	8.66%
51	3.78%	5.67%	2.07%	3.11%	5.85%	8.78%
52	3.86%	5.79%	2.05%	3.07%	5.91%	8.86%
53	3.91%	5.87%	1.99%	2.99%	5.91%	8.86%
54	3.94%	5.91%	1.96%	2.94%	5.90%	8.85%
55	3.92%	5.88%	1.92%	2.88%	5.84%	8.76%
56	3.90%	5.85%	1.84%	2.76%	5.74%	8.61%
57	3.88%	5.82%	1.71%	2.57%	5.59%	8.39%
58	3.82%	5.73%	1.67%	2.51%	5.49%	8.24%
59+	3.80%	5.70%	1.65%	2.47%	5.45%	8.17%



	General Tier 2									
Entry	Basic	Basic	COL	COL	Total	Total				
Age	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350				
16	3.69%	5.53%	0.95%	1.42%	4.63%	6.95%				
17	3.69%	5.53%	0.95%	1.42%	4.63%	6.95%				
18	3.69%	5.53%	0.95%	1.42%	4.63%	6.95%				
19	3.69%	5.53%	0.95%	1.42%	4.63%	6.95%				
20	3.69%	5.53%	0.95%	1.42%	4.63%	6.95%				
21	3.71%	5.57%	0.97%	1.45%	4.68%	7.02%				
22	3.74%	5.61%	0.99%	1.48%	4.73%	7.09%				
23	3.76%	5.65%	1.01%	1.51%	4.77%	7.16%				
24	3.79%	5.68%	1.03%	1.54%	4.81%	7.22%				
25	3.81%	5.71%	1.05%	1.57%	4.85%	7.28%				
26	3.82%	5.73%	1.07%	1.61%	4.89%	7.34%				
27	3.83%	5.75%	1.09%	1.64%	4.93%	7.39%				
28	3.84%	5.76%	1.12%	1.68%	4.96%	7.44%				
29	3.85%	5.77%	1.14%	1.71%	4.99%	7.48%				
30	3.85%	5.77%	1.17%	1.75%	5.02%	7.52%				
31	3.93%	5.89%	1.19%	1.79%	5.12%	7.68%				
32	4.01%	6.01%	1.22%	1.83%	5.23%	7.84%				
33	4.09%	6.14%	1.25%	1.87%	5.34%	8.01%				
34	4.17%	6.26%	1.28%	1.92%	5.45%	8.18%				
35	4.26%	6.39%	1.31%	1.96%	5.57%	8.35%				
36	4.35%	6.52%	1.34%	2.01%	5.69%	8.53%				
37	4.44%	6.66%	1.38%	2.07%	5.82%	8.73%				
38	4.53%	6.80%	1.41%	2.12%	5.94%	8.92%				
39	4.63%	6.94%	1.45%	2.17%	6.07%	9.11%				
40	4.72%	7.09%	1.49%	2.23%	6.21%	9.32%				
41	4.82%	7.24%	1.51%	2.26%	6.33%	9.50%				
42	4.93%	7.39%	1.53%	2.30%	6.46%	9.69%				
43	5.03%	7.55%	1.56%	2.34%	6.59%	9.89%				
44	5.15%	7.72%	1.58%	2.37%	6.73%	10.09%				
45	5.26%	7.89%	1.61%	2.41%	6.87%	10.30%				
46	5.39%	8.08%	1.63%	2.44%	7.01%	10.52%				
47	5.51%	8.26%	1.65%	2.47%	7.16%	10.73%				
48	5.63%	8.45%	1.67%	2.51%	7.31%	10.96%				
49	5.75%	8.63%	1.69%	2.54%	7.45%	11.17%				
50	5.87%	8.80%	1.71%	2.56%	7.58%	11.36%				
51	5.97%	8.95%	1.72%	2.58%	7.69%	11.53%				
52	6.04%	9.06%	1.73%	2.59%	7.77%	11.65%				
53	6.06%	9.09%	1.72%	2.58%	7.78%	11.67%				
54	6.05%	9.07%	1.71%	2.56%	7.75%	11.63%				
55	6.02%	9.02%	1.67%	2.51%	7.69%	11.53%				
56	5.98%	8.97%	1.61%	2.42%	7.60%	11.39%				
57	5.95%	8.93%	1.51%	2.26%	7.46%	11.19%				
58	6.13%	9.19%	1.47%	2.21%	7.60%	11.40%				
59+	6.33%	9.50%	1.45%	2.17%	7.78%	11.67%				



			General Tie	er 4		
Entry	Basic	Basic	COL	COL	Total	Total
Age	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
16	2.09%	3.13%	1.23%	1.85%	3.32%	4.98%
17	2.09%	3.13%	1.23%	1.85%	3.32%	4.98%
18	2.09%	3.13%	1.23%	1.85%	3.32%	4.98%
19	2.09%	3.13%	1.23%	1.85%	3.32%	4.98%
20	2.09%	3.13%	1.23%	1.85%	3.32%	4.98%
21	2.10%	3.15%	1.27%	1.90%	3.36%	5.05%
22	2.10%	3.16%	1.29%	1.94%	3.40%	5.10%
23	2.11%	3.16%	1.32%	1.98%	3.43%	5.14%
24	2.11%	3.17%	1.35%	2.02%	3.46%	5.19%
25	2.11%	3.17%	1.38%	2.07%	3.49%	5.24%
26	2.16%	3.23%	1.41%	2.11%	3.56%	5.34%
27	2.20%	3.30%	1.43%	2.14%	3.63%	5.44%
28	2.25%	3.37%	1.45%	2.18%	3.70%	5.55%
29	2.29%	3.44%	1.48%	2.22%	3.77%	5.66%
30	2.34%	3.51%	1.51%	2.26%	3.85%	5.77%
31	2.39%	3.58%	1.53%	2.30%	3.92%	5.88%
32	2.44%	3.65%	1.57%	2.35%	4.00%	6.00%
33	2.49%	3.73%	1.59%	2.39%	4.08%	6.12%
34	2.54%	3.81%	1.63%	2.45%	4.17%	6.26%
35	2.59%	3.89%	1.67%	2.51%	4.27%	6.40%
36	2.65%	3.97%	1.71%	2.57%	4.36%	6.54%
37	2.70%	4.06%	1.76%	2.64%	4.46%	6.70%
38	2.76%	4.14%	1.80%	2.70%	4.56%	6.84%
39	2.82%	4.24%	1.85%	2.77%	4.67%	7.01%
40	2.89%	4.33%	1.89%	2.84%	4.78%	7.17%
41	2.96%	4.43%	1.92%	2.88%	4.88%	7.31%
42	3.03%	4.54%	1.95%	2.92%	4.97%	7.46%
43	3.10%	4.65%	1.98%	2.97%	5.08%	7.62%
44	3.17%	4.76%	2.00%	3.00%	5.17%	7.76%
45	3.25%	4.87%	2.03%	3.04%	5.27%	7.91%
46	3.32%	4.98%	2.05%	3.07%	5.36%	8.05%
47	3.39%	5.08%	2.07%	3.10%	5.46%	8.18%
48	3.44%	5.16%	2.08%	3.12%	5.52%	8.28%
49	3.46%	5.19%	2.09%	3.13%	5.55%	8.32%
50	3.44%	5.16%	2.09%	3.13%	5.53%	8.29%
51	3.42%	5.14%	2.09%	3.13%	5.51%	8.27%
52	3.41%	5.11%	2.05%	3.08%	5.46%	8.19%
53	3.36%	5.03%	2.00%	3.00%	5.36%	8.03%
54+	3.34%	5.01%	1.97%	2.95%	5.30%	7.96%



			General Tie	er 5		
Entry	Basic	Basic	COL	COL	Total	Total
Age	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
16	4.18%	6.26%	1.23%	1.85%	5.41%	8.11%
17	4.18%	6.26%	1.23%	1.85%	5.41%	8.11%
18	4.18%	6.26%	1.23%	1.85%	5.41%	8.11%
19	4.18%	6.26%	1.23%	1.85%	5.41%	8.11%
20	4.18%	6.26%	1.23%	1.85%	5.41%	8.11%
21	4.19%	6.29%	1.27%	1.90%	5.46%	8.19%
22	4.21%	6.31%	1.29%	1.94%	5.50%	8.25%
23	4.22%	6.33%	1.32%	1.98%	5.54%	8.31%
24	4.22%	6.33%	1.35%	2.02%	5.57%	8.35%
25	4.22%	6.34%	1.38%	2.07%	5.60%	8.41%
26	4.31%	6.47%	1.41%	2.11%	5.72%	8.58%
27	4.40%	6.60%	1.43%	2.14%	5.83%	8.74%
28	4.49%	6.74%	1.45%	2.18%	5.94%	8.92%
29	4.58%	6.87%	1.48%	2.22%	6.06%	9.09%
30	4.68%	7.02%	1.51%	2.26%	6.18%	9.28%
31	4.77%	7.16%	1.53%	2.30%	6.31%	9.46%
32	4.87%	7.31%	1.57%	2.35%	6.44%	9.66%
33	4.97%	7.46%	1.59%	2.39%	6.57%	9.85%
34	5.08%	7.62%	1.63%	2.45%	6.71%	10.07%
35	5.18%	7.78%	1.67%	2.51%	6.86%	10.29%
36	5.29%	7.94%	1.71%	2.57%	7.01%	10.51%
37	5.41%	8.11%	1.76%	2.64%	7.17%	10.75%
38	5.53%	8.29%	1.80%	2.70%	7.33%	10.99%
39	5.65%	8.47%	1.85%	2.77%	7.50%	11.24%
40	5.78%	8.66%	1.89%	2.84%	7.67%	11.50%
41	5.91%	8.87%	1.92%	2.88%	7.83%	11.75%
42	6.05%	9.08%	1.95%	2.92%	8.00%	12.00%
43	6.20%	9.30%	1.98%	2.97%	8.18%	12.27%
44	6.35%	9.52%	2.00%	3.00%	8.35%	12.52%
45	6.49%	9.74%	2.03%	3.04%	8.52%	12.78%
46	6.64%	9.95%	2.05%	3.07%	8.68%	13.02%
47	6.78%	10.17%	2.07%	3.10%	8.84%	13.27%
48	6.87%	10.31%	2.08%	3.12%	8.95%	13.43%
49	6.92%	10.38%	2.09%	3.13%	9.01%	13.51%
50	6.89%	10.33%	2.09%	3.13%	8.97%	13.46%
51	6.85%	10.27%	2.09%	3.13%	8.94%	13.40%
52	6.81%	10.22%	2.05%	3.08%	8.87%	13.30%
53	6.71%	10.07%	2.00%	3.00%	8.71%	13.07%
54+	6.67%	10.01%	1.97%	2.95%	8.64%	12.96%



			Safety Tie	r 2		
Entry	Basic	Basic	COL	COL	Total	Total
Age	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
18	4.95%	7.43%	1.70%	2.55%	6.65%	9.98%
19	4.95%	7.43%	1.70%	2.55%	6.65%	9.98%
20	4.95%	7.43%	1.70%	2.55%	6.65%	9.98%
21	5.06%	7.58%	1.77%	2.66%	6.83%	10.24%
22	5.16%	7.74%	1.82%	2.73%	6.98%	10.47%
23	5.26%	7.89%	1.87%	2.81%	7.14%	10.70%
24	5.37%	8.05%	1.93%	2.89%	7.30%	10.94%
25	5.48%	8.22%	1.98%	2.97%	7.46%	11.19%
26	5.59%	8.38%	2.03%	3.04%	7.62%	11.42%
27	5.70%	8.55%	2.08%	3.12%	7.78%	11.67%
28	5.82%	8.73%	2.14%	3.21%	7.96%	11.94%
29	5.94%	8.91%	2.19%	3.29%	8.13%	12.20%
30	6.06%	9.09%	2.25%	3.37%	8.31%	12.46%
31	6.19%	9.28%	2.31%	3.47%	8.50%	12.75%
32	6.32%	9.47%	2.37%	3.56%	8.69%	13.03%
33	6.45%	9.67%	2.43%	3.65%	8.88%	13.32%
34	6.59%	9.88%	2.49%	3.73%	9.07%	13.61%
35	6.73%	10.10%	2.54%	3.81%	9.27%	13.91%
36	6.88%	10.32%	2.58%	3.87%	9.46%	14.19%
37	7.03%	10.55%	2.61%	3.92%	9.64%	14.47%
38	7.18%	10.77%	2.66%	3.99%	9.84%	14.76%
39	7.32%	10.98%	2.71%	4.06%	10.03%	15.04%
40	7.45%	11.18%	2.76%	4.14%	10.21%	15.32%
41	7.58%	11.37%	2.77%	4.15%	10.34%	15.52%
42	7.70%	11.54%	2.77%	4.15%	10.46%	15.69%
43	7.79%	11.69%	2.76%	4.14%	10.55%	15.83%
44	7.86%	11.78%	2.75%	4.13%	10.61%	15.91%
45	7.87%	11.80%	2.74%	4.11%	10.61%	15.91%
46	7.83%	11.74%	2.75%	4.12%	10.58%	15.86%
47	7.74%	11.61%	2.75%	4.12%	10.49%	15.73%
48	7.95%	11.93%	2.75%	4.13%	10.70%	16.06%
49+	8.22%	12.32%	2.75%	4.13%	10.97%	16.45%



Safety Tier 5						
Entry	Basic	Basic	COL	COL	Total	Total
Age	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
18	5.19%	7.78%	2.35%	3.53%	7.54%	11.31%
19	5.19%	7.78%	2.35%	3.53%	7.54%	11.31%
20	5.19%	7.78%	2.35%	3.53%	7.54%	11.31%
21	5.29%	7.94%	2.45%	3.67%	7.74%	11.61%
22	5.40%	8.10%	2.51%	3.77%	7.91%	11.87%
23	5.51%	8.26%	2.57%	3.86%	8.08%	12.12%
24	5.62%	8.43%	2.63%	3.95%	8.25%	12.38%
25	5.73%	8.60%	2.69%	4.04%	8.43%	12.64%
26	5.85%	8.78%	2.75%	4.13%	8.60%	12.91%
27	5.97%	8.95%	2.81%	4.22%	8.78%	13.17%
28	6.09%	9.14%	2.87%	4.31%	8.97%	13.45%
29	6.22%	9.32%	2.93%	4.39%	9.14%	13.71%
30	6.34%	9.52%	2.95%	4.42%	9.29%	13.94%
31	6.48%	9.71%	2.96%	4.44%	9.44%	14.15%
32	6.61%	9.92%	3.01%	4.52%	9.62%	14.44%
33	6.75%	10.13%	3.07%	4.60%	9.82%	14.73%
34	6.90%	10.34%	3.12%	4.68%	10.02%	15.02%
35	7.04%	10.57%	3.18%	4.77%	10.22%	15.34%
36	7.20%	10.80%	3.22%	4.83%	10.42%	15.63%
37	7.37%	11.05%	3.27%	4.90%	10.63%	15.95%
38	7.54%	11.31%	3.32%	4.98%	10.86%	16.29%
39	7.70%	11.56%	3.37%	5.06%	11.08%	16.62%
40	7.86%	11.79%	3.44%	5.16%	11.30%	16.95%
41	8.01%	12.02%	3.39%	5.09%	11.41%	17.11%
42	8.16%	12.24%	3.35%	5.03%	11.51%	17.27%
43	8.30%	12.45%	3.32%	4.98%	11.62%	17.43%
44	8.45%	12.67%	3.29%	4.94%	11.74%	17.61%
45	8.54%	12.81%	3.27%	4.90%	11.80%	17.71%
46	8.57%	12.86%	3.26%	4.89%	11.83%	17.75%
47	8.55%	12.83%	3.26%	4.89%	11.81%	17.72%
48	8.34%	12.51%	3.26%	4.89%	11.60%	17.40%
49+	8.22%	12.32%	3.26%	4.89%	11.48%	17.21%



		PEPRA Rates	S				
	Gei	neral	Safety				
	County and Ceres and Other		County and	<b>Ceres and Other</b>			
	<b>Former County</b>	Districts	<b>Former County</b>	Districts			
Current	8.73%	9.24%	12.34%	13.72%			
Prior	8.63%	9.41%	12.33%	14.11%			
Assumptions:							
Interest:	7.00%						
Salary:	2018 Valuation Scale (Service based, includes wage inflation at 3.00%)						
Mortality:	Because the PEPRA contributions rates are based on 50% of the actual Normal Cost, the mortality rates are the same as those used in the Actuarial Valuation (CalPERS mortality tables with adjustments based on StanCERA experience projected generationally from 2009 using Scale MP-2018)						







## Stanislaus County Employees' Retirement Association

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#### February 25, 2020

Retirement Board Agenda Item

TO: Retirement Board

FROM: Lisa Frazer, Member and Employer Services Manager

I. SUBJECT: 2020 NCPERS Legislative Conference Summary

II. ITEM NUMBER: 9.c

III. ITEM TYPE: Information Only

IV. STAFF RECOMMENDATION: None

V. ANALYSIS: The NCPERS Legislative Conference was held in Washington D.C. January 26-28, 2020. Multiple speakers were featured at this year's conference including:

- Domenico Montario, Senior Political Editor/Correspondent at NPR
- Anthony Roda, Williams & Jensen, PLLC
- J. Robert Brown, Jr., Public Company Accounty Oversight Board
- Carol Weiser, Department of Treasury's Office of Benefits Tax Counsel
- Gideon Bragin, House Democratic Caucus.

All the speakers in attendance brought interesting topics to the table, however Ms. Weiser, Department of Treasury's Office of Benefits Tax Counsel, who advised of amendments to the Secure Act which were signed into law December 2019 were of significance. While not all the amendments apply to StanCERA some will; such as the age increase for mandatory distributions. Further research is being conducted on this as well as the deadline to meet these requirements.

I had the opportunity to spend the last day of the conference on Capital Hill. I met with representatives from Senator Feinstein's (D-CA) office, sharing with them a copy of the Comprehensive Annual Financial Report (CAFR) and Popular Annual Financial Report (PAFR). I also met with Representative Harder (D-CA), California's 10<sup>th</sup> District, speaking to him about StanCERA and the benefit, providing him with copies of the CAFR and PAFR and Representative Costa (D-CA), California's 16<sup>th</sup> District, sharing the same information. While StanCERA does not reside in Representative Costa's district, many of our members reside in District 16.

I would recommend attending this conference in the future. It provided a unique opportunity to learn about regulatory and legislative issues that may affect StanCERA and other pensions funds. It also afforded an excellent networking opportunity with senior administration officials, and Members of Congress informing them of our pension system and the critical issues affecting public pensions today.

VI. RISK: None

VII. STRATEGIC PLAN: N/A

VIII. ADMINISTRATIVE BUDGET IMPACT: None

Lisa Frazer, Member and Employer Services Manager

Rick Santos, Executive Director