MCERA INVESTMENT RETIREMENT BOARD AGENDA
THURSDAY, JUNE 27, 2019
MERCED COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
3199 M STREET, MERCED, CA 95348

Please turn your cell phone or other electronic device to non-audible mode.

CALL TO ORDER: 8:15 A.M.

- ROLL CALL.
- APPROVAL OF MINUTES – June 13, 2019.

PUBLIC COMMENT

Members of the public may comment on any item under the Board's jurisdiction. Matters presented under this item will not be discussed or acted upon by the Board at this time. For agenda items, the public may make comments at the time the item comes up for Board consideration. Persons addressing the Board will be limited to a maximum of five (5) minutes in total. Please state your name for the record.

CLOSED SESSION

As provided in the Ralph M. Brown Act, Government Code sections 54950 et seq., the Board may meet in closed session with members of its staff, county employees and its attorneys. These sessions are not open to the public and may not be attended by members of the public. The matters the Board will meet on in closed session are identified below. Any public reports of action taken in the closed session will be made in accordance with Government Code sections 54957.1.

(1) DISCUSSION AND POSSIBLE ACTION REGARDING INVESTMENTS IN RECOMMEDED FUNDS, ROLL CALL VOTE REQUIRED.
(Govt. Code § 54956.81)
1. Discussion and possible adoption of private equity fund recommendation – Cliffwater.
2. Discussion and possible action on the sale of a fund – Meketa.

RETURN TO OPEN SESSION

Report on any action taken in closed session.

BOARD ACTION[1]/DISCUSSION
Pursuant to Govt. Code § 31594 and MCERA's Investment Objectives & Policy Statement due diligence analysis requirement:

1. Presentation and discussion of 2019 Quarterly Investment Performance Report – Cliffwater.
2. Presentation and discussion of the 2019 Monthly Investment Performance Report with possible board action on any funds – Meketa Investment Group.
3. Discussion and possible action on any funds on Meketa Investment Group's Initial Fund Review of MCERA – Meketa Investment Group.

[1] "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.

4. Discussion and possible action to adopt the proposed interest crediting rates for the estimated Active, Retiree, and Employer Reserve Balances as of June 30, 2019 – Staff.
5. Review calendar of any training sessions and authorize expenditures for Trustees and Plan Administrator. Pursuant to Govt. Code § 31522.8 and MCERA's Trustees Education and Training Policy requirements. Examples of upcoming training and educational sessions:
   a. SACRS UC Berkeley Program, July 22-24, 2019, Berkeley, CA.
   b. Principles of Pension Management for Trustees, August 26-29, 2019 Malibu, CA.
   c. Nossaman Fiduciary Forum, September 4-5, 2019, San Francisco, CA.
   d. CALAPRS Administrators Institute (Plan Administrator), September 25-27, 2019, Carmel, CA.
   e. Trustee Roundtable, October 25, 2019, Oakland, CA.
   f. SACRS Fall Conference, November 12-15, 2019, Monterey, CA.
   g. CALAPRS General Assembly, March 7 -10, 2020, Rancho Mirage, CA.
   h. SACRS Spring Conference, May 12-15, 2020, San Diego, CA.

INFORMATION ONLY

MCERA Upcoming Board Meetings:

Please note: The MCERA Board Meeting and/or Education Day times and dates may be changed in accordance with the Ralph M. Brown Act by the MCERA Board as required.

- July 11, 2019
- July 25, 2019
- August 8, 2019

ADJOURNMENT

All supporting documentation is available for public review in the office of the Merced County Employees' Retirement Association, 3199 M Street, Merced, California, 95348 during regular business hours, 8:00 a.m. – 5:00 p.m., Monday through Friday.

The agenda is available online at www.co.merced.ca.us/retirement

Any material related to an item on this Agenda submitted to the Merced County Employees' Retirement Association, after distribution of the Agenda packet is available for public inspection in the office of the Merced County Employees' Retirement Association.

Persons who require accommodation for a disability in order to review an agenda, or to participate in a meeting of the Merced County Employees' Retirement Association per the American Disabilities Act (ADA), may obtain assistance by requesting such accommodation in writing addressed to Merced County Employees' Association, 3199 M Street, Merced, CA 95348 or telephonically by calling (209) 726-2724. Any such request for accommodation should be made at least 48 hours prior to the scheduled meeting for which assistance is requested.

MCERA RETIREMENT BOARD MEETING MINUTES
THURSDAY, JUNE 13, 2019
MERCED COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
3199 M STREET, MERCED, CA 95348

ROLL CALL: 8:15 A.M.

Board Members Present: Scott Silveira, Janey Cabral, Ryan Paskin, Michael Rhodes, David Ness, Scott Johnston and Jason Goins. ***Counsel:*** Forrest Hansen. ***Staff:*** Kristie Santos, Adriana Valdez, Michelle Lee, Sheri Villagrana and Brenda Mojica.

Absent: Karen Adams, Darlene Ingersoll, Alfonse Peterson.

APPROVAL OF MINUTES: May 23, 2019.
Motion to approve the May 23, 2019 meeting minutes.
Silveira/Cabral U/A (7-0).

PUBLIC COMMENT

No public comment.

CLOSED SESSION

RETURN TO OPEN SESSION

(1) DISABILITY RETIREMENT APPLICATIONS: PERSONNEL EXCEPTION
Disability update and possible action:
Motion to deny a service connected disability and deny a non-service connected disability for Elizabeth Arroyo.
Ness/Goins U/A (7-0).

Motion to grant service connected disability and deny non-service connected disability for Mathew Valizan.
Rhodes/Ness U/A (7-0).

CONSENT CALENDAR

RETIREMENTS:
All items of earnable compensation for service or disability retirements listed below are in compliance with the pay code schedule approved by the Board of Retirement. The retirement is authorized; however, administrative adjustments may be necessary to alter the amount due to: audit, late arrival of data, court order, etc.

a.	Navarro, Christopher	Sheriff	20 Yrs. Svc.	Eff. 05/25/2019
b.	Horta, Jeffrey	Fire	2 Yrs. Svc.	Eff. 06/03/2019
c.	Near, Delia	Library	14 Yrs. Svc.	Eff. 06/03/2019
d.	Goddard, Kimberley	DA	1 Yrs. Svc.	Eff. 05/12/2019
e.	Quinn-Harp, Jodi	MCMC	12 Yrs. Svc.	Eff. 05/01/2019
f.	Tedrow, Theresa	RWMA	12 Yrs. Svc.	Eff. 05/21/2019
g.	Morales, Theresa	H.S.A.	14 Yrs. Svc.	Eff. 05/25/2019
h.	Barba, Alejandro	Sheriff	13 Yrs. Svc.	Eff. 01/24/2019*
i.	Smith, Derrell	AG	13 Yrs. Svc.	Eff. 04/06/2018**
j.	Wallace, Kathryn	Courts	18 Yrs. Svc.	Eff. 06/08/2019
k.	Keas, Sheryl	Library	20 Yrs. Svc.	Eff. 06/01/2019
l.	Arnold, Gina	DA	13 Yrs. Svc.	Eff. 05/18/2019

m. Ogden, Albertina Risk 16 Yrs. Svc. Eff. 06/01/2019

YTD fiscal year 2018/2019 retirees: 098
YTD fiscal year 2017/2018 retirees: 082
YTD fiscal year 2016/2017 retirees: 065
*SCD granted 05/09/2019
**SCD granted 5/09/2019 (Retired 4/06/2018)

REFUND OF SERVICE PURCHASE: None
DEATH BENEFIT: None
MONTHLY BUDGET REPORT: Submitted

Motion to approve Consent Calendar.
Rhodes/Cabral U/A (7-0).

<u>REGULAR CALENDAR</u>

<u>BOARD ACTION[1]/DISCUSSION</u>

1. Discussion and possible action on the Legislative Review as of May 28, 2019 – Staff.
   No action taken.

2. Review calendar of any training sessions and authorize expenditures for Trustees and Plan Administrator. Pursuant to Govt. Code § 31522.8 and MCERA's Trustees Education and Training Policy requirements. Examples of upcoming training and educational sessions:
   a. Principles of Pension Management for Trustees, August 26-29, 2019 Malibu, CA.
   b. SACRS Fall Conference, November 12-15, 2019, Monterey, CA.

   No action taken.

<u>INFORMATION ONLY</u>

Counsel Forrest Hansen informed the Board that he would not be attending the MCERA Retirement Board meeting on June 27, 2019 and that Counsel Jeff Grant would be present.

The Plan Administrator informed the Board that during the next MCERA Administrative Board meeting on July 11, 2019, the Board Officer Elections will be held.

Plan Administrator informed the MCERA Board that Board Seat Election timelines for Seats 2, 7 and 7A would be provided at the next Administrative Board meeting.

<u>MCERA Upcoming Board Meetings:</u>
Please note: The MCERA Board Meeting and/or Education Day times and dates may be changed in accordance with the Ralph M. Brown Act by the MCERA Board as required.

- June 27, 2019
- July 11, 2019
- July 25, 2019

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ADJOURNMENT

The meeting adjourned at 8:38 a.m.

Respectfully submitted,

____
Darlene Ingersoll, Chair

____
Al Peterson, Secretary

____
Date

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CLIFFWATER LLC

INVESTMENT ADVISORY SERVICES

Los Angeles • New York

Alternative Investment Performance

Merced County Employees' Retirement Association

June 27, 2019

MCERA Private Equity Capital Budget & Implementation Plan

15% fund level target

- Annual capital budget target of $40 million, range of $30-$50 million
- Target 4-7 investments, range of $5-$15 million per inv; average size of $8 million per

Performance comparisons:

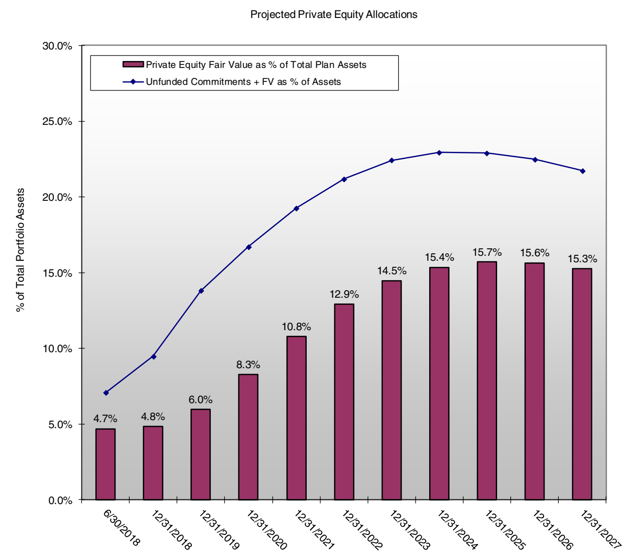
- *Long term investment objective:* Earn a return premium over public equity (Russell 3000 + 3%)
- *Recommended primary asset class benchmark:* Cambridge Associates Global Private Equity & VC Index
- *Recommended fund benchmarks*: Each fund will be compared to the Cambridge Associates strategy universe for the respective vintage years and each vintage year will be compared to Cambridge Associates Global Private Equity & VC Index

MCERA CY 2018 commitments ($5 mm each):

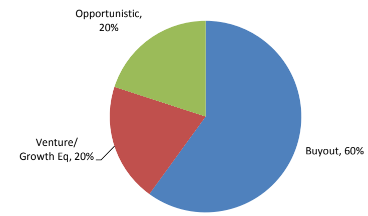
- *Cressey VI* –healthcare services buyout (VY 2018)
- *Accel-KKR Growth III*– software growth equity (VY 2019)
- *TCV X* – venture capital (VY 2019)

MCERA CY 2019 commitments:

- Summit X – growth capital (VY 2019), $8 mm
- Genstar IX – mid market buyout (VY 2019), $8 mm
- Spark Capital VI – early stage VC (VY 2019), $3 mm
- Spark Capital Growth III – late stage VC (VY 2019), $6 mm
- Accel-KKR Capital VI – software buyout (VY 2019), $5 mm



Target Strategy Diversification



	Target	Ranges
Buyout	60%	40-80%
Venture/Growth Eq	20%	10-30%
Opportunistic	20%	10-30%
	100%	

Note: MCERA's existing private equity portfolio was modeled using vintage year drawdown/return of capital assumptions patterned after historical category averages. Total fund growth of 5.5%.

MCERA Private Equity Investment Structure & Portfolio Assessment

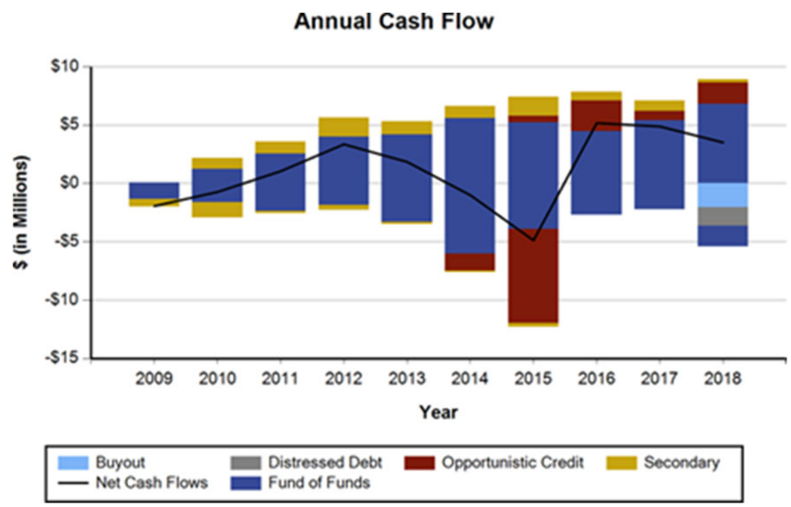
Investment structure (15% fund target; 4.9% invested as of Dec 2018):

- Current portfolio is barbelled with half of commitments in 2007 & earlier FoFs and half in 2011 & later FoFs
  - Overall portfolio has not met performance expectations; 2011 & later portfolio is still in development with the funds in VY 2017 and 2018 beginning their investment period
  - Quarterly performance improvement due to VY 2014 funds; net distributions over the past year as the older FoFs are distributing capital
  - Portfolio is diversified by strategy but overall it is in a negative cash flow situation

Annual Summary

(in thousands)

	Total Partnerships	Total Commitments	(A) Contributions	(B) Distributions	(C) Fair Value	(B+C) Total Value	(B+C-A) Gain/ Loss	Net IRR	Benchmark
December 31, 2017	22	$84,125	$59,008	$47,514	$35,203	$82,717	$23,709	7.85%	10.62%
December 31, 2018	25	$99,016	$64,600	$56,471	$37,562	$94,034	$29,434	8.41%	10.74%
Annual Change	3	$14,891	$5,592	$8,957	$2,359	$11,317	$5,725		



Note: Net cash flow is the for the respective calendar year.

MCERA Private Equity Performance – as of Dec 31, 2018

Partnership Name ($000)	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/ Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
(in thousands)													
Vintage Year 2004													
Invesco Partnership Fund IV, L.P.	Fund of Funds	10,000	2,417	7,898	76%	15,814	475	16,289	8,391	11.81%	7.25%	2.06	1.54
Vintage Year 2004 Total		10,000	2,417	7,898	76%	15,814	475	16,289	8,391	11.81%	7.63%	2.06	1.50
Vintage Year 2005													
ASP 2005 Non-US Fund	Fund of Funds	1,500	74	1,426	95%	1,634	321	1,954	529	4.94%	5.63%	1.37	1.38
ASP 2005 US Fund	Fund of Funds	3,500	177	3,323	95%	4,256	793	5,049	1,726	6.74%	7.63%	1.52	1.54
Pantheon Ventures Euro Fund IV	Fund of Funds	1,155	55	1,278	95%	1,535	134	1,669	392	4.74%	5.63%	1.31	1.38
Pantheon Ventures USA Fund VI	Fund of Funds	3,750	206	3,544	95%	4,633	870	5,503	1,959	6.92%	7.63%	1.55	1.54
Vintage Year 2005 Total		9,905	512	9,570	95%	12,058	2,118	14,176	4,605	6.32%	7.35%	1.48	1.46
Vintage Year 2006													
Pantheon Global Secondary Fund III "B"	Secondary	10,000	540	9,460	95%	9,370	1,258	10,628	1,168	2.12%	N/A	1.12	N/A
Vintage Year 2006 Total		10,000	540	9,460	95%	9,370	1,258	10,628	1,168	2.12%	7.35%	1.12	1.49
Vintage Year 2007													
ASP 2007 Direct Fund	Fund of Funds	450	14	436	97%	704	267	972	536	11.67%	11.08%	2.23	1.73
ASP 2007 Non-US Fund	Fund of Funds	1,575	78	1,497	95%	1,495	781	2,277	779	7.72%	7.26%	1.52	1.46
ASP 2007 US Fund	Fund of Funds	2,475	115	2,360	95%	2,971	1,230	4,201	1,841	11.58%	11.08%	1.78	1.73
Vintage Year 2007 Total		4,500	207	4,293	95%	5,170	2,279	7,449	3,156	10.35%	8.76%	1.74	1.55
Vintage Year 2011													
ASP 2011 Direct Fund	Fund of Funds	500	44	456	91%	467	386	852	396	16.07%	13.78%	1.87	1.62
ASP 2011 Emerging Markets Fund	Fund of Funds	500	64	436	87%	131	589	720	284	13.24%	12.47%	1.65	1.57
ASP 2011 Non-US Developed Fund	Fund of Funds	1,500	322	1,178	79%	710	1,091	1,801	623	12.51%	12.47%	1.53	1.57
ASP 2011 US Fund	Fund of Funds	2,500	326	2,175	87%	1,165	2,302	3,467	1,292	14.11%	13.78%	1.59	1.62
Pantheon Asia Fund VI	Fund of Funds	1,000	176	825	82%	301	955	1,256	431	11.02%	12.47%	1.52	1.57
Pantheon Euro Fund VII	Fund of Funds	1,611	301	1,410	81%	722	1,299	2,021	612	9.47%	12.47%	1.43	1.57
Pantheon Ventures USA Fund IX	Fund of Funds	2,000	312	1,688	84%	818	1,924	2,742	1,054	13.02%	13.78%	1.62	1.62
Vintage Year 2011 Total		9,611	1,546	8,167	84%	4,313	8,546	12,859	4,692	12.60%	13.37%	1.57	1.61
Vintage Year 2013													
Invesco Partnership Fund VI, L.P.	Fund of Funds	5,000	1,833	3,674	63%	526	6,440	6,966	3,292	18.22%	14.06%	1.90	1.56
Vintage Year 2013 Total		5,000	1,833	3,674	63%	526	6,440	6,966	3,292	18.22%	13.10%	1.90	1.42

Note:. The benchmark represents the Cambridge Associates LLC median for the respective strategy and vintage year. At the vintage year level, the Cambridge Associates LLC Global Private Equity & VC ® median is used for the respective vintage year.

MCERA Private Equity Performance – as of Dec 31, 2018

Partnership Name ($000)	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/ Loss	Net IRR	IRR Bench.	TVPI	TVPI Bench.
Vintage Year 2014													
Ocean Avenue Fund II	Fund of Funds	10,000	1,600	8,400	84%	3,347	9,730	13,077	4,677	16.61%	11.82%	1.56	1.28
Raven Asset-Based Opportunity Fund II	Opportunistic Credit	10,000	474	9,526	95%	5,830	3,483	9,314	-212	-0.84%	8.15%	0.98	1.21
Vintage Year 2014 Total		20,000	2,074	17,926	90%	9,177	13,214	22,391	4,465	8.24%	14.73%	1.25	1.39
Vintage Year 2017													
GTCR XII	Buyout	5,000	4,242	758	15%	44	384	428	-330	N/M	N/M	0.56	1.04
Vintage Year 2017 Total		5,000	4,242	758	15%	44	384	428	-330	N/M	N/M	0.56	1.06
Vintage Year 2018													
Carrick Capital Partners III, L.P.	Buyout	5,000	4,197	803	16%	0	710	710	-94	N/M	N/M	0.88	0.94
Cressey & Company Fund VI LP	Buyout	5,000	4,500	500	10%	0	444	444	-56	N/M	N/M	0.89	0.94
Davidson Kempner Long-Term Distressed Opportunit	Distressed Debt	5,000	3,450	1,550	31%	0	1,696	1,696	146	N/M	N/M	1.09	N/A
Vintage Year 2018 Total		15,000	12,147	2,853	19%	0	2,849	2,849	-4	N/M	N/M	1.00	
Vintage Year 2019													
Accel-KKR Growth Capital Partners III	Buyout	5,000	5,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
TCV X, L.P.	Venture Capital	5,000	5,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Vintage Year 2019 Total		10,000	10,000	0	0%	0	0	0	0	N/M	N/M	N/A	N/A
Total Portfolio:		**99,016**	**35,518**	**64,600**	**64%**	**56,472**	**37,562**	**94,034**	**29,434**	**8.41%**	**10.74%**	**1.46**	
Portfolio Strategy Totals													
Buyout		20,000	17,939	2,061	10%	44	1,538	1,582	-480	N/M		0.77	
Distressed Debt		5,000	3,450	1,550	31%	0	1,696	1,696	146	N/M		1.09	
Fund of Funds		40,175	7,044	33,954	82%	34,700	24,417	59,117	25,163	11.27%		1.74	
Non-US		8,841	1,070	8,049	88%	6,528	5,171	11,699	3,649	7.46%		1.45	
Opportunistic Credit		10,000	474	9,526	95%	5,830	3,483	9,314	-212	-0.84%		0.98	
Secondary		10,000	540	9,460	95%	9,370	1,258	10,628	1,168	2.12%		1.12	
Venture Capital		5,000	5,000	0	0%	0	0	0	0	N/M		N/A	
Total Portfolio:		**99,016**	**35,518**	**64,600**	**64%**	**56,472**	**37,562**	**94,034**	**29,434**	**8.41%**	**10.74%**	**1.46**	

Note:. The benchmark represents the Cambridge Associates LLC median for the respective strategy and vintage year. At the vintage year level, the Cambridge Associates LLC Global Private Equity & VC ® median is used for the respective vintage year.

MCERA Real Estate Capital Budget & Implementation Plan

8% fund level target

- Annual capital budget target of $10 million, range of $5-$25 million
- Target 2-4 investments, range of $4-$7 million per inv
  - Average investment size of $5 million
  - If an average of 2-4 GP partnership commitments per year, expect a total of 8-16 GP relationships over a 4 year fund raising cycle
- Retain core real estate exposure but lower it to 25% of the portfolio due to current valuations; use it as a source of funding and substitute for private real estate investments (long term target of 75%)

Performance comparisons:

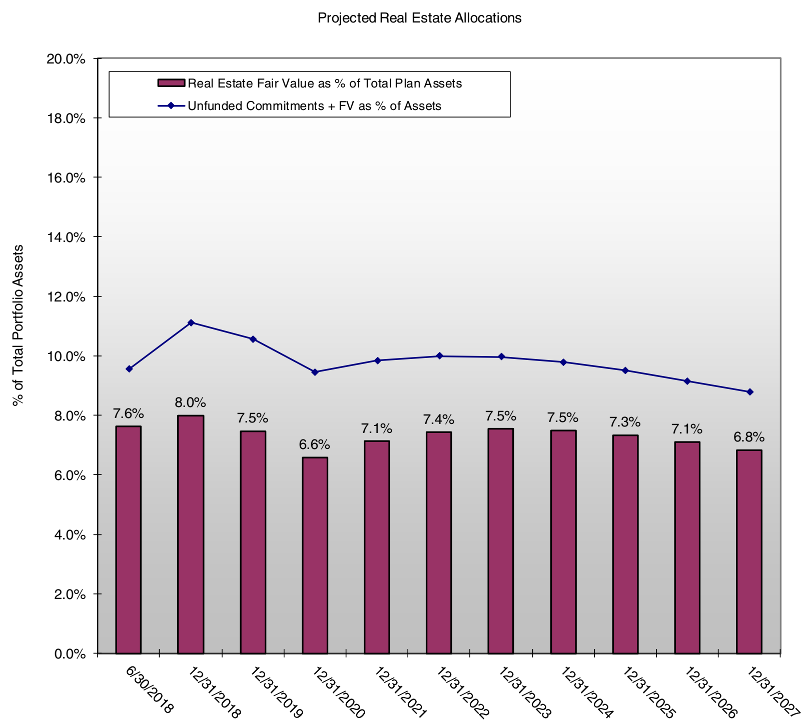
- *Long term investment objective:* Earn a return premium over inflation (CPI-U + 5%)
- *Recommended primary asset class benchmark:* NCREIF NFI-ODCE; revisit over time as the structure of the portfolio changes
- *Recommended fund benchmarks*: Cambridge Associates strategy universe for the respective vintage years and each vintage year will be compared to Cambridge Associates Global Real Estate Index

MCERA CY 2018 commitments ($5 mm):

- *Taconic CRE II* –opportunistic RE (VY 2018)
- *AG Realty Value X* – opportunistic RE (VY 2018)
- *Carmel VIII* – opportunistic RE (VY 2019)

MCERA CY 2019 commitments ($5 mm):

- *Rockpoint VI* –opportunistic RE (VY 2019)



Note: MCERA's existing real estate portfolio was modeled using vintage year drawdown/return of capital assumptions patterned after historical averages. Total fund growth rate of 5.5%.

MCERA Real Estate Investment Structure & Portfolio Assessment

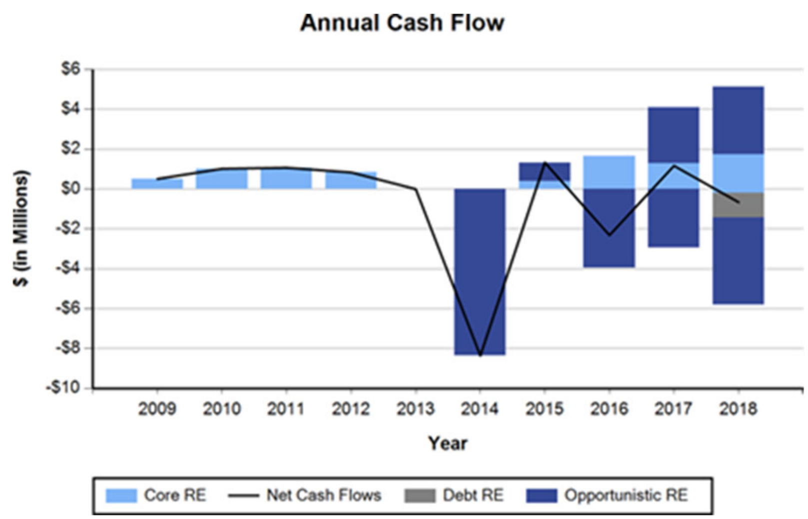
Real estate investment structure (8% target, 7.8% actual as of Dec 2018)

- MCERA invested in 1999 in a private core real estate fund; gains have been re-invested in the fund
- Contributions were similar to distributions over the past year as the newer funds are being built out

Annual Summary

(in thousands)

	Total Partnerships	Total Commitments	(A) Contributions	(B) Distributions	(C) Fair Value	(B+C) Total Value	(B+C-A) Gain/ Loss	Net IRR	Benchmark
December 31, 2017	4	$49,283	$31,592	$22,638	$58,130	$80,768	$49,175	9.39%	8.56%
December 31, 2018	8	$63,742	$37,201	$27,770	$63,336	$91,106	$53,905	9.33%	8.55%
Annual Change	4	$14,459	$5,609	$5,132	$5,206	$10,338	$4,730		



Note: Net cash flow is the for the respective calendar year.

MCERA Real Estate Performance – as of Dec 31, 2018

Real Estate Portfolio

- MCERA began investing in the UBS Trumbull core real estate fund in 1999 and this represents the bulk of the real estate portfolio
  - Opportunistic funds began being added in 2014 and they are in the early stages of development with the VY 2016 fund now out of its "j-curve"; VY 2014 fund is making distributions & Patron's performance is out of the j curve
- Overall performance has met objectives, driven by the core RE fund; opportunistic fund performance is not meaningful

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/ Loss	Net IRR	IRR Bench.	TVPI
(in thousands)												
Vintage Year 1999												
UBS Trumbull Property Fund	Core RE	17,000	0	17,189	100%	21,465	43,392	64,857	47,668	9.17%	11.57%	3.77
Vintage Year 1999 Total		17,000	0	17,189	100%	21,465	43,392	64,857	47,668	9.17%	13.66%	3.77
Vintage Year 2014												
Greenfield Acquisition Partners VII, L.P.	Opportunistic RE	13,000	1,876	12,662	86%	5,170	12,882	18,052	5,391	13.14%	13.47%	1.43
Vintage Year 2014 Total		13,000	1,876	12,662	86%	5,170	12,882	18,052	5,391	13.14%	11.88%	1.43
Vintage Year 2016												
Patron Capital Fund V	Opportunistic RE	13,742	8,047	5,726	41%	1,135	5,620	6,754	1,028	13.38%	11.99%	1.18
Vintage Year 2016 Total		13,742	8,047	5,726	41%	1,135	5,620	6,754	1,028	13.38%	11.76%	1.18
Vintage Year 2017												
Carlyle Realty Partners VIII, L.P.	Opportunistic RE	5,000	4,627	374	7%	0	248	248	-127	N/M	N/M	0.66
Vintage Year 2017 Total		5,000	4,627	374	7%	0	248	248	-127	N/M	N/M	0.66
Vintage Year 2018												
Taconic CRE Dislocation Fund II	Debt RE	5,000	3,750	1,250	25%	0	1,242	1,242	-8	N/M	N/M	0.99
AG Realty Value Fund X, L.P.	Opportunistic RE	5,000	5,000	0	0%	0	-33	-33	-33	N/M	N/M	0.00
Carmel Partners Investment Fund VII, L.P	Value-Add RE	5,000	5,000	0	0%	0	-14	-14	-14	N/M	N/M	0.00
Vintage Year 2018 Total		15,000	13,750	1,250	8%	0	1,194	1,194	-56	N/M	N/M	0.96
Total Portfolio:		**63,742**	**28,300**	**37,201**	**56%**	**27,770**	**63,336**	**91,106**	**53,905**	**9.33%**	**8.55%**	**2.45**

Note: The benchmark at the total portfolio level is NCREIF NFI-ODCE . Private real estate benchmark at the fund level is the Cambridge Value Add or Opportunistic RE Indices while the Cambridge Global Real Estate Index at the vintage year level.

MCERA Real Asset Capital Budget & Implementation Plan

5% fund level target

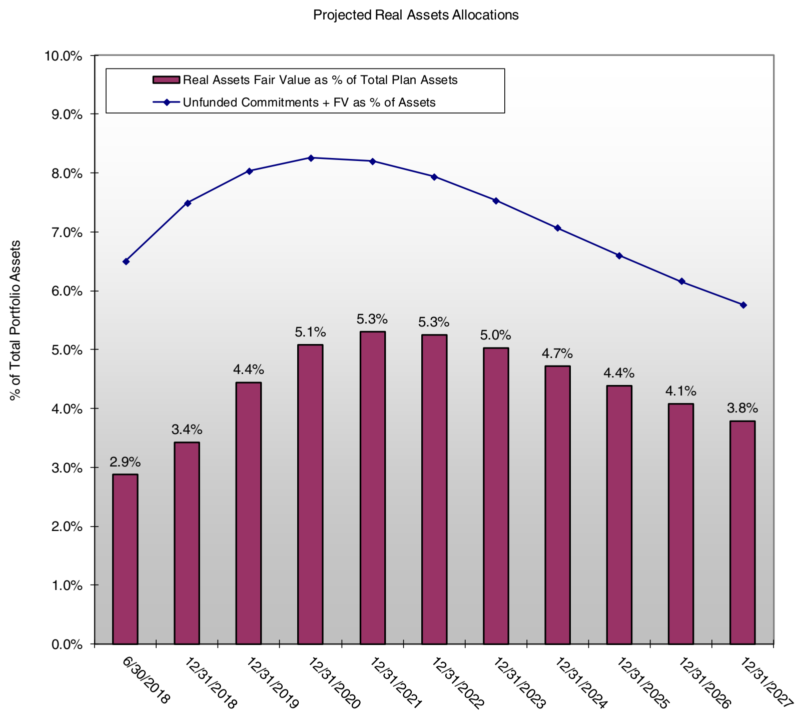
- Annual capital budget target of $10 million, range of $5-$15 million
- Target 2-4 investments, range of $3-$7 million per inv
  - Average investment size of $5 million
  - If an average of 2-4 GP partnership commitments per year, expect a total of 8-16 GP relationships over a 4 year fund raising cycle
- Portfolio targeted to be equally split between infrastructure and energy/natural resource funds

Performance comparisons:

- *Long term investment objective:* Earn a return premium over inflation (CPI-U + 5%)
- *Recommended primary asset class benchmark:* 50/50 Cambridge Global Infrastructure/Cambridge Energy Upstream & Royalties and Private Energy Index
- *Recommended fund benchmarks*: Each fund will be compared to the Cambridge Associates strategy universe for the respective vintage years and each vintage year will be compared to the 50/50 index

MCERA CY 2018 commitments ($5 mm):

- *KKR Infrastructure III*– global infrastructure (VY 2018)
- *Ardian Infrastructure V* – global infrastructure (VY 2019)
- *BlackRock Infrastructure III* – energy & power (VY 2019)



Note: MCERA's existing real asset portfolio was modeled using vintage year drawdown/return of capital assumptions patterned after historical category averages. Total fund growth rate of 5.5%.

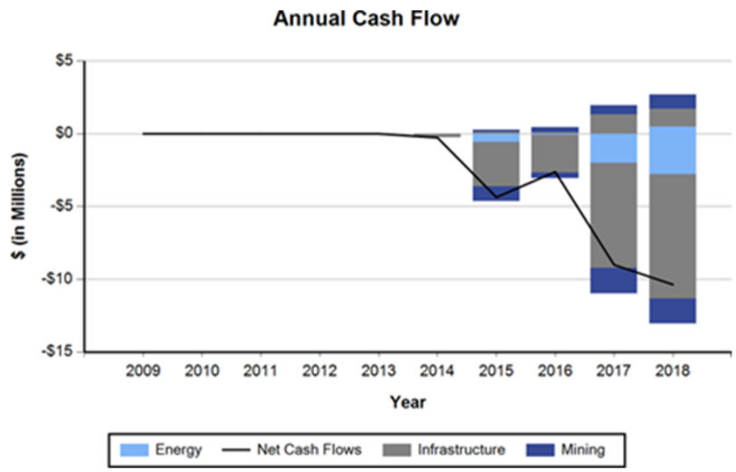
Real assets investment structure (5% target, 7.9% actual as of Dec 2018)

- Program is designed to be equally divided between private infrastructure and natural resource funds along with a public real asset component
- Private fund commitments began in 2014 to infrastructure and 2015 to natural resources
- The overall portfolio is immature with the funds in the early stage of development
  - Contributions exceed distributions by $10 mm as the newer funds are being built out
  - Gains in the debt oriented funds

Annual Summary

(in thousands)

	Total Partnerships	Total Commitments	(A) Contributions	(B) Distributions	(C) Fair Value	(B+C) Total Value	(B+C-A) Gain/ Loss	Net IRR	Benchmark
December 31, 2017	8	$52,500	$18,915	$2,661	$19,055	$21,716	$2,801	14.17%	5.58%
December 31, 2018	12	$65,500	$31,972	$5,360	$31,249	$36,608	$4,636	11.11%	-0.71%
Annual Change	4	$13,000	$13,057	$2,699	$12,194	$14,892	$1,835		



Note: As of Dec 31, 2017. Net cash flow is the for the respective calendar year.

MCERA Real Assets Performance – as of Dec 31, 2018

Real Asset Portfolio

- MCERA began allocating to real assets in 2014 via direct fund commitments
  - Portfolio is approximately equally divided between infrastructure & energy/mining
- Portfolio is in its early stages of development so performance is not meaningful; the 2014-16 funds are making distributions; the VY 2017 & 2018 funds have activated

Partnership Name	Strategy	(A) Commit. Amount	Unfund. Amount	(B) Cumulat. Cont.	% Drawn	(C) Cumulat. Dist.	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/ Loss	Net IRR	IRR Bench.	TVPI
(in thousands)												
Vintage Year 2014												
KKR Global Infrastructure II	Infrastructure	10,000	1,167	9,908	88%	1,178	10,429	11,607	1,699	10.44%	6.57%	1.17
Vintage Year 2014 Total		10,000	1,167	9,908	88%	1,178	10,429	11,607	1,699	10.44%		1.17
Vintage Year 2015												
GSO Energy Select Opportunities Fund	Energy	7,500	3,853	4,103	49%	464	4,423	4,887	784	12.48%	14.01%	1.19
North Haven Infrastructure Partners II LP	Infrastructure	10,000	1,317	10,045	87%	1,570	9,619	11,189	1,144	9.10%	6.52%	1.11
Taurus Mining Finance Fund	Mining	5,000	2,682	3,019	46%	1,412	2,331	3,743	724	16.82%	N/A	1.24
Vintage Year 2015 Total		22,500	7,852	17,167	65%	3,446	16,373	19,819	2,652	11.47%		1.15
Vintage Year 2016												
Taurus Mining Finance Annex Fund	Mining	5,000	3,602	1,822	28%	679	1,598	2,277	455	N/M	N/M	1.25
Vintage Year 2016 Total		5,000	3,602	1,822	28%	679	1,598	2,277	455	N/M		1.25
Vintage Year 2017												
EnCap Energy Capital Fund XI, L.P.	Energy	5,000	4,464	536	11%	0	412	412	-124	N/M	N/M	0.77
ISQ Global Infrastructure Fund II	Infrastructure	5,000	3,709	1,345	26%	57	1,324	1,380	35	N/M	N/M	1.03
Vintage Year 2017 Total		10,000	8,173	1,881	18%	57	1,736	1,793	-89	N/M		0.95
Vintage Year 2018												
EnCap Flatrock Midstream IV, L.P.	Energy	3,000	2,152	848	28%	0	804	804	-44	N/M	N/M	0.95
KKR Global Infrastructure Investors III	Infrastructure	5,000	4,654	346	7%	0	309	309	-38	N/M	N/M	N/A
Vintage Year 2018 Total		8,000	6,806	1,194	15%	0	1,113	1,113	-81	N/M		0.93
Vintage Year 2019												
Global Energy & Power Infrastructure Fund III	Energy	5,000	5,000	0	0%	0	0	0	0	N/M	N/M	0.00
Ardian Infrastructure Fund V	Infrastructure	5,000	5,000	0	0%	0	0	0	0	N/M	N/M	N/A
Vintage Year 2019 Total		10,000	10,000	0	0%	0	0	0	0	N/M		0.00
Total Portfolio:		**65,500**	**37,600**	**31,972**	**43%**	**5,360**	**31,249**	**36,608**	**4,636**	**11.11%**	**-0.71%**	**1.15**

Note: Benchmark is 50% S&P Natural Resources and 50% S&P Infrastructure. Benchmarks for individual funds are the respective Cambridge strategy benchmark.

MCERA Hedge Fund Performance – as of Apr 30, 2019

Markets rallied in 1Q19 following the 4Q downturn on Fed moderation

- Equity and credit oriented strategies have been the best performers in the year
- Managers are being upsized and Taconic was funded at the end of Nov

			Returns							Sharpe	Incep
Fund	Market Value	Actual %	Apr	QTD	YTD	1 Year	3 Year	Incep	Std Dev	Ratio	Date
Market Neutral											
KLS Diversified Fund LP	9,215,123	12.1%	0.99%	0.99%	1.54%	2.11%	-	2.24%	4.30%	0.01	Oct-17
Laurion Capital, Ltd. Class A 18-07	5,341,065	7.0%	2.85%	2.85%	4.40%	-	-	6.82%	3.91%	-	Jul-18
Market Neutral - HF Total	14,556,189	19.1%	1.66%	1.66%	2.57%	6.05%	-	4.71%	3.08%	0.77	Oct-17
HFRI Relative Value (Total) Index			0.94%	0.94%	4.87%	3.29%	-	3.46%	3.18%	0.38	Oct-17
Credit/Distressed											
Silver Point Capital Fund, L.P.	12,460,964	16.3%	2.65%	2.65%	4.86%	0.10%	-	3.02%	4.80%	0.15	Dec-17
Credit/Distressed - HF Total	12,460,964	16.3%	2.65%	2.65%	4.86%	0.10%	-	3.02%	4.80%	0.15	Dec-17
HFRI ED: Distressed/Restructuring Index			3.03%	3.03%	6.40%	3.63%	-	4.20%	5.32%	0.36	Dec-17
Event Driven											
Taconic Opportunity Fund L.P.	10,271,587	13.5%	1.14%	1.14%	3.12%	-	-	2.72%	2.13%	-	Dec-18
Event Driven - HF Total	10,271,587	13.5%	1.14%	1.14%	3.12%	-	-	2.72%	2.13%	-	Dec-18
HFRI Event-Driven (Total) Index			2.18%	2.18%	6.41%	-	-	3.94%	7.39%	-	Dec-18
Equity Long/Short											
Archipelago Partners, L.P.	11,806,829	15.5%	0.88%	0.88%	9.48%	3.67%	-	5.16%	7.65%	0.41	Sep-17
MW Eureka Fund Class B2	3,142,986	4.1%	-0.17%	-0.17%	4.25%	-0.06%	-	3.34%	5.69%	0.19	Dec-17
Equity Long/Short - HF Total	14,949,815	19.6%	0.66%	0.66%	8.33%	3.02%	-	5.16%	6.73%	0.45	Sep-17
HFRI Equity Hedge (Total) Index			1.63%	1.63%	9.45%	0.99%	-	3.86%	7.46%	0.25	Sep-17
Global Macro-Discretionary											
Graham Absolute Return Trading Ltd. - Class A	7,461,819	9.8%	3.09%	3.09%	6.51%	2.34%	-	4.03%	7.31%	0.27	Sep-17
Global Macro-Discretionary - HF Total	7,461,819	9.8%	3.09%	3.09%	6.51%	2.34%	-	4.03%	7.31%	0.27	Sep-17
HFRI Macro (Total) Index			1.65%	1.65%	4.08%	1.21%	-	0.80%	4.81%	-0.27	Sep-17
Global Macro-Systematic											
Winton Futures Fund Limited - Class B	6,150,342	8.1%	1.23%	1.23%	1.51%	0.44%	-	2.32%	7.43%	0.03	Nov-17
Global Macro-Systematic - HF Total	6,150,342	8.1%	1.23%	1.23%	1.51%	0.44%	-	2.32%	7.43%	0.03	Nov-17
HFRI Macro (Total) Index			1.65%	1.65%	4.08%	1.21%	-	0.17%	4.76%	-0.43	Nov-17
Multi-Strategy											
OZ Domestic Partners II, LP	10,460,571	13.7%	3.35%	3.35%	12.89%	7.77%	9.96%	6.39%	5.68%	0.92	Jul-14
Multi-Strategy - HF Total	10,460,571	13.7%	3.35%	3.35%	12.89%	7.77%	9.96%	6.39%	5.68%	0.92	Jul-14
HFRI Relative Value (Total) Index			0.94%	0.94%	4.87%	3.29%	5.30%	3.30%	2.90%	0.73	Jul-14
MCERA Hedge Fund Portfolio	76,311,288	100.0%	1.88%	1.88%	5.74%	3.32%	7.13%	4.06%	4.26%	0.68	Jul-14
Benchmarks											
HFRI Fund of Funds Composite Index			0.63%	0.63%	5.29%	0.58%	3.98%	2.09%	3.67%	0.26	Jul-14
Market Indices											
Libor3Month			0.21%	0.21%	0.86%	2.53%	1.69%	1.18%	0.25%	-	Jul-14
Bloomberg Barclays US Aggregate Bond Index			0.03%	0.03%	2.97%	5.29%	1.91%	2.42%	2.86%	0.44	Jul-14
Bloomberg Barclays US High Yield Bond Index			1.42%	1.42%	8.78%	6.74%	7.69%	4.64%	5.53%	0.64	Jul-14
S&P 500 TR			4.05%	4.05%	18.25%	13.50%	14.88%	11.05%	11.44%	0.87	Jul-14
MSCI AC World Index Free - Net			3.38%	3.38%	15.96%	5.06%	11.36%	6.33%	11.29%	0.50	Jul-14
MSCI EAFE - Net			2.81%	2.81%	13.07%	-3.22%	7.24%	2.15%	12.00%	0.14	Jul-14
MSCI EMF (Emerging Markets Free) - Net			2.11%	2.11%	12.24%	-5.04%	11.25%	2.89%	15.43%	0.18	Jul-14

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F U N D   E V A L U A T I O N   R E P O R T

Merced County Employees' Retirement Association

Performance Review

As of May 31, 2019

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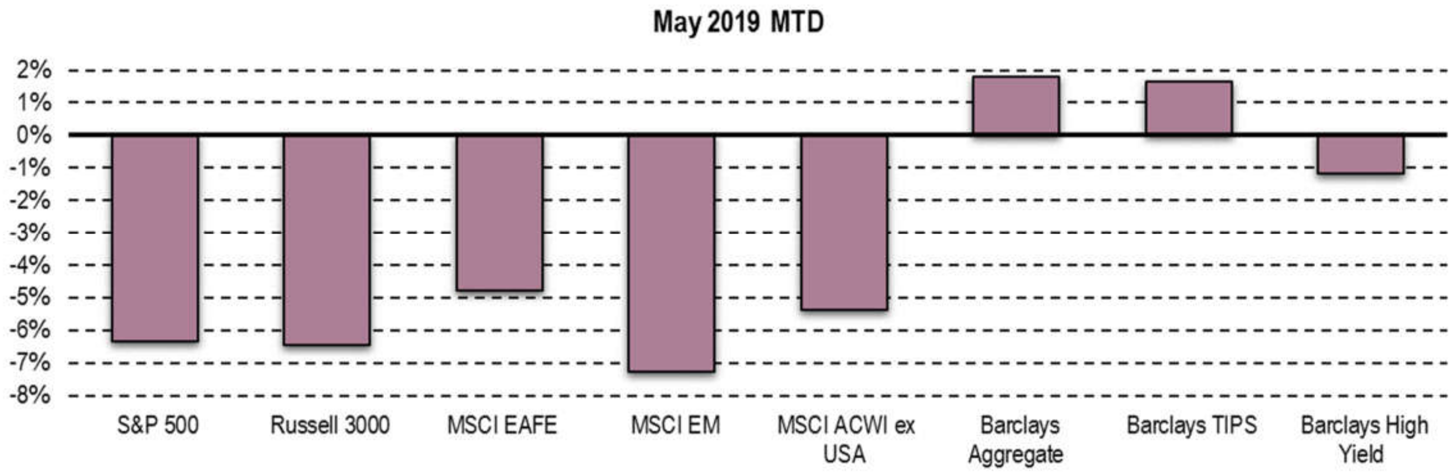
Performance Highlights
As of May 31, 2019

Market Review and Preliminary Performance Summary for May 2019:



Growth > Value	US Treasury 10 yr: rate fell 37 basis points	Small Cap < Large Cap

- Global Equities reversed course and declined amid escalating trade tensions.
- Market sentiments were also weighed down by signs of slowing global growth.
- U.S. Treasury rates rallied (10 yr tenor fell 37 basis points) and the yield curve flattened.
- Spreads widened in terms of Credit and oil prices fell.

As of May 31, 2019, total assets stood at $829.3 million with a one-month return of -2.7%.

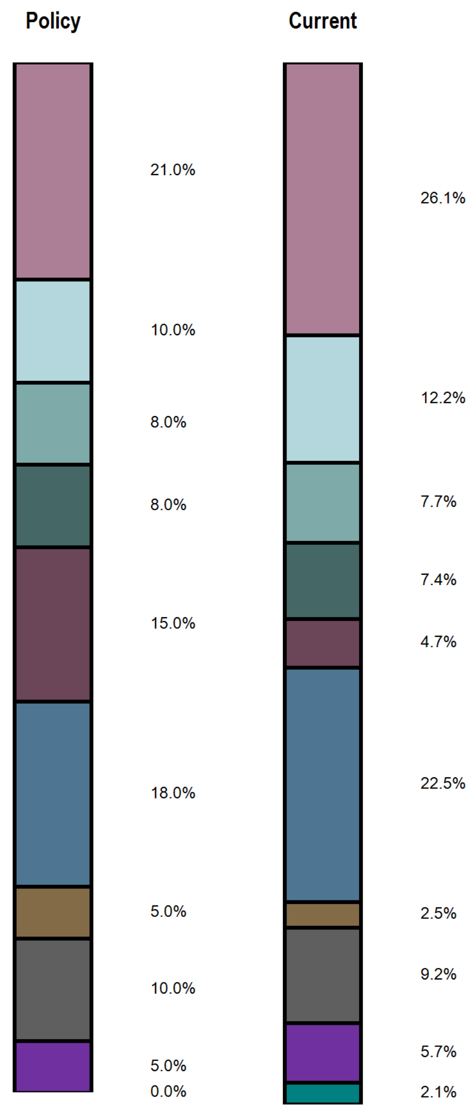
- U.S. Equity weighed down overall results in the Fund, as this segment returned -6.3% for the month.
- Another main detractor was Emerging Markets Equity, posting a -8.2% return in May.
- Fixed Income was up for the month, at +1.6%, while Hedge Funds reported a -0.5% return.

Performance Review

As of May 31, 2019

Total Fund

As of May 31, 2019



Cash range displayed for illustrative purposes only.

Allocation vs. Targets and Policy

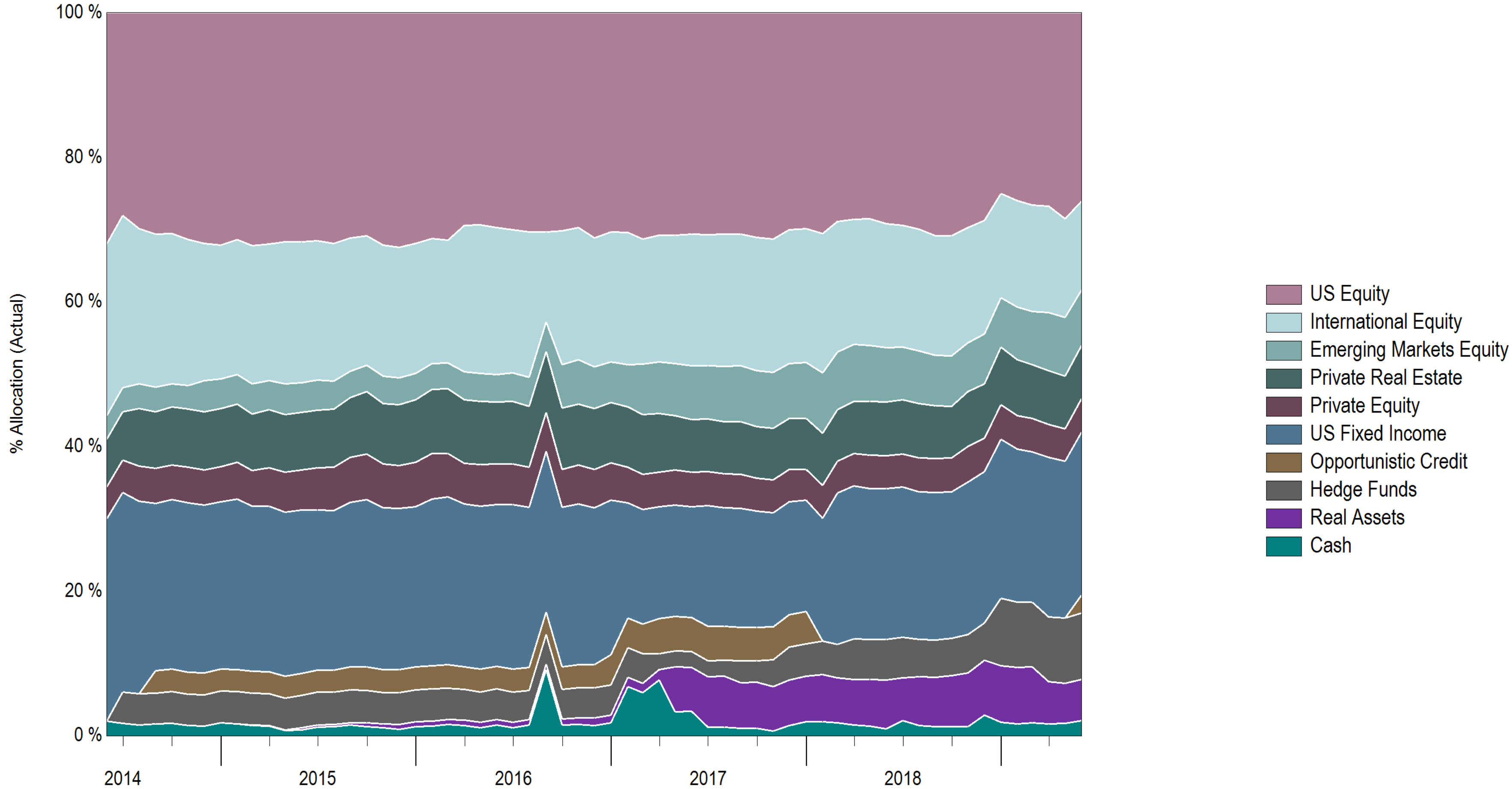
	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
US Equity	$216,493,176	26.1%	21.0%	5.1%	15.0% - 26.0%	No
International Equity	$101,479,922	12.2%	10.0%	2.2%	5.0% - 15.0%	Yes
Emerging Markets Equity	$63,760,718	7.7%	8.0%	-0.3%	4.0% - 12.0%	Yes
Private Real Estate	$61,009,346	7.4%	8.0%	-0.6%	6.0% - 10.0%	Yes
Private Equity	$38,592,642	4.7%	15.0%	-10.3%	5.0% - 20.0%	No
US Fixed Income	$186,680,800	22.5%	18.0%	4.5%	13.0% - 23.0%	Yes
Opportunistic Credit	$20,517,027	2.5%	5.0%	-2.5%	3.0% - 7.0%	No
Hedge Funds	$75,959,729	9.2%	10.0%	-0.8%	5.0% - 15.0%	Yes
Real Assets	$47,209,790	5.7%	5.0%	0.7%	3.0% - 7.0%	Yes
Cash	$17,624,214	2.1%	0.0%	2.1%	0.0% - 5.0%	Yes
Total	**$829,327,364**	**100.0%**	**100.0%**			

Total Fund

As of May 31, 2019

Asset Allocation History

5 Years Ending May 31, 2019



Total Fund

As of May 31, 2019

Asset Class Performance Summary

	Market Value ($)	% of Portfolio	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund (Net)*	**829,327,364**	**100.0**	**-2.7**	**1.2**	**6.7**	**0.8**	**7.6**	**5.4**	**8.7**	**7.8**	**Dec-94**
Total Fund (Gross)*			**-2.7**	**1.4**	**6.8**	**1.1**	**7.8**	**5.7**	**9.0**	**8.0**	
Policy Index			*-2.4*	*0.4*	*5.5*	*0.7*	*7.9*	*5.6*	*10.6*	*5.8*	*Dec-94*
Total Fund w/o Alternatives (Net)	**588,931,642**	**71.0**	**-3.6**	**0.5**	**8.4**	**0.1**	**7.8**	**5.2**	**--**	**--**	**Dec-94**
Total Fund w/o Alternatives (Gross)			**-3.6**	**0.8**	**8.5**	**0.4**	**8.1**	**5.5**	**--**	**--**	
Policy Index w/o AI			*-3.8*	*0.8*	*7.5*	*0.3*	*7.7*	*5.0*	*--*	*--*	*Dec-94*
US Equity (Net)	**216,493,176**	**26.1**	**-6.3**	**0.7**	**11.5**	**1.4**	**11.9**	**10.0**	**14.1**	**9.7**	**Dec-94**
US Equity (Gross)			**-6.3**	**0.9**	**11.6**	**1.6**	**12.2**	**10.2**	**14.2**	**9.8**	
80% R1000 / 20% R2000			*-6.7*	*0.2*	*10.7*	*0.9*	*11.4*	*8.9*	*13.7*	*9.6*	*Dec-94*
International Equity (Net)	**165,240,640**	**19.9**	**-5.8**	**-5.3**	**7.9**	**-7.2**	**6.5**	**1.1**	**6.5**	**4.9**	**Dec-98**
International Equity (Gross)			**-5.8**	**-4.9**	**8.1**	**-6.8**	**6.9**	**1.7**	**7.0**	**5.1**	
International Equity Custom			*-5.8*	*-4.6*	*6.4*	*-6.6*	*7.4*	*1.9*	*6.3*	*4.0*	*Dec-98*
Developed International Equity (Net)	**101,479,922**	**12.2**	**-4.3**	**-5.5**	**8.4**	**-6.9**	**6.0**	**1.0**	**6.9**	**2.8**	**Jan-08**
Developed International Equity (Gross)			**-4.3**	**-5.4**	**8.4**	**-6.8**	**6.2**	**1.4**	**7.3**	**3.2**	
MSCI EAFE			*-4.8*	*-4.6*	*7.6*	*-5.7*	*5.8*	*1.3*	*6.2*	*1.9*	*Jan-08*
Emerging Markets Equity (Net)	**63,760,718**	**7.7**	**-8.2**	**-4.0**	**7.7**	**-7.1**	**9.8**	**2.8**	**--**	**2.5**	**Apr-12**
Emerging Markets Equity (Gross)			**-8.1**	**-3.2**	**8.1**	**-6.2**	**10.8**	**3.7**	**--**	**3.5**	
MSCI Emerging Markets			*-7.3*	*-4.7*	*4.1*	*-8.7*	*9.9*	*1.8*	*5.0*	*2.0*	*Apr-12*
US Fixed Income (Net)	**186,680,800**	**22.5**	**1.6**	**5.8**	**4.1**	**5.7**	**3.3**	**2.9**	**4.6**	**5.3**	**Dec-94**
US Fixed Income (Gross)			**1.6**	**5.9**	**4.2**	**5.8**	**3.5**	**3.1**	**4.9**	**5.5**	
US Fixed Custom			*1.6*	*6.0*	*4.3*	*5.9*	*3.4*	*3.0*	*4.1*	*5.6*	*Dec-94*
Opportunistic Credit (Net)	**20,517,027**	**2.5**									
Opportunistic Credit (Gross)											

Data prior to March 2018 provided by prior consultant

Total Fund

As of May 31, 2019

	Market Value ($)	% of Portfolio	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Real Estate (Net)	**61,009,346**	**7.4**	**0.0**	**5.8**	**2.4**	**5.8**	**7.2**	**7.8**	**--**	**--**	**Mar-99**
Private Real Estate (Gross)			**0.0**	**5.8**	**2.4**	**5.8**	**7.4**	**8.5**	**8.7**	**8.6**	
NCREIF ODCE (net)			*0.0*	*4.7*	*1.2*	*6.6*	*7.0*	*9.2*	*7.7*	*7.4*	*Mar-99*
Private Equity (Net)	**38,592,642**	**4.7**	**0.0**	**6.1**	**0.7**	**6.1**	**11.2**	**9.2**	**7.9**	**7.9**	**Jun-05**
Private Equity (Gross)			**0.0**	**6.1**	**0.7**	**6.1**	**11.2**	**9.2**	**8.1**	**8.1**	
Thomson Reuters Cambridge Private Equity Index			*0.0*	*3.8*	*0.0*	*9.4*	*16.7*	*12.1*	*--*	*--*	*Jun-05*
Hedge Fund (Net)	**75,959,729**	**9.2**	**-0.5**	**0.9**	**5.2**	**1.2**	**6.5**	**3.8**	**--**	**3.9**	**Jun-14**
Hedge Fund (Gross)			**-0.5**	**1.0**	**5.3**	**1.4**	**6.6**	**3.9**	**--**	**4.0**	
Hedge Fund Custom			*-0.9*	*-0.2*	*4.7*	*-0.7*	*3.9*	*--*	*--*	*2.6*	*Jun-14*
Real Assets (Net)	**47,209,790**	**5.7**	**-0.8**	**4.4**	**3.7**	**4.3**	**6.3**	**7.1**	**--**	**--**	**Mar-99**
Real Assets (Gross)			**-0.8**	**4.5**	**3.8**	**4.4**	**6.5**	**7.8**	**--**	**--**	
Real Asset Custom			*-4.5*	*5.5*	*8.8*	*6.8*	*9.2*	*7.3*	*--*	*--*	*Mar-99*
Private Infrastructure (Net)	**20,185,177**	**2.4**	**0.0**	**4.5**	**0.3**	**4.5**	**8.8**	**--**	**--**	**6.2**	**Dec-14**
Private Infrastructure (Gross)			**0.0**	**4.5**	**0.3**	**4.5**	**8.8**	**--**	**--**	**6.2**	
S&P Global Infrastructure Net TR USD			*-1.5*	*5.4*	*13.4*	*7.3*	*6.9*	*3.6*	*--*	*3.9*	*Dec-14*
Private Natural Resources (Net)	**10,847,341**	**1.3**	**0.0**	**7.9**	**1.2**	**7.9**	**15.3**	**--**	**--**	**16.5**	**Sep-15**
Private Natural Resources (Gross)			**0.0**	**7.9**	**1.2**	**7.9**	**15.3**	**--**	**--**	**16.5**	
S&P Global Natural Resources Index TR USD			*-7.7*	*-12.5*	*3.7*	*-13.4*	*8.7*	*-0.5*	*2.0*	*11.3*	*Sep-15*
Cash (Net)	**17,624,214**	**2.1**	**0.2**	**1.0**	**0.5**	**0.8**	**--**	**--**	**--**	**--**	
Cash (Gross)			**0.2**	**1.0**	**0.5**	**0.8**	**--**	**--**	**--**	**--**	

**One or more accounts have been excluded from the composite for the purposes of performance calculations and market value.*

Real Assets includes State Street Real Asset NL Fund

Total Fund

As of May 31, 2019

Trailing Net Performance

	Market Value ($)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund(Net)*	**829,327,364**	**100.0**	**--**	**-2.7**	**1.2**	**6.7**	**0.8**	**7.6**	**5.4**	**8.7**	**7.8**	**Dec-94**
Policy Index				*-2.4*	*0.4*	*5.5*	*0.7*	*7.9*	*5.6*	*10.6*	*5.8*	*Dec-94*
Total Fund w/o Alternatives(Net)	**588,931,642**	**71.0**	**71.0**	**-3.6**	**0.5**	**8.4**	**0.1**	**7.8**	**5.2**	**--**	**--**	**Dec-94**
Policy Index w/o AI				*-3.8*	*0.8*	*7.5*	*0.3*	*7.7*	*5.0*	*--*	*--*	*Dec-94*
US Equity(Net)	**216,493,176**	**26.1**	**36.8**	**-6.3**	**0.7**	**11.5**	**1.4**	**11.9**	**10.0**	**14.1**	**9.7**	**Dec-94**
80% R1000 / 20% R2000				*-6.7*	*0.2*	*10.7*	*0.9*	*11.4*	*8.9*	*13.7*	*9.6*	*Dec-94*
Mellon Dynamic US Equity(Net)	84,821,928	10.2	39.2	-5.7	4.0	13.7	4.5	13.8	12.0	--	16.2	Dec-12
S&P 500				*-6.4*	*3.1*	*10.7*	*3.8*	*11.7*	*9.7*	*13.9*	*13.1*	*Dec-12*
Mellon Large Cap(Net)	98,179,443	11.8	45.3	-6.3	2.9	11.1	3.6	11.7	--	--	11.9	Mar-16
Russell 1000				*-6.4*	*2.8*	*11.0*	*3.5*	*11.7*	*9.5*	*14.0*	*11.8*	*Mar-16*
DFA Small Cap(Net)	16,637,302	2.0	7.7	-8.9	-11.5	6.3	-10.6	7.8	--	--	5.4	Jun-14
Russell 2000				*-7.8*	*-9.7*	*9.3*	*-9.0*	*9.8*	*6.7*	*12.8*	*5.7*	*Jun-14*
PanAgora(Net)	16,854,504	2.0	7.8	-7.2	-12.7	9.0	-11.6	8.5	6.7	--	7.7	Sep-13
Russell 2000				*-7.8*	*-9.7*	*9.3*	*-9.0*	*9.8*	*6.7*	*12.8*	*7.1*	*Sep-13*
International Equity(Net)	**165,240,640**	**19.9**	**28.1**	**-5.8**	**-5.3**	**7.9**	**-7.2**	**6.5**	**1.1**	**6.5**	**4.9**	**Dec-98**
International Equity Custom				*-5.8*	*-4.6*	*6.4*	*-6.6*	*7.4*	*1.9*	*6.3*	*4.0*	*Dec-98*
Developed International Equity(Net)	**101,479,922**	**12.2**	**61.4**	**-4.3**	**-5.5**	**8.4**	**-6.9**	**6.0**	**1.0**	**6.9**	**2.8**	**Jan-08**
MSCI EAFE				*-4.8*	*-4.6*	*7.6*	*-5.7*	*5.8*	*1.3*	*6.2*	*1.9*	*Jan-08*
Mellon International(Net)	81,694,308	9.9	80.5	-4.7	-4.3	7.9	-5.4	6.2	--	--	6.6	Mar-16
MSCI EAFE				*-4.8*	*-4.6*	*7.6*	*-5.7*	*5.8*	*1.3*	*6.2*	*6.2*	*Mar-16*
Acadian ACWI ex U.S. Small Cap Equity(Net)	9,635,614	1.2	9.5	-5.1	--	--	--	--	--	--	-5.1	May-19

Developed International Equity and Emerging Markets Equity composites were only reported as one composite prior to March 2018.

Historical returns for the US Equity Composite prior to January 2012 and for the International Equity Composite prior to December 2010 are gross only.

	Market Value ($)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Driehaus International Small Cap Growth(Net)	10,150,000	1.2	10.0	0.0	--	--	--	--	--	--	0.0	May-19
Emerging Markets Equity(Net)	**63,760,718**	**7.7**	**38.6**	**-8.2**	**-4.0**	**7.7**	**-7.1**	**9.8**	**2.8**	**--**	**2.5**	**Apr-12**
MSCI Emerging Markets				*-7.3*	*-4.7*	*4.1*	*-8.7*	*9.9*	*1.8*	*5.0*	*2.0*	*Apr-12*
Wells Capital(Net)	63,760,718	7.7	100.0	-8.2	-4.0	7.7	-7.1	9.8	2.8	--	2.3	Mar-12
MSCI Emerging Markets				*-7.3*	*-4.7*	*4.1*	*-8.7*	*9.9*	*1.8*	*5.0*	*1.8*	*Mar-12*
US Fixed Income(Net)	**186,680,800**	**22.5**	**31.7**	**1.6**	**5.8**	**4.1**	**5.7**	**3.3**	**2.9**	**4.6**	**5.3**	**Dec-94**
US Fixed Custom				*1.6*	*6.0*	*4.3*	*5.9*	*3.4*	*3.0*	*4.1*	*5.6*	*Dec-94*
Barrow Hanley(Net)	69,667,091	8.4	37.3	1.8	6.4	4.8	6.3	2.4	2.7	--	3.5	Mar-10
BBgBarc US Aggregate TR				*1.8*	*6.5*	*4.8*	*6.4*	*2.5*	*2.7*	*3.8*	*3.5*	*Mar-10*
Vanguard Short-Term Treasury Index Fund(Net)	48,039,650	5.8	25.7	0.8	3.5	1.9	3.5	--	--	--	3.1	Feb-18
BBgBarc US Govt 1-3 Yr TR				*0.7*	*3.5*	*1.9*	*3.5*	*1.3*	*1.1*	*1.2*	*3.1*	*Feb-18*
Vanguard Total Bond Market Index Fund(Net)	68,974,059	8.3	36.9	1.8	--	--	--	--	--	--	1.8	May-19
BBgBarc US Aggregate TR				*1.8*	*6.5*	*4.8*	*6.4*	*2.5*	*2.7*	*3.8*	*1.8*	*May-19*
Opportunistic Credit(Net)	**20,517,027**	**2.5**	**3.5**									
PIMCO Income Fund(Net)	20,517,027	2.5	100.0									
Private Real Estate(Net)	**61,009,346**	**7.4**	**7.4**	**0.0**	**5.8**	**2.4**	**5.8**	**7.2**	**7.8**	**--**	**--**	**Mar-99**
NCREIF ODCE (net)				*0.0*	*4.7*	*1.2*	*6.6*	*7.0*	*9.2*	*7.7*	*7.4*	*Mar-99*
Greenfield Gap VII(Net)	10,535,338	1.3	17.3	0.0	9.4	4.0	9.4	12.2	--	--	12.6	Dec-14

Historical returns for the US Fixed Income Composite prior to December 2010 and for Barrow Hanley prior to June 2010 are gross only.

All private markets performance and market values reflect a 12/31/2018 capital account balance unless otherwise noted.

Private Real Estate results prior to 1/1/2019 were included in the Real Assets composite. All results for the Private Real Estate composite that include the period prior to 1/1/2019 will reflect only the latest lineup of managers that Meketa received information for, therefore it may not reflect the entire Private Real Estate composite at that given time.

	Market Value ($)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Patron Capital V(Net)	5,703,497	0.7	9.3	0.0	6.5	5.6	6.5	17.2	--	--	15.3	Jan-16
UBS Trumbull Property(Net)	42,587,692	5.1	69.8	0.0	5.0	1.7	5.0	5.2	7.4	6.8	7.3	Mar-99
Carlyle Realty VIII(Net)	414,355	0.0	0.7	0.0	-28.7	-6.4	-28.7	--	--	--	-37.0	Dec-17
Taconic CRE Dislocation Fund II(Net)	1,691,598	0.2	2.8	0.0	--	-0.7	--	--	--	--	-0.7	Nov-18
Carmel Partners Investment Fund VII(Net)	76,866	0.0	0.1	0.0	--	--	--	--	--	--	0.0	Apr-19
Private Equity(Net)	**38,592,642**	**4.7**	**4.7**	**0.0**	**6.1**	**0.7**	**6.1**	**11.2**	**9.2**	**7.9**	**7.9**	**Jun-05**
Thomson Reuters Cambridge Private Equity Index				*0.0*	*3.8*	*0.0*	*9.4*	*16.7*	*12.1*	--	--	*Jun-05*
Adams Street(Net)	7,304,194	0.9	18.9	0.0	7.1	-1.5	7.1	12.1	11.2	10.4	6.8	Sep-05
Invesco IV(Net)	474,703	0.1	1.2	0.0	-19.1	0.0	-19.1	6.2	6.5	7.6	8.1	Jun-05
Invesco VI(Net)	5,976,760	0.7	15.5	0.0	5.3	0.0	5.3	12.0	20.4	--	11.5	Jun-13
Ocean Avenue II(Net)	9,730,272	1.2	25.2	0.0	13.8	8.0	13.8	21.7	--	--	12.0	Jun-14
Pantheon I(Net)	977,851	0.1	2.5	0.0	1.9	-3.0	1.9	6.4	4.3	5.2	3.5	Dec-05
Pantheon II(Net)	3,857,584	0.5	10.0	0.0	11.0	0.9	11.0	13.6	11.2	--	11.5	Dec-11
Pantheon Secondary(Net)	1,167,621	0.1	3.0	0.0	13.3	-4.2	13.3	5.6	2.7	1.3	3.7	Jun-07
Raven Asset Fund II(Net)	3,429,925	0.4	8.9	0.0	6.9	2.9	6.9	0.3	--	--	-1.2	Aug-14

The market values for the following funds reflect a 9/30/2018 capital account balance: Invesco IV and Invesco VI

Adams Street includes Adams Street 2005, Adams Street 2007, and Adams Street 2011.

Historical returns for Invesco IV prior to April 2012 are gross only.

Pantheon I includes Pantheon US Fund VI and Pantheon Europe Fund IV.
Pantheon II includes Pantheon US Fund IX, Pantheon Asia Fund VI, and Pantheon Europe Fund VII.
Pantheon Secondary includes Pantheon GLO SEC III B.

	Market Value ($)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Davidson Kempner Long-Term Distressed Opportunities Fund IV(Net)	3,095,578	0.4	8.0	0.0	15.1	2.8	15.1	--	--	--	13.5	Apr-18
GTCR Fund XII(Net)	863,998	0.1	2.2	0.0	-32.5	-32.5	-32.5	--	--	--	-32.5	Jun-18
Carrick Capital Partners III(Net)	1,056,429	0.1	2.7	0.0	--	-7.0	--	--	--	--	-11.4	Aug-18
Cressey & Company Fund VI(Net)	444,228	0.1	1.2	0.0	--	-11.2	--	--	--	--	-11.2	Jan-19
TCV X(Net)	213,500	0.0	0.6	0.0	--	--	--	--	--	--	0.0	Apr-19
Hedge Fund(Net)	**75,959,729**	**9.2**	**9.2**	**-0.5**	**0.9**	**5.2**	**1.2**	**6.5**	**3.8**	**--**	**3.9**	**Jun-14**
Hedge Fund Custom				*-0.9*	*-0.2*	*4.7*	*-0.7*	*3.9*	*--*	*--*	*2.6*	*Jun-14*
OZ Domestic II(Net)	10,286,722	1.2	13.5	-1.7	3.7	10.8	4.1	8.8	--	--	5.9	Jun-14
Graham Absolute Return(Net)	7,413,153	0.9	9.8	-0.7	1.3	5.9	1.0	--	--	--	3.2	Aug-17
Wellington-Archipelago(Net)	11,651,615	1.4	15.3	-1.3	0.9	8.1	0.5	--	--	--	3.9	Aug-17
KLS Diversified(Net)	9,163,197	1.1	12.1	-0.6	-2.1	0.9	0.3	--	--	--	1.7	Oct-17
Winton(Net)	6,105,554	0.7	8.0	-0.7	-1.1	0.7	0.0	--	--	--	1.7	Oct-17
Marshall Wace Eureka(Net)	3,201,836	0.4	4.2	1.9	0.3	6.2	-0.4	--	--	--	4.2	Nov-17
Silver Point Capital(Net)	12,358,131	1.5	16.3	-0.8	-0.9	3.9	-0.8	--	--	--	2.2	Nov-17
Laurion Capital(Net)	5,490,326	0.7	7.2	2.8	--	7.4	--	--	--	--	10.8	Aug-18
Taconic Opportunity Fund(Net)	10,289,196	1.2	13.5	0.2	--	3.3	--	--	--	--	--	Dec-18
Real Assets(Net)	**47,209,790**	**5.7**	**5.7**	**-0.8**	**4.4**	**3.7**	**4.3**	**6.3**	**7.1**	**--**	**--**	**Mar-99**
Real Asset Custom				*-4.5*	*5.5*	*8.8*	*6.8*	*9.2*	*7.3*	*--*	*--*	*Mar-99*

	Market Value ($)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA(Net)	16,177,272	2.0	34.3	-2.4	-2.0	6.2	-2.4	--	--	--	2.7	Apr-17
Real Asset NL Custom Blended Index				*-2.4*	*-1.8*	*6.4*	*-1.9*	*--*	*--*	*--*	*3.0*	*Apr-17*
Private Infrastructure(Net)	**20,185,177**	**2.4**	**42.8**	**0.0**	**4.5**	**0.3**	**4.5**	**8.8**	**--**	**--**	**6.2**	**Dec-14**
S&P Global Infrastructure Net TR USD				*-1.5*	*5.4*	*13.4*	*7.3*	*6.9*	*3.6*	*--*	*3.9*	*Dec-14*
KKR Global II(Net)	10,289,728	1.2	51.0	0.0	6.3	0.3	6.3	9.2	--	--	9.6	Dec-14
North Haven Infrastructure II(Net)	8,035,760	1.0	39.8	0.0	4.6	0.0	4.6	9.3	--	--	5.8	May-15
ISQ Global Infrastructure Fund II(Net)	1,267,229	0.2	6.3	0.0	-28.0	5.7	-28.0	--	--	--	-28.0	Jul-18
KKR Global Infrastructure Investors III(Net)	592,460	0.1	2.9	0.0	--	-10.9	--	--	--	--	-10.9	Jan-19
Private Natural Resources(Net)	**10,847,341**	**1.3**	**23.0**	**0.0**	**7.9**	**1.2**	**7.9**	**15.3**	**--**	**--**	**16.5**	**Sep-15**
S&P Global Natural Resources Index TR USD				*-7.7*	*-12.5*	*3.7*	*-13.4*	*8.7*	*-0.5*	*2.0*	*11.3*	*Sep-15*
EnCap XI(Net)	700,910	0.1	6.5	0.0	-14.0	-4.6	-14.0	--	--	--	-32.4	Jul-17
EnCap IV(Net)	827,735	0.1	7.6	0.0	-9.1	0.6	-9.1	--	--	--	-13.5	Feb-18
GSO Energy Opportunities(Net)	4,429,328	0.5	40.8	0.0	3.1	-1.8	3.1	15.6	--	--	15.9	Nov-15
Taurus Mining(Net)	2,729,061	0.3	25.2	0.0	15.0	4.9	15.0	14.6	--	--	17.2	Sep-15
Taurus Mining Annex(Net)	2,160,307	0.3	19.9	0.0	23.7	7.3	23.7	--	--	--	28.9	Jan-17
Cash(Net)	**17,624,214**	**2.1**	**2.1**	**0.2**	**1.0**	**0.5**	**0.8**	**--**	**--**	**--**	**--**	
Cash(Net)	11,440,093	1.4	64.9	0.2	1.5	0.7	1.2	1.1	0.9	--	--	Sep-03
Treasury Cash(Net)	6,184,121	0.7	35.1									

**One or more accounts have been excluded from the composite for the purposes of performance calculations and market value.*

Merced County Employees' Retirement Association

As of May 31, 2019

Benchmark History
As of May 31, 2019

Total Fund		
1/1/2019	Present	21% US Equity Custom / 18% International Equity Custom / 23% US Fixed Custom / 10% Hedge Fund Custom / 15% Thomson Reuters Cambridge Private Equity Index / 5% Real Asset Custom / 8% NCREIF ODCE (net)
1/1/2017	12/31/2018	27% US Equity Custom / 23% International Equity Custom / 22% US Fixed Custom / 5% Hedge Fund Custom / 9% Thomson Reuters Cambridge Private Equity Index / 14% Real Asset Custom
7/1/2014	12/31/2016	22.7% Russell 1000 / 5.7% Russell 2000 / 23.6% International Equity Custom / 28.5% US Fixed Custom / 4.5% Hedge Fund Custom / 8% NCREIF ODCE (net) / 7% Cambridge Assoc. U.S. Private Equity Index
US Equity		
12/31/1994	Present	80% Russell 1000 / 20% Russell 2000
International Equity		
1/1/2019	Present	56% MSCI EAFE Gross / 44% MSCI Emerging Markets Gross
1/1/2017	12/31/2018	69.56% MSCI EAFE Gross / 30.44% MSCI Emerging Markets Gross
7/1/2013	12/31/2016	MSCI ACWI ex USA Gross
US Fixed Income		
3/1/2018	Present	77.27% BBgBarc US Aggregate TR / 22.73% BBgBarc US Govt 1-5 Yr TR
1/1/2017	2/28/2018	77.27% BBgBarc US Aggregate TR / 22.73% Credit Suisse Leveraged Loans
8/1/2014	12/31/2016	71.93% BBgBarc US Aggregate TR / 17.54% ICE BofAML US High Yield TR / 10.53% Credit Suisse Leveraged Loans
Hedge Fund		
7/1/2017	Present	100% HFRI Fund of Funds Composite Index
1/1/2015	6/30/2017	50% HFRI Fund of Funds Composite Index / 50% HFRI RV: Multi-Strategy Index
Real Assets		
1/1/2019	Present	50% S&P Global Natural Resources Index TR USD / 50% S&P Global Infrastructure TR USD
6/1/2013	12/31/2018	57.14% NCREIF ODCE (net) / 21.43% S&P Global Natural Resources Index TR USD / 21.43% S&P Global Infrastructure TR USD
SSgA		
4/30/2017	Present	25% Bloomberg Roll Select Commodities Index TR USD / 25% S&P Global LargeMidCap Commodity and Resources NR USD / 10% S&P Global Infrastructure TR USD / 15% DJ US Select REIT TR USD / 25% BBgBarc US TIPS TR

Annual Investment Expense Analysis
As Of May 31, 2019

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Total Fund w/o Alternatives		**$588,931,642**		
US Equity		**$216,493,176**		
Mellon Dynamic US Equity	0.30% of Assets	$84,821,928	$254,466	0.30%
Mellon Large Cap	0.04% of First 100.0 Mil, 0.02% Thereafter	$98,179,443	$39,272	0.04%
DFA Small Cap	0.35% of Assets	$16,637,302	$58,231	0.35%
PanAgora	0.80% of Assets	$16,854,504	$134,836	0.80%
International Equity		**$165,240,640**		
Developed International Equity		**$101,479,922**		
Mellon International	0.04% of Assets	$81,694,308	$32,678	0.04%
Acadian ACWI ex U.S. Small Cap Equity	0.99% of Assets	$9,635,614	$95,393	0.99%
Driehaus International Small Cap Growth	0.90% of Assets	$10,150,000	$91,350	0.90%
Emerging Markets Equity		**$63,760,718**		
Wells Capital	0.90% of First 100.0 Mil, 0.85% Thereafter	$63,760,718	$573,846	0.90%
US Fixed Income		**$186,680,800**		
Barrow Hanley	0.30% of First 50.0 Mil, 0.20% of Next 100.0 Mil, 0.15% Thereafter	$69,667,091	$189,334	0.27%
Vanguard Short-Term Treasury Index Fund	0.05% of Assets	$48,039,650	$24,020	0.05%
Vanguard Total Bond Market Index Fund	0.04% of Assets	$68,974,059	$24,141	0.04%
Opportunistic Credit		**$20,517,027**		
PIMCO Income Fund		$20,517,027		
Private Real Estate		**$61,009,346**		
Greenfield Gap VII		$10,535,338		
Patron Capital V		$5,703,497		
UBS Trumbull Property		$42,587,692		

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Carlyle Realty VIII		$414,355		
Taconic CRE Dislocation Fund II		$1,691,598		
Carmel Partners Investment Fund VII		$76,866		
Invesco IV		$474,703		
Invesco VI		$5,976,760		
Ocean Avenue II		$9,730,272		
Pantheon I		$977,851		
Pantheon II		$3,857,584		
Pantheon Secondary		$1,167,621		
Raven Asset Fund II		$3,429,925		
Davidson Kempner Long-Term Distressed Opportunities Fund IV		$3,095,578		
GTCR Fund XII		$863,998		
Carrick Capital Partners III		$1,056,429		
Cressey & Company Fund VI		$444,228		
TCV X		$213,500		
Hedge Fund		**$75,959,729**		
OZ Domestic II	Performance-based 1.50 and 20.00	$10,286,722	$154,301	1.50%
Graham Absolute Return	Performance-based 1.75 and 20.00	$7,413,153	$129,730	1.75%
Wellington-Archipelago	Performance-based 1.00 and 20.00	$11,651,615	$116,516	1.00%
KLS Diversified	Performance-based 2.00 and 20.00	$9,163,197	$183,264	2.00%
Winton	Performance-based 0.90 and 20.00	$6,105,554	$54,950	0.90%
Marshall Wace Eureka	Performance-based 2.00 and 20.00	$3,201,836	$76,027	2.37%
Silver Point Capital	Performance-based 2.00 and 20.00	$12,358,131	$247,163	2.00%
Laurion Capital		$5,490,326		
Taconic Opportunity Fund		$10,289,196		

Total Fund

As of May 31, 2019

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Real Assets		**$47,209,790**		
SSgA	0.30% of First 50.0 Mil, 0.27% of Next 50.0 Mil, 0.25% Thereafter	$16,177,272	$48,532	0.30%
Private Infrastructure		**$20,185,177**		
KKR Global II		$10,289,728		
North Haven Infrastructure II		$8,035,760		
ISQ Global Infrastructure Fund II		$1,267,229		
KKR Global Infrastructure Investors III		$592,460		
Private Natural Resources		**$10,847,341**		
EnCap XI		$700,910		
EnCap IV		$827,735		
GSO Energy Opportunities		$4,429,328		
Taurus Mining		$2,729,061		
Taurus Mining Annex		$2,160,307		
Cash		**$17,624,214**		
Cash		$11,440,093		
Treasury Cash		$6,184,121		

Disclaimer, Glossary, and Notes

Disclaimer

WE HAVE PREPARED THIS QUARTERLY REPORT FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT MERCED COUNTY EMPLOYEES' RETIREMENT ASSOCIATION.

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INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM", "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. Portfolio Return- [Risk Free Rate+Beta*(market return-Risk Free Rate)].

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about is future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a "basis book." For example, a 5% bond pays $5 a year interest on each $100 par value. To figure its current yield, divide $5 by $95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay $100 for the bond that can be bought now for $95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\%\ \text{(discount)}}{5\ \text{(yrs. to maturity)}} = \begin{array}{c}1\%\ \text{pro rata, plus} \\ 5.26\%\ \text{(current yield)}\end{array} = 6.26\%\ \text{(yield to maturity)}$$

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999.
The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991.

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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.

Merced County Employees' Retirement Association
Initial Fund Review
Presented June 27, 2019

Table of Contents

Overview

Introduction

This task is typically undertaken in the first six months of a new relationship, but given the priorities of the MCERA Board, we moved up some of the items (such as Asset Allocation, the review/replacement of Copper Rock, and search for the managers in Opportunistic Credit) before addressing the entire Initial Fund Review. Meketa Investment Group's Initial Review of the Merced County Employees' Retirement Association is designed to achieve the following objectives:

- Identify the major components and characteristics essential to the long-term success of MCERA;
- Describe these components and provide their present status for MCERA;
- Develop an action plan for MCERA, including the priority level for each project.

With the initial review, we seek to identify areas of potential improvement for MCERA's structure, efficiency and performance. This document serves as a platform from which we plan to address and discuss these issues.

We have assigned each action item with a priority of *one* through *three*, as detailed in the table below. Priorities can be adjusted based on feedback provided by the Board.

Priority	Implementation Timeframe
One	Within 6 months
Two	Within 6 - 18 months
Three	Within 12 - 36 months

While we do not view these parameters as rigid, they do represent, based on our experience, a reasonable timeframe for the Board to make thoughtful decisions on the future course of MCERA.

Recommendations Summary

The table below summarizes Meketa Investment Group's initial review of the Merced County Employees' Retirement Association, including our recommendations and their respective priorities. Each recommendation is discussed in detail in the remainder of this document.

Fund Governance	Priority
Investment Policy Statement	
• Review and update Investment Policy Statement	1
Investment Manager Guidelines	
• No Action Necessary at this Time	NA
Governance Structure	
• No Action Necessary at this Time	NA
Crisis Response Plan	
• Establish a Crisis Response Plan	1

Asset Allocation & Portfolio Construction	Priority
Asset Allocation	
• Asset Allocation Review	Completed
Portfolio Construction	
– Manager Structure & Manager Evaluation	On-going
– Domestic Equity	2
– International Equity	1
– Fixed Income	Completed
– Private Markets	NA
– Hedge Funds	NA
• Active and Passive Investment Management	1

Recommendations Summary (continued)

Operations	Priority
Custody Services	
• Review Periodically	2
Transition Management	
• Retain a Panel of Transition Managers	2
Securities Lending	
• No Recommendation	3
Expenses	
• Review Periodically	2
Cash Sweep	
• Utilize Government Money Market Fund	1
Commission Recapture	
• No Recommendation	1
Legal & Actuarial Services	
• No Recommendation	3
Proxy Voting	
• No Recommendation	3

Meketa Investment Group’s Investment Philosophy

- Focus on strategic advice (i.e., a long-term approach to investing)
- Treat asset allocation as the primary determinant of an investor’s performance
- Diversify very broadly to protect against a wide variety of risks
- Avoid unnecessary risks
- Invest in primarily generative assets
- Be skeptical regarding new investment strategies or fads
- Create efficient, cost-effective portfolios
- Use best-in-class managers
- Minimize fees and other expenses

Fund Governance

Investment Policy Statement

An Investment Policy Statement ("IPS") represents one of the most important governance tools for an investment plan. It serves to identify and formalize the objectives and constraints governing the funds and to establish guidelines for the implementation of investment strategy.

A well-developed IPS thoughtfully merges client-specific goals with the realities of the capital markets. The IPS should be long-term and stable in nature, and should focus on core fund-level policy issues.

Merced County Employees' Retirement Association Status:

The current IPS was amended on November 8, 2018 to more accurately define the role and requirements of the newly approved opportunistic fixed income segment (within Section 6.3 Investment Manager Guidelines). Also, **Appendix A** was updated with the newly increased allocation targets to Private Equity and Hedge Funds, in addition to a marginal increase to Emerging Markets Equity and U.S. Fixed Income, a modest decrease to Real Assets, and a reduction in Developed Markets Equity (US, International).

Overall, the IPS in its current state is comprehensive and covers the fundamental pieces necessary to establish well laid out policies and procedures. The IPS is broken out into four sections: I. Policy Perspectives, II. Portfolio Management, III. Investment Guidelines, and IV. Controls. In addition, there is an appendices section, which provides more detail for two areas: Asset Allocation Plan and Target Asset Mix (Appendix A) and Placement Agent Disclosure Policy (Appendix B).

Section I. of the IPS outlines the purpose of MCERA, the investment objectives of the Board, and the roles and responsibilities of the various parties involved (Board, Staff, outside Consultants, Investment Managers and Custodian Bank).

Section II. of the IPS outlines the importance of diversification and asset allocation as important considerations when investing Plan assets.

Section III. of the IPS outlines the investment policies governing each investment manager hired by MCERA and provides specifics on permissible asset classes and securities.

Investment Policy Statement (continued)

Finally, Section IV. outlines certain controls and practices related to proxy voting, execution of trades, commission recapture, manager due diligence, IPS reviews, and portfolio rebalancing.

Recommendation:

While Meketa Investment Group believes the current IPS provides the appropriate guidance and process for Trustee members and fiduciaries to carry out their responsibilities, we believe there is additional room to further streamline the IPS and add clarity on some items. Observations include:

- **Clarity on Risk Philosophy of the Board**. While the IPS references this as a Board responsibility, there is little mention of how risk is being defined by the Board, or what the risk objectives are beyond citing the need to diversify investment risk as part of the asset allocation mix. A clear investment strategy that includes a reasonable set of assumptions about the Board's risk tolerance and expected returns would enhance the current IPS.
- **Setting Investment Beliefs to guide investing strategies**. Investment beliefs are intended to provide a basis for strategic management of the investment portfolio, and to inform organizational priorities. Investment beliefs are not a checklist but rather a guide for making decisions. We believe the plan would be better served including a set of beliefs as a preamble to the current IPS. We can walk through this process with the Investment Committee and Board if desired.
- **Monthly review of the investment reports by the Board**. The IPS states that "on a monthly basis, the Board will review monthly investment reports, investment strategy, market conditions, portfolio manager performance and the status of MCERA's asset allocation plan". We believe monthly oversight is misaligned with the views and practices of long-term investors such as MCERA, and recommend quarterly reviews as the standard. Meketa can continue to provide monthly snapshots if requested, but does not believe having formal agenda items at meetings to review this performance is in line with best practice. Industry standard is for Investment Committees to meet quarterly to review, unless there are pressing matters to discuss.

Investment Policy Statement (continued)

- **Manager Due Diligence Requirements.** Per the IPS, the Board, an individual Trustee or designated Staff, is required to meet with Managers once every 18 months to satisfy due diligence requirements. In practice, it is unclear if this responsibility is carried out as outlined in the IPS. MCERA and Meketa should review the relevancy of this practice and ensure the language in the IPS and the process for following that language is aligned. It is likely more appropriate to ensure that the Investment Consultant is the party responsible for meeting with investment managers on a regular basis. We also intend to update benchmarks within the IPS as needed.

Priority: 1

Investment Manager Guidelines

Investment Manager Guidelines ("Guidelines") formally outline the roles, constraints and objectives of MCERA's investment managers. They ensure that the Board and the managers understand the scope of the assignments and the restrictions under which the managers are operating. It should be noted that guidelines are typically only in place for separate account mandates. For commingled funds and mutual funds, MCERA is subject to the general restrictions of the portfolio.

Investment Manager Guidelines should clearly define the role of each manager and the area(s) of the capital markets in which that manager is expected to operate. In addition, the Guidelines should provide a comprehensive list of constraints placed upon the portfolio, such as limitations on individual positions or industry sectors. The guidelines should state the performance benchmarks and time periods used for evaluation. Finally, the investment guidelines should include the required level of reporting and communication with the Board of MCERA.

Investment Manager Guidelines should be reviewed regularly and updated as necessary, to reflect changes in manager roles or in the capital markets. MCERA should retain the executed original versions of all investment manager guidelines.

Merced County Employees' Retirement Association Status:

MCERA's investment managers are not operating under manager-specific guidelines imposed by the Board, as most investments are in commingled or limited partnership vehicles. The one exception to this is Barrow Hanley, a separately managed account, and this manager adheres to the investment management agreement as outlined in their contract. BHMS recently reviewed its investment manager guidelines with Meketa and Board Trustees in an April 2019 Board Meeting. Discussions reaffirmed the manager's primary purpose and original mandate: to actively manage a core fixed income portfolio with a low risk approach, so as to provide protection to the overall Plan portfolio. No changes to the manager's role was made.

Investment Manager Guidelines (continued)

Investment Manager	Strategy Name	Vehicle
Barrow, Hanley, Mewhinney & Strauss, Inc	Core Fixed Income	SMA
Dimensional Fund Advisors	US Small Cap Trust	Commingled
Mellon Capital Management Corporation	BNY Mellon MCM Dynamic U.S. Equity Fund	Commingled
Mellon Capital Management Corporation	EB DV International Stock Index Fund	Commingled
Mellon Capital Management Corporation	EB DV Large Cap Stock Index Fund	Commingled
PanAgora Asset Management, Inc.	US Small Cap Core Stock Selector	Commingled
The Vanguard Group	Short-Term Treasury Index Fund	Mutual Fund (VSBIX)
The Vanguard Group	Total Bond Market Index Fund	Mutual Fund (VBTIX)
Wells Capital Management	Berkeley Street Emerging Markets 3c1 Fund	Commingled
GoldenTree	Multi Sector Credit	Limited Partnership
PIMCO	PIMCO Income Fund	Mutual Fund (PIMIX)
Driehaus	Driehaus International Small Cap Growth	Commingled
Acadian	Acadian ACWI ex-US Small Cap Equity	Commingled
SSGA	Real Assets Strategy	Commingled

Recommendation:

Given the current structure of MCERA’s portfolio, that holds one separate account manager, we do not have any recommendations at this time. Meketa Investment Group recommends a full review of all investment manager guidelines at least every three years to ensure that they control relevant risks and are consistent with each manager’s role. As the portfolio continues to grow in size and complexity, greater opportunities for separately managed accounts may exist, requiring further in-depth review of potential IMA’s.

Priority: NA

Governance Structure

The Board has exclusive control of all investments of the Plan, and is responsible for the establishment of investment objectives, strategies and policies. The Board delegates certain responsibilities to Staff, largely administrative in nature, so as to aide in the efficient execution of specific elements of the Plan's investment program. Please see section 4.2 and 11.0 (d) of the IPS for examples of tasks delegated to Staff. The Board employs a General Investment Consultant (currently Meketa Investment Group), and a Private Markets/Alternatives Investment Consultant (currently Cliffwater). The General Consultant reports to the Board and is tasked with providing non-discretionary investment advice in the areas of asset allocation, investment strategy and policy development, public markets manager selection and Board education. In addition, the General Investment Consultant is responsible for performance reporting on both public and private investments, which covers manager level performance, asset class performance and total fund level performance against the Policy benchmark. The Specialty Consultant is responsible for providing non-discretionary investment advice specific to private equity, hedge funds, private real assets, and real estate investments.

Merced County Employees' Retirement Association Status:

There is an active working relationship between Staff, the Investment Consultants, and the Board. The two Investment Consultants understand their individual roles well and collaborate effectively. No immediate action is required, based on Meketa's analysis, unless the Board desires a different governance model or process.

Priority: NA

Crisis Response Plan

Periodically, crises arise that require immediate action. For example, a manager's investment team may depart unexpectedly, or a natural disaster may deny investment professionals access to necessary information. Meketa Investment Group believes that MCERA assets should never be left unattended.

To deal with emergencies, we recommend that a Crisis Response Team ("Team") be identified by the Board. The Team could consist of a subset of the members of the Board of Retirement, the legal counsel, the administrative office, and Meketa Investment Group. The Team would have the authority to take any action necessary to protect the MCERA's assets between meetings, including, but not limited to, terminating a manager, halting trading in a portfolio, and shifting management responsibilities to another manager.

Merced County Employees' Retirement Association Status:

It is unclear if MCERA has contingency plans for investment-related emergencies.

Recommendation:

Meketa Investment Group recommends the formulation of a Crisis Response Plan that identifies the Crisis Response Team and makes the necessary authorizations for emergency actions. This document would be a single page addendum to the IPS, typically, and Meketa can provide a draft at Staff's request for review.

Priority: 1

Portfolio Construction

Manager Structure & Manager Evaluation

Now that MCERA's asset allocation targets are determined, the portfolio roster should be structured to provide the intended exposure to each asset class, to minimize overlap among managers, to provide broad diversification, and to capitalize on the expertise of management firms. Specialized managers should complement one another, as duplication of investment strategies may reduce efficiency and increase risk. A structure in which each manager fulfills a distinct and necessary role increases efficiency, as well as ensures that the policies are not reversed by the actions of individual managers. For a portfolio that utilizes active managers, the Board_should ensure that allocations are sized appropriately, and that the overall success of the plan is not disproportionately impacted by the outcome of a single manager.

Furthermore, it is essential to review manager roles regularly to ensure that they remain relevant and consistent with the Board's objectives. All investment managers should be monitored continuously to ensure that each fulfills a specific mandate. We have already formally reviewed some of the portfolio roster, including the fixed income category and made a manager replacement to the International Equity roster, but this is an opportunity to review the full portfolio and provide recommendations.

Merced County Employees' Retirement Association Status:

Equity: An initial review of the U.S. Equity construct took place during the Asset Allocation Review process. From an asset allocation standpoint, public equity exposure was reduced in order to reduce overall portfolio risk. Manager analysis revealed positive attributions of the Mellon Dynamic strategy, in the context of protecting best under significant negative market environments (i.e. systemic risk). Additional analysis highlighted potential changes to consider: Panagora/ DFA having overlapping factor exposures, Copper Rock lacking meaningful differentiation, and Wells Fargo as the lone Emerging Markets Equity exposure. Copper Rock has since been terminated and replaced with two international active small cap managers. Further review of the international roster is included as a separate document.

Manager Structure & Manager Evaluation (continued)

Fixed Income: A full review of the fixed income roster was completed, following the new Asset Allocation Policy. Review of the fixed income segment and managers resulted in the addition of a new asset class, Opportunistic Credit, with the inclusion of two active managers. In addition, a portion of BHMS' core fixed income mandate was repurposed into a passive vehicle of similar profile.

Private Equity: A full review of the Private Equity program was undertaken during the Asset Allocation Review process. Review of the program resulted in an increase to this asset class, bringing policy target to 15% of total plan assets. MCERA's Private Markets program is in buildout mode and will take some time to reach full policy allocation. In the interim, assets reserved for Private Markets will be temporarily held in Public Market Equity. In terms of reporting, Meketa considers the internal rate of return calculation the best measure of performance, which is how Cliffwater provides results to the Board. Currently, we report on the Private Markets managers of the Plan on a time-weighted basis, mainly as a method of providing performance in a cohesive manner for the overall portfolio. Because of limitations of a time-weighted calculation for Private Market managers, we suggest showing results only at the aggregated level, instead of at the individual manager level. To be more specific, returns would be shown only at the total Private Equity level, while only market values are shown at the manager level.

Hedge Funds: A full review of the Hedge Fund program was undertaken during the Asset Allocation Review process. Review of the program resulted in an increase to this asset class bring policy target to 10% of total plan assets. MCERA's current hedge fund allocation is within close approximation to its stated target.

Recommendation:

We recommend further analysis at a future meeting for the US Equity roster. A full review of the International Equity roster is included within the June 27 Board Materials.

Priority: On-going

Active & Passive Investment Management

The goal of active management is to add value through enhanced returns or reduced risk relative to a particular market sector or combination of market sectors. Generally, active managers seek to outperform by creating portfolios that differ from their benchmarks through over/under weighting in specific securities, strategies, or sectors. When these investments are successful, active management produces returns that are superior to a passive benchmark (i.e., a market index). The failure of these investments to achieve the objectives represents an active management risk. Philosophically, it's important for the Board to decide what level of active management they believe is worth the cost within the portfolio, based on expected alpha potential from the asset class, and return distributions over time.

A variety of other risks accompany active management. Firms that manage assets actively may take on large risks unintentionally, encounter significant personnel problems, attract too many assets to manage effectively, or accept large risks to compensate for lagging performance. A sound investment strategy acknowledges the risks associated with active management.

The amount of value that an active manager can add relative to a benchmark (i.e., a market index) varies by asset class. The following table presents the excess return (before fees) at the 25th percentile and the 75th percentile for a variety of public market asset classes. As you can see in the table below, while top quartile returns are well above the benchmark, in several asset classes, active managers lost clients money at the 75th percentile.

Excess Returns over Ten Years[1]

Asset Class	25th Percentile (%)	75th Percentile (%)	Interquartile Spread (bps)
Core Bonds	1.22	0.43	78
Global Equity	1.84	-0.87	270
Foreign Equity	3.08	0.43	264
Emerging Markets Cap	2.24	-0.19	243
U.S. Large Cap	1.18	-1.21	239

1 Source: eVestment as of September 30, 2018. Based on 10-year excess returns. All returns are gross of fees.

Active & Passive Investment Management (continued)

If one defines the "efficiency" of a market by how much value an active manager has historically added (or detracted), then some markets are clearly more efficient than others. Moreover, superior manager selection can add value, no matter the asset class. However, it would be unrealistic for investors to presume that all of their managers will achieve top-quartile returns.

In areas of the capital markets that are particularly "efficient" (e.g., U.S. Large Cap Equity), passive management has a relatively high probability of success. Passive investment strategies (i.e., index funds) attempt to replicate the returns of a particular market segment. In addition, they incur very low fees, which improves overall performance. Therefore, passive management is most appropriate when the objective is to provide broad diversification with low costs.

Merced County Employees' Retirement Association Status:

Within U.S. Equity, MCERA accesses the efficient large cap area through use of Mellon's Large Cap index fund. In addition, the Plan holds Mellon's Dynamic U.S. Equity strategy that, while benchmarked to the S&P 500, will shift allocations across domestic equity, fixed income and cash markets with the ability to maintain long and short positions through use of derivatives. Within Small Cap Domestic Equity, there are two active managers. In Developed International Equity, the plan's exposure is heavily weighted toward passive management through use of Mellon's International index fund. The remaining funds in Developed International and Emerging Markets Equity are all active. In Fixed Income, the Short-term bond exposure is accessed through an index fund, while assets for the two Core Fixed Income mandates are equally distributed to passive and active. The Opportunistic Credit sleeve holds two active managers. Private markets program is entirely active and managed by Cliffwater.

Public Markets - Asset Class Exposures as of 4/30/19	Active (%)	Passive (%)
US Equity	54.0	46.0
Developed International Equity	17.5	82.5
Emerging Markets Equity	100.0	0.0
US Fixed Income[1]	35.0	65.0
Opportunistic Credit	100.0	0.0

[1] Estimated based on pending cash flows.

Active & Passive Investment Management (continued)

Recommendation:

We believe there may be additional opportunities to capture alpha in the international developed space through an increase in active management, provided additional fees do not impose a constraint. As the table of excess returns shows, performance by the 25th percentile manager returned over 300 basis points in excess returns over the ten-year period. Furthermore, the 75th percentile manager also showed positive results against the benchmark with an excess return over 40 basis points (gross of fees).

Within U.S. Equity, the Plan maintains sufficient passive exposure in the large cap space. Within Emerging Markets Equity, we believe active management is the best strategy, but some clients choose to have a portion of their allocation in passive strategies to facilitate tactical views/trades at a lower cost. We do not recommend passive investing in Opportunistic Credit or Private Markets, as passive investing is either not available, or the range of possible outcomes of active management is wide enough where active investing is more attractive.

Priority: 1

Equity Capitalization

Capitalization is a stock market measure based solely on the total market value of a company's equity securities (the outstanding number of shares multiplied by the current stock price). Market capitalization does not reflect a company's revenues, the number of employees or the value of its assets. Definitions of capitalization size categories vary in the investment industry.

Some investors have further segmented the market, introducing the labels "microcap" and "megacap" for the very smallest and very largest companies. This further segmentation illuminates the arbitrary nature of precisely defining capitalization categories.

Historically, small capitalization stocks have provided higher average annual returns with higher volatility, compared to large capitalization equities. This is commonly referred to as "the small stock effect." Academic studies have sought to explain this effect, examining the greater inefficiency of the equity markets for smaller company stocks and the greater business risks of smaller companies.

Status & Recommendation:

We generally recommend a modest overweight to Small Cap Equity, but more so for MCERA as Small Cap Funds also will house a portion of future capital calls for Private Equity. MCERA's exposure to Small Cap is higher relative to the benchmark, but when comparing weighted average market capitalizations and median market capitalizations, they are within acceptable ranges. We are currently comfortable with the mix between Small Cap and Large Cap.

Capitalization Structure As of 3/31/19	U.S. Equity Composite	*Russell 3000*
Weighted Average Market Cap. (U.S. $ billion)	161.56	*178.56*
Large	64.53	*69.88*
Medium	22.33	*24.55*
Small	13.14	*5.57*

Capitalization Structure As of 3/31/19	International Equity Composite	*MSCI ACWI ex US*
Weighted Average Market Cap. (U.S. $ billion)	59.94	*64.41*
Large	61.25	*74.46*
Medium	20.58	*19.79*
Small	18.17	*5.66*

Growth & Value Disciplines

While there are numerous techniques and strategies used to manage equities actively, most can be categorized as growth-oriented or value-oriented management styles. Growth-oriented managers seek to identify companies with the best earnings growth prospects. Value-oriented managers seek to identify the most attractively priced stocks. Though many managers employ a combination of the two strategies, one strategy is nearly always predominant.

Growth and value strategies generally provide exposure to different industries and companies. In addition, the two strategies have historically displayed less-than-perfect correlations. Thus, a plan would benefit from investing in both strategies. This exposure may be achieved through the use of specific growth or value strategies, or through the use of broad market index funds. Market index funds cover the full style spectrum, and can therefore provide exposure to both style categories.

Strategies emphasizing either growth or value stocks tend to rotate in market leadership, producing alternating superior and inferior returns. However, over long time periods, value stocks have generated slightly stronger historical returns and experienced lower volatility, relative to growth strategies. Nevertheless, as noted above, MCERA can gain diversification benefits by investing in both growth and value strategies.

Status & Recommendation:

Meketa's general recommendation is to have a slight value bias, but as we know, Growth and Value tend to rotate in and out of favor. In the U.S. Equity space, the portfolio does have a very slight value tilt when compared to the benchmark. The International Equity space is slightly more Growth oriented compared to the MSCI ACWI ex U.S., but not by much. We feel that from a style perspective, MCERA's equity sleeves do not require a change.

Characteristics As of 3/31/19	U.S. Equity Composite	*Russell 3000*
Price-Earnings Ratio	19.56	20.16
Price-Book Value Ratio	3.12	3.30
Dividend Yield	1.88%	1.91%
EPS Growth 5 yrs. ($ Wtd. Median)	12.25	12.52

Characteristics As of 3/31/19	International Equity Composite	*MSCI ACWI ex US*
Price-Earnings Ratio	15.67	14.55
Price-Book Value Ratio	2.36	2.24
Dividend Yield	2.86%	3.21%
EPS Growth 5 yrs. ($ Wtd. Median)	10.20	10.83

Operations

Custody Services

The primary role of a custody bank is to provide accurate, reliable, efficient, and useful accounting and safekeeping services. It is crucial that the custody bank act as the independent confirmation of asset values and account activity, to protect investment assets, and to reduce the possibility of missed income, or manipulation or errors that could lead to financial loss. In addition, the custody bank should be able to provide its data in electronic form, and should offer up-to-date on-line access to information.

Because custodian banks track investment activity as part of their accounting responsibilities, it has become the industry standard to rely upon the custodian to calculate investment performance. Fees for this service are generally minimal as the custodian already performs much of the work entailed in calculating performance. By retaining the custodian bank to calculate performance, MCERA improves the likelihood of accurate and impartial performance numbers.

In addition to accounting, safekeeping, and performance calculation services, custody banks often offer investment products that can serve client needs. For example, most custodians offer automatic overnight cash pools to allow clients to invest excess cash on a daily basis. Index fund products also are usually available from the custodian. The advantages of utilizing investment products from the custodian stem from the relationship pricing that can occur and the administrative ease of transitions to and from these products.

Custody fees should be monitored and negotiated, as appropriate. Custody fees should be examined in the context of the entire fee stream to the custodian.

Custody Services (continued)

Merced County Employees' Retirement Association Status:

MCERA entered into a 5-year contract with Northern Trust in July 2017 with the possibility of two one-year extensions. Northern Trust was hired to serve as MCERA's global custodian and provide custody accounting only. Northern Trust and MCERA entered into a flat fee contract, whereby the Plan pays $25,100 per quarter. We believe this fee is reasonable, as it is just outside the range we expect custodian fees to fall into under normal circumstances - between 0.75 to 1 basis point (annually) of total assets. Additional services, such as lending of securities may be obtained pursuant to a separate written agreement. Prior to the relationship with Northern Trust, MCERA participated in a securities lending arrangement with its prior custodian, but has discontinued the practice based on a view that securities lending is unprofitable.

Recommendation:

We recommend a periodic review of accounting and other services provided by Northern Trust to ensure that the MCERA receives all necessary services.

Priority: 2

Transition Management

When a plan sponsor adds a new asset class, changes its asset allocation targets, or replaces a manager, assets will need to be moved from one (or more than one) portfolio to another portfolio(s). These assets may stay within the same asset class (e.g., when one small cap stock manager is replaced with another) or they may move across asset classes (e.g., when a new allocation to TIPS is funded from equities).

Transition management often entails selling marketable securities from a legacy portfolio, where a manager has been terminated, to a target portfolio, where the new manager will take over. The outmoded model for handling this type of transition was to instruct the legacy manager to sell all the securities and give the new manager the resulting cash to invest. The main shortcomings of this method are that costs (commissions, opportunity costs, trade execution) may be high, as a firm with no incentive to maximize receipts is responsible for executing the trades.

Using a third-party transition manager can reduce or eliminate these costs. For example, the transition manager typically transfers as many assets “in-kind” as possible. Assets in the legacy portfolio which are needed by the new manager can be transferred directly to the new portfolio. Because they are not traded on the open market, commission costs are eliminated. Further, the transition manager seeks to maintain market exposure throughout the transition, thus ensuring that opportunity costs are minimized. Finally, a transition manager is measured on their performance, and therefore more likely to search for the best execution.

Merced County Employees' Retirement Association Status:

Transition management is offered through Northern Trust and the Plan intends to use these services when needed. MCERA has no existing transition management relationships outside of what is offered by the custodian.

Transition Management (continued)

Recommendation:

Meketa Investment Group recommends that the MCERA retain a panel of transition managers (two to three) with evergreen contracts in place for each. When a transition is necessary, bids can be requested from the panel. Once bids are received, the most appropriate manager can be selected. Since the paperwork is already complete, the time frame required before starting the transition is significantly reduced.

Priority: 2

Securities Lending

Securities lending programs have the ability to generate modest incremental revenue for investors. During most periods, risk of loss is minimal. However, during periods of market disruption, the potential for significant loss exists. Investors may find that controlled exposure to securities lending can provide added income with an acceptable risk level. The amount of income, and risk, in any securities lending program is determined largely by how the borrowing collateral is invested.

Individual programs vary according to several factors, including the degree of risk accepted and the percentage of gains accruing to the investor. The collateral requirements for loaned securities, the indemnification of investors, the likely volume of lending available, and the revenue split vary from one program to another and should be carefully reviewed before a decision to participate is finalized.

Merced County Employees' Retirement Association Status:

MCERA does not participate in a securities lending program with the custodian.

Recommendation:

MCERA does not have a securities lending program in place and we are comfortable with this. If additional separate accounts are established within MCERA, we would reassess as the program could thereby become more attractive. We will continue to monitor the marketplace, but no action needed at this time.

Priority: 3

Expenses

One of the surest ways to increase the MCERA's return is to reduce its expenses. Expenses can be explicit (e.g., portfolio management, custody, and brokerage fees) or implicit (trading execution costs). In most cases, opportunities exist to reduce expenses outright.

Investment management fees typically represent the largest component of a plan's expenses, and should be negotiated aggressively and monitored closely. For example, while a manager's fees may be low when measured as a percentage of assets, the dollar fee may have increased substantially through market appreciation. Much of the accompanying fee appreciation does not represent additional management responsibility, and a fee re-negotiation is appropriate.

Custody fees should also be monitored and negotiated, as appropriate. Custody fees should be examined in the context of the entire fee stream to the custodian. For example, a custodian's fees may be a fixed dollar amount, based on asset values or transactions, or a combination. Custodians may also earn revenue from cash management and securities lending.

Trading costs consist of explicit costs (commissions) and implicit costs (execution and market impact), and can be difficult to monitor precisely. While influenced by an investment manager's particular strategy, trading costs indicate the care an investment manager takes in implementing strategy. Participation in commission recapture programs may help control trading costs and limit the exposure of client assets to soft dollar arrangements.

Merced County Employees' Retirement Association Status:

Investment manager fees have been reviewed and compared against their peer groups. With the exception of active manager GoldenTree, all manager fee structures show to be near median or below relative to peers. See table enclosed.

Expenses (continued)

Investment Manager Fees

	Active or Passive	Peer Category	Fee Schedule (%)	Peer Ranking (percentile)	Peer Median Fees (bps)
US Equity					
Mellon Dynamic US Equity	Active	eV US Large Cap Core Equity Net	0.30	30	43
Mellon Large Cap	Passive	eV US Passive Large Cap Core Equity Net	0.04% on first $100M, 0.02% thereafter	34	4
DFA Small Cap	Active	eV US Small Cap Core Equity Net	0.35	5	80
PanAgora	Active	eV US Small Cap Core Equity Net	0.80	50	80
Mellon International	Passive	eV All EAFE Passive Equity Net	0.04	1	10
Acadian ACWI ex US Small Cap Equity	Active	eV ACWI ex US Small Cap Equity	0.99	53	95
Driehaus International Small Cap Growth	Active	eV ACWI ex US Small Cap Growth Equity	0.90	11	100
Wells Capital	Active	eV Emerging Markets Equity Net	0.90% on first $100M, 0.85% thereafter	51	89
Fixed Income					
Barrow Hanley	Active	eV US Core Fixed Inc Net	0.30% on first $50M, 0.20% on next $100M, 0.15% thereafter	52	27
Vanguard Short-Term Treasury Index Fund	Passive	eV US Passive Short Duration Fixed Inc Net	0.05	22	9
Vanguard Total Bond Market Index Fund	Passive	eV US Passive Intermediate Duration Fixed Inc Net	0.04	5	7
Opportunistic Credit					
PIMCO	Active	Morningstar Fee Level – Distribution Multisector Bond Institutional	0.50[3]	63	70
GoldenTree	Active	eV Global Multi-Sector Fixed Inc Net	0.75	95	50

[3] Rankings are based on the total expense ratio of 0.74%, which includes a 0.24% interest expense which can result from portfolio transactions not paid to PIMCO. In essence, the interest expense only shows one leg of the trade, and does not account for the other leg of the trade, where the Fund could invest in high quality, short-dated, liquid securities to beat the interest rate.

Expenses (continued)

Recommendation:

Meketa Investment Group will continue to review manager fees and will recommend opportunities for expense reduction in MCERA's portfolio when opportunities arise. From a cost basis only, we believe MCERA's current fee offering is very reasonable; when factoring in Meketa's view that several of these are high quality managers (Driehaus, Acadian, GoldenTree), the fee offerings becomes even more attractive.

Priority: 2

Cash Sweep

At a client's direction, a custodian will invest excess cash from separate accounts in a short-term vehicle, typically a STIF account (Short-Term Investment Fund). Currently, interest rates are at historical lows, resulting in little return for investors in STIF accounts. In an effort to increase the yield, many short-term cash vehicles are increasing exposure to riskier segments of the fixed income market where yields are higher.

Although the risk of capital loss in money market and short-term investment funds is relatively small, it does exist. That risk would be sharply reduced by holding Treasuries, rather than the Euro-denominated time deposits and commercial paper investments held in the STIF. If the markets experience a similar credit crisis as in 2008, these corporate debts face the risk of a "Lehman Brothers" effect of a sudden, unexpected total loss.

Merced County Employees' Retirement Association Status:

MCERA utilizes the Northern Trust Short-Term Investment Fund (STIF).

Recommendation:

Given that the MCERA receives virtually no return for its short-term investments, we recommend the Board consider switching to a U.S. Government money market fund, to reduce the MCERA's credit risk exposure. Northern Trust offers the Collective Government Short-Term Investment Fund (GSTIF) as an alternative to the STIF. The latest 7 Day Yield was 2.48%, with annual fees at 1 basis point for the GSTIF. For comparison purposes, the STIF reported a 2.63% 7 Day Yield with annual fees at also 1 basis point.

Priority: 1

Commission Recapture

When an investment manager conducts a trade, the broker charges a commission. The commission is often "bundled," meaning that it includes the cost of both trade execution (explicit) and research services (implicit). This "bundling" of commissions allows a broker to post a standard price structure. The term "commission recapture" refers to a brokerage house setting aside, as a refund to the Plan, the implicit portion of the total commission paid.

Once a commission recapture program is in place, the plan sponsor informs its investment managers of this relationship and can ask them to trade a portion of their trading volume through the recapture broker. Commission recapture brokerage is most useful for plans utilizing active U.S. equity managers with high turnover.

Investment managers should be encouraged to balance trading through a commission recapture broker with best execution. Ensuring that managers are given the freedom to perform their fiduciary duty is essential in any recapture agreement.

Merced County Employees' Retirement Association Status:

MCERA utilizes ConvergEx Group and Capital Institutional Service, Inc. as commission recapture brokers. Per the annual CAFR: "MCERA encourages its investment managers, on a "best efforts" basis to execute 25% to 35% of total trades annually through brokers who have a commission recapture program. MCERA's policies require investment managers to seek the best price and execution on all trades. This means that commission recapture trades should only be executed when such trades meet this standard. If an investment manager can execute the trade through MCERA's commission recapture brokerage firms while not incurring any incremental commission or market impact costs, then MCERA would like the manager to do so. This program should not interfere with or reduce an investment manager's incentive to reduce trading costs."

Commission Recapture (continued)

Recommendation:

Meketa Investment Group feels that commission recapture can be a valuable option to the Board. However, they should be used only under the conditions that the investment managers still have a broad choice of brokers through which to trade, and they are not required to execute a specific portion of trades through any specific broker(s). Therefore, we recommend removing any language that directs a specific target or range of trades (25% to 35%).

Priority: 1

Legal & Actuarial Services

Outside professionals are often required to ensure the efficient operation of an investment plan. The input of a qualified actuary is crucial in understanding the long-term liabilities faced by the plan. In addition, access to legal counsel is necessary to protect the plan and ensure compliance with relevant regulations and laws.

Merced County Employees' Retirement Association Status:

The legal counsel and actuary for MCERA are Nossaman LLP and Cheiron, respectively.

Recommendation:

It is our expectation that legal counsel will continue to review contracts and other MCERA documents, and that the MCERA's actuary will work with Meketa Investment Group to provide forecasts of cash flows under various scenarios. The actuarial firm employed has a good reputation working with public funds and has several common clients with Meketa. No changes to the current providers are recommended.

Priority: 3

Proxy Voting

The voting of proxies is important to the overall performance of a plan, and doing so is the fiduciary duty of the Board. However, the Board has the ability to delegate that responsibility, either to a third-party proxy voting service or to the investment managers. In any case, the Board should receive a full accounting of all proxy votes, and upon request, a written explanation of individual voting decisions.

Merced County Employees' Retirement Association Status:

MCERA does not utilize a proxy voting service. Per the Investment Policy Statement, the Board reserves the right to delegate proxy voting responsibilities to an investment manager. In doing so, the manager agrees to vote all proxy ballots according to the best economic interest of the MCERA's members and in a manner consistent with the Board's proxy voting guidelines. It is unclear if managers are required to report their proxy voting activity to the Board.

Recommendation:

We do not recommend any specific action with regards to the MCERA's proxy voting policy. As an alternative to the MCERA's current policy, the Board could consider hiring a third-party proxy-voting service. The benefit of a third-party proxy-voting service is that they provide one point of contact with regards to proxy voting, as well as provide an annual report of voting decisions with explanations. Unless more separate accounts are utilized, this service is likely unnecessary.

Priority: 3

Merced County Employees' Retirement Association (MCERA)
RETIREMENT BOARD AGENDA ITEM

DATE: June 27, 2019

TO: MCERA Board of Retirement

FROM: Mark Harman, Fiscal Manager

SUBJECT: Interest Crediting Rates for June 2019

ITEM NUMBER: 4

ITEM TYPE: Action

STAFF RECOMMENDATION:

1. Adopt the proposed interest credit rate of 1.33% to be credited to the active reserves balances and 3.56% (7.25% compounded semiannually) to retiree and employer reserves balances.

DISCUSSION: Pursuant to the Interest Crediting Policy adopted by the MCERA Retirement Board on September 14, 2017 and in accordance with Section 31591 of the County Employees' Retirement Law of 1937, the Retirement Board shall determine a rate of interest to be credited on December 31st to all contributions in the retirement fund which have been on deposit for six months immediately prior to that date.

Active Member Reserves shall be credited first. The policy provides a range of 0% to 7.25% (the actuarial rate of return originally adopted November 2016). The policy provides guidance for establishing the proposed amount to be credited by using the Bank of America Merrill Lynch Six Month Treasury Bill index. For the six-month period, ending May 31, 2019, the index return was 1.33%, as reported to MCERA by Meketa.

Employer and Retiree Reserves shall be credited semiannually at the actuarial discount rate, if there are sufficient funds. MCERA will only credit interest to the extent that there is a current fiscal year net investment revenue or any balance in the Interest Fluctuation Reserve.

The estimated net investment income through June 30, 2019 is as follows:

Balance in Interest Fluctuation Reserve as of July 01, 2018	$ 85,096,243.98
Total Estimated Investment Gain as of June 30, 2019*	40,222,856.21
Total Estimated Expenses as of June 30, 2019*	(3,211,838.88)
Total Interest Credited December 31, 2018	(18,379,375.86)
Total Estimated Available for Interest Crediting	103,727,885.45
Proposed 1.33% (Active Member) and 3.56% (Retiree and Employer Reserves) Interest Crediting to all reserves on June 30, 2019	(19,369,657.80)
Estimated Balance in Interest Fluctuation Reserve as of June 30, 2019	$ 84,358,227.65

**Investment gains and expenses are based on a blend of actuals and best estimates. Recently, MCERA rebalanced several funds as well as redeemed from several managers to fund new investments. The potential realized gains/losses from these transactions have not been accounted for at the time of producing this document.*