ASSET ALLOCATION IMPLEMENTATION

Fresno County Employees' Retirement Association

April 2, 2014

WURTS ASSOCIATES

SEATTLE | 206.622.3700
LOS ANGELES | 310.297.1777
www.wurts.com

EXECUTIVE SUMMARY

In December 2013 the Board approved a more risk-diversified allocation (Mix B) following the 2013 Asset Liability Study. The new Investment Policy Statement ("IPS"), reflecting the updated asset allocation, was approved at the mid-March 2014 meeting.

In implementing the new Policy, the most immediate task is to **minimize total risk** by reducing equities. However, managers have not yet been identified for the new mandates that will receive the proceeds from the equity liquidation.

- The Hedge Fund program will be reviewed mid/late 2014.
- Infrastructure and Private Equity/Credit will fund over a number of years even after the managers are selected.

To affect the reduction in equity risk and minimize cost, Wurts & Associates recommends parking the assets for the unfunded Hedge Fund*, Infrastructure and Private Credit in a Barclays Aggregate Index Fund.

Unfunded Private Equity, as well as a portion of unfunded Hedge Fund*, can be parked with the current active domestic equity managers, reducing the amount that would need to be liquidated.

* The portion of unfunded Hedge Fund parked in equity and fixed income reflects Hedge Fund's sensitivity to each of those asset classes.

REBALANCE EQUITY RISK TO NEW POLICY

To bring down the equity risk exposure of the Plan:

1) Reduce the exposures to Large Cap, Small Cap and International Equity.

2) Additional assets to existing mandates – EM Equity, TIPS and EM Debt. (Brings allocations to target)

3) Fund a Barclays Aggregate Index Fund to "park" assets for unfunded Hedge Fund, Infrastructure and Private Credit

As a result of these trades, the broad asset classes will be at or near the new target allocations.

	Current	Target (adjusted for unfunded)	Rebalance (%)		New Allocation	Difference
Large Cap Equity	25.0	14.0	**-8.2**		16.8	
Small Cap Equity	5.6	3.0	**-2.1**		3.5	
Total Domestic Equity	30.6	17.0	**-10.3**		20.3	
Unfunded Private Equity		*2.5*		#1		
20% Unfunded Hedge Fund		*0.8*				
Adjusted Domestic Equity	30.6	20.3	**-10.3**		20.3	0.0
International Equity	21.5	12.0	**-9.5**		12.0	0
EM Equity	4.1	7.0	**2.9**	#2	7.0	0
Total Equity	**56.2**	**39.3**	-16.9		**39.3**	**0.0**
Core Plus - Current Managers	21.3				21.3	21.3
New Fixed Income (HY, Global, BL, Credit)		22.0			0	-22.0
80% Unfunded Hedge Fund		*3.4*				
Unfunded Infrastructure		*3.0*				
Unfunded Private Credit		*6.5*				
Passive BC Agg Mandate		*12.9*	**12.6**	#3	12.6	-0.3
TIPS	1.5	4.0	**2.5**		4.0	0
EMD	3.2	5.0	**1.8**	#2	5.0	0
Total Fixed Income	**26.0**	**43.9**	**16.9**		**42.9**	**-1**
Real Estate	4.5	5.0			4.5	-0.5
Commodities	3.2	3.0			3.2	0.2
Funded Private Equity	3.5	3.5			3.5	0
Funded Private Credit	1.5	1.5			1.5	0
Funded HF	3.8	3.8			3.8	0
Cash	1.3	0.0			1.3	1.3
Total Alternatives	**17.8**	**16.8**	**0**		**17.8**	**1.0**
TOTAL	**100.0**	**100.0**	**0**		**100.0**	**0**

ANTICIPATED MANAGER STRUCTURE CHANGES

Equities:

- The current lineup will remain intact as each managers' allocation is reduced on a pro rata basis.
- Anticipate an in-depth review of the domestic equity program once other allocations have been met.

Fixed Income:

- Eaton Vance and IFM bank loans finals presentations (April 2014).
- The Current Core Plus Allocation (21.3%) is managed by three firms. Wurts' Manager Research Group is evaluating the suitability of these managers to fill the High Yield, Global Sovereign, and Credit allocations (May 2014)
- The assets that are currently in Core Plus will be used to fund these new mandates (total of 22%).

Private Markets:

- Hedge Fund program will be reviewed in the second half of 2014.
- Additional commitments to Private Equity and Private Credit to be funded over the next several years.
- Consideration of active management in Commodities allocation (late 2014).

TRACKING ERROR ANALYSIS

TRACKING ERROR ANALYSIS

Definition: The standard deviation of the difference between the rate of return of a portfolio and its benchmark.

Active management will create tracking error.

In addition, using broad benchmarks for the Plan's specific asset class mandates will create tracking error due to different underlying asset class exposures than the broad benchmarks.

Wurts & Associates expects the most tracking error in Hedge Funds and Fixed Income and the least in Domestic Equities.

FCERA Tracking Error Analysis

Asset Class	Target Allocation	% of Asset Class	Weight in Benchmark	Over/ Underweight	Benchmark
Domestic Equities	***17%***	***100%***	***100%***		***Russell 3000 Index***
Large Cap	14%	82%	92%	-	Russell 1000
Small/Mid Cap	3%	18%	8%	+	Russell 2000
International Equities	***19%***	***100%***	***100%***		***MSCI ACWI ex US Index***
International Large	9%	47%	70%	-	MSCI EAFE
International Small	3%	16%	10%	+	S&P Developed ex US Small Cap
Emerging Markets	7%	37%	20%	+	MSCI Emerging Mkts
Fixed Income	***31%***	***100%***	***71%***		***Barclays Global Aggregate Index***
US Credit Fixed Income	5%	16%	17%	=	Barclays US Credit
High Yield Fixed Income	5%	16%	0%	+	Barclays US Corporate High Yield
Bank Loans	5%	16%	0%	+	Credit Suisse Leveraged Loan
Global Sovereign	7%	23%	51%	-	Barclays Global Trsy Ex US Hdg
Emg Markets Debt Local	5%	16%	3%	+	JPM EMBI Global Diversified
TIPS	4%	13%	0%	+	Barclays US Treasury US TIPS
Real Assets	**11%**				
Commodities	3%				DJ UBS Commodity Index
Real Estate	5%				NCREIF ODCE Index
Infrastructure	3%				NCREIF ODCE Index
Alternative Investments	**22%**				
Hedge Funds	8%				20% RU 3000 / 80% BC Agg*
Private Equity	6%				Russell 3000 + 250 bps
Private Credit	8%				Barclays Aggregate + 250 bps
Total	**100%**				

* The uninvested portion of HFs is benchmarked against the weighted return of 20% Russell 3000 and 80% Barclays Aggregate, while the invested portion is benchmarked agains the HFRI FOF Composite Index.

TRACKING ERROR - EQUITIES

Minimal historical tracking error between the Domestic Equity Portfolio and the Russell 3000 Index

- The underweight to Large Cap does not create much tracking error.

	Russell 3000	FCERA Domestic EQ Portfolio
Annualized Return:	12.0%	12.1%
Standard Deviation:	15.6%	15.6%
Sharpe Ratio:	0.62	0.62
Historical Tracking Error:	**0.13%**	

Historical Data since January 1979 (first common date of indices)

FCERA Domestic EQ Portfolio targets 92% Large Cap and 8% Small Cap.

Moderate historical tracking error between the International Equity Portfolio and the MSCI ACWI ex US Index

- Relative to the benchmark, the Plan's underweight to International Large Cap in favor of International Small Cap and Emerging Markets will create tracking error.

	MSCI ACWI ex US	FCERA Intl EQ Portfolio
Annualized Return:	6.1%	6.9%
Standard Deviation:	17.8%	17.8%
Sharpe Ratio:	0.21	0.26
Historical Tracking Error:	**2.04%**	

Historical Data since July 1989 (first common date of indices)

FCERA Intl EQ Portfolio targets 70% Intl Large Cap, 10% Intl Small Cap and 20% Emerging Markets.

TRACKING ERROR – FIXED INCOME

Significant historical tracking error between the Fixed Income Portfolio and the Barclays Global Aggregate Index

- Over/underperformance of the benchmark will be driven in large part by the difference in the composition of the Fixed Income Portfolio and its benchmark.

- The Barclays Global Aggregate Index comprises of investment grade issues only (vs. high yield) and does not include floating rate instruments (vs. bank loans) and inflation-linked bonds (vs. TIPS).

- ***However, the Fixed Income Portfolio is expected to have better risk-adjusted returns relative to the Index.***

	BC Global Aggregate	FCERA FI Portfolio
Annualized Return:	5.5%	6.7%
Standard Deviation:	5.7%	4.7%
Sharpe Ratio:	0.54	0.91
Historical Tracking Error:	**5.30%**	

Historical Data since May 1997 (first common date of indices)

FCERA FI Portfolio targets 12.9% TIPS; 16.1% each US Credit, High Yield, Bank Loans, EMD; and 22.6% Global Sovereign.

BC Global Agg Composition as of 12/31/13		
Sovereign		**53.6**
	Developed	51.0
	EM	2.6
Govt-related		**13.4**
Corporates		**17.2**
	Inv grade	17.2
	Below Inv grade	0.0
	EM	0.0
Securitized		**15.8**
	ABS	0.2
	CMBS	0.5
	Covered	0.8
	MBS	14.3
Total		**100.0**

TRACKING ERROR – HEDGE FUNDS

Significant historical tracking error between Hedge Fund Portfolio and the HFRI Fund of Fund Composite Index

- The Hedge Fund Portfolio is defined as 20% Russell 3000 Index and 80% Barclays Aggregate Index, reflecting the equity beta of the HFRI FoF Composite Index. The 20/80 weighted index will be used to benchmark Unfunded Hedge Fund as defined in the IPS.

- The 20/80 weighted index does not reflect the underlying composition of the HFRI FoF Composite, creating the tracking error.

	HFRI FOF Composite	FCERA Hedge Fund Portfolio
Annualized Return:	7.3%	7.3%
Standard Deviation:	5.7%	4.4%
Sharpe Ratio:	0.86	1.11
Historical Tracking Error:	**5.54%**	

Historical Data since January 1990 (first common date of indices)