

# CalPERS Trust Level Monthly Update - Performance & Risk



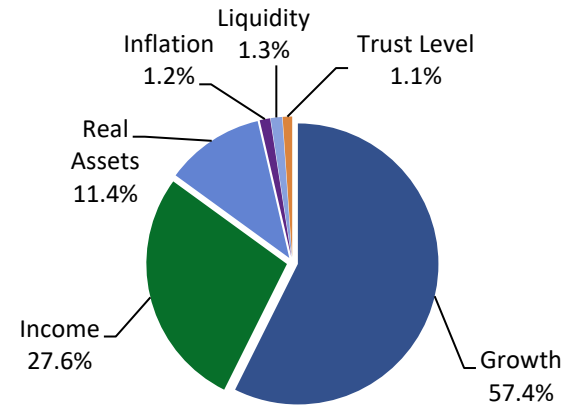
## Public Employees Retirement Fund (PERF)

As of January 31, 2019

### Asset Allocation

Asset Allocation	EMV (bil)	Current Allocation (%)	Interim Policy Weight (%) <sup>1</sup>	Variance (%)
<b>Growth</b>	\$ 201.4	57.4%	57.7%	(0.3%)
Public Equity	\$ 173.6	49.4%	49.7%	(0.3%)
Private Equity	\$ 27.8	7.9%	8.0%	(0.1%)
<b>Income</b>	\$ 97.0	27.6%	27.7%	(0.1%)
<b>Real Assets</b>	\$ 39.9	11.4%	12.0%	(0.6%)
Real Estate	\$ 34.1	9.7%	10.0%	(0.3%)
Infrastructure	\$ 4.6	1.3%	1.0%	0.3%
Forestland	\$ 1.3	0.4%	1.0%	(0.6%)
<b>Inflation</b>	\$ 4.2	1.2%	1.2%	0.0%
<b>Liquidity</b>	\$ 4.7	1.3%	1.4%	(0.1%)
<b>Trust Level<sup>2</sup></b>	\$ 3.8	1.1%	-	1.1%
<b>Total Fund</b>	\$ 351.1	100.0%	100.0%	0.0%

### Current Total Fund Allocation



TAP <sup>3</sup>	\$ 0.1
TF Plus TAP	\$ 351.2

### Performance Summary

Performance Summary	FYTD			1-Yr			3-Yr			5-Yr			10-Yr			5-Yr Realized Information Ratio <sup>4</sup>
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	
<b>Growth</b>	(0.6%)	(1.6%)	97	(4.4%)	(5.1%)	65	12.5%	12.5%	(7)	7.8%	7.9%	(5)	11.7%	12.5%	(79)	-
Public Equity	(1.7%)	(1.7%)	5	(6.8%)	(6.5%)	(29)	12.5%	12.6%	(7)	7.2%	7.2%	(1)	12.2%	12.2%	2	(0.0)
Private Equity	6.2%	-2.3%	850	12.4%	1.9%	1,051	12.4%	11.4%	95	11.2%	10.5%	72	11.5%	14.2%	(274)	-
<b>Income</b>	2.5%	2.4%	12	1.2%	0.9%	27	3.6%	2.9%	78	3.7%	3.1%	57	6.8%	4.9%	187	1.2
<b>Real Assets</b>	0.7%	3.7%	(296)	4.3%	7.5%	(323)	6.1%	7.4%	(130)	9.0%	9.1%	(12)	1.5%	6.7%	(521)	-
Real Estate	1.1%	3.7%	(263)	4.1%	7.7%	(363)	6.2%	7.8%	(163)	9.4%	9.7%	(34)	1.2%	8.0%	(679)	-
Infrastructure	3.0%	3.7%	(75)	11.6%	6.6%	500	12.2%	6.2%	608	14.1%	5.7%	843	15.2%	6.3%	885	-
Forestland	(12.7%)	3.7%	(1,643)	(11.1%)	6.3%	(1,733)	(6.7%)	4.3%	(1,097)	(3.4%)	6.5%	(985)	(2.4%)	4.2%	(667)	-
<b>Inflation</b>	(3.5%)	(3.7%)	18	(3.0%)	(3.0%)	1	3.6%	3.6%	(5)	(1.4%)	(2.0%)	58	2.6%	2.0%	68	0.8
<b>Liquidity</b>	1.5%	1.2%	30	2.3%	1.8%	52	1.4%	1.0%	34	1.1%	1.1%	0	1.0%	1.1%	(10)	-
<b>Trust Level<sup>2</sup></b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Fund</b>	0.2%	0.1%	10	(1.9%)	(1.6%)	(30)	9.0%	8.9%	2	6.3%	6.2%	6	8.9%	9.7%	(86)	-

TAP <sup>3</sup>	0.2%	-	-	1.1%	-	-	2.3%	-	-	3.4%	-	-	-	-	-	-
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<sup>1</sup> Interim policy weight reflects the weights in effect at the beginning of the first day of the subsequent month.

<sup>2</sup> Trust Level includes Multi Asset Class, Completion Overlay, Risk Mitigation, Absolute Return Strategies, Plan Level Transition and other Total Fund level portfolios

<sup>3</sup> Terminated Agency Pool (TAP) funded in July 2013 and exists to provide benefit payments to members who are employees of agencies that have terminated their contract with CalPERS

<sup>4</sup> Information Ratio is excess return divided by realized tracking error. This presents a perspective on risk adjusted performance. The metric is not meaningful for illiquid assets where realized volatility tends to be muted by valuation based pricing and benchmark issues.

## Public Employees Retirement Fund (PERF)

As of January 31, 2019

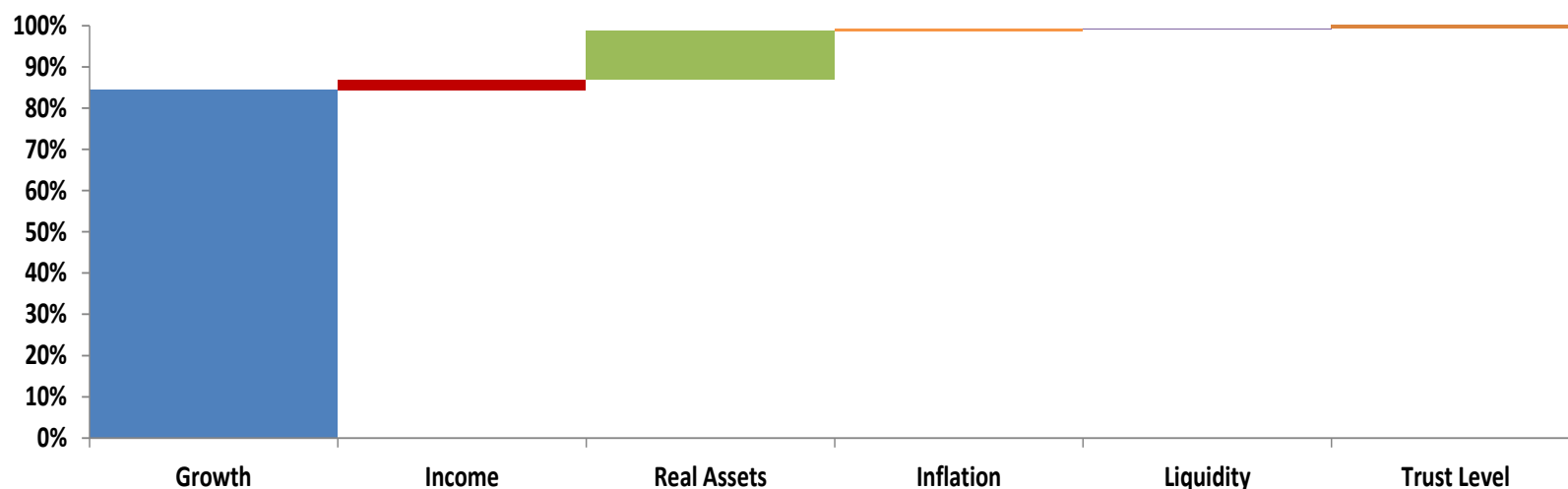
### Total Fund Risk

Risk Measure	1/31/2019	12/31/2018	Explanation of Risk Measures:
<b>Forecast Volatility</b>			The total (absolute) volatility is the annualized standard deviation of the PERF's total return distribution and is indicative of the plan's short-term return dispersion given the current environment. The metric is model-based and could underestimate potential drawdowns.
Portfolio	8.4%	8.1%	
Benchmark	8.3%	8.0%	
<b>Forecast Tracking Error</b>			Forecast tracking error is the annualized standard deviation of the differential return between the portfolio and an equal investment in the benchmark.
Portfolio	0.5%	0.4%	

January 31, 2019	Portfolio Volatility		Tracking Error	
	Projected	Realized	Projected	Realized
Asset Class	Annualized Projected Volatility (%)	5-Year Realized Volatility (%) <sup>1</sup>	Annualized Projected Tracking Error (%)	5-Year Realized Tracking Error (%) <sup>1</sup>
<b>Growth</b>	<b>12.7%</b>	<b>9.5%</b>	<b>0.6%</b>	<b>1.6%</b>
Public Equity	12.3%	11.3%	0.2%	0.3%
Private Equity	17.6%	3.9%	4.2%	6.2%
<b>Income</b>	<b>4.3%</b>	<b>4.5%</b>	<b>0.2%</b>	<b>0.5%</b>
<b>Real Assets</b>	<b>11.6%</b>	<b>4.3%</b>	<b>2.1%</b>	<b>4.3%</b>
Real Estate	12.6%	4.9%	2.3%	4.8%
Infrastructure	7.6%	5.7%	8.0%	5.4%
Forestland	13.5%	6.8%	13.5%	6.8%
<b>Inflation</b>	<b>7.3%</b>	<b>6.2%</b>	<b>1.3%</b>	<b>0.8%</b>
<b>Liquidity</b>	<b>0.1%</b>	<b>0.7%</b>	<b>0.1%</b>	<b>0.5%</b>
<b>Trust Level</b>	<b>6.3%</b>	-	<b>4.6%</b>	-
<b>Total Fund</b>	<b>8.4%</b>	<b>6.1%</b>	<b>0.5%</b>	<b>1.1%</b>

<sup>1</sup>Realized Volatility and Tracking Error for private asset classes are computed from quarterly net returns

### Contribution to Total Fund Volatility



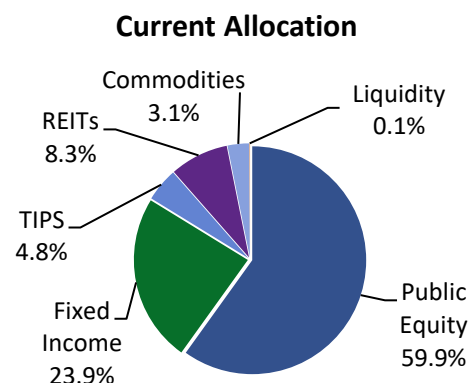
# Affiliate Investment Program

## CERBT Strategy 1 Fund (CERBT 1) & CERBT Strategy 2 Fund (CERBT 2)

As of January 31, 2019

### Asset Allocation, Performance & Realized Risk Summary - CERBT 1

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) <sup>1</sup>	Variance (%)	Policy Range
Public Equity	\$ 4,222.9	59.9%	59%	0.9%	± 5%
Fixed Income	\$ 1,681.5	23.9%	25%	(1.1%)	±5%
TIPS	\$ 335.4	4.8%	5%	(0.2%)	± 3%
REITs	\$ 586.7	8.3%	8%	0.3%	± 5%
Commodities	\$ 216.4	3.1%	3%	0.1%	± 3%
Liquidity	\$ 7.0	0.1%	0%	0.1%	± 2%
<b>Total CERBT 1</b>	<b>\$ 7,049.9</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>	



Performance Summary <sup>2</sup>	FYTD			1-Yr			3-Yr			5-Yr			10-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	(2.4%)	(2.6%)	18	(7.5%)	(7.7%)	26	12.1%	11.7%	40	7.0%	6.6%	37	11.6%	11.4%	22
Fixed Income	2.7%	2.6%	2	1.8%	1.6%	19	3.6%	2.8%	83	4.1%	3.5%	58	6.8%	5.3%	151
TIPS	0.1%	0.1%	2	1.0%	0.9%	4	2.1%	2.1%	2	1.5%	1.6%	(5)	-	-	-
REITs	5.4%	4.7%	66	5.9%	4.9%	100	8.2%	7.3%	90	7.1%	6.3%	84	11.6%	11.4%	17
Commodities	(14.9%)	(14.9%)	1	(9.0%)	(9.2%)	16	5.2%	5.3%	(6)	(12.7%)	(12.8%)	7	-	-	-
<b>Total CERBT 1</b>	<b>(0.7%)</b>	<b>(0.9%)</b>	<b>18</b>	<b>(3.6%)</b>	<b>(3.9%)</b>	<b>25</b>	<b>8.8%</b>	<b>8.3%</b>	<b>50</b>	<b>5.5%</b>	<b>5.1%</b>	<b>40</b>	<b>10.1%</b>	<b>9.8%</b>	<b>30</b>

5-Yr Realized Volatility:

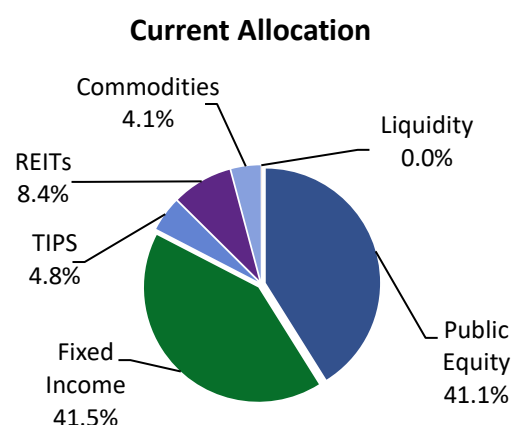
7.8%

5-Yr Realized Tracking Error:

0.1%

### Asset Allocation, Performance & Realized Risk Summary - CERBT 2

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) <sup>1</sup>	Variance (%)	Policy Range
Public Equity	\$ 473.5	41.1%	40%	1.1%	± 5%
Fixed Income	\$ 478.3	41.5%	43%	(1.5%)	±5%
TIPS	\$ 55.5	4.8%	5%	(0.2%)	± 3%
REITs	\$ 97.0	8.4%	8%	0.4%	± 5%
Commodities	\$ 47.7	4.1%	4%	0.1%	± 3%
Liquidity	\$ 0.2	0.0%	0%	0.0%	± 2%
<b>Total CERBT 2</b>	<b>\$ 1,152.3</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>	



Performance Summary <sup>2</sup>	FYTD			1-Yr			3-Yr			5-Yr			10-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	(2.4%)	(2.6%)	18	(7.5%)	(7.7%)	28	12.1%	11.7%	38	7.0%	6.6%	34	-	-	-
Fixed Income	2.6%	2.6%	(2)	1.8%	1.6%	14	3.6%	2.8%	83	4.1%	3.5%	57	-	-	-
TIPS	0.2%	0.1%	11	1.1%	0.9%	13	2.1%	2.1%	5	1.5%	1.6%	(6)	-	-	-
REITs	5.4%	4.7%	71	6.0%	4.9%	105	8.2%	7.3%	92	7.1%	6.3%	82	-	-	-
Commodities	(14.3%)	(14.9%)	56	(8.4%)	(9.2%)	74	5.5%	5.3%	21	(12.5%)	(12.8%)	22	-	-	-
<b>Total CERBT 2</b>	<b>0.2%</b>	<b>0.0%</b>	<b>14</b>	<b>(1.9%)</b>	<b>(2.2%)</b>	<b>24</b>	<b>7.3%</b>	<b>6.8%</b>	<b>52</b>	<b>4.8%</b>	<b>4.4%</b>	<b>36</b>	<b>-</b>	<b>-</b>	<b>-</b>

5-Yr Realized Volatility:

6.3%

5-Yr Realized Tracking Error:

0.2%

<sup>1</sup> Allocations approved by the Board at the May 2018 IC Meeting

<sup>2</sup> Liquidity is for operational purposes rather than a strategic allocation target and is not included in the performance summary table due to negligible impact on performance

# Affiliate Investment Program

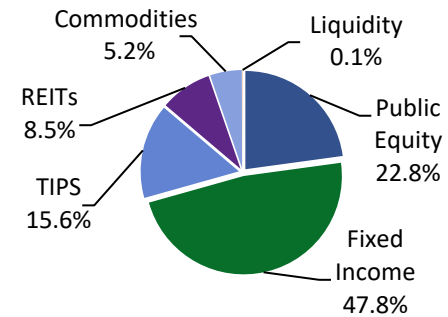
## CERBT Strategy 3 Fund (CERBT 3) & Legislators' Retirement System Fund (LRF)

As of January 31, 2019

### Asset Allocation, Performance & Realized Risk Summary - CERBT 3

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) <sup>1</sup>	Variance (%)	Policy Range
Public Equity	\$ 142.5	22.8%	22%	0.8%	± 5%
Fixed Income	\$ 298.2	47.8%	49%	(1.2%)	±5%
TIPS	\$ 97.1	15.6%	16%	(0.4%)	± 3%
REITs	\$ 53.1	8.5%	8%	0.5%	± 5%
Commodities	\$ 32.6	5.2%	5%	0.2%	± 3%
Liquidity	\$ 0.3	0.1%	0%	0.1%	± 2%
<b>Total CERBT 3</b>	<b>\$ 623.9</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>	

#### Current Allocation



Performance Summary <sup>2</sup>	FYTD			1-Yr			3-Yr			5-Yr			10-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	(2.4%)	(2.6%)	17	(7.5%)	(7.7%)	25	12.0%	11.7%	35	7.0%	6.6%	34	-	-	-
Fixed Income	2.6%	2.6%	(5)	1.8%	1.6%	12	3.5%	2.8%	78	4.0%	3.5%	51	-	-	-
TIPS	0.2%	0.1%	9	1.0%	0.9%	12	2.1%	2.1%	4	1.5%	1.6%	(2)	-	-	-
REITs	5.5%	4.7%	79	6.0%	4.9%	113	8.2%	7.3%	84	7.1%	6.3%	81	-	-	-
Commodities	(13.8%)	(14.9%)	112	(7.8%)	(9.2%)	134	5.9%	5.3%	62	(12.3%)	(12.8%)	46	-	-	-
<b>Total CERBT 3</b>	<b>0.6%</b>	<b>0.5%</b>	<b>10</b>	<b>(0.5%)</b>	<b>(0.7%)</b>	<b>15</b>	<b>5.7%</b>	<b>5.3%</b>	<b>44</b>	<b>4.1%</b>	<b>3.8%</b>	<b>34</b>	<b>-</b>	<b>-</b>	<b>-</b>

5-Yr Realized Volatility:

5.1%

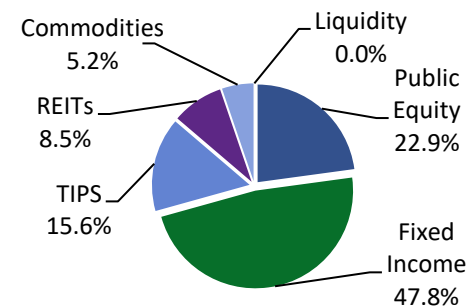
5-Yr Realized Tracking Error:

0.2%

### Asset Allocation, Performance & Realized Risk Summary - LRF

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) <sup>1</sup>	Variance (%)	Policy Range
Public Equity	\$ 25.2	22.9%	22%	0.9%	± 5%
Fixed Income	\$ 52.8	47.8%	49%	(1.2%)	±5%
TIPS	\$ 17.2	15.6%	16%	(0.4%)	± 3%
REITs	\$ 9.4	8.5%	8%	0.5%	± 5%
Commodities	\$ 5.8	5.2%	5%	0.2%	± 3%
Liquidity	\$ 0.0	0.0%	0%	0.0%	± 2%
<b>Total LRF</b>	<b>\$ 110.4</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.1%</b>	

#### Current Allocation



Performance Summary <sup>2</sup>	FYTD			1-Yr			3-Yr			5-Yr			10-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	(2.4%)	(2.6%)	18	(7.2%)	(7.3%)	14	12.4%	12.3%	16	7.2%	7.1%	14	11.7%	11.6%	9
Fixed Income	2.6%	2.6%	(7)	1.7%	1.6%	9	3.6%	2.8%	80	4.1%	3.5%	55	6.8%	5.3%	150
TIPS	0.2%	0.1%	9	1.0%	0.9%	11	2.1%	2.1%	5	1.5%	1.6%	(3)	3.5%	3.6%	(10)
REITs	5.3%	4.7%	57	6.1%	5.6%	50	9.1%	8.9%	21	7.6%	7.5%	13	-	-	-
Commodities	(13.9%)	(14.9%)	103	(7.9%)	(9.2%)	125	5.9%	5.3%	63	(12.3%)	(12.8%)	47	-	-	-
<b>Total LRF</b>	<b>0.7%</b>	<b>0.5%</b>	<b>20</b>	<b>(0.3%)</b>	<b>(0.5%)</b>	<b>18</b>	<b>5.9%</b>	<b>5.5%</b>	<b>37</b>	<b>4.2%</b>	<b>4.0%</b>	<b>25</b>	<b>8.0%</b>	<b>7.4%</b>	<b>68</b>

5-Yr Realized Volatility:

5.0%

5-Yr Realized Tracking Error:

0.2%

<sup>1</sup> Allocations approved by the Board at the May 2018 IC Meeting

<sup>2</sup> Liquidity is for operational purposes rather than a strategic allocation target and is not included in the performance summary table due to negligible impact on performance

# Affiliate Investment Program

## Judges' Retirement Fund (JRF) & Judges Retirement System Fund II (JRF II)

As of January 31, 2019

### Asset Allocation, Performance & Realized Risk Summary - JRF

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%)	Variance (%)	Policy Range
Cash	\$ 32.5	100.0%	100%	0.0%	± 0%
<b>Total JRF</b>	<b>\$ 32.5</b>	<b>100.0%</b>	<b>100%</b>	<b>0.0%</b>	

#### Current Allocation



Performance Summary	FYTD			1-Yr			3-Yr			5-Yr			10-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Cash	1.4%	1.3%	11	2.1%	2.0%	18	1.3%	1.1%	18	0.8%	0.7%	15	0.5%	0.4%	10
<b>Total JRF</b>	<b>1.4%</b>	<b>1.3%</b>	<b>11</b>	<b>2.1%</b>	<b>2.0%</b>	<b>18</b>	<b>1.3%</b>	<b>1.1%</b>	<b>18</b>	<b>0.8%</b>	<b>0.7%</b>	<b>15</b>	<b>0.5%</b>	<b>0.4%</b>	<b>10</b>

5-Yr Realized Volatility:

0.2%

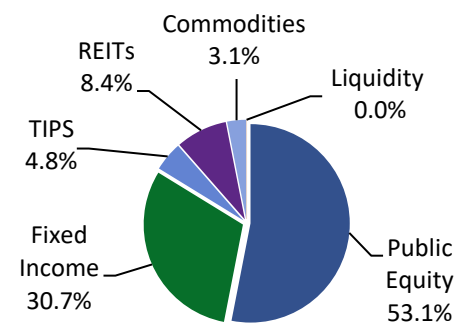
5-Yr Realized Tracking Error:

0.0%

### Asset Allocation, Performance Realized Risk Summary - JRF II

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) <sup>1</sup>	Variance (%)	Policy Range
Public Equity	\$ 825.7	53.1%	52%	1.1%	± 5%
Fixed Income	\$ 477.5	30.7%	32%	(1.3%)	± 5%
TIPS	\$ 74.4	4.8%	5%	(0.2%)	± 3%
REITs	\$ 130.2	8.4%	8%	0.4%	± 5%
Commodities	\$ 48.0	3.1%	3%	0.1%	± 3%
Liquidity	\$ 0.0	0.0%	0%	0.0%	+2%
<b>Total JRF II</b>	<b>\$ 1,555.8</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>	

#### Current Allocation



Performance Summary <sup>2</sup>	FYTD			1-Yr			3-Yr			5-Yr			10-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	(2.4%)	(2.6%)	18	(7.2%)	(7.3%)	14	12.4%	12.3%	15	7.2%	7.1%	13	11.6%	11.5%	8
Fixed Income	2.6%	2.6%	(2)	1.8%	1.6%	15	3.6%	2.8%	83	4.1%	3.5%	56	6.8%	5.3%	150
TIPS	0.1%	0.1%	2	1.0%	0.9%	4	2.1%	2.1%	2	1.5%	1.6%	(5)	-	-	-
REITs	5.3%	4.7%	59	6.1%	5.6%	52	9.1%	8.9%	21	7.6%	7.5%	12	12.0%	12.3%	(24)
Commodities	(14.9%)	(14.9%)	3	(9.0%)	(9.2%)	18	5.5%	5.3%	21	(12.5%)	(12.8%)	27	-	-	-
<b>Total JRF II</b>	<b>(0.2%)</b>	<b>(0.5%)</b>	<b>26</b>	<b>(2.7%)</b>	<b>(2.9%)</b>	<b>24</b>	<b>8.5%</b>	<b>8.1%</b>	<b>39</b>	<b>5.4%</b>	<b>5.2%</b>	<b>25</b>	<b>9.9%</b>	<b>9.5%</b>	<b>36</b>

5-Yr Realized Volatility:

7.2%

5-Yr Realized Tracking Error:

0.2%

<sup>1</sup> Allocations approved by the Board at the May 2018 IC Meeting

<sup>2</sup> Liquidity is for operational purposes rather than a strategic allocation target and is not included in the performance summary table due to negligible impact on performance

# Affiliate Investment Program

## Health Care Fund (HCF) & Long-Term Care Fund (LTCF)

As of January 31, 2019

### Asset Allocation, Performance & Realized Risk Summary - HCF

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) <sup>1</sup>	Variance (%)	Policy Range
Fixed Income	\$ 455.4	100.0%	100%	0.0%	± 0%
<b>Total HCF</b>	<b>\$ 455.4</b>	<b>100.0%</b>	<b>100%</b>	<b>0.0%</b>	

#### Current Allocation



Performance Summary	FYTD			1-Yr			3-Yr			5-Yr			10-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Fixed Income	2.7%	2.7%	0	2.3%	2.3%	9	2.0%	2.0%	3	2.6%	2.4%	16	4.4%	3.7%	68
<b>Total HCF</b>	<b>2.7%</b>	<b>2.7%</b>	<b>0</b>	<b>2.3%</b>	<b>2.3%</b>	<b>9</b>	<b>2.0%</b>	<b>2.0%</b>	<b>3</b>	<b>2.6%</b>	<b>2.4%</b>	<b>16</b>	<b>4.4%</b>	<b>3.7%</b>	<b>68</b>

5-Yr Realized Volatility:

2.8%

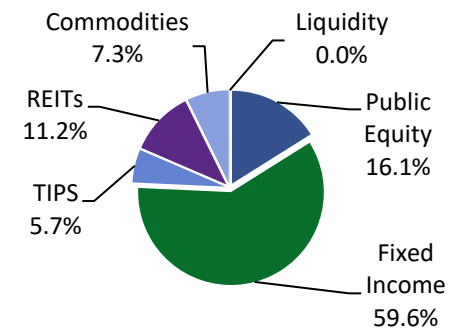
5-Yr Realized Tracking Error:

0.2%

### Asset Allocation, Performance & Realized Risk Summary - LTCF

Asset Allocation	EMV (mil)	Current Allocation (%)	Policy Weight (%) <sup>1</sup>	Variance (%)	Policy Range
Public Equity	\$ 726.5	16.1%	15%	1.1%	± 4%
Fixed Income	\$ 2,694.8	59.6%	60%	(0.4%)	± 5%
TIPS	\$ 259.7	5.7%	6%	(0.3%)	± 2%
REITs	\$ 507.3	11.2%	11%	0.2%	± 4%
Commodities	\$ 329.6	7.3%	8%	(0.7%)	± 2%
Liquidity	\$ 0.1	0.0%	0%	0.0%	± 2%
<b>Total LTCF</b>	<b>\$ 4,518.0</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>	

#### Current Allocation



Performance Summary <sup>2</sup>	FYTD			1-Yr			3-Yr			5-Yr			10-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Public Equity	(2.4%)	(2.6%)	18	(7.5%)	(7.7%)	25	12.0%	11.7%	33	6.9%	6.6%	31	11.6%	11.5%	17
Fixed Income	2.6%	2.6%	(2)	1.7%	1.6%	3	2.7%	2.8%	(6)	3.5%	3.5%	(1)	6.3%	5.3%	103
TIPS	0.1%	0.1%	2	0.9%	0.9%	0	2.1%	2.1%	(1)	1.6%	1.6%	(0)	3.5%	3.6%	(10)
REITs	5.3%	4.7%	65	5.9%	4.9%	100	8.2%	7.3%	87	7.1%	6.3%	81	11.6%	11.4%	16
Commodities	(14.9%)	(14.9%)	(5)	(9.3%)	(9.2%)	(14)	5.1%	5.3%	(17)	(12.8%)	(12.8%)	(3)	-	-	-
<b>Total LTCF</b>	<b>0.6%</b>	<b>0.6%</b>	<b>(5)</b>	<b>(0.4%)</b>	<b>(0.3%)</b>	<b>(13)</b>	<b>4.7%</b>	<b>4.8%</b>	<b>(6)</b>	<b>3.4%</b>	<b>3.3%</b>	<b>14</b>	<b>7.6%</b>	<b>7.2%</b>	<b>35</b>

5-Yr Realized Volatility:

5.1%

5-Yr Realized Tracking Error:

0.3%

<sup>1</sup> Allocations approved by the Board at the June 2018 IC Meeting

<sup>2</sup> Liquidity is for operational purposes rather than a strategic allocation target and is not included in the performance summary table due to negligible impact on performance

# Affiliate Investment Program

## Supplemental Income Plan (SIP)

As of January 31, 2019

### Asset Allocation - SIP

Asset Allocation	EMV (mil)	Global Equity			US Fixed Income			Real Assets			Cash and Cash Equivalents		
		Actual	Policy	Policy Range	Actual	Policy	Policy Range	Actual	Policy	Policy Range	Actual	Policy	Policy Range
Target Income Fund	\$ 99.1	31.5%	30.0%	+/-4%	58.6%	60.0%	+/-4%	5.1%	5.0%	+/-1%	4.8%	5.0%	+/-1%
Target 2015 Fund	\$ 87.4	38.6%	37.0%	+/-4%	52.4%	54.0%	+/-4%	5.1%	5.0%	+/-1%	3.8%	4.0%	+/-1%
Target 2020 Fund	\$ 156.8	51.7%	50.0%	+/-4%	41.4%	43.0%	+/-4%	4.0%	4.0%	+/-1%	2.9%	3.0%	+/-1%
Target 2025 Fund	\$ 155.3	63.6%	62.0%	+/-4%	30.5%	32.0%	+/-4%	4.0%	4.0%	+/-1%	1.9%	2.0%	+/-1%
Target 2030 Fund	\$ 132.8	76.2%	75.0%	+/-4%	18.9%	20.0%	+/-2%	4.0%	4.0%	+/-1%	0.9%	1.0%	+/-1%
Target 2035 Fund	\$ 76.9	87.7%	87.0%	+/-4%	9.4%	10.0%	+/-2%	3.0%	3.0%	+/-1%	0.0%	0.0%	+/-0.25%
Target 2040 Fund	\$ 68.1	92.4%	92.0%	+/-4%	4.7%	5.0%	+/-1%	2.9%	3.0%	+/-1%	0.0%	0.0%	+/-0.25%
Target 2045 Fund	\$ 34.6	92.4%	92.0%	+/-4%	4.7%	5.0%	+/-1%	2.9%	3.0%	+/-1%	0.0%	0.0%	+/-0.25%
Target 2050 Fund	\$ 16.8	92.4%	92.0%	+/-4%	4.7%	5.0%	+/-1%	2.9%	3.0%	+/-1%	0.0%	0.0%	+/-0.25%
Target 2055 Fund	\$ 7.5	92.4%	92.0%	+/-4%	4.7%	5.0%	+/-1%	2.9%	3.0%	+/-1%	0.0%	0.0%	+/-0.25%
Target 2060 Fund	\$ 0.5	92.4%	92.0%	+/-4%	4.7%	5.0%	+/-1%	2.9%	3.0%	+/-1%	0.0%	0.0%	+/-0.25%
SSgA STIF	\$ 103.2	0.0%	0.0%	-	0.0%	0.0%	-	0.0%	0.0%	-	100.0%	100.0%	-
SIP US ST Bond Core	\$ 34.7	0.0%	0.0%	-	100.0%	100.0%	-	0.0%	0.0%	-	0.0%	0.0%	-
SIP US Bond Core	\$ 55.4	0.0%	0.0%	-	100.0%	100.0%	-	0.0%	0.0%	-	0.0%	0.0%	-
SIP Real Asset Core	\$ 6.9	0.0%	0.0%	-	0.0%	0.0%	-	100.0%	100.0%	-	0.0%	0.0%	-
SIP Russell All Cap Core	\$ 519.8	100.0%	100.0%	-	0.0%	0.0%	-	0.0%	0.0%	-	0.0%	0.0%	-
SIP Gbl All Cap EX-US	\$ 64.6	100.0%	100.0%	-	0.0%	0.0%	-	0.0%	0.0%	-	0.0%	0.0%	-

### Performance Summary - SIP

Performance Summary	FYTD			1-Yr			3-Yr			5-Yr			10-Yr		
	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps	Net Return	BM Return	Excess Bps
Target Income Fund	0.9%	0.7%	14	(0.3%)	(0.4%)	13	3.5%	3.5%	8	2.8%	2.7%	13	5.6%	5.7%	(11)
Target 2015 Fund	0.3%	0.1%	14	(0.9%)	(1.0%)	13	3.3%	3.3%	7	2.7%	2.6%	12	7.1%	7.3%	(13)
Target 2020 Fund	(0.7%)	(0.8%)	13	(2.1%)	(2.2%)	12	3.8%	3.7%	5	2.9%	2.8%	12	7.8%	7.9%	(12)
Target 2025 Fund	(1.3%)	(1.4%)	13	(3.4%)	(3.5%)	10	5.4%	5.3%	2	3.6%	3.4%	13	8.7%	8.8%	(11)
Target 2030 Fund	(2.2%)	(2.3%)	10	(4.9%)	(5.0%)	7	6.3%	6.4%	(1)	4.0%	3.8%	12	9.6%	9.6%	(10)
Target 2035 Fund	(3.0%)	(3.1%)	8	(6.3%)	(6.3%)	5	7.5%	7.5%	(3)	4.4%	4.3%	12	10.2%	10.4%	(19)
Target 2040 Fund	(3.2%)	(3.2%)	6	(7.0%)	(7.0%)	3	8.9%	8.9%	(6)	5.0%	4.9%	13	10.7%	10.8%	(14)
Target 2045 Fund	(2.8%)	(2.9%)	6	(7.2%)	(7.3%)	6	10.0%	10.1%	(6)	5.6%	5.5%	13	10.9%	11.1%	(19)
Target 2050 Fund	(2.8%)	(2.9%)	7	(7.2%)	(7.3%)	7	10.1%	10.1%	(3)	5.6%	5.5%	15	10.9%	11.1%	(17)
Target 2055 Fund	(2.8%)	(2.9%)	7	(7.2%)	(7.3%)	7	10.0%	10.1%	(6)	5.6%	5.5%	14	-	-	-
Target 2060 Fund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSgA STIF	1.6%	1.3%	36	2.4%	2.0%	44	1.4%	1.1%	27	0.9%	0.7%	19	-	-	-
SIP US ST Bond Core	1.9%	1.9%	(1)	2.2%	2.3%	(4)	1.1%	1.2%	(10)	1.0%	1.1%	(12)	-	-	-
SIP US Bond Core	2.8%	2.7%	4	2.3%	2.3%	8	2.0%	2.0%	2	2.5%	2.4%	7	-	-	-
SIP Real Asset Core	(1.8%)	(1.7%)	(7)	(2.2%)	(2.0%)	(14)	7.8%	8.1%	(26)	0.9%	1.0%	(11)	-	-	-
SIP Russell All Cap Core	(0.3%)	(0.3%)	1	(2.3%)	(2.3%)	(2)	14.2%	14.2%	(2)	10.5%	10.4%	4	-	-	-
SIP Gbl All Cap EX-US	(4.7%)	(4.8%)	13	(12.8%)	(13.0%)	21	9.5%	9.6%	(3)	3.4%	3.2%	22	-	-	-



Affiliate Investment Program  
Supplemental Income Plan (SIP)

As of January 31, 2019

Realized Risk - SIP

	Annualized 5-Yr Realized Volatility	Annualized 5-Yr Realized Tracking Error
Realized Risk		
Target Income Fund	3.2%	0.2%
Target 2015 Fund	3.4%	0.2%
Target 2020 Fund	4.5%	0.2%
Target 2025 Fund	5.8%	0.3%
Target 2030 Fund	7.1%	0.3%
Target 2035 Fund	8.4%	0.4%
Target 2040 Fund	9.5%	0.4%
Target 2045 Fund	10.0%	0.5%
Target 2050 Fund	10.0%	0.5%
Target 2055 Fund	10.0%	0.5%
Target 2060 Fund	-	-
SSgA STIF	0.3%	0.1%
SIP US ST Bond Core	0.8%	0.0%
SIP US Bond Core	2.8%	0.1%
SIP Real Asset Core	8.6%	0.3%
SIP Russell All Cap Core	11.5%	0.1%
SIP Gbl All Cap EX-US	12.1%	1.1%



# CalPERS Trust Level

## Trust Level Benchmarks

As of January 31, 2019

### Public Employee's Retirement Fund and Affiliate Investment Program Policy Benchmarks

Trust	Asset Class Benchmark	Policy Benchmark
Public Employees Retirement Fund	Public Equity	CalPERS Custom Global Equity Benchmark
	Private Equity	CalPERS Custom FTSE All World, All Cap Equity, +150 bps, 1 Qtr Lag
	Income	CalPERS Custom Global Fixed Income Benchmark
	Real Assets	MSCI Investment Property Databank US Core - Fund Level
	Inflation	Custom Inflation Assets Benchmark
	Liquidity	30-Day Treasury Bill
Judge's Retirement System Fund	Cash	91-day Treasury Bill
Judge's Retirement System II Fund	Global Equity	MSCI ACWI IMI (Net)
	U.S. Fixed Income	Bloomberg Barclays Long Liability Index
	TIPS	Bloomberg Barclays U.S. TIPS Index, Series L
	Commodities	S&P GSCI Total Return Daily
	REITs	FTSE EPRA/NAREIT Developed Liquid (Net)
Legislators' Retirement System Fund	Global Equity	MSCI ACWI IMI (Net)
	U.S. Fixed Income	Bloomberg Barclays Long Liability Index
	TIPS	Bloomberg Barclays U.S. TIPS Index, Series L
	Commodities	S&P GSCI Total Return Daily
	REITs	FTSE EPRA/NAREIT Developed Liquid (Net)
Public Employees' Health Care Fund	U.S. Fixed Income	Bloomberg Barclays U.S. Aggregate Bond Index
Long-Term Care Fund	Global Equity	MSCI ACWI IMI (Net)
	U.S. Fixed Income	Bloomberg Barclays Long Liability Index
	TIPS	Bloomberg Barclays U.S. Treasury Inflation Protected Securities (TIPS) Index
	Commodities	S&P GSCI Total Return Daily
	REITs	FTSE EPRA/NAREIT Developed Liquid (Net)
California Employers' Retiree Benefit Trust (CERBT) Funds 1, 2 & 3	Global Equity	MSCI ACWI IMI (Net)
	U.S. Fixed Income	Bloomberg Barclays Long Liability Index
	TIPS	Bloomberg Barclays U.S. TIPS Index, Series L
	Commodities	S&P GSCI Total Return Daily
	REITs	FTSE EPRA/NAREIT Developed Liquid (Net)

CalPERS Trust Level

Trust Level Benchmarks  
As of January 31, 2019

Supplemental Income Plan Policy Benchmarks

Policy Weights						
	Global Equity	US Equity	In'l Equity	US Income	Real Assets	Cash & Cash Equivalents
Supplemental Income Plan	Russell 3000 / MSCI ACWI ex US	Russell 3000	MSCI ACWI ex US	Bloomberg Barclays US Ag Bond	SSGA Real Asset	BofA ML 3 mo T-bill
Target Income Fund	30.0%	16.0%	14.0%	60.0%	5.0%	5.0%
Target 2015 Fund	37.0%	20.0%	17.0%	54.0%	5.0%	4.0%
Target 2020 Fund	50.0%	27.0%	23.0%	43.0%	4.0%	3.0%
Target 2025 Fund	62.0%	33.0%	29.0%	32.0%	4.0%	2.0%
Target 2030 Fund	75.0%	40.0%	35.0%	20.0%	4.0%	1.0%
Target 2035 Fund	87.0%	46.0%	41.0%	10.0%	3.0%	0.0%
Target 2040 Fund	92.0%	49.0%	43.0%	5.0%	3.0%	0.0%
Target 2045 Fund	92.0%	49.0%	43.0%	5.0%	3.0%	0.0%
Target 2050 Fund	92.0%	49.0%	43.0%	5.0%	3.0%	0.0%
Target 2055 Fund	92.0%	49.0%	43.0%	5.0%	3.0%	0.0%
Target 2060 Fund	92.0%	49.0%	43.0%	5.0%	3.0%	0.0%
SSgA STIF	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
SIP US ST Bond Core	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
SIP US Bond Core	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
SIP Real Asset Core	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
SIP Russell All Cap Core	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%
SIP Global All Cap ex US	100.0%	0.0%	100.0%	0.0%	0.0%	0.0%