

# Real Assets Annual Program Review

November 14, 2016

# Executive Summary – Real Assets Program Performance

As of June 30, 2016	NAV (millions)	1-Year Net Return	3-Year Net Return	5-Year Net Return	10-Year Net Return	20-Year Net Return
<b>Real Estate</b>	\$27,296	7.1%	11.5%	12.4%	-0.5%	7.1%
Policy Index		12.6%	12.6%	12.1%	8.7%	10.4%
Excess Return		-5.6%	-1.1%	0.3%	-9.2%	-3.4%
<b>Infrastructure</b>	\$2,568	9.0%	14.9%	11.7%		
Policy Index		4.9%	4.8%	5.3%		
Excess Return		4.1%	10.1%	6.3%		
<b>Forestland</b>	\$1,973	-9.6%	-2.6%	-2.6%		
Policy Index		2.9%	7.7%	6.6%		
Excess Return		-12.5%	-10.3%	-9.2%		
<b>Real Assets</b>	\$31,838	6.0%	10.6%	11.1%	-0.1%	7.3%
Policy Index		11.1%	11.5%	11.0%	7.8%	10.0%
Excess Return		-5.2%	-0.9%	0.1%	-7.9%	-2.7%

# Executive Summary – Real Assets Program Performance

## Role - Cash Yield

FY	Net Income Return	RA Core Exposure
FY 15/16	3.7%	65%
FY 14/15	3.6%	46%
FY 13/14	3.4%	42%
FY 12/13	2.6%	39%
FY 11/12	0.6%	38%

## Role - Inflation Protection

FY	5 - Year rolling Net Appreciation	5 - Year rolling CPI
FY 15/16	8.1%	1.3%
FY 14/15	9.1%	1.6%
FY 13/14	-0.5%	2.1%
FY 12/13	-8.7%	1.7%
FY 11/12	-8.6%	2.2%

## Role - Diversification of Equity

	Volatility 3 - Year	Volatility 5 - Year	Correlation 3 - Year	Correlation 5 - Year
Real Assets	5.4	5.4	0.14	-0.17
FTSE GLOBAL ALL CAP CUSTOM NET	9.7	13.8		

# Executive Summary – Portfolio Position

Program	Core vs. Non-Core*	1-Year Net Valuation Change	1-Year Net Income Return	LTV Change	Net Buyer/Seller (millions)	Business Model FY 14/15 / FY 15/16	
Real Estate	72% / 28%	2.9%	4.2%	-0.3%	(\$1,620)	Light Green	Green
Infrastructure	35% / 65%	6.0%	3.1%	+1.3%	\$293	Green	Green
Forestland	N/A	-8.4%	-1.2%	+ 7.1%	\$0	Red	Yellow

# Executive Summary – FY 2015/16 Accomplishments

Initiatives	Accomplishments
<b>Organization and Governance</b>	<ul style="list-style-type: none"> <li>• Integration of Real Assets Programs</li> <li>• Strategic Plan – Approved</li> <li>• Policy &amp; Delegations of Authority</li> </ul>
<b>Portfolio Repositioning</b>	<ul style="list-style-type: none"> <li>• Real Estate Secondary Sale</li> <li>• External Manager Reduction</li> <li>• Infrastructure Portfolio Growth</li> </ul>
<b>Alignment and Costs</b>	<ul style="list-style-type: none"> <li>• Strengthen Operating Platform</li> <li>• Forestland Investment Restructuring</li> </ul>
<b>Environmental Social Governance (ESG)</b>	<ul style="list-style-type: none"> <li>• Manager Expectations</li> <li>• ESG Monitoring and Benchmarking Programs</li> <li>• California Solar Power Investment (Infrastructure Program)</li> </ul>

# Executive Summary – FY 2016/17 Initiatives

Category	Initiatives
Sustainable Investment - ESG	<p><u>Energy Optimization Initiative:</u></p> <ul style="list-style-type: none"> <li>• Research technological landscape for Real Estate portfolio energy optimization</li> </ul> <p><u>Global Real Estate Sustainability Benchmark (GRESB):</u></p> <ul style="list-style-type: none"> <li>• Real Estate 2017 roll out for single Real Assets sustainability benchmarking</li> </ul>
RE Emerging & Transition Manager Program	<p><u>RE Emerging Managers:</u></p> <ul style="list-style-type: none"> <li>• Evaluating additional Real Estate emerging managers</li> </ul>
Alignment and Costs	<p><u>Business Model:</u></p> <ul style="list-style-type: none"> <li>• Finish Strategic Manager re-alignment</li> </ul>
Organization & Governance	<p><u>Strategic Plan Update - Implementation:</u></p> <ul style="list-style-type: none"> <li>• Segment / Sector planning</li> <li>• Portfolio Hierarchy – systems / database</li> </ul> <p><u>ALM – 2017:</u></p> <ul style="list-style-type: none"> <li>• Real Assets benchmark</li> <li>• Real Assets allocation</li> <li>• Forestland role</li> </ul>

# Appendix

Real Assets Annual Program Review

# Review Outline

Section	Pages Real Assets	Pages Real Estate	Pages Infrast	Pages Forest	Investment Beliefs Map											
					1	2	3	4	5	6	7	8	9	10		
Executive Summary	2-6															
Review Outline	8															
Investment Beliefs Key	9															
I. Program Overview		11-16														
Program Roles	11				Yellow	Green										
Program Investment Philosophy	12					Green						Yellow	Yellow			
Policy Benchmarks	13								Yellow							
Program Performance	14-15				Yellow					Yellow				Yellow		
Program Characteristics	16									Yellow	Green ↑		Yellow			
II. Investment Review		18-24	26-32	34-40												
Past Year Environment Review		18	26	34						Yellow	Green ↑					
Program Performance		19-20	27-28	35-36		Green				Yellow				Yellow		
Volatility Profile		21	29	37							Green ↑			Yellow		
Program Characteristics/Positioning		22-24	30-32	38-40	Yellow					Yellow				Yellow		
III. Business Review		42-53														
Investment Decision Process	42															Green
Functional Organizational Chart	43															Green
Staffing Overview	44															Green
Strategic Plans/Projects Update	45-46								Yellow							Green
ESG	47-48					Green	Green	Yellow								Green
Emerging Manager Program	49						Green									Green
Program Expenses		50-51	52-53	52-53						Yellow			Yellow			

- 1** Liabilities
- 2** Long-Term Horizon
- 3** Stakeholders
- 4** Three Forms of Capital
- 5** Accountability
- 6** Strategic Allocation
- 7** Risk Reward
- 8** Costs Matter
- 9** Multi-faceted Risk
- 10** Resources/Process

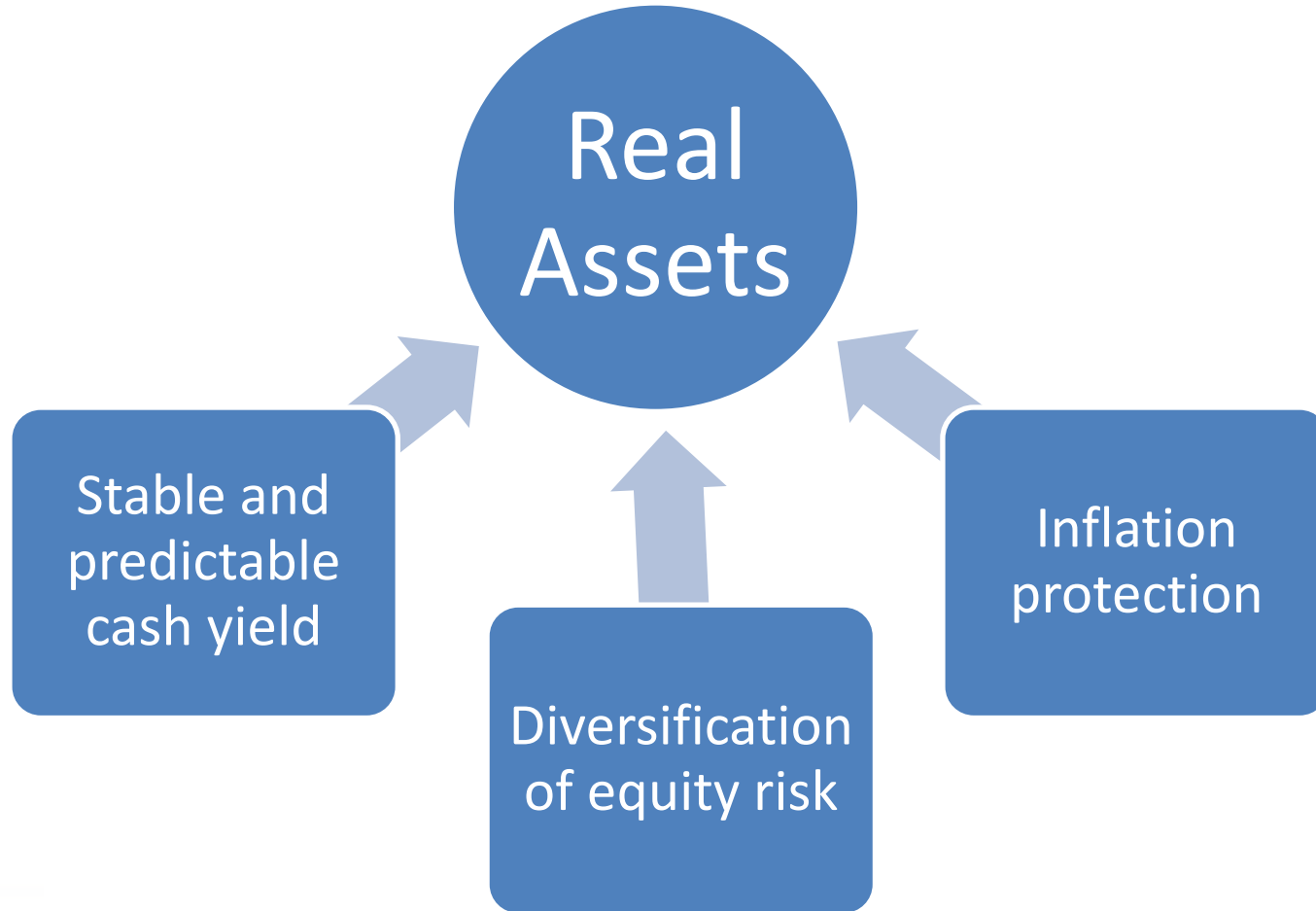


## Investment Beliefs Key

	Short Name	Investment Belief
1	Liabilities	Liabilities must influence the asset structure.
2	Long-Term Horizon	A long time investment horizon is a responsibility and an advantage.
3	Stakeholders	CalPERS investment decisions may reflect wider stakeholder views.
4	Three Forms of Capital	Long-term value creation requires effective management of three forms of capital: financial, physical, and human.
5	Accountability	CalPERS must articulate its investment goals and performance measure and ensure clear accountability for their execution.
6	Strategic Allocation	Strategic asset allocation is the dominant determinant of portfolio risk and return.
7	Risk Reward	CalPERS will take risk only where we have a strong belief we will be rewarded.
8	Costs Matter	Costs matter and need to be effectively managed.
9	Multi-faceted Risk	Risk of CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error.
10	Resources / Process	Strong processes and teamwork and deep resources are needed to achieve CalPERS' goals and objectives.

# I. Program Overview

# Program Roles



# Program Investment Philosophy

- The program is to be invested in high-quality well located assets, held through business cycles.
- Core assets with stable and predictable cash flows.
- Separate accounts with highly reputable, market-leading managers.
- Strong governance with focus on economic alignment, transparency, and cost efficiency.
- Movement toward fewer and larger external manager relationships.
- Moderate leverage usage across the portfolio.
- Sustainable investment practices for selection, contracting, monitoring, and management of assets and managers.

# Policy Benchmarks

## Real Assets Policy Benchmark

83.34% Real Estate Benchmark + 8.33% Infrastructure Benchmark + 8.33% Forestland Benchmark

### Real Estate Policy Benchmark

National Council of Real Estate Investment Fiduciaries Open-End Diversified Core Fund Index (NCREIF ODCE)

### Infrastructure Policy Benchmark

Consumer Price Index (CPI) + 4% lagged one quarter

### Forestland Policy Benchmark

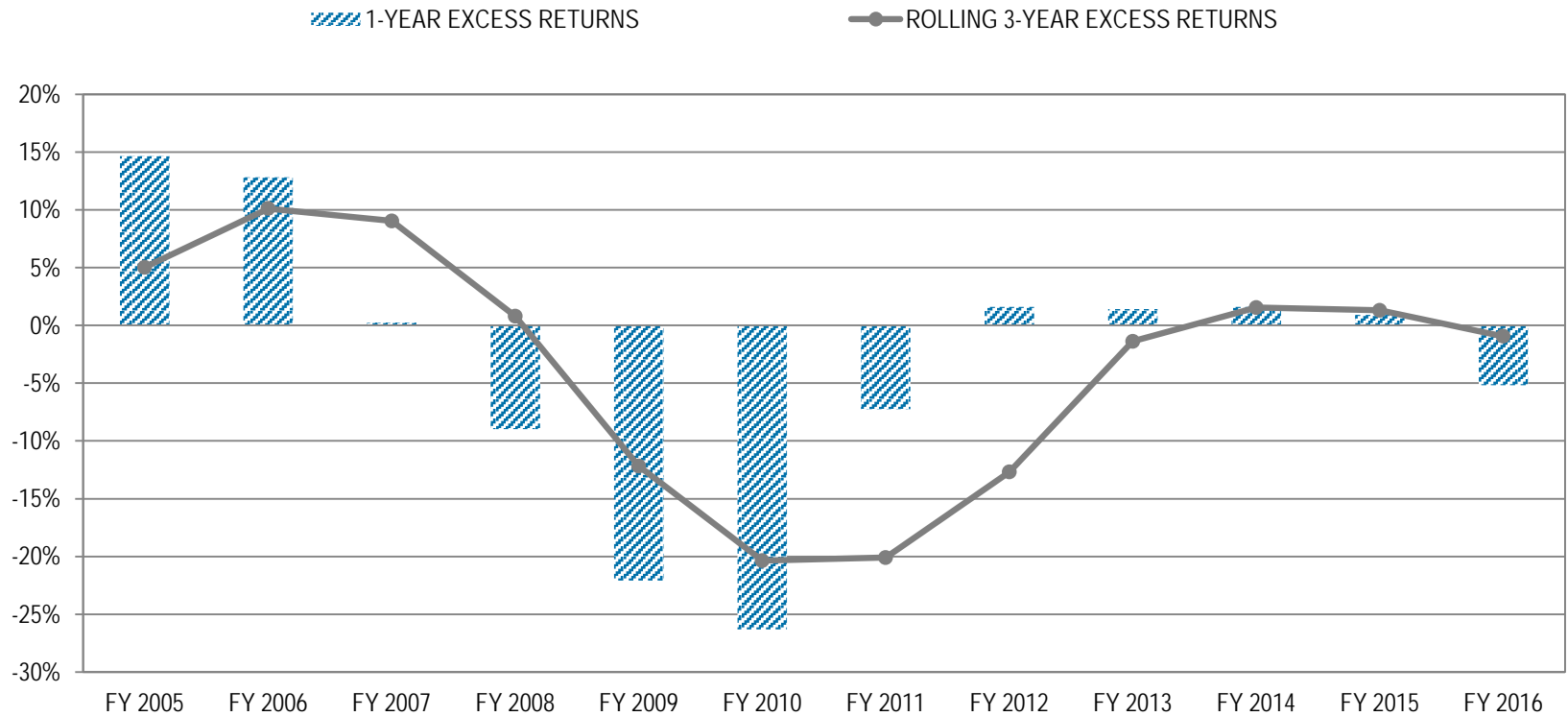
National Council of Real Estate Investment Fiduciaries (NCREIF) Timberland Index

# Program Performance Review – Real Assets

As of June 30, 2016	1-Year Net Return	3-Year Net Return	5-Year Net Return	10-Year Net Return	20-Year Net Return
Real Assets	6.0%	10.6%	11.1%	-0.1%	7.3%
Policy Index*	11.1%	11.5%	11.0%	7.8%	10.0%
Excess Return	-5.2%	-0.9%	0.1%	-7.9%	-2.7%

- Since the adoption of the 5-year Strategic Plan in 2011 for Real Estate and Infrastructure, Total Real Assets and Programs have outperformed their respective benchmarks.
- The 6.0% 1-year total return after fee does not meet the 1-year policy index of 11.1%.

# Performance: Real Assets 3-Year Rolling Excess Return



# Program Characteristics – Real Assets

- **Total Net Asset Value (NAV):** \$31.8 billion
  - Real Assets accounts for 10.8% of the Total Fund NAV.
  - The NAV remained unchanged for the year.
- **Unfunded:** \$9.2 billion, CalPERS discretion \$8.3 billion.
- **Structure:**
  - 32 External Managers.
  - 27 Commingled Funds, 51 Separate Accounts, 3 Direct Investments and 1 Operating Company.
    - NAV Basis: 76% Separate Accounts, 11% Commingled Funds, 2% Direct Investments, 11% Operating Company.
- **Geographic Exposure:**
  - 90% U.S. and 10% International.
  - 26% of the Program NAV is invested in California.



## II. Investment Review

- a. **Real Estate**
- b. Infrastructure
- c. Forestland

# Past Year Environment Review – Real Estate

- Capital Markets
  - Markets are competitive and pricing is robust.
  - Debt markets have been generally conservative, and markets are more awash in equities.
  - Cap rates remain at historic lows.
- Property Fundamentals
  - Muted new supply except apartments, industrials, and in select MSA's.
  - Net Operating Income (NOI)\* growth across property sectors is moderating, yet positive.
  - Vacancy rates are stable given the macroeconomic backdrop in the U.S. New supply additions in apartments may pressure vacancies moderately upward.

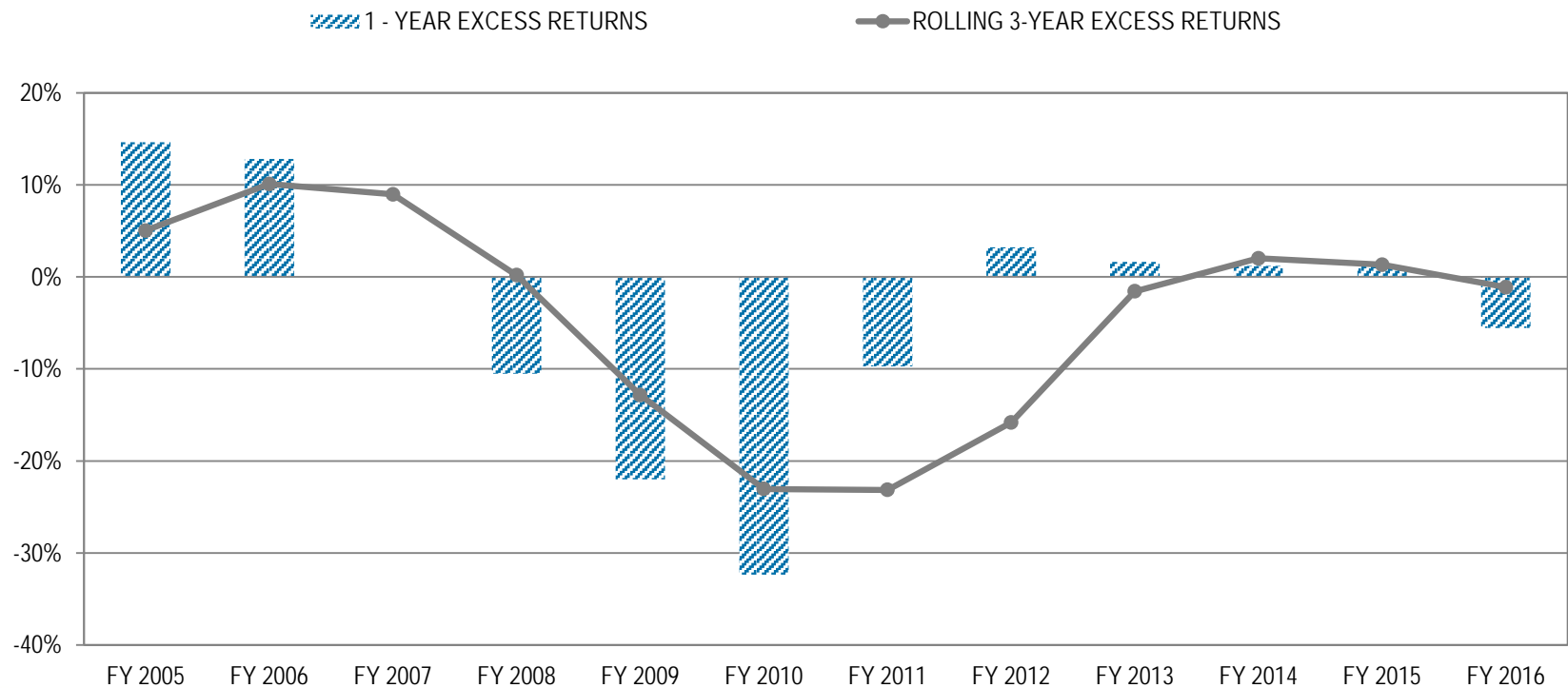
# Program Performance Review – Real Estate

As of June 30, 2016	1-Year Net Return	3-Year Net Return	5-Year Net Return	10-Year Net Return	20-Year Net Return
Real Estate	7.1%	11.5%	12.4%	-0.5%	7.1%
Policy Index*	12.6%	12.6%	12.1%	8.7%	10.4%
Excess Return	-5.6%	-1.1%	0.3%	-9.2%	-3.4%

- Since the adoption of the 5-year Strategic Plan in 2011 for Real Estate, the Program has outperformed the benchmark.
- The 7.1% 1-year total return after fee does not meet the policy index of 12.6%.
- The underperformance to the benchmark was primarily driven by non-core holdings related to the secondary sale of commingled funds, emerging market exposure, and housing.

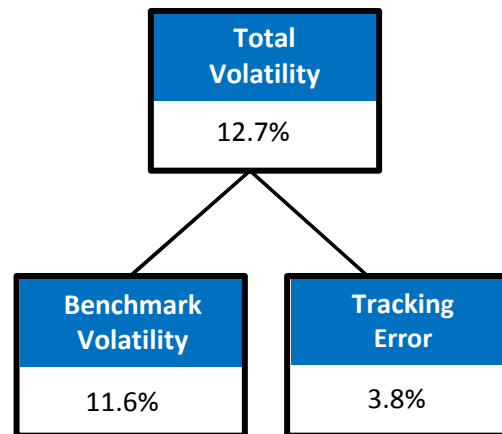
# Program Performance Review – Real Estate (Cont'd)

## 3-Year Rolling Excess Return



# Volatility Profile – Real Estate

- Real Estate Forecast Volatility is 12.7%
- Forecast Tracking Error is 3.8%
- Correlation vs. the entire PERF portfolio is 0.74

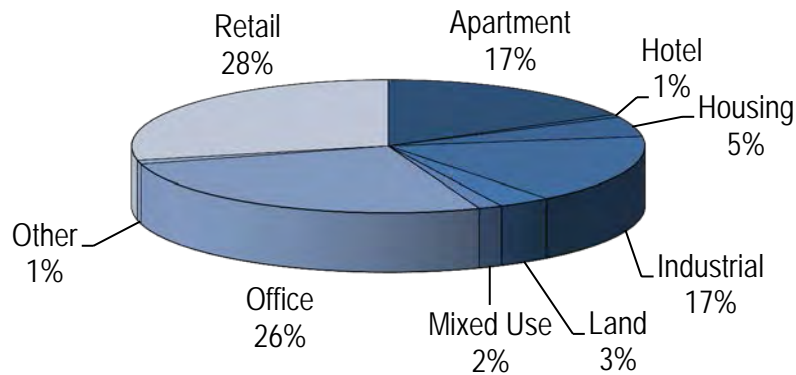


# Program Characteristics – Real Estate

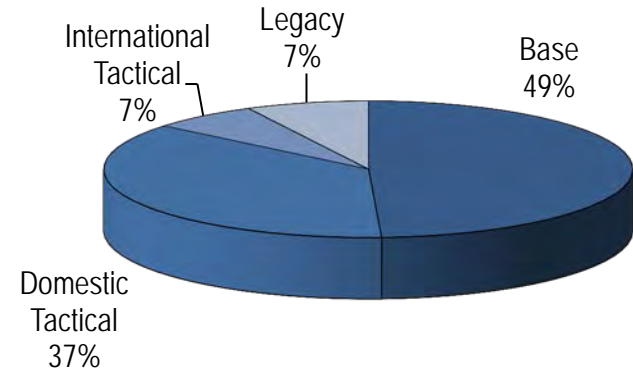
- **Total NAV:** \$27.3 billion.
  - Program NAV is 9.2% of Total Fund, versus 10% target.
  - The NAV decreased 1% from \$27.5 billion to \$27.3 billion.
- **Unfunded:** \$7.2 billion, CalPERS discretion \$7.0 billion.
- **Structure:**
  - 23 External Managers, compared to 50 last year.
  - 19 Commingled Funds, 46 Separate Accounts, 1 Operating Company.
    - NAV Basis: 79% Separate Accounts, 8% in Commingled Funds, 13% Operating Company.
- **Geographic Exposure:**
  - 93% U.S. and 7% in Emerging Countries.
  - 30% of the Program NAV is invested in California.

# Program Characteristics – Real Estate by NAV\*

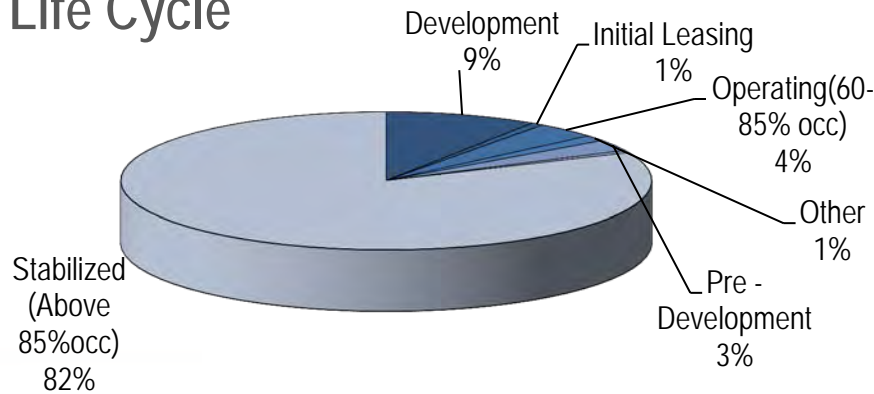
## Property Type



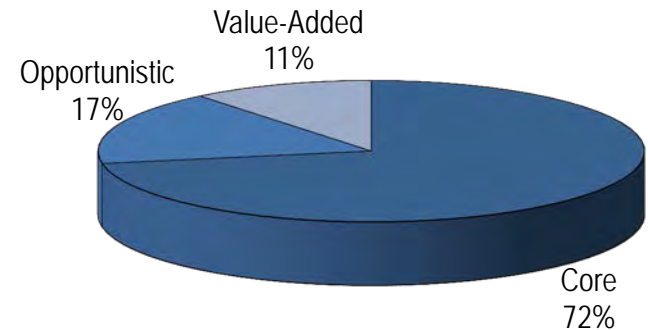
## Strategy



## Life Cycle



## Risk



\*Period ending March 31, 2016 with total property level NAV amounting to \$27.3 billion

# Portfolio Positioning – Real Estate

Program Target per Policy as % of Total Fund	Program Target based on Total Fund Value	Actual Investment as % of Total Fund	Actual Investment (NAV in Millions)
10.0%	\$29,000	9.4%	\$27,296
Current Policy 7/1/15 - 6/30/17			
Investment Parameters (Asset Level)	NAV%	Range/Limit	Compliance
<b>Strategy</b>			
Strategic	92.5%	n/a	n/a
Base	53.2%	25 - 100%	53.2%
Domestic Tactical	39.7%	0 - 60%	40%
International Tactical	7.1%	0 - 25%	7%
Legacy	7.5%	n/a	n/a
<b>Risk Classification</b>			
Core	72.2%	50 - 100%	72%
Value Add	10.8%	0 - 40%	11%
Opportunistic	17.0%	0 - 40%	17%
REITS	0.0%	0 - 7.5%	0%
<b>Property Type</b>			
Office	26.4%	45%	26%
Industrial	16.7%	45%	17%
Retail	28.5%	45%	28%
Multifamily	17.1%	45%	17%
For Sale Residential & Land Dev.	8.2%	15%	8%
Hotels	0.7%	10%	1%
Mixed-Use	1.5%	10%	1%
Other Property Types	0.9%	15%	1%
<b>Geography</b>			
Developed Markets	93.4%	75 - 100%	93%
Developed - US	99.9%	70 - 100%	100%
Developed - ex US	0.1%	0 - 25%	0%
Emerging Markets	6.6%	0 - 15%	7%
Frontier Markets	0.0%	0 - 5%	0%
<b>REAL ESTATE PROGRAM</b>	<b>9.4%</b>	<b>5 - 15%</b>	<b>9%</b>



## II. Investment Review

- a. Real Estate
- b. Infrastructure**
- c. Forestland

# Past Year Environment Review – Infrastructure

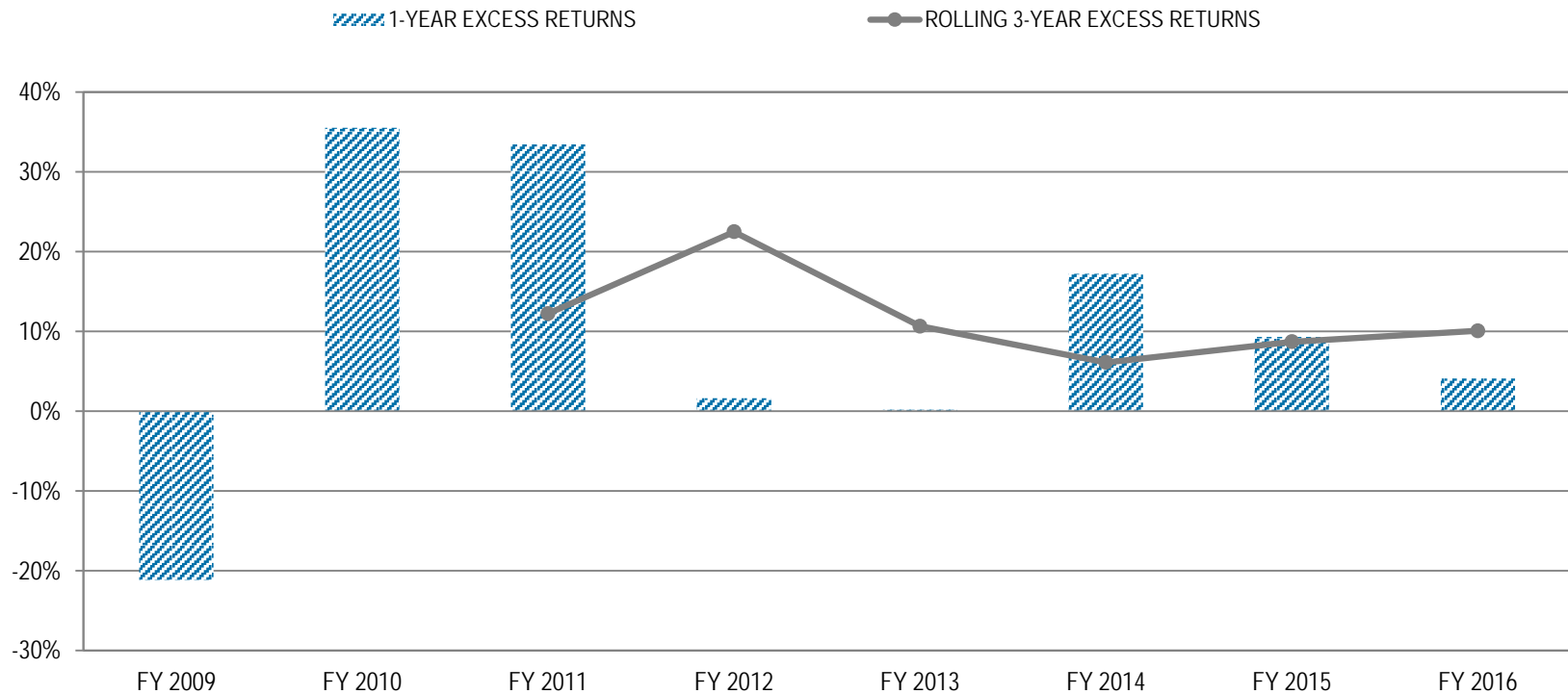
- Fierce competition for new investments.
- Supportive credit markets.
- U.S. public 'Infrastructure Gap' continues.
- Global transition to “clean” power generation gaining speed.
- Australian privatizations continue, but very dependent on regional political dynamics.
- Oil majors under pressure: midstream divestitures continue.
- Largest/sophisticated institutional investors increasing focus on greenfield investments, renewable platforms and selected less developed geographies (Eastern Europe, Latin America).

# Program Performance Review – Infrastructure

As of June 30, 2016	1-Year Net Return	3-Year Net Return	5-Year Net Return
Infrastructure	9.0%	14.9%	11.7%
Policy Index	4.9%	4.8%	5.3%
Excess Return	4.1%	10.1%	6.3%

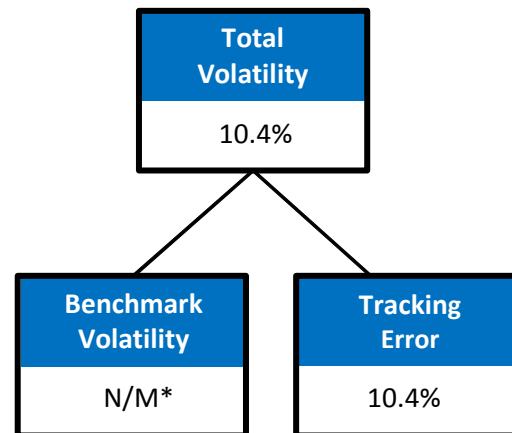
- Since the adoption of the 5-year Strategic Plan in 2011 for Infrastructure, the Program has outperformed the benchmark.
- The Infrastructure Program has outperformed across all measured periods.
- Strong performance was driven by the program's direct investments and commingled funds.

# Program Performance Review – Infrastructure (Cont'd) 3-Year Rolling Excess Return



# Volatility Profile – Infrastructure

- Infrastructure Forecast Volatility is 10.4%
- Forecast Tracking Error is 10.4%\*
- Correlation vs. the entire PERF portfolio is 0.85

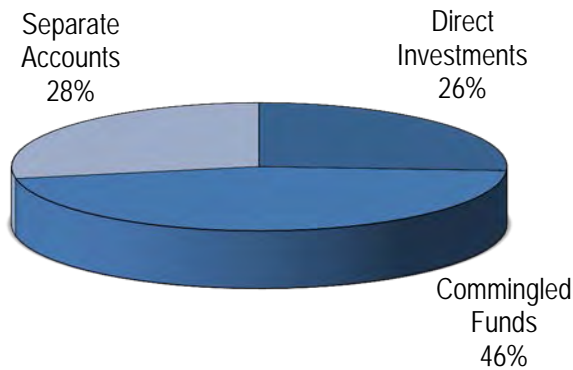


# Program Characteristics – Infrastructure

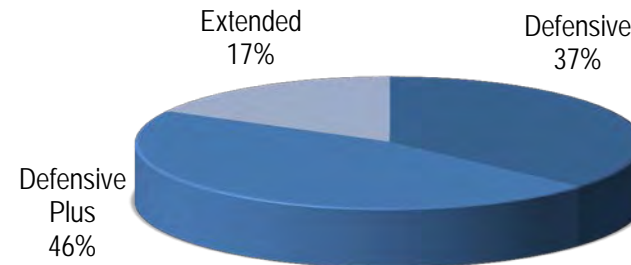
- **Total NAV:** \$2.6 billion.
  - Program NAV is 0.9% of Total Fund, versus 0 - 2% target range with a 1% interim target.
  - The NAV grew 18% from \$2.2 billion to \$2.6 billion.
- **Unfunded:** \$2.0 billion, CalPERS discretion \$1.3 billion.
- **Structure:**
  - 8 External Managers.
  - 8 Commingled Funds, 3 Direct Investments, and 3 Separate Accounts.
    - NAV Basis: 46% in Commingled Funds, 26% in Direct Investments, 28% in Separate Accounts.
- **Geographic Exposure:**
  - 59% U.S., 40% in Developed OECD ex US Countries (primarily in the U.K. and Canada) and 1% in Less Developed Countries.
  - 13% of the Program NAV is invested in California.

# Program Characteristics – Infrastructure by NAV\*

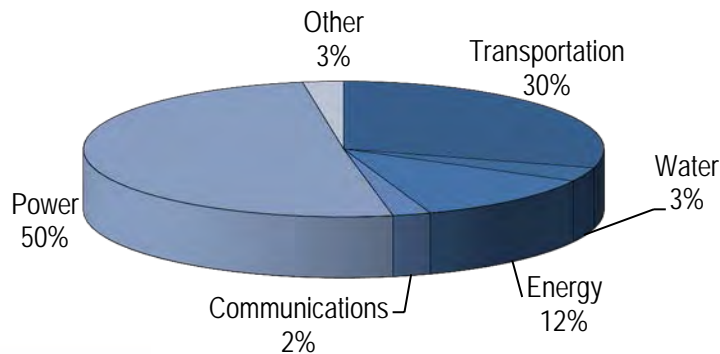
## Investment Type



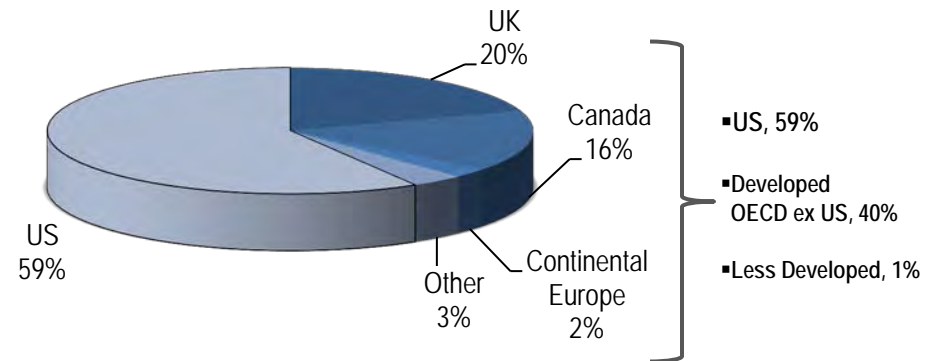
## Risk Category



## Sector



## Geography



\*Period ending March 31, 2016 with total NAV amounting to \$2.6 billion.

# Portfolio Positioning – Infrastructure (a)

Program Target Policy as % of Total Fund	Interim Program Range/Limit as a % of Total Fund		Actual Investment as % of Total Fund
1.0%	0.0% - 2.0%		0.9%
Investment Parameters	Long Term Strategic Range/Limit		As % of Program NAV <sup>(b)</sup>
<b>Risk</b>			
Defensive	25% - 75%		37%
Defensive Plus	25% - 65%		46%
Extended	0% - 10%		17%
<b>Region</b>			
US	40% - 80%		59%
Dev OECD ex US	20% - 50%		40%
Less Developed	0% - 10%		1%
<b>Concentration</b>			
Equity Investments <sup>(c)</sup>	70% - 100%		100%
Debt Investments	0% - 30%		0%
Public Equity Securities	0% - 10%		0%
Other Investment Parameters	Long Term Strategic Range/Limit as % of Total Program	Actual as % of Total Fund Program	Compliance
<b>Leverage</b>			
Overall Portfolio LTV	65%	47%	P

(a) Per the Infrastructure Policy effective as of August 15, 2011, as stated in Section V.F.2, the requirement to meet the risk and region investment parameters will be applicable for the Infrastructure Program in dollar terms and only when the NAV exceeds \$3 billion. (b) Data presented reflects the investment partnerships financial statements for the period ending of March 31, 2016 (c) One commingled fund acquired prior to program inception exceeds the concentration limits for new investments.



## II. Investment Review

- a. Real Estate
- b. Infrastructure
- c. **Forestland**

## Past Year Environment Review – Forestland

- U.S. Housing starts continued their slow recovery, ending the year at ~1.2 million, but remain below the long-term average.
- Forestland U.S. investment values reflected continuing recovery in log prices and housing starts.
- Forestland transaction activity continued at a moderate level with high quality assets achieving attractive valuations.

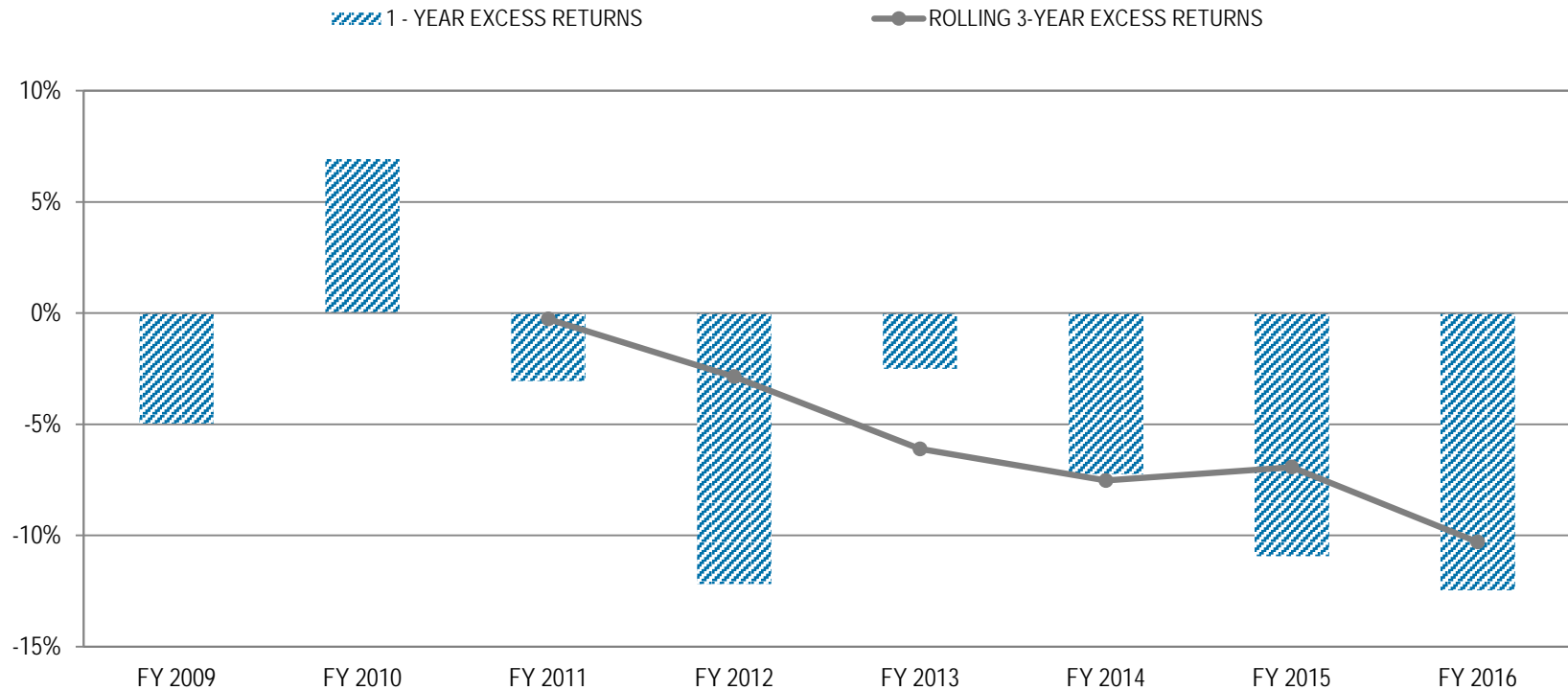
# Program Performance Review – Forestland

As of June 30, 2016	1-Year Net Return	3-Year Net Return	5-Year Net Return
Forestland	-9.6%	-2.6%	-2.6%
Policy Index	2.9%	7.7%	6.6%
Excess Return	-12.5%	-10.3%	-9.2%

- The Program has underperformed relative to its benchmark for all measurement periods.
- The Domestic Portfolio (NAV \$1.5 billion) underperformed the benchmark and the International Portfolio (NAV \$0.5 billion) outperformed the benchmark for the 1-year period.

# Program Performance Review – Forestland (Cont'd)

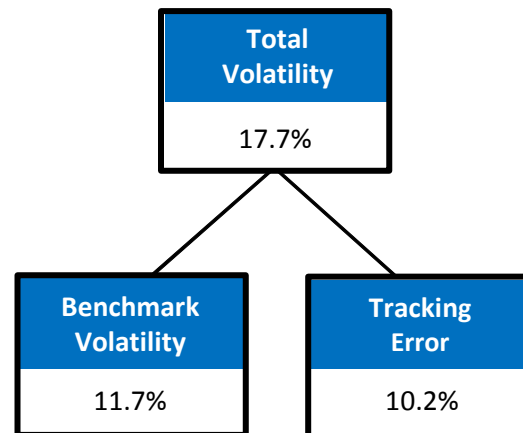
## 3-Year Rolling Excess Return



Note: Forestland has an inception date of January 2008

# Volatility Profile – Forestland

- Forestland Forecast Volatility is 17.7%
- Forecast Tracking Error is 10.2%
- Correlation vs. the entire PERF portfolio is 0.63

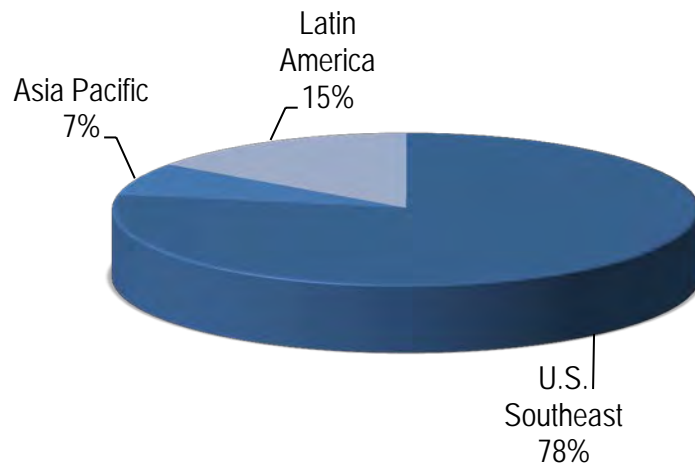


# Program Characteristics – Forestland

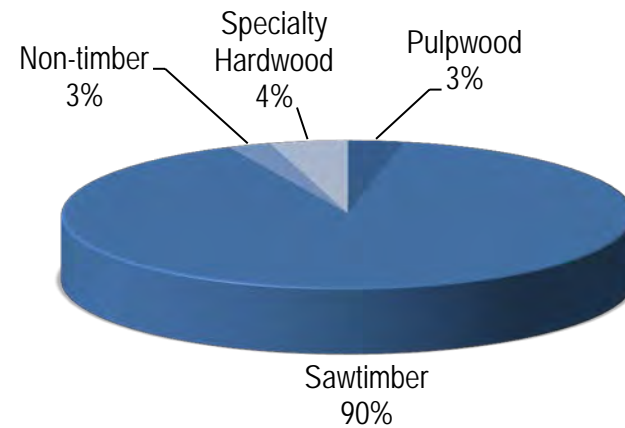
- **Total NAV:** \$2.0 billion.
  - Program NAV is 0.7% versus 1% target allocation of Total Fund.
  - The NAV decreased 10% from \$2.2 billion to \$2.0 billion.
- **Unfunded:** \$0.
- **Structure:**
  - 2 External Managers.
  - 1 domestic separate account: Lincoln Timber, L.P. includes two distinct portfolios in the U.S. south.
    - NAV Basis is 78%.
  - 1 international separate account: Sylvanus LLC, includes properties in Brazil, Guatemala, and Australia.
    - NAV Basis is 22%.
- **Geographic Exposure:**
  - The portfolio maintains overweights to the US South and International geographies relative to the NCREIF Timberland Index (which includes only U.S. regions).

# Portfolio Characteristics – Forestland by NAV<sup>(a)</sup>

## Geography



## Primary Product



(a) Period ending March 31, 2016 with total NAV amounting to \$2.0 billion..

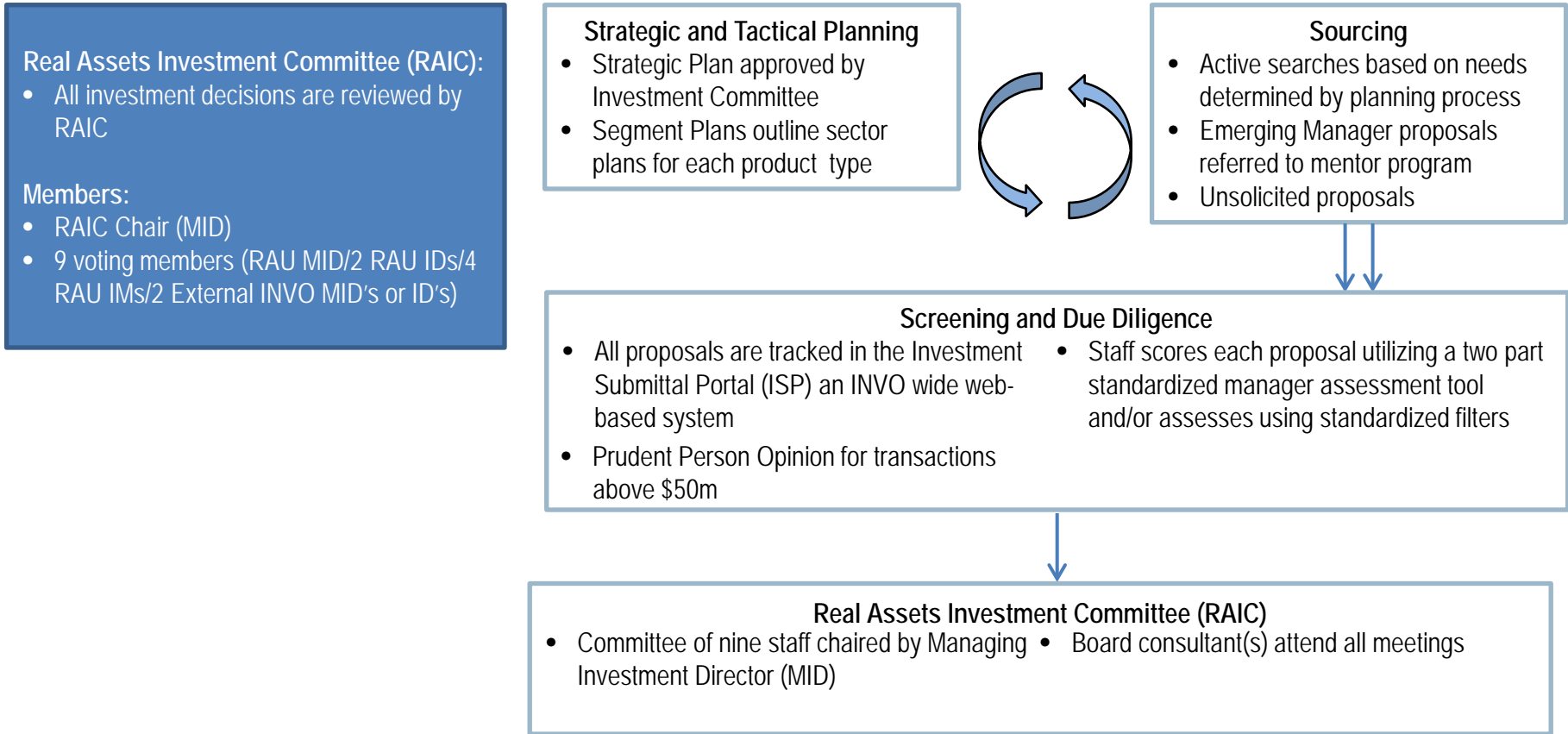
# Portfolio Positioning – Forestland

- Forestland is integrating with Real Assets sector planning processes for portfolio rebalancing and investment.
- LTV ratio is limited to 40%, current LTV is 22.7%.
- There are no specific targets for region and type. However, there is a general requirement stated for diversification.



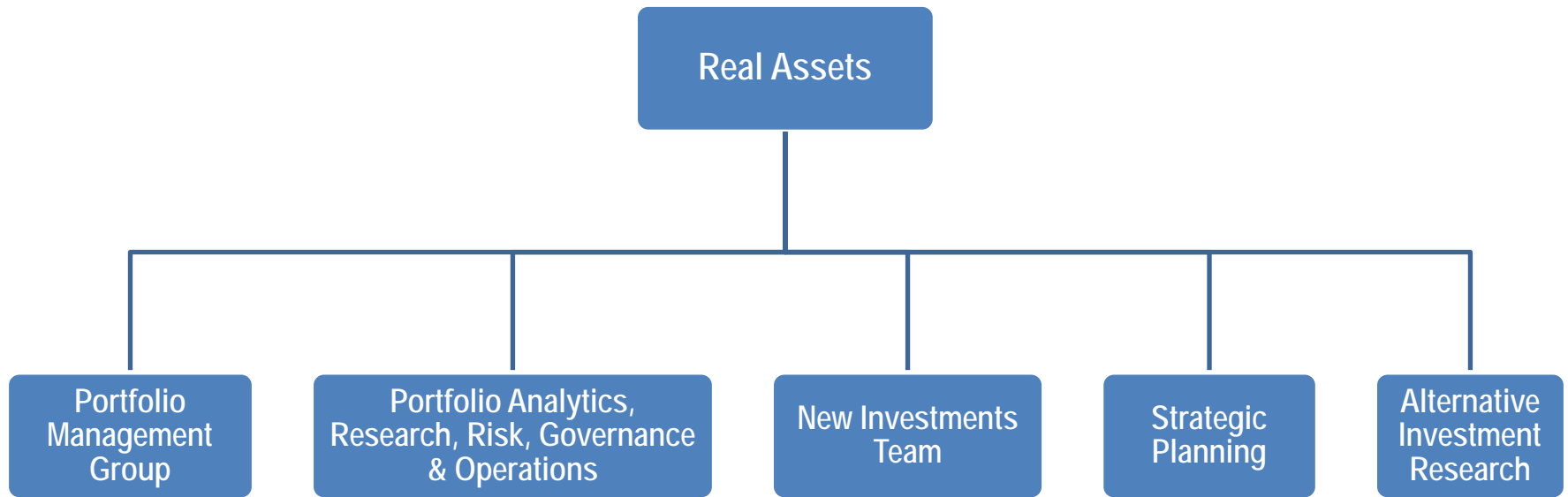
## III. Business Review

# Real Assets Investment Decision Process



• In fiscal year 2015-2016, RAIC made investment decisions representing \$13.2 billion of investment, disposition, and debt decisions.

# Functional Organizational Chart



# Staffing Overview

## TOTAL PROGRAM

- 56 total positions within Real Assets; two fewer than the number of positions in 2014-2015

## STAFFING UPDATES

- Appointed 1 Investment Director
- Appointed 1 Investment Manager
- Appointed 3 Investment Officers
- Appointed 1 Staff Services Manager
- Appointed 1 Office Technician (Typing)
- Transferred 2 Investment Officer positions to other INVO programs

## CURRENT VACANCIES

- 4 Investment Officers
- 1 Associate Governmental Program Analyst
- 1 Office Technician (Typing)

From July 1, 2015 through June 30, 2016

# Strategic Plans

	Policy Requirement	Investment Committee Approval
Real Assets	Strategic Plan updated at a minimum every five years, setting forth CalPERS' long-term objectives for investment and management of the Program.	April 2016

- Role of asset class and benchmark are inputs into strategic planning process provided by Asset Allocation framework.
- Integrated Real Assets Strategic Plan harmonizing underlying programs:
  - Real Estate
  - Infrastructure
  - Forestland
- Established Real Assets parameters; Harmonizing nomenclature; Reducing risk, costs, and complexity; Increasing transparency
- Consistent with Vision 2020 of reducing complexity

# Strategic Projects Update

Initiatives	Activities
Strategic Plan Update	<ul style="list-style-type: none"> <li>Investment Committee approved Real Assets 2016 Strategic Plan in April 2016.</li> <li>Initiated implementation of strategic plan, including segment/sector planning.</li> </ul>
Real Assets Investment Policy Revision	<ul style="list-style-type: none"> <li>Investment Committee approved August 2016.</li> <li>Investment Policy Procedures Guidelines under review.</li> <li>Desktop procedure manual in process.</li> </ul>
Portfolio Repositioning	<ul style="list-style-type: none"> <li>Secondary sale of commingled funds.</li> <li>Real Estate and Infrastructure portfolio growth through investments in core assets.</li> <li>Forestland restructuring to improve alignment.</li> </ul>

# ESG Integration Highlights within Real Assets

## Existing

- **Manager Expectations Project**
  - Continued to refine Real Assets Sustainable Investment Practice Draft Guidelines during pilot period.
  - Incorporated the Real Assets Sustainable Investment Practice Draft Guidelines to RAU Desktop Procedures Manual, in line with the Total Fund's Environmental, Social, and Governance (ESG) 5-year Strategic Plan.
- **Global Real Estate Sustainability Benchmark (GRESB) - Infrastructure**
  - Majority of CalPERS Infrastructure managers participated in Year 1 of the annual GRESB Infrastructure survey providing comprehensive ESG insights into infrastructure assets.
- **ULI Greenprint Center for Building Performance**
  - CalPERS Core Real Estate managers are members of Greenprint and report energy consumption for underlying assets.
- **Responsible Contractor Program (RCP) Policy**
  - CalPERS Real Estate Separate Account operating agreements continue to include provisions requiring compliance with the Responsible Contractor Program Policy.

# ESG Integration Highlights within Real Assets

## Enhancements

- **Strategic Direction clarified for Real Assets and the Total Fund**
  - RAU's Strategic Plan, approved in April 2016, outlined ESG integration goals over the next 5 years. These goals are aligned with the Total Fund's ESG 5-year Strategic plan and center around Manager Expectations, ESG integration throughout the investment process and research.
- **Manager Expectations**
  - **Global Real Estate Sustainability Benchmark (GRESB) – Real Estate**  
Real Estate Managers to start reporting into GRESB in 2017 for a single sustainable performance benchmark platform for both Infrastructure and Real Estate.
- **Research**
  - **Energy Optimization (EO) Initiative**  
Launched to research an economically and environmentally accretive plan by the end of this fiscal year.



# Emerging & Transition Manager Programs in Real Estate

- **FY 2015/16 Significant Events**
  - As part of the Annual Investment Plan FY 2015/16 , the Emerging Manager Program received an allocation of \$150M and invested \$100M. Note, these managers have multi-year commitments.
- **Current Status/Update**
  - Fourth year completed of Innovative Mentoring Manager Model.
  - Continued favorable feedback to our programmatic joint venture structure.
  - Mentoring managers are evaluating the transition readiness of existing emerging managers and maintain outreach efforts to the broader emerging manager community.
  - Through its first 4 years, the programs have been performing above expectations.

# Program Expenses – Real Estate

	FY 2015-16			FY 2014-15		
	AUM (\$billions)	Fees Paid (\$millions)	Fees Paid <sup>a</sup> (BPS)	AUM (\$billions)	Fees Paid (\$millions)	Fees Paid <sup>a</sup> (BPS)
Internal Management	\$0	\$ 8.5	3	\$0	\$ 7.3	3
External Management <sup>b</sup>	\$ 27,296	\$ 399.9	147	\$ 27,451	\$ 609.0	222
Asset Management Fees Paid	N/A	\$ 155.8	57	N/A	\$ 177.1	65
Profit Sharing	N/A	\$ 81.1	30	N/A	\$ 8.4	3
Profit Sharing Accrued	N/A	\$ 163.0	60	N/A	\$ 423.5	154
Consultants Expense	N/A	\$ 2.1	1	N/A	\$ 4.5	2
Technology & Operating Expense	N/A	\$ 12.2	4	N/A	\$ 8.8	3
<b>Total Program</b>	<b>\$ 27,296</b>	<b>\$ 422.7</b>	<b>155</b>	<b>\$ 27,451</b>	<b>\$ 629.6</b>	<b>229</b>

# Program Expenses – Real Estate

- Strategic (*domestic*) Core actual and forecasted asset management fees are below the ODCE benchmark.
- Implementation of new fee alignment structure with strategic managers facilitates better alignment and drives cost efficiency and predictability.
- Fees, in basis points, are expected to further decline as legacy portfolios continue to liquidate.

# Program Expenses – Infrastructure & Forestland

	FY 2015-16			FY 2014-15		
	AUM (\$billions)	Fees Paid (\$millions)	Fees Paid <sup>a</sup> (BPS)	AUM (\$billions)	Fees Paid (\$millions)	Fees Paid <sup>a</sup> (BPS)
Internal Management	\$0	\$ 1.4	3	\$0	\$ 2.5	6
External Management <sup>b</sup>	\$ 4,541	\$ 58.0	128	\$ 4,385	\$ 63.0	144
Asset Management Fees Paid	N/A	\$ 22.8	50	N/A	\$ 22.2	51
Profit Sharing	N/A	\$ 1.8	4	N/A	\$ 11.8	27
Profit Sharing Accrued	N/A	\$ 33.5	74	N/A	\$ 28.9	66
Consultants Expense	N/A	\$ .2	0	N/A	\$ .5	1
Technology & Operating Expense	N/A	\$ 1.0	2	N/A	\$ 1.0	2
<b>Total Program</b>	<b>\$ 4,541</b>	<b>\$ 60.6</b>	<b>134</b>	<b>\$ 4,385</b>	<b>\$ 67.0</b>	<b>153</b>

# Program Expenses – Infrastructure & Forestland

- Separate account strategic partnerships negotiated for the Infrastructure component carry better economic terms and governance than commingled funds.
- Separate accounts are anticipated to be the primary mode of new investment.
- Fees as a percentage of NAV are expected to decrease as the portfolio grows through new separate account vehicles.