Real Assets
Annual Program Review

Tom McDonagh
Acting Senior Investment Officer

November 17, 2014

Executive Summary

- **Real Assets' 13.4% return outperformed the policy benchmark by 160 bps in FY 2013/14**

  - Real Estate & Infrastructure outperformed their respective benchmarks for one and three year periods, while Forestland underperformed its benchmark for the one and three year periods

- **Continue to increase number of income producing assets in the long-term hold portfolio and decrease leverage to reduce risk**

- **Further develop process to meet the ODCE index performance**

- **Continue to invest in developing staff into global asset managers**

Review Outline

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7	Risk Reward
8	Costs Matter
9	Multi-faceted Risk
10	Resources/Process

CalPERS Investment Office Real Assets

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

As defined through the Asset Liability Management (ALM) Process:

Real Estate

The role of Real Estate is to have ownership risk in real property with stable cash yield and act as an economic diversifier to equity risk. Capital appreciation is an added, but lower source of return. Real Estate is also a partial inflation hedge.

Infrastructure

The role of Infrastructure is to have ownership risk in essential infrastructure assets and provide predictable returns with moderate long-term inflation protection. Infrastructure also acts as an economic diversifier to equity risk.

Forestland

The role of Forestland is to have ownership risk in forestland properties, enhance long-term inflation protection and provide moderate cash yield.

Program Investment Philosophy

Real Estate

– A majority of the program (75%) to be invested in high quality well located assets held long term.
– Separate accounts with market leading operators to lower fee loads.
– Maintain control while aligning interests.
– Focus on operations and efficient management.

Infrastructure & Forestland

– We will succeed in meeting the Programs' roles and performance objectives through:
  - Disciplined Asset Selection
  - High Standard of Due Diligence
  - Effective Partnering
  - Appropriate Governance
  - Pro-active Management
  - Cost-effective Delivery

Policy Benchmarks

Real Assets Policy Benchmark

83% Real Estate Benchmark + 8.5% Infrastructure Benchmark + 8.5% 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 + 4% lagged one quarter

Forestland Policy Benchmark

National Council of Real Estate Investment Fiduciaries (NCREIF) Timberland

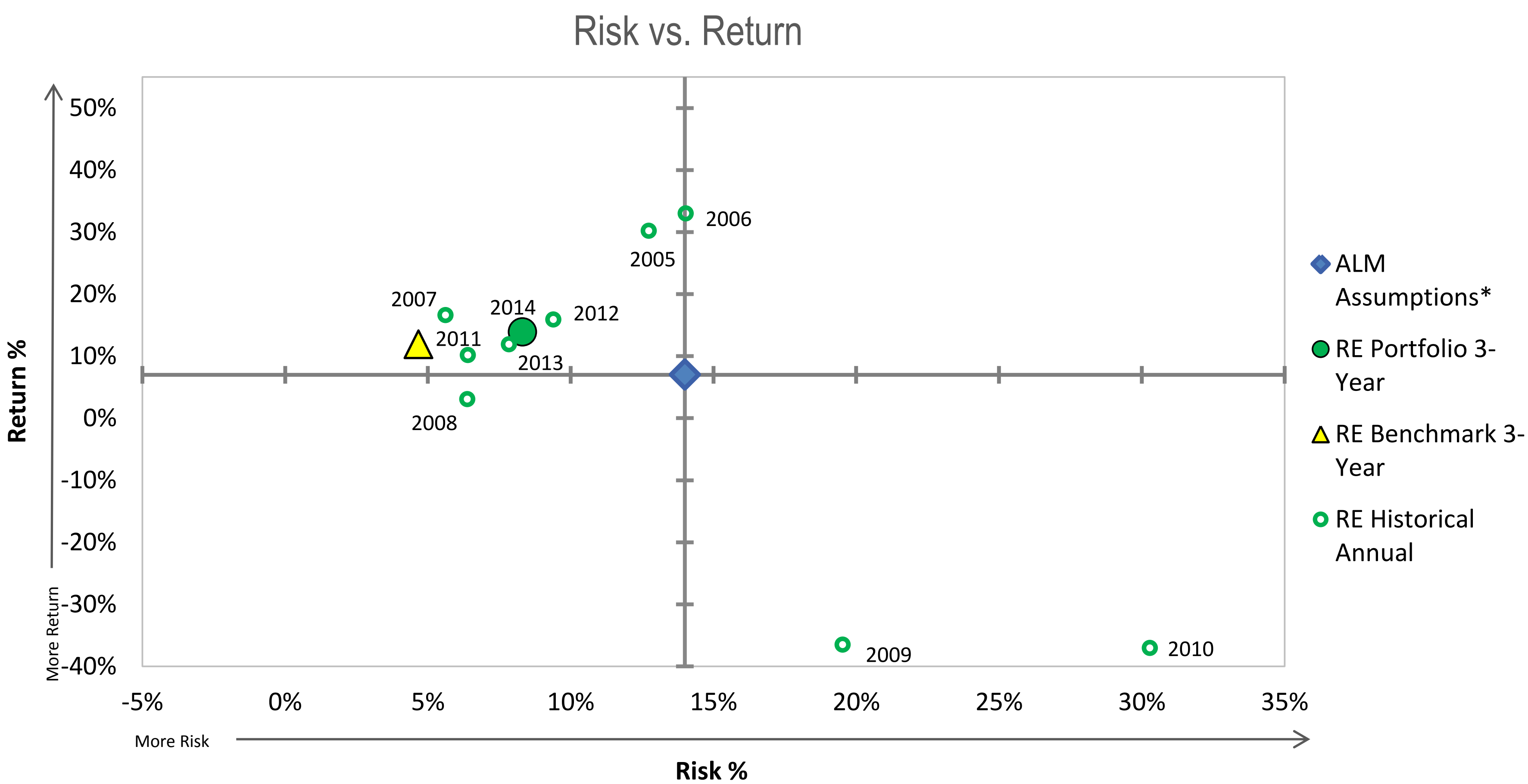
Program Characteristics – Real Assets

- Total Net Asset Value (NAV): $30.0 billion
  - Real Assets accounts for 10% of the Total Fund NAV.
- Structure:
  - 66 Commingled Funds, 63 Separate Accounts, 1 Custom Account, 2 Operating Companies and 2 Direct Investments.
- Geographic Exposure:
  - 81% U.S. and 19% International.
  - 22% of the Program NAV is invested in California.

II. Investment Review

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

ALM Assumptions Validation – Real Estate



*Capital Market Assumptions used in the 2013 ALM Workshop.
Data Sources: State Street Bank, ALM Assumptions

Past Year Environment Review – Real Estate

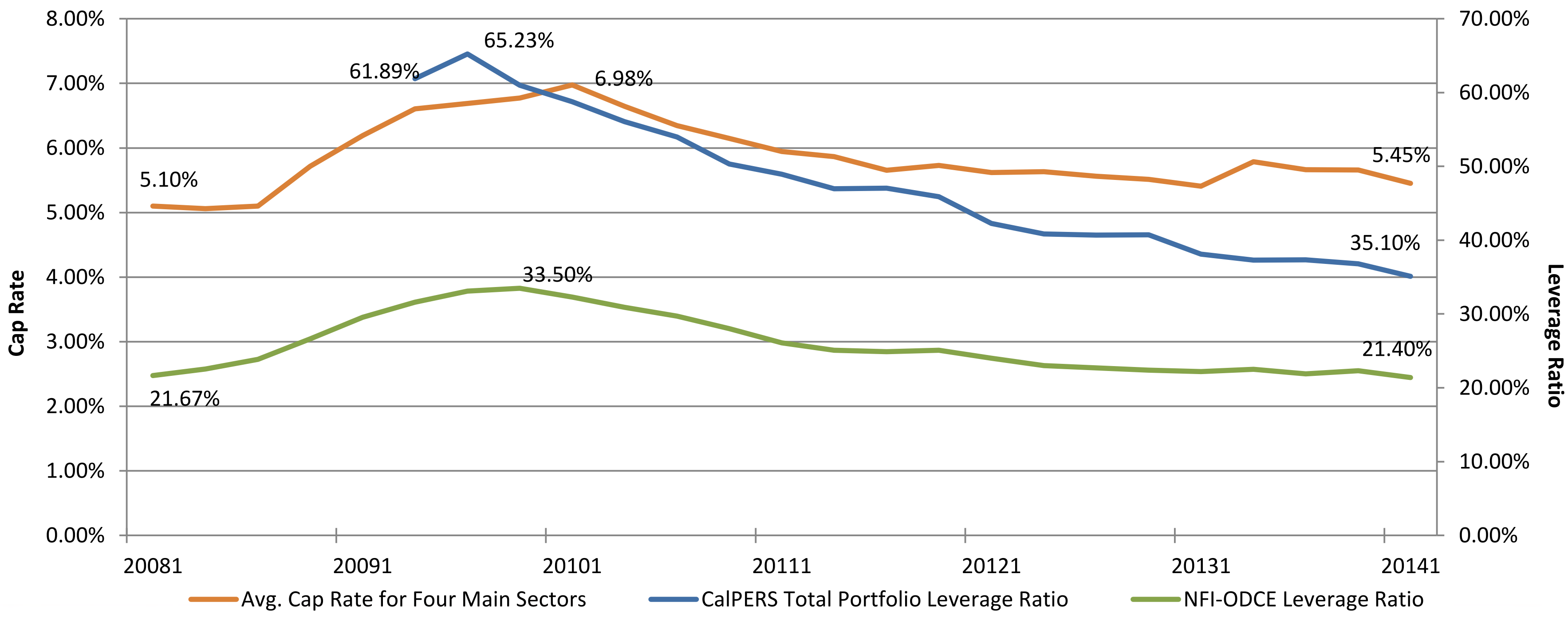
- Macro Drivers
  - Growth in GDP, growth in employment, accommodative monetary policy, low inflation, and strong international trade have helped boost returns across United States real estate sectors over the last 12 months.
- Capital Markets
  - Commercial real estate transaction volume in the United States was up 23% year over year June 2014.
  - Investor demand for core properties in primary markets has driven pricing to surpass prior peak levels achieved in 2007.
  - Cap rates across property sectors for best in class properties in CalPERS' target markets range between 3.5% to 4.5%.
- Property Fundamentals
  - Strengthening Sector fundamentals including increasing tenant demand coupled with benign supply trends have served to moderately reduce vacancies and bolster Net Operating Income (NOI) growth across property sectors in the United States.
  - NCREIF reported occupancy of 92.3% as of June 2014 represents the highest occupancy rate since the third quarter of 2007 and the fourth highest since 2000.
- Performance
  - Property markets continued to deliver robust investment returns. The NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE) delivered one-year return of 12.7%, net of fees. CalPERS' real estate portfolio delivered 14.0%, net of fees over the same period, outperforming its policy benchmark by 121 bps. Capital appreciation served as the primary driver of total return.

* NOI is net operating income before capital expense and interest expense

Past Year Environment Review – Real Estate (Cont'd)

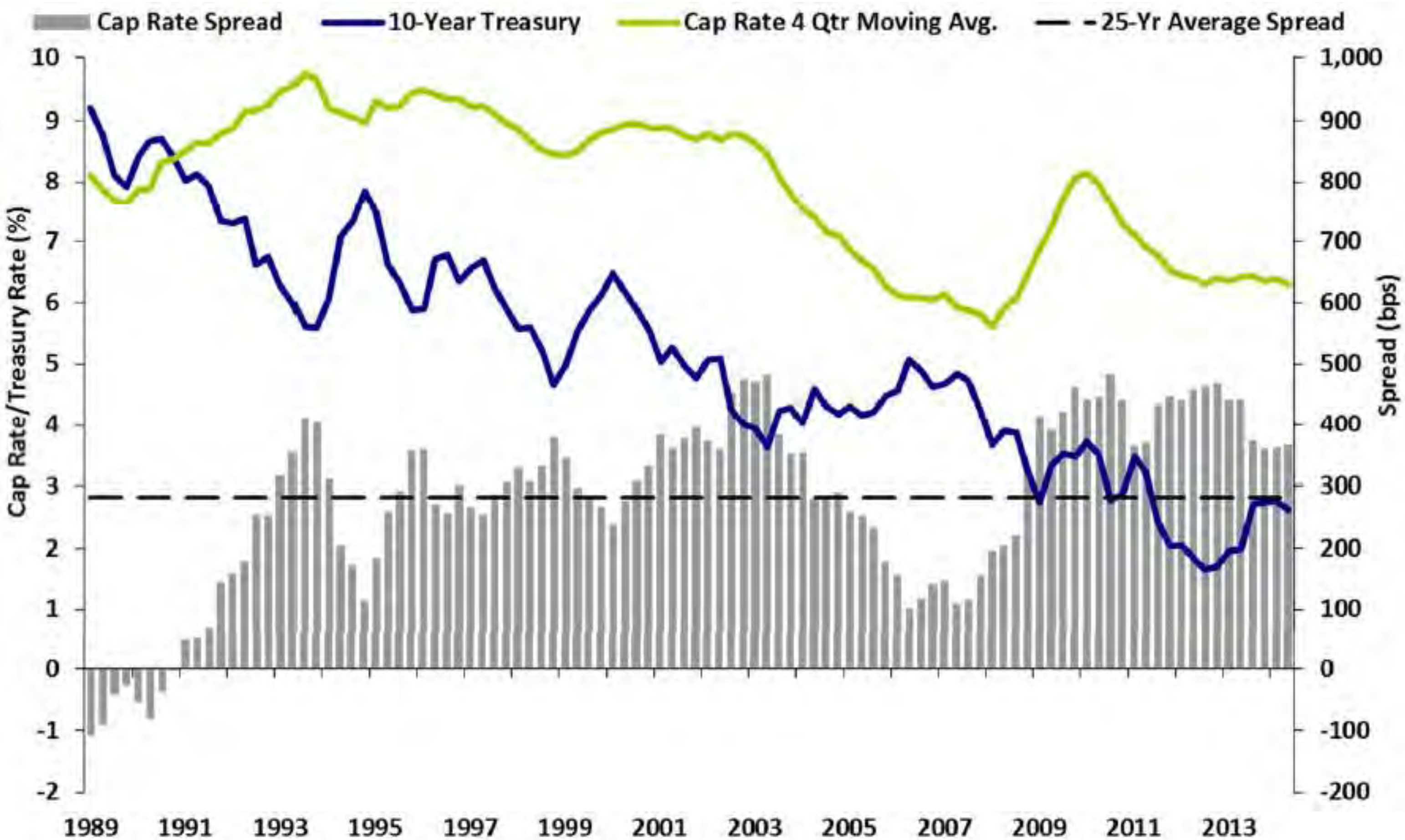
Leverage Ratios and Capitalization Rates

- Since 2009, leverage ratios in the CalPERS Total Real Estate Portfolio and NFI-ODCE funds have been reduced significantly.
- Since 2009, capitalization rates for core NCREIF properties have also declined during this period.



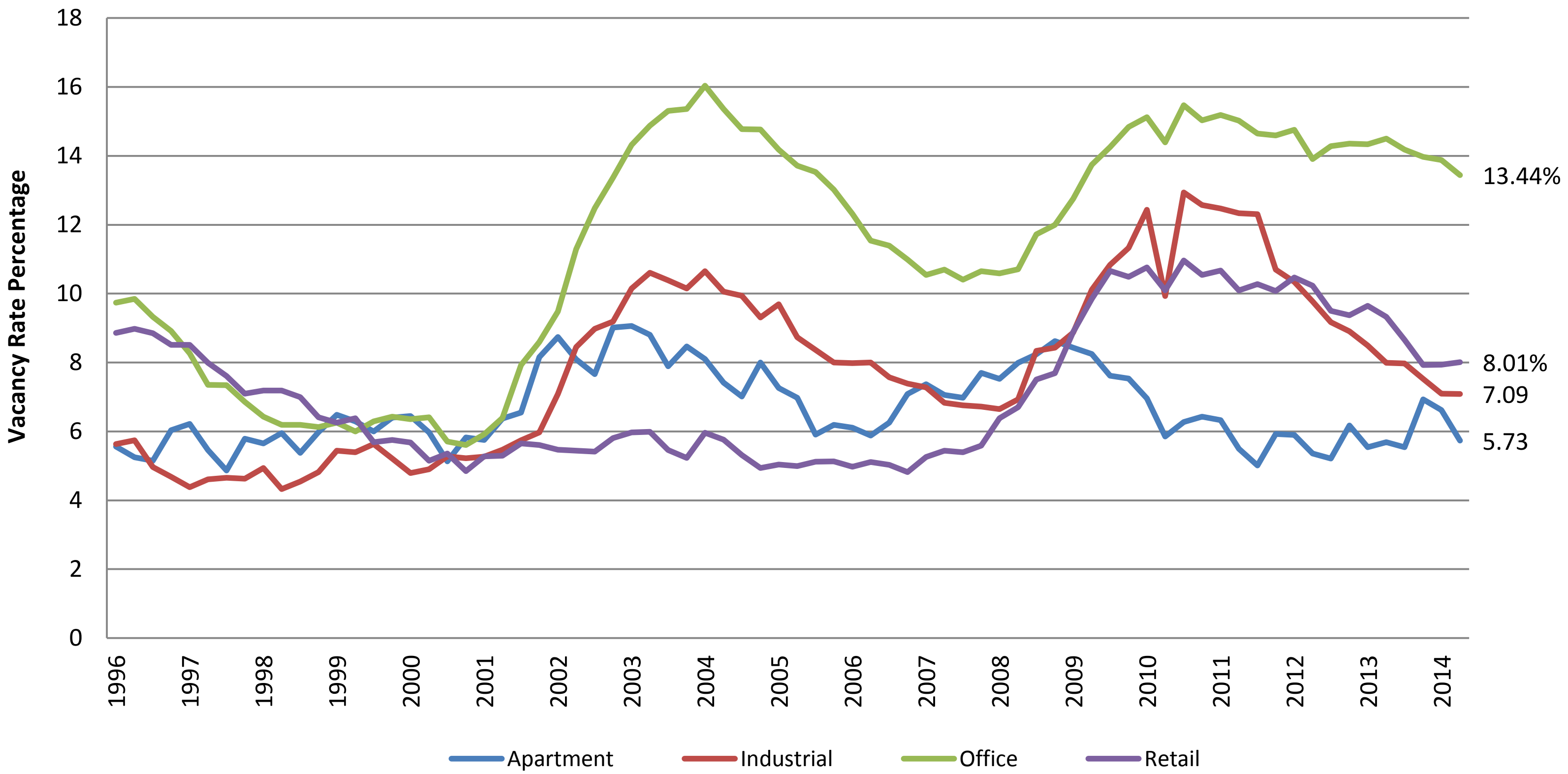
Past Year Environment Review – Real Estate (Cont'd)

Historic Spread of NOI Cap Rates* vs 10 Year Treasury



Past Year Environment Review – Real Estate (Cont'd)

Vacancy Rate by Property Type



Source: National Council of Real Estate Investment Fiduciaries (NCREIF)

Program Performance Review – Real Estate

As of June 30, 2014	1-YR Net Return	3-YR Net Return	5-YR Net Return	10-YR Net Return	20-YR Net Return
REAL ESTATE	**14.0%**	**13.9%**	**0.5%**	**3.1%**	**6.9%**
POLICY INDEX	12.7%	11.9%	9.9%	9.7%	9.9%
Excess Return	1.2%	2.0%	(9.4%)	(6.6%)	(3.0%)

Total Portfolio

- The total return (after fees) of 14.0% vs.12.7% for the benchmark, a 1.2% out performance, was driven by appreciation of 10.1%, primarily from 3/31/14 annual valuations.
- The NAV grew 15.5% from $22.4 billion to $25.9 billion, driven by $2.3 billion in net appreciation and $1.1 billion in growth from net new investments in the strategic portfolio.

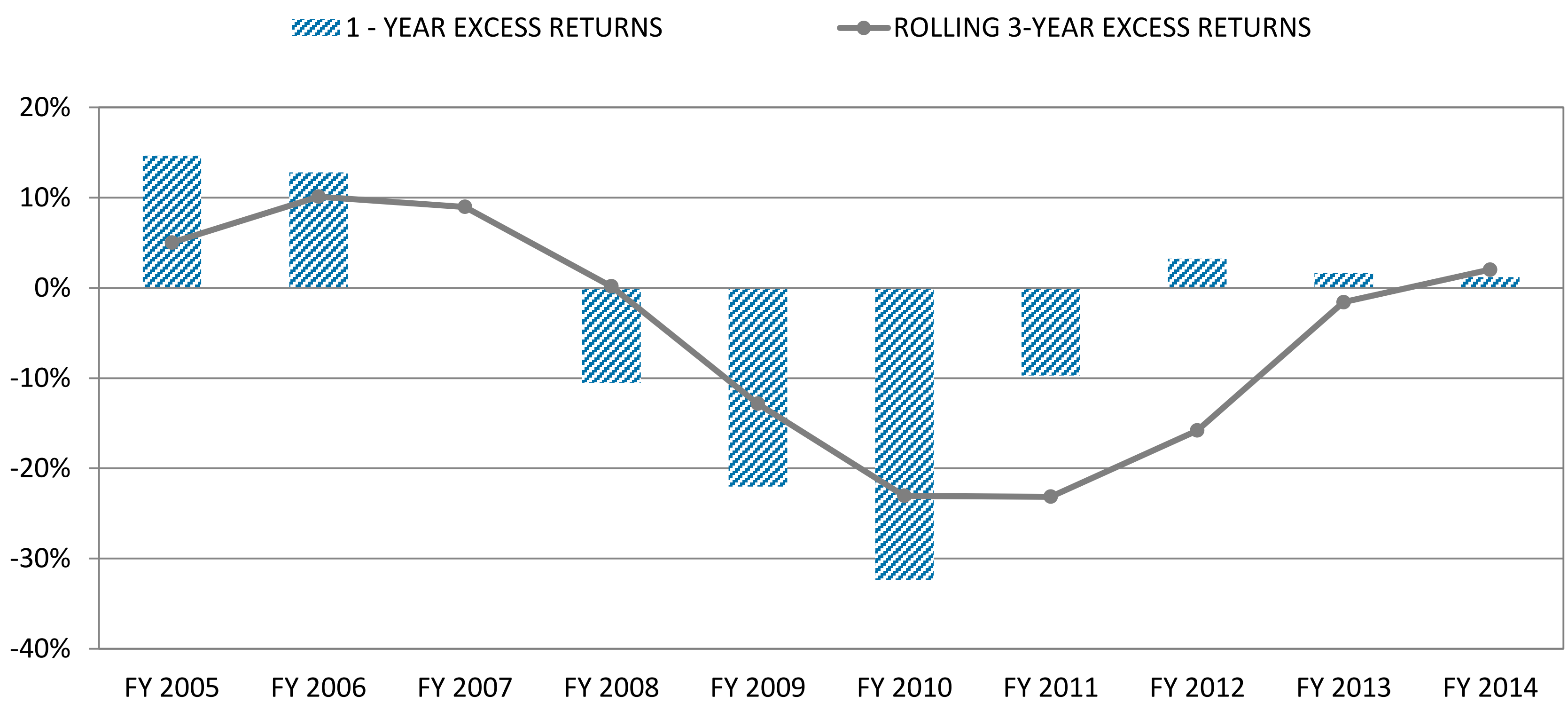
Strategic Portfolio

- Total return (after fees) of 13.7%, outperformed the benchmark by 1.0%, driven by $1.6 billion in appreciation, primarily from 3/31/14 annual valuations.
- The NAV grew 22.5% from $15.5 billion to $19.0 billion, increasing from 71% of the total real estate portfolio to 73%.

Legacy Portfolio

- Total return (after fees) of 14.7%, outperformed the benchmark by 1.9%, driven by $720 million in appreciation, $440 million coming from housing.
- The NAV at $7.0 billion decreased from 30% of the total real estate portfolio to 27%, due to net distributions of $1.0 billion.

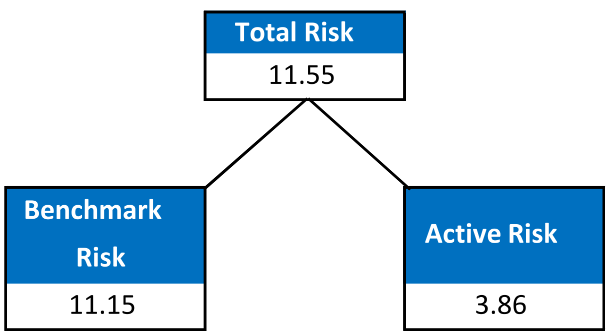
Program Performance Review – Real Estate (Cont'd)
3-Year Rolling Excess Return

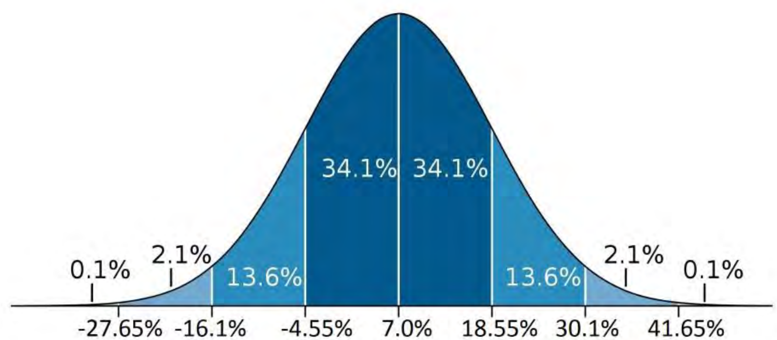


Risk Profile – Real Estate

As of June 30, 2014

- Real Estate Forecast Risk is 11.55%
- Forecast Tracking Error is 3.86%





Forecasted Distribution of Returns*

*Based on Expected Returns from 2013 ALM Workshop of 7.0% and Forecasted Risk of 11.55%

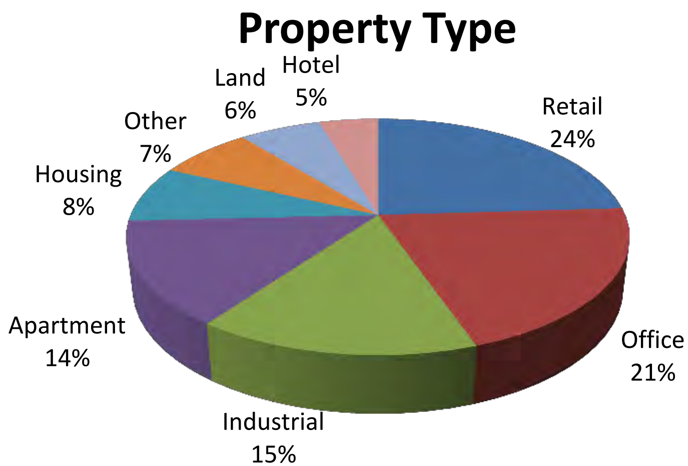
Program Characteristics – Real Estate

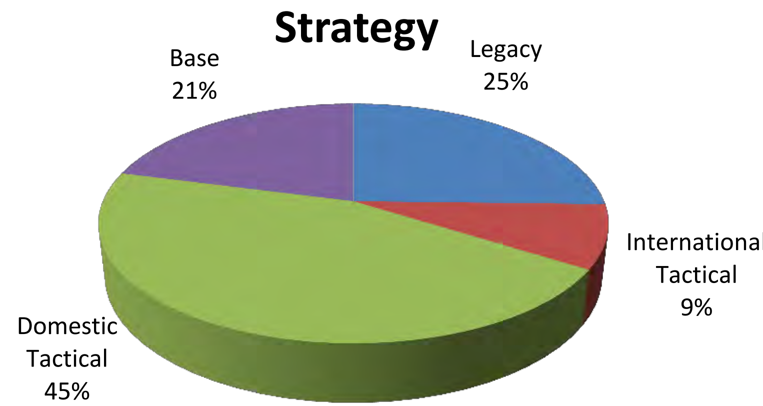
- **Total NAV:** $25.9 billion.
  - Program NAV is 8.6% of Total Fund, versus 9% interim and 10% target.

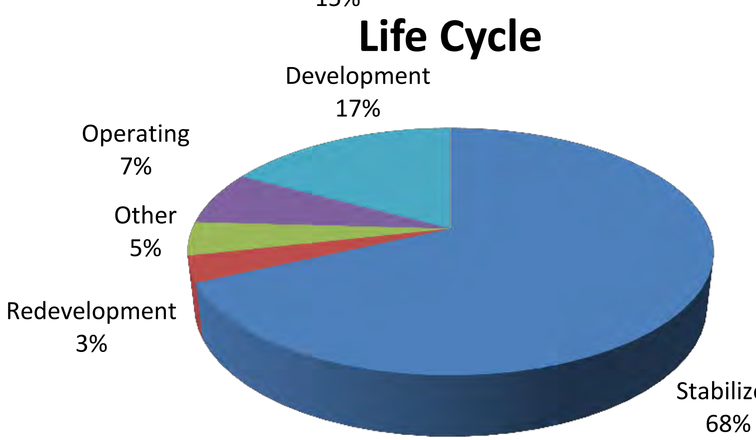
- **Structure:** 60 Commingled Funds, 61 Separate Accounts, and 2 Operating Companies.
  - 22.6% in Commingled Funds, 66.7% in Separate Accounts, 10.7% in Operating Companies.

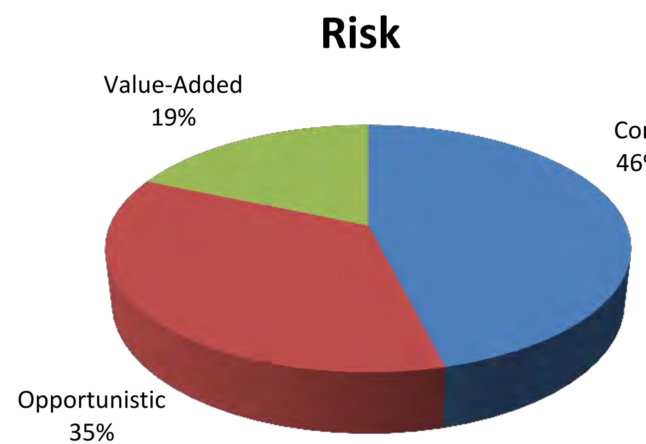
- **Geographic Exposure:**
  - 83% U.S. and 7% in other Developed Countries, 10% in Emerging Countries.
  - 25% of the Program NAV is invested in California.

Program Characteristics – Real Estate by NAV[(a)]









(a) Period ending March 31, 2014 with total property level NAV amounting to $25.7 billion

Portfolio Positioning – Real Estate

Program Target per Policy as % of Total Fund	Long-Term Strategic Range/Limit per Policy as % of Total Fund	Program Target based on Total Fund Value	Actual Investment as % of Total Fund	Actual Investment (NAV in Millions)
9.0%	7 - 13%	$25,941	9.0%	$25,930

	Interim Limits 6/30/15			Interim Limits 7/1/15 - 6/30/17		Long-Term Limits 7/1/17 forward	
Investment Parameters	**NAV%**	**Range/Limit**	**Compliance**	**Range/Limit**	**Compliance**	**Range/Limit**	**Compliance**
Strategy							
Strategic	74.6%	n/a	n/a	n/a	n/a	n/a	n/a
Base	28.1%	0 - 100%	✓	25 - 100%	✓	60 - 100%	✗
Domestic Tactical	60.4%	0 - 100%	✓	0 - 60%	✗	0 - 30%	✗
International Tactical	11.5%	0 - 30%	✓	0 - 25%	✓	0 - 15%	✓
Legacy	25.4%	n/a	n/a	n/a	n/a	n/a	n/a
Risk Classification							
Core	46.1%	20 - 100%	✓	50 - 100%	✗	75 - 100%	✗
Value Add	18.5%	0 - 50%	✓	0 - 40%	✓	0 - 25%	✓
Opportunistic	35.4%	0 - 60%	✓	0 - 40%	✓	0 - 25%	✗
REITS	0.0%	0 - 10%	✓	0 - 7.5%	✓	0 - 5%	✓
Property Type							
Office	20.6%	45%	✓	45%	✓	45%	✓
Industrial	15.3%	45%	✓	45%	✓	45%	✓
Retail	24.0%	45%	✓	45%	✓	45%	✓
Multifamily	14.2%	45%	✓	45%	✓	45%	✓
For Sale Residential & Land Dev.	13.4%	15%	✓	10%	✗	10%	✗
Hotels	4.6%	10%	✓	10%	✓	10%	✓
Mixed-Use	2.3%	10%	✓	10%	✓	10%	✓
Other Property Types	5.6%	15%	✓	10%	✓	10%	✓
Geography							
Developed Markets	89.6%	75 - 100%	✓	75 - 100%	✓	75 - 100%	✓
Developed - US	92.7%	60 - 100%	✓	70 - 100%	✓	85 - 100%	✓
Developed - ex US	7.3%	0 - 25%	✓	0 - 25%	✓	0 - 25%	✓
Emerging Markets	10.4%	0 - 15%	✓	0 - 15%	✓	0 - 15%	✓
Frontier Markets	0.0%	0 - 5%	✓	0 - 5%	✓	0 - 5%	✓

Forward-looking Commentary – Real Estate

Macro Drivers

– CalPERS' target markets should benefit from continued employment growth, modest growth in GDP, and low interest rates.

Capital Markets

– Capital inflow into core commercial real estate markets will likely continue given the global view of the US as a safe haven for real estate investment. Inflows from international investors to the U.S. increased 43% for the last four quarters compared to the previous four-quarter period.*

Property Fundamentals

– Fundamentals in the CalPERS target markets are likely to continue to strengthen at a measured paced based on steady growth in the economy and limited new construction in the commercial sectors.

– For commercial real estate new supply of projects is forecasted to be 90% of the historic average the next three years. For multifamily, new supply of projects is forecasted to be 130% of the historic average the next three years.**

Risks

– Current NOI cap rates, at 5.6% , are well below the historic average of 7.1%. Interest rate increases could expand cap rates although the pricing impact may be muted by NOI growth and offset by continued capital flowing into real estate and further compressing returns.

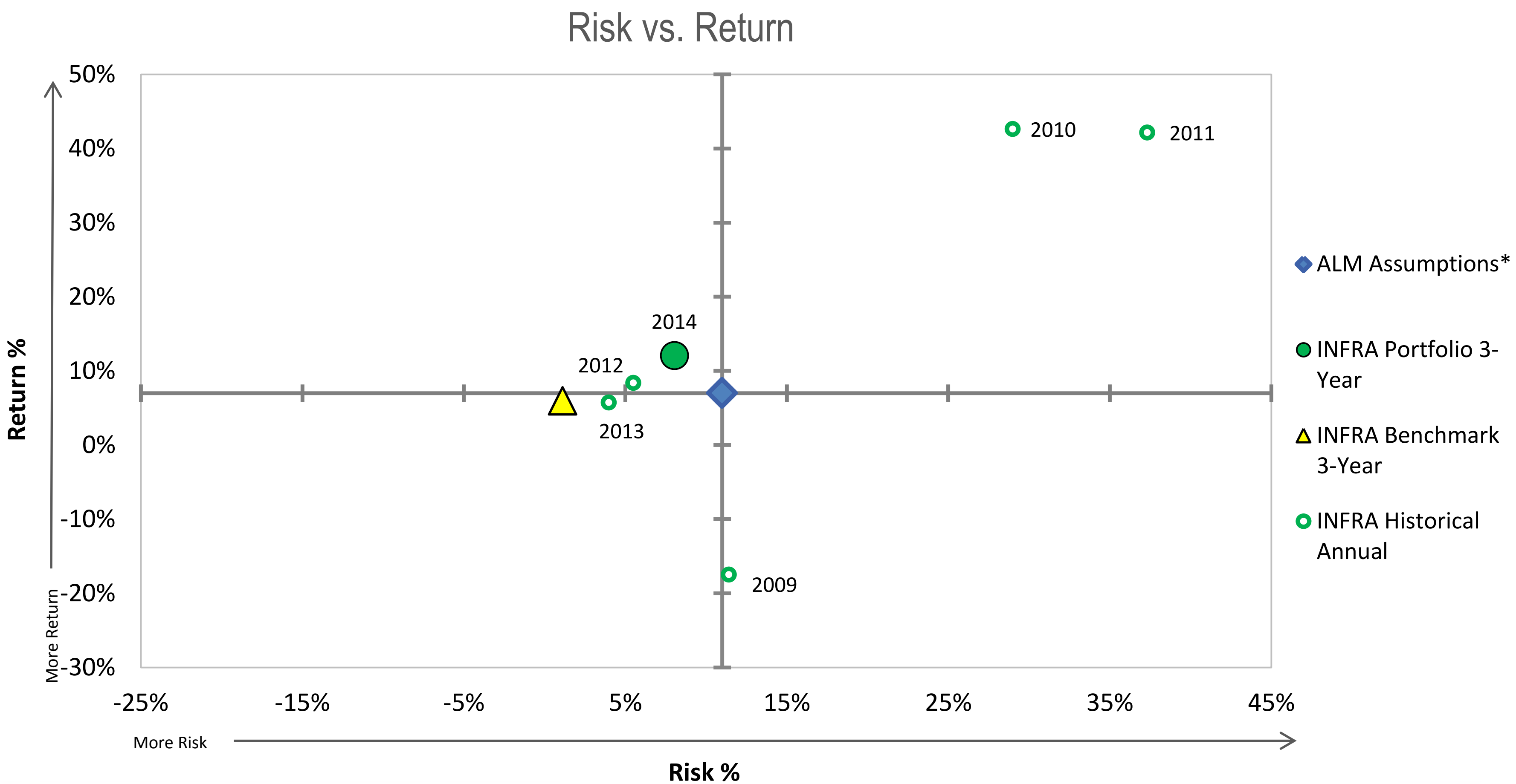
– Continued capital inflows into core real estate in CalPERS' target markets will continue to make capital deployment challenging at current return requirements.

*Real Capital Analytics **Green Street Advisors

II. Investment Review

a. Real Estate
b. Infrastructure
c. Forestland

ALM Assumptions Validation – Infrastructure



*Capital Market Assumptions used in the 2013 ALM Workshop.
Data Sources: State Street Bank, ALM Assumptions

Past Year Environment Review – Infrastructure

Environmental Factors	Market Activity
Low interest rate environment	Increasing pool of institutional capital searching for yield through infrastructure investment; high degree of competition for low-risk, cash-yielding assets
Supportive credit markets	Project finance banks demonstrating improved appetite – larger tickets, longer tenors, tighter margins
U.S. shale boom	Investments in gas & liquids pipelines, storage, terminals, rail, processing and LNG terminals, gas-fired generation
U.S. clean power transition	Renewable and gas-fired generation and new transmission projects; abundant secondary opportunities
U.S. public 'Infrastructure Gap'	Limited but increasing use of Public-private partnership (P3); focus on greenfield projects; The Transportation Infrastructure Finance and Innovation Act (TIFIA) and Private Activity Bonds (PABs) provide low-cost debt financing
Lackluster European economy	Tightening utility rate regulation; tempering P3 activity
Aussie privatizations	Policy of 'recycling' – funding greenfield from brownfield asset sales; popular target market with high-profile transactions: Port of Botany; Port of Newcastle; Queensland Motorways
Closed-end fund divestures	Increase in volume of secondary transactions as first-generation funds near end of lives

Program Performance Review – Infrastructure

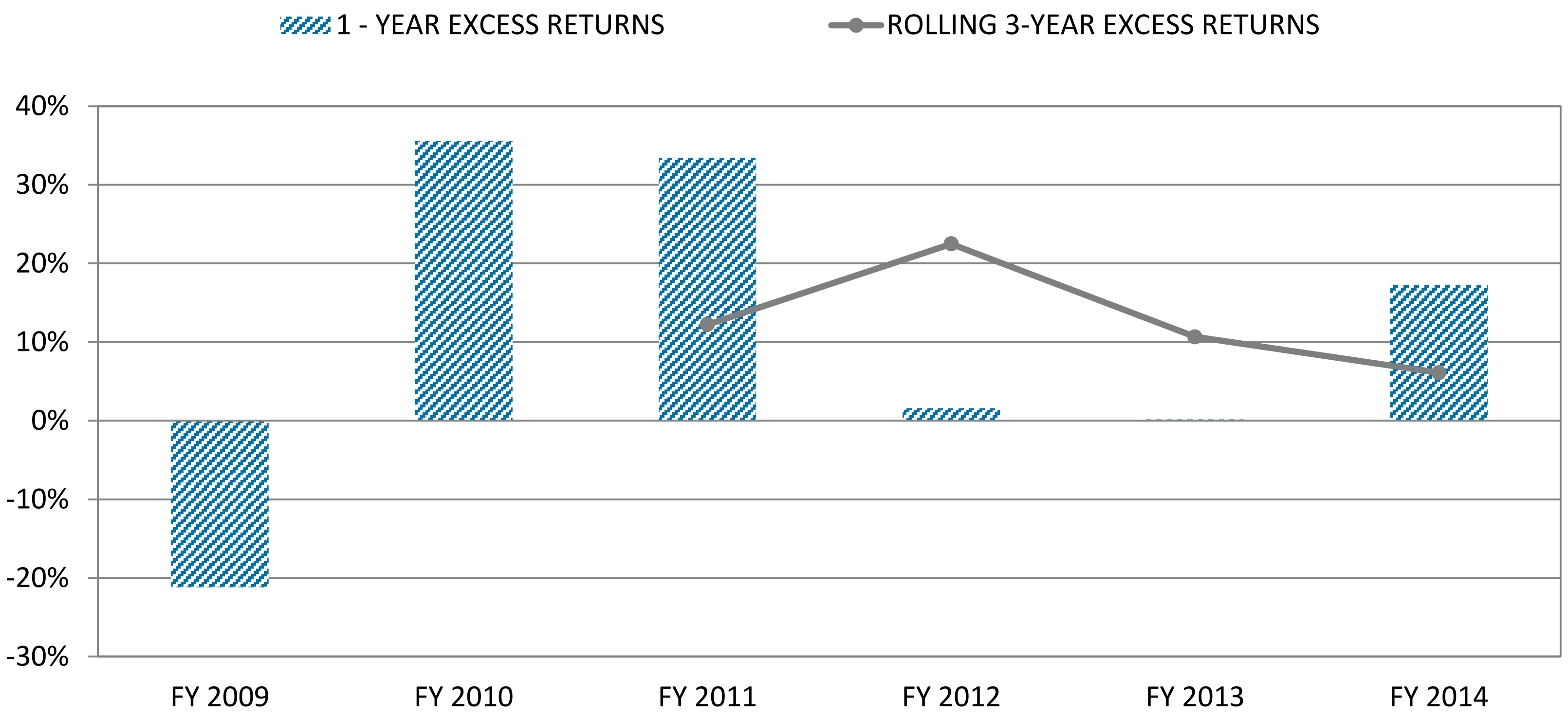
- **The Infrastructure Program has outperformed across all measured periods.**

As of June 30, 2014	1-YR Net Return	3-YR Net Return	5-YR Net Return
INFRASTRUCTURE	**22.8%**	**12.0%**	**23.3%**
POLICY INDEX	5.6%	5.9%	6.7%
Excess Return	17.2%	6.1%	16.6%

- **Since inception IRR: 17.1%**

- Strong performance has been driven by all investment modes: direct, separate account investments, and select commingled funds.
- NAV grew 55% from $1.1 billion to $1.8 billion.

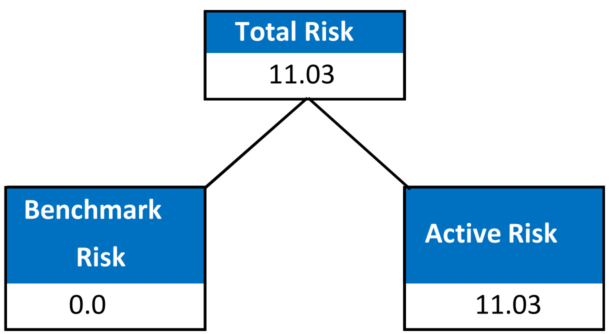
Program Performance Review – Infrastructure (Cont'd) 3-Year Rolling Excess Return

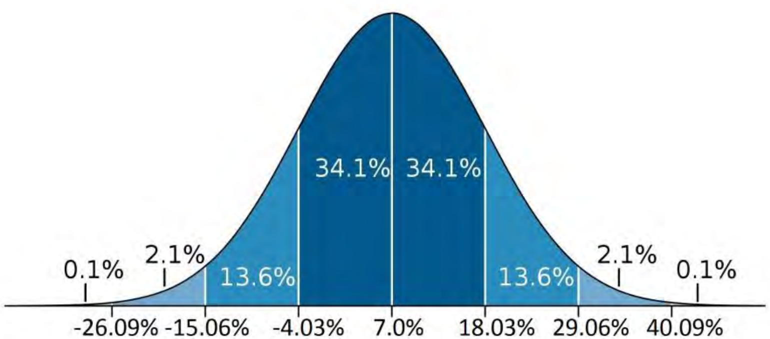


Risk Profile – Infrastructure

As of June 30, 2014

- Infrastructure Forecast Risk is 11.03%
- Forecast Tracking Error is 11.03%





Forecasted Distribution of Returns*

*Based on Expected Returns from 2013 ALM Workshop of 7.0% and Forecasted Risk of 11.03%

Program Characteristics – Infrastructure

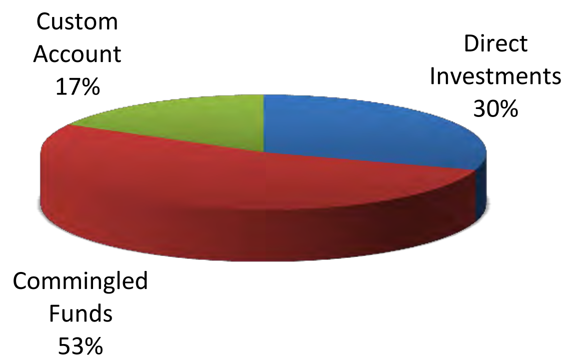
- **Total NAV:** $1.8 billion.
  - Program NAV is 0.6% of Total Fund, versus 1% interim and 2% targets.
  - Original commitments of $2.0 billion; $0.6 billion of undrawn commitments.

- **Structure:** 6 Commingled Funds, 2 Direct Investments, and 1 Custom Account.
  - 53% in Commingled Funds, 30% in Direct Investments, 17% in Custom Account.

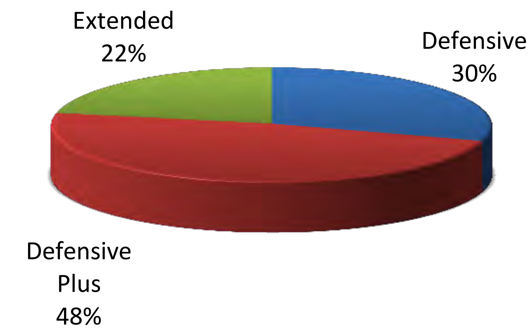
- **Geographic Exposure:**
  - 57% U.S. and 43% in Developed Countries (primarily in the U.K. and Canada).
  - 8% of the Program NAV is invested in California.

Program Characteristics – Infrastructure by NAV[(a)]

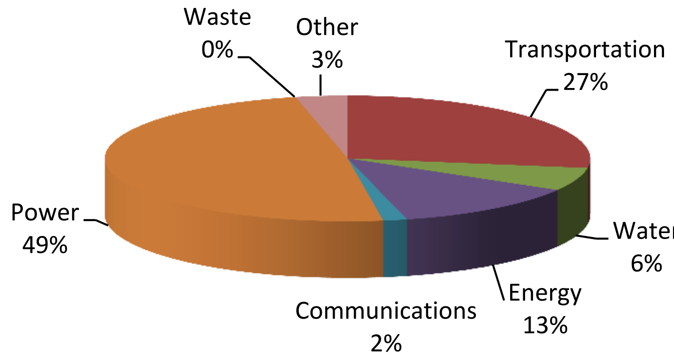
Investment Type



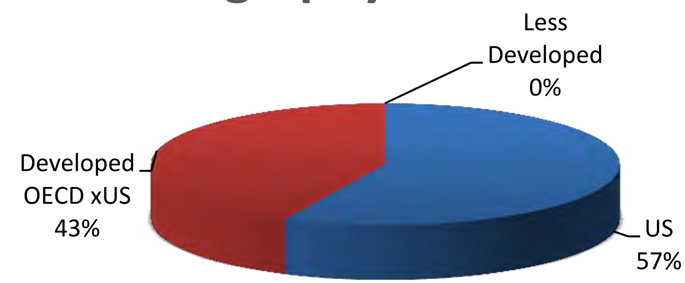
Risk Classification



Sector



Geography



(a) Period ending March 31, 2014 with total NAV amounting to $1.8 billion.

Portfolio Positioning – Infrastructure

			CalPERS Total Fund 03/31/2014 End Market Value: $288.3 Billion		
Program Target per Policy as % of Total Fund	Long-Term Strategic Range/Limit per Policy as % of Total Fund	Program Target based on EOY Total Fund ($)[(a)]	Actual Investment as % of Total Fund[(a)]	Actual Investment (NAV in $ Millions) [(a)]	Program Commitment (in $ Millions)
2.0%	1.0 - 3.0%	$5.8 Billion	0.6%	$1,757	$1,990

Investment Parameters	Long-Term Strategic Range/Limit	Long-Term Strategic Range/Limit (in $ Millions)	As % of Program NAV	Total Program (NAV in $ Millions)	Compliance
Risk			Refer to footnote (b) regarding compliance for early stage program		
Defensive	25 - 75%	$1,442 – 4,325	30%	$531	FN
Defensive Plus	25 - 65%	$1,442 - 3,749	48%	$851	FN
Extended	0 - 10%	$0 – 577	22%	$375	FN
Region					
United States	40 - 80%	$2,307 - 4,614	57%	$1,002	FN
Developed OECD ex US	20 - 50%	$1,153 - 2,883	43%	$755	FN
Less Developed	0 - 10%	$0 – 577	0%	$0	FN
Concentration					
Equity Investments[(c)]	70 -100%	$4,037 - 5,767	100%	$1,757	FN
Debt Investments	0 -30%	$0 – 1,730	0%	$0	FN
Public Equity Securities	0 -10%	$0 – 577	0%	$0	FN

Other Investment Parameters	Long-Term Strategic Range/Limit as % of Total Program	Actual as % of Total Fund Program[(a)]	Compliance
Leverage			
Overall Portfolio LTV	65%	48%	✓

(a) Data presented reflects the investment partnerships financial statements for the period ending March 31, 2014 (b) Per the new 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. (c) One commingled fund acquired prior to program inception exceeds the concentration limits for new investments.

Forward-looking Commentary – Infrastructure

- **Highly competitive market** – Private infrastructure market will continue to be highly competitive as institutions are under-invested relative to allocations.

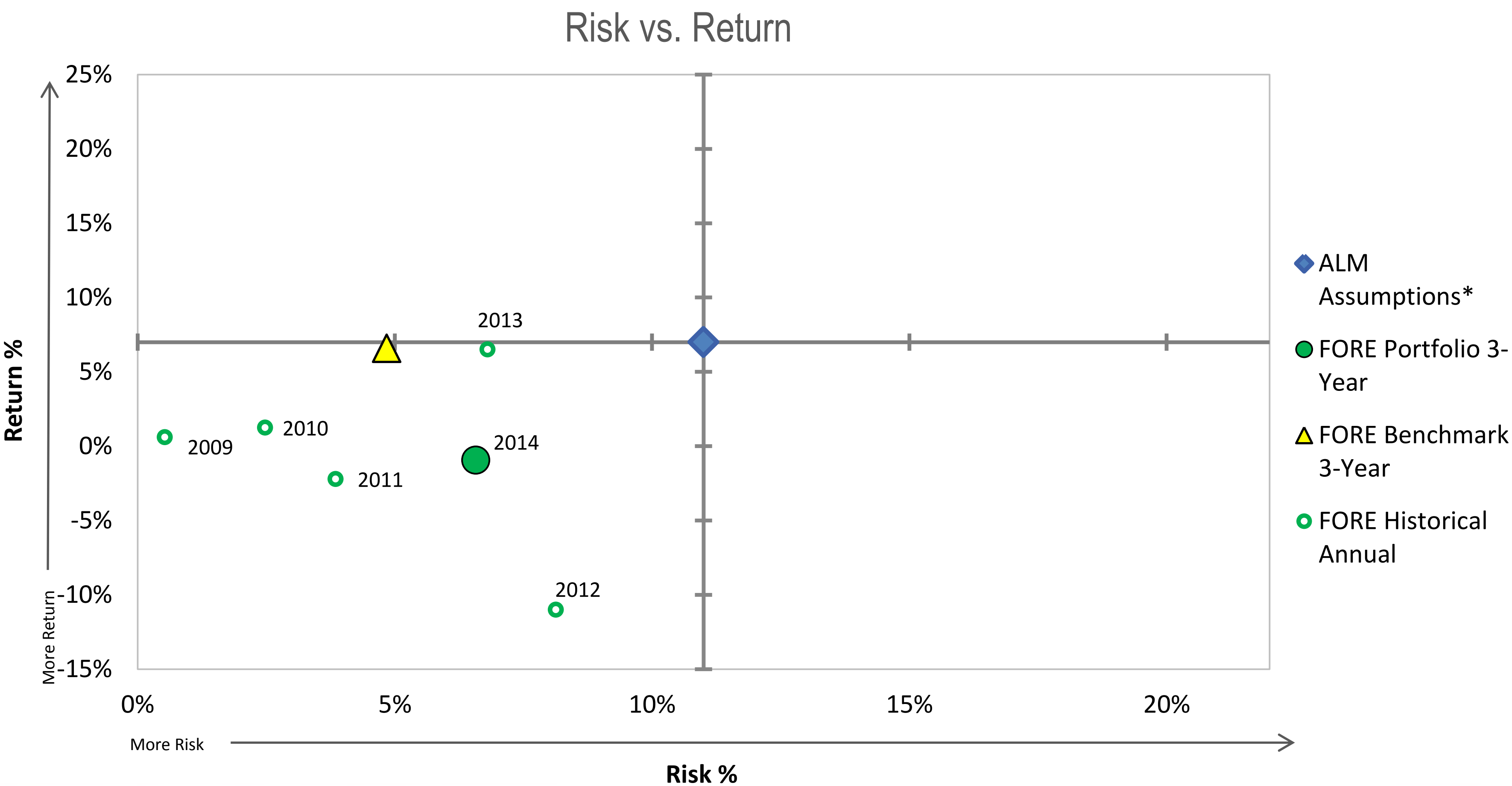
- **Focus on NAV growth** – Infrastructure Program seeks to grow NAV by over $4 billion through the next three years, while maintaining strong investment discipline.

- **Focus on competitive strengths:**
  - Expand and strengthen available investment modes → non-discretionary accounts and directs
  - Strengthen sub-sector expertise → invest with conviction based on expert knowledge
  - Exploit strengths → domestic market; available capital; multi-modal capabilities; cost competitive

II. Investment Review

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

ALM Assumptions Validation – Forestland



*Capital Market Assumptions used in the 2013 ALM Workshop.
Data Sources: State Street Bank, ALM Assumptions
Note FORE is Forestland.

Past Year Environment Review – Forestland

- The NCREIF timberland benchmark reported a 1-year return of 9.8%.
  - 18.1% for the Pacific Northwest region; 7.6% for the South region.
- U.S. housing starts are projected to be at or below the one million level for 2014, which will mark the seventh straight year of starts below one million.
- Lower discount rates translated to generally higher timberland appraisal values.
- The U.S. Pacific Northwest region continued to benefit from strong exports of sawlogs to China.
- The U.S. South region has seen significant capital investments in sawmills, which benefit from depressed prices for sawlogs.

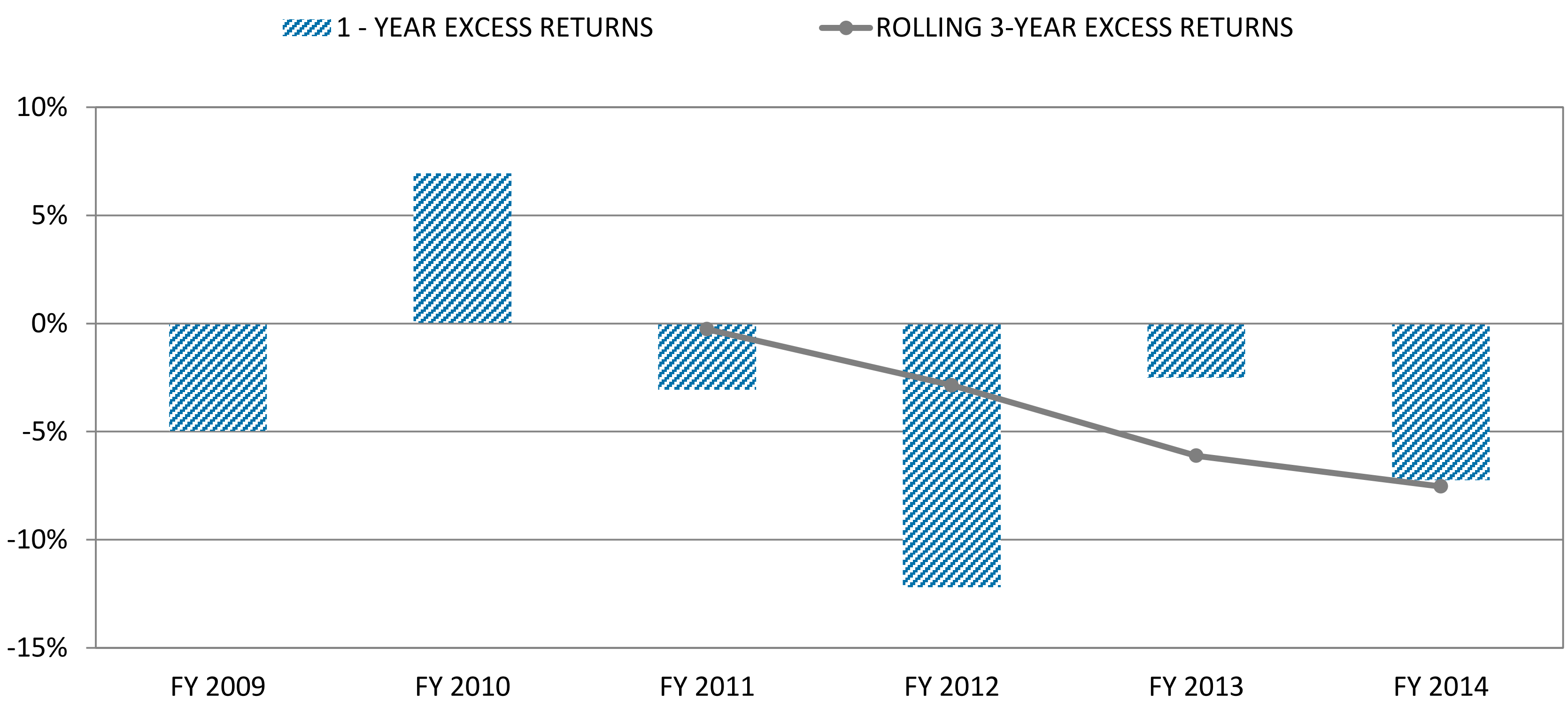
Program Performance Review – Forestland

- **Forestland Program (NAV of $2.3 billion)**
  - The Forestland Program reported a 2.5% return for the 1-year period. The Program has underperformed relative to its benchmark for all measurement periods.

As of June 30, 2014	1-YR Net Return	3-YR Net Return	5-YR Net Return
FORESTLAND	**2.5%**	**(1.0%)**	**(0.8%)**
POLICY INDEX	9.8%	6.6%	2.9%
Excess Return	(7.3%)	(7.5%)	(3.6%)

  - The Domestic Portfolio (NAV of $1.8 billion) **underperformed** the benchmark across all periods.
  - The International Portfolio (NAV $0.5 billion) **underperformed** the benchmark over the 1-year and 3-year periods, and **outperformed** the benchmark over the 5-year and since inception periods.

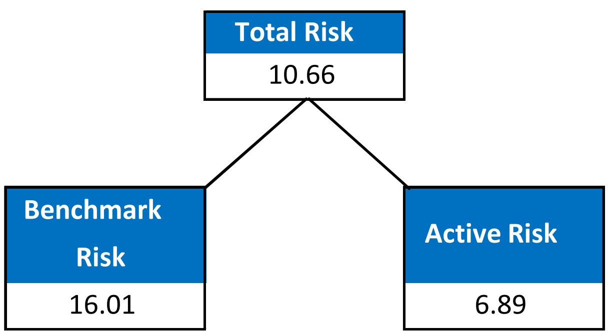
Program Performance Review – Forestland (Cont'd) 3-Year Rolling Excess Return

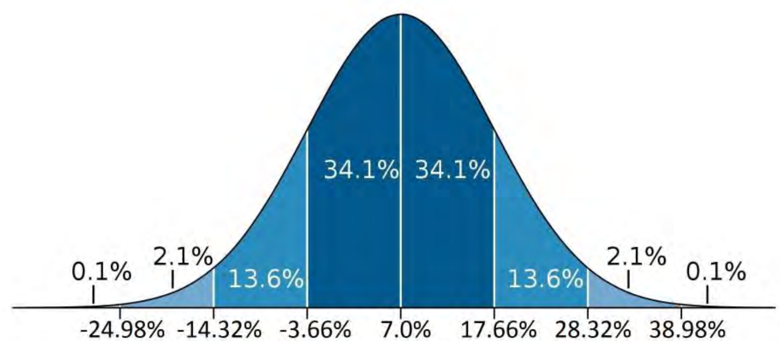


Risk Profile – Forestland

As of June 30, 2014

- Forestland Forecast Risk is 10.66%
- Forecast Tracking Error is 6.89%





Forecasted Distribution of Returns*

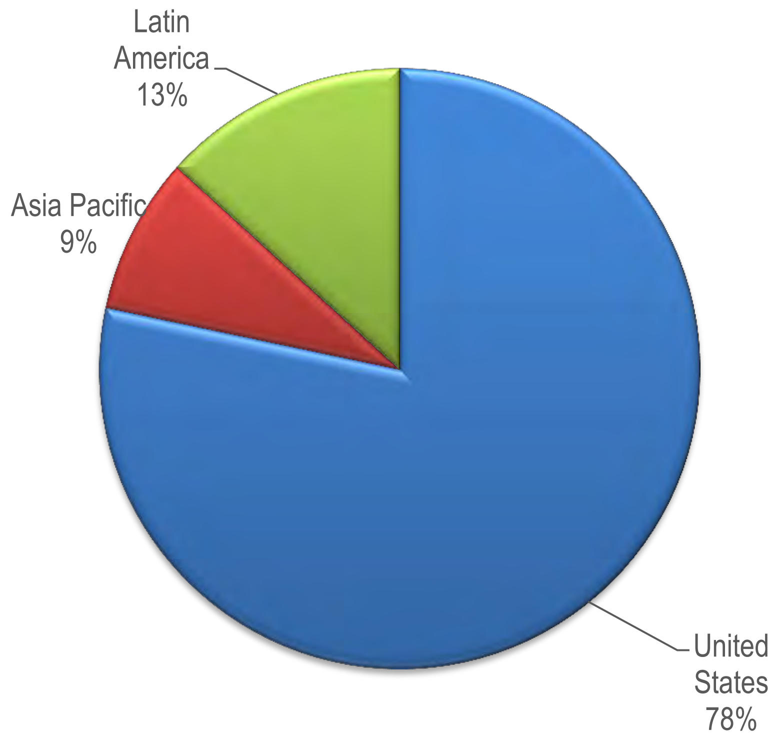
*Based on Expected Returns from 2013 ALM Workshop of 7.0% and Forecasted Risk of 10.66%

Program Characteristics – Forestland

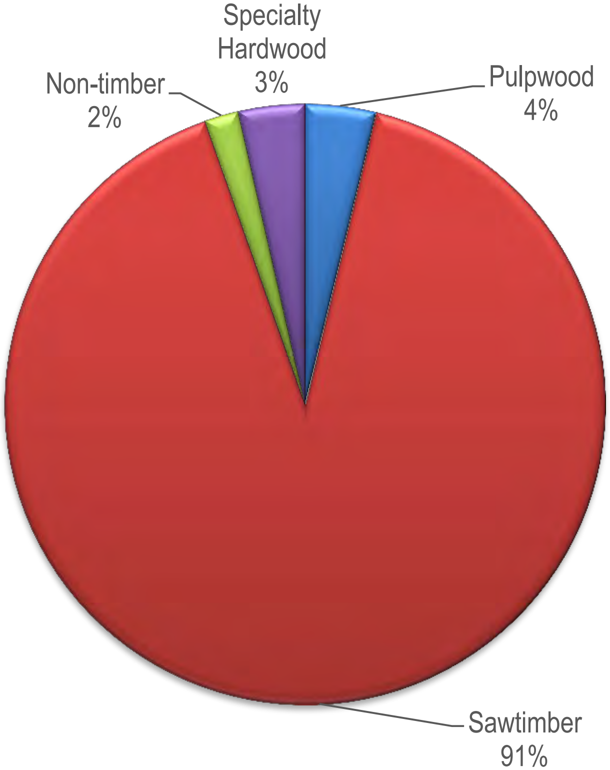
- **Total NAV:** $2.3 billion.
  - Program NAV is 0.8% versus 1% target allocation of Total Fund.
- **Structure:**
  - 1 domestic separate account: Lincoln Timber, L.P. includes two distinct portfolios in the U.S. south; and
  - 1 international separate account: Sylvanus LLC, includes properties in Brazil, Guatemala, and Australia.
- **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[a]

Geography



Primary Product



(a) Period ending March 31, 2014 with total NAV amounting to $2.3 billion.

Portfolio Positioning – Forestland

- The NCREIF Timberland Index is generally regarded as the best available timberland investment returns benchmark, although it contains only US properties and is gross of management fees and incentives.

- Relative to the NCREIF Timberland Index, the Forestland portfolio is:
  - overweight in the US South and international regions, and
  - underweight in other US regions.

Region	% of Total CalPERS Portfolio	NCREIF Timberland	CalPERS - NCREIF Difference
US South	78.0%	70.0%	8.0%
Asia Pacific	9.0%	0.0%	9.0%
Latin America	13.0%	0.0%	13.0%
US Pacific Northwest	0.0%	23.0%	-23.0%
US Northeast	0.0%	5.0%	-5.0%
Other US[(a)]	0.0%	2.0%	-2.0%

(a) Region labeled “Other” includes: all US States outside of the South, Pacific Northwest and Northeast

Forward-looking Commentary – Forestland

- The housing market in the U.S. South will continue to be a major factor driving returns.
- U.S. housing starts are projected to return to a more normalized level of ~1.5 million level by 2017.
- Long-term projections by timber research firms are for U.S. South sawlog prices to increase by 40-70% by 2019.
- Recent increases in timberland transaction prices reflect an expected recovery in U.S. housing and sawlog prices.
- Staff will continue to engage with external managers regarding strategies to strengthen underperforming investments.

III. Business Review

Business Model

Real Estate

- Primary vehicle is Separate Accounts with market leading operators.
  - CalPERS makes semi-annual allocations of capital.
  - General partner has discretion to execute transactions which meet guidelines.
  - Large investment decisions are made by staff or Investment Committee.

- CalPERS maintains ultimate control of capital.
  - Right to withdraw capital.
  - Right to terminate general partner and transfer assets.
  - Right to deleverage.

Infrastructure & Forestland

- Multi-mode investment capability.
- Blend in-house discretion with external management expertise.
- Cost-effective approaches.
- Robust due diligence review process.
- Efficient execution.
- Detailed monitoring & reporting.

Real Estate Investment Decision Process

Real Estate Investment Committee (REIC):
- All investment decisions are reviewed by REIC

Members:
- Chair SIO
- 7 voting members (SIO/4 SPMs/2 PMs)

Strategic Planning and Tactical
- Strategic Plan approved by Investment Committee
- Sector Plans outline tactical plans for each product type

Sourcing
- Active searches based on needs determined by planning process.
- Emerging Manager proposals referred to mentor program.
- Unsolicited proposals

Screening and Due Diligence
- All proposals are tracked in Investment Proposal Tracking System (IPTS) an INVO wide web-based system
- Staff scores each proposal utilizing a two part standardized manager assessment tool

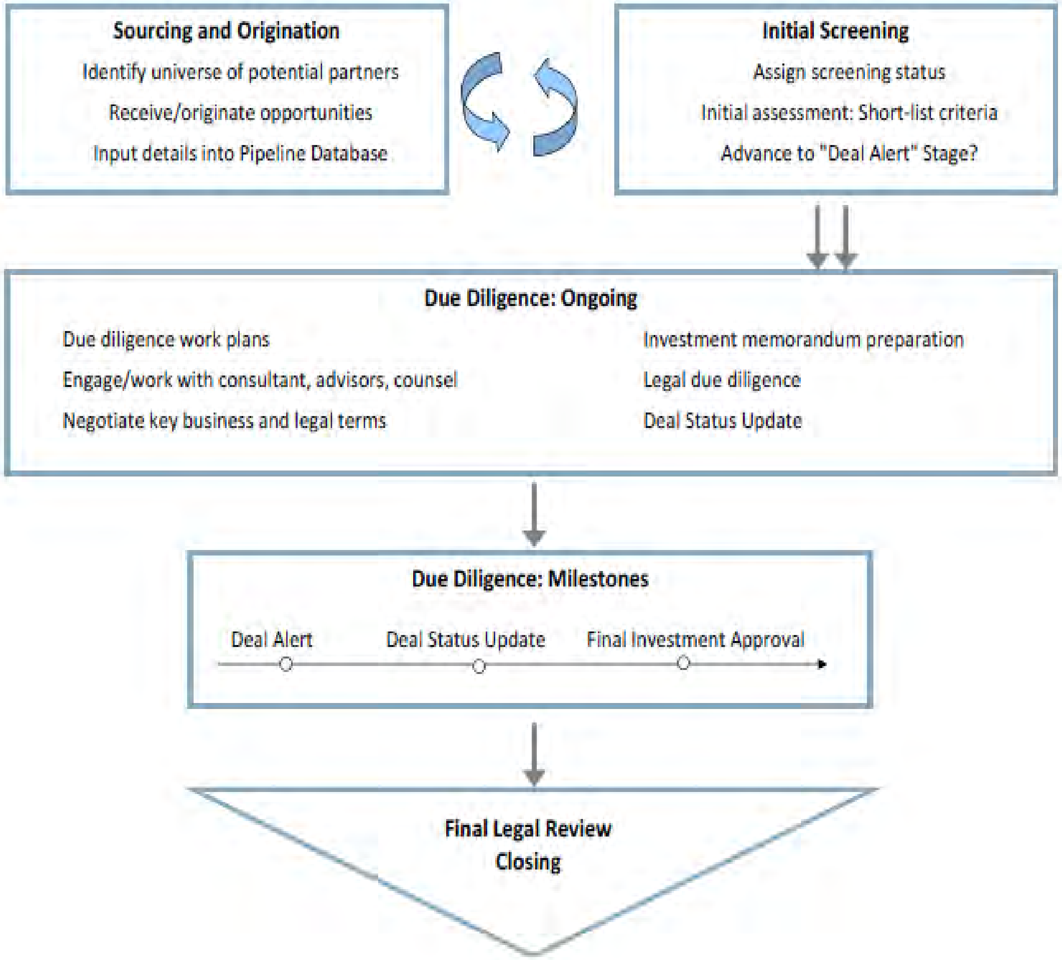
Real Estate Investment Committee (REIC)
- Committee of seven staff chaired by Senior Investment Office (SIO)
- Pension Consulting Alliance (PCA) attends all meetings

- Over the last 36 months, REIC made 424 investment decisions representing $18 billion of capital

Infrastructure & Forestland Investment Decision Process

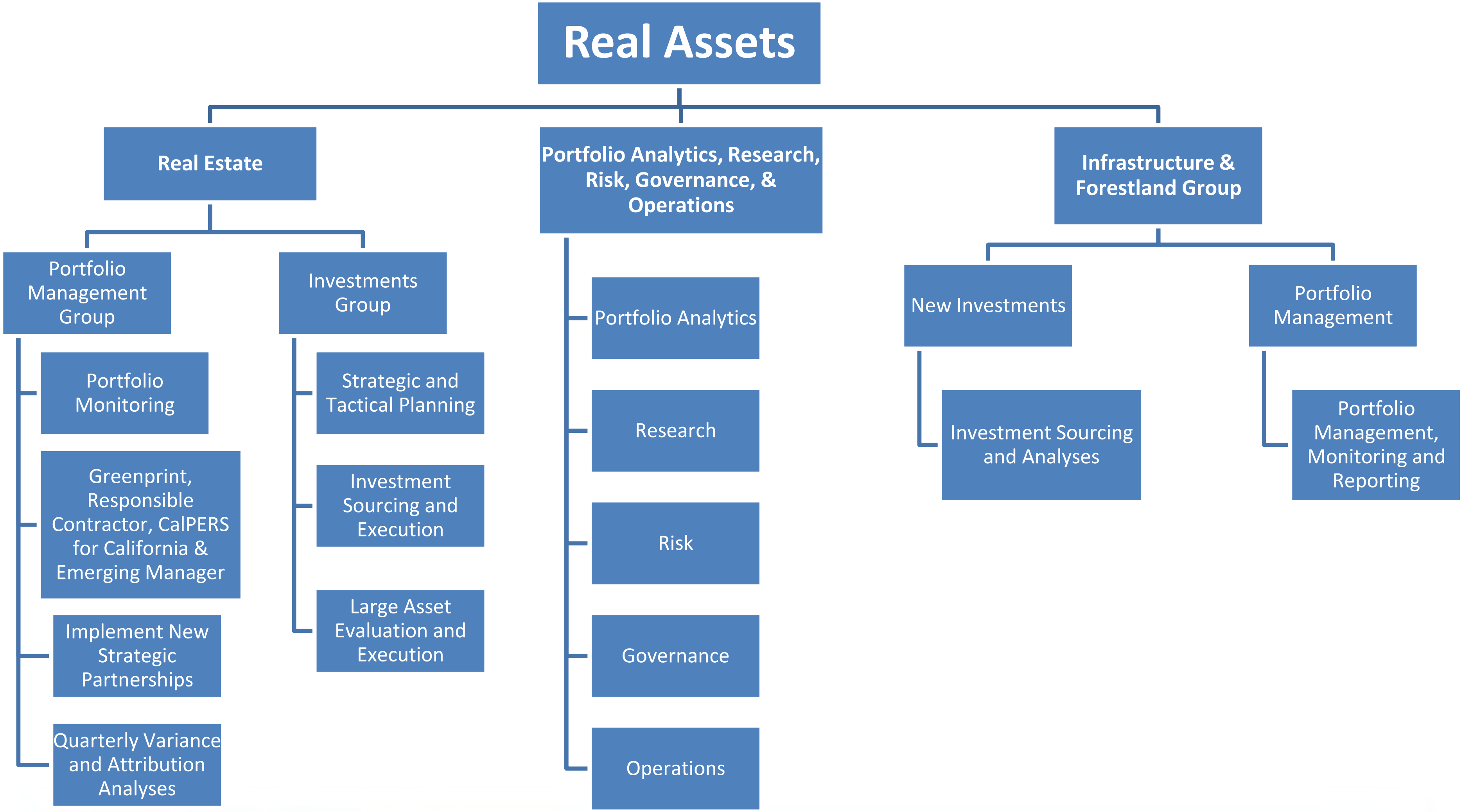
Infrastructure & Forestland Investment Committee (IIC):
Review, discuss and vote on investment transactions and plans

Members:
Chair: SIO
5 Voting members (SIO/SPM//3 PMs)



- Over six months since its formation, the IIC has provided *Final Investment Approval* for new capital commitments totaling $1.3 billion

Functional Organizational Chart



Staffing Overview

TOTAL PROGRAM [1]

- 54 total positions within Real Assets compared to 45 positions in FY 2012-13

STAFFING UPDATES [1]

- Hired 1 Portfolio Manager
- Hired 6 Investment Officers

CURRENT VACANCIES [2]

- 1 Portfolio Manager
- 2 Investment Officers
- 1 Staff Services Analyst
- 2 Office Technicians

[1] From June 30, 2013 through June 30, 2014
[2] As of October 1, 2014

Strategic Plans – Real Estate 2014-15

FROM	TO	STATUS
Annual investment planning process.	Addition of mid-year update with presentations by new sector teams and review of partner's annual allocations.	First mid-year update schedule for Dec 2014
Dispersed debt strategies driven by partnerships.	Integrated debt strategy and liability management.	Initial survey of market started.
Separate operations platforms for Infrastructure, Forestland, and Real Estate.	Develop a common platform for portfolio analytics, allocation, compliance, and operations	Completed June 2014

Strategic Projects Update – Real Estate

- Real Estate staff has been organized into teams with each team focused on a specific sector – Office, Industrial, Retail, Multifamily, International, and Domestic Tactical
- In addition to the annual investment planning process completed in May of each year, sector teams will present midyear updates on their sectors including an evaluation of partners' progress acquiring assets and performance.
- Staff has developed a target model portfolio which is used to guide the allocation process during both the annual investment plan and the mid-year update.

Emerging Manager Program in Real Estate

- In 2012, $200 million was allocated to Canyon Catalyst Fund with Canyon as a mentoring manager to emerging managers. To date, 4 Emerging Managers (EM) selected by Canyon have invested over $87 million in nine office, retail, and multifamily properties throughout California.

- In September 2014, $100 million was committed to a new EM venture with AGI Resmark. Resmark is serving as the mentoring manager to AGI, investing in build-to-base-core multifamily assets in the San Francisco Bay Area.

- After 20+ years of EM experience, Real Estate currently has 11 direct emerging managers, 1 fund of fund manager, and the 2 above recent mentoring manager strategies.

- EM program objectives:

  1) achieve appropriate risk adjusted returns,

  2) access smaller scale investments that may not otherwise be pursued and

  3) cultivate the next generation of external managers.

ESG Implementation within Real Estate

Environmental – Striving to increase its energy efficiency and reduce carbon emissions, CalPERS and its core managers contribute data to the ULI Greenprint Center for Building Performance and evaluate findings with our investment managers.

Social – As a market leader, CalPERS continues to encourage fair wages and benefits to workers through its Responsible Contractor Program Policy which was adopted in 1994.

Governance – CalPERS continues to use its Alignment of Interest Principles providing appropriate strong governance in its investment management partnership agreements.

Strategic Plans – Infrastructure & Forestland 2014-15

FROM	TO	STATUS
Infrastructure Program: NAV = 0.6% of Total Fund ($1.8 bn NAV)	***Infrastructure Program:*** NAV = 2.0% of Total Fund ($6.7 bn NAV) by FYE 16-17	Building and strengthening the Investment Platform to support effective capital deployment.
Infrastructure Program: Pursuit of $800 million of new investment within California.	***Infrastructure Program:*** Reach goal of $800 million of new investment within California.	Pursuit of new investments within California continues to be a Program priority.
Forestland Program: NAV = 0.8% of Total Fund ($2.3 bn NAV)	***Forestland Program:*** Meets its investment objectives	Focus on risk mitigation for current investments; Reviewing program goals and positioning to set long-term direction
Separate operations platforms for Infrastructure & Forestland and REU.	Develop a common platform for portfolio analytics, allocation, compliance, and operations	Completed June 2014

Strategic Projects Update – Infrastructure & Forestland

Building and Strengthening the Investment Platform

External Development:

Key Platform initiative is to establish a set of Non-discretionary Custom Accounts:

- Accounts leverage in-house team to enhance the Program's new investment and asset management capabilities;
- CalPERS retains control over all key investment decisions;
- Relatively-low-cost managed vehicles;
- No-fault termination rights.

Established 1st Account in May 2013:

- *Gulf Pacific Power (GPP)*
- $600 million account with Harbert Power;
- Invested more than $500 million in first year;
- Increased account size to $900 million.

Established 2nd Account in June 2014:

- *Golden State Matterhorn (GSM)*
- $500 million account with UBS Infrastructure.

Internal Development

Strengthened investment review tools and processes:

- Manager Assessment Tool
- Due Diligence Questionnaire
- Sustainable Investment Guidelines
- ESG Risk Assessment Matrix
- IFG Managers Committee
- IFG Investment Committee

Developing the investment team:

- Currently 12 investment positions.
- Expansion of the program with current model (based on high degree of in-house management discretion) will require measured expansion of in-house resource expertise and depth.

ESG – Manager Expectations Infrastructure & Forestland

- In 2014, Infrastructure & Forestland created and adopted the 'Infrastructure and Forestland Sustainable Investment Practice Guidelines'. These guidelines are part of the fund-wide Manager Expectations project for which Infrastructure & Forestland has been the first program to complete its guidelines.

- The guidelines are based on CalPERS' Investment Beliefs, the United Nations Principles for Responsible Investments (UNPRI), Real Assets - Infrastructure Program Policy as well as industry best practices.

- The guidelines address Infrastructure & Forestland's sustainable investment practices throughout the life cycle of the program's investments through due diligence to contracting and ongoing monitoring.

- Key elements include:
  - ESG Risk Matrix
  - Financial Modeling
  - Due Diligence Questionnaire
  - Monitoring and Reporting Practices

California Infrastructure Investments

- In October 2011, the CalPERS Board approved a plan to ***target up to $800 million*** for investments in California infrastructure over three years.
- Staff conducted an outreach effort to facilitate investment opportunities, including conducting five ***Roundtable Meetings*** with the participation of state and local agencies, the investment community, and the other stakeholders.
- California investments totaled ***$136 million (or 8%)*** of Program NAV, including $124 million of investment in the water and wastewater sector.
- Staff reviewed ***73 opportunities*** over three years.
- Staff submitted or directed competitive bids on ***five opportunities totaling $1.0 billion*** of equity investment over three years, although no acquisitions were completed.
- ***Acquisition of new investments in California continues to be a Program priority***. Staff remains committed to achieving its $800 million new investment target.

Program Expenses – Real Estate

Expense Category	FY 2013-14			FY 2012-13		
	AUM ($billions)	Fees Paid / Accrued ($millions)	Fees Paid[2] / Accrued (bps)	AUM ($billions)	Fees Paid / Accrued ($millions)	Fees Paid[2] / Accrued (bps)
Internal Management	$ 0	$ 7	3	$ 0	$ 5	2
External Management[1]	$ 26	$ 825[3]	317	$ 24	$ 457	191
Asset Management : Paid		$ 116	44		$ 47	20
Incentive: Paid		$ 153	59		$ 218	91
Incentive: Accrued		$ 556	214		$ 192	80
Consultants Expense	N/A	$ 8	3	N/A	$ 7	3
Technology & Operating Expense	N/A	$ 9	3	N/A	$ 20	8
Total Program	*$ 26*	*$ 849*	*326*	*$ 24*	*$ 489*	*204*

[1] Includes base and performance fees
[2] BPS calculated on Total Program AUM
[3] $709 million performance fees, primarily accruals. $116 million mgmt. fees

Program Expenses – Real Estate

- Strategic *(domestic)* Core actual and forecasted asset management fees are below the ODCE benchmark
- Newly formed strategic *(domestic)* partnerships include caps on total fees (asset management and incentive) that are below the ODCE benchmark
- Fees, in basis points, are expected to further decline as legacy portfolios continue to liquidate

Program Fee Savings – Real Estate

- The fees of the strategic domestic partnerships are projected to be 130 bps or 52% lower than CalPERS' historic 10 year average.
- The fee of the core strategic domestic partnerships are 12 basis points, or 12%, below the 1 year ODCE policy benchmark.

Program Expenses – Infrastructure & Forestland

Expense Category	FY 2013-14			FY 2012-13		
	AUM ($billions)	Fees Paid / Accrued ($millions)	Fees Paid[2] / Accrued (bps)	AUM ($billions)	Fees Paid / Accrued ($millions)	Fees Paid[2] / Accrued (bps)
Internal Management	$ 0	$ 3	7	$ 0	$ 2	6
External Management[1]	$ 4	$ 56	138	$ 3	$ 33	97
Consultants Expense	N/A	$ 0	1	N/A	$ 2	5
Technology & Operating Expense	N/A	$ 0	1	N/A	$ 1	4
Total Program	*$ 4*	*$ 59*	*146*	*$ 3*	*$ 38*	*113*

[1] Includes base and performance fees
[2] BPS calculated on Total Program AUM.

Program Expenses – Infrastructure & Forestland

Infrastructure

- Expected to increase with growth of portfolio as a result of capital deployment and performance fees paid.
- Internal expenses expected to increase due to focus on direct investments and custom accounts, however total expenses expected to decrease as a percentage of AUM.
- **Expenses as a proportion of value-add are expected to decrease** with an increased focus on direct investments and separate accounts.

Program Fee Savings – Infrastructure & Forestland

- Total Fee Savings:

Values in USD

IFG Annual Fee Savings	
	Profit Enhancement
Total	**$ 19,346,988**

- Fee savings are calculated relative to customary fee terms for large commingled fund vehicles. Savings were captured through negotiated incentive fee terms and reduced management fees and rebates.
- Directs and Custom Accounts contributed to the majority of the total fee savings.
- Calculated on an investment of $1.0 billion, expected annual management fee savings (excluding incentive fee savings) would be $15.0 million (150 bps) using custom accounts and $20.0 million (200 bps) investing directly per annum, as compared to investment through a commingled fund vehicle.

Conclusion

- Real Estate
  - Continue to acquire high quality, income producing core assets.
- Infrastructure
  - Focus is on increasing deployment and continuing strong performance
- Forestland
  - Focus is on mitigating risk and improving performance; reviewing long-term investment goals and related strategies