
April 18, 2016

Item Name: Real Assets Strategic Plan

Program: Real Assets

Item Type: Action

Recommendation

Staff recommends the Investment Committee approve the 2016 Real Assets Strategic Plan (RA Plan).

Executive Summary

As defined by CalPERS Asset Allocation, Real Assets' role within the CalPERS Total Fund portfolio is to provide: 1) stable and predictable cash yield; 2) diversification of equity risk; and 3) inflation protection. The RA Plan seeks to align with CalPERS Vision 2020 and Asset Liability Management. Additionally, the RA Plan harmonizes the Real Estate, Infrastructure, and Forestland programs in one strategy. Specifically, the RA Plan aims to reduce complexity, risk, and costs by improving asset class level parameters and standardizing Real Assets nomenclature. The overall investment strategy remains substantially unchanged and is consistent with the previous strategic plan.

Strategic Plan

The RA Plan supports CalPERS' overall goal of improving long-term pension and health benefit sustainability.

Investment Beliefs

This agenda item supports the following Beliefs:

- Investment Belief 1 – Liabilities must influence the asset structure
- Investment Belief 2 – A long time investment horizon is a responsibility and an advantage
- Investment Belief 4 – Long-term value creation requires effective management of three forms of capital: financial, physical and human
- Investment Belief 10 – Strong processes and teamwork and deep resources are needed to achieve CalPERS goals and objectives

Background

As required by the Real Assets Investment Policy, staff shall develop and present to the Investment Committee (IC) a new strategic plan at a minimum of every five years. The IC approved the strategic plans for Real Estate and Infrastructure in 2011.

Staff worked closely with the Board Consultants from each of the three programs, market participants, industry leaders, strategic partners, the Investment Strategy Group (ISG), and other stakeholders over the past several months to complete the proposed RA Plan.

Analysis

As discussed in the 2011 strategic plans, Real Assets will continue to acquire and invest in private equity interests of assets. Key components of the Real Assets strategy include risk level, geographic focus, leverage, and business models. All assets within the Real Assets Portfolio will be classified into three risk categories: core, value-add, or opportunistic. The portfolio will be focused on core, high quality assets (75-90%). Geographically, 70-100% of the Portfolio will be focused in the U.S. and 0-30% focused in international developed and emerging markets. Moderate leverage will be used across the Portfolio. Real Estate will seek to implement a pilot unleveraged mandate which may have debt added and managed internally by staff at the Total Fund or Real Assets Level. Implementation of ESG goals, Emerging Manager and Transitional Manager programs will also continue.

Additions and modifications to the RA Plan are largely portfolio hierarchy updates that will be consistent across the three programs unifying the asset class. Details on the updated hierarchy are within Attachment 1. Ongoing planning within the current fiscal year is required including revisions to Real Assets Policy and Delegated Authority, while implementation is expected in the 2017-18 fiscal year and beyond.

Budget and Fiscal Impacts

At this time there are no anticipated impacts.

Benefits and Risks

The proposed RA Plan aims to benefit the Asset Class and Investment Office by:

- Reducing Complexity
- Reducing Risk
- Reducing Costs
- Increasing Transparency

Attachments

Attachment 1 – Real Assets Strategic Plan

Attachment 2 – Pension Consulting Alliance Opinion Letter – Real Estate

Attachment 3 – StepStone Group Opinion Letter – Infrastructure

Attachment 4 – Wilshire Associates Opinion Letter – Forestland

Paul Mouchakka

Managing Investment Director

Theodore Eliopoulos

Chief Investment Officer



Real Assets Strategic Plan Update

Investment Committee – April 18, 2016

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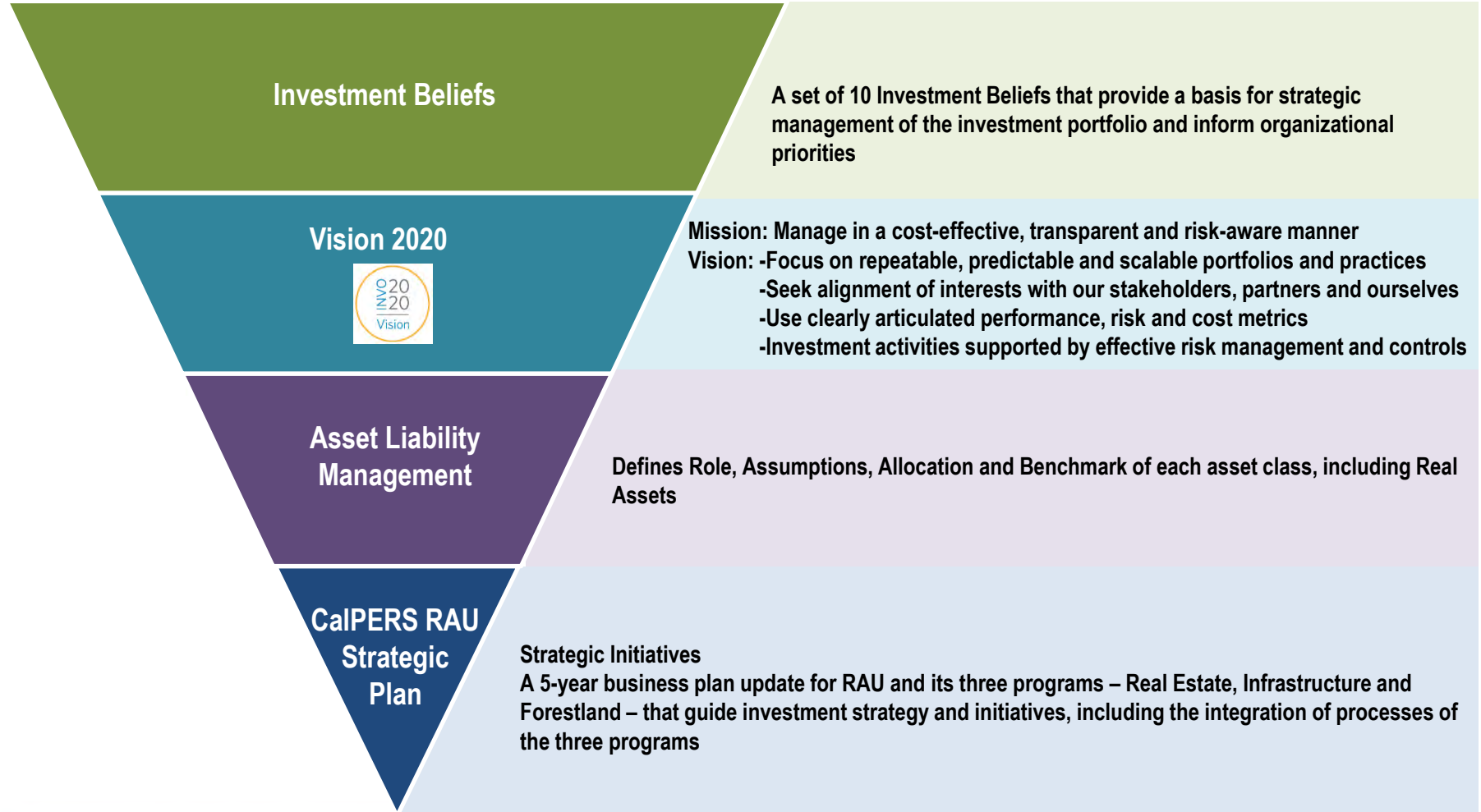
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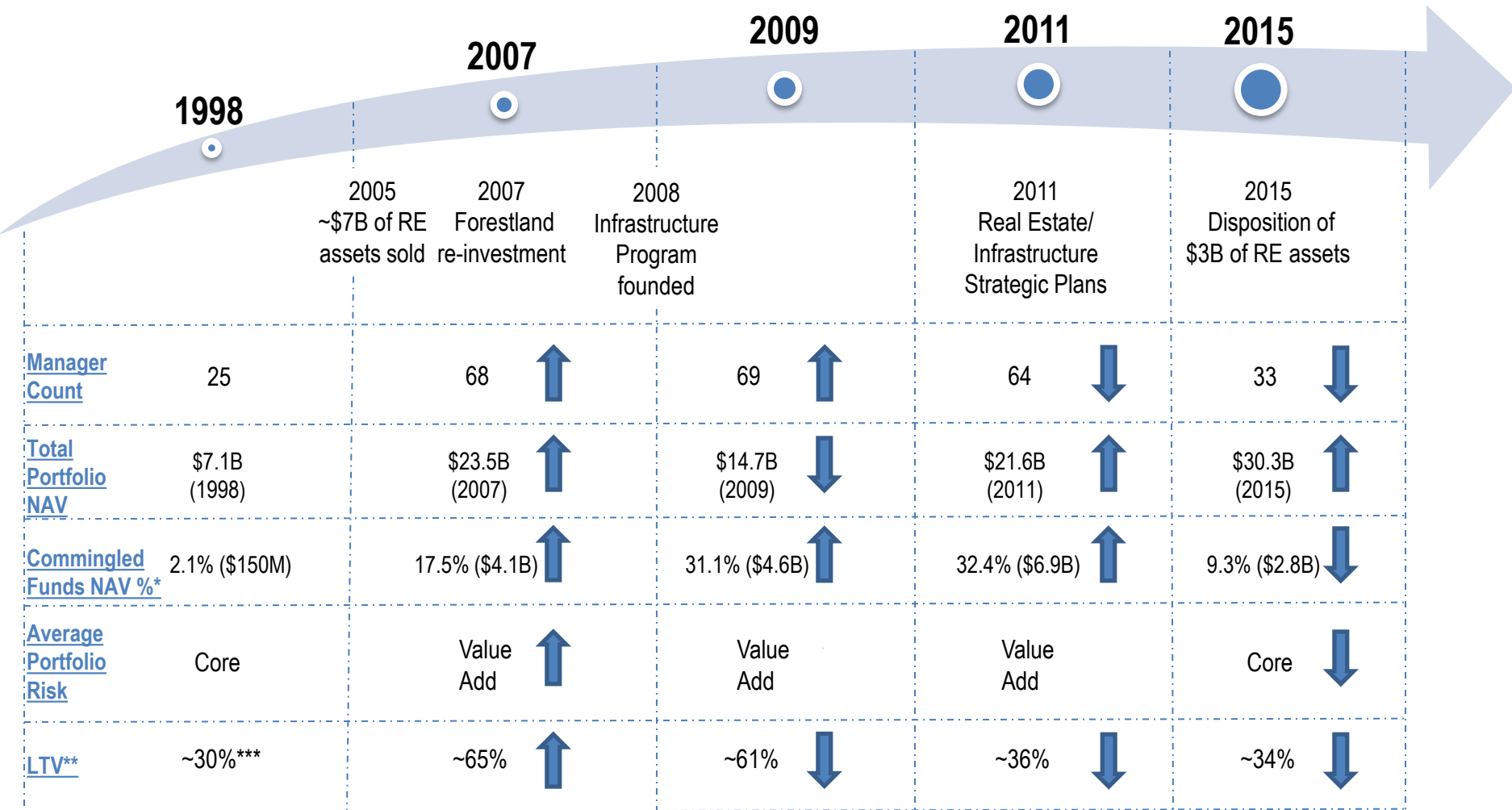
Section I: Real Assets Overview

- Real Assets INVO Alignment
- Real Assets Program History
- Real Assets Strategic Plan Process
- Real Assets Role in Total Fund
- Real Assets Key Messages – Strategy Summary
- Real Assets Key Messages – Integration / ALM 2017
- Real Assets Risks

Real Assets – INVO Alignment

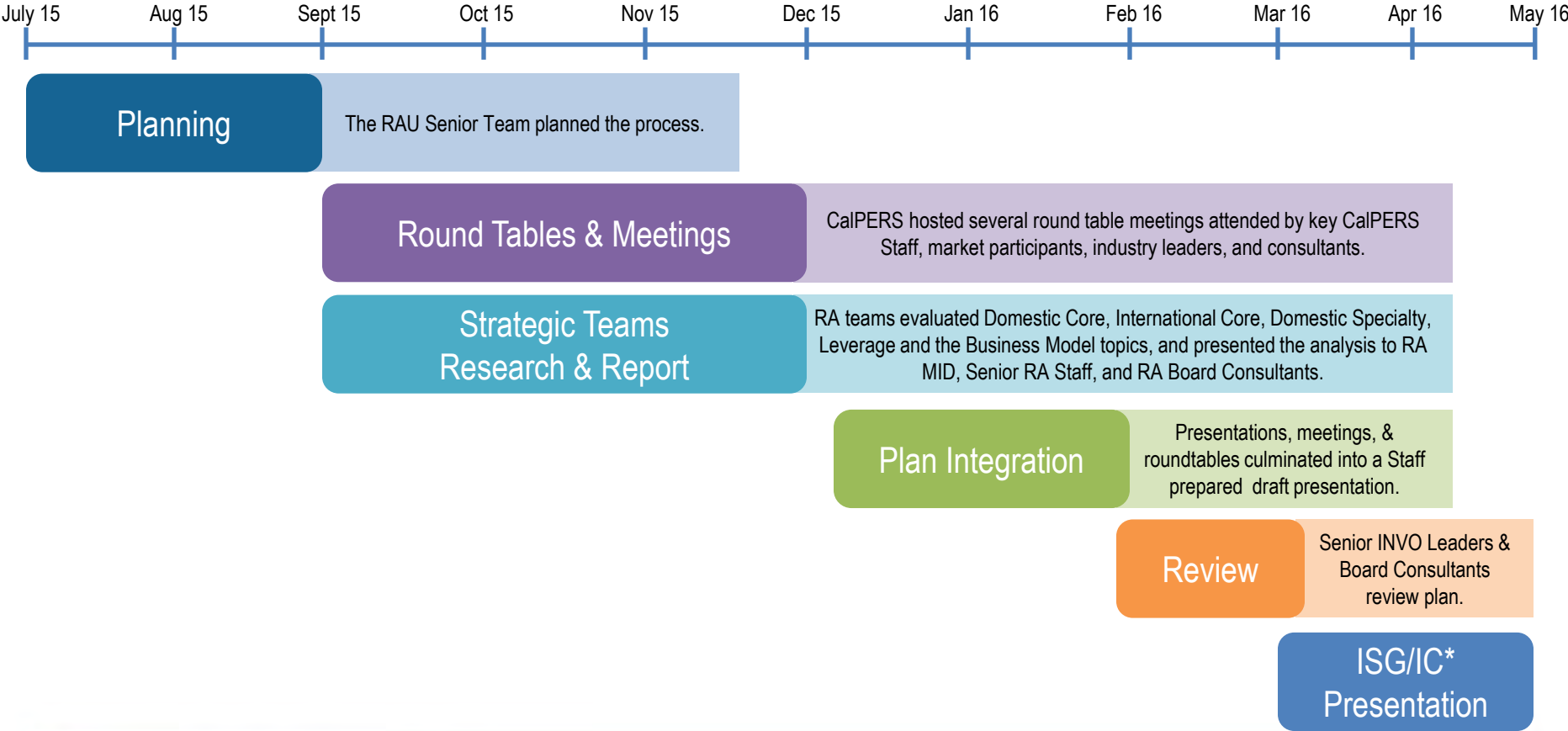


Real Assets – Program History



Real Assets – Strategic Plan Process

The Real Assets (RA) strategic planning process includes input from industry leaders, CalPERS Staff, strategic partners and consultants



Real Assets – Role in Total Fund

Harmonizing across the programs (Real Estate, Infrastructure, Forestland)

- ***Stable and predictable cash yield***
- ***Diversification of equity risk***
- ***Inflation protection***

Real Assets Key Messages – Strategy Summary (1 of 2)

Investment Strategy substantially unchanged

Refining and harmonizing portfolio structure, parameters and nomenclature

<p>Risk</p>	<ul style="list-style-type: none"> • Private Real Assets equity – providing diversification of equity risk • Mitigate Asset class risk through: <ul style="list-style-type: none"> • Majority of program (75-90%) – high quality Core assets held through business cycles • Durable cash flow – producing stable and predictable cash yield • Revenue models – supporting inflation protection
<p>Geography</p>	<ul style="list-style-type: none"> • Focus majority of portfolio in the U.S. (70-100%) • International investments aligned with role in developed and emerging markets • Acquire and maintain exposures to well located assets
<p>Leverage</p>	<ul style="list-style-type: none"> • Utilize moderate leverage across the portfolio and monitor leverage levels • Pilot Real Estate Program: (see slide #24) <ul style="list-style-type: none"> • Implement an unlevered RE partnership mandate(s) • Leverage could potentially be added and managed internally by Staff at Total Fund or Real Assets level • Security for leverage could potentially be at the Real Estate (Individual asset, Sub-Portfolio, Total Portfolio) or Total Fund level. • Leverage Pilot Program plan to be approved by Investment Strategy Group (ISG) prior to implementation. • Evaluate reducing costs and complexity, and increasing alignment and transparency

Real Assets Key Messages – Strategy Summary (2 of 2)

Strong governance focused on economic alignment, transparency and cost efficiency

<p>Business Model</p>	<ul style="list-style-type: none"> • Primary focus on Separate Accounts with highly reputable, market-leading managers • Secondary focus on Operating Companies and Direct Investments • Manager Limit Target: Movement toward fewer and larger external manager relationships, consistent with Vision 2020
<p>Specialized Programs</p>	<ul style="list-style-type: none"> • Continued implementation of Environmental, Social, Governance (ESG) goals set for the next 5 years • Continued implementation of Real Estate Emerging Manager and Transition Manager Programs
<p>Portfolio Hierarchy</p>	<ul style="list-style-type: none"> • Focus on Core assets within target Segments and Sectors to align with role • Integrate existing Strategic and Legacy sub portfolios to align with the new Real Assets Strategic Plan structure • Develop Sector implementation plans • Integrate Portfolio Hierarchy into Organizational Structure

Real Assets Key Messages – Integration / ALM 2017

Integrating Real Estate, Infrastructure and Forestland parameters

Harmonizing nomenclature; Reducing risks, costs, and complexity; Increasing transparency

- Portfolio: Hierarchy
- Risk classification: Core, Value Add, Opportunistic
 - Add Development limit of 0-10% (Build-to-Core)
- Geography: U.S., International Developed, Emerging, and Frontier
- Leverage: Loan-to-Value (LTV), Debt Service Coverage Ratio (DSCR)
- Segments – Essential, Commercial, Consumer, Residential, Specialized, and International

Items to be evaluated in Asset Liability Management (ALM) 2017 process:

ALM 2017

- Real Assets Benchmarks
 - Current Real Assets Benchmark: 83% Real Estate (NCREIF- ODCE); 8.5% Infrastructure (CPI +4%); 8.5% Forestland (NCREIF Timberland Index)
- Role of Forestland program
- Real Assets allocation

Real Assets – Risks

Select Risks and Risk management

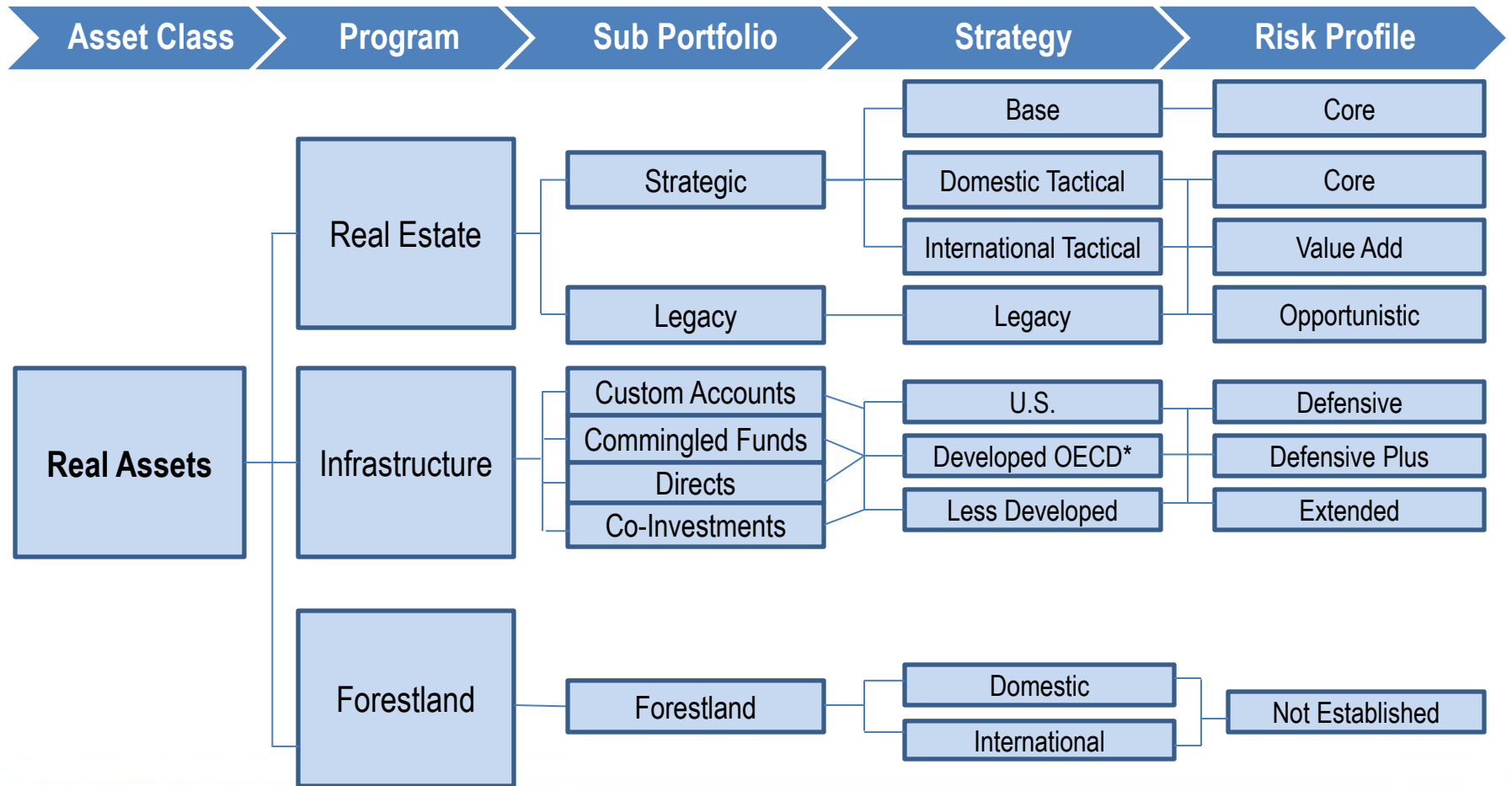
	Select Risks	Risk Management
Operational	<ul style="list-style-type: none"> • Vacancy • Maintenance of assets • Operational expenses and capital expenditures • Resource management 	<ul style="list-style-type: none"> • Due diligence (asset and manager) • Monitoring
Revenue Model	<ul style="list-style-type: none"> • Contract / lease features • Merchant / renewal risks • Counterparty risks 	<ul style="list-style-type: none"> • Contract / lease negotiation • Due diligence • Monitoring
Agency / Governance	<ul style="list-style-type: none"> • External manager practices • Ownership under Joint Ventures (JVs) 	<ul style="list-style-type: none"> • Partner selection / Due diligence • Monitoring • Negotiation of governance/rights
Environmental	<ul style="list-style-type: none"> • Climate change impact • Resource use and management 	<ul style="list-style-type: none"> • Due diligence (asset and manager) • Monitoring
Reputational	<ul style="list-style-type: none"> • Management of sensitive matters • Relationship with regulatory bodies 	<ul style="list-style-type: none"> • Due diligence (asset and manager) • Monitoring • Stakeholder engagement
Valuation	<ul style="list-style-type: none"> • Value of cash flows post-contract • Cap rate reversion (impact on values) 	<ul style="list-style-type: none"> • Due diligence • Contract / lease negotiation

Section II: Real Assets Hierarchy and Structure

- Real Assets Current Portfolio Hierarchy
- Real Assets Proposed Portfolio Hierarchy
- Real Assets Current Organization Structure

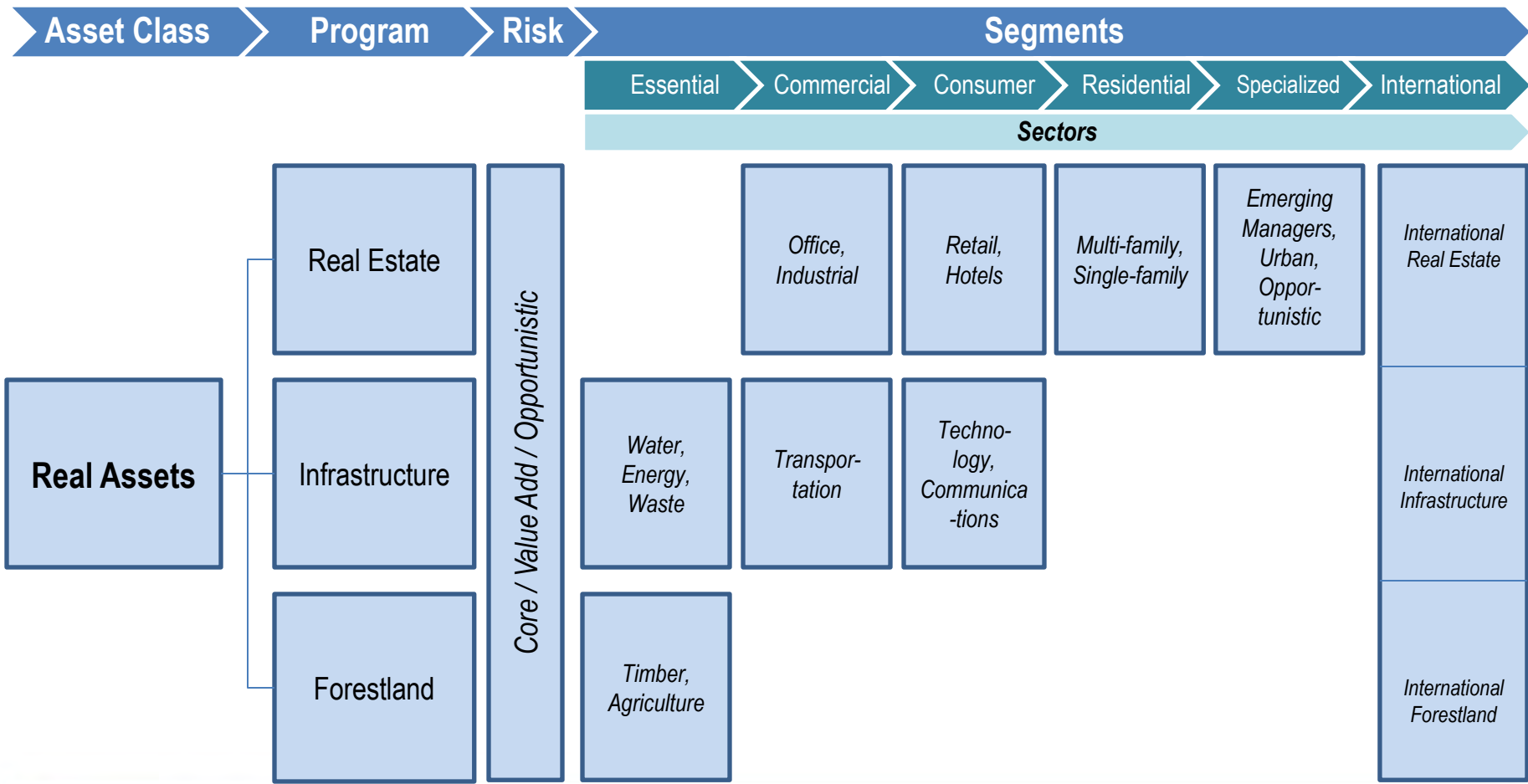
Real Assets – Current Portfolio Hierarchy

Real Assets currently consists of three programs, seven sub-portfolios, nine strategies, and seven risk profiles

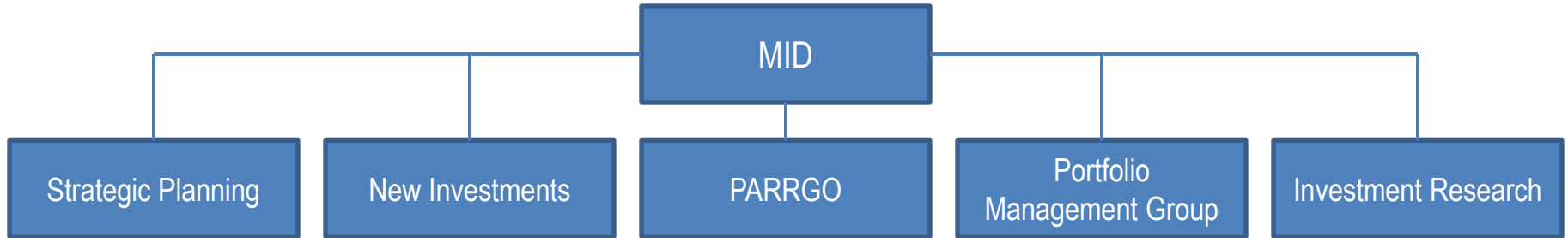


Real Assets – Proposed Portfolio Hierarchy

Real Assets would consist of three programs, three risk classes and six segments



Real Assets – Current Organization Structure





Current Status	Proposed
<ul style="list-style-type: none"> Organization Integration complete Process integration ongoing 	<ul style="list-style-type: none"> Portfolio hierarchy to be integrated into organizational structure

Section III: Changes

- Real Assets Proposed Changes and Rationale
- Real Assets Changes
- Real Estate Changes
- Infrastructure Changes
- Forestland Changes
- Real Assets Current Portfolio Structure
- Real Assets Proposed Program Parameters
- Real Estate Proposed Leverage Pilot Program
- Real Estate Emerging Manager and Transition Manager Programs
- Real Assets ESG Integration

Real Assets – Proposed Changes and Rationale

Establishing Real Assets parameters
Harmonizing nomenclature

Type of Change	Change		Rationale
Additions	<ul style="list-style-type: none"> • Harmonize risk classification • Cap on development • Leverage measurement (LTV, DSCR) • Geography • Manager Limit target 		<ul style="list-style-type: none"> • Reduces complexity • Reduces risk • Reduces cost • Increases transparency
Modifications	<ul style="list-style-type: none"> • Six new segments 		<ul style="list-style-type: none"> • Reduces complexity • Increases transparency • Align with Total Fund

Real Assets – Changes

Establishing Real Assets parameters

Harmonizing nomenclature

Reducing risk, costs and complexity; Increasing transparency

Parameter	Current	Proposed
Risk	Not established	Core: 75-100% Value Add: 0-25% Opportunistic: 0-25% Development: 0-10% (Build-to-Core)
Geography	Not established	-US: 70-100% -International Developed: 0-30% -International Emerging Markets: 0-15% -International Frontier Markets: 0-5%
Leverage	LTV: Not established DSCR: Not established	LTV: 55% DSCR: 1.40
Manager Limit Target	Not established	25
Segments	Not established	Essential, Commercial, Consumer, Residential, Specialized, and International

Real Estate – Changes

Structure substantially unchanged
Reducing risk, costs and complexity; Increasing transparency

Parameter	Current	Proposed
Risk	Core: 75-100% Value Add: 0-25% Opportunistic: 0-25% Development: Not established	Core: 75-100% Value Add: 0-25% Opportunistic: 0-25% Development: 0-10% (Build-to-Core)
Geography	US: 63.75-100% Developed: Ex-US: 0-25% Emerging Markets: 0-15% Frontier Markets: 0-5%	US: 75-100% International Developed: 0-25% International Emerging Markets: 0-15% International Frontier Markets: 0-5%
Leverage	LTV: 50% DSCR (Total): 1.5 DSCR (Core): 2.0	No changes proposed
Manager Limit Target	Not established	15
Sub Portfolios	Strategic and Legacy	Eliminate Sub Portfolios
Classification	Domestic Base, Domestic Tactical, International Tactical, Legacy	Eliminate these classifications
Segments	Not established	Essential, Commercial, Consumer, Residential, Specialized, and International

Infrastructure – Changes

Modifying parameters

Harmonizing nomenclature; Reducing risks, costs and complexity; Increasing transparency

Parameter	Current	Proposed
Risk	Infrastructure Defensive: 25-75% Infrastructure Defensive Plus: 25-65% Infrastructure Extended: 0-10% Development: Not established	Core: 60-100% Value Add: 0-25% Opportunistic: 0-25% Development: 0-10% (Build-to-Core)
Geography	US: 40-80% Developed OECD ex-US: 20-50% Less Developed: 0-15%	US: 50-100% International Developed: 0-50% International Emerging Markets: 0-15% International Frontier Markets: 0-5%
Leverage	LTV: 65% DSCR: Not established	LTV: 65% DSCR: 1.25
Manager Limit Target	Not established	10 (Infrastructure & Forestland combined)
Segments	Not established	Essential, Commercial, Consumer, Residential, Specialized, and International
Key Parameters Applicability Minimum (NAV)*	\$3B	\$5B

Forestland – Changes

Establishing parameters

Harmonizing nomenclature; Reducing risk, costs and complexity; Increasing transparency

Parameter	Current	Proposed
Risk	Not established	Core: 75-100% Value Add: 0-25% Opportunistic: 0-25% Development: 0-10% (Build-to-Core)
Geography	Not established	US: 50-100% International Developed: 0-50% International Emerging Markets: 0-15% International Frontier Markets: 0-5%
Leverage	LTV: 40% DSCR: Not established	LTV: 40% DSCR: 1.25
Manager Limit Target	Not established	10 (Infrastructure & Forestland combined)
Segments	Not established	Essential, Commercial, Consumer, Residential, Specialized, and International

Real Assets – Current Portfolio Structure

Program	Real Assets	Real Estate	Infrastructure	Forestland
Risk Classification	N/A	Core: 71% Value Add: 12% Opportunistic: 17%	Defensive: 31% Defensive Plus: 49% Extended: 20%	N/A
Geography	US: 90% (CA: 25%) International: 10%	US: 94% (CA: 29%) Developed ex-US: 0% Emerging: 6%	US: 60% (CA: 5%) Developed OECD ex-US: 38% LDC: 2%	US: 82% (CA: 0%) Latin America: 12% Asia Pacific: 6%
Leverage	LTV: 34% DSCR: N/A	LTV: 33% DSCR: 3.0**	LTV: 47% DSCR: N/A	LTV: 21% DSCR: N/A
Business Model	N/A	Separate Accounts: 80% Commingled: 6% Operating Companies: 14%	Commingled: 52% Directs: 26% Separate Accounts: 22%	Separate Accounts: 100%
Manager Count	33*	24	8	2
Emerging Managers	5	5	N/A	N/A
NAV / Unfunded	NAV: \$30.3B Unfunded: \$11.8B	NAV: \$25.7B Unfunded: \$9.5B	NAV: \$2.3B Unfunded: \$2.2B	NAV: \$2.2B Unfunded: \$0.0

Real Assets – Proposed Program Parameters

Integrating Real Estate, Infrastructure, and Forestland into Real Assets

Program	Real Assets	Real Estate	Infrastructure	Forestland
Risk Classification	Core 75-100% Value Add 0-25% Opportunistic 0-25% Development : 0-10% (Build-to-Core)	Core 75-100% Value Add 0-25% Opportunistic 0-25% Development : 0-10% (Build-to-Core)	Core 60-100% Value Add 0-25% Opportunistic 0-25% Development : 0-10% (Build-to-Core)	Core 75-100% Value Add 0-25% Opportunistic 0-25% Development : 0-10% (Build-to-Core)
Geography	US: 70-100% International Developed: 0-30% International Emerging Markets: 0-15% International Frontier Markets: 0-5%	US: 75-100% International Developed: 0-25% International Emerging Markets: 0-15% International Frontier Markets: 0-5%	US: 50-100% International Developed: 0-50% International Emerging Markets: 0-15% International Frontier Markets: 0-5%	US: 50-100% International Developed: 0-50% International Emerging Markets: 0-15% International Frontier Markets: 0-5%
Leverage	55% LTV Limit 1.40 Total DSCR (Min)	50% LTV Limit 1.5 Total DSCR (Min) 2.0 Core DSCR (Min)	65% LTV Limit 1.25 Total DSCR (Min)	40% LTV Limit 1.25 Total DSCR (Min)
Business Model	Separate Accounts / JVs, Directs, Commingled	Primarily Separate Accounts, Commingled	Primarily Separate Accounts / JVs, Commingled, Directs	Primarily Separate Accounts, Commingled
Manager Count	25	15	10 (Infrastructure and Forestland combined)	10 (Infrastructure and Forestland combined)
Emerging & Transition Managers	up to 11	up to 11	N/A	N/A
ESG Integration	Manager Expectations: Sustainable Investment Practices for Selection, Contracting, Monitoring & Management for Assets & Managers			

Real Estate – Proposed Leverage Pilot Program

Implement an unlevered Real Estate partnership mandate(s)

Leverage could potentially be added and managed internally by Staff at Total Fund or Real Assets level

Security for leverage could potentially be at the Real Estate (Individual asset, Sub-Portfolio, Total Portfolio) or Total Fund level

Leverage Pilot Program plan to be approved by ISG prior to implementation

Evaluate reducing costs & complexity, and increasing alignment & transparency

Potential Advantages

- Increase scale of borrowings
- Reduce cost
- Reduce complexity
- Increase alignment
- Increase transparency

Challenges

- Implementation timing
- Staff resources
- Processes
- Controls
- Data Technology

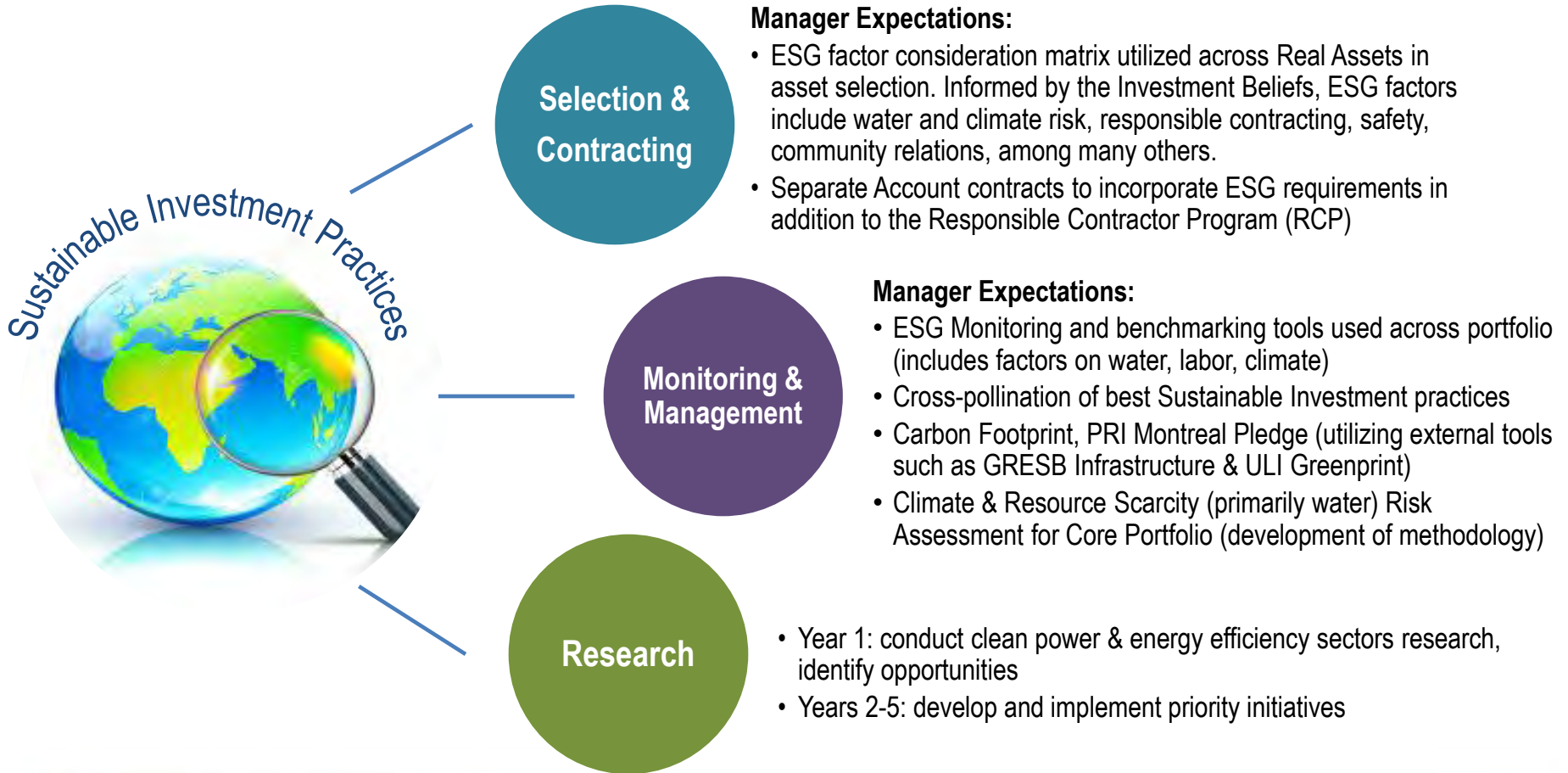
Real Estate – Emerging Manager and Transition Manager Programs

These Programs provide an opportunity to invest with successful early and mid-stage managers

Parameter	Emerging Manager	Transition Manager
Estimated Future Commitments Over a Five Year Period	Up to \$500M	Up to \$2B
Number of Managers at Program Maturity	Up to 6	Up to 5
Geographic Focus	California	TBD
Risk	Opportunistic	TBD
Manager Oversight	External Advisor/Mentoring Manager	Staff
Business Model	Primarily Separate Accounts	Separate Accounts & Commingled Funds
Firm Assets Under Management	Less than \$1B	TBD
Length of Track Record	First, Second or Third Separate Account or Institutional Fund	Fourth, Fifth and Sixth Separate Account or Institutional Fund
Estimated Time Frame for Manager to Complete Program	5 – 10 Years	5 – 15 Years

Real Assets – ESG Integration

Goals for Next 5 Years

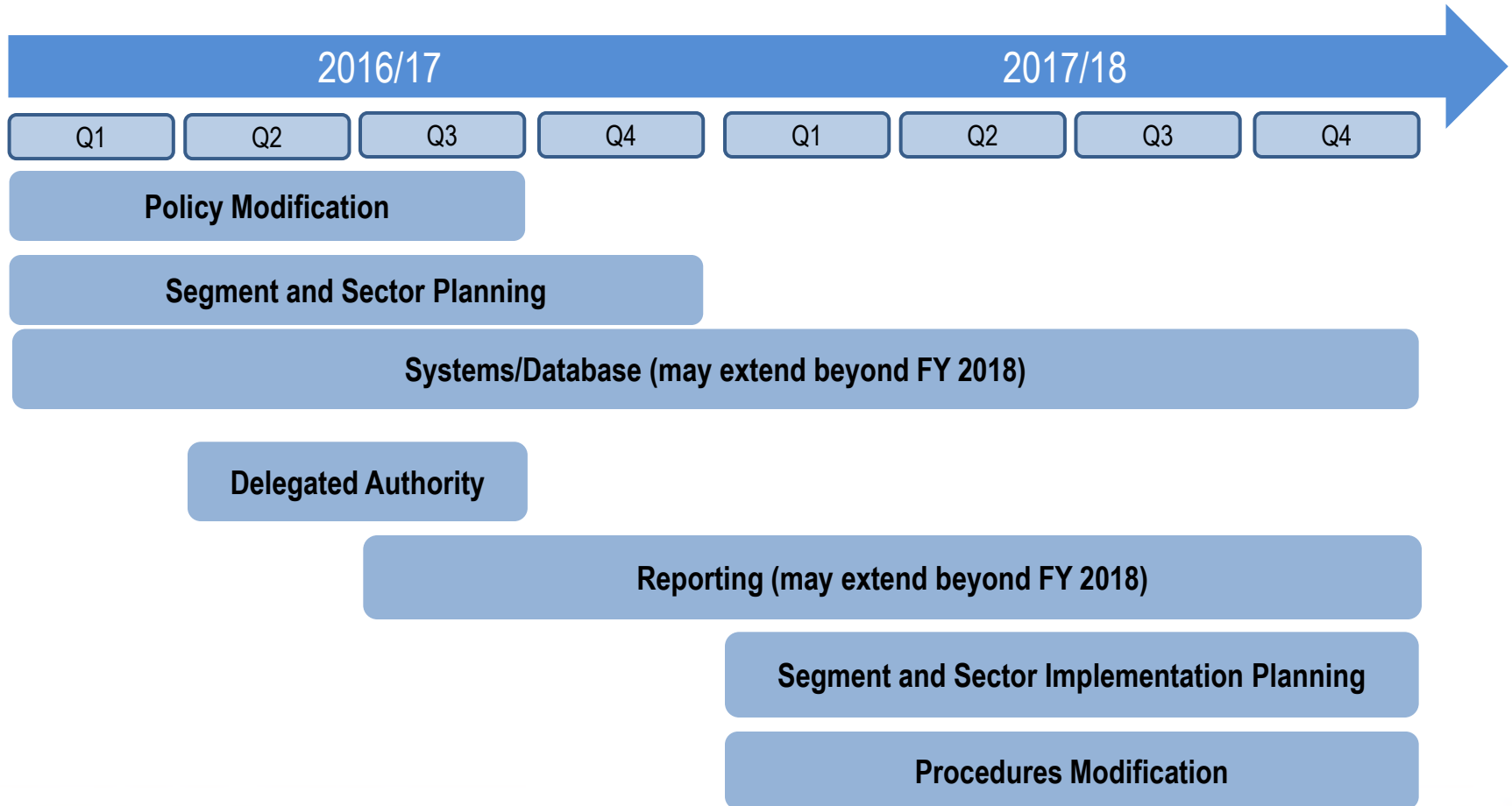


Section IV: Implementation & Conclusion

- Real Assets Proposed Strategic Plan Implementation
- Real Assets Conclusion Strategy Summary
- Real Assets Conclusion Integration / ALM 2017

Real Assets Proposed Strategic Plan Implementation

Ongoing planning in FY 2016-17 with implementation in FY 2017-18



Real Assets Conclusion – Strategy Summary (1 of 2)

Investment Strategy substantially unchanged

Refining and harmonizing portfolio structure, parameters and nomenclature

<p>Risk</p>	<ul style="list-style-type: none"> • Private Real Assets equity – providing diversification of equity risk • Mitigate Asset class risk through: <ul style="list-style-type: none"> • Majority of program (75-90%) – high quality Core assets held through business cycles • Durable cash flow – producing stable and predictable cash yield • Revenue models – supporting inflation protection
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Real Assets Conclusion – Strategy Summary (2 of 2)

Strong governance focused on economic alignment, transparency and cost efficiency

<p>Business Model</p>	<ul style="list-style-type: none"> • Primary focus on Separate Accounts with highly reputable, market-leading managers • Secondary focus on Operating Companies and Direct Investments • Manager Limit Target: Movement toward fewer and larger external manager relationships, consistent with Vision 2020
<p>Specialized Programs</p>	<ul style="list-style-type: none"> • Continued implementation of ESG goals set for the next 5 years • Continued implementation of Real Estate Emerging Manager and Transition Manager Programs
<p>Portfolio Hierarchy</p>	<ul style="list-style-type: none"> • Focus on Core assets within target Segments and Sectors to align with role • Integrate existing Strategic and Legacy sub portfolios to align with the new Real Assets Strategic Plan structure • Develop Sector implementation plans • Integrate Portfolio Hierarchy into Organizational Structure

Real Assets Conclusion - Integration / ALM 2017

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Items to be evaluated in Asset Liability Management (ALM) 2017 process:

ALM 2017

- Real Assets Benchmarks
 - Current Real Assets Benchmark: 83% Real Estate (NCREIF- ODCE); 8.5% Infrastructure (CPI +4%); 8.5% Forestland (NCREIF Timberland Index)
- Role of Forestland program
- Real Assets allocation

Section V: Real Assets Information

- Real Assets INVO ALM
- Real Assets Current Market Conditions
- Real Assets Performance
- Real Assets Current Portfolio Characteristics
- Real Assets Estimated Pro-Forma Portfolio Characteristics

Real Assets - INVO ALM

Strategic Plan based on ALM 2013; Next ALM is in 2017

Asset Class	Role	Benchmark	Allocation Target/Range	Compound E(R)	Volatility (St. Dev.)
Real Assets	Stable and predictable cash yield Economic diversification of equity risk Inflation protection	83% Real Estate benchmark + 8.5% Infrastructure benchmark + 8.5% Forestland benchmark	N/A	N/A	N/A
Program	Role	Benchmark	Allocation Target/Range	Compound E(R)	Volatility (St. Dev.)
Real Estate	Stable cash yield with real property ownership Economic diversifier Partial inflation hedge	NCREIF ODCE	Interim Target/Range 10% 5% to 15% Strategic Target/Range 11% 6% to 16%	7.00	14.00
Infrastructure	Predictable returns with essential infrastructure assets ownership Economic diversifier, moderate long-term inflation protection	Consumer Price Index + 4% lagged one quarter	Interim Target/Range 2% 0% to 4% Strategic Target/Range 3% 1% to 5%	7.00	11.00
Forestland	Forestland properties ownership Long-term inflation protection	NCREIF Timberland Index			

Real Assets – Current Market Conditions

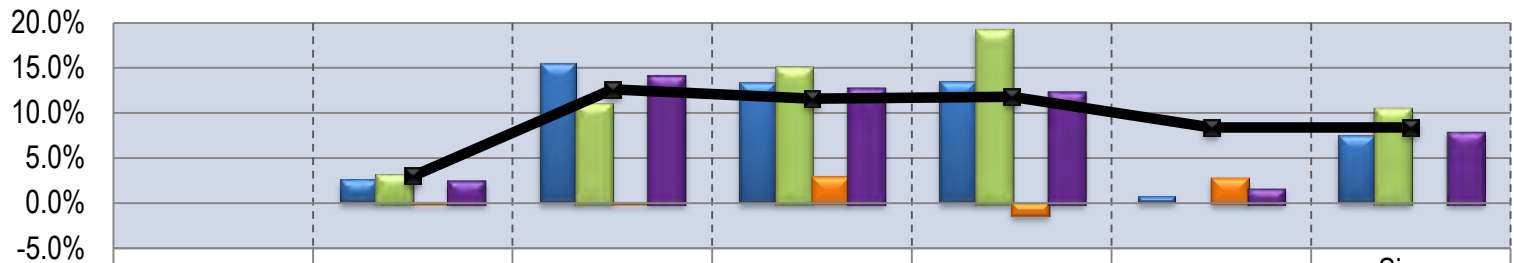
Continued competitive environment for asset buyers

Program	Market Conditions
Real Estate	<ul style="list-style-type: none"> • Continued robust pricing for core assets • Volatility in public markets, slowing global growth, and uncertain Fed policy • Increasing supply in apartments, industrial, and office sectors although more restrained in latter two sectors • Net Operating Income (NOI) growth across property sectors is positive but moderating
Infrastructure	<ul style="list-style-type: none"> • Core assets continue to be in high demand with institutional and strategic investors leading bids • Valuation levels have exceeded pre-Global Financial Crisis (GFC) levels • Energy continues to be the most abundant investment opportunity in the U.S. • Transportation and water opportunities more abundant in the U.K. and Australia
Forestland	<ul style="list-style-type: none"> • Recent timberland transaction activity has been slightly below average • Low housing demand and increasing inventory levels in the U.S. South have led to low / slow pricing recovery

Real Assets - Performance

Total Program outperforms in the 1, 3, and 5 Year Periods

Net Returns by Risk Classification

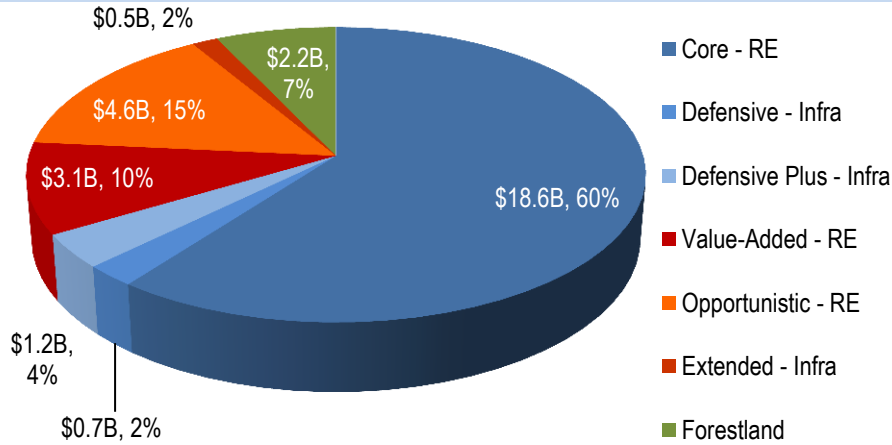


	NAV as a % of Total Program	Quarter Ending 09/30/2015	1-Year	3-Year	5-Year	10-Year	Since Inception of Investment
Real Estate	85.6%	2.6%	15.5%	13.4%	13.5%	0.8%	7.6%
Infrastructure	7.4%	3.2%	11.0%	15.0%	19.1%	N/A	10.5%
Forestland	7.0%	0.0%	0.0%	2.8%	-1.3%	2.7%	N/A*
Total Program	100.0%	2.5%	14.0%	12.7%	12.2%	1.6%	7.8%
Real Assets Benchmark (CPERRABX)	N/A	3.0%	12.6%	11.6%	11.8%	8.4%	8.4%
Difference between Total Program and Benchmark	N/A	-0.5%	1.4%	1.1%	0.4%	-6.8%	-0.6%

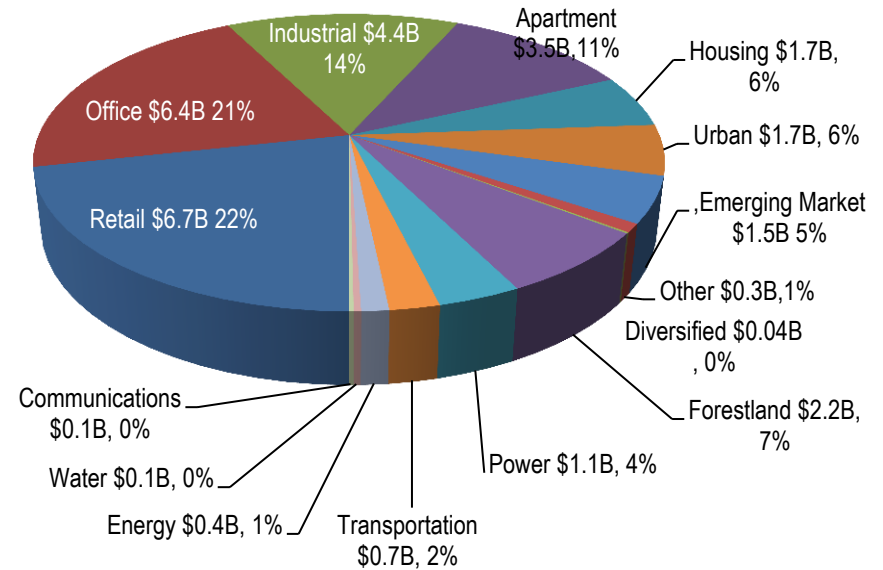
Real Assets – Current Portfolio Characteristics

Numerous classifications across three programs

Risk Classification



Sector



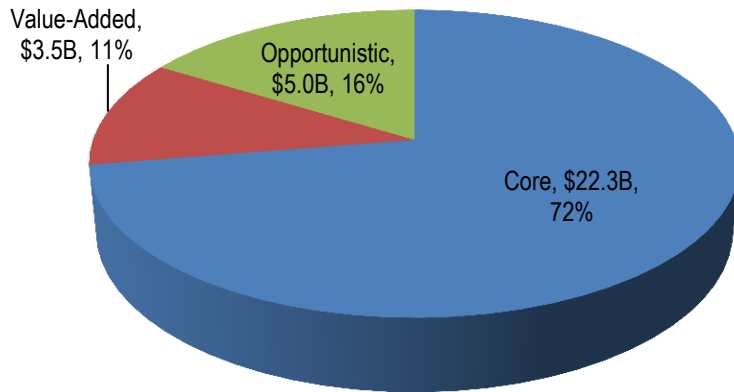
Current portfolio nomenclature and classifications:

- Numerous risk classifications across programs
- Numerous sectors classifications across programs

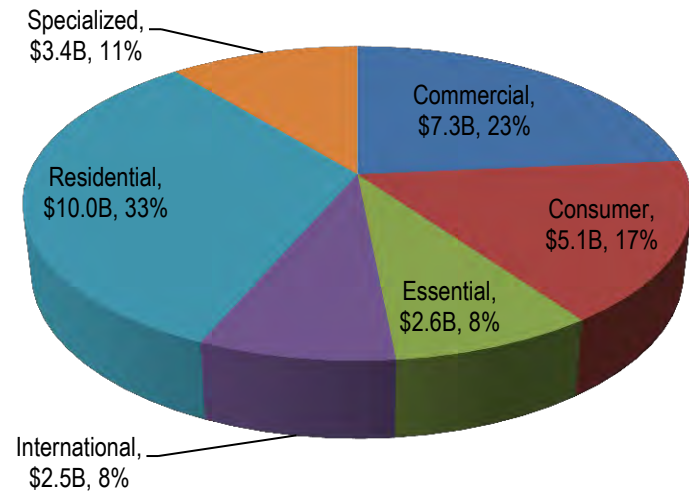
Real Assets – Estimated Pro-Forma Portfolio Characteristics

Proposed risk and segment classifications
Harmonizing nomenclatures

Risk Classification



Segments



Proposed structure:

- Above graphs illustrate proposed risk classification and segments using estimated pro-forma figures as of 9/30/2015
- Sectors (e.g. Office, Energy) would reside one level below Segments in the proposed hierarchy

Real Estate Appendix




- Real Estate Messages
- Real Estate Proposed Changes and Impact
- Real Estate Current Portfolio Parameters
- Real Estate Performance
- Real Estate Characteristics

Real Estate - Messages

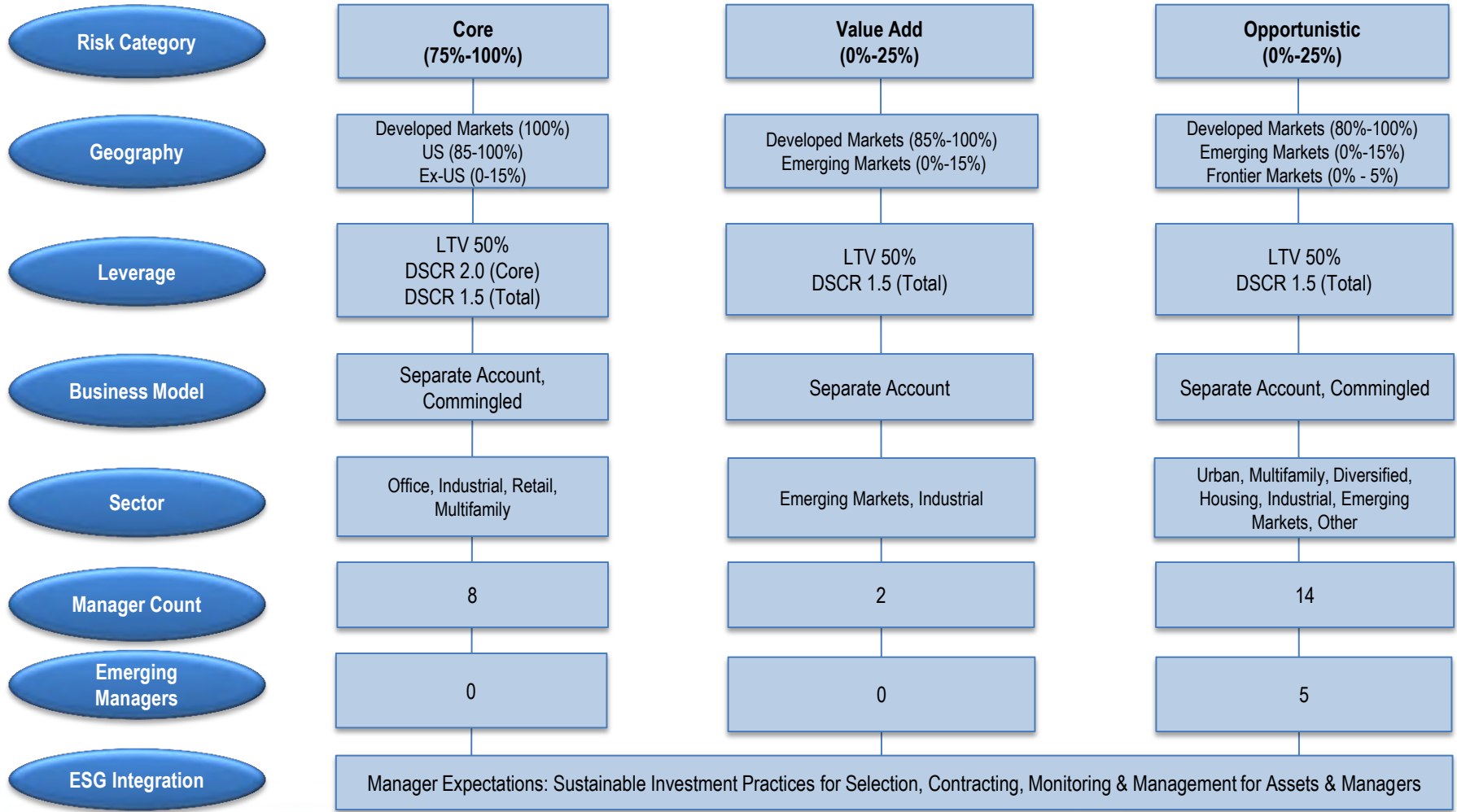
Topic	Message
Risk	Continuing focus on Core – reduces risk
Geography	Continuing focus on U.S. – reduces risk International investments aligning with role in developed and emerging markets
Leverage	Continuing moderate leverage levels – reduces risk Pilot Real Estate Leverage Program: <ul style="list-style-type: none"> • Implement an unlevered RE partnership mandate(s) • Leverage could potentially be added and managed internally by Staff at Total Fund or Real Assets level • Security for leverage could potentially be at the RE (Individual asset, Sub-Portfolio, Total Portfolio) or Total Fund level • Leverage Pilot Program plan to be approved by ISG prior to implementation • Evaluate reducing costs and complexity, and increasing alignment and transparency
Business Model	Continue primary focus on Separate Accounts Continue secondarily focus on Operating Companies
Specialized Programs	Continuing implementation of ESG goals set for the next 5 years Continuing implementation of Real Estate Emerging Manager and Transition Manager Programs
External Managers	Manager Limit Target: Movement toward fewer and larger external manager relationships, consistent with Vision 2020
Portfolio Hierarchy	Harmonizing Portfolio Hierarchy – reduces complexity

Real Estate - Proposed Changes and Impact

Structural changes simplify portfolio and promote integration of Real Estate Program with the Infrastructure and Forestland Programs

Category	Changes	Impact
Additions	<ul style="list-style-type: none"> • Risk: Development limit of 0-10% (Build-to-Core) • Manager Limit Target: 15 	 <ul style="list-style-type: none"> • Reduces risk • Reduces complexity • Reduces cost
Deletions	<ul style="list-style-type: none"> • Portfolio Hierarchy: <ul style="list-style-type: none"> • Base Core / Domestic Tactical / International Tactical strategies eliminated • Strategic and Legacy sub-portfolios eliminated 	 <ul style="list-style-type: none"> • Reduces complexity
Modifications	<ul style="list-style-type: none"> • Portfolio Hierarchy: Sectors to be classified within Segments (Essential, Consumer, Residential, Commercial, Specialized and International) 	 <ul style="list-style-type: none"> • Reduces complexity

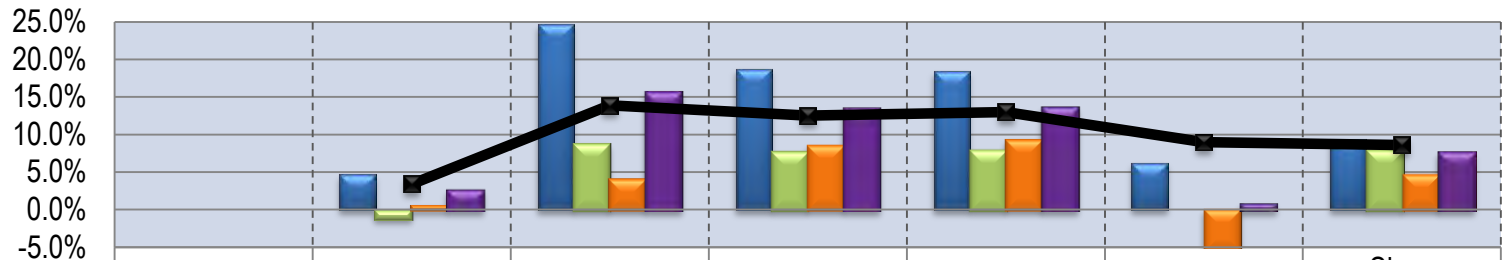
Real Estate - Current Portfolio Parameters



Real Estate - Performance

Total program outperforms in 1, 3, and 5 year periods
Core outperforms in all periods except 10 year period

Net Returns by Risk Classification



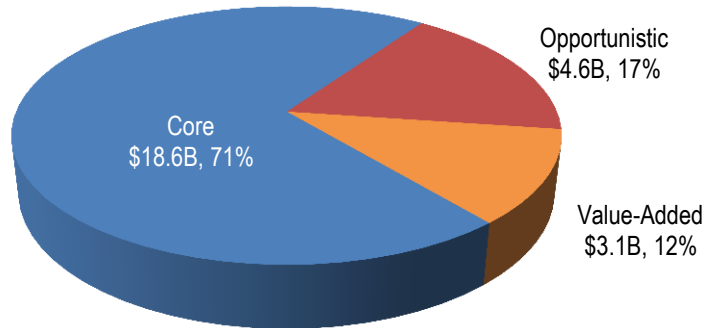
	NAV as a % of Total Program	Quarter Ending 09/30/2015	1-Year	3-Year	5-Year	10-Year	Since Inception of Investment
Core	58.3%	4.7%	24.7%	18.7%	18.4%	6.2%	9.3%
Value-Add	18.3%	-1.1%	8.6%	7.6%	7.8%	N/A	7.8%
Opportunistic	23.4%	0.5%	4.0%	8.5%	9.2%	-5.4%	4.6%
Total Program	100.0%	2.6%	15.5%	13.4%	13.5%	0.8%	7.6%
RE Program Benchmark (CPERSREX)	N/A	3.4%	13.9%	12.5%	13.0%	9.0%	8.6%
Difference between Total Program and Benchmark	N/A	-0.8%	1.6%	0.9%	0.5%	-8.2%	-1.0%

Real Estate – Characteristics

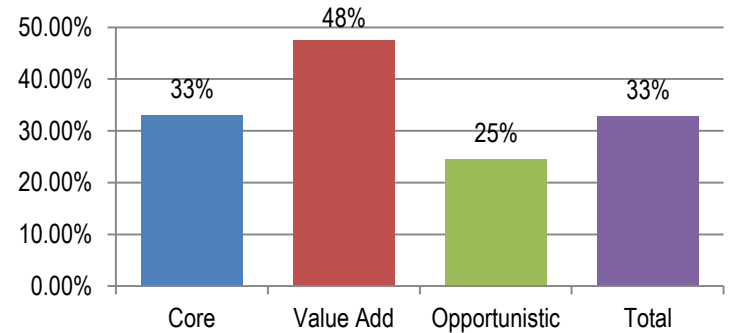
Real Estate Portfolio is primarily U.S. Core with modest leverage

As of 9/30/15, Adjusted NAV of \$25.7 Billion (8.9% of Total Fund) – \$9.5 Billion Unfunded

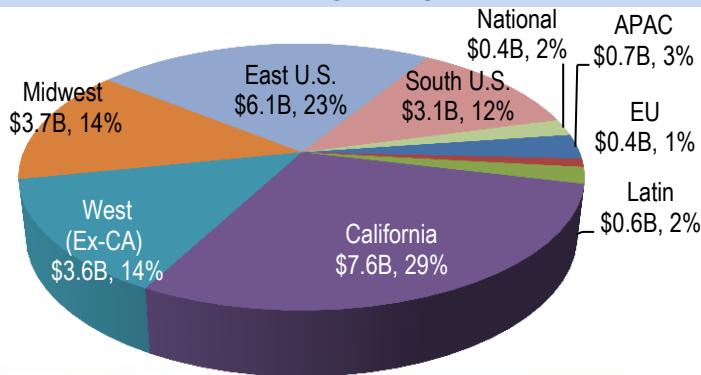
Risk



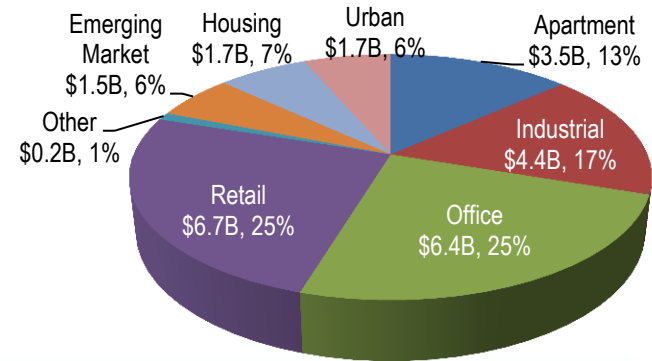
Leverage – LTV (%)



Geography



Sector



Infrastructure Appendix

- Infrastructure Messages
- Infrastructure Proposed Changes and Impact
- Infrastructure Current Portfolio Parameters
- Infrastructure Performance
- Infrastructure Characteristics

Infrastructure - Messages

Topic	Message
Risk	Continuing focus on Core assets – reduces risks Adding 10% Development limit (Build-to-Core)
Geography	Continuing focus on U.S. and International developed markets – reduces risks
Leverage	Maintain current LTV limit of 65% Adding DSCR 1.25 minimum – reduces risks
Business Model	Primarily focusing on Separate Accounts Secondarily focusing on Directs
External Managers	Manager Limit Target: Movement toward fewer and larger external manager relationships, consistent with Vision 2020
Key Parameters Applicability Minimum (NAV)	Increasing from \$3B to \$5B
Portfolio Hierarchy	Harmonizing Portfolio Hierarchy – reduces complexity

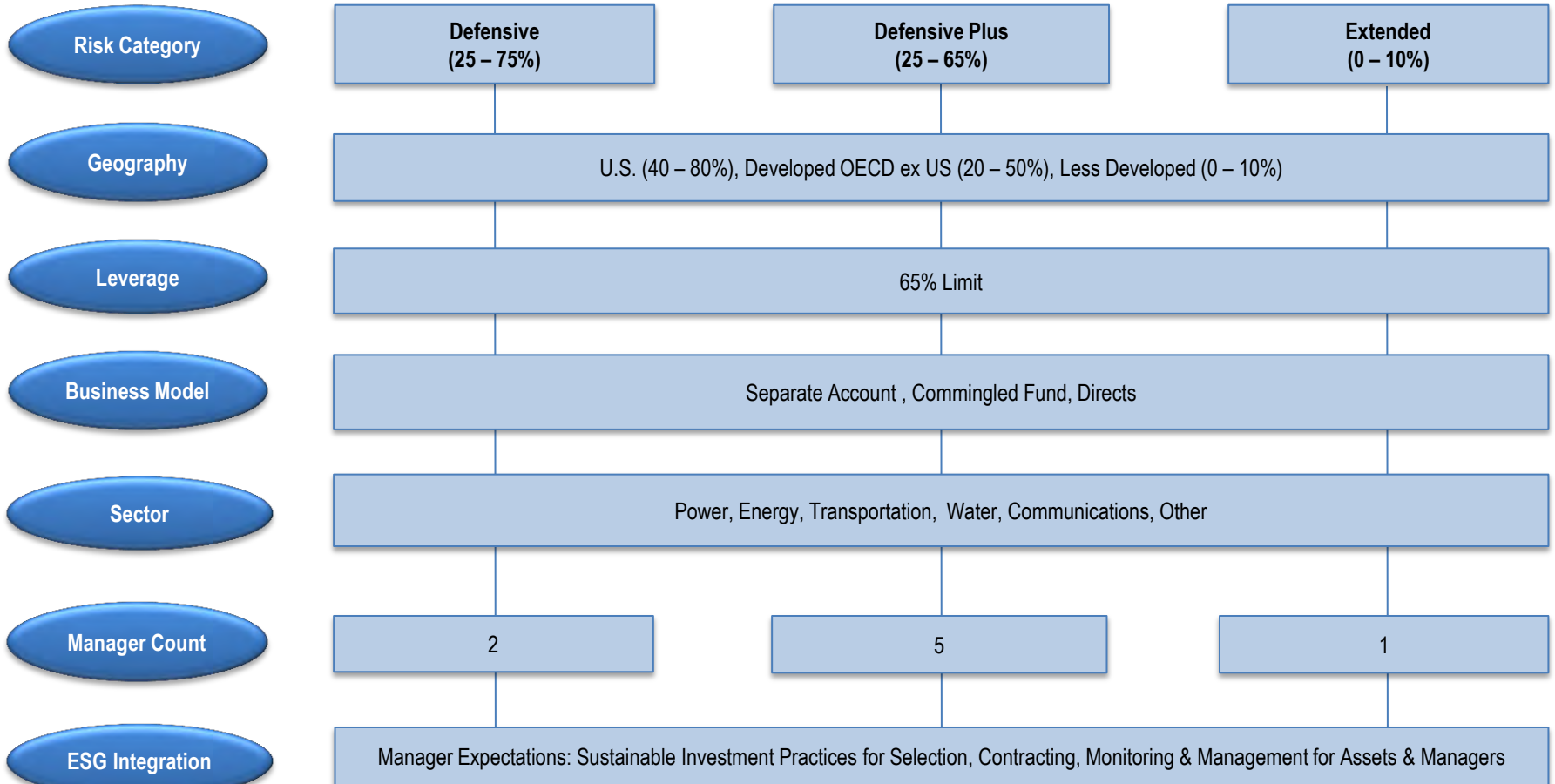
Infrastructure - Proposed Changes and Impact

Infrastructure will be further integrated into RAU and better diversified, with access to a broader opportunity set

Category	Change	Impact
Addition(s)	<ul style="list-style-type: none"> Risk: Development limit 0-10% (Build-to-Core) Leverage: DSCR target of 1.25x Manager Limit Target: 10 	<ul style="list-style-type: none"> Reduces risk Increases transparency Reduces costs
Deletion(s)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
Modification(s)	<ul style="list-style-type: none"> Risks: <ul style="list-style-type: none"> -New: Core (60-100%); Value Add: (0-25%); Opportunistic: (0-25%) -Eliminate: Defensive (25-75%); Defensive Plus (25-65%); Extended (0-10%) Geography: <ul style="list-style-type: none"> -Eliminate: US (40-80%) / Developed ex-US (20-50%) / Less Developed (0-15%) -New: US (50-100%); International Developed (0-50%) / International Emerging Markets (0-15%) / International Frontier Markets (0-5%) Portfolio Hierarchy: <ul style="list-style-type: none"> -Segments: <ul style="list-style-type: none"> o Essential: Power and Energy, Water, Waste o Consumer: Communications o Commercial: Transportation Key Parameters Applicability Minimum: Increased from \$3B to \$5B 	<ul style="list-style-type: none"> Reduces risk Reduces complexity Increases transparency Increases flexibility



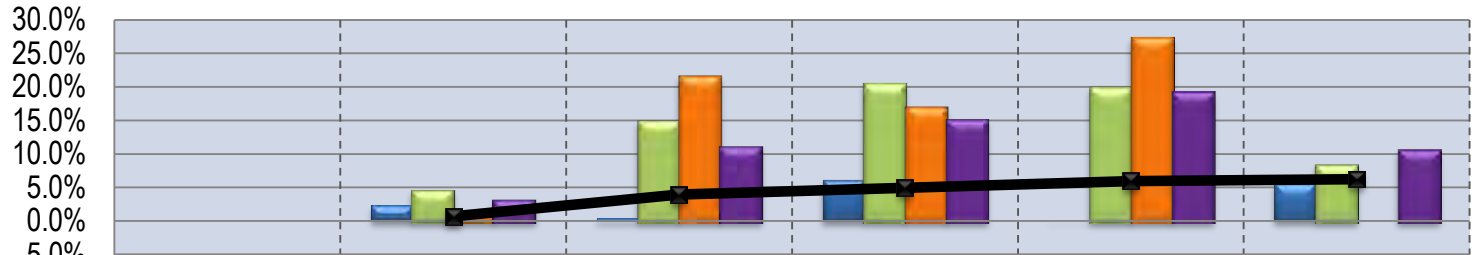
Infrastructure - Current Portfolio Parameters



Infrastructure - Performance

The Infrastructure Program outperformed the benchmark in all periods

Net Returns by Risk Classification



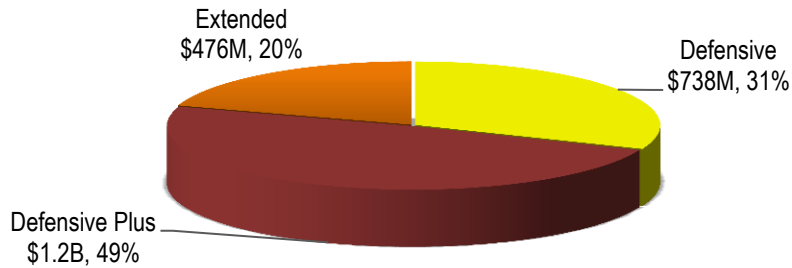
	NAV as a % of Total Program	Quarter Ending 09/30/2015	1-Year	3-Year	5-Year	Since Inception (04/01/2007)
Defensive	32.1%	2.3%	0.4%	6.1%	N/A	5.6%
Defensive Plus	49.2%	4.5%	14.8%	20.3%	19.7%	8.3%
Extended	18.8%	1.3%	21.5%	16.9%	27.2%	N/M
Total Program	100.0%	3.2%	11.0%	15.0%	19.1%	10.5%
CPI + 400 BPS	N/A	0.7%	4.0%	5.0%	5.9%	6.3%
Difference between Total Program and CPI + 400 BPS	N/A	2.5%	7.0%	10.0%	13.2%	4.2%

Infrastructure - Characteristics

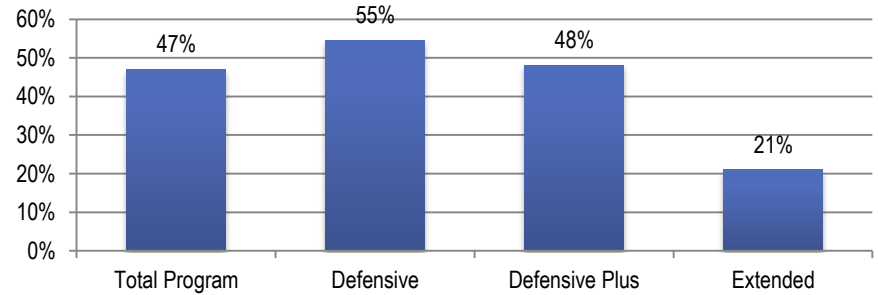
The Program is in ramp up mode

As of 9/30/2015, Total Adjusted NAV of \$2.37 Billion (0.9% of Total Fund) – \$2.22 Billion Unfunded

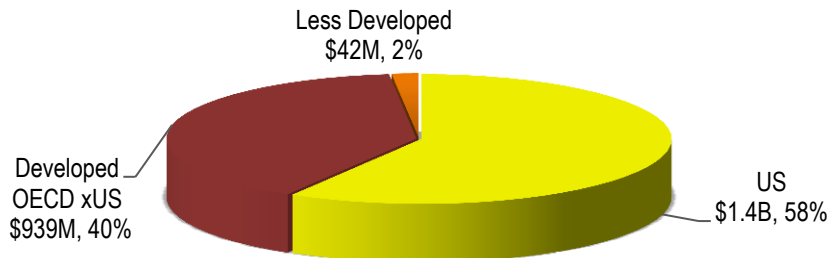
Risk



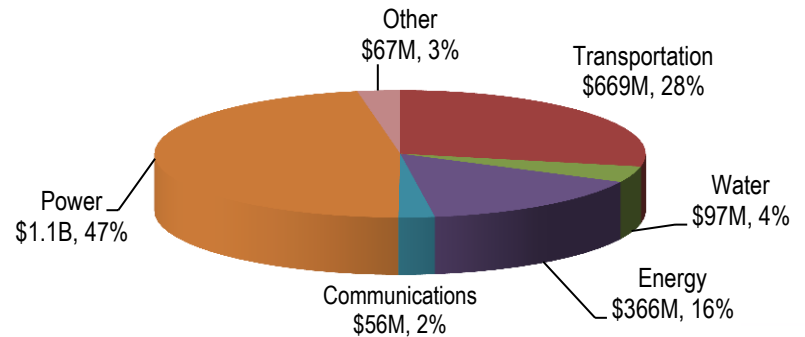
Leverage – LTV (%)



Geography



Sector



Forestland Appendix

- Forestland Messages
- Forestland Scalability Analysis
- Forestland Proposed Changes and Impact
- Forestland Current Portfolio Structure and Proposed Parameters
- Forestland Performance
- Forestland Characteristics

Forestland - Messages

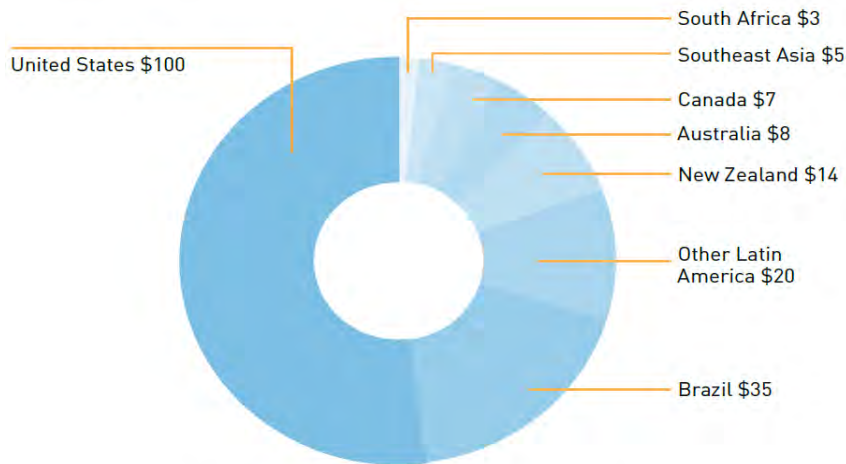
Topic	Message
Current Status	<ul style="list-style-type: none"> • International portfolio outperformed the benchmark since (10/1/07) • Domestic portfolio is under restructuring
Implementation Challenges	<ul style="list-style-type: none"> • Challenging to scale at a meaningful level for CalPERS • It may take Program 5+ years to get to a 1% allocation and 11+ years to get to a 2% allocation • At 2% of allocation (\$6B), CalPERS would comprise 6.7% of the global timberland market*
ALM 2017	<ul style="list-style-type: none"> • Forestland's role to be evaluated as part of 2017 ALM Process

Forestland – Scalability Analysis

Forestland is challenging to scale at a meaningful level for CalPERS

- **Transactions:** Annual average transaction volume of approximately 32 transactions or \$3B
- **Managers:** The top ten Timber managers' assets under management total \$44B

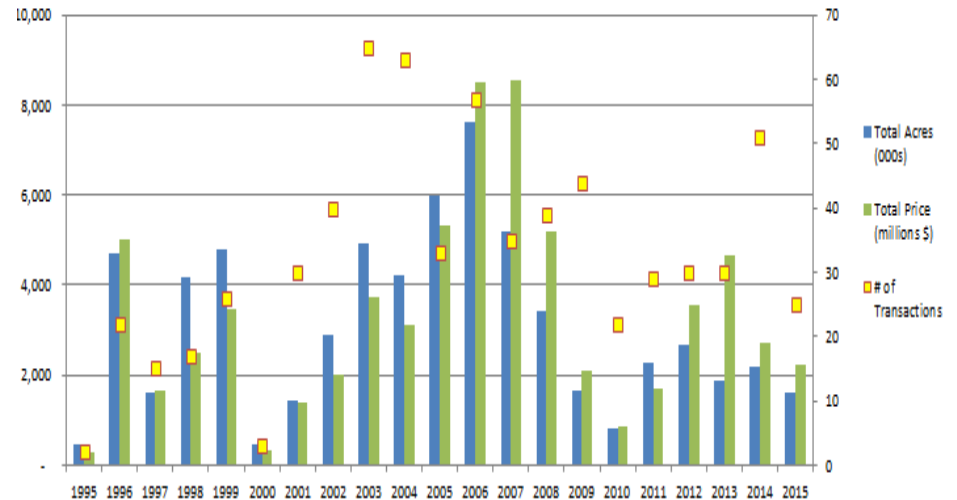
Timberland Investment Universe by Region (USD Billion)



Source: New Forests data, June 2015. NB: Does not include Europe.

Major U.S. Timberland Transactions 1995-2015⁽¹⁾

(Total Acres and Total Price - left scale; # of Transactions - right scale)




Sources: RISI; Equity Research Associates

⁽¹⁾Excludes transactions of less than \$1M

Forestland - Proposed Changes and Impact

Forestland will be further integrated into Real Assets

Category	Change	Impact
Addition(s)	<ul style="list-style-type: none"> • Risk: <ul style="list-style-type: none"> • Core (75-100%) • Value Add (0 – 25%) • Opportunistic (0-25%) • Development limit 0-10% (Build-to-Core) • Geography: <ul style="list-style-type: none"> • U.S. (50-100%) • International Developed (0-50%) • Emerging Markets (0-15%) • Frontier Markets (0-5%) • Leverage: DSCR target of 1.25x • Manager Limit Target: 10 (Infrastructure and Forestland combined) 	 <ul style="list-style-type: none"> • Reduces risk • Increases transparency • Reduces costs
Deletion(s)	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Modification(s)	<ul style="list-style-type: none"> • Portfolio Hierarchy: <ul style="list-style-type: none"> -Segments: <ul style="list-style-type: none"> ○ Essential: Timber, Agriculture 	<ul style="list-style-type: none"> • Reduces complexity • Increases transparency

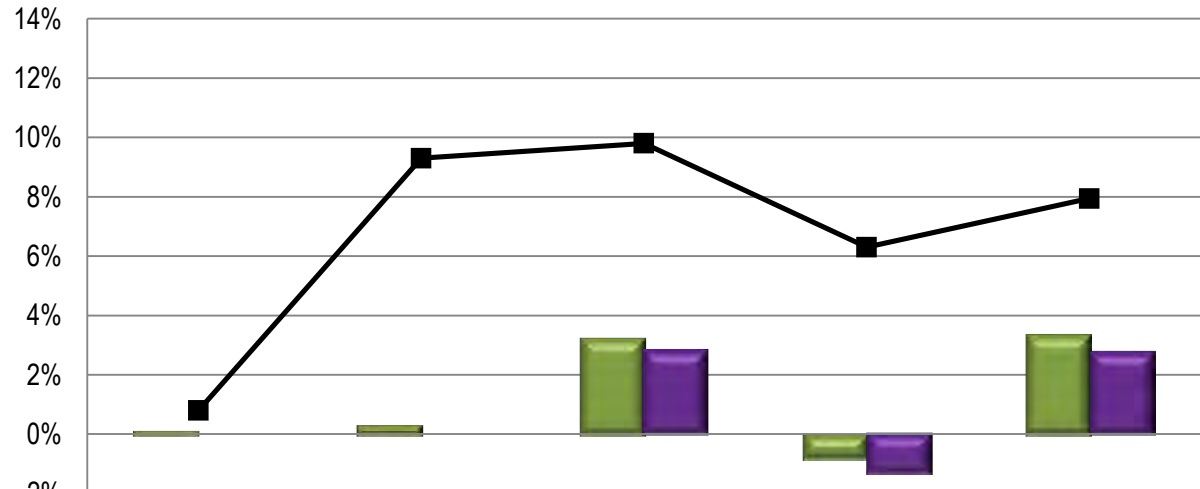
Forestland – Current Portfolio Structure and Proposed Parameters

	Current	Proposed
Risk Category	Not Established	Core: 75-100% Value Add: 0-25% Opportunistic: 0-25% Development: 0-10%
Geography	Not Established	US: 50-100% International Developed: 0-50% International Emerging Markets: 0-15% International Frontier Markets: 0-5%
Leverage	40% LTV Program Limit Actual 21.2%	40% LTV Program Limit DSCR: 1.25
Business Model	Separate Account (2 accounts, 100%; \$2.2 B)	Primarily Separate Account
Manager Count	Not Established	10 (Infrastructure and Forestland combined)
ESG Integration	Manager Expectations: Sustainable Investment Practices: Selection, Contracting, Monitoring & Management	Manager Expectations: Sustainable Investment Practices: Selection, Contracting, Monitoring & Management
Sector	Forestland	Forestland/Agriculture
Asset Type	Sawtimber, Pulpwood	Sawtimber, Pulpwood, Agricultural Products

Forestland - Performance

Forestland has underperformed across all periods

Gross Returns versus Net Returns



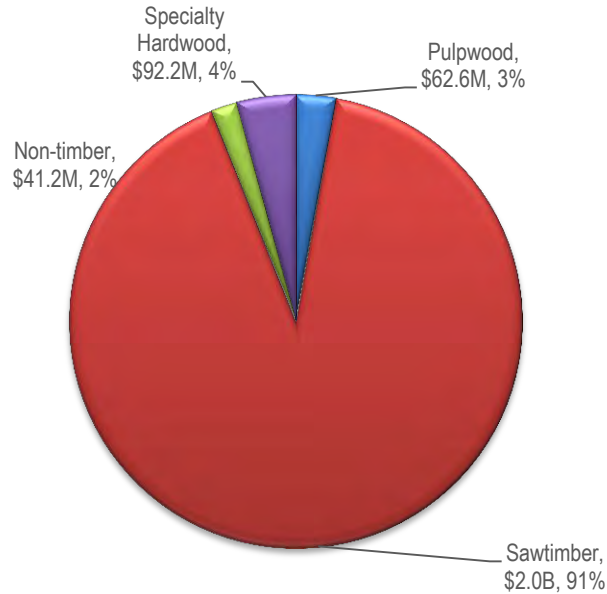
	Quarter Ending 09/30/2015	1-Year	3-Year	5-Year	10-Year
Total Forestland - Gross	0.1%	0.3%	3.2%	-0.8%	3.3%
Total Forestland - Net	0.0%	0.0%	2.8%	-1.3%	2.7%
NCREIF Timberland Index	0.8%	9.3%	9.8%	6.3%	7.9%
Difference Between Forestland Returns and NCREIF Timberland Index (Both Gross of Fees)	-0.7%	-8.9%	-6.6%	-7.1%	-4.6%

Forestland - Characteristics

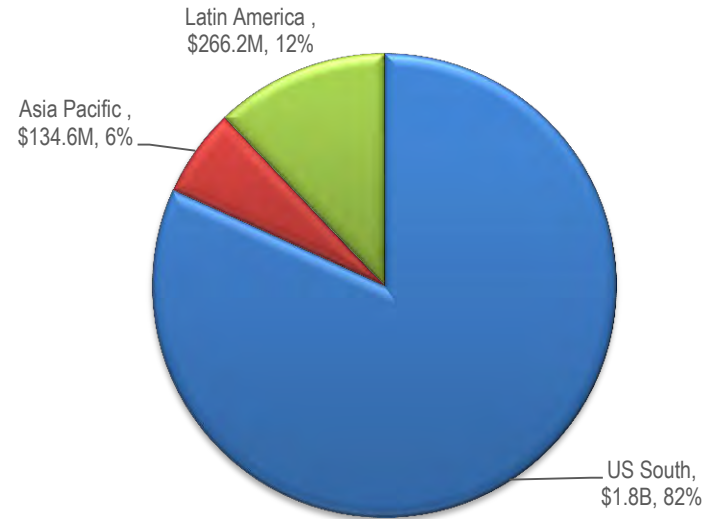
Forestland investments are concentrated in Sawtimber in the Southern United States.

As of 9/30/15, Total NAV of \$2.2 Billion (0.8% of Total Fund) – \$0 Billion Unfunded

Product Type (%)



Geography Exposure (%)



Source: CalPERS

Glossary Appendix

Glossary

Below is a list of terms that appear in the 2016 RAU Strategic Plan. A definition and slide number where it first appears are provided below.

Cap Rate Reversion: Cap rates adjusting to historical mean levels. (Slide #11)

Capital Expenditures (capex): Investment expenditures that are capitalized onto the balance sheet (vs expensed in the current period). (Slide #11)

Cash Yield (%): Net cash flow divided by Net Asset Value (NAV) paid to owner. (Slide #7)

Climate & Resource Scarcity Risk Assessment: The assessment of value at risk due to short, medium and long term risks from resource scarcity (primarily water) and climate change (physical risk to asset from sea level rise, storms). (Slide #26)

Debt Service Coverage Ratio (DSCR): Net operating income divided by total debt service. (Slide #10)

Development (Build-to-Core): Development intended for inclusion in the Core portfolio upon stabilization. (Slide #10)

Direct Investments (Directs): Investments that are purchased and owned directly by an investor without a dedicated manager. (Slide #9)

Frontier Markets (Frontier): Frontier Markets are those that are less economically established than Emerging markets but have investable stock markets. Examples include Vietnam, Nigeria, and Argentina. (Slide #10)

Loan-to-Value ratio (LTV): (Debt divided by asset value). (Slide #5)

Merchant (renewal risk) / Value of cash flows post-contract : Contract renewal risks. / The value of the cash flows that occur after contract expiration. (Slide #11)

Net Asset Value (NAV): The value of an investment's assets less the value of its liabilities. (Slide #5)

Glossary

Operating Companies: An investment vehicle structure responsible for day to day management of the investments of the vehicle. (Slide #9)

Operational expenses (opex): Expenses incurred during normal course of operations reflected in the income statement (vs. capitalized on the balance sheet). (Slide #11)

Separate Account: An investment vehicle structure with a manager solely dedicated to the investor. (Slide #9)



Date: March 18, 2016

To: CalPERS - Investment Committee

From: Pension Consulting Alliance, LLC (PCA)

CC: Theodore Eliopoulos, CIO; Paul Mouchakka, MID

RE: Real Assets Strategy Plan Update – Real Estate

In our capacity as Real Estate Consultant to the Board of Trustees, PCA has worked with Staff to update the 2011 Strategic Plan for the real estate component of the Real Assets program. The revised Strategic Plan continues to adhere to the investment principles established in the 2011 Strategic Plan. By many measures, both quantitative and qualitative, the 2011 Strategic Plan and improvements in policies, procedures, and personnel have served the System well during the past five years. CalPERS' Staff have made significant progress in aligning the real estate portfolio with the needs of the System, especially compared to the real estate portfolio of 2008. Recent returns have been strong, and many risks have been eliminated or reduced. At the same time, the Update makes various adjustments to sub-portfolio categories to enhance portfolio management, support integration of the Real Assets teams, and better align the overall Real Assets program with CalPERS' enterprise-level mission and values.

The Update makes no big changes to the central implementation tenets for real estate instituted by the 2011 Strategic Plan. Rather, the revisions contained in the Update build on the stability of the business model that has been established over the last five years and fine tune the organization and implementation of the real estate program. Importantly, the proposed changes in the Update do not introduce meaningful new investment themes or risks and keep the focus of Staff's resources on the areas of greatest impact. These changes will further support the real estate portfolio in its efforts to meet the role of real estate in current and anticipated market conditions.

The role of real estate can be summarized as:

- Economic diversification of equity risk;
- Durable and sustainable cash flows; and
- Partial inflation hedge

In accordance with this role, the real estate program will continue to be anchored by low to moderately leveraged investments made in core (i.e., stabilized and leased) properties in the United States. These investments generate the majority of their total return through income. The Update maintains minimum target allocations of 75% to core and 75% to US.



PCA believes a focus on domestic core properties achieves the prescribed role of real estate and reduces risk in the overall portfolio. Additionally, the Update continues to adhere to lessons learned from the previous downturn during which CalPERS suffered substantial losses in the value of its real estate portfolio. As previously described by Staff and PCA, the losses suffered in real estate were primarily attributable to: (a) vintage-year concentration, (b) investments in non-core assets, and (c) the use of high amounts of leverage. Real estate is likely to remain a cyclical asset class. CalPERS will, therefore, experience other periods of underperformance in real estate compared to the targeted nominal returns from time to time in the future. However, PCA believes that with continued proper oversight, a moderately levered, core-oriented portfolio can weather a potential re-pricing of assets and slower economic growth (or recession).

In addition to a domestic core program, the Update continues to allow non-core investments as well as international investments in developed and emerging markets. The non-core investments will have a new limitation on development investments of 10%. This is intended to allow for the creation, from time to time, of new core assets in markets that offer limited opportunities to acquire existing stabilized assets. PCA believes these non-core and international real estate investments can be beneficial to the overall plan, but should play a relatively small role in the real estate investment program.

The Update continues the focus on investment through private investment vehicles and, more specifically, scalable separately managed accounts. CalPERS intends to further reduce the number of manager relationships in the real estate portfolio as a means of more efficiently utilizing finite Staff resources, maintaining strong governance provisions, increasing alignment, and controlling costs. A smaller number of long-term partnerships will also allow Staff to integrate investment beliefs and ESG matters into portfolio management in a more meaningful and disciplined manner.

The Update provides for a new leverage pilot program, which will explore the potential benefits and risks associated with the use of in-house gearing for an unleveraged real estate separate account. Details have yet to be determined and implementation of the program is subject to ISG approval. PCA will be closely involved in the evolution of this program.

Finally, the Update reduces complexity and improves risk management by reclassifying the underlying sub-portfolios within the real estate portfolio. A vestige of the post-crisis portfolio workout is the current delineation of investments between "Legacy" (i.e., not aligned with the role of real estate) and "Strategic" (aligned with the asset class role). Ongoing asset sales combined with the recent secondary sale of CalPERS' LP interests in commingled funds has significantly reduced the Legacy portfolio to the point where the delineation between Legacy and Strategic no longer meaningfully serves portfolio management efforts. Similarly, the distinctions between Domestic Base, Domestic Tactical and International Tactical portfolios have become less useful.



The reclassification of investments based on risk profile (i.e., core, value add, opportunistic) and economic segment (i.e., essential, commercial, consumer, residential and specialized) should provide more meaningful insight into portfolio concentrations and overall risk profile. The International segment is a bit of an outlier as it does not describe fundamental economic drivers of real estate property. Even so, this reclassification effort combined with similar efforts across the infrastructure and forestland portfolios should contribute to improved investment decision making, analysis and reporting.

Taken together, the proposed modifications contained within the Strategy Plan Update serve to better organize and align the Real Asset Unit with its own mandate and the overarching mission and values of CalPERS. PCA will work as the Board's advocate with Staff to modify the investment policy and procedures manual for real estate, as well as make any other necessary adjustments to investment decision making processes and portfolio monitoring systems.

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An investment in the Fund is speculative and involves a degree of risk and no assurance can be provided that the investment objectives of the Fund will be achieved. Investment in the Fund is suitable only for sophisticated investors who are in a position to tolerate such risk and satisfy themselves that such investment is appropriate for them. The Fund may lack diversification, thereby increasing the risk of loss, and the Fund's performance may be volatile. As a result, an investor could lose all or a substantial amount of its investment. The Fund's governing documents will contain descriptions of certain of the risks associated with an investment in the Fund. In addition, the Fund's fees and expenses may offset its profits. It is unlikely that there will be a secondary market for the shares. There are restrictions on redeeming and transferring shares of the Fund. In making an investment decision, you must rely on your own examination of the Fund and the terms of the offering.

Memo

To: Members of the Investment Committee
California Public Employees' Retirement System

From: StepStone Group

Date: April 18, 2016

Subject: Strategic Plan Five-Year Update – Infrastructure

StepStone has reviewed the updated Real Assets Strategic Plan to be presented to the Investment Committee in April. With respect to the Infrastructure Program, the changes proposed in the updated Strategic Plan are primarily focused on creating (1) an integrated organizational structure across the Real Assets component programs; and (2) a single portfolio hierarchy for Real Assets, under which risk classifications, parameters and the business model for the component programs will conform to those currently used in Real Estate. StepStone believes that the increased integration of the component asset classes should help to reduce complexity across the Real Assets Unit and Investment Office. As we discuss below, some of these changes have already been implemented while others are forthcoming, including revisions to the Investment Policy (the "Policy").

In July 2011, Infrastructure was transferred, along with Real Estate and Forestland, to the newly-formed Real Assets asset class. Shortly thereafter, the Investment Committee approved the Infrastructure Strategic Plan. In 2015, the Real Assets Unit ("RAU") initiated the process of integrating investment staff, procedures, reporting, and policies across the three component programs. These changes were undertaken as part of the INVO Vision 2020 effort to reduce risks, costs, and complexity across CalPERS' Investment Office. The 2016 strategic planning process began in July 2015 and included a series of roundtables with market participants, and an evaluation of market conditions by geography and strategy, and other topics. The updated Strategic Plan sets forth an integrated Real Assets Unit for the first time, with a single organizational structure and portfolio hierarchy, including risk classifications, parameters and a business model for Real Estate, Infrastructure, and Forestland.

The updated Strategic Plan introduces several changes to the Infrastructure Program, which are outlined below:

- **Organization:** The RAU has created a new, integrated organizational structure comprising five divisions: Strategic Planning, New Investments, PARRGO, Portfolio Management Group, and Investment Research.
 - The RAU initiated these changes in 2015. The reorganization of staff is complete, yet certain policies and procedures are still in the process of being integrated. StepStone believes that the new organizational structure should lead to greater consistency in the investment process, decision making, asset management, and reporting across the RAU and Investment Office.
- **Risk Classification:** The updated Strategic Plan proposes to change the Infrastructure risk classifications to conform to those used in Real Estate.
 - The 2011 Infrastructure Strategic Plan introduced risk classifications to highlight specific return drivers, risks, and other criteria that are specific to Infrastructure investments (Defensive, Defensive Plus, and Extended). In the updated Strategic Plan, the existing Infrastructure risk classifications will be replaced with those currently used in CalPERS' Real Estate Program and by other institutions for Real Assets (Core, Value-Added, and Opportunistic). The use of a single risk classification scheme should help to clarify the role that Real Assets investments are expected to play in CalPERS' portfolio, particularly for purposes of Asset Liability Management. StepStone notes that new risk classifications for Infrastructure will require a revision to the definitions currently used in the Policy. Staff will begin the process of updating the Policy following Investment Committee approval of the Strategic Plan. Further, existing Infrastructure investments must also be reclassified in CalPERS' reporting systems.

- **Segments:** The updated Strategic Plan proposes the classification of infrastructure sectors into “segments” used in Real Estate (Essential, Commercial, Consumer, Residential, Specialized, and International).
 - Several infrastructure sectors have been mapped onto Essential, Commercial, Retail, and International segments. However, further detail on the use of these segments across CalPERS’ existing Infrastructure portfolio and future investments is required, particularly since infrastructure investments have not historically been classified by segment. Further, existing infrastructure investments must be reclassified by segment in CalPERS’ reporting systems.
- **Geography:** Geographic regions used in Infrastructure have been changed to conform to those currently used in Real Estate and with the classifications used by FTSE. In addition, the upper limit of the allocation range for US investments has increased from 80% to 100%, while the lower limit on investments in developed markets outside the US was reduced from 20% to 0%.
 - StepStone considers international investments to be an important component of a diversified infrastructure allocation, particularly due to the size, depth and maturity of the infrastructure market outside the US. The proposed changes to geographic segments are not expected to impact CalPERS’ ability to invest outside the US.
- **Business Model:** The updated Strategic Plan incorporates a limit on Infrastructure and Forestland manager relationships to 10. Currently, the Infrastructure Program has 8 manager relationships.
 - The emphasis on maintaining fewer, larger relationships with external managers is positive and should contribute to a reduction in the complexity and costs associated with CalPERS’ investments. Given the specialized nature of certain infrastructure sectors and regions, StepStone notes that a cap on the number of manager relationships may limit CalPERS’ ability to gain access to top-tier specialists, and to maintain a diversified portfolio of Infrastructure investments.
- **Other changes:** The updated Strategic Plan incorporates a Debt Service Coverage Ratio (DSCR) of 1.25% for Infrastructure investments, a new limit on exposure to Development (up to 10%) for all Real Asset component programs, and an integrated Environmental, Social, and Governance (“ESG”) goals and sustainable investment practices across Real Assets. These changes are prudent and should help to strengthen the Program’s focus on risk.

StepStone welcomes the opportunity to answer any questions of the Investment Committee.



*Andrew Junkin, CFA, CAIA
President*

March 24, 2016

Mr. Henry Jones
Chair of the Investment Committee
California Public Employees' Retirement System
400 Q Street
Sacramento, CA 95814

Re: Real Asset Strategic Plan

Dear Mr. Jones:

You requested Wilshire's opinion with respect to the Strategic Plan for the Real Assets Program. In addition to our duties as the General Pension Consultant to the Investment Committee, Wilshire acts as the Investment Committee's Forestland Consultant.

Strategic Role and Investment Beliefs

The strategic role of the Real Assets Program, including Real Estate, Infrastructure and Forestland is to provide stable cash flows while serving to provide long-term inflation protection and as an equity risk mitigant. The Real Asset Program is supported by a number of CalPERS' Investment Beliefs. First, Investment Belief 1 states that "Liabilities must influence the asset structure." This is evident in the Real Asset Program's strategic role. The Program requires a long-term investment horizon and thus corresponds well with Investment Belief 2, which states "A long time investment horizon is a responsibility and an advantage." The Real Assets Program also addresses Investment Belief 4 regarding multiple forms of capital – notably, in terms of how environmental practices can impact the long term returns of the Program.

Decisions regarding the strategic role of Real Assets will be important as the 2017 ALM Workshop proceeds. As the Investment Committee is aware, much of CalPERS' volatility is driven by equity risk (both public and private) and the corresponding link to global economic growth. Having Real Assets continue to serve as a diversifier to equity risk helps provide some balance to the more dominant equity risk in the portfolio.



Investment Strategy

Staff is proposing an investment strategy that is largely unchanged from the current strategy and remains focused on high quality assets, strong cash flow, and moderate leverage. Staff is working to coordinate the classifications and terms used across the three components of the program. The revised terminology is more descriptive and should make the investment strategy more transparent for Staff, managers, and other stakeholders. Additionally, Staff is proposing adding Loan-To-Value (LTV) and Debt Service Coverage Ratio (DSCR) limits at the Program level, in addition to limits within the components.

Staff is also proposing a pilot program to apply leverage internally at the Program level, rather than on a deal-by-deal basis. There are certainly pros and cons to such an endeavor, but Wilshire believes that the portfolio is more likely to be able to sustain – and profit from – appropriate and judicious leverage at the program level. This will further align CalPERS' interests with the managers, by creating unlevered real estate mandates – managers will now simply be focused on maximizing the returns due to real estate expertise and not machinations around leverage within the portfolio. This would enable Staff to maintain significant control over the amount of leverage in the Program from a holistic perspective, rather than a manager who is simply focused on one particular sleeve of the portfolio. At this point, this is a proposed pilot program, not a major change and many details will need to be considered and approved by the ISG prior to implementation.

Conclusion

Wilshire believes that the Real Assets Strategic Plan is appropriate as a guide for managing the Program and keeps the focus on the strategic role for the asset class. While there are no significant investment approach changes, the evolution of the Program under this Strategic Plan are likely to lead to greater transparency and commonality across the underlying components.

Should you require anything further or have any questions, please do not hesitate to contact us.

Best regards,

A handwritten signature in black ink, appearing to read 'Ann J. ...'.