LIVE VIRTUAL COMMITTEE MEETING

JANUARY 12, 2022 AT 8:00 AM

REAL ASSETS COMMITTEE MEETING

TO VIEW VIA WEB

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TO PROVIDE PUBLIC COMMENT

You may submit a request to speak during Public Comment or provide a written comment by emailing PublicComment@lacera.com. If you would like to remain anonymous at the meeting without stating your name, please let us know.

Attention: Public comment requests must be submitted via email to PublicComment@lacera.com.

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION
300 N. LAKE AVENUE, SUITE 650, PASADENA, CA

AGENDA

A REGULAR MEETING OF THE REAL ASSETS

COMMITTEE AND THE BOARD OF INVESTMENTS*

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, SUITE 810, PASADENA, CALIFORNIA 91101

8:00 A.M., WEDNESDAY, JANUARY 12, 2022

This meeting will be conducted by teleconference under California Government Code Section 54953(e).

Any person may view the meeting online at
https://lacera.com/leadership/board-meetings

The Committee may take action on any item on the agenda, and agenda items may be taken out of order.

I. CALL TO ORDER

II. APPROVAL OF MINUTES

A. Approval of the Minutes of the Real Assets Committee Meeting of December 8, 2021.

III. PUBLIC COMMENT

(Written Public Comment - You may submit written public comments by email to PublicComment@lacera.com. Correspondence will be made part of the official record of the meeting. Please submit your written public comments or documentation as soon aspossible and up to the close of the meeting.

Verbal Public Comment - You may also request to address the Committee. A request to speak must be submitted via email to PublicComment@lacera.com. We will contact you with information and instructions as to how to access the meeting as a speaker. If you would like to remain anonymous at the meeting without stating your name, please let us know.)

IV. CONSENT ITEM

A. Recommendation as submitted by Steven P. Rice, Chief Counsel: That, under AB 361 and Government Code Section 54953(e)(3) of the Brown Act, the Board of Investments consider whether to find that the Governor's COVID-19 State of Emergency continues to directly impact the ability of the Board and its Committees to meet safely in person and that the County of Los Angeles and other agencies still recommend social distancing such that the Board and its Committees shall hold teleconference meetings for the next 30 days, and if so, direct staff to comply with the agenda and public comment requirements of the statute. (Memo dated December 27, 2021)

V. NON – CONSENT ITEM

A. Real Assets Structure Review
James Rice, Principal Investment Officer
Daniel Joye, Investment Officer
Pushpam Jain, Investment Officer
Noah Damsky, Senior Investment Analyst
(Memo dated December 23, 2021)

VI. REPORTS

A. Real Estate Portfolio ESG Integration: Updates and Next Steps
James Rice, Principal Investment Officer
Scott Zdrazil, Senior Investment Officer
(Memo dated November 24, 2021)

VII. ITEMS FOR STAFF REVIEW

VIII. GOOD OF THE ORDER
(For information purposes only)

IX. ADJOURNMENT

*The Board of Investments has adopted a policy permitting any member of the Board to attend a standing committee meeting open to the public. In the event five or more members of the Board of Investments (including members appointed to the Committee) are in attendance, the meeting shall constitute a joint meeting of the Committee and the Board of Investments. Members of the Board of Investments who are not members of the Committee may attend and participate in a meeting of a Committee but may not vote, make a motion, or second on any matter discussed at the meeting. The only action the Committee may take at the meeting is approval of a recommendation to take further action at a subsequent meeting of the Board.

Documents subject to public disclosure that relate to an agenda item for an open session of the Board of Investments that are distributed to members of the Board of Investments less than 72 hours prior to the meeting will be available for public inspection at the time they are distributed to a majority of the Board of Investments Members at LACERA's offices at 300 N. Lake Avenue, Suite 820, Pasadena, CA 91101, during normal business hours of 9:00 a.m. to 5:00 p.m. Monday through Friday.

Requests for reasonable modification or accommodation of the telephone public access and Public Comments procedures stated in this agenda from individuals with disabilities, consistent with the Americans with Disabilities Act of 1990, may call the Board Offices at (626) 564-6000, Ext. 4401/4402 from 8:30 a.m. to 5:00 p.m. Monday through Friday or email PublicComment@lacera.com, but no later than 48 hours prior to the time the meeting is to commence.

MINUTES OF THE REGULAR MEETING OF THE REAL ASSETS COMMITTEE

AND BOARD OF INVESTMENTS

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, SUITE 810, PASADENA, CA 91101

8:00 A.M., Wednesday, December 8, 2021

This meeting was conducted by teleconference pursuant to the California Government Code Section 54953(e).

PRESENT: Patrick Jones, Chair

Alan J. Bernstein, Vice Chair

Keith Knox

Gina V. Sanchez

David Green, Alternate

MEMBERS AT LARGE:

Herman Santos

Joseph Kelly

STAFF, ADVISORS, PARTICIPANTS:

Jonathan Grabel, Chief Investment Officer

James Rice, Principal Investment Officer

Scott Zdrazil, Senior Investment Officer

Amit Aggarwal, Investment Officer

STAFF, ADVISORS, PARTICIPANTS (Continued):

Cindy Rivera, Senior Investment Analyst

Michael Romero, Senior Investment Analyst

StepStone Real Estate
Margaret McKnight, Partner
Tom Hester, Managing Director

I. CALL TO ORDER

The meeting was called to order virtually by Chair Jones at 8:00 a.m.

II. APPROVAL OF MINUTES

A. Approval of the Minutes of the Regular Real Assets Committee Meeting of September 8, 2021.

Ms. Sanchez made a motion, Mr. Knox seconded, to approve the minutes of the regular meeting of September 8, 2021. The motion passed unanimously (roll call) with Messrs. Knox, Bernstein, Jones and Ms. Sanchez voting yes.

III. PUBLIC COMMENT

There were no requests from the public to speak.

IV. NON-CONSENT ITEMS

A. Recommendation as submitted by James Rice, Principal Investment Officer, Amit Aggarwal, Investment Officer, Cindy Rivera, Senior Investment Analyst, Michael Romero, Senior Investment Analyst: That the Committee advance the Real Estate Structure Review to the Board of Investments for approval. (Memo dated November 23, 2021)

Messrs. Rice, Aggarwal, Romero and Ms. Rivera and Mr. Hester and Ms. McKnight of StepStone Group provided a presentation and answered questions from the Board.

IV. NON-CONSENT ITEMS (Continued)

Ms. Sanchez made a motion, Mr. Bernstein seconded, to advance the Real Estate Structure Review to the Board of Investments for approval. The motion passed unanimously (roll call) with Messrs. Knox, Bernstein, Jones and Ms. Sanchez voting yes.

V. REPORTS

A. ESG Integration Updates and Next Steps
James Rice, Principal Investment Officer
Scott Zdrazil, Senior Investment Officer
(Memo dated November 24, 2021)

This Item was rescheduled to the next Real Assets Committee Meeting.

VI. ITEMS FOR STAFF REVIEW

Staff will review the prioritization of filling the vacant real estate positions in the Investment Division.

VII. GOOD OF THE ORDER
(For information purposes only)

There was nothing to report.

VIII. EXECUTIVE SESSION

A. Conference with Staff and Legal Counsel to Consider the Purchase or Sale of Particular, Specific Pension Fund Investments
(Pursuant to California Government Code Section 54956.81)

1. Fiduciary/Assets regarding the Real Estate Portfolio

The Committee took action, which will be reported out at a future date in accordance with the Brown Act.

IX. ADJOURNMENT

There being no further business to come before the Committee, the meeting was adjourned at 9:00 a.m.

L//CERA

December 27, 2021

TO: Each Trustee,
Real Assets Committee

SPR

Chief Counsel

FOR: January 12, 2022 Real Assets Committee Meeting

SUBJECT: Approval of Teleconference Meetings Under AB 361 and Government Code Section 54953(e)

RECOMMENDATION

That, under AB 361 and Government Code Section 54953(e)(3) of the Brown Act, the Real Assets Committee (Committee) consider whether to find that the Governor's COVID-19 State of Emergency continues to directly impact the ability of the Committee to meet safely in person and that the County of Los Angeles and other agencies still recommend social distancing such that the Committee shall hold teleconference meetings for the next 30 days, and if so, direct staff to comply with the agenda and public comment requirements of the statute.

LEGAL AUTHORITY

Under Article XVI, Section 17 of the California Constitution, the Board of Investments has plenary authority and exclusive fiduciary responsibility for the fund's investments, actuarial matters, and related issues. This authority includes the ability to manage Board and Committee meetings and evaluate and act on legal options for the conduct of such meetings, such as whether to invoke teleconferencing of meetings under the terms and conditions provided in AB 361 and Government Code Section 54953(e) of the Brown Act to protect the health and safety of Trustees, staff, and the public. It is necessary for the Committee to take separate action at this meeting because the limit of a determination under Section 54953(e)(3) is 30 days, the Board of Investments' December 8, 2021 action invoking the statute was more than 30 days ago, and the January 12, 2022 Real Assets Committee meeting will take place before the Board of Investments' meeting at which the Board will again consider the issue. The Real Assets Committee is a separate legislative body under the Brown Act and may properly take this action for its own meetings. and Government Code Section 54953(e) of the Brown Act to protect the health and safety of Trustees, staff, and the public.

DISCUSSION

A. Summary of Law.

On September 16, 2021, the Governor signed AB 361 which enacted new Government Code Section 54953(e) of the Brown Act to put in place, effective immediately and through December 31, 2023, new relaxed teleconferencing rules that may be invoked by local legislative bodies, such as the Committee, upon making certain findings and following certain agenda and public comment requirements.

Specifically, Section 54953(e)(3) provides that the Committee may hold teleconference meetings, without the need to comply with the more stringent procedural requirements of Section 54953(b)(3), if a state of emergency under Section 8625 of the California Emergency Services Act impacts the safety of in person meetings or state or local officials have imposed or recommended social distancing rules, provided that the Committee makes the following findings by majority vote:

(A) The Committee has considered the circumstances of the state of emergency;
(B) Any of the following circumstances exist:
- (i) The state of emergency continues to directly impact the ability of the Trustees to meet safely in person;
- (ii) State or local officials continue to impose or recommend measures to promote social distancing.

If the Committee makes the required findings, the Committee may hold teleconference meetings for the next 30 days without the need to comply with the regular rules of Section 54953(b)(3) provided that: agendas are prepared and posted under the Brown Act; members of the public are allowed to access the meeting via a call-in option or an internet-based service option; and the agenda provides an opportunity for public comment in real time and provides notice of the means of accessing the meeting for public comment.

B. Information Supporting the Required Findings and Process if the Real Assets Committee Determines to Invoke Section 54953(e).

The Governor's State of Emergency for the COVID-19 pandemic as declared in the Proclamation of a State of Emergency dated March 4, 2020 remains active. The Proclamation was issued under the authority of Section 8625 of the California Emergency Services Act. It is unclear when the State of Emergency will end, although the Governor recently extended certain COVID-19 emergency provisions to March 31, 2022. *See* Order No. N-21-21, issued November 10, 2021.

The Los Angeles County Department of Public Health maintains guidance to "Keep your distance. Use two arms lengths as your guide (about 6 feet) for social distancing with people outside your household when you are not sure that they are vaccinated." http://publichealth.lacounty.gov/acd/ncorona2019/reducingrisk/. The County Public Health Department also maintains guidance that employers should, "Implement policies and practices that support physical distancing: Whenever possible, take steps to reduce crowding indoors and enable employees and customers to physically distance from each other. Generally, at least 6 feet of distance (2 arm lengths) is recommended, although this is not a guarantee of safety, especially in enclosed or poorly ventilated spaces." http://publichealth.lacounty.gov/acd/ncorona2019/bestpractices/

The Centers for Disease Control and Prevention (CDC) also still advise the public that, "Outside your home: . . . Stay at least 6 feet (about 2 arm lengths) from other people, especially if you are at higher risk of getting very sick." https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html#stay6ft%20.

It is important to acknowledge that guidance from federal, state, and local governments with respect to COVID-19 precautions, inside and outside the workplace, has evolved over the past several months and continues to change. Some guidance has been relaxed. However, the guidance quoted above remains in effect.

The pandemic continues to present a significant health risk, as the virus appears in different variants. LACERA has not yet returned to the office. Management is preparing return to office vaccination and testing protocols to ensure the safety of LACERA employees, members, and others, including Trustees.

Under these circumstances, the Committee may continue to reasonably conclude and find that teleconferencing under Section 54953(e) is appropriate for Committee meetings during the next 30 days because (1) the state of emergency continues to directly impact the ability of the Trustees to meet safely in person, and (2) the County and other authorities continue to recommend measures to promote social distancing, as required by the statute. The Board of Investments made these findings at its October, November, and December 2021 meetings.

If the Committee makes these findings and directs teleconferencing under Section 54953(e), procedures exist and will be implemented to ensure compliance with the agenda and public comment requirements of the statute, as stated above.

CONCLUSION

Based on the above information, staff recommends that, under AB 361 and Government Code Section 54953(e)(3) of the Brown Act, the Real Assets Committee consider whether to find that the Governor's COVID-19 State of Emergency continues to directly impact the ability of the Committee to meet safely in person and that the County of Los Angeles and other agencies still recommend social distancing such that the Committee shall hold teleconference meetings for the next 30 days, and if so, direct staff to comply with the agenda and public comment requirements of the statute.

c: Santos H. Kreimann
Jonathan Grabel
Luis Lugo
JJ Popowich
Laura Guglielmo
Carly Ntoya
James Rice

L/ACERA

December 23, 2021

TO: Trustees – Real Assets Committee

FROM: James Rice
Principal Investment Officer

FOR: January 12, 2021 Real Assets Committee Meeting

SUBJECT: **REAL ASSETS STRUCTURE REVIEW**

RECOMMENDATION

Advance the Real Assets Structure Review (**Attachment A)** including initiatives, guidelines, and recommendations throughout the document as well as those summarized on slides 32, 33, and 34 to the Board of Investments for approval.

BACKGROUND

The first structure review of the then recently formed Real Assets Category (excluding Real Estate) was approved in November 2019. A mid-cycle update was presented to the Board in October 2020. The strategic asset allocation analysis completed in May 2021 raised the Infrastructure allocation target weight from 3 to 5%, and reduced Natural Resources from 4% to 3%.

SUMMARY

This structure review recommends the continuation of the program to invest in private Infrastructure and Natural Resources assets through Fund and other structures such as co-investment vehicles. Over the next four to five years these private assets are expected to largely replace the existing public market equities and commodities portfolios in the Infrastructure and Natural Resources categories.

The presentation consists of an overview followed by sections on the strategies and guidelines to be employed in implementing the recommendation.

LACERA's consultant, Albourne, reviewed the structure review and is in support of the recommendation. The consultant's concurrence memo is included as **Attachment B**.

Attachments

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

JR:mm

ATTACHMENT A

Real Assets and Inflation Hedges
2021 Structure Review
Part 2 : Real Assets

Real Assets Committee

January 12, 2022

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

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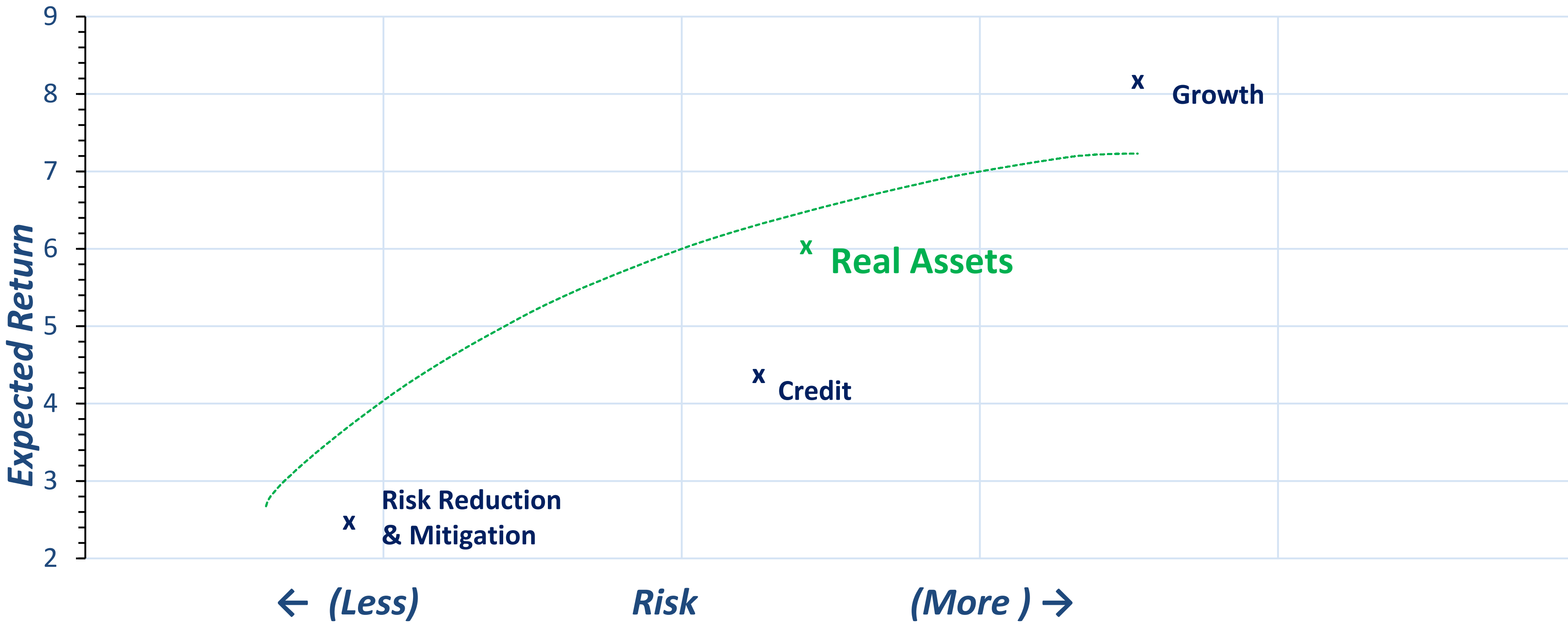
Portfolio Role



- Diversify exposure to growth assets to mitigate portfolio downside risk
- Provide consistent yield for the broader portfolio
- Hedge the risk of inflation with investments in hard or inflation-linked assets

Data from the Board-approved 2021 asset allocation study.

Structure Review - Background

1.0 Real Estate: Historical Structure

1. Fully owned assets
2. Improve sector and regional diversification

2.0 Real Assets: Asset Category Created

Includes

1. Historical Real Estate and Commodities programs
2. New assets for Natural Resources, Infrastructure and TIPS

3.0 Real Assets: Future

Existing initiatives

1. Consideration of changes to Real Estate structure
2. Private program for Infrastructure and Natural Resources

4.0 Real Assets: Next Phase

1. Reduce Real Estate portfolio operational and concentration risk
2. Real Estate focus on open-ended and closed-ended funds rather than separate accounts
3. Real Assets (excl Real Estate): continued implementation of public to private transition.

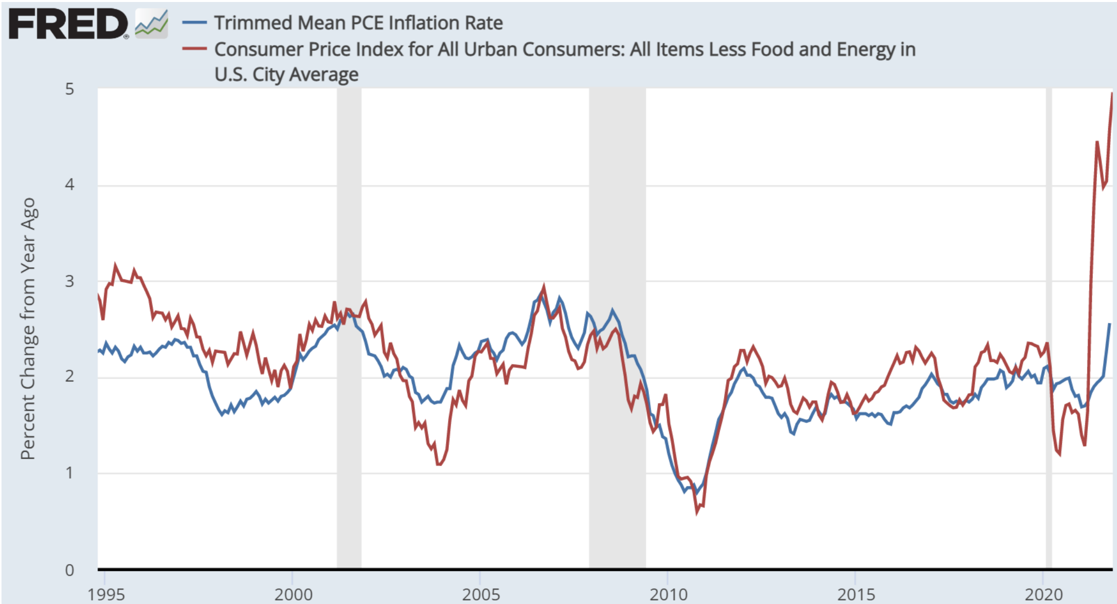
We are here

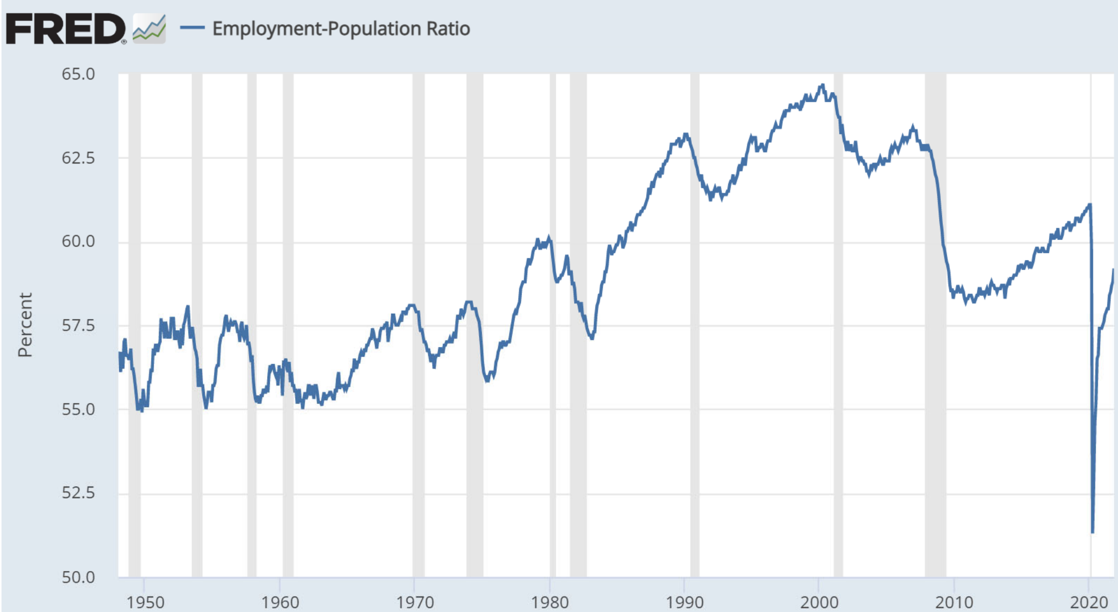
2018 Strategic Asset Allocation Study and Implementation

2019 Structure Review and Initiatives

2020 Mid-Cycle & 2021 Structure Reviews

Inflationary Pressures Rising





- Increase in wages
- High federal debt to GDP ~125%
- Fed stated target of higher employment participation
- Equal emphasis on employment and inflation
- Inflationary pressures high

Portfolio Components

Real Estate

- Capital preservation and stable yield from rents
- Hard assets provide inflation protection
- Diversified sources of returns less correlated with growth assets
- Non-core also provides Growth returns

Natural Resources & Commodities

- Mix of diversification, income generation, and inflation hedging
- Farmland and agriculture less correlated to broader markets, and income generators
- Commodities in energy, mining, and agriculture can serve as inflation hedge

Infrastructure

- Core: generate yield with highly contracted revenues to limit downside across market environments
- Non-core: growth opportunities across energy/utilities, transportation, communications and social infrastructure

TIPS

- Inflation hedge through public markets
- Diversification benefits with inflation-linked and interest rate exposure
- Generates modest income

ESG Considerations

ESG in Real Assets

ESG evaluation to ensure a sustainable rate of return over the long-term life of private investments

Manager Assessment

Evaluated at entry and monitored on:

- Manager's investment process incorporate material ESG factors
- Manager resources for ESG monitoring
- Operating assets to high ESG standards
- Transparency of ESG related reporting

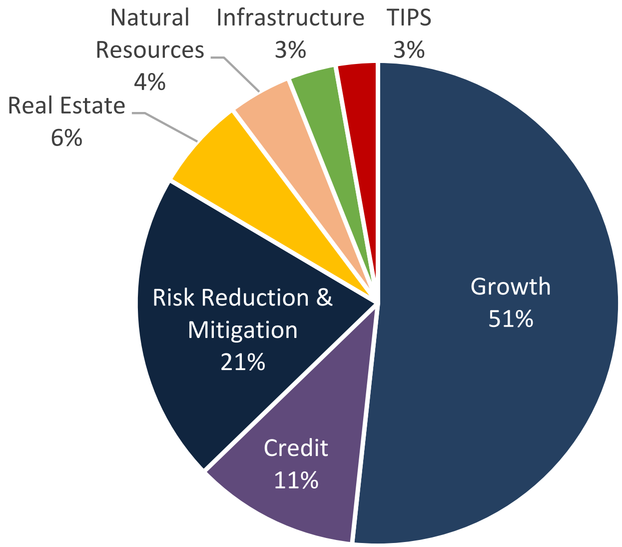
Monitoring & Future

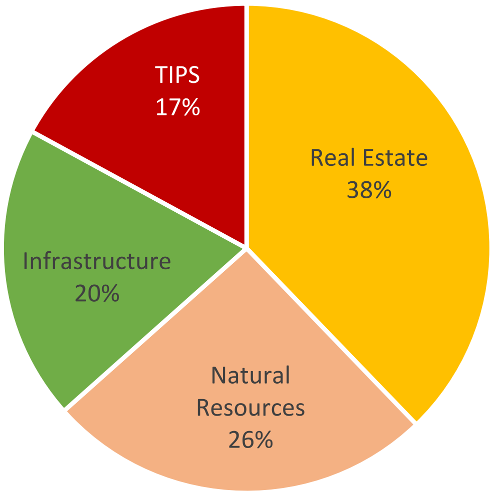
- Evaluation tools include LACERA specific DDQ questionnaires, and ESG evaluation
- ESG results incorporated into manager scorecard
- ESG risk measures in new LACERA risk system
- Side letters related to ESG issues
- LPAC role to monitor ESG
- Consideration of revisions to Responsible Contractor Policy

Real Assets (Excluding Real Estate)

Structure

Portfolio Composition





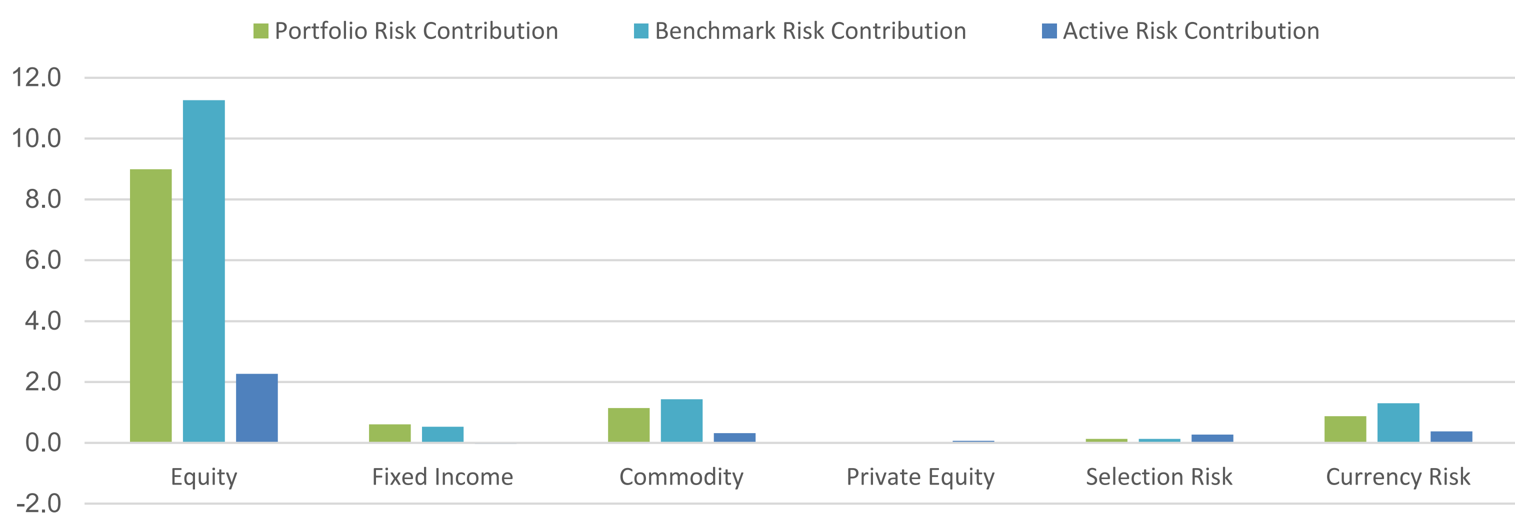
Asset Class	Allocation	Former Target	Interim Oct '21 Target	Final Jul '22 Target	Difference (v Interim)	Target Range	Benchmark
Real Assets & Inflation Hedges	**16.3%**	**17%**	**17%**	**17%**	**(0.7)%**	**+/- 3%**	**Custom Blend**
Core Real Estate	6.2%	7%	6%	6%	(0.8)%	+/- 3%	NFI ODCE + 50 bps (3 month lag)
Infrastructure	3.2%	3%	4%	5%	0.2%	+1/-3%	Dow Jones Brookfield Global Infrastructure Composite
Natural Resources/ Commodities	4.2%	4%	4%	3%	0.2%	+/- 2%	50% Bloomberg Commodity/ 50% S&P Global Natural Resources
TIPS	2.8%	3%	3%	3%	(0.2)%	+/- 3%	Bloomberg Barclays U.S. TIPS

Allocation weights are as of September 30, 2021; private assets based on latest asset valuation including any actual cash flows.

MSCI Forecast Active Risk – Real Assets

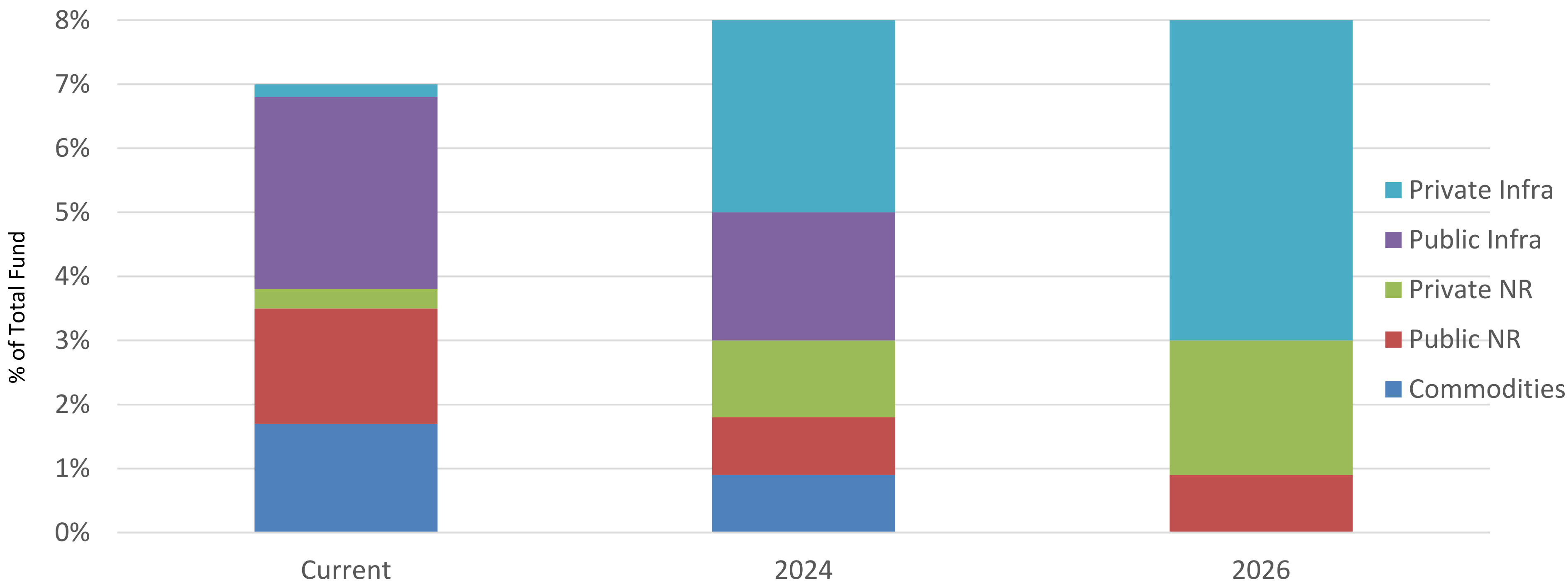
	Weight%	Benchmark Weight%	Active Weight%	Active Risk Contribution	Allocation Risk Cont.	Selection Risk Cont.	Standalone Active Risk
Total Real Assets (Ex Real Estate)				**3.3%**	**-0.1%**	**3.3%**	**3.3%**
Natural Resources and Commodities	41.1%	36.4%	4.7%	2.8%	-0.3	3.1%	8.0%
Infrastructure	31.2%	36.4%	-5.2%	0.4%	0.2%	0.3%	3.1%
TIPS	27.8%	27.3%	0.5%	0.1%	0.1%	0.0%	0.0%

Risk by Source



Implementation of the MSCI Risk Platform is ongoing; reconciliation and refinement of the data is progressing and subject to change.
As of November 30, 2021.
Source: MSCI Barra One.

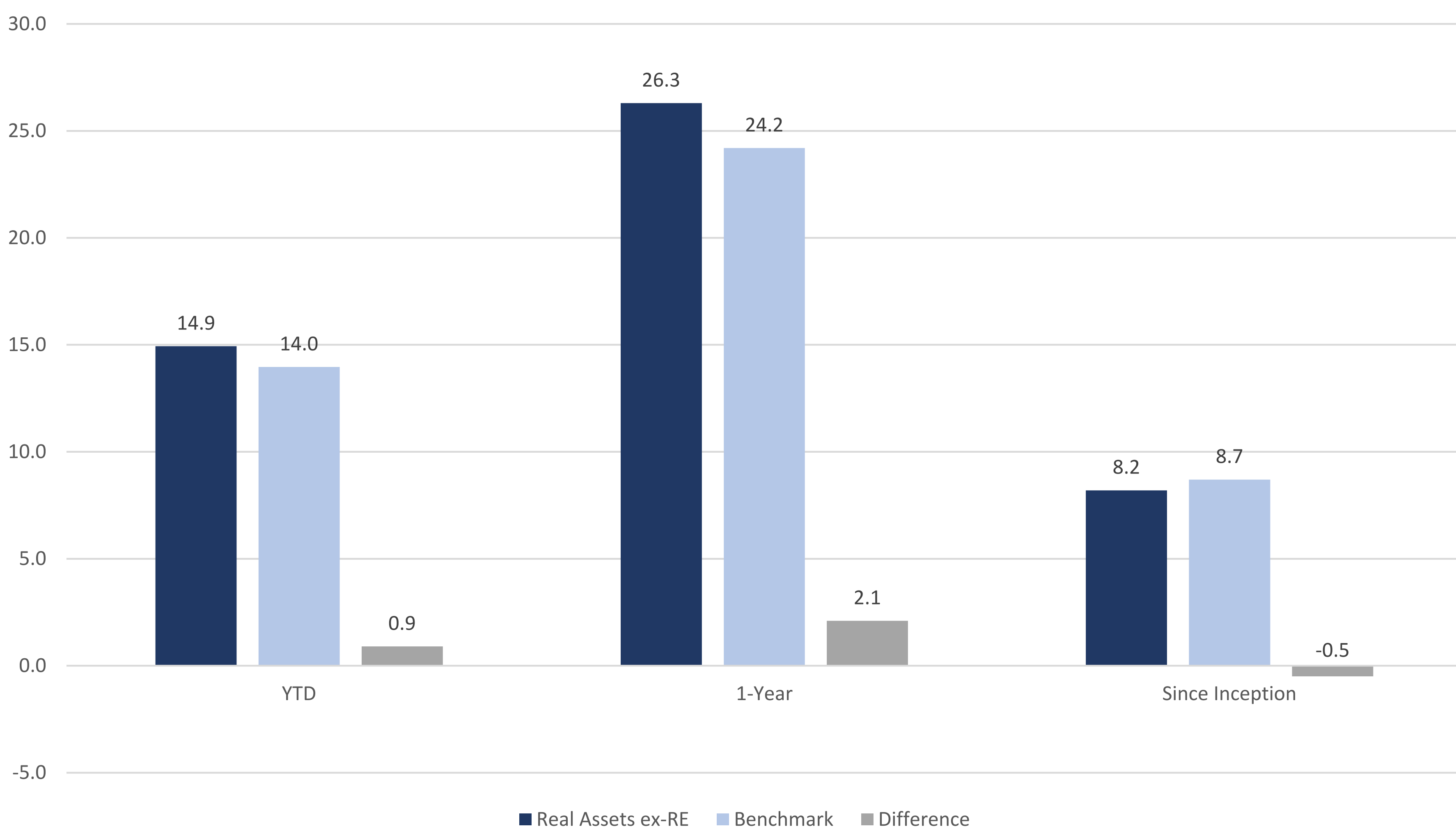
Structural Evolution from Public to Private



- Completion portfolio provides key role in maintaining exposures in transition towards private assets
- Commodities (public) exposure will be eliminated as private assets increase
- Staff will manage the mix of public real asset sector exposures to maintain balance to key real asset sectors as private assets increase across sectors
- Private Energy investments are targeted to newer energy transition strategies rather than traditional energy which faces stranded asset risk

Infrastructure	Natural Resources
Power/Utilities	Energy
Transportation	Metals/Mining
Telecom	Agriculture/Timber
Social	

Real Assets Performance



Current data as of September 30, 2021; Inception dates: Real Assets ex-RE, April 1, 2019; DWS , June 1, 2019; Blackrock, May 1, 2019; NR/Comm Composite, July 1, 2007.

Real Assets Performance (Cont'd)

Performance vs. Benchmark (net-of-fees)	% of Total Fund	3Q 2021	YTD (3Q 2021)	Trailing 1-Y	Since Inception
Real Assets ex-RE	10.2%	1.5	14.9	26.3	8.2
Benchmark		*1.5*	*14.0*	*24.2*	*8.7*
Excess Return		0.0	0.9	2.1	(0.5)
Public Market Infrastructure	3.0%	(0.4)	12.5	21.3	10.1
Benchmark		*(0.7)*	*12.2*	*20.6*	*7.0*
Excess Return		0.3	0.3	0.7	3.1
Private Infrastructure	0.2%	5.0	(0.3)	N/A	14.0
Benchmark		*7.9*	*22.3*	*N/A*	*18.2*
Excess Return		(2.9)	(22.6)	N/A	(4.2)
Public Natural Resources/ Commodities Composite	3.9%	2.9	23.3	42.1	(2.0)
Benchmark		*2.8*	*23.2*	*42.6*	*(2.9)*
Excess Return		0.1	0.1	(0.5)	0.9
Private Natural Resources	0.3%	3.2	0.8	0.0	(16.8)
Benchmark		*5.4*	*43.2*	*47.0*	*16.8*
Excess Return		(2.2)	(44.0)	(47.0)	(33.6)
TIPS	2.8%	1.6	3.3	4.9	7.8
Benchmark		1.8	3.5	5.2	7.9
Excess Return		(0.2)	(0.2)	(0.3)	(0.1)

Performance Commentary, as of 3Q 2021

- All categories excluding TIPS have outperformed through 3Q 2021
- All public market managers have outperformed their benchmarks since inception
- Private assets in early stages of fund cycle detract from overall performance

Inception dates: Real Assets ex-RE, April 2019; Public Infra and Natural Resources, May 2019; TIPS, May2019; NR/Comm Composite, July 2007.

LACERA Real Assets Structural Plan Steps

Closed or Open Ended Funds	Generates future co-investment flow	$1.8B in Commitments in 11 funds approved
Co-Investments and Secondaries	Larger internal staff oversees, brings in-house	Delegated authority in June 2021. Team evaluating co-investments
Club/Syndicated Deals	With like-minded peers, strategy control	Large transaction through secondary transaction in club structure negotiated
Separately Managed Accounts	Use select managers for complementary investments	

- Real Assets program is evolving with increased structural complexity and risk-adjusted return expectations
  - 11 commingled funds with $1.8B in committed capital
  - Co-investments being evaluated and secondary natural resources purchase negotiated
  - One club deal structure negotiated and approved by Board
- Selectively evaluate managed accounts
  - Challenging as large ticket sizes in Real Assets reduces diversification

Increased complexity and risk-adjusted return expectations over time

Energy Transition Creating New Opportunities

Segment	Energy Transition
Metals & Mining	Low carbon transition into renewables and electric vehicles is metal intensive, greater unit of metal input per unit of output Increased demand for metals such as lithium, copper, graphite, other base and precious metals
Agriculture / Timberland	Agriculture strategies focusing on conservation, carbon reduction, and carbon capture
Energy	Renewable fuels, carbon reduction and sequestration in industrial operations, and hydrogen fuel
Infrastructure	Renewable power, battery storage, and electric vehicle charging and related grid infrastructure improvements

- Transition to a low carbon economy presents investment opportunities across Real Assets
  - Infrastructure: renewable power, select battery storage, and related grid infrastructure improvements
  - Natural Resources: most appealing opportunities in Metals & Mining and Energy

Real Assets: Infrastructure

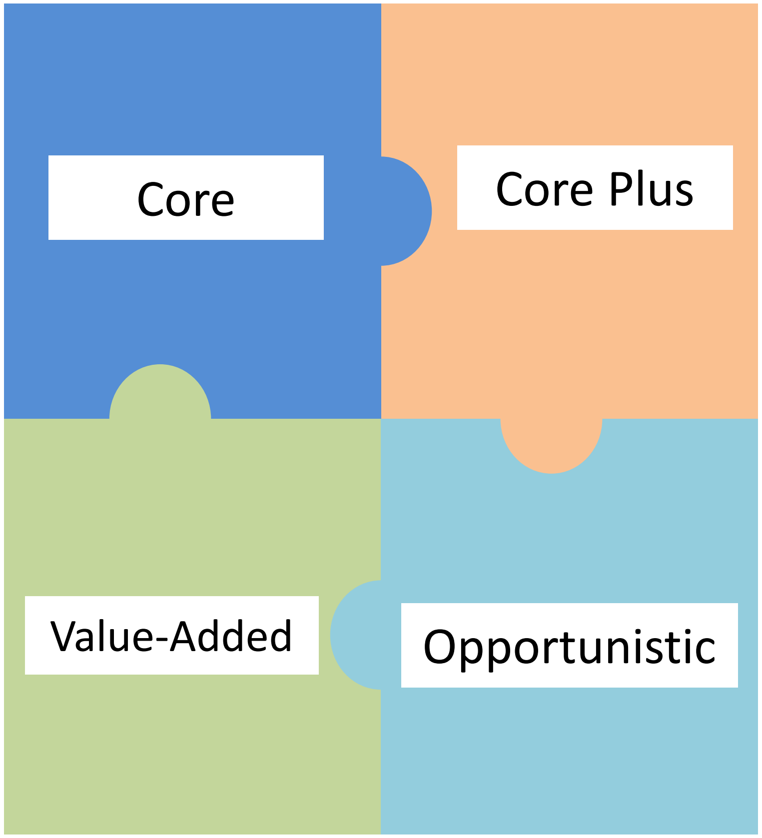
Infrastructure Role and Objectives

Role

- Diversification: more defensive than public equities
- Provide consistent income

Objectives

- Contracted and regulated assets to provide consistent returns less correlated to GDP growth
- Some potential allocation for higher-returning core plus, value added, opportunistic spectrum
- Explore co-investments and other structures for lower fees and more intentional allocation



Infrastructure Private Equity Structure

Sub-Category	Proposed Allocation Range	Target Deal Returns[1]	Net Fund Returns[2]	Asset Characteristics
Core/Core+	50 - 75%	7 - 12%	6 - 10%	Defensive, contracted assets, asset value based current yield
Non-Core	25 - 50%	11 - 20%	10 - 17%	Balanced income/capital appreciation, regulatory protection

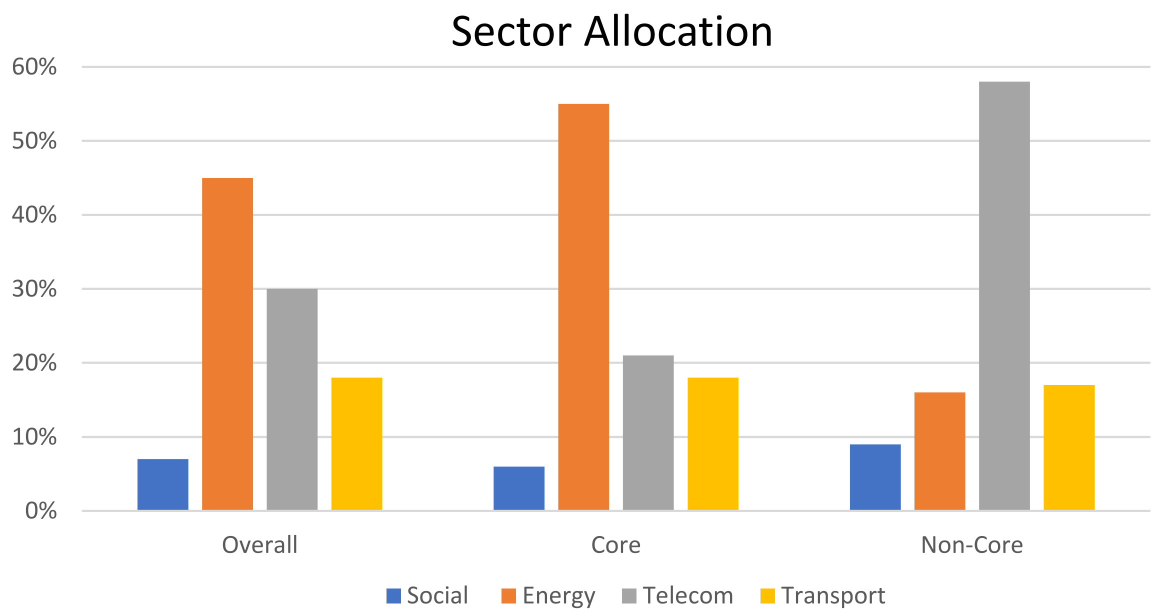
Industrial Sector	Examples
Energy/Utilities	Power generation (renewables and conventional), transmission/distribution systems, storage facilities, midstream, water treatment, water distribution, water transportation, and waste treatment
Communications	Fiber networks, communication towers, satellite systems, and data centers
Transportation	Toll roads, bridges, tunnels, airports, seaports, rail/transit, and parking facilities
Social	Availability based payment structures for hospitals, universities, and government buildings

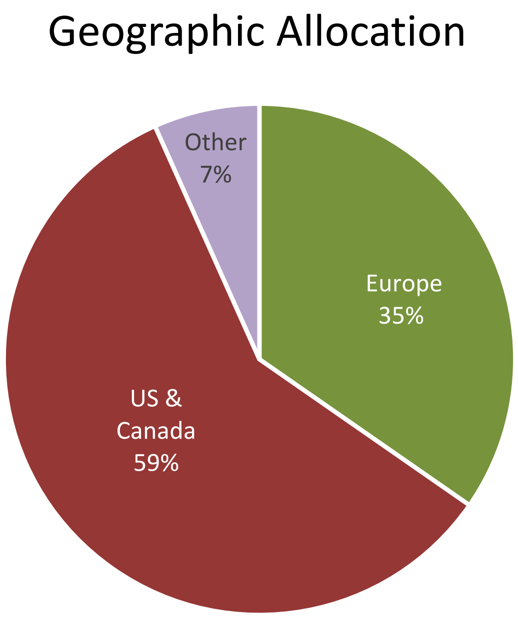
- Infrastructure sub-categories differ based on risk premium and income generation
- Infrastructure investments will generally focus on equity within capital structure
- Current geographic focus: developed markets and global funds

[1] Source Albourne. Target Deal Returns are based on manager underwriting of deals in each respective strategy.
[2] Source Albourne. Expected Net Fund Returns are Albourne's estimated loss-adjusted IRRs, net of fees, for funds in each respective strategy.

Infrastructure Sector & Geographic Exposure

Estimated Infrastructure Portfolio at committed capital amounts





Sector Proposed Allocation Range	Energy	Telecom	Transport	Social
Core/Core+	35 - 65%	10 - 40%	5 - 25%	0 - 20%
Non-core	35 - 65%	10 - 40%	5 - 25%	0 - 20%

Geographical Exposure	US & Canada	Europe	Asia Pacific Developed	Rest of World
Proposed Allocation Range	25 - 75%	25% - 75%	0 - 25%	0 - 20%

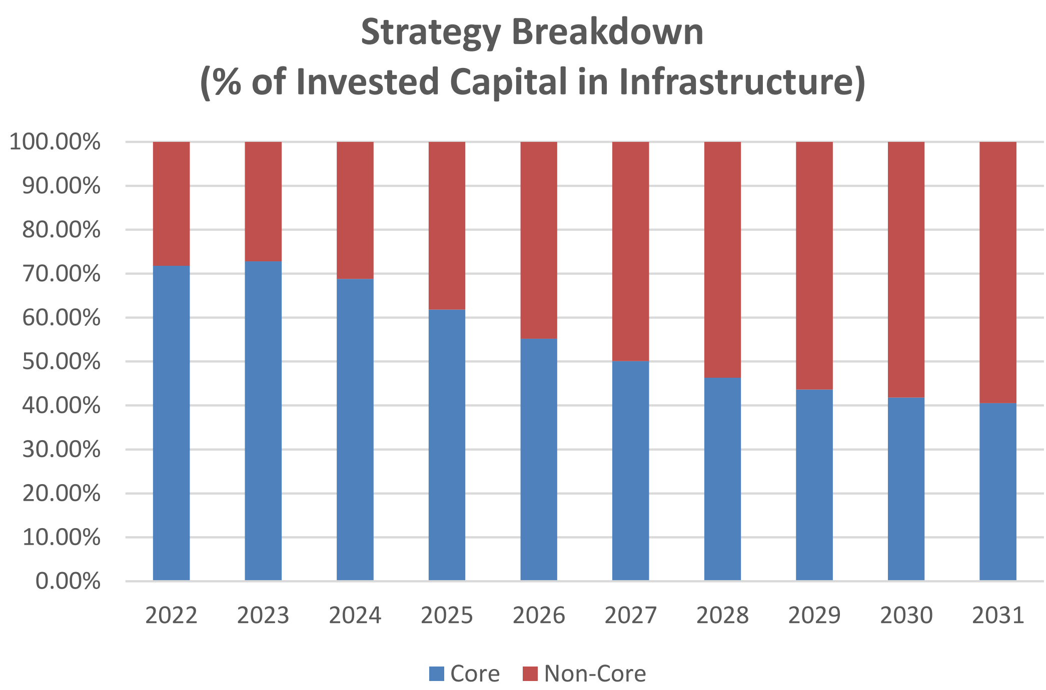
Infrastructure: Pacing & Commitment Schedule

	Current Commitment	Expected NAV end of 2024	SAA Target
Allocation Target as % of Total Fund	~2.5%	4%	5%

- Targeting 4% Infrastructure allocation (i.e. within 1% of target) by 2024
- Targeting 5% Infrastructure allocation (i.e. full target allocation) by 2026

→ Goals: Hit target allocation in prudent time frame; reduce vintage year risk; avoid greatly overshooting target

→ Implementation: commit ~$1.4B/year adjusted by total Fund growth



Core vs. Non-core split

- Oversize core commitment through open-ended funds in early years:
  - Less vintage risk (since assets valued on cash flow as opposed to multiple)
  - Core deploys in two years (vs. five years for non-core)
  - Core has higher cash yield giving more flexibility for re-investment
- Non-core progressively becomes a larger portion of allocation mainly due to return differential (i.e., 7% for core vs. 13% for non-core)

Real Assets:

Natural Resources/Commodities

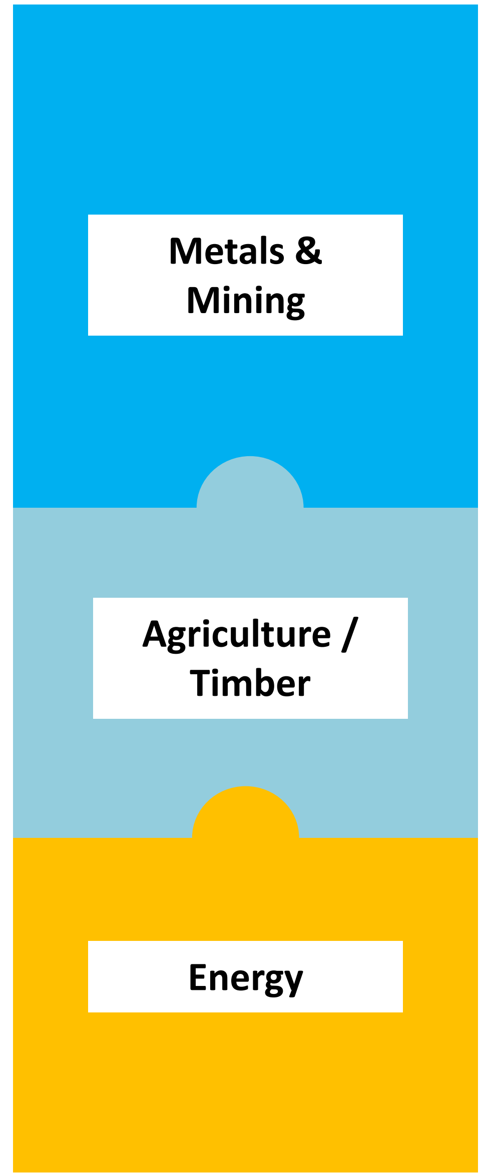
Natural Resources Role & Objectives

Role

- Diversify broad equity risk
- Serve as inflation hedge
- Generate income

Objectives

- Generate income and / or stable capital appreciation
- Provide returns less correlated with broader markets
- Higher correlation to inflation



Natural Resources Segments

Segment	Allocation Range	Private Deal Returns[1]	Private Fund Returns[2]
Metals & Mining	0 - 60%	12 - 25%	8 - 20%
Agriculture / Timberland	0 - 60%	7 - 20%	5 - 11%
Energy	0 - 60%	12 - 25%	10 - 20%

- Natural Resources at 3% of LACERA Fund allocation targeting inflation hedging, diversification, and income generation
- Current public markets portfolio: 2% in S&P Natural Resources Index + 2% in Commodities
- Natural Resources investments across public and private markets, provide flexibility for opportunistic and patient deployment of capital while still reaching 2% private allocation by 2026
- $350-500MM in annual commitment expected

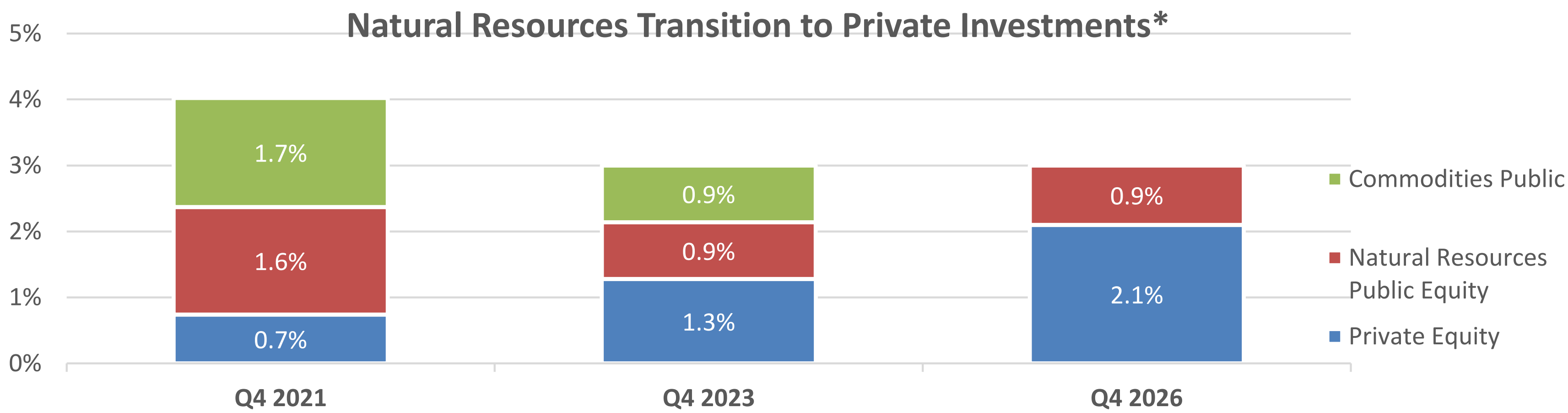
[1] Source Albourne. Target Deal Returns are underwriting targets, NOT realized results (i.e., not adjusted for potential losses).
[2] Source Albourne. Expected Net Fund Returns are estimated loss-adjusted IRRs (net of fees).

Natural Resources Opportunities

Segment	Allocation	Public Markets	Private Markets
Metals & Mining	0 - 60%	Base and Precious Metals Companies	Private mining funds in Operating Projects or 2-3 years from development
Geography		*Majority Tier I OECD mining jurisdictions with select non-OECD exposures*	
Agriculture / Timberland	0 - 60%	Ag Chemicals, Ag Products, Paper and Forestry	Core Farmland, Agriculture Infrastructure (Farmland+), Agribusiness, Timberland
Geography		*Primarily OECD, with select non-OECD exposures*	
Energy	0 – 60%	Exploration and production companies, Downstream, Petrochemicals, Chemicals Renewable Fuels, Synthetic Biotech	Produced, Developed, and Producing oil and gas fields Energy transition and low carbon infrastructure
Geography		*Primarily OECD*	

- Natural Resources segments targeted through a mix of private and public market investments
- Private and public market opportunities across segments, provide flexibility in targeting segment allocation
    I. Private market long-term oil and gas investment present stranded asset risk, and potential for conflict with evolving ESG Climate considerations
    II. Energy investments in select energy transition and low carbon primarily in Private Markets, with renewable power in infrastructure

Natural Resources Modeled Transition to Private



- Current natural resources portfolio, which is primarily in public markets, is transitioning to a mix of public and private markets over next 4-5 years
- Public commodities declining over time, replaced by private investments
- Energy investment exposure through public and private markets
  - Stranded asset risk for long-term (8-12 year) private equity style oil and gas funds, which have historically been volatile, with performance more highly correlated to public markets
  - Private strategies focused on select energy transition opportunities such as renewable fuels, carbon mitigation and carbon capture

* Assumes $400MM invested in Q4 2021 secondary and is immediately deployed.

Real Assets: TIPS

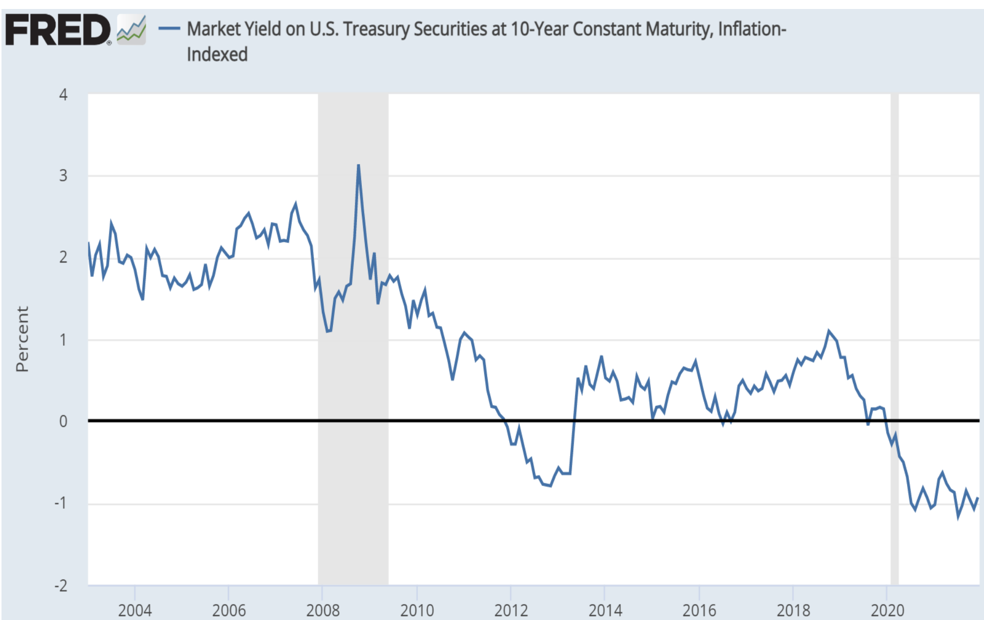
TIPS Role and Objectives

Role

- Inflation protection: Actual CPI + real yield
- Diversification to broad equity risk

Objectives

- Generate returns based on actual inflation and increases in inflation expectations
- Low correlation to equities
- Hedge increases in unanticipated inflation



- Persistent low nominal bond yields and increasing inflation expectations* result in lower real yields
- TIPS captured gains with reductions in real yields in 2019-2020
- TIPS cannot fully capture future inflation increases with currently negative real yields
- LACERA reduced underweight to TIPS in past year

* Breakeven inflation measures the difference in the yield of a nominal US Treasury bond and the real yield of an equivalent-maturity inflation-protected bond (TIPS). It reflects an expectation at which the market is pricing inflation over the term of the securities.

Real Assets: Next Steps

Emerging Manager Program

Program

- Initiate RFP Process for Delegated Custom Real Assets Separate Account Private Fund Assets Portfolio managed up to 10% of allocation
- Size program up to $400 MM in total commitments in initial launch of program

Objectives

- Source and Commit to Funds early in fund firm's life cycle (Fund I or II) or at small fund size
- Manage consistent with LACERA's TIDE policies
- Potentially achieve attractive terms for: fees, future capacity rights, GP revenue share, or other LP friendly Fund terms

Evaluation

What has Worked:

Inflation Hedging

Commodities have rebounded with inflation

Elements of Diversification

All commodities have outperformed
Completion Portfolio has outperformed over full cycle

Area for Refinement:

Exposure

Higher correlation (beta) to public market within Real Assets

Private Investing Outlook

- Inaugural private investment in mining fund and approval for secondaries farmland fund
- Core Infrastructure yields are decreasing while higher returning opportunities with some commercial risk remain
- Oil and gas presents stranded asset risk for long-term commitments and timber has continued to lack in returns
- General paucity of agricultural and mining funds, selectively pursue agribusiness funds

Strategic Initiatives

Completed

- Committed approximately $1.8 billion in private Real Assets (ex-Real Estate) to date, including open-ended funds
- Updated benchmarks more accurately reflect target portfolios

In-Process

- Interim period with private investments replacing public market portfolios; continue Real Assets (ex-Real Estate) transition to private assets
- In addition to fund commitments, actively sourcing and evaluating co-investment opportunities; exploring alternative Real Asset structures

Upcoming

- Further explore and consider fund investments in evolving opportunity set in private Energy Transition strategies

Summary Investment Guidelines Recommendations

Infrastructure

Infrastructure Risk Sub-Category	Private Allocation Range
Core/Core+	50 - 75%
Non-core	25 - 50%

Infrastructure Sector Private Allocation Range	Energy	Telecom	Transport	Social
Core/Core+	35 - 65%	10 - 40%	5 - 25%	0 - 20%
Non-core	35 - 65%	10 - 40%	5 - 25%	0 - 20%

Infrastructure Private Geographical Exposure	US & Canada	Europe	Asia Pacific Developed	Rest of World
Proposed Allocation Range	25 - 75%	25% - 75%	0 - 25%	0 - 20%

Natural Resources

Natural Resources	Private Allocation Range
Energy	0-60%
Metals Mining	0-60%
Agriculture/Timber	0-60%

Private Investment Diversification Guidelines	
Manager Diversification	Total General Partner less than 30% of Infra or Natural Resources MV plus undrawn commitments
Fund Concentration	LACERA no more than 40% of Total LP commitments for each Fund
Minimum Commitment Size	$10 MM

Proposed New CIO Authority for Follow-on Real Assets Funds

Recommendation

- Incorporate CIO Authority for Follow-on Funds into the Real Assets Investment Guidelines

	Description
CIO Authority for Follow-on Funds	The CIO is authorized to approve capital commitments in follow-on-funds up to $250 million per fund or up to a 25% fund ownership increase compared to LACERA's ownership percentage in the predecessor fund, provided: i. LACERA's prior investments in each predecessor fund greater than three years old (based on the fund's inception or commencement of operations date) exceeds the benchmark net IRR and net MOIC median returns for the fund's sub-asset class strategy, and ii. There have been no material changes in the investment strategy or key persons, and iii. LACERA's Real Assets consultant concurs with the investment The Board will receive written notification of all such actions from staff

Recommendation Summary

Continue Private Asset Pacing in New Funds and Co-invests	Revised Guidelines
• For Infrastructure, underwrite and commit to **$125-$250MM** Non-Core fund allocations to closed-ended funds and to **$300-600 MM** Core fund allocations targeting an overall **5%** allocation in **4-5** years • For Natural Resources underwrite and commit to **$125-$300MM** Non-Core natural resources fund allocations to closed-ended funds targeting an overall **3%** allocation in **4-5** years • Evaluate and commit to co-investment opportunities when attractive and further align the portfolio with its objectives	• Adopt revised guidelines on slides **34** and **35**

Appendix

Portfolio Structure Sub-Categories

Asset Class	Income Generation	Inflation Linkage	Diversification Benefits
Infrastructure			
Core/Core+	High	Medium	High
Non-Core	Medium	Medium	Medium
Natural Resources			
Metals & Mining	Low	Medium	Medium
Agriculture / Timberland	Medium	Medium	High
Energy	Medium	High	Low
Commodities	Low	High	High
TIPS	Low	Medium	High

Real Assets (Excluding Real Estate)

- More defensive than public equities
- Mix of diversification, income generation, and inflation hedging

Infrastructure

- Income generation and diversification

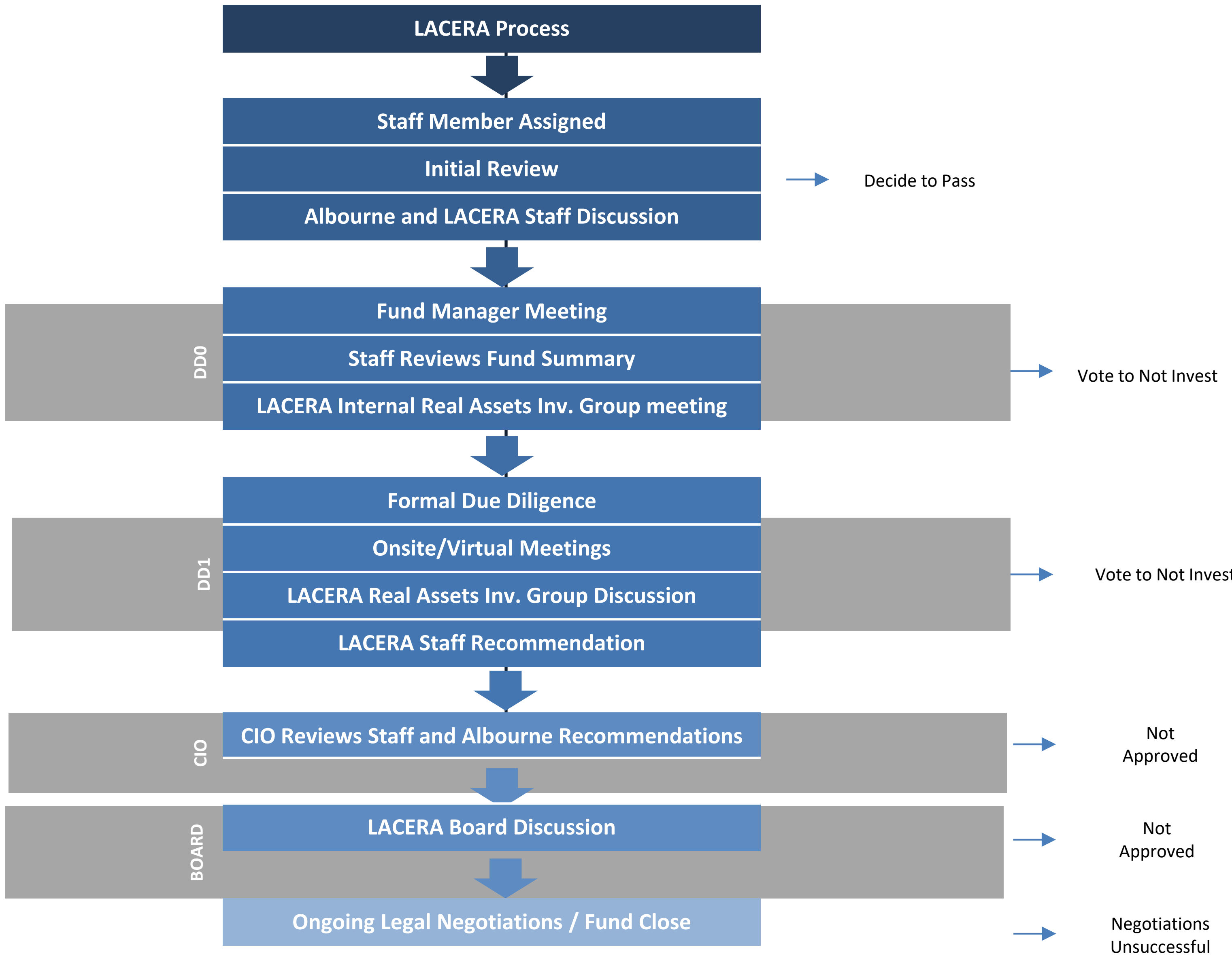
Natural Resources & Commodities

- Agriculture / Timber diversifiers to broader markets
- Commodities, energy, mining, and agriculture inflation hedge

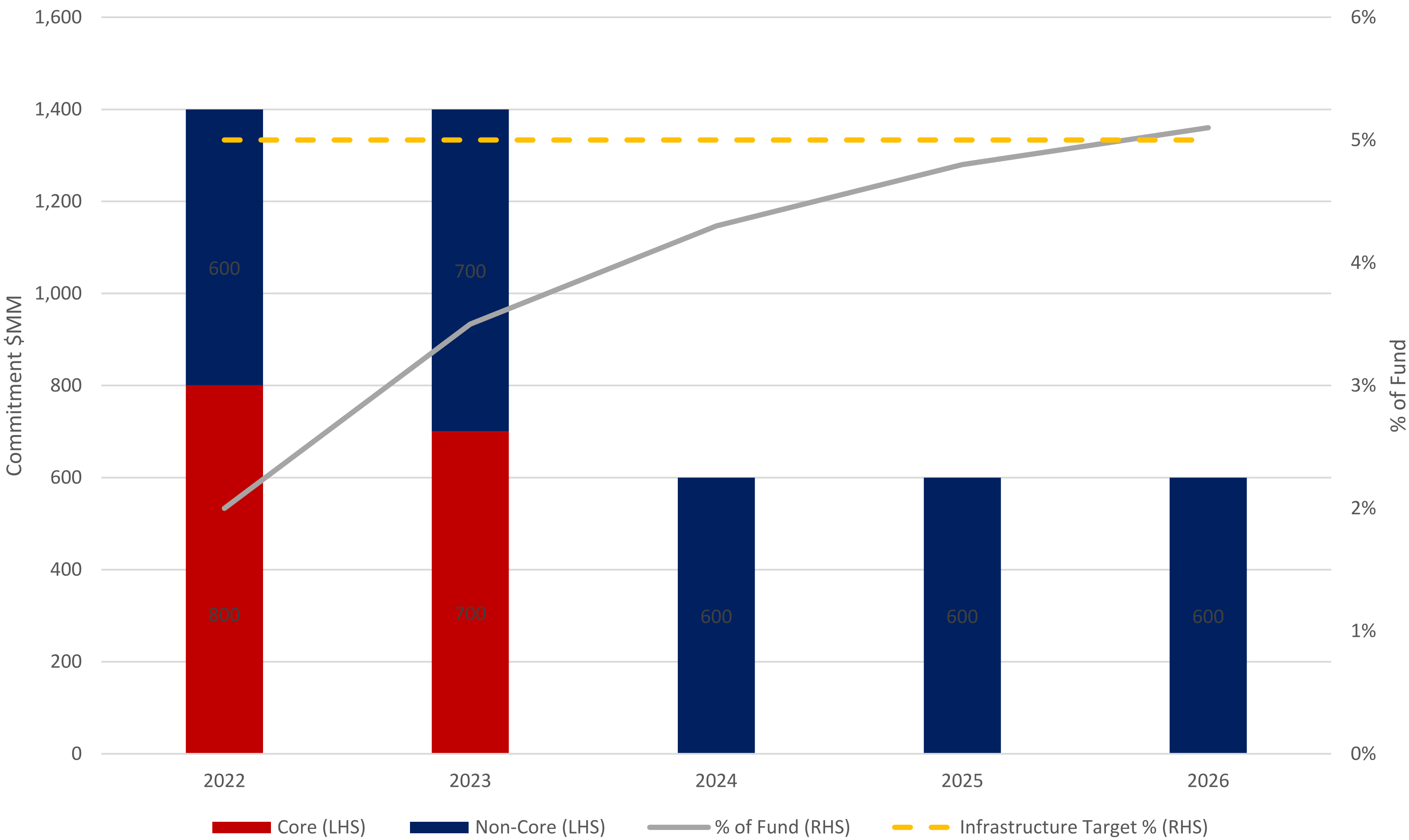
TIPS

- Inflation linkage through direct return of CPI plus real yield over bond life
- Diversification by preservation in down markets and inflation linkage

Investment Process

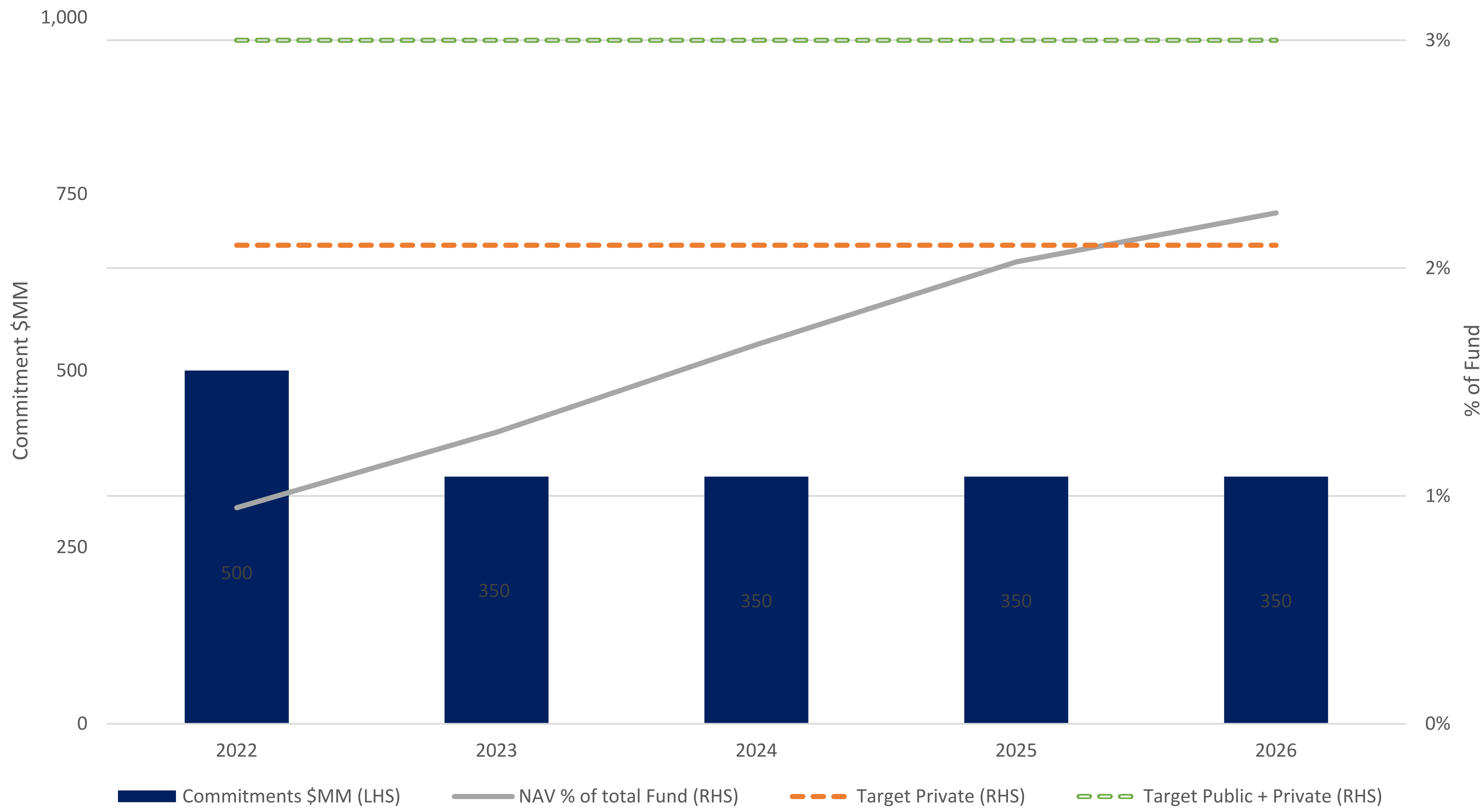


Investment Pacing: Infrastructure



Source: Albourne.

Investment Pacing: Natural Resources



Assumes: secondary purchase in 2021, and 0.9% of total Fund continues to be invested in public markets energy investments.
Source Albourne.

LACERA Real Asset Structure Review Concurrence Memo

December 20, 2021

To: Each Member
Real Assets and Inflation Hedges Committee
Board of Investments

From: James Walsh, Mark White
Albourne America LLC

For: January 12, 2022 Real Assets Committee Meeting

Recommendation: Albourne America LLC ("Albourne") recommends that the 2021 Structure Review of LACERA's Real Assets Portfolio be advanced to the Board of Investments for approval.

Background: Staff has prepared the 2021 Real Assets Structure Review for the Real Assets and Inflation Hedges Committee and the Board of Investments for its consideration and ultimately its approval. Albourne has reviewed the Structure Review and agrees with the recommendations.

The Structure Review re-asserts the Investment Role and Objectives last approved in November 2019, which emphasize income generation, inflation sensitivity, and diversification characteristics to benefit from complexity, illiquidity, and upside optionality. The Structural Review notes that, with the approval the portfolio will continue to be built out to a 17% total Strategic Target. Sub allocations are to increase infrastructure to 5% from 4% and reduce natural Resources from 4% to 3%. The Next Phase of this build out is anticipated to be implemented over 1-4 years with the potential inclusion of an Emerging Manager Program.

Conclusion: Staff's Structure Review outlines the focus on current income generation, inflation sensitivity, and diversification. The review clearly establishes the objectives and parameters of the program and the actions necessary to move forward to meet targets.

Sincerely,

James Walsh
Head of Portfolio Group

Mark White
Senior Portfolio Analyst

LACERA Real Asset Structure Review Concurrence Memo

Important Notice

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LACERA

December 14, 2021

TO: Each Trustee
Real Assets Committee

FROM: James Rice
Principal Investment Officer

Scott Zdrazil
Senior Investment Officer

FOR: January 12, 2022, Real Assets Committee Meeting

SUBJECT: **Real Assets Portfolio ESG Integration: Updates and Next Steps**

The attached presentation (**Attachment**) summarizes strategies and next steps to integrate consideration of financially relevant environmental, social, and governance (ESG) factors into LACERA's real assets portfolio for Trustee review and discussion at the January 12, 2022, Real Assets Committee meeting. A similar report was included in the December 2021 Real Assets Committee materials but postponed for discussion.

Attachment

Noted and Reviewed:

Jonathan Grabel
Chief Investment Officer

ATTACHMENT

Real Assets Portfolio ESG Integration: Updates and Next Steps

Real Assets Committee

January 12, 2022

James Rice, Principal Investment Officer
Scott Zdrazil, Senior Investment Officer

Discussion Outline

1. Background and Objectives
2. Key ESG Integration Strategies to Date in LACERA's Real Assets Portfolio
   - ESG Assessments of Each Investment Mandate
   - Global Real Estate Sustainability Benchmark (GRESB)
   - Responsible Contractor Policy
   - Portfolio Climate/ESG Data Analytics
3. Summary of Next Steps

Background and Objective

LACERA's *Investment Policy Statement* recognizes that environmental, social, and governance (ESG) factors may impact investment risks and opportunities

LACERA pursues pragmatic approaches in all asset classes to consider ESG in its investment process to safeguard and enhance risk-adjusted returns

Today's report:

1) Summarizes LACERA's key approaches to ESG integration in the real assets portfolio
2) Suggests next steps to refine and further advance our approach

Core ESG Integration Strategies in Real Assets

LACERA has pursed 4 key strategies to integrate ESG in real assets to date

ESG Assessments of Each Mandate

using LACERA's ESG Analytical Framework

ESG Benchmarking

using the
Global Real Estate Sustainability Benchmark
(GRESB)

LACERA
**Real Estate Portfolio
ESG Integration**

Responsible Contractor Policy

applying LACERA's own policy provisions

ESG & Climate Data Analytics

using procured third party data and software

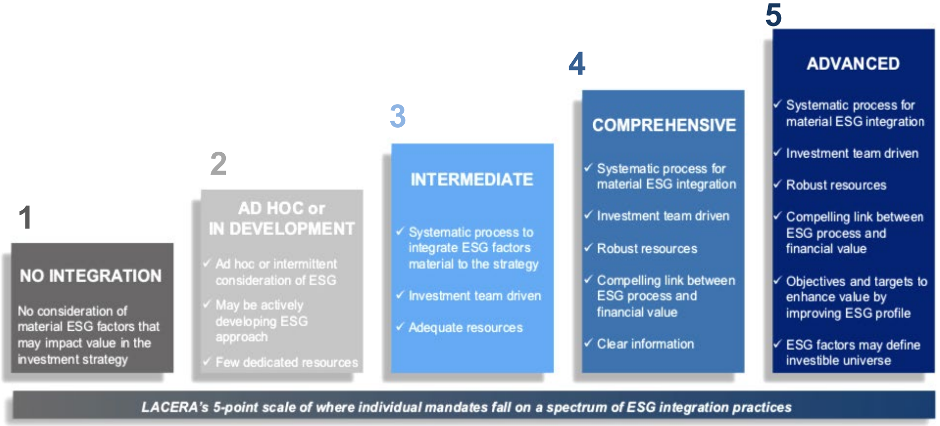
Each is discussed in the following slides

1. Assessing ESG Integration in Every Mandate

LACERA evaluates every prospective and current investment mandate on the extent to which the asset manager identifies and manages material ESG factors in the specific investment mandate

- ✓ Consistent methodology across asset classes
- ✓ Key points assessed include
  - ESG policy
  - Process for ESG integration
  - Resources to inform ESG integration
  - Demonstrable link to financial performance
  - Transparency of ESG integration to LACERA
- ✓ Informs holistic evaluation of manager quality, alongside fees, performance, and other factors
- ✓ Range of ESG factors considered, such as:
  - Anti-bribery and Code of Ethics provisions
  - Government and regulatory relations
  - Resource management (energy, water, waste)
  - Environmental liabilities management
  - Tenant satisfaction
  - Community relations and "license to operate"
  - Human capital management

Figure: LACERA 5-Point ESG Assessment Scale



Snapshot of Current Assessments

- ✓ Manager approaches are evolving with continuous improvement
- ✓ Scores reported in quarterly performance books

Figure 1: Dashboard of Current Real Estate Managers' ESG Assessments

	Policy	Approach	Resources	Industry Associations	Reporting and Transparency	Overall
Manager 1	4	4	4	4	4	4
Manager 2	4	4	4	5	4	4
Manager 3	4	3	2	2	3	3
Manager 4	3	2	2	2	2	2
Manager 5	4	4	3	4	3	4
Manager 6	3	2	2	3	3	3
Manager 7	4	4	4	4	4	4
Manager 8	4	4	4	4	4	4
Manager 9	4	4	3	2	3	3
Manager 10	4	4	4	3	4	4
Manager 11	4	4	4	3	4	4
Manager 12	3	2	2	1	1	2
Manager 13	4	4	4	4	4	4
Manager 14	4	4	4	3	4	4
Manager 15	3	3	2	2	2	2
Manager 16	4	4	3	3	3	3
Manager 17	4	3	3	3	3	3

Figure 2: Dashboard of Current Real Assets Managers' ESG Assessments

	Policy	Approach	Resources	Industry Associations	Reporting and Transparency	Overall
Manager 1	3	3	3	3	3	3
Manager 2	4	4	4	4	4	4
Manager 3	3	3	4	3	3	3
Manager 4	3	3	3	3	3	3
Manager 5	3	3	4	3	4	3
Manager 6	3	2	2	3	2	2
Manager 7	3	3	3	3	3	3
Manager 8	3	3	2	3	4	3
Manager 9	4	3	3	3	3	3
Manager 10	3	3	3	3	3	3
Manager 11	4	3	3	3	3	3
Manager 12	3	3	3	4	3	3
Manager 13	4	4	4	3	4	4
Manager 14	3	3	3	4	3	3
Manager 15	4	4	4	4	4	4

- ✓ Recent private fund commitments appear to be more attentive to ESG factors
- ✓ Scores are selected cautiously and may be ratcheted up as the team monitors the portfolios going forward

2. ESG Benchmarking: GRESB

About the Global Real Estate Sustainability Benchmark (GRESB)

- Established in 2009 by Dutch pension plans APG and PGGM
- Aimed to move beyond "anecdotal" ESG reporting from managers and develop a consistent framework for asset owners and asset managers to measure, track, and compare management of ESG factors and progress
- Supported by 140 institutional investors and 2,200 fund managers, including CalPERS and NY State fund
- Investors and asset managers collaborate to establish uniform annual reporting
- Asset managers report data to GRESB which analyzes and avails scores and data to asset owners

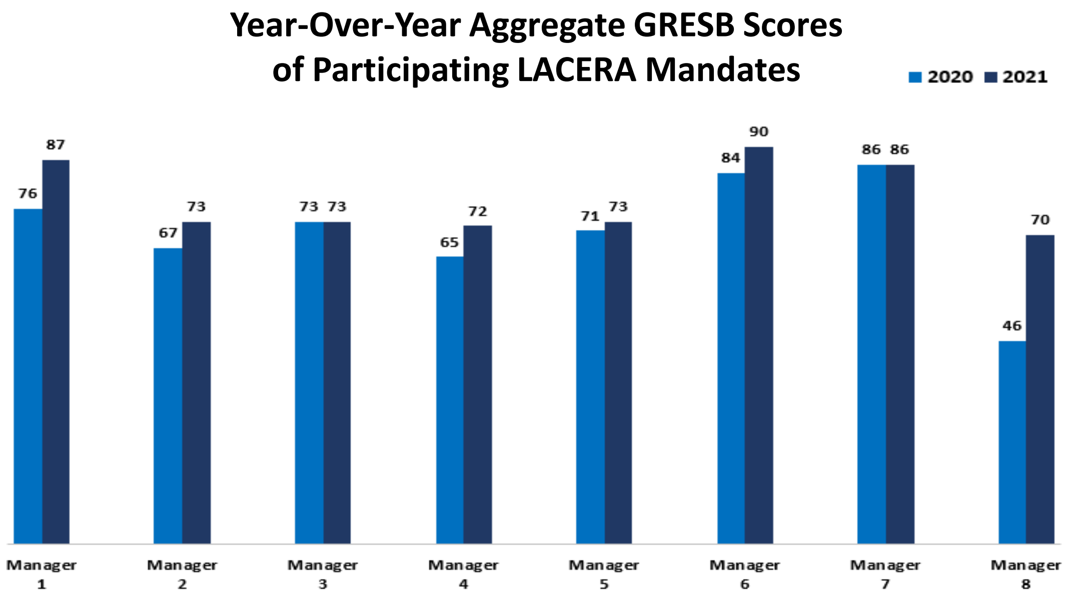
LACERA Two-Year Trial Affiliation Initiated in 2020

- **Objectives of Trial Affiliation:** Ascertain utility of using GRESB as a tool for:
    - **Underwriting/due diligence**: GRESB may provide standardized and comparable data and insight on how managers mitigate key ESG risks
    - **Manager monitoring**: Help identify the baseline of managers' ESG integration strategies, compare with similar strategies (core/opportunistic/etc. and by region), and monitor progress over time
    - **Portfolio-wide analytics**: Facilitate Total Fund portfolio analytics by availing key ESG metrics, such as
        - Energy consumption
        - Greenhouse gas emissions
        - Water consumption
        - Waste usage
    - Gain better **insight into ESG best practices** and adoption rate among LACERA managers

- **8 LACERA managers participated**, including a mix of:
    - Separate account managers and commingled fund managers
    - U.S. and non-U.S. mandates (including Asia and Europe regional funds)
    - Some first-time GRESB reporters and others who have reported to GRESB for other mandates

* Summit Partners Europe Fund III acquired GRESB from private equity firm GBCI in November 2020, after LACERA initiated a trial affiliation. GBCI had acquired GRESB in 2014. LACERA is a limited partner in Summit Partners Europe Fund III.

GRESB Takeaways and Next Steps



73

asset-weighted portfolio GRESB score

compared to

79

GRESB average score of similar portfolio exposures

Observations

- 6 of 8 LACERA managers improved year-over-year GRESB scores in their 2021 reporting
- Range of manager performance relative to their sector and regional peers (two outperformance, one in line, several under)
- On a composite basis, LACERA's portfolio scored an asset-weighted average of 73 out of 100, below the GRESB average score of 79
- In follow-up interviews, managers indicated several benefits of GRESB reporting:
  - Helps identify areas for improvement
  - Provides roadmap for enhancing ESG management
  - Has prompted some firms to formalize and accelerate ESG efforts and resources
- All participating managers plan to continue reporting GRESB reporting next year

Prospective Next Steps

- Staff considers GRESB participation is providing useful insights and data points and intends to bring forward a recommendation for Trustees' consideration to formally affiliate to GRESB.

3. Responsible Contractor Policy/RCP

History: LACERA adopted its RCP in 2002; Last revised in 2014*

Objective: Guide real estate asset managers to select high-quality, stable, safe building construction and services contractors, as evidenced by their track records of legal compliance, stability, and fair wages and benefits

Philosophy

- Enhance risk-adjusted returns through **"high-road"** real estate, i.e.:
  - Legal compliance at real estate contractors
  - Workforce safety and stability
  - "Fair" pay and benefits
- Avoid **"low-road"** strategies marked by unsafe workplaces, legal noncompliance, undercutting local market pay, etc., that may present:
  - Operational instability, project delays, workforce unrest
  - Legal and regulatory risks
  - Reputational risks

Review initiated in summer 2021 in light of:

- Portfolio shift to commingled funds from separate accounts
- LACERA's strategic asset allocation expansion to infrastructure
- Recent RCP revisions at numerous peers and asset managers to "Version 2.0"

* See attachment 2 of the Investment Policy Statement

RCP Prospective Refinement

Review Process

- Analysis of peer policies (i.e., CalPERS, CalSTRS, Maryland, NYC, NY State, Oregon)
- Interviews with peers, asset managers, consultants, and select stakeholders
- Assessment of LACERA policy implementation history

Sample of Policy Gap Analysis Findings

	Current RCP	Notable Peer Practice	Prospective Refinement
Asset Class Coverage	Only real estate	Include infrastructure	Expand to infrastructure
Ownership Threshold	Applies to 100% owned assets	Apply to "controlled" assets; i.e., >50% owned	Consider lower threshold
Commingled Funds	Not covered	Encourage RCP adherence	Encourage RCP adherence
Fair Wages Definitions	Not defined	Explanatory language	Add explanatory language
Compliance Reporting	Inconsistent formats	Consistency	Add consistency

Prospective Next Steps

- Proactively review and modernize RCP as portfolio evolves to promote alignment with LACERA expectations
- Staff anticipates providing fuller details for Trustees to consider possible updates

4. Climate & ESG Analytics

LACERA procures third-party vendor data to assess and monitor real estate portfolio investment risks, such as exposure to climate change and weather-related factors

- The LACERA real estate portfolio may face an aggregate 4.5% value loss from physical risks under MSCI scenario analysis
- Figure 1 identifies cyclone and coastal flooding as key contributors to climate change-related physical risks
- Data enables LACERA to monitor portfolio risks and engage managers on risk mitigation strategies of specific properties

Figure 1: Physical Risks Scenario Analysis
Portfolio Value-At-Risk "CVaR" From Climate-related Physical Risks

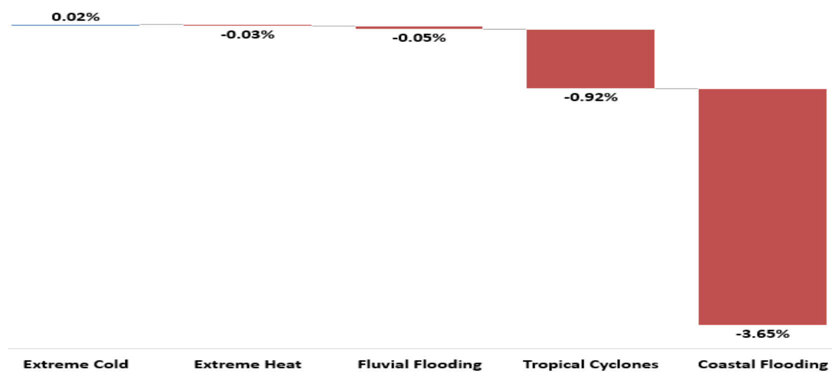
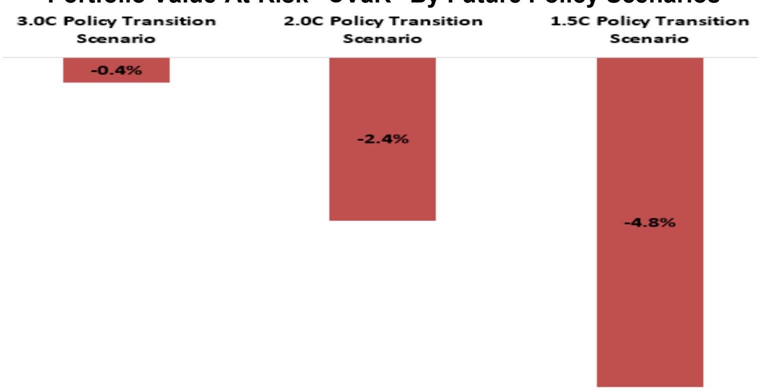


Figure 2: Transition and Policy Scenario Analysis Risks
Portfolio Value-At-Risk "CVaR" By Future Policy Scenarios



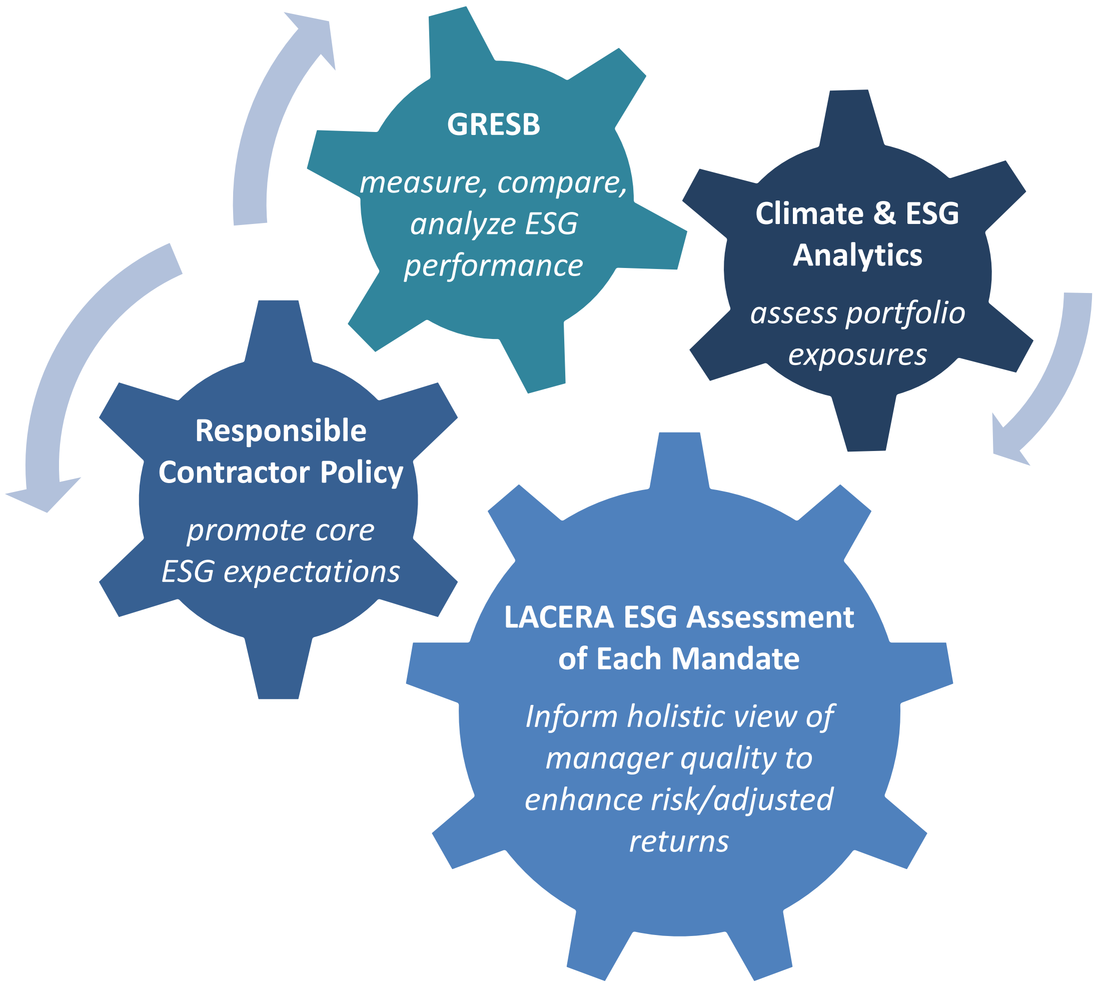
- MSCI data also enables LACERA to assess how prospective government policies may impact current portfolio value
- Figure 2 indicates that prospective regulations to reach the Paris Agreement goals of maintaining global climate change to under 2.0° Celsius may impact real estate portfolio value by 2.4%
- Paris Agreement aspirational goal to maintain warming under 1.5° degrees may impact portfolio value by 4.8%

Scenario analysis is an iterative process, as more data and information is reported and available

Strategies Intended to Be Synergistic

LACERA Real Estate Portfolio ESG Integration

Approaches aim to complement each other in order to advance LACERA's commitment and fiduciary duties to consider material ESG factors in its investment process



Summary of Prospective Next Steps

Key anticipated next steps as part of LACERA's real estate structure review include:

1. **ESG Assessments:** Continue evaluating new and current mandates as portfolio evolves
2. **GRESB:** Propose formal affiliation for Trustee consideration
3. **RCP:** Draft policy refinements for Trustee consideration
4. **Climate and ESG Data Analytics:** Continue incorporating data, as available, to identify concentrated risks, monitor portfolio, and inform Total Fund view of climate risks