Investment Committee Meeting
November 18, 2024

Meeting Items

- Agenda
- 2025 Investment Committee Meeting Schedule
- Total Fund Performance Review for period ending June 30, 2024
- Asset Class Review: Real Asset for period ending June 30, 2024
- Annual Benchmarking Review
- Annual Plan Liquidity Target Review
- Annual Investment Policy Statement Review
- Approval of Minutes – August 19, 2024

Board Packet Documents are available to the public for inspection on the Employees' Retirement System's Website: https://ers.ehawaii.gov/board-and-committee-agendas-and-meeting-packets, and in the Employees' Retirement System's Office, 201 Merchant Street, Suite 1400, Honolulu, HI 96813

NOTICE OF REGULAR MEETING

AGENCY: Investment Committee of the Board of Trustees of the Employees' Retirement System of the State of Hawaii

DATE: Monday, November 18, 2024; 10:00 a.m.

PLACE: City Financial Tower, 201 Merchant Street, Suite 1200, Honolulu, Hawaii 96813

The meeting will be conducted pursuant to HRS § 92-3.7, under which Members of the Investment Committee of the Board of Trustees may participate via interactive conference technology; and members of the public may also participate via interactive conference technology or in person at the meeting place stated above.

Members of the public may also attend the meeting in person to testify or provide testimony by teleconference either audio or video, at the following link and phone number:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZGM5ODhlYTgtYjg3OC00NzAyLThiMzgtNTI2Njc2YmI2YmI5%40thread.v2/0?context=%7b%22Tid%22%3a%223847dec6-63b2-43f9-a6d0-58a40aaa1a10%22%2c%22Oid%22%3a%22143b2242-bd77-4676-ace0-1fa20512039b%22%7d

or

+1 808-829-4853,,960322930# United States, Honolulu
Phone conference ID: 960 322 930#

Individuals testifying at the meeting are requested to limit their testimony to three minutes or an amount of time otherwise designated by the Chairperson.

In the event audiovisual communication cannot be maintained with participating Trustees and quorum is lost, the meeting shall be automatically recess for up to 30 minutes, during which time, an attempt to restore audiovisual communication will be made. If such attempt is unsuccessful, all Trustees, members of the public, staff and other interested individuals may continue to participate in the meeting via telephone using the above listed telephone and conference ID numbers, whereby audio-only communication will be established for all participants and the meeting will continue. If reconvening the meeting is not possible because neither audiovisual nor audio-only communication can be re-established, the meeting will be terminated.

AGENDA

CALL TO ORDER/QUORUM

Motion to hold the meeting allowing Trustees and members of the public to participate by interactive conference technology, pursuant to HRS § 92-3.7, with at least one meeting location open to the public that has audiovisual connection.

PUBLIC COMMENT

Members of the public may submit written testimony on these agenda items via e-mail or postal mail with receipt recommended by 4:30 p.m. on Friday, November 15, 2024, in order to ensure it is distributed in time for consideration. Please address written testimony if by e-mail to diana.gomes@hawaii.gov or by postal mail to: Employees' Retirement System of the State of Hawaii, Investment Committee, 201 Merchant Street, Suite 1400, Honolulu, Hawaii 96813.

NEW BUSINESS

1. Discussion of 2025 Employees' Retirement System Investment Committee Meetings.

   Pursuant to HRS § 92-5(a)(4) and (8), the Board of Trustees may enter into Executive Session to consult with the Board of Trustees' attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to this matter.

PRESENTATIONS

1. Total Fund Performance Review for period ending September 30, 2024.
   Kristin Varela, ERS Chief Investment Officer and Meketa Investment Group, Inc.

   Pursuant to HRS § 88-27.5(a)(1), 92-5(a)(4) and (8), the Board of Trustees may enter into Executive Session to conduct discussions and deliberations relating to, and if appropriate, to make a decision on investments or prospective investments by the system that requires the consideration of information or records that are exempt from disclosure under HRS Chapter 92F, including information and records that are proprietary information or confidential business information, and to consult with the Board's attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to this matter.

2. Rotating Alternative Asset Class Review: Townsend – Real Assets for period ending June 30, 2024
   Ian Wetzel, ERS Investment Officer and Townsend Group.

   Pursuant to HRS § 88-27.5(a)(1), 92-5(a)(4) and (8), the Board of Trustees may enter into Executive Session to conduct discussions and deliberations relating to, and if appropriate, to make a decision on investments or prospective investments by the system that requires the consideration of information or records that are exempt from disclosure under HRS Chapter 92F, including information and records that are proprietary information or confidential business information, and to consult with the Board's attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to this matter.

3. Annual Benchmarking Review
   Kristin Varela, ERS Chief Investment Officer and Meketa Investment Group, Inc

   Pursuant to HRS § 88-27.5(a)(1), 92-5(a)(4) and (8), the Board of Trustees may enter into Executive Session to conduct discussions and deliberations relating to, and if appropriate, to make a decision on investments or prospective investments by the system that requires the consideration of information or records that are exempt from disclosure under HRS Chapter 92F, including information and records that are proprietary information or confidential business information, and to consult with the Board's attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to this matter.

4. Annual Plan Liquidity Target Review
   Kristin Varela, ERS Chief Investment Officer and Meketa Investment Group, Inc.

   Pursuant to HRS § 88-27.5(a)(1), 92-5(a)(4) and (8), the Board of Trustees may enter into Executive Session to conduct discussions and deliberations relating to, and if appropriate, to make a decision on investments or prospective investments by the system that requires the consideration of information or records that are exempt from disclosure under HRS Chapter 92F, including information and records that are proprietary information or confidential business information, and to consult with the Board's attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to this matter.

5. Annual Investment Policy Statement Review
   Kristin Varela, ERS Chief Investment Officer

   Pursuant to HRS § 88-27.5(a)(1), 92-5(a)(4) and (8), the Board of Trustees may enter into Executive Session to conduct discussions and deliberations relating to, and if appropriate, to make a decision on investments or prospective investments by the system that requires the consideration of information or records that are exempt from disclosure under HRS Chapter 92F, including information and records that are proprietary information or confidential business information, and to consult with the Board's attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to this matter.

REPORTS BY STAFF

1. Chief Investment Officer Update

APPROVAL OF MINUTES – August 19, 2024

EXECUTIVE SESSION

1. Executive Session, pursuant to HRS § 88-27.5(a)(1), 92-5(a)(4) and (8), to conduct discussions and deliberations relating to, and if appropriate, to make a decision on investments or prospective investments by the system that require the consideration of information or records that are exempt from disclosure under HRS Chapter 92F, including information and records that are proprietary information or confidential business information, and to consult with the Board's attorneys on questions and issues pertaining to the Board's powers, duties, privileges, immunities, and liabilities with respect to Confidential ERS Investment Portfolio activity to include (1) Update on closure of Weiss Asset Management, (2) Man Operational Risk Process Update, and (3) Investment Office staffing updates.

2. Executive Session, pursuant to HRS § 88-27.5(a)(1), 92-5(a)(4) and (8),, to Review and Approval of Executive Session Minutes of August 19, 2024.

ADJOURNMENT

If you require auxiliary aid/service or other accommodation due to a disability, contact Diana Gomes at (808) 586-0175 or diana.gomes@hawaii.gov as soon as possible, preferably by Friday, November 15, 2024, and the ERS will try to obtain the auxiliary aid/service or accommodation, but cannot guarantee that the request can be fulfilled.

Upon request, this notice can be made available in large print.

2025 Investment Committee Meeting Dates

Regular Quarterly Meetings

Day	Month
Tuesday	February 18
Monday	May 19
Monday	August 18
Monday	November 17

Regular quarterly meetings in February, May, August and November.

a. Recurring Oversight Items
b. Rotating Oversight Items
c. Annual Governance Items
d. Ad-Hoc Educational Sessions

Trustee Education Summit date to be determined as agreed upon by the Investment Committee and Board of Trustees.

All items and dates are subject to change, at the direction of the Investment Committee.

MEKETA

Employees' Retirement System of the State of Hawaii

November 18, 2024

2024 Q3 Performance Report

Agenda

1. Introduction
2. ERS Portfolio Review
3. Plan Sponsor Peer Group Analysis
4. Appendix

Introduction

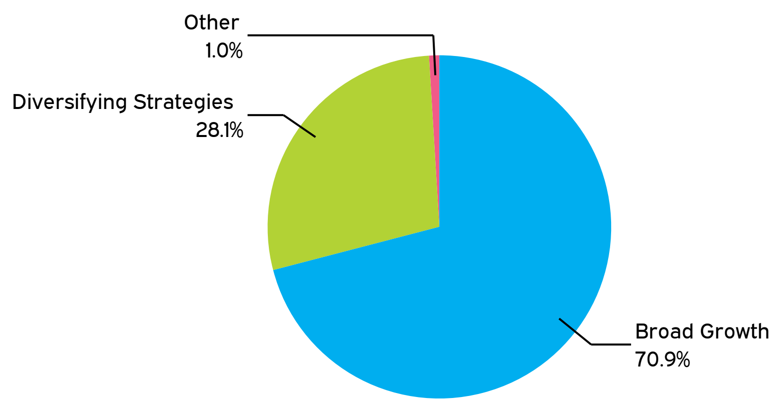
Portfolio Valuation	Quarter-to-Date	Calendar Year-to-Date	One Year
Total Fund			
Beginning Market Value	23,596,065,256	22,880,493,536	22,202,894,595
Net Cash Flow	-99,987,886	26,079,561	-86,458,199
Capital Appreciation	540,100,458	1,129,604,731	1,919,741,432
Ending Market Value	**24,036,177,828**	**24,036,177,828**	**24,036,177,828**

ERS Total Fund Relative Performance	Inception	30 Yrs	20 Yrs	10 Yrs	5 Yrs	3 Yrs	1 Yr	YTD	FYTD	QTD
Total Fund	**7.7**	**7.4**	**7.1**	**7.1**	**7.8**	**4.5**	**9.5**	**5.9**	**2.2**	**2.2**
Return Benchmark	7.7	7.7	7.5	7.1	7.0	7.0	7.0	5.2	1.7	1.7
Excess Return	0.0	-0.3	-0.4	0.0	0.8	-2.5	2.5	0.7	0.5	0.5
Total Fund	**7.7**	**7.4**	**7.1**	**7.1**	**7.8**	**4.5**	**9.5**	**5.9**	**2.2**	**2.2**
Market Benchmark	7.9	7.8	7.2	6.9	8.1	5.8	15.6	12.3	3.2	3.2
Excess Return	-0.2	-0.4	-0.1	0.2	-0.3	-1.3	-6.1	-6.4	-1.0	-1.0
Total Fund	**7.7**	**7.4**	**7.1**	**7.1**	**7.8**	**4.5**	**9.5**	**5.9**	**2.2**	**2.2**
Peer Benchmark	7.9	7.8	7.0	7.0	8.1	4.6	17.5	9.9	4.7	4.7
Excess Return	-0.2	-0.2	0.2	0.2	-0.2	-0.1	-7.9	-4.0	-2.6	-2.6
Total Fund Rank	63	66	39	48	65	56	100	100	100	100

Total Fund performance consists of net of fees returns. Fiscal year begins on July 1. Inception date is June 1, 1990. Current Market Benchmark composition (effective January 1, 2024) is 70% Broad Growth Benchmark and 30% Diversifying Strategies Benchmark. Please see the Appendix for current and historical custom benchmark compositions. Return Benchmark represents the ERS's actuarial assumption rate. Peer Benchmark represents the plan sponsor peer group InvMetrics Public DB >$1B Net universe and includes BNY Mellon Total Public Fund >$1B universe and Investment Metrics client data.

Asset Allocation vs. Target
As of September 30, 2024

	Balance ($)	Current Allocation (%)	Policy (%)	Difference (%)	Policy Range (%)
Broad Growth	**17,052,137,741**	**70.9**	**70.0**	**0.9**	**60.0 - 80.0**
Global Equity	9,746,593,033	40.5	39.0	1.5	19.0 - 59.0
Global Credit	2,761,481,275	11.5	12.0	-0.5	6.0 - 18.0
Real Assets	4,544,063,433	18.9	19.0	-0.1	9.0 - 29.0
Diversifying Strategies	**6,750,637,892**	**28.1**	**30.0**	**-1.9**	**20.0 - 40.0**
Liquid Defensive/Diversifying	5,787,173,633	24.1	26.0	-1.9	15.0 - 30.0
Illiquid Diversifying	963,464,260	4.0	4.0	0.0	0.0 - 9.0
Other	**233,402,194**	**1.0**	**0.0**	**1.0**	**0.0 - 0.0**
Other	233,402,194	1.0	0.0	1.0	0.0 - 0.0
Total	**24,036,177,827**	**100.0**	**100.0**	**0.0**	



Target allocation effective January 1, 2024. "Other" includes ERS Operating Account, Parametric Overlay program, and transitional or residual proceeds from liquidating or terminated accounts.

Hawaii ERS vs. Public Fund Peers

→ On a risk-unadjusted basis, the ERS Total Portfolio outperformed the Median Public Fund Peer Group[1] over the trailing 10- and 20-year periods.

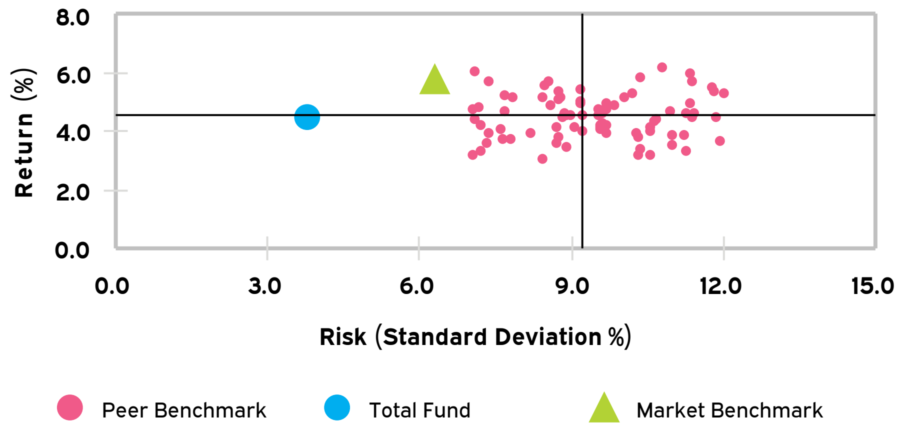
Risk-Adjusted Performance[2] of Hawaii ERS vs. Median Public Fund

	Since Inception	30 Yrs	20 Yrs	10 Yrs	5 Yrs	3 Yrs	1 Yr	CYTD	FYTD	QTD
Total Fund	**7.7**	**7.4**	**7.1**	**7.1**	**7.8**	**4.5**	**9.5**	**5.9**	**2.2**	**2.2**
Risk-Adjusted Peer Median[3]	*7.8*	*7.4*	*6.3*	*5.2*	*4.8*	*1.8*	*7.0*	*4.9*	*2.5*	*2.5*
Excess Return	(0.1)	0.1	0.8	1.9	3.0	2.6	2.5	1.0	(0.3)	(0.3)

→ On a risk-adjusted basis, the ERS Total Portfolio has consistently, and materially, outperformed relative to the Median Public Fund over most time periods. This is indicative of a more efficient (i.e., higher return per unit of risk) portfolio that was explicitly constructed by the ERS over the last several asset-liability studies.

[1] Peer universe data from Investment Metrics (IM) Public Defined Benefit >$1B Net Universe includes Investment Metrics client data and plan sponsor peer group data from BNY Mellon.
[2] Performance shown is net of fees since October 1, 2014, and a mix of net and gross of fees prior to October 1, 2014. Fiscal Year beings on July 1. Inception date is June 1, 1990.
[3] The risk-adjusted median normalizes the median fund to the ERS's exhibited volatility. Calculated as: risk-adjusted median return = unadjusted median return × (ERS volatility ÷ median fund volatility), where volatility is measured as standard deviation. Figures for periods greater than one year are annualized.

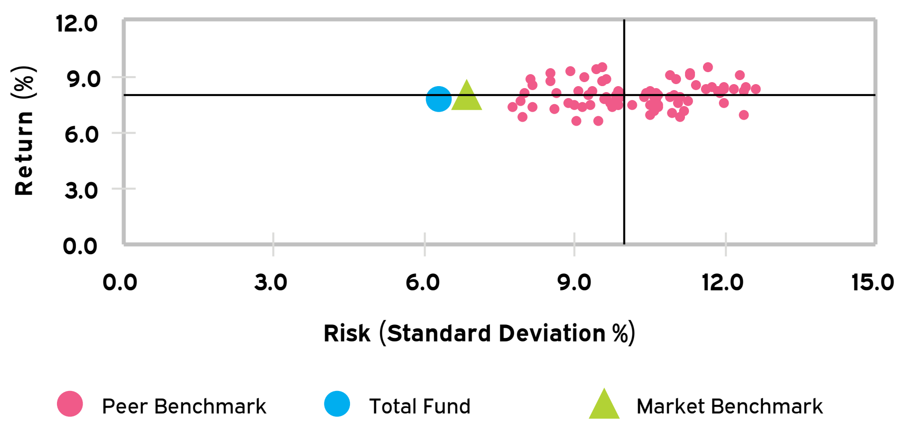
Annualized Return vs. Annualized Standard Deviation
3 Years Ending September 30, 2024



Annualized Risk-Return

	3 Years Return	3 Years Standard Deviation	3 Years Sharpe Ratio
Total Fund	4.5	3.8	0.3
Market Benchmark	5.8	6.3	0.4
Peer Benchmark Median	4.6	9.2	0.2

Annualized Return vs. Annualized Standard Deviation
5 Years Ending September 30, 2024

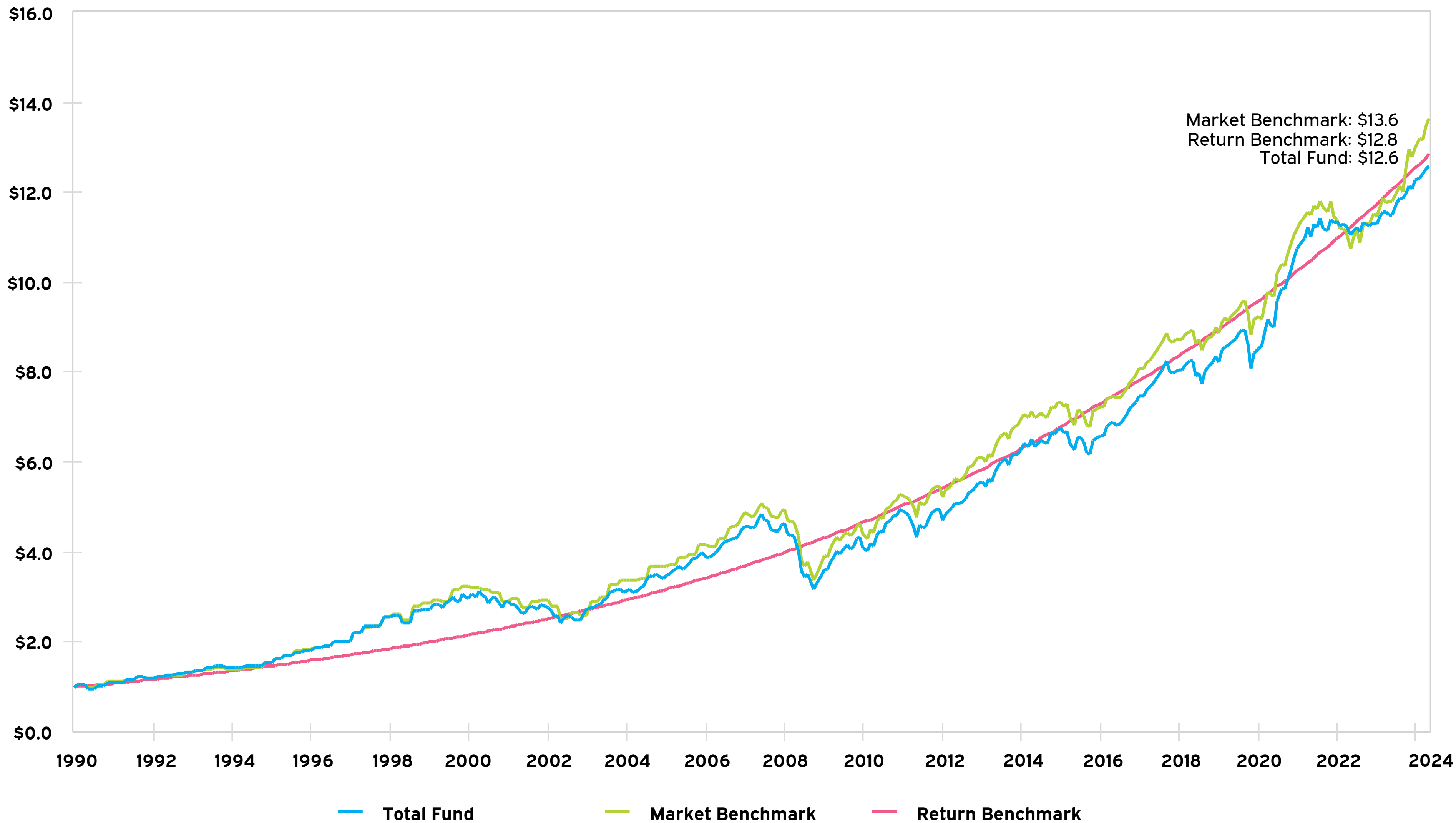


Annualized Risk-Return

	5 Years Return	5 Years Standard Deviation	5 Years Sharpe Ratio
Total Fund	7.8	6.3	0.8
Market Benchmark	8.1	6.8	0.8
Peer Benchmark Median	8.1	10.0	0.6

Peer Benchmark represents the plan sponsor peer group InvMetrics Public DB >$1B Net universe and includes BNY Mellon Total Public Fund >$1B universe and Investment Metrics client data.

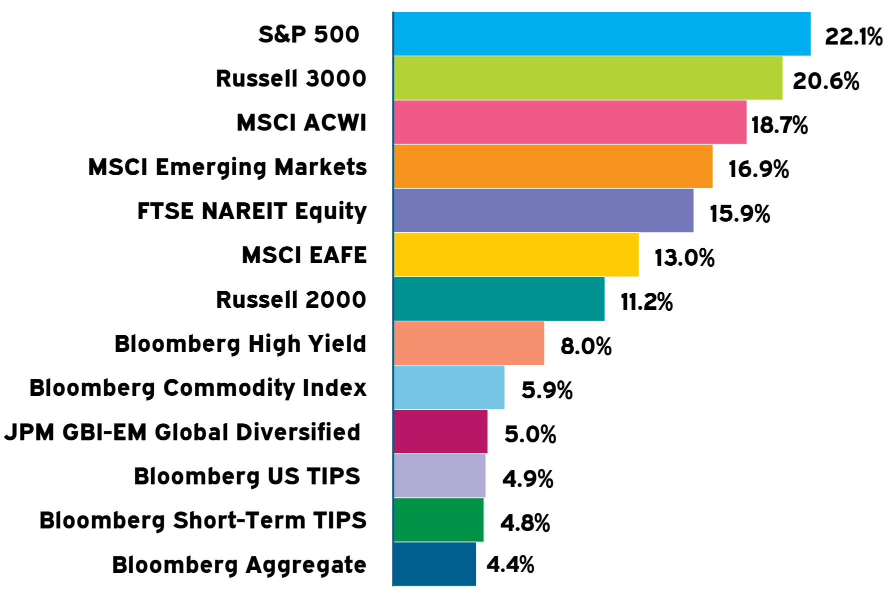
Since Inception Growth of $1



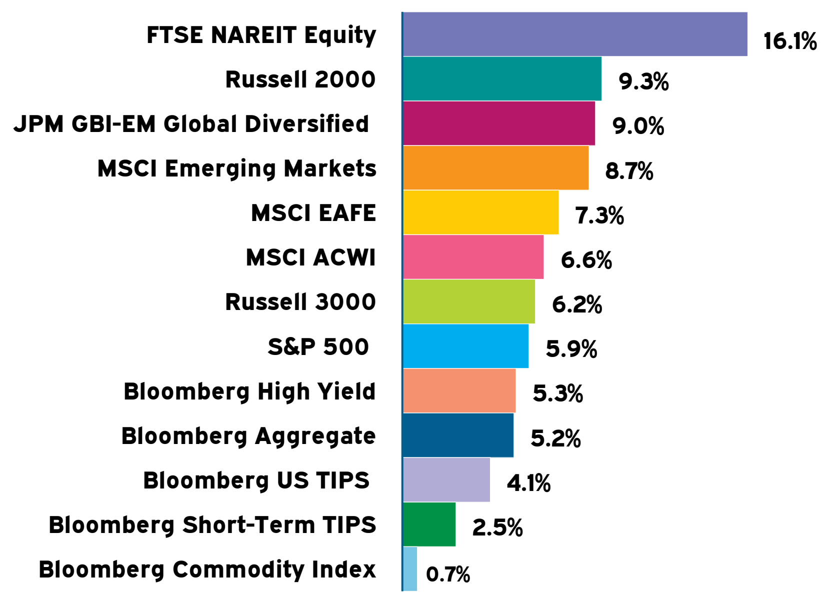
Inception date is June 1, 1990. Return Benchmark represents the ERS's actuarial assumption rate, which is 7.0% since July 2016, 7.65% from July 2015 to July 2016, 7.75% July 2011 to July 2015, 8.00% prior to July 2011.

Index Returns[1]

YTD



Q3



→ Major markets finished the third quarter in positive territory despite several spikes in volatility. Falling inflation, resilient growth in the US, and dovish central banks supported stocks and bonds. Rate sensitive sectors, like REITs, particularly benefited from lower interest rates.

→ Year-to-date through September, all major asset classes were positive, led by US equities.

[1] Source: Bloomberg. Data is as of September 30, 2024.

Summary

Key Trends:

→ According to the International Monetary Fund's (IMF) July report, global growth this year is expected to match the 2023 estimate at around 3.2% with most major economies predicted to avoid a recession.

→ Key economic data in the US has largely weakened and come in below expectations, causing markets to expect an additional two rate cuts this year after the Fed's initial 0.5% reduction. Uncertainty remains regarding the timing and pace of interest rate cuts in the coming year.

→ US consumers could feel pressure as certain components of inflation (e.g., shelter) remain high, borrowing costs stay elevated, and the job market may weaken further.

→ A focus for US equities going forward will be whether earnings can remain resilient if growth slows. Also, the future paths of the large technology companies that have driven market gains will be important.

→ We have started to see divergences in monetary policy. Some central banks, such as the Fed, European Central Bank, and the Bank of England, have started to cut interest rates and others, like the Bank of Japan, have increased interest rates. This disparity will likely influence capital flows and currencies.

→ China appears to have shifted focus to more policy support for the economy/asset prices with a new suite of policy stimulus and signals for more support ahead. It is still not clear what the long-term impact of these policies will be on the economy and if policy makers will remain committed to these efforts.

Macro Risk Analytics – Key Takeaways

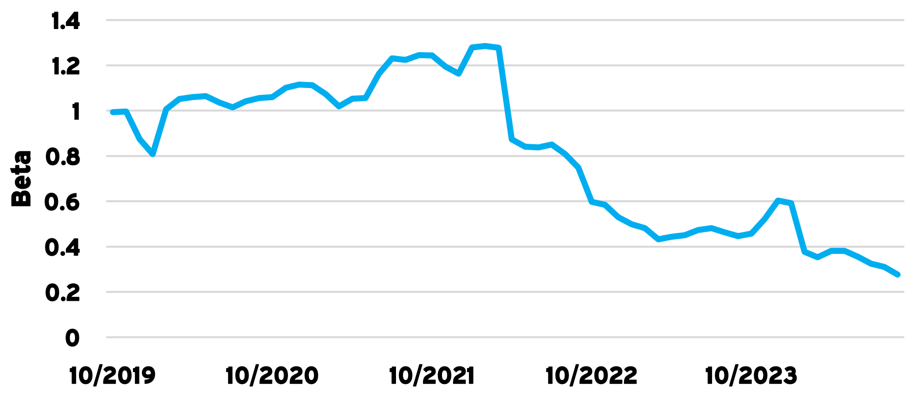
→ Projections for monetary and fiscal policy decisions are front-and-center with respect to market reactions at the moment. Too much stimulus into a healthy economy may inject fragility into the system. While economic activity (i.e., corporate earnings, GDP, income growth, unemployment, etc.) remains relatively resilient, pockets of weakness have begun to show in certain data releases. With strong market moves across liquid markets in recent periods, valuations for several asset classes still exhibit elevated levels.

→ Meketa's Market Sentiment Indicator remained green (i.e., positive) during Q3.

→ The Actual Portfolio's beta (on a 12-month basis relative to the Policy Portfolio) declined in Q3 and is at extremely low levels. Related, trailing 12-month volatility for the Actual Portfolio and Policy Portfolio remain at a relatively wide spread. Of note, a new policy benchmark was implemented on 1/1/2024.

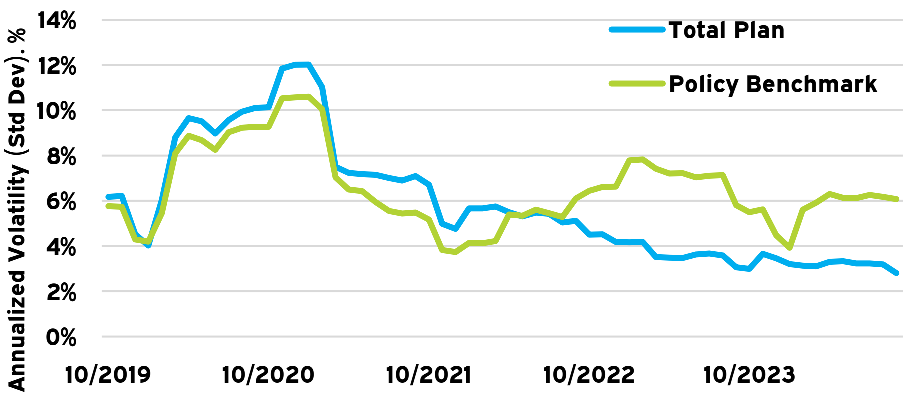
12 Month Rolling Beta vs. Policy Benchmark

Oct 19 - Sep 24



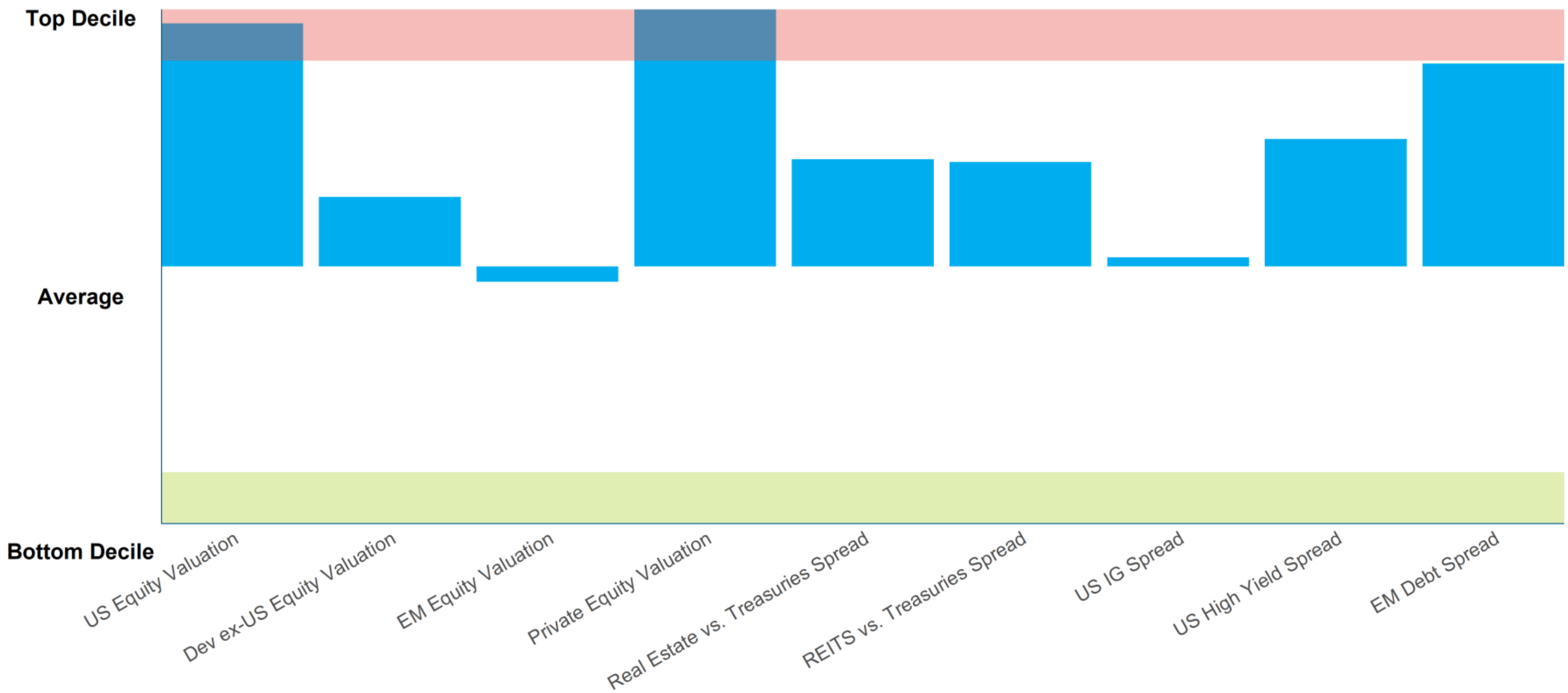
12 Month Rolling Risk

Oct 19 - Sep 24



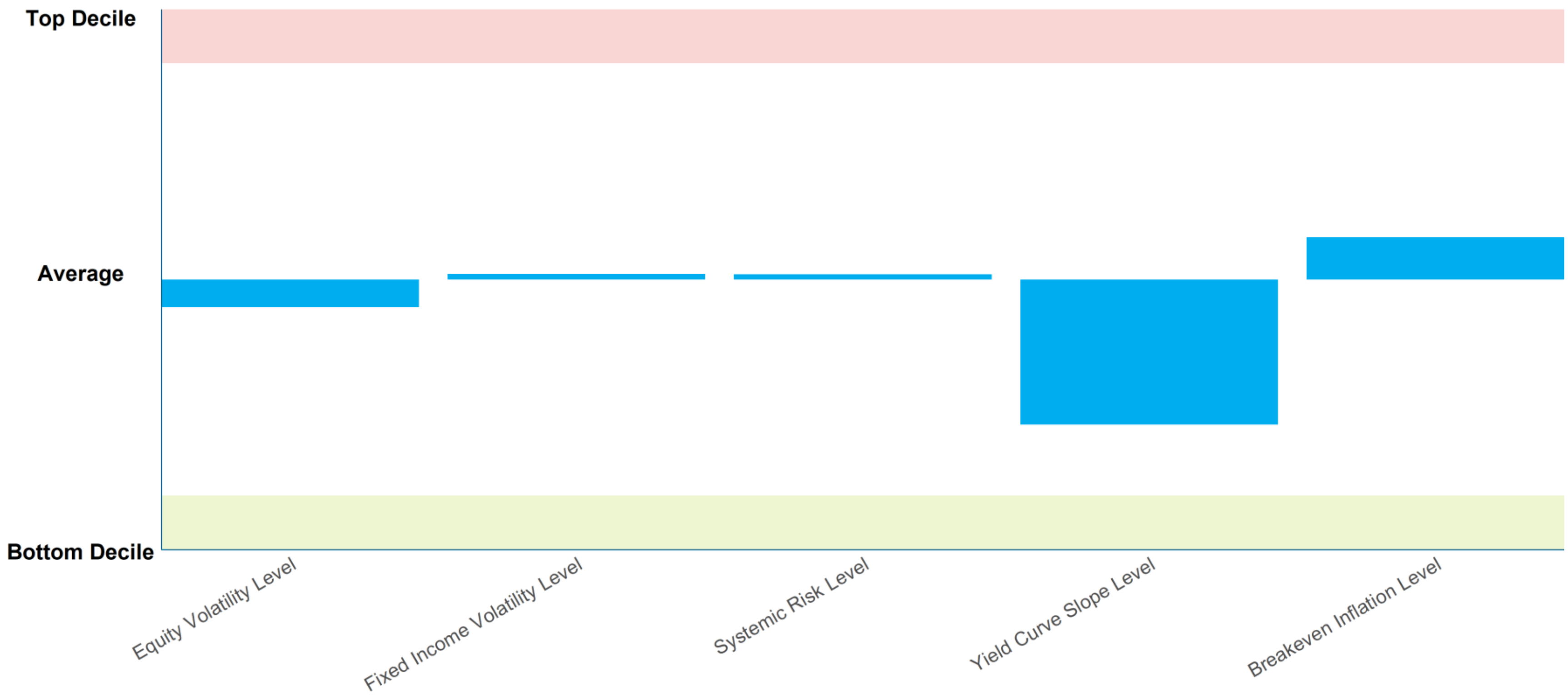
Valuation Metrics Dashboard

(current measures relative to history)

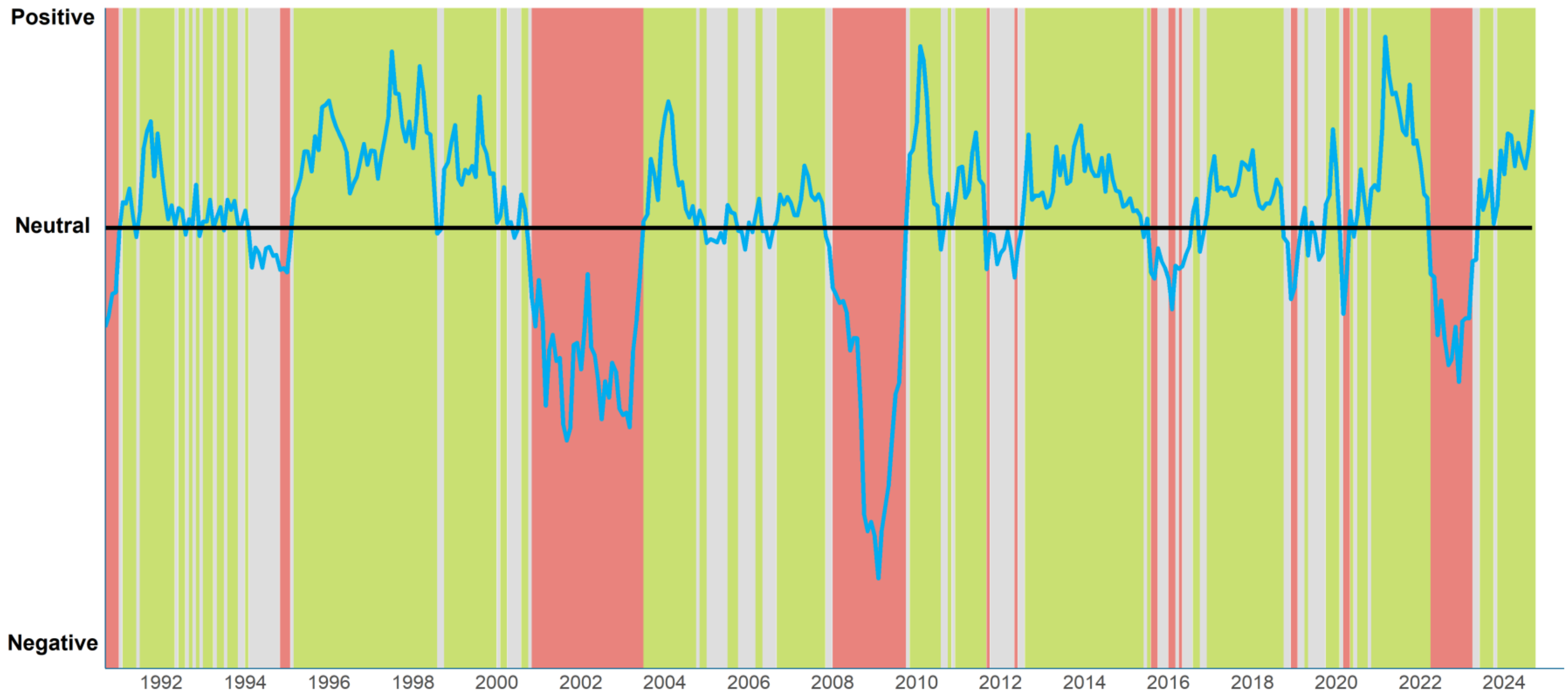


Other Market Metrics Dashboard

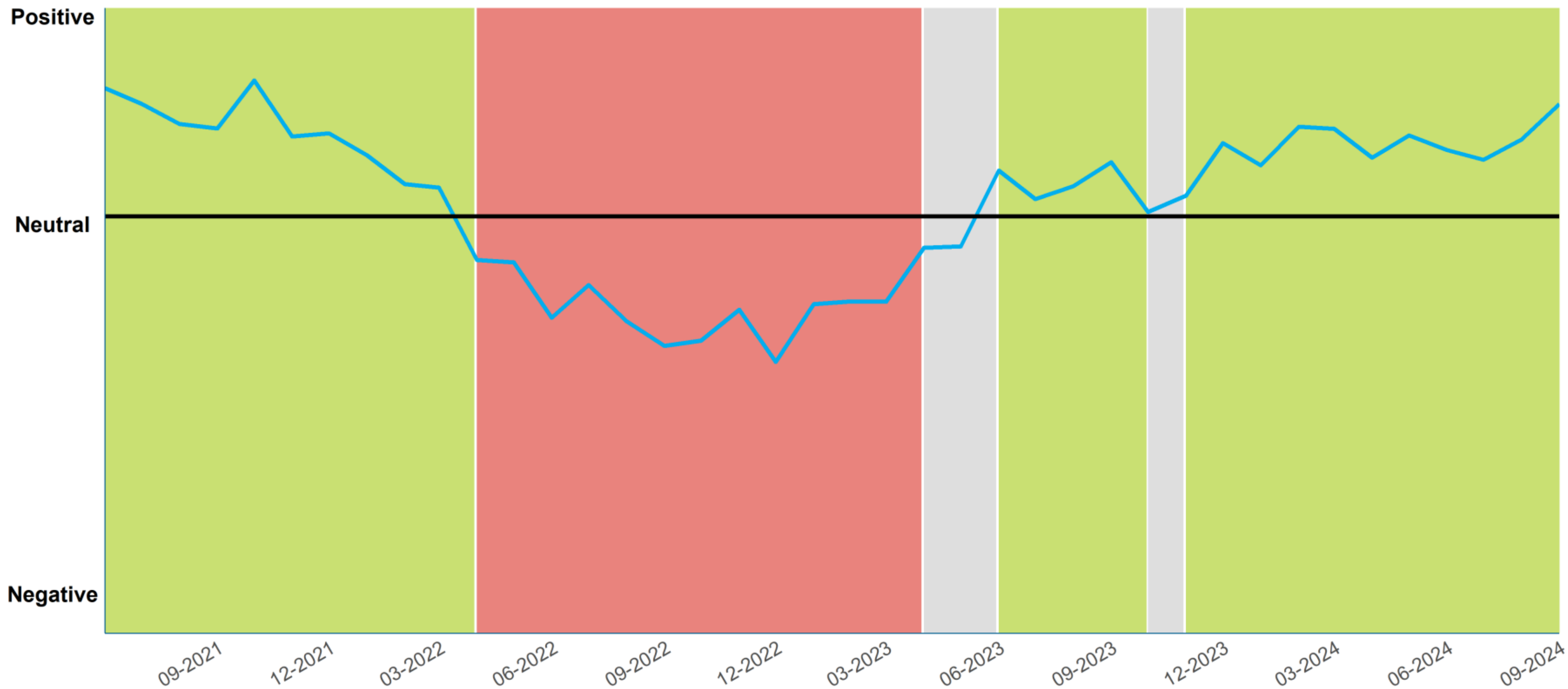
(current measures relative to history)



Market Sentiment Indicator (All History)

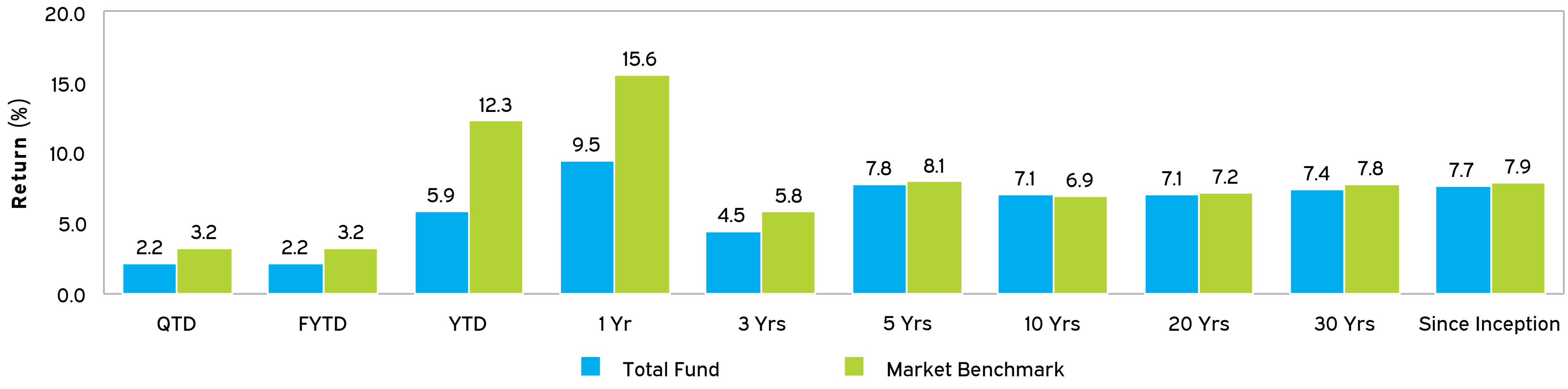


Market Sentiment Indicator (Last Three Years)

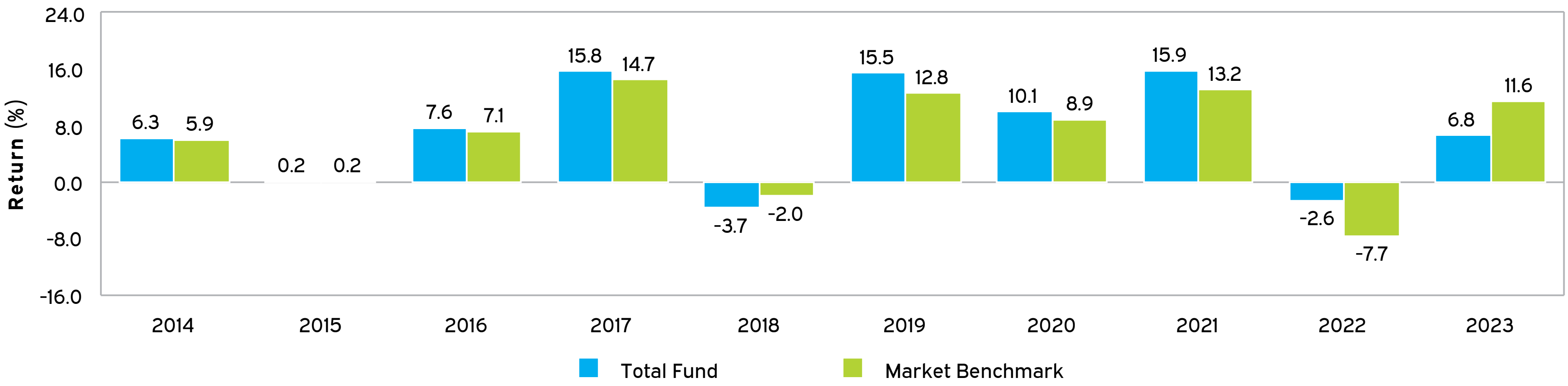


ERS Portfolio Review

Trailing Performance



Calendar Year Performance



Performance shown is net of fees. Inception date is 6/1/1990. Please see the Appendix for the Market Benchmark's composition history.

Performance Attribution[1] vs. Policy Benchmark – Quarter ending September 30, 2024

	Policy		Portfolio		Impact on Return		
	Allocation (%)[2]	Return	Allocation (%)	Return	Weighting	Implementation	Total
Broad Growth	**70.0**	**2.6**	**70.7**	**3.0**	**0.0**	**0.3**	**0.3**
Global Equity	39.2	4.7	40.3	4.0	0.0	(0.3)	(0.3)
Global Credit	11.9	2.3	11.7	2.3	0.0	0.0	0.0
Real Assets	18.9	(1.7)	18.7	1.4	0.0	0.6	0.6
Diversifying Strategies	**30.0**	**4.1**	**28.3**	**0.2**	**0.0**	**(1.2)**	**(1.1)**
Liquid Defensive/Diversifying	26.1	3.7	24.4	(0.1)	0.0	(1.0)	(0.9)
Illiquid Diversifying	3.9	6.8	4.0	1.8	0.0	(0.2)	(0.2)
Other Assets	**0.0**	**1.4**	**0.9**	**1.3**	**0.0**	**0.0**	**0.0**
Total	**100.0**	**3.2**	**100.0**	**2.2**	**0.0**	**(0.3)**	**(0.8)**

[1] Performance attribution is calculated using account performance data from BNY Mellon. Total impacts may not sum to excess return due to rounding, rebalancing, and measurement frequencies.
[2] Policy allocation weights refer to the benchmark composition and may not match the policy target weights at all times.

Performance Attribution[1] vs. Policy Benchmark –Calendar Year-to-Date ending September 30, 2024

	Policy		Portfolio		Impact on Return		
	Allocation (%)[2]	Return	Allocation (%)	Return	Weighting	Implementation	Total
Broad Growth	**70.0**	**15.6**	**67.9**	**7.8**	**(0.1)**	**(5.3)**	**(5.3)**
Global Equity	39.2	20.2	39.3	10.3	0.0	(3.9)	(3.9)
Global Credit	11.9	9.1	10.7	8.2	0.0	(0.1)	(0.1)
Real Assets	18.9	10.3	17.9	2.5	0.0	(1.4)	(1.4)
Diversifying Strategies	**30.0**	**4.1**	**28.2**	**2.4**	**0.1**	**(0.5)**	**(0.3)**
Liquid Defensive/Diversifying	26.1	2.8	23.9	1.8	0.2	(0.2)	0.0
Illiquid Diversifying	3.9	13.0	4.3	5.9	0.0	(0.3)	(0.3)
Other Assets	**0.0**	**4.0**	**3.9**	**0.1**	**(0.3)**	**(0.2)**	**(0.5)**
Total	**100.0**	**12.3**	**100.0**	**5.9**	**(0.2)**	**(5.9)**	**(6.1)**

[1] Performance attribution is calculated using account performance data from BNY Mellon. Total impacts may not sum to excess return due to rounding, rebalancing, and measurement frequencies.
[2] Policy allocation weights refer to the benchmark composition and may not match the policy target weights at all times.

Performance Attribution[1] vs. Policy Benchmark – 1-Year ending September 30, 2024

	Policy		Portfolio		Impact on Return		
	Allocation (%)[2]	Return	Allocation (%)	Return	Weighting	Implementation	Total
Broad Growth	**68.8**	**19.7**	**67.8**	**11.9**	**0.0**	**(5.3)**	**(5.3)**
Global Equity	39.4	26.1	39.6	16.9	0.0	(3.6)	(3.6)
Global Credit	10.6	13.4	10.4	10.9	0.0	(0.3)	(0.3)
Real Assets	17.8	9.1	17.4	1.6	0.0	(1.3)	(1.3)
Diversifying Strategies	**31.3**	**5.8**	**28.9**	**4.1**	**0.2**	**(0.5)**	**(0.2)**
Liquid Defensive/Diversifying	27.0	3.7	24.4	3.4	0.3	(0.1)	0.2
Illiquid Diversifying	4.3	16.2	4.4	8.3	0.0	(0.3)	(0.3)
Other Assets	**0.0**	**5.5**	**3.4**	**11.7**	**(0.3)**	**0.2**	**(0.1)**
Total[3]	**100.0**	**15.6**	**100.0**	**9.5**	**(0.1)**	**(5.5)**	**(5.7)**

[1] Performance attribution is calculated using account performance data from BNY Mellon. Total impacts may not sum to excess return due to rounding, rebalancing, and measurement frequencies. The current plan structure began on January 1, 2024. Global Equity, Global Credit, and Liquid Defensive/Diversifying composites were not use in the current form prior to 2024. To calculate performance attribution for the prior periods, reconstructed or estimated data are used including reconstructed historical benchmark compositions and target allocation weights, and composite asset values as recalculated by BNY Mellon.

[2] Policy allocation weights refer to the benchmark composition and may not match the policy target weights at all times.

[3] Total is the sum of Broad Growth, Diversifying Strategies, and Other Assets; The sum of sub-composites (Global Equity, Global Credit, Real Assets, Liquid Defensive/Diversifying, and Illiquid Diversifying) along with Other Assets may not sum to Total as obsolete sub-composites are excluded and the recalculated composite asset values may not contain the terminated accounts.

Performance Attribution[1] vs. Policy Benchmark – 3-Year ending September 30, 2024

	Policy		Portfolio		Impact on Return		
	Allocation (%)[2]	Return	Allocation (%)	Return	Weighting	Implementation	Total
Broad Growth	**66.9**	**6.5**	**67.8**	**4.5**	**0.0**	**(1.4)**	**(1.4)**
Global Equity	39.3	6.9	39.9	5.5	0.0	(0.5)	(0.5)
Global Credit	8.0	5.0	7.9	5.0	0.0	0.0	0.0
Real Assets	14.3	8.6	14.9	6.0	0.0	(0.4)	(0.4)
Diversifying Strategies	**33.1**	**3.7**	**29.5**	**4.7**	**0.1**	**0.3**	**0.3**
Liquid Defensive/Diversifying	28.8	0.9	25.4	4.6	0.2	0.9	1.1
Illiquid Diversifying	4.5	9.5	4.1	4.4	0.0	(0.2)	(0.2)
Other Assets	**0.0**	**3.5**	**2.7**	**0.7**	**(0.1)**	**(0.1)**	**(0.1)**
Total[3]	**100.0**	**5.8**	**100.0**	**4.5**	**0.0**	**(1.2)**	**(1.2)**

[1] Performance attribution is calculated using account performance data from BNY Mellon. Total impacts may not sum to excess return due to rounding, rebalancing, and measurement frequencies. The current plan structure began on January 1, 2024. Global Equity, Global Credit, and Liquid Defensive/Diversifying composites were not use in the current form prior to 2024. To calculate performance attribution for the prior periods, reconstructed or estimated data are used including reconstructed historical benchmark compositions and target allocation weights, and composite asset values as recalculated by BNY Mellon.

[2] Policy allocation weights refer to the benchmark composition and may not match the policy target weights at all times.

[3] Total is the sum of Broad Growth, Diversifying Strategies, and Other Assets; The sum of sub-composites (Global Equity, Global Credit, Real Assets, Liquid Defensive/Diversifying, and Illiquid Diversifying) along with Other Assets may not sum to Total as obsolete sub-composites are excluded and the recalculated composite asset values may not contain the terminated accounts.

Performance Attribution[1] vs. Policy Benchmark – 5-Year ending September 30, 2024

	Policy		Portfolio		Impact on Return		
	Allocation (%)[2]	Return	Allocation (%)	Return	Weighting	Implementation	Total
Broad Growth	**68.7**	**9.5**	**71.4**	**9.2**	**0.0**	**(0.1)**	**(0.1)**
Global Equity	39.7	12.3	41.1	12.5	0.1	0.1	0.1
Global Credit	7.4	5.9	7.0	6.9	0.0	0.1	0.1
Real Assets	13.2	6.1	12.3	6.7	0.0	0.1	0.1
Diversifying Strategies	**29.5**	**3.9**	**25.7**	**2.8**	**0.2**	**(0.3)**	**(0.1)**
Liquid Defensive/Diversifying	27.0	2.6	22.8	2.6	0.2	0.0	0.2
Illiquid Diversifying	4.0	--	3.3	--	0.1	0.0	0.1
Other Assets	**0.0**	**2.3**	**3.0**	**5.3**	**(0.2)**	**0.1**	**(0.1)**
Total[3]	**100.0**	**8.1**	**100.0**	**7.8**	**0.0**	**(0.4)**	**(0.4)**

[1] Performance attribution is calculated using account performance data from BNY Mellon. Total impacts may not sum to excess return due to rounding, rebalancing, and measurement frequencies. The current plan structure began on January 1, 2024. Global Equity, Global Credit, and Liquid Defensive/Diversifying composites were not use in the current form prior to 2024. To calculate performance attribution for the prior periods, reconstructed or estimated data are used including reconstructed historical benchmark compositions and target allocation weights, and composite asset values as recalculated by BNY Mellon.

[2] Policy allocation weights refer to the benchmark composition and may not match the policy target weights at all times.

[3] Total is the sum of Broad Growth, Diversifying Strategies, and Other Assets; The sum of sub-composites (Global Equity, Global Credit, Real Assets, Liquid Defensive/Diversifying, and Illiquid Diversifying) along with Other Assets may not sum to Total as obsolete sub-composites are excluded and the recalculated composite asset values may not contain the terminated accounts.

Asset Class Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)
Total Fund	**2.2**	**9.5**	**4.5**	**7.8**	**7.2**
Market Benchmark	*3.2*	*15.6*	*5.8*	*8.1*	*7.3*
Broad Growth	**3.0**	**11.9**	**4.5**	**9.2**	**8.2**
Broad Growth Historical Benchmark	*2.6*	*19.7*	*6.5*	*9.5*	*8.4*
Global Equity	**4.0**	**16.9**	**5.5**	**12.5**	**10.9**
Global Equity Historical Benchmark	*4.7*	*26.1*	*6.9*	*12.3*	*10.5*
Global Credit	**2.3**	**10.9**	**5.0**	**6.9**	**6.0**
Global Credit Historical Benchmark	*2.3*	*13.4*	*5.0*	*5.9*	*5.6*
Real Assets	**1.4**	**1.6**	**6.0**	**6.7**	**7.0**
Real Assets Historical Benchmark	*-1.7*	*9.1*	*8.6*	*6.1*	*6.3*
Diversifying Strategies	**0.2**	**4.1**	**4.7**	**2.8**	**4.2**
Diversifying Strategies Benchmark	*4.1*	*5.8*	*3.7*	*3.9*	*4.2*
Liquid Defensive/Diversifying	**-0.1**	**3.4**	**4.6**	**2.6**	**4.1**
Liquid Defensive Historical Benchmark	*3.7*	*3.7*	*0.9*	*2.6*	*2.9*
Illiquid Diversifying	**1.8**	**8.3**	**4.4**	**--**	**--**
Illiquid Diversifying Historical Benchmark	*6.8*	*16.2*	*9.5*	*--*	*--*

Total Fund performance shown is net of fees.
Relevant valuations may not have been available for all underlying Global Equity, Real Assets, and Diversifying Strategies managers at the time this report was produced; in such cases, most recent available data is used.
Benchmarks for Broad Growth and its underlying components contain lagged index returns. Please see the Appendix for current and historical custom benchmark compositions.

Asset Class Performance Summary

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Global Equity	**9,746,593,033**	**100.0**	**4.0**	**16.9**	**5.5**	**12.5**
Global Equity Historical Benchmark			*4.7*	*26.1*	*6.9*	*12.3*
Public Equity	**5,101,303,846**	**52.3**	**6.9**	**29.5**	**5.8**	**11.6**
MSCI AC World IMI Index (Net)			*6.8*	*31.0*	*7.4*	*11.9*
Active Public Equity	**3,554,549,556**	**36.5**	**7.2**	**28.1**	**4.5**	**11.1**
Alliance Bernstein	674,831,394	6.9	8.3	28.0	6.0	--
Longview	859,714,764	8.8	7.4	27.3	9.0	11.2
Wellington (Mid-Large Cap)	704,438,681	7.2	4.5	33.8	6.3	--
MSCI AC World IMI Index (Net)			*6.8*	*31.0*	*7.4*	*11.9*
Wasatch	549,038,699	5.6	11.5	31.8	-1.4	13.5
Wellington (Small Cap)	545,090,409	5.6	8.1	26.0	4.5	10.4
MSCI ACWI Small Cap (Net)			*8.8*	*24.6*	*2.6*	*9.4*
Hillhouse China A Shares	154,077,912	1.6	-7.3	-2.5	--	--
MSCI China A Onshore Index (Net)			*21.5*	*13.9*	*-7.9*	*4.0*
Passive Public Equity	**1,546,754,290**	**15.9**	**6.2**	**32.9**	**8.8**	**12.9**
BlackRock Alpha Tilt	685,958,273	7.0	5.7	33.7	9.6	13.1
Legal & General	860,796,017	8.8	6.6	32.2	8.3	12.5
Parametric Equity Overlay	67,357,697	0.7	--	--	--	--
MSCI AC World IMI Index (Net)			*6.8*	*31.0*	*7.4*	*11.9*

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Private Equity	**4,645,289,187**	**47.7**	**1.0**	**4.7**	**6.3**	**14.8**
Private Equity Historical Benchmark			*2.4*	*19.0*	*6.3*	*12.2*
Hamilton Lane	4,278,904,362	43.9	0.9	4.8	6.3	15.0
HITIP I Stafford	10,364,713	0.1	2.1	27.7	-3.4	-1.8
HITIP II Stafford	40,723,679	0.4	-0.9	-7.8	6.2	8.3
HITIP III Stafford	41,481,753	0.4	2.2	-3.8	3.8	--
Other Equity	273,814,679	2.8	3.1	5.3	8.7	13.2

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

Asset Class Performance Summary

	Market Value $	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Global Credit	**2,761,481,275**	**100.0**	**2.3**	**10.9**	**5.0**	**6.9**
Global Credit Historical Benchmark			*2.3*	*13.4*	*5.0*	*5.9*
Private Credit	**1,689,791,439**	**61.2**	**2.2**	**9.9**	**5.6**	**--**
Private Credit Historical Benchmark			*1.7*	*12.3*	*4.9*	*6.2*
Public Credit	**1,071,689,835**	**38.8**	**2.4**	**13.1**	**5.4**	**6.7**
HPS Credit	937,662,793	34.0	2.0	11.1	4.7	7.1
Parametric Credit Overlay	134,027,042	4.9	--	--	--	--
Public Credit Historical Benchmark			*3.7*	*13.7*	*4.8*	*5.6*

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

Asset Class Performance Summary

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Real Assets	**4,544,063,433**	**100.0**	**1.4**	**1.6**	**6.0**	**6.7**
Real Assets Historical Benchmark			*-1.7*	*9.1*	*8.6*	*6.1*
Real Estate	**1,994,990,236**	**43.9**	**-2.5**	**-6.6**	**3.8**	**5.5**
Real Estate Historical Benchmark			*-1.4*	*10.0*	*8.3*	*5.3*
Core Real Estate	**1,060,154,407**	**23.3**	**-1.8**	**-5.2**	**5.1**	**6.9**
Core Real Estate Historical Benchmark			*-1.4*	*9.9*	*8.0*	*6.4*
Non-Core Real Estate	**934,835,830**	**20.6**	**-3.3**	**-8.2**	**2.4**	**4.2**
Non-Core Real Estate Historical Benchmark			*-1.4*	*10.2*	*8.8*	*3.3*
Agriculture	**389,406,895**	**8.6**	**-0.2**	**2.0**	**4.3**	**--**
Agriculture Historical Benchmark			*-5.6*	*-5.7*	*3.8*	*4.1*
Timber	**230,995,384**	**5.1**	**-0.1**	**16.9**	**13.8**	**7.4**
Timber Benchmark			*-5.9*	*8.9*	*10.7*	*7.0*
Infrastructure	**1,928,670,917**	**42.4**	**6.4**	**13.6**	**9.4**	**14.1**
Private Infrastructure	**659,964,914**	**14.5**	**1.4**	**7.0**	**7.2**	**12.8**
Infrastructure Historical Benchmark			*-0.4*	*12.9*	*11.1*	*9.6*
Public Infrastructure	**534,254,677**	**11.8**	**14.5**	**--**	**--**	**--**
Morgan Stanley Infrastructure	534,254,677	11.8	14.5	--	--	--
Dow Jones Brookfield Global Infrastructure			*14.6*	*--*	*--*	*--*
Other Real Assets	**734,451,326**	**16.2**	**5.3**	**8.3**	**--**	**--**
Infrastructure Historical Benchmark			*-0.4*	*12.9*	*11.1*	*9.6*
Parametric Real Assets Overlay	102,461,890	2.3	--	--	--	--

Performance shown is net of fees. Both performance and benchmark data for Real Assets component are sourced from BNY Mellon's time-weighted data. Please see the Appendix for current and historical custom benchmark compositions.

Asset Class Performance Summary

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Liquid Defensive/Diversifying	**5,787,173,633**	**100.0**	**-0.1**	**3.4**	**4.6**	**2.6**
Liquid Defensive Historical Benchmark			*3.7*	*3.7*	*0.9*	*2.6*
Defensive Return Capture	**592,023,270**	**10.2**	**-5.3**	**-9.3**	**0.0**	**--**
P/E Global Macro	188,510,856	3.3	-11.9	-8.7	9.2	-0.7
Saba	189,575,597	3.3	4.3	-11.4	--	--
36 South Cap Adv	213,936,816	3.7	-6.8	-12.4	--	--
Defensive Return Capture Historical Benchmark			*4.0*	*6.3*	*5.5*	*4.5*
Discretionary Alpha	**1,124,210,304**	**19.4**	**1.8**	**9.3**	**6.8**	**2.6**
Aequim Relative Value Arbitrage	304,527,446	5.3	4.0	11.5	10.5	--
Aristeia Relative Value Arbitrage	224,623,277	3.9	0.0	5.3	4.0	--
Melqart Relative Value Arbitrage	238,132,372	4.1	5.8	16.4	--	--
Monashee Relative Value Arbitrage	188,068,825	3.2	-4.3	6.0	-1.0	--
Myam Asian Opportunity	168,858,384	2.9	2.4	18.6	--	--
Discretionary Alpha Benchmark			*4.0*	*6.3*	*5.5*	*4.5*
Intermediate Duration Treasury	**1,762,785,387**	**30.5**	**4.0**	**--**	**--**	**--**
Bank of Hawaii	287,200,298	5.0	4.2	10.0	-0.2	0.9
First Hawaiian Bank	176,396,406	3.0	4.0	9.9	-0.4	0.6
SLC Intermediate Treasury	1,189,746,459	20.6	3.8	--	--	--
Parametric Treasury Overlay	109,442,224	1.9	--	--	--	--
Blmbg. U.S. Treasury: Intermediate			*4.0*	*8.4*	*-0.1*	*0.8*
Long Duration Treasury	**682,086,681**	**11.8**	**7.1**	**9.9**	**-4.4**	**-0.3**
SLC Long Treasury	682,086,681	11.8	7.1	15.5	-7.3	-2.9
Long Treasury Historical Benchmark			*7.8*	*15.4*	*-7.4*	*-3.0*

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Systematic Trend Following	**1,626,067,991**	**28.1**	**-6.0**	**-4.0**	**8.3**	**7.5**
AlphaSimplex	221,476,150	3.8	-9.6	-8.5	8.7	9.8
Aspect	249,550,605	4.3	-3.6	5.8	16.6	11.0
Brevan Howard Disc Global Macro	261,247,710	4.5	2.3	-5.9	--	--
Broad Reach	196,813,392	3.4	-4.7	-1.3	--	--
Crabel Advanced Trend	224,992,392	3.9	-7.5	-4.5	5.4	5.5
Graham Quant Macro	217,213,571	3.8	-18.6	-4.8	10.5	4.5
Mount Lucas	218,413,275	3.8	1.0	-3.9	-0.3	4.0
Parametric Trend Overlay	36,360,895	0.6	--	--	--	--
MLM Global Index EV Blend 15V			*1.1*	*-5.2*	*2.0*	*4.8*

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

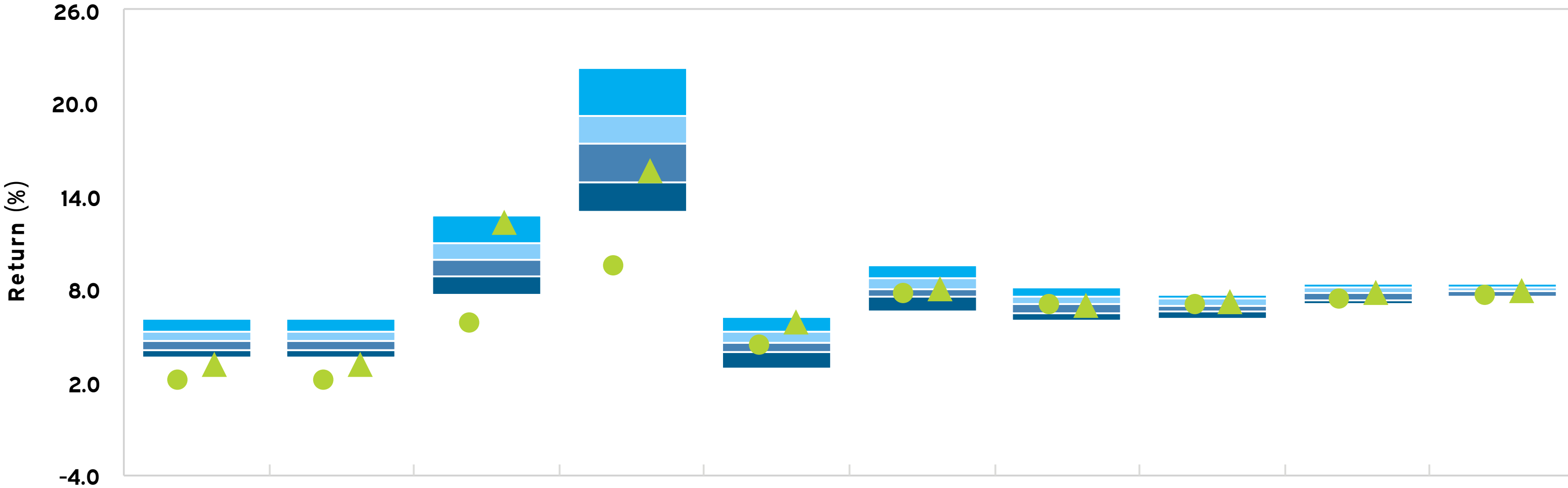
Asset Class Performance Summary

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)
Illiquid Diversifying	**963,464,260**	**100.0**	**1.8**	**8.3**	**4.4**
Illiquid Diversifying Historical Benchmark			*6.8*	*16.2*	*9.5*
Idiosyncratic Return Capture	**483,264,696**	**50.2**	**0.7**	**5.8**	**4.0**
Idiosyncratic Return Capture Historical Benchmark			*6.8*	*15.6*	*9.2*
Insurance Linked	**480,199,564**	**49.8**	**2.9**	**11.3**	**4.8**
Swiss Re Global Catastrophe Bond Index (Hedged)			*6.8*	*17.3*	*10.2*

Performance shown is net of fees. Please see the Appendix for current and historical custom benchmark compositions.

Plan Sponsor Peer Group Analysis

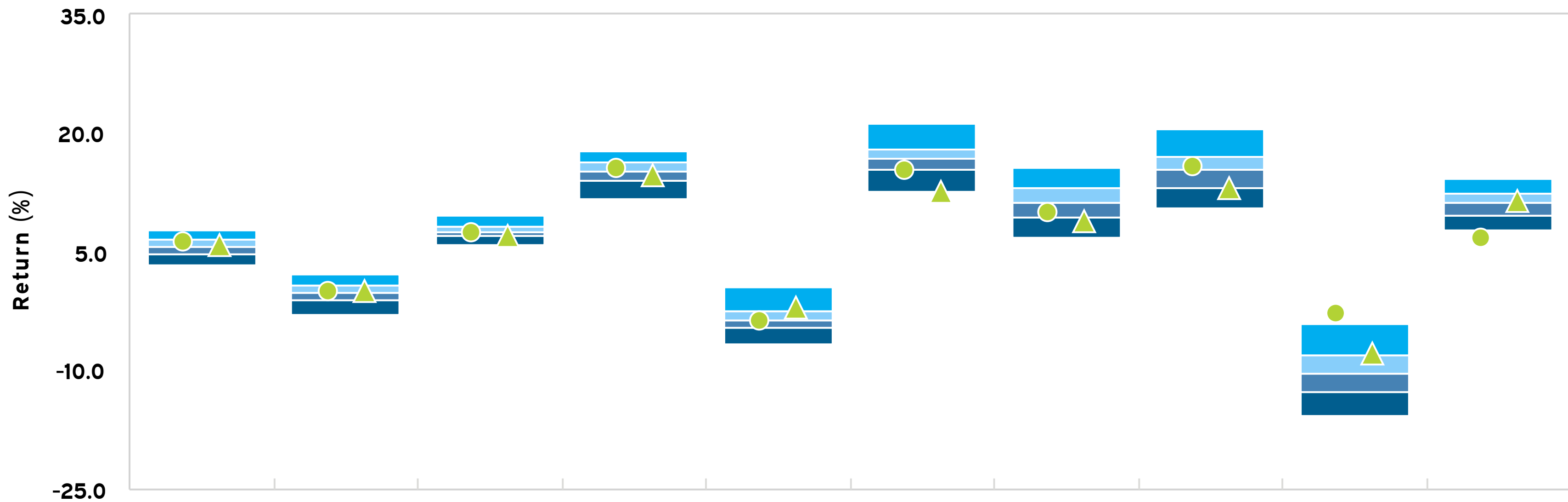
Peer Group Performance Comparison
Trailing Periods Ending September 30, 2024



	QTD	FYTD	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	20 Yrs	30 Yrs	Since Inception
● Total Fund	2.2 (100)	2.2 (100)	5.9 (100)	9.5 (100)	4.5 (56)	7.8 (65)	7.1 (48)	7.1 (39)	7.4 (66)	7.7 (63)
▲ Market Benchmark	3.2 (99)	3.2 (99)	12.3 (9)	15.6 (70)	5.8 (13)	8.1 (50)	6.9 (55)	7.2 (34)	7.8 (49)	7.9 (57)
5th Percentile	6.1	6.1	12.8	22.4	6.3	9.6	8.1	7.7	8.3	8.4
1st Quartile	5.3	5.3	11.0	19.2	5.3	8.8	7.5	7.4	8.1	8.1
Median	4.7	4.7	9.9	17.5	4.6	8.1	7.0	7.0	7.8	7.9
3rd Quartile	4.1	4.1	8.9	14.9	4.0	7.5	6.5	6.5	7.3	7.5
95th Percentile	3.6	3.6	7.7	13.0	2.9	6.6	6.0	6.1	7.1	7.4
Population	108	108	108	108	105	104	100	75	25	15

Calculation based on monthly periodicity. Fiscal year begins on July 1. The plan sponsor peer group, InvMetrics Public DB >$1B Net universe, includes BNY Mellon Total Public Fund >$1B universe and Investment Metrics client data.
Parenthesized numbers represent peer group percentile ranking.

Peer Group Performance Comparison
Calendar Year Returns



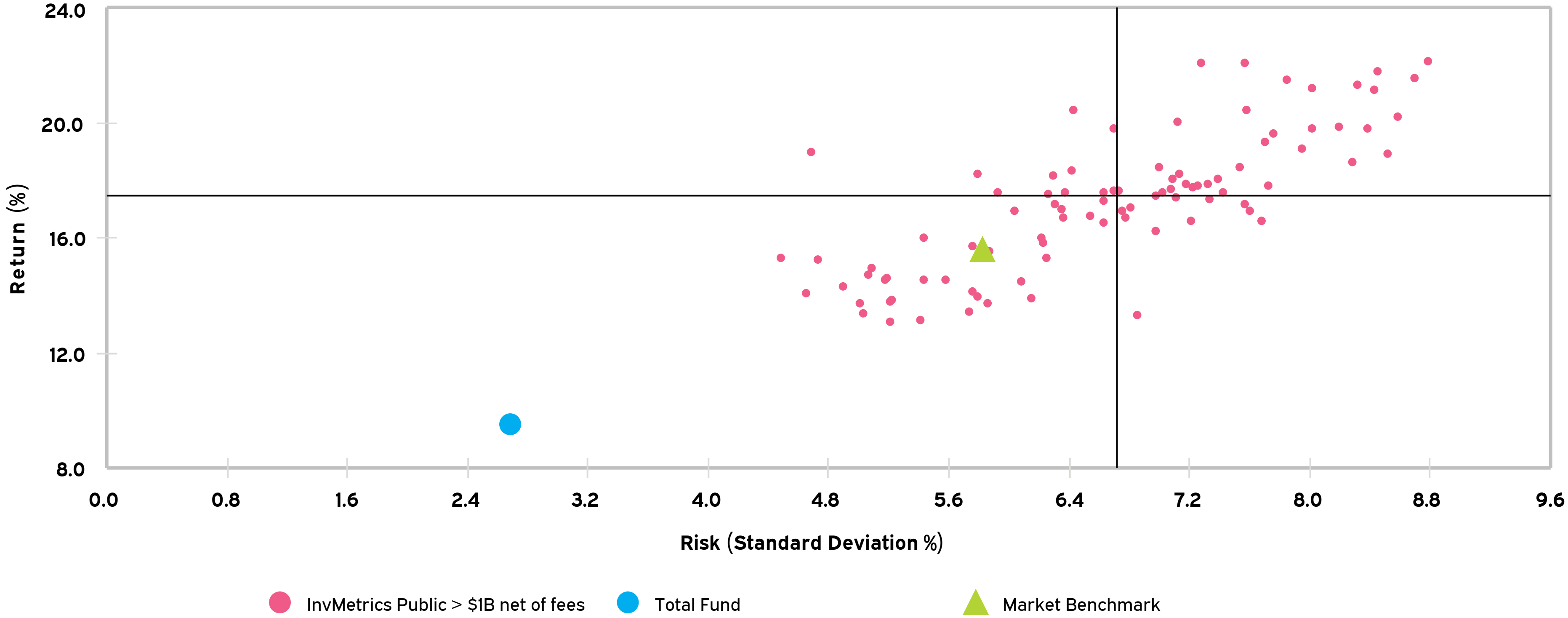
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Fund	6.3 (35)	0.2 (37)	7.6 (50)	15.8 (41)	-3.7 (55)	15.5 (77)	10.1 (71)	15.9 (45)	-2.6 (4)	6.8 (98)
Market Benchmark	5.9 (43)	0.2 (39)	7.1 (71)	14.7 (61)	-2.0 (22)	12.8 (95)	8.9 (83)	13.2 (74)	-7.7 (20)	11.6 (41)
5th Percentile	7.9	2.2	9.6	17.8	0.5	21.2	15.7	20.7	-4.1	14.4
1st Quartile	6.6	0.8	8.3	16.3	-2.3	18.0	13.1	17.2	-8.1	12.5
Median	5.7	-0.2	7.6	15.3	-3.5	16.8	11.3	15.3	-10.3	11.2
3rd Quartile	4.7	-1.1	7.0	14.1	-4.5	15.5	9.4	13.1	-12.6	9.7
95th Percentile	3.4	-2.9	5.9	11.8	-6.7	12.8	6.8	10.5	-15.6	7.8
Population	171	172	176	181	171	194	219	211	179	181

Calculation based on monthly periodicity. The plan sponsor peer group, InvMetrics Public DB >$1B Net universe, includes BNY Mellon Total Public Fund >$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

Risk/Return Statistics	1 Yr		3 Yrs		5 Yrs		7 Yrs		10 Yrs	
	Total Fund	Benchmark	Total Fund	Benchmark	Total Fund	Benchmark	Total Fund	Benchmark	Total Fund	Benchmark
RETURN SUMMARY STATISTICS										
Return	9.5	15.6	4.5	5.8	7.8	8.1	7.2	7.3	7.1	6.9
Excess Performance	-6.1	0.0	-1.4	0.0	-0.3	0.0	0.0	0.0	0.2	0.0
RISK SUMMARY STATISTICS										
Standard Deviation	2.7	5.8	3.8	6.3	6.3	6.8	6.3	6.5	6.4	6.4
Beta	0.3	1.0	0.5	1.0	0.8	1.0	0.9	1.0	0.9	1.0
RISK/RETURN SUMMARY STATISTICS										
Information Ratio	-1.2	-	-0.4	-	-0.1	-	0.0	-	0.1	-
Sharpe Ratio	1.4	1.6	0.3	0.4	0.8	0.8	0.8	0.8	0.8	0.8
Tracking Error	4.7	0.0	4.1	0.0	3.5	0.0	3.2	0.0	2.7	0.0

Net of fees performance is shown or used in calculating the statistics on this page.

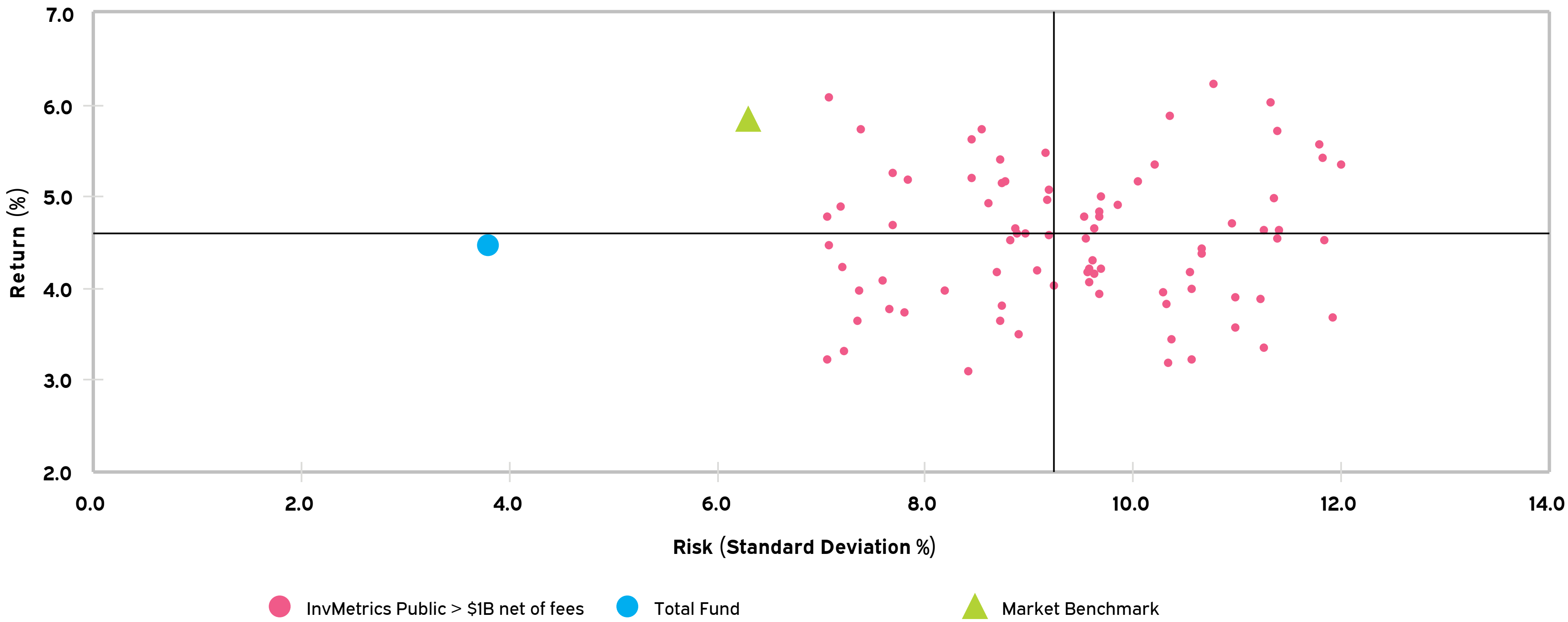
Annualized Return vs. Annualized Standard Deviation
1 Year ending September 30, 2024



	Return	Standard Deviation	Sharpe Ratio	Information Ratio
Total Fund	9.5 (100)	2.7 (1)	1.4 (88)	-1.2 (100)
Market Benchmark	15.6 (70)	5.8 (28)	1.6 (53)	-
Peer Benchmark Median	17.5	6.7	1.6	0.3

Peer Benchmark represents the plan sponsor peer group Peer Benchmark Net universe and includes BNY Mellon Total Public Fund >$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

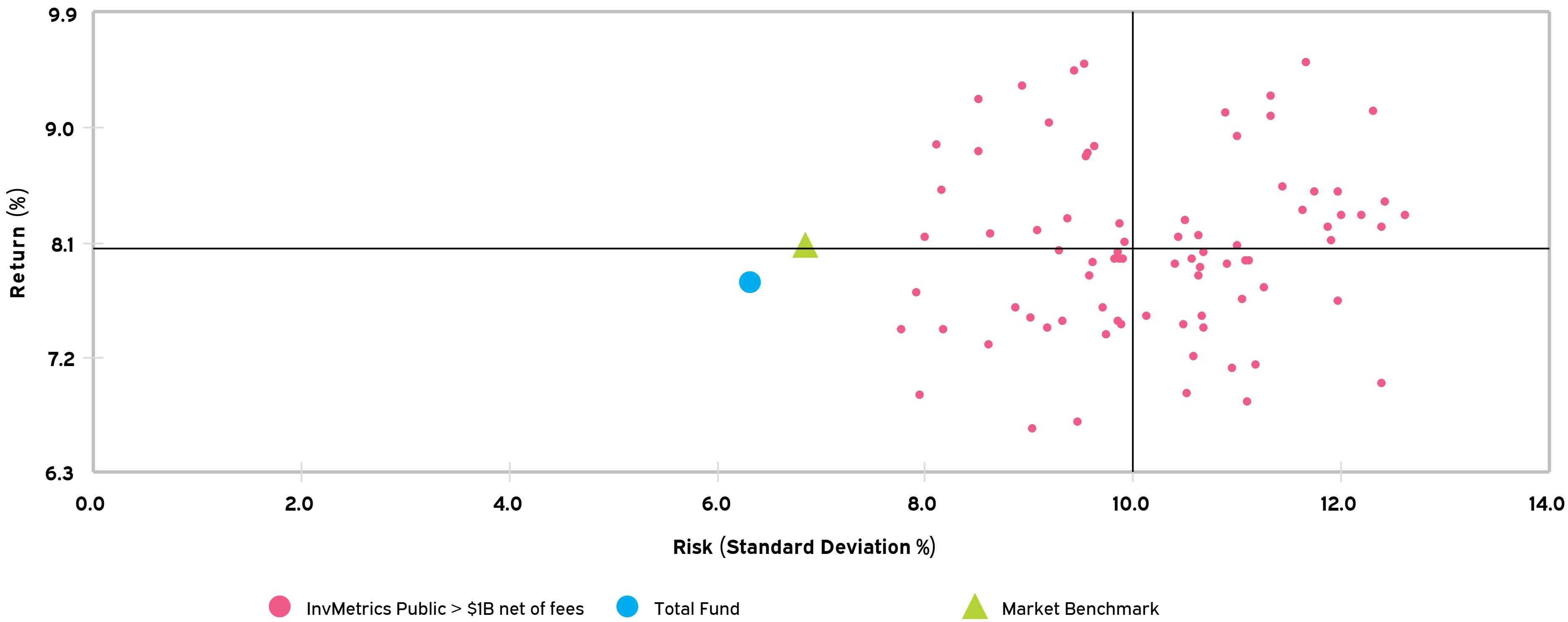
Annualized Return vs. Annualized Standard Deviation
3 Years ending September 30, 2024



	Return	Standard Deviation	Sharpe Ratio	Information Ratio
Total Fund	4.5 (56)	3.8 (1)	0.3 (17)	-0.4 (88)
Market Benchmark	5.8 (13)	6.3 (2)	0.4 (7)	-
Peer Benchmark Median	4.6	9.2	0.2	-0.2

Peer Benchmark represents the plan sponsor peer group Peer Benchmark Net universe and includes BNY Mellon Total Public Fund >$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

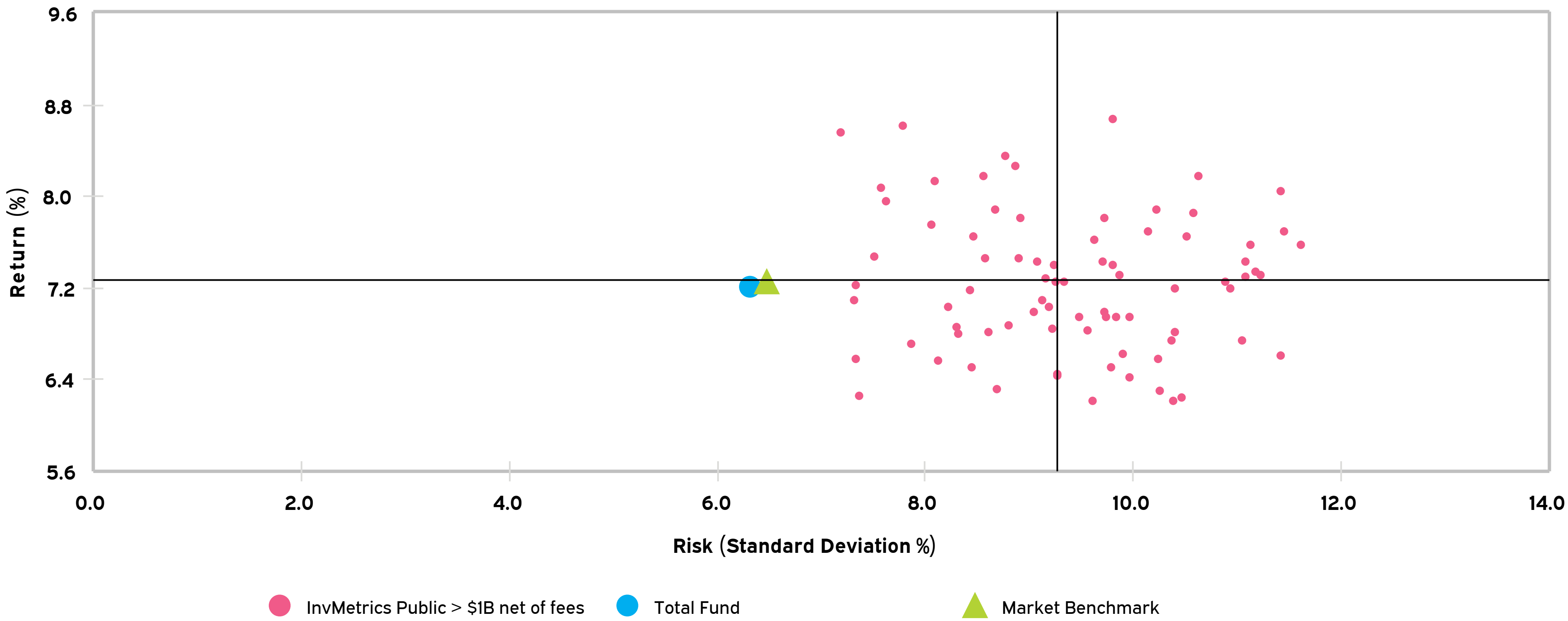
Annualized Return vs. Annualized Standard Deviation
5 Years ending September 30, 2024



	Return	Standard Deviation	Sharpe Ratio	Information Ratio
Total Fund	7.8 (65)	6.3 (1)	0.8 (7)	-0.1 (86)
Market Benchmark	8.1 (50)	6.8 (1)	0.8 (8)	-
Peer Benchmark Median	8.1	10.0	0.6	0.0

Peer Benchmark represents the plan sponsor peer group Peer Benchmark Net universe and includes BNY Mellon Total Public Fund >$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

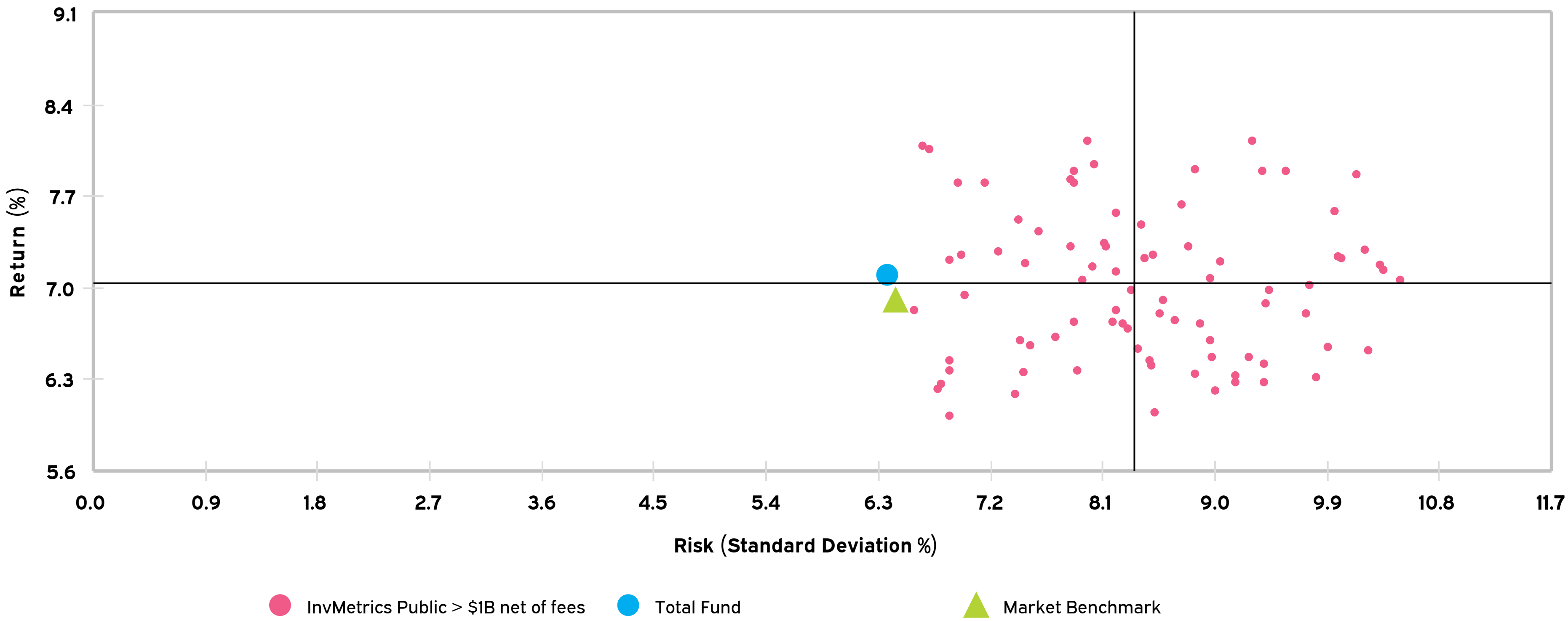
Annualized Return vs. Annualized Standard Deviation
7 Years ending September 30, 2024



	Return	Standard Deviation	Sharpe Ratio	Information Ratio
Total Fund	7.2 (54)	6.3 (1)	0.8 (8)	0.0 (68)
Market Benchmark	7.3 (51)	6.5 (1)	0.8 (8)	-
Peer Benchmark Median	7.3	9.3	0.6	0.1

Peer Benchmark represents the plan sponsor peer group Peer Benchmark Net universe and includes BNY Mellon Total Public Fund >$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

Annualized Return vs. Annualized Standard Deviation
10 Years ending September 30, 2024



	Return	Standard Deviation	Sharpe Ratio	Information Ratio
Total Fund	7.1 (48)	6.4 (4)	0.8 (11)	0.1 (52)
Market Benchmark	6.9 (55)	6.4 (4)	0.8 (12)	-
Peer Benchmark Median	7.0	8.3	0.6	0.1

Peer Benchmark represents the plan sponsor peer group Peer Benchmark Net universe and includes BNY Mellon Total Public Fund >$1B universe and Investment Metrics client data. Parenthesized numbers represent peer group percentile ranking.

Appendix

Definition of Benchmarks

Bloomberg Aggregate is an index comprised of approximately 6,000 publicly traded investment-grade bonds including US Government, mortgage-backed, corporate, and yankee bonds with an approximate average maturity of 10 years.

Bloomberg Global High Yield is a multi-currency measure of the global high yield debt market. The Index is comprised of the US High Yield, the Pan-European High Yield, and Emerging Markets Hard Currency High Yield Indices. The high yield and emerging markets sub-components are mutually exclusive.

Bloomberg High Yield covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (e.g., Argentina, Brazil, Venezuela, etc.) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeroes, step-up coupon structures, 144-As and pay-in-kind bonds (PIKs, as of October 1, 2009) are also included. Must be rated high yield (Ba1/BB+ or lower) by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. All issues must have at least one year to final maturity regardless of call features and have at least $150 million par amount outstanding.

Bloomberg Multiverse Non-US Hedged provides a broad-based measure of the international fixed-income bond market. The index represents the union of the BC Global Aggregate Index and the BC Global High Yield Index. In this sense, the term "Multiverse" refers to the concept of multiple universes in a single macro index.

Bloomberg US Credit includes publicly issued US corporate and foreign debentures and secured notes that which are rated investment grade or higher by Moody's Investor Services, Standard and Poor's Corporation, or Fitch Investors Service, with all issues having at least one year to maturity and an outstanding par value of at least $250 million. Issues must be publicly issued, dollar-denominated and non-convertible.

Bloomberg Universal includes market coverage by the Aggregate Bond Index fixed rate debt issues, which are rated investment grade or higher by Moody's Investor Services, Standard and Poor's Corporation, or Fitch Investors Service, with all issues having at least one year to maturity and an outstanding par value of at least $100 million) and includes exposures to high yield CMBS securities. All returns are market value weighted inclusive of accrued interest.

Bloomberg World Govt Inflation-Linked Bond (WGILB) measures the performance of the major government inflation-linked bond markets. The index is designed to include only those markets in which a global government linker fund is likely and able to invest. To be included a market must have aggregate issuance of $4 billion or more and have minimum rating of A3/A- for G7 and euro-zone issuers, Aa3/AA- otherwise, using the middle rating from Moody's, S&P and Fitch ("two out of three" rule). The index is available in local currency and in most major currencies hedged or un-hedged.

Definition of Benchmarks (continued)

CBOE S&P 500 Buy Write Index (BXM) is a benchmark index designed to track the performance of a hypothetical buy-write strategy on the S&P 500 Index. Announced in April 2002, the BXM Index was developed by the CBOE in cooperation with Standard & Poor's. To help in the development of the BXM Index, the CBOE commissioned Professor Robert Whaley to compile and analyze relevant data from the time period from June 1988 through December 2001. Data on daily BXM prices now is available from June 30, 1986, to the present time (see below). The BXM is a passive total return index based on (1) buying an S&P 500 stock index portfolio, and (2) "writing" (or selling) the near-term S&P 500 Index (SPXSM) "covered" call option, generally on the third Friday of each month. The SPX call written will have about one month remaining to expiration, with an exercise price just above the prevailing index level (i.e., slightly out of the money). The SPX call is held until expiration and cash settled, at which time a new one-month, near-the-money call is written. Please visit the BXM FAQ for more information about the construction of the index.

CBOE S&P 500 Put Write Index (PUT) is a benchmark index designed to track the performance of a hypothetical cash-secured put-write strategy on the S&P 500 Index. Announced in June 2007, the PUT strategy is designed to sell a sequence of one-month, at-the-money, S&P 500 Index puts and invest cash at one- and three-month Treasury Bill rates. The number of puts sold varies from month to month, but is limited so that the amount held in Treasury Bills can finance the maximum possible loss from final settlement of the S&P 500 Index puts.

ICE BofA 3-Month US Treasury Bills (90-Day T-bills) tracks the performance of US Treasury bills with 3-month maturity.

MLM Global Index is the first passive index of returns to futures investing. The objective of the Index strategy is to provide pure systematic trending following exposure in a consistent, efficient, and cost effective manner which captures the price risk premium offered by those who seek price certainty.

MSCI ACWI is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. The Index captures large and mid-cap representation across 47 country indices comprising 23 developed and 24 emerging market country indices. The developed market country indices included are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States. The emerging market country indices included are: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey, and the United Arab Emirates.

MSCI ACWI ex US ND comprises both developed and emerging markets less the United States. The index consisted of 22 counties classified as developed markets and 24 classified as emerging markets. This series approximates the minimum possible dividend reinvestment. The dividend is reinvested after deduction of withholding tax, applying the rate to non-resident individuals who do not benefit from double taxation treaties. MSCI uses withholding tax rates applicable to Luxembourg holding companies, as Luxembourg applies the highest rates.

MSCI ACWI IMI captures large, mid, and small cap representation across 23 developed markets and 24 emerging markets countries. The Index is comprehensive, covering approximately 99% of the global equity investment opportunity set.

MSCI ACWI Minimum Volatility is a global equity (developed and emerging markets) index constructed by MSCI that utilizes an estimated security co-variance matrix to produce an index that has the lowest absolute volatility for a given set of constraints. The estimated security co-variance matrix is based on the relevant Barra multi-factor equity model.

Definition of Benchmarks (continued)

MSCI ACWI Small Cap is a free float-adjusted market capitalization weighted index captures the small cap representation across 23 developed markets and 24 emerging markets countries.

MSCI EAFE Free (Europe, Australasia, Far East) ND is a free float-adjusted market capitalization index that is designed to measure developed market equity performance, excluding the US & Canada. This series approximates the minimum possible dividend reinvestment. The dividend is reinvested after deduction of withholding tax, applying the rate to non-resident individuals who do not benefit from double taxation treaties. MSCI Barra uses withholding tax rates applicable to Luxembourg holding companies, as Luxembourg applies the highest rates.

MSCI EM (Emerging Markets) GD is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. This series approximates the maximum possible dividend reinvestment. The amount reinvested is the entire dividend distributed to individuals resident in the country of the company, but does not include tax credits.

MSCI Europe is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of the developed markets in Europe. As of June 2007, this index consisted of the following 16 developed market country indices: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

MSCI Pacific is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of the developed markets in the Pacific region. As of June 2007, this index consisted of the following 5 Developed Market countries: Australia, Hong Kong, Japan, New Zealand, and Singapore.

MSCI USA is a free float adjusted market capitalization index that is designed to measure large- and mid-cap US equity market performance. The MSCI USA Index is member of the MSCI Global Equity Indices and represents the US equity portion of the global benchmark MSCI ACWI Index.

MSCI World ex US ND is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets. The MSCI World Index consists of the following 22 developed market country indices: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom.

Morningstar Leveraged Loan (formerly **S&P Leveraged Loan**) is a capitalization-weighted syndicated loan index based upon market weightings, spreads, and interest payments. The Index covers the US market back to 1997.

NAREIT Index consists of all tax-qualified REITs listed on the New York Stock Exchange, American Stock Exchange, and the NASDAQ National Market System. The data is market weighted.

NCREIF Property Index (NPI) the NPI contains investment-grade, non-agricultural, income-producing properties which may be financed in excess of 5% gross market value; were acquired on behalf of tax exempt institutions; and are held in a fiduciary environment. Returns are gross of fees; including income, realized gains/losses, and appreciation/depreciation; and are market value weighted.

NCREIF Timberland Index is a quarterly time series composite return measure of investment performance of a large pool of individual timber properties acquired in the private market for investment purposes only. All properties in the Timberland Index have been acquired, at least in part, on behalf of tax-exempt institutional investors - the great majority being pension funds. As such, all properties are held in a fiduciary environment.

Definition of Benchmarks (continued)

Russell 1000 measures the performance of the 1,000 largest securities in the Russell 3000 Index. Russell 1000 is highly correlated with the S&P 500 Index and capitalization weighted.

Russell 1000 Growth measures the performance of those Russell 1000 securities with a greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-earnings ratios, lower dividend yields and higher forecasted growth values than the Value universe.

Russell 1000 Value measures the performance of those Russell 1000 securities with a less-than-average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-earnings ratios, higher dividend yields and lower forecasted growth values than the Growth universe.

Russell 2000 measures the performance of the 2,000 smallest companies in the Russell 3000 Index, which represents approximately 8% of the total market capitalization of the Russell 3000 Index.

Russell 2000 Growth measures the performance of those Russell 2000 securities with a greater-than-average growth orientation. Securities in this index tend to exhibit higher price-to-book and price-to-earnings ratios.

Russell 2000 Value measures the performance of those Russell 2000 securities with a less-than-average growth orientation. Securities in this index tend to exhibit lower price-to-book and price-to-earnings ratios.

Russell 3000 represents the largest 3,000 US companies based on total market capitalization, representing approximately 98% of the investable US equity market.

S&P 500 is an index of 500 stocks chosen for market size, liquidity and industry grouping, among other factors. The S&P 500 is designed to be a leading indicator of U.S. equities and is meant to reflect the risk/return characteristics of the large cap universe.

Plan Structure Evolution

Prior to 10/2014, Employees' Retirement System of the State of Hawaii ("ERS" or "Plan") had an allocation policy based asset classes (such as US Large Cap Equity, Developed International Equity, Real Estate). Since 10/2014, the ERS has adopted a risk-based, functional framework which uses strategic/functional classes designed to achieve a certain goal and/or be exposed to a specific set of macroeconomic risks through various underlying asset classes and strategies. Since then, the plan structure and the nomenclature of its components have evolved over time to fit the ERS's needs. This page summarizes this evolution since 10/2014 on a high level.

<table>
<tr><th>10/2014-06/2016</th><th>07/2016-03/2017</th><th>04/2017-06/2020</th><th>07/2020-12/2023</th><th>01/2024-Current</th></tr>
<tr><td>Total Fund
→ Broad Growth
→ Principal Protection
→ Real Return
→ Real Estate</td><td>Total Fund
→ Broad Growth
→ Principal Protection
→ Real Return</td><td>Total Fund
→ Broad Growth
→ Principal Protection
→ Real Return
→ Crisis Risk Offset (CRO)</td><td colspan="2">Total Fund
→ Broad Growth
→ Diversifying Strategies</td></tr>
<tr><td>Broad Growth
→ Growth-Oriented
→ Private Growth
→ Stabilized Growth</td><td colspan="2" rowspan="2">Broad Growth
→ Traditional Growth
→ Private Growth
→ Stabilized Growth</td><td rowspan="3">Broad Growth
→ Public Growth
• Traditional Growth
• Stabilized Growth
→ Private Growth
→ Real Assets</td><td rowspan="3">Broad Growth
→ Global Equity
→ Global Credit
→ Real Assets</td></tr>
<tr><td>Real Estate</td></tr>
<tr><td colspan="3">Real Return
→ Public Inflation-Linked
→ Private Inflation-Linked</td></tr>
<tr><td colspan="3">Principal Protection</td><td rowspan="2">Diversifying Strategies
→ Liquid Defensive
• Treasury / Agency Duration
• Systematic Trend
• Defensive Return
→ Liquid Diversifying
• Alternative Return
• Relative Value
→ Illiquid Diversifying
• Insurance-Linked
• Idiosyncratic Return</td><td rowspan="2">Diversifying Strategies
→ Liquid Defensive / Diversifying
• Systematic Trend
• Defensive Return
• Intermediate Duration
• Long Duration
• Discretionary Alpha
→ Illiquid Diversifying
• Insurance-Linked
• Idiosyncratic Return</td></tr>
<tr><td></td><td></td><td>Crisis Risk Offset (CRO)
→ Treasury Duration Capture
→ Systematic Trend Following
→ Alternative Return Capture</td></tr>
</table>

Custom Benchmarks

This section includes the compositions of custom benchmarks currently in use. Policy Benchmarks for Total Fund, Broad Growth, and Diversifying Strategies are presented first, followed by the benchmarks of their lower-level composites sorted according to the Plan structure. Discontinued custom benchmarks are listed separately afterward and are noted as such when they appear in this section.

Total Fund Policy Benchmark

From	To	Total Fund Policy Benchmark
01/01/2024	Current	70% Broad Growth Benchmark, 30% Diversifying Strategies Benchmark
07/01/2022	12/31/2023	65% Broad Growth Benchmark, 35% Diversifying Strategies Benchmark
07/01/2021	06/30/2022	67.5% Broad Growth Benchmark, 32.5% Diversifying Strategies Benchmark
07/01/2020	06/30/2021	72% Broad Growth Benchmark, 28% Diversifying Strategies Benchmark
01/01/2019	06/30/2020	68% Broad Growth Benchmark, 16% Crisis Risk Offset Benchmark, 8% Principal Protection Benchmark, 8% Real Return Benchmark
01/01/2018	12/31/2018	72% Broad Growth Benchmark, 13% Crisis Risk Offset Benchmark, 8% Principal Protection Benchmark, 7% Real Return Benchmark
04/01/2017	12/31/2017	76% Broad Growth Benchmark, 10% Crisis Risk Offset Benchmark, 9% Principal Protection Benchmark, 5% Real Return Benchmark
07/01/2016	03/31/2017	83% Broad Growth Benchmark, 12% Principal Protection Benchmark, 5% Real Return Benchmark
10/01/2014	06/30/2016	76% Broad Growth Benchmark, 12% Principal Protection Benchmark, 5% Real Return Benchmark, 7% NCREIF Property Index (Qtr Lagged)

From	To	Total Fund Asset-Based Policy Benchmarks (prior to the Functional Allocation Framework)
07/01/2013	09/30/2014	30% Russell 3000, 26% MSCI AC World ex US (Net), 15% Bloomberg Universal, 5% Bloomberg Multiverse ex US (Hedged), 7% NCREIF Property Index (Qtr Lagged), 7% ERS Private Equity Performance, 5% ERS Real Return Performance, 5% CBOE S&P 500 BuyWrite (BXM)
07/01/2012	06/30/2013	30% Russell 3000, 26% MSCI AC World ex US (Net), 15.75% Bloomberg Universal, 5.25% Bloomberg Multiverse ex US (Hedged), 7% NCREIF Property Index (Qtr Lagged), 6% ERS Private Equity Performance, 5% ERS Real Return Performance, 5% CBOE S&P 500 BuyWrite (BXM)
10/01/2011	06/30/2012	35% Russell 3000, 18% MSCI World ex US, 3% MSCI Emerging Markets, 18% Bloomberg Universal, 6% Bloomberg Multiverse ex US (Hedged), 7% NCREIF Property Index (Qtr Lagged), 5% ERS Private Equity Performance, 5% ERS Real Return Performance, 3% CBOE S&P 500 BuyWrite (BXM)
07/01/2011	09/30/2011	41% Russell 3000, 14.5% MSCI World ex US, 2.5% MSCI Emerging Markets (Net), 21% Bloomberg Universal, 7% Bloomberg Multiverse ex US (Hedged), 9% NCREIF Property Index (Qtr Lagged), 5% ERS Alternative Investments Performance
01/01/2009	06/30/2011	41% Russell 3000, 14.5% MSCI EAFE Free, 2.5% MSCI Emerging Markets (Net), 21% Bloomberg Universal, 7% Bloomberg Multiverse ex US (Hedged), 9% NCREIF Property Index (Qtr Lagged), 5% ERS Alternative Investments Performance
06/01/1990	12/31/2008	34.9% S&P 500, 4.5% S&P 400 MidCap, 4.5% Russell 2000, 14.5% MSCI EAFE Free, 2.5% MSCI Emerging Markets, 21% Bloomberg Aggregate, 7% Bloomberg Multiverse ex US (Hedged), 7.5% NCREIF Property Index (Qtr Lagged), 3.6% ERS Alternative Investments Performance

Custom Benchmarks: Immediate Sub-Composites of Total Fund

Broad Growth Benchmark

From	To	Broad Growth Benchmark
01/01/2024	Current	56% Global Equity Benchmark, 17% Global Credit Benchmark, 27% Real Assets Benchmark
07/01/2022	12/31/2023	50% Public Growth Benchmark, 28% Private Growth Benchmark, 22% Real Assets Benchmark
07/01/2021	06/30/2022	66% Public Growth Benchmark, 20% Private Growth Benchmark, 14% Real Assets Benchmark
07/01/2020	06/30/2021	70% Public Growth Benchmark, 16% Private Growth Benchmark, 14% Real Assets Benchmark
01/01/2019	06/30/2020	41% Traditional Growth Benchmark, 41% Stabilized Growth Benchmark, 18% Private Growth Benchmark
01/01/2018	12/31/2018	43% Traditional Growth Benchmark, 43% Stabilized Growth Benchmark, 14% Private Growth Benchmark
07/01/2016	12/31/2017	45% Traditional Growth Benchmark, 45% Stabilized Growth Benchmark, 10% Private Growth Benchmark
01/01/2016	06/30/2016	77% Traditional Growth Benchmark, 17% Stabilized Growth Benchmark, 6% Private Growth Benchmark
10/01/2014	12/31/2015	78% Traditional Growth Benchmark, 17% Stabilized Growth Benchmark, 5% Private Growth Benchmark

For the historical components Traditional Growth Benchmark and Private Growth Benchmark please refer to Public Equity Benchmark and Private Equity Benchmark respectively.

Public Growth Benchmark and Stabilized Growth Benchmark are no longer in use. Please see their historical compositions in the "Discontinued Custom Benchmarks" section.

Diversifying Strategies Benchmark

From	To	Diversifying Strategies Benchmark
01/01/2024	Current	87% Liquid Defensive Benchmark, 13% Illiquid Diversifying Benchmark
07/01/2022	12/31/2023	45% Liquid Defensive Benchmark, 40% Liquid Diversifying Benchmark, 15% Illiquid Diversifying Benchmark
04/01/2017	06/30/2022	50% Liquid Defensive Benchmark, 40% Liquid Diversifying Benchmark, 10% Illiquid Diversifying Benchmark

Liquid Diversifying Benchmark is no longer in use. Please see its historical compositions in the "Discontinued Custom Benchmarks" section.

Custom Benchmarks: Global Equity Composite

Global Equity Policy Benchmark

Global Equity composite was created effective on 01/01/2024 to aggregate the Public and Private Equity components which had previously existed within separate higher-level composites. Accordingly, the Global Equity Policy Benchmark was retroactively reconstructed for periods prior to 01/01/2024 reflecting the historical policy targets for the underlying Public and Private Equity components.

From	To	Global Equity Policy Benchmark
01/01/2024	Current	51.3% Public Equity Benchmark, 48.7% Private Equity Benchmark
07/01/2022	12/31/2023	54.3% Public Equity Benchmark, 45.7% Private Equity Benchmark
07/01/2021	06/30/2022	64.7% Public Equity Benchmark, 35.3% Private Equity Benchmark
07/01/2020	06/30/2021	70.8% Public Equity Benchmark, 29.2% Private Equity Benchmark
01/01/2019	06/30/2020	69.5% Public Equity Benchmark, 30.5% Private Equity Benchmark
01/01/2018	12/31/2018	75.4% Public Equity Benchmark, 24.6% Private Equity Benchmark
07/01/2016	12/31/2017	81.8% Public Equity Benchmark, 18.2% Private Equity Benchmark
01/01/2016	06/30/2016	92.8% Public Equity Benchmark, 7.2% Private Equity Benchmark
10/01/2014	12/31/2015	94.0% Public Equity Benchmark, 6.0% Private Equity Benchmark
07/01/2013	09/30/2014	88.9% Public Equity Benchmark, 11.1% Private Equity Benchmark

Public Equity Benchmark

From 10/2014 through 12/2023, public equity assets have resided within the Broad Growth strategic class with names such as "Traditional Growth" or "Traditional Equity". Thus, Public Equity Benchmark may be considered the successor of Traditional Growth and Traditional Equity Benchmarks. Please note that Public Equity Benchmark is different from the discontinued Public Growth Benchmark; its historical benchmark composition is included in the "Discontinued Custom Benchmarks" section.

From	To	Public Equity Benchmark
10/01/2014	Current	100% MSCI All Country World Investable Market Index (Net)
07/01/2012	09/30/2014	53.6% Russell 3000, 46.4% MSCI All Country World ex US (Net)
10/01/2011	06/60/2014	62.5% Russell 3000, 32.1% MSCI World ex US (Net), 5.4% MSCI Emerging Markets (Net)
07/01/2011	09/30/2011	70.7% Russell 3000, 25.0% MSCI World ex US (Net), 4.3% MSCI Emerging Markets (Net)
01/01/2009	06/30/2011	70.7% Russell 3000, 25.0% MSCI EAFE (Net), 4.3% MSCI Emerging Markets (Net)
03/01/2008	12/31/2008	57.3% S&P 500, 7.4% S&P Mid Cap 400, 7.4% Russell 2000, 23.8% MSCI EAFE (Net), 4.1% MSCI Emerging Markets (Net)

Custom Benchmarks: Global Equity Composite (Continued)

Private Equity Benchmark

From 10/2014 through 12/2023, private equity assets have resided within the Broad Growth strategic class as "Private Growth". Thus, Private Equity Benchmark may be considered the successor of Private Growth Benchmark.

From	To	Private Equity Benchmark
01/01/2024	Current	100% MSCI ACWI IMI (Net) (Quarter Lagged)
10/01/2014	12/31/2023	100% MSCI ACWI IMI (Net) +2% (Quarter Lagged)
10/01/2011	09/30/2014	Private Equity Actual Performance

Custom Benchmarks: Global Credit Composite

Global Credit Policy Benchmark

From	To	Global Credit Benchmark
01/01/2024	Current	33.3% Public Credit Benchmark, 66.7% Private Credit Benchmark
07/01/2021	12/31/2023	50% Public Credit Benchmark, 50% Private Credit Benchmark
07/01/2020	06/30/2021	25% Public Credit Benchmark, 75% Private Credit Benchmark
10/01/2014	06/30/2020	100% Public Credit Benchmark

Public Credit Policy Benchmark

From	To	Public Credit Benchmark
07/01/2021	Current	50% Bloomberg Global High Yield (Hedged), 50% Morningstar LSTA US Leveraged Loan 100 Index
07/01/2020	06/30/2021	50% Bloomberg Global High Yield (Hedged), 50% Morningstar LSTA US Leveraged Loan 100 Index*
10/01/2014	06/30/2020	50% Bloomberg Global Credit (Hedged) 33.3% Bloomberg Global High Yield (Hedged), 16.7% Morningstar LSTA US Leveraged Loan 100 Index*

Private Credit Policy Benchmark

From	To	Private Credit Benchmark
01/01/2024	Current	50% Bloomberg Global High Yield (Hedged) (Quarter Lagged), 50% Morningstar LSTA US Leveraged Loan 100 Index (Quarter Lagged)
07/01/2021	12/31/2023	25% Bloomberg Global High Yield (Hedged) +1% (Month Lagged), 25% Morningstar LSTA US Leveraged Loan 100 Index +1% (Month Lagged), 25% Bloomberg Global High Yield (Hedged) +1% (Quarter Lagged), 25% Morningstar LSTA US Leveraged Loan 100 Index +1% (Quarter Lagged)
07/01/2020	06/30/2021	50% Bloomberg Global High Yield (Hedged) +1% (Month Lagged), 50% Morningstar LSTA US Leveraged Loan 100 Index +1% (Month Lagged)*
11/01/2019	06/30/2020	100% Public Credit Benchmark

From 11/2019 to 06/2020, Private Credit Benchmark is the same as Public Credit Benchmark.

Notes on Component Indices

Historically, prior to 07/01/2021, Morningstar LSTA US Leveraged Loan Index (formerly known as "S&P LSTA US Leveraged Loan Index") was used in the places where Morningstar LSTA US Leveraged Loan 100 Index occurs on this page. Due to licensing issues, Morningstar LSTA US Leveraged Loan 100 Index is applied retroactively to periods prior to 07/2021. Compositions which historically used Morningstar LSTA US Leveraged Loan Index are marked on this page with an asterisk (*).

Custom Benchmarks: Real Assets Composite

Real Assets Policy Benchmark

Real Assets composite contains the following asset classes: Real Estate (Core and Non-Core), Agriculture (or Farmland), Timberland, Infrastructure (Private and Public), and Other Real Assets. They existed separately under various higher level composites at different points in the Plan's history prior to the Real Asset composite's inception in 07/2020.

Prior to 07/2016, **Real Estate** was an immediate sub-composite of Total Fund. From 07/2016 through 06/2020, Core Real Estate and Non-Core Real Estate were separately subsumed into Stabilized Growth and Private Growth categories respectively (which were both contained within Broad Growth). From 10/2014 to 07/2020, **Agriculture, Timber, and Infrastructure** constituted the Private Inflation-Linked component within Real Return, an immediate subordinate of Total Fund.

The Real Assets Policy Benchmark for periods prior to 07/2020 were retroactively reconstructed using the historical policy allocation targets for the underlying components.

From	To	Real Assets Policy Benchmark
01/01/2024	Current	47% Real Estate Benchmark, 7% Agriculture Benchmark, 9% Timber Benchmark, 37% Infrastructure Benchmark
07/01/2022	12/31/2023	70% Real Estate Benchmark, 10% Agriculture Benchmark, 10% Timber Benchmark, 10% Infrastructure Benchmark
07/01/2021	06/30/2022	70% Real Estate Benchmark, 8% Agriculture Benchmark, 12% Timber Benchmark, 10% Infrastructure Benchmark
07/01/2020	06/30/2021	75% Real Estate Benchmark, 5% Agriculture Benchmark, 12.5% Timber Benchmark, 7.5% Infrastructure Benchmark
01/01/2019	06/30/2020	52% Real Estate Policy Benchmark, 48% Real Return Benchmark
01/01/2018	12/31/2018	57% Real Estate Policy Benchmark, 43% Real Return Benchmark
04/01/2017	12/31/2017	70% Real Estate Policy Benchmark, 30% Real Return Benchmark
07/01/2016	06/30/2017	75% Real Estate Policy Benchmark, 25% Real Return Benchmark
01/01/2016	06/30/2016	80% Real Estate Policy Benchmark, 20% Real Return Benchmark
10/01/2014	12/31/2015	83% Real Estate Policy Benchmark, 17% Real Return Benchmark

Custom Benchmarks: Real Assets Composite (Continued)

Real Estate Policy Benchmark

Real Estate composite became effective in 01/2024 as an aggregate of the Core and Non-Core Real Estate components. The Real Estate Policy Benchmark was retroactively reconstructed for periods prior to 01/2024 reflecting the historical policy allocation targets for the underlying Core and Non-Core components.

From	To	Real Estate Policy Benchmark
01/01/2024	Current	100% FTSE EPRA NAREIT Global REITs Index (Gross) (Quarter Lagged)
07/01/2022	12/31/2023	57.1% Core Real Estate Benchmark, 42.9% Non-Core Real Estate Benchmark
07/01/2021	06/30/2022	55.7% Core Real Estate Benchmark, 44.3% Non-Core Real Estate Benchmark
07/01/2020	06/30/2021	53.3% Core Real Estate Benchmark, 46.7% Non-Core Real Estate Benchmark
07/01/2019	06/30/2020	60% Core Real Estate Benchmark, 40% Non-Core Real Estate Benchmark
07/01/2018	06/30/2019	66% Core Real Estate Benchmark, 34% Non-Core Real Estate Benchmark
07/01/2017	06/30/2018	73% Core Real Estate Benchmark, 27% Non-Core Real Estate Benchmark
07/01/2016	06/30/2017	80% Core Real Estate Benchmark, 20% Non-Core Real Estate Benchmark
07/01/2013	06/30/2016	100% Core Real Estate Benchmark

Core Real Estate Benchmark

From	To	Core Real Estate Benchmark
01/01/2024	Current	100% FTSE EPRA NAREIT Global REITs Index (Gross) (Quarter Lagged)
01/01/2018	12/31/2023	100% NCREIF ODCE (Net) (Quarter Lagged)
07/01/2013	12/31/2017	100% NCREIF Property Index (Net) (Quarter Lagged)

Non-Core Real Estate Benchmark

From 07/2016-06/2020, this composite sat within Private Growth segment and was benchmarked against Private Equity Benchmark (formerly, "Private Growth Benchmark").

From	To	Non-Core Real Estate Benchmark
01/01/2024	Current	100% FTSE EPRA NAREIT Global REITs Index (Gross) (Quarter Lagged)
07/01/2020	12/31/2023	100% NCREIF ODCE (Net) +1% (Quarter Lagged)
07/01/2016	06/30/2020	100% Private Equity Benchmark
07/01/2013	06/30/2016	100% NCREIF Property Index (Net) (Quarter Lagged)

Custom Benchmarks: Real Assets Composite (Continued)

Agriculture Benchmark

From	To	Agriculture Benchmark
01/01/2024	Current	100% S&P GCSI Agriculture Index (Quarter Lagged)
10/01/2021	12/31/2023	100% NCREIF Farmland Index (Quarter Lagged)

Timber Benchmark

From	To	Timber Benchmark
01/01/2024	Current	100% S&P Global Timber & Forestry Index (Net) (Quarter Lagged)
09/01/1999	12/31/2023	100% NCREIF Timberland Index (Quarter Lagged)

Infrastructure Benchmark

From	To	Infrastructure Benchmark
01/01/2024	Current	100% Dow Jones Brookfield Global Infrastructure Index (Net) (Quarter Lagged)
12/01/2014	12/31/2023	100% Consumer Price Index (Seasonally Adjusted) +4%

Custom Benchmarks: Diversifying Strategies Composite

Liquid Defensive Benchmark

From	To	Liquid Defensive Benchmark
01/01/2024	Current	31% MLM Global Index EV (Blend), 15% Bloomberg US Treasury: Long Index, 54% Bloomberg US Treasury: Intermediate Index
07/01/2022	12/31/2023	40% MLM Global Index EV (Blend), 40% 90-Day T-Bill +2.5%, 15% Bloomberg US Treasury: Long Index, 5% Bloomberg US Intermediate Aggregate ex Credit Index
07/01/2021	06/30/2022	35% MLM Global Index EV (Blend), 20% 90-Day T-Bill+2.5%, 15% Bloomberg US Treasury: Long Index, 15% Bloomberg US Intermediate Aggregate ex Credit Index, 15% Bloomberg US TIPS 5+ Year Index
07/01/2016	06/30/2021	40% MLM Global Index EV (Blend), 30% Bloomberg US Treasury: Long Index, 30% Bloomberg US Intermediate Aggregate ex Credit Index

Defensive Return Capture Benchmark

Defensive Return Capture and Discretionary Alpha Benchmarks have the same underlying components since 07/01/2020.

From	To	Defensive Return Capture Benchmark
01/01/2024	Current	100% Bloomberg US Treasury: Intermediate Index
07/01/2020	12/31/2023	100% 90-Day T-Bill +2.5%

Discretionary Alpha Benchmark

Defensive Return Capture and Discretionary Alpha Benchmarks have the same underlying components since 07/01/2020.

From	To	Discretionary Alpha Benchmark
01/01/2024	Current	100% Bloomberg US Treasury: Intermediate Index
07/01/2020	12/31/2023	100% 90-Day T-Bill +2.5%

Intermediate Duration Treasury Policy Benchmark

From	To	Intermediate Duration Treasury Policy Benchmark
01/01/2024	Current	100% Bloomberg US Treasury: Intermediate Index
04/01/2017	12/31/2023	100% Bloomberg US Intermediate Aggregate ex Credit

Custom Benchmarks: Diversifying Strategies Composite (Continued)

Long Duration Treasury Policy Benchmark

From	To	Long Duration Treasury Policy Benchmark
04/01/2022	Current	100% Bloomberg US Treasury: Long Index
02/01/2021	03/31/2022	50% Bloomberg US Treasury: Long Index, 50% Bloomberg TIPS 5+ Year Index
04/01/2017	01/31/2021	100% Bloomberg US Treasury: Long Index

MLM Global Index EV (Blend)

MLM Global Index EV (Blend) is used as the benchmark for the Systematic Trend Following composite and as a component of other custom benchmarks.

From	To	MLM Global Index EV (Blend)
04/01/2019	Current	100% MLM Global Index EV (15V)
04/01/2017	03/31/2019	100% MLM Global Index LT 15V

Illiquid Diversifying Benchmark

From	To	Illiquid Diversifying Benchmark
01/01/2024	Current	100% Swiss RE Global Catastrophe Bond Hedged Index
07/01/2022	12/31/2023	65% 90-Day T-Bills +3.5%, 35% Swiss RE Global Catastrophe Bond Hedged Index
07/01/2021	06/30/2022	50% 90-Day T-Bills +3.5%, 50% Swiss RE Global Catastrophe Bond Hedged Index
04/01/2014	06/30/2021	65% 90-Day T-Bills +3.5%, 35% Swiss RE Global Catastrophe Bond Hedged Index

Idiosyncratic Return Capture Benchmark

From	To	Idiosyncratic Return Capture Benchmark
01/01/2024	Current	100% Swiss RE Global Catastrophe Bond Hedged Index
07/01/2020	12/31/2023	100% 90-Day T-Bills +3.5%

Discontinued Custom Benchmarks

This section includes only the discontinued custom benchmarks which have been a component of current custom benchmarks' history and does not include all the discontinued historical custom benchmarks. The items in this section are ordered alphabetically.

Crisis Risk Offset (CRO) Benchmark

Crisis Risk Offset (CRO) Benchmark was a component of Total Fund Policy Benchmark from 2017 to 2020. The composite consisted of Systematic Trend Following, Alternative Return Capture, and Treasury Duration Capture (in the form of long duration treasuries) components.

From	To	Crisis Risk Offset (CRO) Benchmark
04/01/2019	06/30/2020	35% MLM Global Index EV (Blend), 40% 90-day T-Bills +2.5%, 25% Bloomberg US Treasury: Long Index
04/01/2017	03/31/2019	45% MLM Global Index EV (Blend), 30% 90-day T-Bills +5%, 25% Bloomberg US Treasury: Long Index

Liquid Diversifying Benchmark

Liquid Diversifying Benchmark was a component of Diversifying Strategies Benchmark from 2017 through 2023.

From	To	Liquid Diversifying Benchmark
04/01/2017	12/31/2023	100% 90-Day T-Bills +2.5%

Options-Based Equity Benchmark

Options-Based Equity Benchmark was a component of Public Growth Benchmark from 2020 to 2022.

From	To	Options-Based Equity Benchmark
07/01/2020	06/30/2022	50% CBOE S&P 500 PutWrite (PUT), 35% CBOE MSCI EAFE PutWrite (PXEA), 15% CBOE MSCI Emerging Markets PutWrite (PXEF)

Principal Protection Benchmark

Principal Protection Benchmark was a component of Total Fund Policy Benchmark from 2014 to 2020. The composite primarily consisted of intermediate duration bonds.

From	To	Principal Protection Benchmark
01/01/2018	06/30/2020	55% Bloomberg US Intermediate ex Credit Index, 45% Bloomberg Global Intermediate ex Credit Index (Hedged)
10/01/2014	12/31/2017	100% Bloomberg Global Intermediate ex Credit Index (Hedged)

Discontinued Custom Benchmarks (Continued)

Public Growth Benchmark

Public Growth Benchmark was a component of Broad Growth Benchmark from 2020 through 2023. Please see Global Credit Benchmark and Traditional Growth Benchmark in the Current Custom Benchmarks section under Global Credit Benchmark and Public Equity Benchmark respectively.

From	To	Public Growth Benchmark
07/01/2022	12/31/2023	66.5% Traditional Growth Benchmark, 20% Global Credit Benchmark, 8% MSCI ACWI Minimum Volatility (Net), 5.5% ICE BofA All US Convertibles All Qualities (VXA0)
07/01/2021	06/30/2022	55.5% Traditional Growth Benchmark, 16% Options-Based Equity Benchmark, 15.5% Global Credit Benchmark, 9% MSCI ACWI Minimum Volatility (Net), 4% ICE BofA All US Convertibles All Qualities (VXA0)
07/01/2020	06/30/2021	55.5% Traditional Growth Benchmark, 20% Options-Based Equity Benchmark, 15.5% Global Credit Benchmark, 9% MSCI ACWI Minimum Volatility (Net)

Real Return Benchmark

Real Return Benchmark was a component of Total Fund Policy Benchmark from 2014 to 2020.

From	To	Real Return Benchmark
10/01/2014	06/30/2020	100% Consumer Price Index (Seasonally Adjusted) +3%

Stabilized Growth Benchmark

Stabilized Growth Benchmark was a component of Broad Growth Benchmark from 2014 to 2020.

From	To	Stabilized Growth Benchmark
01/01/2018	06/30/2020	8.5% Bloomberg Global Credit (Hedged), 5.67% Bloomberg Global High Yield (Hedged), 17% CBOE S&P 500 BuyWrite (BXM), 17% CBOE S&P 500 PutWrite (PUT), 2.83% Morningstar LSTA Leveraged Loan, 8.5% MSCI ACWI ex US (Net), 8.5% 90-day T-Bills, 17% MSCI ACWI Minimum Volatility (Net), 15% NCREIF ODCE Index (Net) (Quarter Lagged)
07/01/2016	12/31/2017	8.5% Bloomberg Global Credit (Hedged), 5.67% Bloomberg Global High Yield (Hedged), 17% CBOE S&P 500 BuyWrite (BXM), 17% CBOE S&P 500 PutWrite (PUT), 2.83% Morningstar LSTA Leveraged Loan, 8.5% MSCI ACWI ex US (Net), 8.5% 90-day T-Bills, 17% MSCI ACWI Minimum Volatility (Net), 15% NCREIF Property Index (Net) (Quarter Lagged)
10/01/2014	06/30/2016	30% Bloomberg Global Credit (Hedged), 20% Bloomberg Global High Yield (Hedged), 40% CBOE S&P 500 BuyWrite (BXM), 10% Morningstar LSTA Leveraged Loan Index

Performance Attribution Glossary

Performance Attribution is the process of comparing a portfolio's performance with its benchmark identifying and quantifying the sources of differential returns (also called active returns).

Differential Returns / Active Returns / Value Added are the difference between the return on a portfolio and the return on the benchmark.

Impact on Return

Attribution Segment	Definition	Formula	Where:
Weighting (also called allocation, sector allocation, or pure sector allocation)	The effects of portfolio manager decisions to over/underweight each sector	$(w_i - W_i) \times (b_i - b)$	w_i = portfolio segment weight W_i = benchmark segment weight b_i = benchmark segment return b = total benchmark return
Selection (also called within-sector selection)	The effects of portfolio manager decision to buy specific securities	$(r_i - b_i) \times W_i$	r_i = portfolio segment return b_i = benchmark segment return W_i = benchmark segment weight
Interaction (also called allocation/selection interaction)	The effects of portfolio managers decisions to security selection can inadvertently cause sector over/underweighting	$(r_i - b_i) \times (w_i - W_i)$	r_i = portfolio segment return b_i = benchmark segment return w_i = portfolio segment weight W_i = benchmark segment weight

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TOWNSEND® GROUP

Employees' Retirement System of the State of Hawai'i
Second Quarter 2024 Real Assets Performance Review

PROPRIETARY & CONFIDENTIAL

November 2024

HIERS Client Team Biographies:
Jeff Leighton, Kathryn Finneran, & D'metrius Grier

- Partner in Townsend's real estate investment consulting group
- Leads consulting assignments for a select number of real estate retainer and project clients
- Has over 19 years of professional experience, including 11 years of institutional real estate experience
- Previously Jeff worked in structured finance for the Debt Capital Markets group at Banc of America Securities
- BBA in Finance from Radford University

Jeff Leighton

- Associate in Townsend's real estate investment consulting group
- Supports consulting assignments for a select number of real estate retainer and project clients
- Has over 6 years of professional experience, including 4 years of institutional real estate experience
- Previously Kathryn worked for SITE Centers (formerly known as DDR Corp.) with the Corporate and Transactions Legal team
- BA in Political Science from John Carroll University

Kathryn Finneran

- Analyst in Townsend's real estate investment consulting group
- Supports consulting assignments for a select number of real estate retainer and project clients
- Has over 3 years of professional experience, including 1 year of institutional real estate experience
- Previously, D'metrius worked for Rocket Mortgage as a Mortgage Loan Originator
- MSM in Finance from the Weatherhead School of Management of Case Western Reserve University

D'metrius Grier

TOWNSEND® GROUP

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A. Executive Summary

Real Assets Markets Performance and Overview

TOWNSEND® GROUP

As of 06/30/2024

Current HIERS' Benchmarks	Quarter (%)		1 Year (%)		3 Year (%)		5 Year (%)		10 Year (%)	
Public Market Benchmarks	**TGRS**	**TNET**	**TGRS**	**TNET**	**TGRS**	**TNET**	**TGRS**	**TNET**	**TGRS**	**TNET**
Total Real Assets Benchmark*	-0.8		5.0		2.6		3.7		4.7	
Public Market Benchmarks										
FTSE EPRA NAREIT Global REITs Index	-1.5		7.4		0.9		1.4		4.5	
Dow Jones Brookfield Global Infrastructure Index		-0.4		1.6		3.4		3.8		4.7
S&P Global Timber & Forestry Index		4.1		21.2		2.1		8.2		7.5
S&P GSCI Agriculture Index	-4.4		-12.8		6.5		9.1		-2.2	
Private Market Benchmarks										
NFI-ODCE Value Weight	-0.4	-0.7	-9.3	-10.0	1.9	1.0	3.2	2.3	6.4	5.5
NCREIF Property Index "NPI"	-0.3		-5.5		2.3		3.4		6.1	
NCREIF Farmland Property Index "NFI"	-0.2		2.5		6.8		5.8		6.9	
NCREIF Timberland Property Index "NTI"	1.7		9.8		11.0		7.2		5.9	

- As of First Quarter 2024, the Total Real Assets Benchmark reflects a blend of public indices. Because ERS' private investments are being compared against a blended benchmark of public indices, a significant amount of "tracking error" is expected. This can lead to periods of out-performance or under-performance over the short or medium term. Focus is on longer-term performance.
- The Total Real Assets Benchmark generated a -0.8% gross return, down -13.4% from the previous quarter. Public market indices are typically more volatile than private market indices, especially in short-term time periods.
- Across the private real estate, timber, and agriculture benchmarks, performance was flat to slightly positive during the current quarter. Private real estate valuations have seemed to bottom across most property types, except office. NFI generated a -0.2% gross return, with row crops continuing to outperform permanent crops. NTI continued to generate positive performance with a one-quarter return of 1.7%.

*Total Real Assets Benchmark combines the historical Real Assets Benchmark (comprised of 40% NFI-ODCE Value Weight (net), 30% NFI-ODCE Value Weight +100 BPS (net), 10% NCREIF Timberland Property Index (gross), 10% NCREIF Farmland Property Index (gross), and 10% CPI + 400 BPS (gross)) with the new public Real Assets Benchmark (comprised of 47% FTSE EPRA NAREIT Global Index (gross), 37% Dow Jones Brookfield Global Infrastructure Index (net), 9% S&P Global Timber & Forestry Index (net), and 7% S&P GSCI Agriculture Index (gross)). Current HIERS' Benchmarks lag the portfolio's performance data by one quarter throughout this presentation.

Total Real Asset Portfolio Funding Status and Composition

Portfolio Overview As of June 30, 2024 ($ in Millions)	
Number of Investments	82
Active Investments	67
Liquidated Investments	15
Number of Active GP Relationships	28
Total Commitments	6,299.5
Unfunded Commitments	1,124.3
Total Paid-In Capital	6,563.5
Total Distributions	4,130.7
Net Asset Value	4,375.8
Gross Asset Value	6,482.6
Total Exposure	5,500.1
DPI[4]	0.6x
TVPI[4]	1.3x
Since Inception IRR[4]	7.6%
Active and Liquidated	

- Recent infrastructure, agriculture, and real estate commitments should help the portfolio continue to move towards its target allocation irrespective of liquidating investments.
- In general, the portfolio is in compliance with its Investment Policy Statement with the following exceptions:
  - Timber exceeds the largest asset as a percent of Timber maximum due to the Timber Separate Account's sale of a large property in December 2017 for roughly $36M.

PORTFOLIO COMPOSITION TO TARGETS (%)
(As of June 30, 2024)[1,3]

	Target (Range) Total Fund	Actual Funded Total Fund
<u>Strategic Asset Allocation</u>		
Real Estate	9.00	8.42
Core	--	4.48
Non-Core	--	3.94
Timber/Agriculture	3.00	2.62
Timber	--	0.98
Agriculture	--	1.65
Infrastructure	7.00	7.51
Total Real Asset	19.00 (9.00 - 29.00)	18.54

PORTFOLIO COMPOSITION TO TARGETS (%)
Olomana Disaggregated into Various Components
(As of June 30, 2024)[2,3]

	Target (Range) Total Fund	Actual Funded Total Fund
<u>Strategic Asset Allocation</u>		
Real Estate	9.00	8.52
Core	--	4.48
Non-Core	--	4.04
Timber/Agriculture	3.00	2.78
Timber	--	0.98
Agriculture	--	1.80
Infrastructure	7.00	7.25
Total Real Assets	19.00 (9.00 - 29.00)	18.54

[1]Olomana: entire NAV (liquid & illiquid investments) is included in Infrastructure.
[2]Olomana: liquid markets NAV is included in Infrastructure, illiquid markets NAV is included in their respective components of Core Real Estate, Non-Core Real Estate, Timber, Agriculture, Infrastructure. Illiquid investments that don't fall under one of these components is in Infrastructure.
[3]Parametric: entire NAV (liquid & illiquid investments) is included in Infrastructure.
[4]Excludes Parametric Real Assets Overlay Portfolio within these calculations.

Private Performance vs. Public Benchmark

- Effective in First Quarter 2024, HIERS changed its real assets benchmark to a blend of public indices. Because ERS' private investments are being compared against a blended benchmark of public indices, a significant amount of “tracking error” is expected. This can lead to periods of out-performance or under-performance over the short or medium term. Focus is on longer-term performance.

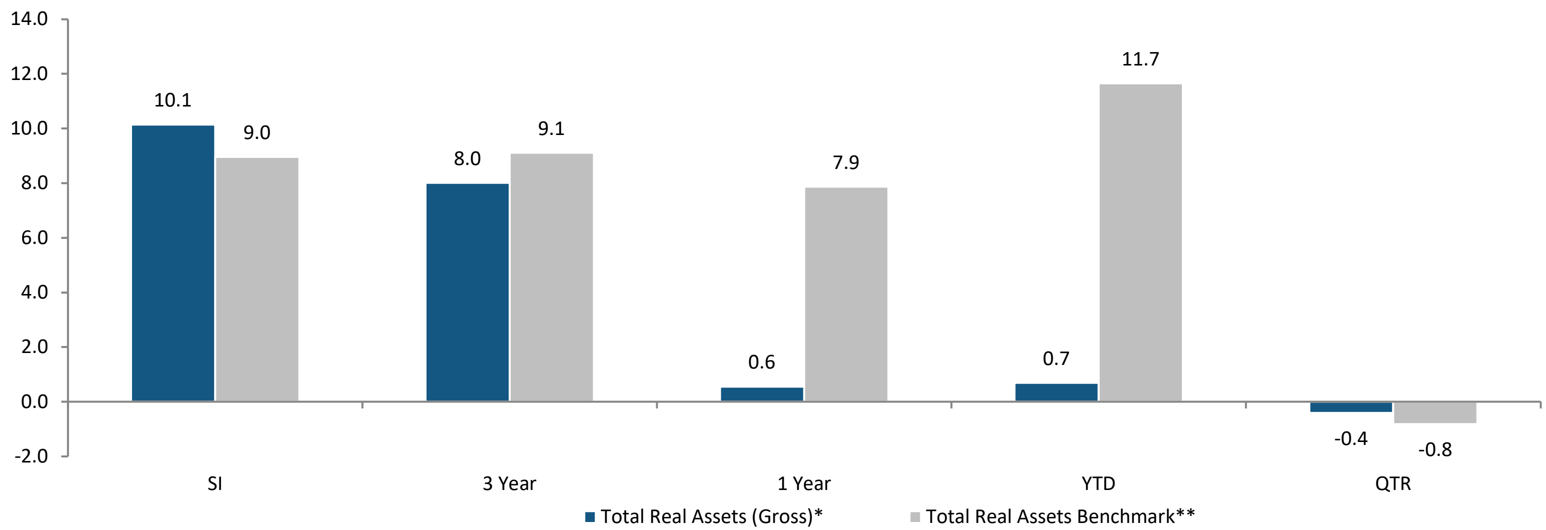
Total Real Assets Portfolio Performance Summary

TOWNSEND GROUP

As of 6/30/2024

Returns (%)	Inception				3 Year				1 Year				YTD				Quarter			
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET
Real Assets																				
Total Real Assets[1]*	3.8	6.2	10.1	7.6	3.3	4.6	8.0	6.5	1.9	-1.3	0.6	0.1	0.8	-0.1	0.7	0.5	0.4	-0.8	-0.4	-0.3
Total Real Assets Benchmark**			9.0				9.1				7.9				11.7				-0.8	

Inception Date: 7/1/2020



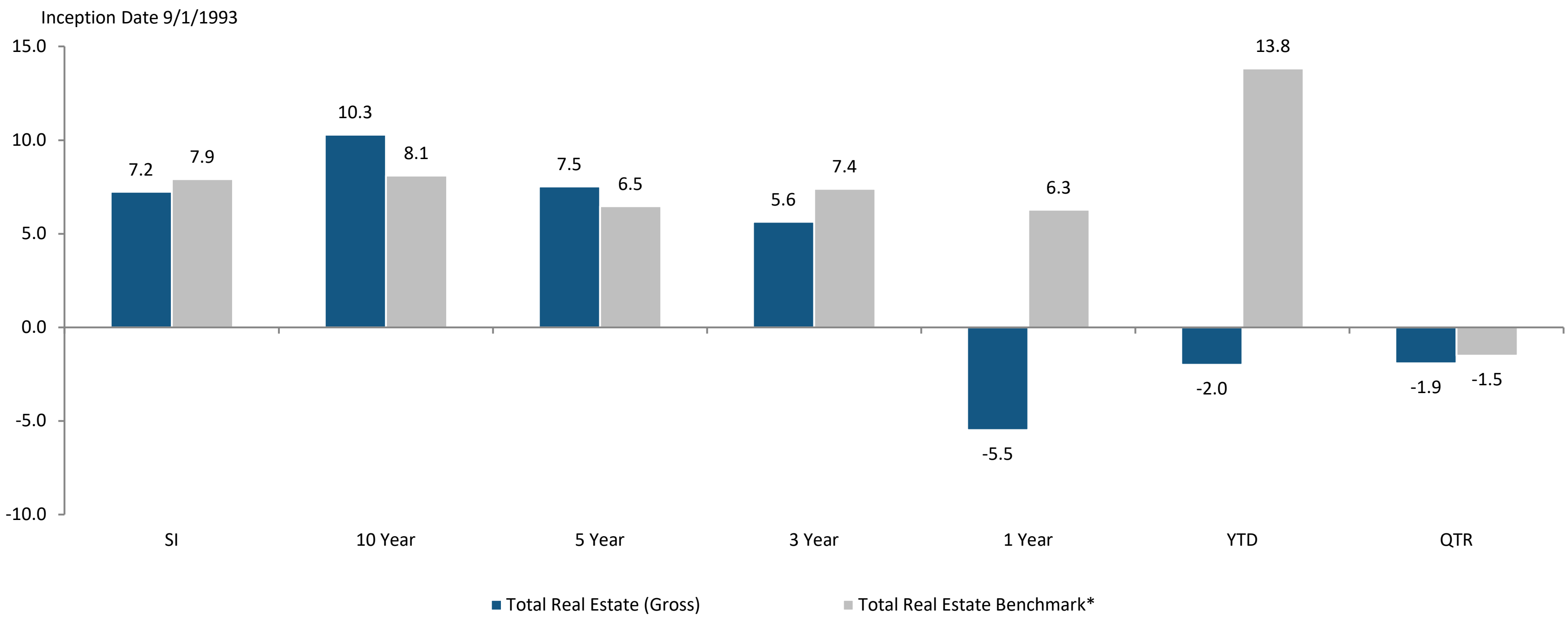
- The table shows the time-weighted returns for HIERS' Total Real Assets.
- The portfolio is outperforming the benchmark over the current quarter and since inception period. The portfolio is underperforming the Real Assets Blended Benchmark on a gross of fee basis over the one-year and three-year time periods.

The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.
*As of 07/01/2023, certain real estate debt funds with ~100% debt (or mostly debt) were reclassified/moved from the Real Assets Composite to the Global Credit Composite. For performance reporting purposes, these were included in the Real Assets composite historically, up to the 07/01/2023 transfer date.
**Total Real Assets Benchmark combines the historical Real Assets Benchmark (comprised of 40% NFI-ODCE Value Weight (net), 30% NFI-ODCE Value Weight +100 BPS (net), 10% NCREIF Timberland Property Index (gross), 10% NCREIF Farmland Property Index (gross), and 10% CPI + 400 BPS (gross)) with the new public Real Assets Benchmark (comprised of 47% FTSE EPRA NAREIT Global Index (gross), 37% Dow Jones Brookfield Global Infrastructure Index (net), 9% S&P Global Timber & Forestry Index (net), and 7% S&P GSCI Agriculture Index (gross)). This blend begins 01/01/2024. Additionally, performance data for the new public benchmark is based on a quarter-lagged calculation of time-weighted returns.
[1]Excludes Parametric Real Asset Overlay returns.

HIERS Real Estate Performance Summary

As of 6/30/2024

Returns (%)	Inception				10 Year				5 Year				3 Year				1 Year				YTD				Quarter			
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET
Real Estate																												
Total Real Estate	6.7	0.5	7.2	6.0	5.3	4.9	10.3	8.4	4.2	3.3	7.5	5.8	3.8	1.9	5.6	4.2	2.3	-7.6	-5.5	-5.5	1.2	-3.2	-2.0	-1.9	0.6	-2.6	-1.9	-1.5
Total Real Estate Benchmark*			7.9				8.1				6.5				7.4				6.3				13.8				-1.5	



- The table shows the time-weighted returns for HIERS' Total Real Estate.
- Overall, the portfolio is performing well over the long-term, outperforming the blended benchmark on a gross of fee basis over the five-year and ten-year periods.
- The real estate portfolio has generated a 7.6% net IRR and 1.4x net equity multiple since inception.

The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

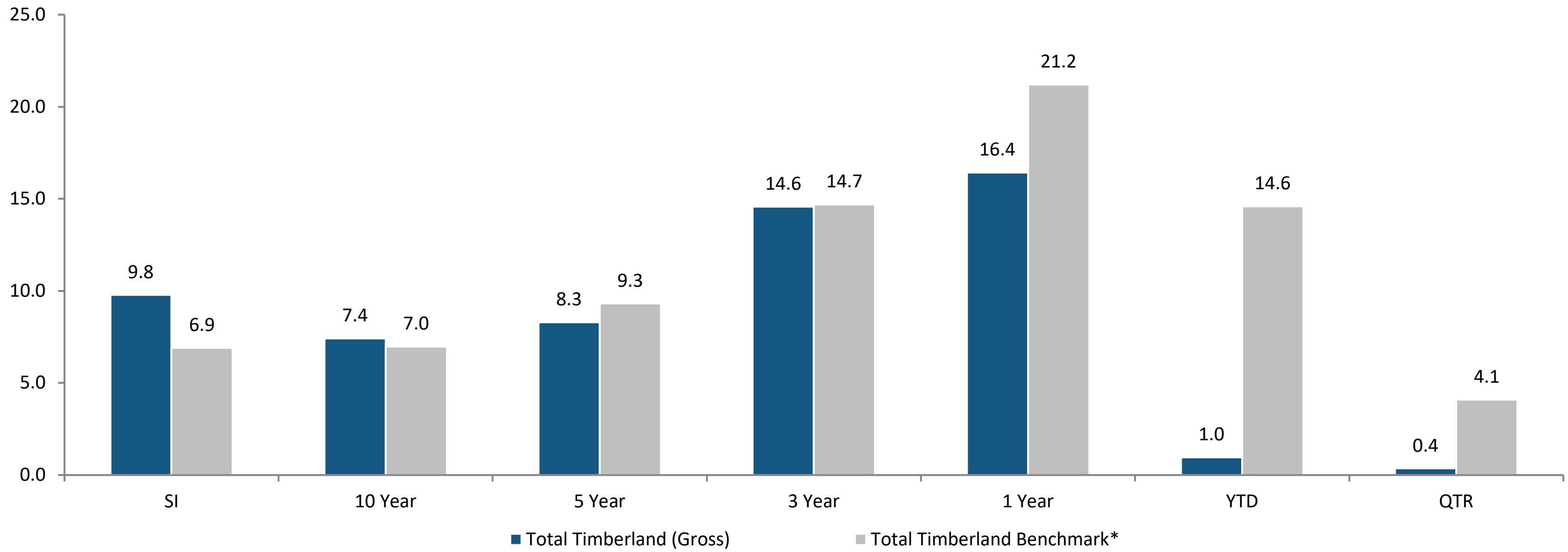
*Total Real Estate Benchmark combines the NFI-ODCE benchmark with the FTSE EPRA/NAREIT Global REITs Index benchmark. This blend begins starting on 01/01/2024. The FTSE EPRA/NAREIT Global REITs Index performance data is based on a quarter-lagged calculation of time-weighted returns.

HIERS Timber Performance Summary

As of 6/30/2024

Returns (%)	Inception				10 Year				5 Year				3 Year				1 Year				YTD				Quarter			
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET
Timber																												
Total Timberland	1.1	8.6	9.8	8.9	1.8	5.5	7.4	6.5	2.1	6.0	8.3	7.4	2.8	11.5	14.6	13.6	1.9	14.3	16.4	15.5	1.0	0.0	1.0	0.5	0.4	0.0	0.4	0.1
Total Timberland Benchmark*			6.9				7.0				9.3				14.7				21.2				14.6				4.1	

Inception Date 9/1/1999



- The table shows the time-weighted returns for HIERS' Timberland.
- The portfolio is underperforming the blended benchmark on a gross of fee basis over most periods due in large part to public market volatility.
- The timber portfolio has generated an 8.4% net IRR and 3.1x net equity multiple since inception.

The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

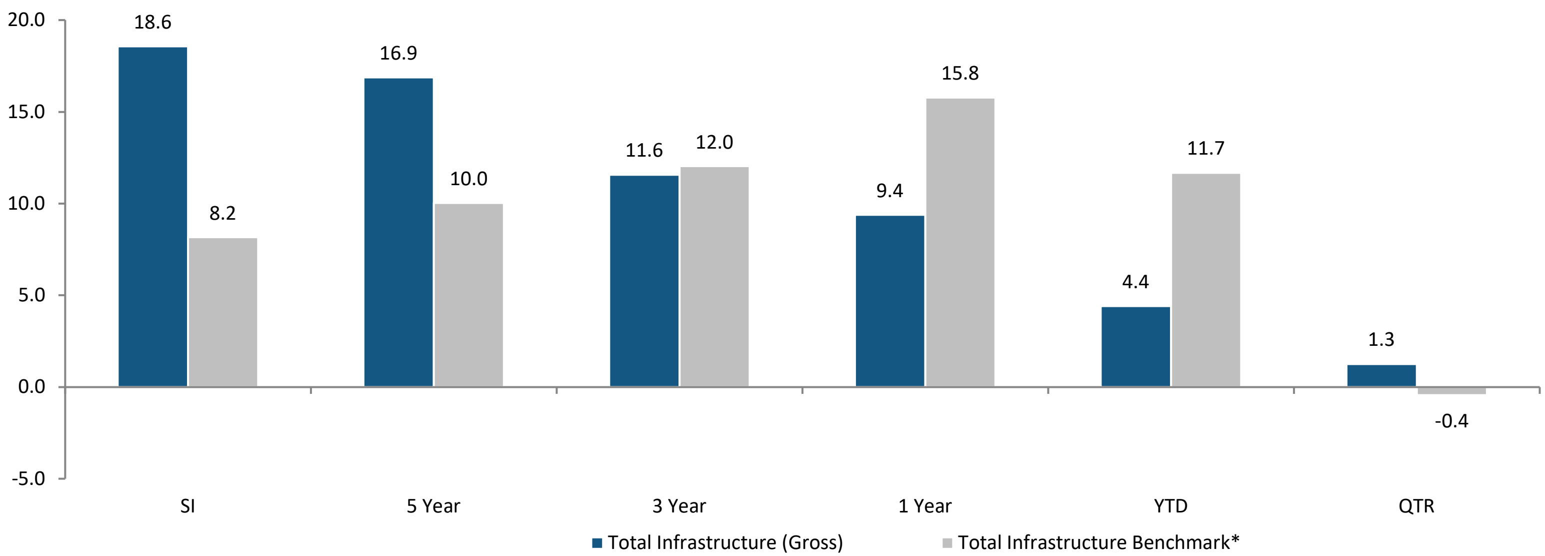
*Total Timberland Benchmark combines the NCREIF Timberland Property Index benchmark with the S&P Global Timber & Forestry Index benchmark. This blend begins starting on 01/01/2024. Additionally, the performance data for the index is based on a quarter-lagged calculation of time-weighted returns.

HIERS Infrastructure Performance Summary

As of 6/30/2024

Returns (%)	Inception				5 Year				3 Year				1 Year				YTD				Quarter			
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET
Infrastructure																								
Total Infrastructure	4.4	13.3	18.6	13.9	8.7	7.1	16.9	13.9	4.9	6.3	11.6	9.2	3.1	6.1	9.4	7.7	0.4	4.0	4.4	3.6	0.2	1.1	1.3	1.0
Total Infrastructure Benchmark*	8.2				10.0				12.0				15.8				11.7				-0.4			

Inception Date 6/1/2015



- The table shows the time-weighted returns for HIERS’ Infrastructure.
- The portfolio continues to outperform the benchmark over the longer-term periods.
- The infrastructure portfolio has generated a 10.6% net IRR and 1.1x net equity multiple since inception.

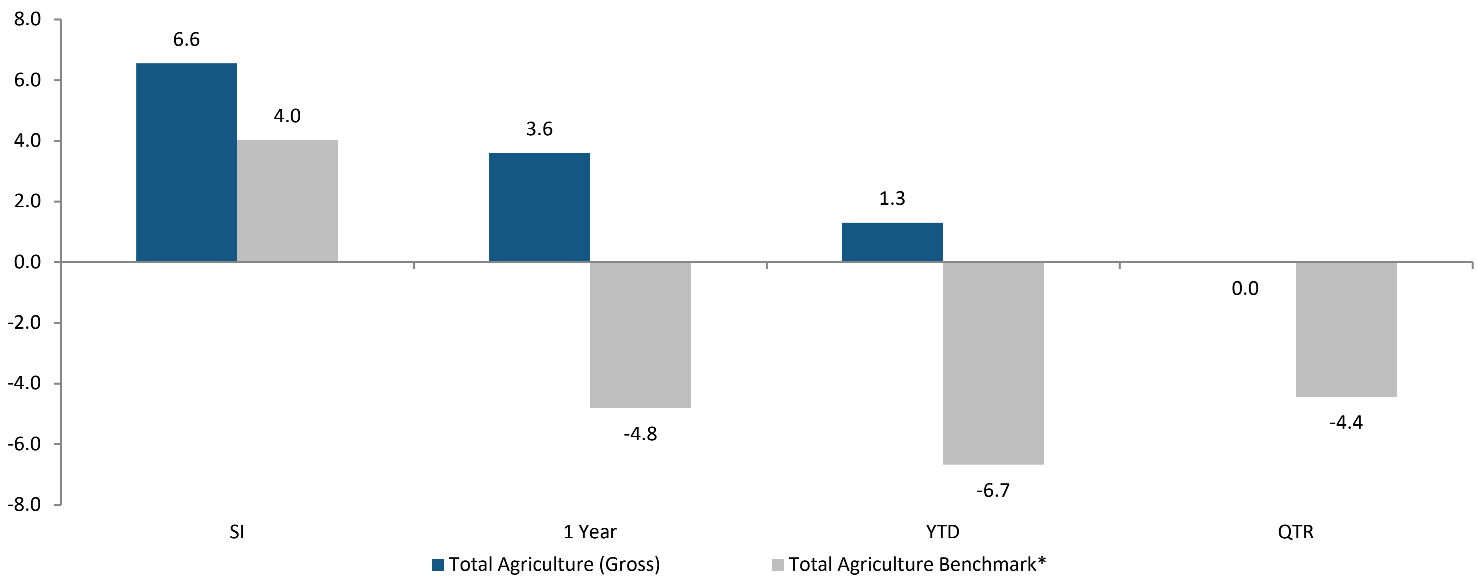
The information provided is from the ERS’ custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.
Data excludes Olomana.
*Total Infrastructure Benchmark combines the CPI +400 bps benchmark with the Dow Jones Brookfield Global Infrastructure Index benchmark. This blend begins starting on 01/01/2024. The Dow Jones Brookfield Global Infrastructure Index performance data is based on a quarter-lagged calculation of time-weighted returns.

HIERS Agriculture Performance Summary

As of 6/30/2024

Returns (%)	Inception				1 Year				YTD				Quarter			
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET
Agriculture																
Total Agriculture	2.5	4.0	6.6	5.3	1.6	2.0	3.6	2.2	0.7	0.6	1.3	0.6	0.2	-0.2	0.0	-0.3
Total Agriculture Benchmark*			4.0				-4.8				-6.7				-4.4	

Inception Date 10/01/2021



- The table shows the time-weighted returns for HIERS' Agriculture.
- Overall, the portfolio has outperformed the blended benchmark over all observable periods.
- The Agriculture portfolio has generated a 2.9% net IRR and 1.0x net equity multiple since inception.

The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

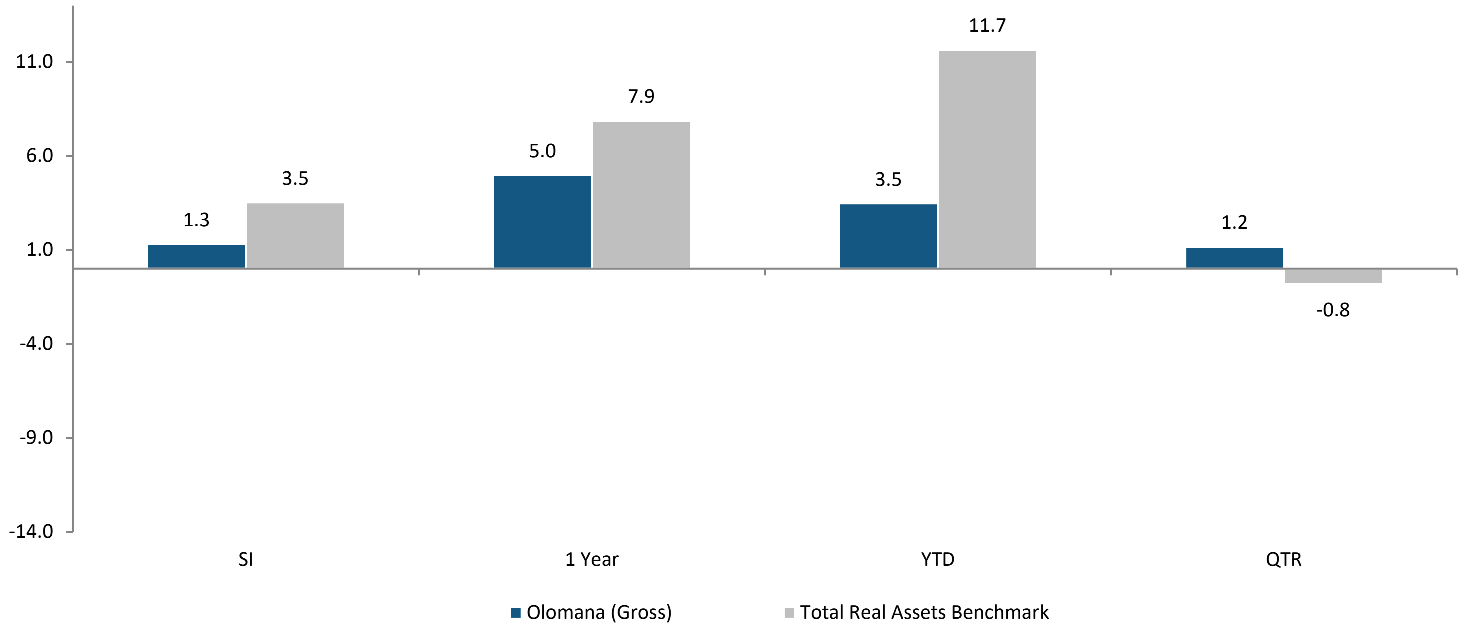
*Total Agriculture Benchmark combines the NCREIF Farmland Property Index benchmark with the S&P GSCI Agriculture Index benchmark. This blend begins starting on 01/01/2024. The S&P GSCI Agriculture Index performance data is based on a quarter-lagged calculation of time-weighted returns.

HIERS Olomana Performance Summary

As of 6/30/2024

Returns (%)	Inception				1 Year				YTD				Quarter			
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET
Olomana																
Total Olomana	0.0	1.3	1.3	1.0	0.0	5.0	5.0	4.7	0.0	3.5	3.5	3.4	0.0	1.2	1.2	1.1
Olomana: Aggregate Benchmark*			-2.4				2.3				2.2				0.9	
Total Real Assets Benchmark			3.5				7.9				11.7				-0.8	

Inception Date 04/01/2022



- The table shows the time-weighted returns for HIERS' Olomana portfolio.
- The Olomana portfolio has generated a 1.0% net IRR and 1.0x net equity multiple since inception.

The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.
*Olomana Aggregate Benchmark (as of 6/30/24) is used by Olomana Manager for reporting purposes. The components/weights are dynamic to match the evolution of actual Olomana construct. The Olomana Aggregate Benchmark consists of 13.7% (MSCI World Defensive), 6.8% (DJ Brookfield North America Infrastructure), 6.8% (FTSE EPRA/NAREIT Developed Real Estate), 27.4% (Bloomberg 1-5Y TIPS), 13.7% (Bloomberg Commodity), 22.2% (NCREIF Property Index), 4.0% (NCREIF Property Index), 5.4% (50% NCREIF Farmland / 50% NCREIF Timberland).

B. Market Overview

Global Economic Conditions

TOWNSEND® GROUP

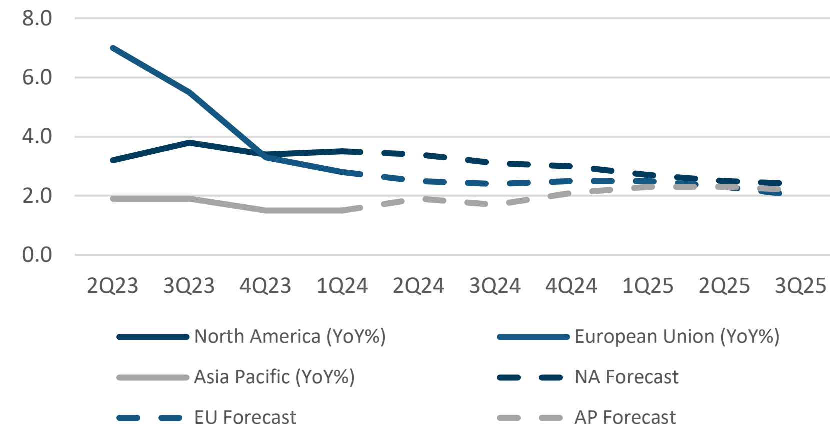
ECONOMIC GROWTH OUTLOOK REMAINS POSITIVE

Real GDP Forecasts (YoY%) – 6/13/2024

Major Regions	2023	2024	2025	2026
North America	2.5	2.3	1.8	2.0
European Union	0.5	1.0	1.7	1.8
Asia Pacific	4.3	4.3	4.1	3.9
Selected Markets	**2023**	**2024**	**2025**	**2026**
United States	2.5	2.4	1.8	2.0
United Kingdom	0.1	0.6	1.2	1.4
Germany	-0.2	0.2	1.2	1.3
China	5.2	4.9	4.5	4.2
Japan	1.9	0.4	1.1	0.9
Australia	2.0	1.3	2.2	2.5

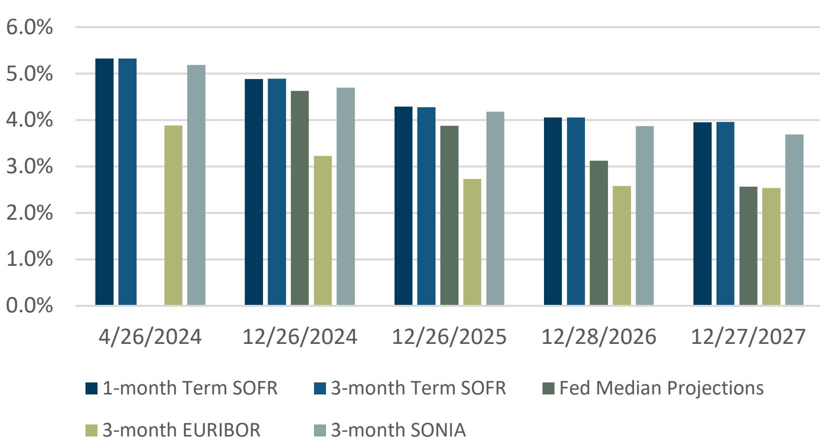
INFLATION IS PROJECTED TO STABILIZE

CPI Quarterly



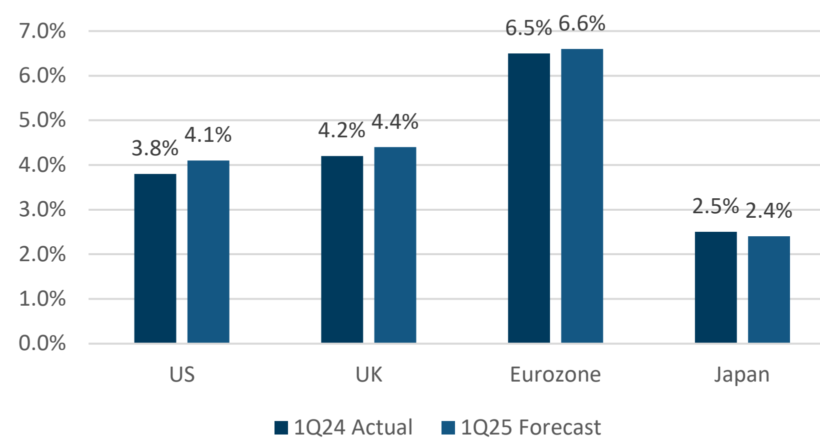
FORWARD CURVES INDICATING DECLINE IN RATES

Forward Curves



UNEMPLOYMENT RATES REMAIN LOW

Unemployment Rate (%)

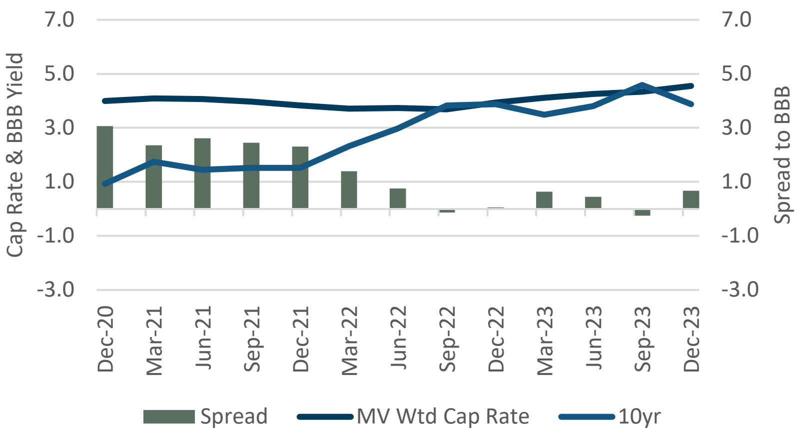


- Source: The Townsend Group, Bloomberg, Chatham Financial.
- Townsend's views are as of the date of this publication and may be changed or modified at any time and without notice. Past performance is not indicative of future results. Actual results and developments may differ materially from those expressed or implied herein.

US Real Estate Market Conditions

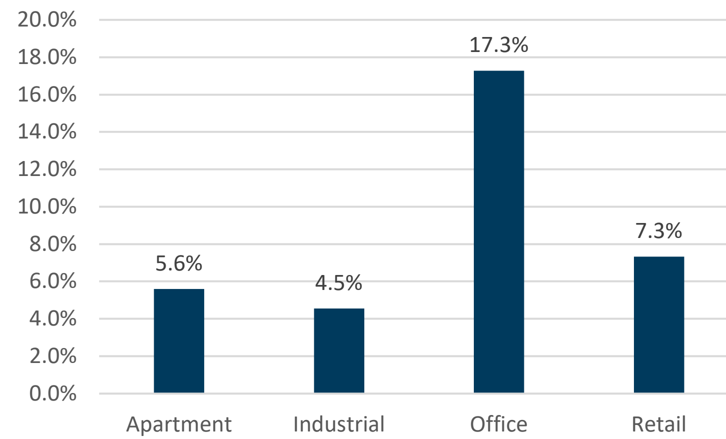
PRIVATE REAL ESTATE SPREADS COMPRESSING

NPI Current Value Cap Rate versus 10yr Treasury



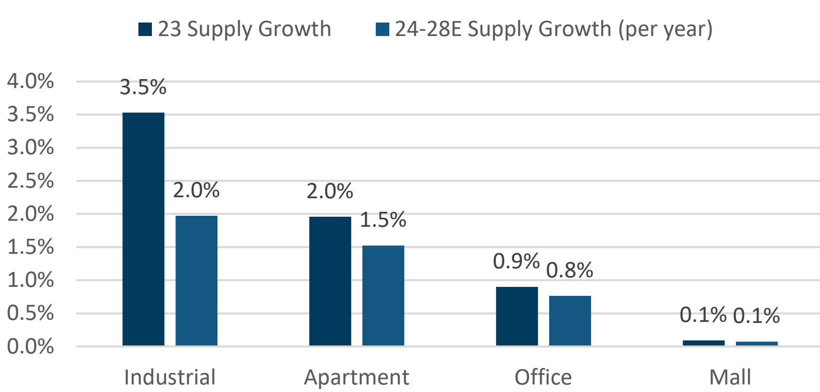
- But Vacancy rates remain low

Vacancy Rates by Property Sector



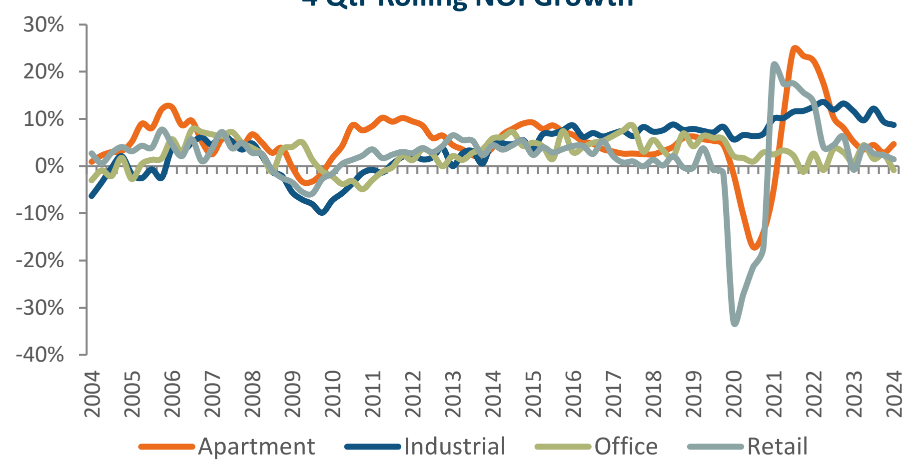
SUPPLY GROWTH CONTRACTING MEANINGFULLY

Annual Completions as % of Existing Stock



NCREIF NOI GROWTH

4 Qtr Rolling NOI Growth



- Source: The Townsend Group, MSCI Real Assets, NCREIF.
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United States Property Matrix (2Q24)

TOWNSEND GROUP

INDUSTRIAL

- In 2Q24, industrial properties returned 0.20% and outperformed the NPI by 46 bps.
- Transaction volumes increased to $21 billion in the second quarter of the year, resulting in a 12% decrease year-over-year. Individual asset sales decreased 12% year-over-year, while portfolio purchases turned in a year-over-year volume decrease of 30%. At $21 billion, the industrial sector decreased by $3.6 billion quarter-over-quarter.
- The industrial sector turned in NOI growth of 8.7% over the past year. NOI continues to reach all time highs for the sector.
- Vacancy increased by 110 bps year-over-year to 2.9%. Vacancy in the sector increased 31 bps from the prior quarter. E-commerce continues to drive demand across the sector.
- Industrial cap rates expanded approximately 27 bps from a year ago, to 4.2%. Industrial overall fundamentals still top all property sectors.

MULTIFAMILY

- The apartment sector delivered a 0.15% return during the quarter, outperforming the NPI by 41 bps.
- Transaction volume in the second quarter of 2024 increased to $40 billion, resulting in an increase of 25% year-over-year. Transaction volume for the sector increased from the first quarter by $19 billion. This volume continues to make multifamily the most actively traded sector for the twenty-fifth straight quarter.
- Cap rates increased to 4.4% quarter-over-quarter, increasing 42 bps year-over-year. Multifamily cap rates remain at low levels relative to prior years, driven by continued investor demand.
- The multifamily sector saw increasing vacancy rates throughout the entirety of 2020 due to the global pandemic. Throughout 2021 and 2022, the sector appeared to have shaken that trend although vacancy rates remained steady. Vacancy rates decreased quarter over quarter to 6.0% as of the second quarter of 2024. The aging millennials have begun shifting their desires to suburban living, but continued home price appreciation has deterred the full effect of this migratory trend.

OFFICE

- The office sector returned -2.36% in 2Q24, 210 bps below the NPI return over the period.
- Transaction volumes decreased by 15% year-over-year in the second quarter. Transaction volume equated to $12 billion for the quarter, slightly decreasing quarter-over-quarter. Office transaction levels have regressed since 4Q21 and are at levels seen during the COVID-19 pandemic.
- Office sector vacancy rates have expanded since the beginning of the pandemic due to a shift to work-from-home and resulting uncertainty revolving around the future of office space. Office continues to be the highest vacancy property type at 14.8%, increasing by 50 bps from last quarter.
- NOI growth in the office sector decreased quarter-over-quarter by 370 bps to -1.4% and is still experiencing volatility given the current market environment.
- Office cap rates expanded from a year ago, sitting at approximately 6.2%. Office-using job growth was stunted significantly throughout 2020 due to work-from-home orders. Though we are observing a slow but steady flow back to in-office work, there is still uncertainty in the sector.

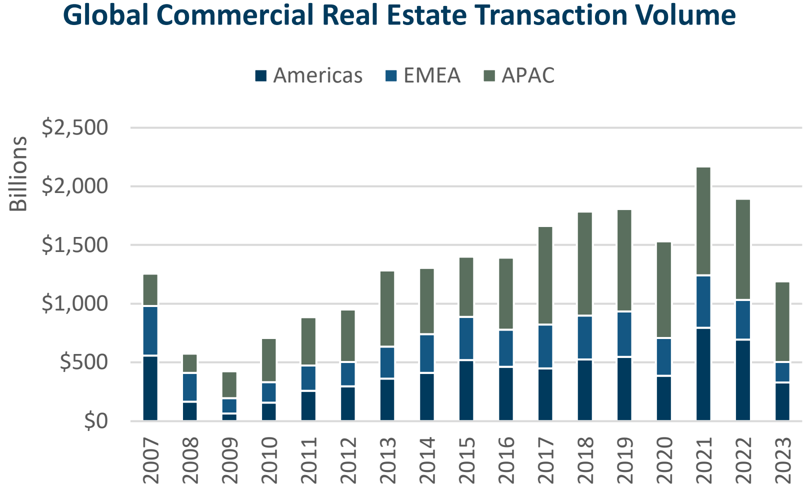
RETAIL

- As of 2Q24, the retail sector delivered a quarterly return of 0.89%, outperforming 115 bps compared to the NPI.
- Transaction volumes totaled $11 billion in the second quarter, decreasing 1% year-over-year. Single asset transactions accounted for just over 87% of all sales volume for the quarter.
- Cap rates have remained fairly steady within the sector over the last year but have slightly increased as of the second quarter at 5.6%. Current valuation cap rates slightly expanded quarter-over-quarter by 1 bps due to valuation adjustments made across the sector in general.
- NOI growth decreased from the prior quarter to -3.4% as of the second quarter. Retail has begun its slow recovery but has continued to experience volatility due to the current market environment.
- Retail vacancy rates remained steady over the quarter at 7.6%, remaining flat over the past year. Many big box stores have closed as the need for retail space shrinks, translating to a negative outlook for rent growth. Paired with the global economic crisis, which has had a significant negative impact on this sector.

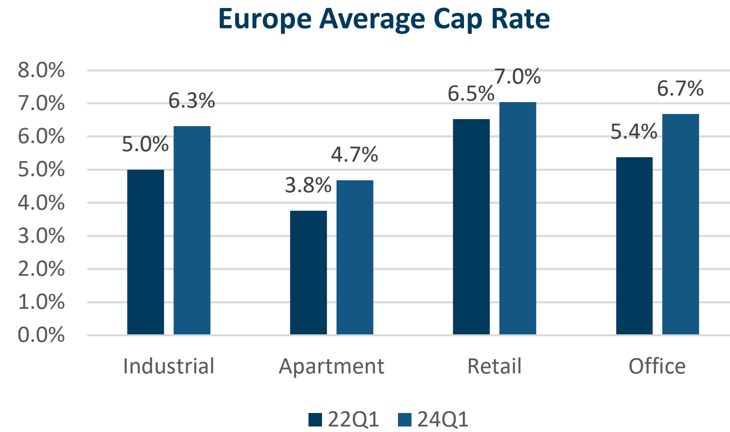
Sources: Real Capital Analytics, Green Street, NCREIF

Global Real Estate Market Conditions

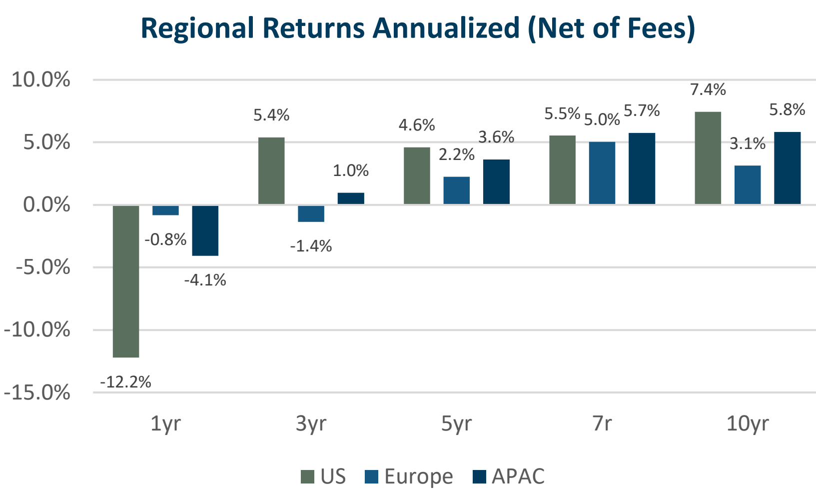
TRANSACTION VOLUME DOWN BUT SIGNS OF PICKUP



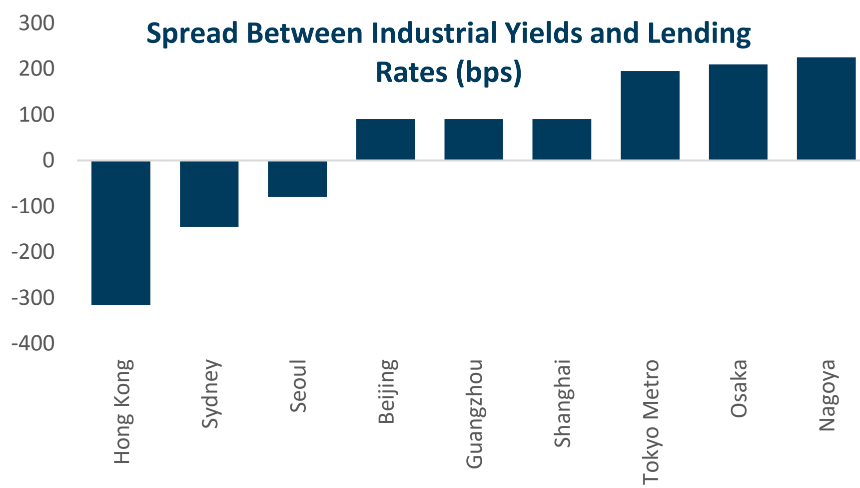
VALUATIONS HAVE RESET CONSIDERABLY FROM '22 LOWS



REAL ESTATE RETURNS DECLINED GLOBALLY IN 2023



INDUSTRIAL SPREADS POSITIVE IN JAPAN; NEGATIVE IN AUSTRALIA



- Source: The Townsend Group, NCREIF, MSCI Real Assets, St. Louis Fed, CBRE (June 2024), DWS (June 2024), Dexus Research (June 2024).
- Townsend's views are as of the date of this publication and may be changed or modified at any time and without notice. Past performance is not indicative of future results. Actual results and developments may differ materially from those expressed or implied herein.

Infrastructure – Second Quarter 2024 Market Update

General

- In 2Q 2024, Infrastructure managers completed 431 deals for an aggregate deal value of $65.4 billion compared to 563 deals totaling $92.3 billion in 2Q 2023. Europe and North America led the industry in the location of deal volume, accounting for 40.1% and 29.0% of total deals, respectively, followed by APAC which accounted for 15.8% of total deals completed in 2Q.

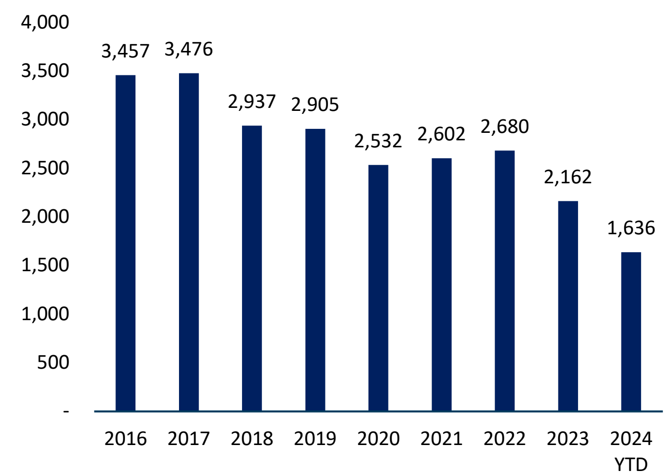
Opportunity

- Mid-market core+ and value-add infrastructure as well as a platform investing approach continue to offer the best relative value.
- Assess funds with pre-specified assets with caution due to possible lag in and uncertainty around valuation impact.
- Blind-pool funds may be better positioned to take advantage of the market dislocation in certain sub-sectors, however careful review of such strategies is required.
- Build-to-core greenfield strategies particularly in the social / PPP infrastructure space offer a premium for investors willing to take on construction / development risk.

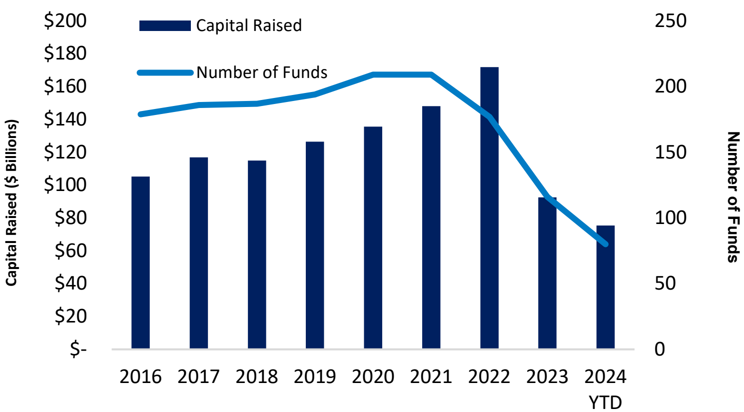
Fundraising

- $75.3 billion of capital was raised by 80 funds year-to date compared to $171.8 billion of capital raised by 116 funds in 2023. 2024 is expected to realize a five-year low in overall funds raised. Infrastructure funds are staying in market longer. Funds in market are reporting the longest timelines to conclude fundraising in the past two decades, averaging 2.3 years to reach final close.
    - European Diversified Infrastructure Fund III was the largest fund raised during 2Q 2024, closing on $4.4 billion.
- To date, there are an estimated 649 funds in the market seeking roughly $561.6 billion.
    - The largest funds in market, Global Infrastructure Partners V and ALTÉRRA Acceleration, each had target fund sizes of $25.0 billion.
    - The ten largest funds are each seeking $10.0 billion or more of LP commitments.
- Continuing concerns surrounding the relative availability and pricing of assets remain. Despite fundraising slowdowns, fundraising remains competitive given the number of funds and aggregate target level of funds in market. Investor appetite for the asset class remains strong despite the high levels of dry powder and increased investment activity from strategic and corporate buyers as well as institutional investors.

Number of Infrastructure Deals Completed



Global Infrastructure Fundraising



Sources: Preqin, Townsend

Farmland – Second Quarter 2024 Market Update

TOWNSEND® GROUP

FARMLAND MARKETS

- Agricultural markets remained pressured during the quarter, as value write-downs continued within permanent crops, most notably in the tree nut complex, and row crops continued to moderate off recent outperformance. Farm incomes remain above long-term averages but have softened significantly, as elevated production levels, U.S. dollar strength, and reduced export volumes will continue to pressure markets throughout 2024/25. Tight credit conditions and elevated interest rates are also adding to the challenges, particularly for permanent crop valuations and operating margins.
- Row crop prices generally trended sideways during 2Q24, reflecting stable but softer market conditions, while farmer margins remain under pressure from reduced commodity prices, though declines in input costs for fuel and fertilizer have helped stabilize profitability, with fertilizer prices declining 17% YoY.
- Many permanent crops remain challenged from ongoing weakness, high water risks, and discounted valuatior appraisers. The tree nut segment, particularly almonds pistachios, continues to be hit hardest.
- Farmland values in the U.S. remained firm but have starte moderate due to tighter credit conditions and incre borrowing costs. Farm real estate values increased by 4.7% y over-year, though growth has slowed considerably compare the rapid pace of the past two years. Despite market headw cropland cash rents rose slightly offering some stabilit landowners despite softening markets.

FIG 1: Major Global Crop Prices Quarterly % Change

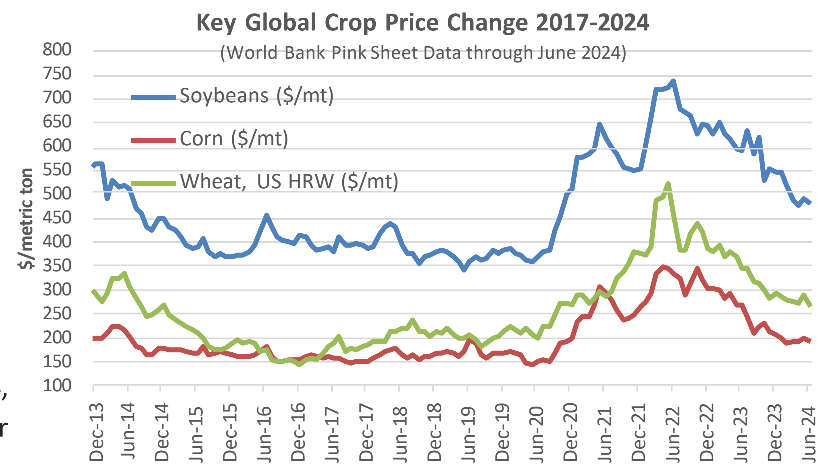
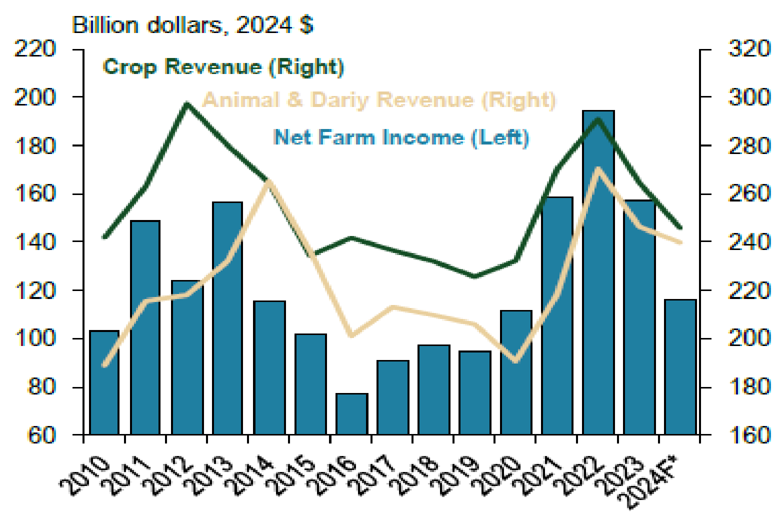


FIG 2: U.S. Farm Income and Revenue

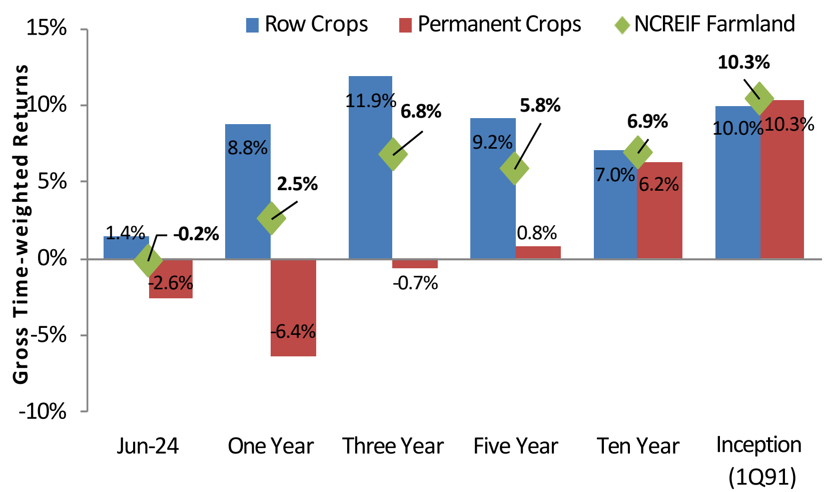


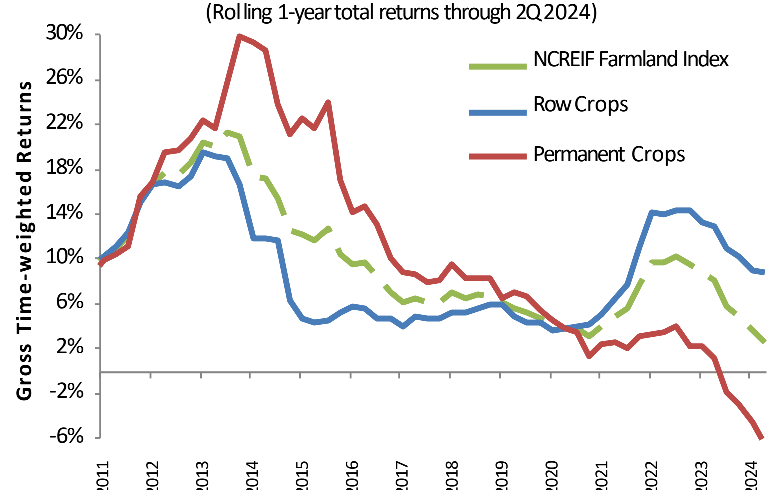
Sources by Figure: (1) World Bank Pink Sheet Monthly Data – March 2024; Figure (2) Federal Reserve Bank of Kansas City Ag Bulletin; USDA

Farmland – Second Quarter 2024 Performance Update

FARMLAND INDEX COMMENTARY 2Q24

- The NCREIF Farmland Index ("NFI") reported a slightly negative return of -0.21% in Q2 2024, reflecting a notable shift from the 0.7% gain last quarter. This quarter's performance is largely attributed to the ongoing divergence between row crops and permanent crop returns.
- The total return was composed of 0.5% income and -0.7% depreciation. Over the trailing 12 months (TTM), the NFI posted a 2.54% total return, composed of 2.89% income and -0.33% depreciation. The results illustrate that row crops have remained a stabilizing factor, while permanent crops continue to experience negative returns due to challenging market conditions in tree nuts.
- Row crops returned 1.5%, split evenly at 0.7% of appreciation and 0.7% of income during the quarter. Permanent crop performance was negative for the fifth consecutive quarter returning -2.6% comprised of -2.7% appreciation and 0.1% income.
- Over the TTM, Row crops returned 8.8% while permanent crops posted a -6.4% return, marking the new lowest return (over last quarter's TTM period) over any 12-month period as both almonds and pistachios continuing to experience write-downs as pricing in the tree nut segment has been under pressure due to a period of oversupply initially driven by COVID-19 supply-chain disruptions and has led to multiple bankruptcies within the nut sector.
- Australian farmland has faced similar pressure as the ANREV Australian Farmland Index ("AFI") has hit its lowest point on an annualized basis, returning -1.7% through 2Q24. Similar to the U.S., the sharp divide between row and permanent crops remained as row crops generated 5.3% over the TTM period, while permanent crops generated a -9.5% return.





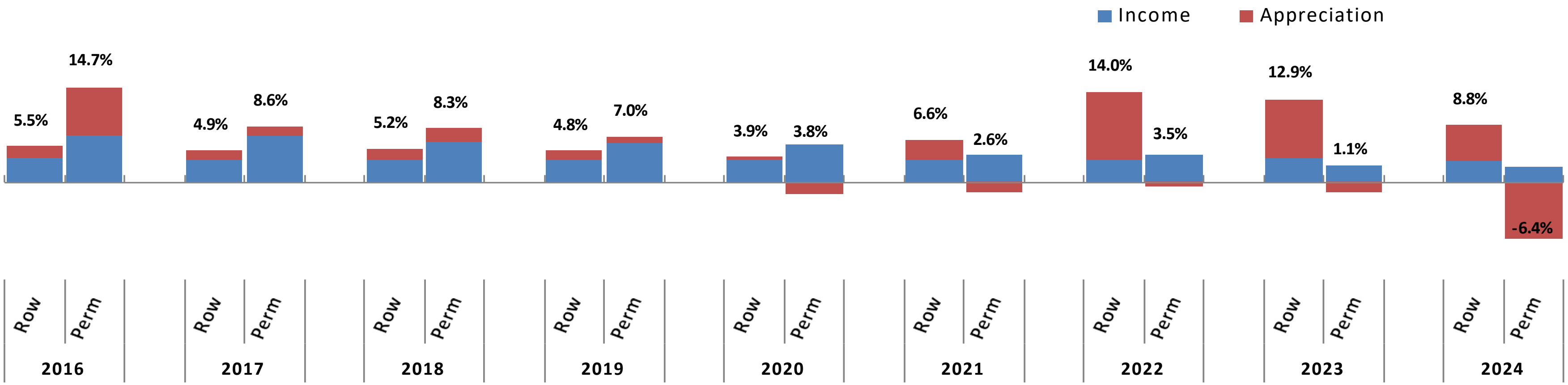
Source: NCREIF; ANREV

Farmland – Second Quarter 2024 Performance Update

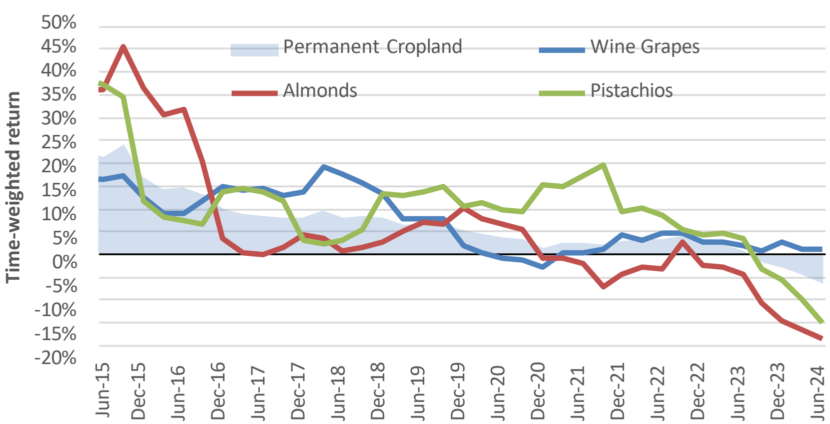
TOWNSEND® GROUP

NCREIF FARMLAND INDEX 2Q24

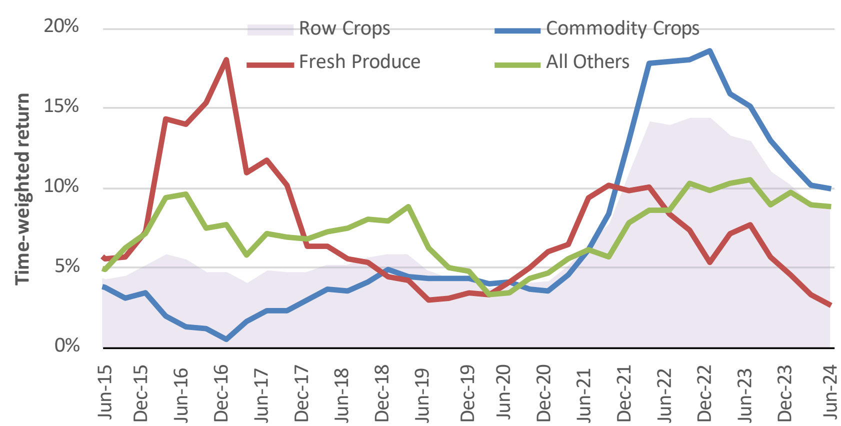
NCREIF Farm Type Performance Attribution June '16 - June '24
(Rolling 1-year total returns through 2Q 2024)



NCREIF Permanent Crop Performance by Crop Type
(Rolling 1-year total returns through 2Q 2024)



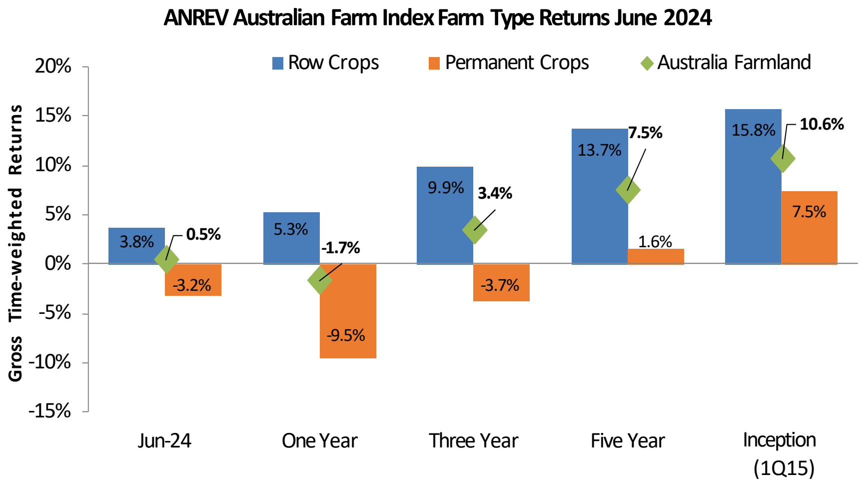
NCREIF Row Crop Performance by Crop Category
(Rolling 1-year total returns through 2Q 2024)

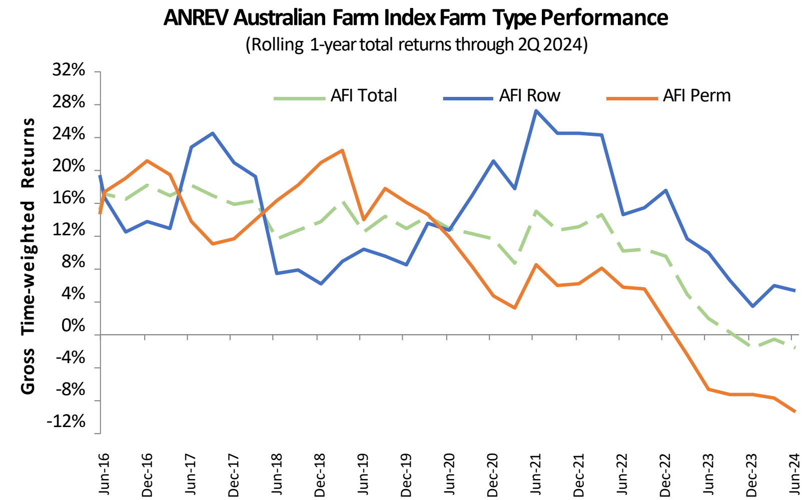


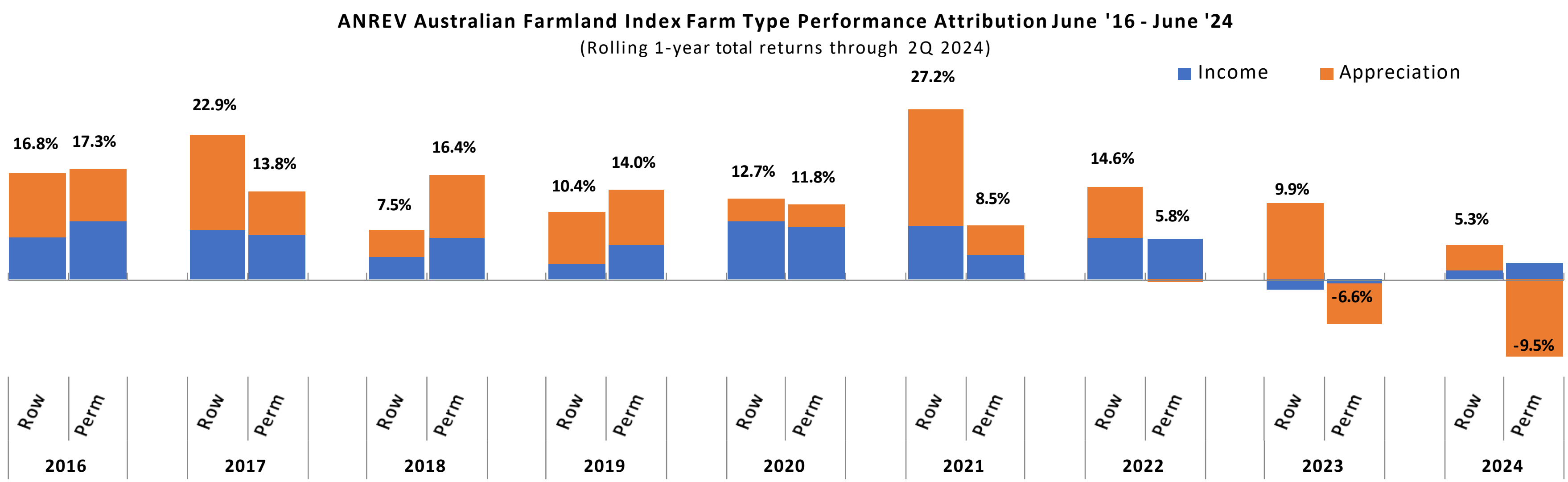
Source: NCREIF; Permanent Crop Types included in chart above (bottom left) account for approximately 70% of the NFI by market value as of March 31, 2024.

Farmland – Second Quarter 2024 Performance Update

ANREV AUSTRALIAN FARMLAND INDEX 2Q24







TOWNSEND® GROUP

TIMBERLAND MARKETS

- Timberland markets relatively stable in 2Q24, although China's weak property sector continues to weigh on global lumber and log markets, despite slight improvements in market activity. The growing focus on natural capital investments and ESG-related opportunities continues to attract investor interest, with timberland serving as a key asset for carbon sequestration and biodiversity enhancement.
- U.S. housing starts remained stable above the 1.3 million mark, driven by pent-up demographic demand and an aging U.S. housing stock. However, starts declined by 4% YoY, reflecting some economic uncertainty and higher borrowing costs.
- In the U.S. south, stumpage prices softened, driven by improved logging conditions increasing supply. Sawtimber prices declined by 8.3%, while pulpwood prices declined 14.2%, reflecting lower short-term demand and operational shifts at pulp mills. In the Northwest, Douglas-fir prices decreased slightly, but remain competitive due to steady export demand from Japan. However, whitewoods saw a 7.0% decline as demand from China and other Pacific Rim countries remained weak.
- New Zealand softwood log prices began stabilizing after earlier declines driven by China's economic slowdown. Log inventories in China remained high but have started to contract, suggesting potential price support for export markets later in the year.
- Brazil's timber markets exhibited mixed but stable conditions with pulp markets elevated, driven by steady demand for paperboard and packaging materials.

FIGURE 1: U.S. Housing Starts, SAAR (millions)

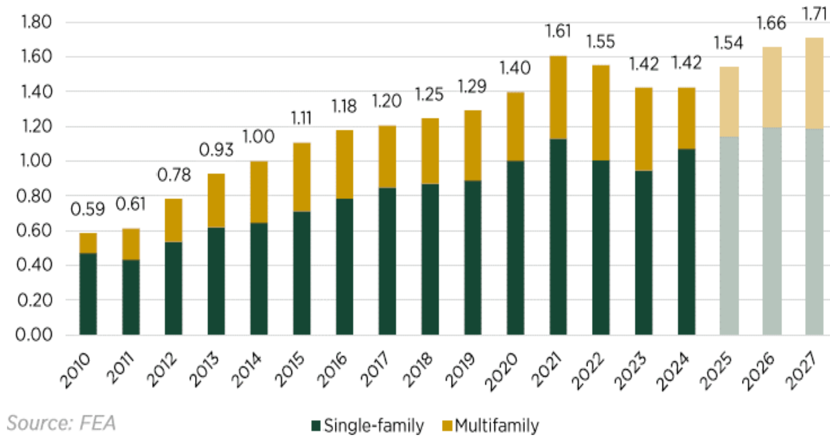
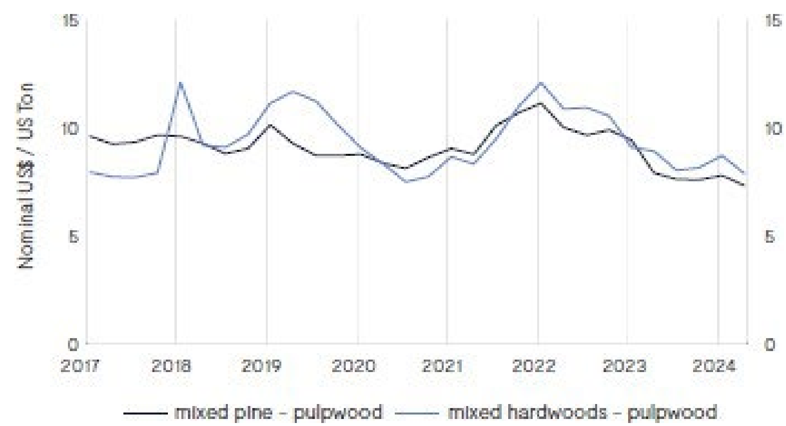


FIGURE 2: U.S. South Mixed Hardwood/Softwood Pulpwood Prices



Sources by Figure: (1) FEA; RMS (2) TimberMart South, as of June 2024

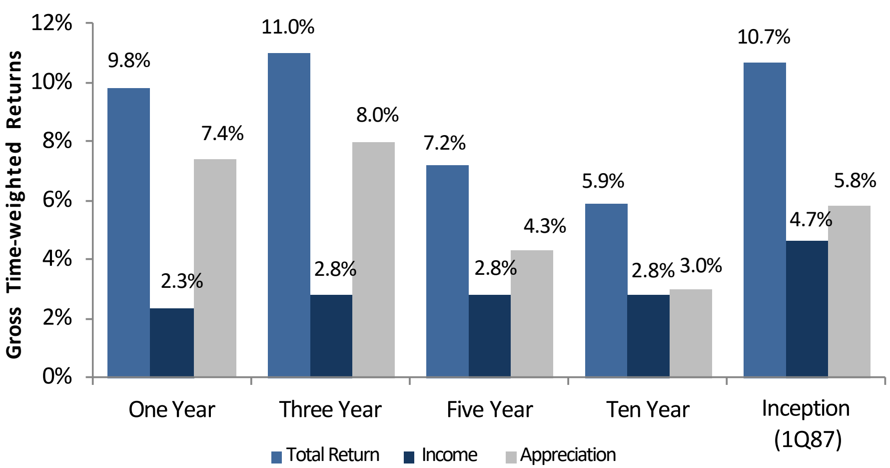
Timberland – Second Quarter 2024 Performance Update

TIMBERLAND INDEX COMMENTARY 2Q24

- The NTI returned 1.7% for the quarter, slightly down from last quarter's 2.1% and the same return from last year's 1Q return; performance was comprised of 0.5% income and 1.2% appreciation.
- The NTI's trailing twelve-month ("TTM") return of 9.8% consisted of appreciation of 7.4% and income of 2.3% - and was unchanged over last quarter's TTM of 9.8% but below last year's same TTM period return of 11.1% as the market continues to moderate off recent performance highs not reached in over ten years.
- Returns for the quarter were positive across all regions except the Northeast as hardwood markets remained pressured by persistent softness in export demand. The U.S. South and Northwest, the largest regions, had quarterly returns of 1.9% and 1.7%, respectively, down from last quarter's returns, respectively, of 2.1% and 2.7%. The South's return was comprised of 0.5% income and 1.5% appreciation, while the Northwest consisted of a 0.5% income return and 1.2% appreciation.
- Market values (per acre) were up a slight 1.1% over last quarter, at $2,186/ac; all regions except the Northeast increased in value on a per acre basis. Discount rates, which have declined over the last few quarters, have appeared to stabilize keeping values relatively flat during the quarter.

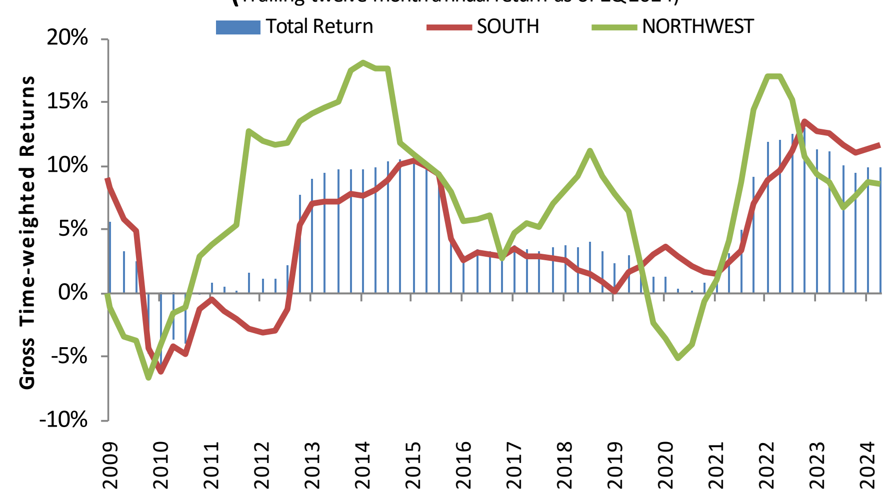
NCREIF TimberIndex Total Returns

(Gross time-weighted returns as of 2Q 2024)



Total Returns by Major Region

(Trailing twelve-month annual return as of 2Q 2024)

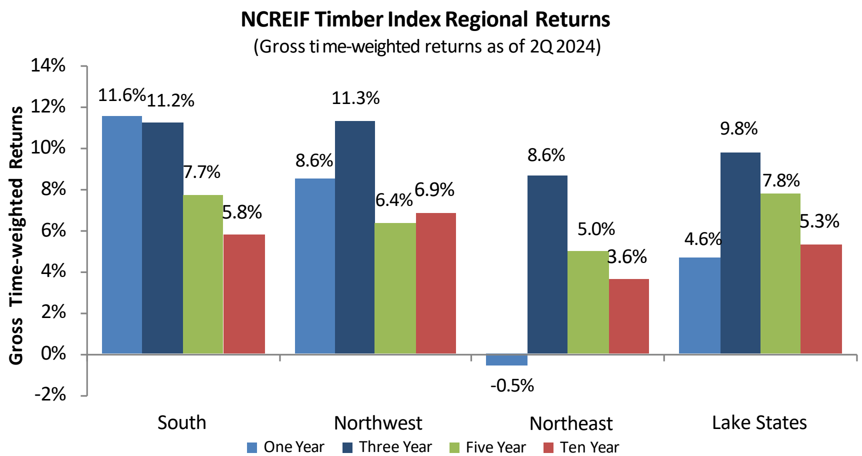


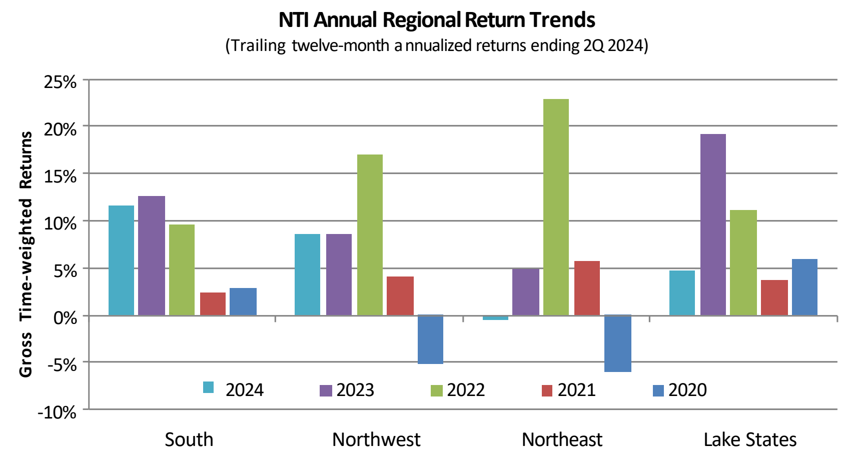
Sources: NCREIF

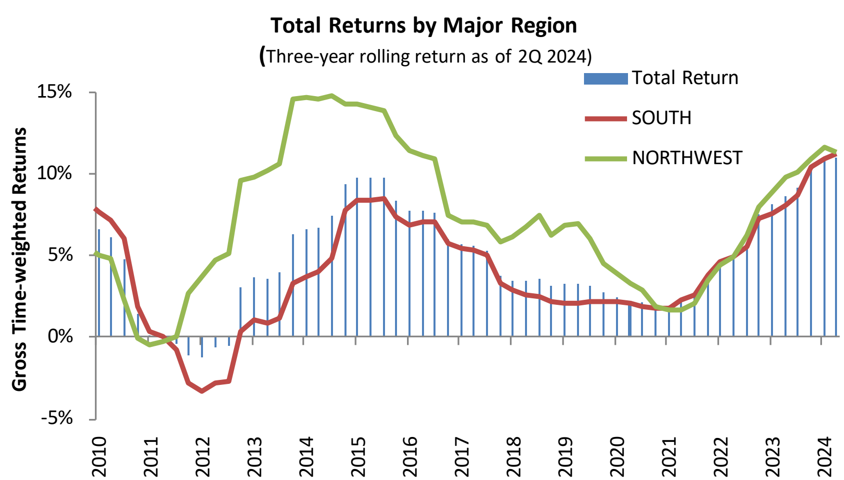
Timberland – Second Quarter 2024 Performance Update

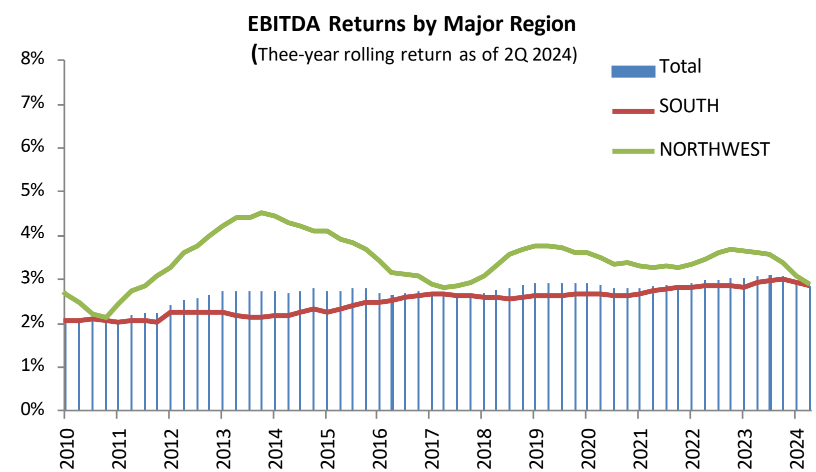
TOWNSEND® GROUP

NCREIF TIMBERLAND INDEX 2Q24









C. Real Estate Portfolio

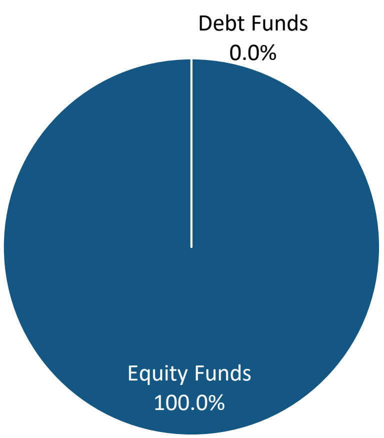
Real Estate Portfolio Funding Status and Composition

Portfolio Overview As of June 30, 2024 ($ in Millions)	
Number of Investments	65
Active Investments	50
Liquidated Investments	15
Number of Active GP Relationships	22
Total Commitments	3,829.7
Unfunded Commitments	747.9
Total Paid-In Capital	4,093.7
Total Distributions	3,595.9
Net Asset Value	1,985.9
Gross Asset Value	3,704.2
Total Exposure	2,733.7
DPI	0.9x
TVPI	1.4x
Since Inception IRR	7.6%

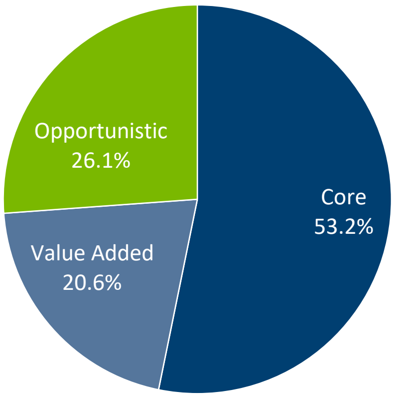
Portfolio Composition To Targets
As of June 30, 2024

	Target	Unfunded Commitments + Funded (NAV)	Funded (NAV)
Core	N/A	4.7	4.5
Non-Core	N/A	6.9	3.9
Total Real Estate	9.0	11.6	8.4
Max Leverage	50.0	N/A	46.4

Structure Diversification
(As of June 30, 2024)



Style Diversification by Net Asset Value
(As of June 30, 2024)



The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

Core Real Estate Portfolio Funding Status & Returns

As of 6/30/2024

Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)	LTV (%)
Core									
Core	**1993**	**970,000,000**	**1,517,501,638**	**44,531,571**	**1,063,533,928**	**1,056,620,776**	**53.2**	**40.3**	**31.1**

Returns (%)	Quarter				1 Year				3 Year				5 Year				10 Year				Inception		TWR Calculation Inception	Net IRR	DPI	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET				
Core																										
Core	**1.1**	**-4.0**	**-2.8**	**-1.7**	**4.7**	**-10.0**	**-5.7**	**-4.9**	**5.0**	**1.0**	**6.0**	**5.5**	**5.3**	**2.5**	**7.9**	**7.3**	**5.4**	**3.8**	**9.4**	**8.6**	**6.7**	**5.9**	**4Q93**	**7.3**	**0.7**	**1.4**
Total Real Estate Benchmark*			-1.5				6.3				7.4				6.5				8.1							
FTSE EPRA/NAREIT Global REITs Index**			-1.5				7.4				0.9				1.4				4.5							
NFI-ODCE Index	1.0	-1.5	-0.4	-0.7	3.9	-12.8	-9.3	-10.0	3.7	-1.8	1.9	1.0	3.8	-0.6	3.2	2.3	4.1	2.2	6.4	5.5	8.0	7.0	4Q93			

Notes

Traditional performance measurement time weighted returns are depicted for the core portfolio as core real estate portfolios use of time weighted returns is a commonly accepted practice.

The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

*Total Real Estate Benchmark combines the NFI-ODCE Index with the FTSE EPRA/NAREIT Global REITs Index. This blend begins starting on 01/01/2024. The FTSE EPRA/NAREIT Global REITs Index performance data is based on a quarter-lagged calculation of time-weighted returns.

**The FTSE EPRA/NAREIT Global REITs Index performance data is based on a quarter-lagged calculation of time-weighted returns.

Non-Core Real Estate Portfolio Funding Status

As of 6/30/2024

Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)	LTV (%)
Value Added	**2007**	**880,000,000**	**638,368,626**	**286,531,230**	**321,980,252**	**409,960,619**	**20.6**	**25.5**	**56.9**
Opportunistic	**2010**	**1,045,466,821**	**706,461,700**	**416,808,389**	**387,998,013**	**519,291,657**	**26.1**	**34.2**	**57.5**
Non-Core	**2007**	**1,925,466,821**	**1,344,830,326**	**703,339,619**	**709,978,265**	**929,252,276**	**46.8**	**59.7**	**57.2**

Returns (%)	Quarter				1 Year				3 Year				5 Year				Inception		TWR Calculation	Net IRR	DPI	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET	Inception			
Value Added	**0.0**	**-1.9**	**-1.8**	**-2.2**	**-0.1**	**-8.5**	**-8.6**	**-9.9**	**2.9**	**0.4**	**3.1**	**1.0**	**3.8**	**0.9**	**4.7**	**2.4**	**9.7**	**6.8**	**4Q07**	**7.9**	**0.5**	**9.7**
Opportunistic	**0.0**	**-0.1**	**-0.1**	**-0.4**	**-0.9**	**-1.6**	**-2.5**	**-3.1**	**1.7**	**5.4**	**7.1**	**4.7**	**2.6**	**7.0**	**9.6**	**6.6**	**23.8**	**16.5**	**3Q10**	**11.3**	**0.5**	**1.3**
Non-Core	**0.0**	**-0.9**	**-0.9**	**-1.2**	**-0.5**	**-4.8**	**-5.3**	**-6.2**	**2.2**	**3.1**	**5.3**	**3.0**	**3.1**	**4.3**	**7.4**	**4.7**	**12.4**	**8.6**	**4Q07**	**9.3**	**0.5**	**1.2**
Total Real Estate Benchmark*			-1.5				6.3				7.4				6.5							
FTSE EPRA/NAREIT Global REITs Index**			-1.5				7.4				0.9				1.4							
NFI-ODCE +100 BPS			-0.2	-0.4			-2.3	-2.7			-8.3	-9.1			2.9	2.0	5.8	4.8	4Q07			

Notes

While time-weighted returns are commonly used as a standard measure of performance in traditional asset classes and core real estate portfolios, time-weighted returns ignores both the timing and magnitude of cash flows into and out of the portfolio. Hence, the Internal Rate of Return (“IRR”) is a better and more common measure of Non Core real estate performance

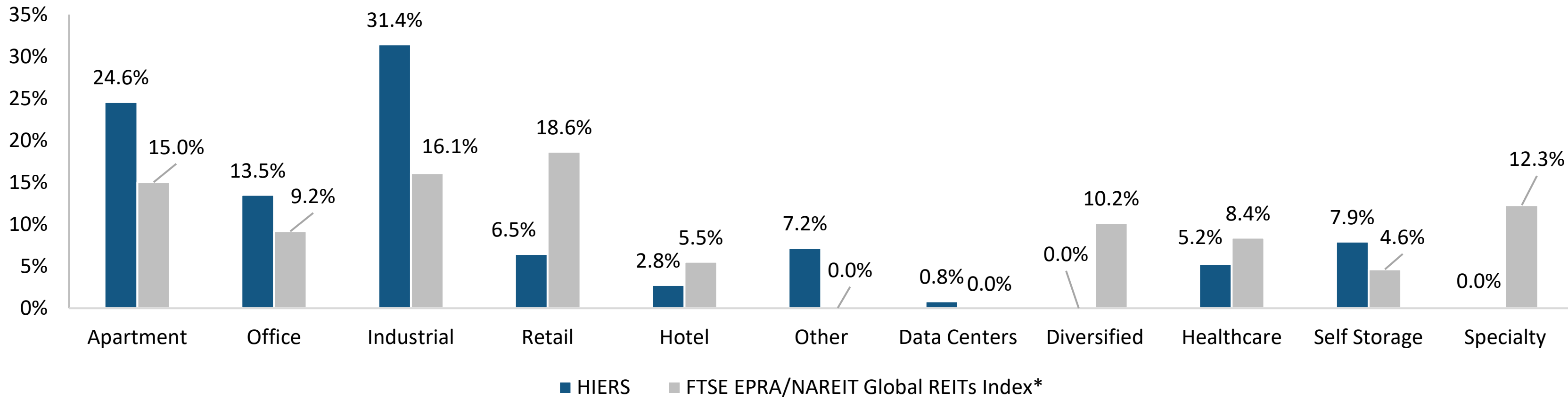
The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

NM = Not Meaningful. Returns are not meaningful as a result of minimal or negative reported Average Invested Capital (AIC).
*Total Real Estate Benchmark combines the NFI-ODCE Index with the FTSE EPRA/NAREIT Global REITs Index. This blend begins starting on 01/01/2024. The FTSE EPRA/NAREIT Global REITs Index performance data is based on a quarter-lagged calculation of time-weighted returns.
**The FTSE EPRA/NAREIT Global REITs Index performance data is based on a quarter-lagged calculation of time-weighted returns.

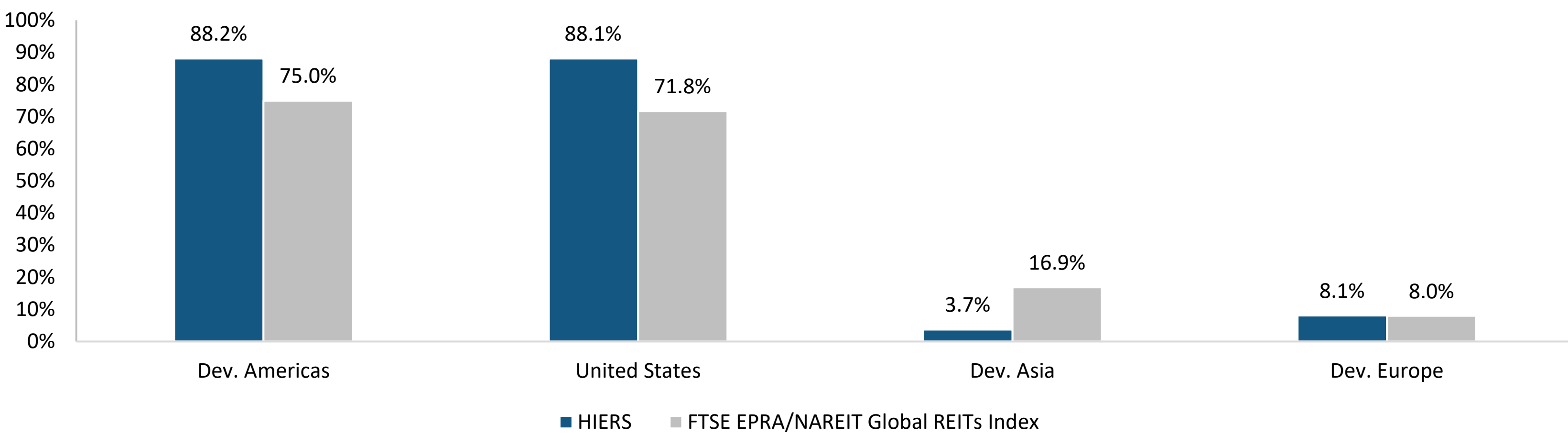
Real Estate Diversification vs. FTSE EPRA/NAREIT Global REITs Index

TOWNSEND® GROUP

Property Diversification v FTSE EPRA/NAREIT Global REITs Index (As of June 30, 2024)



Geographic Diversification v FTSE EPRA/NAREIT Global REITS Index (As of June 30, 2024)

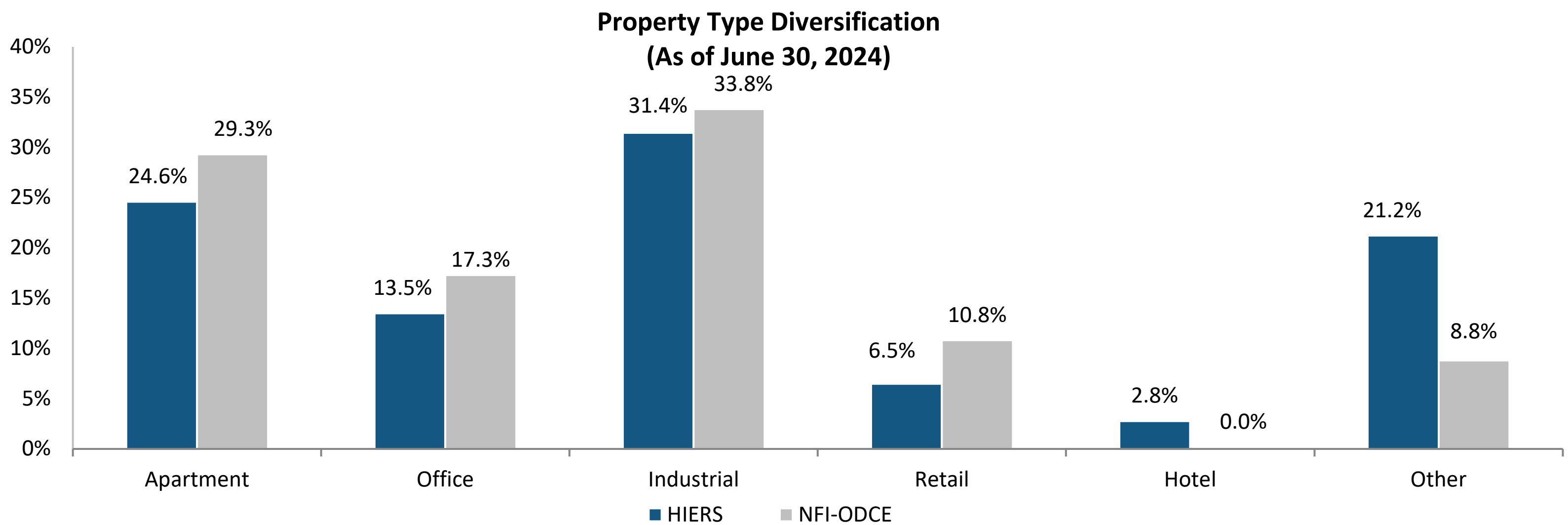


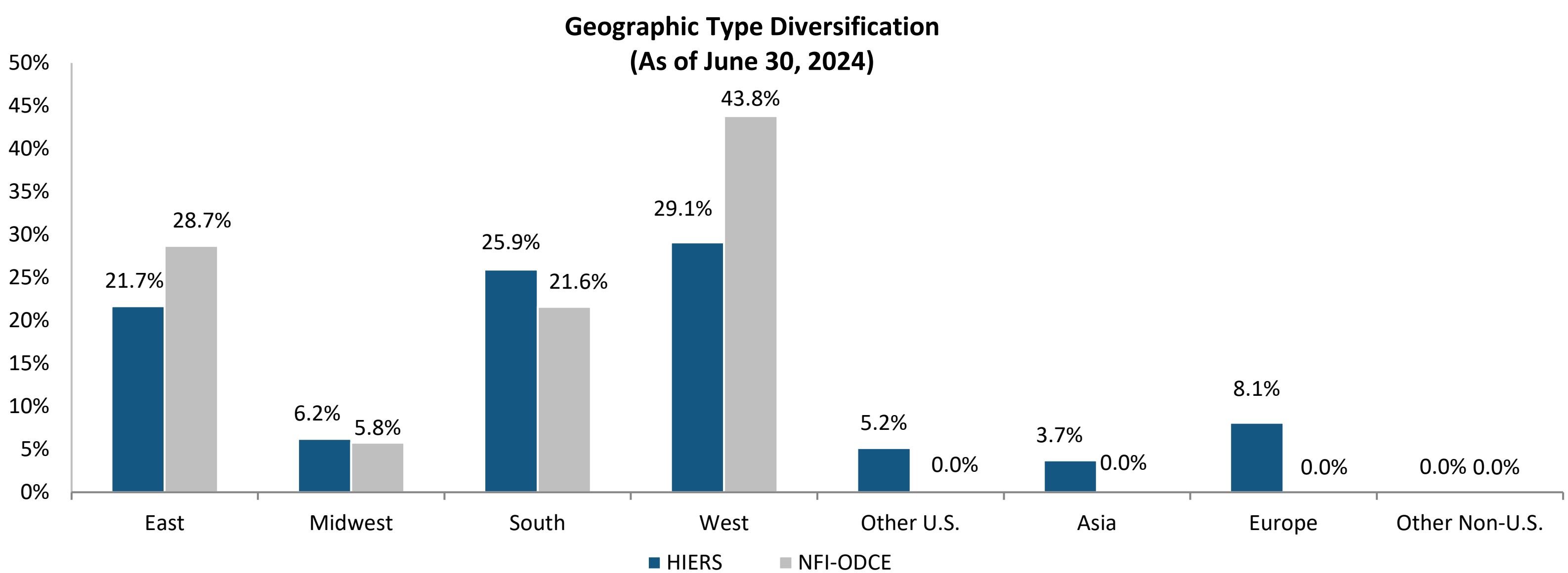
*For HIERS' portfolio, Healthcare includes Healthcare, Medical Office, Life Science, and Senior Housing. As industry standards for property type classifications are changing, some managers have classified Life Science assets in Other as opposed to Healthcare.

**The FTSE EPRA/NAREIT Global REITs Index classifies Apartments as a part of a broader "Residential" property type. Additionally, Health Care includes Health Care, Life Science, and Senior Housing. As industry standards for property type classifications are changing, some managers have classified Life Science assets in Other as opposed to Healthcare.

***Geographic exposures less than 1% have been excluded for formatting purposes.

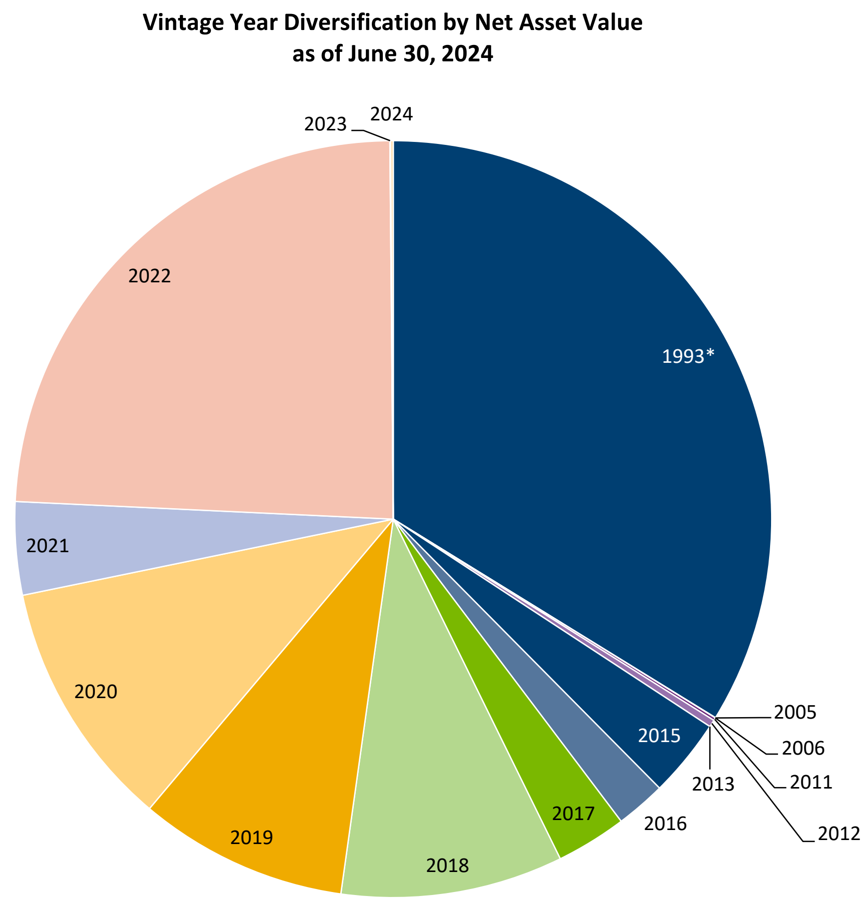
Real Estate Diversification vs. NFI-ODCE





The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.
Effective in early 2020, NCREIF changed its methodology in reporting diversification from net real estate assets to gross real estate assets for the NFI-ODCE.
Other Property Types are comprised of self storage (7.9%), student housing (1.7%), senior housing (4.4%), data centers (0.4%), health care (0.8%), entertainment (0.2%), for sale residential (1.0%), parking (0.0%), and land (0.5%), along with non-traditional property types (4.2%).

Real Estate Portfolio Diversification



The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

*The 1993 vintage year is composed solely of a Separate Account Portfolio which includes investments that span other vintage years. The 1993 labeling indicates the start of the partnership.
**The 2022 vintage year's relative size can be attributed to anchor commitments in two open-end vehicles, aimed at establishing Core commingled fund exposure within the portfolio. These commitments will have sustained exposure over time.

D. Private Infrastructure Portfolio (ex-Olomana)

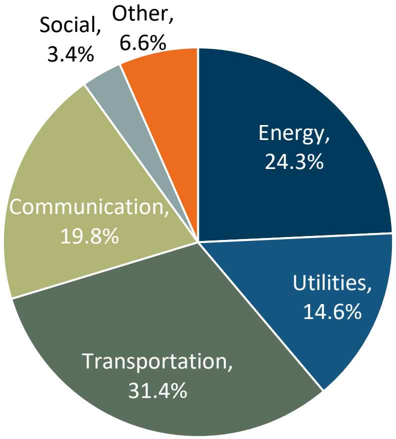
Private Infrastructure Portfolio (ex-Olomana) Funding Status and Composition

TOWNSEND GROUP

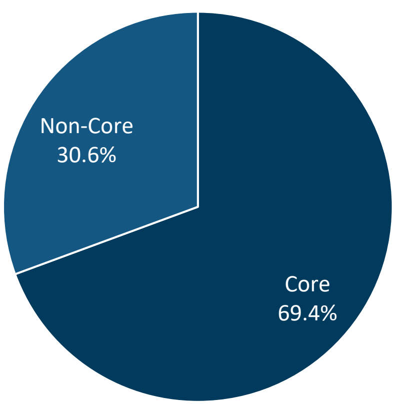
Portfolio Overview As of June 30, 2024 $ in Millions	
Number of Investments	10
Active Investments	10
Liquidated Investments	0
Number of Active GP Relationships	6
Total Commitments	761.7
Unfunded Commitments	204.4
Total Paid-In Capital	614.5
Total Distributions	151.8
Net Asset Value	603.8
Gross Asset Value	991.5
Total Exposure	808.3
DPI	0.2x
TVPI	1.2x
Since Inception IRR	10.8%

PORTFOLIO COMPOSITION TO TARGETS (%) As of June 30, 2024	Unfunded Commitments + Funded (NAV)	Funded (NAV)
Infrastructure*	3.4	2.6
Leverage	N/A	39.1

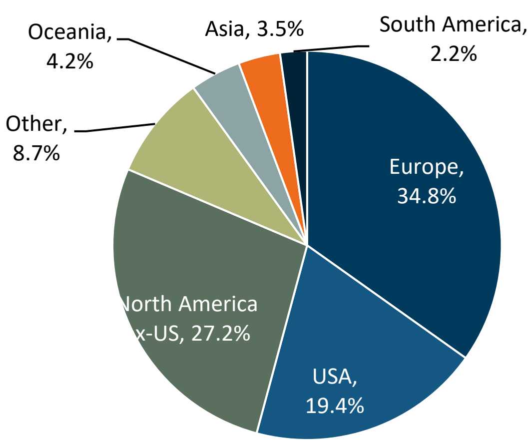
Industry Diversification by Value (As of June 30, 2024)



Structure Diversification (As of June 30, 2024)



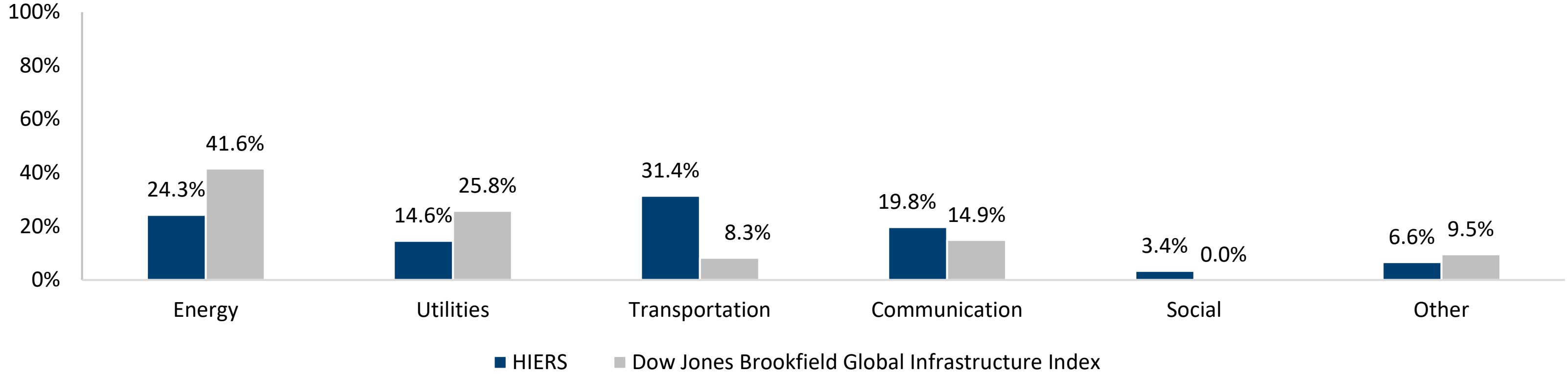
Geographic Diversification by Value (As of June 30, 2024)



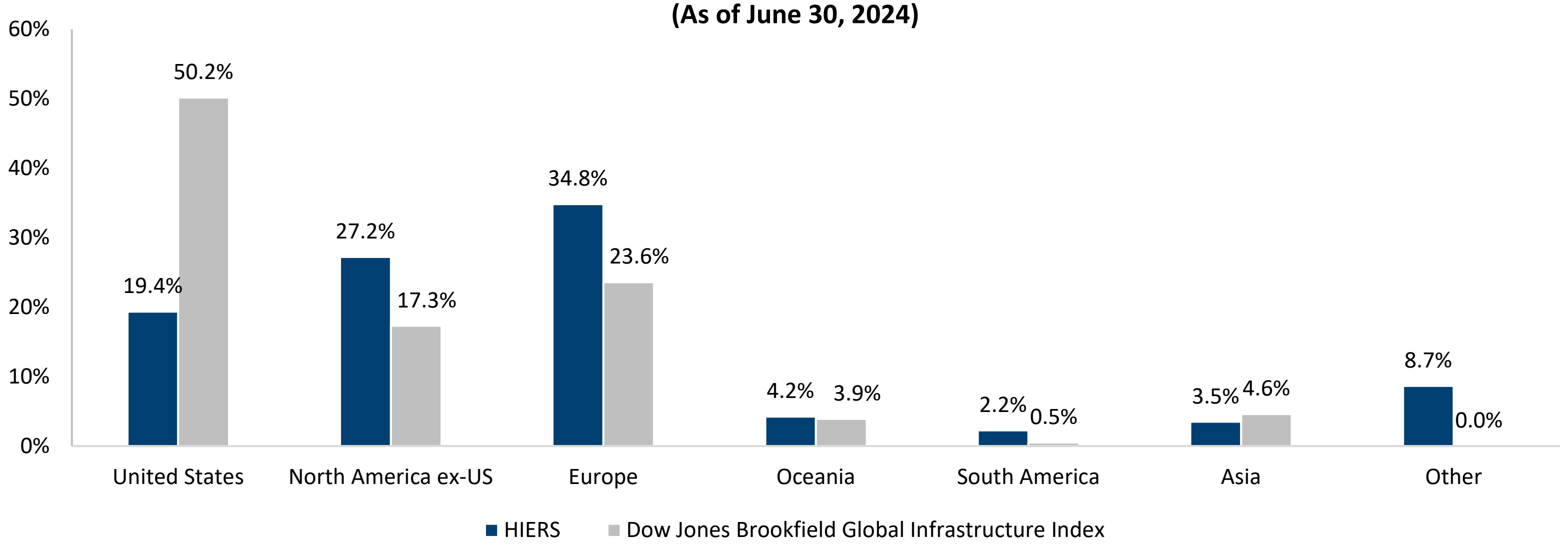
The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.
*Excludes Olomana, Morgan Stanley Listed Infrastructure Portfolio, and Real Assets Overlay.

Private Infrastructure (ex-Olomana) Diversification vs. Public Benchmark

Property Type Diversification v. Dow Jones Brookfield Global Infrastructure Index
(As of June 30, 2024)

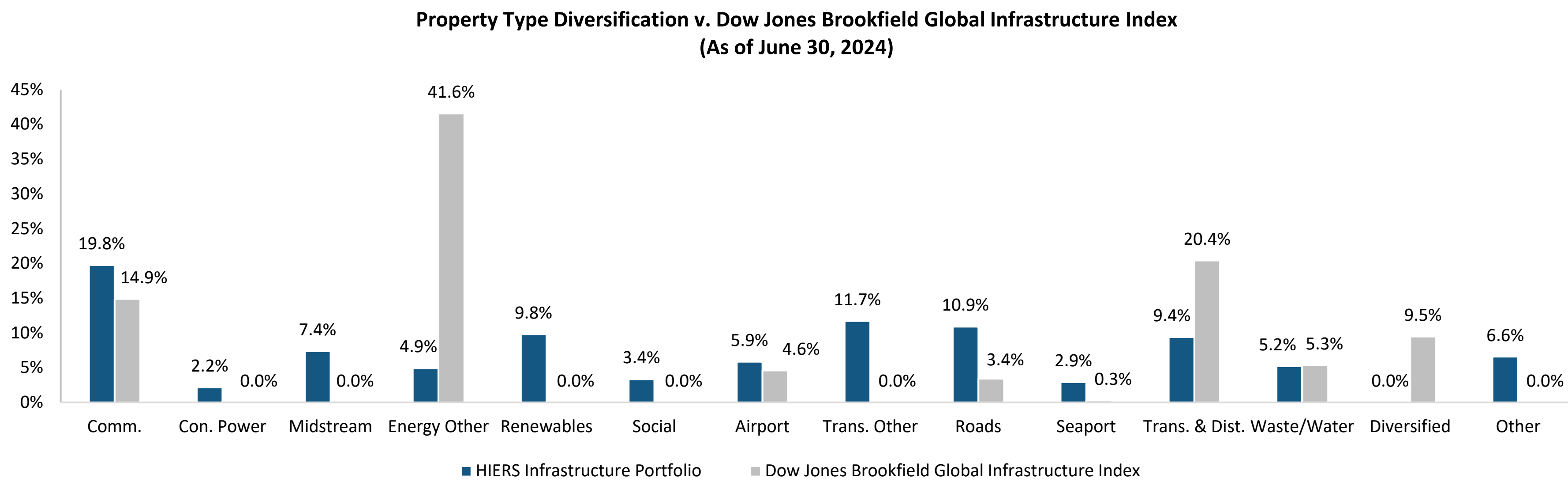


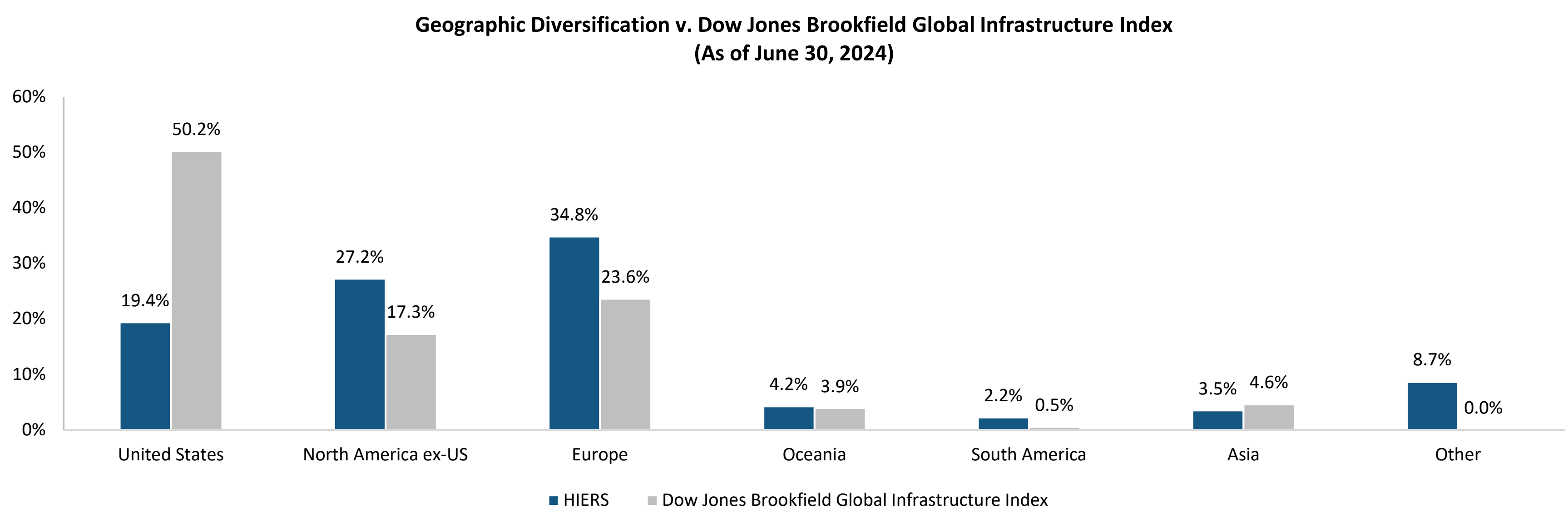
Geographic Diversification v. Dow Jones Brookfield Global Infrastructure Index
(As of June 30, 2024)



The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.
Excludes Olomana, Morgan Stanley Listed Infrastructure Portfolio, and Real Assets Overlay.

Private Infrastructure (ex-Olomana) vs. Public Benchmark (Detail)





The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.
Excludes Olomana, Morgan Stanley Listed Infrastructure Portfolio, and Real Assets Overlay.
Both various energy investments and ‘Oil & Gas Storage & Transportation’, as classified by the public benchmark, are included in "Energy Other".

Private Infrastructure (ex-Olomana) Performance

As of 6/30/2024

Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)	LTV (%)
Infrastructure									
Core Infrastructure	**2022**	**400,000,000**	**382,207,215**	**33,613,247**	**17,718,201**	**418,985,909**	**69.4**	**56.0**	**39.4**
Non-Core Infrastructure	**2015**	**361,650,000**	**232,302,808**	**170,831,916**	**134,094,443**	**184,846,495**	**30.6**	**44.0**	**38.4**
Total Private Infrastructure	**2015**	**761,650,000**	**614,510,023**	**204,445,163**	**151,812,644**	**603,832,404**	**100.0**	**100.0**	**39.1**

Returns (%)	Quarter				1 Year				3 Year				5 Year				Inception		TWR Calculation Inception	Net IRR	DPI	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET				
Infrastructure																						
Core Infrastructure	**0.5**	**1.9**	**2.4**	**2.2**	**3.1**	**3.9**	**7.2**	**6.5**									**8.4**	**7.5**	**2Q22**	**7.5**	**0.0**	**1.1**
Non-Core Infrastructure	**0.0**	**2.3**	**2.4**	**1.4**	**4.0**	**9.4**	**13.6**	**7.5**	**5.4**	**8.3**	**14.1**	**9.5**	**9.0**	**8.3**	**18.5**	**14.1**	**19.5**	**14.0**	**3Q15**	**13.7**	**0.6**	**1.4**
Total Private Infrastructure	**0.4**	**2.0**	**2.4**	**1.9**	**3.4**	**5.5**	**9.1**	**6.8**	**5.0**	**6.1**	**11.5**	**8.9**	**8.8**	**7.0**	**16.8**	**13.7**	**18.5**	**13.8**	**3Q15**	**10.8**	**0.0**	**1.2**
Total Infrastructure Benchmark*			-0.4				15.8				12.0				10.0		8.2		3Q15			
Dow Jones Brookfield Global Infrastructure Index**				-0.4				1.6				3.4				3.8		4.2	3Q15			
CPI + 400 BPS			1.3				7.2				9.2				8.3		7.2		3Q15			

The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

*Total Infrastructure Benchmark combines the CPI +400 bps Index with the Dow Jones Brookfield Global Infrastructure Index. This blend begins starting on 01/01/2024. The Dow Jones Brookfield Global Infrastructure Index performance data is based on a quarter-lagged calculation of time-weighted returns.

**The Dow Jones Brookfield Global Infrastructure Index performance data is based on a quarter-lagged calculation of time-weighted returns.

E. Olomana

Olomana Portfolio Funding Status and Composition

Portfolio Overview As of June 30, 2024 $ in Millions	
Number of Investments	6
Active Investments	6
Liquidated Investments	0
Number of Active GP Relationships [(a)]	1
Total Initially Funded to Olomana [(b)]	600.1
Total Private Commitments [(b)]	642.4
Unfunded Commitments	146.9
Total Paid-In Capital	809.3
Total Distributions	208.8
Net Asset Value	614.8
Gross Asset Value	614.8
Total Exposure	761.7
DPI	0.3x
TVPI	1.0x
Since Inception IRR	1.0%

PORTFOLIO COMPOSITION TO TARGETS (%) As of June 30, 2024			
	Target	Unfunded Commitments + Funded (NAV)	Funded (NAV)
Core Real Estate	N/A	0.0	0.0
Non-Core Real Estate	N/A	6.0	3.8
Core Timber	N/A	0.0	0.0
Non-Core Timber	N/A	0.0	0.0
Core Infrastructure	N/A	6.7	8.4
Non-Core Infrastructure	N/A	28.6	16.5
Core Agriculture	N/A	0.0	0.0
Non-Core Agriculture	N/A	6.0	6.0
Liquid Alternatives	N/A	52.7	65.3
Other Real Assets	N/A	0.0	0.0

(a) Represented by the GP responsible for the management of Olomana, in this case, Morgan Stanley
(b) Total Private Commitments represent private market commitments made by Olomana. A total of $600.1 million was funded to Olomana between ERS and MSIM. ERS funded Olomana with $598.6 million ($433.6 million in TIPS and $165.0 million in cash), and MSIM funded $1.5 million in cash. The MSIM share of the investment is included in the committed value, as the accrued incentive for the manager.

Olomana Performance

As of 6/30/2024

Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)	LTV (%)
Olomana	**2022**	**642,409,765**	**809,326,125**	**146,928,116**	**208,799,211**	**614,783,614**	**100.0**	**100.0**	**0.0**

Returns (%)	Quarter				1 Year				Inception		TWR Calculation Inception	Net IRR	DPI	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET				
Olomana	**0.0**	**1.2**	**1.2**	**1.1**	**0.0**	**5.0**	**5.0**	**4.7**	**1.3**	**1.0**	**2Q22**	**1.0**	**0.3**	**1.0**
Olomana: Aggregate Benchmark			**0.9**				**2.3**		**-2.4**		**2Q22**			

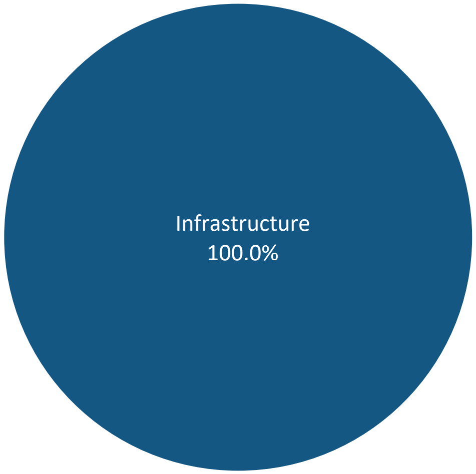
The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.
*ERS funded a total, approximate amount of $589.6 million to Olomana through liquid alternatives. As private investment opportunities arise, capital will be re-allocated from liquid alternatives to those private market investments. The total commitment figure for Olomana represents the full amount funded by ERS to Olomana. As capital is moved to private market investments, the commitment amount for liquid alternatives will shift to private market investments. Total commitment and liquid alternatives commitment figures are approximations until full data is available.

F. Listed Infrastructure Portfolio

Listed Infrastructure Portfolio

Portfolio Overview As of June 30, 2024 $ in Millions	
Number of Investments	1
Active Investments	1
Liquidated Investments	0
Number of Active GP Relationships	1
Total Commitments	450.0
Unfunded Commitments	0
Total Paid-In Capital	450.0
Total Distributions	0
Net Asset Value	466.5
Leverage	0.0%
DPI	0.0x
TVPI	1.0x
Since Inception IRR	3.7%

Sector Diversification (As of June 30, 2024)



Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)	LTV (%)
Listed Infrastructure									
Listed Infrastructure Portfolio	2024	450,000,000	450,000,000	0	0	466,456,311	100.0	100.0	0.0

Returns (%)	Quarter				Inception		TWR Calculation Inception	Net IRR	DPI	Equity Multiple
	INC	APP	TGRS	TNET	TGRS	TNET				
Listed Infrastructure										
Listed Infrastructure Portfolio	0.0	-0.2	-0.2	-0.2	-0.2	-0.2	2Q24	3.7	0.0	**1.0**
Dow Jones Brookfield Global Infrastructure Index*				12.2		12.2	1Q24			

The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.
*The performance data for the index is based on a quarter-lagged calculation of time-weighted returns.

G. Timber Portfolio

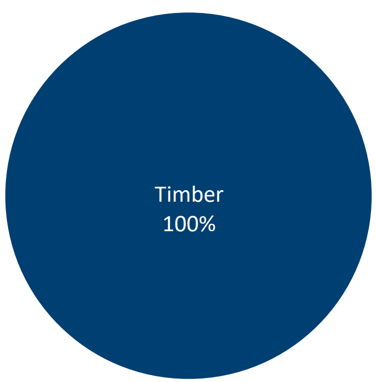
Timber Separate Account Funding Status and Composition

As of 6/30/2024

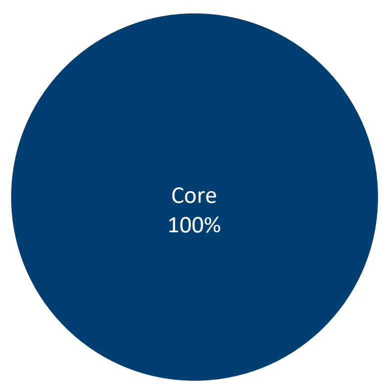
Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)	LTV (%)
Timber									
Timberland Separate Account	1999	130,000,000	129,259,500	0	169,175,680	230,069,902	100.0	100.0	0.0

Returns (%)	Quarter				1 Year				3 Year				5 Year				10 Year				Inception***		TWR Calculation Inception	Net IRR	DPI	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET				
Timber																										
Timberland Separate Account	0.4	0.0	0.4	0.1	1.9	14.3	16.4	15.5	2.8	11.5	14.6	13.6	2.1	6.0	8.3	7.4	1.8	5.5	7.4	6.5	9.8	8.9	4Q99	8.4	1.3	3.1
Net Real TWR				-0.4				12.1				8.2				3.0				3.6		6.1	4Q99			
Total Timber Benchmark*			4.1				21.2				14.7				9.3				7.0		6.9		4Q99			
S&P Global Timber & Forestry Index**				4.1				21.2				2.1				8.2				7.5						
NCREIF Timberland Property Index “NTI”	0.5	1.2	1.7		2.3	7.4	9.8		2.8	8.0	11.0		2.8	4.3	7.2		2.8	3.0	5.9		6.5		4Q99			

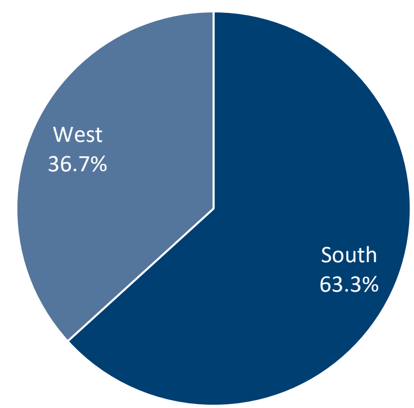
Property Type Diversification (As of June 30, 2024)



Style Diversification (As of June 30, 2024)



Geographic Type Diversification (As of June 30, 2024)

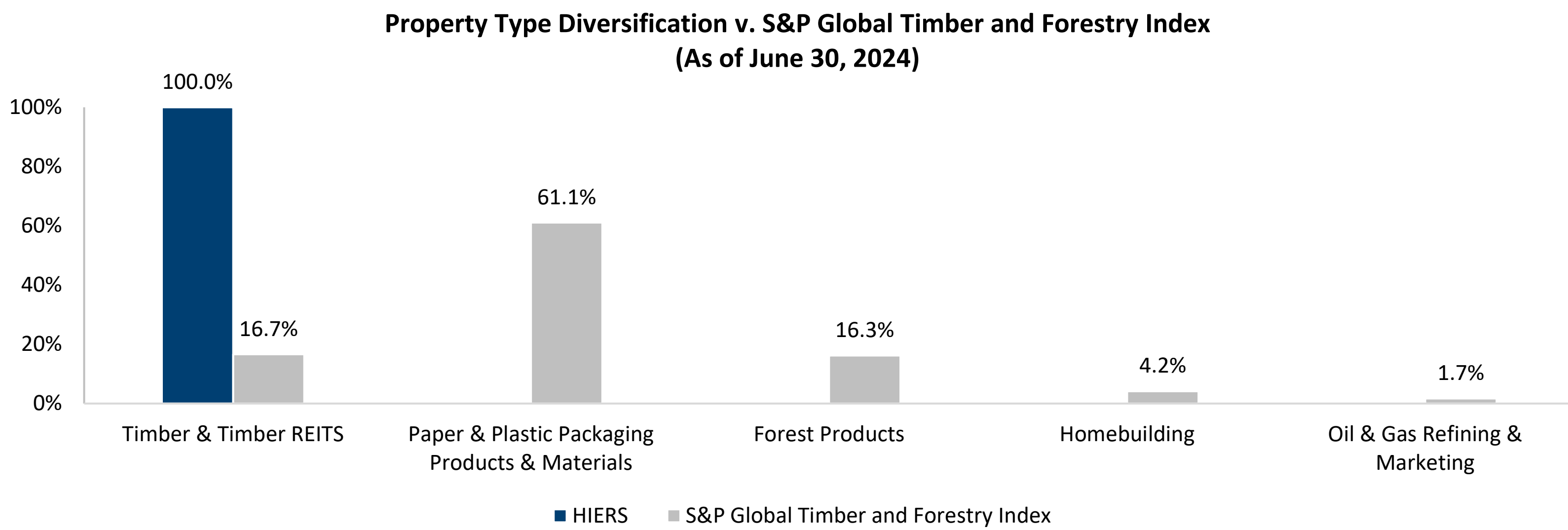


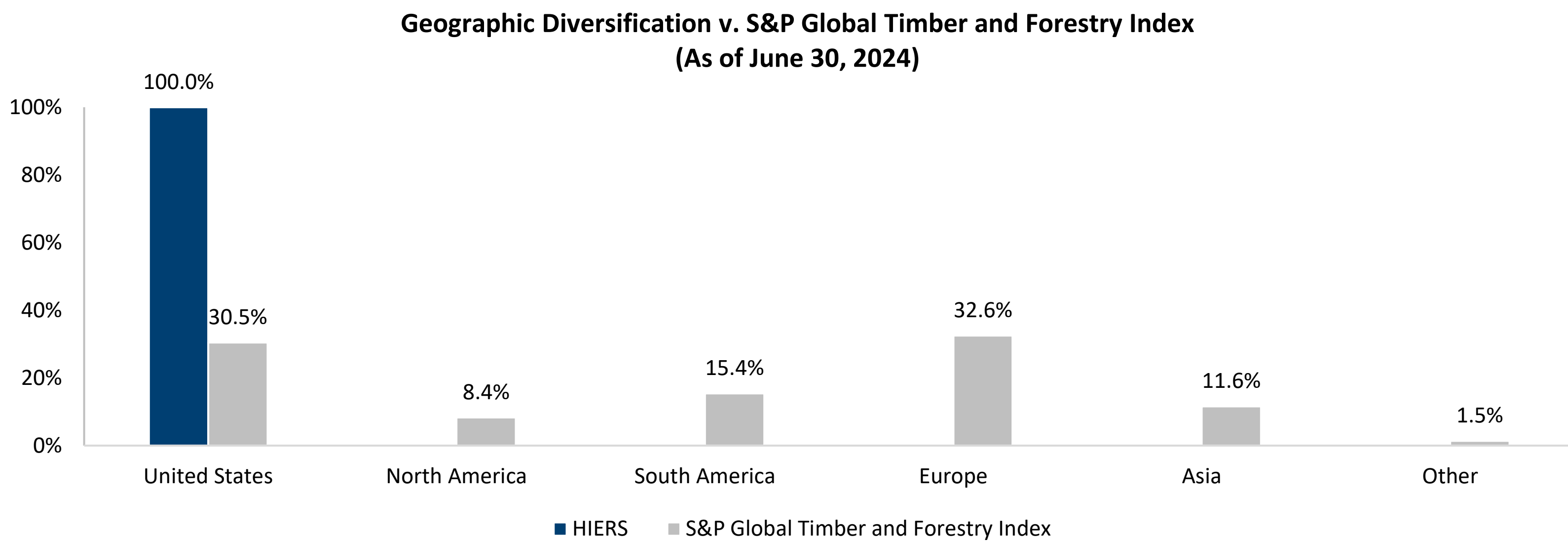
The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

*Total Timberland Benchmark combines the NCREIF Timberland Property Index with the S&P Global Timber & Forestry Index. This blend begins starting on 01/01/2024. The performance data for the S&P Global Timber & Forestry Index is based on a quarter-lagged calculation of time-weighted returns.
**The performance data for the S&P Global Timber & Forestry Index is based on a quarter-lagged calculation of time-weighted returns.
***The S&P Global Timber & Forestry Index Since Inception calculation is excluded as the index launched in 2007, whereas the Timber portfolio dates back to 1999.

Timber Diversification vs. S&P Global Timber & Forestry Index

As of 6/30/2024





The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

H. Agriculture Portfolio

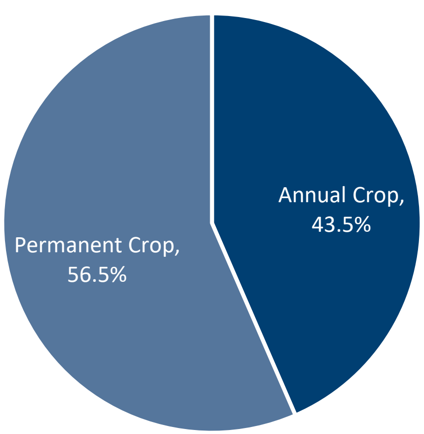
Agriculture Portfolio Funding Status and Composition

Portfolio Overview As of June 30, 2024 $ in Millions	
Number of Investments	3
Active Investments	3
Liquidated Investments	0
Number of Active GP Relationships	3
Total Commitments	400.0
Unfunded Commitments	25.1
Total Paid-In Capital	381.0
Total Distributions	5.0
Net Asset Value	388.3
Gross Asset Value	388.3
Total Exposure	413.3
DPI	0.0x
TVPI	1.0x
Since Inception IRR	2.9%

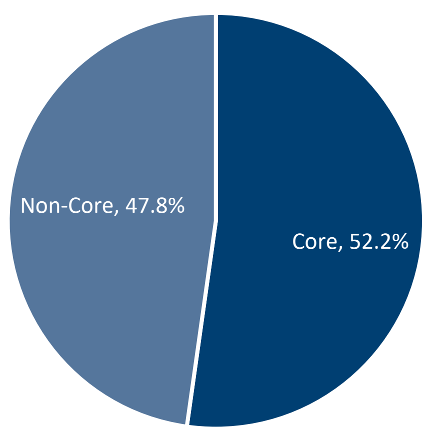
PORTFOLIO COMPOSITION TO TARGETS (%)
As of June 30, 2024

	Target	Unfunded Commitments + Funded (NAV)	Funded (NAV)
Agriculture	N/A	1.8	1.6
Leverage	N/A	N/A	0.0

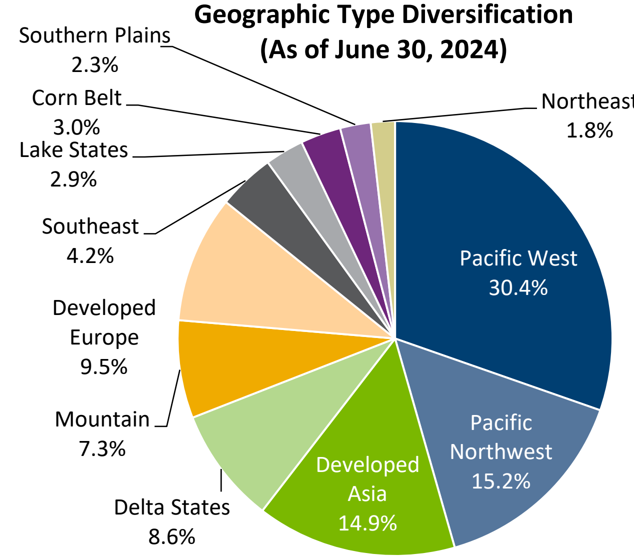
Crop Type Diversification (As of June 30, 2024)



Style Diversification (As of June 30, 2024)



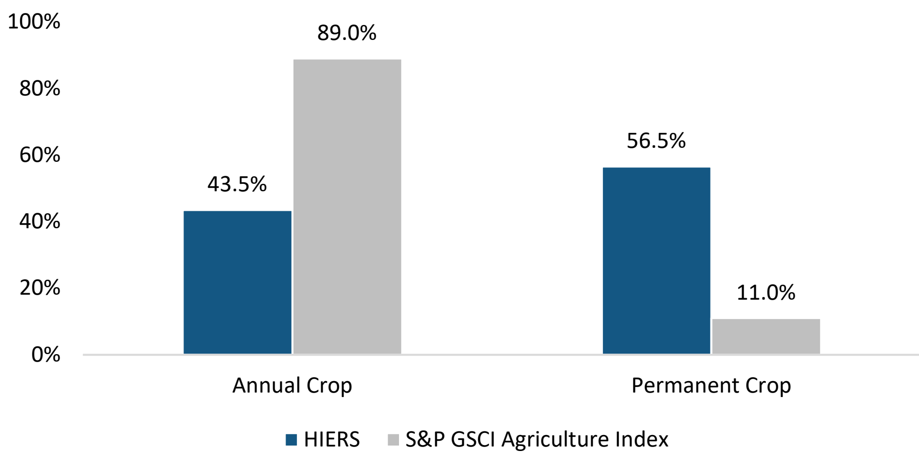
Geographic Type Diversification (As of June 30, 2024)



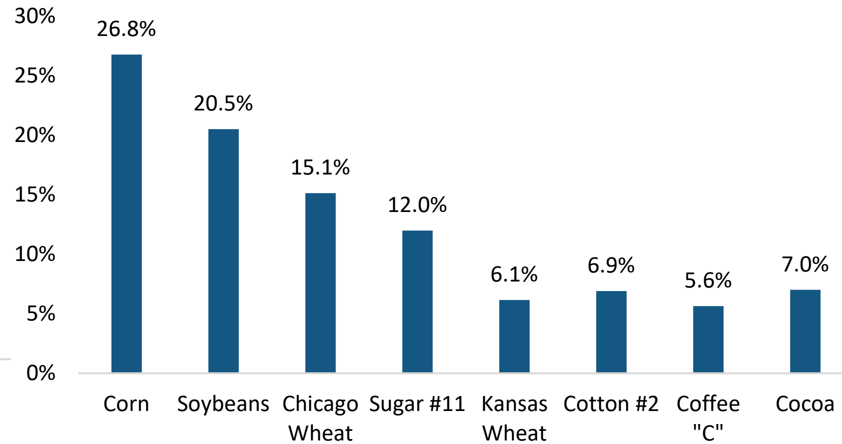
The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

Agriculture Crop Diversification vs. S&P GSCI Agriculture Index

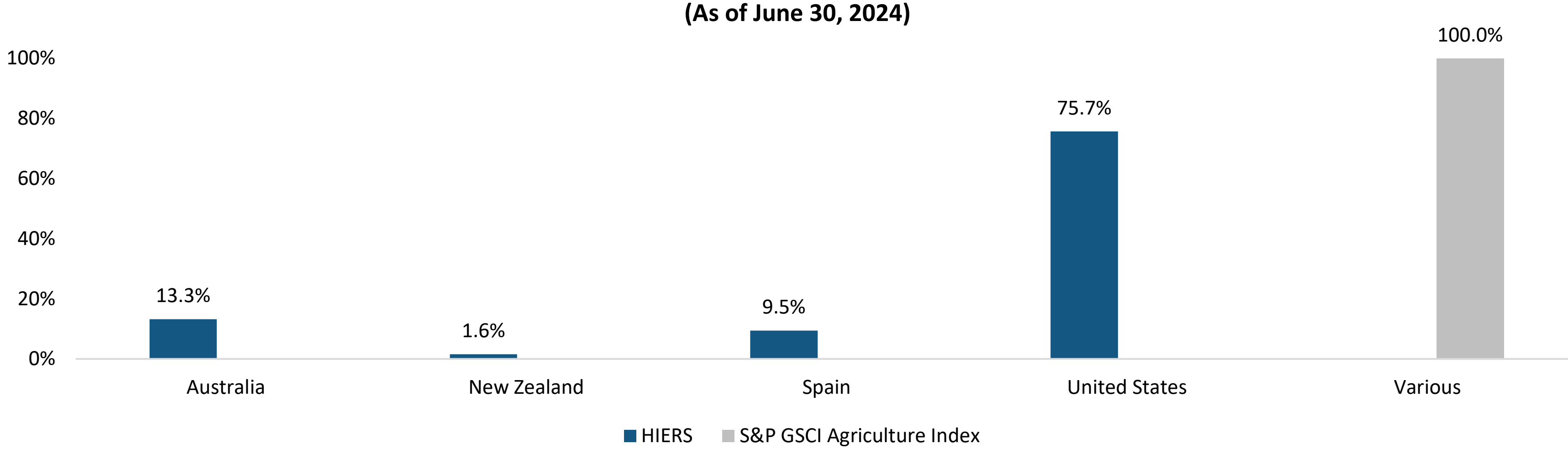
Crop Type Diversification v. S&P GSCI Agriculture Index (As of June 30, 2024)



S&P GSCI Agriculture Index Crop Diversification (Detail) (As of June 30, 2024)



Geographic Diversification v. S&P GSCI Agriculture Index) (As of June 30, 2024)



The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.
Detailed geographic diversification for the S&P GSCI Agriculture Index is not currently available.

Agriculture Performance

As of 6/30/2024

Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)	LTV (%)
Total Agriculture	**2021**	**400,000,000**	**380,999,647**	**25,059,729**	**5,016,395**	**388,286,789**	**100.0**	**100.0**	**0.0**

Returns (%)	Quarter				1 Year				Inception		TWR Calculation Inception	Net IRR	DPI	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET				
Total Agriculture	**0.2**	**-0.2**	**0.0**	**-0.3**	**1.6**	**2.0**	**3.6**	**2.2**	**6.6**	**5.3**	**4Q21**	**2.9**	**0.0**	**1.0**
Total Agriculture Benchmark*			-4.4				-4.8		8.3		4Q21			
S&P GSCI Agriculture Index**			-4.4				-12.8		8.3		4Q21			
NCREIF Farmland Property Index “NFI”	0.5	-0.7	-0.2		2.9	-0.3	2.5		6.9		4Q21			

The information provided is from the ERS' custodial bank and/or its consultants and has not been provided or approved by any of the Funds' General Partners or members.

*Total Agriculture Benchmark combines the NCREIF Farmland Property Index with the S&P GSCI Agriculture Index. This blend begins starting on 01/01/2024. The S&P GSCI Agriculture Index performance data is based on a quarter-lagged calculation of time-weighted returns.
**The S&P GSCI Agriculture Index performance data is based on a quarter-lagged calculation of time-weighted returns.

I. Glossary

Glossary of Terms

- Catch-up – The provision that dictates how cash flows from the fund will be allocated between the investors and the manager in order for the manager to receive their performance fee. This allocation of cash flows occurs once the investors have collected their capital and preferred return
- Core – The most conservative institutional real estate investing style
- Core-Plus – A style whereby investments have a slightly higher level of risk and expected return than Core, primarily through use of leverage
- Custom Public Index – Currently the FTSE EPRA/NAREIT Global Developed REIT Index. Prior to July 2008, the benchmark was the Dow Jones U.S. Select REIT Index
- Development – The construction of buildings from breaking the ground through building completion. This may also include entitlement of the land and the pursuit of permits prior to construction
- DPI – Distributions to Paid In; the ratio of distributions from investments to total invested capital
- First Closing – The point at which a manager receives and executes the subscription documents and can begin drawing capital from investors
- Final Closing – The final date at which new investors can subscribe to a fund
- Internal Rate of Return (IRR) - A method of measuring the performance of a portfolio from inception through a particular point in time. This method weights returns according to the dollars invested at each point in time. Hence, this is known as dollar-weighted return. This is a better measure when the manager controls when dollars must be invested and is the most commonly used method of real estate performance evaluation; Gross IRR is gross of fee and Net IRR is net of fee
- NFI-ODCE – NCREIF Fund Index Open-end Diversified Core Equity Index is an index of investment returns reporting on both a historical and current basis the results of 24 open-end commingled funds pursuing a core investment strategy; underlying funds are leveraged with gross and net returns available
- NPI – NCREIF Property Index is a quarterly time series composite total rate of return measure of investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only; it is reported unlevered and gross of fee
- FTSE-NAREIT Equity REIT – An unmanaged capitalization-weighted index of all equity real estate investment trusts
- FTSE EPRA/NAREIT Global REIT – An unmanaged market-weighted total return index, which consists of many companies from Global markets whose floats are larger than $100 million and derive more than half of their revenue from property-related activities

Glossary of Terms (cont'd)

- Opportunistic – A style that is the riskiest form of real estate investing. The name derives from when such funds were formed after the early 1990s real estate market crash to take advantage of opportunities in unwanted properties. Such investments include ground-up development, highly-leveraged purchases, or transactions involving highly complicated legal or environmental situations
- Private Market Equivalent (PME) Analysis – The private market equivalent ("PME") analysis seeks to answer the question of whether a portfolio's non-Core investments are providing alpha over the lower-risk Core alternatives. Non-Core performance is best measured through dollar weighted performance metrics (i.e. IRR) while Core indices have traditionally been provided in time-weighted return ("TWR") methodologies. The PME analysis converts the Core indices from TWRs to IRRs by taking the cash flows from the non-Core portfolio and making hypothetical investments into the Core indices. This exercise allows for a like-kind comparison on performance
- Policy Benchmark – Blended benchmark reflecting private and public nature of portfolio where private real estate benchmark is weighted 90% and public real estate benchmark is weighted 10%; private real estate benchmark is NFI-ODCE + 50bps, public real estate benchmark is Wilshire REIT 1Q1997 through 2Q08 and EPRA/NAREIT Global Developed Index from 3Q08 to present
- Pre-Specified Deals – Investments that are purchased for a fund before its final close. The assets are typically warehoused on a line of credit
- Promote (Carried Interest) – The performance fee a manager receives once the investors have received their return of capital and the preferred return (return promised by the manager)
- RVPI – Residual Value to Paid In; the ratio of the residual value of an investment to total invested capital
- Time-Weighted Return - A method of measuring the performance of a portfolio over a particular period of time. Effectively, it is the return of one dollar invested in the portfolio at the beginning of the measurement period. This is a better return measure when the manager does not control when the dollars must be invested
- TVPI – Total value to paid-in ratio; the ratio of total value from an investment, including distributions, to total invested capital
- Value-Added – A style that represents moderate-risk real estate. A manager typically increases the future value of the investment by undertaking activities such as leasing, improving an existing building, or taking some risk through operating intensive assets, such as hotels or self-storage
- Vintage Year – The year in which a fund has its final closing. Typically coincides with the year a fund begins making investments

Disclosures

About Townsend Group

Founded in 1983, The Townsend Group (“Townsend”) provides a core set of investment skills exclusively focused on global real estate and real asset classes. The firm offers these capabilities to institutional investors as an investment advisor and consultant.

Townsend has been advising and managing real estate portfolios for over three decades and across multiple market cycles. As of September 30, 2023, Townsend had assets under management of approximately $22.1 billion. As of September 30, 2023, Townsend provided advisory services to clients who had real estate/real asset allocations exceeding $122.9 billion. We believe, through our global investment platform, fiduciary culture, asset class expertise and client capital scale, we are able to deliver clients unique information, while providing a sourcing and execution advantage.

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MEKETA
INVESTMENT GROUP

Employees' Retirement System of the State of Hawaii

November 18, 2024

Annual Benchmark Review

Introduction

→ Four major events occurred in the last ~17 months:

- 2022/2023 Asset-Liability Study & new long-term allocation targets *(June 2023)*
- Approval of new asset class and Total Fund benchmarks *(August 2023)*
- Implementation of new long-term allocation targets *(January 2024)*
- Reconfiguration of asset class composites *(Q1 2024)*
- Audit of historical benchmark composites *(Q2/Q3 2024)*

→ As a result of these events, the reporting structure of performance results has meaningful changed.

→ This presentation seeks to provide a quick review of the new policy structure, utilized benchmarks, and confirmation of benchmark suitability going forward.

Asset-Liability Results and Corresponding Benchmarks

→ In June 2023, the ERS Board adopted a new long-term policy portfolio.

→ In August 2023, the ERS Board approved the new asset class and Total Fund benchmarks.

→ On January 1, 2024, the new policy structure and associated benchmarks went into effect.

		Long-term Asset Class Policy Weight	Corresponding Benchmark
Global Equity	Public Equity	20%	MSCI ACWI IMI
	Private Equity	19%	MSCI ACWI IMI (qtr lag)
Global Credit	Liquid Credit	4%	Bloomberg Global High Yield Index (hedged) S&P LSTA Leveraged Loan 100 Index
	Private Credit	8%	Bloomberg Global High Yield Index (qtr lag) (hedged) S&P LSTA Leveraged Loan 100 Index (qtr lag)
Real Assets	Real Estate	9%	FTSE EPRA NAREIT Global REITS Index GD (qtr lag)
	Infrastructure	7%	Dow Jones Brookfield Global Infrastructure Index (qtr lag)
	Timberland and Agriculture	3%	S&P Global Timber & Forestry Index (qtr lag) S&P GSCI Agriculture Index (qtr lag)
Liquid Defensive	Systematic Trend Following	8%	Mount Lucas Global Index EV 15 Vol
	Long US Treasuries	4%	Bloomberg US Treasury: Long Index
	Intermediate Duration Government Bonds	14%	Bloomberg US Treasury: Intermediate Index
	Diversifying	---	---
Illiquid Diversifying	Reinsurance/similar	4%	Swiss Re Global Catastrophe Bonds Index (hedged)

Overview of 1/1/24 Benchmark Changes

→ Policy benchmark now reflects the following:

- Better alignment between benchmarks and betas/market risks of corresponding asset classes
- Improved investability (i.e., opportunity cost and/or alternative implementation)
- Elimination of artificial illiquidity premiums (e.g., + 2%)
- Elimination of "riskless" indices (e.g., 90-day T-Bill)

→ Reasoning :

- Better reflection of Board-directed market risk (as an outcome of A/L study)
- Improved ability to measure/attribute performance between policy and implementation
- More streamlined structure reduces complexity
- Stronger fulfillment of "ideal" benchmark characteristics

Benchmark Characteristics

→ **Bailey Criteria[1]:**

- Unambiguous – well-defined identities and weights;
- Investable – one can own the benchmark's constituents;
- Measurable – can calculate performance at reasonable intervals;
- Appropriate – consistent with the investment approach/style;
- Reflective of current investment options – representative of the segment; and
- Specified in advance – constructed before evaluation period.

→ **Other example characteristics**

- Accessible - difficult-to-produce benchmarks should be avoided;
- Transparent – understandable constituency of the benchmark;
- Independent – a manager's performance should not impact the benchmark return; and
- Relevant – correlation between a portfolio and a benchmark influences its relevance but is not sufficient due to potential spurious relationships.

[1] The Bailey Criteria: Financial Analysts Journal, CFA Institute, 1992.

Future Changes and Conclusion

- Meketa and ERS Staff continually review the ERS's effective benchmarks, the broader universe of potential benchmarks, as well as industry trends/practices.
- Future benchmark modifications may occur for several reasons: 1) Board-directed asset allocation changes, 2) Changes to existing benchmark constructs (including data issues/costs) and/or new benchmark availability, and 3) Alterations in benchmarking philosophy by the ERS or in accordance with changes in industry best practices.
- Meketa and ERS Staff believe that the ERS's current benchmarks remain appropriate for the ERS Total Portfolio and corresponding asset classes, and thus no changes are proposed.
- Benchmark reviews will continue to occur on a recurring basis with potential changes proposed to the ERS Board/IC when appropriate.

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MEKETA
INVESTMENT GROUP

Employees' Retirement System of the State of Hawaii

November 18, 2024

Total Portfolio Liquidity – Annual Review

Introduction

→ In November 2023, the ERS received education on "Total Portfolio Liquidity" and approved a minimum allocation for liquidity purposes – defined as 5% of the Total Portfolio in *Tier 1* assets.

- The list/definitions of tiers is provided later in this presentation.

→ This presentation seeks to quickly review the process that was used to determine the liquidity minimum as well as the historical amounts of *Tier 1* assets held by the ERS in 2024 YTD (as of 9/30).

→ Additionally, this presentation concludes with liquidity guidance for calendar year 2025.

Liquidity for Public Pensions

→ The liquidity needs of public pensions are different than other investors:

- Consistent benefit payment outflows.
  - For the average public pension of similar size as the ERS, benefit payment outflows exceed contribution inflows (average peer is roughly -2.5%* for net cash flow as a percent of the total portfolio).
- Private markets capital calls.
- For certain closed systems, the portfolio may not have any contributions and will eventually be entirely liquidated.

→ Additionally, liquidity is important from an investment perspective in order to rebalance and take advantage of investment opportunities.

*Source: Boston College Center for Retirement Research

Liquidity Tiers

→ Investments can often be classified into liquidity tiers/categories.

Tier 1	- Assets with either low-to-moderate volatility or a negative equity beta. - Must be accessible within days. - Ex: cash, short-to-intermediate Treasuries, long volatility strategies, etc.

Tier 2	- Assets that are expected to be uncorrelated to public equity but exhibit one or more of the following characteristics:
	    - High volatility (i.e., 10% or more annual standard deviation).
	    - Liquidity that isn't accessible for one month or more.
	- Ex: systematic trend following, liquidity restricted commingled funds, etc.

Tier 3	- Assets that are liquid (days-to-weeks) but with high correlations to public equity. - Ex: public equity, public credit, public real assets, etc.
Tier 4	- Illiquid assets/private markets. - Ex: private equity, private credit, private real assets, etc.

Methodology for Determining *Tier 1* Minimum

→ The ERS conducts a comprehensive evaluation of the total portfolio's ability to meet liquidity requirements over long-horizons during asset-liability studies (conducted every 3-5 years).

- Liquidity requirements typically include projected benefit payments over a ~20-year horizon and private markets commitments/distributions over the first five years (with cash flow neutrality assumed thereafter).

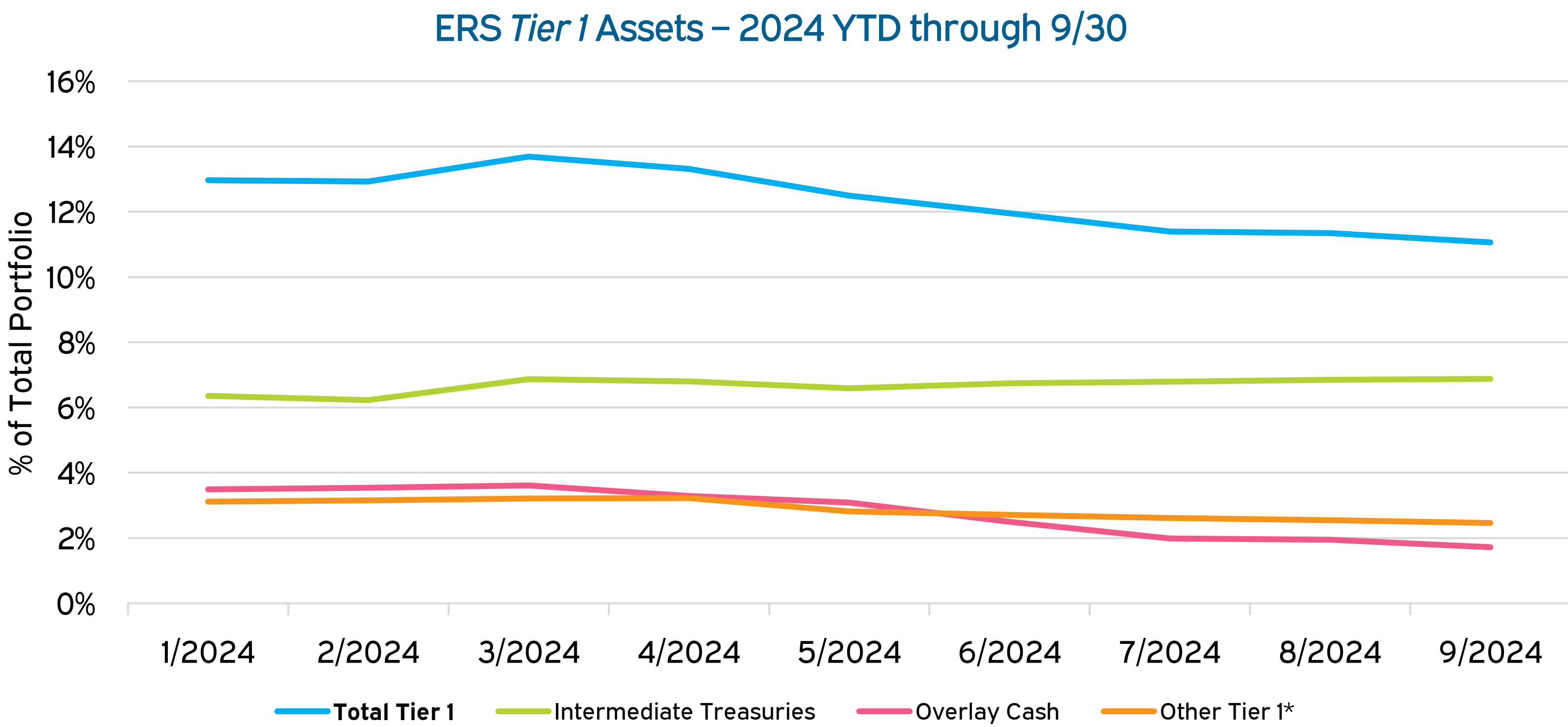
→ Moreover, portfolios are examined under severe liquidity stress tests in order to evaluate the ERS's ability to meet liquidity requirements.

→ As it relates to methods for determining a *Tier 1* minimum, there is no industry standard.

→ In 2023, Meketa and ERS Staff examined expectations for portfolio drawdown lengths and determined the amount of *Tier 1* assets required to meet liquidity needs during such drawdowns.

- This is where the 5% minimum (i.e., 2.5 years of net cash outflows) came from.

ERS – 2024 YTD Experience



→ ERS has maintained sufficient exposure in *Tier 1* assets throughout 2024 – well above the 5% minimum (e.g., ~11-14% of Total Portfolio throughout the year).

→ The amount of cash in the Overlay program has declined over the year but has been increased in Q4 2024 to begin 2025 near $750 million (~7 months of cash flow needs).

- This process follows the plan presented by ERS Staff and Meketa in November 2023.

*Other Tier 1 assets are primarily long volatility strategies.

Note: figures do not include cash held in the "ERS Operating Account" which ranged from roughly $90-$290 million in 2024 YTD ending 9/30, based on month-end data.

Conclusion

→ Mature public pension systems require an explicit consideration of liquidity.

→ Liquidity is a multifaceted attribute, and it is important to examine each asset class's liquidity under periods of market stress.

→ During periods of market stress, liquidity should primarily be accessed from asset classes exhibiting stable/improving values and low transaction costs.

- The primary reason why it is not advisable to obtain liquidity from assets experiencing drawdowns is because that is the exact time that their forward-looking returns are the most attractive.

→ Throughout 2024 YTD, ERS has maintained a high level of exposure in *Tier 1* assets that well exceeded the 5% minimum.

→ Based on current market values and actuarial projections, Meketa and ERS Staff recommend that the 5% minimum remain unchanged for calendar year 2025.

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MEMORANDUM

November 18, 2024

TO: The Investment Committee of the Board of Trustees
Employees' Retirement System of the State of
Hawaiʻi ("ERS")

THROUGH: Thomas Williams, Executive Director ("ED")
Employees' Retirement System of the State of Hawaiʻi

FROM: Kristin Varela, Chief Investment Officer ("CIO")
Employees' Retirement System of the State of Hawaiʻi

SUBJECT: Revisions and Updates to the ERS Investment Policy Statement (IPS) – Sections C and D

Summary of Recommended Revisions:

The recommended revisions to the Responsible Investing policy in Section C of the IPS places greater emphasis on broader fiduciary considerations, going beyond traditional ESG considerations and incorporating other factors into investment decision-making. Edits include:

SECTION C. ERS GENERAL INVESTMENT OVERVIEW

- SECTION C.7: Responsible Investing
  Action: Update definition and language for "Responsible Investing" to account for systemic risk factors.
  Reasoning: To align with ERS goals and objectives.

- SECTION C.7.1:
  Action: Update language to delete specific references to the proxy voting administrator by name and redundancy and include guidance for ERS investment managers with delegated proxy authority.
  Reasoning: To eliminate reference to vendor by name in IPS and for clarity.

SECTION D. BROAD GROWTH PROGRAM

The Real Assets Component in Section D has been aligned with the strategic allocation approved by the Board in 2023 and streamlined to ensure clarity and consistency in the management of real assets investments. Edits include:

- BROAD GROWTH APPENDIX: REAL ASSETS COMPONENT
  - REAL ASSETS COMPONENT – VARIOUS SECTIONS
    Action: Updated reference to selection consultant, from Real Estate Consultant to Real Assets Consultant.
    Reasoning: To align with contracted responsibilities of selection consultant, covering total Real Asset portfolio.

- REAL ESTATE SUB-COMPONENT 1.b, 2.a, 2.c

  Action: Update language and to align with current practice.

  Reasoning: To consolidate the naming convention of Core and Non-Core Real Estate into Real Estate, align Separate Account Tactical Plan with current practice, and broaden leverage expectations in alignment with market implementation.

- REAL ESTATE SUB-COMPONENT 3.c.iv, 3.c.vi, 3.d.viii

  Action: Update language of Value Add and Opportunistic Real Estate general characteristics.

  Reasoning: To streamline IPS and ensure alignment with Infrastructure and Agriculture Sub-Component policies.

- REAL ESTATE SUB-COMPONENT 4.c

  Action: Elimination of Section C, Target Portfolio.

  Reasoning: Removing target portfolio references to legacy benchmark, no longer utilized by ERS. Specific guidelines are no longer relevant.

All changes to become effective on January 1, 2025.

ERS GENERAL INVESTMENT OVERVIEW

SECTION: C

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C. 1. ERS INVESTMENT PLAN SUMMARY

1. Primary Goal

The preservation of capital is of primary concern of the Employees' Retirement System of the State of Hawaii ("ERS" or "Plan"). The Board of Trustees of the ERS ("Board of Trustees" or "Board") seeks preservation of capital with a consistent, positive return for the Plan. Although pure speculation is to be avoided, the Board recognizes that a return in-line with the actuarial rate is associated with a certain degree of risk. Risk to be assumed must be considered appropriate for the return anticipated and consistent with the total diversification of the Plan.

2. Structure

The ERS implements a risk-based, functional framework for allocating capital within the total portfolio. This framework makes use of strategic/functional classes that in-turn utilize underlying asset classes and strategies. Each of these classes is designed to achieve a certain goal (e.g., Diversifying Strategies class) and/or be exposed to a specific set of macroeconomic risks that are common amongst the different strategy types and/or assets within the class (e.g., Broad Growth class). As a result of this structure, each strategic class is expected to be exposed to a set of major and minor macroeconomic risks. Each program's policy section contains a list of the relevant macroeconomic risks. Definitions for each of these macroeconomic risks can be found in Appendix B of this Manual.

a. *Current Strategic Allocation Target Ranges (effective 01/01/2024)*

The ERS will be invested according to the following strategic class targets and ranges:

	Lower Limit	Target	Upper Limit
Broad Growth	60%	70%	80%
Diversifying Strategies	20%	30%	40%
Opportunities	0%	0%	0%

The Chief Investment Officer of the ERS ("CIO") may set the actual class levels anywhere within the upper and lower limits above. For deviations in excess of +/- 3%, the CIO shall provide regular ongoing justifications for the deviations. Adjustments in the above targets may be reviewed in conjunction with the annual strategic allocation review. The general consultant should conduct a formal strategic allocation study at least every three years for the Board of Trustees to verify or amend the strategic targets and ranges.

b. *Total Investment Portfolio Evaluation Benchmark*

To monitor the total investment portfolio result, a custom benchmark is constructed to measure the target mix. This target benchmark mix will evolve over time, but it is based on historical evolving allocation targets, the above-highlighted strategic allocation targets, and the broad benchmarks listed below (i.e., evolving weights x benchmark return).

- Broad Growth Blended Benchmark[1]
- Diversifying Strategies Blended Benchmark[1]

[1] Refer to program section for detailed description of benchmark, and possible evolving benchmark timeline.

Individual ERS investment managers ("Investment Managers" or "investment managers") will not be measured against this total investment portfolio objective. However, it is expected that the sum of their efforts will exceed the objective over time.

C. 2. INVESTMENT MANAGEMENT POLICY

1. Manager Discretion

The investment managers shall be given full discretion to manage the assets under their supervision subject to this Investment Policy, Guidelines, and Procedures manual ("Manual"), their assigned mandate, the laws of the State of Hawai'i ("State"), and their investment management agreements with the ERS.

2. Manager Evaluation

Individual investment managers will be measured against an appropriate benchmark, index and peer group as appropriate. Relevant manager evaluation benchmarks are stated in investment management agreements with the ERS.

3. Policy on Local Managers

The Board of Trustees wishes to utilize qualified local firms in the management of a portion of the ERS's assets. Due to the size of the ERS's portfolio and the fiduciary responsibility of the board members to select qualified firms in accordance with overall Board investment strategy, the following guidelines have been established for the identification, selection and evaluation of Hawai'i-based investment management firms.

a. It shall be the policy of the Board to allocate assets to local investment managers in accordance with the Board's strategic allocation and long-term investment policies.

b. The asset mix of the combined local investment managers' portfolios shall be determined under a fiduciary framework with respect to the overall portfolio and relevant strategic classes.

c. Evaluation of Local Firms

   i. All local firms retained by the Board of Trustees shall be evaluated in a similar fashion as all other investment managers within the same strategic class.

C. 3. REPORTING REQUIREMENTS FOR INVESTMENT MANAGERS

1. Investment Managers of Liquid Mandates

Investment managers of liquid mandates must abide by the reporting requirements stated within their investment management agreements.

2. Investment Managers of Illiquid Mandates

Investment managers of illiquid mandates must abide by the reporting requirements stated within their partnership agreements.

C. 4. SECURITIES LENDING GUIDELINES

The policies and guidelines governing the securities lending program shall pertain to the Custodian, unless such services are contracted otherwise. A *separate contract*, distinct from the custody relationship, detailing the type of securities lending relationship and program is both mandatory and essential in the treatment of securities lending as, foremost, an investment function with the associated risks and return implications, and fiduciary responsibility.

On an annual basis, the Custodian shall provide a detailed report of the ERS's securities lending activities. This summary shall be the basis for verification that the Custodian is complying with these securities lending guidelines. After reviewing the report provided by the Custodian, the General Investment Consultant shall prepare a report summarizing the ERS's securities lending activity and compliance with the ERS's policies.

1. Objective

The Custodian, as the ERS's securities lending agent, receives cash or government securities (defined below) as collateral for loans of their securities to approved borrowers. On an ongoing basis, the securities lending agent identifies eligible collateral and, in the case of cash collateral, the opportunity for a market rate of return consistent with allowed investment latitude and thereby seek to generate positive program spreads.

The securities lending agent must exercise investment discretion consistent with the overall objective of preserving principal; providing a liquidity level consistent with market conditions and the lending and trading activities of the ERS; and maintaining full compliance with stated guidelines and statutory provisions. The securities lending agent shall exercise prudence and expertise in managing the cash collateral reinvestment function.

2. Program Guidelines

Maintenance of the integrity and operational functionality of the securities lending program shall be pursued with utmost diligence. The securities lending agent shall have documented policies and procedures in place detailing the following if not stipulated in the securities lending contract for both domestic and international securities.

a. Borrower Limits/Creditworthiness

b. Acceptable Collateral

c. Marking to Market

d. Corporate Actions/Distributions

e. *Proxy Voting Limitations*

f. *Recall of Loaned Securities*

g. *Revenue Splits*

h. *Valuation and Reporting of Loaned Securities and Cash Collateral Reinvestments*

i. *Borrower Risk (Default)*

j. *Cash Collateral Reinvestment Risk*

k. *Operational Negligence*

l. *Counterparty Indemnification*

m. *Other relevant policies*

The securities lending agent shall at all times exercise prudence and due care and shall comply at all times with Section 88-121.5, Hawai‘i Revised Statutes and all other applicable laws, rules and regulations of federal, state, and local entities or agencies having jurisdiction, including but not limited to banking and securities regulatory bodies, taxation authorities and the US Department of Labor.

3. Collateral Management

The securities lending agent shall exercise prudence and reasonable care in discharging its discretion in the investment management of cash and non-cash collateral, including asset/liability (gap) management that is appropriate relative to the market environment or conditions that the securities lending agent is operating in. Provided that the management of collateral, specifically cash, imposes the greater risk, the securities lending agent shall adhere to the overall investment objective of ERS. Policies regarding issuer, credit, exposure and rating limits utilized in the securities lending program per investment vehicle shall be under the full discretion of the provider, and appropriate and consistent with the stated general guideline. Issues such as exposure guidelines, prohibited securities for cash investment, duration strategies, and matched and mismatched book are both strategic and tactical investment functions and shall be consistent with the above objective.

Initial Collateral levels will not be less than 102% of the Market Value of the Borrowed Securities, or not less than 105% if the borrowed securities and the Collateral are denominated in different currencies. Marking-to-market is performed every business day subject to de minimis rules of change in value, and the Borrower is required to deliver additional Collateral when necessary so that the total Collateral held by the securities lending agent for all loans to the Borrower of all participating lenders will at least equal the market value of all the borrowed securities of all participating lenders loaned to the Borrower.

Listed below are the cash and non-cash Collateral guidelines specifying eligible investments, credit quality standards, and diversification, maturity and liquidity requirements. Except for Prior Purchased Assets[2], all requirements listed in these guidelines are effective at the time of purchase of any security or instrument as a cash Collateral investment and at the time of receipt of any non-cash Collateral. Agent will make use of market standard settlement methods for cash investments and non-cash collateral including the use of a tri-party custodian as approved by Agent's appropriate risk committee. Settlement through a tri-party custodian may result in cash collateral being held on deposit at the tri-party custodian.

[2] There may be certain assets held as Collateral that complied with the requirements of a prior version of these guidelines then in effect at the time of purchase of such assets, but that may not meet these latest guidelines (such assets termed "Prior Purchased Assets"). Such Prior Purchased Assets may continue to impact the overall securities lending portfolio accordingly. The securities lending agent may, at its sole discretion, hold such Prior Purchased Assets until maturity, or as otherwise determined by it.

a. *Cash Collateral Guidelines*

i. Investment Objectives

Cash Collateral of the Collateral Account is invested to seek the following objectives:

1. preservation of capital
2. maintenance of liquidity, and
3. maximization of current income to the extent consistent with (a), and (b), above by investing cash Collateral in accordance with the guidelines stated below. Within quality, maturity, and market sector diversification guidelines, investments are made in those securities Agent judges to offer the most attractive relative yields.

ii. Investment Guidelines

A separate cash Collateral account shall be maintained for each currency, subject to the eligibility rules below. Cash Collateral shall be denominated in either U.S. Dollars or Euro currency, and shall be invested in securities or instruments managed under the following guidelines:

b. *Eligible Investments:*

i. Securities and Exchange Commission (SEC) Rule 2a-7 money market mutual funds.

ii. Securities issued or guaranteed as to principal and interest by the Government of the United States or issued or guaranteed by agencies or instrumentalities thereof.

iii. High-grade commercial paper and commercial paper master notes, whether or not registered under the Securities Act of 1933, as amended, and promissory notes. Obligor shall have a short-term rating not lower than "A-1, P-1 or F-1", at time of purchase.

iv. Corporate obligations, including the banking industry, which are marketable and rated high-grade. At the time of purchase, either the long-term rating shall not be lower than "AA-, Aa3", or the equivalent thereof, or the short-term rating shall not be lower than "A-1, P-1, or F-1" if less than one year remaining until maturity. Obligations may include fixed, floating and variable rate notes and bonds.

v. Asset backed securities, at the time of purchase, shall have either a long-term rating of "AAA, Aaa" or the equivalent thereof, or a short-term rating not lower than "A-1, P-1, or F-1" if less than one year remaining until maturity. Mortgage-backed securities are not considered asset backed securities for purposes of this restriction. Asset backed securities must be collateralized by credit cards, auto receivables, equipment trusts or student loans.

vi. Certificates of deposit and other bank deposit obligations of U.S. banks or U.S. branches or subsidiaries of foreign banks. At the time of purchase, the issuing bank must have either a short-term issuer debt rating not lower than "A-1, P-1, or F-1" or a long-term issuer debt rating not lower than "AA-, Aa3", or the equivalent thereof.

vii. Bankers' acceptances issued by U.S. banks or issued in the U.S. by branches or subsidiaries of foreign banks. At the time of purchase, the issuing bank must have either a short-term issuer debt rating not lower than "A-1, P-1, or F-1" or a long-term issuer debt rating not lower than "AA-, Aa3", or the equivalent thereof.

viii. Repurchase agreements with respect to the following types of collateral and repo counterparties:

ix. U.S. government securities, agencies, sovereigns, supranationals, commercial paper, municipal bonds, asset-backed securities, mortgage-backed securities (only pass-throughs), corporate bonds (investment grade and high yield), and equities.

x. The credit worthiness of the repurchase agreement counterparties shall be monitored by Agent's internal risk committee.

xi. Sovereign debt obligations (other than U.S. Government obligations). At the time of purchase, either the long-term rating shall not be lower than "AA-, Aa3" or the equivalent thereof, or the short-term rating shall not be lower than "A-1, P-1, or F-1" if less than one year remaining until maturity.

xii. Interests or units in any short-term investment fund (including, without limitation, such funds of the ERS's Custodian Bank and any of its affiliates) that invests in any or of the types of investments approved above.

xiii. Capped floaters, provided that Agent shall notify Lender of the usage of such securities and shall employ appropriate risk assessment and manage expertise as specified by the Office of the Comptroller of the Currency.

xiv. Constant Maturity Treasury ("CMT") floaters, provided that Agent shall notify Lender of the usage of such securities and shall employ appropriate risk assessment and manage expertise as specified by the Office of the Comptroller of the Currency.

c. *Maturity/Liquidity*

The "maturity" of a security or instrument (or "maturities" for more than one security or instrument) shall be defined as follows:

i. The shorter of the date on which the principal amount is ultimately required to be paid or the put date under a demand feature, or

ii. Variable rate eligible U.S. Government and U.S. Agency obligations shall have a maturity equal to the date of the next readjustment of the interest rate, or

iii. The maturity of a pooled investment fund shall be the number of days required to liquidate an investment in the fund under normal market conditions, or

iv. Asset-backed securities shall have a maturity equal to such security's weighted average life (i.e., the average time to receipt of expected cash flows on the security).

A minimum of 60% of the cash portion of the Collateral Account shall be invested in securities which have a maturity (as herein defined) of 97 days or less.

A minimum of 20% of the cash portion of the Collateral Account shall be available each business day. This may be satisfied by maturities (as herein defined), or demand features.

The rate sensitivity or weighted average maturity, as measured to the shorter of the remaining time until the interest rate reset (if applicable) or maturity, of the cash portion of the Collateral Account will be limited to 60 days.

The weighted average maturity, as measured to maturity (as herein defined), of the cash portion of the Collateral Account shall not exceed 120 days.

The maturity of fixed rate investments may not exceed 13 months from the date of purchase. The maturity of floating rate Eligible Investments, including the maturity of variable rate eligible U.S. Government and U.S. Agency securities (as measured to final maturity date, not the next readjustment of interest rate), may not exceed 2 years.

d. *Diversification*

Subject to the following exceptions, a maximum of 5% of the cash portion of the Collateral Account may be invested in securities or instruments of any one issuer or obligor. Exceptions are as follows:

i. 100% of the cash portion of the Collateral Account may be invested in obligations issued or guaranteed by the U.S. Government or its agencies/instrumentalities.

ii. 25% of the cash portion of the Collateral Account may be invested with any one counterparty in repurchase agreements collateralized by U.S. Government or U.S. Government agency securities.

iii. 10% of the cash portion of the Collateral Account may be invested with any one counterparty in repurchase agreements collateralized by eligible securities other than U.S. Government or U.S. Government agency securities.

iv. Residual cash balances, which cannot be invested into the marketplace, shall not be subject to diversification limits.

e. *General Ratings Provisions:*

The ratings above must be designated by at least two Nationally Recognized Statistical Rating Organizations ("NRSROs"), or if only rated by one NRSRO, then rated at the time of purchase in the minimum rating category specified by that NRSRO, as above. For the avoidance of doubt, if all three NRSROs rate the obligation, then the obligation is eligible as long as two NRSRO ratings meet the minimum criteria. In the event that the obligation is not rated, the issuer rating shall be considered with respect to the class of comparable short-term obligation or long-term obligation.

f. *Prohibited Transactions and Securities*

The following transactions and securities are not permitted as direct investments of Cash Collateral:

i. Additional leverage, which shall mean that Lender may not further lend Eligible Investments in the Collateral Account.

ii. Highly leveraged, structured notes.

iii. Range floaters, COFI floaters, Dual Index floaters inverse floaters and leveraged floaters.

g. *Non-Cash Collateral Guidelines*

Listed below are the non-cash Collateral investment guidelines for eligible Collateral.

i. <u>Investment Guidelines</u>

Non-cash eligible instruments may consist of the following:

ii. <u>Eligible Investments</u>

1. Obligations issued or guaranteed by the U.S. Government or its agencies or instrumentalities thereof.

2. Obligations issued or guaranteed by OECD (Organization for Economic Cooperation and Development) member states or their local governments, agencies or authorities.

3. Canadian Provincial Debt

4. Equity securities, which are part of U.S. and non-U.S. indices (including, but not limited to U.S., U.K., EMU, Japan, Canadian and Australian markets), as approved by Agent's internal risk committee from time to time; and

5. Such other Collateral as the parties may agree to in writing from time to time.

iii. Credit Quality

1. Eligible Instruments as named above may be accepted without limit.

iv. Diversification

1. Eligible Instruments as named above may be accepted without limit.

h. Operation of the Collateral Account

i. Income

Income earned from the investment of cash Collateral, net of (i) expenses, including but not limited to, transaction accounting and reporting expenses, auditing fees, brokerage fees and other commissions, and any miscellaneous expenses, (ii) any applicable withholding of tax, (iii) loan rebate fees paid or accrued to the borrowers, and (iv) any adjustments to provide for regular returns, together with loan fees for loans Collateralized by non-cash Collateral, are distributed to Lender of the Collateral Account on a monthly basis.

On a monthly basis, a portion of the income earned by Lender on a loan on any business day may be withheld by Agent and transferred to income earned on a different loan for that Lender on any other business day if on that day one or more rebates due or accrued to borrowers with respect to one or more loans should exceed the income earned from the cash Collateral supporting those loans. If, despite such transfers, during any month total rebates payable exceed total revenues with respect to any loan or loans of Lender, the net shortfall shall be charged against positive undistributed earnings from other loans of Lender to the extent thereof, and any remaining shortfall shall be allocated between the Lender and the Agent in the same proportions as positive securities lending revenues. Any amounts thereby payable by the Lender shall be the personal obligation of Lender and shall be due and payable upon the Lender's receipt of Agent's invoice for such amounts. Agent may withhold (and Lender is deemed to grant to Agent a lien upon) future loan revenues, and any other property of the Lender then or thereafter in the possession of Agent, to secure the payment of such obligation. Notwithstanding the foregoing, however, all other Collateral losses shall not be shared between the Lender and the Agent to any extent but shall be allocated as provided in the Agreement or these guidelines.

Incidental expenses, (e.g., negative float due to payment advances) incurred in the administration of the Collateral Account are recovered against incidental receipts, (e.g., positive float from pending balances) similarly arising and any remaining balance is added to the lending revenues for the benefit of Lender. Net realized short-term capital gains or losses (if any) may be distributed (or charged) from time to time.

ii. Net Asset Value

Lender hereby directs Agent to maintain the cash portion of the Collateral Account as a fund comprised of units having a constant net asset value of $1.00 per unit and to value the fund using the amortized cost method (acquisition cost as adjusted for amortization of premium or accretion of discount) for that purpose. Agent will not determine or monitor the fair market value of the investments as a means of comparing the unit value with the market value of its investments. Lender hereby represents and confirms on a continuing basis throughout the term of this Agreement that such a method of valuation and account maintenance is consistent with all laws, rules, regulations and accounting procedures applicable to Lender.

The cash portion of the Collateral Account intends to maintain a constant net asset value within minimum tolerances established by Agent's senior management. There is no guarantee, however, that the cash portion of the Collateral Account will be able to attain that objective. The Collateral Account is not registered under the Investment Company Act of 1940 as a money market fund, is not subject to regulation by the Securities and Exchange Commission and does not comply with federal regulations governing registered money market mutual funds.

In no event shall Agent be personally liable to restore any loss within the Collateral Account, unless the loss was directly caused by the negligence or intentional misconduct of Agent.

iii. Trading Policy

Although the Collateral Account will generally not engage in short-term trading, the Agent may dispose of any portfolio security prior to its maturity if, on the basis of a revised credit evaluation of the issuer or other considerations, Agent believes such disposition is advisable. Subsequent to its purchase, a portfolio security or issuer thereof may be assigned a lower rating or cease to be rated. Such an event would not necessarily require the disposition of the security, if the continued holding of the security is determined to be in the best interest of the Lender. In any event, Agent will notify Lender as soon as reasonably practicable if any security is downgraded after initial purchase below the minimum requirements set forth in these investment guidelines.

C. 5. STRATEGIC ALLOCATION REBALANCING GUIDELINES

1. Rebalancing Assets within the Strategic Allocation

One essential component of a strategic allocation policy is the development and use of rebalancing ranges for the target allocation. According to several studies, systematic rebalancing should reduce portfolio volatility and increase a portfolio's risk-adjusted return. Using the ERS's long-term strategic target allocation, the greatest enhancement to investment performance (i.e., enhancing the annualized return while lowering the risk) is achieved by the rebalancing within the ranges described in C.1. ERS Investment Plan Summary.

The Investment Staff will maintain the classes within their target ranges primarily by using cash flows, although the actual allocations will be rebalanced whenever a class is outside of its strategic target range. The Board of Trustees should review the targets and ranges annually for reasonableness relative to significant economic and market changes, and relative to changes in the ERS's long-term goals and objectives.

If the Plan has positive cash flow (i.e., contributions exceeding disbursements), Investment Staff has the discretion to rebalance by directing new moneys to the under allocated strategic classes on a pro-rata basis. If the Plan has negative cash flow, Investment Staff has the discretion to withdraw moneys to be disbursed from over allocated strategic classes. In each case, the CIO shall keep the Executive Director and the Board of Trustees apprised of current asset movements. Managing strategic allocations in this manner should not incur any additional transaction cost beyond what would have been normally incurred to liquidate or invest assets.

Certain strategic classes have more subjective rebalancing ranges relative to their target allocations. Concerns of liquidity and the long-term horizon for these investments suggest a more infrequent rebalancing schedule. Accordingly, other more qualitative considerations (e.g., transaction costs, liquidity needs, investment time horizons, etc.) regarding the timing of rebalancing certain elements within certain asset classes will be important to consider with the guidelines shown above.

2. Rebalancing Investment Style/Mandate Allocations Within Strategic Classes

Investment Staff is responsible for maintaining appropriate style and mandate weightings, consistent with the respective strategic classes' risk profile(s). Investment Staff and/or the applicable investment consultant shall regularly report style and mandate weightings, and their deviations from policy, to the Board. Any adjustments that cause a material change to a strategic class's risk profile requires Board approval.

3. Single Manager Portfolio and Firm Allocation Limits for Active Mandates

In order to minimize any potential risk associated with large concentrations of the ERS's portfolio assets being managed in a single manager portfolio or by a single firm, the following limits have been put in place:

a. No single equity manager portfolio shall represent more than 5% of the total ERS portfolio and

b. No single manager/firm, when all active mandates associated with that manager/firm are aggregated, shall represent more than 10% of the total ERS portfolio.

If any single manager portfolio or manager/firm's active assets exceed these limitations, Investment Staff shall provide the Board its solution to reallocate funds from that portfolio or manager/firm within the portfolio to reduce the concentration within a reasonable time period.

The Board may exclude certain firms from these limits.

Exemptions:

Gateway Investment Advisers, the ERS's covered calls manager, was granted a temporary exemption from the single manager portfolio limit at the September 14, 2015 Board meeting.

C. 6. PORTFOLIO TRANSITIONS

From time to time, the ERS will have a need to restructure its portfolios as a result of manager performance or strategic allocation changes. The Board of Trustees, acting on recommendations and suggestions of the Investment Staff and investment consultants, will decide to undertake actions to allocate assets to maintain optimal strategic class weightings and/or to individual managers. Investment Staff will maintain desktop procedures that detail the asset transition decision process and will follow the asset transition steps. Investment Staff will maintain coordination and communication throughout the transition process with other ERS staff and outside parties. During the trade and post-trade processes Investment Staff will evaluate the performance of manager(s) by means of various reports. The CIO will report transition highlights to the Executive Director and the Board when appropriate.

C. 7. RESPONSIBLE INVESTING

The ERS strives to ~~integrate and consider Responsible Investing practices~~be a prudent and responsible investor in overseeing the System's assets.

~~This practice aims for a balance between the System's financial goals and needs and the investment's impact on society by~~ This means that the ERS, as a fiduciary to its members, is responsible for achieving financial return and positive impact on our members through oversight of the actions of the corporations or entitie~~y~~s in which ~~the~~ investments ~~is~~ are made.

~~Falling within the realm of Responsible Investing is the consideration of environmental, social, and corporate governance (ESG) factors, where ESG describes the three main areas of concern that have developed as the central factors in measuring the sustainability and ethical impact of an investment in a company or business. Within these three areas are a broad set of concerns that are increasingly being included in the nonfinancial factors that figure in the valuation of equity, real estate, infrastructure, and fixed income investments. Examples include but are not limited to, a company's carbon footprint, human rights, employee gender and ethnic diversity and non-discrimination, climate change, and effective board oversight. ESG factors have the potential to affect the economic value and performance of an investment now and in the future. Sound corporate governance policies and practices play an important role in protecting economic value while enhancing value for long-term plan participants and beneficiaries. The ERS strives to incorporate ESG into its investment process to identify and select investment partners that share in its alignment of utilizing ESG factors when evaluating the value and risk of portfolio companies.~~ There are a broad set of factors that are not found in financial statements which nevertheless can have significant impact on the financial valuation of an investment. These factors have always been a part of a comprehensive due diligence process and are becoming increasingly important to finding opportunities and avoiding risks. These factors affect the valuation of investments across various asset classes. Examples include but are not limited to: a company's ability to adapt to systemic changes; effective board oversight; degradation or contribution to its surroundings, including the local populations; human rights; employee non-discrimination. These factors have the potential to affect the economic value and performance of an investment. Sound corporate policies and practices, to ensure accountability, play an important role in protecting and enhancing long-term economic value for plan participants and beneficiaries.

The ERS strives to be a prudent and responsible investor by incorporating all relevant factors into its investment process and seeks to identify and select investment partners that are aligned with our mission to fulfill our fiduciary duty to our members.

~~Upon the~~The ERS will be mindful of the encouragement by the House of Representatives of the Twenty-sixth Legislature of the State of Hawai'i, Regular Session of 2012~~, the ERS will continue to apply the principles of Responsible Investing in investment practices and decisions where possible, and encourages other investment counselors and money managers to apply Responsible Investing to their investment portfolios. The ERS believes that these considerations align with its goal to provide strong long-term investment results to the System.~~, and adhere to all applicable state and federal statue in making investments.

The following sections outline the ERS's policies and efforts that pertain and support the practice of Responsible Investing:

1. Proxy Voting
2. The Global Sullivan Principles

3. Anti-Terrorism Policies
4. Sudan Policies
5. United Nations – Supported Principles for Responsible Investment (PRI)
6. HiTIP Policies and Procedures (Created by the ERS to fulfill the mandate of Act 260, "A Bill For An Act Relating To The Innovation Economy.")

1. Proxy Voting

The ERS has a fiduciary responsibility to act solely in the best interest of its members and beneficiaries and ~~the right to vote~~voting proxies is considered by the ERS as an important part of its fiduciary duty~~. Proxy voting can be a powerful tool to affect company behavior and is preferable to divestment, which is a tool that reduces the size of the investible universe and gives up the~~

~~influence inherent in the rights of equity ownership~~ as it maximizes the rights of equity ownership. Proxies have economic value and must be voted in the interest of the ultimate shareholder of plan beneficiary. The ERS will use its rights as an active shareholder to manage risks and hold companies in which they invest accountable for the business decisions the companies make.

The ERS shall retain a proxy voting administrator to aggregate, research, and vote the ERS's proxies related to the Plan's applicable public markets separate accounts. The proxy voting administrator shall have delegated authority to vote the ERS's proxies according to guidelines selected/customized by the ERS. On an ongoing basis the proxy voting administrator shall review the ERS's proxy voting guidelines and annually, or more frequently, if necessary, update the guidelines if needed. The proxy voting guidelines are designed to ensure compliance with the fiduciary responsibilities of public plan sponsors voting proxies on behalf of the Plan's participants. The proxy voting administrator shall report to the ERS the proxies voted on behalf of the Plan at least annually, or more frequently upon request.

Proxy Voting Guidance for ERS Investment Managers with Delegated Proxy Authority ~~The ERS has established comprehensive proxy voting and reporting guidelines that are aligned with the System's specific interests.~~

~~The ERS has elected to utilize a customized version of the ESG Policy established by Glass Lewis as the guidelines for voting decisions. Glass Lewis is the proxy voting administrator for the ERS, and votes on behalf of the ERS for companies in the Public Growth portfolio. Glass Lewis offers various "policies" which are templates that guide vote decisions. These guidelines are compliant with the fiduciary responsibilities of public pension plan sponsors in voting proxies on behalf of the Plan's participants and are suitable for investors with extremely long-term investment horizons. In addition, these guidelines support direct action by companies, linking executive compensation to prescribed responsible investing metrics, and more strongly support increased or improved disclosure relative to other voting policies. The ERS has added customization to ensure this policy is at least as stringent on governance-related board practices as other voting policies. These guidelines reflect analysis and identification of both financial and corporate governance risk and include consideration of stakeholders and affected parties in making proxy voting decisions. These guidelines encourage increased reporting and disclosure on the part of portfolio companies on executive compensation, governance, labor practices, and~~

~~the environment. Glass Lewis evaluates its policy guidelines on an ongoing basis and formally updates them on an annual basis. Additionally, the ERS can further adjust the voting policy to reflect the System's specific preferences and beliefs.~~

The ERS reserves the right to delegate proxy voting authority to any managers ~~not able to adhere to the proxy guidelines selected by the ERS~~, where proxy voting authority cannot be delegated to the Plan's proxy voting administrator (i.e., public equity commingled funds), or where the manager votes proxies only on rare occurrence (i.e., fixed income mandates). Any investment manager voting proxies on behalf of the Board will do so with the primary objective of maintaining and advancing the economic value and interests of ERS members. ERS also requests these investment managers, as part of their investment discretion and fiduciary responsibility, to take into consideration the importance of the Corporate Governance Policies promulgated by the Council of Institutional Investors, proxy voting guidance available through the CFA Institute, and the Global Sullivan Principles. Investment Staff, with the assistance of the applicable investment consultants, shall poll these managers annually as to their proxy voting policies. A letter affirming compliance with the manager's proxy voting guidelines will be requested from these applicable managers on an annual basis. The ERS may request from each manager reports of the proxy votes cast on the ERS's behalf for review.

To meet their fiduciary duty with regard to corporate governance, investment managers must follow adequate procedures concerning the voting of proxies. When ERS managers are given the responsibility to vote proxies, they must adopt procedures to ensure that issues are noted, analyzed, and considered before voting. Investment managers must be thoroughly familiar with the issues that arise in proxies. Proxies have economic value and must be voted in the interest of the ultimate shareholder or plan beneficiary. Investment managers cannot simply vote without adequate examination of the underlying issues. Managers of this type may refer to the CFA Institute for general proxy voting guidance. The skills and experience of the professional investment community, particularly the research and analytic skills, can be used effectively in corporate governance issues, which will ultimately benefit corporations and shareholders alike and enhance the competitiveness of business in global markets. Good corporate governance and good investment decisions go hand in hand.

Corporate Governance Policies,
Council of Institutional Investors
(reprinted from www.cii.org)

The ERS ~~believes in~~understands that ~~carrying forward the Council of Institutional Investors' (CII) goal of~~ instituting strong governance standards at public companies and strong shareholder rights can be supportive of positive investment outcomes. The Council of Institutional Investors (CII) ~~believes~~ works to enhance effective corporate governance and disclosure, which serves the best long-term interests of companies, shareholders, and other stakeholders. CII supports shareholders' discretion to employ a variety of stewardship tools to improve corporate governance and disclosure at the companies they own, which includes casting well-informed proxy votes. The ERS encourages its investment managers and proxy voting provider to use the Corporate Governance Policies established by the CII to guide proxy voting decisions when casting votes on behalf of the ERS.

The Council expects that corporations will comply with all applicable federal and state laws and regulations and stock exchange listing standards.

The Council believes every company should also have written disclosed governance procedures and policies, an ethics code that applies to all employees and directors, and provisions for its strict enforcement. The Council posts its corporate governance policies on its web site (www.cii.org); it hopes corporate boards will meet or exceed these standards and adopt similarly appropriate additional policies to best protect shareholders' interests.

In general, the Council believes that corporate governance structures and practices should protect and enhance accountability to, and ensure equal financial treatment of, shareholders. An action should not be taken if its purpose is to reduce accountability to shareholders.

The Council also believes shareholders should have meaningful ability to participate in the major fundamental decisions that affect corporate viability, and meaningful opportunities to suggest or nominate director candidates and to suggest processes and criteria for director selection and evaluation.

The Council believes companies should adhere to responsible business practices and practice good corporate citizenship. Promotion, adoption and effective implementation of guidelines for the responsible conduct of business and business relationships are consistent with the fiduciary responsibility of protecting long-term investment interests.

The Council believes good governance practices should be followed by publicly traded companies, private companies and companies in the process of going public. As such, the Council believes that consistent with their fiduciary obligations to their limited partners, the general members of venture capital, buyout and other private equity funds should use appropriate efforts to encourage companies in which they invest to adopt long-term corporate governance provisions that are consistent with the Council's policies.

The Council believes that U.S. companies should not reincorporate offshore because corporate governance structures there are weaker and therefore reduce management accountability to shareholders.

Council policies neither bind members nor corporations. They are designed to provide guidelines that the Council has found to be appropriate in most situations.

~~2. Proxy Voting Guidance for ERS Investment Managers with Delegated Proxy Authority~~

~~To meet their fiduciary duty with regard to corporate governance, investment managers must follow adequate procedures concerning the voting of proxies. When ERS managers are given the responsibility to vote proxies, they must adopt procedures to ensure that issues are noted, analyzed, and considered before voting. Investment managers must be thoroughly familiar with the issues that arise in proxies. Proxies have economic value and must be voted in the interest of the ultimate shareholder or plan beneficiary. Investment managers cannot simply vote without adequate examination of the underlying issues. Managers of this type may refer to the CFA Institute for general proxy voting guidance. The skills and experience of the professional investment community, particularly the research and analytic skills, can be used effectively in corporate governance issues, which will ultimately benefit corporations and shareholders alike and enhance the competitiveness of business in global markets. Good corporate governance and good investment decisions go hand in hand.~~

~~3.~~2. The Global Sullivan Principles

a. Preamble

The objectives of the Global Sullivan Principles are to support economic, social and political justice by companies where they do business; to support human rights and to encourage equal opportunity at all levels of employment, including racial and gender diversity on decision making committees and boards; to train and advance disadvantaged workers for technical, supervisory and management opportunities; and to assist with greater tolerance and understanding among peoples; thereby, helping to improve the quality of life for communities, workers and children with dignity and equality. I urge companies large and small in every part of the world to support and follow the Global Sullivan Principles of corporate social responsibility wherever they have operations.

Feb. 1, 1999
The Rev. Leon H. Sullivan

b. *Principles*

As a company which endorses the Global Sullivan Principles we will respect the law, and as a responsible member of society we will apply these Principles with integrity consistent with the legitimate role of business. We will develop and implement company policies, procedures, training and internal reporting structures to ensure commitment to these principles throughout our organization. We believe the application of these Principles will achieve greater tolerance and better understanding among peoples, and advance the culture of peace.

Accordingly, we will:

i. Express our support for universal human rights and, particularly, those of our employees, the communities within which we operate, and parties with whom we do business.

ii. Promote equal opportunity for our employees at all levels of the company with respect to issues such as color, race, gender, age, ethnicity or religious beliefs, and operate without unacceptable worker treatment such as the exploitation of children, physical punishment, female abuse, involuntary servitude, or other forms of abuse.

iii. Respect our employees' voluntary freedom of association.

iv. Compensate our employees to enable them to meet at least their basic needs and provide the opportunity to improve their skill and capability in order to raise their social and economic opportunities.

v. Provide a safe and healthy workplace; protect human health and the environment; and promote sustainable development.

vi. Promote fair competition including respect for intellectual and other property rights, and not offer, pay or accept bribes.

vii. Work with governments and communities in which we do business to improve the quality of life in those communities – their educational, cultural, economic and social well-being – and seek to provide training and opportunities for workers from disadvantaged backgrounds.

viii. Promote the application of these principles by those with whom we do business.

We will be transparent in our implementation of these principles and provide information which demonstrates publicly our commitment to them.

5/26/99
Source of Global Sullivan Principles: mallenbaker.net,
http://www.mallenbaker.net/csr/CSRfiles/gsprinciples.html, 11/05/03

ERS has a fiduciary responsibility to act solely in the interest of its members and beneficiaries. Therefore investment managers voting proxies for the board will do so with the primary goal of maintaining or increasing the economic interests of ERS.

~~4.~~3. Anti-Terrorism Policy

a. Introduction

Since 9/11, attention has been focused on the potential security threats certain countries and specific companies pose to the United States of America. The ERS Board of Trustees recognize the heightened awareness of security risks and the fact that public pension funds have come under increased pressure from the general public to divest from companies that do business in countries that support terrorism. On the surface this issue may appear simple and straightforward, but in reality it is very complex and requires information that is not currently available to public pension funds. A policy as simple as requiring divestiture from all companies that do business in certain countries may actually work to the detriment of US foreign policy objectives and needlessly damage US companies and jobs. The Board maintains its fiduciary obligations to the members of the System as its top priority. This requires the Board to act prudently and in the exclusive interest of participants in the management of System assets. In an effort to balance their fiduciary obligations with their moral and ethical responsibility as citizens of the United States of America, the Board of Trustees is hereby establishing this Anti-Terrorism Investment Policy.

b. Background on US Foreign Policy Related to Countries Supporting Terrorism

In the area of foreign policy, regulations and sanctions are complex and continually changing to address the needs of US national security. The US State Department maintains an official list of countries that the US deems to be supporting international terrorism. The countries included on this list and the regulations and sanctions that apply in these countries change frequently. Unfortunately, a list of companies that are deemed to be supporting terrorism is not publicly available at this time. The fact that a company may have a business link to a listed country does not mean that the US government believes the company is supporting terrorism. In many cases, the US government allows business relationships because they believe they further US policy goals via the contracts and leverage that trade and other business connections create. Placing investment restrictions that would discourage business relationships in these countries could actually run counter to US anti-terrorism initiatives in some instances. As a result of the complexities and lack of public information in this area, ERS must rely upon federal agencies such as the Securities and Exchange Commission and the State, Commerce, Justice and Treasury Departments to provide factual information regarding companies that are supporting terrorism. To date, this information has not been available to ERS or any other public pension fund. Quite simply, factual information that ERS would need to prudently divest from these companies is not available.

This policy is intended to avoid 1) discriminating against companies whose activities abroad are supported by the US government; 2) discriminating against companies whose activities abroad do not further terrorism; 3) unnecessarily harming US companies and jobs; and 4) compromising the Board's fiduciary duties to the beneficiaries of the System. Recognizing the dynamic nature of the issue, annually Investment Staff will evaluate this policy to determine if changes need to be made to reflect recent developments in this area. In the event that Investment

Staff believes changes to this policy are warranted, they will bring the issue to the attention of the Board of Trustees for consideration.

~~5.~~4. Sudan Investment Policy

Act 192, Session Laws of Hawaiʻi 2007, expresses the State's desire to not participate in ownership of companies that provide "significant practical support" for genocide activities as currently being conducted by the Sudanese government in the Darfur region. The ERS Board of Trustees wishes to recognize its agreement with the intent of Act 192 and to abide by its requirements. The Board, however, also applies a decision framework of acting for the exclusive benefit of ERS Plan participants. In this respect, the Board recognizes that divestment activities could potentially increase the portfolio's idiosyncratic investment risk. Therefore, divestment guidelines and procedures should seek to minimize the impact of a specific divestment policy (such as Sudan divestment) upon the investment results of the portfolio.

The Board has determined to use the following procedures to comply with Act 192 by requiring the CIO, or another designated member of Investment Staff, to:

a. *Assemble a list of all direct holdings in "scrutinized companies"[3];*

b. *Review publicly available information regarding companies with business operations in the Sudan provided by nonprofit organizations (e.g., the Sudan Divestment Taskforce) and other appropriate parties;*

c. *Send written notice informing companies of their scrutinized company status and the possibility that they may become subject to divestment;*

d. *Monitor other institutional investors that have divested from or engaged with companies that have business operations in Sudan;*

e. *Consider divestment or other corrective actions to the extent reasonable with due consideration for among other things, return on investment, diversification, and the System's other legal obligations;*

f. *Inform the ERS's equity investment managers of Board decisions as related to the above processes; and*

g. *Review and update progress of scrutinized companies on a quarterly basis.*

This policy is intended to avoid: 1) discriminating against companies whose Sudan-related business activities are supported by the U.S. government; 2) discriminating against companies whose Sudan-related business activities do not support genocide activities; 3) unnecessarily harming U.S. companies and jobs; and 4) compromising the Board's duties to the beneficiaries of the ERS.

~~6.~~5. United Nations – Supported Principles for Responsible Investment ("PRI")

In May 2018, the ERS became a signatory of the United Nations – *Supported Principles for Responsible Investment.* The six *Principles for Responsible Investment* are a voluntary and aspirational set of investment principles that offer a selection of possible actions for incorporating environmental, social, and corporate governance issues into investment practice. The signatories' commitment is as follows:

[3] Reference Act 192, Section 2. Definitions of "Scrutinized Company."

"As institutional investors, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that environmental, social, and corporate governance (ESG) issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes and through time).

We also recognize that applying these Principles may better align investors with broader objectives of society. Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

- *Principle 1: We will incorporate ESG issues into investment analysis and decision-making processes.*
- *Principle 2: We will be active owners and incorporate ESG issues into our ownership policies and practices*
- *Principle 3: We will seek appropriate disclosure on ESG issues by the entities in which we invest.*
- *Principle 4: We will promote acceptance and implementation of the Principles within the investment industry.*
- *Principle 5: We will work together to enhance our effectiveness in implementing the Principles.*
- *Principle 6: We will each report on our activities and progress towards implementing the Principles.*

The Principles for Responsible Investment were developed by an international group of institutional investors reflecting the increasing relevance of environmental, social and corporate governance issues to investment practices. The process was convened by the United National Secretary-General.

In signing the Principles, we as investors publicly commit to adopt and implement them, where consistent with our fiduciary responsibilities. We also commit to evaluate the effectiveness and improve the content of the Principles over time. We believe this will improve our ability to meet commitments to beneficiaries as well as better align our investment activities with the broader interests of society.

We encourage other investors to adopt the Principles."

Source: https://unpri.org

As part of its commitment to the PRI, the ERS shall report on an annual basis its progress in implementing the PRI's Six Principles.

~~7.~~6. Hawaiian Targeted Investment Program (HiTIP)

HiTIP was initiated to fulfill the mandate of Act 260, "A Bill For An Act Relating To The Innovation Economy" passed by the Legislature and signed by the Governor in July 2007. The stated purpose of Act 260 is "to encourage the employees' retirement system to invest in Hawai'i venture capital…"

The legislation pertains to HiTIP in that HiTIP targets investments that are directly a part of the Hawaiian community.

A full account of the Hawaiian Targeted Investment Program can be found in Section H Hawaiʻi Targeted Investment Program Policies and Procedures.

C. 8. POLICY FOR THE USE OF PLACEMENT AGENTS

The ERS shall require the specific and timely disclosure of payments and compensation to Placement Agents[4] in connection with the ERS's investments. This Placement Agent Policy is intended to apply broadly to all investment contracts made by the ERS. The goal of this Placement Agent Policy is to provide transparency into actual payments and help ensure that the ERS investment decisions are made solely on the merits of the investment opportunity in accordance with the Board of Trustees' fiduciary responsibility, and to avoid the appearance of undue influence on the Board or Staff or illegal pay-to-play practices in the award of investment related contracts. Each investment manager shall provide information to determine if any such pay-to-play practices exist. Such information shall be provided prior to the closing of an investment opportunity.

1. Investment Manager Placement Agent Disclosures

Each investment manager shall provide to the ERS the required information listed below. The investment manager must notify the Investment Staff of any changes to any of the information required.

a. Required Disclosure of Payments Made to Placement Agents

i. A written statement of whether the investment manager or any of its principals, employees, agents or affiliates has compensated or agreed to compensate any person or entity to act as a Placement Agent in connection with the ERS's investments.

ii. The name of the Placement Agent and resumes of the relevant Placement Agent(s) involved with ERS' investment.

iii. Description of any and all compensation paid or agreed to be paid to the Placement Agent, including payment to employees of the investment manager who are retained in order to solicit, or who are paid based in whole or in part upon, an investment from the ERS.

iv. Description of the services rendered or the services expected to be performed by the Placement Agent.

v. Name of the regulatory agencies the Placement Agent or any of its affiliates are registered with, such as The Securities and Exchange Commission (SEC), the Financial Industry Regulatory Association (FINRA), or any similar regulatory agency; proof and details of such registration shall be included, or an explanation as to why no registration is required.

b. Required Disclosure of Relationships to the Board and; Campaign Contributions

i. To the best of their knowledge, full disclosure of any connection between the Placement Agent or the investment manager and the ERS, including whether anyone receiving compensation or who will receive compensation with respect to

[4] "Placement Agent" includes any person or entity hired, engaged, retained by, acting on behalf of or serving for the benefit of an investment manager or on behalf of another Placement Agent as a third-party marketer, finder, solicitor, marketer, consultant, broker, or other intermediary to market, solicit, obtain access to the ERS, and/or raise money or investments either directly or indirectly from the ERS. Notwithstanding the foregoing, an individual who is an employee, officer, director, equity holder, partner, member or trustee of an investment manager and who spends one-third or more of his or her time, during a calendar year, managing the securities or assets owned, controlled, invested or held by the investment manager is not a Placement Agent.

an investment from the ERS from the Placement Agent or the fund manager is: a current or former ERS Board Member, ERS employee, or ERS consultant; a member of the immediate family of anyone connected to or formerly connected to the ERS; a current or former elected or appointed official of the State and/or cities and counties of the State, a current or former employee of the State and/or cities and counties of the State; or anyone seeking to be elected to public office of the State and/or cities and counties of the State or a member of his/her campaign organization or a political action committee.

ii. To the best of their knowledge, full disclosure of the donations made by the Placement Agent or the investment manager during the prior 24-month period to any organization (including contributions to political campaign funds and donations to non-profits) in which any person listed in Paragraph 2.a is an officer, employee, or member of the Board or Advisory Board (or similar body). Additionally, any subsequent donations made by the Placement Agent or the investment manager to any such organization during the time the Placement Agent or the investment manager is receiving compensation in connection with a the ERS investment shall also be disclosed.

iii. To the best of their knowledge, full disclosure of the names of any current or former members of the Board, ERS employees or investment consultants who suggested the retention of the Placement Agent to the investment manager.

c. *Responsibilities of Staff and Consultants*

At the time that investment discussions between an investment manager and the ERS for a prospective investment commence, Investment Staff is responsible for providing investment managers and Placement Agents with a copy of this Placement Agent Policy.

Investment Staff and investment consultants must confirm that the applicable Placement Agent disclosures have been received prior to the completion of due diligence and completion of any recommendation to proceed with the decision to invest with the investment manager. For new contracts and amendments to existing contracts, the ERS will:

i. Stop investment negotiations with an investment manager who refuses to disclose the required information;

ii. Decline the opportunity to retain or invest with an investment manager who has used or intends to use a Placement Agent who is not registered with the SEC, FINRA, or any similar regulatory agency and cannot provide an explanation as to why no registration is required; and

iii. Investment Staff and investment consultants will assist legal counsel as necessary to secure in the final contract terms and side letter agreements between the ERS and the investment manager, including but not limited to, the following:

iv. The investment manager's agreement that it has complied with and will continue to comply with this Placement Agent Policy.

v. The investment manager's representation and warranty that it will notify the Investment Staff of any changes to any of the information required above.

At any meeting where an investment decision with an investment manager will be considered, Investment Staff and the applicable investment consultants must notify the Board of the name(s) of any Placement Agent(s) used by the investment manager in connection with the proposed investment, and any campaign contributions or gifts reported by each Placement Agent.

Staff must maintain records of all information disclosed to the ERS in accordance with this policy and provide the Board with notice of any violation of this policy as soon as practicable.

d. Responsibilities of Counsel

Legal counsel to the ERS must secure in the final contract terms and side letter agreements between the ERS and the investment manager all requisite agreements and representations and warranties by the investment manager for compliance in accordance with this Placement Agent Policy.

e. Responsibilities of the Board

The Board must review all violations of this Placement Agent Policy reported by Investment Staff, consider whether each violation is material, and consider recommendations from Investment Staff and the Executive Director whether to prohibit that investment manager and/or Placement Agent from soliciting new investments from the ERS for a certain period from the date of the determination.

C. 9. BOARD OF TRUSTEES DISCRETIONARY ACCOUNT GUIDELINES

The ERS Investment Staff shall only hold U.S. Dollar cash in the Board of Trustees (BOT) Discretionary account; the cash shall be swept into the BNY Mellon Short-Term Investment Fund on a daily basis.

1. Investment Objectives

Assets held in the BOT Discretionary account shall be invested to seek the following objectives:

a. *preservation of capital*

b. *maintenance of liquidity, and*

c. *maximization of current income to the extent consistent with (i), and (ii), above by investing assets in accordance with the guidelines stated below.*

2. Investment Guidelines

Funds shall be denominated in U.S. Dollars and shall be invested in securities or instruments managed under the following guidelines:

a. *Eligible Investments:*

   i. Securities and Exchange Commission (SEC) Rule 2a-7 money market mutual funds of institutional grade[5].

   ii. Interests or units in any short-term investment fund (including, without limitation, such funds of the Custodial Bank and any of its affiliates) that invests in any of the types of investments approved above.

b. *Liquidity*

   i. A minimum of 95% of the available cash portion of the BOT Discretionary account shall be invested in Eligible Investments (1) and/or (2) above.

[5] Rule 2a-7 of the act restricts the quality, maturity and diversity of investments by money market funds. Under this act, a money fund mainly buys the highest rated debt, which matures in under 397 days. The portfolio must maintain a weighted average maturity of 60 days or less and not invest more than 5% in any one issuer, except for government securities and repurchase agreements

BROAD GROWTH PROGRAM

SECTION: D

TABLE OF CONTENTS

D. 1. OVERVIEW

1. General Description

The Broad Growth class consists of investment strategies and assets that are largely exposed and/or susceptible to changes in global economic growth and corporate profitability. Such investments typically contain relatively high degrees of risk and exhibit more volatility than other strategic classes.

The Broad Growth class consists of three major components: Global Equity, Global Credit, and Real Assets. The Global Equity component consists largely of global public and private equity and other similar-risk investments. The Global Credit component consists of public and private credit opportunities that are largely exposed to various collateral types, focused on income generation and Broad Growth diversification. The Real Assets component consists of public and private real assets that can help diversify the Broad Growth class during normal economic environments but that are also sensitive to material changes in economic growth during crisis periods.

2. Purpose

The Broad Growth class provides the bulk of the total portfolio's investment return due its exposure to the equity risk (and similar) premium. The equity risk premium, while volatile, is the reward associated with bearing economic and corporate risk – it is the highest risk premium available to investors. In addition, over long investment horizons (i.e., greater than 10 years), the equity risk premium is generally significantly positive after accounting for inflation. Due to this feature, the Broad Growth class is expected to increase the purchasing power of the total portfolio's assets over time.

By diversifying into the three major Broad Growth components, the Broad Growth class seeks to moderate its risk profile versus investing solely in any one component. This approach seeks to capture the entirety of the equity risk premium as well as capture premiums associated with other risk factors that are closely related to the equity risk premium.

3. Risk Factor Exposures

<u>*Major*</u>

- *Growth Risk*

<u>*Minor*</u>

- *Interest Rate Risk*
- *Liquidity Risk*

D. 2. CLASS STRUCTURE

1. Components

The Broad Growth class consists of public and private market components, as described below:

a. *Public Equity*

Public Equity is a sub-component of Global Equity. In general, this sub-component can include any strategy that exhibits similar risk exposures and risk/return expectations as the publicly traded global equity market opportunity set. While individual strategies can vary, the aggregate Public Equity sub-component should exhibit a high correlation to global equity market indices when examined over full market cycles (e.g., 10-year periods).

b. *Private Equity*

Public Equity is a sub-component of Global Equity. This sub-component includes a spectrum of private markets investment strategies that are primarily exposed to economic growth risk and can exhibit high levels of measured investment risk. This component will largely consist of Private Equity and similar strategies.

c. *Global Credit*

This component consists of liquid and illiquid investment strategies and assets that are largely exposed and/or susceptible to various collateral types (corporate cash flows, mortgages, various credit receivables, etc.) that produce relatively high levels of income. These investments may be traded in public markets or sourced through private issuance. Such investments typically contain relatively lower levels of risk and exhibit lower volatility than other Broad Growth components but do have exposure to growth-related characteristics. In addition, periodic income will likely be a material portion of the Global Credit portfolio's investment return.

d. *Real Assets*

This component includes a spectrum of liquid and illiquid investment strategies that represent interests directly in or derived from physical, real assets. In aggregate, this component will tend to produce returns in-line with a lower volatility growth exposure, but the characteristics will vary from strategy to strategy and the component bears the unique attributes of private markets investments (e.g., pacing studies, lagged reporting, etc.).

2. Modifications to Component Structure

Modifications to the Broad Growth class's component structure can take four forms:

a. Adding or deleting a specific investment strategy within a specific component;
b. Establishing allocation levels among the components;
c. Adding or deleting a specific component;
d. Establishing allocation ranges among the components;

Staff shall have the discretion to implement items a. and b. above, whereas items c. and d. will only occur with approval of the Board of Trustees or designee (e.g., Investment Committee).

3. Components' Allocations and Allocation Ranges

The Broad Growth class's allocation targets and allocation ranges among its three major components are as follows (as a percent of total Plan assets):

Component	Target	Ranges
Global Equity	39%	+/- 20%
Global Credit	12%	+/- 6%
Real Assets	19%	+/- 10%

If the actual allocations fall outside of the above-stated ranges, ERS Staff shall provide a written report to the Board of Trustees as to the cause, and if relevant, the planned route for shifting the portfolio back in-line with the policy range.

4. Components' Managers and Managers' Allocations

To manage the assets allocated to each strategic class and its underlying components, the Board delegates investment authority to external investment managers ("investment managers"). ERS Investment Staff has the authority to select the investment managers and their corresponding mandate sizes so long as the components retain their expected characteristics individually and the Broad Growth class maintains its expected characteristics as a whole.

D. 3. RETURN OBJECTIVES & RISK PROFILE

1. Class Return Benchmarks

The ERS utilizes the weighted target benchmark below to monitor the performance results of the Broad Growth Class:

BROAD GROWTH BENCHMARK
56% GLOBAL EQUITY BENCHMARK
27% REAL ASSETS BENCHMARK
17% GLOBAL CREDIT BENCHMARK
GLOBAL EQUITY BENCHMARK
51% MSCI ACWI IMI
49% MSCI ACWI IMI (qtr. lag)
REAL ASSETS BENCHMARK
47% FTSE EPRA NAREIT Global REITS Index GD (qtr. lag)
37% Dow Jones Brookfield Global Infrastructure Index (qtr. lag)
9% S&P Global Timber & Forestry Index (qtr. lag)
7% S&P GSCI Agriculture Index (qtr. lag)
GLOBAL CREDIT BENCHMARK
17% Bloomberg Global High Yield Index (hedged)
17%S&P LSTA Leveraged Loan 100 Index
33% Bloomberg Global High Yield (hedged) (qtr. lag)
33% S&P LSTA Leveraged Loan 100 Index (qtr. lag)

The Broad Growth Class portfolio is expected to outperform the above blended benchmark, net of fees, over a full investment cycle. An appropriate measure of an investment cycle would be rolling 5-year periods. The Broad Growth Class portfolio should outperform its benchmark, net of fees, over the majority of rolling 5-year periods.

2. Class Risk Profile

In aggregate, the Broad Growth Class is the ERS's most volatile investment class and is the class that is most sensitive to economic growth trends.

The true risk levels of the various components are expected to be ordered as follows (highest risk to lowest): Global Equity, Real Assets, Global Credit. Due to the diverse nature of strategies within the Real Assets component, its true risk level is expected to generally fall in between Global Equity and Global Credit, but it may vary over time. Considering this attribute, it is expected that ERS Staff will notify the Board of material changes in the risk profile of the Real Assets component. Moreover, it is important to note that statistical measures of risk (e.g., performance volatility) are not indicative of the true levels of risk when examined for private markets strategies.

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BROAD GROWTH: APPENDIX

DERIVATIVES POLICY[1]

Derivatives may be used in the ERS portfolio as a substitute for a cash market security, risk control, income (e.g., Covered Calls), cost reduction, or liquidity management. Derivatives are not permitted for purposes of speculation. Any derivative investment not explicitly authorized below is prohibited.

1. Where derivatives are used as substitutes for a specific cash security or set of cash securities, the return volatility of the combination of the derivative and associated cash position shall be equivalent to the unleveraged cash security or securities underlying the derivative instrument.
2. When options are used for income and risk control (e.g., Covered Calls), the notional value of the options may not exceed the total value of the underlying securities.
3. Managers shall mark-to-market their derivative positions daily.
4. Permitted Instruments:
    a. _Futures_ – stock index futures, stock and bond futures, money market futures, and currency futures where the manager has the authority to invest in the underlying or deliverable cash market security.
    b. _Options_ – options on stocks, indices, ETFs, and bonds (including interest rate caps and floors). Options on futures, swaps, and currencies are allowed for those managers who have permission to invest in the comparable cash instruments.
    c. _Currency forwards_ – only those managers who have the authority to invest in the underlying cash market instrument.
    d. _Swaps (Global Credit managers)_ – where the manager has the authority to invest in the underlying cash market instrument. Minimum counterparty rating: A-
5. Futures contracts must be CTFC (Commodity Futures Trading Commission) approved and exchange traded.
6. Options may be either exchange traded or over-the-counter (OTC) subject to counterparty guidelines as noted.
7. Managers may purchase back options in order to close out positions.
8. Counterparties to OTC traded instruments (options and forwards) must be rated investment grade or better as determined by at least one major rating agency.
9. Cross-hedging is not permitted by international equity managers; however, as it is a standard practice for non-U.S. bond managers, it is allowed for Extended Global Credit managers. These credit managers may also use certain developed-market currencies as proxies for otherwise illiquid emerging-market currencies. In such cases, use of such proxies will be disclosed through the ongoing reporting process. The counterparties for foreign currency derivatives must be rated A- or equivalent.
10. On an annual basis, all investment managers shall provide a summary of the derivatives used and the reasons for their use. This summary shall be the basis for verification that the investment managers are generally complying with the objectives and constraints of the investment policy. The investment consultant shall elicit responses on each manager's policy in the form of a letter.
11. On a daily basis the custodian bank shall examine all manager derivatives purchases for prohibited derivatives. Should any prohibited derivatives be found, the custodian bank should promptly notify Staff and instruct the manager to sell the prohibited derivatives. The custodian bank will also value and monitor all derivatives and the trades from which they emanate.

[1] Performance-related criteria for the Private Growth component is specified within the corresponding component section.

REAL ASSETS COMPONENT

1. Program Management

The Real Assets program shall be implemented and monitored through the coordinated efforts of the Board of Trustees ("Board of Trustees" or "Board") of the Employees' Retirement System of the State of Hawaii ("ERS"), the ERS investment staff ("Investment Staff"), and the ERS's investment consultants ("Investment Consultants"). The ERS Investment Staff shall maintain the day-to-day management and implementation responsibilities of the program while leveraging the expertise of the ERS's Investment Consultants where applicable. The Board of Trustees or designee shall provide high-level oversight and approve the long-term, strategic direction of the program during asset-liability studies and/or component structure reviews.

2. Investment Parameters

a. Portfolio Construction

The ERS has determined that, over the long-term, the inclusion of a Real Assets component can enhance the ERS's expected total portfolio investment characteristics. Specifically, investments in Real Assets strategies provide unique exposures and return drivers relative to public market securities and other private markets strategies (e.g., private equity). Moreover, Real Assets strategies are expected to increase the purchasing power of the total portfolio's assets over time, while buffering drawdowns during inflation-oriented crises. As a component of the Broad Growth strategic class, the Real Assets component is expected to produce returns similar to other Broad Growth components but commensurate with its relative level of risk.

Real Assets investments of the ERS shall be made in a manner consistent with the fiduciary standards of the prudent expert rule: (1) for the sole interest of the ERS's participants and their beneficiaries; and (2) to safeguard and diversify the Real Asset portfolio. The selection and management of Real Assets investments will be guided to preserve investment capital and to maintain prudent diversification of assets and management responsibility. The diversification objective is required to manage overall market risk and the specific risks inherent in any single investment or management selection.

b. Aggregate Target Allocation

The allocation of ERS assets to Real Assets investments shall remain within the limits authorized by the Board of Trustees or designee. The long-term target allocation is 19% of the ERS's Total portfolio (based on net asset value of invested capital).

	Long-term Total Portfolio Target *(effective 01/01/2024)*
Real Assets	19%

As a private markets class, the Board of Trustees understands that it is unlikely the ERS will ever be perfectly in-line with the target allocation. However, the Board of Trustees expects the program to be implemented in a prudent and diversified manner with a relatively consistent risk profile. In order to avoid concentration risks, the Board expects the program to incorporate relatively even vintage year and strategy diversification over time (subject to the component target allocations detailed below).

c. *Sub-Component Target Allocations*

The ERS's Real Assets component consist of several sub-components:

i. Real Estate (Core and Non-Core)

ii. Timber

iii. Agriculture

iv. Infrastructure

v. Other Real Assets

Each of the components are expected to be implemented with private markets assets, although public market proxies may be used for transitory purposes. The *Other Real Assets* sub-component is not expected to be used without prior notification of the Board or designee. The following table provides the long-term sub-component-level target allocations and respective ranges within the Real Assets component.

Sub-Component	**Long-Term Total Portfolio Target**
Real Estate	9%
Timber/Agriculture	3%
Infrastructure	7%
Other Real Assets	---
Total	**19%**

Due to the unpredictability in the timing of capital calls and distributions, the Board understands that the portfolio is unlikely to ever be perfectly in-line with these targets. Moreover, the ERS Investment Staff maintains discretion around the sub-component targets and can modify the implementation of the actual portfolio subject to the risk management policy (see following section).

d. *Risk Management*

The construction and management of the Real Assets program will be designed to generate an attractive level of return with prudent diversification that is additive to the total portfolio. The specific risk/return objective of the program is an outcome of the Board's or designee's selection of a target portfolio during asset-liability studies.

As a component of the Broad Growth strategic class, it is expected that the Real Assets program will share some commonalities (i.e., drawdown and positive return periods) with other growth-related strategies, however, the ERS Investment Staff seeks to implement the program in as complementary of a manner as possible.

With Real Assets investments, there is an inherent risk that the actual return of capital, gains, and income will vary from the amounts expected. The ERS shall manage the investment risk associated with Real Assets investments in several ways:

i. Strategic Structure

1. Allocation by sub-component. The ERS Investment Staff can manage allocations to the sub-components with a certain level of flexibility in order to adjust for market dynamics, opportunities, and private market-specific challenges. The ERS Board expects the Investment Staff to maintain a holistic view of the portfolio's aggregate risk posture across all strategic classes, components, and sub-components.

2. Commitment pacing into each segment over time. It is expected that the Real Assets component will be implemented via measured and consistent commitment pacing. However, certain annual commitment amounts among these sub-components may vary significantly, depending upon the capital investment opportunities within each component.

ii. Manager Selection / Institutional Quality

1. All assets must be of institutional investment quality. Institutional quality will be defined as being of a quality whereby the investment would be considered acceptable by other prudent institutional investors (e.g., endowments, foundations, insurance companies, commercial banks and savings institutions, public employee retirement systems, corporate employee benefit plans, and other tax-exempt institutions).

iii. Leverage

1. Leverage levels will be an explicit consideration when examining and monitoring investments. For a given fund, the utilized leverage must be consistent with the objectives of the respective strategy and industry-wide practices.

e. Benchmarks

The aggregate Real Assets component will utilize a blended benchmark based on the underlying sub-component benchmarks and corresponding total portfolio target allocations. As a private markets class, the ERS Board understands that perfect benchmarks do not exist and there will be variances/mismatches over periods of time. The success of the Real Assets program will primarily be examined over rolling 10-year windows.

	Sub-Component Benchmark
Real Estate	FTSE EPRA NAREIT Global REIT Index GD (qtr. lag)
Timber/Agriculture	S&P GSCI Agriculture Index (qtr. lag) S&P Global Timber & Forestry Index (qtr. lag)
Infrastructure	Dow Jones Brookfield Global Infrastructure Index (qtr. lag)
Other Real Assets	---

f. Monitoring and Reporting

The performance of private Real Assets investments will be calculated on both a time-weighted and dollar-weighted (internal rate of return or IRR) basis. The rate of return calculations will be net of all partnership/LLC fees and expenses.

The ERS's Real Assets~~ (or Real Estate)~~ Consultant will be responsible for calculating and reporting net IRRs on the individual investments as well as at various composite levels as requested by the ERS. The ERS's General Consultant, in conjunction with the ERS's custodian, will produce time-weighted returns on the aggregate Real Assets composite.

The ERS's Investment Staff and/or the appropriate designated retained consultant will provide additional performance measurement information, if requested by the ERS Board or designee.

REAL ESTATE SUB-COMPONENT

1. Investment Objectives

a. Investments In Real Estate

The Employees' Retirement System of the State of Hawaii ("ERS") Board of Trustees has determined that the inclusion of Core and Non-Core Real Estate can enhance the portfolio's structure.

While safety of principal is given primary consideration, the ERS recognizes the need to use active asset management strategies in order to obtain the highest attainable total investment return (income plus appreciation) within the ERS's framework of prudence and managed risk.

The selection of investment managers and development of investment policy will be guided to enhance diversification within the portfolio of the ERS's real estate investment program ("Real Estate Investment Program") thereby limiting exposure to any one investment, organization, real estate property type and geographic region (Refer to Section II: Program Management).

i. Real Estate Defined - Real estate assets are defined as those investments that are unleveraged or leveraged, equity or debt positions in private and public real property. Investments in private and public real estate companies are also permissible. The ownership structure(s) should be consistent with any rules, regulations, or law, as applicable, governing the ERS. The ERS will pursue both discretionary separate account investment management and discretionary commingled fund investment management for its real estate allocation.

b. Strategic Allocation

The ERS allocation to real estate shall remain within the limits authorized by the ERS Board of Trustees or designee. ~~Core and Non-Core ~~R~~r~~eal estate allocations should be in line with those that are detailed in Section D: Broad Growth Program. ~~Core and Non-Core ~~R~~r~~eal estate allocations will be established and managed via scheduled annual commitment pacing approved as a result of the annual strategic plan (see item 2.C. below).

c. Portfolio Return Objectives

The real estate return objectives and benchmarks will follow their respective assignments as detailed in Section D.3. Return Objectives & Risk Profile.

2. Program Management

a. Overview

In compliance with current ERS investment philosophy, the Real Estate Investment Program will primarily utilize discretionary separate account relationships and discretionary commingled fund investment vehicles that are sponsored by real estate investment managers ("Investment Managers"). Under this program, the Investment Managers acquire, operate and dispose of real estate assets in accordance with a work assignment that is outlined in their investment management contract with the ERS (the "Contract") and in the Annual Tactical Plan for separate accounts and the fund documents for commingled funds. The Contract describes the acceptable property types, geographic restrictions, investment structures, leverage and other specific investment parameters. For Separate Accounts, The Annual Tactical Plan is the Investment Manager's "working plan" for each fiscal year and must be reviewed by Investment Staff and Real Assets~~Estate~~ Consultant. Such planning will be incorporated into the Real Assets Strategic Plan and approved by the Board of Trustees or designee, annually. For commingled funds, documents typically refer to the fund's offering memorandum or private placement memorandum, limited partnership or LLC membership agreement, and subscription agreement.

b. Participant Roles and Responsibilities

The ERS's Real Estate Investment Program shall be implemented and monitored through the coordinated efforts of the Board of Trustees or designee(s). Specific responsibilities that fall outside the general responsibilities highlighted in Section B.5. are listed below:

i. Investment Manager - Qualified real estate organizations, registered as Investment Advisors under the 1940 Act that provide institutional real estate investment management services to the ERS. ERS may invest in commingled fund vehicles that are not registered, however, it is preferred that the commingled fund be sponsored and/or managed by a Registered Investment Advisor.

ii. Separate Account Manager Responsibilities - The separate account Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of real estate properties and/or originates or acquires, manages, and realizes upon real estate debt investments in accordance with the annual Tactical Plan and Contract.

iii. Commingled Fund Manager Responsibilities – The commingled fund Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of real estate properties and/or originates or acquires, manages, and realizes upon real estate debt investments in accordance with the terms of the investment vehicle documents.

c. Annual Real Assets~~Estate~~ Strategic Plan

i. Annually, the Investment Staff, with the Real Assets~~Estate~~ Consultant as requested, will prepare a Strategic Plan which reviews the current status of the portfolio, recent historical and prospective market conditions, and proposes the actions to be taken over the next approximately twelve-month period. This document will recommend general capital allocations to the ~~Core and Non-Core~~ Real Estate Program and the rationale and expectations for inclusion.

ii. The annual Strategic Plan will then be presented to the Board of Trustees or designee for approval.

3. Portfolio Composition

a. *Core Portfolio* - Core investments include equity or debt investments on existing, substantially leased income-producing traditional property types located principally in metropolitan areas that exhibit reasonable economic diversification. Core investments typically exhibit one or more of the following characteristics:

   i. Traditional institutional quality property types including office, industrial, retail and multifamily; also included are medical office, senior housing, storage, and student housing properties that demonstrate core characteristics;

   ii. Operating and stabilized properties that demonstrate predictable income flows with a high proportion of anticipated total return arising from current income and cash flow;

   iii. Well-leased upon purchase of the asset;

   iv. Located in institutional markets and in economically diversified metropolitan areas;

   v. High credit quality tenants and a staggered lease maturity schedule;

   vi. Quality construction and design features;

   vii. Reasonable assurance of a broad pool of potential purchasers upon disposition;

   viii. Properties requiring quality asset and portfolio management but not requiring specialized operating expertise which is not readily available in the market;

b. *Non-Core Portfolio* - Non Core real estate investments represent equity or debt investments in those properties and/or investment strategies that require specialized acquisition and management expertise or skill to mitigate the business and leasing risk that may be associated with individual investments. Non-Core investments which may be referred to as Value Added or Opportunistic have greater volatility and leverage compared to core investments and as such are expected to provide yields higher than those associated with core investments.

c. *Value Added* – Value Added investments include equity, debt, or real estate company investments of institutional quality that offer the opportunity to enhance value through rehabilitation, redevelopment, development, lease-up or repositioning. A significant portion of return is from appreciation and includes moderately higher leverage than core. Value added investments typically exhibit one or more of the following characteristics:

   i. Properties located in primary as well as secondary and tertiary markets which may not be economically diversified and may have accompanying susceptibility to imbalance of demand and supply;

   ii. Traditional as well as non-traditional property types including, but not limited to, hotels, motels, senior housing, student housing, manufactured and residential housing;

   iii. Properties that are undermanaged with specific problems that require specialized management skills;

   iv. Properties well leased ~~that are less than 70% leased~~ upon purchase or ~~where more than 30% of leases expire~~ within in the first three years of purchase;

   v. Properties involving significant appreciation, lease-up, development and/or redevelopment risks;

   vi. Properties using moderate leverage; ~~between 50% and 65%;~~

   vii. Investments in institutional quality properties located in mature real estate markets showing high levels of market transparency outside of the United States and Canada;

d. *Opportunistic* – Opportunistic investments include equity or debt investments in real estate properties, real estate operating companies and other investment vehicles that offer the opportunity to capitalize on the disequilibrium of the real estate markets caused by dramatic shifts in capital flows or other fundamental real estate characteristics. Opportunistic investments not only include distressed assets in need of lease up but also assets that provide returns from financial restructuring. Opportunistic investments typically exhibit one or more of the following characteristics:

   i. Strategies that seek to exploit inefficiencies in the capital and real estate markets
   ii. Strategies that involve financing or acquisition of real estate assets, operating companies, portfolio of real estate assets
   iii. Strategies that focus on major development or redevelopment
   iv. Properties with substantial leasing, development and entitlement risk
   v. Distressed assets
   vi. Distressed debt
   vii. Major financial re-structuring required
   viii. Higher utilization of leverage ~~of between 65% and 90%~~
   ix. Investments in real estate markets driven by growth and continued improvements in market transparency, located outside of the United States and Canada

4. Investments and Risk Management

The ERS shall manage the investment risk associated with real estate in several ways:

a. Institutional Quality

All assets within the Real Estate portfolio must be of institutional investment quality as evidenced by a history of institutional investment in similar properties; expert analysis which supports the economic viability of the market; high quality construction and design features; and a current or potentially competitive position within the property's immediate market area.

b. Diversification

The real estate portfolio shall be diversified by geographic region and property type. Diversification reduces the impact on the portfolio of any one investment or any single Investment Manager's style to the extent that an adversity affecting any one particular area will not impact a disproportionate share of the total portfolio.

c. ~~Target Portfolio~~

~~The long-term real estate strategy is for the ERS real estate portfolio to be diversified taking into account the following diversification guidelines:~~

~~Property Type - The real estate portfolio shall be diversified with the majority of investments comprised of the four traditional property types: office, industrial, retail, and multifamily (apartment). No single traditional property type shall account for greater than 50% of the portfolio. In addition, the range of property type allocations are generally expected to be 0.5x - 1.5x the NFI-ODCE's weight in each property type. Other property types, as defined by NFI-ODCE, are allowed but (on a combined basis) should generally not exceed 20% of the real estate portfolio.~~

~~*Geographic - Within the United States, the range of geographic allocations are generally expected to be 0.5x – 1.5x the NFI-ODCE weight in each region. International Investments (Non US and Canada) will generally range between 0-20% of the core real estate portfolio.*~~

Ownership Structure

The ownership structure for real estate investments may include leveraged and unleveraged equity and debt investments owned directly via separate accounts or through commingled funds. For separate accounts, directly owned investments may be 100% owned by ERS or owned jointly with Suitable Investment Partners. "Suitable Investment Partners" include public, corporate and union pension plans, foundations and endowments, insurance company general accounts or separate accounts, and other tax-exempt institutions, having the same or greater standards of fiduciary care and responsibility as those imposed by ERS guidelines. When dealing with non-core investments that are directly owned, Operating Partners shall be added to the list of "Suitable Investment Partners." The ownership structure of non-core assets within commingled funds will be governed by the fund documents.

~~*j.*~~*d. Leverage*

The use of leverage is a prudent tool for enhancing returns and diversifying equity investments, though it does raise the risk profile of the portfolio. As such, ERS has approved leverage targets in order to enhance returns to the total portfolio. The availability and cost of leverage will be factors considered in determining its use. For the total real estate portfolio, the ERS has established a leverage maximum of fifty percent (50%). Third party debt should primarily be non-recourse. At no time shall the origination of new leverage cause the portfolio to exceed the established limits on a loan-to-value basis. In the event that either the portfolio level and/or style level leverage constraint is breached due to a contraction in market values, the Staff and Consultant will notify the Board of Trustees or designee and make a recommendation for action or exception if appropriate.

~~*k.*~~*e. Manager Concentration*

ERS shall limit its exposure to any single manager. No single Investment Manager shall be permitted to manage more than 35% of the total allocation to real estate at the time of investment (i.e., purchase) without prior approval from the Board of Trustees or its designee. In the case of the Separate Account Manager(s), concentrations are likely to exist, and be allowed, during build up or wind down periods of such accounts.

~~*l.*~~*f. Investment Size*

There is no minimum investment size. The maximum net investment in a single property within a separate account shall be limited to 15% of the allocation to the core real estate program at the time of investment. The ERS's investments in a single commingled fund shall not exceed 20% of the total net market value of the commingled fund at the time of investment. If the commingled fund is in the process raising assets (versus being an open-ended fund), the 20% threshold will be based on target fund size.

5. Investment Process (Separate Accounts)

a. Manager Selection Process

ERS Investment Staff, assisted by the Real Estate Consultant as requested, shall have responsibility for sourcing managers. ERS, assisted by the Real Estate Consultant as requested, shall screen and review the managers and arrange interviews and final presentations if necessary. The Real Estate Consultant will assist Investment Staff in negotiating and closing manager agreements, including final fee structures.

b. Leverage

The total level of debt for any single core separate account investment will generally not exceed fifty percent (50%).

c. *Monitoring and Reporting*

The ERS expects its Separate Account managers to generally act in accordance with the most recent version of the Reporting Standards established jointly by the National Council of Real Estate Investment Fiduciaries ("NCREIF") and the Pension Real Estate Association ("PREA") ("Reporting Standards"). The Reporting Standards were developed with a mission to establish, manage and promote transparent and consistent reporting standards for the real estate industry to facilitate informed investment decision-making.

6. Investment Process (Commingled Funds)

a. *Manager Selection Process*

In an effort to maintain program simplicity and ensure appropriate underwriting of investment management organizations, the ERS Staff shall utilize only ERS approved real estate investment management firms for the acquisition, asset management and disposition of property and origination, management, and realization of debt investments. In addition to the existing separate account Investment Managers, the ERS has approved a program of commingled fund investing.

The following steps shall be followed in order for the ERS to commit to any prospective commingled real estate investment opportunity:

i. Investment Staff, with assistance from the Real Estate Consultant, sources and performs comprehensive due diligence on attractive investment opportunities consistent with criteria set forth in the annual Strategic Plan.

ii. If, as a fiduciary of the ERS, the Real Estate Consultant determines that the investment merits a commitment from the ERS, the Real Estate Consultant will take the following steps:

1. Discuss with Investment Staff the key findings during due diligence, including investment merits, risks and key conclusions;

2. Follow-up with Investment Staff on additional requests for information based on this discussion and complete an Investment Disclosure Form;

3. In conjunction with the ERS's legal review process, assist legal negotiation and closing into the investment opportunity.

iii. Upon successful review of the investment by Investment Staff, the investment shall be recommended to the Board of Trustees or designee for approval. This recommendation shall contain a summary of the due diligence and a prospective commitment level for the investment.

b. *Monitoring and Reporting*

i. <u>Reporting System</u> - There shall be a comprehensive reporting and monitoring system for the entire portfolio, Real Estate Consultant, Investment Manager(s) of commingled funds, and individual investments. Situations of underperforming investments, portfolio diversification deficiencies from the Policies & Procedures, and conflicts of interest can then be identified, facilitating active portfolio management.

TIMBER SUB-COMPONENT

1. Investment Objectives

a. Investments in Timberland Assets

Timber investments involve the privately negotiated purchase and, to a lesser degree, leasing of forestland tracts, upon which trees are grown for commercial sale. Investments in timber will primarily be made directly through a separate account or indirectly through a multi-investor structure (i.e., two or more investors investing in a specific timber asset as a limited liability company ["LLC"] or other investment vehicle, as appropriate) in which ERS's separate account is an investor. When applicable and consistent with the objectives of the Real Assets program, commingled funds may also be used to achieve exposure to timberland investments. All timber investments will be managed by a qualified timberland investment manager ("timberland manager" or "manager").

Timber investments of the ERS shall be made in a manner consistent with the fiduciary standards of the prudent expert rule: (1) for the sole interest of the ERS's participants and their beneficiaries; and, (2) to safeguard and diversify the timber portfolio. The timber portfolio will be constructed to preserve investment capital and to maintain prudent diversification of assets.

b. Strategic Allocation

The ERS's allocation to timber investments shall remain within the limits authorized by the Board of Trustees or designee as described in the Real Assets component of this Investment Policy Statement.

c. Portfolio Return Objectives

The timber return objectives and benchmarks will follow their respective assignments as detailed in Section D.3. Return Objectives & Risk Profile.

At a high-level, the timber investments portfolio's rate of return is expected to be generated primarily from biological growth, sale of timber inventory, and purchases and sales of properties. Additionally, value-added investments may be used to enhance timberland investments, and may include recreation leases, carbon sequestration, wetland mitigation, and other ecosystem services.

2. Program Management

a. Overview

In compliance with current ERS investment philosophy, the Timber program will primarily utilize discretionary separate account relationships and discretionary commingled fund investment vehicles that are sponsored by timberland investment managers ("Investment Managers"). Under this program, the Investment Managers acquire, operate and dispose of timberland assets in accordance with a work assignment that is outlined in their investment management contract with the ERS (the "Contract") and in the Annual Tactical Plan for separate accounts and the fund documents for commingled funds. The Contract describes the acceptable property types, geographic restrictions, investment structures, leverage, and other specific investment parameters. For Separate Accounts, the Annual Tactical Plan is the Investment Manager's "working plan" for each fiscal year and must be reviewed by Investment Staff and Real Assets~~Estate~~ Consultant. For commingled funds, documents typically refer to the fund's offering memorandum or private placement memorandum, limited partnership or LLC membership agreement, and subscription agreement.

b. Participant Roles and Responsibilities

The ERS's Timber Investment Program shall be implemented and monitored through the coordinated efforts of the Board of Trustees or designee; through the Investment Staff; the ERS's general investment consultant ("General Investment Consultant"); the ERS's R~~r~~eal Assets~~estate~~ consultant ("Real Assets~~Estate~~ Consultant"); and the Investment Manager(s). Specific responsibilities that fall outside the general responsibilities highlighted in Section B.5. are listed below:

i. Investment Manager - Qualified organizations, registered as Investment Advisors under the 1940 Act, that provide institutional timberland investment management services to the ERS. ERS may invest in commingled fund vehicles that are not registered, however, it is preferred that the commingled fund be sponsored and/or managed by a Registered Investment Advisor.

ii. Separate Account Manager Responsibilities - The separate account Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of timberland properties in accordance with the Annual Tactical Plan and Contract.

1. Annual Tactical Plan

Annually, the separate account timberland manager will prepare an Annual Tactical Plan which reviews the current status of the portfolio, recent historical and prospective market conditions, and proposes the steps to be taken to further implement the long-term strategic plan. The Annual Tactical Plan will be reviewed by the Real Assets~~Estate~~ Consultant and Investment Staff

The format of the Annual Tactical Plan is expected to include: (1) a review of the current status of the portfolio, (2) perceived investment environment, (3) the types and amount of property investments to be sought and underlying rationale, (4) goals for other management responsibilities such as situations being monitored and adding value, and (5) outline the steps anticipated toward portfolio development over the course of the coming year, and (6) any other items requested by the ERS.

iii. Commingled Fund Manager Responsibilities – The commingled fund Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of timberland investments in accordance with the terms of the investment vehicle documents.

3. Strategic Plan

The Timber program is expected to be managed and monitored as a sub-component of the broader Real Assets component. Separate account timberland mandates will contain their own *Annual Tactical Plans* as highlighted above.

a. Portfolio Composition

With timber investments, there exists an inherent risk that the actual return of capital, income and gains will vary from the amounts expected. The composition of the portfolio and its key program management parameters are as follows:

i. Institutional Quality

All assets must be of institutional investment quality. Institutional quality will be defined as being of a quality whereby the investment would be considered acceptable by other prudent expert institutional timber market participants and corporate forest product industry investors.

ii. Diversification

The timber portfolio shall be diversified by:

1. regional geographical location (South, Northeast, West, Other, and International)
2. non-contiguous tract and parcel locations
3. type and species of tree (e.g., softwood "conifer," such as pine, fir redwood, etc., and hardwood "deciduous," such as oak, maple, etc.)
4. end-use market of forest product (building and construction, pulp and paper, furniture and decorative wood)
5. potential purchasers of inventory (mills and processing plants)
6. stage of tree growth (seedling through mature)
7. timing of investment

When fully invested, no one timberland investment should represent in excess of twenty-five percent (25%) of the total market value of the portfolio. These limits are subject to waiver on a case-by-case basis by the Trustees. It is also recognized that during the portfolio development and wind-down stages the full investment parameters may not, of necessity, be met.

iii. Ownership Structure

Account and Investment Structure: The ERS's ownership structure will comprise an arrangement whereby separate account relationships will be established with one or more fiduciary timberland managers. The separate account timberland manager will in turn purchase, on a discretionary basis, timber assets for the ERS's account. When applicable and consistent with the objectives of the Real Assets program, commingled funds may also be used to achieve exposure to timberland investments. Commingled fund investments will be governed by their fund-specific documentation, and any corresponding side letters, which may vary from the separate account guidelines presented below.

b. Investment Process (Separate Accounts)

i. Eligible Investments

In general, the timberland manager will have discretion to purchase forest tracts that are expected to meet or exceed the ERS's rate of return objectives for timber investment. The rate of return must be appropriate after the consideration of any risk measures employed by the manager. Multi-investor structures and lease holdings may be made, however, the majority of the fully invested portfolio should be made up of fee simple investments. The timberland manager is allowed to enter into joint ventures with forest product companies for up to 20% of the portfolio. However, the structure of the joint venture must not impede, at any time, either the sale of the holding or the ability of the ERS to replace the timberland manager. Also, the manager will minimize the concentration of holdings in areas known to be frequented by natural disasters, for example coastal tracts known to be frequent hurricane paths, flood zones, etc.

Without compromising the geographical diversification targets, the timberland manager will use reasonable efforts to mitigate the incurrence of unrelated business taxable income in the portfolio.

Leverage may be used, on a nonrecourse basis, up to 20% of the timberland market value of the portfolio, with no more than 50% leverage on any one timber investment. The single investment debt level will be measured for compliance at the time leverage is added to the portfolio. Leverage for the total portfolio will be measured for compliance at the time the leverage is added to the portfolio, or a portfolio asset is purchased or sold. Leverage may not be added to any investments held as of September 15, 2010.

4. Geographical Location Diversification

Over the long-term, the ERS portfolio should seek portfolio diversification with regard to major timber growing regions. The currency exposure to the ERS from any non-U.S. dollar aspect of the allocation is expected to be negligible over the long-term.

The following ranges set forth the geographic diversification targets for the timberland manager to fulfill:

Region	Range
South	45% - 65%
West	25% - 45%
Northeast	0% - 20%
Other/International	0% - 20%

5. Tree Maturity Diversification

The ERS portfolio will seek to diversify by maturity of timber ranging from immature, pre-merchantable trees through mature, merchantable timber. The timberland manager will create a sustainable timberland portfolio where tree seeding, planting, growth and purchases will replace trees harvested and properties sold.

6. Tree Species Diversification

The portfolio will be diversified by timber type and include both hardwoods and softwoods.

7. End Use Diversification

The ERS portfolio will be structured to sell into several commercial industries, such as paper goods and cardboard, various building and construction materials markets, and finished carpentry and furniture. The timberland manager will also take into account the number of regional processors or purchasers of timber inventory.

8. Tract And Parcel Diversification

The portfolio will be composed of numerous non-contiguous tracts with the goal of diversifying the risk of natural disasters such as fire, disease, pests, etc.

9. Manager Responsibilities

a. Investment Management

Timberland managers are directly accountable for the following investment management responsibilities. This section designates certain investment responsibilities that the timberland manager will perform or cause to be performed.

i. <u>Acquisition</u> – The manager will be responsible for sourcing, evaluating and selecting, on a discretionary basis with fiduciary responsibility, timber investments to be made on behalf of the ERS.

ii. The acquisition process will be made with a view to maximize the ERS's risk adjusted rate of return subject to portfolio management/diversification parameters.

iii. <u>Ongoing Operations</u> – The timberland manager shall manage or cause to be managed, the portfolio and individual properties such as to enhance the ERS's value in the investment. This includes silvicultural/forest management, property valuations/appraisals, and cash-flow management.

iv. <u>Disposition</u> – Ongoing, and based on timber market circumstances, the timberland manager shall review the managed investments with respect to continued timely return of capital, income and gains, including both planned and opportunistic sales of timber inventory and properties. The manager shall identify qualified buyers, solicit and evaluate offers, and negotiate property sales.

b. Monitoring and Reporting

The ERS expects its Separate Account managers to generally act in accordance to the most recent version of the Reporting Standards established by the National Council of Real Estate Investment Fiduciaries ("NCREIF") and US GAAP.

10. Investment Process (Commingled Funds)

When applicable and consistent with the objectives of the Real Assets program, commingled funds may be used to achieve exposure to timberland investments. The commingled fund Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of timberland investments in accordance with the terms of the investment vehicle documents.

INFRASTRUCTRE SUB-COMPONENT

1. Program Management

a. General Description

The Infrastructure Portfolio is long term in nature, and for time-diversification purposes, investment commitments may be drawn down over several years throughout a defined investment period with respect to certain investment vehicles (e.g., closed-end pooled funds). Accordingly, the ERS Investment Staff and Investment Consultants may recommend total investment commitments that reasonably exceed the total Infrastructure Portfolio allocation authorized for Portfolio investment (e.g., 150% of the authorized allocation amount) to build and maintain the allocation. The Infrastructure program is expected to be managed and monitored as a sub-component of the broader Real Assets component.

b. Investment Structure

The Infrastructure Portfolio may include private equity and private debt investments in closed-end and open-end pooled funds. Private equity fund investments may include equity interests in Infrastructure assets, including energy, communications, transportation, and other types of assets. Private debt fund investments may include structured investments, which provide for stated preferred returns, which may be accrued or paid on a current basis.

c. Diversification

The Infrastructure Portfolio diversification is important in reducing portfolio risk and accomplishing risk-adjusted return expectations in the context of the larger Real Assets component that includes the Infrastructure sub-component. The impact of Infrastructure investments on the Real Assets portfolio's diversification, portfolio risk, and risk-adjusted returns shall be considered when evaluating prospective investments.

d. Leverage

Leverage can be a significant risk factor, impacting the risk / return profile of the Infrastructure Portfolio. The ERS Investment Staff and the investment consultants will monitor closely the leverage level of each Infrastructure fund investment seek to maintain a risk/return level consistent with the ERS's investment objectives.

e. Portfolio Risk and Liquidity Attributes

Infrastructure investments are expected to be private; therefore, on-demand liquidity outside of income is not anticipated. Investments are expected to primarily be "core" investments, equity or debt investment in high-quality infrastructure assets with lower risk/return attributes. Core investments are often regulated or contracted essential assets that may be characterized by a low correlation to GDP growth (e.g., regulated utilities). Volatility levels are anticipated to be reduced by this focus on income-oriented investing.

AGRICULTURE SUB-COMPONENT

1. Program Management

a. General Description

The Agriculture Portfolio target is long term in nature, and for time-diversification purposes, investment commitments may be drawn down over several years throughout a defined investment period with respect to certain investment vehicles (e.g., closed-end pooled funds). Accordingly, the ERS Investment Staff and the investment consultants may recommend total investment commitments that reasonably exceed the total Agriculture Portfolio allocation authorized for Portfolio investment (e.g., 150% of the authorized allocation amount) to build and maintain the allocation. The Agriculture program is expected to be managed and monitored as a sub-component of the broader Real Assets component.

b. Investment Structure

The Agriculture Portfolio may include private equity and private debt investments in closed-end and open-end pooled funds. Private equity fund investments may include equity interests in Agriculture assets, including farmland, delivery, storage, and other types of assets. Private debt fund investments may include structured investments, which provide for stated preferred returns, which may be accrued or paid on a current basis.

c. Diversification

The Agriculture Portfolio diversification is important in reducing portfolio risk and accomplishing risk-adjusted return expectations in the context of the larger Real Assets component that includes the Agriculture sub-component. The impact of Agriculture investments on the Real Assets portfolio's diversification, portfolio risk, and risk-adjusted returns shall be considered when evaluating prospective investments.

d. Leverage

Leverage can be a significant risk factor, impacting the risk / return profile of the Agriculture Portfolio. The ERS Investment Staff and the investment consultants will monitor closely the leverage level of each Agriculture fund investment and seek to maintain a risk/return level consistent with the ERS's investment objectives.

e. Portfolio Risk and Liquidity Attributes

Agriculture investments are expected to be private; therefore, on-demand liquidity outside of income is not anticipated. Investments are expected to primarily be "core" investments, equity or debt investment in high-quality Agriculture assets with lower risk/return attributes. Core investments may be characterized by a low correlation to GDP growth. Volatility levels are anticipated to be reduced by this focus on income-oriented investing.

GLOBAL CREDIT COMPONENT

1. Investment Objectives & Structure of the Credit Portfolio

a. General Description

The Credit Portfolio consists of investment strategies and assets that are largely exposed and/or susceptible to various collateral types (corporate cash flows, mortgages, various credit receivables, etc.) that produce relatively high levels of income. These investments may be traded in public markets or sourced through private issuance. Such investments typically contain relatively lower levels of risk and exhibit lower volatility than other Broad Growth components but do have exposure to growth-related characteristics. In addition, periodic income will likely be a material portion of the Credit Portfolio's investment return.

b. Strategic Objective

The objective of the ERS Credit Portfolio is to complement other Broad Growth components by generating a consistent return by pursuing an opportunistic non-benchmark focused approach across global public and private credit markets.

c. Long-Term Investment Return Objective

The ERS shall use the following rate of return tests to evaluate the performance of the Credit Portfolio:

i. <u>Total Return</u>

1. Over rolling 3-year periods, the total Credit Portfolio is expected to generate a minimum total dollar-weighted rate of return (internal rate of return or IRR) that exceeds an absolute return of 3-month SOFR (or equivalent short-term interest rate) + 4-6%, net of all investment management fees and expenses.
2. The Credit Portfolio's risk and return characteristics will also be measured against the investable credit indices as specified in the ERS Broad Growth Benchmark.

d. Investment Strategies

The following credit strategies and investment types will be considered eligible for the ERS's portfolio:

i. <u>Corporate Credit</u>. Partnerships/Fund of Ones ("FOOs") or commingled funds which invest in liquid and less liquid corporate credit across the capital structure as well as opportunistically provide private financing. Investment instruments and/or strategies include but are not limited to the purchase and/or origination of investment grade, broadly syndicated high yield bonds, broadly syndicated leveraged loans, narrowly syndicated private debt ("club deals"), collateralized loan obligations ("CLO") debt and equity, municipal securities, capital solutions and convertibles.

ii. <u>Mortgage Credit</u>. Partnerships/FOOs or commingled funds which invest in liquid and less liquid mortgage credit as well as opportunistically provide private financing. Investment instruments and/or strategies include but are not limited to the purchase and/or origination of legacy non-agency residential mortgage-backed securities, ABS CDOs, agency risk transfer, FNMA/Freddie preferreds, non-qualified mortgage origination, re-performing loans, legacy CMBS, CRE CDOs, credit tenant leases and bridge financings.

iii. Specialty Finance. Partnerships/FOOs or commingled funds which invest in liquid and less liquid specialty finance as well as opportunistically provide private financing. Investment instruments and/or strategies include but are not limited to the purchase and/or origination of marketplace lending, equipment leasing, consumer loans, student loans, auto loan, aircraft finance and regulatory capital relief.

iv. Hedging. Partnerships/FOOs or commingled funds which seek to opportunistically hedge beta exposures through derivative exposures. Derivatives may be used for managing interest rate, volatility, term structure, country, currency and sector exposures and will be employed defensively.

e. Investment Structure

The ERS may utilize commingled funds, separate accounts, or funds of one specifically tailored to meet the needs of the ERS for primary, secondary, and co-investments. The Credit component is expected to be allocated 100% to active management.

2. Implementation

a. Investment Approval Process

The investment approval process (i.e., the selection of investment managers for this component) will be consistent with ERS's manager selection and retention processes as discussed under Section C of this policy manual. Any selected mandates will also be subject to the policies put forth under Section D (Broad Growth class policy) of this manual.

b. Reporting

Time-weighted investment performance results for Credit mandates will be reported in a manner consistent with results produced for other account mandates under the Broad Growth class and consistent with general reporting requirements found in Section C of this policy manual. In addition, in order to assess whether the component is meeting its objectives as discussed above in paragraph 1.C. (Long-term Investment Return Objective), the Staff will provide an annual update of the Credit program.

In addition to the return metrics highlighted above, Investment Staff may develop additional metrics to assess the progress of the Credit program. Such metrics may include, but not be limited to:

- Yields based upon cash income produced by the related portfolio(s);
- Default rates and/or impairment rates exhibited by the portfolio(s);
- Sector and/or collateral concentration levels within the portfolios;
- Other measures.

PRIVATE EQUITY SUB-COMPONENT

1. Program Management

a. Responsibilities

The Private Equity program shall be implemented and monitored through the coordinated efforts of the Board of Trustees ("Board of Trustees" or "Board") of the Employees' Retirement System of the State of Hawaii ("ERS"), the ERS investment staff ("Investment Staff"), the ERS private equity consultant ("Private Equity Consultant"), and the ERS specialty managers ("Specialty Managers"). Specific responsibilities that fall outside the general responsibilities highlighted in Section B.5. are listed below:

b. Specific Responsibilities: Board of Trustees

i. Investment Selection

1. Evaluate all proposed activities or investments that may fall outside the parameters and direction of the annual Strategic Plans.
2. Mediate any disputes regarding investment selection that may take place between Investment Staff, the Private Equity Consultant(s) and/or Specialty Managers.

2. Investment Objectives

a. Portfolio Construction

The ERS has determined that, over the long term, inclusion of private markets investments (private equity, certain private debt opportunities, etc.) would enhance the ERS's expected portfolio investment characteristics. Specifically, as a result of the possibility of enhanced rates of return over publicly traded securities and returns that have low-to-moderate correlation with those associated with other major strategic class components, the use of private equity investments tends to increase the portfolio's overall long-term expected real return and reduce year-to-year portfolio volatility.

Private equity investments of the ERS shall be made in a manner consistent with the fiduciary standards of the prudent expert rule: (1) for the sole interest of the ERS's participants and their beneficiaries; and (2) to safeguard and diversify the Private Equity portfolio. The selection and management of Private Equity assets will be guided to preserve investment capital and to maintain prudent diversification of assets and management responsibility. The diversification objective is required to manage overall market risk and the specific risks inherent in any single investment or management selection.

b. Target Allocation

The allocation of ERS assets to Private Equity investments shall remain within the limits authorized by the Board of Trustees. Allocated capital will be defined as invested capital (based on market value). The Board of Trustees recognizes that it will be necessary to make capital commitments in excess of the target allocation in order to achieve and maintain progress toward its long-term target.

The goal of the ERS is to spread out the timing of new commitments so as to avoid an undue concentration of commitments in any one year. Over the long-term, it is expected that barring any unforeseen events approximately equal amounts of new funding will be committed each fiscal year to garner the benefits of vintage year diversification.

c. *Benchmarking / Return Targets*

The ERS shall use the following rate of return tests to evaluate the performance of the Private Equity portfolio:

i. Total Return (Realized and Unrealized Gain/Loss plus Income)

1. Over rolling 10-year periods, the total Private Equity portfolio is expected to generate a minimum total dollar-weighted rate of return (internal rate of return or IRR) that exceeds an equivalent public global equity return (MSCI ACWI IMI) by 200 basis points ("bps") per year, net of all investment management fees and expenses
2. Any individual fund investment is expected to produce a commensurate return that contributes to the overall Private Equity portfolio return objectives

d. *Risk Management*

The selection and management of assets in the Private Equity portfolio will be guided to generate a high level of risk adjusted return, to provide minimal amounts of current income, and to maintain prudent diversification of assets and specific investments.

With private equity investments, there is an inherent risk that the actual return of capital, gains and income will vary from the amounts expected. The ERS shall manage the investment risk associated with private growth investments in several ways:

i. Strategic Structure

1. Allocation by strategic component.

   The Private Equity component consists of two segments: (i) private equity and (ii) other private investments. Descriptions and characteristics of these segments are discussed in the appendix to this section.

2. Commitment pacing into each segment over time.

   It is expected that the private equity component will have scheduled annual commitments. However, certain annual commitment amounts among these segments may vary significantly, depending upon the capital investment opportunities within each component.

ii. Manager Selection / Institutional Quality

1. All assets must be of institutional investment quality. Institutional quality will be defined as being of a quality whereby the investment would be considered acceptable by other prudent institutional investors.
2. It shall be expected that "foundation managers" to the ERS private equity portfolio (that is, are expected to comprise a significant subset of total ERS private growth assets) periodically report to the Board of Trustees and/or Investment Staff as requested on the progress of ERS investments under their management.

e. *Investment Structures*

The following are considered allowable investment structures for the private equity program. It shall be noted that the Private Equity Consultant or Specialty Manager are expected to act as fiduciaries on behalf of the ERS and the investment structures mentioned below must be within accordance of the investment policies set forth in this Manual and the annual Strategic Plan. Such investment activity is subject to active review by Investment Staff on a regular basis.

i. Co/Direct Investments

Co-investments may be sourced by the Private Equity Consultant or Specialty Manager, or Investment Staff, and must be approved by the Board of Trustees or designee.

ii. Primary Investments in Private Equity Funds

Capital commitments to limited partnerships and/or limited liability companies established for the purpose of private equity investment are managed through the Private Equity Consultant or a Specialty Manager.

iii. Secondary Investments

Purchasing an existing interest in a private equity fund is managed through the Private Equity Consultant or a Specialty Manager.

iv. Separate Accounts

Investment vehicles typically set up for a single limited partner where the investment manager constructs a diversified portfolio of private market investments that are tailored specifically to the needs and objectives of the investor. Separate accounts should offer the ERS access to economics that are below generally prevailing rates and/or target strategies that are traditionally difficult for the ERS to access directly (e.g., Venture Capital).

f. *Investment Strategies*

The following private equity strategies and investment types will be considered eligible for the ERS's portfolio:

i. Corporate Finance/Buyout:

Partnerships/LLCs which provide funding to acquire majority or controlling interests in a business or product lines from either a public or private company. Buyout sub-strategies are classified by total capital commitments and include Small, Mid, Large and Mega buyouts

ii. Fund-of-Funds

Blind pool partnerships/LLCs that evaluate, select and monitor investments in other limited partnership/LLC investments

iii. Mezzanine Debt

Partnerships/LLCs which invest in unsecured or junior obligations in financings. These generally take the form of subordinated debentures or preferred stock. They typically earn a current coupon or dividend and have warrants on common stock or conversion features

iv. Distressed Debt

Partnerships/LLCs which invest in non-investment grade privately placed debt securities. Common sub-strategies include Distressed For Control, Non-Control and Trading

v. Project Finance

Partnerships/LLCs which invest in industrial leveraged or unleveraged lease or project financings. These can include participation in equity, mezzanine, or senior debt investments. Investments should be made after the development phase, as part of the project's permanent financing, when projects are going operational

vi. Special Situations

Partnerships/LLCs with investment strategies which have gained an institutional following, but where sporadic opportunities do not justify a separate long-term strategic allocation. Categories includes partnerships/LLCs which make strategic block investments, have very broad mandates, focus on restructuring/recovery or focus on specific industries or which seek to exploit opportunities created by changing industry trends or governmental regulations

vii. Venture Capital

Investments in start-up companies generally exhibiting promising potential and/or high-growth characteristics. Such investments generally exhibit minimal leverage and can consist of the following stages: Seed/Early, Middle, Late-Stage and Growth Equity

viii. Other

Partnerships/LLCs which invest in publicly traded securities or which employ strategies different from those cited above such as, hedge fund strategies, commodity trading, post-venture equities, investments in commercial leases, and other non-traditional strategies. The purchase of secondary partnership/LLC interests is also allowed.

g. *Diversification Requirements*

The private equity portfolio shall, to the extent possible[2] be diversified as to investment strategy, timing of investment, size and life cycle of investment, industry sector, investment sponsor organization (e.g., general partner group), capital structure and geographical location. Diversification reduces the impact on the portfolio of any one investment or any single investment style to the extent that an adversity affecting any one particular area will not impact a disproportionate share of the total portfolio.

It is also recognized that during the portfolio development and wind-down stages the full investment parameters may not, of necessity, be met.

The scope and size of the ERS program is such that significant investments in fewer, more concentrated "foundation" managers are preferred to smaller, more numerous managers. While ERS has not set a minimum dollar amount per partnership/LLC, the Private Equity Consultant and/or Specialty Manager will be charged with deploying the capital efficiently, such that funding targets are achieved with a minimal number of partnership/LLC holdings. Long-term diversification targets among eligible investment strategies will be set forth in the annual Strategic Plan document, and reviewed and updated as necessary.

i. Geographic

[2] Investments will be primarily in "blind pool" funds where there is limited control over the diversification process.

Over the long-term, the ERS portfolio should seek portfolio diversification with regard to major regional areas both domestically, and internationally.

The portfolio shall primarily target investments domiciled within North America. In line with the ERS's total international allocation, the portfolio shall seek to limit international investments (outside of North America) by targeting no more than 35% of the private equity investment allocation to such investments. The currency exposure to the ERS from the non-dollar aspect of the allocation is expected to be negligible.

ii. Industry

The ERS portfolio will seek to diversify by industry sector (as outlined through the Global Industry Classification Standard) and shall target that no one industry classification represents more than 35% of the private equity portfolio.

iii. Life Cycle

Commitments to partnership/LLC investments generally will be staged over time. It is the long-term goal of ERS to spread out investment timing such that new commitments will be made each fiscal year. This policy will have the effect of dollar cost averaging the ERS's portfolio over business cycles to help insulate the portfolio from event risk.

h. General Partner

The ERS portfolio will seek to diversify by issuer of limited partnership/LLC securities, and other specific investments sponsors. No more than 20% of the ERS's private equity portfolio net asset value will be invested with any one investment sponsor organization.

i. Single Investment

No single private equity commitment shall comprise more than 100bps of total ERS assets under management. An exception to this limitation may be offered for separate accounts, subject to approval by the Board of Trustees.

ii. Limited Partner

The ERS is permitted to own up to 20% of any particular partnership/LLC subject to the General Partner limitation (item 4) above.

3. Implementation of Private Equity Program

a. Annual Strategic Plan

i. Annually, the Private Equity Consultant and Specialty Managers (if applicable), in conjunction with Investment Staff, will prepare a Strategic Plan which reviews the current status of the portfolio, recent historical and prospective market conditions, and proposes the actions to be taken over the next approximately twelve-month period.

ii. The annual Strategic Plan will then be presented to the Board of Trustees for approval

b. Investment Approval Process

The following steps shall be followed in order for the ERS to commit to any prospective private equity investment opportunity:

i. Private Equity Consultant sources and performs comprehensive due diligence on attractive investment opportunities consistent with criteria set forth in the annual Strategic Plan

ii. If, as a fiduciary of the ERS, the Private Equity Consultant determines that the investment merits a commitment from the ERS, the Private Equity Consultant will take the following steps:

1. Discuss with Investment Staff the key findings during due diligence, including investment merits, risks and key conclusions
2. Follow-up with Investment Staff on additional requests for information based on this discussion and complete a due diligence memorandum.
3. In conjunction with the ERS's legal review process, facilitate legal negotiation and closing into the investment opportunity

iii. The Board of Trustees shall be notified in the event of a disagreement between Investment Staff and the Private Equity Consultant on an investment recommendation

iv. The Specialty Manager (if applicable) will be expected to operate on a discretionary basis

1. The Specialty Manager is to operate under the oversight of and provide regular updates to Staff.

c. Monitoring and Reporting

i. Reporting System

There shall be a quarterly reporting and monitoring system for the entire portfolio by the Private Equity Consultant. The monitoring shall include asset/risk allocation and portfolio performance in sufficient detail to identify situations of underperformance, diversification deficiencies and conflicts of interest. Due to the large number of funds, the ERS investment staff will employ a sampling methodology to verify that the Private Equity Consultant is adequately executing the monitoring program and detecting major performance issues within the private equity portfolio.

ii. Performance Measurement

The Private Equity Consultant and Specialty Manager(s) will provide cash flow, valuation, and any other requested information to Investment Staff and the Private Equity Consultant quarterly, and the ERS's custodian bank ("custodian") on a monthly basis, and will notify Investment Staff of any instances of materially different carrying values from those reported by general partners.

Performance may be calculated on a time-weighted and/or dollar-weighted (internal rate of return or IRR) basis, as applicable, with primary emphasis being placed on the internal rate of return. The rate of return calculations will be net of all partnership/LLC fees and expenses, but gross of Private Equity Consultant and/or Specialty Manager fees and expenses. The manager and/or Private Equity Consultant will be responsible for reviewing the custodian's figures as to timing, amount, value of in-kind securities at distribution and reported net asset value, and reconciling and explaining any discrepancies.

MEMORANDUM

November 18, 2024

TO: The Investment Committee of the Board of Trustees Employees' Retirement System of the State of Hawaiʻi ("ERS")

THROUGH: Thomas Williams, Executive Director ("ED") Employees' Retirement System of the State of Hawaiʻi

FROM: Kristin Varela, Chief Investment Officer (CIO") Employees' Retirement System of the State of Hawaiʻi

SUBJECT: Revisions and Updates to the ERS Investment Policy Statement (IPS) – Sections C and D

Summary of Original Recommended Revisions (posted 11/13/2024):

The recommended revisions to the Responsible Investing policy in Section C of the IPS places greater emphasis on broader fiduciary considerations, going beyond traditional ESG considerations and incorporating other factors into investment decision-making. Edits include:

SECTION C. ERS GENERAL INVESTMENT OVERVIEW

- SECTION C.7: Responsible Investing
  Action: Update definition and language for "Responsible Investing" to account for systemic risk factors.
  Reasoning: To align with ERS goals and objectives.

- SECTION C.7.1:
  Action: Update language to delete specific references to the proxy voting administrator by name and redundancy and include guidance for ERS investment managers with delegated proxy authority.
  Reasoning: To eliminate reference to vendor by name in IPS and for clarity.

SECTION D. BROAD GROWTH PROGRAM

The Real Assets Component in Section D has been aligned with the strategic allocation approved by the Board in 2023 and streamlined to ensure clarity and consistency in the management of real assets investments. Edits include:

- BROAD GROWTH APPENDIX: REAL ASSETS COMPONENT

  - REAL ASSETS COMPONENT – VARIOUS SECTIONS
    Action: Updated reference to selection consultant, from Real Estate Consultant to Real Assets Consultant.
    Reasoning: To align with contracted responsibilities of selection consultant, covering total Real Asset portfolio.

  - REAL ESTATE SUB-COMPONENT 1.b, 2.a, 2.c
    Action: Update language and to align with current practice.

Reasoning: To consolidate the naming convention of Core and Non-Core Real Estate into Real Estate, align Separate Account Tactical Plan with current practice, and broaden leverage expectations in alignment with market implementation.

- REAL ESTATE SUB-COMPONENT 3.c.iv, 3.c.vi, 3.d.viii

  Action: Update language of Value Add and Opportunistic Real Estate general characteristics.

  Reasoning: To streamline IPS and ensure alignment with Infrastructure and Agriculture Sub-Component policies.

- REAL ESTATE SUB-COMPONENT 4.c

  Action: Elimination of Section C, Target Portfolio.

  Reasoning: Removing target portfolio references to legacy benchmark, no longer utilized by ERS. Specific guidelines are no longer relevant.

Summary of Further Recommended Revisions (proposed 11/18/2024):

Upon review of original recommended revisions Staff and Committee Chair identified areas to further revise, focused on consistency of terminology, correction of administrative typos, and streamlining processes. Recommended edits include:

SECTION D. BROAD GROWTH PROGRAM

- SECTION D.2 CLASS STRUCTURE, 1. COMPONENTS, a. PRIVATE EQUITY, PG. 3
  Action: changing introductory language to reference private equity, instead of public equity.
  Reasoning: correcting typo.

SECTION D. BROAD GROWTH APPENDIX

- DERIVATIVES POLICY, PG. 8
  Action: Delete prohibitive language in first paragraph
  Reasoning: Section 4. Permitted Instruments allows for the full investable universe of derivative instruments.

- REAL ESTATE SUB-COMPONENT, SECTION 1.a, PG. 12
  Action: Update language to align with current practice.
  Reasoning: To consolidate the naming convention of Core and Non-Core Real Estate into Real Estate.

- REAL ESTATE SUB-COMPONENT, SECTION 3.c.iv, PG. 14
  Action: Update language of Value-Add Real Estate general characteristics.
  Reasoning: To streamline IPS and ensure alignment with Infrastructure and Agriculture Sub-Component policies.

- REAL ESTATE SUB-COMPONENT, SECTION 5.a, 6.a.i, 6.a.iii, 6.b.i, PG. 16-17
- TIMBER SUB-COMPONENT, SECTION 2.a, 2.b, 2.b.ii

  Action: Updated reference to selection consultant, from Real Estate Consultant to Real Assets Consultant.

  Reasoning: To align with contracted responsibilities of selection consultant, covering total Real Asset portfolio.

All changes to become effective on January 1, 2025.

ERS GENERAL INVESTMENT OVERVIEW

SECTION: C

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C. 1. ERS INVESTMENT PLAN SUMMARY

1. Primary Goal

The preservation of capital is of primary concern of the Employees' Retirement System of the State of Hawaii ("ERS" or "Plan"). The Board of Trustees of the ERS ("Board of Trustees" or "Board") seeks preservation of capital with a consistent, positive return for the Plan. Although pure speculation is to be avoided, the Board recognizes that a return in-line with the actuarial rate is associated with a certain degree of risk. Risk to be assumed must be considered appropriate for the return anticipated and consistent with the total diversification of the Plan.

2. Structure

The ERS implements a risk-based, functional framework for allocating capital within the total portfolio. This framework makes use of strategic/functional classes that in-turn utilize underlying asset classes and strategies. Each of these classes is designed to achieve a certain goal (e.g., Diversifying Strategies class) and/or be exposed to a specific set of macroeconomic risks that are common amongst the different strategy types and/or assets within the class (e.g., Broad Growth class). As a result of this structure, each strategic class is expected to be exposed to a set of major and minor macroeconomic risks. Each program's policy section contains a list of the relevant macroeconomic risks. Definitions for each of these macroeconomic risks can be found in Appendix B of this Manual.

a. *Current Strategic Allocation Target Ranges (effective 01/01/2024)*

The ERS will be invested according to the following strategic class targets and ranges:

	Lower Limit	Target	Upper Limit
Broad Growth	60%	70%	80%
Diversifying Strategies	20%	30%	40%
Opportunities	0%	0%	0%

The Chief Investment Officer of the ERS ("CIO") may set the actual class levels anywhere within the upper and lower limits above. For deviations in excess of +/- 3%, the CIO shall provide regular ongoing justifications for the deviations. Adjustments in the above targets may be reviewed in conjunction with the annual strategic allocation review. The general consultant should conduct a formal strategic allocation study at least every three years for the Board of Trustees to verify or amend the strategic targets and ranges.

b. *Total Investment Portfolio Evaluation Benchmark*

To monitor the total investment portfolio result, a custom benchmark is constructed to measure the target mix. This target benchmark mix will evolve over time, but it is based on historical evolving allocation targets, the above-highlighted strategic allocation targets, and the broad benchmarks listed below (i.e., evolving weights x benchmark return).

- Broad Growth Blended Benchmark[1]
- Diversifying Strategies Blended Benchmark[1]

[1] Refer to program section for detailed description of benchmark, and possible evolving benchmark timeline.

Individual ERS investment managers ("Investment Managers" or "investment managers") will not be measured against this total investment portfolio objective. However, it is expected that the sum of their efforts will exceed the objective over time.

C. 2. INVESTMENT MANAGEMENT POLICY

1. Manager Discretion

The investment managers shall be given full discretion to manage the assets under their supervision subject to this Investment Policy, Guidelines, and Procedures manual ("Manual"), their assigned mandate, the laws of the State of Hawaiʻi ("State"), and their investment management agreements with the ERS.

2. Manager Evaluation

Individual investment managers will be measured against an appropriate benchmark, index and peer group as appropriate. Relevant manager evaluation benchmarks are stated in investment management agreements with the ERS.

3. Policy on Local Managers

The Board of Trustees wishes to utilize qualified local firms in the management of a portion of the ERS's assets. Due to the size of the ERS's portfolio and the fiduciary responsibility of the board members to select qualified firms in accordance with overall Board investment strategy, the following guidelines have been established for the identification, selection and evaluation of Hawaiʻi-based investment management firms.

a. It shall be the policy of the Board to allocate assets to local investment managers in accordance with the Board's strategic allocation and long-term investment policies.

b. The asset mix of the combined local investment managers' portfolios shall be determined under a fiduciary framework with respect to the overall portfolio and relevant strategic classes.

c. Evaluation of Local Firms

    i. All local firms retained by the Board of Trustees shall be evaluated in a similar fashion as all other investment managers within the same strategic class.

C. 3. REPORTING REQUIREMENTS FOR INVESTMENT MANAGERS

1. Investment Managers of Liquid Mandates

Investment managers of liquid mandates must abide by the reporting requirements stated within their investment management agreements.

2. Investment Managers of Illiquid Mandates

Investment managers of illiquid mandates must abide by the reporting requirements stated within their partnership agreements.

C. 4. SECURITIES LENDING GUIDELINES

The policies and guidelines governing the securities lending program shall pertain to the Custodian, unless such services are contracted otherwise. A *separate contract*, distinct from the custody relationship, detailing the type of securities lending relationship and program is both mandatory and essential in the treatment of securities lending as, foremost, an investment function with the associated risks and return implications, and fiduciary responsibility.

On an annual basis, the Custodian shall provide a detailed report of the ERS's securities lending activities. This summary shall be the basis for verification that the Custodian is complying with these securities lending guidelines. After reviewing the report provided by the Custodian, the General Investment Consultant shall prepare a report summarizing the ERS's securities lending activity and compliance with the ERS's policies.

1. Objective

The Custodian, as the ERS's securities lending agent, receives cash or government securities (defined below) as collateral for loans of their securities to approved borrowers. On an ongoing basis, the securities lending agent identifies eligible collateral and, in the case of cash collateral, the opportunity for a market rate of return consistent with allowed investment latitude and thereby seek to generate positive program spreads.

The securities lending agent must exercise investment discretion consistent with the overall objective of preserving principal; providing a liquidity level consistent with market conditions and the lending and trading activities of the ERS; and maintaining full compliance with stated guidelines and statutory provisions. The securities lending agent shall exercise prudence and expertise in managing the cash collateral reinvestment function.

2. Program Guidelines

Maintenance of the integrity and operational functionality of the securities lending program shall be pursued with utmost diligence. The securities lending agent shall have documented policies and procedures in place detailing the following if not stipulated in the securities lending contract for both domestic and international securities.

a. *Borrower Limits/Creditworthiness*

b. *Acceptable Collateral*

c. *Marking to Market*

d. *Corporate Actions/Distributions*

e. *Proxy Voting Limitations*

f. *Recall of Loaned Securities*

g. *Revenue Splits*

h. *Valuation and Reporting of Loaned Securities and Cash Collateral Reinvestments*

i. *Borrower Risk (Default)*

j. *Cash Collateral Reinvestment Risk*

k. *Operational Negligence*

l. *Counterparty Indemnification*

m. *Other relevant policies*

The securities lending agent shall at all times exercise prudence and due care and shall comply at all times with Section 88-121.5, Hawai‘i Revised Statutes and all other applicable laws, rules and regulations of federal, state, and local entities or agencies having jurisdiction, including but not limited to banking and securities regulatory bodies, taxation authorities and the US Department of Labor.

3. Collateral Management

The securities lending agent shall exercise prudence and reasonable care in discharging its discretion in the investment management of cash and non-cash collateral, including asset/liability (gap) management that is appropriate relative to the market environment or conditions that the securities lending agent is operating in. Provided that the management of collateral, specifically cash, imposes the greater risk, the securities lending agent shall adhere to the overall investment objective of ERS. Policies regarding issuer, credit, exposure and rating limits utilized in the securities lending program per investment vehicle shall be under the full discretion of the provider, and appropriate and consistent with the stated general guideline. Issues such as exposure guidelines, prohibited securities for cash investment, duration strategies, and matched and mismatched book are both strategic and tactical investment functions and shall be consistent with the above objective.

Initial Collateral levels will not be less than 102% of the Market Value of the Borrowed Securities, or not less than 105% if the borrowed securities and the Collateral are denominated in different currencies. Marking-to-market is performed every business day subject to de minimis rules of change in value, and the Borrower is required to deliver additional Collateral when necessary so that the total Collateral held by the securities lending agent for all loans to the Borrower of all participating lenders will at least equal the market value of all the borrowed securities of all participating lenders loaned to the Borrower.

Listed below are the cash and non-cash Collateral guidelines specifying eligible investments, credit quality standards, and diversification, maturity and liquidity requirements. Except for Prior Purchased Assets[2], all requirements listed in these guidelines are effective at the time of purchase of any security or instrument as a cash Collateral investment and at the time of receipt of any non-cash Collateral. Agent will make use of market standard settlement methods for cash investments and non-cash collateral including the use of a tri-party custodian as approved by Agent's appropriate risk committee. Settlement through a tri-party custodian may result in cash collateral being held on deposit at the tri-party custodian.

[2] There may be certain assets held as Collateral that complied with the requirements of a prior version of these guidelines then in effect at the time of purchase of such assets, but that may not meet these latest guidelines (such assets termed "Prior Purchased Assets"). Such Prior Purchased Assets may continue to impact the overall securities lending portfolio accordingly. The securities lending agent may, at its sole discretion, hold such Prior Purchased Assets until maturity, or as otherwise determined by it.

a. *Cash Collateral Guidelines*

i. Investment Objectives

Cash Collateral of the Collateral Account is invested to seek the following objectives:

1. preservation of capital
2. maintenance of liquidity, and
3. maximization of current income to the extent consistent with (a), and (b), above by investing cash Collateral in accordance with the guidelines stated below. Within quality, maturity, and market sector diversification guidelines, investments are made in those securities Agent judges to offer the most attractive relative yields.

ii. Investment Guidelines

A separate cash Collateral account shall be maintained for each currency, subject to the eligibility rules below. Cash Collateral shall be denominated in either U.S. Dollars or Euro currency, and shall be invested in securities or instruments managed under the following guidelines:

b. *Eligible Investments:*

i. Securities and Exchange Commission (SEC) Rule 2a-7 money market mutual funds.

ii. Securities issued or guaranteed as to principal and interest by the Government of the United States or issued or guaranteed by agencies or instrumentalities thereof.

iii. High-grade commercial paper and commercial paper master notes, whether or not registered under the Securities Act of 1933, as amended, and promissory notes. Obligor shall have a short-term rating not lower than "A-1, P-1 or F-1", at time of purchase.

iv. Corporate obligations, including the banking industry, which are marketable and rated high-grade. At the time of purchase, either the long-term rating shall not be lower than "AA-, Aa3", or the equivalent thereof, or the short-term rating shall not be lower than "A-1, P-1, or F-1" if less than one year remaining until maturity. Obligations may include fixed, floating and variable rate notes and bonds.

v. Asset backed securities, at the time of purchase, shall have either a long-term rating of "AAA, Aaa" or the equivalent thereof, or a short-term rating not lower than "A-1, P-1, or F-1" if less than one year remaining until maturity. Mortgage-backed securities are not considered asset backed securities for purposes of this restriction. Asset backed securities must be collateralized by credit cards, auto receivables, equipment trusts or student loans.

vi. Certificates of deposit and other bank deposit obligations of U.S. banks or U.S. branches or subsidiaries of foreign banks. At the time of purchase, the issuing bank must have either a short-term issuer debt rating not lower than "A-1, P-1, or F-1" or a long-term issuer debt rating not lower than "AA-, Aa3", or the equivalent thereof.

vii. Bankers' acceptances issued by U.S. banks or issued in the U.S. by branches or subsidiaries of foreign banks. At the time of purchase, the issuing bank must have either a short-term issuer debt rating not lower than "A-1, P-1, or F-1" or a long-term issuer debt rating not lower than "AA-, Aa3", or the equivalent thereof.

viii. Repurchase agreements with respect to the following types of collateral and repo counterparties:

ix. U.S. government securities, agencies, sovereigns, supranationals, commercial paper, municipal bonds, asset-backed securities, mortgage-backed securities (only pass-throughs), corporate bonds (investment grade and high yield), and equities.

x. The credit worthiness of the repurchase agreement counterparties shall be monitored by Agent's internal risk committee.

xi. Sovereign debt obligations (other than U.S. Government obligations). At the time of purchase, either the long-term rating shall not be lower than "AA-, Aa3" or the equivalent thereof, or the short-term rating shall not be lower than "A-1, P-1, or F-1" if less than one year remaining until maturity.

xii. Interests or units in any short-term investment fund (including, without limitation, such funds of the ERS's Custodian Bank and any of its affiliates) that invests in any or of the types of investments approved above.

xiii. Capped floaters, provided that Agent shall notify Lender of the usage of such securities and shall employ appropriate risk assessment and manage expertise as specified by the Office of the Comptroller of the Currency.

xiv. Constant Maturity Treasury ("CMT") floaters, provided that Agent shall notify Lender of the usage of such securities and shall employ appropriate risk assessment and manage expertise as specified by the Office of the Comptroller of the Currency.

c. *Maturity/Liquidity*

The "maturity" of a security or instrument (or "maturities" for more than one security or instrument) shall be defined as follows:

i. The shorter of the date on which the principal amount is ultimately required to be paid or the put date under a demand feature, or

ii. Variable rate eligible U.S. Government and U.S. Agency obligations shall have a maturity equal to the date of the next readjustment of the interest rate, or

iii. The maturity of a pooled investment fund shall be the number of days required to liquidate an investment in the fund under normal market conditions, or

iv. Asset-backed securities shall have a maturity equal to such security's weighted average life (i.e., the average time to receipt of expected cash flows on the security).

A minimum of 60% of the cash portion of the Collateral Account shall be invested in securities which have a maturity (as herein defined) of 97 days or less.

A minimum of 20% of the cash portion of the Collateral Account shall be available each business day. This may be satisfied by maturities (as herein defined), or demand features.

The rate sensitivity or weighted average maturity, as measured to the shorter of the remaining time until the interest rate reset (if applicable) or maturity, of the cash portion of the Collateral Account will be limited to 60 days.

The weighted average maturity, as measured to maturity (as herein defined), of the cash portion of the Collateral Account shall not exceed 120 days.

The maturity of fixed rate investments may not exceed 13 months from the date of purchase. The maturity of floating rate Eligible Investments, including the maturity of variable rate eligible U.S. Government and U.S. Agency securities (as measured to final maturity date, not the next readjustment of interest rate), may not exceed 2 years.

d. Diversification

Subject to the following exceptions, a maximum of 5% of the cash portion of the Collateral Account may be invested in securities or instruments of any one issuer or obligor. Exceptions are as follows:

i. 100% of the cash portion of the Collateral Account may be invested in obligations issued or guaranteed by the U.S. Government or its agencies/instrumentalities.

ii. 25% of the cash portion of the Collateral Account may be invested with any one counterparty in repurchase agreements collateralized by U.S. Government or U.S. Government agency securities.

iii. 10% of the cash portion of the Collateral Account may be invested with any one counterparty in repurchase agreements collateralized by eligible securities other than U.S. Government or U.S. Government agency securities.

iv. Residual cash balances, which cannot be invested into the marketplace, shall not be subject to diversification limits.

e. General Ratings Provisions:

The ratings above must be designated by at least two Nationally Recognized Statistical Rating Organizations ("NRSROs"), or if only rated by one NRSRO, then rated at the time of purchase in the minimum rating category specified by that NRSRO, as above. For the avoidance of doubt, if all three NRSROs rate the obligation, then the obligation is eligible as long as two NRSRO ratings meet the minimum criteria. In the event that the obligation is not rated, the issuer rating shall be considered with respect to the class of comparable short-term obligation or long-term obligation.

f. Prohibited Transactions and Securities

The following transactions and securities are not permitted as direct investments of Cash Collateral:

i. Additional leverage, which shall mean that Lender may not further lend Eligible Investments in the Collateral Account.

ii. Highly leveraged, structured notes.

iii. Range floaters, COFI floaters, Dual Index floaters inverse floaters and leveraged floaters.

g. Non-Cash Collateral Guidelines

Listed below are the non-cash Collateral investment guidelines for eligible Collateral.

i. <u>Investment Guidelines</u>

Non-cash eligible instruments may consist of the following:

ii. <u>Eligible Investments</u>

1. Obligations issued or guaranteed by the U.S. Government or its agencies or instrumentalities thereof.

2. Obligations issued or guaranteed by OECD (Organization for Economic Cooperation and Development) member states or their local governments, agencies or authorities.

3. Canadian Provincial Debt
4. Equity securities, which are part of U.S. and non-U.S. indices (including, but not limited to U.S., U.K., EMU, Japan, Canadian and Australian markets), as approved by Agent's internal risk committee from time to time; and
5. Such other Collateral as the parties may agree to in writing from time to time.

iii. Credit Quality

1. Eligible Instruments as named above may be accepted without limit.

iv. Diversification

1. Eligible Instruments as named above may be accepted without limit.

h. *Operation of the Collateral Account*

i. Income

Income earned from the investment of cash Collateral, net of (i) expenses, including but not limited to, transaction accounting and reporting expenses, auditing fees, brokerage fees and other commissions, and any miscellaneous expenses, (ii) any applicable withholding of tax, (iii) loan rebate fees paid or accrued to the borrowers, and (iv) any adjustments to provide for regular returns, together with loan fees for loans Collateralized by non-cash Collateral, are distributed to Lender of the Collateral Account on a monthly basis.

On a monthly basis, a portion of the income earned by Lender on a loan on any business day may be withheld by Agent and transferred to income earned on a different loan for that Lender on any other business day if on that day one or more rebates due or accrued to borrowers with respect to one or more loans should exceed the income earned from the cash Collateral supporting those loans. If, despite such transfers, during any month total rebates payable exceed total revenues with respect to any loan or loans of Lender, the net shortfall shall be charged against positive undistributed earnings from other loans of Lender to the extent thereof, and any remaining shortfall shall be allocated between the Lender and the Agent in the same proportions as positive securities lending revenues. Any amounts thereby payable by the Lender shall be the personal obligation of Lender and shall be due and payable upon the Lender's receipt of Agent's invoice for such amounts. Agent may withhold (and Lender is deemed to grant to Agent a lien upon) future loan revenues, and any other property of the Lender then or thereafter in the possession of Agent, to secure the payment of such obligation. Notwithstanding the foregoing, however, all other Collateral losses shall not be shared between the Lender and the Agent to any extent but shall be allocated as provided in the Agreement or these guidelines.

Incidental expenses, (e.g., negative float due to payment advances) incurred in the administration of the Collateral Account are recovered against incidental receipts, (e.g., positive float from pending balances) similarly arising and any remaining balance is added to the lending revenues for the benefit of Lender. Net realized short-term capital gains or losses (if any) may be distributed (or charged) from time to time.

ii. Net Asset Value

Lender hereby directs Agent to maintain the cash portion of the Collateral Account as a fund comprised of units having a constant net asset value of $1.00 per unit and to value the fund using the amortized cost method (acquisition cost as adjusted for amortization of premium or accretion of discount) for that purpose. Agent will not determine or monitor the fair market value of the investments as a means of comparing the unit value with the market value of its investments. Lender hereby represents and confirms on a continuing basis throughout the term of this Agreement that such a method of valuation and account maintenance is consistent with all laws, rules, regulations and accounting procedures applicable to Lender.

The cash portion of the Collateral Account intends to maintain a constant net asset value within minimum tolerances established by Agent's senior management. There is no guarantee, however, that the cash portion of the Collateral Account will be able to attain that objective. The Collateral Account is not registered under the Investment Company Act of 1940 as a money market fund, is not subject to regulation by the Securities and Exchange Commission and does not comply with federal regulations governing registered money market mutual funds.

In no event shall Agent be personally liable to restore any loss within the Collateral Account, unless the loss was directly caused by the negligence or intentional misconduct of Agent.

iii. Trading Policy

Although the Collateral Account will generally not engage in short-term trading, the Agent may dispose of any portfolio security prior to its maturity if, on the basis of a revised credit evaluation of the issuer or other considerations, Agent believes such disposition is advisable. Subsequent to its purchase, a portfolio security or issuer thereof may be assigned a lower rating or cease to be rated. Such an event would not necessarily require the disposition of the security, if the continued holding of the security is determined to be in the best interest of the Lender. In any event, Agent will notify Lender as soon as reasonably practicable if any security is downgraded after initial purchase below the minimum requirements set forth in these investment guidelines.

C. 5. STRATEGIC ALLOCATION REBALANCING GUIDELINES

1. Rebalancing Assets within the Strategic Allocation

One essential component of a strategic allocation policy is the development and use of rebalancing ranges for the target allocation. According to several studies, systematic rebalancing should reduce portfolio volatility and increase a portfolio's risk-adjusted return. Using the ERS's long-term strategic target allocation, the greatest enhancement to investment performance (i.e., enhancing the annualized return while lowering the risk) is achieved by the rebalancing within the ranges described in C.1. ERS Investment Plan Summary.

The Investment Staff will maintain the classes within their target ranges primarily by using cash flows, although the actual allocations will be rebalanced whenever a class is outside of its strategic target range. The Board of Trustees should review the targets and ranges annually for reasonableness relative to significant economic and market changes, and relative to changes in the ERS's long-term goals and objectives.

If the Plan has positive cash flow (i.e., contributions exceeding disbursements), Investment Staff has the discretion to rebalance by directing new moneys to the under allocated strategic classes on a pro-rata basis. If the Plan has negative cash flow, Investment Staff has the discretion to withdraw moneys to be disbursed from over allocated strategic classes. In each case, the CIO shall keep the Executive Director and the Board of Trustees apprised of current asset movements. Managing strategic allocations in this manner should not incur any additional transaction cost beyond what would have been normally incurred to liquidate or invest assets.

Certain strategic classes have more subjective rebalancing ranges relative to their target allocations. Concerns of liquidity and the long-term horizon for these investments suggest a more infrequent rebalancing schedule. Accordingly, other more qualitative considerations (e.g., transaction costs, liquidity needs, investment time horizons, etc.) regarding the timing of rebalancing certain elements within certain asset classes will be important to consider with the guidelines shown above.

2. Rebalancing Investment Style/Mandate Allocations Within Strategic Classes

Investment Staff is responsible for maintaining appropriate style and mandate weightings, consistent with the respective strategic classes' risk profile(s). Investment Staff and/or the applicable investment consultant shall regularly report style and mandate weightings, and their deviations from policy, to the Board. Any adjustments that cause a material change to a strategic class's risk profile requires Board approval.

3. Single Manager Portfolio and Firm Allocation Limits for Active Mandates

In order to minimize any potential risk associated with large concentrations of the ERS's portfolio assets being managed in a single manager portfolio or by a single firm, the following limits have been put in place:

a. No single equity manager portfolio shall represent more than 5% of the total ERS portfolio and

b. No single manager/firm, when all active mandates associated with that manager/firm are aggregated, shall represent more than 10% of the total ERS portfolio.

If any single manager portfolio or manager/firm's active assets exceed these limitations, Investment Staff shall provide the Board its solution to reallocate funds from that portfolio or manager/firm within the portfolio to reduce the concentration within a reasonable time period.

The Board may exclude certain firms from these limits.

Exemptions:

Gateway Investment Advisers, the ERS's covered calls manager, was granted a temporary exemption from the single manager portfolio limit at the September 14, 2015 Board meeting.

C. 6. PORTFOLIO TRANSITIONS

From time to time, the ERS will have a need to restructure its portfolios as a result of manager performance or strategic allocation changes. The Board of Trustees, acting on recommendations and suggestions of the Investment Staff and investment consultants, will decide to undertake actions to allocate assets to maintain optimal strategic class weightings and/or to individual managers. Investment Staff will maintain desktop procedures that detail the asset transition decision process and will follow the asset transition steps. Investment Staff will maintain coordination and communication throughout the transition process with other ERS staff and outside parties. During the trade and post-trade processes Investment Staff will evaluate the performance of manager(s) by means of various reports. The CIO will report transition highlights to the Executive Director and the Board when appropriate.

C. 7. RESPONSIBLE INVESTING

The ERS strives to ~~integrate and consider Responsible Investing practices~~be a prudent and responsible investor in overseeing the System's assets.

~~This practice aims for a balance between the System's financial goals and needs and the investment's impact on society by~~ This means that the ERS, as a fiduciary to its members, is responsible for achieving financial return and positive impact on our members through oversight of the actions of the corporations or entities~~y~~ in which ~~the~~ investments ~~is~~ are made.

~~Falling within the realm of Responsible Investing is the consideration of environmental, social, and corporate governance (ESG) factors, where ESG describes the three main areas of concern that have developed as the central factors in measuring the sustainability and ethical impact of an investment in a company or business. Within these three areas are a broad set of concerns that are increasingly being included in the nonfinancial factors that figure in the valuation of equity, real estate, infrastructure, and fixed income investments. Examples include but are not limited to, a company's carbon footprint, human rights, employee gender and ethnic diversity and non-discrimination, climate change, and effective board oversight. ESG factors have the potential to affect the economic value and performance of an investment now and in the future. Sound corporate governance policies and practices play an important role in protecting economic value while enhancing value for long-term plan participants and beneficiaries. The ERS strives to incorporate ESG into its investment process to identify and select investment partners that share in its alignment of utilizing ESG factors when evaluating the value and risk of portfolio companies.~~ There are a broad set of factors that are not found in financial statements which nevertheless can have significant impact on the financial valuation of an investment. These factors have always been a part of a comprehensive due diligence process and are becoming increasingly important to finding opportunities and avoiding risks. These factors affect the valuation of investments across various asset classes. Examples include but are not limited to: a company's ability to adapt to systemic changes; effective board oversight; degradation or contribution to its surroundings, including the local populations; human rights; employee non-discrimination. These factors have the potential to affect the economic value and performance of an investment. Sound corporate policies and practices, to ensure accountability, play an important role in protecting and enhancing long-term economic value for plan participants and beneficiaries.

The ERS strives to be a prudent and responsible investor by incorporating all relevant factors into its investment process and seeks to identify and select investment partners that are aligned with our mission to fulfill our fiduciary duty to our members.

~~Upon the~~The ERS will be mindful of the encouragement by the House of Representatives of the Twenty-sixth Legislature of the State of Hawai'i, Regular Session of 2012~~, the ERS will continue to apply the principles of Responsible Investing in investment practices and decisions where possible, and encourages other investment counselors and money managers to apply Responsible Investing to their investment portfolios. The ERS believes that these considerations align with its goal to provide strong long-term investment results to the System.~~, and adhere to all applicable state and federal statue in making investments.

The following sections outline the ERS's policies and efforts that pertain and support the practice of Responsible Investing:

1. Proxy Voting
2. The Global Sullivan Principles

3. Anti-Terrorism Policies
4. Sudan Policies
5. United Nations – Supported Principles for Responsible Investment (PRI)
6. HiTIP Policies and Procedures (Created by the ERS to fulfill the mandate of Act 260, "A Bill For An Act Relating To The Innovation Economy.")

1. Proxy Voting

The ERS has a fiduciary responsibility to act solely in the best interest of its members and beneficiaries and ~~the right to vote~~voting proxies is considered by the ERS as an important part of its fiduciary duty~~. Proxy voting can be a powerful tool to affect company behavior and is preferable to divestment, which is a tool that reduces the size of the investible universe and gives up the~~

~~influence inherent in the rights of equity ownership~~ as it maximizes the rights of equity ownership. Proxies have economic value and must be voted in the interest of the ultimate shareholder of plan beneficiary. The ERS will use its rights as an active shareholder to manage risks and hold companies in which they invest accountable for the business decisions the companies make.

The ERS shall retain a proxy voting administrator to aggregate, research, and vote the ERS's proxies related to the Plan's applicable public markets separate accounts. The proxy voting administrator shall have delegated authority to vote the ERS's proxies according to guidelines selected/customized by the ERS. On an ongoing basis the proxy voting administrator shall review the ERS's proxy voting guidelines and annually, or more frequently, if necessary, update the guidelines if needed. The proxy voting guidelines are designed to ensure compliance with the fiduciary responsibilities of public plan sponsors voting proxies on behalf of the Plan's participants. The proxy voting administrator shall report to the ERS the proxies voted on behalf of the Plan at least annually, or more frequently upon request.

Proxy Voting Guidance for ERS Investment Managers with Delegated Proxy Authority ~~The ERS has established comprehensive proxy voting and reporting guidelines that are aligned with the System's specific interests.~~

~~The ERS has elected to utilize a customized version of the ESG Policy established by Glass Lewis as the guidelines for voting decisions. Glass Lewis is the proxy voting administrator for the ERS, and votes on behalf of the ERS for companies in the Public Growth portfolio. Glass Lewis offers various "policies" which are templates that guide vote decisions. These guidelines are compliant with the fiduciary responsibilities of public pension plan sponsors in voting proxies on behalf of the Plan's participants and are suitable for investors with extremely long-term investment horizons. In addition, these guidelines support direct action by companies, linking executive compensation to prescribed responsible investing metrics, and more strongly support increased or improved disclosure relative to other voting policies. The ERS has added customization to ensure this policy is at least as stringent on governance-related board practices as other voting policies. These guidelines reflect analysis and identification of both financial and corporate governance risk and include consideration of stakeholders and affected parties in making proxy voting decisions. These guidelines encourage increased reporting and disclosure on the part of portfolio companies on executive compensation, governance, labor practices, and~~

~~the environment. Glass Lewis evaluates its policy guidelines on an ongoing basis and formally updates them on an annual basis. Additionally, the ERS can further adjust the voting policy to reflect the System's specific preferences and beliefs.~~

The ERS reserves the right to delegate proxy voting authority to any managers ~~not able to adhere to the proxy guidelines selected by the ERS~~, where proxy voting authority cannot be delegated to the Plan's proxy voting administrator (i.e., public equity commingled funds), or where the manager votes proxies only on rare occurrence (i.e., fixed income mandates). Any investment manager voting proxies on behalf of the Board will do so with the primary objective of maintaining and advancing the economic value and interests of ERS members. ERS also requests these investment managers, as part of their investment discretion and fiduciary responsibility, to take into consideration the importance of the Corporate Governance Policies promulgated by the Council of Institutional Investors, proxy voting guidance available through the CFA Institute, and the Global Sullivan Principles. Investment Staff, with the assistance of the applicable investment consultants, shall poll these managers annually as to their proxy voting policies. A letter affirming compliance with the manager's proxy voting guidelines will be requested from these applicable managers on an annual basis. The ERS may request from each manager reports of the proxy votes cast on the ERS's behalf for review.

To meet their fiduciary duty with regard to corporate governance, investment managers must follow adequate procedures concerning the voting of proxies. When ERS managers are given the responsibility to vote proxies, they must adopt procedures to ensure that issues are noted, analyzed, and considered before voting. Investment managers must be thoroughly familiar with the issues that arise in proxies. Proxies have economic value and must be voted in the interest of the ultimate shareholder or plan beneficiary. Investment managers cannot simply vote without adequate examination of the underlying issues. Managers of this type may refer to the CFA Institute for general proxy voting guidance. The skills and experience of the professional investment community, particularly the research and analytic skills, can be used effectively in corporate governance issues, which will ultimately benefit corporations and shareholders alike and enhance the competitiveness of business in global markets. Good corporate governance and good investment decisions go hand in hand.

Corporate Governance Policies,
Council of Institutional Investors
(reprinted from www.cii.org)

The ERS ~~believes in~~understands that ~~carrying forward the Council of Institutional Investors' (CII) goal of~~ instituting strong governance standards at public companies and strong shareholder rights can be supportive of positive investment outcomes. The Council of Institutional Investors (CII) ~~believes~~ works to enhance effective corporate governance and disclosure, which serves the best long-term interests of companies, shareholders, and other stakeholders. CII supports shareholders' discretion to employ a variety of stewardship tools to improve corporate governance and disclosure at the companies they own, which includes casting well-informed proxy votes. The ERS encourages its investment managers and proxy voting provider to use the Corporate Governance Policies established by the CII to guide proxy voting decisions when casting votes on behalf of the ERS.

The Council expects that corporations will comply with all applicable federal and state laws and regulations and stock exchange listing standards.

The Council believes every company should also have written disclosed governance procedures and policies, an ethics code that applies to all employees and directors, and provisions for its strict enforcement. The Council posts its corporate governance policies on its web site (www.cii.org); it hopes corporate boards will meet or exceed these standards and adopt similarly appropriate additional policies to best protect shareholders' interests.

In general, the Council believes that corporate governance structures and practices should protect and enhance accountability to, and ensure equal financial treatment of, shareholders. An action should not be taken if its purpose is to reduce accountability to shareholders.

The Council also believes shareholders should have meaningful ability to participate in the major fundamental decisions that affect corporate viability, and meaningful opportunities to suggest or nominate director candidates and to suggest processes and criteria for director selection and evaluation.

The Council believes companies should adhere to responsible business practices and practice good corporate citizenship. Promotion, adoption and effective implementation of guidelines for the responsible conduct of business and business relationships are consistent with the fiduciary responsibility of protecting long-term investment interests.

The Council believes good governance practices should be followed by publicly traded companies, private companies and companies in the process of going public. As such, the Council believes that consistent with their fiduciary obligations to their limited partners, the general members of venture capital, buyout and other private equity funds should use appropriate efforts to encourage companies in which they invest to adopt long-term corporate governance provisions that are consistent with the Council's policies.

The Council believes that U.S. companies should not reincorporate offshore because corporate governance structures there are weaker and therefore reduce management accountability to shareholders.

Council policies neither bind members nor corporations. They are designed to provide guidelines that the Council has found to be appropriate in most situations.

~~2. Proxy Voting Guidance for ERS Investment Managers with Delegated Proxy Authority~~

~~To meet their fiduciary duty with regard to corporate governance, investment managers must follow adequate procedures concerning the voting of proxies. When ERS managers are given the responsibility to vote proxies, they must adopt procedures to ensure that issues are noted, analyzed, and considered before voting. Investment managers must be thoroughly familiar with the issues that arise in proxies. Proxies have economic value and must be voted in the interest of the ultimate shareholder or plan beneficiary. Investment managers cannot simply vote without adequate examination of the underlying issues. Managers of this type may refer to the CFA Institute for general proxy voting guidance. The skills and experience of the professional investment community, particularly the research and analytic skills, can be used effectively in corporate governance issues, which will ultimately benefit corporations and shareholders alike and enhance the competitiveness of business in global markets. Good corporate governance and good investment decisions go hand in hand.~~

~~3.~~2. The Global Sullivan Principles

a. Preamble

The objectives of the Global Sullivan Principles are to support economic, social and political justice by companies where they do business; to support human rights and to encourage equal opportunity at all levels of employment, including racial and gender diversity on decision making committees and boards; to train and advance disadvantaged workers for technical, supervisory and management opportunities; and to assist with greater tolerance and understanding among peoples; thereby, helping to improve the quality of life for communities, workers and children with dignity and equality. I urge companies large and small in every part of the world to support and follow the Global Sullivan Principles of corporate social responsibility wherever they have operations.

Feb. 1, 1999
The Rev. Leon H. Sullivan

b. *Principles*

As a company which endorses the Global Sullivan Principles we will respect the law, and as a responsible member of society we will apply these Principles with integrity consistent with the legitimate role of business. We will develop and implement company policies, procedures, training and internal reporting structures to ensure commitment to these principles throughout our organization. We believe the application of these Principles will achieve greater tolerance and better understanding among peoples, and advance the culture of peace.

Accordingly, we will:

i. Express our support for universal human rights and, particularly, those of our employees, the communities within which we operate, and parties with whom we do business.

ii. Promote equal opportunity for our employees at all levels of the company with respect to issues such as color, race, gender, age, ethnicity or religious beliefs, and operate without unacceptable worker treatment such as the exploitation of children, physical punishment, female abuse, involuntary servitude, or other forms of abuse.

iii. Respect our employees' voluntary freedom of association.

iv. Compensate our employees to enable them to meet at least their basic needs and provide the opportunity to improve their skill and capability in order to raise their social and economic opportunities.

v. Provide a safe and healthy workplace; protect human health and the environment; and promote sustainable development.

vi. Promote fair competition including respect for intellectual and other property rights, and not offer, pay or accept bribes.

vii. Work with governments and communities in which we do business to improve the quality of life in those communities – their educational, cultural, economic and social well-being – and seek to provide training and opportunities for workers from disadvantaged backgrounds.

viii. Promote the application of these principles by those with whom we do business.

We will be transparent in our implementation of these principles and provide information which demonstrates publicly our commitment to them.

5/26/99
Source of Global Sullivan Principles: mallenbaker.net,
http://www.mallenbaker.net/csr/CSRfiles/gsprinciples.html, 11/05/03

ERS has a fiduciary responsibility to act solely in the interest of its members and beneficiaries. Therefore investment managers voting proxies for the board will do so with the primary goal of maintaining or increasing the economic interests of ERS.

~~4.~~3. Anti-Terrorism Policy

a. *Introduction*

Since 9/11, attention has been focused on the potential security threats certain countries and specific companies pose to the United States of America. The ERS Board of Trustees recognize the heightened awareness of security risks and the fact that public pension funds have come under increased pressure from the general public to divest from companies that do business in countries that support terrorism. On the surface this issue may appear simple and straightforward, but in reality it is very complex and requires information that is not currently available to public pension funds. A policy as simple as requiring divestiture from all companies that do business in certain countries may actually work to the detriment of US foreign policy objectives and needlessly damage US companies and jobs. The Board maintains its fiduciary obligations to the members of the System as its top priority. This requires the Board to act prudently and in the exclusive interest of participants in the management of System assets. In an effort to balance their fiduciary obligations with their moral and ethical responsibility as citizens of the United States of America, the Board of Trustees is hereby establishing this Anti-Terrorism Investment Policy.

b. *Background on US Foreign Policy Related to Countries Supporting Terrorism*

In the area of foreign policy, regulations and sanctions are complex and continually changing to address the needs of US national security. The US State Department maintains an official list of countries that the US deems to be supporting international terrorism. The countries included on this list and the regulations and sanctions that apply in these countries change frequently. Unfortunately, a list of companies that are deemed to be supporting terrorism is not publicly available at this time. The fact that a company may have a business link to a listed country does not mean that the US government believes the company is supporting terrorism. In many cases, the US government allows business relationships because they believe they further US policy goals via the contracts and leverage that trade and other business connections create. Placing investment restrictions that would discourage business relationships in these countries could actually run counter to US anti-terrorism initiatives in some instances. As a result of the complexities and lack of public information in this area, ERS must rely upon federal agencies such as the Securities and Exchange Commission and the State, Commerce, Justice and Treasury Departments to provide factual information regarding companies that are supporting terrorism. To date, this information has not been available to ERS or any other public pension fund. Quite simply, factual information that ERS would need to prudently divest from these companies is not available.

This policy is intended to avoid 1) discriminating against companies whose activities abroad are supported by the US government; 2) discriminating against companies whose activities abroad do not further terrorism; 3) unnecessarily harming US companies and jobs; and 4) compromising the Board's fiduciary duties to the beneficiaries of the System. Recognizing the dynamic nature of the issue, annually Investment Staff will evaluate this policy to determine if changes need to be made to reflect recent developments in this area. In the event that Investment

Staff believes changes to this policy are warranted, they will bring the issue to the attention of the Board of Trustees for consideration.

~~5.~~4. Sudan Investment Policy

Act 192, Session Laws of Hawai'i 2007, expresses the State's desire to not participate in ownership of companies that provide "significant practical support" for genocide activities as currently being conducted by the Sudanese government in the Darfur region. The ERS Board of Trustees wishes to recognize its agreement with the intent of Act 192 and to abide by its requirements. The Board, however, also applies a decision framework of acting for the exclusive benefit of ERS Plan participants. In this respect, the Board recognizes that divestment activities could potentially increase the portfolio's idiosyncratic investment risk. Therefore, divestment guidelines and procedures should seek to minimize the impact of a specific divestment policy (such as Sudan divestment) upon the investment results of the portfolio.

The Board has determined to use the following procedures to comply with Act 192 by requiring the CIO, or another designated member of Investment Staff, to:

a. *Assemble a list of all direct holdings in "scrutinized companies"*[3]*;*

b. *Review publicly available information regarding companies with business operations in the Sudan provided by nonprofit organizations (e.g., the Sudan Divestment Taskforce) and other appropriate parties;*

c. *Send written notice informing companies of their scrutinized company status and the possibility that they may become subject to divestment;*

d. *Monitor other institutional investors that have divested from or engaged with companies that have business operations in Sudan;*

e. *Consider divestment or other corrective actions to the extent reasonable with due consideration for among other things, return on investment, diversification, and the System's other legal obligations;*

f. *Inform the ERS's equity investment managers of Board decisions as related to the above processes; and*

g. *Review and update progress of scrutinized companies on a quarterly basis.*

This policy is intended to avoid: 1) discriminating against companies whose Sudan-related business activities are supported by the U.S. government; 2) discriminating against companies whose Sudan-related business activities do not support genocide activities; 3) unnecessarily harming U.S. companies and jobs; and 4) compromising the Board's duties to the beneficiaries of the ERS.

~~6.~~5. United Nations – Supported Principles for Responsible Investment ("PRI")

In May 2018, the ERS became a signatory of the United Nations – *Supported Principles for Responsible Investment.* The six *Principles for Responsible Investment* are a voluntary and aspirational set of investment principles that offer a selection of possible actions for incorporating environmental, social, and corporate governance issues into investment practice. The signatories' commitment is as follows:

[3] Reference Act 192, Section 2. Definitions of "Scrutinized Company."

"As institutional investors, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that environmental, social, and corporate governance (ESG) issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes and through time).

We also recognize that applying these Principles may better align investors with broader objectives of society. Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

- *Principle 1: We will incorporate ESG issues into investment analysis and decision-making processes.*
- *Principle 2: We will be active owners and incorporate ESG issues into our ownership policies and practices*
- *Principle 3: We will seek appropriate disclosure on ESG issues by the entities in which we invest.*
- *Principle 4: We will promote acceptance and implementation of the Principles within the investment industry.*
- *Principle 5: We will work together to enhance our effectiveness in implementing the Principles.*
- *Principle 6: We will each report on our activities and progress towards implementing the Principles.*

The Principles for Responsible Investment were developed by an international group of institutional investors reflecting the increasing relevance of environmental, social and corporate governance issues to investment practices. The process was convened by the United National Secretary-General.

In signing the Principles, we as investors publicly commit to adopt and implement them, where consistent with our fiduciary responsibilities. We also commit to evaluate the effectiveness and improve the content of the Principles over time. We believe this will improve our ability to meet commitments to beneficiaries as well as better align our investment activities with the broader interests of society.

We encourage other investors to adopt the Principles."

Source: https://unpri.org

As part of its commitment to the PRI, the ERS shall report on an annual basis its progress in implementing the PRI's Six Principles.

~~7.~~6. Hawaiian Targeted Investment Program (HiTIP)

HiTIP was initiated to fulfill the mandate of Act 260, "A Bill For An Act Relating To The Innovation Economy" passed by the Legislature and signed by the Governor in July 2007. The stated purpose of Act 260 is "to encourage the employees' retirement system to invest in Hawai'i venture capital…"

The legislation pertains to HiTIP in that HiTIP targets investments that are directly a part of the Hawaiian community.

A full account of the Hawaiian Targeted Investment Program can be found in Section H Hawai‘i Targeted Investment Program Policies and Procedures.

C. 8. POLICY FOR THE USE OF PLACEMENT AGENTS

The ERS shall require the specific and timely disclosure of payments and compensation to Placement Agents[4] in connection with the ERS's investments. This Placement Agent Policy is intended to apply broadly to all investment contracts made by the ERS. The goal of this Placement Agent Policy is to provide transparency into actual payments and help ensure that the ERS investment decisions are made solely on the merits of the investment opportunity in accordance with the Board of Trustees' fiduciary responsibility, and to avoid the appearance of undue influence on the Board or Staff or illegal pay-to-play practices in the award of investment related contracts. Each investment manager shall provide information to determine if any such pay-to-play practices exist. Such information shall be provided prior to the closing of an investment opportunity.

1. **Investment Manager Placement Agent Disclosures**

   Each investment manager shall provide to the ERS the required information listed below. The investment manager must notify the Investment Staff of any changes to any of the information required.

   a. *Required Disclosure of Payments Made to Placement Agents*

      i. A written statement of whether the investment manager or any of its principals, employees, agents or affiliates has compensated or agreed to compensate any person or entity to act as a Placement Agent in connection with the ERS's investments.

      ii. The name of the Placement Agent and resumes of the relevant Placement Agent(s) involved with ERS' investment.

      iii. Description of any and all compensation paid or agreed to be paid to the Placement Agent, including payment to employees of the investment manager who are retained in order to solicit, or who are paid based in whole or in part upon, an investment from the ERS.

      iv. Description of the services rendered or the services expected to be performed by the Placement Agent.

      v. Name of the regulatory agencies the Placement Agent or any of its affiliates are registered with, such as The Securities and Exchange Commission (SEC), the Financial Industry Regulatory Association (FINRA), or any similar regulatory agency; proof and details of such registration shall be included, or an explanation as to why no registration is required.

   b. *Required Disclosure of Relationships to the Board and; Campaign Contributions*

      i. To the best of their knowledge, full disclosure of any connection between the Placement Agent or the investment manager and the ERS, including whether anyone receiving compensation or who will receive compensation with respect to

[4] "Placement Agent" includes any person or entity hired, engaged, retained by, acting on behalf of or serving for the benefit of an investment manager or on behalf of another Placement Agent as a third-party marketer, finder, solicitor, marketer, consultant, broker, or other intermediary to market, solicit, obtain access to the ERS, and/or raise money or investments either directly or indirectly from the ERS. Notwithstanding the foregoing, an individual who is an employee, officer, director, equity holder, partner, member or trustee of an investment manager and who spends one-third or more of his or her time, during a calendar year, managing the securities or assets owned, controlled, invested or held by the investment manager is not a Placement Agent.

an investment from the ERS from the Placement Agent or the fund manager is: a current or former ERS Board Member, ERS employee, or ERS consultant; a member of the immediate family of anyone connected to or formerly connected to the ERS; a current or former elected or appointed official of the State and/or cities and counties of the State, a current or former employee of the State and/or cities and counties of the State; or anyone seeking to be elected to public office of the State and/or cities and counties of the State or a member of his/her campaign organization or a political action committee.

ii. To the best of their knowledge, full disclosure of the donations made by the Placement Agent or the investment manager during the prior 24-month period to any organization (including contributions to political campaign funds and donations to non-profits) in which any person listed in Paragraph 2.a is an officer, employee, or member of the Board or Advisory Board (or similar body). Additionally, any subsequent donations made by the Placement Agent or the investment manager to any such organization during the time the Placement Agent or the investment manager is receiving compensation in connection with a the ERS investment shall also be disclosed.

iii. To the best of their knowledge, full disclosure of the names of any current or former members of the Board, ERS employees or investment consultants who suggested the retention of the Placement Agent to the investment manager.

c. *Responsibilities of Staff and Consultants*

At the time that investment discussions between an investment manager and the ERS for a prospective investment commence, Investment Staff is responsible for providing investment managers and Placement Agents with a copy of this Placement Agent Policy.

Investment Staff and investment consultants must confirm that the applicable Placement Agent disclosures have been received prior to the completion of due diligence and completion of any recommendation to proceed with the decision to invest with the investment manager. For new contracts and amendments to existing contracts, the ERS will:

i. Stop investment negotiations with an investment manager who refuses to disclose the required information;

ii. Decline the opportunity to retain or invest with an investment manager who has used or intends to use a Placement Agent who is not registered with the SEC, FINRA, or any similar regulatory agency and cannot provide an explanation as to why no registration is required; and

iii. Investment Staff and investment consultants will assist legal counsel as necessary to secure in the final contract terms and side letter agreements between the ERS and the investment manager, including but not limited to, the following:

iv. The investment manager's agreement that it has complied with and will continue to comply with this Placement Agent Policy.

v. The investment manager's representation and warranty that it will notify the Investment Staff of any changes to any of the information required above.

At any meeting where an investment decision with an investment manager will be considered, Investment Staff and the applicable investment consultants must notify the Board of the name(s) of any Placement Agent(s) used by the investment manager in connection with the proposed investment, and any campaign contributions or gifts reported by each Placement Agent.

Staff must maintain records of all information disclosed to the ERS in accordance with this policy and provide the Board with notice of any violation of this policy as soon as practicable.

d. *Responsibilities of Counsel*

Legal counsel to the ERS must secure in the final contract terms and side letter agreements between the ERS and the investment manager all requisite agreements and representations and warranties by the investment manager for compliance in accordance with this Placement Agent Policy.

e. *Responsibilities of the Board*

The Board must review all violations of this Placement Agent Policy reported by Investment Staff, consider whether each violation is material, and consider recommendations from Investment Staff and the Executive Director whether to prohibit that investment manager and/or Placement Agent from soliciting new investments from the ERS for a certain period from the date of the determination.

C. 9. BOARD OF TRUSTEES DISCRETIONARY ACCOUNT GUIDELINES

The ERS Investment Staff shall only hold U.S. Dollar cash in the Board of Trustees (BOT) Discretionary account; the cash shall be swept into the BNY Mellon Short-Term Investment Fund on a daily basis.

1. Investment Objectives

Assets held in the BOT Discretionary account shall be invested to seek the following objectives:

a. *preservation of capital*

b. *maintenance of liquidity, and*

c. *maximization of current income to the extent consistent with (i), and (ii), above by investing assets in accordance with the guidelines stated below.*

2. Investment Guidelines

Funds shall be denominated in U.S. Dollars and shall be invested in securities or instruments managed under the following guidelines:

a. *Eligible Investments:*

i. Securities and Exchange Commission (SEC) Rule 2a-7 money market mutual funds of institutional grade[5].

ii. Interests or units in any short-term investment fund (including, without limitation, such funds of the Custodial Bank and any of its affiliates) that invests in any of the types of investments approved above.

b. *Liquidity*

i. A minimum of 95% of the available cash portion of the BOT Discretionary account shall be invested in Eligible Investments (1) and/or (2) above.

[5] Rule 2a-7 of the act restricts the quality, maturity and diversity of investments by money market funds. Under this act, a money fund mainly buys the highest rated debt, which matures in under 397 days. The portfolio must maintain a weighted average maturity of 60 days or less and not invest more than 5% in any one issuer, except for government securities and repurchase agreements

BROAD GROWTH PROGRAM

SECTION: D

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D. 1. OVERVIEW

1. General Description

The Broad Growth class consists of investment strategies and assets that are largely exposed and/or susceptible to changes in global economic growth and corporate profitability. Such investments typically contain relatively high degrees of risk and exhibit more volatility than other strategic classes.

The Broad Growth class consists of three major components: Global Equity, Global Credit, and Real Assets. The Global Equity component consists largely of global public and private equity and other similar-risk investments. The Global Credit component consists of public and private credit opportunities that are largely exposed to various collateral types, focused on income generation and Broad Growth diversification. The Real Assets component consists of public and private real assets that can help diversify the Broad Growth class during normal economic environments but that are also sensitive to material changes in economic growth during crisis periods.

2. Purpose

The Broad Growth class provides the bulk of the total portfolio's investment return due its exposure to the equity risk (and similar) premium. The equity risk premium, while volatile, is the reward associated with bearing economic and corporate risk – it is the highest risk premium available to investors. In addition, over long investment horizons (i.e., greater than 10 years), the equity risk premium is generally significantly positive after accounting for inflation. Due to this feature, the Broad Growth class is expected to increase the purchasing power of the total portfolio's assets over time.

By diversifying into the three major Broad Growth components, the Broad Growth class seeks to moderate its risk profile versus investing solely in any one component. This approach seeks to capture the entirety of the equity risk premium as well as capture premiums associated with other risk factors that are closely related to the equity risk premium.

3. Risk Factor Exposures

Major

- *Growth Risk*

Minor

- *Interest Rate Risk*
- *Liquidity Risk*

D. 2. CLASS STRUCTURE

1. Components

The Broad Growth class consists of public and private market components, as described below:

a. *Public Equity*

Public Equity is a sub-component of Global Equity. In general, this sub-component can include any strategy that exhibits similar risk exposures and risk/return expectations as the publicly traded global equity market opportunity set. While individual strategies can vary, the aggregate Public Equity sub-component should exhibit a high correlation to global equity market indices when examined over full market cycles (e.g., 10-year periods).

b. *Private Equity*

Private ~~Public~~ Equity is a sub-component of Global Equity. This sub-component includes a spectrum of private markets investment strategies that are primarily exposed to economic growth risk and can exhibit high levels of measured investment risk. This component will largely consist of Private Equity and similar strategies.

c. *Global Credit*

This component consists of liquid and illiquid investment strategies and assets that are largely exposed and/or susceptible to various collateral types (corporate cash flows, mortgages, various credit receivables, etc.) that produce relatively high levels of income. These investments may be traded in public markets or sourced through private issuance. Such investments typically contain relatively lower levels of risk and exhibit lower volatility than other Broad Growth components but do have exposure to growth-related characteristics. In addition, periodic income will likely be a material portion of the Global Credit portfolio's investment return.

d. *Real Assets*

This component includes a spectrum of liquid and illiquid investment strategies that represent interests directly in or derived from physical, real assets. In aggregate, this component will tend to produce returns in-line with a lower volatility growth exposure, but the characteristics will vary from strategy to strategy and the component bears the unique attributes of private markets investments (e.g., pacing studies, lagged reporting, etc.).

2. Modifications to Component Structure

Modifications to the Broad Growth class's component structure can take four forms:

a. Adding or deleting a specific investment strategy within a specific component;
b. Establishing allocation levels among the components;
c. Adding or deleting a specific component;
d. Establishing allocation ranges among the components;

Staff shall have the discretion to implement items a. and b. above, whereas items c. and d. will only occur with approval of the Board of Trustees or designee (e.g., Investment Committee).

3. Components' Allocations and Allocation Ranges

The Broad Growth class's allocation targets and allocation ranges among its three major components are as follows (as a percent of total Plan assets):

Component	Target	Ranges
Global Equity	39%	+/- 20%
Global Credit	12%	+/- 6%
Real Assets	19%	+/- 10%

If the actual allocations fall outside of the above-stated ranges, ERS Staff shall provide a written report to the Board of Trustees as to the cause, and if relevant, the planned route for shifting the portfolio back in-line with the policy range.

4. Components' Managers and Managers' Allocations

To manage the assets allocated to each strategic class and its underlying components, the Board delegates investment authority to external investment managers ("investment managers"). ERS Investment Staff has the authority to select the investment managers and their corresponding mandate sizes so long as the components retain their expected characteristics individually and the Broad Growth class maintains its expected characteristics as a whole.

D. 3. RETURN OBJECTIVES & RISK PROFILE

1. Class Return Benchmarks

The ERS utilizes the weighted target benchmark below to monitor the performance results of the Broad Growth Class:

BROAD GROWTH BENCHMARK
56% GLOBAL EQUITY BENCHMARK
27% REAL ASSETS BENCHMARK
17% GLOBAL CREDIT BENCHMARK
GLOBAL EQUITY BENCHMARK
51% MSCI ACWI IMI
49% MSCI ACWI IMI (qtr. lag)
REAL ASSETS BENCHMARK
47% FTSE EPRA NAREIT Global REITS Index GD (qtr. lag)
37% Dow Jones Brookfield Global Infrastructure Index (qtr. lag)
9% S&P Global Timber & Forestry Index (qtr. lag)
7% S&P GSCI Agriculture Index (qtr. lag)
GLOBAL CREDIT BENCHMARK
17% Bloomberg Global High Yield Index (hedged)
17%S&P LSTA Leveraged Loan 100 Index
33% Bloomberg Global High Yield (hedged) (qtr. lag)
33% S&P LSTA Leveraged Loan 100 Index (qtr. lag)

The Broad Growth Class portfolio is expected to outperform the above blended benchmark, net of fees, over a full investment cycle. An appropriate measure of an investment cycle would be rolling 5-year periods. The Broad Growth Class portfolio should outperform its benchmark, net of fees, over the majority of rolling 5-year periods.

2. Class Risk Profile

In aggregate, the Broad Growth Class is the ERS's most volatile investment class and is the class that is most sensitive to economic growth trends.

The true risk levels of the various components are expected to be ordered as follows (highest risk to lowest): Global Equity, Real Assets, Global Credit. Due to the diverse nature of strategies within the Real Assets component, its true risk level is expected to generally fall in between Global Equity and Global Credit, but it may vary over time. Considering this attribute, it is expected that ERS Staff will notify the Board of material changes in the risk profile of the Real Assets component. Moreover, it is important to note that statistical measures of risk (e.g., performance volatility) are not indicative of the true levels of risk when examined for private markets strategies.

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BROAD GROWTH: APPENDIX

DERIVATIVES POLICY[1]

Derivatives may be used in the ERS portfolio as a substitute for a cash market security, risk control, income (e.g., Covered Calls), cost reduction, or liquidity management. Derivatives are not permitted for purposes of speculation. ~~Any derivative investment not explicitly authorized below is prohibited~~.

1. Where derivatives are used as substitutes for a specific cash security or set of cash securities, the return volatility of the combination of the derivative and associated cash position shall be equivalent to the unleveraged cash security or securities underlying the derivative instrument.
2. When options are used for income and risk control (e.g., Covered Calls), the notional value of the options may not exceed the total value of the underlying securities.
3. Managers shall mark-to-market their derivative positions daily.
4. Permitted Instruments:
   a. *Futures* – stock index futures, stock and bond futures, money market futures, and currency futures where the manager has the authority to invest in the underlying or deliverable cash market security.
   b. *Options* – options on stocks, indices, ETFs, and bonds (including interest rate caps and floors). Options on futures, swaps, and currencies are allowed for those managers who have permission to invest in the comparable cash instruments.
   c. *Currency forwards* – only those managers who have the authority to invest in the underlying cash market instrument.
   d. *Swaps (Global Credit managers)* – where the manager has the authority to invest in the underlying cash market instrument. Minimum counterparty rating: A-
5. Futures contracts must be CTFC (Commodity Futures Trading Commission) approved and exchange traded.
6. Options may be either exchange traded or over-the-counter (OTC) subject to counterparty guidelines as noted.
7. Managers may purchase back options in order to close out positions.
8. Counterparties to OTC traded instruments (options and forwards) must be rated investment grade or better as determined by at least one major rating agency.
9. Cross-hedging is not permitted by international equity managers; however, as it is a standard practice for non-U.S. bond managers, it is allowed for Extended Global Credit managers. These credit managers may also use certain developed-market currencies as proxies for otherwise illiquid emerging-market currencies. In such cases, use of such proxies will be disclosed through the ongoing reporting process. The counterparties for foreign currency derivatives must be rated A- or equivalent.
10. On an annual basis, all investment managers shall provide a summary of the derivatives used and the reasons for their use. This summary shall be the basis for verification that the investment managers are generally complying with the objectives and constraints of the investment policy. The investment consultant shall elicit responses on each manager's policy in the form of a letter.
11. On a daily basis the custodian bank shall examine all manager derivatives purchases for prohibited derivatives. Should any prohibited derivatives be found, the custodian bank should promptly notify Staff and instruct the manager to sell the prohibited derivatives. The custodian bank will also value and monitor all derivatives and the trades from which they emanate.

[1] Performance-related criteria for the Private Growth component is specified within the corresponding component section.

REAL ASSETS COMPONENT

1. Program Management

The Real Assets program shall be implemented and monitored through the coordinated efforts of the Board of Trustees ("Board of Trustees" or "Board") of the Employees' Retirement System of the State of Hawaii ("ERS"), the ERS investment staff ("Investment Staff"), and the ERS's investment consultants ("Investment Consultants"). The ERS Investment Staff shall maintain the day-to-day management and implementation responsibilities of the program while leveraging the expertise of the ERS's Investment Consultants where applicable. The Board of Trustees or designee shall provide high-level oversight and approve the long-term, strategic direction of the program during asset-liability studies and/or component structure reviews.

2. Investment Parameters

a. Portfolio Construction

The ERS has determined that, over the long-term, the inclusion of a Real Assets component can enhance the ERS's expected total portfolio investment characteristics. Specifically, investments in Real Assets strategies provide unique exposures and return drivers relative to public market securities and other private markets strategies (e.g., private equity). Moreover, Real Assets strategies are expected to increase the purchasing power of the total portfolio's assets over time, while buffering drawdowns during inflation-oriented crises. As a component of the Broad Growth strategic class, the Real Assets component is expected to produce returns similar to other Broad Growth components but commensurate with its relative level of risk.

Real Assets investments of the ERS shall be made in a manner consistent with the fiduciary standards of the prudent expert rule: (1) for the sole interest of the ERS's participants and their beneficiaries; and (2) to safeguard and diversify the Real Asset portfolio. The selection and management of Real Assets investments will be guided to preserve investment capital and to maintain prudent diversification of assets and management responsibility. The diversification objective is required to manage overall market risk and the specific risks inherent in any single investment or management selection.

b. Aggregate Target Allocation

The allocation of ERS assets to Real Assets investments shall remain within the limits authorized by the Board of Trustees or designee. The long-term target allocation is 19% of the ERS's Total portfolio (based on net asset value of invested capital).

	Long-term Total Portfolio Target *(effective 01/01/2024)*
Real Assets	19%

As a private markets class, the Board of Trustees understands that it is unlikely the ERS will ever be perfectly in-line with the target allocation. However, the Board of Trustees expects the program to be implemented in a prudent and diversified manner with a relatively consistent risk profile. In order to avoid concentration risks, the Board expects the program to incorporate relatively even vintage year and strategy diversification over time (subject to the component target allocations detailed below).

c. *Sub-Component Target Allocations*

The ERS's Real Assets component consist of several sub-components:

i. Real Estate (Core and Non-Core)

ii. Timber

iii. Agriculture

iv. Infrastructure

v. Other Real Assets

Each of the components are expected to be implemented with private markets assets, although public market proxies may be used for transitory purposes. The *Other Real Assets* sub-component is not expected to be used without prior notification of the Board or designee. The following table provides the long-term sub-component-level target allocations and respective ranges within the Real Assets component.

Sub-Component	**Long-Term Total Portfolio Target**
Real Estate	9%
Timber/Agriculture	3%
Infrastructure	7%
Other Real Assets	---
Total	**19%**

Due to the unpredictability in the timing of capital calls and distributions, the Board understands that the portfolio is unlikely to ever be perfectly in-line with these targets. Moreover, the ERS Investment Staff maintains discretion around the sub-component targets and can modify the implementation of the actual portfolio subject to the risk management policy (see following section).

d. *Risk Management*

The construction and management of the Real Assets program will be designed to generate an attractive level of return with prudent diversification that is additive to the total portfolio. The specific risk/return objective of the program is an outcome of the Board's or designee's selection of a target portfolio during asset-liability studies.

As a component of the Broad Growth strategic class, it is expected that the Real Assets program will share some commonalities (i.e., drawdown and positive return periods) with other growth-related strategies, however, the ERS Investment Staff seeks to implement the program in as complementary of a manner as possible.

With Real Assets investments, there is an inherent risk that the actual return of capital, gains, and income will vary from the amounts expected. The ERS shall manage the investment risk associated with Real Assets investments in several ways:

i. Strategic Structure

1. Allocation by sub-component. The ERS Investment Staff can manage allocations to the sub-components with a certain level of flexibility in order to adjust for market dynamics, opportunities, and private market-specific challenges. The ERS Board expects the Investment Staff to maintain a holistic view of the portfolio's aggregate risk posture across all strategic classes, components, and sub-components.

2. Commitment pacing into each segment over time. It is expected that the Real Assets component will be implemented via measured and consistent commitment pacing. However, certain annual commitment amounts among these sub-components may vary significantly, depending upon the capital investment opportunities within each component.

ii. Manager Selection / Institutional Quality

1. All assets must be of institutional investment quality. Institutional quality will be defined as being of a quality whereby the investment would be considered acceptable by other prudent institutional investors (e.g., endowments, foundations, insurance companies, commercial banks and savings institutions, public employee retirement systems, corporate employee benefit plans, and other tax-exempt institutions).

iii. Leverage

1. Leverage levels will be an explicit consideration when examining and monitoring investments. For a given fund, the utilized leverage must be consistent with the objectives of the respective strategy and industry-wide practices.

e. *Benchmarks*

The aggregate Real Assets component will utilize a blended benchmark based on the underlying sub-component benchmarks and corresponding total portfolio target allocations. As a private markets class, the ERS Board understands that perfect benchmarks do not exist and there will be variances/mismatches over periods of time. The success of the Real Assets program will primarily be examined over rolling 10-year windows.

	Sub-Component Benchmark
Real Estate	FTSE EPRA NAREIT Global REIT Index GD (qtr. lag)
Timber/Agriculture	S&P GSCI Agriculture Index (qtr. lag) S&P Global Timber & Forestry Index (qtr. lag)
Infrastructure	Dow Jones Brookfield Global Infrastructure Index (qtr. lag)
Other Real Assets	---

f. Monitoring and Reporting

The performance of private Real Assets investments will be calculated on both a time-weighted and dollar-weighted (internal rate of return or IRR) basis. The rate of return calculations will be net of all partnership/LLC fees and expenses.

The ERS's Real Assets~~ (or Real Estate)~~ Consultant will be responsible for calculating and reporting net IRRs on the individual investments as well as at various composite levels as requested by the ERS. The ERS's General Consultant, in conjunction with the ERS's custodian, will produce time-weighted returns on the aggregate Real Assets composite.

The ERS's Investment Staff and/or the appropriate designated retained consultant will provide additional performance measurement information, if requested by the ERS Board or designee.

REAL ESTATE SUB-COMPONENT

1. Investment Objectives

a. Investments In Real Estate

The Employees' Retirement System of the State of Hawaii ("ERS") Board of Trustees has determined that the inclusion of ~~Core and Non-Core~~ Real Estate can enhance the portfolio's structure.

While safety of principal is given primary consideration, the ERS recognizes the need to use active asset management strategies in order to obtain the highest attainable total investment return (income plus appreciation) within the ERS's framework of prudence and managed risk.

The selection of investment managers and development of investment policy will be guided to enhance diversification within the portfolio of the ERS's R~~r~~eal E~~e~~state investment program ("Real Estate Investment Program") thereby limiting exposure to any one investment, organization, real estate property type and geographic region (Refer to Section II: Program Management).

i. Real Estate Defined - Real estate assets are defined as those investments that are unleveraged or leveraged, equity or debt positions in private and public real property. Investments in private and public real estate companies are also permissible. The ownership structure(s) should be consistent with any rules, regulations, or law, as applicable, governing the ERS. The ERS will pursue both discretionary separate account investment management and discretionary commingled fund investment management for its real estate allocation.

b. Strategic Allocation

The ERS allocation to real estate shall remain within the limits authorized by the ERS Board of Trustees or designee. ~~Core and Non-Core~~ R~~r~~eal E~~e~~state allocations should be in line with those that are detailed in Section D: Broad Growth Program. ~~Core and Non-Core~~ R~~r~~eal E~~e~~state allocations will be established and managed via scheduled annual commitment pacing approved as a result of the annual strategic plan (see item 2.C. below).

c. Portfolio Return Objectives

The real estate return objectives and benchmarks will follow their respective assignments as detailed in Section D.3. Return Objectives & Risk Profile.

2. Program Management

a. Overview

In compliance with current ERS investment philosophy, the Real Estate Investment Program will primarily utilize discretionary separate account relationships and discretionary commingled fund investment vehicles that are sponsored by real estate investment managers ("Investment Managers"). Under this program, the Investment Managers acquire, operate and dispose of real estate assets in accordance with a work assignment that is outlined in their investment management contract with the ERS (the "Contract") and in the Annual Tactical Plan for separate accounts and the fund documents for commingled funds. The Contract describes the acceptable property types, geographic restrictions, investment structures, leverage and other specific investment parameters. For Separate Accounts, The Annual Tactical Plan is the Investment Manager's "working plan" for each fiscal year and must be reviewed by Investment Staff and Real Assets~~Estate~~ Consultant. Such planning will be incorporated into the Real Assets Strategic Plan and approved by the Board of Trustees or designee, annually. For commingled funds, documents typically refer to the fund's offering memorandum or private placement memorandum, limited partnership or LLC membership agreement, and subscription agreement.

b. Participant Roles and Responsibilities

The ERS's Real Estate Investment Program shall be implemented and monitored through the coordinated efforts of the Board of Trustees or designee(s). Specific responsibilities that fall outside the general responsibilities highlighted in Section B.5. are listed below:

i. Investment Manager - Qualified real estate organizations, registered as Investment Advisors under the 1940 Act that provide institutional real estate investment management services to the ERS. ERS may invest in commingled fund vehicles that are not registered, however, it is preferred that the commingled fund be sponsored and/or managed by a Registered Investment Advisor.

ii. Separate Account Manager Responsibilities - The separate account Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of real estate properties and/or originates or acquires, manages, and realizes upon real estate debt investments in accordance with the annual Tactical Plan and Contract.

iii. Commingled Fund Manager Responsibilities – The commingled fund Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of real estate properties and/or originates or acquires, manages, and realizes upon real estate debt investments in accordance with the terms of the investment vehicle documents.

c. Annual Real Assets~~Estate~~ Strategic Plan

i. Annually, the Investment Staff, with the Real Assets~~Estate~~ Consultant as requested, will prepare a Strategic Plan which reviews the current status of the portfolio, recent historical and prospective market conditions, and proposes the actions to be taken over the next approximately twelve-month period. This document will recommend general capital allocations to the ~~Core and Non-Core~~ Real Estate Program and the rationale and expectations for inclusion.

ii. The annual Strategic Plan will then be presented to the Board of Trustees or designee for approval.

3. Portfolio Composition

a. *Core Portfolio* - Core investments include equity or debt investments on existing, substantially leased income-producing traditional property types located principally in metropolitan areas that exhibit reasonable economic diversification. Core investments typically exhibit one or more of the following characteristics:

i. Traditional institutional quality property types including office, industrial, retail and multifamily; also included are medical office, senior housing, storage, and student housing properties that demonstrate core characteristics;

ii. Operating and stabilized properties that demonstrate predictable income flows with a high proportion of anticipated total return arising from current income and cash flow;

iii. Well-leased upon purchase of the asset;

iv. Located in institutional markets and in economically diversified metropolitan areas;

v. High credit quality tenants and a staggered lease maturity schedule;

vi. Quality construction and design features;

vii. Reasonable assurance of a broad pool of potential purchasers upon disposition;

viii. Properties requiring quality asset and portfolio management but not requiring specialized operating expertise which is not readily available in the market;

b. *Non-Core Portfolio* - Non Core real estate investments represent equity or debt investments in those properties and/or investment strategies that require specialized acquisition and management expertise or skill to mitigate the business and leasing risk that may be associated with individual investments. Non-Core investments which may be referred to as Value Added or Opportunistic have greater volatility and leverage compared to core investments and as such are expected to provide yields higher than those associated with core investments.

c. *Value Added* – Value Added investments include equity, debt, or real estate company investments of institutional quality that offer the opportunity to enhance value through rehabilitation, redevelopment, development, lease-up or repositioning. A significant portion of return is from appreciation and includes moderately higher leverage than core. Value added investments typically exhibit one or more of the following characteristics:

i. Properties located in primary as well as secondary and tertiary markets which may not be economically diversified and may have accompanying susceptibility to imbalance of demand and supply;

ii. Traditional as well as non-traditional property types including, but not limited to, hotels, motels, senior housing, student housing, manufactured and residential housing;

iii. Properties that are undermanaged with specific problems that require specialized management skills;

~~iv. Properties that are less than 70% leased upon purchase or where more than 30% of leases expire in the first three years of purchase;~~

~~v.~~iv. Properties involving significant appreciation, lease-up, development and/or redevelopment risks;

~~vi.~~v. Properties using moderate leverage; ~~between 50% and 65%;~~

~~vii.~~vi. Investments in institutional quality properties located in mature real estate markets showing high levels of market transparency outside of the United States and Canada;

d. *Opportunistic* – Opportunistic investments include equity or debt investments in real estate properties, real estate operating companies and other investment vehicles that offer the opportunity to capitalize on the disequilibrium of the real estate markets caused by dramatic shifts in capital flows or other fundamental real estate characteristics. Opportunistic investments not only include distressed assets in need of lease up but also assets that provide returns from financial restructuring. Opportunistic investments typically exhibit one or more of the following characteristics:

   i. Strategies that seek to exploit inefficiencies in the capital and real estate markets
   ii. Strategies that involve financing or acquisition of real estate assets, operating companies, portfolio of real estate assets
   iii. Strategies that focus on major development or redevelopment
   iv. Properties with substantial leasing, development and entitlement risk
   v. Distressed assets
   vi. Distressed debt
   vii. Major financial re-structuring required
   viii. Higher utilization of leverage ~~of between 65% and 90%~~
   ix. Investments in real estate markets driven by growth and continued improvements in market transparency, located outside of the United States and Canada

4. Investments and Risk Management

The ERS shall manage the investment risk associated with real estate in several ways:

a. *Institutional Quality*

All assets within the Real Estate portfolio must be of institutional investment quality as evidenced by a history of institutional investment in similar properties; expert analysis which supports the economic viability of the market; high quality construction and design features; and a current or potentially competitive position within the property's immediate market area.

b. *Diversification*

The real estate portfolio shall be diversified by geographic region and property type. Diversification reduces the impact on the portfolio of any one investment or any single Investment Manager's style to the extent that an adversity affecting any one particular area will not impact a disproportionate share of the total portfolio.

c. ~~*Target Portfolio*~~

~~*The long-term real estate strategy is for the ERS real estate portfolio to be diversified taking into account the following diversification guidelines:*~~

~~*Property Type – The real estate portfolio shall be diversified with the majority of investments comprised of the four traditional property types: office, industrial, retail, and multifamily (apartment). No single traditional property type shall account for greater than 50% of the portfolio. In addition, the range of property type allocations are generally expected to be 0.5x – 1.5x the NFI-ODCE's weight in each property type. Other property types, as defined by NFI-ODCE, are allowed but (on a combined basis) should generally not exceed 20% of the real estate portfolio.*~~

~~*Geographic - Within the United States, the range of geographic allocations are generally expected to be 0.5x – 1.5x the NFI-ODCE weight in each region. International Investments (Non US and Canada) will generally range between 0-20% of the core real estate portfolio.*~~

Ownership Structure

The ownership structure for real estate investments may include leveraged and unleveraged equity and debt investments owned directly via separate accounts or through commingled funds. For separate accounts, directly owned investments may be 100% owned by ERS or owned jointly with Suitable Investment Partners. "Suitable Investment Partners" include public, corporate and union pension plans, foundations and endowments, insurance company general accounts or separate accounts, and other tax-exempt institutions, having the same or greater standards of fiduciary care and responsibility as those imposed by ERS guidelines. When dealing with non-core investments that are directly owned, Operating Partners shall be added to the list of "Suitable Investment Partners." The ownership structure of non-core assets within commingled funds will be governed by the fund documents.

d. Leverage

The use of leverage is a prudent tool for enhancing returns and diversifying equity investments, though it does raise the risk profile of the portfolio. As such, ERS has approved leverage targets in order to enhance returns to the total portfolio. The availability and cost of leverage will be factors considered in determining its use. For the total real estate portfolio, the ERS has established a leverage maximum of fifty percent (50%). Third party debt should primarily be non-recourse. At no time shall the origination of new leverage cause the portfolio to exceed the established limits on a loan-to-value basis. In the event that either the portfolio level and/or style level leverage constraint is breached due to a contraction in market values, the Staff and Consultant will notify the Board of Trustees or designee and make a recommendation for action or exception if appropriate.

e. Manager Concentration

ERS shall limit its exposure to any single manager. No single Investment Manager shall be permitted to manage more than 35% of the total allocation to real estate at the time of investment (i.e., purchase) without prior approval from the Board of Trustees or its designee. In the case of the Separate Account Manager(s), concentrations are likely to exist, and be allowed, during build up or wind down periods of such accounts.

f. Investment Size

There is no minimum investment size. The maximum net investment in a single property within a separate account shall be limited to 15% of the allocation to the core real estate program at the time of investment. The ERS's investments in a single commingled fund shall not exceed 20% of the total net market value of the commingled fund at the time of investment. If the commingled fund is in the process raising assets (versus being an open-ended fund), the 20% threshold will be based on target fund size.

5. Investment Process (Separate Accounts)

a. Manager Selection Process

ERS Investment Staff, assisted by the Real Assets ~~Real Estate~~ Consultant as requested, shall have responsibility for sourcing managers. ERS, assisted by the Real Assets ~~Real Estate~~ Consultant as requested, shall screen and review the managers and arrange interviews and final presentations if necessary. The Real Assets ~~Real Estate~~ Consultant will assist Investment Staff in negotiating and closing manager agreements, including final fee structures.

b. Leverage

The total level of debt for any single core separate account investment will generally not exceed fifty percent (50%).

c. *Monitoring and Reporting*

The ERS expects its Separate Account managers to generally act in accordance with the most recent version of the Reporting Standards established jointly by the National Council of Real Estate Investment Fiduciaries ("NCREIF") and the Pension Real Estate Association ("PREA") ("Reporting Standards"). The Reporting Standards were developed with a mission to establish, manage and promote transparent and consistent reporting standards for the real estate industry to facilitate informed investment decision-making.

6. Investment Process (Commingled Funds)

a. *Manager Selection Process*

In an effort to maintain program simplicity and ensure appropriate underwriting of investment management organizations, the ERS Staff shall utilize only ERS approved real estate investment management firms for the acquisition, asset management and disposition of property and origination, management, and realization of debt investments. In addition to the existing separate account Investment Managers, the ERS has approved a program of commingled fund investing.

The following steps shall be followed in order for the ERS to commit to any prospective commingled real estate investment opportunity:

i. Investment Staff, with assistance from the Real Assets ~~Real Estate~~ Consultant, sources and performs comprehensive due diligence on attractive investment opportunities consistent with criteria set forth in the annual Strategic Plan.

ii. If, as a fiduciary of the ERS, the Real Assets ~~Real Estate~~ Consultant determines that the investment merits a commitment from the ERS, the Real Assets ~~Real Estate~~ Consultant will take the following steps:

1. Discuss with Investment Staff the key findings during due diligence, including investment merits, risks and key conclusions;

2. Follow-up with Investment Staff on additional requests for information based on this discussion and complete an Investment Disclosure Form;

3. In conjunction with the ERS's legal review process, assist legal negotiation and closing into the investment opportunity.

iii. Upon successful review of the investment by Investment Staff, the investment shall be recommended to the Board of Trustees or designee for approval. This recommendation shall contain a summary of the due diligence and a prospective commitment level for the investment.

b. *Monitoring and Reporting*

i. Reporting System - There shall be a comprehensive reporting and monitoring system for the entire portfolio, Real Assets ~~Real Estate~~ Consultant, Investment Manager(s) of commingled funds, and individual investments. Situations of underperforming investments, portfolio diversification deficiencies from the Policies & Procedures, and conflicts of interest can then be identified, facilitating active portfolio management.

TIMBER SUB-COMPONENT

1. Investment Objectives

a. Investments in Timberland Assets

Timber investments involve the privately negotiated purchase and, to a lesser degree, leasing of forestland tracts, upon which trees are grown for commercial sale. Investments in timber will primarily be made directly through a separate account or indirectly through a multi-investor structure (i.e., two or more investors investing in a specific timber asset as a limited liability company ["LLC"] or other investment vehicle, as appropriate) in which ERS's separate account is an investor. When applicable and consistent with the objectives of the Real Assets program, commingled funds may also be used to achieve exposure to timberland investments. All timber investments will be managed by a qualified timberland investment manager ("timberland manager" or "manager").

Timber investments of the ERS shall be made in a manner consistent with the fiduciary standards of the prudent expert rule: (1) for the sole interest of the ERS's participants and their beneficiaries; and, (2) to safeguard and diversify the timber portfolio. The timber portfolio will be constructed to preserve investment capital and to maintain prudent diversification of assets.

b. Strategic Allocation

The ERS's allocation to timber investments shall remain within the limits authorized by the Board of Trustees or designee as described in the Real Assets component of this Investment Policy Statement.

c. Portfolio Return Objectives

The timber return objectives and benchmarks will follow their respective assignments as detailed in Section D.3. Return Objectives & Risk Profile.

At a high-level, the timber investments portfolio's rate of return is expected to be generated primarily from biological growth, sale of timber inventory, and purchases and sales of properties. Additionally, value-added investments may be used to enhance timberland investments, and may include recreation leases, carbon sequestration, wetland mitigation, and other ecosystem services.

2. Program Management

a. Overview

In compliance with current ERS investment philosophy, the Timber program will primarily utilize discretionary separate account relationships and discretionary commingled fund investment vehicles that are sponsored by timberland investment managers ("Investment Managers"). Under this program, the Investment Managers acquire, operate and dispose of timberland assets in accordance with a work assignment that is outlined in their investment management contract with the ERS (the "Contract") and in the Annual Tactical Plan for separate accounts and the fund documents for commingled funds. The Contract describes the acceptable property types, geographic restrictions, investment structures, leverage, and other specific investment parameters. For Separate Accounts, the Annual Tactical Plan is the Investment Manager's "working plan" for each fiscal year and must be reviewed by Investment Staff and Real Assets~~Estate~~ Consultant. For commingled funds, documents typically refer to the fund's offering memorandum or private placement memorandum, limited partnership or LLC membership agreement, and subscription agreement.

b. Participant Roles and Responsibilities

The ERS's Timber Investment Program shall be implemented and monitored through the coordinated efforts of the Board of Trustees or designee; through the Investment Staff; the ERS's general investment consultant ("General Investment Consultant"); the ERS's R~~r~~eal Assets~~estate~~ consultant ("Real Assets~~Estate~~ Consultant"); and the Investment Manager(s). Specific responsibilities that fall outside the general responsibilities highlighted in Section B.5. are listed below:

i. Investment Manager - Qualified organizations, registered as Investment Advisors under the 1940 Act, that provide institutional timberland investment management services to the ERS. ERS may invest in commingled fund vehicles that are not registered, however, it is preferred that the commingled fund be sponsored and/or managed by a Registered Investment Advisor.

ii. Separate Account Manager Responsibilities - The separate account Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of timberland properties in accordance with the Annual Tactical Plan and Contract.

1. Annual Tactical Plan

Annually, the separate account timberland manager will prepare an Annual Tactical Plan which reviews the current status of the portfolio, recent historical and prospective market conditions, and proposes the steps to be taken to further implement the long-term strategic plan. The Annual Tactical Plan will be reviewed by the Real Assets~~Estate~~ Consultant and Investment Staff

The format of the Annual Tactical Plan is expected to include: (1) a review of the current status of the portfolio, (2) perceived investment environment, (3) the types and amount of property investments to be sought and underlying rationale, (4) goals for other management responsibilities such as situations being monitored and adding value, and (5) outline the steps anticipated toward portfolio development over the course of the coming year, and (6) any other items requested by the ERS.

iii. Commingled Fund Manager Responsibilities – The commingled fund Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of timberland investments in accordance with the terms of the investment vehicle documents.

3. Strategic Plan

The Timber program is expected to be managed and monitored as a sub-component of the broader Real Assets component. Separate account timberland mandates will contain their own *Annual Tactical Plans* as highlighted above.

a. Portfolio Composition

With timber investments, there exists an inherent risk that the actual return of capital, income and gains will vary from the amounts expected. The composition of the portfolio and its key program management parameters are as follows:

i. Institutional Quality

All assets must be of institutional investment quality. Institutional quality will be defined as being of a quality whereby the investment would be considered acceptable by other prudent expert institutional timber market participants and corporate forest product industry investors.

ii. Diversification

The timber portfolio shall be diversified by:

1. regional geographical location (South, Northeast, West, Other, and International)
2. non-contiguous tract and parcel locations
3. type and species of tree (e.g., softwood "conifer," such as pine, fir redwood, etc., and hardwood "deciduous," such as oak, maple, etc.)
4. end-use market of forest product (building and construction, pulp and paper, furniture and decorative wood)
5. potential purchasers of inventory (mills and processing plants)
6. stage of tree growth (seedling through mature)
7. timing of investment

When fully invested, no one timberland investment should represent in excess of twenty-five percent (25%) of the total market value of the portfolio. These limits are subject to waiver on a case-by-case basis by the Trustees. It is also recognized that during the portfolio development and wind-down stages the full investment parameters may not, of necessity, be met.

iii. Ownership Structure

Account and Investment Structure: The ERS's ownership structure will comprise an arrangement whereby separate account relationships will be established with one or more fiduciary timberland managers. The separate account timberland manager will in turn purchase, on a discretionary basis, timber assets for the ERS's account. When applicable and consistent with the objectives of the Real Assets program, commingled funds may also be used to achieve exposure to timberland investments. Commingled fund investments will be governed by their fund-specific documentation, and any corresponding side letters, which may vary from the separate account guidelines presented below.

b. Investment Process (Separate Accounts)

i. Eligible Investments

In general, the timberland manager will have discretion to purchase forest tracts that are expected to meet or exceed the ERS's rate of return objectives for timber investment. The rate of return must be appropriate after the consideration of any risk measures employed by the manager. Multi-investor structures and lease holdings may be made, however, the majority of the fully invested portfolio should be made up of fee simple investments. The timberland manager is allowed to enter into joint ventures with forest product companies for up to 20% of the portfolio. However, the structure of the joint venture must not impede, at any time, either the sale of the holding or the ability of the ERS to replace the timberland manager. Also, the manager will minimize the concentration of holdings in areas known to be frequented by natural disasters, for example coastal tracts known to be frequent hurricane paths, flood zones, etc.

Without compromising the geographical diversification targets, the timberland manager will use reasonable efforts to mitigate the incurrence of unrelated business taxable income in the portfolio.

Leverage may be used, on a nonrecourse basis, up to 20% of the timberland market value of the portfolio, with no more than 50% leverage on any one timber investment. The single investment debt level will be measured for compliance at the time leverage is added to the portfolio. Leverage for the total portfolio will be measured for compliance at the time the leverage is added to the portfolio, or a portfolio asset is purchased or sold. Leverage may not be added to any investments held as of September 15, 2010.

4. Geographical Location Diversification

Over the long-term, the ERS portfolio should seek portfolio diversification with regard to major timber growing regions. The currency exposure to the ERS from any non-U.S. dollar aspect of the allocation is expected to be negligible over the long-term.

The following ranges set forth the geographic diversification targets for the timberland manager to fulfill:

Region	Range
South	45% - 65%
West	25% - 45%
Northeast	0% - 20%
Other/International	0% - 20%

5. Tree Maturity Diversification

The ERS portfolio will seek to diversify by maturity of timber ranging from immature, pre-merchantable trees through mature, merchantable timber. The timberland manager will create a sustainable timberland portfolio where tree seeding, planting, growth and purchases will replace trees harvested and properties sold.

6. Tree Species Diversification

The portfolio will be diversified by timber type and include both hardwoods and softwoods.

7. End Use Diversification

The ERS portfolio will be structured to sell into several commercial industries, such as paper goods and cardboard, various building and construction materials markets, and finished carpentry and furniture. The timberland manager will also take into account the number of regional processors or purchasers of timber inventory.

8. Tract And Parcel Diversification

The portfolio will be composed of numerous non-contiguous tracts with the goal of diversifying the risk of natural disasters such as fire, disease, pests, etc.

9. Manager Responsibilities

a. Investment Management

Timberland managers are directly accountable for the following investment management responsibilities. This section designates certain investment responsibilities that the timberland manager will perform or cause to be performed.

i. Acquisition – The manager will be responsible for sourcing, evaluating and selecting, on a discretionary basis with fiduciary responsibility, timber investments to be made on behalf of the ERS.

ii. The acquisition process will be made with a view to maximize the ERS's risk adjusted rate of return subject to portfolio management/diversification parameters.

iii. Ongoing Operations – The timberland manager shall manage or cause to be managed, the portfolio and individual properties such as to enhance the ERS's value in the investment. This includes silvicultural/forest management, property valuations/appraisals, and cash-flow management.

iv. Disposition – Ongoing, and based on timber market circumstances, the timberland manager shall review the managed investments with respect to continued timely return of capital, income and gains, including both planned and opportunistic sales of timber inventory and properties. The manager shall identify qualified buyers, solicit and evaluate offers, and negotiate property sales.

b. Monitoring and Reporting

The ERS expects its Separate Account managers to generally act in accordance to the most recent version of the Reporting Standards established by the National Council of Real Estate Investment Fiduciaries ("NCREIF") and US GAAP.

10. Investment Process (Commingled Funds)

When applicable and consistent with the objectives of the Real Assets program, commingled funds may be used to achieve exposure to timberland investments. The commingled fund Investment Manager, acting as a fiduciary on behalf of ERS, acquires, manages and disposes of timberland investments in accordance with the terms of the investment vehicle documents.

INFRASTRUCTRE SUB-COMPONENT

1. Program Management

a. General Description

The Infrastructure Portfolio is long term in nature, and for time-diversification purposes, investment commitments may be drawn down over several years throughout a defined investment period with respect to certain investment vehicles (e.g., closed-end pooled funds). Accordingly, the ERS Investment Staff and Investment Consultants may recommend total investment commitments that reasonably exceed the total Infrastructure Portfolio allocation authorized for Portfolio investment (e.g., 150% of the authorized allocation amount) to build and maintain the allocation. The Infrastructure program is expected to be managed and monitored as a sub-component of the broader Real Assets component.

b. Investment Structure

The Infrastructure Portfolio may include private equity and private debt investments in closed-end and open-end pooled funds. Private equity fund investments may include equity interests in Infrastructure assets, including energy, communications, transportation, and other types of assets. Private debt fund investments may include structured investments, which provide for stated preferred returns, which may be accrued or paid on a current basis.

c. Diversification

The Infrastructure Portfolio diversification is important in reducing portfolio risk and accomplishing risk-adjusted return expectations in the context of the larger Real Assets component that includes the Infrastructure sub-component. The impact of Infrastructure investments on the Real Assets portfolio's diversification, portfolio risk, and risk-adjusted returns shall be considered when evaluating prospective investments.

d. Leverage

Leverage can be a significant risk factor, impacting the risk / return profile of the Infrastructure Portfolio. The ERS Investment Staff and the investment consultants will monitor closely the leverage level of each Infrastructure fund investment seek to maintain a risk/return level consistent with the ERS's investment objectives.

e. Portfolio Risk and Liquidity Attributes

Infrastructure investments are expected to be private; therefore, on-demand liquidity outside of income is not anticipated. Investments are expected to primarily be "core" investments, equity or debt investment in high-quality infrastructure assets with lower risk/return attributes. Core investments are often regulated or contracted essential assets that may be characterized by a low correlation to GDP growth (e.g., regulated utilities). Volatility levels are anticipated to be reduced by this focus on income-oriented investing.

AGRICULTURE SUB-COMPONENT

1. Program Management

a. *General Description*

The Agriculture Portfolio target is long term in nature, and for time-diversification purposes, investment commitments may be drawn down over several years throughout a defined investment period with respect to certain investment vehicles (e.g., closed-end pooled funds). Accordingly, the ERS Investment Staff and the investment consultants may recommend total investment commitments that reasonably exceed the total Agriculture Portfolio allocation authorized for Portfolio investment (e.g., 150% of the authorized allocation amount) to build and maintain the allocation. The Agriculture program is expected to be managed and monitored as a sub-component of the broader Real Assets component.

b. *Investment Structure*

The Agriculture Portfolio may include private equity and private debt investments in closed-end and open-end pooled funds. Private equity fund investments may include equity interests in Agriculture assets, including farmland, delivery, storage, and other types of assets. Private debt fund investments may include structured investments, which provide for stated preferred returns, which may be accrued or paid on a current basis.

c. *Diversification*

The Agriculture Portfolio diversification is important in reducing portfolio risk and accomplishing risk-adjusted return expectations in the context of the larger Real Assets component that includes the Agriculture sub-component. The impact of Agriculture investments on the Real Assets portfolio's diversification, portfolio risk, and risk-adjusted returns shall be considered when evaluating prospective investments.

d. *Leverage*

Leverage can be a significant risk factor, impacting the risk / return profile of the Agriculture Portfolio. The ERS Investment Staff and the investment consultants will monitor closely the leverage level of each Agriculture fund investment and seek to maintain a risk/return level consistent with the ERS's investment objectives.

e. *Portfolio Risk and Liquidity Attributes*

Agriculture investments are expected to be private; therefore, on-demand liquidity outside of income is not anticipated. Investments are expected to primarily be "core" investments, equity or debt investment in high-quality Agriculture assets with lower risk/return attributes. Core investments may be characterized by a low correlation to GDP growth. Volatility levels are anticipated to be reduced by this focus on income-oriented investing.

GLOBAL CREDIT COMPONENT

1. Investment Objectives & Structure of the Credit Portfolio

a. *General Description*

The Credit Portfolio consists of investment strategies and assets that are largely exposed and/or susceptible to various collateral types (corporate cash flows, mortgages, various credit receivables, etc.) that produce relatively high levels of income. These investments may be traded in public markets or sourced through private issuance. Such investments typically contain relatively lower levels of risk and exhibit lower volatility than other Broad Growth components but do have exposure to growth-related characteristics. In addition, periodic income will likely be a material portion of the Credit Portfolio's investment return.

b. *Strategic Objective*

The objective of the ERS Credit Portfolio is to complement other Broad Growth components by generating a consistent return by pursuing an opportunistic non-benchmark focused approach across global public and private credit markets.

c. *Long-Term Investment Return Objective*

The ERS shall use the following rate of return tests to evaluate the performance of the Credit Portfolio:

i. Total Return

1. Over rolling 3-year periods, the total Credit Portfolio is expected to generate a minimum total dollar-weighted rate of return (internal rate of return or IRR) that exceeds an absolute return of 3-month SOFR (or equivalent short-term interest rate) + 4-6%, net of all investment management fees and expenses.
2. The Credit Portfolio's risk and return characteristics will also be measured against the investable credit indices as specified in the ERS Broad Growth Benchmark.

d. *Investment Strategies*

The following credit strategies and investment types will be considered eligible for the ERS's portfolio:

i. Corporate Credit. Partnerships/Fund of Ones ("FOOs") or commingled funds which invest in liquid and less liquid corporate credit across the capital structure as well as opportunistically provide private financing. Investment instruments and/or strategies include but are not limited to the purchase and/or origination of investment grade, broadly syndicated high yield bonds, broadly syndicated leveraged loans, narrowly syndicated private debt ("club deals"), collateralized loan obligations ("CLO") debt and equity, municipal securities, capital solutions and convertibles.

ii. Mortgage Credit. Partnerships/FOOs or commingled funds which invest in liquid and less liquid mortgage credit as well as opportunistically provide private financing. Investment instruments and/or strategies include but are not limited to the purchase and/or origination of legacy non-agency residential mortgage-backed securities, ABS CDOs, agency risk transfer, FNMA/Freddie preferreds, non-qualified mortgage origination, re-performing loans, legacy CMBS, CRE CDOs, credit tenant leases and bridge financings.

iii. Specialty Finance. Partnerships/FOOs or commingled funds which invest in liquid and less liquid specialty finance as well as opportunistically provide private financing. Investment instruments and/or strategies include but are not limited to the purchase and/or origination of marketplace lending, equipment leasing, consumer loans, student loans, auto loan, aircraft finance and regulatory capital relief.

iv. Hedging. Partnerships/FOOs or commingled funds which seek to opportunistically hedge beta exposures through derivative exposures. Derivatives may be used for managing interest rate, volatility, term structure, country, currency and sector exposures and will be employed defensively.

e. Investment Structure

The ERS may utilize commingled funds, separate accounts, or funds of one specifically tailored to meet the needs of the ERS for primary, secondary, and co-investments. The Credit component is expected to be allocated 100% to active management.

2. Implementation

a. Investment Approval Process

The investment approval process (i.e., the selection of investment managers for this component) will be consistent with ERS's manager selection and retention processes as discussed under Section C of this policy manual. Any selected mandates will also be subject to the policies put forth under Section D (Broad Growth class policy) of this manual.

b. Reporting

Time-weighted investment performance results for Credit mandates will be reported in a manner consistent with results produced for other account mandates under the Broad Growth class and consistent with general reporting requirements found in Section C of this policy manual. In addition, in order to assess whether the component is meeting its objectives as discussed above in paragraph 1.C. (Long-term Investment Return Objective), the Staff will provide an annual update of the Credit program.

In addition to the return metrics highlighted above, Investment Staff may develop additional metrics to assess the progress of the Credit program. Such metrics may include, but not be limited to:

- Yields based upon cash income produced by the related portfolio(s);
- Default rates and/or impairment rates exhibited by the portfolio(s);
- Sector and/or collateral concentration levels within the portfolios;
- Other measures.

PRIVATE EQUITY SUB-COMPONENT

1. Program Management

a. Responsibilities

The Private Equity program shall be implemented and monitored through the coordinated efforts of the Board of Trustees ("Board of Trustees" or "Board") of the Employees' Retirement System of the State of Hawaii ("ERS"), the ERS investment staff ("Investment Staff"), the ERS private equity consultant ("Private Equity Consultant"), and the ERS specialty managers ("Specialty Managers"). Specific responsibilities that fall outside the general responsibilities highlighted in Section B.5. are listed below:

b. Specific Responsibilities: Board of Trustees

i. <u>Investment Selection</u>

1. Evaluate all proposed activities or investments that may fall outside the parameters and direction of the annual Strategic Plans.
2. Mediate any disputes regarding investment selection that may take place between Investment Staff, the Private Equity Consultant(s) and/or Specialty Managers.

2. Investment Objectives

a. Portfolio Construction

The ERS has determined that, over the long term, inclusion of private markets investments (private equity, certain private debt opportunities, etc.) would enhance the ERS's expected portfolio investment characteristics. Specifically, as a result of the possibility of enhanced rates of return over publicly traded securities and returns that have low-to-moderate correlation with those associated with other major strategic class components, the use of private equity investments tends to increase the portfolio's overall long-term expected real return and reduce year-to-year portfolio volatility.

Private equity investments of the ERS shall be made in a manner consistent with the fiduciary standards of the prudent expert rule: (1) for the sole interest of the ERS's participants and their beneficiaries; and (2) to safeguard and diversify the Private Equity portfolio. The selection and management of Private Equity assets will be guided to preserve investment capital and to maintain prudent diversification of assets and management responsibility. The diversification objective is required to manage overall market risk and the specific risks inherent in any single investment or management selection.

b. Target Allocation

The allocation of ERS assets to Private Equity investments shall remain within the limits authorized by the Board of Trustees. Allocated capital will be defined as invested capital (based on market value). The Board of Trustees recognizes that it will be necessary to make capital commitments in excess of the target allocation in order to achieve and maintain progress toward its long-term target.

The goal of the ERS is to spread out the timing of new commitments so as to avoid an undue concentration of commitments in any one year. Over the long-term, it is expected that barring any unforeseen events approximately equal amounts of new funding will be committed each fiscal year to garner the benefits of vintage year diversification.

c. *Benchmarking / Return Targets*

The ERS shall use the following rate of return tests to evaluate the performance of the Private Equity portfolio:

i. Total Return (Realized and Unrealized Gain/Loss plus Income)

1. Over rolling 10-year periods, the total Private Equity portfolio is expected to generate a minimum total dollar-weighted rate of return (internal rate of return or IRR) that exceeds an equivalent public global equity return (MSCI ACWI IMI) by 200 basis points ("bps") per year, net of all investment management fees and expenses
2. Any individual fund investment is expected to produce a commensurate return that contributes to the overall Private Equity portfolio return objectives

d. *Risk Management*

The selection and management of assets in the Private Equity portfolio will be guided to generate a high level of risk adjusted return, to provide minimal amounts of current income, and to maintain prudent diversification of assets and specific investments.

With private equity investments, there is an inherent risk that the actual return of capital, gains and income will vary from the amounts expected. The ERS shall manage the investment risk associated with private growth investments in several ways:

i. Strategic Structure

1. Allocation by strategic component.

   The Private Equity component consists of two segments: (i) private equity and (ii) other private investments. Descriptions and characteristics of these segments are discussed in the appendix to this section.

2. Commitment pacing into each segment over time.

   It is expected that the private equity component will have scheduled annual commitments. However, certain annual commitment amounts among these segments may vary significantly, depending upon the capital investment opportunities within each component.

ii. Manager Selection / Institutional Quality

1. All assets must be of institutional investment quality. Institutional quality will be defined as being of a quality whereby the investment would be considered acceptable by other prudent institutional investors.
2. It shall be expected that "foundation managers" to the ERS private equity portfolio (that is, are expected to comprise a significant subset of total ERS private growth assets) periodically report to the Board of Trustees and/or Investment Staff as requested on the progress of ERS investments under their management.

e. Investment Structures

The following are considered allowable investment structures for the private equity program. It shall be noted that the Private Equity Consultant or Specialty Manager are expected to act as fiduciaries on behalf of the ERS and the investment structures mentioned below must be within accordance of the investment policies set forth in this Manual and the annual Strategic Plan. Such investment activity is subject to active review by Investment Staff on a regular basis.

i. Co/Direct Investments

Co-investments may be sourced by the Private Equity Consultant or Specialty Manager, or Investment Staff, and must be approved by the Board of Trustees or designee.

ii. Primary Investments in Private Equity Funds

Capital commitments to limited partnerships and/or limited liability companies established for the purpose of private equity investment are managed through the Private Equity Consultant or a Specialty Manager.

iii. Secondary Investments

Purchasing an existing interest in a private equity fund is managed through the Private Equity Consultant or a Specialty Manager.

iv. Separate Accounts

Investment vehicles typically set up for a single limited partner where the investment manager constructs a diversified portfolio of private market investments that are tailored specifically to the needs and objectives of the investor. Separate accounts should offer the ERS access to economics that are below generally prevailing rates and/or target strategies that are traditionally difficult for the ERS to access directly (e.g., Venture Capital).

f. Investment Strategies

The following private equity strategies and investment types will be considered eligible for the ERS's portfolio:

i. Corporate Finance/Buyout:

Partnerships/LLCs which provide funding to acquire majority or controlling interests in a business or product lines from either a public or private company. Buyout sub-strategies are classified by total capital commitments and include Small, Mid, Large and Mega buyouts

ii. Fund-of-Funds

Blind pool partnerships/LLCs that evaluate, select and monitor investments in other limited partnership/LLC investments

iii. Mezzanine Debt

Partnerships/LLCs which invest in unsecured or junior obligations in financings. These generally take the form of subordinated debentures or preferred stock. They typically earn a current coupon or dividend and have warrants on common stock or conversion features

iv. Distressed Debt

Partnerships/LLCs which invest in non-investment grade privately placed debt securities. Common sub-strategies include Distressed For Control, Non-Control and Trading

v. Project Finance

Partnerships/LLCs which invest in industrial leveraged or unleveraged lease or project financings. These can include participation in equity, mezzanine, or senior debt investments. Investments should be made after the development phase, as part of the project's permanent financing, when projects are going operational

vi. Special Situations

Partnerships/LLCs with investment strategies which have gained an institutional following, but where sporadic opportunities do not justify a separate long-term strategic allocation. Categories includes partnerships/LLCs which make strategic block investments, have very broad mandates, focus on restructuring/recovery or focus on specific industries or which seek to exploit opportunities created by changing industry trends or governmental regulations

vii. Venture Capital

Investments in start-up companies generally exhibiting promising potential and/or high-growth characteristics. Such investments generally exhibit minimal leverage and can consist of the following stages: Seed/Early, Middle, Late-Stage and Growth Equity

viii. Other

Partnerships/LLCs which invest in publicly traded securities or which employ strategies different from those cited above such as, hedge fund strategies, commodity trading, post-venture equities, investments in commercial leases, and other non-traditional strategies. The purchase of secondary partnership/LLC interests is also allowed.

g. *Diversification Requirements*

The private equity portfolio shall, to the extent possible[2] be diversified as to investment strategy, timing of investment, size and life cycle of investment, industry sector, investment sponsor organization (e.g., general partner group), capital structure and geographical location. Diversification reduces the impact on the portfolio of any one investment or any single investment style to the extent that an adversity affecting any one particular area will not impact a disproportionate share of the total portfolio.

It is also recognized that during the portfolio development and wind-down stages the full investment parameters may not, of necessity, be met.

The scope and size of the ERS program is such that significant investments in fewer, more concentrated "foundation" managers are preferred to smaller, more numerous managers. While ERS has not set a minimum dollar amount per partnership/LLC, the Private Equity Consultant and/or Specialty Manager will be charged with deploying the capital efficiently, such that funding targets are achieved with a minimal number of partnership/LLC holdings. Long-term diversification targets among eligible investment strategies will be set forth in the annual Strategic Plan document, and reviewed and updated as necessary.

i. Geographic

[2] Investments will be primarily in "blind pool" funds where there is limited control over the diversification process.

Over the long-term, the ERS portfolio should seek portfolio diversification with regard to major regional areas both domestically, and internationally.

The portfolio shall primarily target investments domiciled within North America. In line with the ERS's total international allocation, the portfolio shall seek to limit international investments (outside of North America) by targeting no more than 35% of the private equity investment allocation to such investments. The currency exposure to the ERS from the non-dollar aspect of the allocation is expected to be negligible.

ii. Industry

The ERS portfolio will seek to diversify by industry sector (as outlined through the Global Industry Classification Standard) and shall target that no one industry classification represents more than 35% of the private equity portfolio.

iii. Life Cycle

Commitments to partnership/LLC investments generally will be staged over time. It is the long-term goal of ERS to spread out investment timing such that new commitments will be made each fiscal year. This policy will have the effect of dollar cost averaging the ERS's portfolio over business cycles to help insulate the portfolio from event risk.

h. General Partner

The ERS portfolio will seek to diversify by issuer of limited partnership/LLC securities, and other specific investments sponsors. No more than 20% of the ERS's private equity portfolio net asset value will be invested with any one investment sponsor organization.

i. Single Investment

No single private equity commitment shall comprise more than 100bps of total ERS assets under management. An exception to this limitation may be offered for separate accounts, subject to approval by the Board of Trustees.

ii. Limited Partner

The ERS is permitted to own up to 20% of any particular partnership/LLC subject to the General Partner limitation (item 4) above.

3. Implementation of Private Equity Program

a. Annual Strategic Plan

i. Annually, the Private Equity Consultant and Specialty Managers (if applicable), in conjunction with Investment Staff, will prepare a Strategic Plan which reviews the current status of the portfolio, recent historical and prospective market conditions, and proposes the actions to be taken over the next approximately twelve-month period.

ii. The annual Strategic Plan will then be presented to the Board of Trustees for approval

b. Investment Approval Process

The following steps shall be followed in order for the ERS to commit to any prospective private equity investment opportunity:

i. Private Equity Consultant sources and performs comprehensive due diligence on attractive investment opportunities consistent with criteria set forth in the annual Strategic Plan

ii. If, as a fiduciary of the ERS, the Private Equity Consultant determines that the investment merits a commitment from the ERS, the Private Equity Consultant will take the following steps:

1. Discuss with Investment Staff the key findings during due diligence, including investment merits, risks and key conclusions
2. Follow-up with Investment Staff on additional requests for information based on this discussion and complete a due diligence memorandum.
3. In conjunction with the ERS's legal review process, facilitate legal negotiation and closing into the investment opportunity

iii. The Board of Trustees shall be notified in the event of a disagreement between Investment Staff and the Private Equity Consultant on an investment recommendation

iv. The Specialty Manager (if applicable) will be expected to operate on a discretionary basis

1. The Specialty Manager is to operate under the oversight of and provide regular updates to Staff.

c. *Monitoring and Reporting*

i. Reporting System

There shall be a quarterly reporting and monitoring system for the entire portfolio by the Private Equity Consultant. The monitoring shall include asset/risk allocation and portfolio performance in sufficient detail to identify situations of underperformance, diversification deficiencies and conflicts of interest. Due to the large number of funds, the ERS investment staff will employ a sampling methodology to verify that the Private Equity Consultant is adequately executing the monitoring program and detecting major performance issues within the private equity portfolio.

ii. Performance Measurement

The Private Equity Consultant and Specialty Manager(s) will provide cash flow, valuation, and any other requested information to Investment Staff and the Private Equity Consultant quarterly, and the ERS's custodian bank ("custodian") on a monthly basis, and will notify Investment Staff of any instances of materially different carrying values from those reported by general partners.

Performance may be calculated on a time-weighted and/or dollar-weighted (internal rate of return or IRR) basis, as applicable, with primary emphasis being placed on the internal rate of return. The rate of return calculations will be net of all partnership/LLC fees and expenses, but gross of Private Equity Consultant and/or Specialty Manager fees and expenses. The manager and/or Private Equity Consultant will be responsible for reviewing the custodian's figures as to timing, amount, value of in-kind securities at distribution and reported net asset value, and reconciling and explaining any discrepancies.

MINUTES OF THE INVESTMENT COMMITTEE OF THE
BOARD OF TRUSTEES OF THE EMPLOYEES' RETIREMENT SYSTEM
OF THE STATE OF HAWAII

AUGUST 19, 2024

CITY FINANCIAL TOWER
201 MERCHANT STREET, SUITE 1200
HONOLULU, HAWAII 96813

Committee Member Trustees present: (via teleconference)	Mr. Lance Mizumoto, Chair Mr. Vincent Barfield Mr. Emmit Kane Mr. Bennett Yap, Vice Chair
Visiting Trustees present: (via teleconference)	Dr. Genevieve Ley
Attorneys present: (via teleconference)	Ms. Jenny Nakamoto, Deputy Attorney General Ms. Lori Tanigawa, Deputy Attorney General
Staff present: (City Financial Tower)	Mr. Thomas Williams, Executive Director Ms. Kristin Varela, Chief Investment Officer Mr. Anthony Goo, Deputy Chief Investment Officer Mr. Aaron Au, Investment Officer – Illiquid Markets Mr. Ian Wetzel, Investment Officer – Real Assets Ms. Christine Chang, Investment Officer – Diversifying Strategies Mr. Andrew Chen, Investment Officer - Credit Ms. Gerri Konishi, Member Home Loan Assistant Ms. Andrea Gaspar, Secretary Ms. Lori Kim, Secretary Ms. Diana Gomes, Secretary
Guest present: (via teleconference)	Mr. Colin Bebee, Meketa Investment Group, Inc. Mr. Jonathan Daffron, Man Group
Public present: (via teleconference)	Mr. Joe Ebisa, With Intelligence Anthony Toscano Jason Leong-Campbell Nathan Paulsen Michael Barela

CALL TO ORDER

A quorum being present (Chair Mizumoto, Vice Chair Yap, Trustee Barfield, and Trustee Kane), Chair Mizumoto called the Investment Committee meeting to order at 9:00 a.m. and requested Board members to identify themselves and confirm that no other individuals are present in the room. Committee members present confirmed. Chair Mizumoto read the following statement, "Motion to hold the meeting allowing Trustees and members of the public to participate by interactive conference technology, pursuant to HRS § 92-3.7, with at least one meeting location open to the public that has audiovisual connection."

On a motion made by Vice Chair Yap, seconded by Trustee Barfield and unanimously carried, the Investment Committee meeting commenced.

PUBLIC COMMENT PERIOD

Chair Mizumoto called for both written and public comment. There was no public comment or written testimony submitted.

PRESENTATIONS

- EDUCATIONAL PRESENTATION: BENCHMARKING UPDATE

Mr. Colin Bebee of Meketa Investment Group presented the benchmarking update and explained the presentation will provide a quick review of the new policy structure, asset class composites and the process the benchmarks have been updated and audited.

Four events occurred in the last 14 months:

- 2022/2023 Asset/Liability Study & new long-term allocation targets.
- Approval of new asset class and Total Fund benchmarks.
- Implementation of new long-term allocation targets.
- Reconfiguration of asset class composites.

Audit Process:

- Starting with Q1 2024 performance report, new composites were created by BNY to accurately reflect composite performance.
- Meketa and ERS staff reviewed historical benchmark constructs and ERS Investment Policy Statement to create benchmarks that reflect Board-approved decisions.
- Audit documentation will be compiled and stored for ERS records.

Two important categories of benchmarks:

- Total Fund-Oriented Benchmarks.
- Description of Composite Benchmarks.

Conclusion:

- New policy took effect on 1/1/2024.
- New asset class composites and benchmarks were implemented.
- To provide ERS and Board with proper benchmark return comparison, retroactive benchmarks were created to reflect prior Board-approved decisions/policies.
- The Total Fund Benchmark was unchanged on a historical basis.

- MEKETA INVESTMENT GROUP, INC. – TOTAL FUND PERFORMANCE REVIEW FOR PERIOD ENDING JUNE 30, 2024

Mr. Colin Bebee of Meketa Investment Group presented the Total Fund Performance Review. The following is a summary of the presentation:

- The ERS Total Fund did meet its return target over the fiscal-year measurement period.
- The portfolio has closely met or exceeded the Total Fund Policy Benchmark over longer-term time horizons; 3 years and beyond.
- On a risk-unadjusted basis, the portfolio outperformed the Median Public Fund Peer Group across all time periods. On a risk-adjusted basis, the ERS has outperformed the Median Public Fund Peer Group, over longer time horizons; 3 years and beyond.
- Market value for the quarter ending June 30, 2024 is \$23,596,065,256, a 7.4% net return was generated.

IO Chen introduced the Global Equity portfolio and selection consultants, Meketa. Ms. Mary Bates and Mr. Michael Pellaz of Meketa presented the Private Credit Portfolio Update. The following is a summary of the presentation:

- MEKETA INVESTMENT GROUP - PRIVATE CREDIT PORTFOLIO REVIEW FOR PERIOD ENDING MARCH 31, 2024

- In 2023, ERS increased the target allocation for private credit to 8% from a previous target of 5%.
- The return objective is 9-11% net IRR with emphasis on yield-oriented opportunities and focus on diversification across manager, strategy, collateral and geography.
- This program comprises 19 partnerships totaling $2.3B in commitments with $1.7B in capital contributions, ERS has received $18.8M in distributions to date.
- In 2024, $700M in commitments were made across three funds.
- The portfolio is performing in line with expectations.
- ERS Private Credit has generated since inception an IRR of 9% as of March 31, 2024.
- Annual commitment amount of $600 million is targeted in 2025, subject to Board approval of 2025 strategic pacing in October.

- CIO UPDATE

CIO Varela informed the Investment Committee that active procurement was taking place for the global custody services and security lending. An expression of interest was issued due to a contract expiration at the end of the year. This is one of ERS' largest contractors. Issued on June 26, 2024, five responses were received as of July 31, 2024. The Evaluation Committee, which consists of investment team staff as well as accounting staff, is currently sorting through the responses.

APPROVAL OF MINUTES – MAY 28, 2024

On a motion made by Trustee Barfield and seconded by Trustee Yap, and unanimously carried, the Investment Committee approved the minutes of May 28, 2024, meeting as presented.

[Before entering Executive Session, Chair Mizumoto read the names of all authorized participants. All unauthorized participants were asked to leave the meeting.]

ENTER EXECUTIVE SESSION

On a motion made by Trustee Barfield, seconded by Trustee Yap, and unanimously carried, the Investment Committee entered Executive Session at 10:55 a.m.

EXECUTIVE SESSION

[At the beginning of Executive Session, Chair Mizumoto asked each participant individually to confirm no unauthorized person is present or able to hear them at their remote locations or via another audio or audiovisual connection. All responded they were by themselves.]

EXECUTIVE SESSION, PURSUANT TO HRS § 88-27.5(A)(1), AND HRS § 92-5(A)(4), TO CONDUCT DISCUSSIONS AND DELIBERATIONS RELATING TO, AND IF APPROPRIATE, TO MAKE A DECISION ON INVESTMENTS OR PROSPECTIVE INVESTMENTS BY THE SYSTEM THAT REQUIRE THE

CONSIDERATION OF INFORMATION OR RECORDS THAT ARE EXEMPT FROM DISCLOSURE UNDER HRS CHAPTER 92F, INCLUDING INFORMATION AND RECORDS THAT ARE PROPRIETARY INFORMATION OR CONFIDENTIAL BUSINESS INFORMATION, AND TO CONSULT WITH THE BOARD'S ATTORNEYS ON QUESTIONS AND ISSUES PERTAINING TO THE BOARD'S POWERS, DUTIES, PRIVILEGES, IMMUNITIES, AND LIABILITIES WITH RESPECT TO UPDATES ON STATUS OR ISSUES RELATED TO CONFIDENTIAL ERS INVESTMENT PORTFOLIO UPDATES REGARDING CHANGES IN (1) CLOSURE OF WEISS ASSET MANAGEMENT, (2) TOWNSEND ORGANIZATIONAL UPDATE (3) CLIMATE ACTION 100+, (4) MANAGER ACTIVITY AND ORGANIZATIONAL UPDATE, AND (5) INVESTMENT OFFICE STAFFING UPDATES	
APPROVAL OF EXECUTIVE SESSION MINUTES – MAY 28, 2024	On a motion made by Trustee Yap, seconded by Trustee Barfield and unanimously carried, the Investment Committee approved the confidential Executive Session minutes of the May 28, 2024, meeting as presented, with the addition of Trustee Barfield's comments.
EXIT EXECUTIVE SESSION	On a motion made by Trustee Yap, seconded by Trustee Barfield, and unanimously carried, the Investment Committee exited Executive Session at 11:27 a.m.
SUMMARY OF EXECUTIVE SESSION	Chair Mizumoto summarized what was discussed in Executive Session: • Discussion of Weiss memo. • Commitment to Climate Action 100 • Townsend staffing.
ADJOURNMENT	On a motion made by Trustee Barfield, seconded by Trustee Yap, and unanimously carried, Chair Mizumoto adjourned the meeting at 11:29 a.m.

REDACTED SIGNATURE

Kristin Varela
Chief Investment Officer
KV/dlg