



INVESTED IN TOMORROW.

**INVESTMENT COMMITTEE MEETING**  
SENATOR FABIAN CHAVEZ JR. BOARD ROOM  
PERA BUILDING

**October 26, 2023**  
9:00 am

**COMMITTEE MEMBERS**

Francis Page, Chair  
Paula Fisher, Vice-Chair  
The Honorable Treasurer, Laura Montoya  
Juan Diaz  
Tony Garcia

**AGENDA**

- 1. Roll Call**
- 2. Approval of Agenda**
- 3. Approval of Meeting Minutes**  
A. June 13, 2023 Investment Committee minutes
- 4. New Business**

<b>ITEM</b>		<b>PRESENTER</b>
A	<u>Action Item</u> : Elimination of the Active Risk Budget	Michael Shackelford Chief Investment Officer  Eileen Neill Verus Advisory
B	<u>Information Item</u> : Investment Policy changes Review <ol style="list-style-type: none"><li>1. Strategic Asset Allocation</li><li>2. Benchmarks</li><li>3. Active Risk Budget</li></ol>	Michael Shackelford Chief Investment Officer  Eileen Neill Verus Advisory
C	<u>Information Item</u> : Strategy & Performance Review <ol style="list-style-type: none"><li>1. Q3 2023 Portable Alpha/Bonds Plus Update</li></ol>	James Walsh Albourne
D	<u>Information Item</u> : Investment Division Compliance Update <ol style="list-style-type: none"><li>1. Custody Bank RFP Update</li><li>2. Fiscal Year End Fee Review</li><li>3. Manager Selection Activity Report</li><li>4. Q2 2023 Cash Activity &amp; Rebalance Update</li><li>5. Q2 2023 Securities Lending Update</li><li>6. Staffing Update</li></ol>	LeAnne Larrañaga-Ruffy Deputy CIO  Sara Hume Senior Portfolio Manager
<b>5. Adjournment</b>		

<b><u>Education Session –after Board Meeting</u></b>		
E	<u>Information Item: Infrastructure Education</u>	Kevin Geneiser, Senior Partner Steven Kennedy, IR Director Antin Infrastructure Partners

Any person with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, please contact Trish Winter at (505) 795-0712 or [patricab.winter@state.nm.us](mailto:patricab.winter@state.nm.us) at least one week prior to the meeting, or as soon as possible. Public documents, including the agenda and minutes, can be provided in various accessible formats. Please contact Trish Winter if a summary or other type of accessible format is needed.

# Memorandum

**To:** Members of the Board  
New Mexico Public Employees Retirement Association

**From:** Verus

**Date:** October 26, 2023

**RE:** Risk Budget Recommendation

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The purpose of this memorandum is to provide the Board of the New Mexico Public Employees Retirement Association (“PERA”) a recommendation to eliminate the current active risk budget targets to be replaced by multiple return and risk monitoring and evaluation metrics which encompass active and strategic risk or total risk.

## Rationale

In effect, the Board selects a total fund risk “budget” through the strategic asset allocation setting process. This target risk is reflected in the resulting strategic asset allocation policy expected risk (defined as standard deviation of expected returns). The widely held belief in the institutional investment industry (supported by both academic research and empirical evidence) is that the strategic asset allocation policy risk represents over 90% of a fund’s risk experience. Given the predominance of policy risk, most public fund boards focus only on monitoring total fund actual risk versus this policy risk.

However, there is another source of risk which contributes to total fund actual risk experience in addition to the policy risk. This additional risk is called “active risk” and it comprises roughly 10% of the remaining total fund actual risk experience. Active risk comes from two sources: (1) differences in actual allocation vs. policy allocation and/or benchmark ‘misfit’ (i.e., benchmarks in policy are not optimal fit with strategies being employed) and (2) manager/strategy return vs. manager/strategy benchmark return. The contribution to total active risk from each of these two sources is approximately 70% (1) / 30% (2).

For public funds similar to PERA where staff has been delegated implementation authority (i.e., manager/strategy selection, rebalancing), it is common to establish specific risk monitoring and evaluation processes, establishment of an active risk budget being just one of those approaches to monitoring and evaluation. In the case of PERA, there currently exists multiple targets: (1) total fund active risk (2.5%), (2) actionable active risk (which applies to liquid, public markets) (1.25%), and (3) non-actionable risk (applies to illiquid, private markets) (2.25%) [note: (2) and (3) are sub-components of (1)]. PERA also has an active return target of 1%. While these targets are detailed, they are complex to accurately measure and evaluate as well as somewhat redundant. The amount of time and effort to collect and process the requisite volume of data from varying sources and vendors necessary to accurately calculate the risk-related targets is, in Verus’ opinion, disproportionate to the value derived from these various targets provide in monitoring and evaluating staff’s implementation decisions.

Verus recommends PERA revise its current Scorecard to eliminate the section on Active Risk Allocation and incorporate the following commonly employed performance and risk evaluation metrics: Total Fund Standard Deviation (i.e., risk), Total Fund Sharpe Ratio (a widely-used

measure of risk-adjusted returns), Total Fund Tracking Error (active risk) and Total Fund Information Ratio (a widely-used measure of risk adjusted active returns). These metrics can also be evaluated versus peers and actually provide better peer comparisons versus just return comparisons as risk-adjusted peer comparisons illustrate how much return a fund earned for the level of risk (total or active) taken. If the Board approves this recommendation, Verus would work with staff to revise the investment policy statement and the current Scorecard for the December meeting.



# **Investment Policy Recommendation: Risk Budget Elimination**

Investment Committee and Board Meeting

October 26, 2023

# Recommendation:

## Risk Budget Elimination

The Board adopted a Risk Budget in the Investment Policy Statement on December 14, 2017.

### What is a Risk Budget?

- Process of setting and allocating active risk to enhance and produce value added returns available from market exposure (Beta).
- Risk Budgeting formalizes the expectation to compare the efficacy of utilizing active management.
- There are certain active risks which can be managed more directly than others.

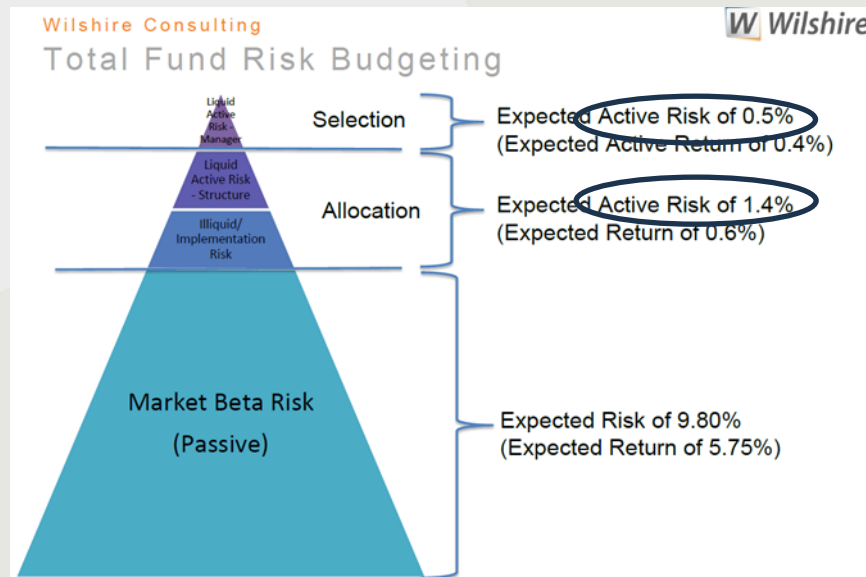
### Why was it adopted?

- Wanted to create efficient utilization of risk to enhance Total Fund returns.
- Wanted to provide accountability for implementation results relative to Board approved targets and ranges.
- Attribution of Total Fund return drivers improves the process of monitoring and adjusting the portfolio over time.

# Recommendation: Risk Budget Elimination

What does it mean?

- We are effectively trying to measure and control just 16% of the total risk in the Total Fund.  
Targeting 1.9% of 11.7% of total risk (or 16.2% of risk).



○ PERA's 4-year tracking error was outside of ranges, while excess return was within ranges:

Active Risk Allocation versus Policy Portfolio			
	4-Year Results	Target	Range
Ex-Post Actionable Total Fund Tracking Error	0.97%	1.25%	1.0% - 2.0%
Ex-Post Total Fund Tracking Error	5.34%	2.50%	2.0% - 3.0%
Ex-Post Excess Return	0.11%	1.0%	0.0% - 2.0%

Source: Board Risk Report (BNYM) / Calculations are based on NOF figures.

This section will be the only item removed from the Scorecard.

# Recommendation: Risk Budget Elimination

Scorecard information included in quarterly performance report to remain consistent, including Strategic Asset Allocation, Capital Allocations, Liquidity guidelines and Market performance of PERA versus Policy portfolio and Median risk adjusted Peer performance rankings.

Capital Allocation				
Asset Class	Target %	Actuals %	Difference Δ	IPS Ranges %
Global Equity	38.0%	38.9%	0.9%	+/- 5%
Credit	19.0%	18.6%	-0.4%	+/- 4%
Risk Mitigation	17.0%	16.7%	-0.3%	+/- 3%
Real Assets	18.0%	17.7%	-0.4%	+/- 4%
Multi-Risk	8.0%	8.3%	0.3%	+/- 4%
Total Fund	100.0%	100.0%		

PERA Investment Goal	Measurement	Total Fund Results	Assumed Return	Excess Return	Scorecard
Set Strategic Asset Allocation (Policy Portfolio) to meet the assumed return and funding goals over the long-term (10 years and longer)	•FYTD	4.23%	7.25%	-3.02%	Below
	•1 year	4.23%	7.25%	-3.02%	Below
	•3 years	8.33%	7.25%	1.08%	Meets
	•5 Years	5.90%	7.25%	-1.35%	Below
	•7 years	6.77%	7.27%	-0.50%	Below
	•10 years	6.60%	7.40%	-0.80%	Below
	•20 years	6.52%	7.58%	-1.06%	Below
	•30 years	7.56%	7.63%	-0.07%	Below
	•ITD	8.58%	7.66%	0.92%	Meets
	NOTE: 7.25 Annual (7.75 before July 2016)				

PERA Investment Goal	Measurement	Total Fund Results	Benchmark Return	Excess Return	Scorecard
Produce returns that meet or exceed Board approved Total Fund benchmarks:  Meet or exceed the Policy Portfolio over the long-term	Policy Portfolio:				
	•FYTD	4.23%	6.89%	-2.66%	Below
	•1 Year	4.23%	6.89%	-2.66%	Below
	•3 years	8.33%	5.76%	2.57%	Meets
	•5 Years	5.90%	4.51%	1.39%	Meets
	•7 years	6.77%	5.62%	1.15%	Meets
	•10 years	6.60%	5.91%	0.69%	Meets
	•20 years	6.52%	6.44%	0.08%	Meets
	•30 years	7.56%	6.91%	0.65%	Meets
	•ITD	8.58%	8.21%	0.37%	Meets
Median risk adjusted peer performance ranking over the long-term (InvestMetrics)	Peer Rankings Fund Sharpe Fund Ranking No. of Funds				
	•1 Year	0.11	98	67	Below
	•3 years	0.89	27	66	Meets
	•5 Years	0.56	34	66	Meets
	•7 Years	0.77	36	66	Meets
	•10 years	0.81	38	62	Meets
<small>ITD Reference Portfolio Benchmark Return: 58% MSCI ACWI IMI (\$n), 42% Bloomberg Barclays U.S. Aggregate 12/31/08 - Present, 62% MSCI ACWI IMI (\$n), 38% Bloomberg Barclays U.S. Aggregate from 05/31/94 - 12/31/08, 62% Russell 3000 Index, 38% Bloomberg Barclays U.S. Aggregate from Inception - 05/31/94.</small>					

Liquidity Allocation			
Tier	Actuals \$M	Actuals %	Guideline
Tier 1 (1-5 Days)	\$2,594	16%	Tier 1 Assets ≥ 10% Fund NAV
Tier 2 (5-90 Days)	\$7,017	42%	
Tier 3 (90-365 Days)	\$883	5%	
Tier 4 (1 Year + )	\$6,163	37%	
	\$16,658	100%	

Investment Performance Review -Q4 FY23 – June 30, 2023



# Recommendation: Risk Budget Elimination

Risk reporting provided in monthly CIO and quarterly performance report inclusive of Standard deviation, Sharpe ratio, Information ratio, and tracking error to remain consistent.



as of: July 31, 2023		Risk Summary				
		Std Dev.	Sharpe	Beta	Alpha	IR
<b>1-Year</b>						
Total Fund		8.4%	-0.1%	0.6%	-1.3%	-0.3%
Policy Index		13.6%	0.0%	1.0%	0.0%	0.0%
<b>3-Year</b>						
Total Fund		7.8%	0.8%	0.6%	3.5%	0.4%
Policy Index		11.8%	0.4%	1.0%	0.0%	0.0%
<b>5-Year</b>						
Total Fund		8.1%	0.5%	0.6%	2.1%	0.2%
Policy Index		12.3%	0.3%	1.0%	0.0%	0.0%
<b>7-Year</b>						
Total Fund		7.0%	0.7%	0.6%	2.2%	0.1%
Policy Index		10.6%	0.4%	1.0%	0.0%	0.0%
<b>10-Year</b>						
Total Fund		7.0%	0.8%	0.7%	1.9%	0.1%
Policy Index		9.4%	0.5%	1.0%	0.0%	0.0%

# Recommendation:

## Risk Budget Elimination

Risk measurement terminology and definitions:

- Alpha – Measures excess return over the benchmark
- Beta – Volatility of portfolio versus market; Beta =1; portfolio will move with market; Beta <1: portfolio will be less volatile than market
- Standard Deviation – Statistical measure of market volatility, measuring how widely returns are dispersed around the average return.
- Tracking Error – Difference in actual performance between a portfolio and its benchmark.
- Sharpe Ratio – A way to measure how efficiently risk is employed to generate excess return (alpha).
- Information Ratio – Measurement of portfolio returns beyond the returns of a benchmark compared to the volatility of those returns.

# Recommendation: Risk Budget Elimination

## Reasons to eliminate

- Complex way for the Board to measure risk.
- Staff has minimal control over Risk Budget.
- Better, more intuitive, ways for the Board to measure and compare risk.

# THE PUBLIC EMPLOYEES RETIREMENT ASSOCIATION OF NEW MEXICO



## INVESTMENT POLICY

Revised

October 27, 2022

**Commented [LL1]:** Recommended revision - December 12  
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## **THE PUBLIC EMPLOYEES RETIREMENT ASSOCIATION OF NEW MEXICO**

### **INVESTMENT POLICY**

#### **I. INTRODUCTION**

##### **A. Statutory Authority**

The Public Employees' Retirement Association of New Mexico (PERA) was created by law in 1947 and is authorized to administer the Public Employees Retirement Act of New Mexico, NMSA 1978, Sections 10-11-1 to 10-11-142, as amended (the PERA Act), the Volunteer Firefighters Retirement Act, NMSA 1978, Sections 10-11A-1 to 10-11A-8, as amended, the Judicial Retirement Act, NMSA 1978, Sections 10-12B-1 to 10-12B-19, as amended, the Magistrate Retirement Act, NMSA 1978, Sections 10-12C-1 to 10-12C-18, as amended, and the Public Employees Reciprocity Act, NMSA 1978, Sections 10-13A-1 to 10-13A-4, as well as other federal and State laws relating to the administration of public employees' retirement systems in the State of New Mexico. As of April 2016, PERA administers thirty-one retirement plans under a defined benefit structure for state employees, municipal employees, county employees, police, firefighters, judges, magistrates, and legislators. PERA is governed by the Retirement Board (the Board).

##### **B. Authority and Duties of the Board**

Article XX, Section 22 of the New Mexico Constitution obligates the Board to administer and invest the PERA trust funds (the Fund) for the sole and exclusive benefit of the members, retirees and other beneficiaries of PERA. The PERA Act, NMSA 1978 §§ 10-11-132 and 10-11-133 generally describe the authority of the Board to invest the Fund. Both those sections incorporate and adopt the Uniform Prudent Investor Act (UPIA), NMSA 1978, §§ 45-7-601 to 45-7-612, which require the Board to exercise the reasonable care, skill, and caution of a prudent investor when it invests and manages assets in its capacity as trustee of the Fund. Among other things, the UPIA requires that Fund investments be diversified to minimize the risk of large losses, unless under the circumstances, it is clearly prudent not to do so. The Board also recognizes that care must be exercised to maintain PERA's status as a government plan that is exempt from the requirements of the federal Employees Retirement Income Security Act of 1974 and as a qualified plan that is exempt from taxation under the Internal Revenue Code.

##### **C. Mission Statement**

In recognition of its fiduciary responsibility, the Board adopts the following as the mission statement for PERA:

The mission of the Board of the Public Employees Retirement Association is to preserve, protect, and administer the trust to meet its current and future obligations and provide quality services to Association members.

##### **D. PERA Roles and Responsibilities/Delegations of Authority**

To accomplish its mission, the Board relies on PERA employees and third-party investment consultants (Investment Consultants) to properly administer the Fund and implement the investment strategies it adopts. Because of the number of parties involved, their roles in investing and managing the Fund must be clearly explained. Doing so increases operational efficiency, ensures clear lines of responsibility, and reduces or eliminates duplication of effort.

## Ethics and Conflicts of Interest

The Board, and PERA employees are obligated to act in the exclusive interest of PERA members, retirees, and beneficiaries. Investment Consultants serve in a fiduciary capacity to PERA. Board members and PERA employees shall refrain from personal business activity that could conflict with the proper execution and management of the investment program, or that could impair their ability to make decisions in accordance with PERA's mission statement.

## Board of Trustees

The primary fiduciary responsibility of the Board is to ensure prudent investment and management of the Fund. It is the responsibility of the Board to ensure that PERA employees administer investments of the Fund at reasonable cost, while preserving the quality of investments. All principal investment policy decisions are subject to approval by the Board. The Board shall oversee the management of the Fund in compliance with this Investment Policy and all applicable federal and State laws and regulations concerning the administration of a government pension plan. The Board, with the assistance of PERA investment staff (Staff) and consultants, determines the strategic direction of investment of the Fund including the strategic asset allocation target, ~~adoption of a risk budget,~~ and the active management strategy target, all of which shall be reviewed at least semiannually.

## Investment Committee

To assist the Board in carrying out its duties, it established an Investment Committee (the Committee). The Committee makes recommendations to the Board on strategic asset allocation target, ~~the risk budget,~~ and the active management strategy target. The Committee establishes benchmarks, including a ~~reference~~ policy portfolio, for evaluating the performance of the total investment portfolio. The Committee shall also adopt an annual work plan and, at least quarterly, review all principal investment policy actions and performance of the portfolio. The Committee may invite Staff and Investment Consultants to inform and make recommendations to the Committee on any topic or issue pertinent to PERA's investment operations. The Committee Chair shall have the duty and the authority to set Committee meeting agendas and request specific analyses and reports from Staff and Investment Consultants.

## Executive Director

The Board appoints the Executive Director (the Director). The Director is responsible for planning, organizing, and administering the operations of PERA under policy guidance and direction from the Board. In fulfilling these investment responsibilities, the Director retains and relies on Staff and Investment Consultants.

## Chief Investment Officer and Investment Staff

Staff reports directly to the Chief Investment Officer (the CIO) who in turn reports to the Director. The CIO, with the assistance of Staff, has the responsibility and authority to assist the Board and the Committee in establishing investment and administrative policies. The CIO and Staff are responsible for implementing the policies and programs established by the Board. The CIO has primary responsibility to implement and direct all decisions necessary and appropriate to carry out the Board's investment policies, including the strategic asset allocation target, ~~risk budget,~~ and active management strategic target approved by the Board. The CIO shall report on all decisions and the progress of implementation of those decisions to the Committee.

The CIO and Staff shall manage the portfolio according to the Board's policies, advise and inform the Board about investments, assist with development and review of investment policies and procedures, report on the progress of the Fund in meeting its investment objectives, and monitor and report to the Board on the performance of the Fund against the appropriate benchmarks. The CIO and staff shall have

the delegated authority to evaluate, select, monitor and terminate investment vehicles and managers necessary and appropriate to implement the Board's policies. Their actions shall be disclosed to the Board periodically, as directed by the Committee. Staff exercises the same fiduciary responsibility under applicable law as the Board.

#### General Counsel and Legal Staff

The Office of General Counsel and legal staff (Legal Counsel) are primarily responsible for legal compliance of the investment program and advises the Board, the Director, the CIO, and Staff on investment-related legal matters. Legal Counsel exercises the same fiduciary responsibility under applicable law as the Board.

#### Third Party Service Providers

- Investment Consultants. Investment Consultants are hired by and accountable to the Board through the authority of the Director. Investment Consultants shall report to the Board or the Committee as directed. An Investment Consultant's duty is to work with the Board and Staff in the oversight and implementation of investment objectives.

The Board's investment strategic consultant shall provide advice and recommendations to the Board or Committee regarding its strategic objectives, ~~risk budget~~, and oversight and implementation of principal investment objectives.

Investment selection and monitoring consultants shall provide advice and recommendations regarding selection of investment managers and portfolio monitoring to the CIO and Staff.

- Custodian Bank. The Custodian Bank serves as the bank of record for the assets comprising the Fund and is responsible for maintaining the official book of record under the supervision of Staff, calculating investment performance, and serving as the primary layer of risk control in the safekeeping of Fund assets. The Custodian Bank is responsible for the ongoing pricing and valuation of all assets, collection of income generated by those assets, and any corporate action notification. The Custodian Bank cooperates with and provides assistance to Staff and Investment Managers in the reconciliation process. PERA may opt to designate other duties to the Custodian Bank as stipulated in the professional services agreement.
- Investment Managers. The Board believes that external management of Fund assets optimizes the potential to maximize risk-adjusted returns and minimize the associated expenses. Investment Managers are selected by the CIO and, subject to the terms and conditions of this Policy, serve PERA through contracts that specify in principal part: investment guidelines, administrative requirements, responsibilities, and performance expectations for management of each mandate. Proxy voting is considered to be a component of the investment decision process and will be exercised in accordance with the established PERA Proxy Voting Policy. Investment Managers will report to Staff on the performance of the Fund using formats and at intervals specified by Staff. This information will be synthesized by Staff and presented to the Committee on at least a quarterly basis in accordance with established performance monitoring and oversight procedures.
- External Legal Counsel. The General Counsel may retain external legal counsel to advise Staff and negotiate and prepare contracts with Investment Consultants and Investment Managers to protect PERA's interests and status as a tax-exempt government plan.

## II. OVERVIEW OF INVESTMENT POLICY

### A. Purpose of the Investment Policy



The purpose of the Investment Policy (the Policy) is to explain implementation of the investment principles and objectives of the Board. The Policy provides a reference point for the management of PERA's assets. The Policy provides guidance to the Board and Staff, as well as Investment Consultants, Investment Managers, and the Custodian Bank. The Policy is intended to provide parameters that ensure prudence and care in the execution of the investment program.

It is the intent of the Policy to provide the foundation for prudent management of the Fund, including the standards and disciplines by which the Board can evaluate Staff, Investment Consultants, Investment Managers, and the Custodian Bank.

### **B. Investment Principles**

Accordingly, the Board adopts the following principles and objectives to guide its investment strategies and decisions:

- Preserve the long-term principal of the Fund.
- Maximize total return within prudent risk parameters.
- Maintain sufficient liquidity to meet PERA's obligations.

## **III. INVESTMENT OBJECTIVES**

### **A. Primary Objective**

PERA's primary objective is to prudently invest assets in order to meet its statutory obligations to its members. The Board will manage the Fund in a manner that reflects the Fund's unique liabilities and funding resources, incorporates accepted investment theory, and targets growth and returns appropriate to prudent levels of risk based on reliable empirical evidence. Accordingly, the Board adopts the following principles:

- Strategic asset allocation is the most significant factor influencing the Fund's ability to meet its stated investment objectives.
- Risk is an unavoidable component of investing and shall be taken into account in assessing investment policy and strategy. In evaluating specific investments, both the risks associated with that investment as well as the impact of the investment to the overall portfolio shall be considered.
- Diversification distributes a portfolio across asset categories to avoid excessive exposure to any one source of risk.
- The Fund's liabilities are long-term and the investment strategy must incorporate the appropriate balance between short- and long-term considerations.
- Sufficient liquidity will be maintained to meet the anticipated cash flow requirements of the Fund.

### **B. Long-Term Returns**

Due to the long-term nature of PERA's pension obligations and the inherent risks in short-term tactical investing, PERA must maintain a long-term perspective in formulating and implementing its investment policy, and in evaluating its investment performance. Therefore, the Board: (1) targets a long-term rate of return commensurate with the actuarial assumed rate of return; (2) adopts an allocation policy

developed to meet the targeted rate of return over long periods of time, while minimizing volatility (risk); ~~(3) adopts a risk budget developed to identify the risk tolerances of the total portfolio;~~ (43) adopts an active management strategic target; and ~~(54)~~ minimizes the costs of investing through efficient use of internal and/or external resources.

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Investment performance is measured by the following long-term objectives:

- The actuarial assumed target rate of return is the key actuarial assumption affecting future funding rates and payment of pension obligations. Investment performance that exceeds or underperforms the target rate may materially impact future funding rates. The Board seeks to have long-term investment performance that will meet or exceed its actuarial assumed rate of return while managing risk.
- The policy benchmark is calculated by applying the investment performance of the asset class benchmarks to the Fund's asset allocation targets. The policy benchmark permits the Board to compare the Fund's actual performance to a total fund benchmark and to measure the contribution of active investment management and policy adherence.

PERA's progress in meeting these return measures will be reported to the Committee on at least a quarterly basis.

### C. Evaluation of Risk

The Board adopts a strategic asset allocation target that is appropriate for existing and anticipated circumstances. In targeting returns, the Board takes into account the benefit levels and structure of the plans supported by the Fund. PERA will periodically conduct and present to the Committee an asset/liability study to determine the extent to which the long-term asset allocation is consistent with the liabilities of the retirement plans that it administers. In determining a prudent level of risk for the targeted returns, PERA shall consider the total Fund risk, expected volatility, liquidity, and general sensitivity of the overall asset allocation by monitoring the major assets classes utilized by the Fund ~~and develop a risk budget.~~ PERA will regularly measure and monitor Fund risks in its management of the Fund.

In accordance with generally accepted principles for prudent investors, the allocation of capital across asset categories increases the probability of meeting or exceeding the Fund's objectives at a prudent level of risk. In establishing its risk tolerance, PERA will consider its ability to withstand short- and intermediate-term volatility in investment performance and fluctuations in financial condition of the Fund.

## IV. ASSET ALLOCATION

### A. Strategic Asset Allocation Targets

Based on recommendations by Staff and Investment Consultants, the Board shall choose the strategic asset allocation target based on its determination of the appropriate risk tolerance for PERA, and its long-term return expectations. Each asset class allocation percentage has a long-term target position within the overall portfolio and a maximum and minimum range around that target allocation. Asset class policy targets and ranges are listed in Appendix A, which is separately adopted by the Board.

The Board recognizes that the long-term target allocation may take an extended period to implement. Staff and Investment Consultants will provide the Board with regular updates on the status of targeted asset allocation of the Fund as a whole and the component asset classes. The Board will prudently monitor this progress and the Fund's performance throughout the implementation period.

The target allocation will be reviewed annually for significant economic and market changes, and as appropriate, to changes in the Fund's long-term goals and objectives. A comprehensive asset allocation study should be conducted at least every three years to verify or revise the targets.

#### **B. Active Management Strategic Target**

Based on recommendations by Staff and Investment Consultants, the Board shall choose the active management strategic target that seeks an additional return expectation for active management over and above the strategic asset allocation target.

#### **C. Risk Budgeting**

~~Based on recommendations by Staff and Investment Consultants, the Board shall set a risk budget that identifies the risk tolerance of the total Fund that is budgeted into two key components: 1) strategic asset allocation target risk; and 2) active risk. Active risk is the additional risk or deviation from the strategic asset allocation benchmark to achieve the active management strategic target.~~

#### **D.C. Rebalancing Strategy**

The Board authorizes the CIO and Staff to rebalance the portfolio in accordance with policy guidelines and established procedures on an ongoing basis. The goal in implementing the rebalancing policy is to minimize transaction costs, market impact, and opportunity costs.

The Board adopts a rebalancing policy that considers allocation ranges rather than time periods. Upper and lower allocation limits established for each asset class are defined in Appendix A. When the allocation to all asset classes remains within these limits, Staff will use cash flow to maintain the overall allocation as closely as possible to the target.

In the event that a liquid strategy within an asset class deviates from an upper or lower allocation limit, the asset class will be rebalanced to return to its strategic asset allocation target range within ninety (90) days. Within this ninety-day window it may be impractical or costly to reallocate capital towards less liquid investment strategies within each major asset category.

Rebalancing shall consider liquidity so that investments can be converted into cash in a short time, with little or no loss in value, as necessary to facilitate the objectives of the Fund. The marketability of an asset will be considered when rebalancing within each asset category. The rebalancing strategy may be implemented through the use of the cash overlay program.

Staff will report the results of rebalancing activities to the Committee by no later than the subsequent regular meeting.

### **V. PERFORMANCE BENCHMARKS**

#### **A. Total Fund Benchmark**

Each asset class is described by an associated benchmark that describes, in general terms, the opportunity set and return characteristics associated with the asset class. For certain private or more complex asset classes the benchmark serves as a proxy for expected returns rather than an approximation of the actual investments that will characterize that component of the portfolio. Those benchmarks are referred to as the "Policy Index" and are identified in Appendix B, which is separately adopted by the Committee. The Board may use the Policy Index to compare the Fund's actual performance to its Total Fund Benchmark, and to measure the contributions of active investment management and policy adherence.

## B. Mandate-Level Benchmarks

Benchmarks relevant to an investment shall be used as standards to measure the performance of Investment Managers. Acceptable benchmarks include but are not limited to:

- the appropriate market indices on a nominal and risk-adjusted basis;
- the performance of peers within their style group;
- adherence of the Investment Manager to the stated investment philosophy and style; and
- adherence to this Policy and the guidelines established in the investment contract.

The Board will work with Staff and the Investment Consultants to identify appropriate sub-asset class benchmarks. Staff and Investment Consultants will review the appropriateness of these benchmarks and report to the Committee on a regular basis.

## VI. INVESTMENT GUIDELINES

Recognizing that capital markets are global in nature, the Board shall consider asset classes that represent all investment opportunities appropriate for PERA, as long as such investments comply with the UPIA. The terms and conditions of investment contracts are subject to legal review for compliance with applicable law and applicable investment standards.

### A. Investments

#### Global Equity

An appropriately diversified Fund should include, commensurate with market conditions, global equity investments, both public and private. This allocation is structured to help the Fund meet its total return goals and will be implemented through strategies that include both liquid and illiquid mandates.

- **Public Equity.** The objective of public equity investments is to provide exposure to global economic growth opportunities and seek to capture capital appreciation and current income. The public equity allocation must anticipate long-term capital appreciation as it targets economic growth with an acceptable exposure to price volatility and the risk of loss. Public equity includes hedged investments that reduce broad market risks by isolating security-specific returns. The vehicles will utilize long and short positions along with leverage to accomplish their investment objectives. Equity-hedged investments will retain some broad market risk, but will generally be less volatile and have a lower correlation to broad equity markets over a full cycle.
- **Private Equity.** The objective of the private equity allocation is to capture a premium from making long-term, illiquid investments in predominantly non-publicly traded equity securities. In making private equity investments, PERA shall consider that private equity Investment Managers typically have concentrated portfolios and generate returns by making operational changes to the acquired businesses and often employ leverage to generate superior returns.

#### Risk Reduction and Mitigation

An appropriately diversified Fund should include, commensurate with market conditions, an allocation of assets for risk reduction and mitigation to provide diversification, a dependable source of current income, and downside protection. PERA shall consider the risk reduction and mitigation allocation as a component of the total investment portfolio that provides lower expected volatility and a greater expectation for the preservation of capital. The risk reduction and mitigation allocation includes, but is

**Commented [LL2]:** Asset mix names may be updated in new SAA to simplify and define exposure.

Change TBD - December

not limited to the following investment types:

- Core and Global Fixed Income. Bonds, notes or other obligations of the U.S. government, its agencies, government-sponsored enterprises, corporations, or collateralized obligations, including but not limited to mortgages are targeted to achieve risk reduction and mitigation. In addition, these portfolios may include debt obligations of non-U.S. governmental or quasi-governmental entities and corporations with an investment grade rating, which may be denominated in foreign currencies.
- Operating Cash Management. In order to mitigate risk and ensure liquidity, commensurate with market conditions, the services of the State Treasurer may be used for overnight investment of short-term assets. Use of a separate or commingled short-term investment fund administered by the Custodian Bank may be considered.
- Currency. As means to mitigate risk while realizing returns, PERA should consider active currency strategies that do not necessarily hedge existing international holdings, but instead, seek absolute return which may include leverage, cross-hedging, emerging markets, and interest-rate futures.
- Securities Lending: The Board may authorize a securities lending program for all or any portion of the assets held as investments by PERA. Securities may only be loaned by the designated agent(s) by contracting for the temporary exchange of securities, for a specified fee or consideration for periods not to exceed one year, with broker-dealers, banks or other recognized institutional investors.
- Cash Overlay: Overlay strategies may be used to manage risk, asset allocation, and market exposures through futures, options, swap agreements, or forward agreements.

#### Credit-Oriented Fixed Income

An appropriately diversified Fund should include, commensurate with market conditions, global credit-oriented fixed income investments to deliver positive returns over a complete market cycle while maintaining sufficient liquidity. Credit-oriented fixed income investments shall be targeted to provide current income and total return with a strong focus on preservation of capital. In making these investments, PERA shall consider the potential volatility as compared to the risk reduction and mitigation allocation. PERA shall also consider credit-oriented fixed income investments that utilize leverage, shorting, derivatives, and illiquidity to generate greater risk-adjusted returns. Credit-oriented fixed income investments include similar types of securities as those in the risk reduction and mitigation allocation, but may have different credit characteristics at the time of purchase.

#### Real Assets

An appropriately diversified Fund should include, commensurate with market conditions, investments in real assets to generate current income and provide capital appreciation. In making such investments, PERA shall consider the benefits of diversification that these investments provide as a hedge against inflation. Real assets investments may include but are not limited to liquid and illiquid securities in real estate, infrastructure, commodities, natural resources, timber, agriculture and farmland. The real assets portfolio includes market neutral strategies—these portfolios seek to avoid elevated exposure to broad market risk through the use of hedges. Market neutral strategies shall target a zero correlation with broad market movements and provide diversification benefits for the total fund.

#### Multi-Risk Allocation

An appropriately diversified Fund should include, commensurate with market conditions, investments

in balanced risk-based exposures to equalize the risk contribution of asset classes or risk factors comprised in the portfolio. In making such investments, PERA shall consider the benefits of diversification that these investments provide as a liability hedge and stabilized return generator. Multi-risk investments shall include, but are not limited to, Risk Balanced/Parity strategies. PERA shall also consider multi-risk investments that utilize leverage and derivatives to generate a greater risk adjusted return.

## **B. Other Investment Considerations**

The Board may, after consideration of pertinent investment risk and reward attributes, and liquidity, cost and administrative complexity, authorize any investment except as otherwise expressly prohibited.

### **Securities Regulations**

PERA shall consider, based on market considerations, whether engagement of Investment Managers registered under the Investment Company Act of 1940 is appropriate. This Act governs the operations of investment companies and their managers. PERA should work with its Investment Consultants and Investment Managers to ensure compliance with all federal and state securities laws including, but not limited to, the Securities Act of 1933 and the Investment Advisers Act of 1940. PERA recognizes that such registration is not applicable to all investment strategies or to investment opportunities located outside the United States.

### **Leverage**

Leverage is implicit in many investment strategies and leverage in and of itself is not strictly prohibited so long as activities do not materially increase the risk level of the Plan. Leverage will be considered when deciding to retain an Investment Manager, and the Board, in conjunction with Staff, Investment Consultants, and Investment Managers, will avoid managers who employ unreasonable levels of leverage.

### **Liquidity**

The Fund must maintain an easily accessible balance of cash equivalents and other reasonably liquid assets for the purposes of meeting the financial obligations of the Fund. The Board will govern these liquidity requirements through the utilization of a structural hierarchy, which will classify asset classes according to liquidity availability and pricing sensitivity during market stress. Convertible Liquidity is defined as a level of access from asset classes that can be liquidated in a relatively short amount of time with minimal pricing impact. Delayed Liquidity will capture all remaining asset classes that can be sold, but at a greater expense and/or over a longer time frame. Within these two classifications asset classes will be further classified across tiered availability. Liquidity guidelines are listed in Appendix C, which is separately adopted by the Board.

### **Derivatives**

Investment Managers may use derivative instruments such as futures, options, swaps, and forwards, to implement investment strategies in a low cost, efficient manner or construct portfolios with risk and return characteristics that cannot be created with cash market securities. Derivatives may also be used within the context of a cash overlay program. The cash overlay program, administered by an Investment Manager, may buy, sell, and hold exchanged-traded derivative instruments and exchange-traded funds.

### **Reporting**

Total Fund performance reporting will be formally presented to the Investment Committee quarterly and shall include comparative peer performance data, compiled by the Board Investment Strategic

Consultant. Illiquid asset class performance reporting will be provided to the Investment Committee quarterly and formally presented no less than twice a year, reviewing the fiscal year end and calendar year end results. All reporting shall be published to the PERA website for public reference, on a timely basis, following quarterly review.

### **C. Prohibited Investments**

In accordance with UPIA guidelines, the Board, Staff, Investment Consultants, and Investment

Managers are expected to perform their fiduciary duties as a prudent investor would and to conform to all applicable federal and state statutes governing the investment of retirement funds for a qualified government plan. Accordingly, the following investments are prohibited:

Investments precluded by law or regulation:

- Transactions that involve a broker acting as a "principal" where such broker is also the Investment Manager who is making the transaction are prohibited unless otherwise approved in each manager's respective PSA.
- Any other investments as specified in each Investment Manager's respective contract.
- An investment that violates the placement agent limitations set forth in the PERA Act.

## **VII. REVIEW AND APPROVAL OF INVESTMENT POLICY**

The Board shall review the Policy from time-to-time to determine if modifications are necessary or desirable but will delegate Staff to review the Policy on an annual basis. Staff will recommend modifications as warranted. If modifications are made, they shall be promptly communicated to all Investment Managers and other interested persons.

By signing this Investment Policy the Board through its Chair, indicates its agreement therewith.

Adopted: June 25, 1992  
Amended: September 14, 1993  
April 28, 1994  
September 28, 1995  
January 29, 1998  
March 23, 1998  
January 27, 2000  
September 26, 2002  
July 31, 2003  
October 31, 2003  
July 1, 2005  
September 28, 2005  
December 29, 2005  
July 27, 2006  
August 31, 2006  
September 28, 2006  
June 1, 2007  
August 30, 2007  
July 31, 2008  
June 24, 2010  
November 29, 2012  
August 28, 2014  
December 18, 2014  
September 24, 2015  
April 28, 2016  
December 14, 2017  
July 26, 2018  
April 30, 2020  
December 14, 2021  
October 27, 2022  
December 12, 2023

By: \_\_\_\_\_  
~~Claudia Armijo~~ Diana Rosales Ortiz,  
Board Chair  
Public Employees Retirement Association of New  
Mexico



APPENDIX A. ASSET ALLOCATION TARGETS AND REBALANCING RANGES

Effective January 1, 2023

**Commented [LL3]:** Asset Mix Names and SAA Targets  
update recommendation at December IC

Asset Class	Lower Limit	Strategic Asset Allocation Target	Upper Limit
Global Equity	33.0%	38.0%	43.0%
Risk Reduction and Mitigation	14.0%	17.0%	20.0%
Credit Oriented Fixed Income	15.0%	19.0%	23.0%
Real Assets	14.0%	18.0%	22.0%
Multi-Risk Allocation	04.0%	8.0%	12.0%

Adopted: ~~October 27, 2022~~December 12, 2023

By:

~~Claudia Armijo~~Diana Rosales Ortiz, Board Chair  
Public Employees' Retirement Association of New Mexico

## APPENDIX B. **BENCHMARKS**

Commented [LL4]: TBD Recommendation December IC

Effective: January 1, 2023

<b>Global Equity</b>	<b>Weighted Benchmark</b>
Global Public Stock	MSCI ACWI IMI (\$net)
Global Low Volatility Equity	MSCI ACWI Minimum Volatility (\$net)
Private Equity	MSCI ACWI IMI (\$net)
<b>Risk Reduction &amp; Mitigation</b>	<b>Weighted Benchmark</b>
Core Fixed Income	Bloomberg Barclays U.S. Aggregate
<b>Credit Oriented Fixed Income</b>	<b>Weighted Benchmark</b>
Liquid Credit	Bloomberg Barclays Global High Yield (Hedged)
Illiquid Credit	Bloomberg Barclays Global High Yield (Hedged)
Alternative Liquid Credit	Bloomberg Barclays Global High Yield (Hedged)
<b>Real Assets</b>	<b>Weighted Benchmark</b>
Illiquid Real Estate	Wilshire Global REITs
Liquid Real Assets	Dow Jones – Brookfield Global Infrastructure Index
Illiquid Real Assets	Dow Jones – Brookfield Global Infrastructure Index Bloomberg Commodity – Commodity Index (TR)
<b>Multi-Risk Allocation</b>	<b>Weighted Benchmark</b>
Risk Balance	Wilshire Risk Parity Index – 15% Volatility

Adopted: ~~October 27, 2022~~ December 12, 2023

By: \_\_\_\_\_

~~Claudia Armijo~~ Diana Rosales Ortiz, Board

Chair

Public Employees' Retirement Association of New Mexico

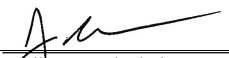
## APPENDIX C. LIQUIDITY GUIDELINES

Effective: April 30, 2020

At no time shall Tier 1 assets fall below 10% of the total fund market value. For the purposes of liquidity, tier classifications and their corresponding asset classes are as follows:

Convertible Liquidity		
Tier 1	1-5 Day Liquidity	Core Fixed Income Global Core Fixed Income Cash and Cash Overlay
Tier 2	5-90 Day Liquidity	Global Public Stock Global Low Volatility Equity Liquid Credit Emerging Market Debt Liquid Real Estate Liquid Real Assets Risk Balance
Delayed Liquidity		
Tier 3	90-365 Day Liquidity	Hedged Equity Hedged Credit / Alternative Credit
Tier 4	1 Year + Liquidity	Private Equity Illiquid Credit Illiquid Real Estate Illiquid Real Assets Bond Plus/Portable Alpha

Adopted: April 30, 2020

By:   
John Melia, Board Chair  
Public Employees' Retirement Association of New Mexico

# Portable Alpha Portfolio Review 2023

Prepared for New Mexico PERA

26 October 2023

# Outline

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What is Portable Alpha?



Review of Portable Alpha Portfolio  
(including guidelines)

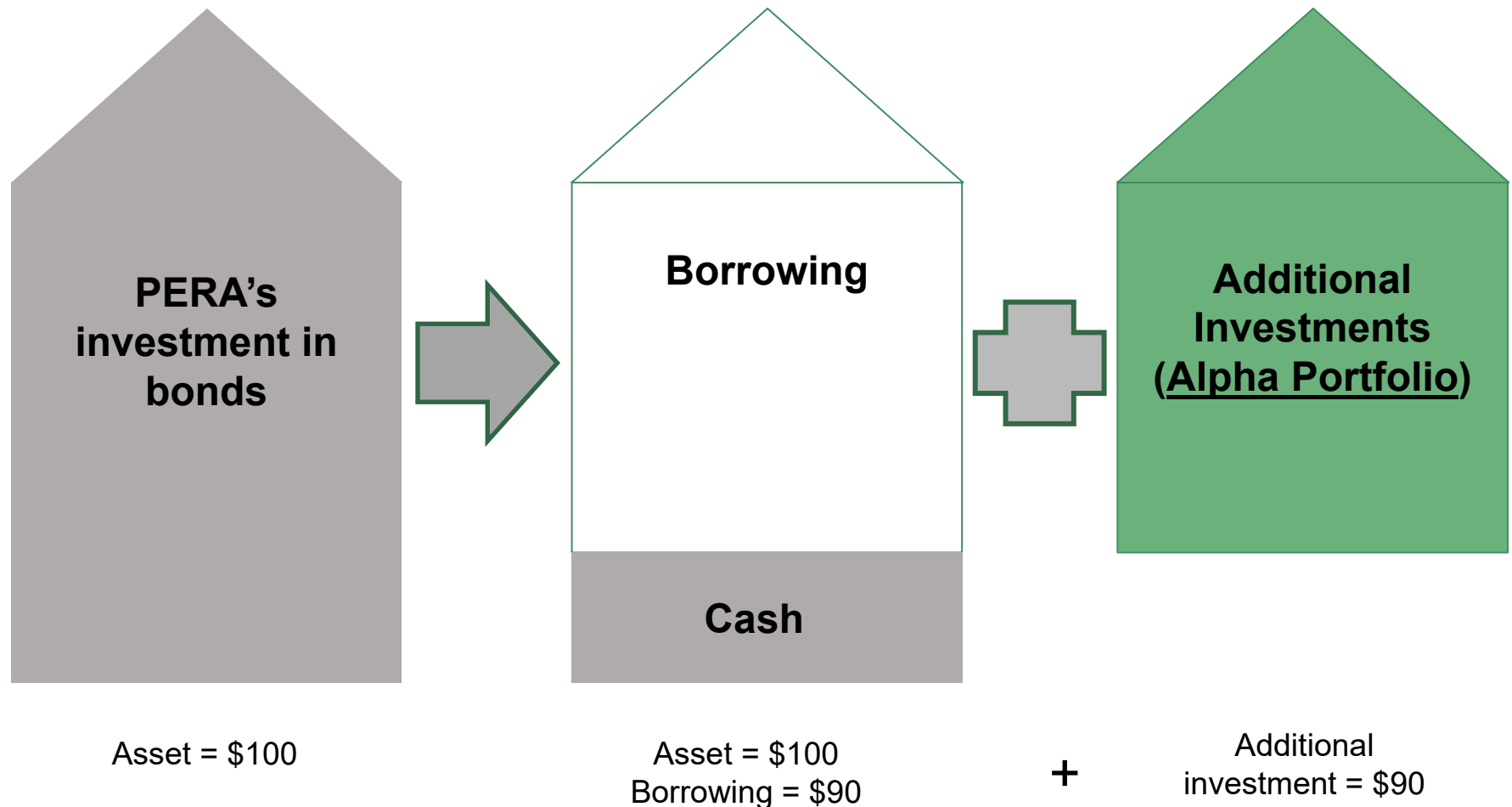


Performance



# What is Portable Alpha?

# Portable Alpha Portfolio – an illustration

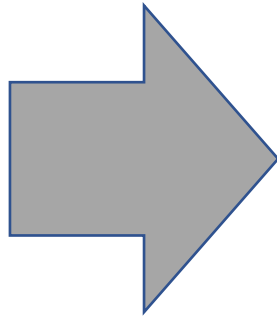


➞ Instead of just owning the initial asset, the investor now owns the asset and exposure to additional investments

# Portable Alpha Portfolio – the mechanics

Physical exposure

**\$100  
portfolio  
Physical  
investment  
in bonds  
(US Barclays  
Aggregate  
Index)**



Exposure to bonds through futures or swap

**\$10 (Cash)  
Margin  
requirement**

**\$100 economic exposure**

Synthetic exposure plus cash

Cash available to invest

**\$90  
invested in  
Alpha  
Portfolio**

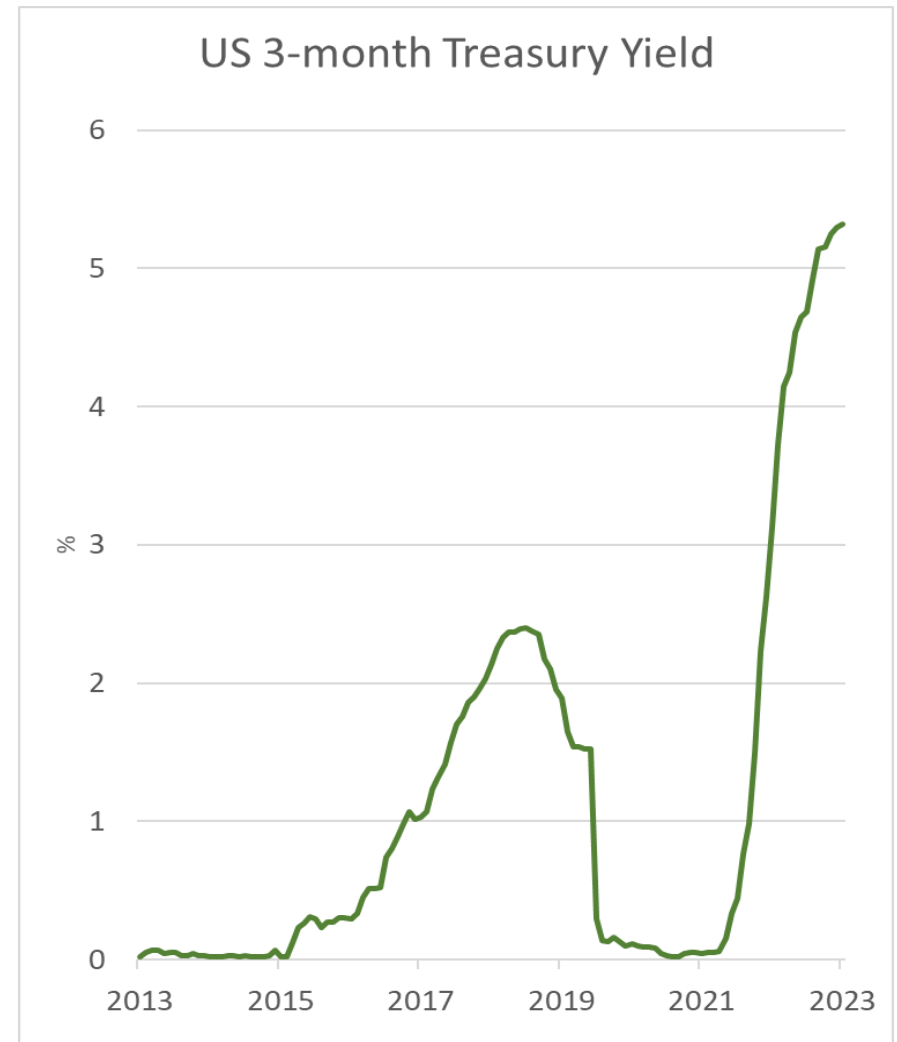
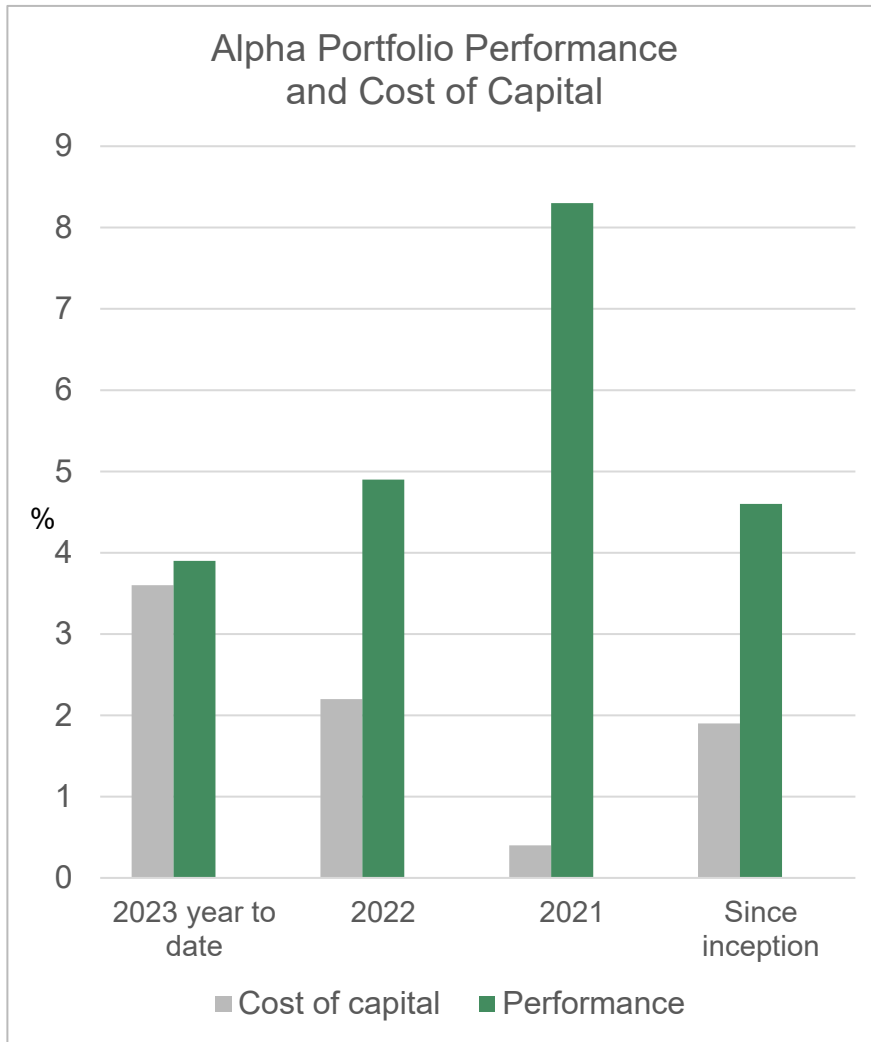
\* Note this is a stylized example



# Pros and Cons of Portable Alpha

- Pros
  - Opportunity to add value through performance with relatively low risk
  - Hedge fund portfolio designed to be a diversifier to the rest of portfolio
  - Overall asset allocation left unchanged
- Cons
  - Cost of funding linked to short term interest rates
  - Adds a degree of operational complexity
  - Implicit leverage on portfolio potentially adds to risk

# Increased interest rates has raised costs



# Removing the bonds overlay

- Increasing cost of capital means lower excess alpha
  - An historic low interest rate environment has come to an end
  - Higher cost only partially offset by increased returns
- What does this mean for the portfolio going forward?
  - Expect opportunity set for managers at least as good, if not better
  - Remains uncorrelated to the rest of the portfolio
  - Provides a source of liquidity which is valuable, as allocation to illiquid investments rise, especially if distributions remain at slower pace
- Portfolio remains a valuable standalone allocation
  - Within a Strategic Asset Allocation (SAA) we usually see this in a “diversifying” or “risk mitigating” allocation

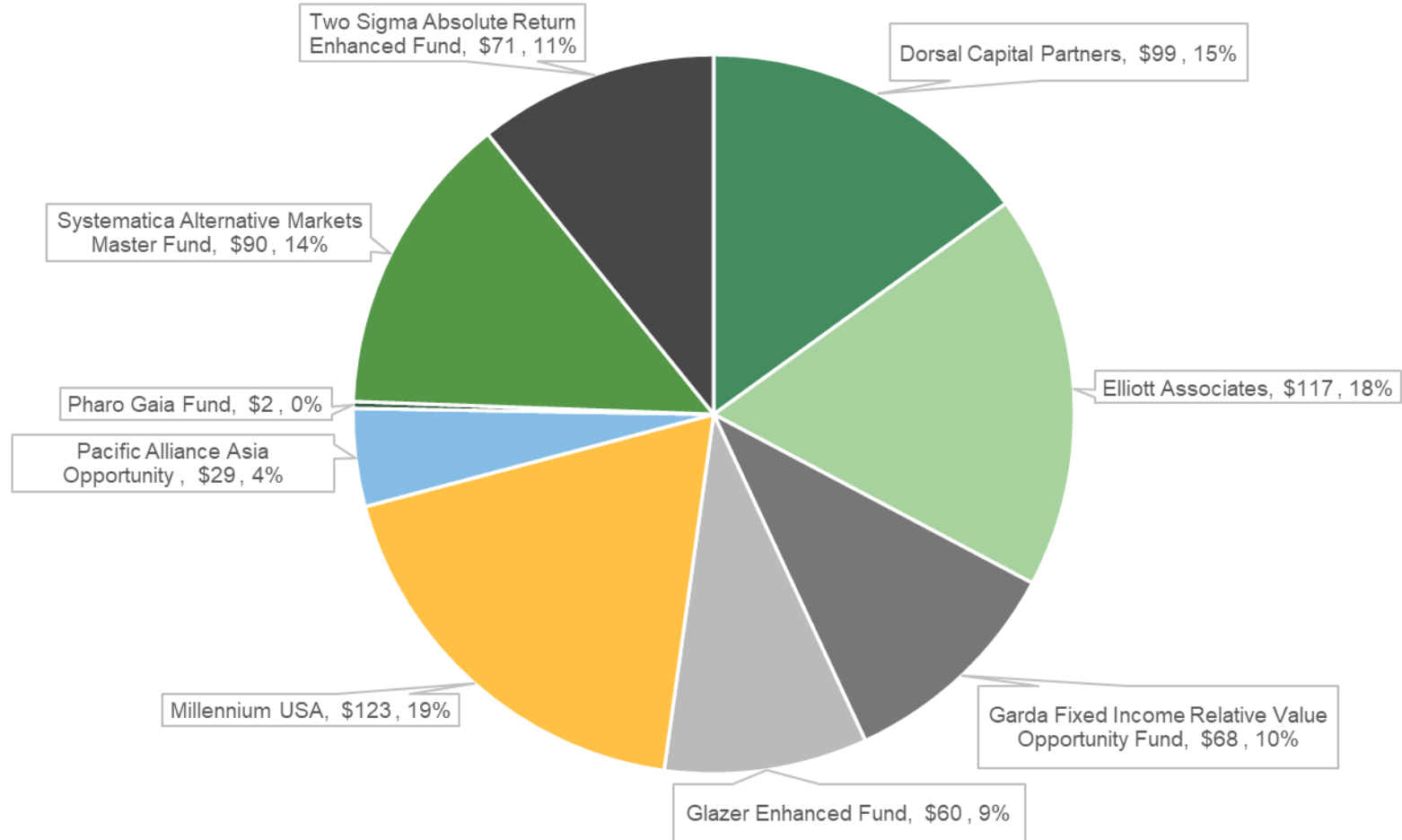


# Portable Alpha Portfolio Review

# PERA Guidelines

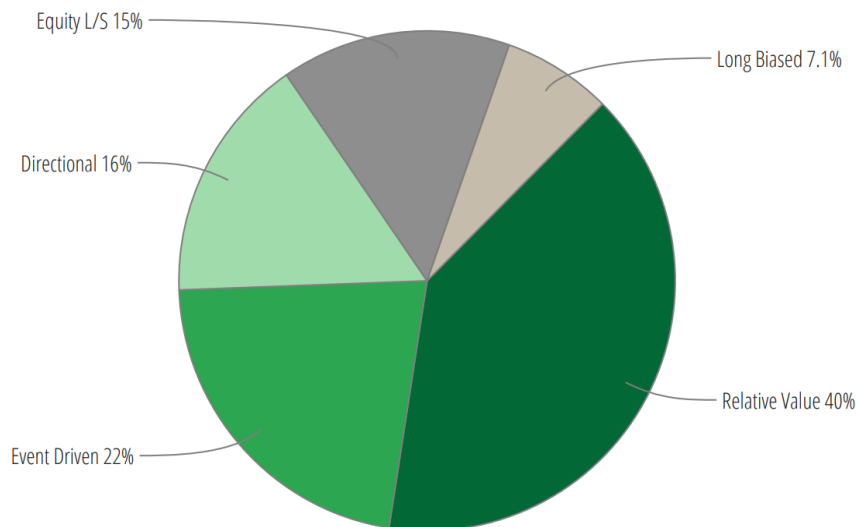
- Portfolio Risk and Return
  - Return versus target (passed)
  - Return versus benchmark (passed)
  - Beta to benchmark and equity (both passed)
  - Idiosyncratic risk (passed)
- Liquidity
  - Ability to withdraw capital over a specified timetable (passed)
- Fund Level
  - Retention of profit after fees (passed)
  - Manager size less than 15% of portfolio (3 managers in breach)
  - Manager risk less than 20% of portfolio (1 manager in breach)
  - Exposure to risk factors (passed)
  - Strategy exposure (3 passed 1 in breach)

# PERA Fund Allocations (\$m)

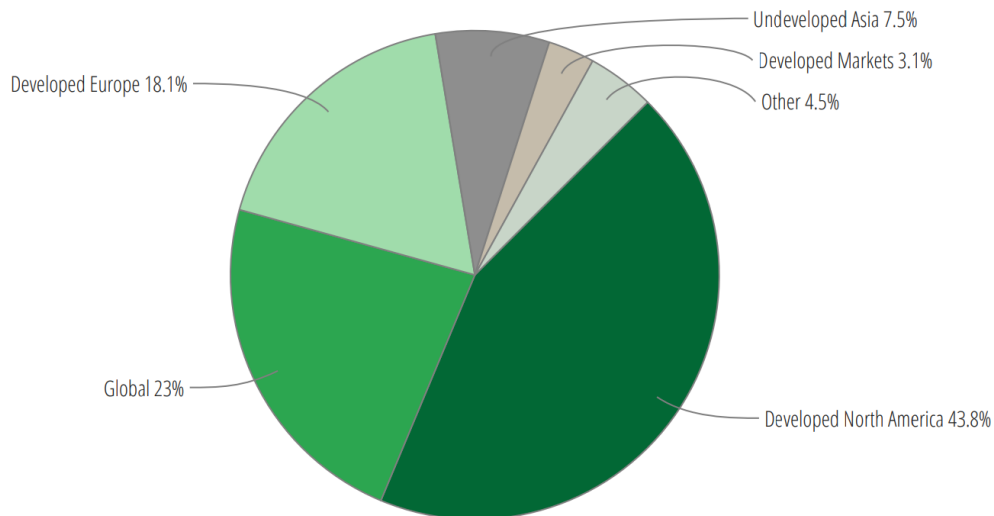


# PERA Strategy & Regional Exposures

**Super-Strategy Allocation**



**Regional Allocation**

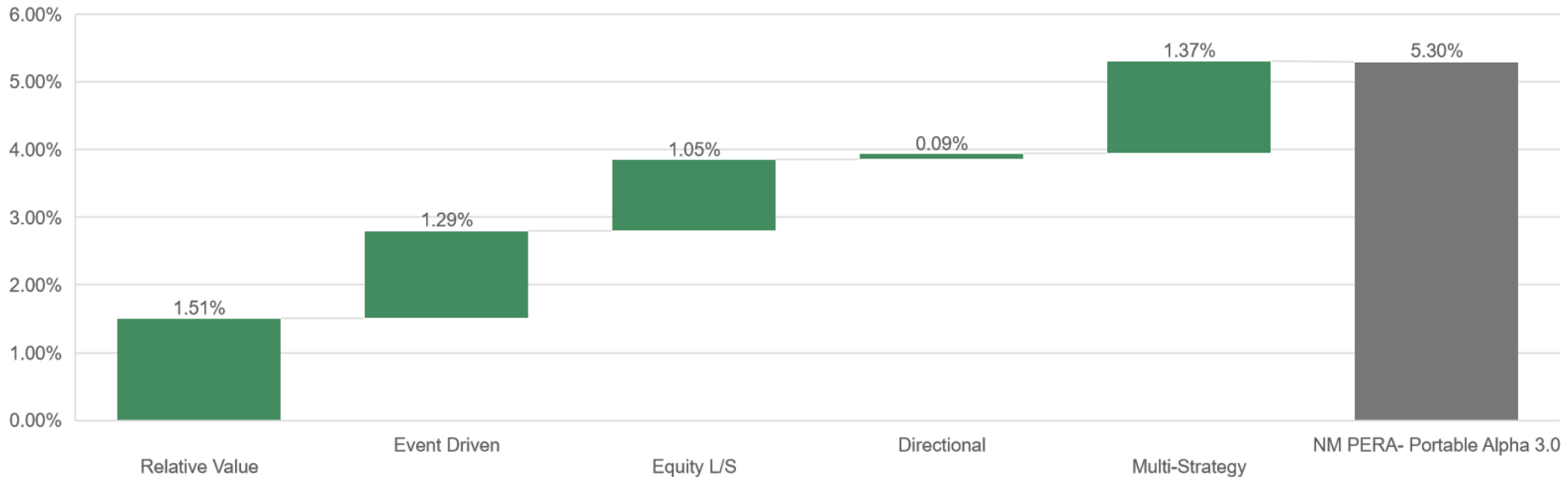


- The Portable Alpha portfolio is well diversified by strategy
- Within each strategy, PERA holds funds with low beta to credit and equity
- PERA's main regional exposures are to developed North America, Developed Europe, and Global managers.

# PERA Performance Attribution – by Strategy

2023 YTD Performance: Strategy Contribution

■ Increase ■ Decrease ■ Total

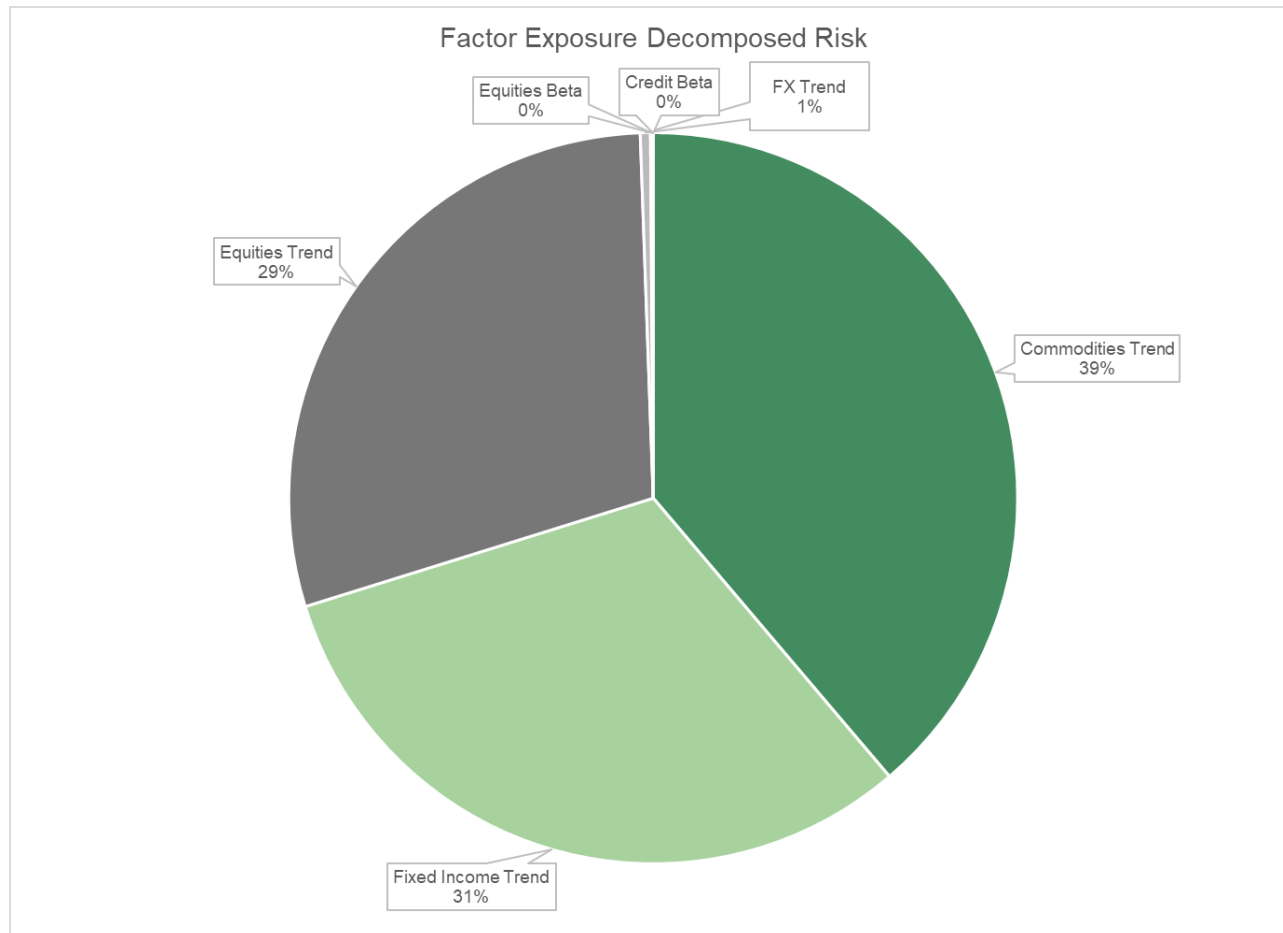


- Relative Value strategies have been the strongest contributor to performance YTD in 2023, followed by Multi- Strategy, Event Driven, Equity L/S, then Directional.



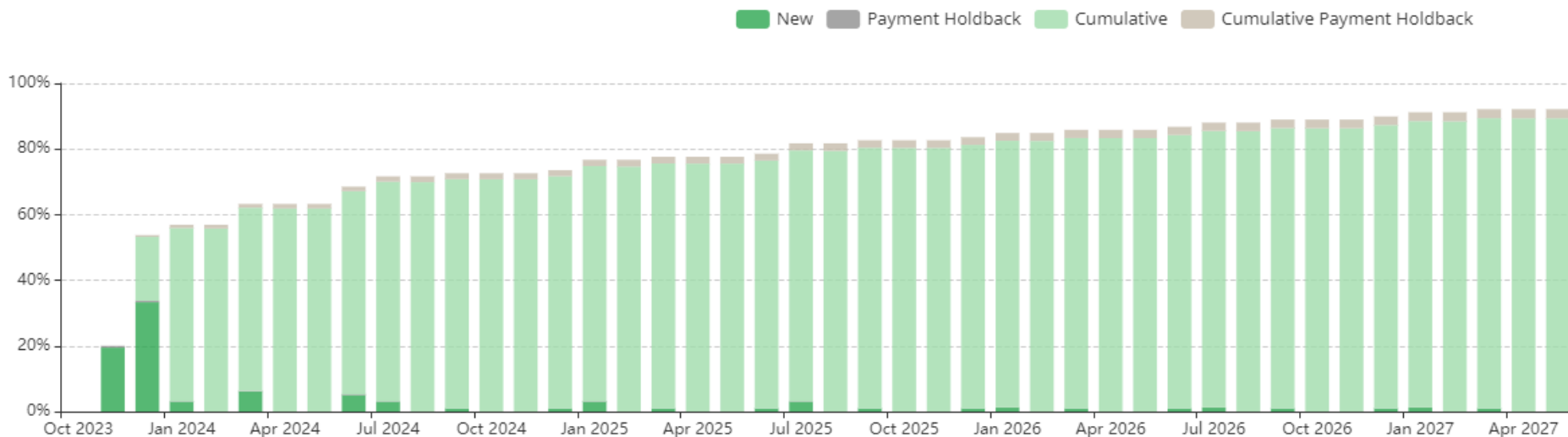
# PERA Factor Exposure

- The systematic risk of the Alpha portfolio includes diversifying sources of alternative risk premia including Trend, Carry and Value, which will vary over time.



# PERA Portfolio Liquidity

## Current Liquidation Profile (by Redemption Opportunities)



Date	Apr 1, 2024	Jul 1, 2024	Jan 1, 2025	Jan 1, 2026
Percentage of portfolio that can be liquidated: Jan '24 and Jan '26	55%	61%	70%	79%

# PERA Portfolio Risk

		Portable Alpha	Bonds Exposure	Bonds + Alpha	Benchmark (1)
Volatility	1 Year	2.2%	6.9%	5.8%	7.1%
	Since Inception	8.0%	5.9%	9.5%	5.9%
Beta to Benchmark (1)	1 Year	-0.21			
	Since Inception	-0.04			
Beta to Equities (2)	1 Year	-0.08			
	Since Inception	0.19			

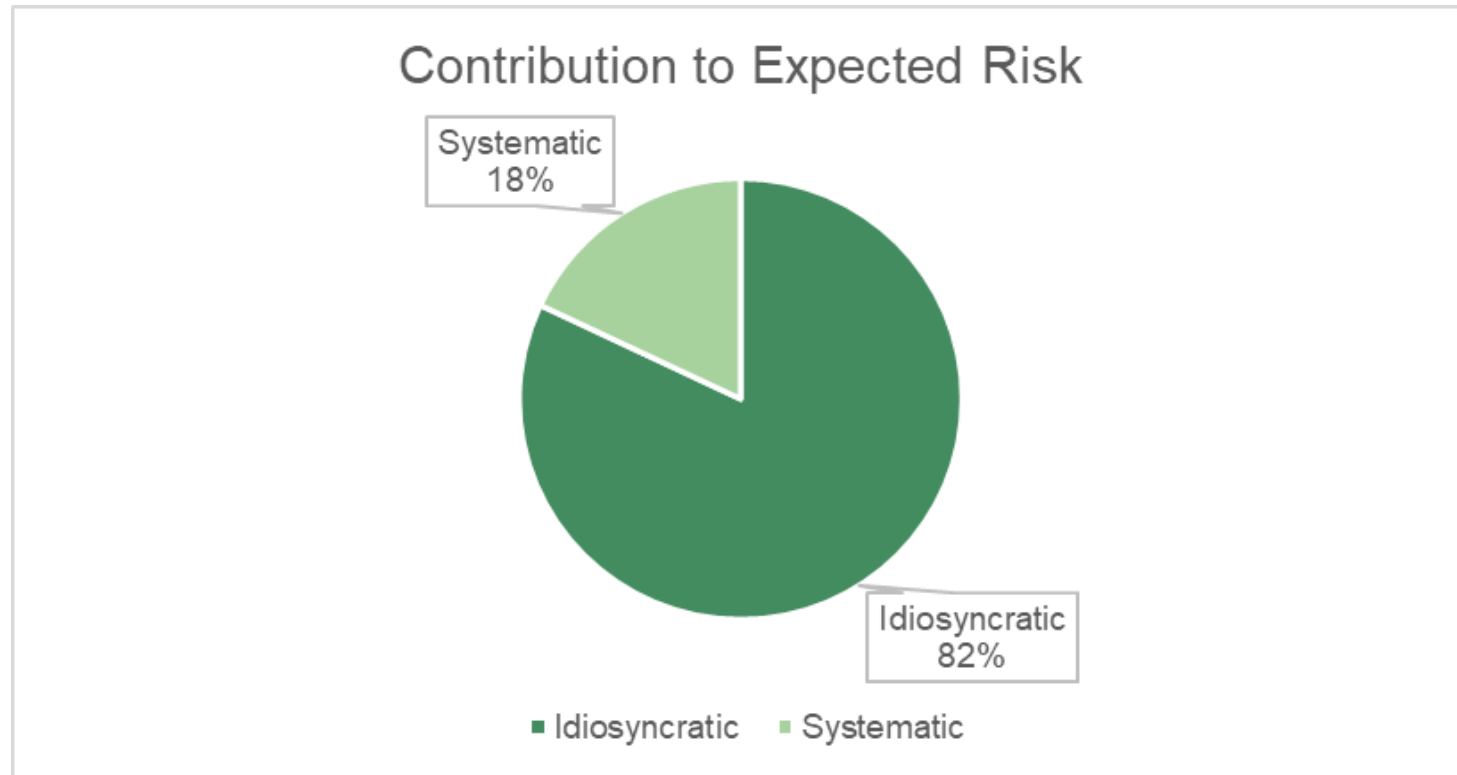
- The Portable Alpha portfolio has relatively low volatility at 2.2%
- The portfolio has little or no beta to bonds or equities (-0.21 and -0.08 respectively over 1-year)
- Since the Portable Alpha portfolio is a diversifier to bonds it reduces volatility when combined with bonds

(1) Bloomberg US Agg (total return, unhedged)

(2) MSCI All Country World Index Investable Market Index

# Expected Risk

- The annualized expected volatility for the Portable Alpha is 3.86%, which can be broken down as 82% idiosyncratic and 18% systematic.



# PERA Guideline Breaches

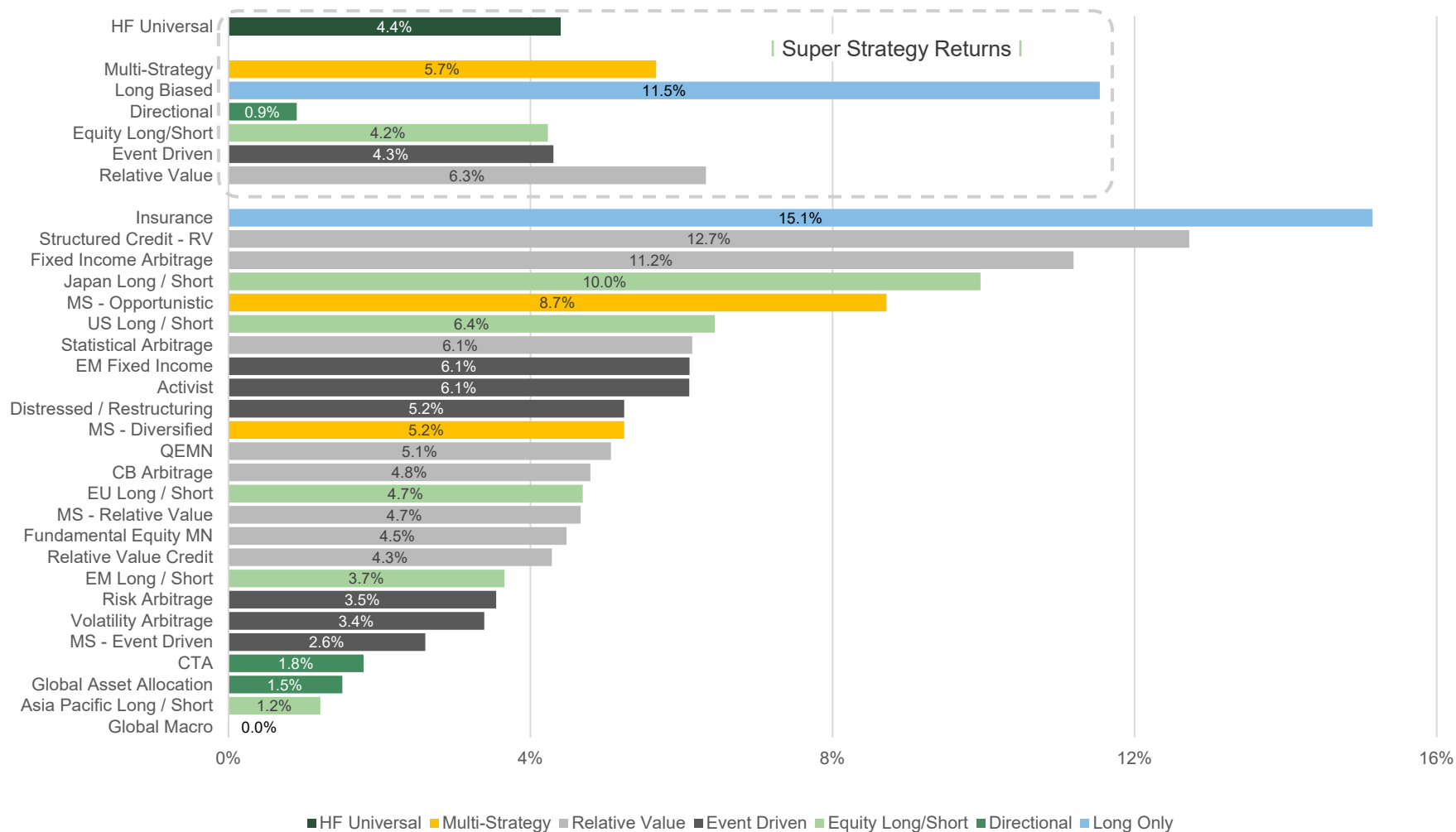
Guideline	Target	As of September 2023
Manager Size	<ul style="list-style-type: none"> <li>&lt;15% of portfolio</li> </ul>	<ul style="list-style-type: none"> <li>Millennium: 19%</li> <li>Elliott: 18%</li> <li>Dorsal: 15%</li> </ul>
Manager Risk Contribution	<ul style="list-style-type: none"> <li>&lt; 20% of expected risk</li> <li>Rebalance if breached for more than 6 months</li> </ul>	<ul style="list-style-type: none"> <li>Systematica: 33%</li> </ul>
Strategy Exposure	<ul style="list-style-type: none"> <li><b>Relative Value:</b> Range 20-45%, Target 30%</li> <li><b>Event Driven:</b> Range 10-30%, Target 20%</li> <li><b>Equity Long/Short:</b> Range 10-30%, Target 20%</li> <li><b>Directional:</b> Range 20-45%, Target 30%</li> <li><b>Other:</b> Range 0-15%, Target 0%</li> </ul>	<ul style="list-style-type: none"> <li>RV: 40%</li> <li>ED: 22%</li> <li>E L/S: 15%</li> <li>Directional: 16%</li> <li>Long Biased: 7.2%</li> </ul>



# Performance

# Performance of Hedge Funds in 2023

## HedgeRS EW Performance - YTD as of September 2023



Long Biased Super-Strategy return presented is based on the returns of Insurance and Direct Lending Strategies.

# PERA Performance Overview

	2023 YTD	CY2022	CY2021	CY2020	Since inception (annualized)
Alpha Portfolio	5.3%	4.9%	8.3%	0.0%	4.9%
Funding cost (1m \$ LIBOR + 0.3%)	4.1%	2.2%	0.4%	0.8%	2.0%
<b>Alpha excess over est. financing</b>	<b>1.2%</b>	<b>2.6%</b>	<b>7.9%</b>	<b>-0.8%</b>	<b>2.9%</b>
Bonds Overlay	-2.9%	-14.6%	-2.4%	6.2%	-3.1%
Bloomberg US Agg (benchmark)	-1.2%	-13.0%	-1.5%	7.5%	-2.5%
<i>Excess over benchmark</i>	<i>-1.7%</i>	<i>-1.6%</i>	<i>-0.9%</i>	<i>-1.3%</i>	<i>-0.6%</i>
Bonds+ Alpha	2.4%	-10.3%	5.7%	6.2%	1.5%

- Alpha portfolio has outperformed in 2021-2023 and since inception both against funding cost and benchmark.
- Bonds have declined in value over past 3-year periods due to rise in inflation.
- Since inception Alpha Portfolio (4.9%) has more than offset the decline in bonds (-3.1%) after funding costs.
- The Alpha Portfolio has added circa \$34m in 2023 and \$133m since inception.
- Going forward the increase in short-term interest rates make this outperformance more challenging.



# PERA Alpha Plus Bonds Performance (\$)

	2023 YTD	CY2022	CY2021	CY2020	Since Inception (annualized)
Alpha Engine	34,159,132	39,653,497	53,127,571	6,231,483	133,171,682
Bonds Overlay	(15,710,699)	(138,893,364)	(8,377,293)	28,522,424	(133,761,907)
Bonds+ Alpha	18,448,433	(99,239,867)	44,750,278	34,753,907	(590,225)

- The Alpha Engine has generated \$133,171,682 since inception through August, while the Bonds Overlay lost (\$133,761,907).
- YTD, the Alpha Engine has generated \$34m, while the bonds overlay detracted (\$16m). Thus, YTD, the Bonds+ Alpha has generated \$18m.



# Appendix

# Portable Alpha Timeline

The Portable Alpha Portfolio has been built out over the past few years

## Phase I

- 7 managers added April-June 2020
- 1 existing manager maintained (Elliott)
- 3 managers removed (Anchorage, AQR, Napier Park)

## Phase II

- 2 managers added Dec 2020 and Apr 2021
- Additional subscriptions to existing managers in April 2021 and July 2021
- Right sized Glazer Enhanced Fund, LP to bring expected risk contribution in line
- Redemptions from MW Eureka, Pharo Gaia, and Pacific Alliance (taking place)

## Looking Forward

- Enhance portfolio diversification with an allocation to a Direction Macro Manager and contemplate an additional allocation to a Multi-Strategy Manager
- Transition the Portable Alpha Program to a sole diversified hedge fund portfolio with the removal of the bonds overlay

# PERA Manager Performance Summary

Fund Name	2023 YTD	1 Year	2 Year	Since Investment (annualized)	Investment Date
Dorsal Capital Partners L.P.	7.34%	11.92%	2.49%	5.29%	May-20
Elliott Associates, LP	5.13%	4.61%	7.82%	10.27%	Dec-19
Garda Fixed Income Relative Value Opportunity Fund	9.92%	16.16%	11.41%	10.17%	Jun-20
Glazer Enhanced Fund, LP	5.16%	9.58%	4.95%	17.18%	May-20
Millennium USA LP	7.60%	10.35%	11.10%	14.56%	Sep-20
Pacific Alliance Asia Opportunity Feeder Fund IV L.P.	-5.41%	-9.25%	-4.87%	-0.49%	May-20
Pharo Gaia Fund Ltd	-1.58%	-3.88%	-11.60%	-6.02%	May-20
Systematica Alternative Markets Master Fund LP	1.21%	-2.59%	9.01	13.69%	May-20
Two Sigma Absolute Return Enhanced Fund, LP	5.87%	6.53	10.85%	9.73%	Apr-21

# Expected Risk

- The annualized expected volatility for the Portable Alpha is 3.86%, which can be broken down as 82% idiosyncratic and 18% systematic.

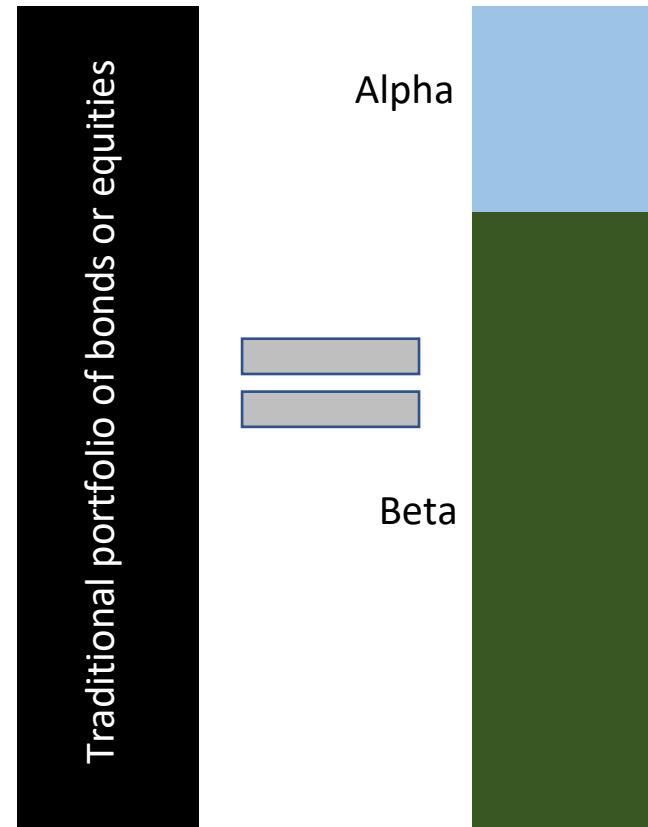
## Risk Analysis Based on Current Systematic Series

	Total		Contribution to Risk From			
	Value	Change <sup>1</sup>	Systematic		Residual	
	Value	Change <sup>1</sup>	Value	Change <sup>1</sup>	Value	Change <sup>1</sup>
Annualised Expected Volatility	3.86%	0.01%	1.65%	0.01%	3.50%	0.01%
Monthly Expected 95% VaR	1.84%	0.01%	0.78%	0.00%	1.66%	0.01%
Monthly Expected 99% VaR	2.60%	0.01%	1.11%	0.01%	2.35%	0.01%
95% VaR Violation Frequency <sup>2</sup>	2.22%	-0.05%				
Monthly Historical 95% CVaR	2.18%	0.00%				
Monthly Modified 95% VaR	1.24%	0.03%				
Monte Carlo 95% VaR, MSCI ACWI IMI TR Net Stress Period	0.81%	0.01%				
Monte Carlo 95% VaR, BBG Barclays US Agg. Value TR UH Stress Period	0.67%	0.01%				
Monthly Expected 95% VaR Assuming Cross-Correlation=1	3.51%	-0.03%				

Risk calculated over period from Feb 2000 to Sep 2023 <sup>1</sup>Change from previous month <sup>2</sup>Computed over 45 months. Change is relative to previous value, computed over 44 months.

# Understanding Portable Alpha

- Alpha and beta are “bundled” when accessing most investment products
  - e.g. an active bond manager will deliver a beta to a benchmark plus alpha
- Alpha is often constrained by long only constraint
- Where the beta can be accessed independently and cheaply you can unbundle alpha from beta



# New Mexico PERA

## Investment Guidelines September 2023 Checklist Bonds+ Alpha Engine

October 2023

## Investment Guidelines for New Mexico Alpha Engine portfolio

## Checklist

Metric	Target Range	September 2023 Status
<b>Portfolio Risk/Return</b>		
Target Return for Bonds+ program	Barclays US Agg + 3.5% (over 5 years)	Since Inception (Dec 2019) Bonds+ Alpha: 1.5% Barclays US Agg + 3.5%: 0.9%
Benchmark for Alpha Engine	1-month LIBOR + 30bps	Since Inception (Dec 2019) Alpha: 4.9% Benchmark: 2.0%
Absolute Risk for Alpha Engine	Range 3%-6%, Target 4.5%, (over 5 years)	Vol Since Inception (Dec 2019): 8.0% Expected Annualized Vol: 3.86%
Beta to Barclays US Agg TR (Realized and Expected)	< 0.3	Realized Beta past 12 months: -0.21 Expected Beta: 0.08
Beta to Equity (Realized and Expected)	< 0.3	Realized Beta past 12 months: -0.08 Expected Beta: 0.00
Idiosyncratic Risk (as % of Total Expected Risk)	> 50%	Idiosyncratic risk: 3.5% Idiosyncratic risk % of total risk: 82%
<b>Portfolio Liquidity</b>		
All capital that can be liquidated without a fee		n-months after the start of 1Q2023:
<b>Liquidity:</b>		
Within 3-months	30%	<b>3</b> (Jan 1, 2024 - Apr 1, 2024): 55%
Within 6-months	40%	<b>6</b> (Jan 1, 2024 - Jul 1, 2024): 61%
Within 12-months	50%	<b>12</b> (Jan 1, 2024 - Jan 1, 2025): 70%
Within 24-months	75%	<b>24</b> (Jan 1, 2024 - Oct 1, 2026): 79%
<b>Fund Level</b>		
Investor Profit Retention	At least 60%	
Manager Size	< 15% of portfolio	<b>Millennium: 19%</b> <b>Elliott: 18%</b> <b>Dorsal: 15%</b>
Manager Risk Contribution	< 20% of expected risk Rebalance if breached for more than 6 months	<b>Systematica: 33%</b>
Risk Factor Exposure	Avoid concentrated exposure to single factor	APP Commodities Trend: 39% decomposed risk. 18% weight.  APP Equities Trend: 29% decomposed risk. 17% weight.  APP Fixed Income Trend: 32% decomposed risk. 21% weight.
<b>Strategy Exposure:</b>		
Relative Value	Range 20-45%, Target 30%	RV: 40%



Event Driven	Range 10-30%, Target 20%	ED: 22%
Equity Long/Short	Range 10-30%, Target 20%	E L/S: 15%
Directional	Range 20-45%, Target 30%	Directional: 16%
Other	Range 0-15%, Target 0%	Long Biased: 7%

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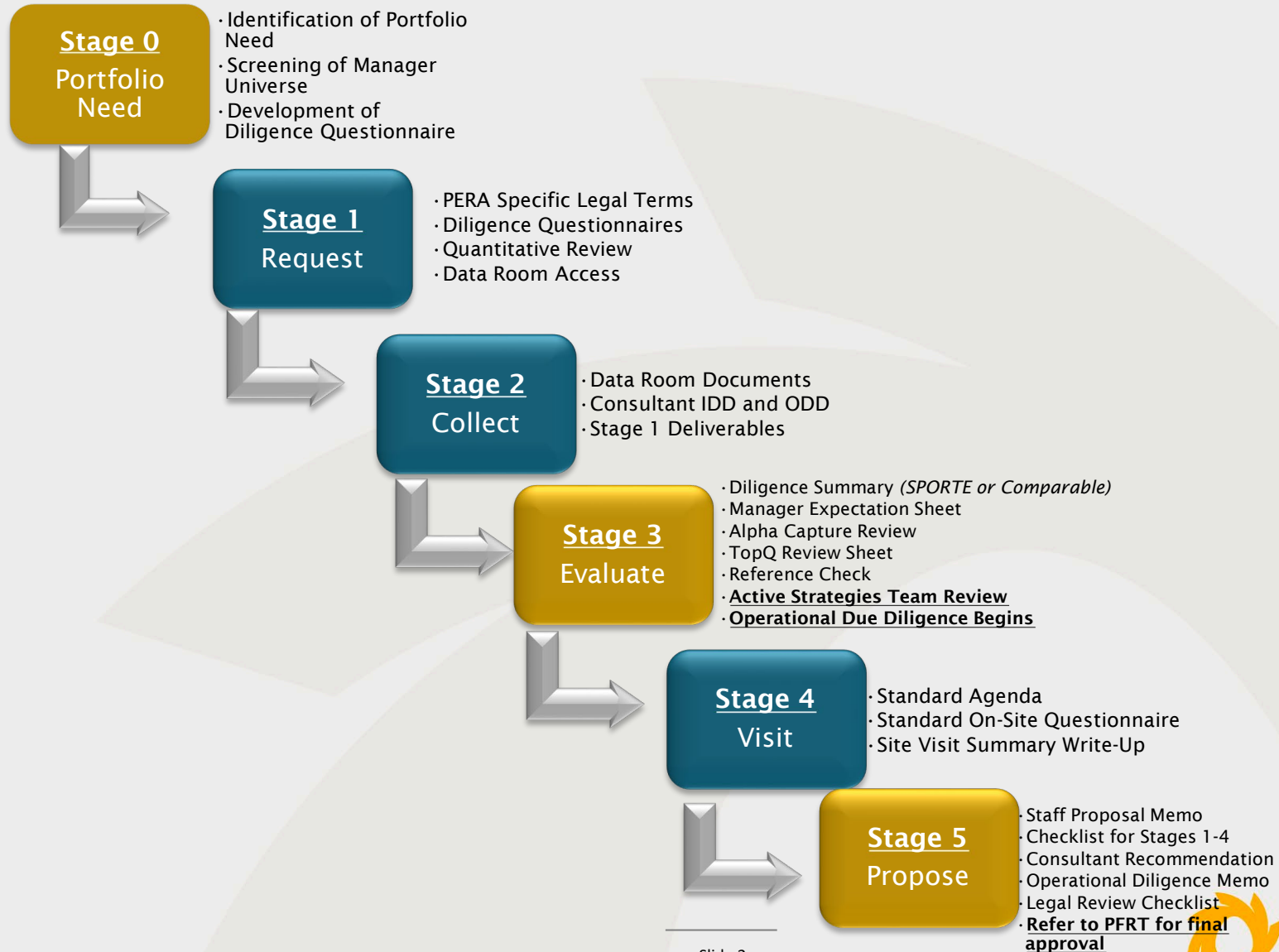


**PERA**

## **Manager Selection Activity Report**

October 26, 2023

# Overview: Manager Selection Process



Slide 2



PERA

# Manager Selection Pipeline

Illiquid	Allocation	Commitment	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
<b><u>Middle Market Lending</u></b> Summary: Credit Oriented Fixed Income (New Mandate)	Credit	-	Complete	Complete	Complete	In Process	
<b><u>Lower Middle Market Lending</u></b> Summary: Credit Oriented Fixed Income (New Mandate)	Credit	-	Complete	Complete	Complete	In Process	
<b><u>Ares Pathfinder Core Fund LP</u></b> Summary: Credit Oriented Fixed Income (New Mandate)	Credit	\$200m	Complete	Complete	Complete	Complete	Complete
<b><u>Venture Capital – Early to Late Stage</u></b> Summary: Private Equity (Follow on)	Global Equity	-	Complete	Complete	Complete	Complete	
<b><u>Middle Market European Buyout</u></b> Summary: Private Equity (Follow on)	Global Equity	-	Complete	Complete	Complete	Complete	In Process
<b><u>Altaris Health Partners VI</u></b> Summary: Private Equity (Follow on)	Global Equity	\$75m	Complete	Complete	Complete	Complete	Complete
<b><u>The Resolute Fund VI &amp; PERA Crescit Eundo TJC Co-Invest</u></b> Summary: Private Equity (Follow on)	Global Equity	\$85m, \$30m	Complete	Complete	Complete	Complete	Complete
<b><u>Real Estate</u></b> Summary: Real Estate (New mandate)	Real Assets		Complete	Complete	In Process		
<b><u>Real Estate</u></b> Summary: Real Estate (Follow on)	Real Assets	-	Complete	Complete	In Process		
<b><u>Infrastructure - Evergreen</u></b> Summary: Real Assets (New mandate)	Real Assets	-	Complete	Complete	In Process		
<b><u>Infrastructure - Evergreen</u></b> Summary: Real Assets (New mandate)	Real Assets	-	Complete	Complete	Complete	In Process	

Note: All completed opportunities are subject to satisfactory legal review, prior to final execution.

Slide 3



# Manager Selection Pipeline

Total Fund	Allocation	Commitment	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
<b><u>Custody Bank RFP</u></b>	Total Fund	N/A	Complete	Complete	Cancelled		
Summary: Issuance due to Expiration of Contract							
<b><u>Custody Bank RFP – Reissue</u></b>	Total Fund	N/A	Complete	Complete	Complete	In Process	
Summary: Extended contract for 1 year to June 30, 2024							

Bonds Plus Alpha	Allocation	Commitment	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
<b><u>Global Macro Hedge Fund</u></b>	Risk Mitigation	-	In process				
Summary: Portable Alpha (New Mandate)							

Note: All completed opportunities are subject to satisfactory legal review, prior to final execution.

Slide 4



# Portfolio Fit and Process Review Team

Opportunities Reviewed	Date	Members	IC Observer	Agreement
<b><u>Ares Pathfinder Core Fund LP</u></b> Summary: Credit (New Mandate)	June 15, 2023	Michael Shackelford; Greg Trujillo LeAnne Larrañaga-Ruffy	*	Yes
<b><u>Altaris Health Partners VI, LP</u></b> Summary: Private Equity (Follow-on)	July 27, 2023	Michael Shackelford; Greg Trujillo; LeAnne Larrañaga-Ruffy	*	Yes
<b><u>The Resolute Fund VI, LP</u></b> Summary: Private Equity (Follow-on)	August 23, 2023	Michael Shackelford; Greg Trujillo; LeAnne Larrañaga-Ruffy	Francis Page	Yes
<b><u>Removal of the Bonds Plus Overlay</u></b> Summary: Risk Reduction & Mitigation	September 25, 2023	Michael Shackelford; Greg Trujillo; LeAnne Larrañaga-Ruffy	Paula Fisher	Yes

\*Roberto Ramirez was invited but did not attend.

\*Tony Garcia was invited but did not attend.

Note: All completed opportunities are subject to satisfactory legal review, prior to final execution.





**Illiquid Credit Investment Proposal:  
Ares Pathfinder Core Fund, L.P.**

June 14<sup>th</sup>, 2023  
Clayton Cleek, CFA

# Proposal

The Active Strategies Team proposes committing up to \$200 million to Ares Management Corporation's ("Ares") Pathfinder Core Fund, L.P. ("Pathfinder Core"), an evergreen asset-based lending mandate that seeks to utilize a high degree of credit selectivity to generate attractive risk-adjusted returns across a broad opportunity set. The team's ability to engage on transactions of varying size and provide scale and flexibility in a capital solution is one of its competitive advantages.

Ares Management Corporation is a publicly traded, global alternative investment manager with approximately \$352 billion of assets under management as of December 31, 2022, and approximately 2,565 employees in over 30 global offices across North America, Europe, Asia Pacific and the Middle East.

Ares Pathfinder Core pursues both illiquid and liquid investment opportunities in which diversified portfolios of loans, leases and other types of receivables comprise the security and generate the contractual cash flows that form the basis of each investment. The Fund's investment strategy is primarily focused on current yield and seeks to generate and distribute significant current income to investors. Pathfinder Core represents an evolution of the opportunistic strategy successfully pursued in three predecessor flagship closed-end vehicles.

Pathfinder Core seeks to construct an investment portfolio that benefits from several forms of risk diversification. Once fully constructed, Ares anticipate that the investment portfolio will be comprised of 60-70 individual investments with diversification by asset type, sector, geographical region (but primarily across North America and Europe) and counterparty type. The asset portfolios securing each investment are likewise diversified and in many cases comprise thousands of individual underlying loans, leases or other receivables.

All proposals are subject to satisfactory legal review, prior to final execution.

This recommendation is based on due diligence material and data obtained by PERA investment division and consultant directly from the fund and focuses on the strategy of the recommended fund as it fits within the current portfolio. PERA defers to the consultant's primary diligence on matters relating to the quality and sufficiency of the fund's back office, compliance, and other operational matters.

# FIVE Stage Process Results – Reasons to Invest

## Portfolio Fit

- Per the SAA, Credit Oriented Fixed Income should constitute 19% of the total portfolio, of which Illiquid Credit is 42% (or 8% of the total portfolio). In consultation with Aksia, staff have targeted four evergreen open-end private credit commitments of up to \$200m each that will recycle principal and pay out quarterly income. Ares Pathfinder Core will fill the role of a wide-mandate asset-based lender in the Illiquid Credit Portfolio, alongside corporate credit focused mandates.

## Strategy Implementation

- There are significant gaps in traditional primary lending markets. Within these gaps, Ares finds non-traditional investments and sectors that are often overlooked or misunderstood. Additionally, as traditional bank lenders continue to retreat from more analytically intensive sectors, private lenders with significant scale and underwriting capacity are ideally situated to step into these gaps.

## Manager Values

- Ares was built upon the fundamental principle that each group benefits from being part of the broader platform. Ares believes the synergies resulting from collaboration across the platforms provide its professionals with more informed decision making as a result of shared industry experience, management relationships, and market insights, access to significant deal flow and a broader opportunity set and the ability to assess relative value.

## Edge

- The scope and scale of Ares alternative credit platform enable it to identify opportunities to tailor investments with counterparties seeking an alternative to a highly standardized capital markets solution. Pathfinder Core specifically focuses on performing assets that generate contractual cash flows that are resilient to stress. Further, where the Fund invests in directly-originated opportunities, Ares can tailor risk and structure in ways that it believes mitigates risk and helps drive performance. There few to no other asset-based lenders who can access and underwrite every corner of this market.



# **Private Equity Investment Proposal: Altaris VI**

PRISM

Kate Brassington, Senior Portfolio Manager

# Proposal

The Active Strategies Team proposes committing up to \$75m to Altaris LLC's ("Altaris") next fund, Altaris Health Partners VI, L.P. ("Altaris VI"), an illiquid private equity fund with a healthcare-focused investment strategy. Altaris VI's target size is \$3 billion.

Altaris has made 49 platform investments since the first fund was closed in 2004. Altaris will target companies that it believes will deliver value to the healthcare industry by providing products and services that improve patient outcomes and increase system efficiency.

Altaris VI will pursue control-oriented investments into North American healthcare businesses. Altaris focuses on four subsectors: pharmaceuticals, medical devices, life sciences & diagnostics, and healthcare services.

This will be a follow-on investment for PERA. There are currently commitments in Altaris IV (2018, \$50 million), Altaris Constellation IV (2018, \$25 million), and Altaris V (2020, \$75 million).\*

The Direct Alpha based on the MSCI ACWI IMI for the current NM PERA funds is 12.69 with a KS-PME of 1.28 as of 03/31/23.

\*Beginning in Fund III, Altaris began offering a lower fee co-investment vehicle (Constellation) alongside the primary funds. Altaris did not raise a Constellation vehicle alongside Fund V and has no plans to raise one alongside Fund VI.

This recommendation is based on due diligence material and data obtained by PERA investment division and consultant directly from the fund and focuses on the strategy of the recommended fund as it fits within the current portfolio. PERA defers to the consultant's primary diligence on matters relating to the quality and sufficiency of the fund's back office, compliance, and other operational matters.

All proposals are subject to satisfactory legal review prior to final execution.

# FIVE Stage Process Results – Reasons to

## Invest

### Portfolio Fit

NM PERA's PE portfolio is roughly 70% buyout-focused. Within the buyout component, NM PERA seeks to build a portfolio that is diversified by geography, sector, and company size. Altaris is an industry specialist in the middle-market healthcare space.

Altaris is NM PERA's sole healthcare specialist manager. As of 05/31/2023, healthcare comprised 12% of the MSCI ACWI IMI and was the third largest sector after IT and Financials and is a continued focus industry for NM PERA's PE portfolio.

Altaris provides dedicated healthcare exposure that remains complementary to NM PERA's current managers. Altaris is focused on product & technology vs. physician practices. In NM PERA's current portfolio, Health Care Providers & Services remains the largest exposure within healthcare, while Altaris comprises the majority of Health Care Equipment and Supplies.

### Strategy Implementation

Altaris relies on both thematic origination and proactive corporate outreach for sourcing.

Altaris has a hands-on approach to its portfolio companies. The firm is a transformational owner and seeks to create value through operational improvements, organic growth initiatives, and M&A.

Altaris utilizes its Altaris Operating Partners (7) to assist with sourcing, diligence, and investment oversight. Additionally, Altaris has created the Altaris Business System, which is a range of processes, standards, and best practices that have been developed based on the knowledge Altaris has accumulated over its history.

### Value Add

Altaris has consistently outperformed the Russell 3000, with a total for Funds I-V of 9.65% Direct Alpha and 1.38x KS-PME.\*

### Edge

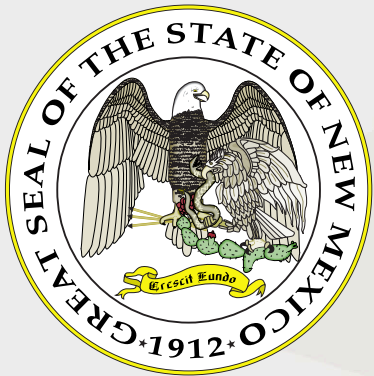
Altaris has a discernible track record in complex transactions, making the firm a “buyer of choice” for large corporations seeking to divest non-core assets. Of the 49 investments made by Altaris, 26 have been carve-out or corporate partnership transactions.

Altaris' specialization in less trafficked areas within healthcare has created a differentiated niche for Altaris leading to reduced deal competition and attractive purchase prices.

\*As per Aksia's analysis as of 03/31/2023



# PERA



**Global Equity  
Private Equity Investment Proposal:  
The Resolute Fund VI, L.P.  
NM PERA Crescit Eundo TJC Co-Invest, L.P.**

PRISM

August 23, 2023

Kate Brassington, Senior Portfolio Manager

# Proposal:

The Active Strategies Team proposes committing up to \$85 million to TJC LP's ("TJC") next fund, The Resolute Fund VI, L.P. ("Resolute VI"). In addition, the Active Strategies Team proposes committing up to \$30 million to NM PERA Crescit Eundo TJC Co-Invest, L.P. ("Crescit Eundo"), an evergreen fund-of-one dedicated to guideline-based, diversified co-investments alongside Resolute VI and future TJC funds in which NM PERA invests.

Resolute VI is an illiquid private equity fund focused on the middle-market. Resolute VI will primarily target control investments, and TJC will strive to create a diversified portfolio of established, well-managed, and profitable businesses located principally in the United States. TJC seeks to acquire companies in partnership with management and supports these investments with a hands-on approach focused on strategic acquisitions and value-added operations strategies. TJC primarily targets investments in the following industry verticals: (i) diversified industrials, (ii) technology, telecom and power, (iii) logistics and supply chain, and (iv) consumer and healthcare.

Resolute VI's target size is \$5.5 billion.

This will be a follow-on investment for PERA. There are currently commitments in Resolute II (2007 - liquidated, \$25 million), Resolute III (2013, \$45 million), Resolute IV (2018, \$65 million), and Resolute V (2021, \$75 million).

The Direct Alpha based on the MSCI ACWI IMI for the NM PERA funds is 18.57 with a KS-PME of 1.48 as of 03/31/23.

This proposal is based on due diligence material and data obtained by PERA investment division and consultant directly from the fund and focuses on the strategy of the proposed fund as it fits within the current portfolio. PERA defers to the consultant's primary diligence on matters relating to the quality and sufficiency of the fund's back office, compliance, and other operational matters.

All proposals are subject to satisfactory legal review prior to final execution.



# FIVE Stage Process Results – Reasons to

## Invest

### *Fit in Portfolio*

NM PERA's PE portfolio is roughly 70% buyout-focused. Within the buyout component, NM PERA seeks to build a portfolio that is diversified by geography, sector, and company size.

TJC's verticals provide NM PERA with differentiated middle-market exposures that remain complementary to NM PERA's current managers. As of 03/31/2023, TJC comprises approximately 24% of NM PERA's current Industrials allocation and around 39% of NM PERA's Materials allocation within Private Equity. Diversified Industrials is expected to be TJC's largest allocation (40-45% of Resolute VI), followed by Logistics and Supply Chain (25-30% of Resolute VI).

Additionally, NM PERA's current co-invest exposures within Industrials and Materials are currently largely concentrated within the lower-middle vs. the middle or upper-middle markets, so a co-invest with TJC will provide NM PERA's co-invest portfolio with company size and sector diversification in addition to averaging down fees.

### *Implementation of Strategy*

TJC has developed an extensive network in its 40+ year history and has established deep relationships with bankers, business brokers, and executives within each vertical. TJC has established a positive reputation in the PE industry and is known for its partner-oriented approach to working with management teams.

TJC targets companies that have: 1) high free cash flow, 2) no commodities-driven outcomes, 3) operational improvement opportunities, 4) opportunities within fragmented industries, 5) collaborative management, and 6) no dependence on any one exit market.

TJC has a focus on adding value and "making good businesses better" – TJC is not a market timer.

### *Value Add*

TJC has consistently outperformed the Russell 3000, with a total for Funds I-V of 7% Direct Alpha and 1.33x KS-PME.\*

### *Edge*

TJC's specialized knowledge in its identified verticals provides a competitive advantage. TJC has a 17-person in-house operating group ("OMG") focused on portfolio value creation.

TJC's team is one of the more tenured in the marketplace – the average tenure of TJC Investment Partners is 21 years, and all Investment Partners joined as associates, demonstrating a "promote from within" culture and strong retention.



# PERA

**Risk Reduction & Mitigation:  
Bonds Plus Proposal:  
Portable Alpha Overlay Removal**

PRISM

September 25, 2023

# Proposal:

## Portable Alpha Overlay Removal

The Active Strategies Team proposes removing the overlay of the Portable Alpha Overlay as the historic rise in interest rates have made the program uneconomical.

### Reasons to remove

- Portable Alpha overlay program lost money and will continue to lose money in the future due to the high financing costs impacting the profits of the program at a rate of -\$3M per month.
- Changing the structure of the asset allocation.
- Limited conviction in the structure and potential to provide excess returns

### Potential costs to remove

- Longer dated swaps (2), \$400K - \$800K to unwind; less to unwind the others (2) as the dates are closer as will naturally expire.
- Continuing cost of the swap financing if left to expire naturally.

### Timeline

- Three weeks to nine months to remove all four remaining swaps in the Portable Alpha overlay program.

# Portable Alpha Overlay Returns: Summary

The inception-to-date (2019) loss of -\$132M shown for the portable alpha Bonds Plus overlay program does not include any other cash overlay program cost for PERA. That loss is entirely for the portable alpha Bonds Plus overlay program.

As rates have risen, the financing cost of synthetic exposure has risen accordingly as well. The costs of financing no longer justify the program as it significantly impacts the net returns of the managers.

Based on the actual 2023 YTD figures, Parametric continues to believe an annual financing cost of ~\$40 million to be a reasonable estimate.

# Proposal:

## Portable Alpha Overlay Removal

### Recommendation:

Let the two near-dated swaps expire.

Reassess (hold to expiration or exit) remaining two swaps in January 2024.

Estimated cost to unwind one (7/15/2024) today, \$400K - \$800K. Will decrease over time to exit but PERA still affected by financing costs.

### Cash needs:

As swaps unwind, exposure to US Agg is decreased. Cash is needed to keep exposure within SAA rebalancing range. As the first two near-term swaps expires, exposure can be funded with cash reserves already in Bonds Plus. Risk Mitigation currently overweight.

### Total Return Swap Positions

Index	CP	Status	Reference #	Trade Date	Last Valuation	Next Valuation	Final Valuation	Effective Rate	Last Valuation Price	Current Price	Units	Initial Notional	Current Notional
Bloomberg US Agg Total Return Value Unhedged USD												770,834,792	
LBUSTRUU	BBNK		38613344B	10/14/2022	8/14/2023	9/15/2023	10/13/2023	5.45000 %	2,059.55	2,057.83	78,200	155,000,000	160,922,078
LBUSTRUU	BBNK		38808928B	1/17/2023	8/14/2023	9/15/2023	1/16/2024	5.63000 %	2,059.55	2,057.83	62,308	131,000,000	128,219,805
LBUSTRUU	BBNK		39007475B	4/17/2023	8/14/2023	9/15/2023	4/12/2024	5.21000 %	2,059.55	2,057.83	107,924	226,586,912	222,089,710
LBUSTRUU	BBNK		39329797B	7/17/2023	8/14/2023	9/15/2023	7/15/2024	5.50000 %	2,059.55	2,057.83	126,154	264,706,123	259,603,199
												770,834,792	

### August SAA Summary

Asset Class	As of Date: 8/31/2023		Actuals		Difference	
	%	MV	%	MV	MV	Δ
Risk Mitigation	17.0%	\$ 2,857,232,087	17.6%	\$ 2,959,433,086	\$ 102,200,999	0.6%
<u>Risk Reduction Liquidity Account</u>				\$ 37,267,948	\$ 37,267,948	
Bond Plus				\$ 849,420,177	\$ 849,420,177	
Core Fixed Income	17.0%	\$ 2,857,232,087	17.0%	\$ 1,977,989,502	\$ (879,242,585)	0.0%
Global Core Fixed Income	0.0%	\$ -	0.0%	\$ 151,277	\$ 151,277	0.0%
Cash	0.0%	\$ -	0.4%	\$ 71,197,608	\$ 71,197,608	0.4%
Other (Suspense)	0.0%	\$ -	0.1%	\$ 23,406,574	\$ 23,406,574	0.1%

	Actuals									Projected		Month's Activity					
	July	August	September	October	November	December	January	February	March	April	May	June					
Month Beginning Cash, BNYM	\$45	\$22	\$24	\$39	\$17	\$121	\$79	\$45	\$63	\$44	\$80	\$85	PE, RA Capital Calls				
Uses of Cash																	
Asset Class Purchases																	
Liquid Asset Purchases	22	13	36	67	365	1,310	193	84	0	102							
Illiquid Asset Capital Calls	40	57	74	86	66	77	53	28	35	10	80	80					
Alt./Hedged Asset Purchases																	
Total Benefit Payments	136	117	117	116	118	118	119	119	119	119	110	110					
Benefit Payments (BNYM)	63	36	61	73	46	53	56	39	56	59	60	60					
Benefit Payments (STO)	73	81	56	43	72	65	62	80	63	60	50	50					
Refunds	5	5	5	5	4	4	3	3	5	4	5	5					
Operational Expense	1	1	1	2	1	3	2	4	1	2	5	5					
Other		0	2	0	0	0	0	0	0	0							
Sources of Cash																	
Asset Class Sales																	
Liquid Asset Redemptions	15	38	143	147	449	1,239	160	46	0	102	60	60					
Illiquid Asset Distributions	74	51	45	58	132	48	83	123	68	105	80	80					
Alt./Hedged Asset Redemptions	13	18	0	0	0	0	24	0	0	0							
Employee / Employer Contributions	78	68	65	63	66	86	69	66	68	66	60	60					
Other	0	1	0	0	1	1	0	0	4	0	5	5					
Month Ending Cash, BNYM	22	24	39	17	121	79	45	63	44	80	85	90					
Corporate Action/Suspense	3	3	2	2	5	5	7	8	10	10	2	2					
Month Ending Cash, STO	26	7	9	22	10	24	26	5	3	2	30	30					
Month-End Capital Allocations																	
Global Equity	5,981	5,748	5,372	5,566	5,861	6,069	6,334	6,156	6,274	6,324	6,331	6,331					
Risk Reduction & Mitigation	3,300	3,207	3,126	3,077	3,287	2,761	2,839	2,785	2,841	2,882	2,832	2,832					
Credit Oriented Fixed Income	2,475	2,444	2,287	2,244	2,275	3,062	3,149	3,124	3,154	3,097	3,165	3,165					
Real Assets	3,694	3,711	3,635	3,666	3,580	2,921	2,966	2,955	2,949	2,976	2,999	2,999					
Multi-Risk Allocation	1,586	1,467	1,307	1,363	1,438	1,371	1,337	1,279	1,383	1,409	1,333	1,333					
STO Cash	26	7	9	22	10	24	26	5	3	2	30	30					
Total (net of cash flows)	\$17,062	\$16,584	\$15,736	\$15,938	\$16,452	\$16,209	\$16,650	\$16,304	\$16,604	\$16,690	\$16,690	\$16,690					
Month-End Percentage Allocations																	
Fund Balance (less STO)	\$17,036	\$16,577	\$15,727	\$15,916	\$16,441	\$16,185	\$16,624	\$16,299	\$16,601	\$16,688	\$16,660	\$16,660					
Global Equity	35.1%	34.7%	34.2%	35.0%	35.7%	37.5%	38.1%	37.8%	37.8%	37.9%	38.0%	38.0%					
Risk Reduction & Mitigation	19.4%	19.3%	19.9%	19.3%	20.0%	18.9%	17.1%	17.1%	17.1%	17.3%	17.0%	17.0%					
Credit Oriented Fixed Income	14.5%	14.8%	14.5%	14.1%	13.8%	17.1%	18.9%	19.2%	19.0%	18.6%	19.0%	19.0%					
Real Assets	21.7%	22.4%	23.1%	23.0%	21.8%	18.1%	17.8%	18.1%	17.8%	17.8%	18.0%	18.0%					
Multi-Risk Allocation	9.3%	8.9%	8.3%	8.6%	8.8%	8.5%	8.0%	7.9%	8.3%	8.4%	8.0%	8.0%					
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%					
<div>April Change in Value</div>													<div>Current Month's Weights</div>				
<div>50</div>													<div>Actual</div>	<div>Target</div>	<div>Var.</div>	<div>Range</div>	
<div>41</div>													37.9%	38.0%	-0.1%	+/-5%	
<div>(58)</div>													17.3%	17.0%	0.3%	+/-3%	
<div>28</div>													18.6%	19.0%	-0.4%	+/-4%	
<div>26</div>													17.8%	18.0%	-0.2%	+/-4%	
<div>(1)</div>													8.4%	8.0%	0.4%	+/-4%	

**NM Public Employees Retirement Association**  
**Cash Flow Projection - FY 23**

	Actuals											Projected	Month's Activity				
	July	August	September	October	November	December	January	February	March	April	May	June					
Month Beginning Cash, BNYM	\$45	\$22	\$24	\$39	\$17	\$121	\$79	\$45	\$63	\$44	\$80	\$26	PE, RA, RE Capital Calls				
Uses of Cash																	
Asset Class Purchases																	
Liquid Asset Purchases	22	13	36	67	365	1,310	193	84	0	102	15						
Illiquid Asset Capital Calls	40	57	74	86	66	77	53	28	35	10	62	80					
Alt./Hedged Asset Purchases																	
Total Benefit Payments	136	117	117	116	118	118	119	119	119	119	120	110					
Benefit Payments (BNYM)	63	36	61	73	46	53	56	39	56	59	52	60					
Benefit Payments (STO)	73	81	56	43	72	65	62	80	63	60	67	50					
Refunds	5	5	5	5	4	4	3	3	5	4	3	5					
Operational Expense	1	1	1	2	1	3	2	4	1	2	1	5					
Other		0	2	0	0	0	0	0	0	0	0						
Sources of Cash																	
Asset Class Sales																	
Liquid Asset Redemptions	15	38	143	147	449	1,239	160	46	0	102	52	60					
Illiquid Asset Distributions	74	51	45	58	132	48	83	123	68	105	22	80					
Alt./Hedged Asset Redemptions	13	18	0	0	0	0	24	0	0	0	0						
Employee / Employer Contributions	78	68	65	63	66	86	69	66	68	66	66	60					
Other	0	1	0	0	1	1	0	0	4	0	1	5					
Month Ending Cash, BNYM	22	24	39	17	121	79	45	63	44	80	26	31					
Corporate Action/Suspense	3	3	2	2	5	5	7	8	10	10	11	2					
Month Ending Cash, STO	26	7	9	22	10	24	26	5	3	2	27	30					
Month-End Capital Allocations																	
Global Equity	5,981	5,748	5,372	5,566	5,861	6,069	6,334	6,156	6,274	6,324	6,276	6,240	May Change in Value	Current Month's Weights			
Risk Reduction & Mitigation	3,300	3,207	3,126	3,077	3,287	2,761	2,839	2,785	2,841	2,882	2,775	2,792	(47)	Actual	Target	Var.	Range
Credit Oriented Fixed Income	2,475	2,444	2,287	2,244	2,275	3,062	3,149	3,124	3,154	3,097	3,083	3,120	(106)	38.2%	38.0%	0.2%	+/-5%
Real Assets	3,694	3,711	3,635	3,666	3,580	2,921	2,966	2,955	2,949	2,976	2,945	2,956	(13)	16.9%	17.0%	-0.1%	+/-3%
Multi-Risk Allocation	1,586	1,467	1,307	1,363	1,438	1,371	1,337	1,279	1,383	1,409	1,344	1,314	(31)	18.7%	19.0%	-0.3%	+/-4%
STO Cash	26	7	9	22	10	24	26	5	3	2	27	30	(65)	17.9%	18.0%	-0.1%	+/-4%
Total (net of cash flows)	\$17,062	\$16,584	\$15,736	\$15,938	\$16,452	\$16,209	\$16,650	\$16,304	\$16,604	\$16,690	\$16,451	\$16,451	25	8.2%	8.0%	0.2%	+/-4%
													(238)	0.2%	0.0%	0.2%	
Month-End Percentage Allocations																	
Fund Balance (less STO)	\$17,036	\$16,577	\$15,727	\$15,916	\$16,441	\$16,185	\$16,624	\$16,299	\$16,601	\$16,688	\$16,424	\$16,421					
Global Equity	35.1%	34.7%	34.2%	35.0%	35.7%	37.5%	38.1%	37.8%	37.8%	37.9%	38.2%	38.0%	Tier	Liquidity Summary			
Risk Reduction & Mitigation	19.4%	19.3%	19.9%	19.3%	20.0%	18.9%	17.1%	17.1%	17.1%	17.3%	16.9%	17.0%	\$ (M) Allocation	% Allocation			
Credit Oriented Fixed Income	14.5%	14.8%	14.5%	14.1%	13.8%	17.1%	18.9%	19.2%	19.0%	18.6%	18.8%	19.0%	Tier 1 (1-5 days)	\$	2,580	16%	
Real Assets	21.7%	22.4%	23.1%	23.0%	21.8%	18.1%	17.8%	18.1%	17.8%	17.8%	17.9%	18.0%	Tier 2 (5-90 days)	\$	6,754	41%	
Multi-Risk Allocation	9.3%	8.9%	8.3%	8.6%	8.8%	8.5%	8.0%	7.9%	8.3%	8.4%	8.2%	8.0%	Tier 3 (90-365 days)	\$	896	5%	
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	Tier 4 (1 year +)	\$	6,194	38%	

NM Public Employees Retirement Association  
Cash Flow Projection - FY 23

	Actuals												Month's Activity				
	July	August	September	October	November	December	January	February	March	April	May	June					
Month Beginning Cash, BNYM	\$45	\$22	\$24	\$39	\$17	\$121	\$79	\$45	\$63	\$44	\$80	\$26	PE, RA, RE Capital Calls				
Uses of Cash																	
Asset Class Purchases																	
Liquid Asset Purchases	22	13	36	67	365	1,310	193	84	0	102	15	50					
Illiquid Asset Capital Calls	40	57	74	86	66	77	53	28	35	10	62	33					
Alt./Hedged Asset Purchases																	
Total Benefit Payments	136	117	117	116	118	118	119	119	119	119	120	121					
Benefit Payments (BNYM)	63	36	61	73	46	53	56	39	56	59	52	67					
Benefit Payments (STO)	73	81	56	43	72	65	62	80	63	60	67	53					
Refunds	5	5	5	5	4	4	3	3	5	4	3	4					
Operational Expense	1	1	1	2	1	3	2	4	1	2	1	6					
Other		0	2	0	0	0	0	0	0	0	0	0					
Sources of Cash																	
Asset Class Sales																	
Liquid Asset Redemptions	15	38	143	147	449	1,239	160	46	0	102	52	108	PE, RA, RE, Credit, RRM Distributions				
Illiquid Asset Distributions	74	51	45	58	132	48	83	123	68	105	22	46					
Alt./Hedged Asset Redemptions	13	18	0	0	0	0	24	0	0	0	0	0					
Employee / Employer Contributions	78	68	65	63	66	86	69	66	68	66	66	86	Securities Lending Proceeds, Class Action Proceeds				
Other	0	1	0	0	1	1	0	0	4	0	1	2					
Month Ending Cash, BNYM	22	24	39	17	121	79	45	63	44	80	26	32					
Corporate Action/Suspense	3	3	2	2	5	5	7	8	10	10	11	13					
Month Ending Cash, STO	26	7	9	22	10	24	26	5	3	2	27	54					
Month-End Capital Allocations																	
Global Equity	5,981	5,748	5,372	5,566	5,861	6,069	6,334	6,156	6,274	6,324	6,276	6,471	June Change in Value	Current Month's Weights			
Risk Reduction & Mitigation	3,300	3,207	3,126	3,077	3,287	2,761	2,839	2,785	2,841	2,882	2,775	2,776	195	Actual	Target	Var.	Range
Credit Oriented Fixed Income	2,475	2,444	2,287	2,244	2,275	3,062	3,149	3,124	3,154	3,097	3,083	3,094	1	38.7%	38.0%	0.7%	+/-5%
Real Assets	3,694	3,711	3,635	3,666	3,580	2,921	2,966	2,955	2,949	2,976	2,945	2,940	11	16.6%	17.0%	-0.4%	+/-3%
Multi-Risk Allocation	1,586	1,467	1,307	1,363	1,438	1,371	1,337	1,279	1,383	1,409	1,344	1,376	(5)	18.5%	19.0%	-0.5%	+/-4%
STO Cash	26	7	9	22	10	24	26	5	3	2	27	54	32	17.6%	18.0%	-0.4%	+/-4%
Total (net of cash flows)	\$17,062	\$16,584	\$15,736	\$15,938	\$16,452	\$16,209	\$16,650	\$16,304	\$16,604	\$16,690	\$16,451	\$16,712	27	8.2%	8.0%	0.2%	+/-4%
													261	0.3%	0.0%	0.3%	
														100.0%	100.0%		
Month-End Percentage Allocations																	
Fund Balance (less STO)	\$17,036	\$16,577	\$15,727	\$15,916	\$16,441	\$16,185	\$16,624	\$16,299	\$16,601	\$16,688	\$16,424	\$16,658	Tier	Liquidity Summary			
Global Equity	35.1%	34.7%	34.2%	35.0%	35.7%	37.5%	38.1%	37.8%	37.8%	37.9%	38.2%	38.9%	\$ (M) Allocation	% Allocation			
Risk Reduction & Mitigation	19.4%	19.3%	19.9%	19.3%	20.0%	18.9%	17.1%	17.1%	17.1%	17.3%	16.9%	16.7%	Tier 1 (1-5 days)	\$	2,594	16%	
Credit Oriented Fixed Income	14.5%	14.8%	14.5%	14.1%	13.8%	17.1%	18.9%	19.2%	19.0%	18.6%	18.8%	18.6%	Tier 2 (5-90 days)	\$	7,017	42%	
Real Assets	21.7%	22.4%	23.1%	23.0%	21.8%	18.1%	17.8%	18.1%	17.8%	17.8%	17.9%	17.7%	Tier 3 (90-365 days)	\$	883	5%	
Multi-Risk Allocation	9.3%	8.9%	8.3%	8.6%	8.8%	8.5%	8.0%	7.9%	8.3%	8.4%	8.2%	8.3%	Tier 4 (1 year +)	\$	6,163	37%	
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%					



# YTD Monthly History - Volume

For the month ending 6/30/2023



BNY MELLON

Securities Lending

Public Employees Retirement of New Mexico  
LEI: HPFHU00Q28E4N0NFVK49 | USD | GSL203

## ENDING BALANCES FOR THE MONTH

## AVERAGE BALANCES FOR THE MONTH

## PERFORMANCE

Month	Market Value Lendable Securities	Market Value Lendable on Loan	Percent of Portfolio on Loan	Monthly Gross Client Earnings	Market Value Lendable Securities	Market Value Securities on Loan	Percent of Portfolio on Loan	Return on Available Assets for Lending	Return on Loaned Assets
July	4,602,175,255.34	537,379,811.16	11.68%	136,010.88	4,505,754,258.85	550,795,301.19	12.22%	3.62 bp	29.63 bp
August	4,523,260,156.27	563,079,959.94	12.45%	158,159.58	4,659,196,671.13	567,868,151.80	12.19%	4.07 bp	33.42 bp
September	4,252,164,854.77	525,572,035.55	12.36%	144,904.16	4,413,012,557.64	560,679,779.16	12.71%	3.94 bp	31.01 bp
October	4,356,692,992.75	559,476,181.56	12.84%	173,048.92	4,285,609,812.45	559,665,759.04	13.06%	4.85 bp	37.10 bp
November	4,477,230,850.97	537,545,230.97	12.01%	164,640.04	4,452,975,516.39	555,061,963.98	12.46%	4.44 bp	35.59 bp
December	5,054,170,871.75	566,820,832.21	11.21%	180,080.63	4,576,609,892.95	535,139,462.65	11.69%	4.72 bp	40.38 bp
January	5,173,342,982.86	569,093,808.45	11.00%	236,716.00	5,140,366,122.02	560,698,937.07	10.91%	5.53 bp	50.66 bp
February	5,278,680,822.11	572,018,381.83	10.84%	197,537.28	5,261,751,498.89	566,914,661.55	10.77%	4.51 bp	41.81 bp
March	5,349,550,733.10	554,825,113.02	10.37%	229,444.81	5,294,913,164.50	480,602,976.79	9.08%	5.20 bp	57.29 bp
April	5,408,765,847.86	560,435,164.51	10.36%	201,547.46	5,438,323,521.04	558,137,941.08	10.26%	4.45 bp	43.33 bp
May	5,264,111,587.97	534,699,822.43	10.16%	233,201.43	5,398,095,660.74	554,738,381.57	10.28%	5.18 bp	50.45 bp
June	5,461,778,502.53	571,894,732.50	10.47%	233,311.08	5,452,942,794.60	566,927,911.53	10.40%	5.13 bp	49.38 bp
<b>AVERAGE</b>	4,933,493,788.19	554,403,422.84	11.24%	190,716.86	4,906,629,289.27	551,435,935.62	11.24%	4.66 bp	41.50 bp

YTD Monthly History - Volume

For the month ending 6/30/2023

Public Employees Retirement of New Mexico

LEI: HPFHU00Q28E4N0NFVK49 | USD | GSL203

ENDING BALANCES FOR THE MONTH					AVERAGE BALANCES FOR THE MONTH			PERFORMANCE	
Month	Market Value Lendable Securities	Market Value Lendable on Loan	Percent of Portfolio on Loan	Monthly Gross Client Earnings	Market Value Lendable Securities	Market Value Securities on Loan	Percent of Portfolio on Loan	Return on Available Assets for Lending	Return on Loaned Assets

Loan volumes are calculated using month end exchange rates. Earnings calculations use exchange rates that are based on final earnings reconciliation date.

Reporting values for Mortgage Backed Securities have been reflected as current face.

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# Presentation to New Mexico PERA

October 2023

Seeing potential | delivering value



# ANTIN

INFRASTRUCTURE PARTNERS

## TODAY'S AGENDA

1. Antin: Firm overview and case study
2. Investing in infrastructure



# ANTIN

INFRASTRUCTURE PARTNERS

## 1. Antin: Firm overview and case study





# ANTIN INFRASTRUCTURE PARTNERS

Leading independent pure-play infrastructure firm focused on **value-add investments** in **Europe and North America**<sup>(1)</sup>

**€30.1bn**  
capital raised<sup>(2)</sup>

Stable team with **16-year** track record

Flagship	Funds I-V <sup>(4)</sup>
Mid Cap	Fund I
NextGen	Fund I <sup>(4)</sup>



Awarded Top Performing  
European Value Added  
Infrastructure Manager - 2023<sup>(3)</sup>

**215+** professionals with **30+** nationalities

## Four key sectors

- Energy & Environment
- Digital
- Transport
- Social

Strategy governed by  
**Antin Infrastructure  
Test**

Investment themes  
underpinned by  
long-term  
**mega trends**

Emphasis on **value  
creation** and  
**downside protection**

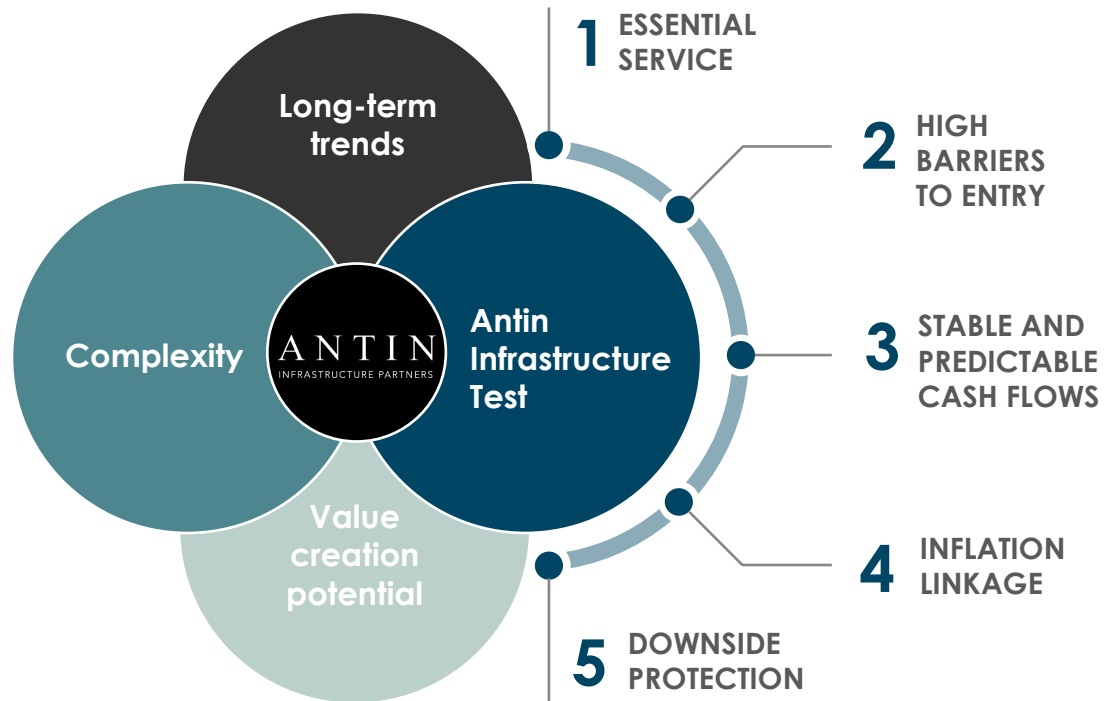
**Sustainability** at the  
core of our DNA

## Notes

(1) Antin is owned c. 85% by its partner group and c. 15% by public shareholders; (2) As at September 2023; across all seven funds including Fund V and NextGen I which are actively investing while fundraise is ongoing. Includes co-investment capital, Fund V and NextGen capital raised to date; (3) The award of 'Top Performing Infrastructure Opportunistic + Value Added Fund Manager, European' is presented to a fund manager annually by Prequin. The data was pulled on 31 May 2023 from Prequin Pro, using fund performance data from the last 5 quarters, from March 2022 to March 2023 and no fee was required to participate; (4) Fund V and NextGen I are currently raising

# ANTIN'S DEFINITION OF INFRASTRUCTURE

## AN ANTIN DEAL



## DISCIPLINE FACILITATES INNOVATION

ALL DEALS GOVERNED BY THE  
ANTIN INFRASTRUCTURE TEST



ENSURES STRONG INFRASTRUCTURE  
PROFILE AND PREVENTS "STYLE DRIFT"



UNCOVERS OPPORTUNITIES IN OVERLOOKED  
OR LESS CROWDED MARKET SEGMENTS

# ANTIN AND NMPERA'S PARTNERSHIP

Long-term relationship of investing in the infrastructure market dates back to 2016

## Fund III (2016)

**Fund is fully invested, and select investments include:**

**idex**

A key provider of district energy services in France

**FirstLight**

Leading provider of fiber in the Northeast US

**CityFibre**

The UK's leading alternative provider of fibre infrastructure

**SOLVTRANS**

Delivers critical services to a growing aquaculture industry

## Fund V (2022)

**Fund is still being raised, with two investments made thus far<sup>(1)</sup>:**

**BLUE ELEPHANT ENERGY**

A fast-growing European renewable energy platform

**opdeenergy**

A well-established vertically-integrated renewable energy platform of scale

### Notes

(1) Fund V's announced investment in Opdenenergy (voluntary tender offer announced in June 2023, expected to close in Q4 2023 subject to regulatory approvals (incl. by Spanish financial markets regulator))



# ORIGIS ENERGY - OVERVIEW

Fund	Fund IV
Investment date	18 November 2021
Country	United States
Long-term trends	Advancements in technology Supportive policy initiatives
Sector	Energy and Environment
Sub-sectors	Renewable energy Energy storage Distributed generation
Ownership	80.0% <sup>(1)</sup>
Governance	Control

## Notes

(1) For Antin Infrastructure Partners IV and Antin Infrastructure Partners IV co-investors. Remaining ownership held by management

Privileged and Confidential

## INVESTMENT OVERVIEW

Origis is a leading renewable energy platform in the United States with a growing pipeline of solar and storage projects

### Investment in New Mexico

Origis portfolio includes Project Escalante, a 240 MW solar PV project in McKinley County that is currently under construction and expected to be operational by end of 2024.

Project has a 17-year power purchase agreement with a utility and is expected to power approximately 61,000 homes in New Mexico.



Project Escalante construction in summer 2023

## 2. Investing in infrastructure



# INVESTING IN INFRASTRUCTURE: BASIC PRINCIPLES

Diversified underlying sectors

Energy & Environment	Digital	Transport	Social
<ul style="list-style-type: none"><li>• Distribution</li><li>• Gas storage, LNG terminals</li><li>• Generation</li><li>• Transmission (pipelines, high-voltage electricity transmission)</li><li>• Waste management</li><li>• Water infrastructure</li></ul>	<ul style="list-style-type: none"><li>• Fibre networks</li><li>• Telecom towers</li><li>• Broadcast towers</li><li>• Satellites</li></ul>	<ul style="list-style-type: none"><li>• Ports</li><li>• Rail</li><li>• Airports</li><li>• Car parks</li><li>• Toll roads, tunnels, bridges</li></ul>	<ul style="list-style-type: none"><li>• Healthcare facilities</li><li>• Defence and judicial buildings, prisons</li><li>• Schools and other education facilities</li><li>• Stadiums</li></ul>

Sample  
Antin  
assets



Origis Energy



IDEX



Eurofiber



FPS Towers



Solvtrans



Porterbrook



Westerleigh



Amedes

# INVESTING IN INFRASTRUCTURE: BASIC PRINCIPLES (CONTINUED)

Different categories of infrastructure can help achieve different risk, return, and yield goals

Core (Most Conservative)	Core-Plus (Conservative/Moderate Risk)	Value-Add (Moderate Risk)	Opportunistic (Most Risky)
<p>Mature, operating business generating cash yield</p> <p>Generally lower risk and “bond-like” defensive assets that can generate yield distributions and are often regulated assets</p>	<p>Mature, operating business generating cash yield with some additional complexity</p> <p>Typically, higher returns than core assets with some opportunity for capital appreciation. Assets underpinned by long-term contracts.</p>	<p>Business and assets that may require greater scale and capabilities to help control complexity</p> <p>More opportunity for growth than core/core plus, and assets still have visible, contracted cash flows and high barriers to entry</p>	<p>Typically, greenfield assets that require significant expenditure for development. Higher risk assets that might have shorter contracts and/or exposed to commodity price risk</p> <p>Highest potential returns but usually highest amounts of risk and complexity</p>

# INVESTING IN INFRASTRUCTURE: BASIC PRINCIPLES (CONTINUED)

Characteristics of brownfield infrastructure investments

## Mature infrastructure assets

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- ✓ Assets with an operating track record
- ✓ No construction risk
- ✓ Limited traffic / volume risk
- ✓ Dividend payment from the first year

## Stability and resilience

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- ✓ Essential assets
- ✓ High barriers to entry
- ✓ Stable cash flow, long term contracts
- ✓ Inflation link
- ✓ Downside protection

## Key benefits to investors

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Stable return and low volatility

Annual cash yield

Long duration

Inflation protection

Low correlation with other asset classes



## Conclusion and Q&A

