SCERS

INVESTMENT YEAR IN REVIEW
2022

ANNUAL INVESTMENT PLAN
2023

Sacramento County
Employees' Retirement System

Sacramento, CA

SCERS

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2022

ANNUAL INVESTMENT PLAN
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Sacramento County
Employees' Retirement System

Sacramento, CA

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TABLE OF CONTENTS

LETTER OF INTRODUCTION 6

PORTFOLIO OVERVIEW 7

- Market Overview 8
- Strategic Asset Allocation 9
- Implementation And Other Considerations 13

ASSET CLASSES 15

GLOBAL EQUITY 16

- Market Overview 16
- Scers Global Equity Portfolio 17
- 2022 Activity 20
- 2023 Annual Plan 21

FIXED INCOME 21

- Market Overview 21
- Scers Fixed Income Portfolio 22
- 2022 Activity 24
- 2023 Annual Plan 24

ABSOLUTE RETURN 24

- Market Overview 24
- Scers Absolute Return Portfolio 25
- 2022 Activity 27
- 2023 Annual Plan 28

PRIVATE EQUITY 28

- Market Overview 28
- Scers Private Equity Portfolio 30
- 2022 Activity 32
- 2023 Annual Plan 33

PRIVATE CREDIT 35

- Market Overview 35
- Scers Private Credit Portfolio 35

TABLE OF CONTENTS

2022 Activity ... 38

2023 Annual Plan ... 38

REAL ASSETS ... 40

Market Overview ... 40

Scers Real Assets Portfolio ... 41

2022 Activity ... 44

2023 Annual Plan ... 44

REAL ESTATE ... 46

Market Overview ... 46

Scers Real Estate Portfolio ... 47

2022 Activity ... 49

2023 Annual Plan ... 50

LIQUID REAL RETURN ... 51

Scers Liquid Real Return Portfolio ... 51

2022 Activity ... 52

2023 Annual Plan ... 52

OTHER INVESTMENT ACTIVITIES ... 53

2022 Activities ... 54

2023 Objectives ... 54

BOARD EDUCATION ... 56

2022 Board Education ... 57

2023 Board Education ... 57

APPENDIX ... 58

Appendix 1 — Verus 2022 Year In Review ... 59

Appendix 2 — Cliffwater Alternative Assets 2023 Investment Plans ... 61

Appendix 3 — Townsend Real Estate Year In Review ... 64

LETTER OF INTRODUCTION

As Chief Executive Officer of the Sacramento County Employees' Retirement System (SCERS), I am pleased to present the 2022 SCERS Investment Year in Review and 2023 Annual Plan, as crafted by SCERS' Investment Staff and consultants.

The purpose of this report is to summarize the major events and developments in the investment program in the past year and preview the investment program's projects and objectives for the upcoming year.

Overall, this annual report on SCERS' investment program helps track our progress toward achieving near-term and long-term investment objectives, and in particular, meeting the fundamental goal of providing funding for the benefits paid to our members.

In 2022, the SCERS Board of Retirement ensured the strategic asset allocation kept in balance through a volatile market period, adjusting asset class exposures and supporting new investment opportunities to maintain a highly diversified investment portfolio. In 2023, SCERS will continue to work with our internal staff, consultants, and key partners to navigate and find value throughout the investment universe as the geopolitical environment, inflation, rising interest rates, and slowing growth pose risks to financial markets.

As a long-term investor, SCERS remains well positioned to weather and find value across different economic and market environments, by staying committed to a strategic asset allocation that is the driving force behind portfolio returns.

Respectfully Submitted,

ERIC STERN
CHIEF EXECUTIVE OFFICER

SECTION 1

PORTFOLIO OVERVIEW

MARKET OVERVIEW

The start of 2022 saw the continuation of a remarkable economic and financial recovery, fueled by monetary policy and central banks lowering interest rates to near-zero levels while flooding the market with trillions of dollars of liquidity. Coming into the year, financial markets were well above pre-pandemic highs, with equity markets doubling off their pandemic lows. The market rally was broad and extended across almost all segments including equities, credit, real estate, and real assets.

However, with the improving economic picture and pent up consumer demand fueled by monetary and fiscal policy, inflation picked up significantly. The economy quickly transitioned from one impacted by a severe deterioration in demand due to COVID-19 related restrictions early in the pandemic, to one seeing a rapid increase in consumer led demand combined with unprecedented supply side constraints and upward pressure on prices.

A perfect storm of events, including rising inflation, interest rate hikes, Russia's invasion of Ukraine, and declining investor sentiment, sent financial markets into a tailspin in calendar year 2022. The Federal Reserve (the Fed) and other central banks were anchored to the belief that inflation would be transitory due to the pandemic-related supply chain bottlenecks. However, the Fed was slow to take their foot off the pedal of historically accommodative monetary policy.

Headline inflation, which includes food and energy, fell from 2.5% in January of 2020 to a low of 0.1% in May 2020, which was well below the Fed's target rate of 2%. The aforementioned supply constraints and pent up demand were the catalysts for inflation to dramatically increase to levels not seen in 40 years. Headline inflation spiked to 5.4% in September 2021, to 7.0% in December 2021, and to a peak of 9.1% for the 12-month period ending June 2022. Excluding the more volatile food and energy components, core inflation sat at 5.9% as of June 2022. The rise in inflation has been across the board, including food, shelter, vehicle sales, and services. However, energy has been the greatest driver, peaking at 41.6% in June 2022, and it was intensified with Russia's invasion of Ukraine.

As a result, the Fed pivoted its stance on inflation quickly and has spent most of 2022 raising interest rates and providing an ultra hawkish stance and rhetoric in an attempt to catch up and get inflation under control, especially since the job market remains strong. During the year, the Fed raised the federal funds rate several times in 50-75 bps increments from a range of 0%-0.25% to where it currently stands at 3.75%-4.00%. The Fed has signaled more rate hikes ahead and the market expects the rate to get above 4% before the Fed has potentially accomplished its objective of getting inflation under control. The Fed has signaled on multiple occasions that the outcome of getting inflation under control will be pain within the economy and financial markets. A slowing GDP picture is signaling a potential economic recession, with the first and second quarter of 2022 registering negative U.S. GDP growth of -1.6% and -0.6% respectively, after increasing close to 6% in 2021.

Major global market returns are challenged in 2022. Within equities, the global MSCI ACWI IMI has returned -25.6% as of September 30, 2022. On the geographic front, domestic equities have lost marginally less than international equities, with currencies being a detractor to performance for non-U.S. equities. The U.S. dollar has rallied dramatically, and is trading at a 20-year high against other major currencies. The rally in the U.S. dollar is a function of U.S. monetary policy and the Fed's aggressive raising of interest rates, the energy crisis and economic slowdown in Europe, and the gravitation toward the U.S. dollar as a safe haven currency in uncertain times. Within styles, value stocks have outperformed growth stocks, as growth stocks have had a meaningful sell off in the rising interest rate environment, and large capitalization stocks have outperformed small capitalization stocks.

While bond markets are typically uncorrelated to equity market returns, and act as a diversifier when equity markets are down, this has not been the case in 2022. Fixed income markets are down meaningfully due to the inflationary and rising interest environment, which has accentuated negative total portfolio returns. The Bloomberg U.S. Treasury Index is down -13.1% as of September 30, 2022, as longer duration Treasury yields have risen meaningfully during the year, with the 10-Year Treasury yield increasing from 1.51% on December 31, 2021 to 3.83% on September 30, 2022. Short-term rates have increased in line with the Fed interest rate hikes, which has resulted in an inverted yield curve, often considered a prelude to a recession. The challenges in the fixed income markets have extended across all sectors. Credit has also been impacted as spreads have widened, with high yield bonds returning -14.7% (Bloomberg U.S. Corporate High Yield Index). The broad based Bloomberg Barclays Aggregate Index, which contains an equal mix of Treasuries, agency mortgages, and investment grade credit, is down -14.6% as of September 30, 2022.

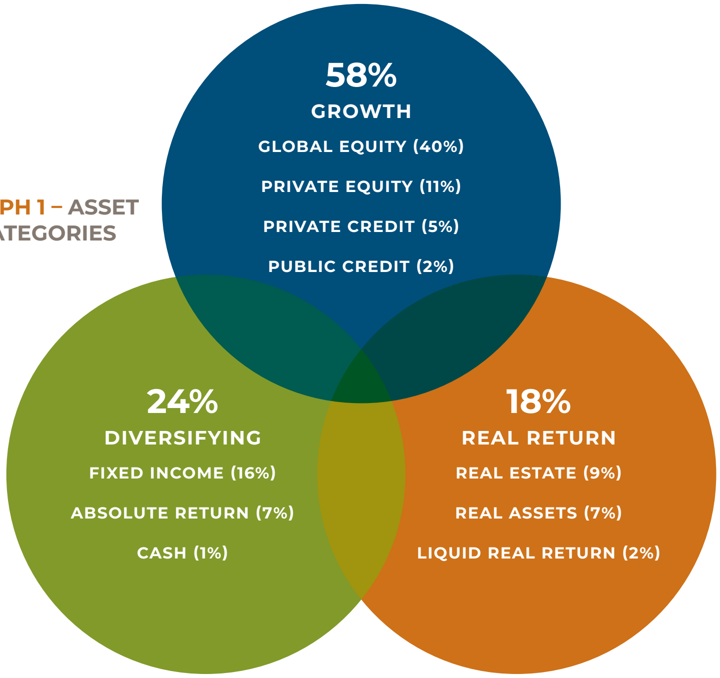
Continued market volatility and the potential for further downside should not be unexpected as the Fed prioritizes getting inflation under control and is aggressive in raising interest rates. The economic picture faces continuing pressure with most economists expecting the U.S. and global economies to enter into recession. Opinions run across the board as to whether financial markets have priced in the worst, or more downside is to come. While the SCERS portfolio has been impacted by its equity and fixed income holdings, it also holds ample diversification and exposure to alternative assets that have had minimal losses or have generated positive returns during much of 2022.

STRATEGIC ASSET ALLOCATION

SCERS' investment program is structured around a strategic asset allocation with the objective of ensuring diversification of investments in a manner that generates a desired rate of investment return with an acceptable level of investment risk. The asset allocation targets are not tactical, but rather are long term in nature, consistent with the nature of our members' lifelong benefit obligations. Ranges are incorporated around target allocations to add flexibility around the implementation of the portfolio based on relative value considerations across asset classes.

SCERS' strategic asset allocation incorporates a functional framework that groups and classifies segments of the portfolio in order to link those segments that are exposed to similar economic environments and risk factors, and which would be expected to have similar roles and outcomes in a portfolio. The functional grouping breaks the portfolio into three asset categories: (1) Growth; (2) Diversifying; and, (3) Real Return, with asset classes that underlie these asset categories. The current allocation is shown below:

GRAPH 1 – ASSET CATEGORIES



The Growth asset category includes those segments of the portfolio that tend to perform best in a high growth and low/moderate inflationary environment, including most equity and credit investments. In contrast, they tend to perform poorly during recessionary periods, when GDP growth is contracting, or during certain periods when unexpected inflation arises. Growth assets tend to comprise the dominant allocation within most institutional investment portfolios, including that of SCERS. The Diversifying asset category includes those segments of the portfolio which are expected to protect capital and perform better than the Growth asset category during dislocated and stressed market environments, including traditional fixed income and absolute return strategies. The Real Return asset category includes those segments of the portfolio that protect against inflation, generate cash flow, and provide further portfolio diversification, including real estate, infrastructure, energy, and agriculture investments.

SCERS' strategic asset allocation takes a risk-balanced approach that emphasizes having enough return generating assets to drive performance toward the actuarial rate of return; however, it also maintains meaningful diversification, especially to investment strategies with low and negative correlations to equity markets that can reduce portfolio volatility and protect against significant market drawdowns. It is also expected to generate meaningful cash flow for SCERS' plan. The strategic asset allocation contains a meaningful allocation to less liquid private market investments, so tracking SCERS' liquidity profile in order to maintain sufficient liquidity and cash flows in order to meet benefit payment obligations is a key focus of SCERS' Board, investment staff, and investment consultants.

SCERS utilizes an Overlay Program, managed by State Street Global Advisors (SSGA), to bring SCERS' portfolio in line with its target asset allocation, and to invest excess portfolio cash. The Overlay Program uses public market proxies to replicate exposures within the portfolio, making it particularly effective in rebalancing public market assets, and less so for alternative assets. Any over- and under-weights within the portfolio are rebalanced quarterly by SCERS' Overlay Program, and when any physical rebalancing activity takes place, the Overlay Program is adjusted accordingly.

During the year, SCERS made meaningful progress implementing the revised strategic asset allocation that was approved by the Board in 2021. This included making structural modifications to underlying asset classes to align with the new strategic asset allocation, adjusting policy benchmarks, rebalancing asset classes to target, and initiating several investment manager searches within the public market asset classes. The majority of the public markets implementation will have been completed by the end of 2022, with private market implementation occurring over the next few years, given the unique cash flow characteristics of these segments and the importance of maintaining vintage year diversification.

Table 1 below compares SCERS' actual physical allocations as of September 30, 2022 to the target allocations.

TABLE 1 – SCERS' ACTUAL ALLOCATIONS VERSUS TARGET ALLOCATIONS

ASSET CATEGORY/ ASSET CLASS	ACTUAL ALLOCATION*	TARGET ALLOCATION	VARIANCE
Growth* **	**53.8%**	**58.0%**	**-4.2%**
Global Equity	33.4%	40.0%	**-6.6%**
Private Equity	15.4%	11.0%	**4.4%**
Public Credit	1.8%	2.0%	**-0.2%**
Private Credit	3.1%	5.0%	**-1.9%**
**Growth Absolute Return	0.1%	0.0%	**0.1%**
Diversifying* **	**23.8%**	**24.0%**	**-0.2%**
Fixed Income	15.5%	16.0%	**-0.5%**
Absolute Return	7.5%	7.0%	**0.5%**
Cash	0.8%	1.0%	**-0.2%**
Real Return** **	**18.1%**	**18.0%**	**0.1%**
Real Estate	8.9%	9.0%	**-0.1%**
Real Assets	8.1%	7.0%	**1.1%**
Liquid Real Return	1.1%	2.0%	**-0.9%**
Overlay Program	**1.1%**	**0.0%**	**1.1%**
Other Cash	**3.2%**	**0.0%**	**3.2%**
	100.0%	**100.0%**	

* Based on State Street Global Advisors market values as of 09/30/2022

** Growth Absolute Return was eliminated from the strategic asset allocation, and is nearly unwound

*** Does not include Overlay exposure

**** Includes Overlay exposure

As shown in Table 1, SCERS has several meaningful divergences between the actual allocation within asset classes and target allocations. This includes a significant overweight to Private Equity and a significant underweight to Global Equity. This is a result of the significant sell off within the equity and fixed income markets in 2022. Private markets to date have either sold off marginally (private equity and private credit) or are up meaningfully (real estate and real assets). Private market valuations are lagged a quarter so they are slower to reflect valuation changes and generally experience a smoothing effect since valuations are not marked to market. Therefore, they generally do not experience the volatility of public market returns. With the downturn in public market valuations, private market valuations have become inflated, and during 2022 several of SCERS' private market asset classes have either rapidly increased to their target allocations or moved above their target allocations. Private Equity and Real Assets are above their 11% and 7% respective targets, Real Estate has moved to its new 9% target allocation, and Private Credit has moved closer to its 5% target. Most institutional investors are experiencing a similar dynamic.

While several of SCERS' asset classes are out of balance to their targets, the Overlay Program rebalances the asset category weights to their target allocations at the end of each quarter, using a combination of derivatives (Growth and Diversifying asset categories) and physical exposures (Real Return asset category). The Overlay Program brings the allocations to target when physical rebalancing is not utilized. The 'Actual Allocation' column in Table 1 does not reflect the Overlay exposure for the Growth and Diversifying asset categories; however, the Real Return Overlay exposures are reflected.

IMPLEMENTATION AND OTHER CONSIDERATIONS

The public market asset classes (global equity and fixed income) do not have budgeted plans like the alternative asset classes; however, SCERS was active implementing the revised structural changes to the Global Equity and Fixed Income asset classes, including conducting several investment manager searches. These include:

- In Global Equity, SCERS added two new global equity mandates to the newly formed Global/Unconstrained segment of the asset class during year. SCERS also reallocated a fund from the former Growth Absolute Return portfolio to the new Global/Unconstrained segment of the Global Equity asset class. A manager search within the Emerging Markets Equity portfolio is also in process to align the segment to the revised structure.

- In Fixed Income, SCERS added two new core plus fixed income mandates that take an active approach to duration management. SCERS also fully redeemed from a global fixed income fund; the Global Fixed Income allocation was eliminated from the strategic asset allocation.

Within private markets, SCERS was still active making new commitments during the year, even with the increasing allocations relative to targets, though at the lower end of budget ranges. Private market asset classes require consistent annual commitments to new funds in order to account for existing funds that sell investments and distribute capital back to SCERS, while newer funds draw down capital and make new investments. Private market investments have longer investment periods, and it is important to maintain vintage year diversification, while also maintaining allocations with top tier investment managers.

Below is a summary of the alternative asset class implementation, which includes funds that are expected to close by the end of the year. Each alternative/private market asset class had defined budgets approved by the Board. The implementation in 2022 consisted of mostly follow-on fund investments with existing managers, in addition to investments with new managers. The individual asset class sections of this report provide greater detail related to implementation activity in 2022.

TABLE 2 – SCERS IMPLEMENTATION SUMMARY

2022 IMPLEMENTATION SUMMARY			
	Investment Amount (in millions)	**Targeted Amount (in millions)**	**Total # Investments**
Absolute Return	$0	$45	0
Private Equity	$340	$365	10
Private Credit	$120	$155	3
Real Assets	$125	$250	3
Real Estate	$98	$270	3

During 2022, the SCERS Board approved a portfolio analytics software service provider, Burgiss, and its software platform Caissa. The portfolio analytics software will provide analytical tools available to Staff and the Board to better oversee and manage a growing and complex portfolio. It will provide a total portfolio view that can holistically view exposures and risk across the entire portfolio (i.e., publics and privates), as well as granularly within assets classes, including the alternative asset classes. The software will be able to dynamically view portfolio exposures, performance attribution, and perform stress testing and scenario analysis when considering new investments. Staff has been working with Burgiss to onboard the software, which is expected to be fully functioning in 2023.

SCERS, like many public plans has negative cash flows, meaning on an annual basis more benefit payments go out than contributions come in. The difference in cash flows is made up by the returns of the investment portfolio. The annual liquidity study conducted by Verus in 2022 demonstrated that SCERS is currently in a strong liquidity position; however, the gap between benefit payments and contributions is forecasted to grow over the next ten years. Staff and Verus expect to perform asset allocation modeling in 2023 that incorporate updated capital market assumptions, to evaluate asset allocation considerations to meet SCERS' long-term objectives.

SECTION 2

ASSET CLASSES

GLOBAL EQUITY

MARKET OVERVIEW

Following strong market returns in 2021, global equity markets began the year at somewhat lofty valuations, particularly in the U.S. where the S&P 500 rose nearly 29% in 2021 and ended the year at 21x forward price to earnings multiple (P/E). Despite high valuations, 2022 began the year on strong footing from an economic and market performance perspective, but several headwinds quickly arose that have resulted in significant declines in global equity markets through the first three quarters of the year. Most notably, inflation has remained persistently high throughout the year, with the U.S. Consumer Price Index (CPI) peaking at over 9% and reaching levels not experienced since 1981. High inflation, which began in 2021 following the flood of stimulus pumped into markets in response to the COVID-19 pandemic, intensified throughout 2022 following Russia's invasion of Ukraine and supply chain disruptions, particularly in China which has maintained a "zero-COVID" policy and routinely implemented widespread lock-downs to contain the disease. In response to high inflation, global central banks have raised interest rates at an unprecedented pace in an attempt to cool demand and slow growth. The increase in interest rates has led to significant declines in equity markets across the globe, as valuation multiples have compressed and recession fears increased amid declining economic activity and elevated inflation.

Year to date through September 30, 2022, the U.S. equity market declined approximately -25%, as measured by the Russell 3000 Index, and is on pace for the worst year since 2008. The U.S. equity market declined for three consecutive quarters, which is also the first time this has occurred since 2008. The decline in U.S. equity markets has been driven exclusively by a contraction in valuation multiples, with the forward P/E multiple for the S&P 500 declining -30%, offset by earnings growth of +5%, resulting in a -25% return year to date. Within the U.S., growth stocks have significantly underperformed value stocks, as increased interest rates have led to a greater re-pricing for high growth stocks with positive cash flows further out in the future. Growth stocks have underperformed value stocks by approximately 13% year to date, with the Russell 3000 Growth Index down -31% versus the Russell 3000 Value Index down -18%. Large capitalization and small capitalization stocks have nearly equal declines for the year, with the Russell 1000 Index outperforming the Russell 2000 Index by a mere 50 basis points. From a sector perspective, energy is the only positive sector year to date, benefiting from the significant increase in oil and gas prices in the first half of the year. Looking forward, it remains to be seen if the U.S. will enter a recession, and if so, how deep and painful the recession may be. The Federal Reserve recently acknowledged that "some pain" may be needed as it raises rates to combat persistently high inflation. The sharp increase in interest rates, which tend to have a lagged effect on economic activity, have led to a wide range of forecasts for future economic growth, corporate earnings, and expectations for market performance. However, despite small declines in U.S. Gross Domestic Product (GDP) in the first and second quarters of 2022, most forecasts are for a small positive result for GDP in the third quarter. With the greater levels of uncertainty, market volatility remains elevated as we approach the end of the year and head into 2023.

International Developed and Emerging Markets have also faced significant headwinds in 2022. Inflation issues were widespread across the globe, and were particularly acute in Europe, which faced a more direct impact from the Russia/Ukraine conflict. Inflation across the 19 Eurozone countries exceeded 9% and the European Central Bank (ECB) implemented several rounds of rate hikes with the goal of keeping inflation expectations in check and ultimately move toward the ECB's 2% inflation target. In addition to inflation, international markets faced currency challenges, with the U.S. dollar undergoing the largest single year increase in 40 years and reaching a 20-year high versus a broad basket of foreign currencies. With many commodities such as oil priced in U.S. Dollars (USD), a strong USD translates into a higher price paid by foreign countries, which worsens inflation pressures. Additionally, many emerging market countries and companies have dollar denominated debt, which becomes more expensive to service and repay if their currency weakens relative to the dollar. This can lead to potential debt downgrades or defaults, worsening the economic outlook. As foreign countries increase interest rates to combat inflation and/or make their currency more competitive versus the USD, this can also lead to slower economic growth. The combinations of these factors have contributed to negative international equity market returns, which are similar to the decline in U.S. markets. For developed international equity, the MSCI World ex-US Index was down -26% through the end of the third quarter and emerging markets, as represented by the MSCI Emerging Markets Index, declined -27%.

From a global perspective, with fairly similar market returns across regions, there was little deviation when contrasting the global benchmark to various regional benchmarks. As part of SCERS' restructuring of its Global Equity portfolio in the prior year, the Global Equity benchmark was updated to the MSCI ACWI Investable Market Index (IMI), which captures large, mid, and small cap returns across 23 Developed Market and 24 Emerging Market countries. The MSCI ACWI IMI has over 9,000 constituents covering approximately 99% of the global equity investment opportunity set. Year to date, through the end of Q3, the MSCI ACWI IMI is down -26%.

SCERS GLOBAL EQUITY PORTFOLIO

Following the restructuring of SCERS' public equity portfolio in the prior year, which consolidated the Domestic and International Equity asset classes under a single global equity framework and updated sub-asset class targets, activity within SCERS' Global Equity portfolio has been focused on aligning the portfolio with the revised structure. Following the strong returns in 2021, the Domestic Equity sub-asset class was at 22.6% and overweight the 20% target allocation, and was rebalanced early in the first quarter toward its target. Additional rebalancing executed in the first quarter was within the International Equity sub-asset class to reduce the overweight allocation to the growth versus value segments of the portfolio, due to strong performance by SCERS' International Developed Large Cap Growth manager. The rebalancing reduced the allocation to growth and increased the allocation to value.

The revised structure for SCERS' Global Equity portfolio included a new Global/Unconstrained sub-asset class. This segment was added to allow for SCERS to allocate to managers and/or strategies that didn't have a natural fit within the prior structure. The Global/Unconstrained segment is benchmarked against SCERS' Global Equity benchmark, the MSCI ACWI IMI. In the first part of the year, SCERS reallocated a manager from the legacy Growth Absolute Return portfolio, a segment that was eliminated as part of SCERS' revised strategic asset allocation, to the Global/Unconstrained segment. Also in the first half of the year, SCERS performed a search to fill Global Equity mandates, which comprise 50% of the Global/Unconstrained segment. The search was completed in the second quarter, with two manager recommendations approved by the Board. The new mandates, funded in the third quarter of 2022, were equal to 2% of SCERS' overall portfolio or 50% of the Global/Unconstrained segment.

Another change to the Global Equity structure was to increase the target allocation to Emerging Markets, within the International Equity sub-asset class. To fill the increased emerging markets allocation, SCERS initiated a manager search and conducted a review of the existing emerging market managers. The search process is expected to be finalized in the fourth quarter of 2022, with new manager recommendations presented to the Board in December, and funding to occur in early 2023. Rebalancing within the International Equity portfolio, to bring the developed and emerging market allocations in line with their respective targets, is expected to occur in conjunction with the funding of the emerging market mandates.

TABLE 3 – SCERS GLOBAL EQUITY PORTFOLIO STRUCTURE

SCERS GLOBAL EQUITY PORTFOLIO STRUCTURE				
	Minimum	Target Allocation	Maximum	Est. Allocation as of 9/30/22
Total Global Equity Portfolio	36%	**40%**	44%	33.4%
Domestic Equity	18%	**20%**	22%	16.9%
International Equity	14%	**16%**	20%	14.1%
Global/Unconstrained	1%	**4%**	6%	2.4%

TABLE 4 – DOMESTIC EQUITY STRUCTURE

DOMESTIC EQUITY STRUCTURE			
Asset Class	**Target Allocation**	**Target Allocation**	**Est. Allocation as of 9/30/22**
Domestic Equity	**20.0%**		**16.9%**
Domestic Equity Large Cap	90.0%		90.7%
Large Cap Passive		50.0%	
Large Cap Active		40.0%	
Domestic Small Cap	10.0%		9.3%
Small Cap Active		10.0%	

TABLE 5 – INTERNATIONAL EQUITY STRUCTURE

INTERNATIONAL EQUITY STRUCTURE			
Asset Class	**Target Allocation**	**Target Allocation**	**Est. Allocation as of 9/30/22**
International Equity	**16.0%**		**14.1%**
International Equity Developed Markets	70.0%		80.5%
Developed Markets Large Cap Active		60.0%	
Developed Markets Small Cap Active		10.0%	
International Equity Emerging Markets	30.0%		19.5%
Emerging Markets Active		30.0%	

TABLE 6 – GLOBAL/UNCONSTRAINED EQUITY STRUCTURE

GLOBAL/UNCONSTRAINED EQUITY STRUCTURE			
Asset Class	**Target Allocation**	**Target Allocation**	**Est. Allocation as of 9/30/22**
Global/Unconstrained Equity	**4.0%**		**2.4%**
Global Equity		>/= 50%	76.9%
Sector or Country Concentrated		</= 25%	
Non Beta 1 (Long/Short)		</= 25%	23.1%

With the selloff within public markets in 2022, SCERS' Global Equity portfolio allocation has dropped to approximately 33.4% as of September 30, 2022, well below the 40% target allocation. In contrast, private market valuations are up significantly, and SCERS' Private Equity asset class in particular is meaningfully overweight to its target, due to the lag in private market valuations and the fact that private markets are not marked to market like public equities. While the actual Global Equity weight is meaningfully under the target, the Overlay Program rebalances the Growth asset category back to its 58% target quarterly, and in turn the Global Equity asset class back towards it target, utilizing a basket of low cost global equity futures to do so. An objective of the Overlay Program is to keep SCERS' asset category weights (Growth, Diversifying, and Real Return) at their target allocations, even if physical allocations stray from targets.

In the interim, Staff is comfortable holding Overlay exposure (global equity futures) in lieu of physically rebalancing back toward the target allocation for Global Equity, even though the Global Equity asset class is below the 36% bottom of its range. A consideration for this approach is that it is important for SCERS to maintain an adequate liquidity profile to meet benefit payments over the remainder of SCERS' physical year. In the current environment, the source of cash for public equity physical rebalancing would be from private markets, which in aggregate are overweight to their targets; particularly Private Equity. There are limited options in rebalancing private market asset classes; however, Staff is evaluating a few rebalancing options within the total portfolio to raise cash for physically rebalancing the Global Equity asset class, including reducing exposure within the Core Real Estate portfolio, and Private Equity secondary sales. Staff and Verus continue to watch the Global Equity allocation closely.

2022 ACTIVITY

- Physically rebalanced the Domestic and International Equity portfolios in the first quarter of 2022 to reduce the overweight position relative to the target allocation range and rebalanced exposure across investment styles (growth and value)

- Restructured the mandate with Lazard Asset Management to align with other International Developed Large Cap mandates, and updated the benchmark to the MSCI World ex-US index

- Transferred the investment with Third Point Partners from the legacy Growth Absolute Return asset class to the Global/Unconstrained sub-asset class within Global Equity

- Completed a manager search for global equity mandates within the Global/Unconstrained sub-asset class (search was completed in the second quarter and the new mandates were funded in the third quarter)

    - Artisan Partners Global Opportunities: $120 million

  - Nikko Asset Management Global Equity: $120 million

- Initiated a manager search for emerging markets mandates within the International Equity sub-asset class

  - The search is expected to be completed in the fourth quarter of 2022

- Oversaw, monitored, and held update calls/meetings with SCERS' existing Global Equity managers

2023 ANNUAL PLAN

- Rebalance the Global Equity portfolio to bring the sub-asset class segments back within range
- Fund new Emerging Market mandates within the International Equity sub-asset class
- Initiate and complete a search for an international small cap equity mandate
- Explore potential additions to the Global/Unconstrained sub-asset class to bring it towards the 4% target allocation
- Review geographic, sector, and style allocations across the Global Equity portfolio
- Oversee, monitor, and meet with SCERS' existing Global Equity managers

FIXED INCOME

MARKET OVERVIEW

The fixed income markets have experienced a challenging year in 2022 against a backdrop of recession fears and central bank policy decisions. Fixed income market volatility can be largely attributed to three overall market drivers — inflation concerns, the central banks' policy response, and the economic impact from these policy decisions. In 2021, massive monetary and fiscal support from central banks stimulated a global recovery. However, it also caused inflation to surge to the highest level in decades. This led to the Fed increasing the federal funds rate multiple times during the year in addition to reducing its balance sheet by allowing bonds it had purchased during accommodative times to roll off. It also led to a subsequent decline in fixed income securities.

Containing inflation is the Fed's top priority, and it has acknowledged the potential negative impact that this will have on the economy. This conundrum has heavily influenced fixed income markets during the year.

Given the current backdrop, it has been a challenging environment for fixed income investors as bonds have been more volatile and more correlated to equities in 2022. The traditional diversification benefits and defensive characteristics of fixed income securities have become blurred, as fixed income has experienced meaningful declines, like the equity drawdowns experienced in the year. Overall, returns across the fixed income markets are down dramatically, with the Bloomberg U.S. Treasury Index down -13.1% as of September 30, 2022, with higher Treasury rates and widening spreads being the driver of poor performance. Treasury yields rose sharply across the curve, with the 10-Year Treasury yield increasing from 1.51% on December 31, 2021 to 3.83% on September 30, 2022. The Treasury yield curve inverted during the year as short-term rates rose quicker than longer-term rates. The curve inversion was a reflection of the concern that the rapid rise in interest rates to contain inflation will cause the economy to go into recession.

Rising interest rates and recession fears have also impacted investment grade corporate bonds as spreads widened significantly and depressed bond prices during the year. The Bloomberg U.S. Credit Index is down -18.1% as of September 30, 2022. The spread widening has created an attractive entry point in terms of valuations; however, the growing risks to economic growth and corporate profits increase the probability of further spread widening and volatility. The high yield bond market, on the other hand, has had a mixed year as it outperformed investment grade corporates and the broader fixed income market in the first quarter of 2022, only to quickly reverse course thereafter. The Bloomberg U.S. Corporate High Yield Index is down -14.7% as of September 30, 2022. The broad based Bloomberg Barclays Aggregate index, which contains an equal mix of Treasuries, agency mortgages, and investment grade credit, is down -14.6% as of September 30, 2022. Elevated volatility has been felt across the overall fixed income markets, and will likely continue amid uncertainty surrounding the Fed's hawkish path, inflation, and economic growth.

SCERS FIXED INCOME PORTFOLIO

SCERS' total fixed income exposures reside within different segments of the total SCERS portfolio. The bulk of the exposure sits within the Diversifying asset category, within a Fixed Income asset class, which consists of Core Plus Fixed Income and U.S. Treasuries exposure. The Fixed Income asset class has the objective of providing lower correlation to growth assets and diversification for SCERS' total portfolio, moderate income and cash flow generation, some return enhancement, and a source of liquidity.

SCERS also maintains fixed income exposure within the Growth asset category, in the form of a Public Credit asset class, which is comprised of mostly high yield corporate credit and bank loans.

This exposure has a higher risk and return profile than the Fixed Income asset class within the Diversifying asset category.

Within SCERS' strategic asset allocation, structural changes to the Fixed Income asset class (which resides within the Diversifying asset category), were approved by the Board in 2021. These changes include eliminating a Global Fixed Income mandate, leaving a combination of Core Plus Fixed Income and U.S. Treasuries sub-strategies, with target weightings of 75% and 25%, respectively. No changes were made to the Public Credit asset class.

The custom blended benchmark for the Fixed Income asset class reflects the sub-strategies and their respective target weights (75% core plus fixed income and 25% U.S. Treasuries). The Public Credit has its own blended benchmark. The aggregate fixed income targets and benchmarks are shown below.

TABLE 7 – SCERS FIXED INCOME PORTFOLIO STRUCTURE

SCERS FIXED INCOME PORTFOLIO STRUCTURE					
	Asset Category	**Minimum**	**Target Allocation**	**Maximum**	**Policy Index Benchmark**
Total Fixed Income Portfolio		13%	**18%**	23%	Custom Blend of benchmarks below:
Core Plus Fixed Income	Diversifying	9%	12%*	15%	Bloomberg Barclays U.S. Aggregate Index
U.S. Treasuries	Diversifying	3%	4%*	5%	Bloomberg Barclays U.S. Treasury Index
Public Credit (high yield/ bank loans)	Growth	1%	2%*	3%	50% ICE BofA ML High Yield + 50% Credit Suisse Leveraged Loan

* Percentage of total portfolio

Within the revised Fixed Income asset class structure, the SCERS Board approved a manager search to add additional core plus fixed Income exposure to the existing lineup of Core Plus managers. Staff and Verus conducted a core plus manager search in 2022, and the Board approved two new core plus managers, Brandywine Global Investment Management and Reams Asset Management, that take an active approach to duration management. The two new mandates complement SCERS' two existing core plus fixed income mandates, and each of the four mandates were equal weighted. SCERS also fully redeemed from a global fixed income fund, managed by Brandywine, that was eliminated from the strategic asset allocation.

2022 ACTIVITY

- Completed a manager search for Core Plus Fixed Income, and hired two new managers Brandywine and Reams ($350 million each), to complement existing managers, TCW and PGIM
  - Rebalanced core plus exposure to equal weight all four managers
- Redeemed from the Brandywine Global Opportunities Fixed Income Fund
- Oversaw, monitored, and held update calls/meetings with SCERS' Fixed Income managers

2023 ANNUAL PLAN

- Monitor allocations to existing managers and rebalance the portfolio as appropriate
- Oversee, monitor, and meet with SCERS' Fixed Income managers

ABSOLUTE RETURN

MARKET OVERVIEW

Absolute Return strategies have held up relatively well in 2022, especially considering the significant decline of both public equity and fixed income markets. With U.S. public equity markets down approximately -25% and the Bloomberg Barclays U.S. Aggregate Bond Index down -15%, a traditional 60/40 portfolio is estimated to be down -20% through the first three quarters of the year. With that market backdrop, absolute return strategies have done fairly well at protecting capital and limiting downside losses year to date. Estimated average performance for absolute return strategies is in the range of -1% to -2%, which translates to approximately 5% downside capture versus equity markets and a traditional 60/40 portfolio. The low level of downside capture in 2022 is much better than other episodes of extreme market declines over the past 15 years, which had equity market downside capture ratios of roughly 30% - 40%. However, despite the average fund performance doing reasonably well, there has been higher than average return dispersion in 2022, both across strategies and between top and bottom quartile funds within a strategy. Additionally, performance on a fund-weighted basis is significantly different than average or equal weighted performance, highlighting the performance impact (at an index level) of the largest absolute return funds. For example, the HFRI Asset Weighted Composite Index return is +3.3%, versus the HFRI Fund Weighted Composite Index return of -6.7%, through the end of the third quarter.

At the strategy level, Systematic and Discretionary Macro strategies are the top performing areas across absolute return. Systematic Macro, which includes Trend Following and other Managed Futures/CTA strategies, benefit from directionality in markets (positive or negative), and have done particularly well in 2022 as several market themes have persisted throughout the year, such as declining equity and fixed income markets, higher energy prices, and a strong U.S. dollar. Systematic Macro is up +19% year to date, as represented by the HFRI Macro Systematic Diversified Index, with many Trend Following strategies up over 30%. Many Discretionary Macro strategies have also done relatively well in 2022, as portfolio managers that trade across markets and assets (currencies, rates, commodities, etc.) were generally able to navigate shifting markets and position portfolios to benefit from areas of strength.

Equity Long/Short strategies are the most challenged absolute return strategy so far in 2022. Equity Long/Short strategies, especially those that have net long exposure, have been hurt most by the decline in public equity markets. Despite reducing gross and net exposure toward the end of 2021, equity long/short portfolios still maintained significant long biased exposure at the beginning of 2022 and were subject to capturing a higher percentage of market declines (compared to other absolute return strategies). Year to date through the end of the third quarter, equity long/short strategies were down -15%, with a wide range of dispersion, approximately 20%, between the top and bottom quartile of funds. Other areas of weakness across absolute return were Event-Driven and Credit strategies, which were down -8% and -4%, respectively. These strategies also tend to have long biased exposures to both equity and credit markets and are thus subject to declining performance of public markets.

SCERS ABSOLUTE RETURN PORTFOLIO

Following the restructuring of SCERS' Absolute Return portfolio in the prior year, activity in 2022 was focused primarily on implementation of the revised structure. Most significantly, the legacy Growth Absolute Return portfolio was unwound during the year, with only a slight position remaining in the fund of funds (FoF) program managed by Grosvenor Capital Management (GCM). The unwinding of Growth Absolute Return involved liquidating one fund, transferring two funds to other parts of SCERS' portfolio, and redeeming from the growth-oriented FoF program managed by GCM. With the removal of Growth Absolute Return from SCERS' strategic asset allocation, SCERS' Absolute Return asset class will be focused exclusively on less correlated strategies, within the Diversifying asset category.

SCERS' Absolute Return portfolio was invested across twelve funds during 2022, with one fund transferred from the legacy Growth Absolute Return segment. The Absolute Return portfolio also invests in a diversified FoF program managed by GCM (managed through a fund of one). The split between direct investments and the FoF program is approximately 75%/25%. The asset class began the year at 6% of SCERS' portfolio, below the 7% target allocation. With the addition of one new fund, equal to approximately 0.5% of the portfolio, combined with shifting market values across public and private markets, the Absolute Return portfolio ended the third quarter above the target allocation at approximately 7.5%. While public market asset values have declined significantly in 2022, SCERS' Absolute Return portfolio has done relatively well, with estimated performance through the end of the third quarter of +1%.

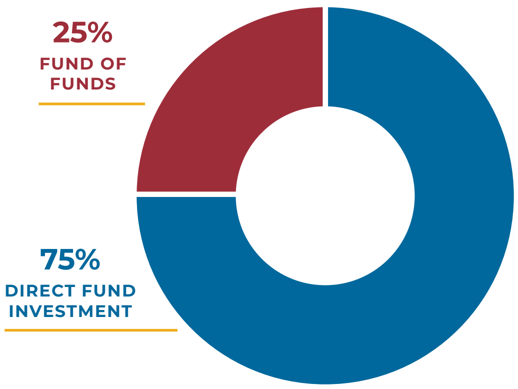
SCERS did place a redemption with one fund in the third quarter of this year, with full liquidation effective in the fourth quarter. The redemption was from a Discretionary Macro fund and SCERS will evaluate potential replacements for the investment in the coming year, along with other rebalancing considerations.

The following charts show the construction parameters and guidelines for SCERS' Absolute Return portfolio, along with estimated portfolio allocations, per SCERS' alternative assets consultant, Cliffwater.

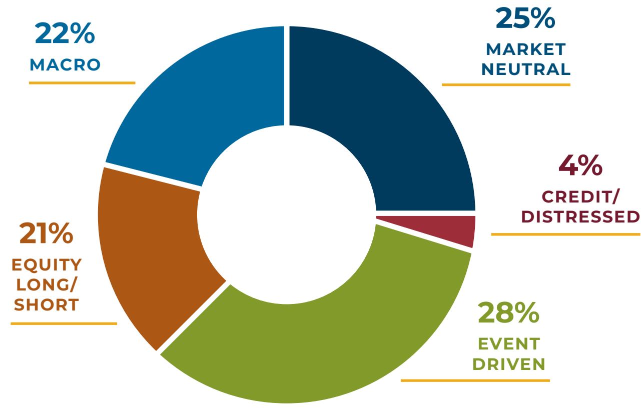
TABLE 8 – ABSOLUTE RETURN PORTFOLIO STRUCTURE

ABSOLUTE RETURN PORTFOLIO STRUCTURE		
Portfolio Objective	Positive absolute return profile over time with limited sensitivity to broad market performance	
Benchmark	Policy: HFRI FoF Conservative Index Long-term objective: T-bills + 2%	
Risk Target	Standard Deviation < 25% of global equities	
Market Sensitivity	Target an equity beta <0.2	Target equity correlation <0.5
Market Exposure	Total notional gross exposure < 750%	
Target Allocation	7% of total assets	
Allocation Range	5% to 9% of total assets	
Number of Funds	Target 12 funds with a range of 8 to 15	
Non-U.S. Exposure	Expect 20% to 50% non-U.S. exposure	

GRAPH 2 – ABSOLUTE RETURN PORTFOLIO ALLOCATIONS
AS OF JUNE 30, 2022



GRAPH 3 – ABSOLUTE RETURN PORTFOLIO STRATEGY ALLOCATIONS
AS OF JUNE 30, 2022



2022 ACTIVITY

THE 2022 ABSOLUTE RETURN ANNUAL INVESTMENT PLAN WAS:

- A target of one fund commitment, with a range of 0-3 funds
- An average commitment size of $45 million per fund
- Manage the liquidation of the Growth Absolute Return portfolio

2022 ACTUAL ACTIVITY:

- Unwound the Growth Absolute Return portfolio, following the elimination of the asset class from SCERS' strategic asset allocation
    - Transferred two direct fund investments to other parts of SCERS' portfolio
    - Liquidated investments in one direct fund investment and the growth-oriented fund of funds program managed by CGM
- Added one new direct investment, transferring the multi-strategy investment in Sculptor Domestic Partners from the legacy Growth Absolute Return asset class
- Redeemed from the discretionary macro fund managed by Eisler Capital in the third quarter, with full liquidity effective in the fourth quarter of 2022
- Oversaw, monitored, and met with SCERS' existing Absolute Return managers

2023 ANNUAL PLAN

Below is the 2023 annual plan for the Absolute Return asset class, as recommended by Cliffwater and Staff:

TABLE 9 – SCERS ABSOLUTE RETURN ANNUAL INVESTMENT PLAN

SCERS ABSOLUTE RETURN ANNUAL INVESTMENT PLAN			
	Target	**Minimum Range**	**Maximum Range**
Number of Funds	1	0	3
Investment per Fund	$50 MM	$30 MM	$60 MM

- Recommend a $50 million commitment budget for 2023, targeting one fund with a range of 0-3 funds
- Evaluate the potential addition of discretionary macro strategies as a replacement for previously terminated investments
- Evaluate other strategies in the portfolio to improve capital allocation and risk-adjusted returns
- Evaluate investment levels with existing managers and rebalance direct portfolio as necessary
- Oversee, monitor, and meet with SCERS' existing Absolute Return managers

PRIVATE EQUITY

MARKET OVERVIEW

Although the final 2022 numbers for private equity will not be finalized until the first quarter of 2023, through the first half of 2022, the fundraising conditions have been auspicious for some private equity (PE) managers. However, many general partners (GPs) are competing for limited resources of limited partners (LPs) as numerous existing managers are raising capital and seeking to secure new relationships. There are over 1,500+ GPs in Europe and the U.S. looking to raise capital.

GPs are returning to the market faster and often seeking sizable step-ups in the size of their funds, and commitment from LPs, potentially overwhelming institutional LPs resources and funding capacity. Through the second quarter of 2022, U.S. GPs completed approximately 4,000 deals with a cumulative value of just over $400 billion, according to Pitchbook. While the number of new investments is down compared to 2021, deal activity remains on pace for a healthy year. GPs and asset owners are uncertain about selling in the current market, with valuation models forecasting price decreases across underlying companies. Not surprisingly, exit markets have slowed dramatically, with an estimated 570 exits in the first six months of 2022 compared to more than 1,800 in 2021. With high inflation, increasing interest rates, and private credit funds putting stricter terms on their debt capital, funding deals has gotten harder. It is not expected that there will be a wave of distressed sellers lurking on the sidelines, so most GPs believe they can grow companies enough to offset the decline in multiples being paid.

Late-stage venture-backed company-level valuations have decreased in line with valuations in public markets. However, early-stage investments have not yet seen a marked decline in values or the size of funding rounds. Late-stage firms are preparing companies for a prolonged challenging fundraising market, with the IPO and M&A markets virtually closed to venture firms. While most groups do not forecast the bloodbath of write-offs seen during the dot com bubble in 1999, or the Global Financial Crisis, experienced managers with high-performing companies are tightening budgets and selectively raising cash in hopes of giving portfolio companies ample cash on their balance sheets. Late-stage GPs are pushing profitability at the expense of growth. Early-stage venture managers are seeing continued competition for great deals, but “me too” companies are finding it harder to raise capital. Newer GPs are slowing down their deployment and focusing on existing investments in hopes that any exit market downturn is short-lived.

Growth equity managers have cemented themselves as a distinct sub-asset class over the past decade, operating between buyouts and venture capital. Billions of dollars have been raised to fill a seemingly insatiable demand for capital to fuel the growth plans of profitable private companies. With the slowdown of the IPO exit markets, growth equity managers are scaling back programs and focusing portfolio companies on profitability. Most growth equity managers do not use company-level leverage when investing, like buyout managers. As a result, GPs can take a longer-term perspective than buyout managers who may feel the pressure to pay down debt.

Distressed investing for the past decade-plus has been sporadic, with many specialized managers rotating into complex, stressed deals, with minimal opportunities in distressed for control deals. There are indications of cracks in the debt markets, which can be seen as an opportunity for distressed funds. While COVID-19 may have created an initial wave of distress investing, there are potential signs on the horizon of a surge of over-leveraged deals coming to market.

By the end of 2021, SCERS had committed to 83 active partnerships, up 12% from 2021. Private equity continues to deliver exceptional returns to SCERS across buyouts, growth equity, venture capital, and distressed debt. Like many private programs, SCERS is seeking ways to generate liquidity in the secondary market, to assist in managing exposures relative to target allocations, which have become inflated during the 2022 public market sell off, and to lock in returns.

Through June 2022, the value of SCERS' Private Equity portfolio has fared well relative to public equity markets. There have been a few significant write-downs in the venture capital segment as a result of falling share prices in the public markets, and others have taken write-downs in response to the market. The significant write-downs as a percentage of value have been muted by good growth in other parts of the portfolio.

During the year, Staff and Cliffwater reviewed the portfolio and began implementing a secondary sales strategy for legacy fund of funds positions. Staff is working with a third-party advisor to improve pricing using up to date valuations, with the goal of selling the assets if the pricing is right.

SCERS PRIVATE EQUITY PORTFOLIO

SCERS' Private Equity portfolio has a target allocation of 11% broken out by sub-strategy, including Buyouts, Venture Capital, Growth Equity, and Distressed Debt. The policy index benchmark that SCERS uses is the Cambridge Associates LLC Global Private Equity & Venture Capital Pooled Index to assess the performance of the Private Equity asset class. The long-term objective of the Private Equity portfolio is to earn equity-like returns with an additional premium (Russell 3000 Index + 3%) to compensate for the liquidity risk undertaken by investing in the asset class. The targeted ranges of investment exposures within Private Equity are shown below:

TABLE 11 – SCERS PRIVATE EQUITY PORTFOLIO STRUCTURE

SCERS PRIVATE EQUITY PORTFOLIO STRUCTURE				
	Minimum	**Target Allocation**	**Maximum**	**Policy Index Benchmark**
Total Private Equity Portfolio	8%	**11%**	14%	Cambridge Associates PE/VC Index
Buyout	35%	**55%**	75%	
Venture Capital	10%	**20%**	40%	
Growth Equity	10%	**15%**	35%	
Distressed Debt	5%	**10%**	30%	
Other	0%	**0%**	15%	
U.S. Private Equity	70%	**80%**	90%	
Non-U.S. Private Equity	10%	**20%**	30%	

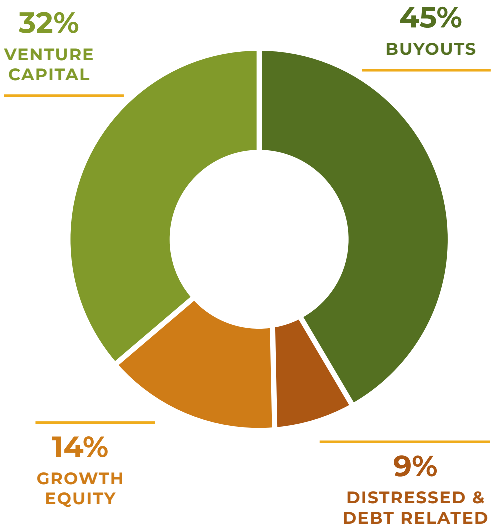
SCERS has built a successful and mature Private Equity program over the past 11 years, by making commitments directly with private equity managers, to complement legacy fund of funds commitments. The current allocation to Private Equity stands at 15.4% as of September 30, 2022 (based on June 2022 NAVs). Even though SCERS' Private Equity portfolio is overweight to its 11% target allocation due to strong performance of the asset class relative to the sell-off in public market assets, given private equity's unique cash flow characteristics, SCERS will need to continue to commit to new funds to maintain its target allocation. Consistent new commitments offset existing funds that sell investments and distribute capital back to SCERS, while newer funds draw down capital and make new investments. Private market investments have longer investment periods, and it is important to maintain vintage year diversification, while also maintaining allocations with top tier investment managers.

Cliffwater and Staff expect the Private Equity portfolios overweight to correct itself through a combination of factors. These include private market valuation lags catching up with the rest of the SCERS portfolio, any potential uplift in public market valuations relative to private markets, the selling and distribution of publicly traded investments within the Private Equity portfolio by GPs, and any private equity secondary sales that SCERS is currently evaluating. Cliffwater's capital budget for Private Equity is based on current valuations and the recommended annual budget for 2023 and beyond incorporates current private equity valuations in its forecasts back toward the 11% target allocation.

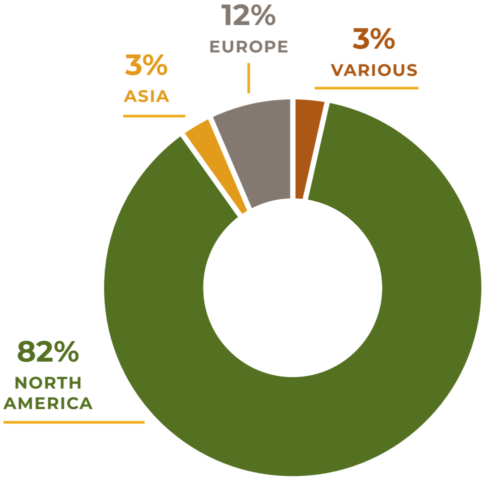
With a mature Private Equity portfolio that includes many existing managerial relationships and general partners quickly coming to market with follow-on funds, there are more investment opportunities in private equity than capital available in the SCERS budget. Each follow-on investment under consideration is fully underwritten as if it is a new relationship. Staff is comfortable with not committing money to a follow-on fund if the opportunity is not warranted, if a new fund is better suited for the portfolio, or if there is insufficient room within the Private Equity budget.

SCERS' current Private Equity strategy and geographic breakdowns are shown in the following charts:

GRAPH 4 – PRIVATE EQUITY PORTFOLIO STRATEGY ALLOCATIONS
AS OF JUNE 30, 2022



GRAPH 5 – PRIVATE EQUITY GEOGRAPHIC ALLOCATIONS
AS OF JUNE 30, 2022



2022 ACTIVITY

THE 2022 PRIVATE EQUITY ANNUAL INVESTMENT PLAN WAS:

- A target of 10 fund commitments, with a range of 7-12 funds
- A total of $365 million in commitments, with a range of $250–$400 million
- An average commitment size of $35 million per fund

2022 ACTUAL ACTIVITY:

- 10 fund commitments were made during the year totaling $340 million in aggregate
  - $30 million follow-on investment to Gridiron Capital Fund V, LP (Buyout)
  - $30 million follow-on investment to Shamrock Capital Content Fund III, LP (Buyout)
  - $30 million investment to Oaktree Power Opportunities VI, LP (Buyout)
  - $100 million to a fund of one co-investment vehicle, Golden Capital Co-Investments, LP (Buyout)
  - $25 million follow-on investment to OrbiMed IX, LP (Venture Capital)
  - $25 million follow-on investment to Threshold Ventures IV, LP (Venture Capital)
  - $22.5 million follow-on investment to CRV XIX, LP (Venture Capital)

 - $22.5 million follow-on investment to CRV Select II, LP (Venture Capital)
 - $30 million follow-on investment to Accel-KKR Growth Capital Partners IV, LP (Growth Equity)
 - $25 million follow-on investment to Spectrum Equity Fund X, LP (Growth Equity)
- Retained a third-party advisor to assist in evaluating legacy positions for secondary sales
- Oversaw, monitored, and met with SCERS' existing Private Equity managers

2023 ANNUAL PLAN

Below is the 2023 capital commitment plan for the Private Equity asset class, as recommended by Cliffwater and Staff:

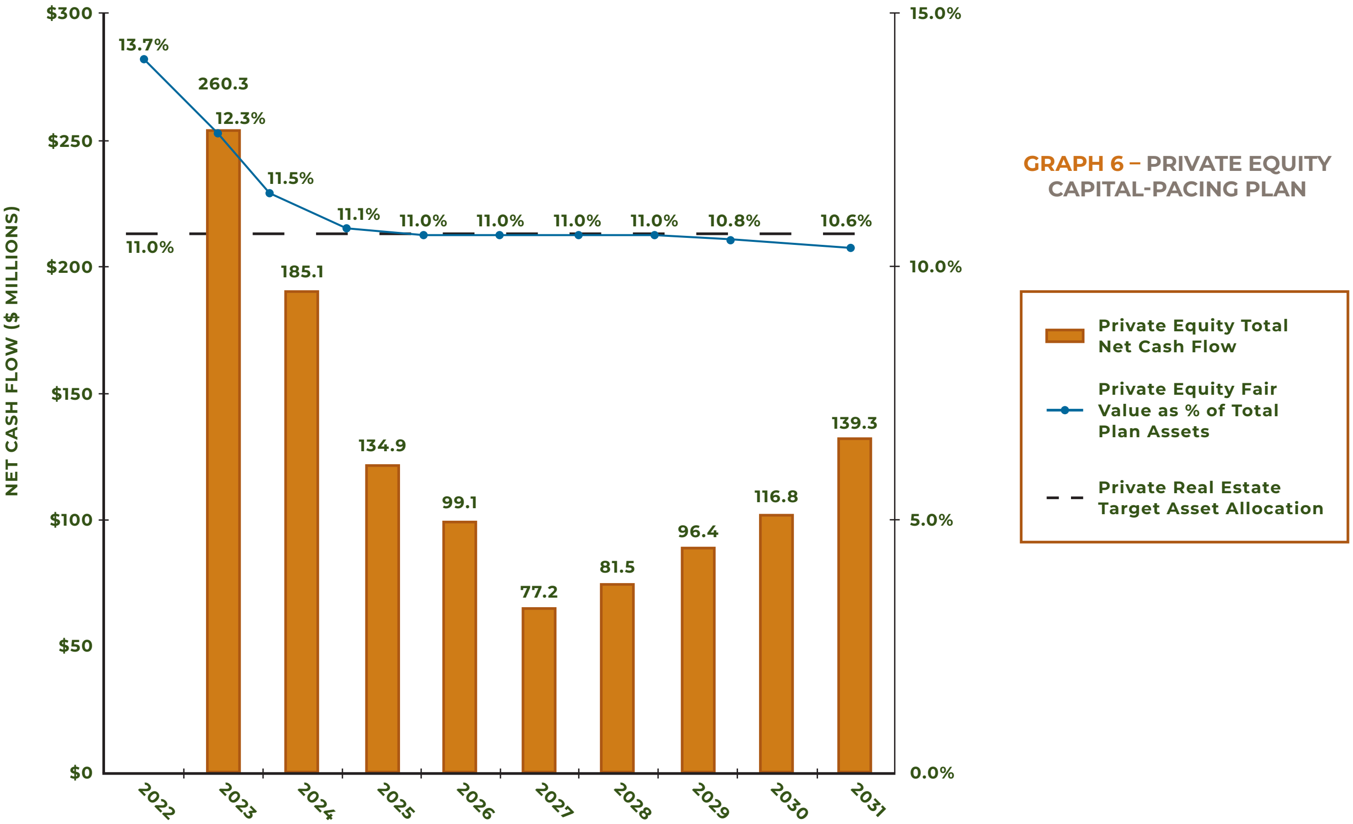
TABLE 12 – SCERS PRIVATE EQUITY ANNUAL INVESTMENT PLAN

SCERS PRIVATE EQUITY ANNUAL INVESTMENT PLAN			
	Target	**Minimum Range**	**Maximum Range**
Commitment Level	$260 MM	$200 MM	$300 MM
Number of Funds	9	6	11
Buyout fund(s)	5	3	6
Distressed fund(s)	1	0	2
VC fund(s)	2	1	4
Growth Equity fund(s)	1	0	2
Other fund(s)	0	0	1
Non-U.S. fund(s)	2	0	3
Commitment per Fund	$30 MM	$20 MM	$50 MM

Non-U.S. funds are reflected in the strategy categories above

- Recommend a $260 million commitment budget for 2023, with a range of $200 million to $300 million
 - Target 9 fund commitments at an average commitment size of $30 million, with a range of $20-$50 million per fund
 - The commitment budget for 2023 is smaller than the prior year to account for current private equity valuations and forecasts to get the portfolio back toward the 11% target allocation
 - The 2023 budget does not include any funds in which a commitment was made in 2022 but capital has not been called

Below is the projected Private Equity capital-pacing plan:



GRAPH 6 – PRIVATE EQUITY CAPITAL-PACING PLAN

- Staff and Cliffwater continue to take a measured approach when making new commitments as the Private Equity portfolio is above the 11% target allocation, and the top of the target range
  - Given the abundance of capital in the private equity markets, Staff and Cliffwater will remain prudent and thoughtful in making new commitments
- Areas of focus in 2023
  - Specialist managers in specific sectors or industries
  - Follow-on investments to existing managers/strategies
  - Increased attention on distressed debt and buyout funds
  - Implementation of the recently formed co-investment mandate
  - Evaluation of secondary sales across the portfolio
- Oversee, monitor, and assess the existing manager lineup

PRIVATE CREDIT

MARKET OVERVIEW

As investors searched for yield in a low rate environment, the U.S. private credit industry enjoyed tremendous growth. According to Preqin, assets under management within private credit grew from $512 billion in 2015 to over $1.2 trillion, while the number of funds went from 265 to 690. This rapid and outsized growth has created severe competitive pressures by compressing loan spreads and deteriorating covenants. With the abundance of capital commoditizing private debt, quick execution and the willingness to provide higher leverage levels has become common in order to secure transactions and meet borrower demand expectations. To compete, private lenders are trying to set themselves apart by being a one-stop capital provider necessitating the need to make larger loans. This dynamic has ushered in multi-billion dollar funds becoming more common with the market consolidating among the largest managers.

Entering 2022, economic conditions were favorable but inflation quickly accelerated and what was thought to be transitory had become persistent. In response, the U.S. Federal Reserve has set an aggressive course of raising interest rates acknowledging that doing so may cause a recessionary outcome. In a rising interest rate environment, private debt would seem to insulate investors with its floating rate structures. However, despite increasing with inflation, floating-rate loans will have a negative consequence to the borrower in the form of higher loan payments, potentially jeopardizing a firm's ability to service the loan and repay the loan at maturity.

Within this competitive landscape and potential difficult economic conditions, Staff and Cliffwater have been prudent in making new private credit commitments. The focus remains on selecting cycle tested managers, who are disciplined and are able to generate transactions and deal flow that will earn higher returns with favorable lending terms due to their competitive advantage or specialization. Having workout experience and in-house resources to navigate a potential default cycle is essential.

SCERS PRIVATE CREDIT PORTFOLIO

Initiated in 2017, the Private Credit asset class sits within SCERS' Growth asset category and represents loans to private companies, primarily mid-sized businesses. Increasingly, private credit has moved into lending to large public corporations traditionally served by large money center banks, insurance companies, and the public market.

An attractive feature of private credit investments is the cash yield provided, which is generally the majority of the return. Cash yield comes from contracted loan payments (interest and principal) and the various fund fees such as origination fees and call protections. Since private credit is an illiquid investment, SCERS' Private Credit investments must generate a premium for the illiquidity, as measured by exceeding the publicly traded bank loan returns by 2%, which SCERS measures against the Credit Suisse Leveraged Loan Index, an index of over 1,600 publicly traded bank loans.

The Private Credit sub-strategy targets and geographic mix are shown below:

TABLE 13 – SCERS PRIVATE CREDIT PORTFOLIO STRUCTURE

SCERS PRIVATE CREDIT PORTFOLIO STRUCTURE				
	Minimum	**Target Allocation**	**Maximum**	**Policy Index Benchmark**
Total Private Credit Portfolio	3%	**5%**	7%	Credit Suisse Leveraged Loan + 2%
Direct Lending	50%	**65%**	90%	
Opportunistic Lending	10%	**35%**	50%	
U.S. Private Credit	65%	**75%**	100%	
Non-U.S. Private Credit	0%	**25%**	35%	

SCERS continues to make progress in reaching the 5% Private Credit target allocation, which is projected by year-end 2024. As of September 30, 2022, the actual Private Credit allocation is 3.1% invested and 5.9% committed. In 2022, SCERS made three commitments totaling $120 million, which was below the budget of $155 million but within the range of $105-$205 million. Commitments made during the year were two follow-on investments totaling $80 million and $40 million to a new strategy from an existing manager, Brookfield Infrastructure Debt Fund III. The current allocation to Private Credit increased towards its 5% target at a faster rate than anticipated in 2022, due to the strong performance of the asset class relative to the sell-off in public market assets. Staff and Cliffwater believe that coming in at the low end of the budget is acceptable and prudent, given the current environment.

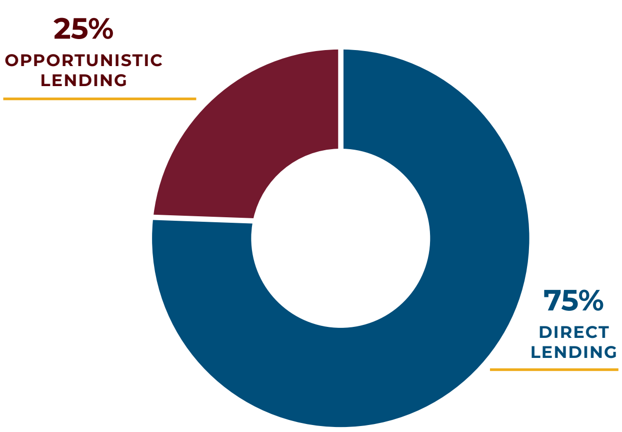
Private credit is lending to private companies who require capital to finance the growth of their businesses, acquire other companies, or other corporate purposes. This is particularly true of sponsored-backed loans to private equity owned businesses where the objective is to grow the business to eventually sell it to a larger company or to take it public. This entails lending based on the going-concern or future enterprise value of the company for monthly loan payments and the eventual repayment at loan maturity. If the economy is growing, then this lending position is fairly secure, but should the economy slow down or reverse then there is more repayment risk. This is especially true for companies that provide services or are asset light where the possibility of a complete loss is higher because the primary assets of the firm are its people and office equipment.

Because of this potential repayment risk, Staff and Cliffwater have preferred lending strategies backed by some hard, tangible, or recoverable collateral such as equipment, infrastructure, transportation assets, royalties, intellectual property, etc., where the downside is mitigated by the collateral value, thereby reducing the possibility of a complete loss.

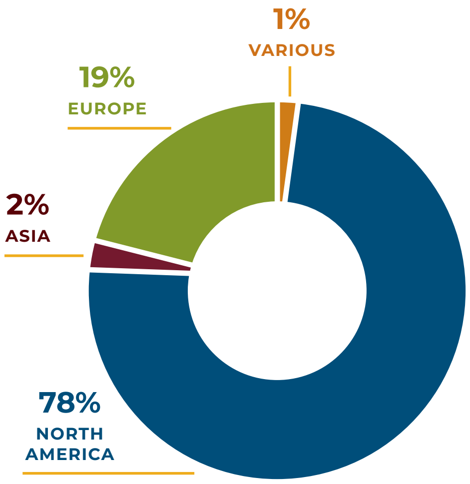
The market continues to exhibit immense competition, leading Staff and Cliffwater to remain focused on managers with long tenured track-records, experience through a market cycle, and who have in-house workout expertise. Given the ubiquity of corporate lending, Staff and Cliffwater continue to seek out specialist managers in corporate going-concern lending, but increasingly favor collateral-based credit strategies.

Below is SCERS' Private Credit diversification by investment strategy and geography as of June 30, 2022:

GRAPH 7 – PRIVATE CREDIT PORTFOLIO STRATEGY ALLOCATIONS
AS OF JUNE 30, 2022



GRAPH 8 – PRIVATE CREDIT PORTFOLIO GEOGRAPHIC ALLOCATIONS
AS OF JUNE 30, 2022



2022 ACTIVITY

THE 2022 PRIVATE CREDIT ANNUAL INVESTMENT PLAN WAS:

- A target of 4 fund commitments, with a range of 2-6
- A total of $155 million in commitments, with a range of $105-205 million
- An average commitment size of $40 million per fund

2022 ACTUAL ACTIVITY:

- 3 commitments were made during the year totaling $120 million:
  - $40 million follow-on investment to OrbiMed Royalty & Credit Opportunities IV, LP (U.S. Opportunistic Lending)
  - In process and expected to close by year-end
    - $40 million follow-on investment to Silver Point Specialty Credit Fund III, LP (U.S. Opportunistic Lending)
    - $40 million investment to Brookfield Infrastructure Debt Fund III, LP (Global Direct Lending)
- Oversaw, monitored, and met with SCERS' existing Private Credit managers

2023 ANNUAL PLAN

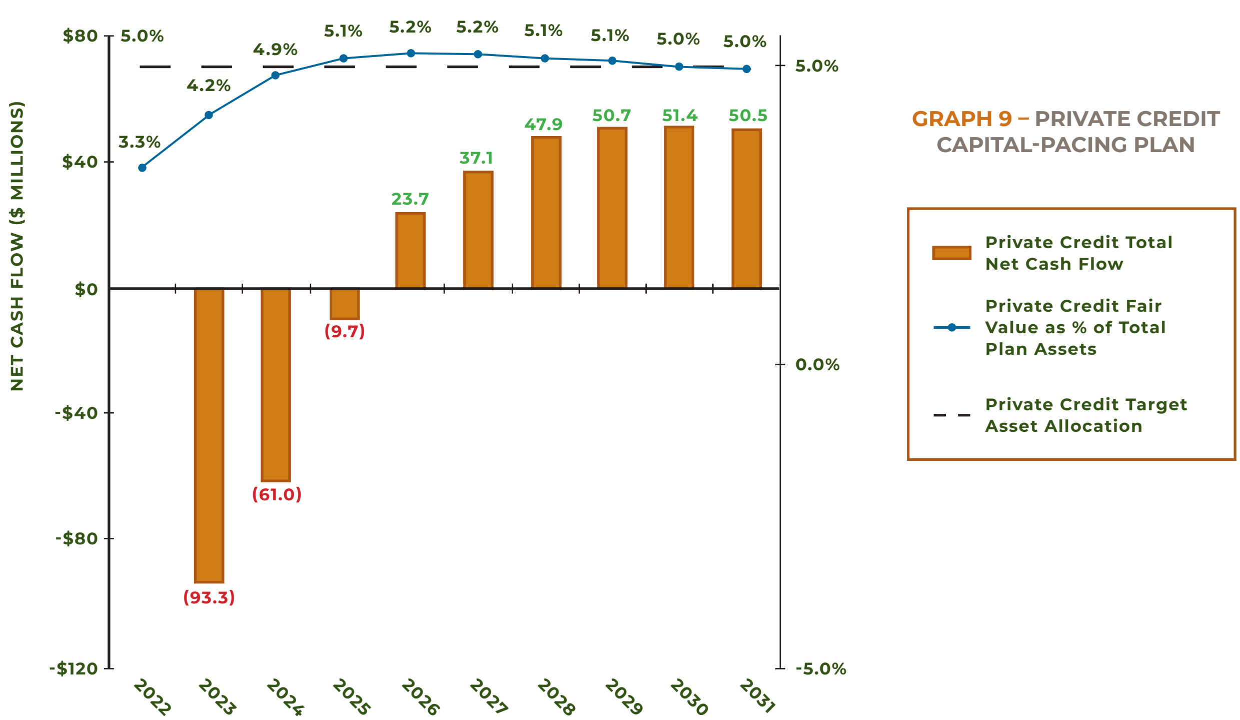
Below is the 2023 capital commitment plan for the Private Credit asset class, as recommended by Cliffwater and Staff:

TABLE 14 – SCERS PRIVATE CREDIT ANNUAL INVESTMENT PLAN

SCERS PRIVATE CREDIT ANNUAL INVESTMENT PLAN			
	Target	**Minimum Range**	**Maximum Range**
Commitment Level	$140 MM	$100 MM	$180 MM
Number of Funds	4	2	6
Direct Lending Fund(s)	2	1	3
Opportunistic Lending Fund(s)	2	1	3
Commitment per Fund	$40 MM	$30 MM	$50 MM

- Recommend a $140 million commitment budget for 2023, with a range of $100 million to $180 million
  - Target 4 fund commitments averaging $40 million each, with a range of $30-$50 million per fund
  - The 2023 budget does not include any funds in which a commitment was made in 2022 but capital has not been called

Below is the projected Private Credit capital-pacing plan:



GRAPH 9 – PRIVATE CREDIT CAPITAL-PACING PLAN

- Staff and Cliffwater continue to make progress, though measured, towards reaching the 5% Private Credit target allocation, which is expected to be reached by year end 2024
  - Given the abundance of capital in the private credit markets, Staff and Cliffwater will remain prudent and thoughtful in making new commitments
  - Staff and Cliffwater continue to seek out specialist managers in corporate going-concern lending, but are favoring collateral-based credit strategies

2023 INVESTMENT STRATEGIES AND THEMES INCLUDE:

- Follow-on investments to existing managers/strategies
- Asia private credit lending strategies
- Niche and specialty lending/leasing strategies, globally
- Hard collateral-based lending, globally
- Oversee, monitor, and assess the existing manager lineup

REAL ASSETS

MARKET OVERVIEW

The volatility in energy prices, in part driven by the Ukraine conflict, COVID-19 shutdowns in China, and supply constraints, is contributing to elevated inflation. To tamp down inflation, interest rates are being increased across the major developed countries starting with the U.S. While energy markets are experiencing volatility, infrastructure is enjoying considerable positive performance and investor demand. Infrastructure assets, particularity essential infrastructure, are less impacted by market volatility and with built-in inflation indexation, are generating increasing returns in the current environment.

ENERGY

Energy prices started the year on a rapid ascent, with oil going from $76 per barrel on January 3rd to a high of $130 on March 7th. Since then, energy pricing has steadily declined, despite supply constraints by OPEC and the shunning of Russian oil and gas. Oil fell back to $78 on September 26th, but has since ticked up to $87 with the announcement by OPEC of future supply cuts of 2 million barrels per day.

The rise in the price of natural gas has been unprecedented, particularly with the fallout of Russian supply. Natural gas is the primary source of power plant generation worldwide and the removal of Russian gas from Europe and parts of Asia is generating severe supply constraints. Natural gas prices started the year at $3.67 USD/MMBtu on January 3rd, and reached a high of $9.32 on June 6th, then retreated to $5.48 on July 6th. From that low, natural gas prices bounced up hitting a high of $10.02 on August 23rd before falling back to $6.47 on October 3rd. With winter upon us and the supply cut-off to Europe by Russia, more volatility in the energy markets should be expected.

Despite heightened energy prices generating record profits, U.S. oil and gas companies continue to restrain new drilling activity as they prioritize returning profits to shareholders over expanding production. New production has fallen dramatically in the U.S. over the last 7 years. According to ISI Research, annual energy capital investment peaked at $750 billion in 2014, but dropped to $400 billion in 2021. Industry projections estimate that this capital decline is contributing to an estimated 4 million barrels per day supply deficit, yet OPEC is focused on cutting supply further, which will potentially lead to higher energy prices and higher inflation.

INFRASTRUCTURE

Infrastructure's strong performance during 2021 highlighted its positive characteristics, as well as its risks, and why investors have favored the asset class. Infrastructure is considered a cash generative asset with low correlations to the macro environment, and provides a level of downside protection. Infrastructure's overall performance was resilient during the pandemic making investors keenly focused on the infrastructure segments of de-carbonization, digitalization, and demographics. The secular trends of the growth of data usage and the Internet of things, the need for alternative energy sources due to climate change, the aging of worldwide populations, and the changes in where people work and live, are driving how infrastructure performs and where the future lies for new investment opportunities.

The need for infrastructure and the resiliency of the asset class continues to foster record levels of fundraising in 2022. According to Preqin, fundraising for infrastructure funds for the first half of the year has already hit what was raised in all of 2021. Through the second quarter, incredibly, $122 billion has been raised from only 39 funds compared to the record $123 billion raised in 2021 across 115 funds. This highlights the incredible investor demand for infrastructure and the scale of capital being raised by fewer managers. There were seven funds that raised over $5 billion so far in 2022, two more than all of last year, leading to an average fund raise so far of over $3 billion. The largest targeted fund raise for 2022 and the largest in history, is Brookfield's Infrastructure Fund V seeking $25 billion, up from the $20 billion they raised in 2020 for Fund IV.

With inflation worries and infrastructure's inflation indexation, infrastructure demand will remain outsized. However, too much capital demand can lead to upward pressure on asset prices and a deterioration in future return performance.

SCERS REAL ASSETS PORTFOLIO

The investment objective of Real Assets is to generate attractive returns that adjust with inflation, provide portfolio diversification through low correlations, generate moderate income and cash flow, and lower return volatility.

The Real Assets asset class resides within the Real Return asset category, in addition to Real Estate and Liquid Real Return. Within Real Assets, there is a broad array of sub-asset classes and investment strategies across infrastructure, energy and power, agriculture, timber, and other natural resources. Portfolio construction for the Real Assets portfolio provides flexibility in investment ranges, allowing moving exposures from one sector in favor of attractive risk-adjusted returns in another sector.

The Real Assets target allocation is 7%, with a +/- 2% range around the target. As of September 30, 2022, the actual Real Assets allocation is 8.1%.

The sub-strategy targets and ranges for Real Assets are shown below:

TABLE 15 – SCERS REAL ASSETS PORTFOLIO STRUCTURE

SCERS REAL ASSETS PORTFOLIO STRUCTURE				
	Minimum	Target Allocation	Maximum	Policy Index Benchmark
Total Real Assets Portfolio	5%	**7%**	9%	Custom blend of benchmarks below:
Infrastructure	45%	**60%**	75%	60% Cambridge Associates Private Infrastructure
Energy	15%	**30%**	45%	30% Cambridge Associates Private Energy
Agriculture, Timber, Other	0%	**10%**	20%	10% NCREIF Farmland

As presented in the 2022 investment plan, the Real Assets' allocation target of 7% was not projected to be reached until 2026, but did so and beyond in 2022. The allocation to Real Assets increased from 6.1% in September 20, 2021 to the current 8.1% allocation, and above the target allocation, due to the sell-off in public market assets, valuation increases in real assets, and the funding of a $100 million investment in Brookfield Super Core Infrastructure Fund (open-ended commingled fund). Having reached the targeted allocation, future Real Assets commitments will be more measured.

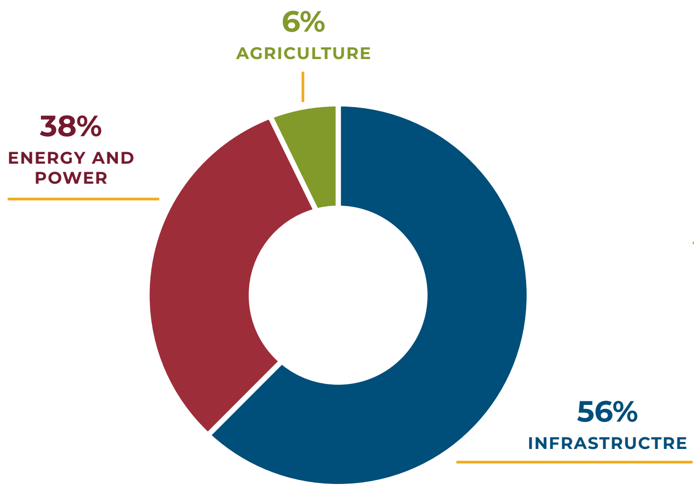
In 2022, SCERS made three commitments totaling $125 million, which was well below the budget of $250 million, and below the range of $200-$300 million. Commitments made during the year were one follow-on investment totaling $50 million, a $25 million upsize with an existing open-end infrastructure manager, and a $50 million commitment to a new manager, Ridgewood Water & Strategic Infrastructure Fund III, LP. Given the rapid increase in the allocation to Real Assets, Staff and Cliffwater believe that coming in at the low end of the budget for 2022 is acceptable and prudent.

When SCERS first initiated implementation of its Real Assets portfolio in 2011, upstream energy was the predominant opportunity; however, the return of the sub-asset class was mostly capital appreciation based on the future growth of oil and gas. Since those early years, Staff and Cliffwater have tilted the portfolio toward strategies where a meaningful amount of the return is from cash flow, and with less sensitivity to the economic cycle and reliance on capital appreciation to generate returns. Staff and Cliffwater moved away from upstream energy in 2017 just as the market became more volatile. By focusing on current cash flow, which is controllable, and away from future outcomes (appreciation), which is less controllable, the Real Assets portfolio is expected to experience more resiliency in its return performance. An example of this is Harrison Street Social Infrastructure Fund, LP that invests in critical infrastructure assets serving municipalities and universities.

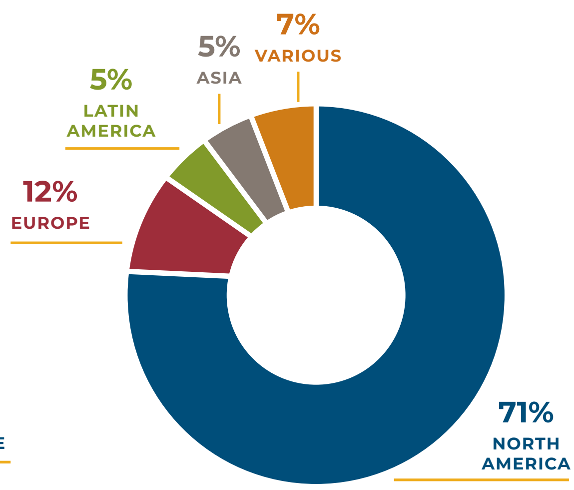
Staff and Cliffwater continue to favor unique and differentiated real assets investment strategies that provide attractive risk adjusted returns, are less sensitive to the broader economy, offer attractive current yield, and/or have the potential to adjust with inflation. With an increasing interest rate environment and uncertain economic conditions, coupled with competitive pressures in the real assets marketplace, Staff and Cliffwater are comfortable taking a restrained approach to allocating capital within the asset class.

Below is SCERS' Real assets diversification by investment strategy and geographic region, as of June 30, 2022:

GRAPH 10 – REAL ASSETS PORTFOLIO STRATEGY ALLOCATIONS
AS OF JUNE 30, 2022



GRAPH 11 – REAL ASSETS PORTFOLIO GEOGRAPHIC ALLOCATIONS
AS OF JUNE 30, 2022



2022 ACTIVITY

THE 2022 REAL ASSETS ANNUAL INVESTMENT PLAN WAS:

- A target of 5 fund commitments, with a range of 3-7
- A total of $250 million in commitments, with a range of $200-300 million
- An average commitment size of $50 million per fund

2022 ACTUAL ACTIVITY:

- 3 commitments were made during the year totaling $125 million
  - $50 million follow-on investment to NGP Royalty Partners II, LP (Energy and Power)
  - $50 million investment to Ridgewood Water & Strategic Infrastructure Fund III, LP (Infrastructure: value add)
  - In process and expected to close by year end, a $25 million upsize to Harrison Street Social Infrastructure Fund, LP (Infrastructure: open-ended core plus)
- Oversaw, monitored, and met with SCERS' existing Real Assets managers

2023 ANNUAL PLAN

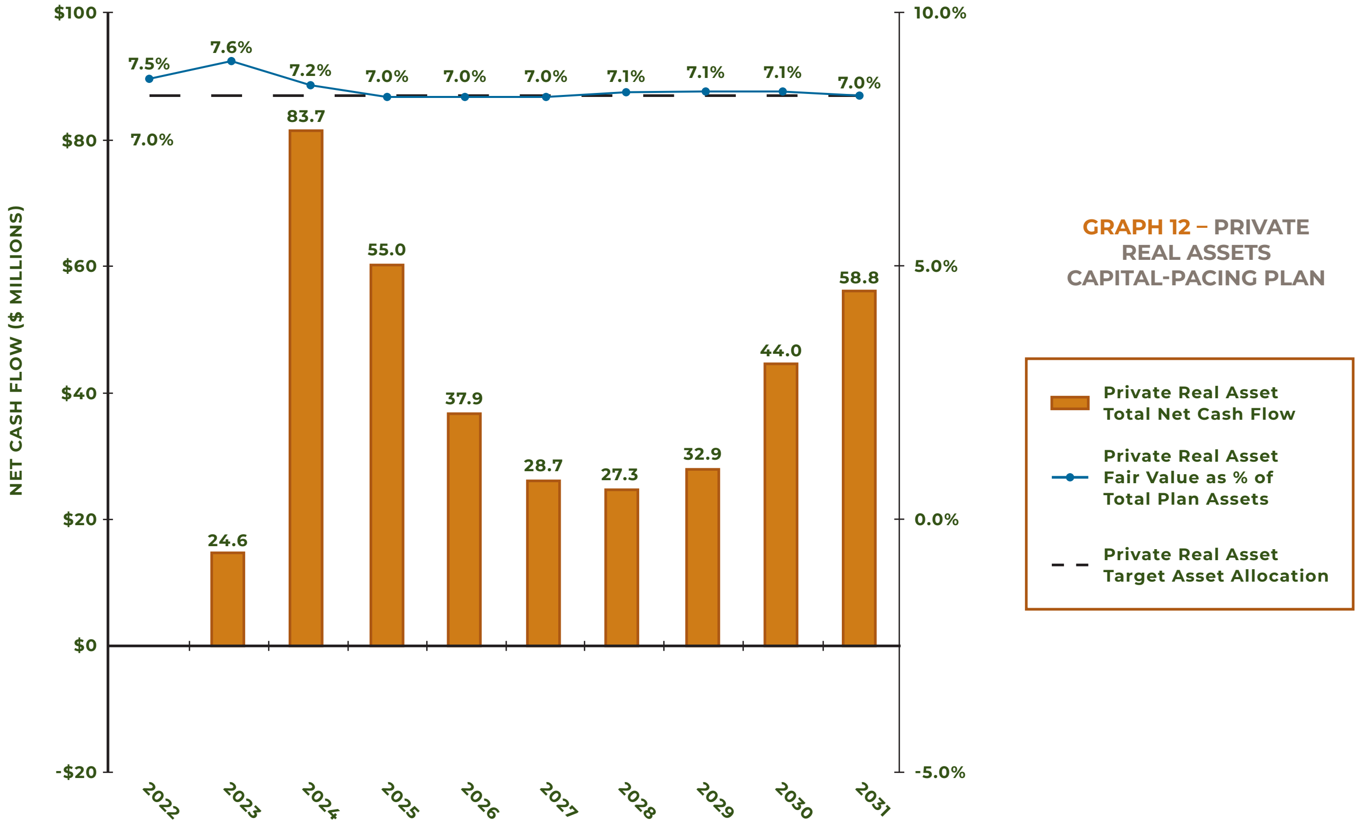
Below is the 2023 capital commitment plan for the Real Assets asset class, as recommended by Cliffwater and Staff:

TABLE 16 – SCERS PRIVATE REAL ASSETS ANNUAL INVESTMENT PLAN

SCERS PRIVATE REAL ASSETS ANNUAL INVESTMENT PLAN			
	Target	**Minimum Range**	**Maximum Range**
Commitment Level	$190 MM	$150 MM	$230 MM
Number of Funds	4	3	6
Energy Related	1	0	2
Infrastructure	2	1	4
Ag, Minerals, Timber	1	0	2
Other	0	0	1
Commitment per Fund	$50 MM	$35 MM	$100 MM

- Recommend a $190 million commitment budget for 2023, with a range of $150-$230 million
  - Target 4 fund commitments averaging $50 million each, with a range of $35-$100 million per fund
  - The 2023 budget does not include any funds in which a commitment was made in 2022 but capital has not been called

Below is the projected Real Assets capital-pacing plan:



GRAPH 12 – PRIVATE REAL ASSETS CAPITAL-PACING PLAN

- Staff and Cliffwater continue to take a measured and prudent approach when making new commitments as the Real Assets portfolio is above the 7% target allocation
  - Capital pacing will be based on the opportunity set of differentiated strategies/managers and the economic/market cycle
  - Capital deployment may be lumpy

2023 INVESTMENT STRATEGIES AND THEMES INCLUDE:

- Follow-on investments with existing managers/strategies
- Pan-Asia infrastructure
- Agriculture and opportunities across the food value chain globally
- Specialty and sector focused real assets strategies
- Environmentally driven strategies (de-carbonization and energy transition ex-renewables)
- Oversee, monitor, and assess the existing manager lineup

REAL ESTATE

MARKET OVERVIEW

Throughout 2021, global real estate markets rebounded from the aftereffects of the pandemic shutdown in 2020. An outcome of the pandemic has been the rapid secular changes occurring in e-commerce, digitalization, demographics, and housing formation. The real estate sectors that were resilient throughout the pandemic and afterwards, industrial and residential, experienced record leasing and transaction volumes. Investor activity in the logistics sector was extremely robust across the U.S., Europe, and Asia during 2021 and into 2022, with tenant demand well exceeding the tight supply, resulting in aggregate vacancy rates below 3% in the main industrial corridors in both the U.S. and Europe.

Coming into 2022, global economies were enjoying considerable growth; however, consumption exceeded supply as supply-chains froze up. Inflation, which was already ticking up, accelerated with the Ukraine conflict causing energy prices to accelerate upward. Soon it became apparent that elevated inflation was not transitory but persistent. The U.S. Federal Reserve reacted quickly by aggressively raising interest rates in an effort to drive inflation back down.

Since the start of interest rate increases at the tail end of 2021, worldwide economies began to feel the negative pull back, with consumption falling and economic activity halting. By mid-year 2022, most economies were entering recessionary conditions. Despite the economic slowdown, industrial and residential real estate leasing and transaction activity was up from record 2021 volumes in the U.S. and Europe. China's more stringent COVID-19 lockdowns has greatly affected their economy and in particular the for-sale residential housing market, as the government cracked down on over-leveraged development companies.

With higher interest rates, real estate loan rates have shot up and real estate transaction volumes have responded accordingly downward. This is in part what central banks are looking to accomplish. With the uncertainty of how much further rates will go up, the real estate markets have ground to a halt. Logistics is still seeing activity but residential leasing and sales has dropped off leading to rent and price declines creeping in. Office remains challenged with hybrid work schedules leading many companies to downsize their office needs. Necessity retail and grocery-anchored shopping centers have been steady, but shopping malls, although they have recovered foot traffic, still are not back to pre-pandemic sales levels.

Uncertainty in the economic environment abounds which is dampening real estate investor sentiment and transaction volumes. The real estate transaction market is at a standstill, with a wide price gap between sellers of real estate and buyers of real estate. Until there is more clarity from central banks on the direction of interest rates, real estate values and returns are expected to be challenged.

SCERS REAL ESTATE PORTFOLIO

SCERS' Real Estate asset class, which resides within the Real Return asset category, seeks to generate current income with moderate return volatility, adjusts with inflation, and is a diversifier to SCERS' overall portfolio. Portfolio construction for the Real Estate portfolio allows flexibility within investment ranges, to move exposures where there are favorable and more attractive risk-adjusted returns. In addition, a range of permitted investment structures include closed and open-end commingled funds, customized separate accounts, and secondary investments.

Real estate investment strategies fall within two broad categories – core/core plus and non-core. Investments in core/core plus strategies will typically possess a lower but stable risk-return profile, and serve as the hub/foundation of the Real Estate asset class. Non-core investments represent the spoke/alpha component of the Real Estate asset class, and can serve as a complement and return enhancer to the overall portfolio, but entail more risk. Core/core plus investments are typically made in open-ended fund structures, while non-core investments are made in closed-end fund structures.

SCERS' revised strategic asset allocation resulted in the Real Estate target allocation increasing from 7% to 9%, and the increase reflects the strong historical performance of the asset class and the large opportunity set of investment strategies. As of September 30, 2022, the actual Real Estate allocation is 8.9%.

Below is the sub-strategy targets and geographic mix of SCERS' Real Estates asset class:

TABLE 17 – SCERS REAL ESTATE PORTFOLIO STRUCTURE

SCERS REAL ESTATE PORTFOLIO STRUCTURE				
	Minimum	**Target Allocation**	**Maximum**	**Policy Index Benchmark**
Total Real Estate Portfolio	7%	**9%**	11%	Custom blend of benchmarks below:
Core Real Estate	50%	**60%**	70%	60% NFI-ODCE
Non-Core Real Estate	30%	**40%**	50%	40% NFI-ODCE + 1%
Non-U.S. Real Estate	0%	**N/A**	35%	

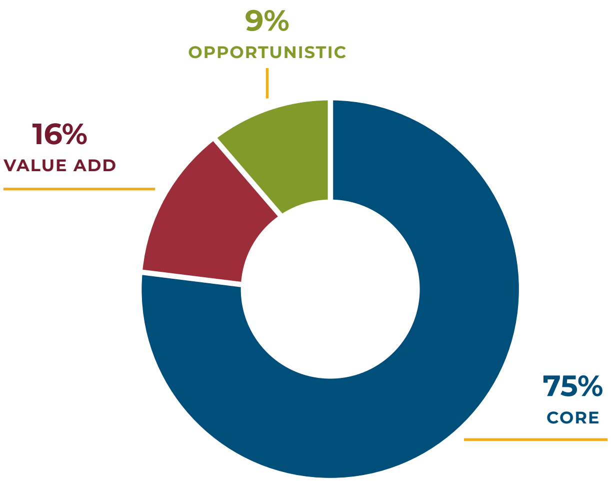
In 2022, SCERS made three commitments totaling $98 million, which was well below the budget of $270 million and the range of $220-$320 million. The commitment budget for 2022 was based on moving the Real Estate allocation from the 7% target to the revised 9% target, which included planned core investments. However, the allocation to Real Estate increased from 7.2% in September 20, 2021 toward the 9% target allocation on its own due to the sell-off in public market assets and valuation increases in real estate. Therefore, Staff and Townsend did not make any new core investments and came in on the low end of the non-core budgets. Having reached the targeted allocation, future Real Estate commitments will be more measured.

In addition, the Europe real estate market, identified as a target for 2022, changed dramatically because of the Russia/Ukraine conflict pushing back a potential commitment. Staff and Townsend continue to see good relative value opportunities in Asia and remain supportive of adding complementary investments in the region in 2023 and over longer periods.

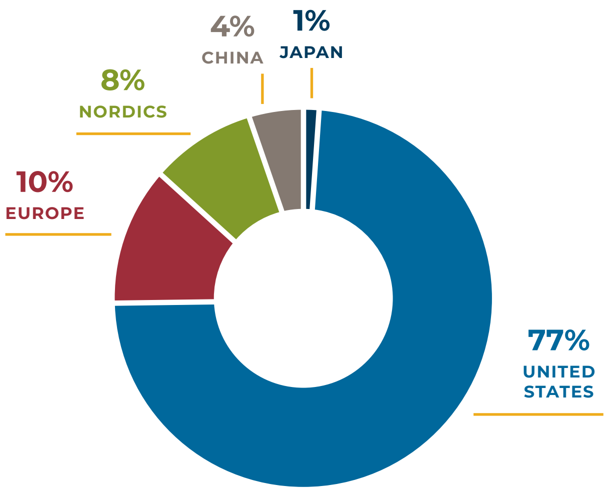
Commitments made during the year were two follow-on investments totaling $78 million, and a $20 million commitment to a new manager, Seven Seas Japan Opportunity Fund, GK.

Below is SCRES' Real Estate diversification by investment strategy and geographic region, as of June 30, 2022:

GRAPH 13 – REAL ESTATE PORTFOLIO STRATEGY ALLOCATIONS
AS OF JUNE 30, 2022



GRAPH 14 – REAL ESTATE PORTFOLIO GEOGRAPHIC ALLOCATIONS
AS OF JUNE 30, 2022



2022 ACTIVITY

THE 2022 REAL ESTATE ANNUAL INVESTMENT PLAN WAS:

- A target of 6 fund commitments, with a range of 4-8
- A total of $270 million in commitments, with a range of $220-320 million
  - 2 core funds, $150 million
  - 4 non-core funds totaling $120 million
- An average commitment size of $75 million per fund

2022 ACTUAL ACTIVITY:

- 3 commitments were made during the year totaling $98 million:
  - $40 million follow-on investment to Hammes Partners IV, LP (U.S. non-core: value add)
  - €40 million ($38 million equivalent) follow-on investment to NREP Nordic Strategies Fund V (non-U.S. non-core: value add)
  - $20 million to Seven Seas Japan Opportunity Fund, GK (non-U.S.: value add)
- Oversaw, monitored, and met with SCERS' existing Real Estate managers

2023 ANNUAL PLAN

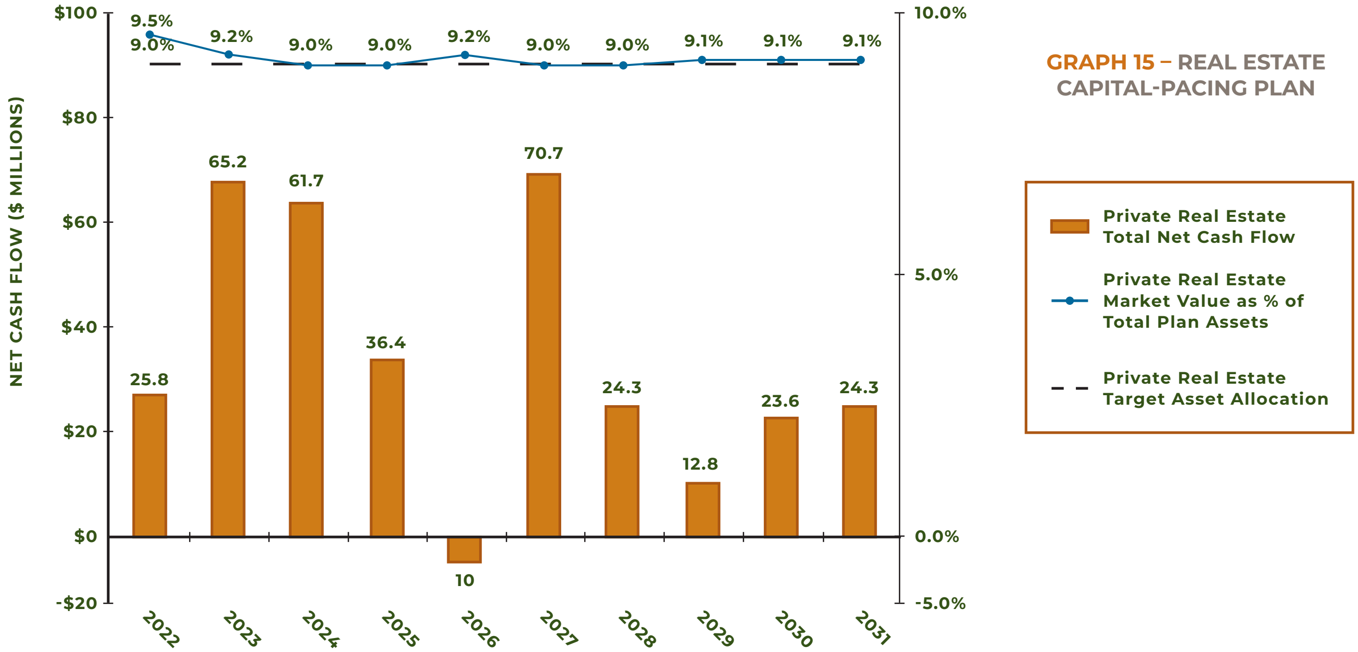
Below is the 2023 capital commitment plan for the Real Estate asset class, as recommended by Townsend and Staff:

TABLE 18 – SCERS REAL ESTATE ANNUAL INVESTMENT PLAN

SCERS REAL ESTATE ANNUAL INVESTMENT PLAN			
	Target	**Minimum Range**	**Maximum Range**
Commitment Level	$80 MM	$40 MM	$120 MM
Number of Funds	2	1	4
Core Fund(s)	0	0	1
Non-Core Fund(s)	2	1	3
Commitment per Non-Core Fund	$40 MM	$25 MM	$50 MM
Commitment per Fund	$75 MM	$50 MM	$100 MM

- Recommend an $80 million commitment budget for 2023, with a range of $40-$120 million
  - Target 2 fund commitments (non-core) averaging $40 million each, with a range of $40-$120 million per fund
  - The 2023 budget does not include any funds in which a commitment was made in 2022 but capital has not been called

Below is the projected Real Estate capital-pacing plan:



GRAPH 15 – REAL ESTATE CAPITAL-PACING PLAN

2023 INVESTMENT STRATEGIES AND THEMES INCLUDE:

- Evaluate Asia core and value add
- Evaluate refrigerated logistics and cold storage globally
- Rebalance the U.S. core open-end portfolio to bring the strategy and geographic mixes within targeted ranges
- Oversee, monitor, and assess the existing manager lineup

LIQUID REAL RETURN

SCERS LIQUID REAL RETURN PORTFOLIO

SCERS' Liquid Real Return asset class has a 2% strategic target allocation; however, it is also used as part of SCERS' Overlay Program to rebalance the overall Real Return asset category to its target allocation. The asset class was created in 2019, when it replaced a legacy Commodities asset class. Liquid Real Return is implemented with two separate account mandates, one managed by Brookfield Asset Management and the other by State Street Global Advisors (SSGA). SSGA also manages SCERS' Overlay Program so its mandate serves a dual purpose, half of the 2% strategic allocation and as an overlay proxy that rebalances the overall Real Return allocation to its target allocation. As of September 30, 2022, the actual Liquid Real Return allocation stood at 1.1%, below the 2% target. The underweight reflects the Overlay Program's adjustment for the aggregate overweight to the Real Assets and Real Estate asset classes.

Liquid Real Return consists of a diversified series of liquid publicly traded real return exposures that complement the broader objectives of the Real Return asset category. Underlying investments include global real estate investment trusts (global REITS), global infrastructure equities, real asset debt, commodities, Treasury inflation protected securities (TIPS), global natural resource equities, REIT preferreds, master limited partnerships (MLPs), and floating rate notes. Given that underlying exposures are publicly traded, Liquid Real Return exposures tend to have higher correlations to equities and fixed income, compared to their private market equivalents within Real Assets and Real Estate.

2022 ACTIVITY

- Oversaw, monitored, and held update calls/meetings with SCERS' Liquid Real Return managers

2023 ANNUAL PLAN

- Perform any rebalancing activity as necessary
- Oversee, monitor, and meet with SCERS' existing Liquid Real Return managers

SECTION 3

OTHER INVESTMENT ACTIVITIES

OTHER INVESTMENT ACTIVITIES

2022 ACTIVITIES

Other projects, activities, and enhancements within the investment program in 2022 included:

- Completed structural modifications to asset classes subsequent to the revised strategic asset allocation, and continued implementation of the revised strategic asset allocation
- Approved adjustments to the overlay proxies, and SCERS transitioned the Overlay Program to the revised strategic asset allocation
- Updated the Master investment policy statement (IPS) and the asset category IPSs to reflect the changes to the strategic asset allocation and underlying asset class structural revisions
- Hired Burgiss and its Caissa platform for portfolio analytics software
- Conducted an annual liquidity analysis as called for in SCERS' Cash Management Policy
- Renewed and extended the contracts with Verus Advisory, for general investment consulting, and The Townsend Group, for real estate consulting, each for three-year terms
- Re-affirmed and updated Cash Management and Proxy Voting Policies
- To comply with California Government Code Section §7514.7, provided public disclosure of calendar year 2021 information regarding fees, expenses, and returns for alternative investment funds in which SCERS invests
- Attended and participated as speakers/panelists at several industry conferences
- Oversaw, monitored, and met with existing investment managers

2023 OBJECTIVES

- Evaluate strategic asset allocation modeling adjustments utilizing updated capital market assumptions
- Complete onboarding of the Caissa portfolio analytics software platform
- Create additional reporting to the Board to incorporate portfolio exposures from Caissa

- Conduct annual liquidity analysis as called for in SCERS' Cash Management Policy
- To comply with California Government Code Section §7514.7, provide public disclosure of calendar year 2022 information regarding fees, expenses, and returns for alternative investment funds in which SCERS invests
- Conduct fiduciary "health check" of SCERS' alternative assets investment contracts
- Continue discussions with the Board regarding SCERS' governance structure and implementation protocols for making investment decisions
- Enhance documentation of internal investment operating procedures and processes
- Oversee, monitor, and conduct calls/meetings with investment managers
- Attend and participate in industry conferences

SECTION 4

BOARD EDUCATION

BOARD EDUCATION

2022 BOARD EDUCATION

- Education on investment implementation protocols
- Education on SCERS' overlay program
- Education on private equity secondary sales
- Education on SCERS' Investment Activity, Compliance, and Watch List reporting
- Education on private markets investing – Shamrock Capital Advisors

2023 BOARD EDUCATION

- Education on performance attribution and analytics
- Strategy update presentations by SCERS' investment managers
- Other educational presentations by Consultants and Staff

SECTION 5

APPENDIX

APPENDIX 1 — VERUS 2022 YEAR IN REVIEW

Verus

Memorandum

To: Sacramento County Employees' Retirement System Board (SCERS)
From: John Nicolini; Verus
Brian Kwan; Verus
Date: November 16th, 2022
RE: 2022 Investment Year in Review

Executive Summary

Following the completion of an Asset/Liability Study in 2021, SCERS spent much of 2022 orienting the portfolio to the newly approved allocation targets and manager structures. Among other work, SCERS completed rebalancing initiatives to bring the portfolio to target, adjusted policy benchmarks, and conducted several public market manager searches. Discussed below are the portfolio initiatives completed in 2022 and planned projects for 2023.

PORTFOLIO INITIATIVES IN 2022

Implementation of the 2021 ALM Study

SCERS completed an asset/liability study in the Summer of 2021 which resulted in some modest changes to the Plan's target allocation and a few implementation changes within global equity and public fixed income. Throughout 2022, SCERS worked on completing the approved changes, which are discussed below.

Global Equity

Within the Global Equity portfolio, SCERS adopted a new Global/Unconstrained sub-asset class with a target allocation of 4% within the 40% allocation to Global Equity.

Asset Class	Target %
Global Equity	40%
Domestic	20%
International (Developed and Emerging)	16%
Global/Unconstrained	4%

- SCERS completed two new global equity manager hires and reallocated one fund from the Growth Absolute Return portfolio to the Global/Unconstrained segment during 2022. There are now three managers within the Global/Unconstrained portfolio which comprises approximately 2.5% of the 4% target allocation.
- Within the Emerging Markets equity portfolio, SCERS initiated a review of the existing managers and structure with the resulting recommendation to redeem from Mondrian and conduct a search for a replacement emerging markets value manager and

potentially add a third manager to the emerging markets portfolio. Staff and Verus expect to make a final recommendation to the SCERS board by year-end.

Fixed Income

In Fixed Income, SCERS implemented the new structure with the redemption of an existing global fixed income mandate and the hiring of two new core/core plus fixed income strategies to bring that allocation to the 12% target.

Asset Class	Target %
Fixed Income	16%
Core/Core Plus	12%
US Treasury	4%

- SCERS redeemed from a Global Fixed Income strategy managed by Brandywine to align the fixed income portfolio with the newly approved manager structure.
- SCERS hired two new core plus fixed income strategies, Brandywine and Reams, which complement the existing two core plus strategies, bringing the portfolio to four equally weighted core plus managers.

PROJECTS FOR 2023

Global Equity

Within global equity, there will be additional searches and rebalancing initiatives to complete.

- Fund the newly approved emerging market strategies
- Conduct a replacement search for Mondrian International Small Cap
- Rebalance the global equity portfolio back to target
- Review potential opportunities within Global/Unconstrained to fill the remaining 4% target allocation

Fixed Income

Fixed Income structure is now at target. SCERS will need to bring the portfolio allocation back to target through rebalancing. In addition, Staff and Verus plan to review the existing managers to ensure fit within the portfolio structure.

Other Projects

- Evaluate SCERS' asset allocation and run some modeling given the large swing in capital market expectations over the past year.
- Staff and Verus will bring education initiatives to the Board.

APPENDIX 2 — CLIFFWATER ALTERNATIVE ASSETS 2023 INVESTMENT PLANS

CLIFFWATER

To:	Sacramento County Employees' Retirement System
From:	Cliffwater LLC
Date:	November 16, 2022
Regarding:	**Alternative Assets 2023 Annual Investment Plans**

Strategic planning is a critical component of all investment programs. The Sacramento County Employees' Retirement System ("SCERS") includes several aspects of strategic planning in the management of its investment portfolio. These include developing a strategic asset allocation, defining investment objectives, forecasting cash flows, determining portfolio structures for each asset class, and, for SCERS' private assets portfolios, developing commitment pacing forecasts. The annual investment plans that SCERS produces each year reflect the total portfolio's strategic goals and objectives and serve as the near-term implementation guides to support SCERS' long-term strategic planning decisions.

The SCERS Investment Staff works closely with Cliffwater to develop the annual investment plans for the alternative assets in the SCERS portfolio. These assets include private equity, private credit, real assets, and absolute return strategies, several of which are focused on illiquid investments. Each annual plan begins with a review of the current portfolio's positioning, performance, and expectations for each asset class, in the context of the objectives each asset class is expected to achieve within the SCERS total portfolio. The annual investment plans are developed to enable each portfolio to meet its objectives and reach its targeted allocation and desired exposures. A significant component of this process for the private investments is developing commitment pacing forecasts to manage the expected allocation to these asset classes over time.

The unique investing characteristics of private asset partnerships requires prospective planning such that allocators like SCERS can regularly commit new capital to private funds to reach or maintain their targeted allocations without significantly over allocating or having outsized unfunded commitments. Investors in private assets use capital budgeting to set a target annual commitment pace, with an expected range of activity around the target to allow for flexibility to adapt as needed to changing market conditions or quality of available investment opportunities. This pacing process is intended to provide vintage year diversification without making unintended "bets" on specific vintage years, or not having the capacity to commit to strategies when desired.

Cliffwater develops commitment pacing forecasts for each private portfolio, including private equity, private credit, and real assets. Each forecast includes fund- or strategy-specific assumptions for expected contributions (capital calls), fair value growth of investments (capital appreciation), and distributions (returns of capital and investment gains) within the private portfolios. Cliffwater applies the assumptions to each of the investments in the current portfolios, as well as to the expected future commitments which are developed through this process. By combining the forecasts for the private asset classes with expectations for the SCERS' total portfolio growth, Cliffwater and the SCERS Investment Staff determine the appropriate level of annual commitment pacing. These annual commitment "budgets" for each private asset class then serve as the basis for determining the number, size, and type of new commitments SCERS expects to make in future years. The annual plans presented to the SCERS Board include the annual commitment plan, projected allocations, and cash flow forecasts for each of the private asset classes.

Private Equity

As shown more fully in the SCERS 2023 Annual Investment Plan, the recommended 2023 investment plan for private equity includes a commitment target of $260 million for 2023 vintage year private equity funds, with an expected commitment range of $200 million to $300 million. With SCERS currently overallocated to private equity, primarily driven by a larger than expected decline in the SCERS total portfolio value combined with outsized appreciation in the private equity portfolio, the 2023 commitment target is lower than pacing in prior years. The expected commitment range is similarly more skewed to the lower end of commitment activity, allowing for more flexibility to slow commitment pacing as needed while still maintaining some additional commitment capacity above the target should opportunities be sufficiently attractive.

The plan is to target approximately nine new partnership commitments, diversified across buyout, growth equity, venture capital, and stressed/distressed funds. These commitments could include globally oriented funds, or funds focused specifically outside of the United States, in additional to funds that invest primarily within the United States. The expected average size of individual commitments is $30 million, with a range of $20 million to $50 million. The lower end of the sizing range should primarily be for funds with a higher expected risk which may warrant a somewhat smaller allocation, or for funds with limited access where SCERS is looking to establish a new general partner relationship.

The SCERS Investment Staff and Cliffwater are forecasting the SCERS private equity allocation will decline to near its targeted allocation by 2024, then continue to trend closely to the 11% target. The SCERS private equity portfolio is projected to continue to be cash-flow positive, with distributions expected to exceed contributions, as it has been for several quarters now. The SCERS private equity portfolio remains well-diversified by strategy, sector, geography, and vintage year. The portfolio's allocations are within their targeted exposure ranges and SCERS will look to continue to maintain these desired allocations as it makes new private equity commitments consistent with its 2023 investment plan.

Private Credit

The recommended 2023 investment plan for private credit includes a commitment target of $140 million for 2023 vintage year private credit funds, with an expected commitment range of $100 million to $180 million. The plan is to target approximately four new partnership commitments, with new allocations to Direct Lending and Opportunistic Lending funds. The expected average size of individual commitments is $40 million, with a range of $30 million to $50 million.

The SCERS Investment Staff and Cliffwater are forecasting the SCERS private credit allocation to reach its targeted allocation in 2025. The SCERS private credit portfolio is also projected to move to be cash-flow positive shortly after reaching its targeted allocation. The SCERS private credit portfolio's allocations are within their targeted exposure ranges for strategy and geography. SCERS will look to continue to maintain these desired allocations as it makes new private credit commitments consistent with its 2023 investment plan.

Real Assets

The recommended 2023 investment plan for real assets includes a commitment target of $190 million for 2023 vintage year real asset funds, with an expected commitment range of $150 million to $230 million. The 2023 commitment target is slightly lower than pacing in prior years, primarily as a result of the larger than expected decline in the SCERS total portfolio value. The plan is to target approximately four new partnership commitments. New commitments in 2023 may favor Infrastructure investments, though may also include allocations to new Energy and Power and Agriculture partnerships. The expected average size of individual commitments is $50 million, with a range of $35 million to $100 million. The upper end of the sizing range is intended to allow SCERS to make a larger allocation to an open-end or dedicated account, consistent with SCERS' "hub and spoke" approach to portfolio construction for real assets. Through this approach, SCERS looks to make larger allocations to funds that are intended to broadly deliver on the portfolio's objectives, complemented by smaller commitments to more specialized, often niche, funds that are intended to generate higher returns and further diversify the portfolio's exposures.

The SCERS Investment Staff and Cliffwater are forecasting the SCERS real assets allocation will remain near its targeted allocation, as it currently is, given expected future commitment pacing. The SCERS Investment Staff and Cliffwater are also forecasting that the real assets portfolio will begin to produce more in distributions than contributions (i.e., become cash-flow positive) beginning in 2023. The SCERS real assets portfolio remains well-diversified by strategy, sector, geography, and vintage year. The portfolio's allocations are within their targeted exposure ranges and SCERS will look to continue to maintain these desired allocations as it makes new real asset commitments consistent with its 2023 investment plan.

Absolute Return Portfolio

The recommended 2023 investment plan for absolute return strategies includes an expectation for one new investment to be made in 2023, expected to be sized at $50 million. Since the absolute return portfolio is already fully developed, including being appropriately diversified across funds and sub-strategies, the only expected new investment activity would be for marginal additions to the portfolio or replacements of funds as desired. While only one new investment is likely in 2023, additional changes are certainly possible; the SCERS Investment Staff and Cliffwater actively monitor the absolute return investments and will adjust exposures as needed and strive to maintain the portfolio quality with investments in the highest conviction strategies. The absolute return portfolio does not require a similar private asset commitment pacing analysis, since the absolute return strategies are typically fully invested at the inception of each investment.

Are We There Yet?

Although most of the SCERS alternative assets portfolios are relatively mature, SCERS continues to adjust and refine these portfolios through their ongoing implementation. As mentioned, the SCERS annual investment plans serve as the near-term implementation guides that support SCERS' long-term strategic planning decisions. Through the implementation of the annual investment plans, SCERS will look to maintain its portfolio quality, which features a deep roster of top tier investment managers, and manage to its target allocations while continuing to generate strong performance that is broadly distributed across each of the alternative asset portfolios.

APPENDIX 3 — TOWNSEND REAL ESTATE YEAR IN REVIEW

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MEMORANDUM

TO: **Sacramento County Employees' Retirement System**

DATE: November 16, 2022

SUBJECT: Real Estate Investment Year in Review (Data as of June 30, 2022)

FROM: **The Townsend Group**

Recently, SCERS increased the target real estate allocation from 7% to 9%, at the same time increasing the Portfolio's permissible exposure to range between 7.0% and 11.0%. As of 2Q2022, real estate represented 9.4% of total plan assets, which is above the target of 9.0% but within the allowable range.

Real Estate Return and Risk Forecasts

Townsend's long-term return expectations for private real estate and real assets are provided below:

Risk & Return	Core	Value	Opportunistic	REITs	Timber	Row Crop	Perm Crop	Private Infrastructure
Expected Net Return	**6.0%**	**6.5%**	**9.0%**	**6.0%**	**5.8%**	**6.0%**	**11.0%**	**7.0%**
Standard Deviation	**6.4%**	**9.1%**	**10.3%**	**20.9%**	**5.0%**	**4.3%**	**10.7%**	**7.3%**

SCERS Private Real Estate Forecasts

Due to the recent decline in total plan assets, SCERS is projected to remain at or above the 9% real estate target for several years. Exposure may actually increase further as recent commitments continue to call capital. Townsend is modeling continued future non-core commitments in order to maintain vintage year diversification, along with partial redemptions from open-end core fund positions to manage the allocation closer to the 9% target. The pacing forecast below assumes $50 million of core redemptions in 2023 and an average of $80 million of non-core commitment per annum between 2023 and 2025.

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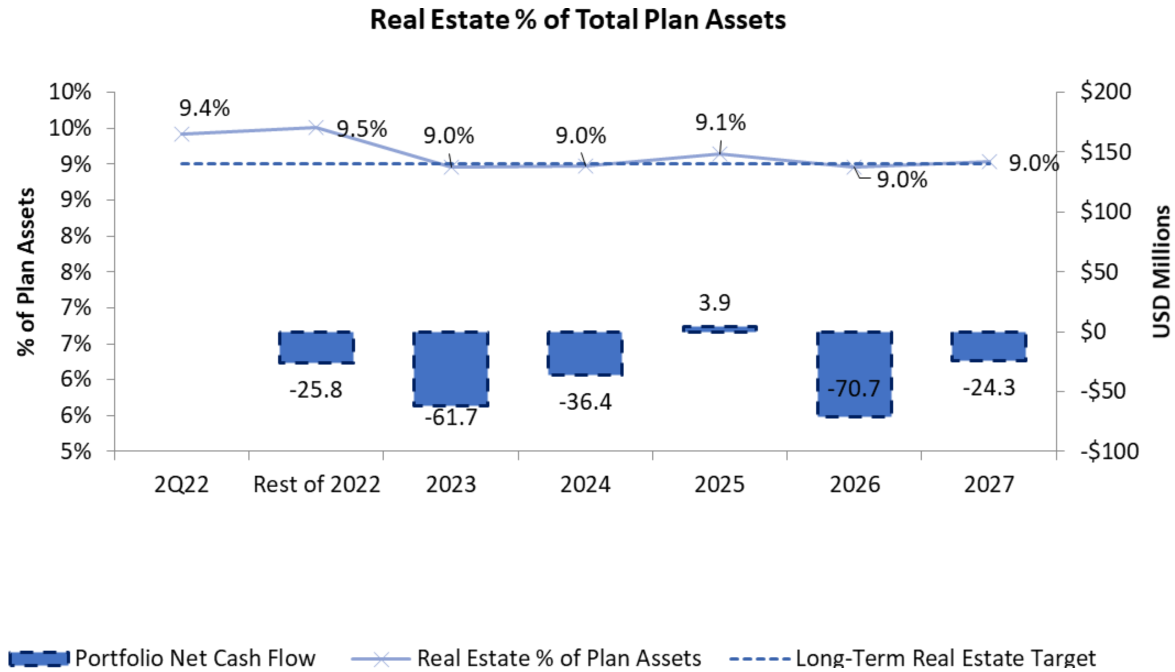

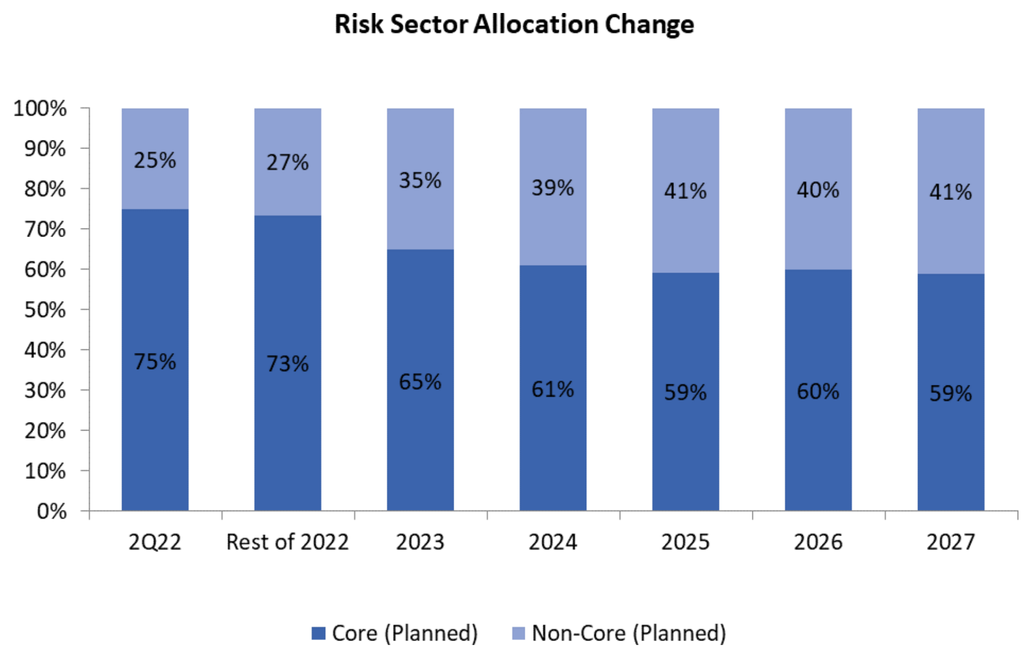

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Recap of 2022

After several real estate guideline changes were approved in 2021, investment activity in 2022 focused on reaching the new target real estate allocation of 9%, increasing non-core exposure to achieve new target weightings (60/40 core/non-core), pursing additional ex-US opportunities to further diversify geographic exposure, while maintaining vintage year diversification in the non-core portfolio, and pursuing attractive thematic investment opportunities.

Following core redemptions in 2021, SCERS did not take any additional action within the core real estate space in 2022. Within the non-core portfolio, SCERS continued down the path of increasing exposure through tactical investments within and outside of the US. The first investment of the year was a $20 million commitment to Seven Seas Japan Opportunity Fund to pursue tactical macro-economic opportunities in Japan and further diversify ex-US exposure. In addition, SCERS made re-up commitments to both Hammes Partners IV and NREP Nordic Strategies V. Hammes focuses on the acquisition and development of medical office assets and ambulatory care centers in the US, and SCERS is an investor in the prior two funds. NREP targets value-add investments in a variety of thematic sectors across Denmark, Sweden, Finland and Norway (with up to 20% allowed to be invested in Poland, Benelux and Germany). SCERS has been an investor with NREP since the first fund in this series.

Recap and Vision for 2023

For 2023, we continue to see tactical non-core opportunities despite softening in some real estate sectors and markets. We expect near-term repricing to reflect higher interest rates and greater economic uncertainty. We also expect returns to moderate over the medium term compared to the outsized market returns of 2021 and the first half of 2022.

Townsend and Staff will continue to pursue the Portfolio's strategic objectives, as approved by SCERS' board. We will consider additional open-end core fund redemptions to satisfy liquidity needs and trim the portfolio over the short-term in order to remain near the 9% target allocation. We will monitor property type exposures and evaluate options to bring industrial exposure down below the 40% limit. In addition, we will continue to identify select non-core opportunities accretive to SCERS' Portfolio, with a focus on sector or regional specialists in thematically interesting offerings likely to take advantage of current market opportunities. We recommend targeting 2-3 new non-core commitments at $25-50 million per fund in 2023.

SCERS

SACRAMENTO COUNTY
EMPLOYEES' RETIREMENT SYSTEM

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