CALSTRS INVESTMENTS

INVESTMENTS BRANCH

Business Plans

FISCAL YEAR
2023–24

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Introduction

Uncertainty has always dominated the future of financial markets, but we were still able to project, within a standard deviation, the likely future outcomes. We always highlighted that even a full standard deviation only picked up two-thirds of the likely outcome. That gave us some sense of realistic expectations. We compounded that false hope by firmly believing that two standard deviations picked up 95 percent of the likely future outcomes. The math and statistics books will still state that as a fact. Yet in the world today, it feels more and more like false precision. The incredible speed and uncertainty of new technology, coupled with the giant mega trends of climate change and bio-diversity loss, make the future more uncertain and more variable than ever. Compound that backdrop with our current geopolitical risks and it wipes away our confidence in our typical financial forecast.

At the front of the Fiscal Year business plan, the CIO usually would present a chart of the future expected growth of the Trust Fund, coupled with a fairly detailed forecast of the expected costs to managing the Investment portfolio. For the first time in twenty years, we are leaving those charts out, due to the uncertainty of the future forecast. I think those forecasts carry the same false sense of precision that the future can be estimated. We still have the charts, and they are available upon request, but the world and financial markets are in a very different place than 20 years ago.

One of the best examples of this variability of change is that we used to use the financial plan to estimate the floor space and number of desks we would need. As of today, we have very little idea of what the future of the office will look like. To compound the point, you can’t be certain if this paragraph or report has been written by staff or by an artificial intelligence bot. We are already seeing examples of video avatars that can generate verbal answers to open ended questions. Forecasting the future seems to have more uncertainty than ever, but that’s just it, maybe it has always been impossible to forecast, we just felt there was a level of consistency.

With that level of uncertainty as a backdrop, the Fiscal year 23-24 business plans try to address the few things we can try to manage and set as our work priorities. First and foremost, as always, it is to achieve an investment return pace that is required by the Actuaries to meet the long-term funding plan of seven percent per year. Couple with that absolute return goal we also have a relative goal to reach our asset class level benchmarks. After those two priorities, the FY Business Plans outline our other goals of: expanding best practices in Diversity, Equity, and Inclusion; continuing the push toward a Net Zero GHG portfolio by 2050 or sooner; and lastly reducing our costs thru expanding the Collaborative Model. Each asset class business plan will address, at the team level, how they plan to concentrate on each of those areas.

Introduction continued

We are also working on two initiatives to navigate this uncertain (any) environment including: (1) Overseeing the total fund's liquidity; and (2) Expanding our Innovation portfolio. While it has always been near impossible to accurately predict the next crisis, it is paramount to manage the total funds liquidity to be in a position to invest across the full business cycle, even when liquidity conditions in the market deteriorate markedly. Specifically, we want to be well prepared to invest during a significant recession, because it is during these time periods when the largest discounts on assets are prevalent. Accordingly, we continue to develop our liquidity tools including the use of derivatives, futures, lending facilities, as well as pacing the total fund's commitments and cash flows.

Secondly, as market conditions rapidly shift, the market opportunities also rapidly change. In order to better capture these opportunities, we have been working on expanding our Innovation portfolio from 0%-2.5% to 0%-5% and increasing its scope to encourage more of our asset classes and investment partners to participate in the sourcing and underwriting of investments. Private credit is a good example of a scalable opportunity in light of the higher interest rate and inflationary environment.

As we have said in the past, the purpose of these plans is to try to plan our work and then work our plan. The challenge in this fast-paced changing world is to keep our focus on the core objective, while also shifting and adjusting to the ever-changing environment, both the physical environment and the financial markets environment.

Christopher Ailman
Chief Investment Officer

Scott Chan
Deputy Chief Investment Officer

FIXED INCOME

FAST FACTS

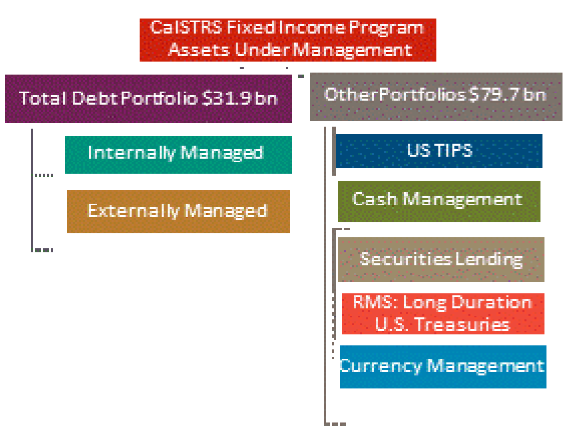
Assets: $31.9 billion as of 3/31/2023
Inception Date: 1987
Asset Management:
Internal Management: $28.5B (89%)
External Management: $3.4B (11%)
Number of External Managers: 5
Benchmark: 95% Bloomberg U.S. Aggregate-Custom/5% Bloomberg U.S. High Yield Cash Pay 2% Cap-Custom
2023/24 Return Assumption: 5.2%
Alpha Objective: 15bps

Fixed Income (FI) also manages programs and/or portfolios for the Fund or other asset classes. Each has their own unique return objective: cash management, protect against inflation and rising interest rates, an increase in market risk, and a strengthening U.S. dollar.

AUM: $79.7B as of 3/31/2023
Internal Management: $63.7B (80%)
External Management: $16B (20%)

PROGRAM DESCRIPTION

Established in 1987 the Fixed Income portfolio is managed both internally and externally using enhanced and active strategies. Fixed Income seeks to provide value through innovative/active asset allocation and bond selection taking advantage of internally and externally managed strategies. In addition, Fixed Income is responsible for several other portfolios and programs including Cash Management, Currency Management, Risk Mitigating Long Duration U.S. Treasuries, Securities Lending and U.S. TIPS.



INVESTMENT TEAM (26)

Director: Glenn Hosokawa (25 years at CalSTRS)

Portfolio Managers: Cathy DiSalvo, Dan Depner, David Gold, Debra Ng, Geetha Arani, Ian McCarty, Rosie Lucchesini-Jack

Associate Portfolio Managers: Anthony Kennedy, Dante Malvini, Darin Yi, Sunny Dhillon

Investment Officers: Aidan Hunter, Allison Prior, Julie Song, Kimmie Nicolas, Marina Kong, Matt Schott, Melanie Guzman, Nick Clyde, Nick Sweet, Solomiya Williams, Stacey Reichenberg, Tiffany Lau
Support Team: Mauriana Raye, Tyler Mah
Vacancies: 1

OUTLOOK FOR 2023-24

In response to the inflationary pressures stemming from the monetary and fiscal policy adjustments to the pandemic, the Federal Reserve has raised interest rates 500 basis points over the last 14 months. With this increase in interest rates, the opportunity set in Fixed Income has become much more attractive on a risk/return basis. The yields available across the Fixed Income public debt universe are at levels not seen in over a decade. Fixed Income staff continues to advocate to increase the invested allocation to the asset class and is making adjustments within its allocation to take advantage of the higher yields.

The most recently approved Asset Liability Management study included a 2% allocation to fund a Direct Lending (Private Credit/Debt) strategy within Fixed Income. While current policy allows Private Credit/Debt with a 5% Fixed Income allocation limit, this dedicated 2% total fund allocation will be to further develop this program within Fixed Income. Private credit is a valuable complement to the Fixed Income portfolio as it offers the opportunity for improved risk-adjusted returns.

During the upcoming fiscal year staff will continue to navigate the changing landscape of tighter policy, higher interest rates and spread volatility while managing to our active risk budget range of ten to 60 basis points. Staff will continue its due diligence of private credit opportunities with the goal of committing capital to strategies that meet our risk and return objectives.

DIVERSITY IN THE MANAGEMENT OF INVESTMENTS

Internal staff: To support the Branch DIMI efforts, one FI team member sits on the internal Investments Diversity Steering Committee, and two additional FI team members sit on the Investments Diversity Committee. Fixed Income staff believes that building diverse teams across personnel classification levels that exhibit equity and inclusion are essential to achieving our return objectives. Attracting and retaining professionals with diverse backgrounds allows for better problem-solving abilities that drive innovation and encourage disparate viewpoints. With 89% of the Fixed Income assets managed internally, we believe that diversity in the management of those assets is a competitive advantage. Regardless of where staff are on their respective career paths, including a variety of team members in stretch assignment projects, senior staff meetings and on investment advisory committee panels allows for improved decision making and better results. FI will continue to seek a diverse pool of candidates for recruitment efforts.

Industry and portfolio engagement: Industry and portfolio engagement drives innovation and change. Fixed Income staff engage with our external managers and investment partners in numerous forums such as Beyond Talk and has a well-established relationship with emerging and diverse Core Plus manager LM Capital.

Portfolio Management: In addition, we have an open-door policy of using diverse women, minority and veteran owned broker-dealers for trade executions and currently conduct business with 12 emerging broker-dealers. New leveraged loan manager Ares has a number of DEI initiatives, programs and policies that reflect their values-driven culture. With the aim to attract, engage, develop and advance diverse talent across the organization and levels of seniority, Ares' efforts include a mentorship exchange, women's leadership coaching program and management accelerator program, to name just a few. A formal DEI council ensures governance and oversight to their established goals. Fixed Income will continue to pursue and engage with emerging and diverse managers.

NET ZERO

Measuring and Reducing Carbon Emissions

At the May 2023 Investment Committee, Fixed Income staff recommended, and the Board approved, a plan to lower carbon emissions within the credit portion of the Fixed Income portfolio. It is in the credit allocation where carbon emissions can be reasonably measured as this is where data and analytical tools exist that can support emissions reduction efforts.

Utilizing a low-carbon optimized index, Fixed Income can reduce carbon emissions while preserving the current index metrics such as yield and duration. Staff will initially target a 15% carbon reduction of the current credit-related indices which will reduce Fixed Income credit portfolio emissions by 12%. This approach allows Fixed Income to begin realizing emissions reductions in alignment with CalSTRS net zero pledge by 2050 or sooner.

Investing in Climate Solutions and Using Influence to Accelerate the Net Zero Transition

With the majority of the Fixed Income assets actively managed in-house, staff remains at the forefront of investors guiding the conversation on industry-wide climate related groups. CalSTRS has a seat at the table at the Cambridge 1.5° Celsius-Aligned Corporate Bonds Index and are long standing members and participants of the Standards Board of the Climate Bonds Initiative and the International Capital Market Associations Green Bond Principles.

In addition, staff continues to be an active buyer of green bonds, sustainability bonds and social bonds.

COLLABORATIVE MODEL 2.0

Over the last 18 months, Fixed Income staff has worked with other asset classes and consultant Cambridge Associates as resources to craft our Private Credit strategy. One of the keys will be to forge collaborative model structures to mitigate fees while benefitting from significant risk adjusted rates of return. Initially, we have focused on existing external relationships with managers that specialize in senior secured, upper middle market, direct lending and seek co-investment and direct investing structures such as revenue sharing to both reduce costs, as well as share in the growth. The current geographic focus will be domestic but could eventually expand into European and Australian markets. With the increase in interest rates over the last 14 months, the targeted return has also risen.

As Fixed Income's private credit strategy evolves, we will continue to collaborate with other asset classes and forge new relationships with existing managers and trusted partners.

GLOBAL EQUITY

FAST FACTS

Assets: $114.2 *billion as of 3/31/2023*

Inception Date: 1986

Asset Management:

Internal Management: $86.9 bn (76 percent)

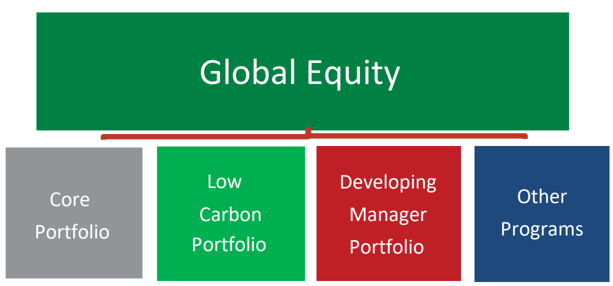
External Management: $27.3 bn (24 percent)

External Manager Portfolios: 28

Benchmark: Effective July 1, 2023, asset-weighted blend of Custom MSCI All Country World Index (ACWI) Investable Market Index (IMI) and Custom MSCI ACWI Low Carbon Target Index

Return Assumption: 8.0%
Risk Assumption: 16.2%
Excess Return Target: 30 basis points, net-of-fees
Active Risk Budget Range: 10 to 50 basis points

PROGRAM DESCRIPTION



Established in 1986 the Global Equity portfolio is invested in passive and active strategies across the U.S., developed non-U.S., and emerging markets. Approximately 76% of the portfolio is managed internally by CalSTRS staff with the rest managed by external investment managers.

The Global Equity team also manages a Developing Manager Program, Cash Equitization Program, and Stock Distribution Program. Beginning in fiscal year 2023-2024, Global Equity will begin managing a Low Carbon sleeve that will eventually hold Total Public Equity's 20% allocation to the MSCI Low Carbon Target Index.

INVESTMENT TEAM (21)

Director: June Kim (9 years at CalSTRS; 27 total)
Portfolio Managers: David Murphy, Jason Crawford, Raymond Venner, Wilson Yee
Associate Portfolio Managers: Edgar Ramirez, Justin Wiles, Sharon Jou, Shawn Webster, Wayne Yim
Investment Officers: Adriana Gutierrez, Alex Glaeser, Chris Louie, Jessie Kong, Jimmy Garcia, Justin Bosley, Mark Melvani, Misty Watson, Shivi Krishna
Support Team: Katherine Chamorro, Unique Coleman
Vacant Positions: 1

OUTLOOK FOR FY 2023-24

Last fiscal year, several challenges reduced investors' risk appetites for equities, including high inflation, interest rate hikes, rising commodities prices due to the Russia-Ukraine conflict, slowing economies, and reductions to corporate earnings forecasts. Markets started to recover from their lows in the fall of 2022, led by large technology companies.

As we look to fiscal year 2023-24, the challenges that dominated last year have ebbed somewhat, but they remain challenges, as indicated by the elevated probability of a U.S. recession in the next 12 months. As a result, the expected return for the Global Equity portfolio for the fiscal year is below the assumed rate of return. Notwithstanding the lower return expectation, the portfolio is well positioned to navigate the challenging environment, given its active managers' stock selection, including tilts to less expensive and higher-quality companies. Staff seek to invest in the most promising opportunities across all regions. The internally managed passive portfolios play a vital role within Global Equity by providing extremely low cost market exposure to all regions and flexibility to adjust allocations to active managers.

DIVERSITY IN THE MANAGEMENT OF INVESTMENTS

Internal staff: To support the Branch DIMI efforts, the GE Director chairs the Investments Diversity Steering Committee, and two GE team members sit on the Investments Diversity Team. The Global Equity team is diverse across various dimensions including work experience, education, background, ethnicity, age, and gender.

Recruitment efforts include broadcasting open positions as widely as possible to attract a diverse pool of qualified candidates. This includes posting with organizations known for their diverse membership in addition to posting at universities and more traditional trade organizations (e.g., CFA Institute).

Industry and portfolio engagement: Global Equity staff actively lead, facilitate, and participate in conferences, organizations, and outreach to promote DEI in the investment industry. Examples include Beyond Talk, Girls Who Invest, P&I Diversity and Inclusion, NASP, Catalyst: California's Diverse Investment Manager Forum, Texas TRS/ERS Emerging Manager Conference, and Meketa's Emerging & Diverse Manager Roundtable.

Portfolio management: Global Equity has allocated approximately $2 billion to minority and women-owned firms that invest with approximately 20 developing managers. In addition, 20% of the equity brokers that Global Equity trades with are minority, women, or disabled veteran business enterprise (DVBE) owned. Global Equity's external investment managers understand the importance of Diversity, Equity, and Inclusion (DEI), and many are considered industry leaders in creating a diverse and inclusive workplace. Knowledge sharing of best practices is a valuable source of information for CalSTRS Investment's DEI efforts. As an example, one external manager has an extensive training and development program that spans across the entire firm and at all levels. They have implemented targeted leadership development and coaching programs, and mandatory training programs for managers and employees on fostering an inclusive work environment. Their connectivity and talent development initiatives focus on promoting community, belonging, growing, and inspiring their talent through career and leadership development. GE will continue to seek, pursue and engage with emerging and diverse managers.

NET ZERO

Measuring and Reducing Emissions

- In alignment with CalSTRS' Investment Beliefs and net zero pledge, Global Equity is committed to achieving a net zero investment portfolio by 2050 or sooner. An important step in this endeavor is reporting an annual carbon emissions measurement of the Global Equity portfolio to track the progress toward net zero goals. Staff is actively working with data providers and the other public market asset classes to address and resolve emissions measurement data issues.
- The CalSTRS Board approved a 20% allocation of Total Public Equity assets to an internally managed portfolio against a Custom MSCI ACWI Low Carbon Target index. Global Equity has managed low carbon index portfolios since 2017. They have performed in-line with expectations, providing a reduction in carbon emissions (Scopes 1 & 2), with low active risk versus the MSCI ACWI index.

Using Influence to Accelerate the Net Zero Transition

- Several Global Equity external investment managers are signatories of the Net Zero Asset Managers Initiative (NZAMI). NZAMI signatories have committed to setting 2030 interim decarbonization goals for assets to be in alignment with net zero. Signatories are also expected to report transparently on their net zero activities and engage with key actors to ensure products and services are consistent with the aim of achieving net zero.
- Global Equity will continue to work with its external investment managers to understand how they assess the risks of climate change and their expectations of how companies and industries will evolve in response to the risks.

COLLABORATIVE MODEL 2.0

- Since the start of the Collaborative Model initiative, Global Equity has significantly increased the amount of assets managed internally. The team now internally manages approximately $87 billion in index strategies across all global markets.
- Internal management allows for more flexibility in implementing timely and risk-controlled portfolio rebalancing. Global Equity implements tactical asset allocation trades for the Total Fund in challenging global equity markets.
- Global Equity will continue to expand internal management capabilities and collaborate with peers, as well as explore new areas that could potentially add value to the fund. Potential ideas for Global Equity's future expansion of the Collaborative Model include: 1) developing quantitative or rules-based models for internally managed portfolios; 2) exploring opportunities with other asset classes to internally manage equity or derivatives strategies.
- In collaboration with Sustainable Investment & Stewardship Strategies (SISS), Global Equity will manage the Total Public Equity active risk to remain within the 10 to 60 basis point policy range approved by the Board in May 2023.

INFLATION SENSITIVE

FAST FACTS

Assets: $18.8 billion as of 3/31/2023

Inception Date: 2008 – part of the Absolute Return asset class. In 2014 - renamed Inflation Sensitive.

Asset Management:

Internal Management: $5.0 billion (27%)

External Management: $13.8 billion (73%)

External Manager Portfolios: 24

Benchmark: The weighted blend of the Bloomberg U.S. Government Inflation Linked Bond Index, Bloomberg Commodities Index, CPI +400 (quarterly lagged), NCREIF Timberland Fund and Separate Account Index (NTFSAI – Value Weighted, net) (quarterly lagged), and CPI +300 (quarterly lagged), Combination of S&P/LSTA Leveraged Loan Index and Bloomberg HY Cash Pay Index +100bps. New strategy benchmarks will be blended with the index as they are added.

Alpha Return Objective: 15 to 25 basis points.

PROGRAM DESCRIPTION

The Inflation Sensitive asset class was established in 2014. The asset class is a hybrid currently comprised of: Infrastructure, Commodities, U.S. TIPS, Timberland, and Agriculture. Approximately 53% of the portfolio is comprised of Infrastructure investments with most of the team focused on that strategy. Additional time is spent, as opportunities arise, on Timberland and Agriculture investments with one team member devoted to Commodities and U.S TIPS portfolio oversight. The team is continuing to review private infrastructure debt opportunities.

INVESTMENT TEAM (14)

Director: Paul V. Shantic (29 years at CalSTRS)

Portfolio Managers: Charles Fitzpatrick, John-Charles Gish, and Michael Warmerdam

Associate Portfolio Manager: Marketa Ostadalova

Investment Officers: Christopher Ellis, Guldip Dhillon, Jackee Mwiti, Krishneel Krishna, Madison Doris, Mohammad Quader, Selina Muasya, Taylor Tsao.

Support Team: Richard Novoa

Vacancies: 2

OUTLOOK FOR 2023-24

Inflation Sensitive currently comprises approximately 6% of the total CalSTRS Fund, reaching its target weight for the asset allocation in early 2023. The major focus of the portfolio has been around the sudden and rapid increase of inflation over the last 12 months.

Inflation has remained higher than normal and is slowing modestly. Recent bank stresses coupled with bank loan and securities valuations have caused wide-spread concern. However, commodity price pressures and returns have eased dramatically over the last few months and while U.S. TIPS returns have gained some incremental value, as the Federal Reserve is slowing rate increases, the eventual decline in interest rates has not yet begun. Therefore, we appear to be approaching an apex in terms of higher interest rates forced by the Federal Reserve and the eventual economic weakness that such actions will spawn.

As the unit entered this fiscal year and has come closer to its asset allocation target Inflation Sensitive has become more selective around managers, co-investment opportunities, and remains comfortable with the number of accounts that have been established. The higher interest rate environment and the denominator effect has slowed commitments even as managers continue to fundraise in what is clearly a tougher market. Infrastructure continues to provide stable returns, income generation capabilities, and many of the assets reprice to the economic circumstances. We expect that inflation will decline in 2023-24 but not approach the 2% level favored by the Federal Reserve until late 2024. Therefore, we expect infrastructure, US TIPS, and private debt to perform well while commodities lag.

We expect to bring no policy changes before the Board this coming fiscal year.

DIVERSITY IN THE MANAGEMENT OF INVESTMENTS

Internal staff: To support the Branch DIMI efforts, one Inflation Sensitive team member sits on the Investments Diversity Team. The Inflation Sensitive staff is diverse. We have expanded our outreach for recruitment through our affinity partners tapping into their membership networks.

A major part of DE&I needs to revolve around enhancing the investment professionals' experience and training. Diverse hiring is not enough, training, and effective mentoring by senior staff is key to the individual's and the unit's future growth. The development of internally guided expertise is necessary to continue the advancement of the Collaborative Model framework.

Industry and portfolio engagement: Inflation Sensitive continues its engagement and outreach efforts with: Beyond Talk, NAA, AAAIM, NASP, NASP/MIDA Africa, along with our own CalSTRS sponsored and co-sponsored diversity efforts. The team continuously engages and collaborates with the diverse managers in our asset class on a regular basis.

Portfolio management: Inflation Sensitive looks forward to participating with the cross-asset class working group to create standardize questions that the unit can utilize in its Due Diligence Questionnaire to get a better glimpse at asset manager policies and practices around DE&I. We want to ensure that we approach the topic in a thoughtful way to not only drive home the importance of the issue but also work towards questions that are cumulative and substantive. Inflation Sensitive will continue to seek, pursue and engage with emerging and diverse managers.

NET ZERO

Measuring and Reducing Emissions

The Inflation Sensitive unit is actively involved with CalSTRS private assets Net Zero Team and has classified a substantial number of assets outside of its fund structures using the GOG taxonomy (Grey-Olive-Green). The unit will look to apply this methodology further into its portfolio holdings over the coming fiscal year. While not a perfect system, it does allow the unit and the Board to look at a collection of assets and make judgements around overall climate-related risks and opportunities.

Using Influence to Accelerate the Net Zero Transition

Over the next fiscal year, staff will continue to push for progress towards net zero by working with external managers, groups establishing climate metrics, and the SISS team to develop better measurement tools. These are issues that all members of the asset management community are struggling to address with no consensus around measurement and reporting. However, staff hopes to develop concrete solutions that will evolve and improve over time. The idiosyncrasies of bespoke private assets are a huge, but not insurmountable hurdle. The unit is cognizant of the challenges that CalSTRS and all asset managers are experiencing in the drive to net zero.

Investing in Climate Solutions

As the SISS unit grows and becomes more active in its market segment, the Inflation Sensitive unit will continue to collaborate with SISS to expand institutional knowledge on net zero-related topics, including the energy transition. However, Inflation Sensitive will stick to its investment philosophy in terms of its acceptance of lower risk, cash flowing assets, and projects in keeping with the Policy adopted by the Board.

COLLABORATIVE MODEL 2.0

Inflation Sensitive's focus has been on value added and a limited number of opportunistic assets. The unit still has a cautious approach to core assets as pricing continues to be aggressive even considering the increase in interest rates. Core assets are very sticky and outright asset sales leading to re-pricings have been few. The increase in inflation has slowed activity and made fund raising more challenging with terms modifying very little. There is still a bit of a wait and see attitude among managers and investors in terms of the longer-term effects of inflation and the Fed's rapid response with rate increases.

Agriculture and Timberland opportunities are limited but the unit still maintains contacts in these sub-asset classes and evaluates opportunities that are of interest.

Allocations to Commodities and the US TIPS portfolio have been paused and are being re-evaluated in response to inflation and the course of interest rates.

Across the portfolio in the areas outlined above, Inflation sensitive has a diverse range of collaborative market structures and continues to seek to apply these tools and structures to reduce fees, enhance returns and control for risks including joint ventures, separately managed accounts, co-investments and a recently formed C-Corp. A long-term objective with our collaborative model investments is to gain greater flexibility to manage liquidity needs in Inflation Sensitive and across the total fund.

INVESTMENT STRATEGY & RISK

FAST FACTS

Total Fund and Risk Management's goal is to improve the risk/return of the CalSTRS fund with short- and long-term Total Fund positioning through research, insights, reporting, and cross asset-class initiatives.

Innovative Strategies' primary goal is to research and invest in strategies that improve the risk and return profile of the Total Fund.

- Innovative Assets as of 3/31/2023: $4.2B
- Inception Date: May 2019
- External Managers: $4.2B (100%)
- External Manager Portfolios: 15 strategies & 13 co-investment vehicles

Benchmark: A short-term blended performance benchmark comprised of underlying strategies and a long-term benchmark of the assumed actuarial rate of return for the Fund at 7%.

Total Fund Alpha return objective: 0.40% over the CalSTRS custom blended strategic benchmark.

OUTLOOK FOR 2023-24

Over the past year, financial markets experienced the largest increase in short-term interest rates in decades. With inflation remaining high, uncertainty remains about Federal Reserve actions and economic growth. At the same time, geopolitical risk remains as an important consideration.

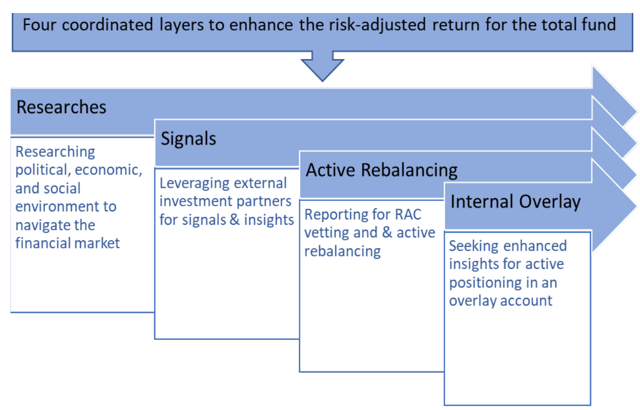
The ISR team continues to collaborate with other asset classes and senior leadership to rebalance the portfolio, manage liquidity, and manage risk through challenging market conditions.

INVESTMENT TEAM (12)

Director: Vacant
Interim Co-Directors: Josh Diedesch, Glen Blacet
Portfolio Managers: Benjamin Wang, Glen Blacet, Josh Diedesch
Associate Portfolio Managers: Anthony Schmitz, Matt Lisonbee
Investment Officers: Angela Tran, Jose Paniagua, Kate Wallen, Kristian Altier, Matthew Toepel
Support Team: Vacant
Vacancies: 2

PROGRAM DESCRIPTION

The ISR team focuses on the CalSTRS portfolio through a One-fund approach with cross asset class initatives, smart rebalancing, risk management and the incubating of investments strategies and overlay positioning. The ISR team focuses on the longer-term ALM study and shorter-term tactical Total Fund positioning with risk budgeting and opportunistic investing by gathering and reporting on market, political, economic, and social turbulences to help inform the Risk Allocation Committee's (RAC) cash management and rebalancing decisions.



DIVERSITY IN THE MANAGEMENT OF INVESTMENTS

Internal staff: To support the Branch DIMI efforts, one ISR team member sits on the Investments Diversity Team. ISR staff is actively involved in the student intern program, providing "shadow" opportunities, mentorship, and active participation on projects.

To promote inclusivity, the team focuses on providing opportunities for contribution and growth of every team member through stretch assignments and actively contributing to team discussions. ISR staff is also actively involved in the CalSTRS mentorship program, serving as mentors to more junior staff. As the team grows, ISR advertises positions with a wide range of affinity partners to seek a diverse, well-qualified candidate pool.

Industry and portfolio engagement: ISR staff will support engagement and outreach opportunities within Diversity in Investment Management including but not limited to CalSTRS Beyond Talk, CalSTRS Affinity Group Tour and CalPERS/CalSTRS Diversity Forum.

Portfolio management: To ensure diversity, equity, and inclusion (DEI) efforts of external partners, the ISR Innovative Strategies team has a diversity section in their standard due diligence questionnaire, which requires prospective managers to complete prior to starting in-depth due diligence. Staff uses an industry standard Diversity Metric template and follows guidelines to motivate GPs to adopt actions that advance DEI over time. continue to follow-up.

During the initial due diligence and ongoing manager oversight, staff engages with the manager on their diversity efforts. All current asset managers in the Innovative Strategies portfolio have a diversity program. If managers are not demonstrating sufficient leadership in this area, staff will request action plans and continue to follow-up.

NET ZERO

Measuring and Reducing Emissions

In collaboration with the SISS team, the ISR team has a major role in net zero strategy research and implementation, specifically integrating climate scenarios into the Asset Liability Management study and modeling, and supporting public markets GHG emissions measurement. The ISR team also works across asset classes to incorporate CalSTRS' net zero-related strategies into active risk budgets and portfolio analysis.

Investing in Climate Solutions

Many low-carbon solutions (for example batteries) require different metals and minerals throughout various supply chains. The metals and mining industry will continue to be a pivotal component of modern society in the transition to a net zero economy. The Innovative Strategies portfolio has an allocation to a general partner that purchases royalties and commodity streams from junior miners, primarily located in North America, Australia, and Scandinavia. Within the strategy, 50% of the deals are forecast to be metals needed for a transition to a low-carbon future (cobalt, lithium, nickel, copper, etc.).

COLLABORATIVE MODEL 2.0

The ISR team's Collaborative Model focuses on:

- Total fund management initiatives and strategies to take advantage of cross asset class opportunities.
- Collaborating with other assets classes and actively working with banks, investment managers, and other parties to enhance and develop balance sheet management, leverage, liquidity, asset allocation, and counterparty relationship strategies. Seeking partners for potential investment ideas and opportunities for JV's, co-investment, and "enhanced economics" such as revenue sharing as well as identifying and investing in new opportunistic strategies to capitalize on potential market dislocations.
- Enhancing risk analytics, reporting, and modeling new investment opportunities and structures.

PRIVATE EQUITY

FAST FACTS

Assets: $47.6 Billion as of 03/31/2023

Inception: 1988

Blind Pool Partnerships: $37.9 Billion (80%)

Co-investments: $8.8 Billion (18%)

Other Co-investments: $1.0 Billion (2%)

Number of Active Partners: 121

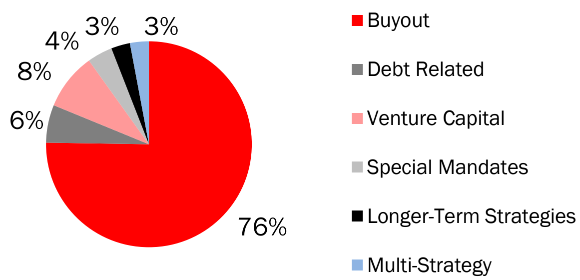
Benchmarks: (1) Customized State Street Global Exchange℠ Private Equity Index (GXPEI); and (2) MSCI ACWI IMI plus 150 basis points.

Capital Market Assumptions:

Return: 9% Risk: 26%

Long Term Target Allocation: 14%

Asset Class and Sub-Asset Class % as of 3/31/2023



PROGRAM DESCRIPTION

Established in 1988. Components include limited partnership commitments, co-investments, and secondary transactions.

Global mandate: currently 74% of the portfolio is North America-based.

Portfolio is concentrated with 121 active manager relationships. Selection is biased toward partnerships with experienced and stable management teams, strong track records, appropriately sized funds, and high levels of side-by-side general partner commitments. Strong alignment of interest and utmost integrity are requisite.

INVESTMENT TEAM (28)

Director: Margot Wirth (22 years CalSTRS)

Portfolio Managers: Aizaz Ali, Carlos Monfiglio, Georgia Pappas, Robert Ross, Seth Hall and Tom Baker

Associate Portfolio Managers: Delfina Palomo, Henry Ha, Geetika Misra, Katherine Rodota, Josh Ungar, Nadiath Adechoubou and Vanessa Morris

Investment Officers: Arthur Ma, Christopher Moore, Christopher Singh, Khoi Nguyen, Miguel Uribe, Nick Koehler, Ryan Brown, Samantha Samson, Scott Huckell, Tyler Rico, and Wayne Chung

Analysts: Jessica Singh, Kylee Neidigh, and Nancy Vang

Vacancies: 9

OUTLOOK FOR FY 2023-24

Private equity investing, like other asset classes, faces a complex mix of opportunities, challenges, and risks. The vast majority of private equity general partners experienced a decrease in deal volume during the first half of 2023 because of slower fundraising, a concern over the macroeconomic environment, and overall borrowing conditions. Spiking interest rates have led to an increase in the cost of debt, which is setting up for a meaningful decline in deals, exits, and fundraising during the second half 2023. Further dampening activity, many institutional private equity portfolios are at or above their allocation targets due to the "denominator effect". However, there are several factors that favor PE in this environment such as diminished competition due to less available capital, the slowing pace of public deals/IPOs, and a growing market for secondary liquidity solutions in partnerships. All of which is driving a decrease in valuations that can provide favorable investment entry points for general partners who have dry powder. This dynamic may lead to the next few vintages being particularly strong as seen in prior cycles.

As a reminder, private equity investing involves long time horizons and patient capital. Staff believes that the long-term strategies and plans for CalSTRS's Private Equity program remain intact. That said, Private Equity is considering and, in some cases, implementing shorter-term tactical shifts regarding commitment pacing and portfolio composition.

NET ZERO

Private Equity believes its industry will play an important role in society's transition to a decarbonized future. The private equity industry excels at providing "transformational capital" to effectuate substantial, rapid change to corporate entities. The private equity industry will play an ever-increasing role in providing capital to companies on the front line of directly reducing greenhouse gas emissions. Additionally, the industry has always been instrumental in establishing and following industry best practices across all sectors which will increasingly include carbon disclosure and reduction.

Measuring and Reducing Emissions

As noted in the May 2023 Investment Committee Meeting, measuring and reporting on carbon emissions in CalSTRS' PE portfolio is particularly challenging given the complexity and limitations of data availability.

Given the above factors and that most private equity asset managers are only in the early stages of dedicating resources to the task of carbon emissions accounting, Staff is endeavoring to analyze its portfolio, and for the time being, evaluate its managers based on the degree to which each is engaged in carbon emissions measurement and reporting.

Private Equity will utilize the approved Green-Olive-Gray (GOG) framework at the general partner level and determine what percentage of general partners are actively measuring carbon emissions across their underlying portfolio. "Green" is being applied when measurement and reporting initiatives are in progress, "Olive" is being applied when a general partner has committed to measuring emissions and is actively and materially working towards that goal, and "Grey" is being applied when the general partner does not yet have a plan regarding emissions measurement.

Using Influence to Accelerate the Net Zero Transition

Staff is actively working with various organizations in the private equity industry regarding net zero. Specifically, the Institutional Limited Partners Association (ILPA), which is focused on a broad array of limited partner issues including carbon reporting, and the ESG Data Convergence Initiative (EDCI), which is working towards standardized ESG reporting in the private equity industry including Green House Gas (GHG) emissions (Scope 1 and 2 and optionally Scope 3) and renewable energy usage.

Investing in Climate Solutions

Private Equity is actively focused on sourcing low-carbon investment opportunities and regularly collaborates with the SISS team on these efforts. Over the past year, PE and SISS have evaluated numerous opportunities and jointly completed three direct investments across a range of low-carbon sectors. In addition, PE helped source the SISS Private Portfolio's inaugural investment in a manager focused on industrial decarbonization.

Overall, Staff has actively communicated CalSTRS' focus on low-carbon investment opportunities to various general partners who are now acutely aware that this is a high priority. As a result, Staff continues to get inbound calls on co-investment opportunities where decarbonization is a key investment theme or part of the general partner's value creation plan. Going forward, Staff will maintain this level of engagement with general partners to ensure that additional opportunities are presented to CalSTRS.

DIVERSITY IN THE MANAGEMENT OF INVESTMENTS

Internal staff: To support the Branch DIMI efforts, two team members sit on the Investments Diversity Team. Private Equity highly values diversity and has successfully maintained and recruited a team with a high-level of gender, ethnic, racial and other forms of diversity. Private Equity will continue to make efforts to attract a diverse pool of qualified candidates. Staff will look to further engage on diversity this year by supporting employee resource groups (e.g., women on the PE team networking together).

Industry and portfolio engagement: Private Equity collaborates with ILPA on industry initiatives and issues related to diversity as well as with other diversity-focused organizations such as NAIC, NASP, AAIM and NAA.

Portfolio management: Private Equity seeks and promotes diversity amongst its investment partners. Such efforts are multi-faceted and include (but are not limited to) the funding of emerging mangers (which tend to be substantially more diverse than established legacy organizations). To date, Private Equity has made commitments targeting such managers totaling $2.6 billion. An additional estimated $4.2 billion in commitments have been made to partners with a majority ownership by diverse individuals. Private Equity will continue to seek, pursue and engage with emerging and diverse managers.

COLLABORATIVE MODEL 2.0

Collaborative Model 1.0 focused on increasing the percentage of co-investments from less than 5% to over 20% of commitments from 2019 through 2021. Collaborative Model 2.0 for Private Equity strives to further increase this metric to 25% to 35%. However, staff has lowered its investment pace in 2023 given liquidity considerations and have raised the bar for co-investments given concerns over market valuations and asset price discovery. In particular, a greater amount of co-investments also provides more flexibility in managing our liquidity in an uncertain environment.

Private Equity continues to be well positioned to accomplish the Collaborative Model 2.0 objectives, having built a highly capable specialist team over the last several years and with our business partners valuing the team's professionalism, knowledge, efficiency, and reliability. The resources provided and policy changes enacted have been put to good use and the team will continue to build upon the already established platform.

Anticipating Collaborative Model 3.0, Staff continues striving to become better and more sophisticated in co-investments and other forms of direct investing. With increased resources, Staff is now serving as observers on corporate boards to better monitor larger portfolio positions and to further advance knowledge of operating companies in general. Private Equity is also building skills and planning to increase capabilities to transact secondary deals (both partnerships and co-investments). No associated policy issue for this will arise in the coming fiscal year.

REAL ESTATE

FAST FACTS

Assets: $51.1 billion NAV as of 03/31/2023

Inception Date: 1985

Asset Management:

Controlled Positions: $39.3B (77%)
Non-Controlled Positions: $11.8B (23%)
External Manager Portfolios: 67
Benchmark: Open End Diversified Core Equity (NFI-ODCE)
Alpha Objective: 70 basis points over benchmark

PROGRAM DESCRIPTION

CalSTRS Real Estate Program		
Core $29.9 Billion 58.5%	Value Add $10.0 Billion 19.5%	Opportunistic $11.2 Billion 22.0%

Direct investment structures with high levels of control (Collaborative Model) are preferred. Staff seeks out best-in-class investment managers and institutional capital to diversify the portfolio on a national, regional, and/or local level. The portfolio is well diversified by product type/geographies and includes real estate private credit investments to further reduce risk.

INVESTMENT TEAM (28)

Interim Directors: Julie Donegan / Mitch Pleis

Portfolio Managers: Bruce Deutsch, Daniel Clark, Don Palmieri, Hank Thomas, Michael McGowan, Sally Stocks

Associate Portfolio Managers: Christopher Preston, Greg Arendt, Kari Maynard, Michael Yager, Orintheo Swanigan

Investment Officers: Alicia McClain, Cristine Chan, Emilio Navarrete, Gina Tavarez, Helena Posner, Hiep Tran, Jake O'Hagan, Mauricio Smith, Samantha Phan, Tiffany Vispetto

Support Team: Susan Daniel, Alina Lindquist, Ashley Chapman, Kayla Ruotolo, Oksana Kovalchuk

Vacancies: 3

OUTLOOK FOR 2023-24

The outlook for the next fiscal year is marked by a mix of opportunities and challenges. On the positive side, real estate investments have historically been a strong hedge against inflation, and the current cycle is proving this. Although valuation and debt issues frequent newspaper headlines, market fundamentals are generally balanced. Buoyed by stable fundamentals, select sectors will likely experience growing rents and net income over the next year.

Residential and industrial (warehouse) buildings are likely to continue to see healthy demand and potentially increased rents. Rent increases are moderating from very high levels from the last two years but are still strong enough to potentially outpace inflation. We are also seeing a resumption of rent growth in high-quality shopping centers and in niche sectors, like self-storage. Conversely, challenges facing the office sector will not recede soon. Remote work has reduced the total need for office space. The future of office space will continue to evolve as hybrid and return to office policies normalize. Net effective rents have decreased in this sector and are likely to remain muted in the near-term.

During the coming year, staff will continue its deliberate investment pacing and sell non-strategic assets to provide additional capacity for new investments that reflect distressed pricing, not distressed assets. Staff will adjust to market conditions, assessing the impact of higher interest rates on the portfolio while selectively evaluating new opportunities that capture strong fundamentals with flexible business plans that can adapt to changing market conditions.

DIVERSITY IN THE MANAGEMENT OF INVESTMENTS

Internal staff: To support the Branch DIMI efforts, three RE team members sit on the Investments Diversity Team. Real Estate continues to enhance and broaden its internal DEI outreach through hiring practices and involvement in branch-wide initiatives focused on DEI.

Industry and portfolio engagement: Real Estate staff are active participants in CalSTRS' focused committees providing insights and leadership at the asset class level. Real Estate sponsors diverse interns through the Pension Real Estate Association/Sponsors for Educational Opportunity (PREA/SEO) program, hiring college students over the past five years. PREA/SEO interns have participated in industry training programs that provide real-time knowledge and experience needed to gain a job offer in the competitive real estate investment management industry.

Over the past three years, Real Estate engaged external managers through the Property Management Pathway Program, an internship program sponsored by the PREA Foundation and Urban Alliance, that trains high school students in underserved communities for careers in property management and maintenance.

Portfolio management: Real Estate supports the development of emerging investment management firms by providing them with access to institutional capital while providing a path to direct allocations for the next generation of real estate investment management talent. CalSTRS' partnership with Belay Investment Group, a majority woman-owned investment firm that invests in emerging and diverse platforms, spans across both our emerging manager program and sustainable investment platform. CalSTRS recognizes the deep pool of talent in the industry and has committed over $10 billion to emerging real estate managers since the formal inception of the program in 2001. Emerging managers currently total $418 million in AUM. CalSTRS Real Estate staff regularly participates in industry-wide diversity and inclusion programs. Real Estate has a leadership role in supporting the PREA diversity initiatives and is helping to promote DEI initiatives at National Council Real Estate Investment Fiduciaries (NCREIF) and other industry conferences.

NET ZERO

Measuring and Reducing Emissions

Staff determined that partnering with Global Real Estate Sustainability Benchmark (GRESB), a leading provider of environmental, social, and governance (ESG) performance data and peer benchmarks, would be an efficient way to obtain carbon emissions data for the portfolio.

Real Estate initiated measurement of approximately 380 assets with a combined gross net asset value (NAV) that comprises an estimated 55 percent of the total real estate portfolio value. GRESB measurements for 2023 are currently underway. Staff are encouraging managers and partners to increase their efforts to obtain better data coverage on carbon emissions and are expanding efforts to collect emissions data on non-control investments, where data may not be readily available, such as commingled fund investments.

Investing in Climate Solutions

Real Estate staff actively encourage managers and partners to examine ways to reduce the carbon footprint of the real estate portfolio. In addition to examining capital improvements or procedures that will reduce waste and energy use, staff has started to review the feasibility of adding solar capability on various assets. Staff expect these initial efforts will likely expand in the coming years.

Accelerating the Net Zero Transition

Staff continue to engage with investment managers and partners on improving their sustainability practices and aligning their emissions reduction plans with CalSTRS net zero goals. In 2022, CalSTRS staff joined the PREA Environmental Committee and became a co-chair of the new NCREIF ESG Committee. Additionally, several members of the Real Estate ESG committee are active participants on industry wide ESG initiatives and are actively sought for their experience and leadership in sustainability. These leadership roles give CalSTRS the opportunity to encourage and provide education around the integration of ESG initiatives, which support best practices in sustainable investment decision-making across the institutional real estate community.

COLLABORATIVE MODEL 2.0

A pioneer in collaborative structures, Real Estate continues to develop and expand its use of highly controlled joint ventures and strategic investments into real estate operating companies (REOCs). Staff has hired an external advisor to oversee CalSTRS' REOC investments. This has improved our ability to cohesively manage our existing investments along with providing a platform from which to leverage industry insights and source additional REOC opportunities that are accretive to the portfolio.

Further, Real Estate continues to seek external like-minded institutional investors to partner with to scale existing and future REOC platforms. Real Estate continues to partner internally with other asset classes, such as Fixed Income and Sustainable Investment and Stewardship Strategies teams to gain scale and leverage economic benefits for CalSTRS where opportunities arise that cross asset classes.

Given the much higher interest rate environment and tight general credit conditions, we believe Real Estate's greater proportion of control and collaborative model structures provides an advantage in managing our liquidity.

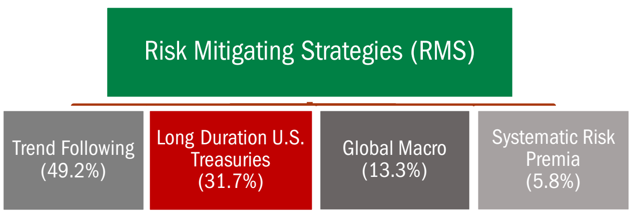
RISK MITIGATING STRATEGIES (RMS)

FAST FACTS

Assets: $26.6 billion as of 3/31/2023
Inception Date: July 2016
Asset Management:
Internal Management: $8.44B (31.7%)
External Management: $18.16B (68.3%)
External Manager Portfolios: 14

Benchmark: RMS asset class uses a blended performance benchmark comprised of the actual weightings for each of the strategies utilized in the portfolio multiplied by their respective benchmarks.

PROGRAM DESCRIPTION



The objective of RMS is to provide protection to the Total Plan during deep and extended equity market downturns. The portfolio strategies currently consist of: trend following, long-duration U.S. Treasuries, global macro, and systematic risk premia.

RMS maintains a level of portfolio risk that is prudent and allows the program to fulfill its mandate of providing diversification over a full business cycle. RMS' stated objective is to generate 20 basis points of positive relative return versus the policy benchmark.

INVESTMENT TEAM (12)

Director: Steven Tong (40+ years at CalSTRS)
Portfolio Managers: Carrie Lo, Jeffrey Jaro
Associate Portfolio Managers: Dianna Dean, Sean Ehrlich
Investment Officers: Denny Young, Ibukun Aina, Michel Paniagua, Saphira Tran, Stefanie Meza, Zang Thao
Support Team: Karen Pham
Vacancies: 2

OUTLOOK FOR 2023-24

The previous fiscal year saw heightened volatility in both equities and rates as markets gyrated between recession and inflation fears. Market uncertainty will likely continue as inflation, and thus rates, remain higher. The market hopes for rate cuts due to a recession, as growth trajectories and central bank policies around the world diverge. This creates both challenges and opportunities for the RMS portfolio, which is tasked with preserving capital when equity markets suffer.

Following a record period for trend following the current environment has proved challenging. Trend managers have generally reduced exposures and should be well-positioned to capture any new trends that emerge. Long duration U.S. effectiveness was challenged in the rising rate environment last year. The behavior has been changing and it remains to be seen whether it will return to its former pattern. For global macro, the story is very similar where elevated volatility, market dislocations and asset price dispersion across regions create a rich opportunity set for the strategy. Systematic risk premia expects to continue to benefit from diverging monetary and fiscal policies across regions. A potential headwind to performance is sudden repricing of risk stemming from monetary policy uncertainty.

Across the portfolio, RMS continues manager searches while working on enhancements to portfolio construction and risk management processes. RMS is also monitoring capacity limitations and enhancing allocation processes relative to rebalancing and optimization. With these efforts, collaboratively but not exclusively, RMS' accomplishments and challenges contribute to reaching the mandate of providing protection to the total plan and strengthens RMS' oversight of the portfolio.

RMS accomplishments, include enhancements to operational due diligence and fee monitoring, as well as new detailed performance attribution reporting and risk monitoring of counterparties, geographical exposures, liquidity, market, and others risks that can affect the RMS portfolio. A challenge that lingers for RMS is to find qualified candidates with desired expertise to fill vacancies.

DIVERSITY IN THE MANAGEMENT OF INVESTMENTS

Internal staff: To support the Branch DIMI efforts, two team members sit on the Investments Diversity Team. Diversity has been a pillar of RMS since it was established in July 2016. RMS encourages expanding opportunities to all qualified candidates across the investment management industry and within RMS. When recruiting for the RMS program, at least one or two women participate on the interview panel and usually the majority of the panel members are ethnically diverse. RMS also plans to participate in recruiting events at local universities to reach diverse talent.

Industry and portfolio engagement: RMS participates and speaks at events, webinars, and podcasts, including AAAIM and Texas Teachers Emerging Manager conference. In addition, RMS is a member of the 100 Women in Finance's Global Fund Women. These organizations showcase the diversity of CalSTRS and hopefully inspire women and people of color to seek roles in and advance in the industry.

Portfolio management: Five of RMS's fourteen external managers include investment teams where women and/or people of color have significant leadership roles. RMS has established the definition of an emerging external manager to include funds up to $2B, given the growth of assets in the industry. RMS's first allocation to a majority women-owned investment manager launched in 2022. To continue to track the DEI progress of its existing managers, RMS participated in the CalSTRS' initial diversity survey in Fall 2022. Going forward, all managers receive an annual survey. RMS will also continue to seek, pursue and engage with emerging and diverse managers.

NET ZERO

Measuring and Reducing Emissions

RMS remains committed to helping CalSTRS achieve its net zero ambitions. To date, RMS has calculated and reported Scope 1 and Scope 2 emissions from the portfolio's long cash equities holdings. RMS also continues to examine the feasibility of widening the pool of securities suitable for measurement. However, in the alternatives space there is currently no regulatory guidance or industry consensus on how to treat short positions, leveraged positions, or derivative instruments. Additionally, there is no well-defined approach to dealing with dynamic exposures. These measurement challenges affect the majority of the RMS portfolio and are significant headwinds to formalizing a net zero investment program.

Using Influence to Accelerate the Net Zero Transition

RMS engaged Cambridge Associates and explored potential pathways to a reduced carbon portfolio. RMS decided that its best opportunity to produce real-world impact is to adopt a plan of strategic engagement with managers. RMS will leverage its influence to encourage adoption of net zero-aligned corporate policies and investment processes, where possible. RMS is designing an external manager monitoring framework that applies Cambridge's net zero guidelines to systematically evaluate managers' progress towards integrating net zero considerations within their organizations in order to measure net zero integration over time and identify areas that require improvement.

RMS continues to monitor the evolution of net zero investing in the alternatives space through constant dialogue with managers. RMS identified three broadly defined approaches: I) Integration of long-short climate factors into security selection models, II) Modification of flagship funds to exclude high carbon emitters from the trading universe, and III) Offering long-biased funds that target specific ESG outcomes or funds that profit from the transition to a low-carbon economy. RMS will continue to monitor for low-carbon investment opportunities that also fulfill its risk mitigation mandate and provide feedback to managers on net zero-related issues.

COLLABORATIVE MODEL 2.0

The Collaborative Model allows RMS to improve cost effectiveness as it pursues the objective of diversifying the equity market risk of the CalSTRS total plan. RMS continues to refine and improve the program and has begun to work with other asset classes to address the liquidity needs of the total plan. In the coming year, RMS expects to increase the number of offerings under the diversifying strategies sleeve, which has been added to the RMS portfolio to diversify the risk of the other four sleeves as well as to improve the program's response to extreme tail events and unexpected market shocks. RMS will continue to focus on cost reduction by negotiating aggressively with new managers and will take opportunistic advantage of scenarios where costs relative to existing managers can be reduced. RMS will also focus on ensuring that CalSTRS improves its profit retention by seeking to reduce the incentive fee payouts to its managers when possible. RMS will also continue to explore opportunities to support liquidity for the total plan, as well as researching options for internal management of certain strategies within RMS to lower overall costs.

SUSTAINABLE INVESTMENT & STEWARDSHIP STRATEGIES (SISS)

FAST FACTS

Inception Date: 1978 (as Corporate Governance)

SISS Public Portfolio (as of 03/31/2023):
Assets: $9.4B
Internal Management: $5.3B (56%)
External Management: $4.2B (44%)
External Manager Portfolios: 9
Benchmark: CalSTRS Custom MSCI All Country World Investable Market Index (MSCI ACWI IMI)
Target Return & Current Active Risk: 45 bps target return; 129 bps forecasted active risk

SISS Private Portfolio (as of 03/31/2023):
Total Net Asset Value (NAV): $64.3M
Fund Investments (NAV): $25.7M
Co-investment (NAV): $38.6M
Total Commitments (Funded & Unfunded): $1.4B
Number of External Partners: 5
Benchmark: Blended weight of respective private asset class benchmarks; positive contributions to sustainable global economy

PROGRAM DESCRIPTION

The SISS (formally known as Corporate Governance) unit was established in 1978 and is responsible for CalSTRS sustainable investment related activities. The unit has three focus areas, including the implementation of CalSTRS net zero portfolio emissions, by 2050 or sooner, pledge:

Sustainable Investment: Portfolio management includes public market strategies (activist, sustainability-focused and risk-controlled low-carbon) and private market strategies with attractive risk-return characteristics and demonstrable positive social and environmental outcomes.

Stewardship: Activities to align the financial markets with CalSTRS long-term investment horizon. Primary activities include proxy voting, portfolio company engagement and regulatory/legislative engagement to influence sustainable business practices.

Strategic Relations: Outreach and communications to a wide range of internal and external audiences with a focus on CalSTRS investments and engagements.

INVESTMENT TEAM (22)

Director: Kirsty Jenkinson (4yrs CalSTRS; 28yrs total)
Portfolio Managers: Aeisha Mastagni, Brian Rice, Daniel Lau, Nicholas Abel
Associate Portfolio Managers: Douglas Chen, Jackie Liu, Nile Garritson, Sarah Maile
Investment Officers: April Uyematsu, Gabriel DeMesa, Ilena Drake, Joakim Mahlberg, Matthew Saha, Michael Wilson, Nicole Yamamoto, Rajveer Dhanoa, Rekha Vaitla
CEA: Michael Weston
Support Team: Gerade Mejia, Samuel Hernandez, Steven Parker
Vacancies: 3

OUTLOOK FOR 2023-24

SISS believes there are significant long-term tailwinds – driven by public policies, technology, and consumer preferences – supporting the sustainable investment efforts of the unit. 2022 was a challenging year for sustainability-oriented investments within the public markets due to the Russian invasion of Ukraine, recession fears, rising interest rates and a rebound in the traditional energy industry. This led to a market shift from growth to value and shorter duration investments. However, investor demand and asset flows for broader sustainability-oriented opportunities and investments remained resilient in FY22-23 and were further buoyed by the passing of the Inflation Reduction Act in the U.S.

Staff intend to grow CalSTRS' exposure to private market low-carbon solutions in the SISS Private Portfolio in alignment with the 1% target allocation in the current Asset Liability Management Study. The Portfolio will invest opportunistically across the risk-return spectrum leveraging both its 'New Opportunities' sleeve and its 'Scaling' sleeve, in collaboration with other private market asset classes.

A principal challenge in the next fiscal year will be balancing and prioritizing the allocation of the team's resources between increasing investment due diligence and escalating stewardship initiatives.

DIVERSITY IN THE MANAGEMENT OF INVESTMENTS

Internal staff: To support DIMI, two SISS team members sit on the Investments Diversity Steering Committee and support Branch diversity efforts.

While recruitment is an ongoing challenge for the SISS team - given strong competition for specific sustainable investment skillsets - the team intentionally seeks to prioritize diversity in the hiring process. The current team benefits from gender, national and cultural diversity with multiple team members having been born outside the U.S. and over five languages spoken fluently.

Industry and portfolio engagement: Influencing corporate board oversight of DEI remains a Stewardship Priority through CalSTRS collaboration with the Human Capital Management Coalition (HCMC) and the California Investors for Effective Board Diversity. Additionally, DEI is actively promoted through proxy voting, including votes against directors of non-diverse boards and CalSTRS support for multiple shareholder proposals requesting enhanced board director diversity and skills disclosure.

Portfolio management: SISS does not have a formal emerging manager program but proactively evaluates and encourages partners to continuously improve their DEI activities. As of 03/31/2023 four out of fourteen (29%) SISS external partners self-identify as diverse managers. In addition, all sustainability-focused managers in the SISS Public Portfolio have extensive DEI programs including firm-wide unconscious bias training in addition to staff and stewardship-related diversity goals. The SISS team intentionally requests that potential new partners provide a written policy addressing workplace DEI as well as evidence of supporting implementation practices.

NET ZERO

Measuring and Reducing Carbon Emissions

Emissions Measurement: SISS is leading and supporting the public markets emissions measurement process, including measuring SISS Public Portfolio emissions. During FY23-24, SISS will also apply CalSTRS 'Green-Olive-Grey' framework to SISS Private Portfolio holdings to better understand carbon exposure, to help direct future low-carbon investment and to support other private market asset classes in their emissions measurement efforts.

Emissions Reductions: Both SISS Public and Private portfolios target low-carbon investments, limiting further emissions reductions. However, to reduce CalSTRS Public Equity emissions by allocating 20% of total public equity exposure to the Low-Carbon Target Index (LCTI), the SISS Public Portfolio's LCTI exposure will be transferred to the Global Equity portfolio (effective 7/1/23) so that the LCTI can be scaled to reach the 20% allocation.

Investing in Climate Solutions

SISS Public Portfolio: After the LCTI is transferred to Global Equity, the SISS Public Portfolio will still hold approximately $1 billion in a risk-controlled, low-carbon transition readiness strategy in public companies most prepared to succeed in the transition to a low-carbon economy, as well as approximately $2.8 billion in sustainability-focused public equity managers who look to invest in companies that are supporting the transition to a low-carbon economy. During FY23-24, SISS will be considering new allocations to additional sustainability-focused public equity managers investing in the low-carbon transition.

SISS Private Portfolio: The portfolio was approved in 2021 to provide a systematic platform to serve as a source of long-term capital appreciation and opportunistically increase CalSTRS exposure to low-carbon solutions that are additive to the Total Fund. Last fiscal year, SISS allocated approximately $1.4 billion to low-carbon solutions within the portfolio and intends to continue expanding investments in line with asset allocation targets.

Using Influence to Accelerate the Net Zero Transition

The SISS team is responsible for escalating CalSTRS climate and net zero oriented stewardship activities with companies, regulators, and policy makers by (1) executing proxy votes to hold company directors accountable for corporate climate risk management; (2) influencing companies to provide climate risk reporting aligned with the Taskforce on Climate-Related Financial Disclosures (TCFD) and provide scope 1 and scope 2 emissions disclosure; and (3) conducting targeted engagement with high emitting companies to set appropriate targets to reduce greenhouse gas emissions.

COLLABORATIVE MODEL 2.0

The SISS Private Portfolio advances the goals of the Collaborative Model through its 'Scaling' and 'New Opportunities' Portfolios.

Scaling Portfolio: Leverages existing CalSTRS partnerships to increase sustainability-focused co-investment and joint venture opportunities at preferred economics across CalSTRS private asset classes.

New Opportunities Portfolio: Allows SISS to explore new CalSTRS sustainability-focused partnerships to take advantage of unique alpha opportunities where advantaged economics may exist. At times, these investments could include opportunities that do not 'fit' cleanly into existing private asset class policies and benchmarks.

Collaborative Model Outlook

Capital Deployment: The SISS Private Portfolio aims to commit at least $1.5 billion in the upcoming fiscal year. Staff anticipates a higher proportion of underlying investment within the New Opportunities Portfolio, given its robust pipeline.

Potential Focus Areas: SISS will continue to evaluate private market low-carbon solutions, flexible capital structures for opportunistic climate infrastructure, strategic ownership of GP stakes, and innovative investments through partnership investing and co-investing to decarbonize hard-to-abate emission sectors. As co-investments and deal complexities increase, operational complexity will also increase requiring vigilance in resourcing and prioritization.

Policy Considerations: The SISS Private Portfolio's growth plan will be informed and supported by ongoing discussions and decisions regarding the Total Fund Opportunities Portfolio.

Private Asset Class Collaboration: SISS will build upon successful cross-asset class collaboration to further develop the SISS Private Portfolio Scaling sleeve pipeline. SISS is also collaborating with private asset class colleagues to establish an external pool of consultants to assist with more complex transactions (i.e., a greater proportion of co-investments, joint ventures, and direct investments) to further the goals of the Collaborative Model

investing to decarbonize hard-to-abate emission sectors. As co-investments and deal complexities increase, operational complexity will also increase requiring vigilance in resourcing and prioritization.

Policy Considerations: The SISS Private Portfolio's growth plan will be informed and supported by ongoing discussions and decisions regarding the Total Fund Opportunities Portfolio.

Private Asset Class Collaboration: SISS will build upon successful cross-asset class collaboration to further develop the SISS Private Portfolio Scaling sleeve pipeline. SISS is also collaborating with private asset class colleagues to establish an external pool of consultants to assist with more complex transactions (i.e., a greater proportion of co-investments, joint ventures, and direct investments) to further the goals of the Collaborative Model.

INVESTMENT OPERATIONS

FAST FACTS

Assets: $ 307.2 billion as of 3/31/2023

Asset Mix	In Millions	%
Public Equity*	123,599	40.2
Real Estate*	51,106	16.6
Private Equity*	47,724	15.5
Fixed Income	31,934	10.4
Risk Mitigating Strategies	26,629	8.7
Inflation Sensitive	18,773	6.1
Innovative Strategies*	4,255	1.4
Cash	2,728	0.9
Strategic Overlay	412	0.1
Total	**$ 307,160**	**100%**

* Includes Sustainable Investment & Stewardship Strategies
Public and Private investments total of $9,471 (in Millions)

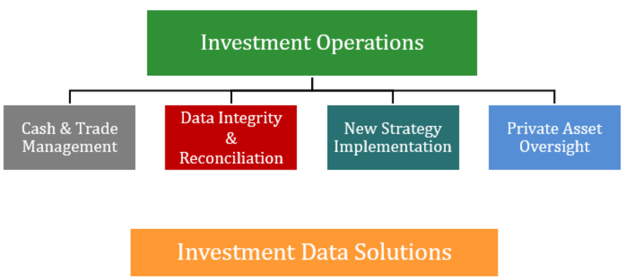
Asset Management:

Internal Management: $137.2B (45%)

External Management: $170.0B (55%)

Number of External Managers Portfolios: 188

PROGRAM DESCRIPTION



Investment Operations was formally established in 1987 and is an essential component of the Investments Branch. Investment Operations focuses on a multitude of operational and trade management functions to support internal and external portfolio activities across all asset classes, such as pre-settlement and post-trade portfolio controls, and cash flow management to ensure fund liquidity to meet member obligations. Additionally, Investment Operations manages the CalSTRS global custodian relationship to protect investment assets and minimize custodial risk, which enables investment management to concentrate on generating alpha.

INVESTMENT OPERATIONS TEAM (31)

Head of Investment Operations: Kelly Criss (9.5 years at CalSTRS, 18 years industry)

Associate Portfolio Managers: Harmony Kingston, Haytham Sharief, Matthew Schroeder, Pedro Morais

Investment Officers: Alicia Osborn, Andrey Golub, Carlos Maciel, Daniel Thai, Diego Sanchez, Edwin Chu, Eli Bradaric, Erica Hogans, Harshini Perera, Huy Ngo, James Hagerty, Joanne Taylor, Karen Tuason, Lilit Arakelyan, Lucy Yang, Mami Wong, Michael Carlson, Mylene Wu, Ralph Smith, Robert Corey, Ron Leu, Sonia Sanchez, Taylor Henry, Thomas Willardsen, Timothy Smith

Support Team: Muriel Dimel

Vacancies: 3

INVESTMENT DATA SOLUTIONS TEAM (2)

Head of Investment Data Solutions: Albert Yong (6 months at CalSTRS, 21 years industry)

Associate Portfolio Manager: Jen Enos

Vacancies: 1

OUTLOOK FOR 2023-24

Valuation Oversight: We continue to establish operational processes and controls for valuation oversight of new investment strategies, while developing and implementing best practices of valuation.

Total Fund Management: Investment Operations will work closely with the asset classes to research and support the implementation of new strategies for the total fund. This also includes total fund reporting, data management, trading, cash forecasting, and liquidity oversight.

Operational Risk Management: As a core responsibility, Investment Operations is focused on identifying, assessing, and mitigating potential risks, improving the effectiveness of our controls, and the adoption and oversight of the master custodian service level agreement.

Technology: The newly created Investment Data Solutions (IDS) group, oversees the technology initiatives across the Investments Branch, including building data solutions and a branch wide data strategy. New analytics solutions are needed for dynamic data aggregation to provide deeper analysis at the total fund level and capabilities for new scenario analysis.

Challenges: To be successful in achieving our goals, Investment Operations will need to continue utilizing industry sponsored educational opportunities and peer networks to obtain additional expertise, support, and knowledge to be successful. Investment Operations will continue to prioritize the competing new strategies/projects across the Investment branch.

DIVERSITY IN THE MANAGEMENT OF INVESTMENTS

Internal staff: The Director of Investment Services is a member of the CalSTRS Investment Office Diversity Steering Committee. Members of the Investment Operations team actively participate in the Diversity and Inclusion Committee.

From a recruitment perspective, we advertise positions with the various affinity groups to identify potential diverse recruits. Prior to conducting interviews, we ensure the pool of qualified candidates includes a sufficient degree of diversity, and that our interview panel is gender balanced when possible. In addition, we partner with Human Resources for targeted advertisements and to assist in the screening criteria for our recruitments.

Industry and portfolio engagement: support engagement and outreach efforts by attending industry events and participating in community programs such as Beyond Talk, Pathways for Women, and National Charity League.

NET ZERO

Investment Operations is committed to supporting CalSTRS' pledge to move the investment portfolio to net zero emissions by 2050 or sooner.

Staff contribute to the cross- asset class Net Zero Green Team and additional internal working groups, assisting with the development and implementation of action plans and evaluation of potential operational risks. The team partners with asset classes to implement and support new sustainability-focused investment strategies across the Total Plan, including the creation and expansion of the SISS Private Portfolio. Staff also leverage strategic partnerships with service providers to gain new low-carbon insights while being cost conscious and supporting current low-carbon internal strategies.

With the need for increased measurement, analytics, and reporting around net zero strategies, staff will partner with the asset classes and CalSTRS master custodian to research and support enhanced analytic solutions, data feeds, and technology. Staff is currently testing a reporting tool that will potentially assist in the collection of net zero attributes to better understand carbon exposure and risk.

COLLABORATIVE MODEL 2.0

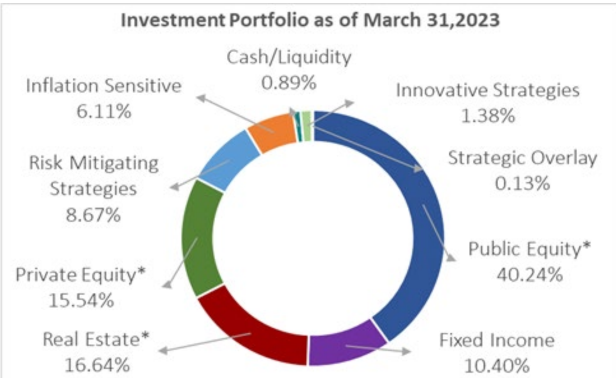
With the expansion of the Collaborative Model, Operations has added responsibilities to the existing essential day-to-day functions, such as: providing operational due diligence expertise for fixed income programs, enhancing our cash flow analysis and cash forecasting for new collaborative and opportunistic strategies, additional valuation oversight functions for private equity, and collaborating with the asset classes to achieve readiness for the U.S. and Canadian securities conversion to T+1 settlement. Operations continues to partner with the asset classes to implement and service the investment strategies.

Operations staff continues to innovate and optimize current tasks to expand bandwidth, increase efficiency, and enhance our operational control, monitoring and mitigation functions.

INVESTMENT PERFORMANCE & COMPLIANCE (IPC)

FAST FACTS

AUM: $307.2 billion (3/31/2023)
Internal $137.2 billion (45%)
External $170.0 billion (55%)
Benchmark: STRS Custom Total Fund Index



*Includes Sustainable Investment & Stewardship Strategies Public and Private investments

PROGRAM DESCRIPTION

The IPC program comprises of two functional areas: **Investment Performance** and **Investment Compliance.**

Investment Performance provides strategy support, performance attribution and cost analysis. Our team ensures performance accuracy through a robust examination. We produce performance and costs analytics to help understand the drivers of performance, evaluating short- and long-term investment decisions. We also implement and manage investment custom benchmarks and the portfolio hierarchy structure.

Investment Compliance reduces business risks of the Total Fund while cultivating a culture of integrity. We monitor investment compliance and ethics activities while advising the asset classes on compliance topics and best practices over the life cycle of an investment or strategy. We foster a principle-based philosophy to avoid and mitigate potential conflicts of interest. We also oversee adherence to current policies, local and foreign laws, and regulations.

INVESTMENT TEAM (14)

Head of Investment Performance & Compliance: Shifat Hasan (11 years at CalSTRS; 19 years total)
Associate Portfolio Managers (APM): Kimberly McDonnell, Melissa DaRonco, Mike Dunigan
Investment Officers: Catrina San Juan, David Munoz, Katie Lee, Marcella Tedla, Monica Robinson, Ramona Marzion, Richard Morgan, Ryan Phillips, Sanjay Singh
Support Team: Margarette Augusto
Vacancies: 4

OUTLOOK FOR 2023-24

The Total Fund is managed through a complex structure of portfolios and benchmarks representing various aggregates rolling up to an asset class. Currently there are 273 portfolios, 125 composites and 415 benchmarks. As the asset classes and management bring in new strategies to the Total Fund, this complex structure needs to maintain its integrity and consistency across the plan. IPC is poised to support all strategic and tactical portfolio decisions in asset classes and for the Risk Allocation Committee. Our role is to stay on task and up to date on internal and external events impacting the investments in the Total Fund, and support the Investment Branch's objectives.

An area of immediate focus in FY 23-24 for IPC is the implementation and expansion of an enhanced performance reporting system known as Solovis. In partnership with our master custodian, State Street Bank, Solovis will replace our performance analytics system providing a Total Fund Multi-Asset Class platform and is a critical step toward modernizing the investment reporting infrastructure.

We continue to evaluate and enhance performance analytics to provide valuable insights related to investment objectives and allocation decisions. Our team is heavily involved in the Investments Branch's policy update process. In FY 23-24, the team will continue the ongoing modernization and re-branding of the Investment Policy Statement (the "IPS"). We partner with the CIO, DCIO and the respective asset classes, working with the Board's consultant to ensure policy updates are adhering to sound and consistent practices and are operationally implementable. We will work closely with the Investment Strategy and Risk team to implement the policy implications of the Asset-Liability Management study. We will also continue to work alongside the stakeholders to bring forward an Investment Procurement policy. We continue our efforts to enhance our Investment Regulatory Oversight Program with the objective to be proactive in evaluating and implementing the ever-changing investment regulatory environment that impacts CalSTRS as an asset owner and investor. This includes recommendations to enhance our regulatory filings processes, increase resources and support the Investment Branch by being the hub for all regulatory and compliance inquiries and activities.

DIVERSITY IN THE MANAGEMENT OF INVESTMENTS

Diversity is a competitive advantage factor to be integrated and applied across the Total Fund as it: (1) brings advantages to our workforce; (2) contributes to a sustainable investment portfolio that is aligned with the risk and return objectives; and (3) drives innovation and change.

Internal staff: The Director of Investment Services and the Head of IPC are members of the Investments Diversity Steering Committee. The Head of IPC provides frequent input and guidance of the Diversity in the Management of Investments (DIMI) strategy. Three additional IPC team members sit on the Investments Diversity Team.

For us, diversity and inclusion begin with our hiring practices, expanding beyond traditional definitions and seeking to create a team of individuals with complimentary backgrounds and skill sets. We come to the table with diverse work styles, apparent with our education and experience and integrated inclusion within our team. We focus on learning and utilizing individuals' strengths through focus sessions to better understand and appreciate our collective strength derived from our diverse personas. We support mentorship opportunities for staff and students through CalSTRS internal mentorship programs and Student Internship Program respectively. Our comprehensive diversity and inclusion practices help us make well researched and sound recommendations and find solid solutions to mitigate business risks and drive performance, ultimately providing the highest value to our members. In support of the DIMI's program, a significant percent of our team participated in the Staff Pulse Survey to provide feedback and opinions regarding diversity and investment objectives.

Industry and portfolio engagement: Investment Services continues to assist with the Beyond Talk workshops to further discussions about diversity and allyship.

Portfolio management: IPC supports the vision of the DIMI program and its increased integration into the asset classes. IPC played a key role in the implementation of the AB890, providing support for the survey management and data collecting. We will continue that support with ongoing Pulse Surveys for Diversity and expanded data analysis for the Annual Diversity Progress report.

NET ZERO

IPC is actively involved in the net zero strategic priority, providing valuable subject matter expertise, and discussing best practices in the following areas: regulatory oversight, security exclusions cost scenario reporting, and performance and cost implications relating to active portfolio decisions. In partnership with the Sustainable Investments and Stewardship Strategies (SISS) team, IPC has created analytics around exclusion costs to the portfolio and plans to expand these analytics to inform portfolio risk management decisions. in FY 23-24.

IPC staff are members of multiple internal net zero working groups. As the initiatives around net zero progress, IPC is relied upon to provide advice around cost measures, policy implementation, measuring performance results, and adhering to the overall project plan in alignment with the Total Fund's risk return goals. Specifically, the team serves as a critical strategic partner to the asset classes in the implementation of investments and investment strategies, Total Fund structure changes, benchmarks and assessing certain pre-funding and post funding business risks.

COLLABORATIVE MODEL 2.0

Our IPC team plays a key advisory role in the Collaborative Model across the Total Fund initiatives including Total Fund liquidity, leverage, and active risk budgets by providing best business practices, valuable insights, and implementation support. Our team provides leadership in calculating savings from the Collaborative Model strategies. These efforts are in line with Collaborative Model 2.0 objectives as we take advantage of our opportunity set, implement non-traditional portfolio hierarchies, and measure our results.

Our team has embarked on a consultative-oriented model to support the asset classes in their investment endeavors while keeping us all within the guardrails of internal controls, policies, and regulations. Additionally, the use of the Disclosure Compliance portal within the Investment Compliance team continues to provide efficiency to the disclosure process. Such as the recent automation of the DEI Survey and the ESG Risk Disclosure Questionnaire. This supplies teams with a centralized way to collaborate.

CALSTRS
INVESTMENTS