March 10, 2017

TO: President and Members  
Board of Retirement

FROM: Steve Davis  
Chief Investment Officer

SUBJECT: Asset Allocation Implementation Plan

INTRODUCTION / BACKGROUND:

During much of 2016, SCERS conducted an asset liability modeling study which concluded with the approval of a new asset allocation structure by SCERS’ Board at the January 2017 Board meeting. The asset allocation is presented below, and compared against SCERS’ prior asset allocation, in a functional asset category framework:

<table>
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<tr>
<th>Asset Category/Class</th>
<th>Prior Policy Allocation</th>
<th>New Policy Allocation</th>
<th>Changes</th>
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<tbody>
<tr>
<td>Growth</td>
<td>63.0%</td>
<td>59.0%</td>
<td>-4.0%</td>
</tr>
<tr>
<td>Public Equities</td>
<td>45.0%</td>
<td>41.0%</td>
<td>-4.0%</td>
</tr>
<tr>
<td>Private Equity</td>
<td>10.0%</td>
<td>9.0%</td>
<td>-1.0%</td>
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<tr>
<td>Public Credit</td>
<td>2.0%</td>
<td>2.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Private Credit</td>
<td>0.0%</td>
<td>4.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Growth Oriented Absolute Return</td>
<td>6.0%</td>
<td>3.0%</td>
<td>-3.0%</td>
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<tr>
<td>Diversifying</td>
<td>22.0%</td>
<td>25.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Core/Core Plus Fixed Income</td>
<td>15.0%</td>
<td>10.0%</td>
<td>-5.0%</td>
</tr>
<tr>
<td>U.S. Treasury</td>
<td>0.0%</td>
<td>5.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Global Fixed Income</td>
<td>3.0%</td>
<td>3.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Diversifying Absolute Return</td>
<td>4.0%</td>
<td>7.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Real Return</td>
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<td>16.0%</td>
<td>1.0%</td>
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<tr>
<td>Real Estate</td>
<td>7.0%</td>
<td>7.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Private Real Assets</td>
<td>5.0%</td>
<td>7.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Commodities</td>
<td>2.0%</td>
<td>2.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Opportunities</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
As a reminder, the key changes between the approved asset allocation and SCERS’ prior asset allocation are as follows:

Growth:
- Reduced overall allocation to Growth from 63% to 59%
  - Public Equities decrease from 45% to 41%
  - Private Equity decreases from 10% to 9%
  - A dedicated 4% allocation to Private Credit is added
  - Public Credit (high yield bonds) remains at a 2% allocation
  - Growth Oriented Absolute Return decreases from 6% to 3%

Diversifying:
- Increased overall allocation to Diversifying from 22% to 25%
  - Diversifying Public Fixed Income remains at a 15% allocation
    - Core/core plus fixed income decreases from 15% to 10%
    - A dedicated 5% allocation to U.S. Treasuries is added
    - Global fixed income remains at a 3% allocation
  - Diversifying Absolute Return increases from 4% to 7%

Real Return:
- Increased overall allocation to Real Return from 15% to 16%
  - Private Real Assets increases from 6% to 7%
  - Real Estate remains at a 7% allocation
  - Commodities remains at a 2% allocation

The approved asset allocation moves SCERS further toward achieving its broad plan objectives. It is a more risk balanced portfolio than the prior policy portfolio with a similar expected return profile. It has a lower standard deviation, and narrower range of potential outcomes, making it less susceptible to negative returns during down markets. It also increases diversification, especially to investment strategies with low and negative correlations to equity markets. In addition, it has the potential to produce greater cash flows for SCERS’ plan with a dedicated private credit allocation and an increased allocation to private real assets, which is important in an environment where cash flows are necessary to meet increasing benefit payment obligations.

With the asset allocation having been approved by SCERS’ Board, there are several projects that will need to be completed in 2017 in order to move toward implementation of the new portfolio. The objective of this memorandum and the presentation by Staff and SCERS’ investment consultants at the March Board meeting, is to highlight these projects and provide an approximate timeline in which these will be completed and presented to SCERS’ Board for each of the underlying asset classes within each of the functional asset categories.

First, a new investment policy statement (‘IPS’) will need to be developed that covers SCERS’ overarching asset allocation and portfolio. The existing broad portfolio IPS is outdated, even related to SCERS’ prior asset allocation.
Second, asset class structures will need to be developed for new segments of the portfolio, such as Private Credit, while other asset class structures will need to be revised for carry over segments of the portfolio, such as Absolute Return. This will include creating individual asset class investment policy statements for new asset classes of the portfolio, and revising existing investment policy statements for those asset classes undergoing changes. The IPSs will cover asset class objectives, guidelines, ranges and benchmarks.

These projects will be performed during the remainder of 2017, with each asset class covered in whole at subsequent Board meetings. Below is a preview of the evaluation that will take place within the asset classes that have undergone change as a result of the new asset allocation, as well as a timeline for when each will be presented to SCERS’ Board for consideration.

**INVESTMENT POLICY STATEMENT:**

At the outset of the implementation plan timeline, SCERS will need to revise the investment policy statement for the overall investment program. Verus and Staff believe that this broad IPS should represent a primary policy for SCERS’ plan, covering the investment portfolio at the highest level. As referenced previously, each individual asset class will have a separate IPS that represents the objectives of an asset class, as well as investment guidelines, ranges and benchmarks. The primary IPS is meant to be a long-standing document with few forward revisions (revisions can occur at the asset class IPS level more frequently), that will guide the overall investment program. It will cover topics such as SCERS’ investment objectives and investment philosophy, authority, governance, asset allocation structure, rebalancing and monitoring.

The revision of the primary IPS will be a two-step process, in which Verus and Staff will first present to SCERS’ Board an outline of the key components of the IPS, including what should be in it and how it should be structured. During this first step, Verus and Staff will seek feedback from SCERS’ Board related to the outline and general structure of the IPS. A recommended IPS would then be brought to SCERS’ Board for approval at a subsequent Board meeting. It is expected that the primary IPS outline will be presented at the April Board meeting, followed by a recommended IPS at the May Board meeting. Revisions to the IPS’s of the individual asset classes will be presented during the month when the implementation plan is covered for a particular asset class.
PRIVATE EQUITY / PRIVATE CREDIT:

Within the new asset allocation, SCERS introduced a dedicated 4% allocation to Private Credit. Private credit investments have historically been made within SCERS’ Private Equity portfolio. These existing Private Credit investments will be moved to the new Private Credit asset class, and SCERS’ Private Equity portfolio is being reduced from a 10% target allocation to a 9% target allocation. Presented here is SCERS’ current Private Equity portfolio with the Private Credit allocations removed, which reduces SCERS’ actual allocation from 7.4% (as of September 30, 2016) to 6.7%. Also presented is the current Private Credit allocation as of September 30, 2016, which totals 0.7%, so SCERS has already made some progress toward the new 4% target.

Key considerations for the implementation of the Private Equity and Private Credit asset classes are:

Private Equity:

- Modify the existing IPS for Private Equity to reflect the removal of Private Credit
- Modify the long-term commitment pacing schedule for Private Equity to reflect the adjusted target allocation of 9%
  - Do not expect material changes for Private Equity pacing

Private Credit:

- Develop a new IPS for Private Credit
  - Portfolio objectives
  - Characteristics of permissible investments
  - Guidelines and allocation ranges
  - Benchmark
- Long-term and 2017 commitment pacing recommendation for Private Credit, including target timeline to reach the 4% target allocation

Cliffwater and Staff anticipate concluding the analysis within the Private Equity and Private Credit asset classes over the next couple of months and are targeting the April and May Board meetings, respectively, to present an implementation plan recommendation for each to SCERS’ Board.
ABSOLUTE RETURN:

Within SCERS’ recently approved asset allocation, the Absolute Return portfolio was broken up into two separate components: (1) Growth Oriented Absolute Return (component of the Growth asset category); and (2) Diversifying Absolute Return (component of the Diversifying asset category). The allocation between Growth Oriented and Diversifying Absolute return is moving from an approximate 60%/40% split, to a 30%/70% split, in favor of Diversifying Absolute Return. Cliffwater provided a breakdown of SCERS’ current Absolute Return exposures as of January 31, 2017, combining both the direct absolute return portfolio and the Grosvenor separately managed accounts (SCARF and SCARF B). With the recent allocations to two global macro systematic macro strategies (Winton and Graham) and an additional investment to an existing diversified multi-strategy strategy (AQR) within the direct program, as well as some recent increases in diversifying strategies within the Grosvenor portfolios, SCERS’ current allocation stands at 5.2% Diversifying Absolute Return, and 4.6% Growth-oriented Absolute Return. So, some progress has already been made in moving towards the new Absolute Return structure.

Key considerations for the implementation of the Absolute Return asset class are:

- Develop a new IPS for Diversifying and Growth Oriented Absolute Return portfolios
  - Portfolio objectives
  - Characteristics of permissible investments
  - Sub-strategy guidelines and allocation ranges
  - Benchmarks
- Provide an implementation plan for reaching target allocations for Diversifying and Growth Oriented Absolute Return portfolios
  - Continue making direct portfolio absolute return investments
  - Adjust exposures within the Grosvenor portfolios

Cliffwater and Staff anticipate concluding the analysis within the Absolute Return strategies over the next few months and are targeting the June Board meeting for the presentation of an implementation plan recommendation to SCERS’ Board.
PRIVATE REAL ASSETS:

Within the new asset allocation, SCERS Board approved a slight increase in the Private Real Assets allocation, from 6% to 7%. The primary permissible investments within the Private Real Assets asset class include infrastructure, energy and agriculture. SCERS also has a debt backed by collateralized real assets strategy in the portfolio. The current Private Real Assets portfolio is still young, but fairly diversified across the investable universe. However, the energy portfolio is more mature and has the largest current allocation, while the infrastructure portfolio consists of several large commitments that have not drawn significant amounts of capital to date. The infrastructure segment is intended to make up the largest allocation within the asset class over time. The current allocation to Private Real Assets is 2.0% as of September 30, 2016, and the gap between the target and actual allocation is filled with the liquid SSGA Real Assets Overlay Strategy.

Key considerations for the implementation of the Private Real Assets asset class are:

- Form a separate IPS for the Private Real Assets asset class, which is currently part of a broader Real Assets IPS
  - Portfolio objectives
  - Characteristics of permissible investments
  - Sub-strategy guidelines and allocation ranges
  - Benchmarks
- Cliffwater and Staff will return to the Board with a new commitment pacing recommendation given the increase in Private Real Assets
  - Most likely moderate increases from the pacing schedule approved in November 2016

Cliffwater and Staff anticipate concluding the analysis within Private Real Assets during the third quarter of 2017, which will conclude with the presentation of an implementation plan recommendation to SCERS’ Board.

PUBLIC FIXED INCOME:

Within SCERS' recently approved asset allocation, the Public Fixed Income portfolio was broken up into two separate components: (1) Public Credit which includes mostly below investment grade credit (component of the Growth asset category); and (2) Diversifying Public Fixed Income which includes core/core plus fixed income, U.S. Treasuries and global fixed income (component of the Diversifying asset category).
The Public Credit segment within the Growth asset category is maintaining a 2% allocation, so there is no implementation measures planned in 2017, other than to continue to evaluate the investment manager managing this strategy.

Within the Diversifying Public Fixed Income segment, capital preservation is being emphasized, so SCERS is reducing its exposure to core/core plus by 5%, and adding a dedicated 5% U.S. Treasury allocation. As part of the implementation plan to add the dedicated Treasury exposure, Verus and Staff will analyze the exposures within SCERS’ current Diversifying Public Fixed Income managers, particularly the mix between Treasury and credit (mostly high-grade) exposures. For SCERS’ current core/core plus managers, SCERS’ aggregate Treasury exposure is 23.6%, which compares to the Barclay’s Aggregate’s 44.0% exposure. Possible considerations within the implementation plan will include either reducing exposure to the core mandate, which currently has a 37.3% allocation to Treasuries, or reducing exposure to the core plus mandates, which have differing Treasury exposures. One core plus manager, TCW, has a 33.3% allocation to Treasuries, while the other core plus manager, Prudential, has a 3.3% allocation to Treasuries. Using the current core mandate as a source of capital for the dedicated Treasury allocation would increase SCERS’ overall Treasury exposure less than using the core plus mandates as a source of capital.

Key considerations for the implementation of the Public Fixed Income portfolio are:

- Develop an implementation plan to add the new dedicated Treasury allocation
- Modify the existing IPS for Public Fixed Income
  - Portfolio objectives
  - Characteristics of permissible investments
  - Guidelines and allocation ranges
  - Benchmark
- Evaluate the current Public Fixed Income exposures within the Diversifying asset category, to make sure they are fulfilling the objectives of the asset category

Verus and Staff anticipate concluding the analysis within Public Fixed Income during the second or third quarter of 2017, which will conclude with the presentation of an implementation plan recommendation to SCERS’ Board.
PUBLIC EQUITIES:

Within SCERS’ newly approved asset allocation, SCERS’ Public Equity portfolio is decreasing from 45% to 41%. The current target split between Domestic Equity and International Equity is 22.5% and 22.5%. The new target split will be 21% and 20% between Domestic and International Equity, respectively.

Below is the current breakdown of SCERS’ Domestic Equity and International Equity exposures across style, market capitalization, and active versus passive.

Key considerations for the implementation of the Public Equity portfolio are:

- The role that REITs will have in the Public Equity structure
- The mix between passive and active exposure
- The approach to active management
- The number of investment managers
- The current Public Equity benchmarks

Verus and Staff anticipate concluding the analysis within the Public Equity portfolio during the latter part of 2017 (most likely in the third or fourth quarter). The reduction in public equities will be used to fund future commitments in Private Credit and Private Real Assets, so Verus and Staff will need forward commitment pacing schedules for these asset classes before presenting an estimated timeline related to the pace of reductions in Public Equities.

PRIVATE REAL ESTATE:

SCERS’ target allocation to private real estate in the new asset allocation remains at 7%. The primary investments within the Private Real Estate portfolio include core and non-core real estate exposures. SCERS’ aggregate exposure between core and non-core currently stands at 8.4%, but it is within the established range of 4.0% and 9.0%. The current allocation to core real estate is 6.4% (or 75.8% of the total Private Real Estate portfolio), and the current allocation to non-core real estate is 2.1% (or 25.2% of the total Private Real Estate portfolio).
Within core real estate, SCERS maintains allocations to separate account individual property assets and to open-end commingled funds. The current weighting as of Q2’17 to separate account properties is 41.6% and to core commingled funds is 58.4%. The target weights for these segments within SCERS’ Real Estate IPS is 70.0% separate accounts and 30.0% commingled funds, but separate accounts can range between 40.0% and 100%, and commingled funds can range between 0% and 60.0%. The core commingled fund exposure has increased over the past few years due to individual property dispositions within the separate accounts. A consideration going forward for SCERS’ Private Real Estate portfolio is the structure of the core real estate portfolio, including the levels of separate account exposure compared to commingled fund exposure.

Within SCERS’ non-core portfolio, most of the exposure is to closed-end fund value added and opportunistic real estate funds. The non-core allocation is currently held within SCERS’ Opportunities asset class, but capital is sourced from the prior Real Assets asset class. A consideration going forward is whether to leave non-core real estate exposure in the Opportunities asset class, or move it into the Private Real Estate portfolio (with core real estate) within the new Real Return asset category.

Key considerations for the implementation of the Private Real Estate asset class are:

- Core real estate – the mix between separate accounts commingled funds
- Non-core real estate
  - Currently held in SCERS’ Opportunities portfolio
  - A consideration is to move non-core into the Private Real Estate asset class within the Real Return asset category
- Benchmarks – potential incorporation of a global benchmark

Townsend and Staff anticipate concluding the analysis within Private Real Estate during the third or fourth quarter of 2017, which will conclude with the presentation of an implementation plan recommendation to SCERS’ Board.

OVERLAY PROGRAM:

As part of the implementation plan for the newly approved asset allocation, an analysis is also being performed on SCERS’ Overlay Program. The Overlay Program serves two key functions for SCERS. First, on a regular basis the Overlay Program rebalances SCERS’ asset classes that have moved from their target allocations, back to target. Second, the Overlay Program provides SCERS with exposure to an asset class as it is being built out
over several years. An example would be within the Private Equity and Private Real Assets asset classes.

Going forward there are a few considerations for SCERS’ Overlay Program. First, related to the first function, does SCERS always want the Overlay Program to rebalance back to the target allocation, or should there be an ability to use the Overlay Program to make tactical bets within ranges around the target in order to generate supplemental alpha (returns) for SCERS’ plan. Second, what should be the broad strategic approach in which the Overlay Program is deployed? Considerations include: (1) Using a simplified approach to replicate broad exposures across the portfolio (i.e., equities and fixed income only); (2) Replicating specific exposures within each individual asset class (similar to SCERS’ current approach); or (3) Replicating exposures at the new functional asset category level, where proxies would be used for the Growth, Diversifying and Real Return asset categories.

It is expected that analysis and recommendation options related to the Overlay Program will be presented to SCERS’ Board after the implementation plans have been approved for each aforementioned asset class.

We would be happy to address any questions.

Respectfully submitted, Concur:

Steve Davis Richard Stensrud
Chief Investment Officer Chief Executive Officer

Attachment
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<td>17</td>
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Executive summary
Executive Summary

- At the January 2017 Board Meeting, the Board chose a new asset allocation policy

| Asset Category/Class                        | Prior Policy Allocation | New Policy Allocation | Changes |
|--------------------------------------------|-------------------------|                       |---------|
| Growth                                     | 63.0%                   | 59.0%                 | -4.0%   |
| Public Equities                            | 45.0%                   | 41.0%                 | -4.0%   |
| Private Equity                             | 10.0%                   | 9.0%                  | -1.0%   |
| Public Credit                              | 2.0%                    | 2.0%                  | 0.0%    |
| Private Credit                             | 0.0%                    | 4.0%                  | 4.0%    |
| Growth Oriented Absolute Return            | 6.0%                    | 3.0%                  | -3.0%   |
| Diversifying                               | 22.0%                   | 25.0%                 | 3.0%    |
| Core/Core Plus Fixed Income                | 15.0%                   | 10.0%                 | -5.0%   |
| U.S. Treasury                              | 0.0%                    | 5.0%                  | 5.0%    |
| Global Fixed Income                        | 3.0%                    | 3.0%                  | 0.0%    |
| Diversifying Absolute Return               | 4.0%                    | 7.0%                  | 3.0%    |
| Real Return                                | 15.0%                   | 16.0%                 | 1.0%    |
| Real Estate                                | 7.0%                    | 7.0%                  | 0.0%    |
| Private Real Assets                        | 6.0%                    | 7.0%                  | 1.0%    |
| Commodities                                | 2.0%                    | 2.0%                  | 0.0%    |
| Opportunities                              | 0.0%                    | 0.0%                  | 0.0%    |

- Reduction in Growth; increases in Diversifying and Real Return
- Similar expected return with lower range of outcomes – more risk balanced
- Increase in cash flow generating strategies
Executive Summary

- This presentation focuses on the interim steps towards implementing the new asset allocation policy to ensure consistency with the overall objectives and maintain a portfolio designed to achieve the desired risk/return characteristics.

- Specific implementation steps include:
  
  - Growth Assets:
    - Steps timeline to move Private Equity and Private Credit to target
    - Steps and timeline to reduce Absolute Return Growth portfolio to target
    - Review Public Equity strategies and reduce the allocation to new target
  
  - Diversifying Assets:
    - Analyze existing Core Bond mandates to determine funding for Treasury allocation
    - Outline steps to bring Treasury allocation to target
    - Steps and timeline for building Absolute Return Diversifying portfolio
  
  - Real Return Assets:
    - Steps and timeline to build Private Real Assets to target, while maintaining exposure through Real Asset proxy
    - Evaluate non-core real estate investments held within the Opportunities portfolio
Current Portfolio vs. New Target Policy

<table>
<thead>
<tr>
<th>Growth</th>
<th>Market Value ($)</th>
<th>Current</th>
<th>Target</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Equity</td>
<td>1,893,854,366</td>
<td>24.39%</td>
<td>21.00%</td>
<td>-3.39%</td>
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<tr>
<td>International Equity</td>
<td>1,793,083,100</td>
<td>23.09%</td>
<td>20.00%</td>
<td>-3.09%</td>
</tr>
<tr>
<td>Public Credit</td>
<td>162,624,371</td>
<td>2.09%</td>
<td>2.00%</td>
<td>-0.09%</td>
</tr>
<tr>
<td>Growth Oriented Absolute Return</td>
<td>355,000,000</td>
<td>4.57%</td>
<td>3.00%</td>
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<td>Private Equity</td>
<td>515,000,000</td>
<td>6.63%</td>
<td>9.00%</td>
<td>2.37%</td>
</tr>
<tr>
<td>Private Credit</td>
<td>54,000,000</td>
<td>0.70%</td>
<td>4.00%</td>
<td>3.30%</td>
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<thead>
<tr>
<th>Diversifying</th>
<th>Market Value ($)</th>
<th>Current</th>
<th>Target</th>
<th>Difference</th>
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<tbody>
<tr>
<td>Diversifying Fixed Income</td>
<td>1,336,002,779</td>
<td>17.20%</td>
<td>13.00%</td>
<td>-4.20%</td>
</tr>
<tr>
<td>US Treasury</td>
<td></td>
<td>5.00%</td>
<td>5.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Diversifying Absolute Return</td>
<td>404,000,000</td>
<td>5.20%</td>
<td>7.00%</td>
<td>1.80%</td>
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<table>
<thead>
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<th>Real Return</th>
<th>Market Value ($)</th>
<th>Current</th>
<th>Target</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate</td>
<td>525,224,464</td>
<td>6.76%</td>
<td>7.00%</td>
<td>0.24%</td>
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<tr>
<td>Private Real Assets</td>
<td>161,716,285</td>
<td>2.08%</td>
<td>7.00%</td>
<td>4.92%</td>
</tr>
<tr>
<td>Real Asset Proxy</td>
<td>314,708,051</td>
<td>4.05%</td>
<td></td>
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<tr>
<td>Commodities</td>
<td>68,398,678</td>
<td>0.88%</td>
<td>2.00%</td>
<td>1.12%</td>
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<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Market Value ($)</th>
<th>Current</th>
<th>Target</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fund</td>
<td>7,765,446,006</td>
<td>100%</td>
<td>100%</td>
<td></td>
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*Includes data provided by Verus and Cliffwater
SCERS IPS Update

- We envision a “Primary Policy” document that outlines Fund Objectives and Philosophy, Board Asset Allocation Policies, and Plan Implementation and Governance
  - Two-step process - outline and structure of IPS, with Board input, at April meeting, and recommended IPS document at May meeting
- Individual Asset Classes will each have a separate IPS that deals with philosophical and structural issues (Q2-Q4 2017)
- A comprehensive benchmark study on each asset class will be conducted alongside asset class IPS revisions
Private Equity & Private Credit
Private Equity and Private Credit

Restructuring Private Equity and Private Credit – April/May 2017

Creating a new asset category for Private Credit
– Represents a further segmentation of the SCERS Private Equity portfolio

Private Credit will include lending-oriented strategies to performing companies
– Primarily debt investments; manager expects to receive principal and interest
  • Often referred to as “performing credit” or “par lending”
– This portfolio will not include distressed oriented strategies

SCERS has some investments in Private Equity that will move to Private Credit
– Moving Summit Credit I & II, and Athyrium II

All other previously included strategies will remain within Private Equity
– Primarily Buyouts, Venture Capital, Distressed, and Special Situations
  • Private Equity will continue to include stressed/distressed debt related investments

This change does not negatively impact expected pacing for new commitments
– Overall pacing will increase as the combined target increased from 10% to 13%
  • New targets of 9% to Private Equity and 4% to Private Credit
  • The “all-inclusive” Private Equity target was 10%
Strategy Exposures – PE and Private Credit Portfolios

Private Equity Portfolio
as of Sept. 30, 2016

- Venture Capital, 36%
- Buyouts, 45%
- Distressed & Special Sits, 15%
- Secondary, 0%
- Energy, 1%
- Direct Investments, 3%

Portfolio totals $515 million
- Approximately 6.7% of the SCERS total portfolio

Private Credit Portfolio
as of Sept. 30, 2016

- Opportunistic Credit, 38%
- Direct Lending, 62%

Portfolio totals $54 million
- Approximately 0.7% of the SCERS total portfolio
Private Equity and Private Credit – Next Steps

Modify existing Private Equity IPS
   – Reflect removal of Private Credit

Develop new IPS for the Private Credit portfolio
   – New IPS will incorporate much of the current Private Equity IPS
   – Will develop the following:
     • Benchmark
     • Portfolio objectives
     • Characteristics of permissible investments

Provide new commitment pacing recommendations for the two portfolios
   – Do not expect material changes for Private Equity pacing
   – Overall pacing will increase as the combined target increased from 10% to 13%
     • New targets of 9% to Private Equity and 4% to Private Credit
     • The “all-inclusive” Private Equity target was 10%
Absolute Return
Absolute Return Strategies

Restructuring Absolute Return – June 2017

SCERS is further segmenting its Absolute Return portfolio into two categories
  – Diversifying strategies
  – Growth oriented strategies

The two categories include all funds in the Direct and Grosvenor portfolios
  – Decision for categorization is made at the individual fund level
    • Not grouping entire sub-strategies

Diversifying Absolute Return strategies
  – Funds should display low sensitivity to broad market performance
    • Expect a beta of approximately 0.1 or lower
  – May have lower return expectations than Growth Oriented strategies

Growth Oriented Absolute Return strategies
  – Funds more geared towards growth and positive market performance
    • Still maintain Absolute Return profile
  – Expect more equity long/short and event driven strategies
SCERS Absolute Return Portfolios – Strategy Exposures

Diversifying Portfolio
as of Jan. 31, 2017

- Global Macro, 37%
- Market Neutral, 28%
- Event Driven, 12%
- Multi-Strategy, 18%
- Cash/Other, 4%
- Credit/ Distressed, 1%

Growth Portfolio
as of Jan. 31, 2017

- Equity Long/Short, 34%
- Event Driven, 30%
- Credit/ Distressed, 24%
- Multi-Strategy, 12%

Portfolio totals $404 million
- Approximately 5.2% of the SCERS total portfolio

Portfolio totals $355 million
- Approximately 4.6% of the SCERS total portfolio

1 Includes the $35 million allocated to Graham Tactical Trend fund on February 16, 2017.
Absolute Return Strategies – Next Steps

Develop new IPS for Diversifying and Growth Oriented AR portfolios
- New policy statements will incorporate much of the current Absolute Return IPS
- Will develop the following for each portfolio:
  - Benchmarks
  - Sub-strategy allocation ranges
  - Portfolio objectives
  - Characteristics of permissible investments

Provide implementation plan for Diversifying and Growth Oriented portfolios
- Roadmap for adjusting allocations between the two portfolios
  - Continue making direct fund investments
  - Adjust exposures within the Grosvenor portfolios
    - Will impact overall allocations and strategy mix within the portfolios
Private Real Assets
Restructuring Private Real Assets – 3rd Quarter 2017

ThePrivateRealAssetsportfolio(excludes Real Estate)sawfewchangesas a result of the new asset allocation study
  – Overall target increased from 6% to 7%

SCERS Staff and Cliffwater will return to the Board with a new commitment pacing recommendation given the increase in Private Real Assets
  – Expect moderate increases to the annual commitment targets from those recommended in the November Real Assets Annual Review

SCERS Staff and Cliffwater may also recommend a new benchmark for Private Real Assets to be incorporated into a revised IPS
  – Potential change driven by evolution of the asset class and better benchmarking options, not a change to the SCERS investment strategy

Portfolio totals $151 million
  – Approximately 2.0% of the SCERS total portfolio
    • 6.4% of total including the Real Asset Overlay
Public Fixed Income (Diversifying)
Public Fixed Income Exposure (Diversifying)

Neuberger Berman – Core Bond
- Treasury: 38%
- Mortgage: 32%
- Corporate: 27%
- Ex US: 1%
- ABS: 1%

Prudential – Core Plus Bond
- Treasury: 3%
- Mortgage: 35%
- Corporate: 52%
- Ex US: [PERCENTAGE]
- ABS: 4%

TCW – Core Plus Bond
- Treasury: 35%
- Mortgage: 38%
- Corporate: 22%
- Ex US: 1%
- ABS: 4%

Brandywine – Global Opportunistic
- Global Sovereign: 70%
- US Treasury: 15%
- US Corporate: 14%
- US Mortgage: 1%
- US ABS: 0%

Total Core Fixed Income Exposure*
- Treasury: 23.6%
- Mortgage: 33.4%
- Corporate: 33.1%
- Global Bond: 3.1%
- ABS: 2.8%

Barclays Aggregate
- Treasury: 44.0%
- Mortgage: 30.0%
- Corporate: 26.0%

*excludes Brandywine
Public Fixed Income

Restructuring the Public Fixed Income Portfolio – 3rd Quarter of 2017

- Review the role of Fixed Income in the Total Portfolio
- Under the new allocation, Capital Preservation is emphasized within Diversifying Fixed Income
  - Reduce exposure to credit-related securities and increase exposure to treasuries
- Provide an implementation plan for the new Treasury allocation
Public Equity
Public Equity

Domestic Equity Exposure

- Domestic Passive: 52%
- Large Cap Active: 27%
- Small Cap Active: 16%
- Domestic REIT Active: 5%

International Equity Exposure

- Intl Large Cap Active: 69%
- Intl Small Cap Active: 10%
- EM All Cap Active: 14%
- EM Small Cap Active: 3%
- Intl REIT Active: 4%

SCERS - Implementation Plan
March 2017
Public Equity

Restructuring the Public Equity Portfolio – 3rd/4th Quarter of 2017

We plan to bring our recommendations to the SCERS Board in the second half of 2017.

- Public equities will comprise a number of likely changes but is less of a near-term priority relative to the private market segment of the Growth portfolio

Reducing Public Equity exposure by 4%

- We will conduct manager structure studies that will determine the best allocation to domestic and international equities and the sizing of SCERS’ allocation within geography, capitalization and style

Review Active vs Passive strategies

- We will be reviewing the advantages of maintaining active management in this market segment.
- Included will be a review of current active managers
Private Real Estate Portfolio – As of 2Q FY 2017

The SCERS Private Real Estate Portfolio represents a combined 8.5% of the Total Plan:

- Core and Core Plus Private Real Estate has been a sub-asset class of SCERS’ Real Assets Portfolio (4-9% Range, 7% Target).
- Value-Add and Opportunistic Real Estate has been a sub-asset class of SCERS’ Opportunities Portfolio (0-5% Range, 0% Target).

### Private Real Estate - Actual v. Plan Guidelines

<table>
<thead>
<tr>
<th>Category</th>
<th>Actual</th>
<th>Target</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Real Estate</td>
<td>6.4%</td>
<td>7.0%</td>
<td>4.0-9.0%</td>
</tr>
<tr>
<td>Non-Core Real Estate</td>
<td>2.1%</td>
<td>0.0%</td>
<td>0.0-5.0%</td>
</tr>
</tbody>
</table>

### Private Real Estate – Core v. Non-Core

- **Core Real Estate**: $514,664,000, 75.8% of Private Real Estate
- **Non-Core Real Estate**: $173,710,000, 25.2% of Private Real Estate
Real Estate

Private Core Real Estate Portfolio Composition – As of 2Q FY 2017

— The SCERS Core Portfolio represents 6.4% of the Total Plan which is well within the established range of 4.0% to 9.0%.

— Separate Account/Individually Managed Account (“IMA”) and Core Open-End Commingled Fund (“OECF”) exposure was in-line with established guidelines, as displayed below.

  ▪ Core Commingled Fund exposure continues to increase as dispositions occur within the SCERS Separate Account Portfolio.

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**Target Allocation by Vehicle As of 2Q2017**

- Commingled Fund Range: 0.0% - 60.0%
- Separate Accounts: 70.0%
- Core Commingled Funds: 30.0%

**Core Fund Allocation by Vehicle As of 2Q2017**

- Separate Account Range: 40.0% - 100.0%
- Core Commingled Funds: 58.4%
- Separate Accounts: 41.6%
Real Estate

Real Estate Benchmarks

— Approximately 84% of the SCERS Private Real Estate Portfolio is invested within the United States.

— The current benchmarks for the SCERS Private Real Estate Portfolio are US-based and include:
  - NFI-ODCE (Core),
  - NFI-ODCE + 100 basis points (Non-Core).

— A consideration in 2017 is the adoption of an ancillary benchmark which includes a blend of US and ex-US exposure based on the SCERS weightings.
  - INREV, the European Association for Investors in Non-listed Real Estate Vehicles, publishes a quarterly index called Global Real Estate Fund Index (GREFI), which includes performance of non-listed real estate funds across the globe and is created by ANREV, INREV and NCREIF.
  - The GREFI includes performance of 470 + positions in Asia Pacific, Europe, U.S. and funds with a global strategy.
Real Estate

Real Estate Considerations in 2017

— Appropriate categorization for Non-Core Real Estate within the context of the Total Plan (Opportunities or Real Return)
— Core Separate Account Structure and Guidelines (appropriateness, targets and guidelines),
— Inclusion of an Ancillary Benchmark.
Overlay

Overlay Modifications – 4th Quarter 2017

— The current overlay serves two purposes, rebalancing and replicating asset classes in the build-up stage.

— In addition to current responsibilities, an Overlay can provide tactical portfolio tilts. These capabilities will be reviewed towards the end of 2017.
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