



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 9

MEETING DATE: February 19, 2020

SUBJECT: Portfolio Allocation and Rebalancing Report – Fourth Quarter 2019

SUBMITTED FOR: Consent Deliberation and Action Receive and File

RECOMMENDATION

Staff recommends that the Board receive and file the quarterly asset allocation and rebalancing report.

PURPOSE

This item complies with the SCERS Master Investment Policy Statement reporting requirements related to the review of SCERS' current asset allocation as it compares to established targets and ranges, and physical and Overlay Program rebalancing activity that occurred during the quarter.

SUMMARY

SCERS employs an Overlay Program, which is managed by State Street Global Advisors (SSGA), to rebalance the asset allocation to policy targets and also invests available cash, in a manner which replicates SCERS' policy target strategic asset allocation.

SCERS' Overlay Program reduces the need for physical rebalancing, but it does not eliminate it. While physical rebalancing typically costs more to execute compared to the Overlay Program, it remains important to assess whether SCERS' portfolio is at a point where physical rebalancing warrants greater consideration.

Key rebalancing and portfolio activity that occurred during the fourth quarter included:

- No physical rebalance activity occurred within the public equity or public fixed income portfolios during the fourth quarter of 2019.
 - Domestic Equity has a 22.4% allocation as of December 31, 2019, which is above the 20% target allocation, and slightly above the 22% high end of the range.

-
- Staff is targeting physical rebalancing for the Domestic Equity portfolio during the first quarter of 2020.
 - Public Fixed Income has a 16.1% allocation as of December 31, 2019, which is below the 18% target allocation, but well above the 13% low end of the range.
 - Physical rebalancing could be considered over the next few quarters.
 - SCERS rebalanced the Real Estate portfolio during 2019 to bring its overweight allocation to within the targeted range. The allocation currently stands at 8.6%, still above the 7% target allocation, but within range. Staff and Townsend have been comfortable maintaining an above target Real Estate allocation while the Real Assets asset class is built out.
 - Staff expects to further rebalance the Real Estate asset class toward its 7% target allocation in 2020, through redemptions in core open-end commingled funds.
 - During the fourth quarter, the recently approved \$100 million Liquid Real Return mandate with Brookfield Asset Management was transitioned and fully implemented. Approximately half of the SSGA passive liquid real return overlay proxy was used to fund the Brookfield mandate.
 - SCERS made several alternative asset investments during the quarter, which helps close the gap between actual and target allocations:
 - Diversifying Absolute Return:
 - \$45 million to LMR Fund Ltd
 - Private Equity:
 - \$30 million to Cortec Group VII, LP
 - \$20 million to Wynnchurch Capital Partners V, LP
 - Private Credit:
 - €31.6 million to MCP Private Capital Fund IV, SCSp
 - \$50 million to Benefit Street Partners Senior Opportunities Fund II, LP
 - Real Estate:
 - €32 million to NREP Nordic Strategies Fund IV, SCSp

BACKGROUND

The Overlay Program rebalances the asset allocation to policy targets and minimize the risk that SCERS falls short of achieving its targeted return due to the asset allocation straying from policy target ranges. The Overlay Program also invests available cash, including: (1) unallocated cash; (2) the cash balances in manager portfolios; and (3) cash held for previously committed to, but un-invested private market investments, in a manner which replicates SCERS' policy target strategic asset allocation. The Overlay Program does not invest the 1% dedicated cash allocation.

While SCERS' Overlay Program reduces the need for physical rebalancing, it does not eliminate it, as there are circumstances whereby physical rebalancing would be a better solution compared to the Overlay Program, including: (1) when there is low correlation between the overlay proxies designed to replicate the underlying asset classes and managers, as is the case with many

alternative assets; and (2) when there is a persistently large difference between physical assets and the target allocation.

While physical rebalancing typically costs more to execute compared to the Overlay Program, it remains important to assess whether SCERS' portfolio is at a point where physical rebalancing warrants greater consideration.

The Overlay Program structure replicates SCERS' asset category targets (Growth; Diversifying; Real Return), with bands around these targets (see below). The rebalancing methodology that SSGA utilizes is quarterly rebalancing with bands, where rebalancing occurs on a quarterly basis, unless the bands are breached on an intra-quarter basis, in which case rebalancing occurs upon the breach of a band. The bands were recently modified in 2019 to reflect changes made to SCERS' Strategic Asset Allocation.

Asset Category	Minimum Allocation (%)	Target Allocation (%)	Maximum Allocation (%)
Growth	53	58	63
Diversifying	22	25	28
Real Return	14	16	18
Cash	0	1	2

Each asset category has a separate overlay proxy, which contains a mixture of investments that attempt to replicate the objectives and exposures of the asset category and the underlying asset classes within the asset category, in order to minimize tracking error and costs.

There remain some larger gaps between target and actual allocations within some private market assets classes. Private market asset class implementation (Private Credit; Real Assets) continues to make good progress, but takes multiple years to execute given the unique capital pacing budgets for these segments of the portfolio. Private Equity is more mature, and in-line with its 9% target allocation.

The underlying components of each asset category overlay proxy are shown at the end of this report.

DISCUSSION

Because SCERS' Overlay Program rebalances SCERS' total fund, it is important to note that **Tables 1-15** reported below refer only to physical holdings compared to policy targets, and not the exposures provided through the Overlay Program. The exception is Table 11 (Real Return asset category exposure), which includes the SSGA Real Return Strategy within the Liquid Real Return asset class, which is the Overlay proxy for this asset category, and is implemented through physical exposures.

As noted, SCERS rebalances the fund via both the Overlay Program and physically purchasing or selling assets. The Overlay Program is particularly effective in rebalancing public market assets due to the low tracking error of the underlying proxies compared to public market managers and the higher expenses of purchasing and liquidating interests held by investment

managers. On the other hand, the Overlay Program is not as effective in tracking alternative assets because it is limited to the use of public market proxies. Public market proxies will not, for example, be able to replicate the 'illiquidity premium' or higher returns achieved historically by private equity and private real assets, or the 'absolute' return characteristics of SCERS' Absolute Return portfolio, including its the ability to outperform equity markets in times of distress. Accordingly, it is beneficial for SCERS to continue physically investing in alternative assets to achieve its asset allocation targets rather than heavily relying on the Overlay Program to rebalance these assets to the target allocations.

SCERS' investment staff and general investment consultant, Verus Advisory, monitor the asset allocation on a quarterly basis and update the Board if the asset allocation moves outside of policy ranges and conditions warrant physical rebalancing.

The values in the tables below are from SCERS' custodian, State Street, which can differ from those of SCERS' investment consultants.

GROWTH ASSET CATEGORY

Table 1: Growth Asset Category Allocation (as of December 31, 2019)

	Market Value	Actual	Target	Delta %	Target Low	Target High
GROWTH ASSET CATEGORY:	\$5,956,573,929	57.6%	58.0%	-0.4%	47.0%	69.0%

The Growth asset category is comprised of the Domestic Equity, International Equity, Private Equity, Public Credit, Private Credit, and Growth Absolute Return segments of the portfolio. The Growth asset category currently has an allocation of 57.6%, which is slightly below the strategic asset allocation's target of 58%. An underweight to Private Credit, due to the multi-year build out of this asset class, is offset by an overweight to Domestic Equities.

The Overlay Program rebalances the Growth asset category to the 58% target allocation by purchasing or selling global equity futures to bring the Domestic Equity and International Equity asset classes to their target allocations, and then adjusts the remainder of the asset category by using a combination of 85% global equity futures and 15% U.S. Treasury futures.

At the end of the quarter, given the strong relative performance of growth assets versus other assets, SCERS' overlay manager, SSGA, sold approximately \$90 million of total overlay proxy exposure to rebalance the Growth asset category to its target allocation.

Domestic Equities:

As depicted in **Table 2** below, SCERS' Domestic Equity asset class actual weighting of 22.4% is above SCERS' policy target allocation of 20%, as of December 31, 2019. SSGA buys and sells a basket of U.S. equity index futures to rebalance the Domestic Equity asset class to the policy target allocation, when physical rebalancing is not required.

During 2019, Staff chose to have SSGA sell domestic equity futures to rebalance the asset class to the revised 20% target allocation, which served as the source of capital for the new 1% dedicated cash allocation. Staff chose this approach over physically rebalancing due to cost and efficiency. With the Domestic Equity allocation slightly above the 22% high end of the range, Staff is targeting physical rebalancing for the Domestic Equity portfolio during the first quarter of 2020.

At the sub-asset class level, U.S. large cap, at a 20.4% allocation is above the target allocation of 18%. U.S. small cap, at a 2% allocation is in-line with the target allocation of 2%.

Table 2: Domestic Equity Allocation (as of December 31, 2019)

Domestic Equity	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$2,318,676,049	22.4%	20.0%	2.4%	18.0%	22.0%
AllianceBernstein	Equity Core Index	\$1,270,958,361	12.3%	10.8%	1.5%		
JP Morgan 130/30	Equity Core Active Short Extension (130/30)	\$147,400,633	1.4%	1.3%	0.2%		
DE Shaw Broad Market Core Alpha Extension	Equity Core Active Short Extension (130/30)	\$137,024,510	1.3%	1.3%	0.1%		
Eagle Capital Management	Equity Large Cap Core	\$286,469,802	2.8%	2.4%	0.4%		
AQR US Enhanced Equity	Equity Systematic Multi-Factor Core	\$266,742,663	2.6%	2.4%	0.2%		
	Equity Large Cap		20.4%	18.1%	2.3%		
Dalton, Greiner, Hartman, Maher & Co.	Equity Small Cap Value	\$100,050,530	1.0%	1.0%	0.0%		
M.A. Weatherbie & Co.	Equity Small Cap Growth	\$110,029,549	1.1%	1.0%	0.1%		
	Equity Small Cap		2.0%	2.0%	0.0%		

International Equities:

As depicted in **Table 3** below, SCERS' International Equity asset class actual weighting of 19.6% is slightly below SCERS' policy target allocation of 20%. SSGA buys and sells a basket of international equity index futures to rebalance the International Equity asset class to the policy target allocation, when physical rebalancing is not required. No physical rebalancing activity took place within the International Equity asset class during the quarter.

At the sub-asset class level, international large cap, at a 13.8% allocation is slightly below the target allocation of 14%. International small cap, at a 2% allocation is in-line with the target allocation of 2%. Emerging markets equity, at a 3.8% allocation is below the policy target allocation of 4%.

Table 3: International Equity Allocation (as of December 31, 2019)

International Equity	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$2,028,868,091	19.6%	20.0%	-0.4%	18.0%	22.0%
Lazard Asset Management	ACWI Ex-US	\$406,694,026	3.9%	4.0%	-0.1%		
LSV Large Cap International Value	International Equity Large Cap Value	\$451,636,509	4.4%	5.0%	-0.6%		
Walter Scott	International Equity Large Cap Growth	\$570,230,964	5.5%	5.0%	0.5%		
	International Equity Large Cap		13.8%	14.0%	-0.2%		
William Blair & Co.	International Equity Small Cap Growth	\$98,605,944	1.0%	1.0%	0.0%		
Mondrian Investment Partners	International Equity Small Cap Value	\$104,320,108	1.0%	1.0%	0.0%		
	International Equity Small Cap		2.0%	2.0%	0.0%		
Baillie Gifford	Emerging Markets Equity - All Cap	\$214,260,292	2.1%	2.0%	0.1%		
Mondrian Emerging Markets Equity Fund, LP	Emerging Markets Equity - All Cap	\$183,120,249	1.8%	2.0%	-0.2%		
	Emerging Markets		3.8%	4.0%	-0.2%		

Private Equity:

As outlined in **Table 4** below, SCERS' Private Equity allocation is 8.8%, which is in-line with the policy target allocation of 9%. SSGA utilizes a basket of 85% global equities and 15% U.S. Treasuries to replicate Private Equity, as part of a broader non-public equity proxy within the Growth asset category.

During the fourth quarter, SCERS made two private equity commitments: \$30 million to Cortec Group VII, LP and \$20 million to Wynnchurch Capital Partners V, LP.

Please note that there is an investment within the Opportunities portfolio (Atalaya Special Opportunities Fund V, LP) which draws capital from the Private Equity asset class, as this is the asset class with the closest risk and return profile of the opportunity being invested in by this fund. The market value of this investment is \$6.9 million, which equates to a 0.1% allocation, and brings SCERS' total allocation in Private Equity to 8.9%.

Table 4: Private Equity Allocation (as of December 31, 2019)

Private Equity	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$915,042,413	8.8%	9.0%	-0.2%	7.0%	11.0%
Accel-KKR Capital Partners IV, LP	Buyout	\$13,490,058	0.1%				
Accel-KKR Capital Partners V, LP	Buyout	\$10,296,701	0.1%				
Accel-KKR Capital Partners VI, LP	Buyout	\$0	0.0%				
Accel-KKR Growth Capital Partners II, LP	Buyout	\$8,745,568	0.1%				
Accel-KKR Growth Capital Partners III, LP	Buyout	\$4,186,930	0.0%				
Cortec Group Fund VII, LP	Buyout	\$0	0.0%				
Gridiron Capital Fund IV, LP	Buyout	\$0	0.0%				
H.I.G. Capital Partners V, LP	Buyout	\$14,591,049	0.1%				
Linden Capital Partners III, LP	Buyout	\$41,437,400	0.4%				
Linden Capital Partners IV, LP	Buyout	\$9,962,558	0.1%				
Marlin Equity Partners IV, LP	Buyout	\$15,015,822	0.1%				
Marlin Equity Partners V, LP	Buyout	\$10,175,942	0.1%				
Marlin Heritage Europe, LP	Buyout	\$12,601,533	0.1%				
Marlin Heritage II, LP	Buyout	\$5,709,704	0.1%				
Marlin Heritage, LP	Buyout	\$8,848,071	0.1%				
Thoma Bravo Fund XI, LP	Buyout	\$41,113,597	0.4%				
Thoma Bravo Fund XII, LP	Buyout	\$37,187,393	0.4%				
Thoma Bravo Fund XIII, LP	Buyout	\$16,028,153	0.2%				
TSG7 A, LP	Buyout	\$14,167,855	0.1%				
TSG7 B, LP	Buyout	\$2,122,374	0.0%				
TSG8, L.P.	Buyout	\$202,932	0.0%				
Wynchurch Capital Partners V, LP	Buyout	\$0	0.0%				
H.I.G. Europe Capital Partners II, LP	European Buyout	\$9,304,071	0.1%				
Waterland Private Equity Fund V, CV	European Buyout	\$12,101,785	0.1%				
Waterland Private Equity Fund VI, CV	European Buyout	\$21,908,435	0.2%				
RRJ Capital Master Fund II, LP	Asian Buyout/Special Situations	\$16,823,830	0.2%				
RRJ Capital Master Fund III, LP	Asian Buyout/Special Situations	\$14,798,920	0.1%				
Spectrum Equity Investors VII, LP	Growth Equity	\$34,752,533	0.3%				
Spectrum Equity Fund VIII, LP	Growth Equity	\$15,992,554	0.2%				
Summit Partners VC Fund III, LP	Growth Equity	\$15,148,105	0.1%				
Summit Partners Venture Capital Fund IV, LP	Growth Equity	\$16,367,499	0.2%				
Summit Partners Europe Growth Equity Fund II, LP	European Growth Equity	\$12,592,676	0.1%				
Khosla Ventures IV, LP	Venture Capital	\$4,781,310	0.0%				
Khosla Ventures V, L.P.	Venture Capital	\$16,990,226	0.2%				
Khosla Ventures VI, L.P.	Venture Capital	\$12,367,483	0.1%				
New Enterprise Associates 14, LP	Venture Capital	\$28,538,847	0.3%				
New Enterprise Associates 15, LP	Venture Capital	\$47,598,599	0.5%				
New Enterprise Associates 16, LP	Venture Capital	\$22,455,073	0.2%				
New Enterprise Associates 17, LP	Venture Capital	\$2,245,720	0.0%				
Threshold Ventures III, LP	Venture Capital	\$2,200,000	0.0%				
Trinity Ventures XI, LP	Venture Capital	\$37,458,436	0.4%				
Trinity Ventures XII, LP	Venture Capital	\$40,127,951	0.4%				
Atalaya Special Opportunities Fund VI, LP	Distressed Debt	\$16,166,763	0.2%				
Davidson Kempner Distressed Opportunities Fund III, LP	Distressed Debt	\$25,775,675	0.2%				
Davidson Kempner Distressed Opportunities Fund IV, LP	Distressed Debt	\$0	0.0%				
Garrison Opportunity Fund III, LP	Distressed Debt	\$13,704,717	0.1%				
H.I.G. Bayside Loan Opportunity III (Europe), LP	Distressed Debt	\$11,631,258	0.1%				
TPG Opportunities Partners III, LP	Distressed Debt	\$20,546,134	0.2%				
TSSP Opportunities Partners IV, LP	Distressed Debt	\$5,948,771	0.1%				
Wayzata Opportunities Fund III, LP	Distressed Debt	\$5,252,387	0.1%				
Dyal Capital Partners II, LP	Other	\$18,048,060	0.2%				
Dyal Capital Partners III, LP	Other	\$19,897,488	0.2%				
Abbott Capital ACE VI	Fund of Funds	\$45,310,644	0.4%				
Goldman Sachs PEP X	Fund of Funds	\$23,706,368	0.2%				
Harbourvest Partners Intl VI	Fund of Funds	\$32,965,631	0.3%				
HarbourVest Partners VIII	Fund of Funds	\$13,390,345	0.1%				
RCP Multi-Fund Feeder (SCERS), L.P.	Fund of Funds	\$12,260,481	0.1%				

Public Credit:

As outlined in **Table 5** below, SCERS' Public Credit allocation is 1.8%, which is slightly below the policy target allocation of 2%. SSGA utilizes a basket of 85% global equities and 15% U.S. Treasuries to replicate Public Credit, as part of a broader non-public equity proxy within the Growth asset category.

Table 5: Public Credit Allocation (as of December 31, 2019)

Public Credit	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$187,542,327	1.8%	2.0%	-0.2%	1.0%	3.0%
Brigade Capital SC Opportunities Mandate	Public Credit	\$187,542,327	1.8%	2.0%			

Private Credit:

As outlined in **Table 6** below, SCERS' Private Credit allocation is 1.9%, which is 2.1% below the policy target allocation of 4%. SSGA utilizes a basket of 85% global equities and 15% U.S. Treasuries to replicate Private Credit, as part of a broader non-public equity proxy within the Growth asset category. The commitment schedule and cash flow forecast of Private Credit investments projects SCERS achieving and maintaining the policy target in 2022.

During the fourth quarter, SCERS made two private credit commitments: €31.6 million to MCP Private Capital Fund IV, SCSp and \$50 million to Benefit Street Partners Senior Opportunities Fund II, LP.

Table 6: Private Credit Allocation (as of December 31, 2019)

Private Credit	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$194,621,578	1.9%	4.0%	-2.1%	2.0%	6.0%
Benefit Street Partners Senior Opportunities Fund, LP	Direct Lending	\$47,508,657	0.5%				
Benefit Street Partners Senior Opportunities Fund II, LP	Direct Lending	\$2,467,756	0.0%				
IFM U.S. Infrastructure Debt Fund, LP	Direct Lending	\$0	0.0%				
Summit Partners Credit Fund, LP	Direct Lending	\$483,090	0.0%				
Summit Partners Credit Fund II, LP	Direct Lending	\$28,615,371	0.3%				
Summit Partners Credit Fund III, LP	Direct Lending	\$21,150,107	0.2%				
Tennenbaum Capital Partners Direct Lending Fund VIII (S), LLC	Direct Lending	\$63,748,643	0.6%				
Athyrium Opportunities Fund II, LP	Healthcare Opportunistic Credit	\$13,766,223	0.1%				
Athyrium Opportunities Fund III, LP	Healthcare Opportunistic Credit	\$15,221,186	0.1%				
OrbiMed Royalty and Credit Opportunities Fund III, LP	Healthcare Opportunistic Credit	\$1,660,545	0.0%				
MCP Private Capital Fund IV, SCSp	Opportunistic Credit	\$0	0.0%				

Growth Absolute Return:

As outlined in **Table 7** below, SCERS' Growth Absolute Return allocation is 3%, which is in-line with the policy target allocation of 3%. SSGA utilizes a basket of 85% global equities and 15% U.S. Treasuries to replicate Growth Absolute Return, as part of a broader non-public equity proxy within the Growth asset category.

Table 7: Growth Absolute Return Allocation (as of December 31, 2019)

Growth Absolute Return	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$311,823,471	3.0%	3.0%	0.0%	1.0%	5.0%
Grosvenor SC Absolute Return Fund - Growth Series	Diversified Separate Account	\$158,372,877	1.5%				
Jana Partners Qualified, LP	Equity Activist & Long/Short	\$1,957,574	0.0%				
Lakewood Capital Partners, LP	Equity Long/Short	\$49,048,395	0.5%				
Third Point Partners Qualified, LP	Event Driven	\$50,580,535	0.5%				
OZ Domestic Partners II, LP	Multi Strategy	\$51,864,090	0.5%				

DIVERSIFYING ASSET CATEGORY

Table 8: Diversifying Asset Category Allocation (as of December 31, 2019)

	Market Value	Actual	Target	Delta %	Target Low	Target High
DIVERSIFYING ASSET CATEGORY:	\$2,324,767,116	22.5%	25.0%	-2.5%	18.0%	32.0%

The Diversifying asset category is comprised of the Public Fixed Income and Diversifying Absolute Return segments of the portfolio. The Diversifying asset category currently has an allocation of 22.5%, which is below the strategic asset allocation’s target of 25%.

The Overlay Program rebalances the Diversifying asset category to the 25% target allocation by purchasing and selling U.S. government bond futures. At the end of the quarter, SCERS’ overlay manager, SSGA, purchased approximately \$61 million of overlay proxy exposure, to rebalance the Diversifying asset category allocation.

Public Fixed Income:

As depicted in **Table 9** below, SCERS’ Public Fixed Income allocation actual weighting of 16.1% is below SCERS’ policy target allocation of 18%. The Overlay Program rebalances the remaining Public Fixed Income underweight to the 18% target allocation. SSGA utilizes a combination of U.S. Treasury futures and Mortgage TBAs to rebalance this segment of the portfolio to its policy target allocation, as part of a broader Diversifying asset category proxy. While the Public Fixed Income allocation is comfortably above the 13% low end of the range, physical rebalancing could be considered over the next few quarters.

Table 9: Public Fixed Income Allocation (as of December 31, 2019)

Public Fixed Income	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$1,664,217,207	16.1%	18.0%	-1.9%	13.0%	23.0%
Prudential Investment Management	Core Plus Active Fixed Income	\$485,034,416	4.7%	5.0%			
TCW/MetWest	Core Plus Active Fixed Income	\$458,937,744	4.4%	5.0%			
	Core Plus		9.1%	10.0%			
Neuberger Berman	US Treasuries	\$461,202,438	4.5%	5.0%			
Brandywine Global	Global Opportunistic Fixed Income	\$259,042,608	2.5%	3.0%			

Diversifying Absolute Return:

As outlined in **Table 10** below, SCERS’ Diversifying Absolute Return allocation is 6.4%, which is below the policy target allocation of 7%. During the fourth quarter, SCERS invested \$45 million in LMR Fund Ltd.

SSGA utilizes a combination of U.S. Treasury futures and Mortgage TBAs to rebalance this segment of the portfolio to its policy target allocation, as part of a broader Diversifying asset category proxy.

Table 10: Diversifying Absolute Return Allocation (as of December 31, 2019)

Diversifying Absolute Return	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$660,549,909	6.4%	7.0%	-0.6%	5.0%	9.0%
Grosvenor SC Absolute Return Fund - Diversifying Series	Diversified Separate Account	\$120,670,664	1.2%				
Grosvenor SC Absolute Return Fund, Series B - Interim Diversifying	Diversified Separate Account	\$110,949,877	1.1%				
Marshall Wace Global Opportunities Fund	Equity Long/Short	\$42,621,240	0.4%				
Elliott Associates LP	Event Driven	\$57,156,580	0.6%				
Davidson Kempner Institutional Partners, LP	Event Driven	\$33,281,006	0.3%				
KLS Diversified Fund, L.P.	Fixed Income Arbitrage	\$39,615,040	0.4%				
AQR Delta Fund II, LP	Bottom Up Replication	\$43,207,188	0.4%				
LMR Fund Ltd	Market Neutral, Multi-Strategy	\$45,420,390	0.4%				
Laurion Capital Management, LP	Volatility Arbitrage	\$47,123,828	0.5%				
Two Sigma Risk Premia Enhanced Fund, LP	Alternative Risk Premia	\$45,198,810	0.4%				
Winton Diversified Futures Fund, L.P.	Systematic Global Macro	\$38,351,565	0.4%				
Graham Tactical Trend Fund, L.P.	Systematic Global Macro	\$36,953,722	0.4%				

REAL RETURN ASSET CATEGORY

Table 11: Real Return Asset Category Allocation (as of December 31, 2019)

	Market Value	Actual	Target	Delta %	Target Low	Target High
REAL RETURN ASSET CATEGORY:	\$1,665,669,796	16.1%	16.0%	0.1%	10.0%	24.0%

The Real Return asset category is comprised of the Real Estate, Real Assets, and Liquid Real Return segments of the portfolio. The Real Return asset category currently has an allocation of 16.1%, which is slightly above the strategic asset allocation’s target of 16%.

The Overlay Program rebalances the Real Return asset category to the 16% target allocation, through the SSGA real return overlay proxy, by purchasing and selling a series of liquid commingled funds across global REITs, global infrastructure stocks, global natural resource stocks, commodities, U.S. TIPS, and floating rate notes. At the end of the quarter, SCERS’ overlay manager, SSGA, purchased approximately \$22 million of overlay proxy exposure, to rebalance the Real Return asset category allocation.

Real Estate:

As outlined in **Table 12** below, SCERS’ Real Estate allocation is 8.6%, which is above the policy target allocation of 7%. SSGA utilizes a series of listed commingled funds described above to replicate Real Estate, as part of the broader Real Return asset category proxy.

During the quarter, SCERS made a €32 million to NREP Nordic Strategies Fund IV, SCSp, a non-core allocation. SCERS is currently underweight non-core real estate, and overweight core real estate.

SCERS rebalanced the Real Estate portfolio during 2019 to bring its overall overweight allocation to within the targeted range through the reduction to two core open-end commingled funds; it had been above the 9% high end of the range. Staff and Townsend have been comfortable maintaining an above target Real Estate allocation while the Real Assets asset class is built out. Staff expects to further rebalance the Real Estate asset class toward its 7% target allocation in 2020, through further redemptions in core open-end commingled funds.

Table 12: Real Estate Allocation (as of December 31, 2019)

Real Estate	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$892,946,211	8.6%	7.0%	1.6%	5.0%	9.0%
Blackrock Realty Advisors Portfolio I	Core Real Estate	\$4,094,018	0.0%				
Brookfield Premier Real Estate Partners, LP	Core Real Estate	\$102,724,980	1.0%				
Clarion Lion Properties Fund, LP	Core Real Estate	\$157,767,498	1.5%				
Cornerstone Realty Advisors	Core Real Estate	\$340,472	0.0%				
Jamestown Premier Property Fund LP	Core Real Estate	\$18,501,801	0.2%				
MetLife Core Property Fund, LP	Core Real Estate	\$62,507,593	0.6%				
Morgan Stanley Prime Property Fund	Core Real Estate	\$63,023,169	0.6%				
Principal US Property Account	Core Real Estate	\$48,562,430	0.5%				
Prologis Targeted Europe Logistics Fund, LP	Core Real Estate	\$52,575,974	0.5%				
Prologis Targeted US Logistics Fund, LP	Core Real Estate	\$75,914,657	0.7%				
Townsend Real Estate Fund, LP	Core Real Estate	\$115,592,291	1.1%				
Carlyle China Realty, L.P.	Non-Core Real Estate - Opportunistic	\$8,295,200	0.1%				
Carlyle China Rome Logistics, L.P.	Non-Core Real Estate - Opportunistic	\$36,746,299	0.4%				
KKR Real Estate Partners Americas, LP	Non-Core Real Estate - Opportunistic	\$6,232,359	0.1%				
Och-Ziff Real Estate Fund III, LP	Non-Core Real Estate - Opportunistic	\$13,531,389	0.1%				
A.E.W Value Investors II, LP	Non-Core Real Estate - Value-Added	\$0	0.0%				
Asana Partners Fund II, L.P.	Non-Core Real Estate - Value-Added	\$2,119,326	0.0%				
CIM Opportunity Fund VIII, LP	Non-Core Real Estate - Value-Added	\$39,322,565	0.4%				
DRC European Real Estate Debt Fund II, LP	Non-Core Real Estate - Value-Added	\$7,755,316	0.1%				
ECE European Prime Shopping Centre Fund II, SCS-SIF	Non-Core Real Estate - Value-Added	\$23,771,201	0.2%				
Hammes Partners II, LP	Non-Core Real Estate - Value-Added	\$3,042,142	0.0%				
Hammes Partners III, LP	Non-Core Real Estate - Value-Added	\$2,597,916	0.0%				
Hines US Office Value Added Fund II, LP	Non-Core Real Estate - Value-Added	\$2,766	0.0%				
NREP Nordic Strategies Fund, FCP-FIS	Non-Core Real Estate - Value-Added	\$7,030,484	0.1%				
NREP Nordic Strategies Fund II, FCP-FIS	Non-Core Real Estate - Value-Added	\$29,321,597	0.3%				
NREP Nordic Strategies Fund III, FCP-FIS	Non-Core Real Estate - Value-Added	\$11,390,349	0.1%				
NREP Nordic Strategies Fund IV, FCP-FIS	Non-Core Real Estate - Value-Added	\$0	0.0%				
UBS (Allegis Value Trust)	Non-Core Real Estate - Value-Added	\$182,420	0.0%				

Real Assets:

As outlined in **Table 13** below, SCERS' Real Assets allocation is 5.7%, which is below the policy target allocation of 7%. SSGA utilizes a series of listed commingled funds described above to replicate Real Assets, as part of the broader Real Return asset category proxy. The commitment schedule and cash flow forecast of Real Assets investments project SCERS achieving and maintaining the policy target in 2023.

During the quarter, SCERS did not make any Real Assets fund commitments.

Table 13: Real Assets Allocation (as of December 31, 2019)

Real Assets	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$588,202,872	5.7%	7.0%	-1.3%	5.0%	9.0%
ACM Fund II, LP	Agriculture	\$17,522,181	0.2%				
Paine Schwartz Food Chain Fund V, L.P.	Agriculture	-\$632,051	0.0%				
EnCap Energy Capital Fund IX, LP	Energy	\$18,346,430	0.2%				
EnCap Energy Capital Fund X, LP	Energy	\$35,515,715	0.3%				
Tailwater Energy Fund III, LP	Energy	\$23,017,803	0.2%				
Tailwater Energy Fund IV, LP	Energy	\$5,926,293	0.1%				
Quantum Energy Partners VI, LP	Energy	\$35,544,118	0.3%				
Quantum Energy Partners VII, LP	Energy	\$19,851,114	0.2%				
ArcLight Energy Partners Fund VI, LP	Infrastructure	\$36,753,018	0.4%				
Brookfield Infrastructure Fund III, LP	Infrastructure	\$30,406,467	0.3%				
Brookfield Infrastructure Fund IV, LP	Infrastructure	\$11,837,763	0.0%				
EnCap Flatrock Midstream Fund III, LP	Infrastructure	\$17,805,518	0.2%				
EnCap Flatrock Midstream Fund IV, LP	Infrastructure	\$8,417,442	0.1%				
EQT Infrastructure IV, SCSp	Infrastructure	\$6,268,489	0.1%				
First Reserve Energy Infrastructure Fund II, LP	Infrastructure	\$23,591,423	0.2%				
IFM Global Infrastructure Fund	Infrastructure	\$123,784,478	1.2%				
ISQ Global Infrastructure Fund II, LP	Infrastructure	\$21,385,304	0.2%				
Meridiam Infrastructure North America III, LP	Infrastructure	\$713,879	0.0%				
Pantheon SCERS SIRF, LLC	Infrastructure	\$85,419,554	0.8%				
Wastewater Opportunity Fund, LLC	Infrastructure	\$19,712,592	0.2%				
Atalaya SCERS SMA, LLC	Infrastructure Debt	\$17,488,395	0.2%				
Carlyle Power Partners II, LP	Power Generation	\$29,526,948	0.3%				

Liquid Real Return:

During the fourth quarter, the recently approved \$100 million Liquid Real Return mandate with Brookfield Asset Management was transitioned and fully implemented. Approximately half of the SSGA passive liquid real return overlay proxy was used to fund the Brookfield mandate.

As outlined in **Table 14** below, SCERS' Liquid Real Return allocation ended the quarter at 1.8%, slightly below the policy target allocation of 2%.

Table 14: Liquid Real Return Allocation (as of December 31, 2019)

Liquid Real Return	Sub-Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		\$184,520,712	1.8%	2.0%	-0.2%	0.0%	3.0%
SSGA Real Return Overlay Strategy	Passive Liquid Real Return Proxy	\$82,739,348	0.8%				
Brookfield Liquid Real Return	Active Liquid Real Return	\$101,781,365	1.0%				

OPPORTUNITIES PORTFOLIO

The allocation for SCERS’ Opportunities portfolio, outlined in **Table 15** below, is 0.1% compared to the 0% target allocation, and within the policy range of 0% to 5%. Any investments made within the Opportunities portfolio draw capital from the asset class with the closest risk and return profile as the opportunity being invested in. The asset class where capital is drawn from is listed in the chart below for each investment. Since the target allocation for Opportunities is 0%, the Overlay Program does not utilize a proxy allocation for the Opportunities portfolio, as it does for the other asset categories.

Table 15: Opportunities Allocation (as of December 31, 2019)

OPPORTUNITIES:	Sub-Asset Class	Market Value	Actual	Target	%	Low	High	Capital Is Drawn From
Atalaya Special Opportunities Fund V, LP	Opportunities - Credit	\$6,924,036	0.1%	0.0%	0.1%	0.0%	5.0%	Private Equity

CASH

SCERS’ total cash balance is approximately 2.4% (as of December 31, 2019), which includes an aggregate of the 1% dedicated cash allocation and other/excess cash. The dedicated cash allocation is intended to close the gap between benefit payments and total contributions in an environment where investment earnings fall short of the targeted assumed rate of return.

The 1.4% other/excess cash allocation is partly comprised of the pre-funded annual employer contribution, and is therefore used to fund monthly benefit payments. It is also used to fund future drawdowns within the private markets segments of the portfolio. SCERS’ Overlay Program rebalances the portfolio by eliminating cash drag by investing the non-dedicated cash allocation (1.4%) into positions that replicate SCERS’ target portfolio.

SCERS OVERLAY PROXIES

Growth Asset Category Proxy:			
	Policy Allocation	Benchmark	Overlay Implementation
Domestic Equities	20.0%	Russell 3000 Index	Basket of S&P 500; S&P 400; and Russell 2000 futures
International Equities	20.0%	MSCI ACWI ex-US Index	Basket of Local Index, EAFE, EM Futures plus currency
Private Equity	9.0%	Cambridge Associates PE/VC Index	Basket of 85% Goba Equity and 15% US TSY
Public Credit	2.0%	50% BofA High Yield/50% CS Leveraged Loan	Basket of 85% Goba Equity and 15% US TSY
Private Credit	4.0%	CS Leveraged Loan + 2%	Basket of 85% Goba Equity and 15% US TSY
Growth Absolute Return	3.0%	HFRI FoF Composite Index + 1%	Basket of 85% Goba Equity and 15% US TSY

Diversifying Asset Category Proxy:			
	Policy Allocation	Benchmark	Overlay Implementation
Core/Core Plus Fixed Income	10.0%	Bloomberg Barclays Aggregate Index	Baskets of Treasury Futures and TBAs
US Treasury	5.0%	Bloomberg Barclays UST Index	Baskets of Treasury Futures and TBAs
Global Fixed Income	3.0%	80% Citi WGBI/20% JPM GBI EM Global	Baskets of Treasury Futures and TBAs
Diversifying Absolute Return	7.0%	HFRI FoF Conservative Index	Baskets of Treasury Futures and TBAs

Real Return Asset Category Proxy:		
	Policy Allocation (relative to Real Return Asset Category)	Benchmark/Overlay Implementation
Global Real Estate (REITs)	15.0%	FTSE EPRA/NAREIT Developed Liquid Index
Global Infrastructure Equity	25.0%	S&P Global Infrastructure Index
Global Natural Resources Commodities	10.0%	S&P Global Large Mid Cap Commodity and Resources Index Bloomberg Roll Select Commodity Index
US Intermediate TIPS	30.0%	Bloomberg Barclays 1-10 Year US TIPS Index
Floating Rate Notes	10.0%	Bloomberg Barclays US Dollar Floating Rate Note < 5 Years Index

Prepared by:

Reviewed by:

Steve Davis
Chief Investment Officer

Eric Stern
Chief Executive Officer