ITEM 16

SCERS
SACRAMENTO COUNTY
EMPLOYEES' RETIREMENT SYSTEM

For Agenda of:
November 7, 2016

November 3, 2016

TO: President and Members
Board of Retirement

FROM: JR Pearce
Investment Officer

SUBJECT: Real Assets Annual Review and 2017 Investment Plan

Recommendation:

It is recommended that your Board receive and file the annual report on the Real Assets asset class and approve the recommended 2017 Real Assets annual investment plan.

Background:

Staff, Cliffwater, and Townsend are providing your Board with an update on SCERS' Real Assets asset class, including an overview of the program, investment activity that occurred over the past year, and the investment plan for the asset class going forward, including cash flow forecasts prepared by Cliffwater and Townsend.

As you will recall, the direction and approach to the Real Assets asset class approved by your Board includes three components: (1) A sub-asset class allocation structure which establishes long-term target allocations and ranges for investment strategies and geographies; (2) An annual investment plan, which establishes the level of commitments and investment priorities for the year; and (3) An implementation protocol, which delegates investment decision making responsibilities among the Board, Staff and consultants. To keep your Board updated on the status of the asset class, and similar to the approach taken within the Private Equity asset class, Staff, Cliffwater and Townsend present an annual review of the Real Assets investment program, including a report to your Board on commitment activity, as well as a recommended investment plan for the next year.

Please note that your Board is being asked to approve the recommended 2017 Real Assets annual investment plan, which details the investment priorities summarized below and within the attached presentation.

Discussion:

A. Real Assets Overview:

SCERS' Real Assets portfolio seeks to achieve multiple investment objectives as outlined below:

- Attractive returns on a real (net of inflation) basis and a hedge against inflation risk;
- Diversification for SCERS' portfolio, including low or negative correlation to equities;
- Moderate income and cash flow generation; and
- Greater consistency in the return distribution and muted downside risk.

SCERS' Real Assets portfolio target and allocation ranges are shown below. What distinguishes the real assets program is its broad scope, which includes: (1) A wide range of assets in both the private markets (illiquid) and public markets (liquid); (2) A number of differing investment strategies; and (3) A variety of sub-asset classes that could be and often are deemed as stand-alone asset classes. The Real Assets asset class is expected to achieve diversification across the real asset sub-strategies and is also expected to achieve diversification across geography, vintage year, investment manager and industry.

	Target	Ranges	
Sub Asset Class	**Weight**	**Min**	**Max**
Core Real Estate	7%	4%	9%
Private Real Assets	6%	3%	8%
Commodities	2%	0%	3%
TIPS	0%	0%	3%

The sub-asset classes were designed with wide ranges to create flexibility in allowing SCERS to allocate toward the most attractive investment opportunities with the most favorable relative value and risk characteristics across a cycle. SCERS has the ability to take exposure down in one segment in favor of more attractive risk-adjusted returns in another segment at a given point in the cycle.

The performance of the Real Assets portfolio is compared against the following benchmarks:

- The performance of the overall Real Assets program is expected to exceed the benchmark return of CPI-U (headline inflation) by 5%.

- Performance of each sub-asset class is benchmarked individually by the underlying asset:
    - Performance of core real estate investments are expected to exceed the NCREIF Fund Index – Open-End Diversified Core Equity ('NFI-ODCE')
    - Performance of non-core real estate investments are expected to exceed the NCREIF Fund Index – Open-End Diversified Core Equity ('NFI-ODCE') + 1%
    - Performance of commodities investments is expected to exceed the Bloomberg Commodity Index (formerly Dow Jones AIG Commodities Index) by 1%
    - Performance of TIPS is expected to meet or exceed the Barclays Capital US TIPS Index

The performance of private real assets and individual partnerships are expected to exceed the appropriate benchmark that will be chosen depending on the investment. Staff and Cliffwater are in the process of identifying an appropriate benchmark for private real assets and the broad real assets class, which will be recommended to your Board upon conclusion of the Asset Liability study.

B. Real Assets Annual Review:

Since the last Real Assets annual review in December 2015, Staff and consultants have focused significant attention on the asset class, and made multiple investments during the year. This activity is referenced within the attached presentation and is described below.

1. *Core Real Estate:*

Markets have been going through a roller coaster of economic events throughout 2016, from the oil price decline to the UK exit from the Eurozone. With sluggish economic growth and persistently low interest rates, investment capital from all sources has been diving into the real estate market, seemingly without discipline. However, uncertainties in the global markets, along with a prolonged real estate cycle, are resulting in transaction volumes declining from 2015's historical levels. Indications are ever more present that the real estate cycle has reached its peak. Despite signs of a weakness, industry experts cite the gap between real estate cap rates and 10-year treasury rate, which at its historical average, so there is less concern of a market correction. That may be the case but what has not been recognized is how much unconventional yield-chasing capital has crowded into real estate. Should there be better risk-adjusted returns elsewhere, particularly more liquid investment alternatives, unconventional real estate capital will exit the market and in turn drive up cap rates. In which direction will the real estate cycle takes us is yet to be revealed. The unprecedented worldwide monetary policy has completely distorted the financial markets, which may result in a period where the market neither increases nor decreases over the year. It is safe to say that there is more downside risk in today's environment, given that real estate fundamentals have achieved or exceeded prior peak levels. It bears caution to invest in real estate under these circumstances but opportunities will avail themselves when markets correct.

In SCERS' 2015 Real Assets Review, Staff and Townsend made note that the robust real estate market would offer SCERS the opportunity to selectively sell separate account assets that achieved their business plans, and which would have minimal forecasted growth going forward. Subsequently, SCERS' separate account managers initiated a number of asset sales in 2015, and continued into 2016, with the sale of Flying Cloud Office, Forest Pointe Apartments, and Stonefield Apartments, due to weak property fundamentals, location challenges, or limited upside potential.

Staff and SCERS' real estate consultant, Townsend, have been very cautious with respect to separate account acquisitions. With core asset prices at or exceeding the prior cycle peak, there have been few, if any, interesting investment opportunities to replace assets sold from SCERS' separate account portfolio. As a result, SCERS has been a net seller of properties in its separate account portfolio over the last three years. Rather than buying core assets for the separate account, Staff and Townsend have targeted projects that could be redeveloped or developed into core properties and where SCERS would have the optionality to hold in its separate account portfolio or take opportunistic profits. Staff and Townsend believe value-add and build-to-core assets offer a better risk-return in many circumstances compared to core assets at this point in the cycle. As such, Staff and Townsend will continue to work with SCERS' separate account managers to identify properties that can be redeveloped or developed into a core asset suitable for SCERS' portfolio.

The build-to-core strategy initiated in 2015 resulted in SCERS making an investment in a $45 million office redevelopment project in downtown Portland. The project known as Block 295 was sourced by BlackRock and closed in June 2016. SCERS, along with a joint venture partner, are redeveloping a 1970s era office building into a creative office and retail property. The project now renamed the Leland James Center, began demolition and construction in July 2016 and has a targeted completion date in the third quarter of 2017.

Because of the challenging market for new core investment opportunities in the separate account portfolio, Staff has taken a different approach to SCERS' core real estate allocation by targeting core open-end funds. A core open-end fund (COEF) offers a similar investment profile that a separate account would offer, such as current yield, liquidity, and diversification. With a COEF, SCERS is able to access the top managers and a portfolio of core assets diversified across vintage years, property type, and geographic location that would otherwise be cost prohibitive. As the separate account requires considerable Staff time and effort, a COEF brings the added benefit of being less taxing on Staff resources. With that in mind, SCERS made a $70 million commitment to Townsend Real Estate Fund, LP (TREF), an open-end core real estate fund investing primarily in private open-end real estate equity and debt funds. TREF can also make smaller investments in direct co-investment opportunities and REITs. Because of Townsend's industry standing and resources, they are able to gain access to the top real estate managers and negotiate favorable terms, while building a differentiated diversified portfolio.

2. *Non-Core (Value-Add/Opportunistic and International) Real Estate:*

As mentioned above, Staff and Townsend believe value-add and build-to-core assets offer a better risk-return compared to core assets at this point in the cycle. With the run up in the pricing of core assets, Staff and Townsend have not found many compelling core investment opportunities. However, Staff and Townsend are still identifying attractive risk-adjusted returns in value-add and opportunistic real estate in the US and particularly outside of the US. In the US, Staff and Townsend are finding interesting opportunities in niche or non-traditional property types, such as healthcare and urban retail. Additionally, rather than buying core assets, Staff and Townsend, believe select redevelopment and development projects can provide a strong risk-return, due to the optionality of holding it in the separate account portfolio or taking opportunistic profits. As noted above, SCERS made an investment in a $45 million office redevelopment project in Portland, known as Leland James Center. Upon completion, SCERS has the contractual option to retain it in the separate account or sell it in the open market.

Investments in international markets are permitted within SCERS' broader real estate portfolio in order to improve diversification and enhance returns. SCERS may target real estate exposure outside of the United States, with a permissible range of 0% to 30%. Staff and Townsend are seeing opportunities in Europe and Asia, as economic and real estate property level recovery in these regions lags the US. Opportunities in these markets provide diversification to SCERS' real estate portfolio, as individual country real estate markets tend to operate independently with different macroeconomic environments, capital market dynamics, and real estate fundamentals, which translates to a more diversified portfolio across countries, economic cycles and property types. However, while international investments can offer benefits relative to domestic investments, they can also be impacted by currency fluctuations. In 2014, SCERS committed $25 million to NREP Fund I. As previously noted, Staff and Townsend are finding better relative value opportunities with differentiated managers in non-US markets and will be a focus for the upcoming year. That being said, due to the strong returns and pipeline of opportunities available in the Nordics, SCERS made a $35 million commitment to Nordic Real Estate Partners' follow on Fund II.

3. Private Real Assets:

The private real assets segment of the asset class was created in 2011, and SCERS has been building out this sub-asset class since then. Due to the cash flow characteristics of private real assets, and the objective to achieve vintage year diversification when investing in this segment, Cliffwater and Staff anticipate that SCERS will reach its 6% target fair market value in 2019, compared to the current actual allocation of 1.6%.

SCERS continues to invest toward the targeted allocation and the investment activity over the past year reflects the efforts made. A key focus over the past year has been investments with a greater emphasis on contracted cash yield, sub-sectors with consistent cash flows, and cash flows that are less correlated to the broader financial markets. Staff and Cliffwater have identified several investment opportunities around this theme, including core infrastructure and agriculture.

During the year, SCERS made two core infrastructure commitments, $100 million to IFM Global Infrastructure Fund, LP (IFM) and $40 million to Brookfield Infrastructure Fund III, LP (BIF).

IFM is an open-end core infrastructure fund investing in North America and Europe. The open-end structure offers several benefits including: (1) A known portfolio of specified assets in the fund (no 'blind' pool); (2) A reduced J-curve due to a quicker investment period, fees drawn only on invested capital, and cash yield at investment inception; (3) Vintage year diversification; and (4) Liquidity through a quarterly redemption schedule. IFM targets core infrastructure assets that provide essential services to communities, cities, or regions. The Fund will construct a portfolio of steady cash flowing assets generated from long-term contracts with creditworthy counterparties, generating a current yield of 6% and a net return of 10%.

BIF is a closed-end core/core plus infrastructure fund targeting infrastructure assets in North America, Europe, South America, and Australasia. Core infrastructure assets targeted by BIF will typically have high barriers due to regulatory and/or contractual structures, unique locations, or monopoly-like characteristics providing essential services to communities. The Fund seeks to generate a current cash yield of 5.0% and earn an overall net return of 10%.

Staff and Cliffwater evaluated several agriculture funds during the year but have found the space is so nascent that the universe of experienced managers is very limited. The agriculture value-chain runs through various sub-sectors, including upstream (crops), midstream infrastructure (processing and packaging), and downstream (wholesale and retail). As a first foray into agriculture, SCERS made a $25 million commitment to ACM Fund II, LLC (ACM), a closed-end agriculture fund investing in high-value permanent crop farmland and midstream processing assets, primarily in California and the Pacific Northwest. The Fund will invest in farmland acreage producing orange and lemon varietals, blueberries, and tree nuts, with an objective to manage farm operations internally from growing, processing, packaging, marketing, and distribution. The Fund expects to generate a stable cash yield of 8% and earn an overall net return of 12%.

The private real asset space continues to expand into interesting opportunities but is still a nascent asset-type. There are few experienced institutional managers with a long track record. The majority of the fund strategies reviewed are primarily sponsored by investment banks that joint venture or hire operating partners to execute a strategy. Because private real assets are specialized, have varying complexities, and have long lives, the space requires experienced on-the-ground operators who can navigate through market challenges. As such, SCERS has had a gap in reaching its target allocation. Because of the allocation gap and complexities, private real assets can lend itself to a custom separate account with an experienced manager, similar to SCERS' separate accounts with Atalaya and Pantheon.

SCERS established a separate account with Atalaya Capital Management in 2015 to execute a direct lending program, which would be secured by over collateralized hard assets that can be readily liquidated. During the year, Staff and Cliffwater evaluated a number of interesting capital equipment lending/leasing opportunities sourced by Atalaya; however, none of these opportunities materialized into investments. Despite not making any investments in 2016, Staff's engagement with Atalaya has progressed by narrowing the investment focus, which is leading to a more robust and targeted pipeline.

Similar to the separate account with Atalaya, SCERS established a separate account with Pantheon in 2014 to invest in various infrastructure opportunities, either on a secondary basis or through a co-investment. During the year, SCERS participated with Pantheon in a co-investment of a portfolio of two Nordic electric distribution plants and a secondary purchase of a diversified portfolio of 91 core infrastructure assets, including hospitals, schools, housing, transportation, and power transmission.

Staff has used its veto rights when appropriate throughout the relationship with Atalya and Pantheon, and as we move later in the economic/market cycle, discipline will be necessary. The projects Staff and Cliffwater have approved are those where the downside risk is mitigated, and the returns adequately reward SCERS for the risk undertaken. Staff will continue to exercise caution and diligence so the pace of investment may decline compared to previous years.

C. Allocation Gap:

A list of the current Real Assets partnerships and investments that SCERS is invested in as of September 30, 2016 is shown below. SCERS' current Real Assets allocation, excluding the overlay proxy, is 9.4% (as of September 30, 2016), which is well below the policy target of 15.0%. Please note that several investments within the Opportunities asset class draw capital from the Real Assets asset class, as this is the asset class with the closest risk and return profile of the opportunity being invested in by these opportunistic funds (please see exhibit below). Accounting for these funds, which are mostly non-core real estate funds, brings SCERS' Real Assets allocation to approximately 11.3%.

Among the Real Assets sub-asset classes, SCERS has a 6.7% allocation to core real estate, which is within the allowable range of 4% to 9%. The total real estate allocation is approximately 9.2% when combining the core and non-core allocation. SCERS' commodity sub-asset class allocation is 0.9%, which is below the target of 2.0%, but within the allowable range of 0% to 3%. The commodity asset class allocation has remained steady despite the sell-off in commodity prices over the last couple of years. SCERS has an approximate 0.9% commodity allocation within the Real Assets proxy used in SCERS' overlay program, which brings SCERS' aggregate commodity specific allocation to 1.7%. SCERS' private real assets sub-asset class allocation is only 1.8%, which is well below the 6% target and is the primary driver of the allocation shortfall in Real Assets.

Real Assets	Asset Class / Sub Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High
		$1,100,695,899	13.7%	15.0%	-1.3%	12.0%	18.0%
Blackrock Realty Advisors Portfolio I	Real Estate Private Market Core	$151,561,641	1.9%				
Blackrock Realty Advisors, Portfolio II	Real Estate Private Market Core	$43,936,792	0.5%				
Cornerstone Realty Advisors	Real Estate Private Market Core	$60,697,147	0.8%				
Morgan Stanley Prime Property Fund	Real Estate Private Market Core	$49,019,776	0.6%				
MetLife Core Property Fund, LP	Real Estate Private Market Core	$48,949,091	0.6%				
Jamestown Premier Property Fund LP	Real Estate Private Market Core	$18,714,049	0.2%				
Prologis Targeted Europe Logistics Fund, LP	Real Estate Private Market Core	$31,139,578	0.4%				
Prologis Targeted US Logistics Fund, LP	Real Estate Private Market Core	$31,140,808	0.4%				
Principal US Property Account	Real Estate Private Market Core	$37,482,340	0.5%				
Townsend Real Estate Fund, LP	Real Estate Private Market Core	$68,198,446	0.8%				
	Real Estate Private Market Core		6.7%	7.0%	-0.3%	4.0%	9.0%
EnCap Energy Capital Fund IX, LP	Private Real Assets	$26,749,822	0.3%				
First Reserve Energy Infrastructure Fund II, LP	Private Real Assets	$7,405,827	0.1%				
EnCap Flatrock Midstream Fund III, LP	Private Real Assets	$6,546,580	0.1%				
Quantum Energy Partners VI, LP	Private Real Assets	$8,340,243	0.1%				
Pantheon SCERS SIRF, LLC	Private Real Assets	$35,639,980	0.4%				
Atalaya SCERS SMA, LLC	Private Real Assets	$11,923,359	0.1%				
EnCap Energy Capital Fund X, LP	Private Real Assets	$9,834,914	0.1%				
ArcLight Energy Partners Fund VI, LP	Private Real Assets	$16,558,261	0.2%				
Carlyle Power Partners II, LP	Private Real Assets	$12,880,662	0.2%				
IFM Global Infrastructure Fund	Private Real Assets	$0	0.0%				
Wastewater Opportunity Fund, LLC	Private Real Assets	$2,988,326	0.0%				
Brookfield Infrastructure Fund III, LP	Private Real Assets	$6,509,283	0.1%				
	Private Real Assets		1.8%	6.0%	-4.2%	3.0%	8.0%
Blackstone Resources Select	Commodities	$40,960,500	0.5%				
Gresham Strategic Commodities Fund	Commodities	$24,896,028	0.3%				
	Commodities		0.8%	2.0%	-1.2%	0.0%	3.0%
SSGA Real Asset Strategy	Real Assets Proxy	$348,622,449	4.3%				

Opportunities	Asset Class / Sub Asset Class	Market Value	Actual	Target	Delta %	Target Low	Target High	Asset Class Where Capital Is Drawn From
		$167,960,495	2.1%	0.0%	2.1%	0.0%	5.0%	
Atalaya Special Opportunities Fund V, LP	Opportunities - Credit	$17,782,592	0.2%					Private Equity
DRC European Real Estate Debt Fund II, LP	Opportunities - Credit	$27,048,194	0.3%					Real Assets
KKR Real Estate Partners Americas, LP	Real Estate Private Market Opportunistic	$18,208,959	0.2%					Real Assets
Och-Ziff Real Estate Fund III, LP	Real Estate Private Market Opportunistic	$10,404,139	0.1%					Real Assets
UBS (Allegis Value Trust)	Real Estate Private Market Value Added	$21,538,912	0.3%					Real Assets
A.E.W Value Investors II, LP	Real Estate Private Market Value Added	$2,092,018	0.0%					Real Assets
Hines US Office Value Added Fund II, LP	Real Estate Private Market Value Added	$3,285,077	0.0%					Real Assets
NREP Nordic Strategies Fund, FCP-FIS	Real Estate Private Market Value Added	$21,771,433	0.3%					Real Assets
CIM Opportunity Fund VIII, LP	Real Estate Private Market Value Added	$22,781,258	0.3%					Real Assets
ECE European Prime Shopping Centre Fund II, SCS-SIF	Real Estate Private Market Value Added	$7,397,916	0.1%					Real Assets
Hammes Partners II, LP	Real Estate Private Market Value Added	$11,151,790	0.1%					Real Assets
NREP Nordic Strategies Fund II, FCP-FIS	Real Estate Private Market Value Added	$4,498,206	0.1%					Real Assets

While the target allocation for private real assets is 6%, and the current fair market value of SCERS' private real assets allocation is 1.6%, SCERS has actually committed approximately 6.8% in capital between its direct commingled fund investments and its customized separate accounts with Pantheon and Atalaya. Due to the cash flow characteristics of private real assets, investments often never reach the value of its initial commitment level at any point in its cycle, since cash is being distributed back to investors as investments progress. Therefore, it is typically necessary to commit approximately 1.5x the target allocation in order to reach target allocations. As a result, SCERS will need to continue to commit more than 6% to the sub-asset class in order to ultimately achieve its target allocation of 6%. Given this dynamic, Cliffwater and Staff anticipate that SCERS will reach its 6% target fair market value sometime in the calendar year 2019. Please see the Cliffwater capital budget detail below, which shows the projected annual investment pace for SCERS' private real assets program.

	SCERS - Capital Budget Model		6/30/2016	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025
1	Forecast Plan Total Assets		7,686,209	7,950,676	8,507,224	9,102,729	9,739,920	10,421,715	11,151,235	11,931,821	12,767,049	13,660,742	14,616,994
2	New Commitments			140,000	150,000	150,000	150,000	150,000	190,000	190,000	190,000	190,000	190,000
	Private Real Assets Fair Value by Sector:		6/30/2016	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025
3	Private Real Assets		128,919	215,131	368,397	491,142	586,051	652,624	702,806	755,514	812,309	854,737	879,359
4	**Private Real Assets Total**		**128,919**	**215,131**	**368,397**	**491,142**	**586,051**	**652,624**	**702,806**	**755,514**	**812,309**	**854,737**	**879,359**
	Strategy Diversification:	**Target Range**	6/30/2016	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025
5	Private Real Assets	100%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
6	Private Real Assets Fair Value as % of Total Plan Ass		1.7%	2.7%	4.3%	5.4%	6.0%	6.3%	6.3%	6.3%	6.4%	6.3%	6.0%
7	Private Real Assets Target Asset Allocation		6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
	Unfunded Commitments and Fair Value		6/30/2016	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025
8	Private Real Assets Unfunded Commitments		385,118	323,598	386,322	385,049	384,153	382,317	414,755	434,875	445,195	450,338	452,792
9	Unfunded Commitments + FV		514,037	538,729	754,719	876,192	970,204	1,034,941	1,117,560	1,190,389	1,257,504	1,305,076	1,332,151
10	Unfunded Commitments + FV as % of Assets		6.7%	6.8%	8.9%	9.6%	10.0%	9.9%	10.0%	10.0%	9.8%	9.6%	9.1%
11	Ratio of Unf Com + FV to Target Allocation		1.11x	1.13x	1.48x	1.60x	1.66x	1.66x	1.67x	1.66x	1.64x	1.59x	1.52x
	Net Cash Flow Requirements			12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025
12	Private Real Assets			(80,133)	(132,978)	(88,186)	(49,231)	(12,395)	9,854	11,753	12,545	32,396	54,446
13	Total Net Cash Flow to Private Real Assets			(80,133)	(132,978)	(88,186)	(49,231)	(12,395)	9,854	11,753	12,545	32,396	54,446
	Annual Commitments by Strategy			12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025
14	Existing Commitments			140,000	0	0	0	0	0	0	0	0	0
15	Private Real Assets			0	150,000	150,000	150,000	150,000	190,000	190,000	190,000	190,000	190,000
16	Total Annual Commitments to Private Real Assets			140,000	150,000	150,000	150,000	150,000	190,000	190,000	190,000	190,000	190,000

Total Plan Assets assumed to grow at 7.0%

In order to minimize the gap between the target allocation of 15% for the Real Assets asset class and the current allocation of 11.3%, SCERS' overlay manager, SSGA, utilizes the SSGA Real Assets Strategy to rebalance SCERS' real assets allocation close to the 15% target. Despite the allocation gap, Staff and Consultants have made great progress in reducing the amount of the real assets proxy. As of September 30, 2016, the SSGA real assets proxy equaled \$349 million, down from \$480 million recorded in the second quarter of 2015, a reduction of \$131 million. Staff is expecting a significant drawdown of capital from IFM and TREF over the next two quarters, which will reduce the real assets proxy further.

As you will recall, your Board approved an enhancement to the SSGA Real Assets Strategy in 2015 whereby the proxy was expanded into a wider variety of investable real asset sectors, including globally. The revised SSGA Strategy contains a mix of commingled funds and separate accounts that provide exposure to a blend of commodities, global infrastructure stocks, global natural resource stocks, Treasury Inflation Protected Securities (TIPS), global REITs, and midstream energy-focused master limited partnerships (MLPs). While the SSGA Strategy (real assets proxy) is not ideal, the mix of investments does provide SCERS with inflation protection, diversified returns, and a moderate level of current yield. However, the SSGA proxy is comprised of publically traded securities, which does not effectively replicate the 'liquidity premium' historically achieved by private market investments, and will be subject to greater levels of market volatility, as has been experienced throughout 2016 in the energy and REIT markets.

These considerations highlight the importance of consistently deploying capital in SCERS' Real Assets asset class. The SSGA Real Assets Strategy will continue to be reduced as SCERS builds out its commitments and prior commitments are drawn down.

D. Forward Investment Plan:

Below is the expected activity, themes and investment opportunities that Staff and Consultants expect to undertake over the next year:

1. Real Estate:

Core Real Estate:

Within SCERS' core separate accounts, as previously referenced, Staff and Townsend have been very cautious with respect to core separate account acquisitions. With core asset prices at or exceeding the prior cycle peak, there have been few, if any, investment opportunities. Because of the challenging market for new investment opportunities, Staff has been targeting core open-end funds as an alternative. As previously discussed, a core open-end fund (COEF) offers a similar investment profile that a separate account would offer, such as current yield, liquidity, and diversification. To this end, Staff and Townsend expect to identify COEF that are additive to SCERS' core real estate portfolio objective of current yield, low volatility, and built-in income increases. Staff has evaluated a number of US core and core plus funds and believe the Townsend Real Estate Fund, LP ("TREF"), The Townsend Group's open-ended core real estate fund, is additive and an enhancer to SCERS' core real estate segment. TREF is a long-term strategic core real estate investment for SCERS, but it is intended to be a partial placeholder for SCERS' real estate allocation as properties are sold or redemptions are made over time. As an example, SCERS recently received $41.9 million from the sale of Stonefield Apartments by BlackRock. Staff believes TREF offers an attractive alternative to placing the sale proceeds in SCERS' real assets proxy, which has inherent equity risk and considerably more volatility. TREF continues to build out a pipeline of excellent opportunities and is seeking new capital to fund several asset acquisitions. Staff is recommending reinvesting some of the Stonefield sale proceeds in TREF by increasing SCERS' commitment by $20 million.

After the Stonefield Apartment sale, Staff and Townsend do not contemplate any immediate asset sales. The remaining assets have characteristics to continue to support as long-term holds, except perhaps the 1811 Brittmoore industrial property where Staff and Townsend believe the fundamentals may deteriorate. Staff and Townsend will continue to oversee the implementation of capital improvement programs at several of the separate account properties, in particular, Harbour Pointe Shopping Center and Lake Washington Office, which are undergoing significant renovations.

Considering the time and effort required for a real estate separate account, Staff and Townsend continue to evaluate alternative ways to leverage resources to execute on the SCERS core real estate portfolio. One approach has been through core open-ended funds (COEF). In a study prepared by Townsend, the differential between the top-quartile core manager and the bottom-quartile core manager is only 100 basis points. What can be inferred from this ranking is that within core real estate, there is very little differentiation among managers. Core real estate can then be defined as an exposure/investment in a universe of institutional real estate, also known as real estate beta. In general, core real estate does not generate meaningful alpha, but mostly beta, as shown by the 100 bps differential between top and bottom quartile managers. Staff and Townsend are finding it is more effective to gain real estate beta exposure by investing in COEFs. COEFs offer the same investment profile as a separate account, such as current yield, liquidity, and diversification, but require minimal direct Staff engagement; provides better diversification; and exhibits less return fluctuation compared to SCERS' separate account. The most significant advantage of a COEF is the participation in a large portfolio of core assets diversified across managers, vintage years, property type, and geographic location that would otherwise be cost prohibitive in a separate account. To illustrate this consideration, below are two schedules of four highly rated COEFs that SCERS is invested. The schedules illustrate SCERS' ownership in a diversified portfolio of 549 core properties, representing some $27 billion in value. Another advantage is the separate account asset/geographic concentration risk is mitigated, as the average asset size within the COEFs is less than 4.5% of their respective portfolio and overall is only 0.2% of the combined portfolio.

	CORE OPEN END COMMINGLED FUNDS				
FUND ASSETS	**Principal**	**MS Prime**	**MetLife**	**Jamestown**	**TOTAL FUNDS**
GAV	$9,071,000,000	$20,181,000,000	$2,650,000,000	$4,380,000,000	$36,282,000,000
NAV	$6,819,000,000	$16,179,000,000	$1,844,000,000	$2,400,000,000	$27,242,000,000
Total Properties	149	341	37	22	549
Avg. Property Size	$60,879,195	$59,181,818	$71,621,622	$199,090,909	$66,087,432
Avg. Property Size as a % of Total Portfolio	**0.7%**	**0.3%**	**2.7%**	**4.5%**	**0.2%**

	CORE OPEN END COMMINGLED FUNDS				
DIVERSIFICATION	**Principal**	**MS Prime**	**MetLife**	**Jamestown**	**TOTAL FUNDS**
Office	43%	35%	42%	65%	**41%**
Apartments	21%	25%	32%		**22%**
Retail	16%	18%	15%	26%	**18%**
Industrial	17%	13%	11%		**12%**
Other	3%	8%		9%	**6%**
	100%	100%	100%	100%	100%
West	62%	36%	39%	19%	**41%**
East	24%	29%	10%	81%	**32%**
Midwest	6%	12%	13%		**9%**
South	8%	23%	38%		**18%**
	100%	100%	100%	100%	100%

Staff and Townsend are reviewing various options for generating alpha or returns greater than the index. In generating alpha, identifying strategic opportunities (value-add/opportunistic and international) that take advantage of points in the cycle, including property-type and location-specific strategies globally, is profitable. Staff and Townsend are evaluating SCERS' various real estate strategies, including the separate account, to identify the best long-term strategy to achieve SCERS' real estate portfolio objectives. Once an approach is identified, Staff and Townsend will bring it to your Board.

Non-Core (Value-Add/Opportunistic and International) Real Estate:

As discussed above, attributes of international real estate markets provide diversification to SCERS' predominately US real estate portfolio, as countries outside of the US face different macroeconomic environments, capital market dynamics and real estate fundamentals, which leads to a more diversified portfolio across countries, economic cycles, and property types.

Staff and Townsend are finding attractive value-add and opportunistic investment opportunities outside of the US, even though returns can be positively or negatively affected by currency exchange rates. Over the last couple of years, Staff and Townsend have been focused on several global investment themes that exhibit favorable risk-adjusted returns, including logistics, student housing, and parking facilities.

The logistics investment theme is centered on the growth of online retailing globally, with emerging markets experiencing the greatest growth. Outside of the US, most markets from Europe to Asia have inadequate logistic facilities to meet the demands of modern e-commerce, particularly for large distribution facilities and last-mile delivery. Because of this dynamic, SCERS made a commitment to Prologis Targeted Europe Logistics Fund, LP and NREP Nordic Strategies Fund I due to its logistics expertise. In Asia, Staff recognized the acute logistics supply-demand imbalance, particularly in China and Japan. E-commerce growth and the need for modern logistics facilities are projected to be a long-term investment opportunity. In China, the economy has been transitioning from a manufacturing-based economy to a consumption-based economy, which has contributed to the rapid growth of e-commerce, as seen in the size of China's e-commerce giant Alibaba. However, the supply of modern logistics facilities has not kept up with the demands of e-commerce and third-party logistics companies. Staff and Townsend have been meeting with and evaluating several Asia investment managers over the last couple of years. Given real estate requires local expertise, especially in a foreign country with different legal and governmental systems, Staff has been extra diligent in identifying a local Asia operating partner with experience and execution capabilities. E-commerce's rapid growth is occurring globally and remains one of the few long-term investment themes offering potential outsize returns. Staff continues to track market fundamentals and potential opportunities in other logistics markets, such as Latin America and Central Eastern Europe, and should a viable opportunity be identified, a recommendation will be brought to your Board.

The chronic shortage of student housing in Europe and the lack of capital dedicated to the space represents a substantial investment opportunity. Compared to the US market, there really is not much of a student-housing sector. In most international countries, particularly continental Europe, there is a severe shortage of adequate on campus or even off-campus student accommodations. Many university systems are now finding it difficult to attract students, both locally and internationally, due to the housing constraints. Staff and Townsend have been researching the European student housing opportunity, but the space is so nascent that a creative approach to entering the market will be necessary, such as a customized account or a club of like-minded pension plans.

As described above, rather than buying core assets, Staff and Townsend, believe redeveloping or developing core projects will generate better risk-adjusted returns, attributable to the optionality of holding it in the separate account portfolio or taking opportunistic profits. Staff and Townsend will work alongside SCERS' separate account managers to identify compelling redevelop/develop core projects, primarily in the key coastal US markets.

2. Private Real Assets:

As discussed previously, the primary focus will be on private real asset investments that offer current cash yield where the majority of the return comes from income, uncorrelated to macro events, lower risk/volatility, and portfolio diversification. Below are some investment themes that Staff and Cliffwater expect to target over the next year.

Energy infrastructure

Within the energy sector, SCERS has committed significant capital to both the upstream energy exploration/exploitation sector and the midstream sector, over the past few years. The universe of energy managers is finite and the universe of managers with a significant track record of success is even more limited. SCERS has made commitments to managers Staff and Cliffwater considers top quartile managers. It has been SCERS' preference to re-commit to high conviction managers; therefore, Staff expects a few of SCERS' energy managers will be raising new funds in 2017. Staff and Cliffwater will evaluate the new funds with caution, as the energy markets remain stressed. However, with the dislocation in the energy market, there may be some compelling contrarian investment opportunities. Staff and Cliffwater will seek to invest with those managers that have exhibited the ability to navigate multiple energy cycles. The managers with access to the top energy companies/teams are what differentiate the top quartile funds, especially in volatile energy markets.

Public-Private Partnership (PPP) Infrastructure

Staff and Cliffwater have been focused on investments in real assets that generate the majority of its return from current income, with lower volatility and correlation to macro events. The sector offering a high-income return and low risk can be found in core infrastructure, including public-private partnerships. A public-private partnership (PPP) is a joint venture between a governmental entity (local, county, and/or state) and the private sector for the purpose of financing, building, and operating public infrastructure projects, such as toll roads, bridges, hospitals, and other essential public facilities.

In a PPP, the capital investment necessary to build an infrastructure project is shouldered by the private sector backed by contracts with a government entity to provide certain ongoing operational services. For projects that are aimed at creating essential public services, it is typical for a government entity to provide some form of capital or revenue enhancement, such as tax subsidies/breaks or guaranteed minimum annual payments. A PPP is a structure that allows resource-constrained governments to leverage the private sector to build and operate large infrastructure projects. The benefit for the governmental entity is that the financing and operating expense is borne by the private sector, allowing the government to provide community services/facilities without the financial burden and risk. The transfer of risks to the private sector minimizes the public's exposure and affords the private sector with the financial incentive to undertake these risks and costs. The appeal to PPP investors is the steady revenue streams generated from contracts that span 30, 50, or more years, often with periodic revenue increases, backed by a government's full faith and credit. Due to a PPP's bond-like cash yield and low risk, PPP's are highly sought after.

SCERS recently gained some PPP exposure from its SMA with Pantheon. As noted above, SCERS along with Pantheon, made a secondary purchase of a diversified portfolio of 91 PPP assets, including hospitals, schools, housing, transportation, and power transmission. During the year, Staff and Cliffwater had identified one of the preeminent global PPP firms, a highly regarded firm with a significant track record of building core infrastructure projects throughout US and Europe. Unfortunately, the manager's European focused PPP fund was well oversubscribed by the re-ups of its current investors, leaving no room for new investors. The manager was able to complete a one-and-done closing of its €2.0 billion fundraise, highlighting the attractiveness of the manager and the high demand for PPP investments. For 2017, Staff and Cliffwater will continue to target PPP investment opportunities, both in the US and in Europe. Staff expects the aforementioned PPP manager SCERS missed participating will be raising a US-focused PPP fund in 2017.

Timberland

In late 2015, Staff and Cliffwater were underwriting a timberland investment opportunity. The opportunity involved a strategic investment alliance with a select group of large public pension plans and the second largest public timber company. The pre-specified portfolio of timberland assets, which represented 50% of the investment strategy, a low-cost fee structure, and a top tier timber operator, was unique. The investment opportunity would allow SCERS to participate in high quality diversified timberland assets, stable cash yield, and strong downside protection. However, the timberland operator was acquired going into 2016. The new company informed the investors they would not be fulfilling the terms of the timberland strategy and would initiate a transition plan. Due to the uncertainty of how the alliance would be managed, SCERS had no choice but not move forward with a commitment. Staff and Cliffwater continue to favor timberland for a SCERS investment due to the sector's steady income and diversification benefits.

Agriculture

Staff and Cliffwater will continue to review agriculture investment opportunities in permanent crops, cattle and meat processing, pastoral lands, and midstream food infrastructure. Agriculture investing offers attractive returns with lower correlations to other segments of SCERS portfolio and is an ongoing Staff focus. Unfortunately, the agriculture space is such a nascent institutional space that identifying an experienced on the ground operator manager is difficult. Several closed-end funds are currently being reviewed and it is anticipated an additional commitment to the sector will be made in 2017. As noted above, SCERS made a $25 million commitment in 2016 to Agriculture Capital Management's ACM Fund II, LP, a closed-end fund targeting permanent crops in the western US.

3. Commodities:

While much of the focus within the Real Assets asset class centers on real estate and private real assets, commodities is also a component of the portfolio, and currently has an actual allocation of 0.9% versus a target allocation of 2%. It includes investments in underlying categories such as energy, agriculture, industrial metals, precious metals and livestock. SCERS currently invests in commodities through two investment managers, Blackstone Resources Select Fund and Gresham Strategic Commodities Fund, in a long-only format. Both investment strategies, which were initiated in 2008, have generated negative returns since inception due to the collapse in commodity prices coming out of the recession, as well as the recent collapse in oil prices. With the recent recovery in commodity prices noted previously, both of SCERS' commodity managers have improved their returns to 11.3% (Gresham) and 14.4% (Blackstone) year-to-date.

Over the past year, commodities experienced significant volatility. Market volatility was less about fundamentals and more about speculation. Investor sentiment on exogenous events would typically lead to trading activity in-and-out of commodities despite the limited change in fundamentals. Entering 2016, the commodity sector continued its downward movement that began in 2015. Around February, the market began to settle and started an upward trajectory. The rebound in commodities is primarily due to the rebound in oil and gas prices. Oil had reached a low of $26 per barrel and has since recovered to around $45 per barrel currently. Gas followed the same trajectory, reaching a low in February and then closely followed the same upward movement as oil. Despite the signs of a recovery, commodity prices continue to be impacted by the economic slowdown in China, a major consumer of commodities, and generally slow growth globally. The combination of muted demand and excess inventory remains a pressure point across nearly all commodity types.

Going forward, Staff and Cliffwater continue to believe the headwinds facing commodity supply and demand will keep commodity prices range bound over the intermediate term, and caution should be taken within the segment. SCERS' commodity allocation with Blackstone and Gresham currently sits at 0.8%, which is below the target of 2.0%, but within the allowable range. As previously mentioned, SCERS has an approximate 0.9% commodity allocation within the Real Assets proxy, which brings SCERS' aggregate commodity specific allocation to 1.7%. Staff and Cliffwater do not see the need to increase SCERS' commodity allocation above the current aggregate levels. However, other approaches to investing in commodities may be considered, such as a long/short relative value approach, which is typically executed through an absolute return structure.

E. Capital Budget/Cash Flow Analysis:

Both Cliffwater and Townsend have provided capital budget forecasts for SCERS' private real assets portfolio and real estate portfolio, respectively. Both are attached to this document.

For private real assets for 2016, the recommended investment plan is shown below.

SCERS Private Real Assets Annual Investment Plan

	Target	Range Min	Range Max
Commitment Level	$150 MM	$100 MM	$200 MM
Number of Funds	4	3	6
Energy Related	2	0	3
Infrastructure	1	0	2
Ag, Minerals, Timber	1	0	3
Other	0	0	1
Commitment per Fund	$40 MM	$20 MM	$100 MM

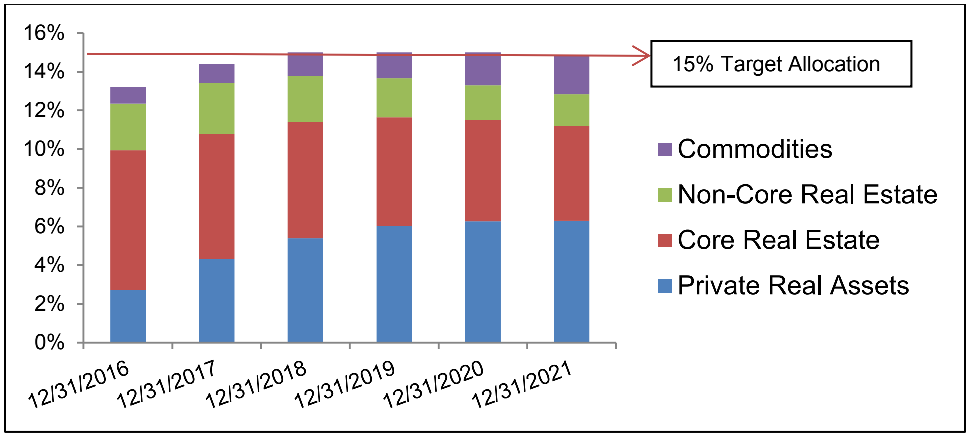
Source: Cliffwater

The 2017 investment plan for the private real assets sub-asset class calls for SCERS to target four fund commitments, with a range between three and six, and a targeted commitment size per fund of approximately $40 million. The aggregate target commitment level is $150 million, with a range between $100 million and $200 million. Areas of focus will include those referenced in the private real assets segment of the 'Forward Investment Plan' section above. With SCERS' private real assets allocation nearing allocation targets and with fewer investment opportunities, the 2017 commitment levels are down from the previous year's $200 million commitment target.

For private real assets, Staff and Cliffwater are targeting the 6% long-term allocation for this asset class, which is the modeled target allocation approved by your Board. If SCERS were to maintain the investment pace referenced in the capital budget forecast, SCERS would reach the 6% target fair market value in the calendar year 2019. As of the third quarter of 2016, SCERS committed $140 million to three private real assets opportunities, including an open-end core infrastructure fund, a closed end core/core plus infrastructure fund, and an agriculture permanent crop fund.

The pace at which SCERS achieves its target allocation can be affected by multiple variables. These include: (1) The growth of SCERS' total plan assets; (2) Staff and Cliffwater's level of conviction in an investment and the subsequent sizing of the commitment; (3) The allocation amount that SCERS receives - SCERS can be pared back in its allocation if a fund is oversubscribed; (4) The supply of viable private real assets funds in the market in a given year; (5) The hit ratio of the number of funds that Staff performs due diligence on versus the number of funds that Staff recommends moving forward with; and (6) The investment structure that SCERS invests in, and the sizing of the commitment amount related to that structure (i.e., commingled fund versus customized separate account). While the targets above are helpful to set a long-term pace for building SCERS' private real assets program, it is important to have flexibility around the annual commitment amount, which is why the annual plan incorporates broad ranges around the targets. The objective of the investment plan is to provide a roadmap for achieving the targeted allocations in a prudent fashion, while managing vintage year, strategy, geography, and investment manager diversification.

Looking at Real Assets taken together, the chart below shows that as SCERS progresses toward the 15% target allocation, the pace of investments in private real assets will accelerate as new commitments are made, and as existing commitments invest capital and get further into the J-curve. Staff and Townsend anticipate that SCERS' core real estate exposure will decrease to approximately 6.5% by the end of 2017, and will maintain a level between 5% and 6% through 2020. These levels are below the target allocation of 7%, but still well within the 4% to 9% range approved by your Board. The non-core real estate allocation is expected to peak in 2017, and then taper off. SCERS' commodity exposure will maintain an allocation of approximately 1%, which is below the target 2% allocation. However, as mentioned previously, SCERS maintains commodity exposure within the Real Assets proxy, which currently brings SCERS' aggregate commodity exposure to approximately 1.7%.



Source: Cliffwater and Townsend

F. Conclusion:

Over the past couple of years, SCERS has committed significant levels of capital toward attractive and high conviction opportunities within the Real Assets asset class and has identified several attractive opportunities for future investments. SCERS' emphasis will be on identifying opportunities with the most attractive risk-adjusted returns, less correlation to the broader financial markets, and meaningful cash flow generation. Staff and consultants will be targeting differentiated funds and managers with the ability to generate top-quartile returns, can manage downside risks, and can build a portfolio of assets motivated by capital preservation during changing economic environments. Staff and consultants are finding a smaller universe of investable opportunities compared to previous years. Despite the limited investment opportunities, Staff will continue to search out appropriate investment opportunities and alternative approaches to investing in the Real Assets asset class and will communicate these to your Board at the appropriate time.

We would be happy to address any questions.

Respectfully submitted,	Concur:
JR Pearce Investment Officer	Richard Stensrud Chief Executive Officer

Steve Davis
Chief Investment Officer

Attachment

Real Assets Annual Review and Forward Plan

SCERS
Sacramento County Employees' Retirement System

November 7, 2016

Cliffwater LLC

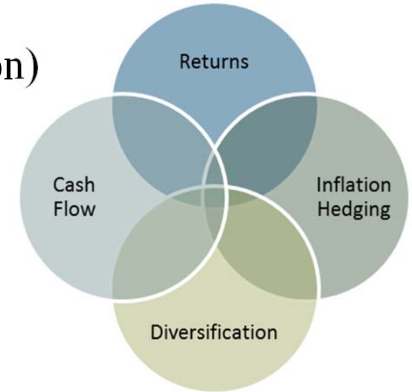
Townsend Group

Agenda

- Real Assets Program Overview
- 2016 Real Assets Activity Review
- Real Assets Allocation Gap
- 2017 Real Assets Forward Investment Plan
- Real Assets Capital Budget/Cash Flow Analysis
- Appendix: Private Real Assets Cash Flow Forecast
- Appendix: Real Estate Cash Flow Forecast

Real Assets Program Overview

- Investment Objective:
  - Cash Yield with Attractive Real Return (net of inflation)
  - Uncorrelated to Financial Markets
  - Low Volatility and Minimal Downside Risk
  - Portfolio Diversification and Inflation Hedge



- Benchmark = CPI-U + 5%
- Flexible Investment Structures and Wide Allocation Ranges
- Consultant Engagement: Private Real Assets (Cliffwater), Real Estate (Townsend)

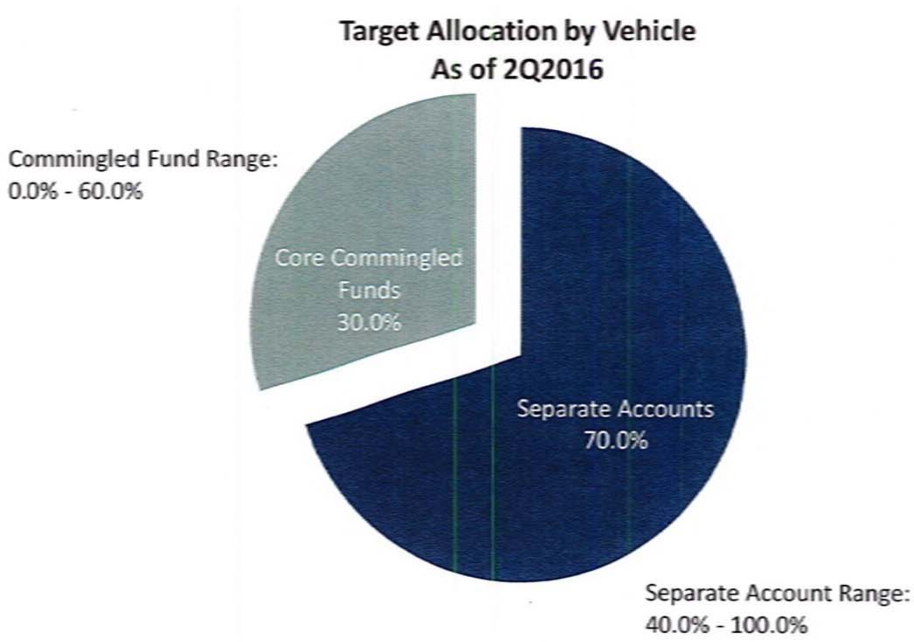
Sub Asset Class	Target Weight	Ranges Min	Ranges Max
Core Real Estate	7%	4%	9%
Private Real Assets	6%	3%	8%
Commodities	2%	0%	3%
TIPS	0%	0%	3%

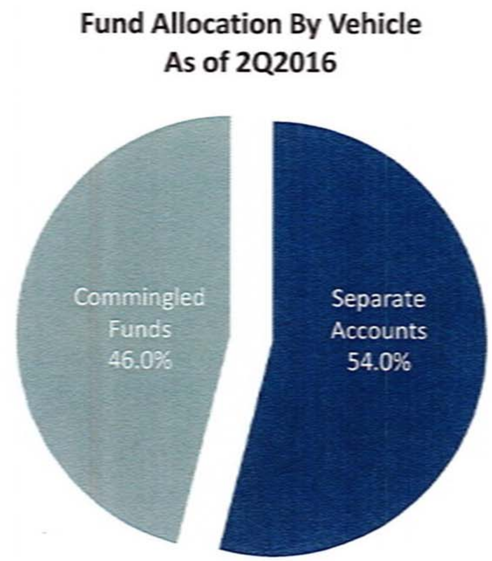
2016 Real Assets Activity Review

- **Core Real Estate:**
  - Indications near cycle peak; decreasing transaction activity and tapering of values
  - Caution exercised; net seller
    - ✓ Sold Forest Pointe Apartments, Stonefield Apartments, Flying Cloud Office
  - Challenging market necessitated alternative approach; targeted Core Open-End Funds (COEF); similar investment profile as separate account but better diversification
    - ✓ $70 million commitment to Townsend Real Estate Fund, LP

2016 Real Assets Activity Review

- **SCERS Core Real Estate Portfolio**





2016 Real Assets Activity Review

- **SCERS Real Estate Portfolio Allocation Summary**

	Market Value ($ millions)*	% SCERS Plan
SCERS Total Plan Assets	7,686	
Core Portfolio Target	538	7.0%
Core Portfolio Market Value	521	6.8%
Unfunded Commitments	57	0.7%
Core Portfolio Market Value & Unfunded Commitments	577	7.5%
Remaining Allocation	-40	-0.5%
Total RE Market Value:		
Core Portfolio	521	6.8%
Non-Core Portfolio	161	2.1%
REIT Portfolio	201	2.6%
Total SCERS Real Estate Market Value	882	11.5%

2016 Real Assets Activity Review

- **SCERS Separate Account Concentration Risk versus Core Commingled Funds**

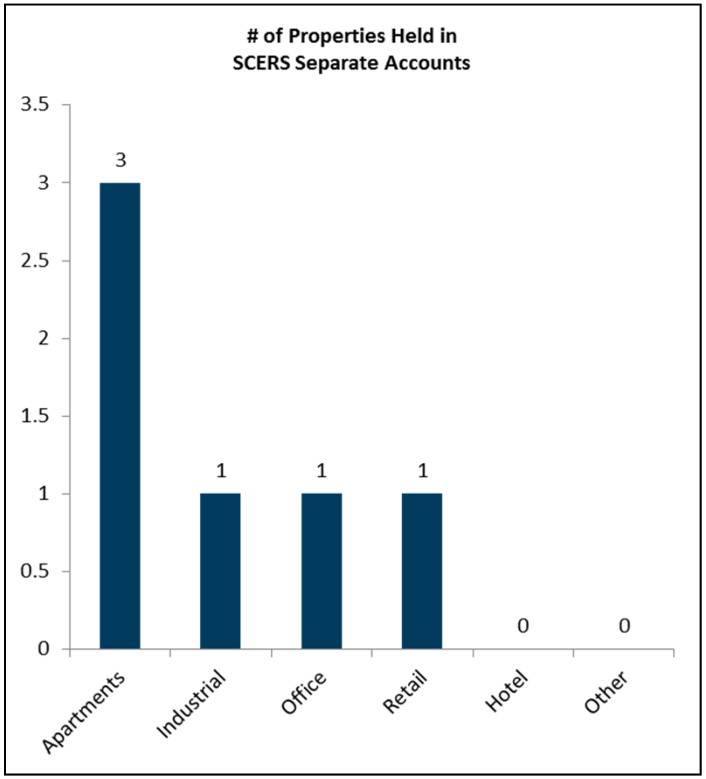
	CORE OPEN END COMMINGLED FUNDS					
DIVERSIFICATION	**Principal**	**MS Prime**	**MetLife**	**Jamestown**	**TOTAL FUNDS**	**SCERS Portfolio**
Office	43%	35%	42%	65%	**41%**	**12%**
Apartments	21%	25%	32%		**22%**	**72%**
Retail	16%	18%	15%	26%	**18%**	**12%**
Industrial	17%	13%	11%		**12%**	**4%**
Other	3%	8%		9%	**6%**	
	100%	100%	100%	100%	100%	100%

West	62%	36%	39%	19%	**41%**	**82%**
East	24%	29%	10%	81%	**32%**	**14%**
Midwest	6%	12%	13%		**9%**	
South	8%	23%	38%		**18%**	**4%**
	100%	100%	100%	100%	100%	100%

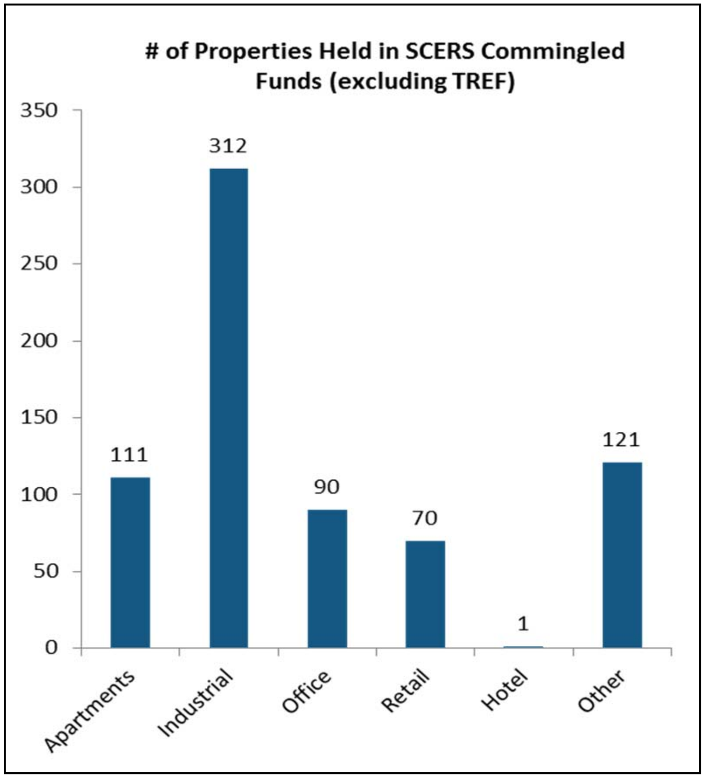
2016 Real Assets Activity Review

- **SCERS Separate Account Concentration Risk versus Core Commingled Funds**

SCERS Separate Account Portfolio



SCERS Commingled Funds



2016 Real Assets Activity Review

❑ SCERS Separate Account Real Estate Portfolio

Asset Name	Location	Units	SF	Cost Basis	Gross Asset Value	Net Asset Value	Debt	LTV Ratio	Occupancy	% of IMA Portfolio
Apartment										
Crescent Park	Playa Vista, CA	214	N/A	$80,940,135	$97,400,000	$58,400,000	$39,000,000	40%	95%	29%
Tower at Hollywood Hills	Los Feliz, CA	80	N/A	$22,779,148	$26,116,062	$15,116,062	$11,000,000	40%	96%	8%
Hillside Village	Berkeley, CA	94	N/A	$47,290,773	$53,981,503	$40,481,503	$13,500,000	24%	89%	20%
Subtotal:		**388**		**$151,010,056**	**$177,497,565**	**$113,997,565**	**$63,500,000**	**35%**	**94%**	**57%**
Office										
Lake Washington Park	Kirkland, WA	N/A	70,019	$36,245,083	$37,423,513	$37,423,513	$0	0%	100%	19%
Industrial										
1811 Brittmoore	Houston, TX	N/A	140,158	$10,934,422	$12,803,950	$12,803,950	$0	0%	100%	6%
Retail										
Harbour Pointe	Mukilteo, WA	N/A	113,449	$29,701,320	$35,845,849	$35,845,849	$0	0%	95%	18%
IMA Portfolio:		**388**	**323,626**	**$227,890,881**	**$264,997,565**	**$200,070,877**	**$63,500,000**	**20%**	**96%**	**100%**

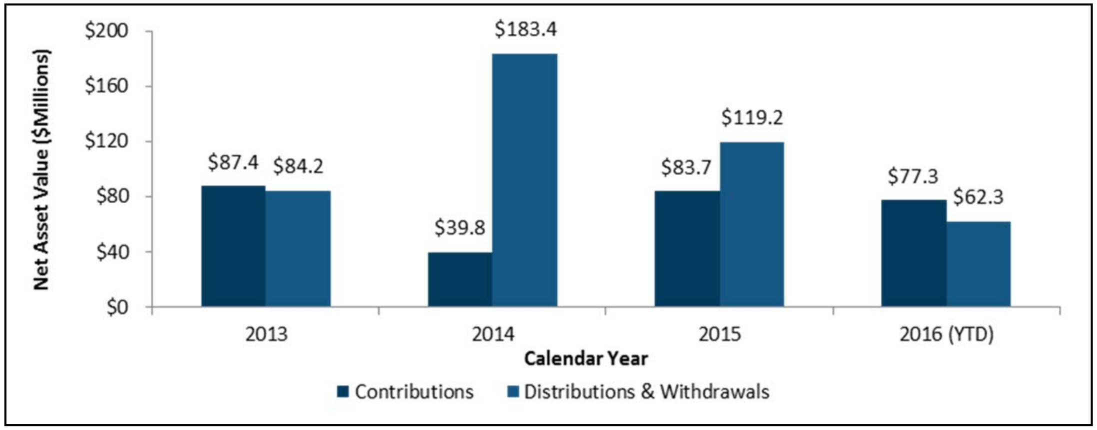
2016 Real Assets Activity Review

- **SCERS Core Open-End Commingled Fund Real Estate Portfolio**

Funding Status ($)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)
Core Commingled Funds								
Jamestown Premier Property Fund	2014	15,000,000	17,561,640	0	2,897,214	19,883,495	2.3	1.8
MetLife Core Property Fund	2013	35,000,000	39,023,567	0	4,534,961	48,437,689	5.5	4.4
Prime Property Fund	2013	35,000,000	39,390,552	0	4,390,552	49,019,764	5.6	4.5
Principal U.S. Property Account	2015	35,000,000	35,000,000	0	0	37,482,334	4.2	3.4
Prologis Targeted Europe Logistics Fund	2015	35,000,000	31,392,181	3,607,819	1,081,168	30,878,629	3.5	3.1
Prologis Targeted U.S. Logistics Fund	2015	35,000,000	29,800,000	5,200,000	741,181	31,429,200	3.6	3.3
Townsend Real Estate Fund, L.P.	2016	70,000,000	22,028,374	47,971,626	0	22,700,281	2.6	6.5
Core Commingled Funds	**1986**	**260,000,000**	**214,196,314**	**56,779,445**	**13,645,076**	**239,831,392**	**27.2**	**27.1**

2016 Real Assets Activity Review

- **SCERS Core Real Estate Portfolio Activity**



	2013	2014	2015	2016 (YTD)
Acquisitions	• Prime Property Fund • MetLife Core Property Fund	• Jamestown Premier Property Fund • Refinancing of Lake Washington Park (now unlevered)	• Prologis US Targeted Logistics Fund • Prologis European Targeted Logistics Fund • Principal US Property Account • Townsend Real Estate Fund ("TREF")	*No Core acquisitions to date.*
Dispositions	• BlackRock Granite Fund (Full Redemption)	• Cornerstone Patriot Fund (Partial Redemption) • Salt Pond • Fontana Industrial • Dupont	• Cornerstone Patriot Fund (Remaining Investment Redemption) • Weston, Inc	• Gateway Corporate Center • Flying Cloud • Forest Pointe (Closed August 2016; gross $34 M) • Stonefield Apartments (Closed October 2016; gross $42.5M)

2016 Real Assets Activity Review

- **Non-Core Real Estate:**
  - Better relative value in redevelopment/development
    - ✓ Initiated Portland, OR office renovation project (Leland James Center)
  - Finding attractive risk-adjusted returns
    - ✓ International value-add and opportunistic
    - ✓ $35 million commitment to NREP Nordic Strategies Fund II
    - ✓ US niche and non-traditional property types

2016 Real Assets Activity Review

- **Non-Core Real Estate Portfolio Activity**

Funding Status	Investment Vintage Year	Commitment Amount	Market Value (% of Total Plan)	Market Value + Unfunded Commitments (% of Total Plan)
Value Added Portfolio				
AEW Value Investors Fund II (pre-GFC; liquidating)	2007	21,812,596	0.0	0.0
Allegis Value Trust (pre-GFC; liquidating)	2006	25,000,000	0.3	0.3
DRC European Real Estate Debt Fund II	2013	50,007,963	0.4	0.5
ECE European Prime Shopping Centre Fund II	2015	27,912,400	0.1	0.5
Hammes Partners II	2015	25,000,000	0.1	0.3
Hines US Office Value Added Fund II (pre-GFC; liquidating)	2007	25,000,000	0.1	0.1
NREP Nordic Strategies Fund	2014	25,130,756	0.3	0.3
NREP Nordic Strategies Fund II	2016	35,176,432	0.1	0.5
Opportunistic Portfolio				
BlackRock High Return Separate Account*	2016	17,336,295	0.1	0.2
CIM Fund VIII	2015	35,000,000	0.2	0.5
KKR Real Estate Partners Americas	2014	35,000,000	0.3	0.5
Och-Ziff Real Estate Fund III	2014	35,000,000	0.1	0.5

2016 Real Assets Activity Review

- **Private Real Assets:**
  - Key focus due to wide allocation gap; emphasis on contracted cash yield, consistent cash flow, and low correlation to broad financial markets
    - ✓ $75 million commitment to IFM Global Infrastructure Fund, LP
      - Open-end fund investing in North American and European core infrastructure, essential facilities to serve communities
      - Commitment amount was increased by $25 million; total $100 million drawdown is expected by 1Q2017
    - ✓ $40 million commitment to Brookfield Infrastructure Fund III, LP
      - Closed-end fund investing in North and South American, European, and Australasia core/core plus high barrier and monopoly-like infrastructure
    - ✓ $25 million commitment to Agriculture Capital Management Fund II, LLC
      - Closed-end fund investing in high-value permanent crop farmland (citrus, blueberries, and tree nuts) and midstream processing assets in California and Pacific Northwest
  - Implementation of separate account with Atalaya and Pantheon
    - ✓ No new investments with Atalaya but high engagement
    - ✓ Pantheon co-investment in two Nordic electric distribution plants and a secondary purchase of a portfolio of 91 social assets

2016 Real Assets Activity Review

❑ Private Real Assets Portfolio Activity

Partnership	Strategy	(A) Commitment Amount	Unfunded Amount	(B) Cumulative Contributions	% Drawn	(C) Cumulative Distributions	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	Bench - mark	Total Value to Paid in Capital
(in thousands)												
Vintage Year 2015												
Principal U.S. Property Fund	Core RE	35,000	0	35,000	100.00 %	0	36,639	36,639	1,639	N/M	N/M	1.05x
Prologis Targeted Europe Logistics Fund	Core RE	31,326	0	31,324	100.00 %	311	31,917	32,228	904	N/M	N/M	1.03x
Prologis Targeted US Logistics Fund	Core RE	35,000	21,000	14,000	40.00 %	442	14,962	15,403	1,403	N/M	N/M	1.10x
Townsend Real Estate Fund, L.P.	Core RE	70,000	70,000	0	0.00 %	0	N/A	0	0	N/M	N/M	N/A
ArcLight Energy Partners VI, L.P.	Energy	40,000	25,712	14,288	35.72 %	0	13,267	13,267	-1,021	N/M	N/M	0.93x
EnCap Energy Capital Fund X, L.P.	Energy	40,000	35,718	4,282	10.70 %	0	3,432	3,432	-850	N/M	N/M	0.80x
Atalaya Real Assets SMA	Other	100,000	88,617	13,700	11.38 %	2,714	11,471	14,185	485	N/M	N/M	1.04x
Vintage Year 2015 Total		351,326	241,047	112,595	31.39 %	3,466	111,689	115,155	2,560	N/M		1.02x
Vintage Year 2016												
IFM Global Infrastructure Fund	Infrastructure	75,000	75,000	0	0.00 %	0	N/A	0	0	N/M	N/M	N/A
Vintage Year 2016 Total		75,000	75,000	0	0.00 %	0	0	0	0	N/M		N/A
Portfolio Total:		**3,264,339**	**541,197**	**2,741,086**	**83.42 %**	**2,129,430**	**982,503**	**3,111,933**	**370,847**	**5.07%**	**7.16%**	**1.14x**
Portfolio Strategy Totals												
Commodities		120,000	0	120,000	100.00 %	0	59,778	59,778	-60,222	-8.60%		0.50x
Core RE		1,546,139	91,000	1,464,710	94.11 %	1,577,873	439,399	2,017,272	552,562	9.09%		1.38x
Diversified RA		1,023,874	0	1,025,918	100.00 %	540,979	353,163	894,142	-131,776	-8.62%		0.87x
Energy		243,000	182,722	64,269	24.81 %	7,553	55,310	62,863	-1,406	-2.95%		0.98x
Infrastructure		125,000	103,857	21,165	16.91 %	0	31,465	31,465	10,301	N/M		1.49x
Other		100,000	88,617	13,700	11.38 %	2,714	11,471	14,185	485	N/M		1.04x
Non-US		106,326	75,000	31,324	29.46 %	311	31,917	32,228	904	N/M		1.03x
Portfolio Total:		**3,264,339**	**541,197**	**2,741,086**	**83.42 %**	**2,129,430**	**982,503**	**3,111,933**	**370,847**	**5.07%**	**7.16%**	**1.14x**
Active / Liquidated Partnership Totals												
Active Partnerships		3,143,905	541,197	2,620,652	82.79 %	1,972,384	982,503	2,954,887	334,235	5.35%		1.13x
Liquidated Partnerships		120,434	0	120,434	100.00 %	157,046	0	157,046	36,612	3.42%		1.30x
Portfolio Total:		**3,264,339**	**541,197**	**2,741,086**	**83.42 %**	**2,129,430**	**982,503**	**3,111,933**	**370,847**	**5.07%**	**7.16%**	**1.14x**

2016 Real Assets Activity Review

❑ Private Real Assets Portfolio Activity

Partnership	Strategy	(A) Commitment Amount	Unfunded Amount	(B) Cumulative Contributions	% Drawn	(C) Cumulative Distributions	(D) Fair Value	(C+D) Total Value	(C+D-B) Gain/Loss	Net IRR	Bench - mark	Total Value to Paid in Capital
(in thousands)												
Vintage Year 1998												
BlackRock Realty Portfolio I	Core RE	815,454	0	815,454	100.00 %	996,748	162,184	1,158,932	343,478	12.02%	8.93%	1.42x
Vintage Year 1998 Total		815,454	0	815,454	100.00 %	996,748	162,184	1,158,932	343,478	12.02%		1.42x
Vintage Year 2002												
BlackRock Realty Portfolio II	Core RE	130,515	0	130,515	100.00 %	172,819	25,253	198,071	67,556	8.52%	8.24%	1.52x
Vintage Year 2002 Total		130,515	0	130,515	100.00 %	172,819	25,253	198,071	67,556	8.52%		1.52x
Vintage Year 2004												
* Cornerstone Patriot Fund	Core RE	50,000	0	50,000	100.00 %	94,447	0	94,447	44,447	6.51%	8.08%	1.89x
Cornerstone Real Estate	Core RE	254,736	0	254,736	100.00 %	240,912	84,624	325,536	70,800	5.00%	8.22%	1.28x
Vintage Year 2004 Total		304,736	0	304,736	100.00 %	335,359	84,624	419,983	115,247	5.49%		1.38x
Vintage Year 2005												
* BlackRock Granite Property Fund	Core RE	70,434	0	70,434	100.00 %	62,599	0	62,599	-7,835	-2.05%	5.04%	0.89x
Vintage Year 2005 Total		70,434	0	70,434	100.00 %	62,599	0	62,599	-7,835	-2.05%		0.89x
Vintage Year 2008												
Blackstone Resources Select Fund	Commodities	60,000	0	60,000	100.00 %	0	36,515	36,515	-23,485	-6.29%	-9.86%	0.61x
Gresham Strategic Commodities Fund Ltd.	Commodities	60,000	0	60,000	100.00 %	0	23,262	23,262	-36,738	-11.37%	-9.86%	0.39x
State Street Real Assets Strategy	Diversified RA	1,023,874	0	1,025,918	100.00 %	540,979	353,163	894,142	-131,776	-8.62%	-0.92%	0.87x
Vintage Year 2008 Total		1,143,874	0	1,145,918	100.00 %	540,979	412,941	953,919	-191,998	-8.61%		0.83x
Vintage Year 2013												
Jamestown Premier Property Fund	Core RE	15,000	0	17,124	100.00 %	2,459	19,536	21,995	4,871	13.34%	13.22%	1.28x
MetLife Core Property Fund	Core RE	35,000	0	38,528	100.00 %	3,528	48,321	51,849	13,321	15.42%	13.22%	1.35x
MS Prime Property Fund	Core RE	35,000	0	38,919	100.00 %	3,919	47,881	51,800	12,881	13.74%	13.38%	1.33x
EnCap Energy Capital Fund IX, L.P.	Energy	33,000	13,561	21,883	58.91 %	4,834	18,145	22,979	1,097	3.70%	-21.18%	1.05x
Vintage Year 2013 Total		118,000	13,561	116,454	88.51 %	14,741	133,883	148,624	32,170	13.08%		1.28x
Vintage Year 2014												
Carlyle Power Partners II, L.P.	Energy	40,000	31,882	8,371	20.30 %	0	6,480	6,480	-1,891	N/M	N/M	0.77x
EnCap Flatrock Midstream Fund III, L.P.	Energy	20,000	17,285	3,286	13.58 %	949	2,899	3,847	562	N/M	N/M	1.17x
First Reserve Energy Infrastructure Fund II, L.P.	Energy	35,000	29,627	5,373	15.35 %	0	5,138	5,138	-235	-7.92%	-6.50%	0.96x
Quantum Energy Partners VI, LP	Energy	35,000	28,937	6,787	17.32 %	1,771	5,949	7,719	933	N/M	N/M	1.14x
Pantheon SCERS SIRF MM, LLC	Infrastructure	100,000	80,000	20,000	20.00 %	0	30,940	30,940	10,940	N/M	N/M	1.55x
Wastewater Opportunity Fund	Infrastructure	25,000	23,857	1,165	4.57 %	0	525	525	-639	N/M	N/M	0.45x
Vintage Year 2014 Total		255,000	211,589	44,980	17.02 %	2,719	51,931	54,650	9,669	24.64%		1.21x

Real Assets Allocation Gap

- Real Assets Target Allocation 15% versus Actual Allocation 9.4%; including Opportunities Actual Allocation equals 11.3%
  - Target Range 12% to 18%
  - Real Estate Target 7% versus Actual 8.8%
    - ✓ Core Real Estate Target 7% versus Actual 6.7%
    - ✓ Opportunities (Non-Core Real Estate) Actual 1.9%; range 0% to 5%
  - Commodities Target 2% versus Actual 0.8%
  - Private Real Assets Target 6% versus Actual 1.8%
    - ✓ Actual committed equals 7.4%
    - ✓ Project 6% target projected to be reached in 2019
- Allocation gap filled by SSGA Real Assets Strategy overlay program
  - Overlay allocation is 4.3% or $349 million; down from $480 million
  - Overlay will decline as drawdowns occur in private real asset commitments
  - Diversified mix of public market securities, including commodities, global infrastructure and natural resources, TIPS, global REITs, and energy MLPs
  - Does not effectively replicate ‘illiquidity premium’; subject to market volatility

2017 Real Assets Forward Investment Plan

- **Private Real Estate**
  - **Core**
    - ✓ Expect no separate account sales; finalize separate account capital improvement programs
    - ✓ Separate account alternative Core Open-End Funds (COEF)
      - Same investment profile: current yield, liquidity, diversification
      - More beta exposure than an alpha generator
    - ✓ Evaluate alternative approaches to executing SCERS' real estate program
    - ✓ Review the role of the separate account portfolio
  - **Non-Core**
    - ✓ Attractive value-add and opportunistic investments internationally
      - Asia logistics
      - Tracking Latin America and Central Eastern Europe logistics
      - European student housing
      - European parking
    - ✓ US niche and non-traditional property types
      - Healthcare
      - Urban retail

2017 Real Assets Forward Investment Plan

- **Private Real Assets**
  - Focus on current cash yield; majority return is income; uncorrelated to financial markets; lower volatility; and portfolio diversification
    - ✓ Public-Private Partnership (PPP)
      - Joint venture between government and private industry
      - Finance, build, and operate essential community services such as toll roads, hospitals, schools, bridges, etc.
      - Long-term (30 to 50 year plus) contracts with governmental entity
      - Highly sought after due to bond-like cash yield and low risk
    - ✓ Agriculture
      - Permanent, row, and pastoral farmlands
      - Midstream processing assets
    - ✓ Timberland
  - Evaluate contrarian opportunities in energy infrastructure; strategies to capitalizing on industry distress
- **Commodities**
  - Maintain actual underweight; use Real Assets overlay to reach 2% target
  - Evaluate commodity long/short strategy

2017 Real Assets Forward Investment Plan

- **Private Real Assets Benchmark**
  - Staff, Cliffwater, and Townsend are in the process of identifying appropriate benchmarks for private real estate, private real assets, and the broad real assets class
    - ✓ Upon conclusion of the Asset-Liability study, a recommendation will be presented to your Board
  - Current overall real assets benchmark is CPI + 5%
  - Current benchmarks for each real assets sub-asset class
    - ✓ Core real estate investments is NCREIF Fund Index – Open-End Diversified Core Equity (NFI-ODCE)
    - ✓ Non-core real estate investments is NCREIF Fund Index – Open-End Diversified Core Equity (NFI-ODCE) + 1%
    - ✓ Commodities investments is the Bloomberg Commodity Index (formerly Dow Jones AIG Commodities Index) + 1%
    - ✓ TIPS is the Barclays Capital US TIPS Index

Real Assets Capital Budget/Cash Flow Analysis

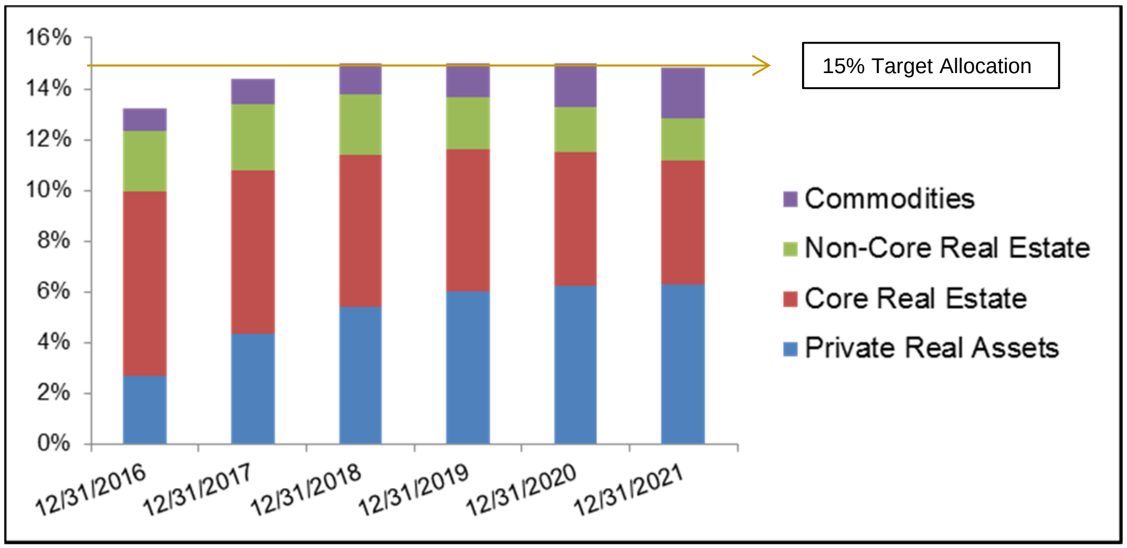
- Recommended 2017 Private Real Assets capital budget
  - ✓ $150 million commitment target; range of $100 million to $200 million
  - ✓ Expect 3 to 6 fund commitments; average commitment of $40 million
  - ✓ Commitment levels down from prior years; target allocation nearing and fewer opportunities later in a market cycle

SCERS Private Real Assets Annual Investment Plan

	Target	Range Min	Range Max
Commitment Level	$150 MM	$100 MM	$200 MM
Number of Funds	4	3	6
Energy Related	2	0	3
Infrastructure	1	0	2
Ag, Minerals, Timber	1	0	3
Other	0	0	1
Commitment per Fund	$40 MM	$20 MM	$100 MM

Real Assets Capital Budget/Cash Flow Analysis

- Recommended 2017 Real Assets capital budget
  - ✓ Real Estate allocation is expected to remain within its 4% to 9% range; modest additional commitments projected
  - ✓ Commodity allocation remain at 2%, including Real Assets overlay
  - ✓ Private real assets 6% target allocation achieved by 2019; dependent upon growth in plan assets, viable opportunities, commitment amount received, and conviction



Appendix: Private Real Assets Cash Flow Forecast

	SCERS - Capital Budget Model		6/30/2016	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
1	Forecast Plan Total Assets		7,686,209	7,950,676	8,507,224	9,102,729	9,739,920	10,421,715	11,151,235
2	New Commitments			140,000	150,000	150,000	150,000	150,000	190,000
	Private Real Assets Fair Value by Sector:		6/30/2016	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
3	Private Real Assets		128,919	215,131	368,397	491,142	586,051	652,624	702,806
4	**Private Real Assets Total**		**128,919**	**215,131**	**368,397**	**491,142**	**586,051**	**652,624**	**702,806**
	Strategy Diversification:	**Target Range**	6/30/2016	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
5	Private Real Assets	100%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
6	Private Real Assets Fair Value as % of Total Plan Ass		1.7%	2.7%	4.3%	5.4%	6.0%	6.3%	6.3%
7	Private Real Assets Target Asset Allocation		6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
	Unfunded Commitments and Fair Value		6/30/2016	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
8	Private Real Assets Unfunded Commitments		385,118	323,598	386,322	385,049	384,153	382,317	414,755
9	Unfunded Commitments + FV		514,037	538,729	754,719	876,192	970,204	1,034,941	1,117,560
10	Unfunded Commitments + FV as % of Assets		6.7%	6.8%	8.9%	9.6%	10.0%	9.9%	10.0%
11	Ratio of Unf Com + FV to Target Allocation		1.11x	1.13x	1.48x	1.60x	1.66x	1.66x	1.67x
	Net Cash Flow Requirements			12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
12	Private Real Assets			(80,133)	(132,978)	(88,186)	(49,231)	(12,395)	9,854
13	Total Net Cash Flow to Private Real Assets			(80,133)	(132,978)	(88,186)	(49,231)	(12,395)	9,854
	Annual Commitments by Strategy			12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
14	Existing Commitments			140,000	0	0	0	0	0
15	Private Real Assets			0	150,000	150,000	150,000	150,000	190,000
16	Total Annual Commitments to Private Real Assets			140,000	150,000	150,000	150,000	150,000	190,000

Total Plan Assets assumed to grow at 7.0%

Appendix: Real Estate Cash Flow Forecast

Real Estate Capital Projections	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
Core Real Estate	574,880	549,267	548,385	547,486	546,568	545,632
Non-Core Real Estate	191,869	222,896	216,371	196,887	186,115	183,053
Total Real Estate	**766,749**	**772,163**	**764,756**	**744,373**	**732,683**	**728,685**

% of Plan Assets	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
Total Real Estate	**9.6%**	**9.1%**	**8.4%**	**7.6%**	**7.0%**	**6.5%**
Core Real Estate	7.2%	6.5%	6.0%	5.6%	5.2%	4.9%
Non-Core Real Estate	2.4%	2.6%	2.4%	2.0%	1.8%	1.6%