PENSION CONSULTING ALLIANCE

MEMORANDUM

Date: August 13, 2018

To: Members of the Investment Committee
California Public Employees' Retirement System (CalPERS)

From: Pension Consulting Alliance, LLC (PCA)

RE: Real Estate Performance as of June 30, 2018

PCA received and reviewed Wilshire's Executive Summary of CalPERS' Investment Performance for the period ending June 30, 2018 as it relates to the Real Estate Portfolio. The following items should be considered in your assessment of Real Estate's performance:

Real Estate Markets:

1. Real estate fundamentals for the most part remain stable in most major domestic markets. Economic growth has supported strong demand, and supply has been subdued due to regulatory changes after the financial crisis. Pockets of oversupply exist among prime Class A multifamily markets, and the retail industry continues to undergo massive change in the face of growing e-commerce sales.
2. Real estate returns are continuing to moderate. Based on current interest rates, forecasted returns for real estate over the next ten years are 4.8% for unlevered global all-property prime markets. The figure was 10.2% for the period from 2011 to 2017.[1]
3. Notwithstanding the lower expectations, capital continues to flow to the asset class. Other long term, institutional investors, like CalPERS, who are primarily interested in the long duration income streams, and diversification from global equities, worry less about near-term slowing appreciation. Indeed, Chinese investors continue to buy up Hong Kong office towers despite current rental yields below the 10-year US Treasury bond as a means of sheltering capital, an investment objective completely divergent from that of CalPERS.
4. The US, along with other countries like the U.K., have seen a reversal of the decade-long lowering of interest rates. Monetary tightening is unlikely to have a major short-term impact on commercial real estate pricing, but it does likely mark the end of the era of very strong returns for the asset class.
5. International markets are generally healthy as well, and priced to disadvantage non-local investors. Many countries' financial sectors are being given permission

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[1] PGIM Real Estate

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to invest in property for the first time, and this demand has caused prices of performing assets to become more expensive.

CalPERS' Real Estate:

1. The Real Estate portfolio had a market value of $31.8 billion at the period ended June 30, 2018, representing 83.4% of the Real Assets program and 9.0% of the total portfolio. Including Forestland and Infrastructure, the Real Assets program currently comprises 10.8% of the total portfolio against a long term target allocation of 13% (+/- 5%).
2. During January through June 2018, the Real Estate Portfolio continued its positive transformation towards a diversifying, income oriented portion of the Real Assets Program, which provides positive cash flow to the System with which to pay benefits and a counterweight to equity risk.
3. Returns are moderating both for CalPERS and the broader market. CalPERS real estate portfolio returns trailed the benchmark over all periods. Among core holdings, retail investments (regional malls and grocery anchored centers), to which CalPERS has a material overweight, showed a marked slowdown. Returns from office and multifamily properties also softened. Legacy investments, particularly higher risk, international assets, continue to be a drag on performance in all measurement periods. Strong performance from industrial and data center investments, as well as the Emerging Manager program, offset the weaker performing sectors to some degree.
4. The Core portfolio representing 77.5% of the real estate portfolio produced strong returns of 9.6% for the three-year return and 12.5% for the five-year return against ODCE benchmark returns of 9.0% and 10.4%, respectively. Virtually all core properties are held directly in lower cost separate accounts. These long-term strategic partnerships anchor the portfolio and provide CalPERS with both defensive and offensive opportunities. It's important to note that just three years ago, the Core portfolio represented only 48% of the real estate portfolio, and that efforts continue to transition the portfolio away from legacy, non-strategic risks towards higher quality, stabilized assets that serve the role of the asset class.
5. The portfolio's deep diversification is serving the System as different sectors experience varying demand and supply dynamics. Across real estate markets, no property type or geographic region outperforms over the long-term, so diversification is critical.
6. The 10-year performance continues to contain a material amount of non-strategic assets and includes the results from the Great Financial Crisis. It shows underperformance of -810 basis points compared to the benchmark.

Real Estate Performance	Quarter	1 Year	3 Year	5 Year	10 Year
Real Estate Returns	1.3%	6.8%	7.2%	9.8%	-1.0%
Real Estate Policy Benchmark	2.0%	7.1%	9.0%	10.4%	7.1%
Difference	-0.7%	-0.3%	-1.8%	-0.6%	-8.1%

Compared to the benchmark performance, it should be noted that CalPERS' portfolio diverges insofar as:

a) higher leverage levels;
b) higher levels of non-stabilized assets; and
c) types of assets (e.g. Housing, Land) and locations of assets (e.g. Brazil, Russia, China) which are not part of the benchmark.

Each of these elements will provide benefits in some market periods and detriments in others. In the last year, Item a) became a small drag on performance as the benchmark reported gains attributable to marking debt to market (CalPERS does not mark debt to market), Item b) contributed some alpha to the portfolio as build-to-core assets were delivered and absorbed by the market, and Item c) continued to be negative to performance.

Leverage

At June 30, 2018, the real estate portfolio had a loan to value ratio of 32.1% and a debt service coverage ratio of 2.95, both well within policy guidelines of <50% and >1.5, respectively. This is a reasonable amount of debt for a long-term, income-oriented portfolio that balances the competitive market for real estate investing, attractive interest rates, and moderate incremental risk. Staff continues to appropriately manage the structure, term, rate and covenants of the debt to reduce costs and risk.

Capital Deployment

For FY 2017-18, Staff approved $4.2 billion of capital commitments to existing strategic partnerships for the acquisition of new investments. As of April 30, 2017, only approximately 25 percent had been deployed. For FY 2018-19, Staff approved $4.8 billion of capital for new investment, including $1.4 billion for investment in existing assets to maintain and/or further improve the quality of long-term hold investments. Staff is also selectively expanding existing relationships to broaden geographic footprints and/or broaden strategic mandates towards the goal of increasing high quality deal flow.

Deployment of new investment capital is expected to remain challenging due to significant capital pursuing core assets. Managers and Staff continue to demonstrate good discipline in not chasing acquisitions. With room in the real assets allocation and significant dry powder available, the program is well positioned to assess and execute on sizable off-market opportunities that may arise and/or to take advantage of any potential re-pricing in the market.

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ESG Update
Major climate events continue to materially impact real estate. This summer has already seen devastating fires in California and Oregon. Such events provide new evidence of material climate risks that can impact property investment portfolios such as CalPERS. Climate change related physical risks to property has become both a near term and long-term risk. The progress made to develop and implement new ESG tools in the CalPERS Real Estate portfolio, provide, in PCA's opinion, key elements for CalPERS to identify and reduce risks to the value of its real estate assets.

In addition to ongoing ESG integration efforts, staff continues to make progress on the Energy Optimization ("EO") Initiative. FY17-18 marked the second year where external managers submitted EO projects as a part of the Annual Investment Planning process with 17 proposed projects across eight managers at an expected total cost of $6.2 million with an expected annual savings of 9.2 million MWh per year or $1.0 million with a combined net present value of $19.7million.

The EO Initiative has also motivated managers to propose innovative pilot projects, including exploring onsite renewable energy opportunities, utility automation, installation of more efficient lighting, green building certifications, and others. The next phase of the project will involve evaluating opportunities for systematic implementation across the portfolio.

The CalPERS Responsible Contractor Policy (RCP) continues to enhance CalPERS' ability to engage with its Real Estate managers to monitor and address potential material human capital risks to CalPERS Real Estate portfolio. Combined, PCA believes that CalPERS' efforts to integrate ESG considerations into its Real Estate portfolio has materially augmented decision-making and portfolio management.

PCA is available to take any questions of the Investment Committee.

Respectfully,

David Glickman
Managing Director

Christy Fields
Managing Director

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<u>Supplement for real estate and private equity partnerships:</u>

While PCA has reviewed the terms of the Fund referred to in this document and other accompanying financial information on predecessor partnerships, this document does not constitute a formal legal review of the partnership terms and other legal documents pertaining to the Fund. PCA recommends that its clients retain separate legal and tax counsel to review the legal and tax aspects and risks of investing in the Fund. Information presented in this report was gathered from documents provided by third party sources, including but not limited to, the private placement memorandum and related updates, due diligence responses, marketing presentations, limited partnership agreement and other supplemental materials. Analysis of information was performed by PCA.

An investment in the Fund is speculative and involves a degree of risk and no assurance can be provided that the investment objectives of the Fund will be achieved. Investment in the Fund is suitable only for sophisticated investors who are in a position to tolerate such risk and satisfy themselves that such investment is appropriate for them. The Fund may lack diversification, thereby increasing the risk of loss, and the Fund's performance may be volatile. As a result, an investor could lose all or a substantial amount of its investment. The Fund's governing documents will contain descriptions of certain of the risks associated with an investment in the Fund. In addition, the Fund's fees and expenses may offset its profits. It is unlikely that there will be a secondary market for the shares. There are restrictions on redeeming and transferring shares of the Fund. In making an investment decision, you must rely on your own examination of the Fund and the terms of the offering.