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Mr. Rob Feckner
Chair of the Investment Committee
California Public Employees' Retirement System
400 Q Street
Sacramento, CA 95814

Re: Trust Level Portfolio Management Program Review

Dear Mr. Feckner:

You requested Wilshire's annual review of the Trust Level Portfolio Management (TLPM) program. Wilshire conducted onsite due diligence, met with TLPM Staff including the Managing Investment Director, reviewed Staff materials, and discussed the structure and goals of the TLPM program with Staff. After another year of continued development, **Wilshire continues to view the build out of the Trust Level Portfolio Management team positively. Given the renewed focus on operating as a single investment team across the Investment Office (INVO), the TLPM program plays a critical role in the holistic approach to managing the portfolio. Wilshire believes that the Program is well positioned to add value – both through return seeking activities and through a keener understanding of the overall investment risks faced by the organization - to CalPERS over the long term.**

Overview

TLPM is the evolution of the Asset Allocation & Risk Management function, with the goal of improving and formalizing the decision-making process at the Total Fund level. Its primary role is to execute the CalPERS strategic investment plan, with specific objectives including:



1. A return that exceeds the actuarial rate of return with reasonable risk and liquidity
2. Meaningful diversification
3. Compliance with asset class policy ranges
4. Adequate liquidity to meet cash needs
5. Positive excess returns through active asset allocation decisions

TLPM Function

In our review of TLPM last year, last we highlighted the three major functions of the group:

Strategic Asset-Liability Management - Implement the Public Employees' Retirement Fund (PERF) and Affiliate Funds' strategic Asset-Liability Management Policy in coordination with the System's Actuarial and Finance Offices, manage Strategic Asset Allocation exposures within ranges.

Dynamic Asset Allocation - Manage multi-asset class strategies, which encompass investment risk mitigation, strategic exposures, liquidity and leverage management, replication, rebalancing, and strategic overlay capabilities.

Portfolio Strategy Research - Ongoing examination of macro-economic factors, long-term trends in capital markets, enhancing CalPERS' ability to model valuation factors, liabilities, regime shifts, and sustainability (ESG) issues that may affect the Total Fund.

These three functions continue to exist as core components of TLPM, however there has been an expansion of the functions that TLPM covers which is consistent with the previously mentioned focus on Total Fund objectives

Investment Manager Engagement - Manage external investment manager selection and assessment process including CalPERS Emerging and Transition Manager Program

Total Fund Business & Analytical Services - Deliver high-quality business, analytical and administrative customer service amongst INVO Asset Class/Programs and across the Enterprise

Wilshire views this expansion as a logical step in the implementation of the new CIO's top down objectives. However, it should be noted that in the short term this has created some uncertainty within the existing team about the role of TLPM.



Governance and Organizational Structure

TLPM is governed by the CalPERS Total Fund Investment Policy, which provides the framework under which CalPERS’ assets are managed. This is an important point, as the decisions made and implemented by TLPM will need to be in accordance with established policies, which provides guidelines for what is, and is not, allowable. Currently there are 62 full time members of TLPM that range from the MID to Support Staff. The structure has expanded over the last year, which will be discussed in more detail later in the memo when the team score is reviewed.

Staffing Overview



Performance

Assessing the value add performance of TLPM is not as straight forward an exercise as it is with more traditional sleeves of the portfolio given TLPM affects multiple areas of the funds return. The table below provides an attribution of the impact of TLPM on a relative basis. Over the last fiscal year, TLPM strategies have detracted 9 basis points of excess return primarily from external partnership impacts. Staff has indicated that a restructuring of the external partnerships will be conducted to better align the program with the plans objectives.

Allocation management, which captures the impact of strategy over and underweights, detracted performance by 13 basis points over the last year. More specifically, cap weighted equities underperformed factor weighted equities in the face of increased volatility, and the fund was underweight these factor weighted equities during the year.



Total Fund – Attribution (Fiscal YTD)

As of 6/30/2019

Asset Class	Actual (%)		Policy (%)		Difference (%)		Total Fund Return Contribution (%)		
	Weight *	Return	Weight *	Return	Weight	Return	Actual Allocation	Active Management	Total
Public Equity	48.73	6.08	49.49	6.24	-0.76	-0.16	-0.09	-0.08	-0.17
Public Equity - Cap Weighted	41.55	5.06	41.41	5.27	0.14	-0.21	-0.01	-0.08	-0.09
Public Equity - Factor Weighted	7.18	13.41	8.08	13.51	-0.90	-0.10	-0.08	0.00	-0.09
Private Equity	7.73	7.72	8.00	4.04	-0.27	3.68	-0.09	0.25	0.16
Income	26.29	9.61	26.09	9.31	0.20	0.30	-0.04	0.07	0.03
Treasury	9.48	10.50	9.47	10.54	0.01	-0.04	-0.01	0.00	-0.02
Spread	14.52	9.47	14.35	8.98	0.17	0.49	-0.03	0.07	0.04
High Yield	2.28	8.41	2.27	8.00	0.01	0.41	0.00	0.01	0.01
Real Assets	11.15	3.69	12.30	6.52	-1.15	-2.83	0.00	-0.34	-0.34
Inflation	2.47	-3.49	2.55	0.54	-0.08	-4.03	0.00	0.00	-0.01
Liquidity	1.75	2.60	1.57	2.15	0.18	0.45	-0.01	0.01	0.00
TLPM	1.81	NM**	0.00	7.18	1.81	NM**	-0.05	-0.04	-0.09
Other PERF/ARS	0.06	NM***	0.00	0.00	0.06	NM***	0.00	0.00	0.00
Monthly Linked Return	100.00	6.68	100.00	7.10		-0.42	-0.29	-0.13	-0.42
Residual		0.00		0.00		0.00			0.00
Total		6.68		7.10		-0.42			-0.42

Evaluation Scoring

The evaluation framework we used to score the TLPM program aligns with Wilshire’s structure for assessing important aspects of any investment organization, including large external managers. The objective of our investment due diligence is to gauge whether an investment program like TLPM invests in-line with stated objectives and has the potential to generate excess risk-adjusted returns over a reasonable investment time horizon. Predominant weighting is given to qualitative factors that we believe are supportive of strong performance going forward.

The summary scoring table below is followed by comments on the rationale for the current evaluation across the model’s six distinct components.



CalPERS Trust Level Portfolio Management		Tier	Letter
Total Qualitative Score		4th	B
Organization	Weight	Tier	Letter
FIRM	20%	5th	C
Quality and Stability of Senior Management	50%	6th	C
Quality of Organization			
Ownership/Incentives			
TEAM	50%	3rd	B
Stability of Investment Professionals			
Quality of Team			
Commitment to Improvement			
Information Gathering	20%	3rd	B
Information Resources			
Depth of Information			
Breadth of Information			
Forecasting	20%	5th	C
Clear & Intuitive Forecasting Approach			
Repeatable Process			
Strength, Clarity, and Intuitiveness of Valuation Methodology			
Forecasting Success			
Unique Forecasting Approach			
Portfolio Construction	20%	3rd	B
Risk Budgeting/Control			
Defined Buy/Sell Discipline			
Consistency of Portfolio Characteristics			
Implementation	10%	3rd	B
Resources			
Liquidity			
Compliance/Trading/Monitoring			
Attribution	10%	2nd	A
Depth of Attribution			
Integration of Attribution			



Organization: Firm (Score Increased – More Stability of Senior Management)

In evaluating the quality of a manager's organization, Wilshire assesses factors contributing to the stability of the organization and the alignment of incentives between the team and the organization's long-term objectives. The score reflects the recent hiring of the new CIO (positive), as well the departure of the COIO (negative). The COIO position has been assumed on interim basis by the MID of Global Equities. We believe that the new CIO has brought a fresh perspective to improving the fund performance, and have seen early evidence of breaking down the silos to focus on Total Fund performance. We view this as a constructive step and will focus on the effectiveness of this Total Fund mindset across the asset class teams in future reviews.

CalPERS still faces some unique organizational risks that for-profit enterprises have greater flexibility in managing, such as inability to provide employees direct ownership opportunities. Ensuring that CalPERS as an organization has the tools necessary to recruit and retain qualified, diverse candidates should be a strong focus in line with Investment Belief #10 - Resources and Process. In addition, given that there are some changes that are taking place across the organization according to the new initiatives of the CIO, the impact from potential changes in the structure of the investment teams and the resulting compensations is still largely uncertain. We will note that the organization has made strides to adjust pay scales to be more competitive in the marketplace, as well as aligning incentive compensation with the Total Fund performance objectives.

Organization: Team (No change in Score)

The TLPM team includes 56 (up from 19 last year) individuals including a dedicated Managing Investment Director, with 62 approved positions. The increase in staff was primarily driven by the transitioning of the Investment Manager Engagement Program (IMEP) from reporting to the COIO to TLPM, as well as centralizing support services into one team - Total Fund business & Analytical Services (TFBAS) within TLPM. The MID is a member of the Asset Liability Management Advisory Committee (ALMAC) as well as the chairperson of the Investment Strategy Group (ISG). The ISG includes four subcommittees on portfolio allocation, risk & attribution, investment review, and governance & sustainability, which draw from the collective expertise of senior INVO staff. Wilshire believes the MID's role in the cross-asset class committees is a strong positive for better integration of INVO staff views on total fund portfolio positioning.

The MID is supported by two Investment Directors, seven Investment Managers, three Associate Investment Manager and fifteen Investment Officers of varying seniority. The



increase in resources dedicated to TLPM is significant. Wilshire views the increase in the size of the team as continued recognition of the importance that decision-making at the Total Fund level can have on overall investment performance, as well as consistent with some of the expanded functions of TLPM. At this point, the TLPM team is appropriately resourced for the work they are tasked to accomplish.

There are currently six open positions (2 Investment Officer and 4 Support Staff) within TLPM. While the team continues to look for outstanding candidates for open positions, compensation bands constrain its ability to attract candidates especially with competition from both local and national financial organizations.

Information & Forecasting (No change in score)

Research activities have continued to expand over the last year, with a centralized review of all the active risks in the portfolio as one of the new initiatives that has been taken on by the research function within TLPM. Wilshire views this as a positive step from a risk management point of view and makes sense to be handled within TLPM; accordingly, we have increased our grade with respect to depth of information.

The business philosophy laid out by staff that is focused on People, Operational Effectiveness, Performance, and Collaboration is a positive one and highlights that human capital management and planning is a priority for CALPERS internal programs.

Forecasting success was somewhat challenging for TLPM over the last fiscal year as some external strategies underperformed and highlighted the challenges in identifying skillful managers in the area of tactical asset allocation. We have downgraded the score for forecasting success because of this, but the overall forecasting score was not affected.

Portfolio Construction (No change in score)

TLPM's role in both strategic and dynamic asset allocation work means that portfolio construction considerations will be a dominant driver of results moving forward. Wilshire believes the TLPM team has demonstrated the expertise and experience necessary to properly plan and execute this process to help CalPERS meet its long-term commitments.

The team has long experience managing the strategic asset allocation process, from setting capital market expectations with input from various market participants to modeling alternative policy portfolios for discussion.



Dynamic asset allocation is another key area of responsibility, one where there has been progress made, and which is expected to evolve and advance over time. Over the last year, an evaluation of external TAA strategies has highlighted that skill in that area is challenging to identify and is not likely to have a meaningful impact to the total fund. An area that has been identified that can have more impact is leverage management. Currently work is underway to update the policy statement so that leverage implementation can be handled at the total fund level. Wilshire views this shift in identifying strategies that have more impact to the risk profile of the total fund is consistent with the long-term goals of the plan.

Further, dynamic asset allocation also encompasses the strategic relationships with outside partners. Information-sharing and knowledge transfer is a key benefit of the strategic relationships as the team works to implement repeatable and scalable dynamic portfolio construction strategies. TLPM is now tasked with the next evolution of that external program which could focus on cross asset risk premiums and trend following strategies.

Implementation (Score increased – Successful transition to new Asset Allocation)

TLPM is responsible for planning and overseeing the implementation of the approved asset allocation targets. Staff have been very vigilant in providing a roadmap for this implementation and utilizing the expertise of INVO Staff across asset classes. Over the last year staff has been able to successfully complete the strategic asset allocation transition and this is reflected as an improvement in the implementation score. With the mid-cycle review planned for next year staff communicated to us that automation work involving the capital market assumptions should further improve some of the operational efficiencies of the process.

Investment manager engagement including the CalPERS Emerging and Transition manager program is a new function for TLPM. The view is that TLPM is better situated to handle some of these initiatives from the perspective of the total fund and to implement from a common framework perspective in collaboration with the asset classes. Wilshire agrees that this type of engagement is best suited from a total fund perspective especially as part of the broader review of active risk taking within the total fund.

Attribution (Score Increased – Depth and Integration of Attribution)

The use of attribution has been repeatedly stated by the new CIO and echoed by staff as a major focus of evaluating all decisions across the total fund. Wilshire has increased our score of TLPM as reflection of this enhanced desire to use attribution, but also to examine



the active risks taken throughout the portfolio. Wilshire also reiterates that impact of TLPM extends beyond just its contribution to excess return.

Conclusion

Two years in to the process, Wilshire views the continued build out of the Trust Level Portfolio Management team in a positive light. The roles, strategies, and processes have evolved over the last year, consistent with the overall plans for the total fund. Going forward, continued strong and clear communication to staff about their roles should help alleviate any short-term uncertainty brought about during the implementation of a new culture focused on total fund performance. This has the potential to improve outcomes when looked at through the lenses of both risk and return over time.

Should you require anything further or have any questions, please do not hesitate to contact us.

Best regards,

A handwritten signature in black ink, appearing to read 'AK'.

Ali Kazemi
Managing Director

A handwritten signature in black ink, appearing to read 'T. Toth'.

Thomas Toth, CFA
Managing Director