



INCENTIVE PLAN SEMIANNUAL UPDATE | Fiscal Year 2017-18

Name: Ted Eliopoulos

Position: Chief Investment Officer

KEY BUSINESS OBJECTIVES

Weight	Key Business Objectives	Score	Payout Ratio
		Far Exceeds High Expectations	1.50 (150%)
Meets High Expectations	1.0 (100%)		
Does Not Meet High Expectations	0 (0%)		
<i>Intermediate points are interpolated</i>			

Business Plan and Investment Office Roadmap

10%	<p>By June 30, 2018, in support of the CalPERS 2018-18 Business Plan, improve CalPERS’ ability to achieve risk-adjusted investment returns.</p> <p><u>Goal A: Improve long-term pension and health benefit sustainability</u> Fund the System through an integrated view of pension assets and liabilities:</p> <ul style="list-style-type: none"> • Build effective investment risk and performance attribution review and decision processes within and across asset classes to ensure risks are fully understood, intended, and compensated • Enhance the Capital Allocation framework through improved risk factor modeling and greater understanding and ownership of trust-level investment risk and performance <p>Deliver target risk-adjusted investment returns:</p> <ul style="list-style-type: none"> • Explore long-term planning considerations including private assets business model, talent management, and office locations • Develop enhanced governance and protocols to improve efficiencies and controls in assessing and engaging external managers and migrating additional asset types in house • Enhance cost effectiveness, resource allocation, and efficiency of the investment program to increase net returns on assets • Enhance the investment platform and internal controls environment to achieve optimum efficiency • Develop a framework for the integration of CalPERS Investment Beliefs and ESG risk considerations into the investment decision-making process, including completing the key deliverables and objectives targeted for the current fiscal year in the Global Governance ESG Strategic Plan approved by the Board in August 2016. <p>Implement the objectives set forth for FY 2017-18 in the FY 2017-18 Investment Office Roadmap.</p>
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Semiannual Status Update

1.	<p>Build effective investment risk and performance attribution review and decision processes within and across asset classes to ensure risks are fully understood, intended, and compensated:</p> <p>Investment Risk Management and Performance Attribution</p> <ul style="list-style-type: none"> ✓ Completed team review of 14 global peers as well as INVO’s MIDs ✓ Summarized information, including an assessment of CalPERS risk functions relative to global practices ✓ Reviewed key observations with internal governance sub-committee ✓ Completed Performance Attribution review of Total Fund and each asset class at ISG.
2.	<p>Enhance the Capital Allocation framework through improved risk factor modeling and greater understanding and ownership of trust-level investment risk and performance</p>

- ✓ Private Equity Portfolio Management Accounting & Data Services (PEARS) – Completed
- ✓ Performed an inventory of current derivative use and existing risk management frameworks; summarized CalPERS current state.
- ✓ Completed Aladdin's business process review and summary
- ✓ Updated policies, procedures and GIPS Practices Manual
- ✓ Completed compliant presentations and GIPS verification and examination
- ✓ Completed the ALM selection and Asset Allocation at the December IC meeting
- ✓ Prepared and completed the necessary components of the ALM at each IC meeting during this review period, including CMA selection, Asset Segmentation delineation, and Benchmark selection

3. Explore long-term planning considerations including private assets business model, talent management, and office locations:

Private Market Business Model Design

- ✓ Developed selected strategies, prepared Closed Session presentations for the Investment Committee with recommendations for the PE future business model, prepared offsite Board meeting presentations; submitted ASP for a Strategic Partnership.

4. Develop enhanced governance and protocols to improve efficiencies and controls in assessing and engaging external managers and migrating additional asset types in house:

The Target Operating Model (TOM) - In FY 2017-18 the Investment Office embarked upon a project to refresh the TOM, with the goal of a simplified structure, framework, and reduced complexity. In December 2017, Investment Office staff presented the Investment Committee with a new TOM Dashboard which has refined and consolidated functions and sub-functions better aligned with industry standard operating models while reflecting specific focus on engagement activities emphasized at CalPERS.

ISG and its subcommittees, as well as Operating Committee met as scheduled with cross asset class collaboration.

5. Enhance cost effectiveness, resource allocation, and efficiency of the investment program to increase net returns on assets:

Business Effectiveness

- ✓ Completed first phase of PE Waterfall project: Designed approach to analyze PE waterfalls with quantitative & qualitative components.
- ✓ Developed workpapers to ensure consistent and systematic approach & documentation.
- ✓ Implemented quantitative analysis of Total Carry (Level 1), Paid Carry (Level II) and Preferred Return (Level 3).
- ✓ Reviewed eight PE strategic General Partners & all Infrastructure & Forestland Funds which have taken carry.
- ✓ Provided feedback for underwriting new investments for PE & RAU.

Investment Platform and Controls

- ✓ Identified and analyzed risks associated with current trust/fund structure
- ✓ Analyzed pros and cons of alternative structures to identify the most viable option(s) for CalPERS

6. Enhance the investment platform and internal controls environment to achieve optimum efficiency:

- ✓ Private Equity Portfolio Management Accounting & Data Services (PEARS) – Completed
- ✓ Performed an inventory of current derivative use and existing risk management frameworks; summarized CalPERS current state.
- ✓ Completed Aladdin's business process review and summary
- ✓ In FY 2017-18 the Investment Office embarked upon a project to refresh the TOM, with the goal of a simplified structure, framework, and reduced complexity. In December 2017, Investment Office staff presented the Investment Committee with a new TOM Dashboard which has refined and consolidated functions and sub-functions better aligned with industry standard operating models while reflecting

specific focus on engagement activities emphasized at CalPERS.

7. Develop a framework for the integration of CalPERS Investment Beliefs and ESG risk considerations into the investment decision-making process, including completing the key deliverables and objectives targeted for the current fiscal year in the Global Governance ESG Strategic Plan approved by the Board in August 2016:

Global Governance ESG Strategic Plan

- ✓ Supported the asset classes and investment programs on core work in the Strategic Plan
- ✓ Development of CalPERS' Governance and Sustainability Principles, as per Investment Committee review and issues arising from asset class participation in Research Working Group
- ✓ Development of CalPERS' position on sensitive proxy voting, corporate engagement and regulatory or legislative issues
- ✓ Strategy and co-ordination of CalPERS' partnerships including PRI, Ceres, ICGN, CII, and other groups where staff and Board members have leadership roles, working across the enterprise
- ✓ Integration of INVO diversity and inclusion activities into the Sustainable Investment program including diversity partnerships, investment manager engagement, labor relations and the Responsible Contractor Program
- ✓ Asset class manager expectations KPI achieved for Sustainable Investment Practice Guidelines for GE, PE, GFI and RA finalized and published on CalPERS' website.
- ✓ Integration of diversity and inclusion activities into the SI program: successful expanded presentation of Responsible Contractor Policy annual update jointly with RA.
- ✓ Ad Hoc Stakeholder request: these include Dakota Access Pipeline engagement of banks and MLP, retailers selling assault weapons, opioid crisis pharmaceuticals, Tesla
- ✓ Completed key strategic priority of Strategic Plan:
 - Data and corporate reporting: engagement with SEC, (human capital management petition) SASB, standards commentary) IFRS, (review of corporate reporting) and TCFD (climate risk reporting)
 - Montreal Pledge companies: Climate Action 100+launched with \$27 trillion backing at Paris Summit
 - 504 companies engaged in Board diversity, with GE, and testimony to state senate
 - Research: SIRI refresh completed with 800 additional papers, and Board presentation of highlights by Professor Brad Barber
 - Carbon footprinting: completed with GFI and successfully presented to IC
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Organizational Leadership

10%	<p>Through June 30, 2018, provide organizational leadership, decision-making, and reliable fund stewardship in support of the following Strategic Outcome Measures:</p> <p>Open and Transparent Communication</p> <ul style="list-style-type: none"> • Set and exemplify standards for respectful, candid, and transparent communication; and • Be open and accessible, working towards solutions in collaborative ways. <p>Efficient and Effective Organization</p> <ul style="list-style-type: none"> • Support the CalPERS work environment's high levels of accountability and focus on cost-effectiveness without negative consequences to service levels; and • Participate in and support ongoing Workforce Planning efforts. <p>Supportive and Engaged Leadership</p> <ul style="list-style-type: none"> • Participate in the development of current and future leaders through: <ul style="list-style-type: none"> ○ Informal mentoring and continued leadership development at all levels; and ○ Participation in and support of the completion of mandatory leadership training. • Create clear links between performance and consequences, including: <ul style="list-style-type: none"> ○ Timely completion of probationary reports and EPADs; ○ Holding team members accountable for poor performance and behavior; and
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	<ul style="list-style-type: none"> ○ Rewarding team members for displaying positive behavior and exceptional performance. <p>Customer Satisfaction Driven Organization</p> <ul style="list-style-type: none"> ● Support the development of a comprehensive understanding of customer needs, expectations, and employees' connection to customer satisfaction; and ● Support an environment in which employees work to improve processes and focus on delivering upon customer expectations. <p>Team Member Engagement</p> <ul style="list-style-type: none"> ● Support efforts to create an environment where team members can thrive in a culture of inclusion, opportunity and representation; and ● Instill a positive work culture where CalPERS is seen as a destination employer.
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Semiannual Status Update

- Met with President of the Board, Chair and Vice Chair of the Investment Committee
- Continued to inform Board of investment issues through Board weekly updates, if necessary
- Held special meetings with INVO staff to address redesign and 2020 Vision.
- Actively participated in the Diversity and Inclusion Project.
- Met regularly with the CEO.
- Actively participated in FINO meetings: ALM Advisory Committee, Risk Mitigation Meetings, Treasury Management and Budgets
- Actively participated in weekly Executive Staff meetings and Executive Huddle meetings/calls with the CEO.
- Continued to work with HR staff in the succession plan for INVO Senior staff.
- Continue to collaborate with INVO Senior staff and communicate with industry professionals to better understand the current economic environment and various risk factors affecting asset allocation and private equity.
- Held two All INVO staff meetings
- Mentored external and internal staff
- Oversaw divestment and legislative reporting: ongoing, including testimony to legislative hearing on (1) divestment vs engagement and (2) diversity and inclusion work at INVO.
- Development of agenda and speakers of Board offsite discussion of Sustainable Development Goals and their relevance to investors and technology panel.

INCENTIVE METRICS (Performance data for all metrics to be provided at year-end.)

Weight	Metric																		
40%	<p>Total Fund Performance (7/1/13 – 6/30/18)</p> <p>The Total Fund Performance Metric is measured based on fund performance against the policy benchmark for the five-year period of July 1, 2013, through June 30, 2018.</p>	<table border="1"> <thead> <tr> <th>Variance (bps) from Benchmark</th> <th>Payout Ratio</th> </tr> </thead> <tbody> <tr><td>+35</td><td>1.50 (150%)</td></tr> <tr><td>+30</td><td>1.41 (141.7%)</td></tr> <tr><td>+20</td><td>1.25 (125%)</td></tr> <tr><td>+5</td><td>1.00 (100%)</td></tr> <tr><td>0</td><td>0.76 (76.3%)</td></tr> <tr><td>-15</td><td>0.05 (5%)</td></tr> <tr><td>< -15</td><td>0.00 (0%)</td></tr> </tbody> </table> <p><i>Payout ratio for intermediate results will be determined by interpolation.</i></p>	Variance (bps) from Benchmark	Payout Ratio	+35	1.50 (150%)	+30	1.41 (141.7%)	+20	1.25 (125%)	+5	1.00 (100%)	0	0.76 (76.3%)	-15	0.05 (5%)	< -15	0.00 (0%)	
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10%	<p>Enterprise Operational Effectiveness</p> <p>The Enterprise Operational Effectiveness Metric for 2017-18 is defined as Overhead Operating Costs as a percentage of Total Operating Costs ("OOC").</p> <ul style="list-style-type: none"> Total Overhead Operating Costs ("OOC") identify all administrative costs not mapped directly to Product and Service Delivery Operating Costs ("PSDOC") OOC = OOC / (OOC + PSDOC) 	<table border="1"> <thead> <tr> <th>Score</th> <th>Payout Ratio</th> </tr> </thead> <tbody> <tr><td><-1.1%</td><td>1.50 (150%)</td></tr> <tr><td>-1.1% to < -0.6%</td><td>1.25 (125%)</td></tr> <tr><td>-0.6% to 0.0%</td><td>1.00 (100%)</td></tr> <tr><td>> 0.0% to 1.0%</td><td>0.75 (75%)</td></tr> <tr><td>> 1.0% to 1.5%</td><td>0.50 (50%)</td></tr> <tr><td>>1.5%</td><td>0.00 (0%)</td></tr> </tbody> </table>	Score	Payout Ratio	<-1.1%	1.50 (150%)	-1.1% to < -0.6%	1.25 (125%)	-0.6% to 0.0%	1.00 (100%)	> 0.0% to 1.0%	0.75 (75%)	> 1.0% to 1.5%	0.50 (50%)	>1.5%	0.00 (0%)			
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15%	<p>Investment Office CEM</p> <p>The 2017-18 annual participation in the CEM benchmarking (CEM) survey analyzes CalPERS' investment costs and return performance over a five-year period against a customized peer group.</p>	<table border="1"> <thead> <tr> <th>Score</th> <th>Payout Ratio</th> </tr> </thead> <tbody> <tr><td>Outperforms US Benchmark on Net Value Added (Returns) and Cost by 0.2% and 5 bps, respectively</td><td>1.50 (150%)</td></tr> <tr><td>Outperforms US Benchmark on Returns and Cost by .001% and 1 bps, respectively</td><td>1.00 (100%)</td></tr> <tr><td>Outperforms US Benchmark on Cost or Outperforms US Benchmark on Returns</td><td>0.50 (50%)</td></tr> <tr><td>Underperforms US Benchmark on Returns and Cost</td><td>0.00 (0%)</td></tr> </tbody> </table>	Score	Payout Ratio	Outperforms US Benchmark on Net Value Added (Returns) and Cost by 0.2% and 5 bps, respectively	1.50 (150%)	Outperforms US Benchmark on Returns and Cost by .001% and 1 bps, respectively	1.00 (100%)	Outperforms US Benchmark on Cost or Outperforms US Benchmark on Returns	0.50 (50%)	Underperforms US Benchmark on Returns and Cost	0.00 (0%)							
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15%	<p>Stakeholder Engagement</p> <p>The Stakeholder Engagement Metric for 2017-18 is based on results of the following three Stakeholder Engagement Survey questions:</p> <ul style="list-style-type: none"> Is CalPERS sensitive to the needs of Stakeholders? Does CalPERS do a good job of keeping its stakeholders informed? On a scale of one to ten, how would you rate CalPERS being effective in engaging and communicating with stakeholders? 	<table border="1"> <thead> <tr> <th>Score</th> <th>Payout Ratio</th> </tr> </thead> <tbody> <tr><td>> 75%</td><td>1.50 (150%)</td></tr> <tr><td>> 73% to 75%</td><td>1.25 (125%)</td></tr> <tr><td>> 71% to 73%</td><td>1.00 (100%)</td></tr> <tr><td>> 69% to 71%</td><td>0.75 (75%)</td></tr> <tr><td>> 67% to 69%</td><td>0.50 (50%)</td></tr> <tr><td>≤ 67%</td><td>0.00 (0%)</td></tr> </tbody> </table>	Score	Payout Ratio	> 75%	1.50 (150%)	> 73% to 75%	1.25 (125%)	> 71% to 73%	1.00 (100%)	> 69% to 71%	0.75 (75%)	> 67% to 69%	0.50 (50%)	≤ 67%	0.00 (0%)			
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100%	Total Plan Weight																		

NOTE: Boxes surrounded by heavy borders contain the bolded symbols (e.g., greater-than, less-than) and percentages that were corrected to rectify inconsistencies from prior versions.