California Public Employees Retirement System

Summary of Top Risk Domains as of May 27, 2014

D: 1 D	Risk Ranking					
Risk Domain	May-13	Oct-13	May-14	Current Trend	Owner	
Investment Controls & Systems				1	Chief Operating Investment Officer	
Pension Funding (Asset Liability Management)				⇒	Chief Investment Officer Chief Actuary Chief Financial Officer	
Policy and Procedures	\triangle	\triangle			Chief Risk & Compliance Officer	
Participating Employer Financial Hardship/Insolvency				>	Chief Financial Officer	
Laws, Rules and Regulations	\triangle	\triangle		>	Chief Risk & Compliance Officer	
Financial Controls and Systems	\triangle	\triangle		>	Chief Financial Officer	
Asset Allocation			\triangle		Chief Investment Officer	
Information Security	\triangle	\triangle	\triangle	1	DEO, Operations & Technology	
Stakeholder Perception	\triangle	\triangle		-	DEO, External Affairs	
Financial Reporting	\triangle	\triangle	\triangle	•	Chief Financial Officer	

Legend

•	Minimal	Decrease
Δ	Moderate	Remain Constant
	Elevated	Increase
•	High	

Top Risk Report: Investment Controls and Systems						
Risk Category: Financial	May-13	Oct-13	May-14	Current Trend		
Risk Domain Rating				•		
Rating Comments: There is no change to the risk rating in this reporting period.	•					

This domain identifies risks that may impact the effectiveness of CalPERS Investment Office to ensure the ability to design, develop, and implement a robust operating model that minimizes complexity, improves transparency, strengthens processes, systems and controls.

Designated Executive Owner:

Chief Operating Investment Officer

Sub Risks

- INVO Cash Forecasting (Cash Management)
- Investment Evaluation and Monitoring Tools Private Equity
- External Manager / Partner Selection and Governance
- Portfolio Data and Analytics
- Recruiting & Retention

Management's Risk Response Strategies: Accomplished Risk Response

- Achieved a 50% reduction in the number of high risk functions, from initial assessment conducted in Dec 2012, and continue to improve the TOM
 risk levels
- Extended "Heavy Lifting" phase to reflect the pace of achievable change
- Completed 75% of INVO Roadmap initiatives

Management's Risk Response Strategies: Ongoing Risk Response

Continue the following INVO Roadmap initiatives:

- Public markets portfolio management
- Private equity portfolio management, accounting & data services
- Investment expense management & CAFR support
- Contract management INVO workflow management

Trust (fund) structure validation & redesign

- Performance measurement attribution
- Incentive compensation reengineering
- Pricing and valuation
- Affiliate investment program process & technology

Manager selection & monitoring - standards and compliance

- Technology management
- ARS legal structure & technology
- Cash management process & controls
- Investment policy revisions
- Disaster recovery/business continuity

- Contact & relationship data management current business partners
- Data management core capabilities
- Records retention, document management

Top Risk Report: Pension Funding (Asset Liability Management)						
Risk Category: Strategic	May-13	Oct-13	May-14	Current Trend		
Risk Domain Rating				→		
Rating Comments: There is no change to the risk rating in this reporting period.						

This domain identifies risks that may impact the sustainability of CalPERS pension plans' affordability and attractiveness to employers, and the goal of low volatility in contributions and appropriate funding levels through the management of asset and liabilities.

Designated Executive Owner:	Chief Investment Officer
	Chief Actuary
	Chief Financial Officer

Sub Risks

- Contribution Rate Volatility
- Contribution Rate Level
- Funded Status Level
- Investment Risk and Return
- Total Risk
- Asset Liability Mis-match

Management's Risk Response Strategies: Accomplished Risk Response

- Developed the integrated Asset Liability Decision Making Framework to bring the issue of funding risk into the evaluation of actuarial and investment decisions
- Conducted Board ALM workshops to improve the understanding of the current risk level. However, these workshops did not change (or reduce) the overall level of market risk in the Plan.

Management's Risk Response Strategies: Ongoing Risk Response

- Continue educate Board about Asset Liability Management Model
- Review actuarial assumptions every 4 years
- · Make recommendations on how pension funding methods and policies impact contribution rate volatility
- As part of INVO's ongoing portfolio and investment risk management process, staff manages specific risks, review asset allocation strategy, increase
 diversification of investment through portfolio management in order to reduce idiosyncratic risk
- Continue to inform the Board and stakeholder community about the degree of dependence on investment return to support benefit payments and the outcome of adverse market condition
- Actively monitor market environment and its risks
- Continue reporting to the Investment Committee the level of Total Risk and the contributions to it from the market environment and from "active management" decisions made by staff

- · Make recommendations on how pension funding methods and policies impact contribution rate volatility
- Review actuarial assumptions every 4 years
- Asset allocation strategy is currently reviewed every 3 years per Board policy, and will move to every 4 year cycle once approved by Investment Committee. Such review leads to the preferred asset allocation mix for CalPERS investment portfolio

Top Risk Report: Policy and Procedures					
Risk Category: Compliance	May-13	Oct-13	May-14	Current Trend	
Risk Domain Rating	\triangle	\triangle		•	

Rating Comments: The risk rating increased from a moderate to an elevated level. Management identified the need to establish a policy framework to efficiently and effectively manage a policy lifecycle. While staff has made progress by establishing an enterprise policy oversight function, implementing a centralized repository, and developing a policy management framework, work remains to fully implement the policy management framework across the enterprise, including the continued build of the compliance monitoring program, process and systems.

Risk Statement

This domain identifies risks that may impact compliance with all CalPERS policies and the effectiveness of a policy management framework.

Designated Executive Owner:

Chief Risk & Compliance Officer

Sub Risks

- Policy Administration
- Policy Measures and Monitoring
- Policy Standards

Management's Risk Response Strategies: Accomplished Risk Response

- Established enterprise policy management function
- Established policy templates to standardize and ensure consistency and continuity of organizational policies
- Created a communication outreach plan
- Designed a Policy Development workshop to train staff on new policy and procedure development processes and lifecycle management
- Implemented Archer Policy Module

Management's Risk Response Strategies: Ongoing Risk Response

- Maintain policy library via SharePoint
- Enhance Archer Policy Module
- Continue policy oversight and compliance monitoring function
- Conduct periodic compliance reviews
- Implement multi-year project to update all existing policies and create new policies as needed

- Implement policy library via SharePoint
- Implement communication and training plans
- Establish policy oversight and compliance monitoring function
- Conduct periodic compliance reviews
- Retire outdated policies

Top Risk Report: Participating Employer Financial Hardship/Insolvency Risk Category: Strategic May-13 Oct-13 May-14 Current Trend Risk Domain Rating

Rating Comments: The risk rating is decreased from a high to an elevated level due to overall economy improvement, and management risk response strategies put in place such as centralized collection of contributions, incorporation of termination costs, review of the criteria for financial hardship qualification, and active engagement in participating employer bankruptcy proceedings to defend the integrity and soundness of the system.

Risk Statement

This domain identifies risks related to and arising out of participating employer financial hardship or insolvency that may impact employers and members pension or health plan terms including benefits, contributions or premiums, or other actions that threaten the integrity and soundness of the system.

Designated Executive Owner: Chief Financial Officer

Sub Risks

- · Legal/Legislation
- Termination Authority
- Employer Contributions
- Stakeholder Perception (Reputation)
- Financial

Management's Risk Response Strategies: Accomplished Risk Response

- Set up a committee and integrate efforts by people from program areas, legal and FCSD to clarify aging of accounts receivable, improve overall
 process of collection, take proactive approach to identify potential delinquent risks related to payment collection from contracting employers
- Established a centralized collection process that monitors outstanding payments, provides notifications for past due amounts and applies interest/penalties for delinquent accounts
- · Provided active education related to termination as well as termination cost to contracting employers
- Performed policy analysis to determine when CalPERS might want to initiate termination proceedings
- Included termination cost in the employer actuarial valuations
- Updated assessment of stakeholder perceptions risk assessment
- Engaged in a three-year stakeholder assessment project being conducted from 2013 through 2015. Staff presents key findings from the stakeholder
 assessment, including follow-up interviews to the online surveys, an analysis of recent media coverage and stakeholder interviews

- Actively defend the integrity and soundness of the system in current bankruptcy court cases; participate by filing amicus briefs as appropriate
- · Continue to actively monitor and decide whether to sponsor legislation to strengthen the soundness of system
- Analyze relevant bankruptcy court cases such as Detroit and understand the potential impact to CalPERS
- Review criteria for hardship qualification which could lower contribution rates and may prevent employer from termination or going into bankruptcy
- Engage directly with employers to educate them on what options they have to minimize their pension cost exposure
- Monitor overall economy situation including economy forecast to analyze potential impact to CalPERS resulting from municipal bankruptcy
- Proactively engage and educate media
- Engage and increase communications and awareness with elected officials, members, and staff
- Engage with stakeholders and conduct briefings, updates, and notices
- Actively monitor financial situation and report to the Board (Quarterly Financial Reports, Year-To-Date Financial Reports, Accounts Receivable Analysis Report)
- Develop payroll related financial data map in terms of where data is derived, who reviews the data, accuracy of the data, etc.

- Proactively monitor participating employers that may potentially become delinquent with their payments
- CalPERS adopts new pension contribution rates for State and Schools beginning July 1, 2014
- CalPERS staff is proactively engaging in appropriate leadership activities, including coalition building with California and other state retirement
 systems, focused advocacy on critical issues, proactive communications and education on completed reforms, and continued support of and
 leadership with national industry organizations
- Develop financial data gap analysis based on the analysis of data map to identify areas where changes are needed
- Implement plan to improve the payroll data process to ensure timeliness, accuracy and completeness of payroll report generated accounts receivables

Top Risk Report: Laws, Rules and Regulations Risk Category: Compliance/Ethics May-13 Oct-13 May-14 Trend Risk Domain Rating Rating Comments: The risk ranking increased from a moderate to an elevated level with the identification of risks associated with lack of clarity around roles and responsibilities, insufficient separation of duties, and immature compliance framework to provide appropriate level of assurance.

Risk Statement

This domain identifies risks that may impact CalPERS and staff resulting from non-compliance with statutory requirements, specifically non-compliance with relevant laws, rules and regulations, including regulatory reporting and the effectiveness of a compliance framework.

Designated Executive Owner:

Chief Risk and Compliance Officer

Sub Risks

- Regulatory Compliance Failure
- Inconsistencies in Policies and Underground Regulations
- Legal Sanctions

Management's Risk Response Strategies: Accomplished Risk Response

- Investigated hotline incidences that may impact compliance with laws, rules and regulations.
- Conducted compliance reviews to monitor adherence to regulations, policies and procedures.
- Provided compliance training and awareness education to CalPERS staff and Board members (e.g., Information Security, HIPAA, Sexual harassment, Form 700 Ethics, Working Values Ethics, and Board Fiduciary).
- Built a centralized searchable database of compliance documents necessary to comply with relevant U.S. federal, State and local regulations.

Management's Risk Response Strategies: Ongoing Risk Response

- Investigate hotline incidents that may impact compliance with laws, rules and regulations.
- Design and implement effective policies and procedures that take into consideration CalPERS fiduciary obligation to its members.
- Provide compliance training and awareness education to CalPERS staff and Board members, including Fiduciary and Accountability training.
- Conduct compliance reviews to monitor adherence to regulations, policies, and procedures.
- Establish formal process for reports required by legislative mandate to ensure timely response.
- Build and mature a compliance program based on the U.S. Federal Sentencing Guidelines.
- Develop, implement and communicate the Integrated Assurance Model and three lines of defense to increase awareness and ensure enterprisewide understanding of roles and responsibilities.
- Maintain a centralized searchable database of compliance documents necessary to comply with relevant U.S. federal, State and local regulations.
- Implement eGRC automated solution tool to enhance enterprise-wide collaboration, promote principled performance and enable efficiency throughout the organization.

- Design and implement effective policies and procedures that take into consideration CalPERS fiduciary obligation to its members.
- Maintain formal process for reports required by legislative mandate to ensure timely response.
- Mature a compliance program based on the U.S. Federal Sentencing Guidelines.
- Sustain the Integrated Assurance Model and three lines of defense to increase awareness and ensure enterprise-wide understanding of roles and responsibilities.
- Implement eGRC automated solution tool to enhance enterprise-wide collaboration, promote principled performance and enable efficiency throughout the organization.

Top Risk Report: Financial Controls and Systems Risk Category: Financial May-13 Oct-13 May-14 Current Trend Risk Domain Rating A D D D Retires Commenter. The risk sanking increased from a medicate to an elevated level based upon the CEO and Controller identification of two news

Rating Comments: The risk ranking increased from a moderate to an elevated level based upon the CFO and Controller identification of two new sub risks focused on strengthening controls over treasury management, financial reporting, implementation GASB 67 and 68. With recruitment of the CFO and Controller, management has increased awareness of the risks impacting this domain.

Risk Statement

This domain identifies risks that may impact the effectiveness of CalPERS financial controls to ensure accurate accounting for plan assets and liabilities. This includes policies and processes, implementation and management of controls for decision making, and use of assets, including appropriate authorizations, and segregation of duties.

Designated Executive Owner: Chief Financial Officer

Sub Risks

- Treasury Management
- Financial Data Governance & Integrity
- my | CalPERS Financial Transactions
- Staff Capability & Skillsets
- Accounting Controls & Information

Management's Risk Response Strategies: Accomplished Risk Response

- Reconcile my | CalPERS data with PeopleSoft ensuring systems are integrated
- Develop financial organization that include CFO, Controller and Chief of Financial Planning & Analysis
- Review contracts to evaluate all accounting related information

- Develop operational yearly cash forecast
- Develop Treasury Management function consolidating all cash related functions within one area including cash reconciliation and operational cash forecasting for all Trusts
- Identify investment related accounting book of records (subsidiary ledgers) that feeds information to the general ledger and evaluate controls
 within each of the applications/functions to identify gaps
- Implement necessary controls to validate accounting information within the subsidiary ledgers for absolute return strategy and corporate governance portfolios
- Educate organization about the importance of financial data and that my | CalPERS application is a financial application as much as a customer service application.
- Review each of the system changes to ensure accounting design changes are incorporated
- Develop classifications that support the necessary skills needed in CalPERS Financial Office
- Evaluate gap analysis of skills to determine training needs for staff and develop/implement training plan to close gaps
- Work with third party and program areas to ensure financial controls are conducted
- Develop processes to review financial information provided by third party vendors

- Implement Enterprise Treasury Management function detailing roles and responsibilities
- Implement an integrated enterprise cash forecast process evaluating risks and options for liquidity management (for all Trusts)
- · Hire/train talented staff to develop and implement/manage Treasury Management functions
- Continue implementation of the necessary controls related to the subsidiary ledgers for investment related data including implementation of Private Equity Accounting & Reporting Solution (PEARS)
- Identify the health, pension, and other related accounting book of records (subsidiary ledgers) that feeds information to the general ledger and evaluate controls within each of the applications/functions to determine any gaps
- Implement necessary controls to close gaps identified
- Continue to educate organization about the importance of financial data and that my | CalPERS application is a financial application as much as a customer service application
- Continue to review each of the system changes to ensure accounting design changes are incorporated
- Evaluate system design to report accounting related entries (including risk pool entries) that do not happen when transaction is performed
- Evaluate system design to summarize transaction data with accounting data to perform necessary analysis of the accounting related data
- Get approval from Department of Finance/CalHR for pension consulting classifications
- Continue training staff to close gaps
- Change contracting process to incorporate financial office review to ensure necessary financial controls are incorporated and necessary information is required from third party vendors

Top Risk Report: Asset Allocation Risk Category: Strategic May-13 Oct-13 May-14 Trend Risk Domain Rating

Rating Comments: This risk domain is related to the planning, design and execution of the actual asset allocation by the Investment Office. This risk domain is moderate as the asset allocation planning and design process is dependent on a significant number of assumptions, estimates and models all of which are estimates of what might actually happen. Additionally, actual execution of the chosen asset allocation requires interaction with the capital markets. Short term market conditions may make it difficult to achieve the desired asset allocation (e.g. achieving target private equity allocation, etc.).

Risk Statement

This domain identifies risks related to and arising out of asset allocation that may impact achieving the target rate of return, maintaining sufficient diversification to avoid large losses and preserve capital, and maintaining adequate funds to fulfill liabilities when they arise.

	Chief Investment Officer
Designated Executive Owner:	Chief Operating Investment Officer

Sub Risks

- Asset Allocation Strategy Risk
- Capital Market Assumption Risk
- Asset Allocation Strategy Execution Risk
- Financial Management Model Risk

Management's Risk Response Strategies: Accomplished Risk Response

- Asset Allocation models and capital market assumptions are carefully reviewed and vetted by the Asset Allocation and Risk Management team, as well by independent consultants for robustness and accuracy.
- The final versions and asset allocation results are also submitted and reviewed by the Investment Committee for reasonableness.
- Further the Investment Office CIO and Senior Investment Officers are responsible for periodically reviewing and updating the models, comparing them with actual results.

Management's Risk Response Strategies: Ongoing Risk Response

• The Investment Office - Investment Servicing Division and Asset Allocation and Risk Management teams are currently engaged in an INVO project to implement a full "top down" performance attribution model that would regularly evaluate and decompose performance and risk by asset class and at the total plan level. This activity, when complete and in full production will allow CalPERS to reduce the level of asset allocation implementation/execution risk by regularly evaluating the sources of risk and return within the asset allocation and tying those sources back to the original capital market assumptions and estimates.

Management's Risk Response Strategies: Planned Risk Response

Risk factor allocation is an asset allocation approach, used by some institutions, that has the potential of reducing model/implementation risk
though this assertion would require significant research and validation. The Asset Allocation and Risk Management team intends to commence
progress on evaluating Risk Factor asset allocation and attribution in FY 2014 - 2015.

Top Risk Report: Information Security							
Risk Category: Operational May-13 Oct-13 May-14 Trend							
Risk Domain Rating	\triangle		\triangle	•			
tating Comments: There is no change to the risk rating in this reporting period.							

This domain identifies risks that may impact information security that protects access to employer and member personal health and financial data, and prevents loss of information assets. Includes compliance with CalPERS information security policies and state requirements.

DEO, Operations & Technology
Chief Financial Officer

Sub Risks

- Large Scale Data Breach
- Targeted Information Disclosure
- Compromised System Operation and Integrity
- Detection of Malicious Activity
- Severe Denial of Service Attack

Management's Risk Response Strategies: Accomplished Risk Response

- Provided information security awareness training
- Created information security policy for data protection [ERMD/ISMS]
- Identified and classified business data (ERMD/ISMS)
- Required authorization for business data leaving CalPERS (ERMD/ISMS)
- Implemented technical controls on CDs, DVDs, and USB storage devices
- Implemented security configurations for desktops in compliance with rigorous US Government standards
- · Applied technical controls that include firewalls, intrusion detection and preventions systems, and malicious code protection systems
- Performed security assessment for remote access systems
- Implemented limited myCalPERS security reports

Management's Risk Response Strategies: Ongoing Risk Response

- Locate and secure data using Data Loss Prevention technology
- Implement and manage security patches for CalPERS information systems
- Provide technical staff training
- Apply antivirus protection and remediation tools
- Monitor sensitive data leaving CalPERS via our network

- Implement Security Incident and Event Monitoring
- Implement protection for non-CalPERS web based email and storage
- Implement Network Access Control systems to improve controls over access to our network

Top Risk Report: Stakeholder Perception						
Risk Category: Strategic	May-13	Oct-13	May-14	Current Trend		
Risk Domain Rating	\triangle	\triangle	\triangle	⇒		
ating Comments: There is no change to the risk rating in this reporting period.						

This domain identifies risks that may impact effective communications and relationships with key stakeholders who require a high level of confidence in CalPERS. These critical partnerships are necessary in order to successfully deliver retirement and health benefits to CalPERS members.

Designated Executive Owner: DEO, External Affairs

Sub Risks

- Stakeholder Management
- Governmental Relations
- Communications
- Public perception/reputation

Management's Risk Response Strategies: Accomplished Risk Response

- Stakeholder Relations has combined the previous Health Constituent and Customer Representatives meetings into to one monthly Stakeholder Engagement Briefing
- Created a framework for coordinated engagement and leadership and we have identified areas of focus for our outreach that include investment and pension beliefs, integrated health care and risk management
- Completed the 2nd phase of the Stakeholder Assessment project. The on-line survey and phone interview were sent to CalPERS employees, employers, members, and key legislative stakeholders
- Implemented the brand voice and visuals throughout CalPERS communications
- Created a Sales Coordination Group consisting of staff from across CalPERS sales and outreach areas that meets regularly to reduce risks related to stakeholder perceptions
- Developed a communications strategy to increase visibility and public presence of CalPERS leadership, in the media and among stakeholders

- Research, enhance calendars and recommend to leadership opportunities for expanded outreach
- Involved with the media, stakeholders, and the legislature on important topics, such as municipal bankruptcies, Long-Term Care, emerging managers, and pension issues
- Develop relationships with academia, California business community and financial industry partners, through thought leadership initiatives to support the effectiveness of our retirement, health and investment programs
- Inform Legislative leaders, key committee chairs and vice chairs, and consultants about issues that could impact CalPERS reputation
- Build alignment and relationships between CalPERS executive team and key legislative leaders
- Hold periodic briefings to educate Legislative Members and staff on important CalPERS issues
- Maintain a responsive and effective legislative constituent help desk within GOVA
- The publication of the CalPERS Legislative Newsletter
- Expand ability to be more transparent and keeping our members and stakeholders informed through various webinars and webcasts, including live Board meetings on the Web
- Enhance social media strategies by raising our voice in the electronic conversation through monitoring and engaging with stakeholder groups via social media channels
- Proactively involved with the media, stakeholders, and the legislature on important topics, such as municipal bankruptcies, Long-Term Care, emerging managers, and pension issues
- Correct the record in the media
- Improve the usability and experience of our website for a better customer service experience

- Continue to infuse stakeholder engagement and communication into future business plan initiatives
- Conduct subsequent phases of the Stakeholder Assessment Project (SAP)
- Continue web-usability initiative

Top Risk Report: Financial Reporting							
Risk Category: Financial May-13 Oct-13 May-14 Trend							
Risk Domain Rating	\triangle		\triangle	>			
Rating Comments: There is no change to the risk rating in this reporting peri	tating Comments: There is no change to the risk rating in this reporting period.						

This domain identifies risks that may impact the integrity of financial and management reporting which meets management's needs for decision making and legal and statutory requirements for disclosure.

Designated Executive Owner: Chief Financial Officer

Sub Risks

- Financial Reporting Evaluation
- Accounting Standards Compliance/Implementation
- Staff Capability & Skillsets

Management's Risk Response Strategies: Accomplished Risk Response

- Communicate with external auditor on accounting standards compliance and implementation
- Develop financial organization that include CFO, Controller and Chief of Financial Planning & Analysis

Management's Risk Response Strategies: Ongoing Risk Response

- Create accounting policies and procedures on financial reporting starting with investment related transactions to identify any gaps in reporting
- For GASB 40 and 53 disclosures, work with State Street Bank to review their accounting controls and processes by verification of their data on a quarterly basis
- · Management at financial reporting section reviews implementation of accounting standards and suggests changes if needed
- Develop classifications that support the necessary skills needed in CalPERS Financial Office
- Evaluate gap analysis of skills to determine training needs for staff and develop/implement training plan to close gaps

- · Continue creating accounting policies and procedures on financial reporting to identify and close any gaps in reporting
- Develop data map that identifies all the current data within financial reports; where data is derived, who reviews the data, accuracy of the data, etc.
- Develop gap analysis based on the analysis of data map.
- Implement plan to make necessary changes to information/data in the financial reports based on the gap analysis conducted
- Develop GASB compliance checklist to identify each GASB requirement and how CalPERS comply to the requirement
- Get approval from Department of Finance/CalHR for pension consulting classifications
- Continue training staff to close gaps