California Public Employees Retirement System Top Risk Summary as of Oct. 20, 2014

Diele Ceterrery			Risk Ranking					
	Risk Category	Risk Domain	Oct-13	May-14	Oct-14	Current Trend	Owner	Oversight
1	Strategic	Pension Funding (Asset Liability Management)				•	Chief Investment Officer Chief Actuary Chief Financial Officer	Investment Committee Finance and Administration Committee
2	Compliance/Ethics	Policy and Procedures	\triangle			-	Chief Risk & Compliance Officer	Risk and Audit Committee
3	Strategic	Participating Employer Financial Hardship/Insolvency				>	Chief Financial Officer	Finance and Administration Committee
4	Compliance/Ethics	Laws, Rules and Regulations	\triangle				Chief Risk & Compliance Officer	Risk and Audit Committee
5	Financial	Financial Controls and Systems	\triangle			>	Chief Financial Officer	Finance and Administration Committee
6	Operational	Information Security	\bigtriangleup	\bigtriangleup	\triangle	⇒	DEO, Operations & Technology	Finance and Administration Committee
7	Strategic	Stakeholder Perception	\bigtriangleup	\bigtriangleup	\triangle	•	DEO, External Affairs	Pension and Health Benefits Committee
8	Financial	Investment Controls and Systems			\triangle	₽	Chief Operating Investment Officer	Investment Committee
9	Strategic	Health Care Cost	\triangle	\triangle	\triangle	>	DEO, Benefit Programs Policy & Planning	Pension and Health Benefits Committee
10	Operational	Physical Security Controls	\triangle	\bigtriangleup	\triangle	•	DEO, Operations & Technology	Finance and Administration Committee

Residual Ferri Residu	Risk - Considering risk responses and the remaining risk	Trend - Considering risk management plans and environmental factors, the residua risk trend over the next 6 months.				
•	Minimal	•	Decrease			
Δ	Moderate	>	Remain Constant			
	Elevated		Increase			
•	High					

Top Risk Report: Pe	nsion Funding (Asset Liab	ility Manag	ement)	
Risk Category: Strategic	Oct-13	May-14	Oct-14	Current Trend
Risk Domain Rating				>
Rating Comments: There is no change to the risk rating in the	his reporting period.			
Risk Statement				
This domain identifies risks that may impact the sustainabili low volatility in contributions and appropriate funding level	, , ,	•		o employers, and the goal of
Designated Executive Owner:	Chief Investm Chief Actuary Chief Financia			
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 Ris	sk Response			
 Developed the integrated Asset Liability Decision Making investment decisions Conducted Board ALM workshops to improve the underst overall level of market risk in the Plan 	Framework to bring the issue of	-		
Management's Risk Response Strategies: Ongoing Risk Res	sponse			
 Continue Board education about the Asset Liability Manage Review actuarial assumptions every 4 years Make recommendations on how pension funding method As part of INVO's ongoing portfolio and investment risk method Continue to inform the Board and stakeholder community the outcome of adverse market conditions Actively monitor market environment and the associated Continue reporting to the Investment Committee the level management" decisions made by staff 	ds and policies impact contribution anagement process, staff manag anagement in order to reduce idi y about the degree of dependence risks	es specific risks osyncratic risk e on investmer	, reviews asset nt return to su	pport benefit payments and
Management's Risk Response Strategies: Planned Risk Res	ponse			
 Make recommendations on how pension funding method Review actuarial assumptions every 4 years Asset allocation strategy is currently reviewed every 3 yea Committee. This review leads to the preferred asset allocation 	ars per Board policy, and will mov	ve to a 4 year cy		oved by the Investment

Top Risk Report:	Policy and Proce	dures		
Risk Category: Compliance	Oct-13	May-14	Oct-14	Current Trend
Risk Domain Rating	\triangle			⇒
Rating Comments: There is no change to the risk rating in this reporting	g period. Risk respons	se strategies ar	re further deve	eloped to respond to the risk.
Risk Statement				
This domain identifies risks that may impact compliance with all CalPER	S policies and the effe	ectiveness of a	policy manage	ment framework.
Designated Executive Owner:	Chief R	isk & Compliar	ice 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 an Created a communication outreach plan 	nd continuity of opera	itional and adr	ninistrative po	licies
 Designed a Policy Development workshop to train staff on new policy 	and procedure devel	opment proces	sses and lifecyo	cle management
Implemented Archer Policy Module				
Management's Risk Response Strategies: Ongoing Risk Response				
Maintain policy library via SharePoint				
 Enhance Archer Policy Module Continue to build and enhance the policy oversight and compliance m 	onitoring function			
 Continue to conduct and mature the process for compliance reviews 				
Management's Risk Response Strategies: Planned Risk Response				
Implement policy library via SharePoint				
 Implement communication and training plans Establish policy oversight and compliance monitoring function 				
 Conduct periodic compliance reviews 				
 Retire outdated policies 				

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Top Risk Report: Participating Employ	yer Financia	l Hardship/	Insolvency				
Risk Category: Strategic	Oct-13	May-14	Oct-14	Current Trend			
Risk Domain Rating				-			
Rating Comments: There is no change to the risk rating in this reporting perio	d.						
Risk Statement							
This domain identifies risks related to and arising out of participating employe members pension or health plan terms including benefits, contributions or pretthe system.		•					
Designated Executive Owner:	Chief F	inancial Office	r				
Sub Risks							
 Legal/Legislation Termination Authority Employer Contributions Stakeholder Perception (Reputation) Financial Management's Risk Response Strategies: Accomplished Risk Response Formed a committee and integrated efforts with staff in legal and FCSD to clexercise a proactive approach to identify potential delinquent risks related to Established a centralized collection process that monitors outstanding payminterest/penalties for delinquent accounts Provided active education related to termination as well as termination costs Performed policy analysis to determine when CalPERS might want to initiate Included termination costs in the employer actuarial valuations Updated assessment of stakeholder perceptions risk Engaged in a three-year stakeholder assessment project being conducted fraassessment, including follow-up interviews to the online surveys, an analysis of the state of the state of the online surveys, an analysis of the online surveys and the state of the online surveys and the state of the online surveys and the	collection from nents, provides t to contracting e termination p om 2013 throu	n contracting en notifications fo g employers proceedings gh 2015, and p	mployers or past due am resented key f	ounts and applies indings from the st			
Management's Risk Response Strategies: Ongoing Risk Response							
 Actively defend the integrity and soundness of the system in current bankru Continue to actively monitor and decide whether to sponsor legislation to si Analyze relevant bankruptcy court cases such as Detroit and understand the Review criteria for hardship qualification which could lower contribution rat bankruptcy Engage directly with employers to educate them on what options they have Monitor overall economy including forecasts to analyze potential impact to Proactively engage and educate media 	trengthen the s potential imp ses and may pr e to minimize t	soundness of sy act to CalPERS event employe heir pension co	r from termin pst exposure	ation or going into	iate		

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 financial data map in terms of where data is derived, who reviews the data, accuracy of the data, and other related processes and controls

Management's Risk Response Strategies: Planned Risk Response

Proactively monitor participating employers that may potentially become delinquent with their payments

• 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 the financial 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

• Engage and strengthen relationships between CalPERS Executive Team and employer senior leaders

Risk Category: Compliance/Ethics O Risk Domain Rating O Rating Comments: There is no change to the risk rating in this reporting period. Risk Risk Statement	0ct-13	May-14	Oct-14	Current Trend				
Rating Comments: There is no change to the risk rating in this reporting period. Ri	\triangle							
Risk Statement	sk respons	e strategies ar	e further deve	eloped to respond to the	he risk.			
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	f Risk and (Compliance Of	ficer					
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 regonalized 	gulations							
 Design and implement effective policies and procedures that take into considerat Provide compliance training and awareness education to CalPERS staff and Board Conduct compliance reviews to monitor adherence to regulations, policies, and p Establish formal process for reports required by legislative mandate to ensure tim Build and mature a compliance program based on industry best practices and gui 	tion CalPEF members rocedures nely respor	, including Fidu						
Develop, implement and communicate the Integrated Assurance Model and three	e lines of c	lefense to incre	ease awarene	ss and ensure enterpri	ise-			
 wide understanding of roles and responsibilities Maintain a centralized searchable database of compliance documents necessary Implement eGRC automated solution tool to enhance enterprise-wide collaborati throughout the organization 					ons			
Management's Risk Response Strategies: Planned Risk Response								
 Design and implement effective policies and procedures that take into considerat Maintain formal process for reports required by legislative mandate to ensure tim Continue to mature the compliance program Sustain the Integrated Assurance Model and three lines of defense to increase aw responsibilities 	nely respoi	nse	-		and			
 Implement eGRC automated solution tool to enhance enterprise-wide collaborati throughout the organization Designate Americans with Disability Act (ADA) contact person and ensure the con 								

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Top Risk Report: Finan	icial Controls a	nd Systems			
Risk Category: Financial	Oct-13	May-14	Oct-14	Current Trend	
Risk Domain Rating	\bigtriangleup			⇒	
Rating Comments: There is no change to the risk rating in this reporting risk.	period. Risk respo	nse strategies a	re further dev	eloped to respond to the	
Risk Statement					
This domain identifies risks that may impact the effectiveness of CalPERS liabilities. This includes policies and processes, implementation and mana appropriate authorizations, and segregation of duties.			-	•	
Designated Executive Owner:	Chief Financia	l Officer			
Sub Risks					
 Treasury Management Financial Data Governance & Integrity my CaIPERS Financial Transactions Staff Capability & Skillsets 					
 Accounting Controls & Information 					
Management's Risk Response Strategies: Accomplished Risk Response					
 my/CalPERS Financial Transactions Reconciled my/CalPERS data with PeopleSoft ensuring systems are inte Staff Capability & Skillsets Developed financial organization that includes a CFO, Controller and Ch Accounting Controls & Information Reviewed contracts to evaluate all accounting related information 	-	nning & Analysis	s		
Management's Risk Response Strategies: Ongoing Risk Response					
Treasury Management Develop operational yearly cash forecast Develop Treasury Management function consolidating all cash related forecasting for all Trusts Financial Data Governance & Integrity	functions within on	e area including	g cash reconcil	iation and operational cash	
 Identify investment related accounting book of records (subsidiary ledg within each of the applications/functions to identify gaps Implement necessary controls to validate accounting information withi governance portfolios my/CalPERS Financial Transactions 					
 Educate organization about the importance of financial data and that to service application Review each of the system changes to ensure accounting design changes 			a financial app	olication and a customer	
 Staff Capability & Skillsets Develop classifications that support the necessary skills needed in CaIPI Evaluate gap analysis of skills to determine training needs for staff and 			to close the ga	aps	
 Accounting Controls & Information Work with third party and program areas to ensure financial controls an Develop processes to review financial information provided by third pa 		exercised			

Management's Risk Response Strategies: Planned Risk Response

Treasury Management

- 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 qualified staff to develop and implement/manage Treasury Management functions

Financial Data Governance & Integrity

 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

my | CalPERS Financial Transactions

• Continue to educate organization about the importance of financial data and that the my|CalPERS application is both a financial application and 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 a transaction is performed Staff Capability & Skillsets

- Get approval from Department of Finance/CalHR for pension consulting classifications

Continue training staff to close gaps

Accounting Controls & Information

Change contracting process to incorporate financial office review to ensure necessary financial controls are incorporated and necessary information
is required from third party vendors

Consolidate all the accounting policies under FINO central management

Top Risk Report: Information Security							
Risk Category: Operational	Oct-13	May-14	Oct-14	Current Trend			
Risk Domain Rating	\triangle	\triangle	\triangle	⇒			
Rating Comments: There is no change to the risk rating in this reporting period. The trend changes from decrease to remain constant. Risk response strategies are further developed to respond to the risk.							

Risk Statement

This domain identifies the risks associated with the capacity and sustainability of information management procedures and practices that ensures the security of CalPERS information assets, including but not limited to personal health and financial data of our employers and members.

Designated Executive Owner:

DEO, Operations & Technology Chief Financial Officer

Sub Risks

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

Management's Risk Response Strategies: Accomplished Risk Response

- Created information security policy for data protection [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 my | CalPERS security reporting

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
- Provide annual information security awareness training
- Identify and classify business data (ERMD/ISMS)
- Require authorization for business data leaving CalPERS (ERMD/ISMS)

Management's Risk Response Strategies: Planned Risk Response

- 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
- Conduct information security compromise assessment

Top Risk Report:	Stakeholder Per	ception		
Risk Category: Strategic	Oct-13	May-14	Oct-14	Current Trend
Risk Domain Rating	\triangle	\triangle	\triangle	⇒
Rating Comments: There is no change to the risk rating in this reporti risk.	ing period. Risk respo	onse strategies a	are further de	veloped to respond to the
Risk Statement				
This domain identifies risks that may impact effective communications confidence in CalPERS. These critical partnerships are necessary in ord		-	-	-
Designated Executive Owner:	DEO, Externa	l Affairs		
Sub Risks				
Stakeholder Management				
Governmental Relations				
Communications				
Public perception/reputation				
Management's Risk Response Strategies: Accomplished Risk Respon	se			
 Completed the 3rd phase of the Stakeholder Assessment project. Th employers, members, and key legislative stakeholders Increased visibility and public presence of CalPERS leadership in the 			v were sent to	CalPERS employees,
Management's Risk Response Strategies: Ongoing Risk Response				
 Conduct a monthly Stakeholder Engagement Briefing Infuse the brand voice and visuals throughout CalPERS communicati Manage the Sales Coordination Group, which consists of staff from a related to stakeholder perceptions Utilize a framework for coordinated engagement and leadership to i beliefs, integrated health care and risk management Recommend to leadership opportunities for expanded outreach Engage with the media, stakeholders, and the legislature on importa Develop relationships with academia, California business community support the effectiveness of our retirement, health and investment pr Inform Legislative leaders, key committee chairs and vice chairs, and Build alignment and relationships between CalPERS executive team Hold periodic briefings to educate Legislative Constituent help desk The publication of the CalPERS Legislative Newsletter Expand ability to be more transparent and keeping our members an Board meetings on the Web Enhance social media strategies by raising our voice in the electronic social media channels Correct the record in the media Improve the usability and experience of our website for a better custion of the calperience of our website for a better custion of the customerien of our website for a better customeries 	across CalPERS sales a identify areas of focu- nt topics, such as Leg y and financial indust ograms d consultants about is and key legislative le- important CalPERS is k within GOVA d stakeholders inform conversation throug	s for our outrea al proceedings, ry partners, thre sues that could aders sues ned through var h monitoring ar	ch that include investment de ough thought impact CalPEI ious webinars	e investment and pension ecisions, and pension issues leadership initiatives to RS reputation and webcasts, including live
Management's Risk Response Strategies: Planned Risk Response				
 Continue to infuse stakeholder engagement and communication int. Conduct subsequent phases of the Stakeholder Assessment Project Continue web-usability initiative As part of the enterprise Strategic Measures Project, EXAB will meas feature CalPERS programs, policies or work in the areas of asset liability governance. 	(SAP) sure the number of p	ositive, negative		

Engage and strengthen relationships between CalPERS Executive Team and employer senior leaders

Top Risk Report: Investment Controls and Systems						
Risk Category: Financial	Oct-13	May-14	Oct-14	Current Trend		
Risk Domain Rating			\bigtriangleup	•		

Rating Comments: The risk rating changed from elevated to moderate for this reporting period. The main reasons for the change are due to the translation of risk ranking based upon Target Operation Model (TOM) risk ranking criteria to CalPERS Enterprise Risk Management risk assessment criteria; and the significant progress made towards sub risks of the domain such as INVO cash forecasting, investment evaluation and monitoring - private equity, external manager/partner selection and governance.

Risk Statement

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. This includes:
 - Public markets portfolio management
 - Derivatives Central Clearing & Processing
 - Manager Selection Standards and Compliance (Phase I)
 - Investment Compliance Monitoring
 - Investment Proposal Administration Enhancements
 - Contract management INVO workflow management

Management's Risk Response Strategies: Ongoing Risk Response

Continue the following INVO Roadmap initiatives:

- Private equity portfolio management, accounting & data services
- Investment expense management & CAFR support
- Trust (fund) structure validation & redesign
- Performance measurement attribution
- Incentive compensation reengineering
- Pricing and valuation
- Affiliate investment program process & technology
- Technology management
- Cash management process & controls
- Investment policy revisions
- Disaster recovery/business continuity

Management's Risk Response Strategies: Planned Risk Response

Conducting TOM risk assessment and refresh

Data Management – Core Capabilities initiative start-up

Manager Monitoring – Standards and Compliance initiative start-up (Phase II)

Top Risk Report: Health Care Cost						
Risk Category: Strategic	Oct-13	May-14	Oct-14	Current Trend		
Risk Domain Rating	\bigtriangleup	\triangle	\triangle			

Rating Comments: There is no change to the risk rating in this reporting period. Risk response strategies are further developed to respond to the risk.

Risk Statement

This domain identifies risks in the health care environment that may impact increases in health care benefit costs and may erode CalPERS ability to provide its members with high quality, cost effective health care services and adversely impact CalPERS as the preferred health care choice for employers and employees.

Designated Executive Owner:

DEO, Benefit Programs Policy & Planning

Sub Risks

- HMO/PPO total cost of health care
- Rising pharmaceutical costs
- Demographic shift
- Health care inefficiencies
- Contracting agency participation

Management's Risk Response Strategies: Accomplished Risk Response

Improved health plan contracts by adding performance metrics for reducing avoidable use of the ER, reduced readmission rates, patient safety, and
other viable cost reduction efforts

Added 4 new HMO health plans to increase competition

• Developed specific contractual provisions, including performance measures, with all current health plans related to promoting and maintaining healthy lifestyles for our membership

 Introduced new innovative approaches to reduce health care cost trends through new regional health plans to remain competitive in the California healthcare industry. (HMO Flex Funded Plan)

Management's Risk Response Strategies: Ongoing Risk Response

 Use integrated health models and patient centered medical home approach and principles to assess health plan disease management, care coordination and intensive case management programs for members with multiple chronic conditions, resulting in shared savings between CalPERS and providers, facility and physicians

- Adopt Value Based Purchasing and specialty care Rx cost reduction strategies
- Implement specialized Networks (i.e. Net Value, PERS Select, etc.)
- Dependent Eligibility Verification
- Develop a Wellness Platform

 Align medical and pharmacy benefits across health plans via contract provisions to close clinical gaps in care, improve shared-decision making, control expensive specialty drugs, improve palliative care, support preventive care, as well as implement population health management.

• Reduce hospital readmissions by implementing Health and Long Term Care program Transition Care Pilot

Management's Risk Response Strategies: Planned Risk Response

Ongoing risk response will also serve as planned risk response

Top Risk Report: Physical Security and Controls							
Risk Category: Operational	Oct-13	May-14	Oct-14	Current Trend			
Risk Domain Rating	\triangle	\bigtriangleup	\triangle	⇒			
Rating Comments: There is no change to the risk rating in this reporting period.							
Risk Statement							
This domain identifies risks that may impact the proper level of operational con- equipment from damage or theft.	trols in place	to safeguard C	alPERS campus	s, assets, mail, and			
Designated Executive Owner:	DEO, C	Operations & Te	chnology				
Sub Risks							
 Damage or theft Facility security Mail security Health and Safety Risk 							
Management's Risk Response Strategies: Accomplished Risk Response • Effectively used architecture, landscaping and lighting to achieve improved security by deterring, disrupting or mitigating potential threats • Implemented proven systems and technologies designed to deter, detect, report and react against threats • Established policies and procedures to prevent unauthorized access to a facility and business assets, whether through carelessness, criminal intent or an outside threat • Increased public access control from 2nd floor and above at LPE building • Trained security personnel to protect and enforce the security procedures and policies governing a building's or business' operations • Setup armed security & X ray machines for Board meeting security • Posted security officers at regional office during working hours • Enhanced security guard presence • Implemented secure reception counters in Human Resources, Sacramento Regional Office • Increased security control for Board offsite meetings							
Management's Risk Response Strategies: Ongoing Risk Response							
 Collect keys and obtain and deactivate access cards when personnel terminate employment with CalPERS Build and implement a comprehensive security plan, periodically review and update it Periodically upgrade security system Setup closed-circuit television (CCTV) cameras and monitor 24/7 Continuously store all checks and deposit forms in locked cabinets and restrict access to management only Protect CalPERS from exposure to threats via mail receipt by using mail scanning system 							
Management's Risk Response Strategies: Planned Risk Response							
 Ongoing risk response will also serve as planned risk response 							