

# IDB-ECO PROJECT RISK MANAGEMENT WORKSHOP

ANKARA  
28-31 MARCH 2012

# World Bank/ IBRD/ IDA

The risks the Bank is concerned with are risks to achieving the results of the operation. What is needed is an approach that

- helps teams design operations that take into account the operating environment,
- links risks to desired results and development objectives,
- differentiates projects on the basis of risks and allows a closer link to resources,
- creates a better environment for learning about risks, and
- allows the Bank to examine the risk attributes of the portfolio.

## **A comprehensive framework for considering investment lending (IL) risks—**

- operational environment risks,
- implementation agency risks,
- project risks, and
- stakeholder risks— and
- mitigation measures.

### **Using this framework;**

- the level of risk are determined at the early stages of project preparation.
- Low-risk operations are processed with simpler documentation and procedures
- Higher-risk projects follow the full process

- The risk assessment continues through implementation and the risk profile updated at least annually to facilitate early identification of problems and a prompt response to them.
- the framework also allows risk assessment of the overall portfolio for various levels of the institution.

# Governance system

## **Risk System Governance**

Governance structure for the risk system is integrated into project processing, is executed in a collaborative way,

- differentiates governance and budgetary decisions by risk,
- provides a third-party perspective,
- The structure calls for independent risk verification using both corporate and Regional resources.
- clarifies the roles of various units and accountabilities for task teams, country and sector management units, and Regional management and quality teams.

## **Supervision and Implementation Support**

most of the emphasis on inputs, process, and oversight of compliance. The Bank tends to allocate **insufficient resources** to supervision.

- **Culture shift needed** —from a culture of *supervision* to a culture of *implementation support*, in which teams spend a greater proportion of available resources to help clients address implementation issues, quickly resolve problems, and build capacity.
- **Incentives** to support this shift are also needed, as part of a general culture change that seeks to value implementation results more highly than is the case today.

# Risk Approach to Investment Lending

- **Risks to what?**

- Risks to achieving development effectiveness as reflected in the results to be generated by Bank operations.
- Strengthening the risk approach contributes to strengthening the results frameworks of investment operations.
- Development objectives and the monitoring systems to measure progress have to be clear if risk analysis is to be properly undertaken.

- **Risk During Life Cycle**

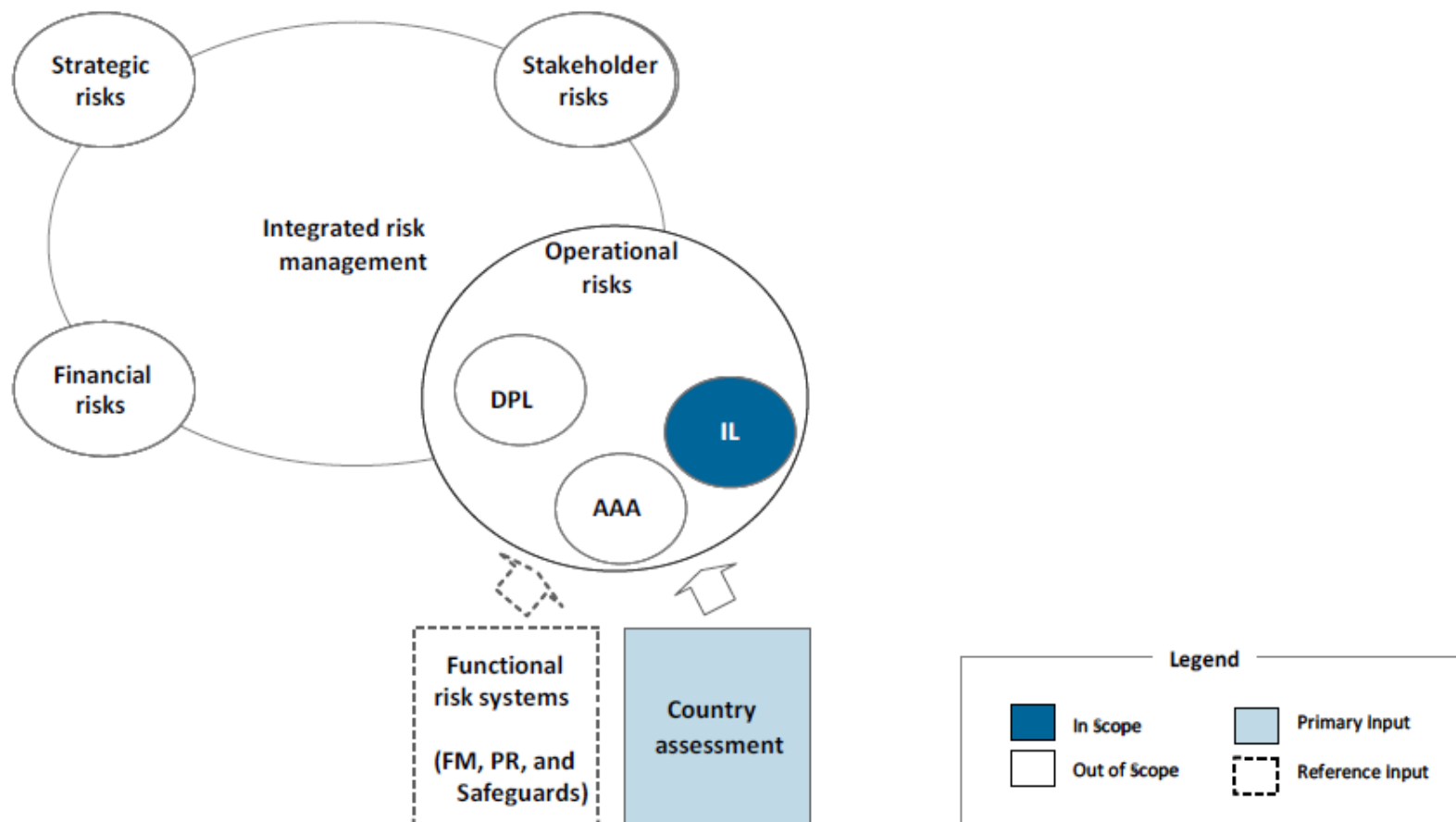
- During **preparation**, the risk assessment system provides
- an early check on the clarity of the results framework. During **implementation**, risks can be properly monitored only if the results monitoring system provides reliable information on progress.

- *Flexibility in Project Preparation.*
- *Strengthened Implementation Support.*
- *Portfolio-Level Risk Assessment.*



## B. Link to the Overall Bank Risk Management System

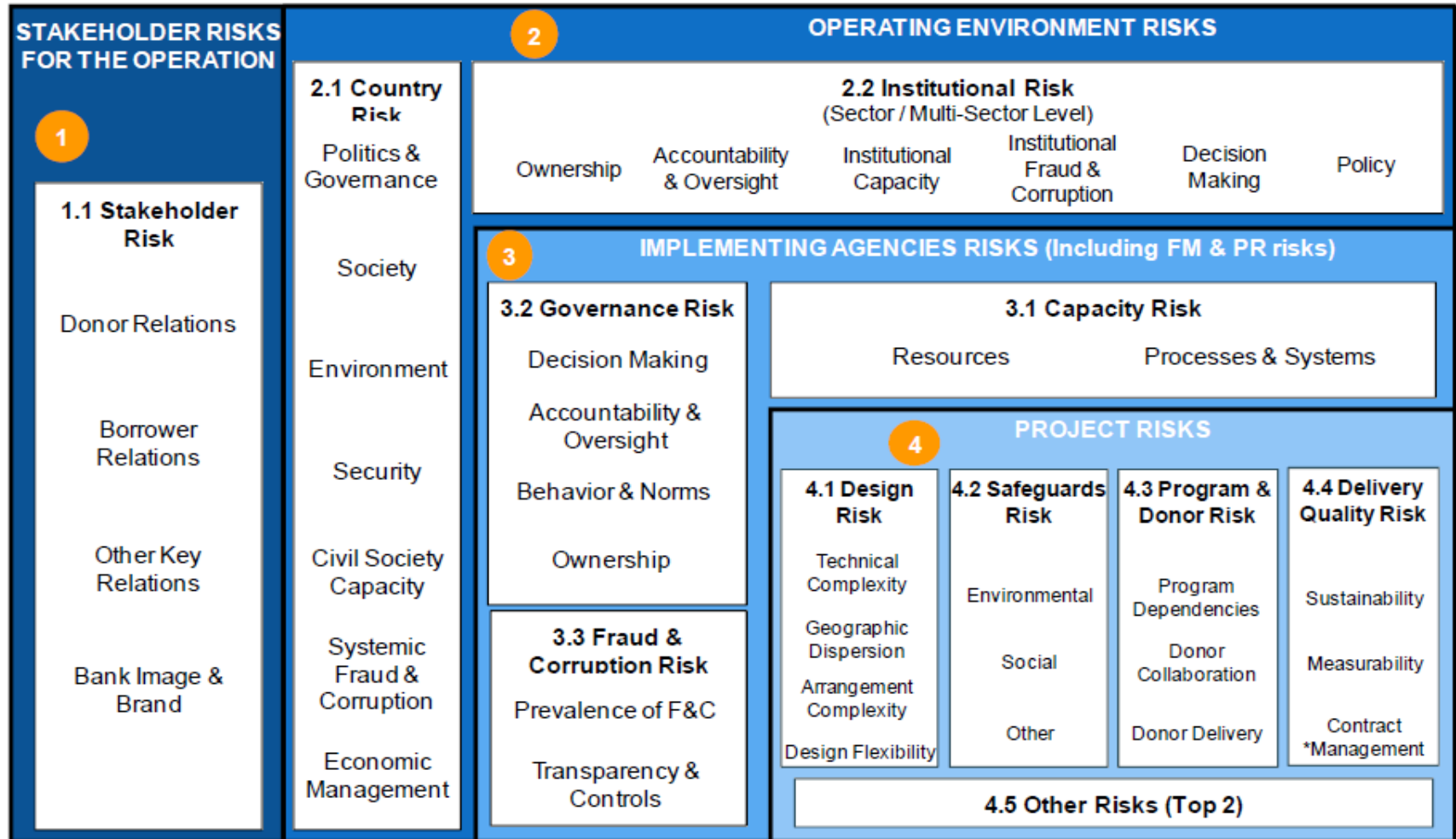
Figure 1. Relationship between Institutional Risk Framework and IL



Source: IL Reform Working Group, based on CSRVP original.

# Operational Risk Assessment Framework (ORAF)

Figure 2. Operational Risk Assessment Framework for Investment Lending



Source: IL Reform Working Group.

## Principles Behind the Risk Categories.

There are four basic principles behind the categories.

- designed to be comprehensive without being overwhelming.
- come with a standardized set of definitions and guidelines, enabling a more uniform application across operations and across Regions.
- provide an integrated risk view, notably at the agency level
- Most importantly, the lens for the work is the link to development objectives.

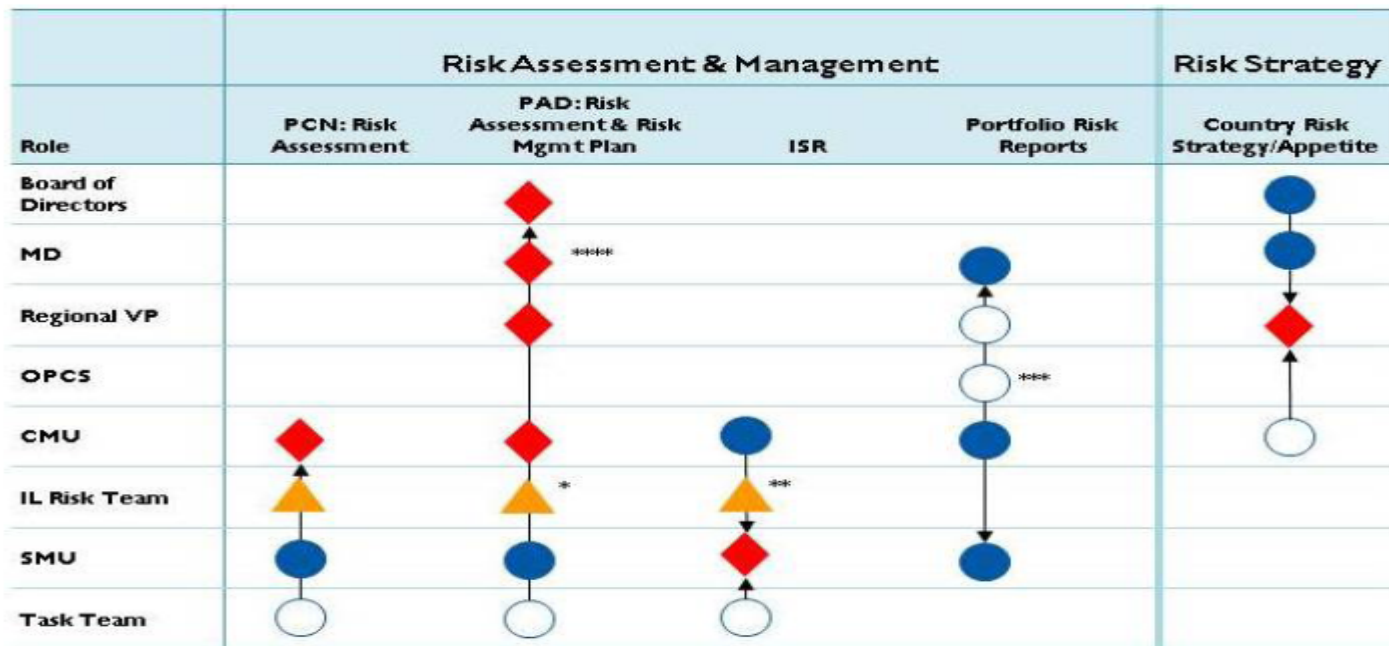
For instance, task teams will first define the key results they aim to achieve in meeting project objectives and then, using a set of guiding questions, rate the various risks to the operation's ability to achieve those results and objectives. The analysis is required at the project level, but teams can use the methodology to identify risks at the component level if that proves helpful to their needs.

- Risk Rating
- Timing for Mitigation
- Use of the Risk Framework Throughout Implementation
- Assessing Bankwide Portfolio Risks
- **Risk System Governance**
- Building on leading practices in risk management, both the risk framework and its proposed governance system are designed to be an integral part of the project appraisal and implementation process, not an add-on.
- (a) **Integration.** Risk governance should be an integral part of the overall governance structure of an organization, and risk management should be an important part of the roles and responsibilities of all management layers involved.
- (b) **Collaboration.** Risk assessment and management should be executed through a collaborative team effort.

- (c) ***Third-party perspective.*** Objectivity should be institutionalized in risk processes by including an independent, third-party perspective supported by objective, well calibrated tools in risk assessment.
- (d) ***Work flow differentiated by risk.*** Governance and budgetary decisions should be differentiated by risk level.
- (e) ***Dynamic process.*** The approach should be dynamic, with a mechanism for reassessment during implementation.
- ***Clear corporate ownership of the framework.*** IL risk processes and reporting should be owned by a corporate function to ensure quality, harmonization, transparency, integrity, and regular review and refinement of processes and tools.

# Roles and Responsibilities

Figure 3. Risk Governance Framework



\* Does not apply to low risk projects  
 \*\* Sample project quality review

\*\*\* Responsible for corporate level portfolio risk reporting  
 \*\*\*\* Review of operations going through an OC

Source: IL Reform Working Group.

# Independent Risk Team

- powerful leading practice for effective implementation of a risk-based approach is to use an independent advisory Risk Team—not an entity with management approval authority, but a reliable and knowledgeable resource for both project teams and management approval bodies.
- The Risk Team assists Regional and country teams in four ways.
- *Provide a constructive challenge to task team risk evaluations*
- *Introduce expert insights and learning*
- *Provide an advisory opinion for management consideration*
- *Expedite the risk skills transfer process and enhance portfolio impact*

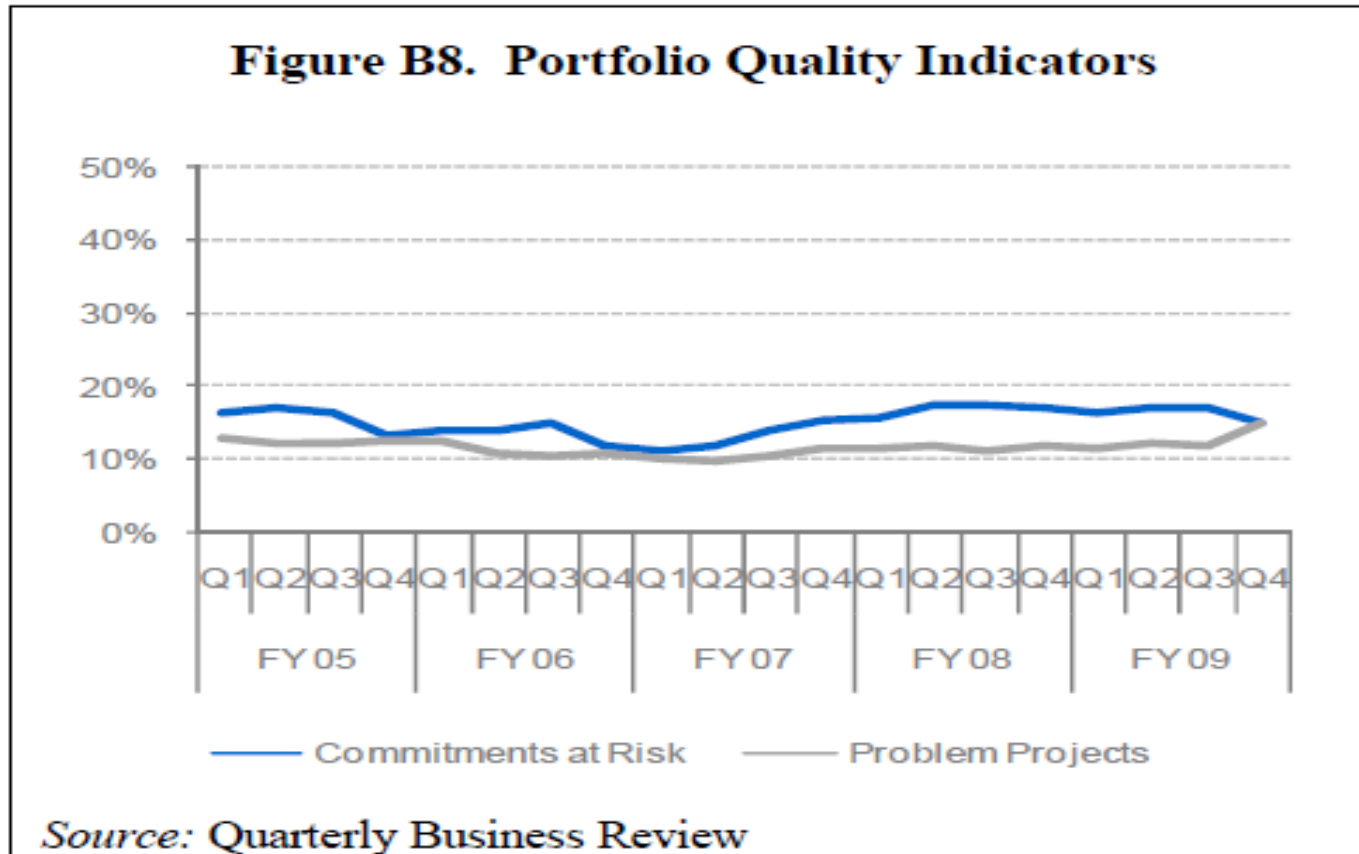
**Table 2. Risk-Based Approach to Preparation and Implementation Support**

		<i>Preparation risks</i>	
		<i>Low Risk Fast Track</i>	<i>Medium/High Risk-Standard Preparation</i>
<b>Implementation support</b>	<b>Low Risk Basic IS</b>	<ul style="list-style-type: none"> <li>• Low-risk IL (preparation and IS)</li> <li>• Additional financing generally falls in this group</li> </ul>	<ul style="list-style-type: none"> <li>• High-risk IL for which risk is in preparation (e.g., infrastructure operations: risks are up front)</li> </ul>
	<b>Medium/High Risk Enhanced IS</b>	<ul style="list-style-type: none"> <li>• High-risk IL with risks concentrated during implementation (e.g., operations for which specifics are defined during implementation)</li> <li>• OP 8.00 operations are an example of high-risk operations with fast-track preparation and enhanced IS</li> </ul>	<ul style="list-style-type: none"> <li>• High-risk operations for which risks are both during preparation and implementation</li> </ul>

Source: IL Reform Working Group.



**Problem Projects.** Bankwide problem projects have remained stable over the past years but increased minimally in Q4 FY09, with 15 percent of projects in the current portfolio rated as problem projects compared to 12 percent in FY08. Projects at risk have grown from approximately 18 percent at the end of FY08 to the current level of 22 percent



# Washington State Department of Transportation

Project risk management is a scalable activity and should be

- commensurate with the size and complexity of the project under consideration.
- Simpler projects may utilize simple qualitative analysis as found in the Project Management Online Guide in the Risk Management Plan spreadsheet.
- Larger more complex projects may wish to use more robust analysis techniques via Monte-Carlo simulation models.

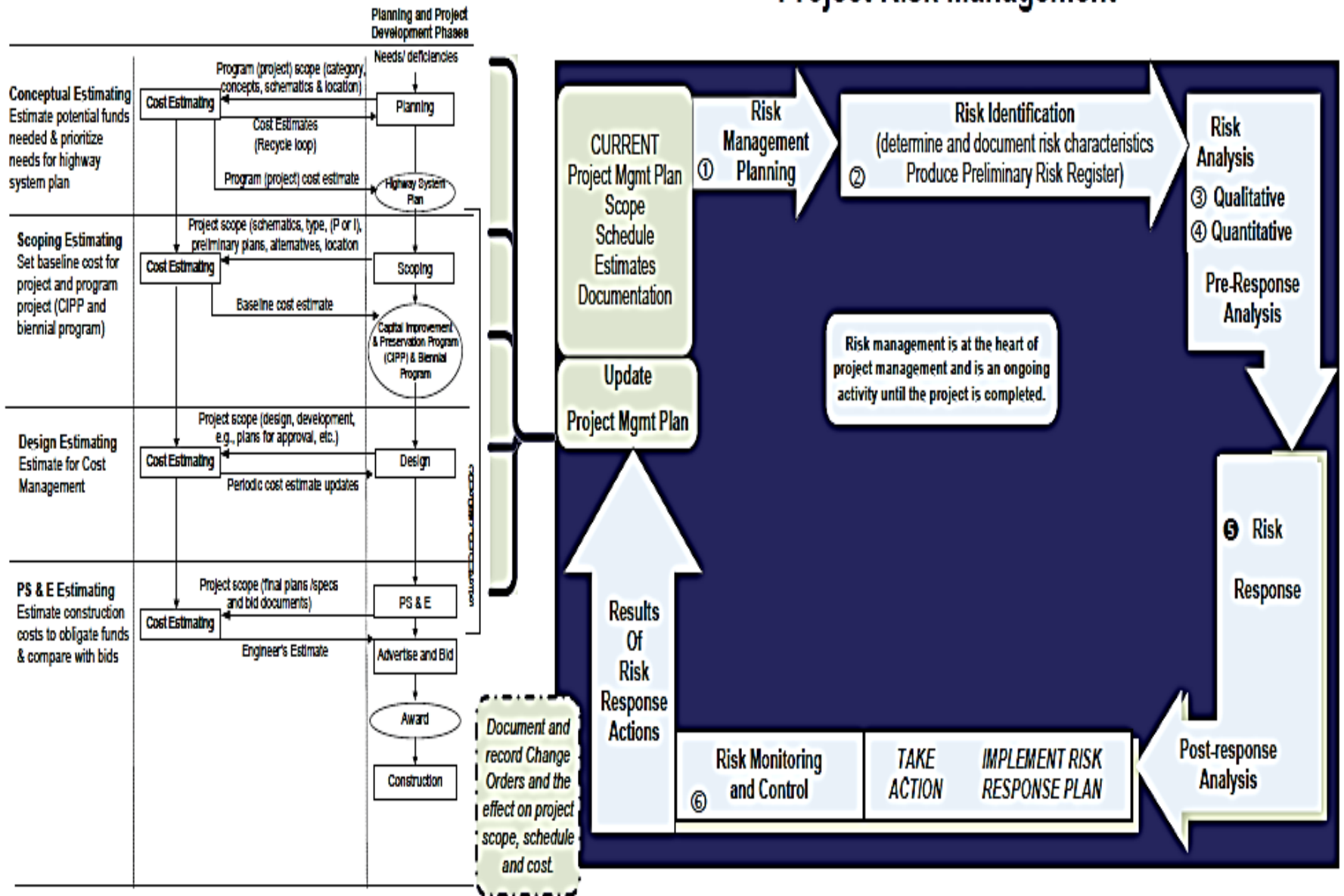
- “No construction project is risk free. Risk can be managed, minimized, shared, transferred, or accepted. It cannot be
- ignored.”

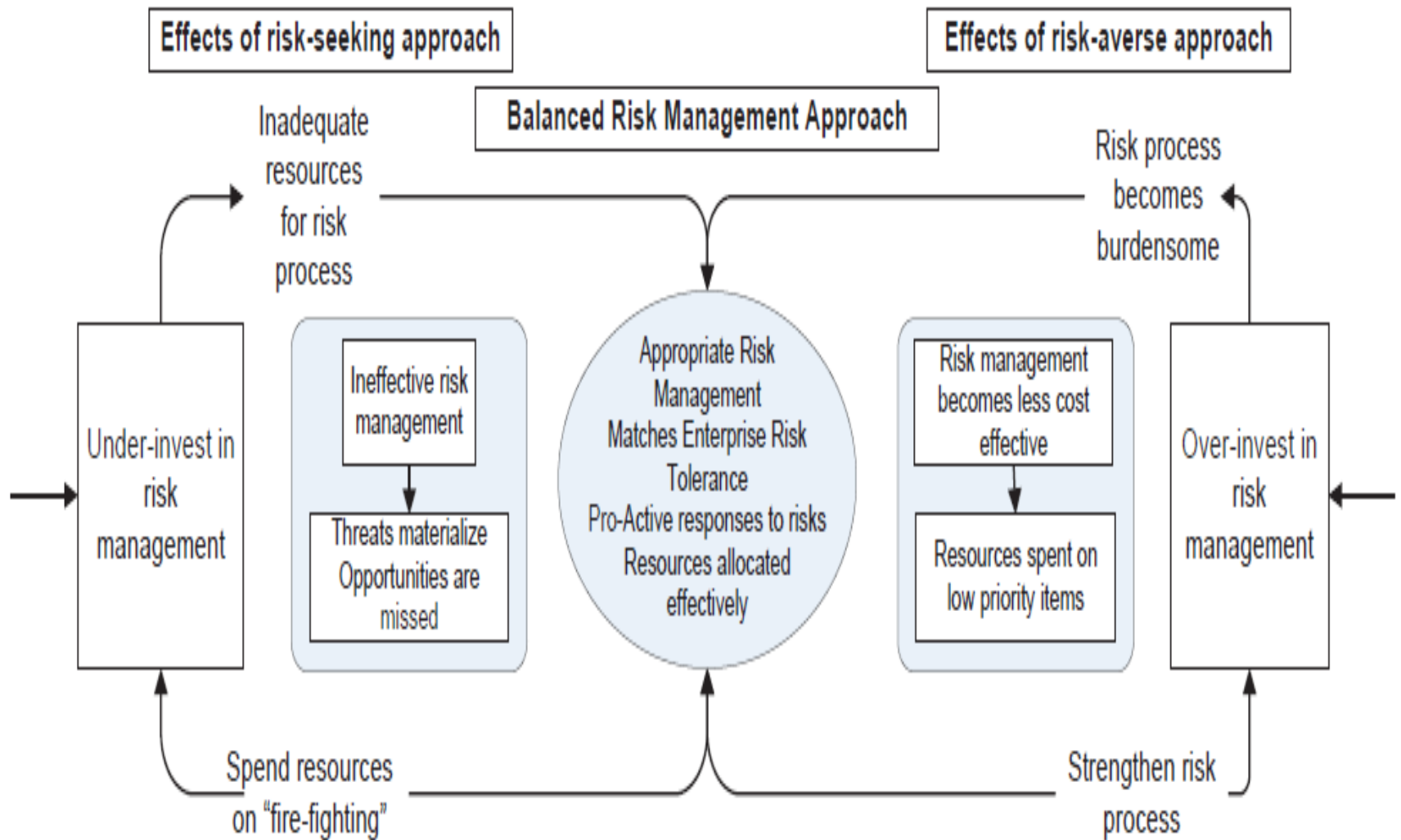
Sir Michael Latham, 1994

# Various types of risks

Type of risk management	Description	Sample objectives
Generic	Risk: any uncertainty that, if it occurs, would affect one or more <i>objectives</i> .	-
<b>Project risk management</b>	<b><i>Project Risk</i></b> : any uncertainty that, if it occurs, would affect one or more <b><i>project objectives</i></b> .	<b>Time, cost</b> , performance, quality, scope, client satisfaction.
Business risk management	<i>Business Risk</i> : any uncertainty that, if it occurs, would affect one or more <i>business objectives</i> .	Profitability, market share, competitiveness, Internal Rate of Return (IRR), reputation, repeat work, share price.
Safety risk management	<i>Safety Risk</i> : any uncertainty that, if it occurs, would affect one or more <i>safety objectives</i> .	Low accident rate, minimal lost days, reduced insurance premiums, regulatory compliance.
Technical risk management	<i>Technical Risk</i> : any uncertainty that, if it occurs, would affect one or more <i>technical objectives</i> .	Performance, functionality, reliability, maintainability.
Security risk management	<i>Technical Risk</i> : any uncertainty that, if it occurs, would affect one or more <i>security objectives</i> .	Information security, physical security, asset security, personnel security.
Credit: David Hillson, Effective Opportunity Management for Projects		

# Project Risk Management





## **STATEMENT OF POLICY: Project Risk Management and Risk Based Estimating**

It is the policy of the Washington State Department of Transportation (WSDOT) to conduct risk based estimating workshops for all projects over \$10 Million (PE, R/W and Const). These workshops provide information to project managers that can help them control scope, cost, schedule, and manage risks for all projects. This policy reaffirms the requirement that a **risk management plan** is a component of every project management plan.

Levels of risk based estimating, in support of risk management (E 53.00):

<b>Project Size (\$)</b>	<b>Required Process</b> (project managers can use a higher level process if desired)
Less than \$10 M	Qualitative Spreadsheet in the Project Management Online Guide <sup>1</sup>
\$10 M to \$25 M	In-formal workshop using the Self-Modeling Spreadsheet <sup>1, 3</sup>
\$25 M to \$100 M	Cost Risk Assessment (CRA) Workshop <sup>1, 2</sup>
Greater than \$100 M	Cost Estimate Validation Process (CEVP®) Workshop <sup>2</sup>

- 1 In some cases it is acceptable to combine the Value Engineering Study and Risk Based Estimating Workshop.
- 2 Projects \$25 Million and over should use the self-modeling spreadsheet in the scoping phase risk based estimating process, followed up by the more formal CRA or CEVP® process during the design phase.
- 3 An informal workshop is comprised of the project team (or key project team members), other participants may be included as the project manager/project team deem necessary.

	CRA	CEVP®
Workshop length	1 – 2 days	3 – 5 days
Subject Matter Experts	Internal and local.	Internal and external.
Timing (when to hold workshop)	Anytime. Typically updated when design changes or other changes to the project warrant an updated CRA.	Best to start early in the process, major projects are typically updated as needed.
General	An assessment of risks with an evaluation and update of costs and schedule estimates.	An intense workshop that provides an external validation of cost and schedule estimates and assesses risks.

**Note:** Workshops are orchestrated by the Cost Risk Estimating Management (CREM) unit of the Strategic Analysis and Estimating Office in HQ in collaboration with the project manager. The project manager submits a workshop request and works with the CREM unit to ascertain the type of workshop required and candidate participants. See WSDOT Guidelines for CRA-CEVP workshops for more details.





We can think of risk management as depicted above, the two pillars of risk management are “IDENTIFY and ANALYZE” the risks then, as depicted in the second pillar “RESPOND, MONITOR and CONTROL” project risk.

	Project Size (\$M)	Risk Assessment Level	Notes
Less Formal Risk Assessment	0 to 10	Project Team Risk Assessment Project Management Online Guide (PMOG) Risk Management Plan <i>Qualitative Tool</i>	The Project team assesses each identified risk for its probability of occurrence and its impact on project objectives. Project teams may request assistance from subject matter experts or functional units to assess the risks in their respective fields. The self-modeling spreadsheet can be used for any project.
	10 to 25	Project Team Risk Assessment Self-Modeling Spreadsheet <i>Quantitative Tool</i>	
More Formal Risk Assessment (Workshops)	25 to 100	Cost Risk Assessment (CRA) Workshop <i>Quantitative Tool</i>	The team, working collaboratively with independent subject matter experts, reviews and/or validates cost and schedule estimating and identifies, characterizes and analyzes risks. Accomplished in a structured workshop setting. Modeling can be accomplished with off the shelf software or using the self-modeling spreadsheet.
	Over 100	Cost Estimate Validation Process (CEVP) Workshop <i>Quantitative Tool</i>	

### Determine the Level of Risk Assessment

<p align="center"><b>Less Formal Risk Assessment (does not require a Formal Workshop) Milestones include:</b></p>	<p align="center"><b>Formal Workshop (CRA/CEVP) Milestones include:</b></p>
<ul style="list-style-type: none"> <li>• Project Scope, Schedule and Estimate are complete (apt for the level of development)</li> <li>• Prep meeting (initial review of areas of concern, determine tool qualitative or self-modeling)</li> <li>• Risk Meeting (risks are identified and characterized)</li> <li>• Risk Response Actions Developed</li> <li>• Risk Response Actions Implemented</li> </ul>	<ul style="list-style-type: none"> <li>• Workshop Request Form submitted</li> <li>• Project Scope, Schedule and Estimate are complete (apt for the level of development)</li> <li>• Prep Session (flowchart project; determine subject matter experts; additional prep items)</li> <li>• Workshop</li> <li>• Preliminary Results Presented</li> <li>• Draft Report</li> <li>• Final Report</li> </ul>

**Include Risk Management Milestones in the project schedule.**

- **Identify Risk Events**
- **How to Identify Risk**
- #1 Determine risk thresholds for the project (establish a minimum dollar amount and time duration considered significant for the project under evaluation).
- #2 Focus on identifying large significant risks which affect project objectives.
- #3 Carefully document and describe risks in a risk register.

**Brainstorming** - is an effective method. Brainstorming can range from a small informal project team effort for simpler projects to a full-blown CEVP workshop. Effective brainstorming requires a skilled facilitator, working together with the project team and specialists who can bring additional expertise.

**Checklists and/or Questionnaires to `specialty groups** - checklists/questionnaires are a quick and easy-to-use technique but limited in nature; they only deal with the items on the list. Each project is unique; hence a standard list will often not capture the project specific risks of most concern. Nonetheless a checklist/questionnaire can spark thinking prior to a more formal brainstorming process.

**Examination of past similar projects** - lessons learned from past projects help us to avoid repeating mistakes; using past examples requires prudent and objective judgment, since a previous project may be similar but is nonetheless different because each new project has unique requirements and features, including uncertainties and risks.

WSDOT Lessons Learned website:

<http://eefmapps.wsdot.wa.gov/fmi/xsl/Lessons/Main.xsl?-db=DebriefReport&-lay=LessonWebForm&MonthlyHighlight=Yes&-find>

**Combination of above methods and/or others** - It is quite likely that for most projects a combination of the above methods will be used to identify risks. The important thing is that once identified the risks are properly documented.

Figure 2-1 Blank template for documenting identified risks (tailor to your needs).

Figure 2-2 Example of how template is used.

Figure 2-3 Risk Breakdown Structure for categorizing and organizing risks.

Figure 2-4 Example of risk identification using spreadsheet from Project Management Online

Guide found at: [http://www.wsdot.wa.gov/Projects/ProjectMgmt/OnLine\\_Guide/Phase\\_Guides/Pre-Construction/Pre-Construction\\_files/slide0001.htm](http://www.wsdot.wa.gov/Projects/ProjectMgmt/OnLine_Guide/Phase_Guides/Pre-Construction/Pre-Construction_files/slide0001.htm)

## Risk Identification

Pre-mitigated					EXAMPLE ONLY					
Risk #	Status	Dependency	Project Phase	Summary Description Threat and/or Opportunity	Detailed Description of Risk Event (Specific, Measurable, Attributable, Relevant, Timebound) [SMART]	Risk Trigger	Type	Probability Correlation	Risk Impact (\$M or Mo)	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	[10a]	(11)
CNS 40	Active		Construction	Threat	Although significant pre-construction site investigations are to be conducted there is still some risk of undiscovered subsurface contaminants in this project. If these contaminants are discovered during construction it can impact both cost and schedule. Because of the nature of the project corridor the area of greatest concern is in the latter half of the project, hence our exposure is primarily during the second year of construction.	discovery during construction	Cost	30%	MIN	0.50\$M
				MAX					7.00\$M	
				Most Likely					1.50\$M	
				Master Duration Risk						
				Threat				MIN	1.0Mo	
<p><b>RISK TRIGGER Details (and duration of exposure to this risk):</b> The trigger for this risk is discovery during construction. Our project is over 4 miles in length, the area of most concern, for exposure to unknown subsurface materials, is in the last 1.5 miles of construction; this construction is expected to occur in the final 12 months of construction (~March 2015 to March 2016).</p> <p><b>NOTES:</b> This risk has been discussed for sometime and our concerns are known by management and regional stakeholders.</p> <p><b>POSSIBLE RESPONSE STRATEGIES TO EXPLORE:</b> (1) even though a thorough site investigation is planned we may want to go above and beyond, particularly when investigating the last 1.5 miles of this project; (2) investigate the use of Ground Penetration Radar; (3) look at strategies for reducing project footprint so as to minimize area we are disturbing during construction.</p>										

**SPECIFIC**  
Provide a well written detailed description of the Risk Event. What is the specific issue of concern?

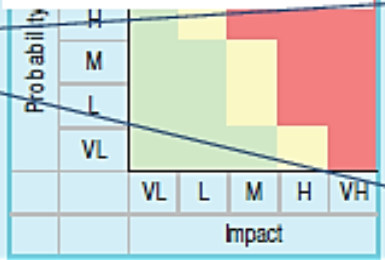
**MEASURABLE**  
Probability of Risk Event Occuring?  
Consequence if it does Occur?  
(impact to cost and schedule)

**ATTRIBUTABLE**  
What will trigger (cause) this risk?  
How do we know?  
Who owns this risk?

**RELEVANT**  
Why is this risk important to our project?  
Will it impact project objectives?  
Is it critical?

**TIMEBOUND**  
Risks have a "shelf life" - that is our project is not exposed to specific risk events indefinitely - when are we at risk?

**EXAMPLE ONLY**



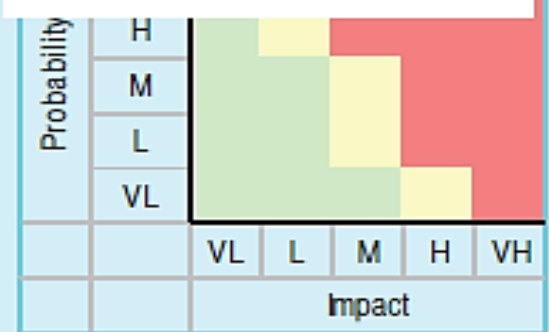
**POTENTIAL RESPONSE ACTIONS?**  
If potential mitigation strategies are mentioned be sure to capture them so they can be more fully explored later.

Pre-mitigated

EXAMPLE ONLY

Risk #	Status	Dependency	Project Phase	Summary Description Threat and/or Opportunity	Detailed Description of Risk Event (Specific, Measurable, Attributable, Relevant, Timebound) [SMART]	Risk Trigger	Type	Probability Correlation	Risk Impact (\$M or Mo)	
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CNS 40	Active		Construction	Threat	Although significant pre-construction site investigations are to be conducted there is still some risk of undiscovered subsurface contaminants in this project. If these contaminants are discovered during construction it can impact both cost and schedule. Because of the nature of the project corridor the area of greatest concern is in the latter half of the project, hence our exposure is primarily during the second year of construction.	discovery during construction	Cost	30%	MIN	0.50\$M
				MAX					7.00\$M	
				Most Likely					1.50\$M	
				0				Master Duration Risk		
								MIN	1.0Mo	
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EXAMPLE ONLY



Project Title:  
Project Manager:  
Date Risk Identified:

Risk Management Guide Example  
Scott Adams  
1-Feb-29

CN Duration Estimate  
PE Estimate  
RW Estimate  
CN Estimate

10.0Mo
2.0\$M
8.0\$M
30.0\$M

Risk ID Sheet/Date

Pre-mitigated or Post mitigated ?							Parameters for Monte-Carlo Modeling			
Risk #	Status	Dependency	Project Phase	Summary Description Threat and/or Opportunity	Detailed Description of Risk Event (Specific, Measurable, Attributable, Relevant, Timebound)	Risk Trigger	Type	Probability Correlation	Risk Impact (\$M or Mo)	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(10a)	(11)
1	Refined		Pre-construction	Threat	Complex project, might require additional time (longer than average) to review. Potential agency staff changes. Tribal issues include fishing rights, effects on fish and habitat, and other environmental concerns. Appeals can be made on any of the major permits, whether based on actual issues with the permits or not. The following specific issues were highlighted: • Shoreline permits from various jurisdictions are of particular concern shoreline permits are easy to challenge and typically result in significant delays. There is a process to weed out frivolous appeals. • New NPDES outfalls (appealable) • HPA issues with WDFW Coast Guard permits for THE channel.	Determination decisions by several agencies. Revisions to our estimated areas of impact	Cost	70%	MIN	0.25\$M
				MAX					2.00\$M	
				Most Likely					0.50\$M	
				Master Duration Risk						
Schedule	MIN	1.0Mo								
	MAX	8.0Mo								
	Most Likely	5.0Mo								

**Supplemental notes about this risk event**

Risk Trigger Details: *Should know by the ides of March.*

Risk Owner: *Mr. Ute Givenz*

Risk Breakdown Structure # (RBS#) *ENV 30.1*

Work Breakdown Structure # (WBS#) *PC-18*

Critical Path (yes or no) *yes*

Response Actions (action to be taken)

*One of the best tools we have to avoid this risk is a concerted, committed & sustained effort to address env. permits upfront & thoroughly. Including verification of jurisdictions and parties of concern and clarify understanding and expectations of all parties.*

*To this end we will form a team to pursue this effort with appropriate representatives from each permitting authority with review dates and commitments.*

Action by date: *February 30, 2929*

Status review date: *March 31, 2929*

Status review date: *April 31, 2929*

**ADDITIONAL NOTES:**

*Actions to implement strategy:*

*What needs to be done?*

*Communication with parties.*

*Succession plan for staff changes.*

*Decisions ASAP on design elements.*

