

**Is your risk register simply “a list of issues”**

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# Topic Overview

1. *A large list of risks quickly becomes unmanageable and turns into a paper chase that everyone ignores, and even 'hates' !*
2. *Risk registers become cluttered with issues that are simply unresolved or even un-designed elements*
3. *Time taken to laboriously review and 'score' a risk register starts to become tedious to management & project staff*
4. *The strive to make a seamless link between a risk register and a risk model complicates matters*
5. *Drafting mitigation plans frustrates Project and Design managers who feel the process starts to micro-manage their normal day to day activities & often over states / elevates issues being managed*
6. *Subduing risks however denies the Owner the opportunity to mitigate*

*This presentation challenges the 'theory' against the 'practical' application of risk management and is designed to 'provoke' comment*

# Topic Overview

- *what the problem is...*
  - *The endless list of risks*
  - *Design / Contract managers wanting their own list of risks*
  - *Scoring / ranking consistency / inconsistency*
  - *Software companies encouraging ‘one size fits all’*
  - *Everyone wants their risk on the register*
  - *A misconception of what a ‘risk’ is*
  - *The desire to place ‘all uncertainty’ on a risk register*
  - *Risk register’s get ‘stale’*
  - *Project wide v’s project / contract specific*
  - *Limited budget / limited resources for RM*

# The Risk Register

- *For....*
  - *Visibility of issues*
  - *Communication of issues*
  - *Challenge in mitigation*
  - *Regulatory Compliance*
  - *Best practice*
- *Against....*
  - *We do it anyway*
  - *Micro management*
  - *We don't want to pay for it*
  - *We'd rather hide 'rumours' and hope they never happen*

# Common to Risk and VE

- *For....*
  - *Visibility of issues*
  - *Communication of issues*
  - *Challenge in mitigation*
  - *Regulatory Compliance*
  - *Best practice*
- *Against....*
  - *We do it anyway*
  - *Micro management*
  - *We don't want to pay for it*
  - *We'd rather hide 'rumours' and hope they never happen*

**Yup ! It's the same list**

+ We would have thought of that ...we have thought of that ...that will never happen ...that didn't happen ...that would have happened anyway

# Consider the process

- *Risk identified*
- *RMC agree whether risk in risk register or not*
- *Once in Risk Register any change has to be agreed by RMC*
- *Wording can be political on large projects subject to FIA therefore RMC needs to validate 'wording changes'*
- *Excessive number of risks and then changes to those risks takes a lot of management time*
- *RMC typically formed of senior management*

*"If you raise a risk you have to manage a risk"*


# Size matters

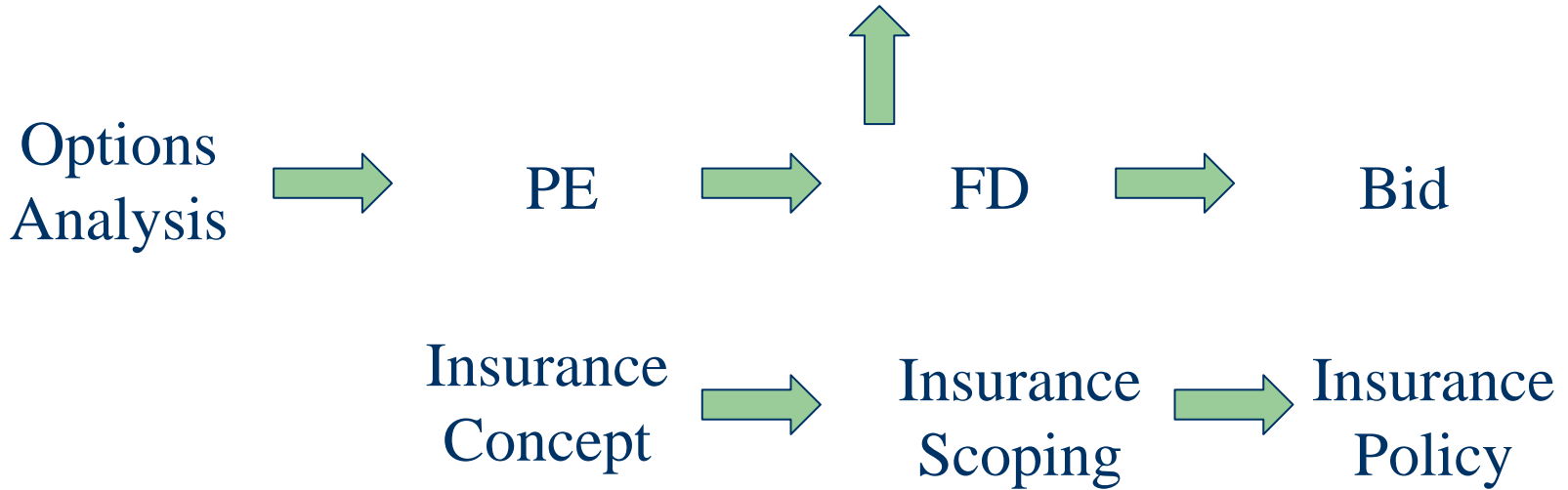
- *Too small...*
  - *Difficult to link to any risk model and loses tractability and audit-ability*
  - *Fails to provide a process and management tool*
- *Too large...*
  - *Becomes a 'ball and chain' sucking management time*
  - *Duplication of impacts*

*Example – Risk allocation plan*

*Contract clauses, insurance, retained / transferred / shared / audit trail*

# Risk Allocation Plan

RISK ALLOCATION PLAN																			
Risk Register Ref #	Contract Clause	Section	Description	Owner	PM / CM	CMCG	CONSULT' ANT	TRADE CONTRACT	Owner Policy	3rd Party Policy	Contractor Policy	Excess to Owner	Retain	Share	Transfer	Retain	Share	Transfer	
				PRIMARY RESPONSIBILITY / OWNERSHIP					Insured Risk					TIME DELAY			COST INCREASE		



Manage & Mitigate Risks



# Risk Types & Groups

- *Scope*
- *Design*
- *Market*
- *Construction*
- *Safety*
- *Security*
- *Environmental [EIS commitments]*
- *Operational Safety [Hazop]*
- *Organizational*
- *Funding / Financial Planning*
- *Reputational*
- *Investor*
- *Compliance*

# Basics – in the context of this presentation

- *Definition – ‘risk’*

*Something which might [or might not] happen and therefore has a probability*

- *Definition – ‘trend’*

*Something which will happen if nothing is done to change it – but that is not yet a ‘agreed change’*

- *Definition - ‘pending change’*

*A change to the baseline impacting scope, budget or schedule that has not yet been ‘sanctioned’*

- *Definition - ‘change’*

*An agreed change to the baseline impacting scope, budget or schedule*

- *Definition – ‘uncertainty’*

*Variability around risk, scope, cost, time, or other project assumption*

# What risks should be on risk register

1. *What function do you want the Risk Register to perform ?*
2. *At what level of detail should risks be captured ?*
3. *How much time and effort will the project budget and resources support*

# Issues v's risks

- *Issues*

- *Design development = Issues*
- *Low risks = Issues*
- *Forget-me-nots = Issues*

- *Risks ..the 'challenge'*

- *Is this something that if it appears in the “news” you would agree has the real potential to impact the project objectives*
- *Define “project objectives”*

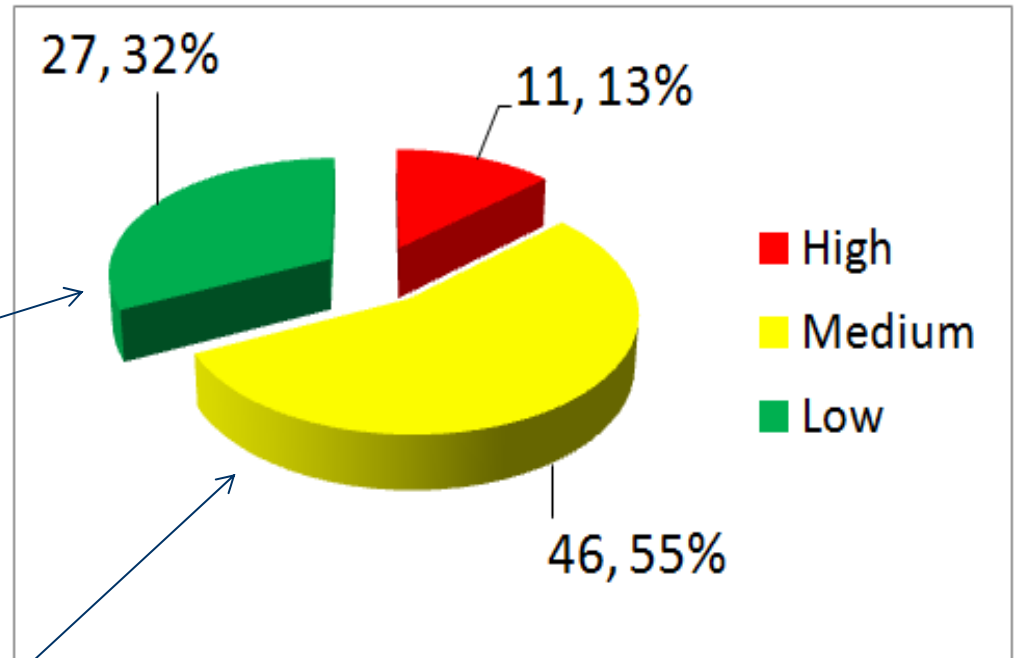
# How many risks should be on the risk register

1. *Does it matter ?*
  2. *Why does it matter ?*
- *Targets :*
    - *Top 10 – project wide*
    - *Top 5 – area / segment / functional area / WBS / Contract package / Senior manager / Discipline*

# How many risks ?

\$2.6B = 84 Risks

Issues ?



Issues  
+  
Risks

RMP's = 20 Risks  
Reds + High Yellow

# Specifics v's Generic

- *House X may require expropriation / condemnation / compulsory purchase*
- *V's*
  - *Some ROW in segment X may need expropriation / condemnation / compulsory purchase*
- *V's*
  - *Some ROW may need expropriation / condemnation / compulsory purchase*
- *600 Acquisitions v's 5 Segments v's 1 Project*

## ISSUES TO CONSIDER ...

- *Commercially better not to name individual properties*
- *Scoring may compromise negotiations [visible through FIA]*
- *Less detail harder to 'model'*
- *Time to review each entry*
- *Will mitigation plan cover all instances ? Is mitigation plan common to all*

# Specifics v's Generic

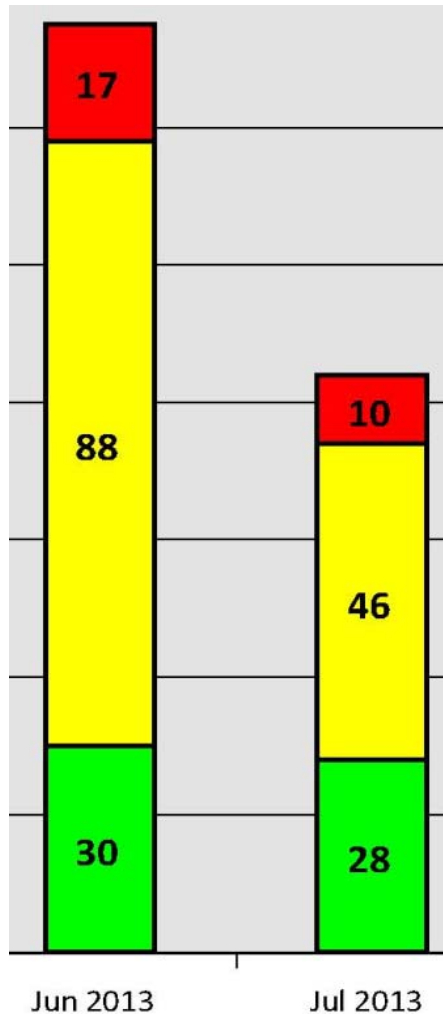
- *Archeology may be uncovered at Bridge X*
- *V's*
  - *Archeology may be uncovered in Segment Y*
- *V's*
  - *Archeology may be uncovered somewhere*
- *30 Bridges v's 5 Segments v's 1 Project*

## ISSUES TO CONSIDER ...

- *Is Archeology more likely at one location than another*
- *Can its possibility / risk be managed separately*
- *Will the impact vary at different locations [ie. Areas with float / no float]*
- *Will mitigation plan cover all instances ? Is mitigation plan common to all*

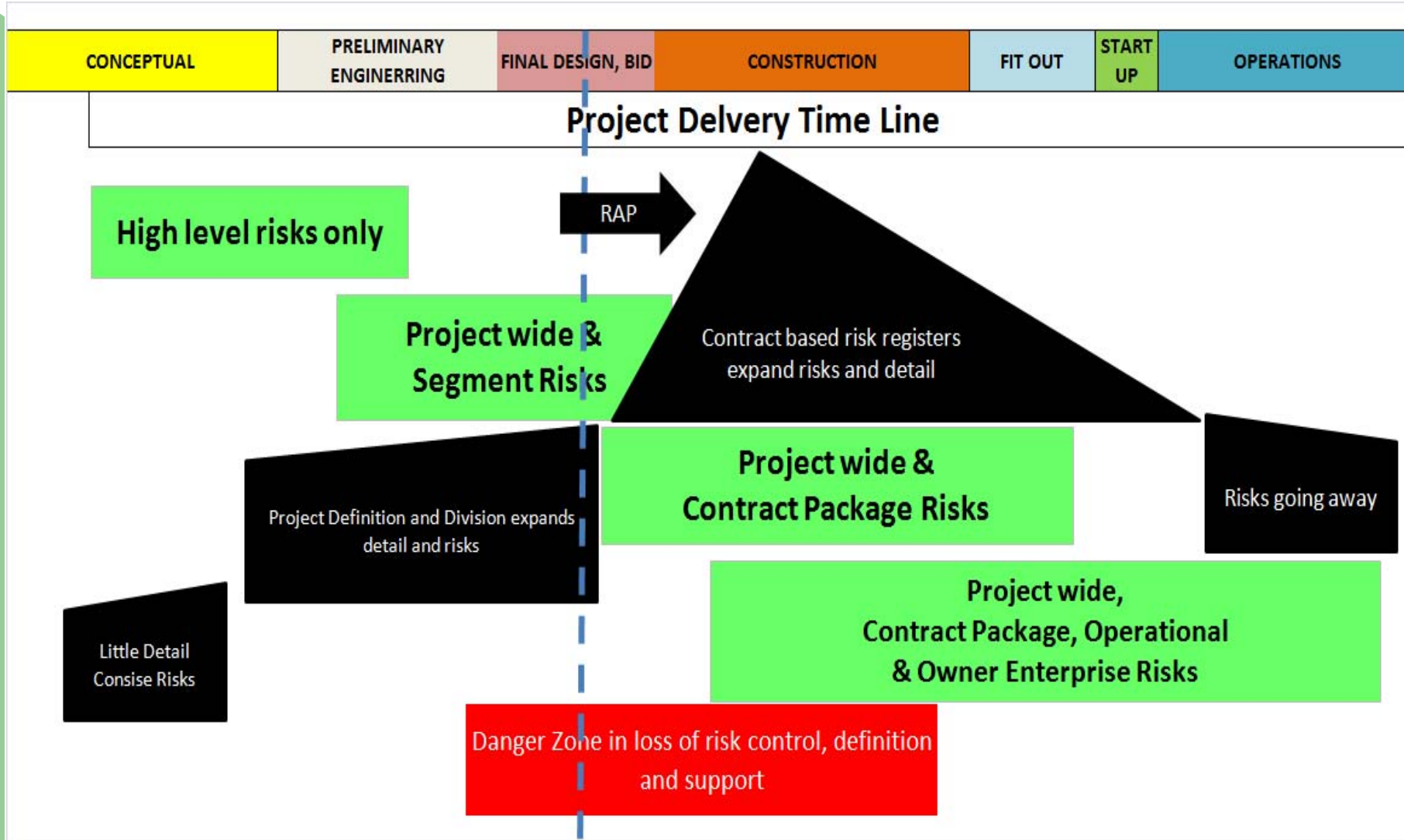


# Cleaning up the risk register



- *V. Low greens = delete*
- *Low greens = Issues*
- *Duplication removed*
- *Specifics removed if generic will encompass RMP*
- *Target per major discipline*
- *Rationalize with respect to time to manage*
- *Eliminate Design Development issues*
- *Treat uncertainty as a “modelling exercise” [Risk Report explains sensitivity]*

# The danger zone



# Risk ranking and scoring

## Purpose:

- Communicate severity of risk
- Prioritise risk mitigation
- Measure risk reduction
- Influence contingency
- Show pro-active Project Management
- Show 'control' of project scope, cost, schedule

Use either  
(Highest impact x probability )  
OR  
([Impact A + Impact B] / %)

Legend	Low (1)	Med(2)	High (3)	Very High (4)	Significant (5)
Probability	<10%	10% > 50%	>50%	75% > 90%	>90%
Cost	<\$250K	\$250K > \$1M	\$1M > \$3M	\$3M > \$10M	>\$10M
Schedule	< 1 Mths	1 > 3 Mths	3 > 6 Mths	6 > 12 Mths	> 12 Mths
Rating	<=3	3.1-9.49		>=9.5	

X 10 = 5-10%  
of Budget



Should there  
be a  
relationship ?

Related to  
schedule  
sensitivity

3 x 5 matrix

# Risk ranking and scoring

## RISK SCORING MATRIX (FOR INDIVIDUAL AND GENERIC RISKS)

### Probability Categories

Score	Descriptor	Description
1	Improbable	about 1 in 1000
2	Remote	about 1 in 100
3	Unlikely	about 1 in 10
4	Likely	more likely to happen than not
5	Certain	expect it to happen

### Risk Profile

Likelihood Score	Severity Score				
	1	2	3	4	5
5	Yellow	Red	Red	Red	Red
4	Yellow	Yellow	Red	Red	Red
3	Green	Yellow	Yellow	Red	Red
2	Green	Green	Yellow	Yellow	Red
1	Green	Green	Green	Yellow	Yellow

LOW MEDIUM HIGH

Score	Impact
1	<ul style="list-style-type: none"> <li>• Insignificant or negligible impact on Project</li> <li>• Schedule delay = 1 month or less</li> </ul>
	<ul style="list-style-type: none"> <li>• \$0 to \$100K extra cost</li> <li>• No change in operating speeds and reliability of the Project</li> <li>• Minor design detail changes</li> </ul>
2	<ul style="list-style-type: none"> <li>• Minor impact on Project - Delay in accomplishing Project objectives</li> <li>• Schedule delay= 1 to 3 months</li> </ul>
	<ul style="list-style-type: none"> <li>• \$100k to \$1 M extra cost (up to 0.1% of assumed base cost of Project)</li> <li>• Minor impact on operating speeds and reliability of the Project</li> <li>• Minor design detail changes applied extensively or to multiple locations.</li> </ul>
3	<ul style="list-style-type: none"> <li>• Significant impact on Project</li> </ul>
	<ul style="list-style-type: none"> <li>• Schedule delay in opening of non-critical areas</li> <li>• \$1 M to \$10 M extra cost (up to 1% of assumed base cost of Project)</li> <li>• Moderate impact on operating speeds and reliability of the Project</li> </ul>
4	<ul style="list-style-type: none"> <li>• Major impact on Project - Fundamental re-work required (e.g., Project re-design or re-approval)</li> <li>• Alignment change</li> </ul>
	<ul style="list-style-type: none"> <li>• Schedule delay in opening of critical areas</li> <li>• &gt;\$10 M extra cost</li> <li>• Major impact on operating speeds and reliability of the Project</li> </ul>
5	<ul style="list-style-type: none"> <li>• Project abandoned</li> </ul>

Single combined impact score

# Risk ranking and scoring

		Severity				
		Low		Medium		High
		1	2	3	4	5
Likelihood	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5

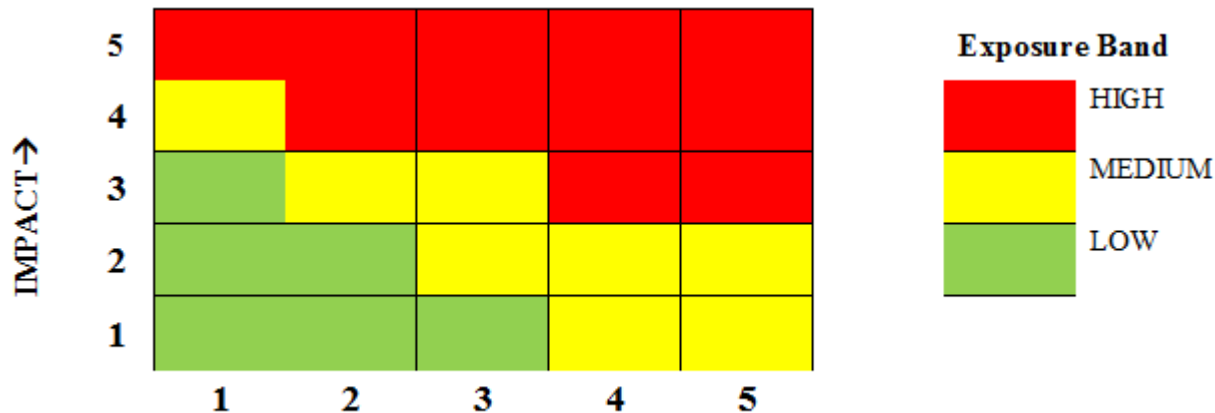
Single combined impact score with both probability and impact subjective weightings

# Risk ranking and scoring

For very large projects consider a Level 1 and level 2 Matrix

Project Level  
Contract Level

	1	2	3	4	5
Likelihood	Very Unlikely (1 - 10%)	Unlikely (11 - 35%)	50/50 chance (36 - 64%)	Likely (65 - 89%)	Highly Likely/ Near certainty (90 - 99%)
Cost Impact (\$)	Tens of Thousands (\$10,000 to \$100,000)	Hundreds of Thousands (\$100,000 to \$1 Mil)	Millions (\$1 to \$10 Mil)	Tens of Millions (\$10 to \$100 Mil)	Hundreds of Millions (>\$100 Mil)
Schedule Impact (workdays)	Days	Weeks	1-3 Months	3-12 Months	Year or longer



Level 1 example



Gardner & Theobald

Measured risk reduction

Risk Mitigation Plans		Date	Risk Owner		Rating	
		July 29, 2011			Current	Prior
Risk ID 126	Description Properties : Station and Guideway may be more difficult than currently assumed, increasing costs and ROW schedule.					
Section Right of Way						
<b>Risk Mitigation Actions</b>						
#	Action Description	Deliverable	Due Date	Action By	Status	
1	Make offers to property owners of Banana Patch.	Offers Made	5/10/2011	ROW Team	Complete except for property with environmental issues.	
2	Continue aggressive efforts to relocate families.	Properties turned over	4/1/2012	ROW Team	Ongoing	
3	Meet with property owner of remaining property to discuss remediation.	Meeting	8/3/2011	Jerry Iwata	Upcoming	
4	Make decision on how to advance acquisition of remaining property.	Offer to property owner	8/3/2011	ROW Team	Upcoming	
<b>July 29, 2011</b>		<b>Monthly Status Report</b>				<b>#4</b>
9 of the 10 properties have accepted offers. City owns 5 of the 10 properties. 4 properties are in escrow and should be acquired by October 2011. 1 family has relocated and another is scheduled to move to new home by end of August. Another family has closed on replacement property and is in process of constructing new home and expected to move by Jan. 2012.						
<b>June 24, 2011</b>		<b>Monthly Status Report</b>				<b>#3</b>
8 of the 10 properties have accepted offers. In discussion with property owner concerning environmental issues. Decision to be made by owner if they will remediate site at their own expense. Believe that negotiations will conclude with remaining properties by the end of June.						

LIMIT PLAN TO FOUR ROLLING ACTIONS

MEASURABLE DELIVERABLES WITH 'DUE BY DATES'

Simple and practical

Risk Mitigation Plan



# Topic Overview

- *Closing statement...*
  - *It's never going to be a 'perfect' and complete 'list'*
  - *Compromises will be required to achieve a balance*
  - *Auditors will need to 'accept' the constraints*
  - *Owners will need to be mindful of limitations*
  - *Risk managers must act as the system and process arbitrators*
  - *Risks can be downgraded to 'issues' to keep them on the 'list'*
  - *Is risk 'insignificant' in the 'whole'*
  - *Is there a mitigation plan*
  - *Databases can manage any number of risks – is that an excuse or reason not to limit ?*



# Last Slide

## Contact info

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