



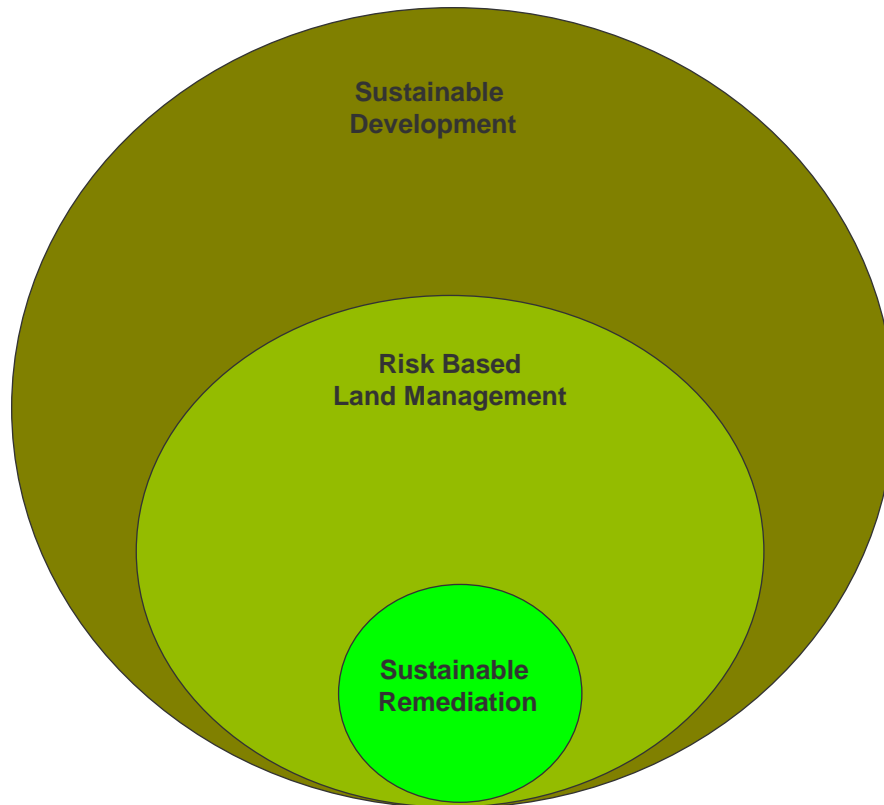
Is Risk Assessment Sustainable?

Alan Thomas & John Waters
Environmental Resources Management (ERM)
www.erm.com

john.waters@erm.com

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Why is this question important?



Considering the contribution of remediation work to sustainable development is an emerging challenge at least as great in its difficulty as the development of risk based decision making, and with the same capacity to profoundly change how we manage contaminated land in the future

(Clarinet 2002)

The Opportunity



Bringing an impacted brownfield site back into beneficial re-use with consequent environmental, social and economic benefits

The Challenge



Quantitative risk assessment is typically the dominant tool, in line with contaminated land regulations, in determining clean-up goals

Yet this may ignore other key factors crucial to sustainable remediation



Interface between risk and remediation

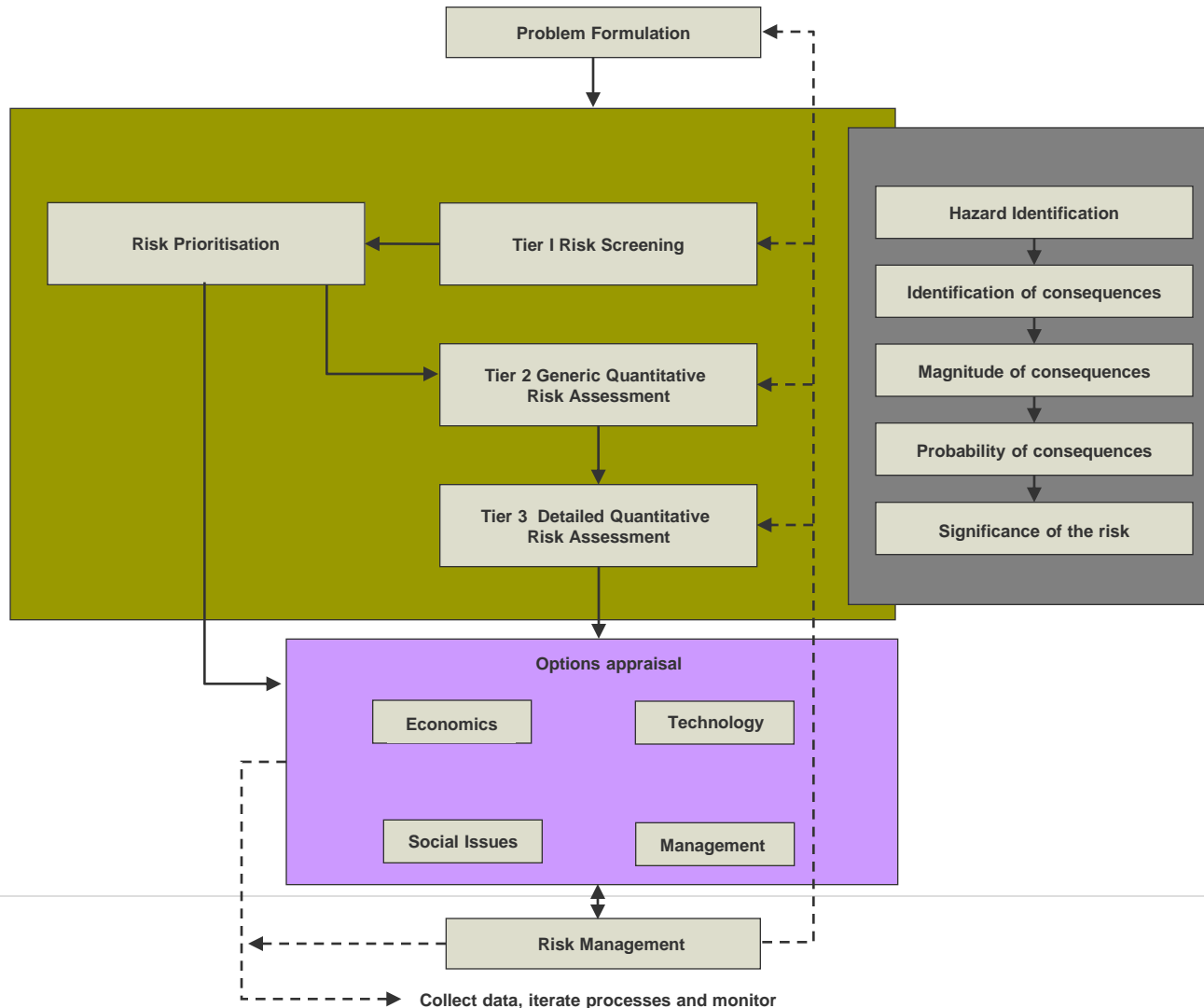
- the risks associated with many sites are relatively small, pertain to a small population, and/or are speculative to hypothetical in nature.... a far greater risk of significant injury and even fatality exists for remediation workers and impacted community (e.g., truck accidents on the open road). These risks are not given proper consideration in remediation decisions.

(SuRF US white paper,2009)

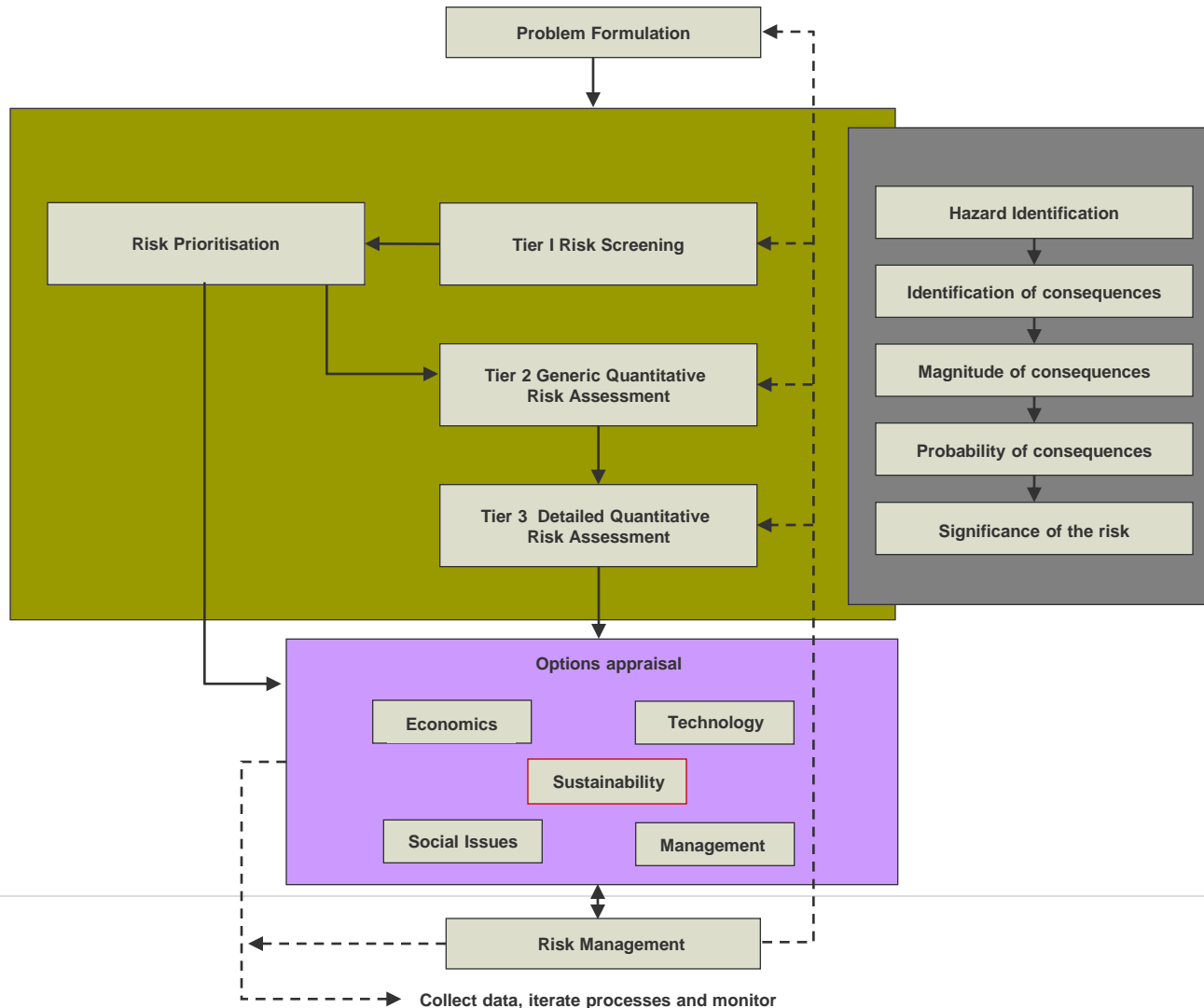
- **An Example of this:**
 - ◆ PCB contaminated soil
 - ◆ Remedial Options analysis – excavation to 65 feet or permeable cover
 - ◆ Excavation and off site disposal over 114 months
 - ◆ Remediation by excavation 1:100 chance of fatality by road accident v 1:1,000,000 chance of contracting cancer

(Rebecca Wallace, NICOLE Leuven workshop 2009)

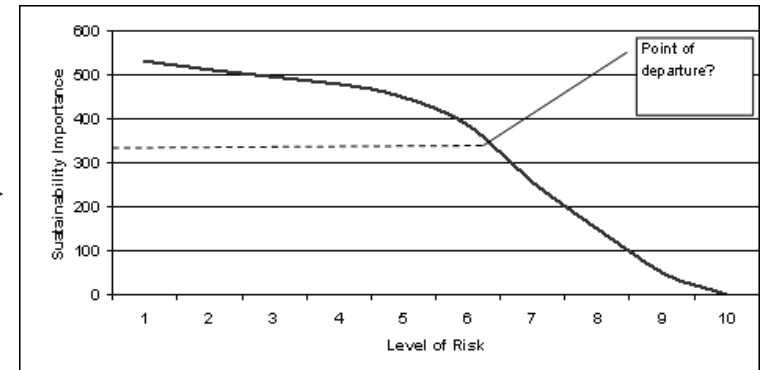
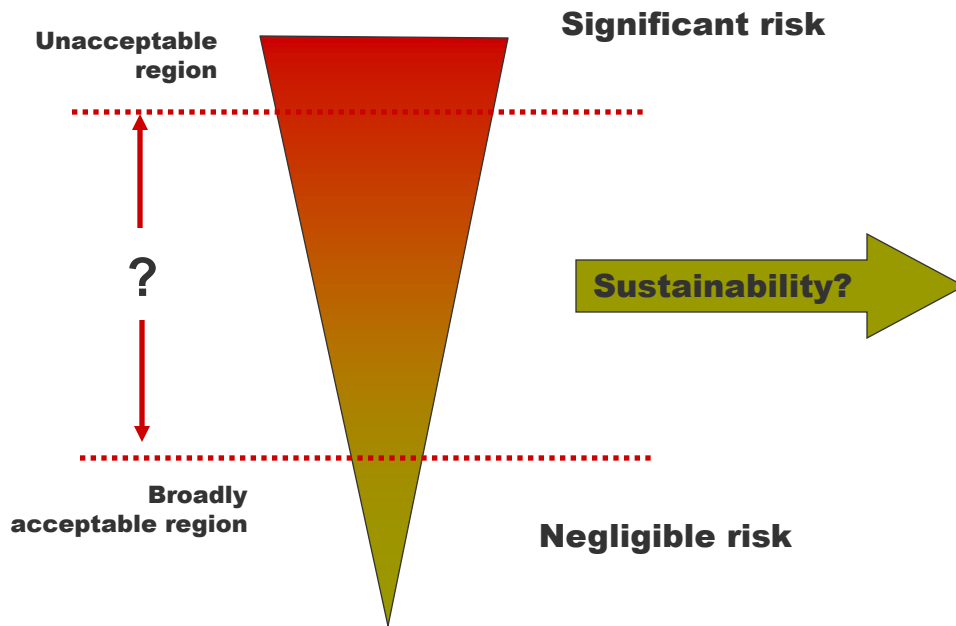
Interface between risk and sustainable remediation



Interface between risk and sustainable remediation



There is a trade-off between the cost of sustainability and the level of risk we are likely to be protective against



(Steve Wallace, NICOLE Leuven workshop 2009)

The Hypothesis



We would bring more sites back into beneficial reuse if we considered risks and benefits, across a broader spectrum of environmental, social and economic parameters

Policy implications

- **Policy decisions set level of acceptable risk**
 - ◆ Is acceptable risk overly conservative?
 - ◆ Why should risks from contaminated land outweigh risks from remediation or transport impacts?
 - ◆ Should we move towards more holistic decision making?
- **Will an increasing focus on sustainability generally and sustainable remediation in particular challenge the current practice of QRA?**

Conclusions & Challenges

- **Conclusions**

- ◆ The relationship between the practice of risk assessment and sustainable remediation is different according to the risk assessment framework in place
- ◆ Site specific QRA coupled with options appraisal offers opportunity to integrate sustainable decision making in parallel with risk process rather than as a follow on and does not comprise the risk assessment
- ◆ QRA, taken in isolation, is not sustainable.
- ◆ Incorporation of sustainability may lead to questioning of fundamental QRA assumptions & hence difficult choices, but also may encourage more holistic decision making

- **Challenges**

- ◆ seen as selling out / doing less / risking away?
- ◆ may also be seen as the end of punitive penalties for historical contamination incidents

The Benefit – More Vibrant Urban Spaces



Thank you for listening