Risk Management for Practitioners

The 29th Japan Road Congress –
Risk Management Symposium
Tokyo, Japan

2 November 2011

Connie Yew
Federal Highway Administration
U.S. Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

Topics

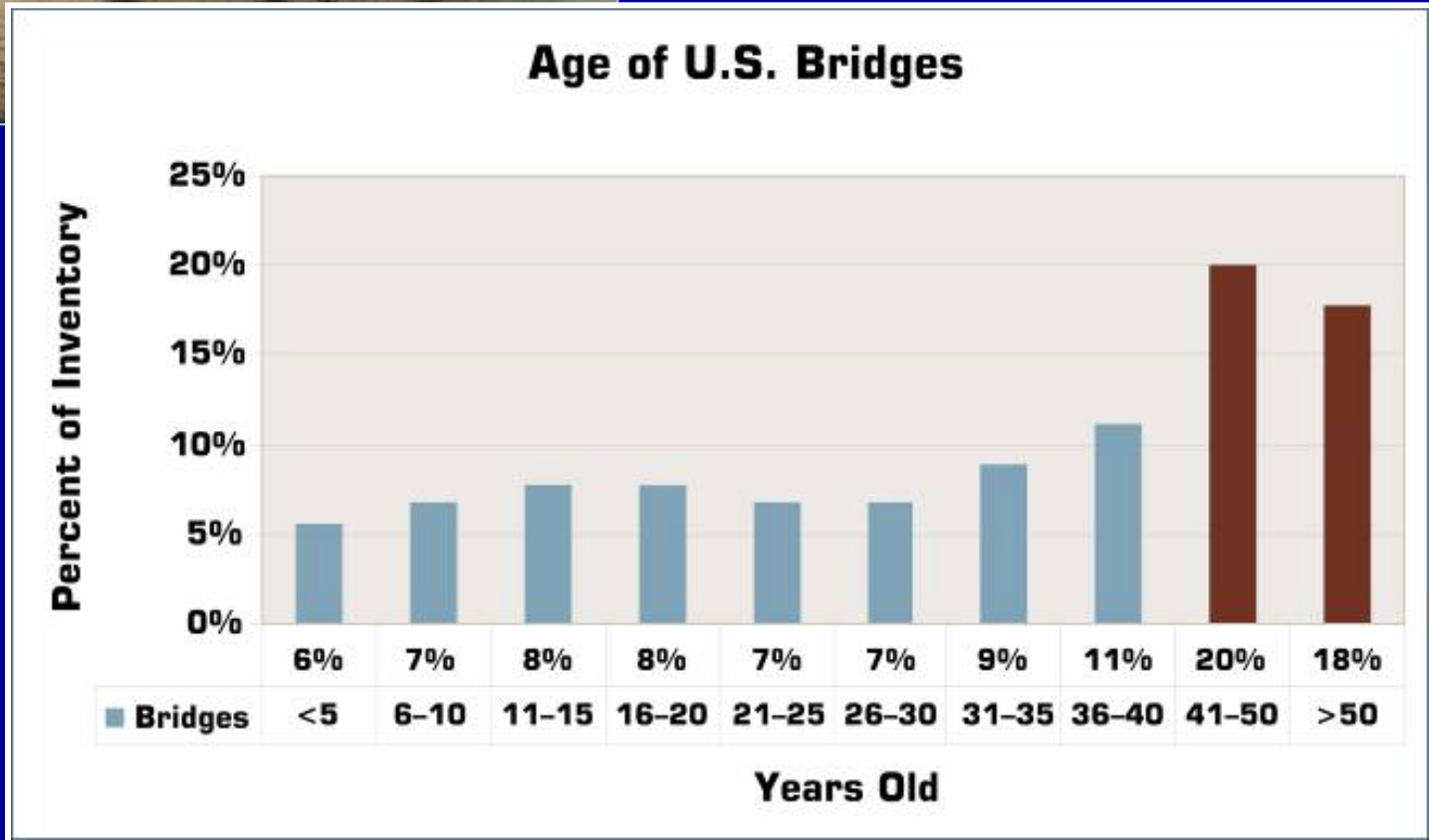
- Why Risk Management?
- Risk Management Framework
- Example of Risk Management Application
- Information on Designing for Disasters

Why Risk Management?

- Aging Infrastructure
- Congestion
- Inadequate Funding
- Accountability for Use of Federal Funds

Source: FHWA

Aging Infrastructure



Source: AASHTO

Will 23 lanes be enough?

LOUIE FAVORITE / Staff

Traffic heads north on I-75, just north of I-285, on Thursday. A proposal for the interstate is enough to make a road builder weep with joy, and make others wonder whether it's overkill.

Proposal would put I-75 among country's biggest

By ARIEL HART
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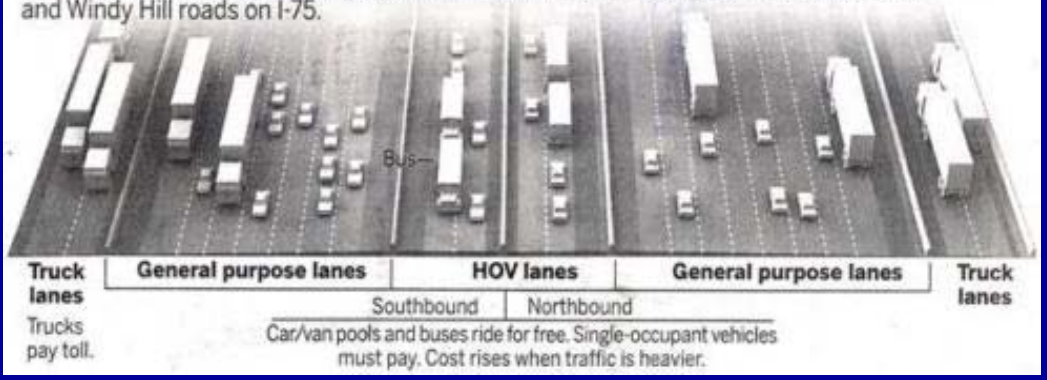
It's wider than an aircraft carrier. Far wider than the carving on Stone Mountain. Wider than the White House stretched end to end, twice.

It's the planned I-75, all 23 lanes, coming soon to Cobb County. As currently conceived it's 388 feet across, wider than a football field is long.

23 LANES: The state Department of Transportation is planning to expand I-75 (below) and I-575 in Cobb and Cherokee counties. The 23-lane stretch would be between Delk and Windy Hill roads on I-75.



Source: AASHTO

Congested Highways

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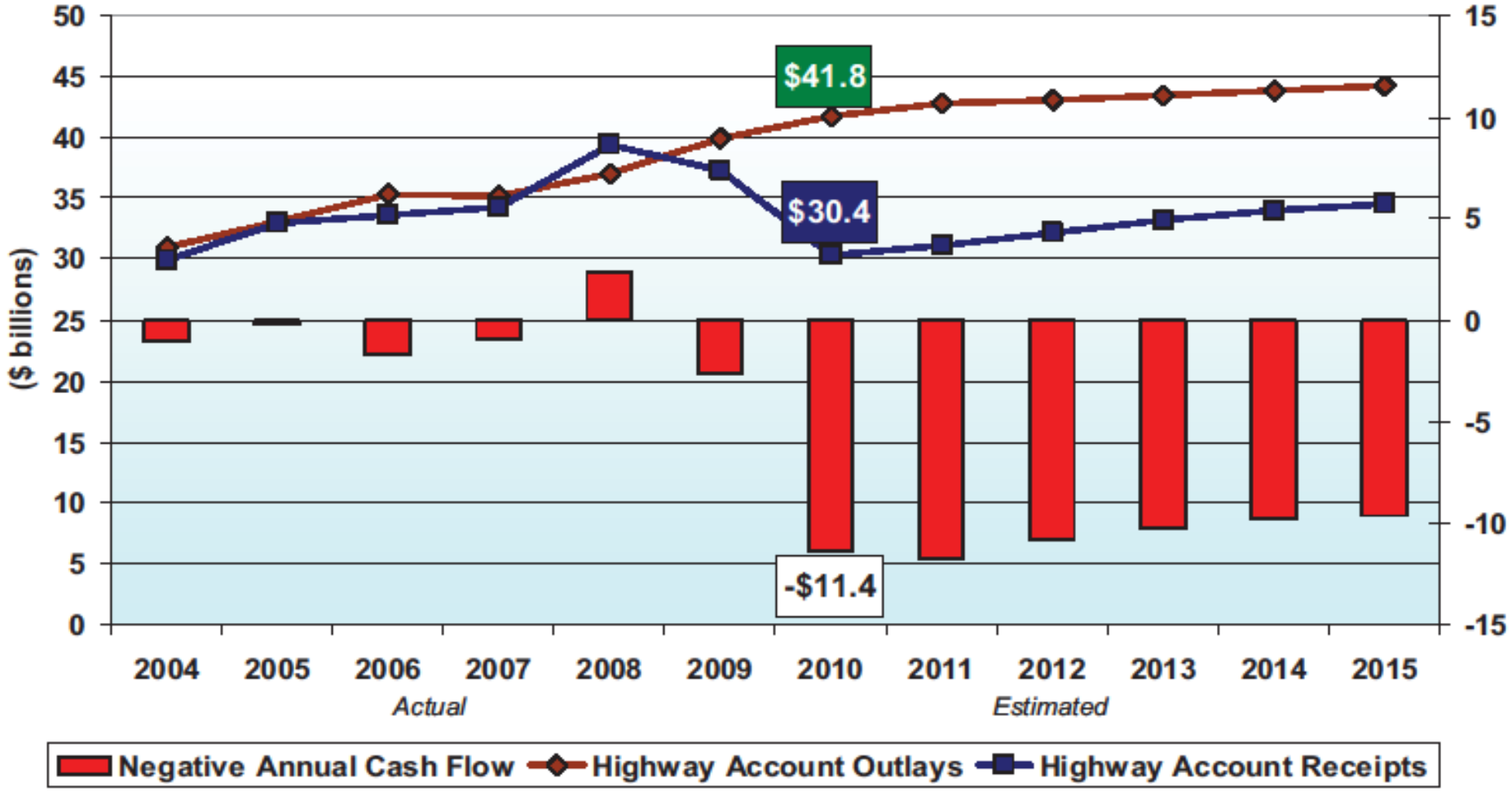
Highway Account of the Highway Trust Fund: Receipts and Outlay Discrepancy



*Excludes $8.017 billion transfer from General Fund to Highway Account of HTF in September 2008.
**Excludes $7 billion transfer from General Fund to Highway Account of HTF in August 2009.

Source: AASHTO

Stewardship & Oversight at Federal Level

Stewardship: funds spent well

- Efficient & Effective Management of Fund

Oversight: funds spent correctly

- Consistent with Laws, Regulations & Policies

Traditional Focus:

- **Process Management**
- **Project Management**

New Focus:

- **Risk-based Program Management**
- **Performance Management**

Risk Management Framework

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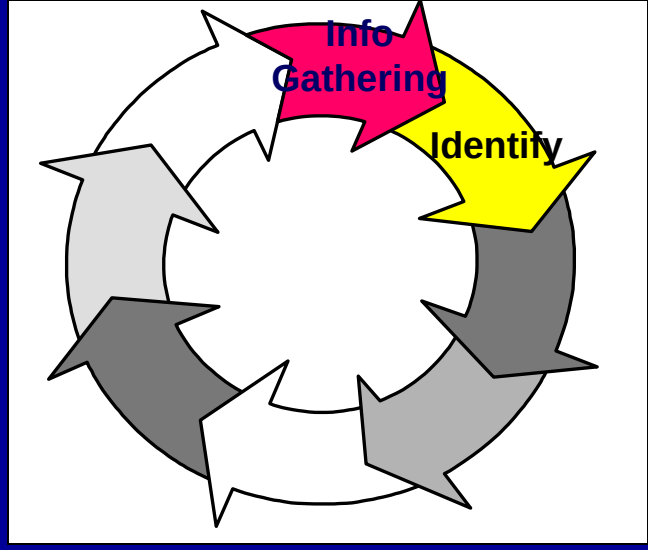
What is Risk?



- Future event
- May or may not occur
- Direct impact to project / program
- Positive or Negative

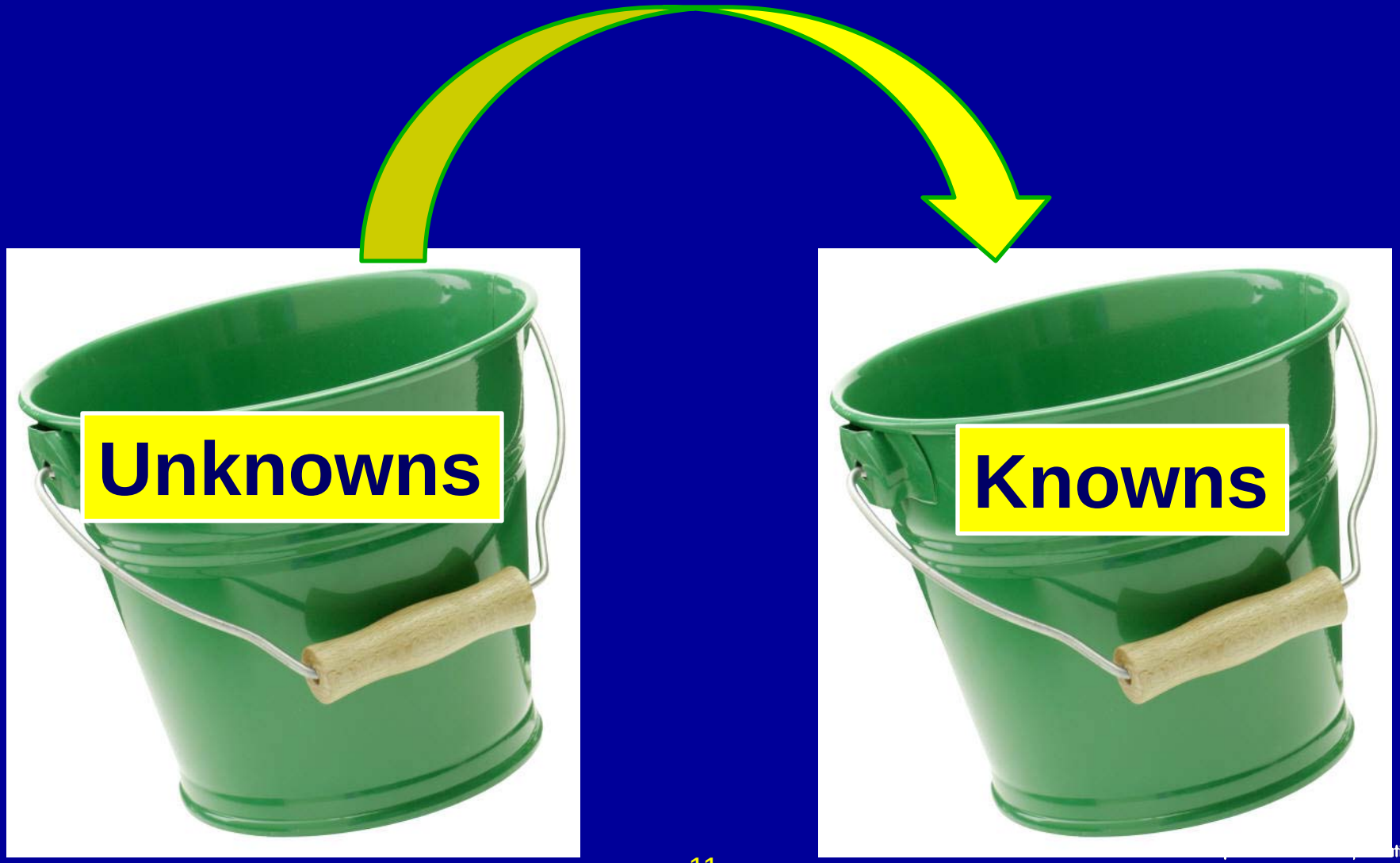
(Opportunity or Threat events)

Risk Statement

Risk statements should identify:

- A specific and definable event (What if?)
- Likelihood that event will occur (How likely?)
- The impact if it does occur (Then what?)

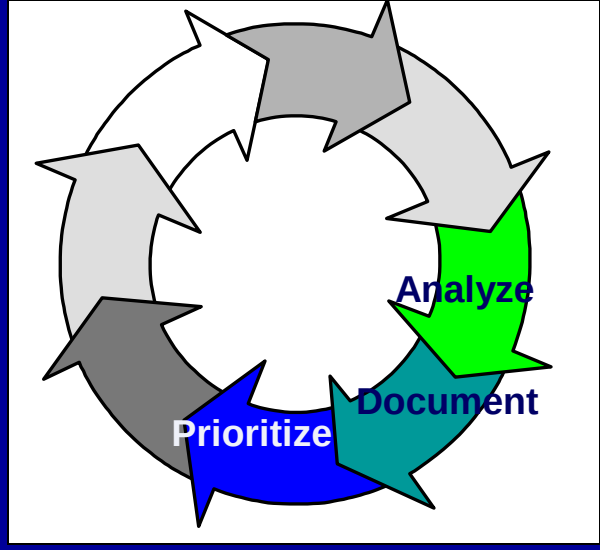
Risk Identification



Tools & Techniques

- Brainstorming
- SWOT Analysis
- Delphi Technique
- Expert Interviews
- Checklists
- Assumption Analysis
- Crawford Slip

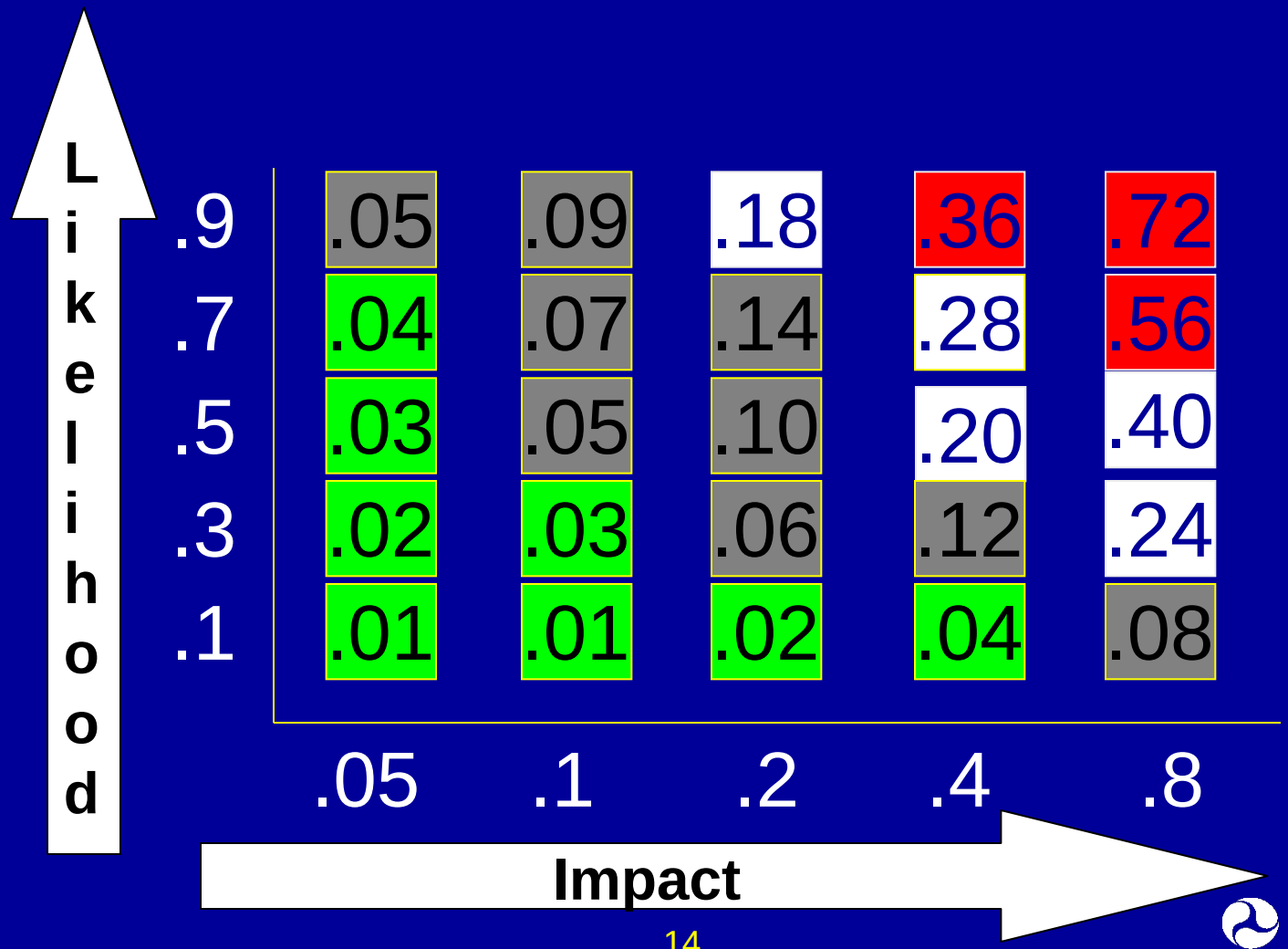
Risk Analysis



Qualitative: Assesses risk likelihood and impact using a scale of high, medium, and low

Quantitative: Analyzes risk likelihood and impact numerically using specific numbers (likelihood, cost, time)

Cardinal Risk Rating Matrix



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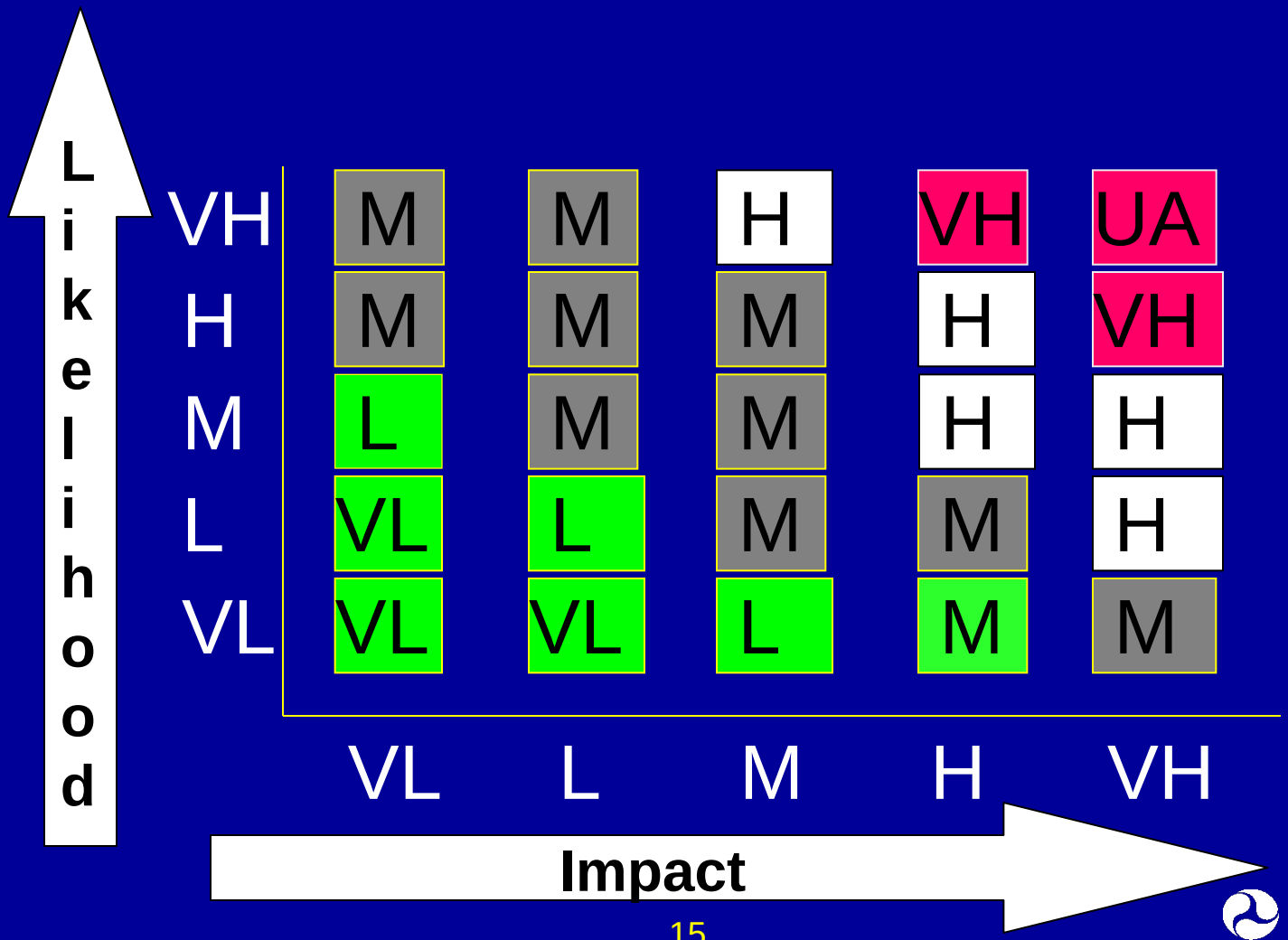
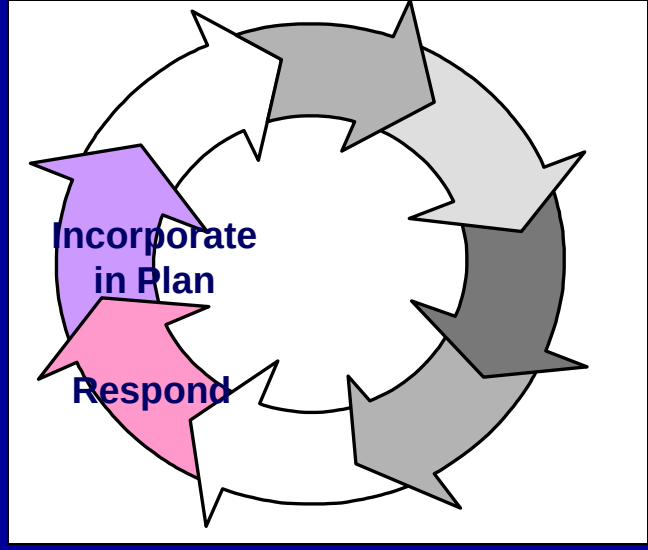
Ordinal Risk Rating Matrix



Risk Prioritization

- Never enough time, money, resource
- Focus on the most important risks

Risk Response



Threat Responses	Opportunity Responses
Avoid	Exploit
Transfer	Share
Mitigate	Enhance
Accept	Accept

Response Comparison Chart

Risks	A	B	C	D	E	
Responses						Total
1	+	-			-	-1
2		+	+	-		1
3	+		+	+		3
4		+		+		2
5					+	1

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Risk Mapping

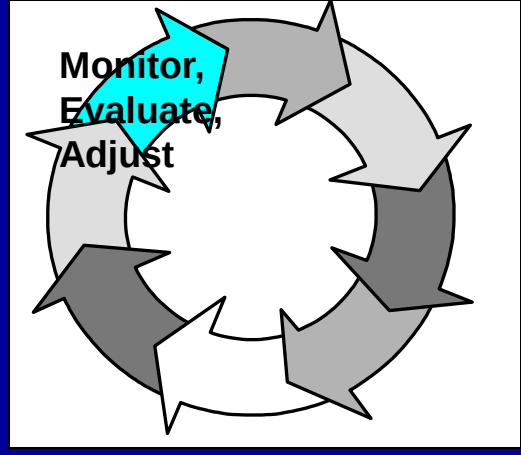
- Correlates likelihood and impact into one overall presentation tool
- Visually displays all types of risks and their associated risk level for each program or project
- Makes outliers easily identifiable by aggregating all risks in one place

Risk Map Example

Likelihood	Low	Medium	High	Very High
Very High	Risk E		Risk H	Risk A Risk D
High		Risk B		
Medium			Risk C	Risk G
Low	Risk F			Risk I

Impact

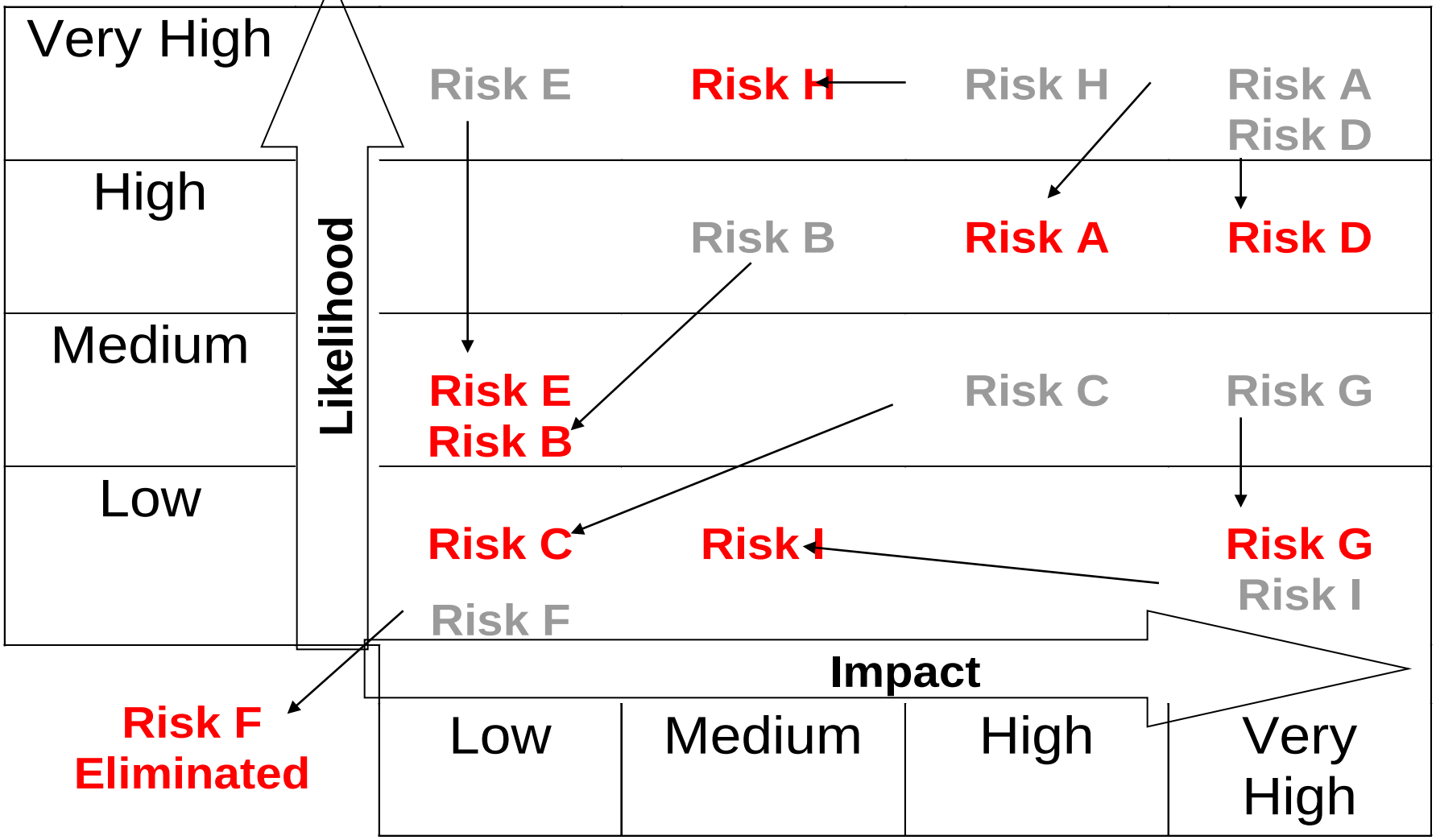
Purpose of Risk Monitoring



Determine whether:

- Responses implemented as planned
- Response actions effective
- New responses should be developed
- Project assumptions are still valid
- Likelihood and/or impact have changed
- A risk trigger has occurred
- Proper policies and procedures followed

Risk Map with Response Strategy Effectiveness

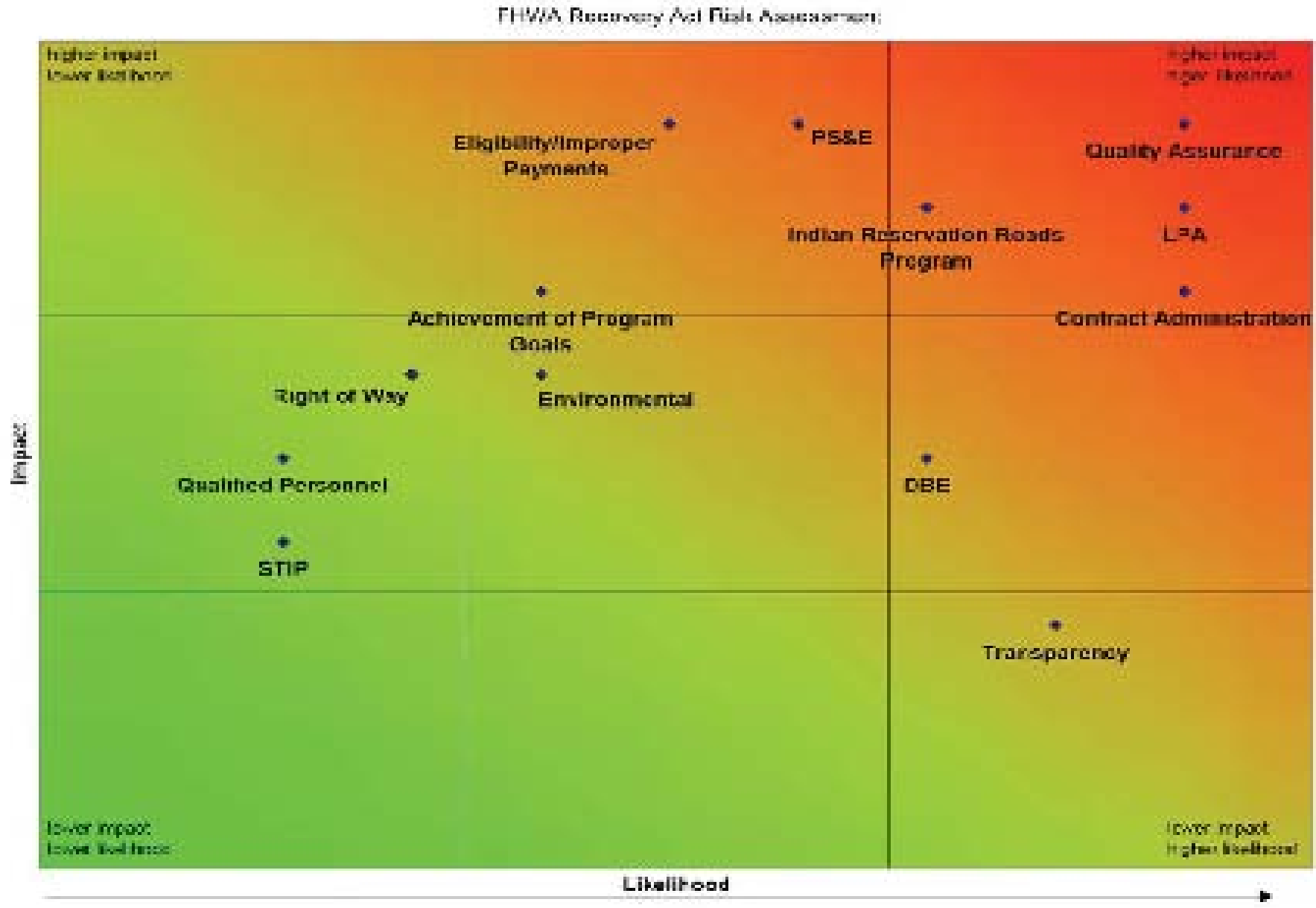


Risk Management Application
Categories of Risk

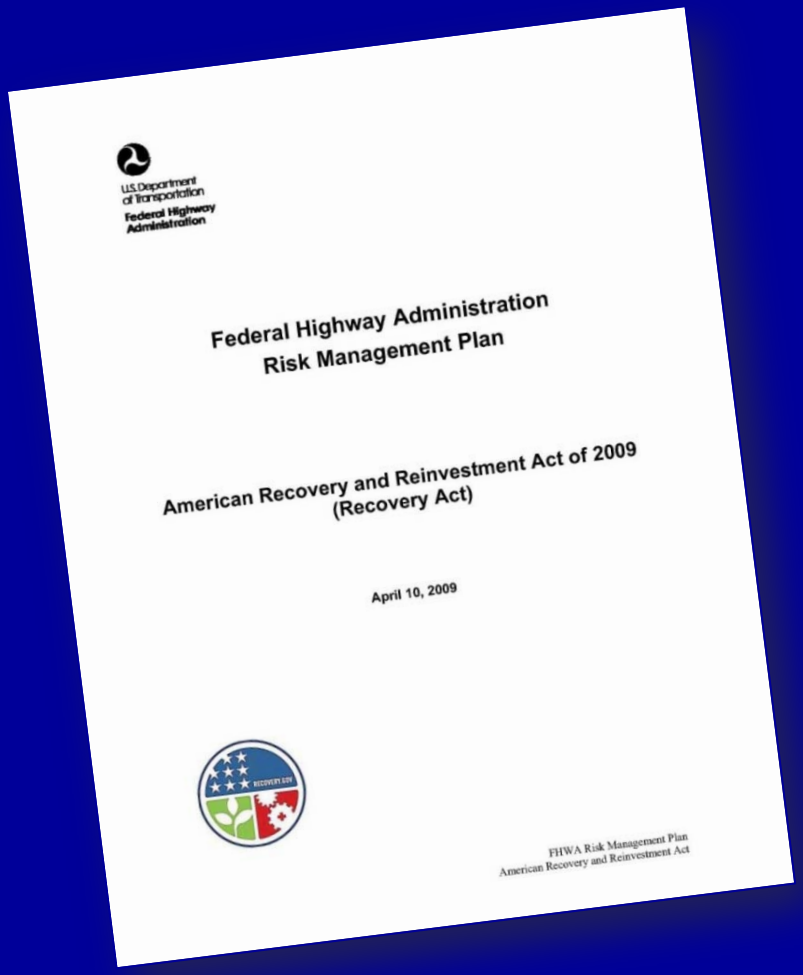
10 Program Areas:

1. Finance
2. Environment
3. Planning
4. Right of Way
5. Safety
6. Design
7. Construction
8. System Preservation
9. Operations
10. Civil Rights

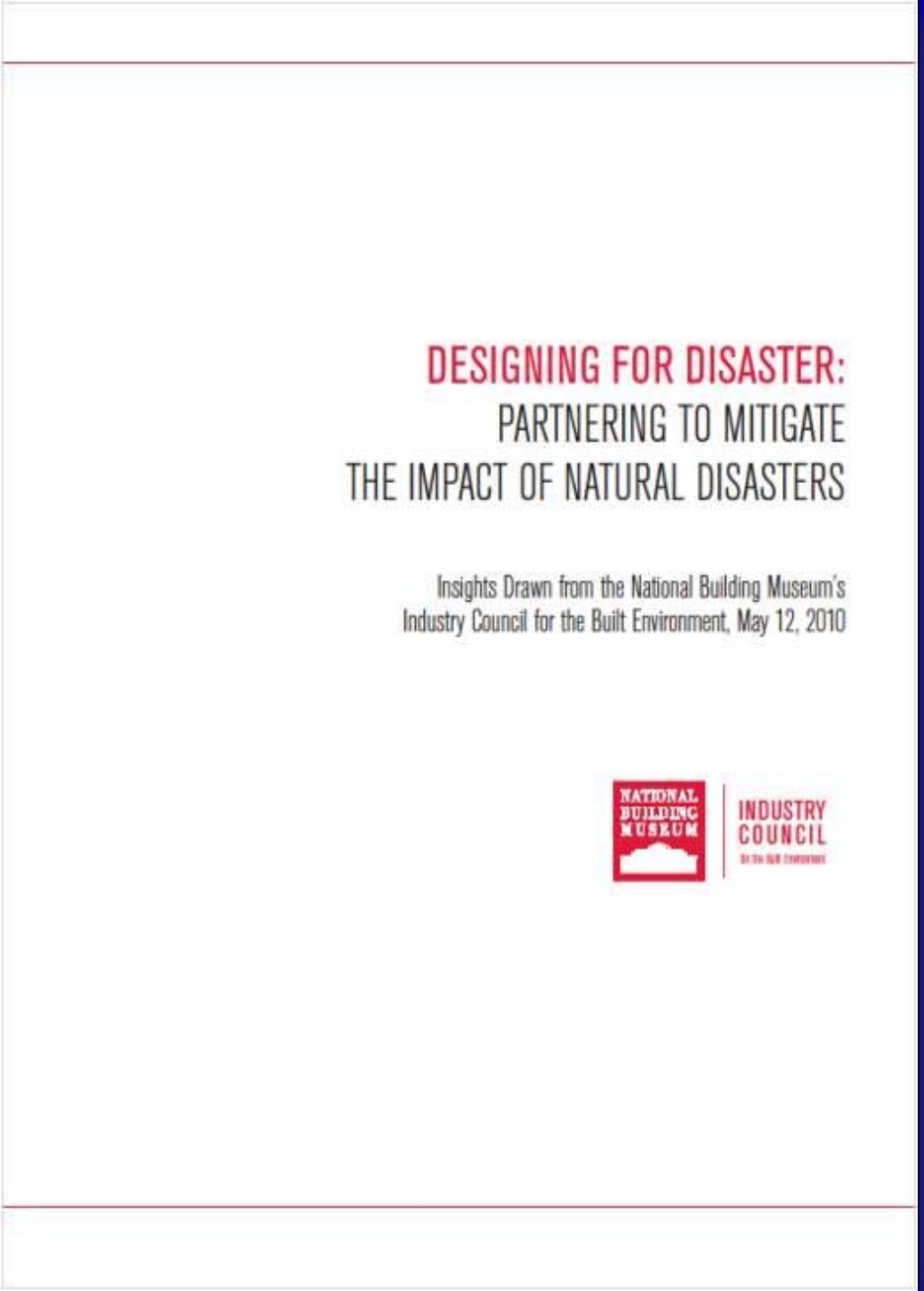
Risk Map


FHWA Recovery Act Risk Assessment
higher impact
lower likelihood
Eligibility/Improper Payments
PS&E
higher impact
higher likelihood
Quality Assurance
Indian Reservation Roads Program
LPA
Achievement of Program Goals
Contract Administration
Right of Way
Environmental
Impact
Qualified Personnel
DBE
STIP
Transparency
lower impact
lower likelihood
lower impact
higher likelihood
Likelihood

Risk Management Plan



1. *Local Agency Oversight*
2. *PS&E Quality*
3. *Contract Administration*
4. *Quality Assurance*
5. *DBE Program*
6. *Eligibility/Improper Payments*
7. *Achievement of Program Goals*
8. *Indian Reservation Roads Program*



National Building Museum

Designing for Disaster

Partnering to mitigate the impact of Natural Disasters

Source:
http://www.nationalbuildingmuseum.net/pdf/NBM%20ICBE%20White%20Paper%20Nov%202010.pdf

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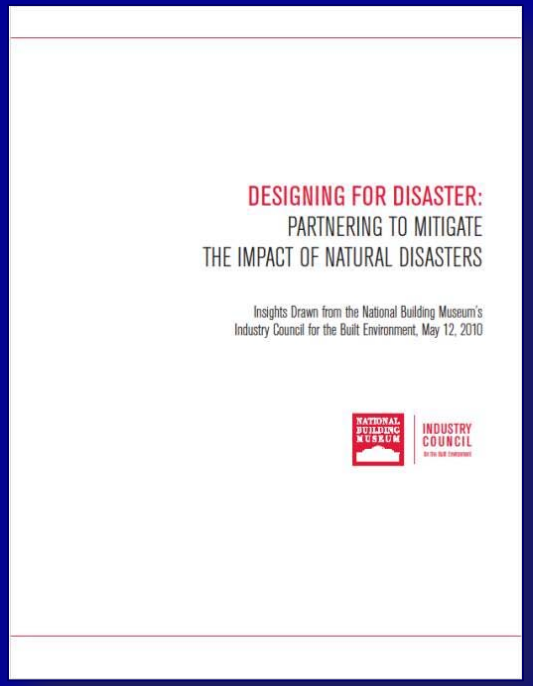
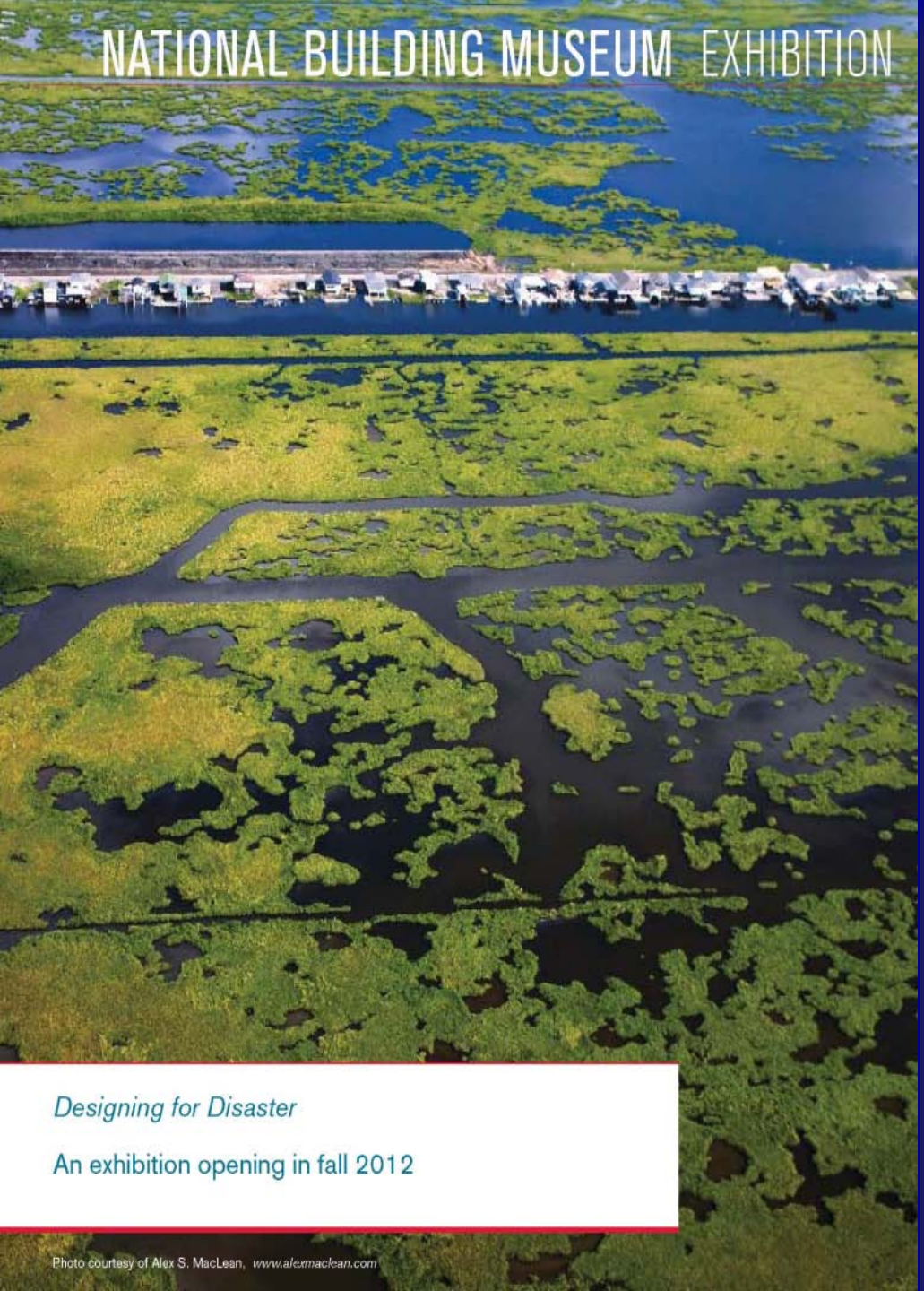


Key Recommendations for:

- U.S. Congress
- Federal Agencies
- State and Local Governments
- Private Sector

3 Themes:

- Raising Awareness
- Linking Resources
- Planning and Building for Resiliency



National Building Museum

Designing for Disaster

Exhibition – opening in fall of 2012

Source:
http://www.nationalbuildingmuseum.net/pdf/Designing%20for%20Disaster%20110910.pdf

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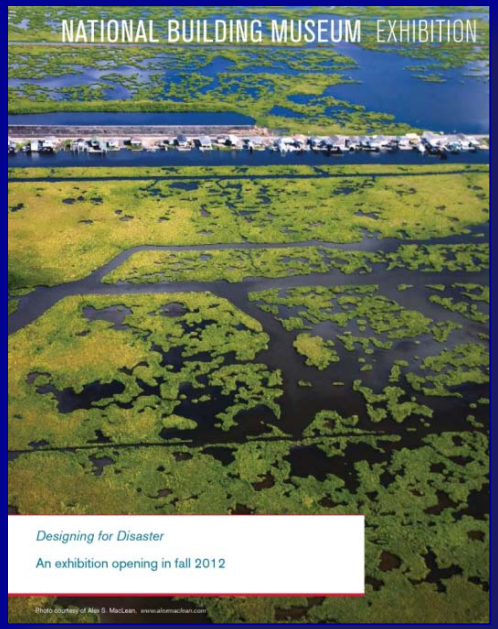
Designing for Disaster



Highlights of Exhibition:

- Discuss disaster mitigation
- Showcase innovative research, materials and technologies
- How to work with natural systems and environment
- Present wide range of viable responses
- Explore solutions for natural disasters including, earthquakes, hurricanes, tsunamis, wildfires, tornados, flooding, subsidence

Risk Management Planning

Decide how to approach and plan risk management activities:

- Methodology
- Roles & responsibilities
- Budget
- Timeframe
- Scoring & interpretation
- Thresholds
- Report format
- Tracking

Conclusions

- Risk management is the systematic identification, assessment, planning and management
- Communication is key
- Be prepared to defend your actions
- You must plan for risk management…hope is NOT a plan

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THE END
Arigatou Gozaimasu!