

TRANSPORTATION SYMPOSIUM

Risk Management Zone: 2019

Risk Management through the Life Cycle of a Project

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RISK MANAGEMENT ZONE

Session Overview

Risk Management

- Scene 1: Talking with the new PM
- Scene 2: Briefing the Director / Prep-Session
- Scene 3: Day of Risk Workshop
- Scene 4: Progress Meeting / Work Program Update

Prologue

The Assignment

The Project

- High Profile
- Major Project
- Must be delivered
 - On Time
 - Under Budget
- Job on the line



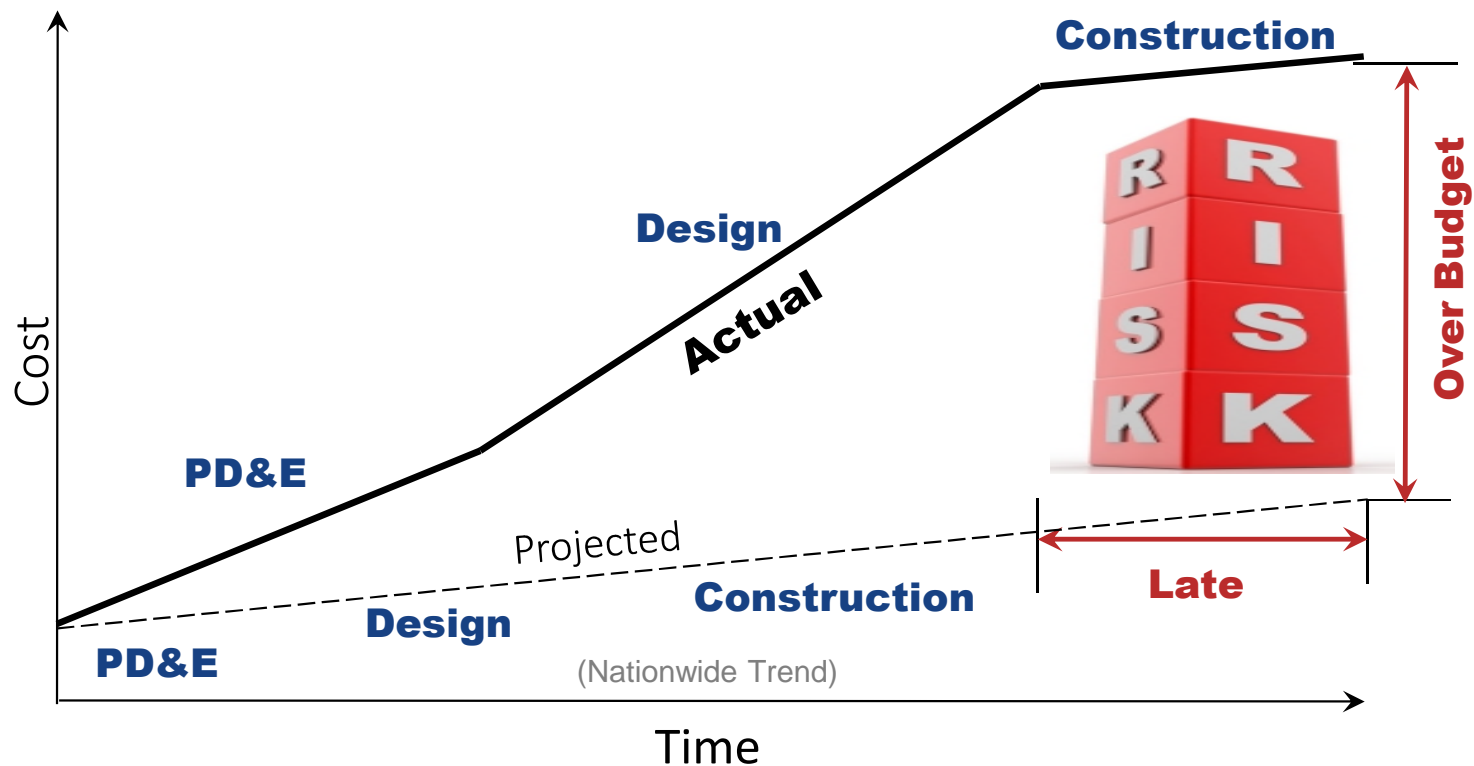
Scene 1

The Journey Begins

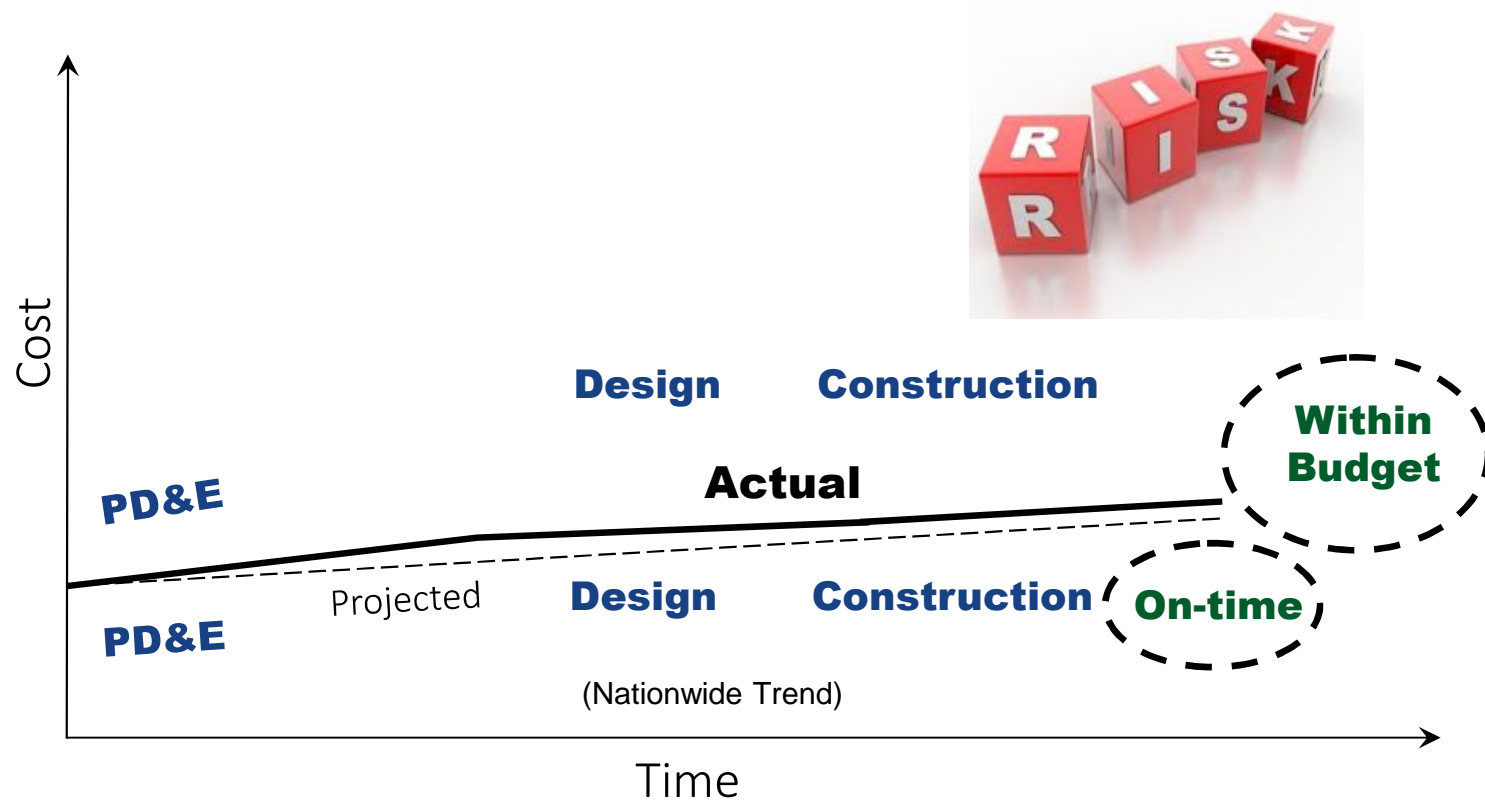
Talking Risk with the New PM



Typical Project Scenario without Risk Analysis



Typical Project Scenario with Risk Analysis



Risk Based Graded Approach Worksheet

- FDOT PM Webpage – PM Toolbox
- Initial risk assessment (15 minutes)
- Supports consultant selection decision

Risk Based Graded Approach Worksheet

ITEM	RISK ELEMENT	RISK ASSESSMENT	PRIORITY	TOTAL
1	Utility Involvement	1	3	3
2	Project Schedule	5	5	25
3	Interfaces	3	1	3
4	Experience/Capability	3	3	9
5	Right-of-Way Involvement	5	5	25
6	Environmental Impacts/Contamination	1	1	1
7	Regulatory Involvement	3	3	9
8	Contractor Issues	5	3	15
9	Resource and Material Availability	3	3	9
10	Project Funding	1	1	1
11	Political Visibility	3	5	15
12	Public Involvement	3	3	9
13	Safety	3	3	9
14	Construction Complexity	1	1	1
15	Weather Sensitivity	3	1	3
Risk Score				137
Low Risk				0 - 90
Medium Risk				90 - 150
High Risk				>150

Risk Based Graded Approach Worksheet

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Risk Score 137

Low Risk	0 - 90
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High Risk	>150

Risk Management & Analysis Tools

- Risk Based Graded Approach Worksheet
- Standard Scope of Services & Staff Hour Guidelines
- Self Modeling Worksheet
- Risk Workshops



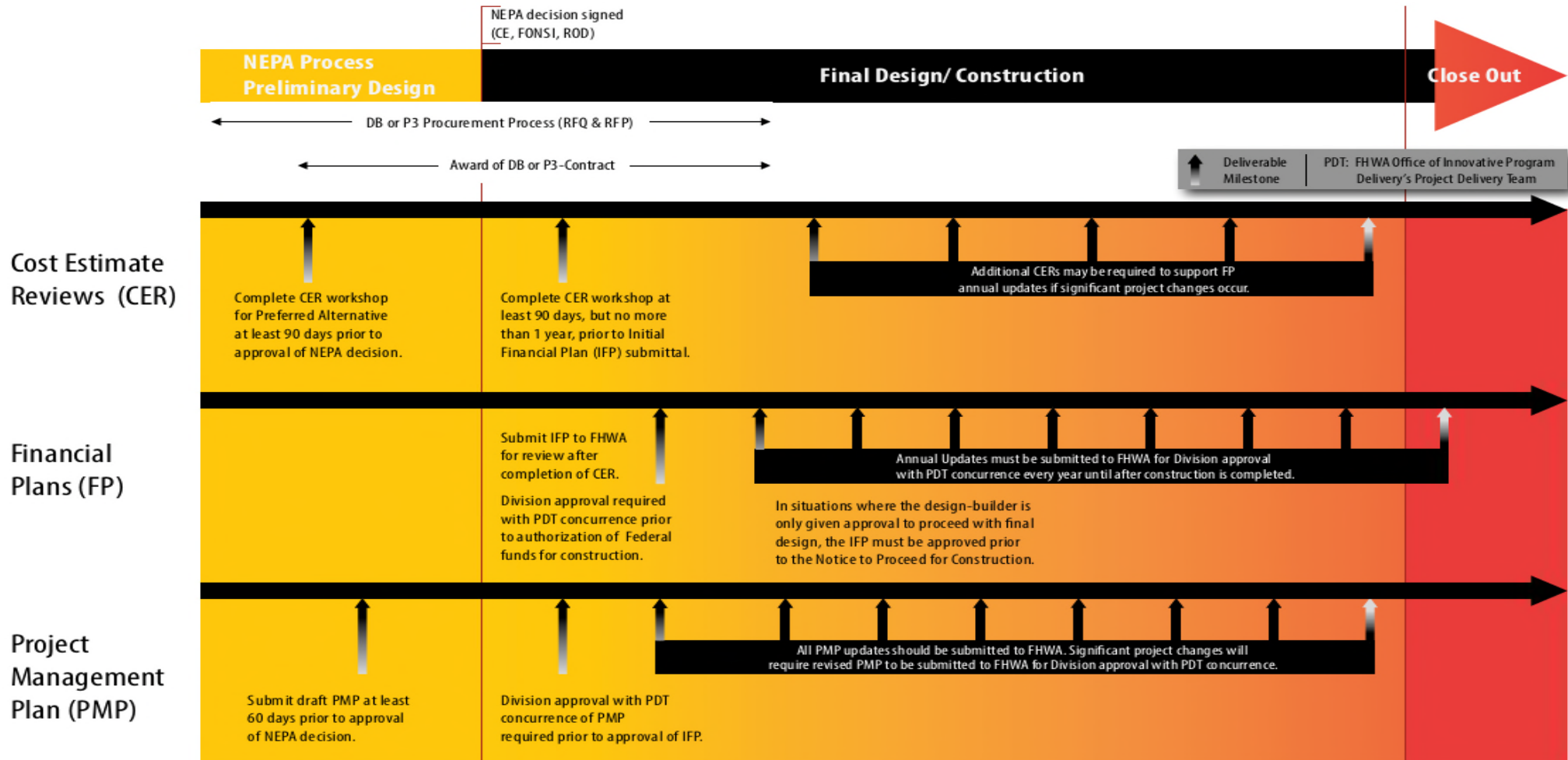
Risk Teams and SharePoint

- State Risk Management Team
- Regional Risk Teams
- Program Management SharePoint
 - <http://cosp.dot.state.fl.us/sites/stateengineer/ProgMgmt/estimates/CRARegionalTeam/>

Major Projects Deliverable Timeline

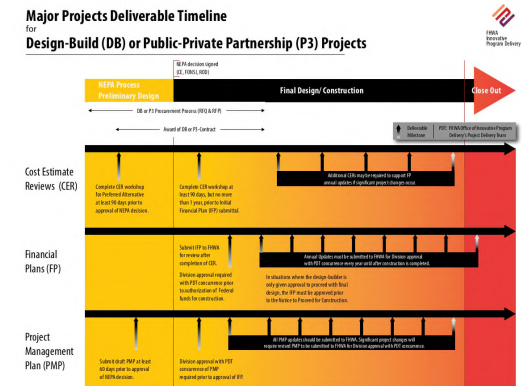
for

Design-Build (DB) or Public-Private Partnership (P3) Projects



Major Project Timeline

- Major Projects (FHWA)
 - Project Delivery Timetable
 - Programming requirements
 - 70% confidence level
- FHWA requires Cost Estimate Review
 - Need before NEPA approval
 - Need before Federal Authorization



Scene 1 Summary

- Risk Based Graded Approach Worksheet
- Standard Scope of Services
- Staff Hour Guidelines
- SharePoint
 - <http://cosp.dot.state.fl.us/sites/stateengineer/Program/estimates/CRARegionalTeam/>
- Self Modeling Worksheet

Scene 1 Summary (Continued)

- State Risk Management Team
- Regional Risk Teams
- Major Project Requirements
- Risk Workshops

Scene 2

Briefing the Director / Prep-Session

Briefing the Director



Prep-Session (Getting Ready for the Workshop)

- Present the Risk Management Process to Project Team



Prep-Session Cont. (Getting Ready for the Workshop)

- Present the Project Scope, Base cost & Base schedule
- Discuss Logistics for workshop:
 - Schedule sessions (number of days)
 - Reserve room(s)
 - Set up Video/GoTo Meetings (if necessary)
 - Coordinate project info with Risk and Schedule leads

Scene 3

The Day of the Workshop

The Workshop

Risk Types

Threat:

- A risk that has a *negative effect* on the project.

Opportunity:

- A risk that has a *positive effect* on the project.

Workshop Rules of Engagement

- Workshop Inputs
- Threats & Opportunities
- Probability Assessment
- Cost and/or Schedule Impacts

Project Scenario

- Base cost estimate:
 - Interstate to Interstate connection
 - 5 miles Major reconstruction
 - 10 miles of 22' noise wall
 - 14 Bridges (3 over water)
 - Managed lanes
 - Reworking 6 interchanges
- Recent developments identify half of project industrial area – Land Use Change
- Risk – based on recent developments, need less wall

Workshop

- Requires 2-3 days
- Recommended for projects >\$100 million
- Required for FHWA major projects (>\$500 million or complex projects)

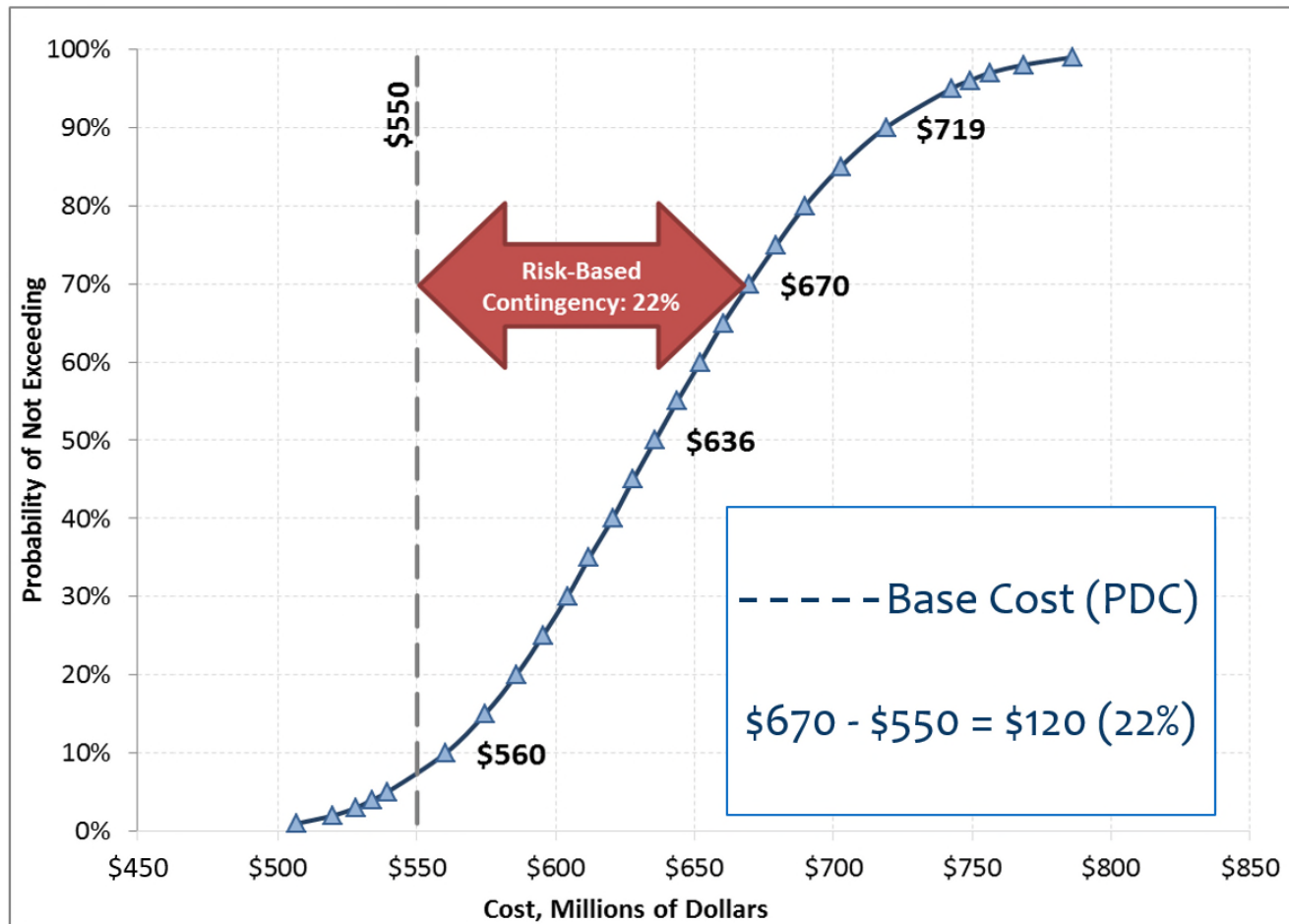
Risk Register

Risk			Pre-Mitigation (Data Date = 01-Feb-12)				Mitigation		
ID	T/O	Title	Probability	Schedule	Cost	Score	Response	Title	Total Cost
CNS 10.01	T	Traffic Management - baseline solution does not work	L (25%)	N (0)	L (\$60,0...	3	Reduce		\$0
CNS 10.03	T	Maintaining local access	VH (80%)	N (0)	L (\$60,0...	9	Reduce		\$0
CNS 50.01	T	Delay in obtaining temporary permit	VL (10%)	H (30)	N (\$0)	4	Reduce		\$0
CNS 900.03	T	Removal of existing bridge	VH (80%)	N (0)	H (\$300,...	36	Reduce		\$0
CTR 40.01 A	O	Competitive Market Results in Lower Bid Prices - Scenario 1	VH (75%)	N (0)	VH (\$5,0...	72	Enhance		\$0
CTR 40.01 B	O	Competitive Market Results in Lower Bid Prices - Scenario 2	M (50%)	N (0)	VH (\$5,0...	40	Enhance		\$0
DES 10.01	T	Changes in Profile	M (50%)	VH (80)	VH (\$75...	40	Accept		\$0
DES 10.02	T	Changes in Design Standards	VL (5%)	N (0)	VH (\$75...	8	Reduce		\$0
DES 20.01	T	Changes in Design - Wider Trail	VL (10%)	VH (100)	VH (\$2,2...	8	Reduce		\$0
ENV 30.02	T	New permits or new information required	L (25%)	N (0)	L (\$66,6...	3	Accept		\$0
ENV 40.02	T	Unanticipated Cultural or Archaeological Findings	VL (10%)	H (36)	N (\$0)	4	Accept		\$0
ENV 60.02	T	Additional wetlands mitigation area needed	M (50%)	N (0)	VH (\$1,5...	40	Reduce		\$0
ENV 60.03 A	T	Additional wetlands mitigation area needed (Schedule)	VL (10%)	VH (60)	N (\$0)	8	Reduce		\$0
ENV 70.01	T	Design Changes for Ponds	M (50%)	N (0)	M (\$90,...	10	Reduce		\$0
MGT 40.02 B	T	Priorities change on existing program (Bridge Maintenance)	VH (100%)	N (0)	VH (\$1,7...	72	Reduce		\$0
MGT 900.04	T	Threat of Lawsuits	VL (10%)	VH (100)	N (\$0)	8	Reduce		\$0
ROW 900.02	T	Coordination of the removal of the Shipyard Pedestrian Bridge	M (50%)	N (0)	M (\$126...	10	Reduce		\$0
STG 20.01	T	Encountering Unexpected Subsurface Conditions	VH (90%)	VH (90)	VH (\$1,1...	72	Reduce		\$0
UTL 20.03	T	FDOT Utilities Relocation Cost	VL (10%)	N (0)	H (\$250,...	8	Reduce		\$0

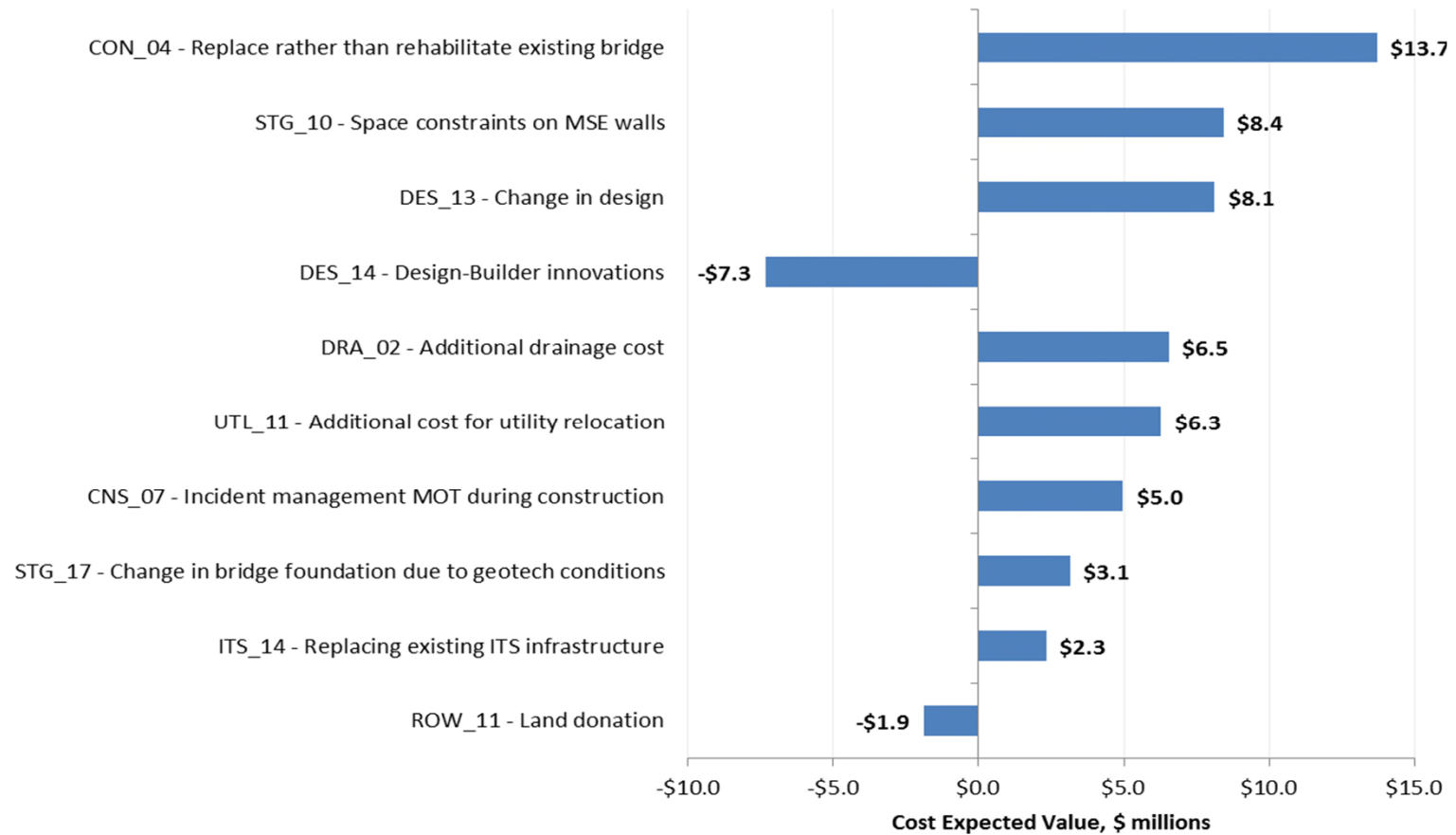
Scene 3 Summary

- Prep Session
- Workshop (2 – 3 days)
- Risk Register
- Cost & Schedule Graphs
- Tornado Diagrams
- Risk Management Plan

Contingency Management



Tornado Diagram



Scene 4

Progress Meeting / Work Program Update

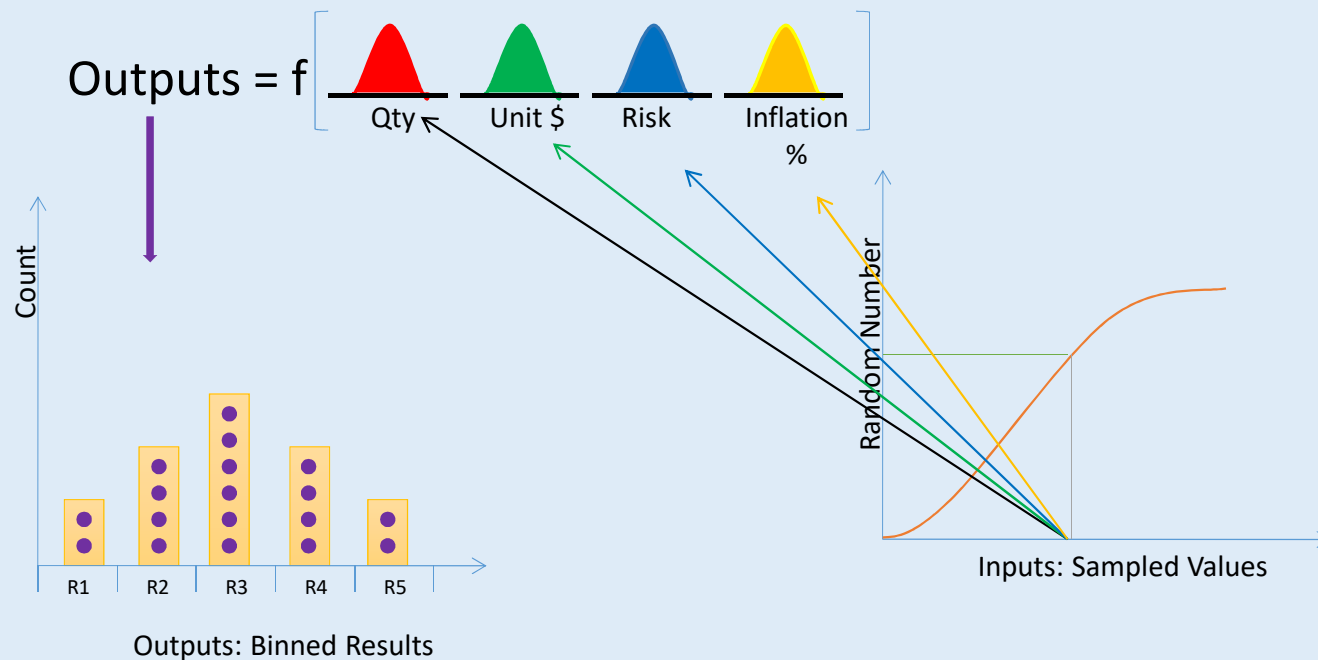
The Progress Meeting



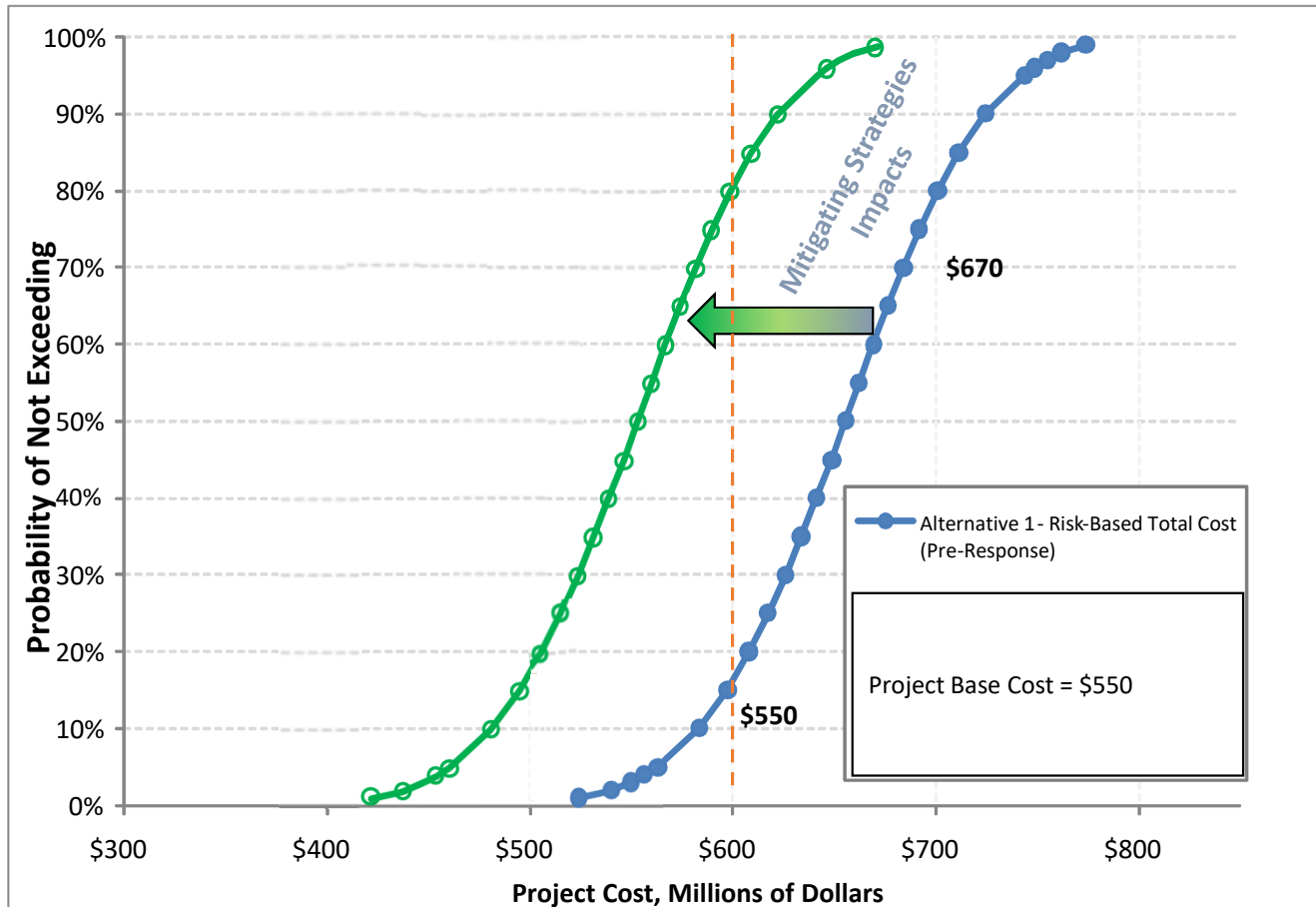
Risk Management Process - Analysis

Monte-Carlo Simulation

$y = f(x)$ or “y” is a function of “x”



Risk Analysis – Post-Mitigated Results



One Final Briefing...



Scene 4 Summary

- Use of the Risk Register
- Progress Meetings
 - Regular contact with Team / Risk Owners
 - Monitor & Control Risks
 - Develop Risk Response Strategies
 - Modify Risk Register
 - Update Cost & Schedule Curves
- Provide for Work Program Update Cycle

Questions?

State Risk Management Team

Frank Chupka

Greg Davis

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Kurt Lieblong

Rob Quigley