

Project Cost

U.S. ARMY

US Army Corps of Engineers
Walla Walla District

National Dredging Meeting

**Cost & Schedule
Risk Analysis**

May 2009

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Walla Walla District

Who am I?

Kim Callan P.E. C.C.E.

Chief, Corps of Engineers Cost Engineering
Directory of Expertise for Civil Works and SFO,
Walla Walla District

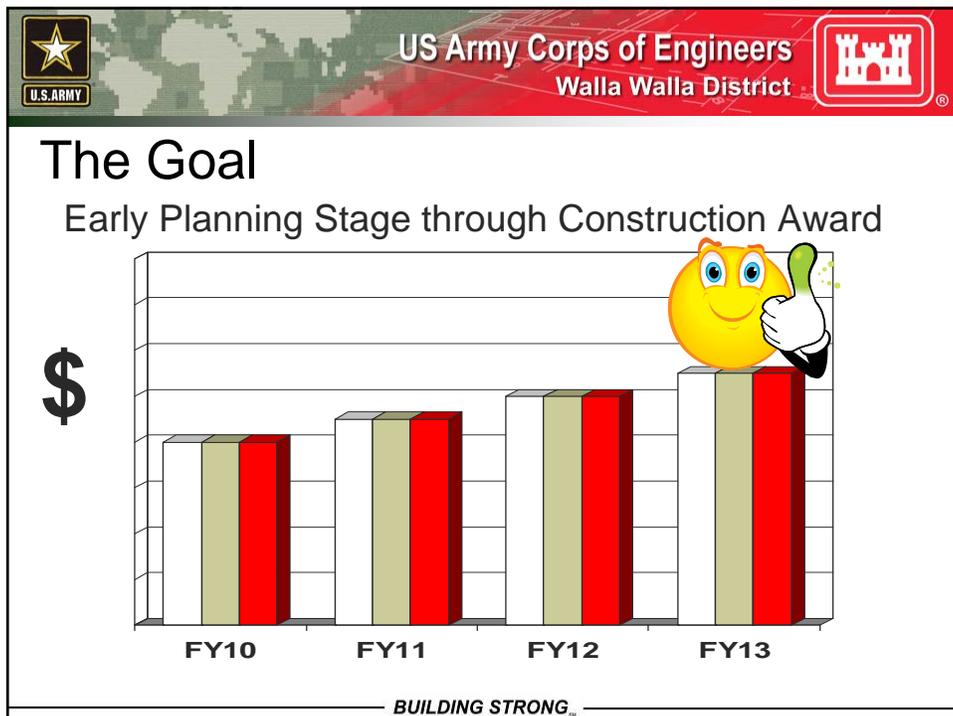
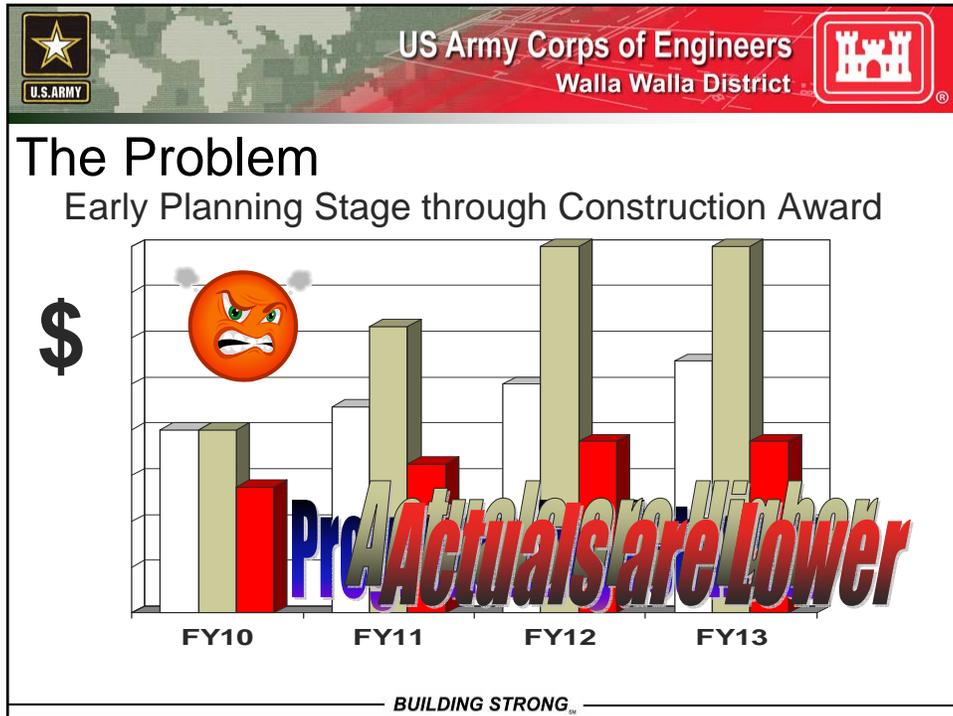
- BS Civil Engineering
- 20+ years cost engineering
- National Cost Steering Committee
- National Dredge Estimating Team

Washington State University

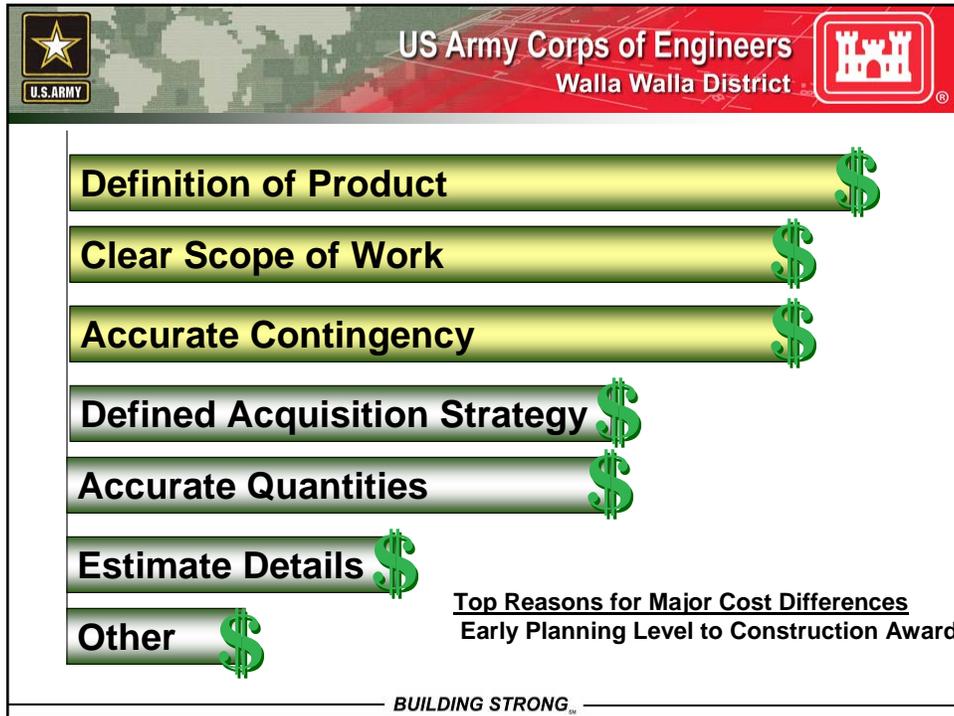
Go Cougs!

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Definition of Product

Assure clear guidance as to what purpose the product is intended. This will effect accuracy of cost and schedule information. As an example, your team may assume a product is at an early recon level report stage while the product is being used for a funding baseline.

Scope

Spend the time...Nail down scope
Assure all parties are on same page
Define Options, Schedules, Restrictions

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This slide features a green gradient header with the US Army Corps of Engineers logo and the 'BUILDING STRONG' slogan. Below the header, the text 'Definition of Product' is displayed in a large, bold font. The main content consists of a paragraph explaining the importance of clear guidance for product purpose and an example scenario. Below this, the text 'Scope' is displayed in a large, bold font, followed by three bullet points: 'Spend the time...Nail down scope', 'Assure all parties are on same page', and 'Define Options, Schedules, Restrictions'. The slide concludes with the 'BUILDING STRONG' slogan at the bottom.



Contingency Analysis

Has the Project Delivery Team defined what the risks are?

- Scope
- Contract Strategy
- Cost
- Schedule
- Construction

What are the effects?

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Risk Analysis Process

- The Team Develops the Risk Register
- Develop Cost and Schedule Model
- Identify Sensitivity of Risk Elements
- Identify Risk Mitigation Efforts
- Confidence Levels and Contingency
- Monitor and Act

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Development of the Risk Register

- Brainstorming effort
- Brings focus to risk levels on specific areas
- Communication tool

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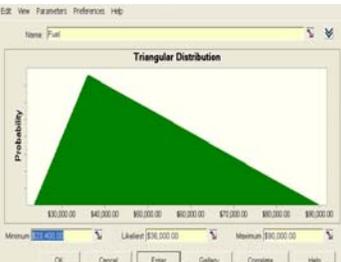


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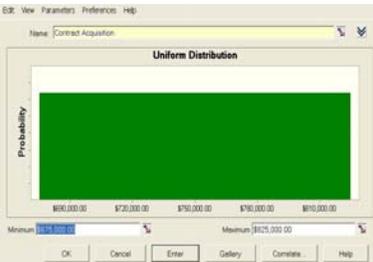
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Develop Cost and Schedule Model



Triangular Distribution



Uniform Distribution

Most Likely - High - Low - Distributions

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Identify Model Parameters

Present Year.....	Low	Most Likely	High
Economic Index.....	7441	7667	8500
Labor Adjustment Factor.	1.170	1.170	1.250
Full Cost of Money Rate.	4.75	5.65	6
Project Window	6	9	9
Current Fuel Price.....	\$2.30	\$2.80	\$5.00
Equip Purchase Value Adj	1.20	1.30	1.50
Construction Labor Adj	0.90	1.00	1.25

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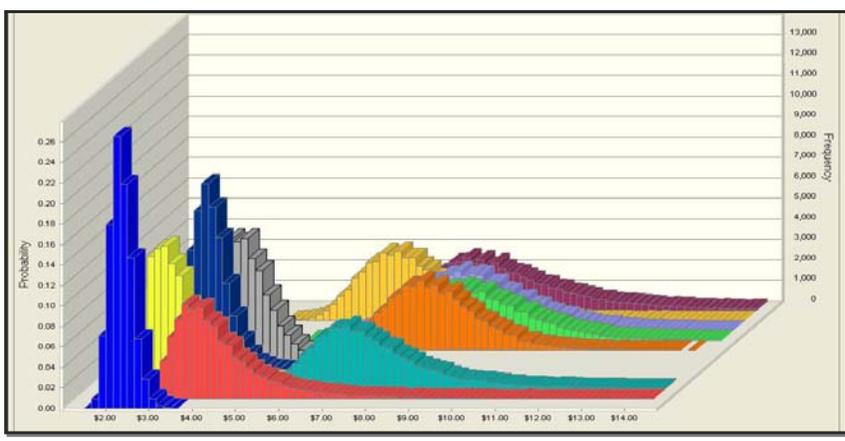


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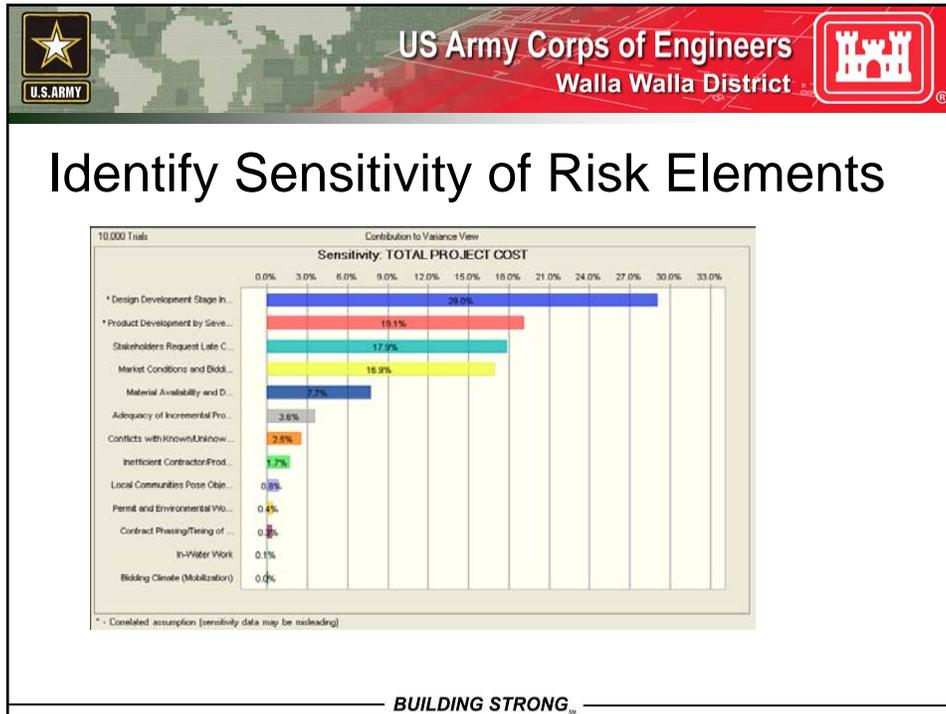


Alternative Cost



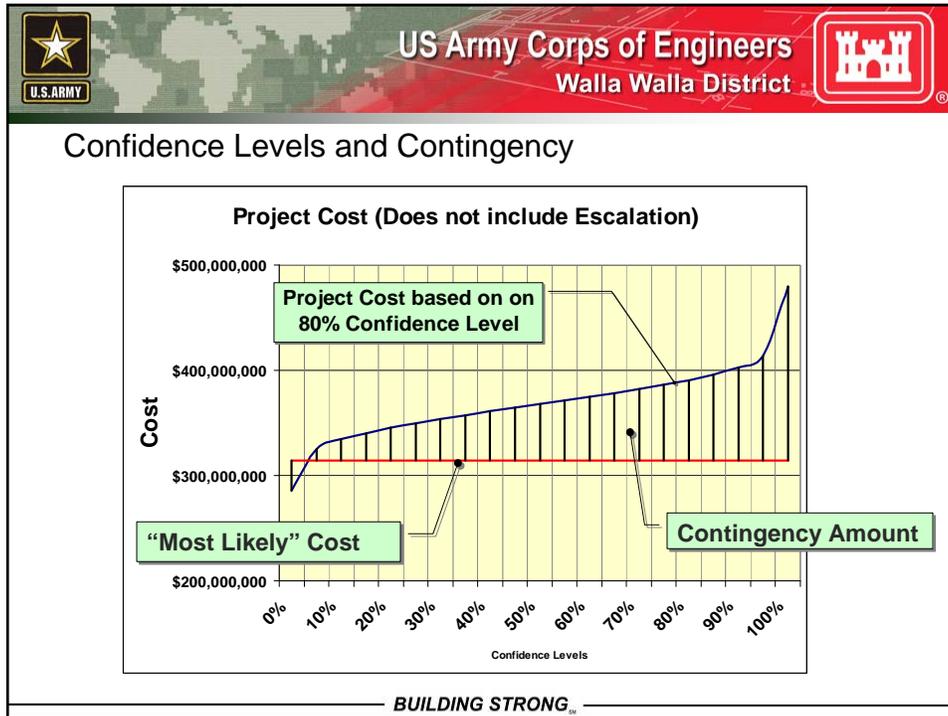
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- ## Identify Risk Mitigation Efforts
- After first run of risk model, project development team can evaluate sensitive elements for potential risk mitigation efforts.
 - Examples: soil sampling, scope clarification, care and diversion, quantity takeoffs, define contract strategy...
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Monitor and Act

- Most critical aspects.....

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General Riley's Guidance on Risk

- “this memorandum directs the use of specific risk analysis methods for the development of the contingency on Civil Works Total Project Cost”
- “This is applicable for all decision documents requiring congressional authorization for **projects exceeding \$40 million.**”

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SUMMARY

- Emphasis on accurate cost and schedule.
- Accurate Cost and Schedule starts with DEFINED SCOPE
- Required Detailed Risk Analysis on Projects \geq \$40M and Risk Analysis is a team product
- Recommended on all projects where you might have any of the following conditions; high cost, complexity, high visibility, new one of a kind.

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	\$0.00	Crew Productivity from
	\$0.00	Crew Productivity from
VIT	QUANTITY	UNIT COST
MF	18616.8	\$0.00
MF	20478.4	\$0.59
		\$12,153.05

Cost Engineering Branch

RELEVANT
READY
RESPONSIVE
RELIABLE

Proudly serving the Armed Forces and the Nation now and in the future.

<http://www.nww.usace.army.mil/html/OFFICES/Ed/C/default.htm>

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Cost Engineering Directory of Expertise for Civil Works, Interagency and International Support

Walla Walla District's Cost Engineering Branch provides the United States Army Corps of Engineers with estimating services for the construction features on all projects from the planning phases through construction, maintenance, and rehabilitation of facilities. Cost Engineering Branch also serves as a [Directory of Expertise for Construction Equipment/Cost Index Database](#). We produce several national guidance documents and software programs which provide detail methodologies for estimating costs for construction and marine equipment, dredging, and cost escalation factors. Our diversified cost team strives to provide technical and export support for all customers, both Corps and other government agencies.



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Thank-You

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