

One-Corps Feasibility Studies

Lessons Learned in Roles and Collaboration in Executing Feasibility Studies

5 December 2013

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US Army Corps of Engineers
PLANNING SMART
BUILDING STRONG®



A Feasibility Study Report and
Recommendation of the Chief of
Engineers are not Planning products

They are not Engineering products

They are USACE products.



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Today's Webinar

- Headquarters Engineering and Planning Perspectives
- Acknowledge Concerns of Planners and Eng in the Field
- Discussion-How is your District / MSC addressing challenges? What do you need from HQ?
- This is the beginning of the discussion



What The Chiefs Have Told Us

- To meet 3 year deadline and budget constraints more engineering analysis will be pushed to
- Lower level of detail and resulting high cost contingencies could effect project decisions
- Some required activities are expensive and consuming and cannot be scaled or reduced
- We ' r e b e i n g - b u t a l o t i s o u t s i d e o u r c o n t r o l
- It is very easy for districts to ~~assume~~ ^{assume} means reduced efforts ~~on~~ ^{on} everything

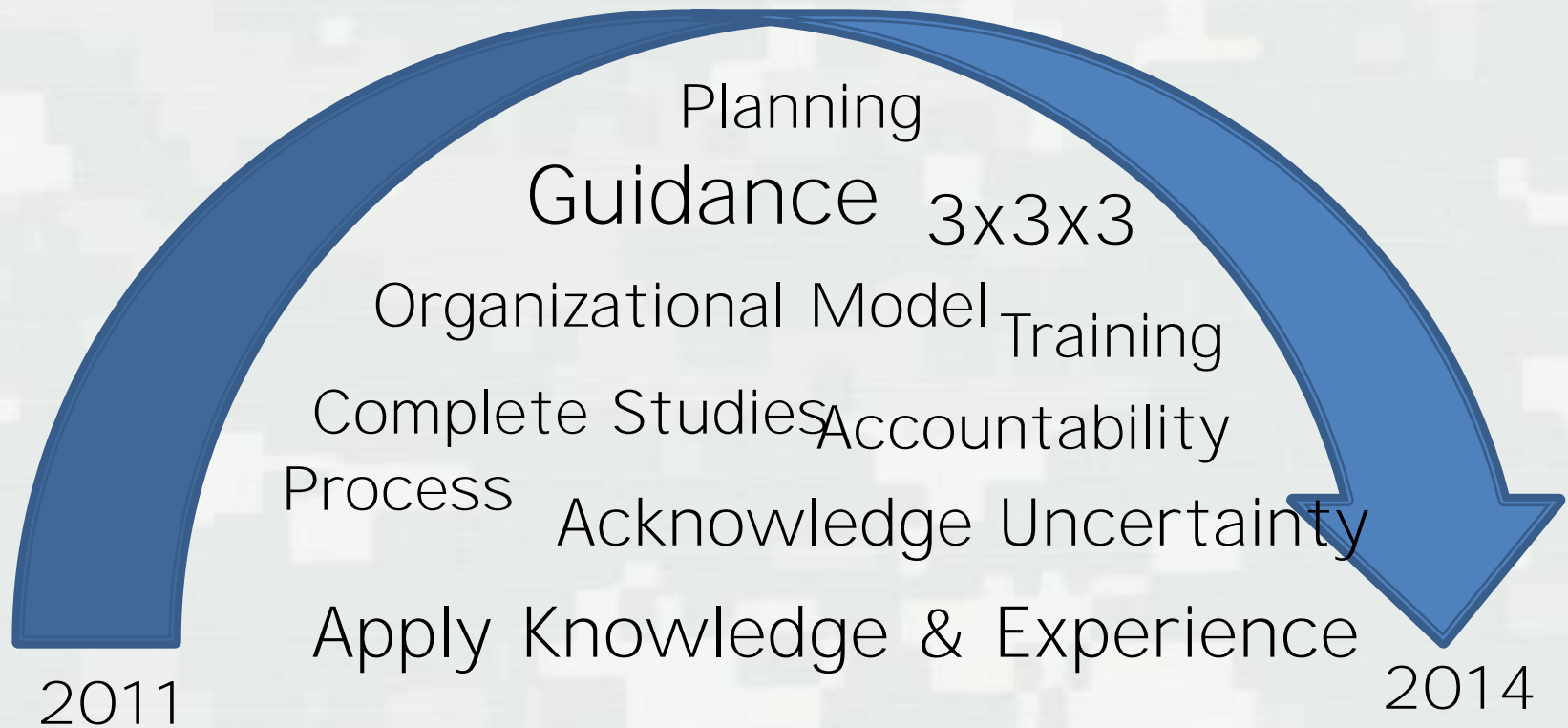


But Also:

- We ' r e w o r k i n g t o g e t h e r forward
- Safety Programs are on board
- Until the culture is set, PDTs need more over from senior leaders (branch-level)
- We would welcome a forum allow the EC community to share lessons learned in streamlining level of detail
- Revisions to ER 1110-1150 can provide guidance on level of detail issues (including ATR)



Planning Modernization 3x3x3



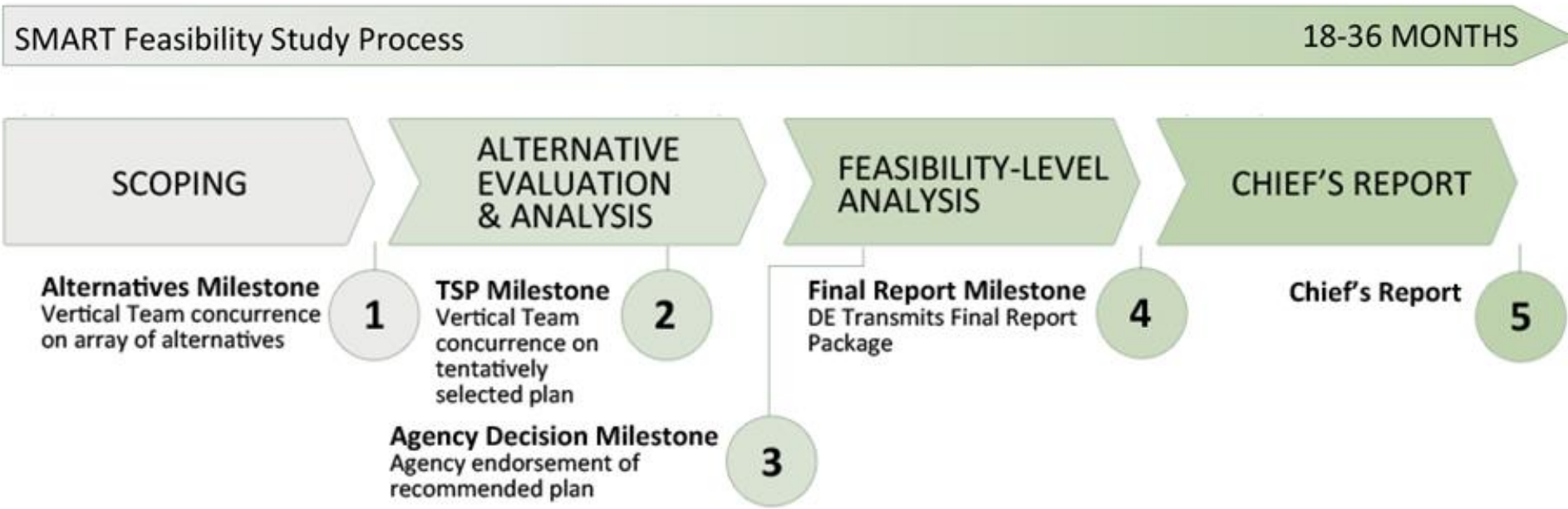
Has the Role of E&C Changed?

In short V

- Reasonable level of design and cost estimates enable an informed recommendation in final feasibility report, but focus on one recommendation rather than several alternatives
- Early engagement with Engineering, Real Estate resource agencies, sponsor, to identify where more (data, information, model runs) necessary to make a decision.



Feasibility Study Process



- All Civil Works functional elements responsible & accountable
- Apply critical thinking throughout the study
- Understand and document impact of uncertainty on decisions



Where is Engineering?

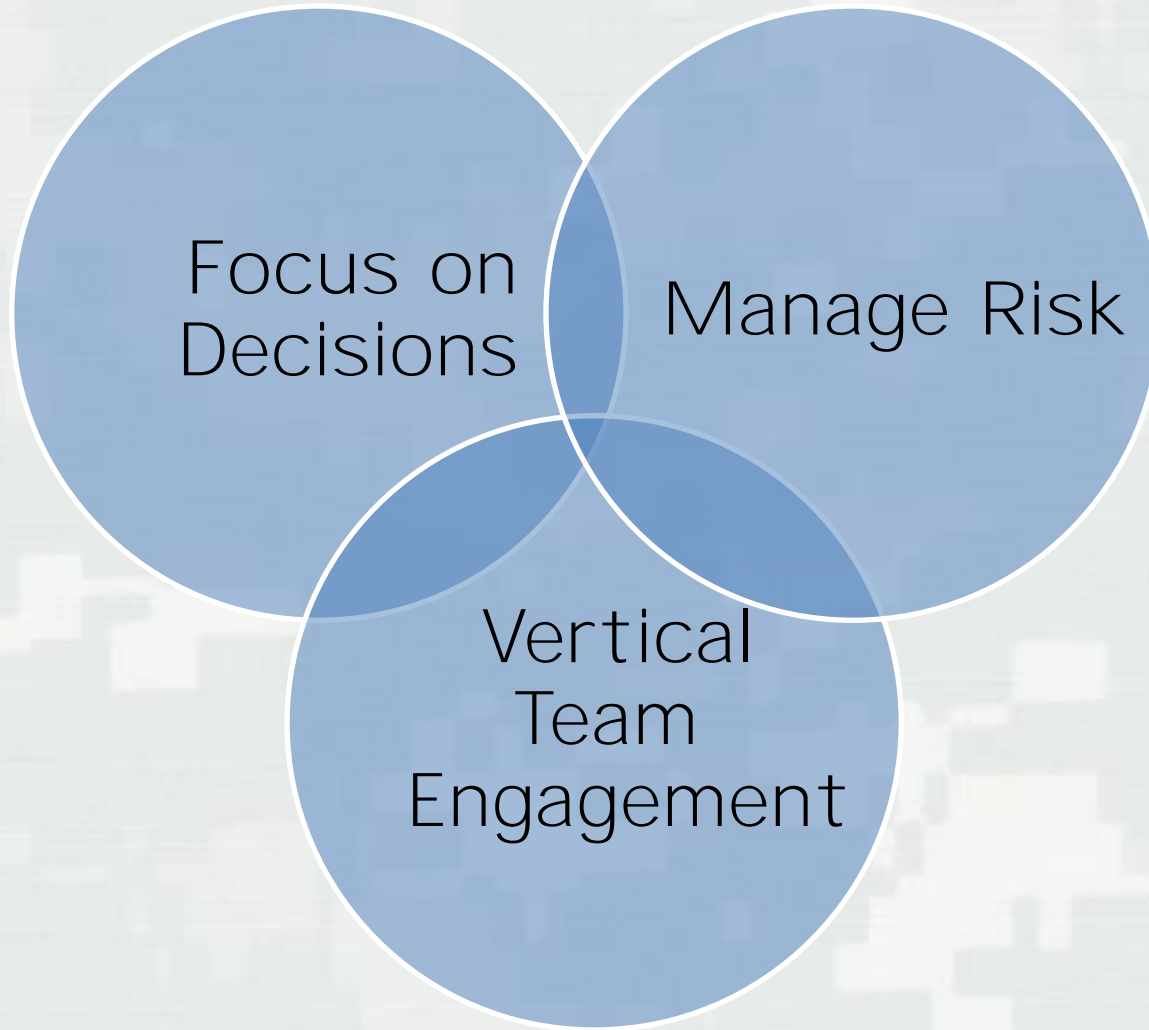


Focus on alternatives evaluation to identify a tentative plan for more detailed design

Focus on scaling the measures and features for the recommended plan/LPP



I t ' s N o t J u s t



What Decisions Are Being Made

- Formulate, evaluate and compare alternatives to select a plan
- Across a set of decision criteria
 - Benefits: Economic, Environmental, Safety
 - Costs: Construction, LERRDS, OMRR&R
 - Impacts: Environmental, Social, Cultural
 - Legal and Policy requirements
- In comparison to future without project conditions



ECB 2018

- Uncertainty and Level of Detail. The new paradigm will require increased use of critical thinking (i.e., engineering judgment) in the analysis and cost estimates supporting plan formulation and selection for both alternate level as well as final recommendation...
- Each project will use a "risk register" organized by cost, schedule and/or function/safety. The goal is to minimize data collection and analysis for low impact features during the feasibility phase. High impact features should be carefully scoped such that data collection and analysis is commensurate with risk and adds value to the decision making process, accuracy to the cost and schedule, or reduces risk.
- The PDT shall work closely with the cost engineer to identify areas where design details would be beneficial to reduce uncertainty. For items with significant cost and schedule risk mitigation strategies should be identified and/or discussed in the risk register. While this approach must not lead us to accept additional life safety risk in projects, it may be appropriate to make a risk informed decision to defer some analysis to the Preconstruction Engineering and Design (PED) phase, provided that proper plan formulation can be accomplished.



F i n d i n g t h e " R i n g

(From ER 11-201150)

Para 13.9.1" T h e l e v e l o f c o s t according to the design information/detail established to support the feasibility report. Contingencies shall be developed based upon the risks related to the uncertainties or unanticipated conditions ... C o n t i n g e n c i e s

Part of the PDT overall project evaluation shall determine whether to perform additional investigations or studies in order to reduce the uncertainties and refine the cost estimate or to proceed with the





Manage Risk Throughout the St

- Identifying risk is a key element.
- SMART Planning incorporates several areas of risk identification.
- For product development there are two areas to be addressed by PDT.
 - Planning Decision Quality: Study Risk, Project
 - Cost and Schedule Risk
- Both utilize Risk Registers to capture risk items and document likelihood and potential impact.



Study and Project Risk

- Planning Decision Risk Analysis
 - Identify uncertainties in critical decision information
 - Benefits; costs; environmental, social or cultural impacts; residual risks
 - Identify those that have greatest impact on decision quality
- Focus on areas that are critical in achieving the objective. This may be alternative design or the TSP.



Cost and Schedule Risk

- Cost and Schedule Risk Analysis
 - Identify which elements upon authorization which could cause the project cost to change or the so of completion change.
 - Highlights areas for risk mitigation and also sets contingency amounts for certain confidence level
- Typically the Corps utilizes the 80% confidence level for establishing contingency levels.
- For questions on this contact the Walla Walla Cost Engineering Center.



A Few Words about

- Cost increases and 902 busts are a concern for the Agency, for the ASA, for our sponsors, for Congress
- However, we must reconsider the cost engineering of detail needed to support a tentative selection
 - Detailed cost information will increase as study moves to single recommended plan
- Detailed MII estimates will be prepared for the recommended plan (and LPP) to support the investment
- Contingencies will continue to reduce as detailed proceeds
 - Intent is not to “push it



Value Engineering

- VE in the planning phase, focuses on the critical path functions; revalidating connections to plan intent throughout the Project Life.
- VE application is scalable/adaptable to decisions to be made throughout the planning process

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school " standard -21: p p
VE Screening Tool fo



Your Role in the Field

- Understand, Communicate and Address Uncertainty
- Technical expertise & Problem solving. Engage the PCX and VT to work through level of complexity decisions be the "honest broker"
- Look for opportunities for mentoring and advising
- Quality Control



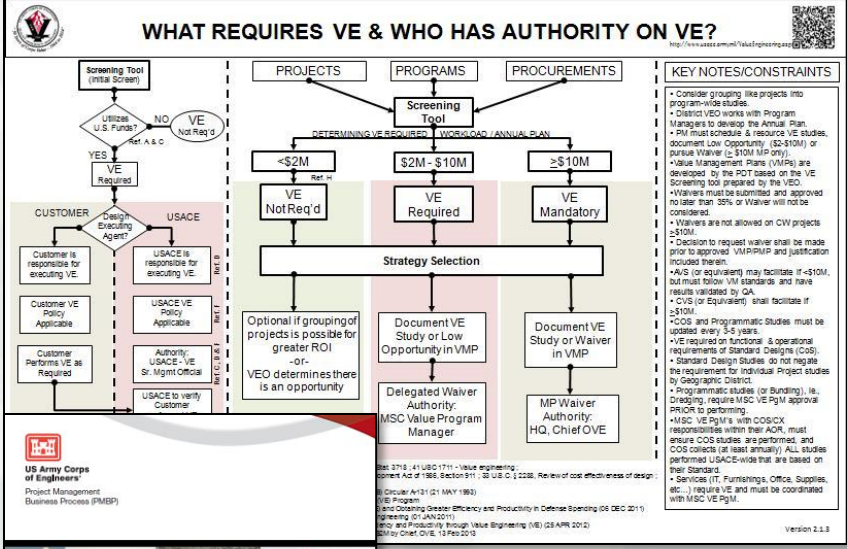
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SMART PLANNING

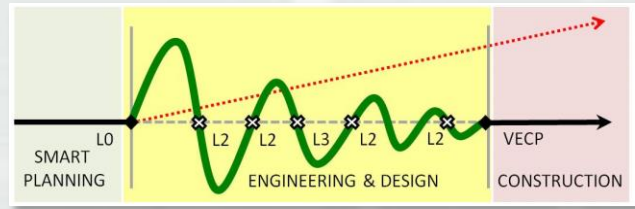
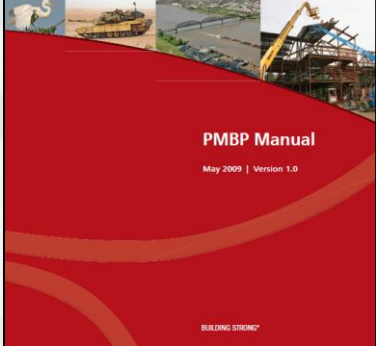
Dialogue on infusion of SMART Planning & VE over project life cycle:

Planning COP Webinar, 16 January 2013

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- WHY VE?
- “Old School” Perception -vs- NEW School Approach
- Integration Pilot Findings & Approaches
- Potential connection to Project Life Cycle
- Valuable sources for more Information



Take Aways

- Limit detail on alternatives
- Focus on cost drivers
- Identify, mitigate, and manage cost risks
- Acknowledge and document risks



Questions?

To ask a question in Question/Answer Mode:

Press 1 0 on your phone

You will be prompted when it's your turn – make sure your own phone is off mute.

Press 1 0 again to Withdraw your question if someone else has already asked it...

We will try to answer as many as time allows.

For more information:

<http://www.corpsplanning.us>

