



US Army Corps of Engineers



Early Contractor Involvement (ECI)

***Industry Workshop
New Orleans, Louisiana***

28 January 2009



Objectives

- Answer the “Why”
- Terms of Reference
- How USACE got here (experience)
- How ECI “works”
 - The basics
 - Lessons Learned
 - “TTP”
- Application for the HPO



Terms of Reference

Primer on
Project Delivery

Provided by the Joint Committee of
The American Institute of Architects
The Associated General Contractors of America

- So, what is the key to Acquisition Strategy Theory?
- “Construction Management at Risk (CM@R),” “Integrated Design-Bid-Build (IDBB),” and “Early Contractor Involvement (ECI)”
- For definition of terms, let’s use Project Delivery Primer, AGC/AIA 2004©



Primer on Project Delivery

A Joint Publication from AIA/AGC 2004©

Delivery vs. Management

Before defining the project delivery methods, it is important to distinguish between the delivery and management aspects of project delivery. “Delivery” refers to the method for assigning responsibility to an organization or an individual for providing design and construction services. “Management” refers to the means for coordinating the process of design and construction (planning, staffing, organizing, budgeting, scheduling, monitoring).

For example, CM@R is a project delivery method and CM-adviser is a form of project management. While this difference in leadership may appear subtle, it is nonetheless important to the understanding of the different delivery methods. Leadership implies the authority to legally bind the owner. Assignment of contractual responsibility is a key concept for differentiating project delivery methods. Outsourcing of such responsibility and administration is an option that owners should address in any project.



Project Delivery Methods

Defining Characteristics

Delivery Method	Design-Bid-Build	Design-Build	Construction Management at Risk
Defining Characteristics*	1) Three prime players -- owner, designer, builder	1) One contract -- owner to design-build entity	1) Three prime players -- owner, designer, CM@R
	2) Two separate contracts -- owner-designer, owner-builder		2) Two separate contracts -- owner to designer, owner to CM@R
	3) Final contractor selection based on lowest responsible bid or total contract price		3) Final provider selection based on aspects other than total cost

Source: Primer on Project Delivery, by Joint Committee of AIA and AGC 2004©

Project Delivery Methods

Typical Characteristics

Delivery Method	Design-Bid-Build	Design-Build	Construction Management at Risk
Typical Characteristics*	1) Three linear phases -- design, bid, build	1) Project-by-project basis for establishing and documenting roles	1) Overlapping phases -- design and build (fast track)
	2) Well-established and broadly documented roles	2) Continuous execution of design and construction	2) Hiring of the construction manager during the design phase
	3) Carefully crafted legal and procedural guidelines	3) Overlapping phases -- design and build (fast track)	3) Specific contractual arrangement determines the roles of players
	4) Contract documents that are typically completed in a single package before construction begins, requiring construction-related decisions in advance of actual execution	4) Two prime players -- owner, design-build entity	4) Preconstruction services offered by the constructor (such as constructability review, bid climate development and bid management)
	5) An opportunity for construction planning based on completed documents	5) Carefully crafted legal and procedural guidelines for public owners	5) Clear quality standards produced by the contract's prescriptive specifications
	6) Complete specifications that produce clear quality standards	6) Some construction-related decisions after the start of the project	
	7) Configuration and details of finished product agreed to by all parties before construction begins	7) Overall project planning and scheduling by the design-build entity prior to mobilization (made possible by the single point of responsibility)	
		8) Either cost or solution as the basis for selection of the design-build entity	

Source: *Primer on Project Delivery*, by Joint Committee of AIA and AGC 2004©



ECI is...

- A project delivery method where the Corps engages the services of a general contractor to provide “preconstruction services” concurrent with design effort
- The contract includes the Government’s ability to exercise an option for the construction
- Contract includes terms and conditions to allocate risk among the parties
- A Fixed Price Incentive contract IAW FAR 16.403



What ECI Is Not...

- Design Contract - Corps retains design responsibility either through in-house or with a separate AE contract. Preconstruction services are not “Brooks Act” services.
- A non-competitive acquisition – The contract is procured IAW FAR 15 and application of FAR 16.403. Price and non-price factors are evaluated.
- Design-Build Contract – There are 2 separate entities (designer & construction manager/general contractor) both report to the owner (Corps).



How we got here

- Spring 2004 Kansas City District (NWK) awards “CM@R” for Lewis and Clark (CGSC) at Fort Leavenworth (using FAR Clause 16.403-2 Fixed-price incentive (successive targets) contracts)
- 2005-2006 NWK awards half-dozen more “CM@R” (Tuttle Creek, RCF, 1ID HQs, Prime Power, ...)
- Fall 2005, North Atlantic Div (NAD) asks USACE for approval to do “CM@R” for BRAC 05 at Ft. Belvoir. Working with USACE HQs, NAD develops “IDBB” variation using same FAR Clause (16.403-2).
- Mar 2007, USACE Chief Counsel renders opinion on “CM@R” as practiced by NWK and sets out seven considerations for application.
- 4 Sep 2007, USACE Letter of Instruction creating “ECI.” LOI rightly observes “CM@R” NWK-version and IDBB are variations of same delivery method using Fixed-price Incentive (successive targets) contracts. LOI establishes test program for USACE Divisions wrt MILCON (1 ECI per).
- 7 Oct 2008, PARC memorandum. Districts can use ECI as long as they receive proper training and the acquisition plan demonstrates sufficiency per the seven CECC considerations (Mar 07).



Use of ECI within USACE

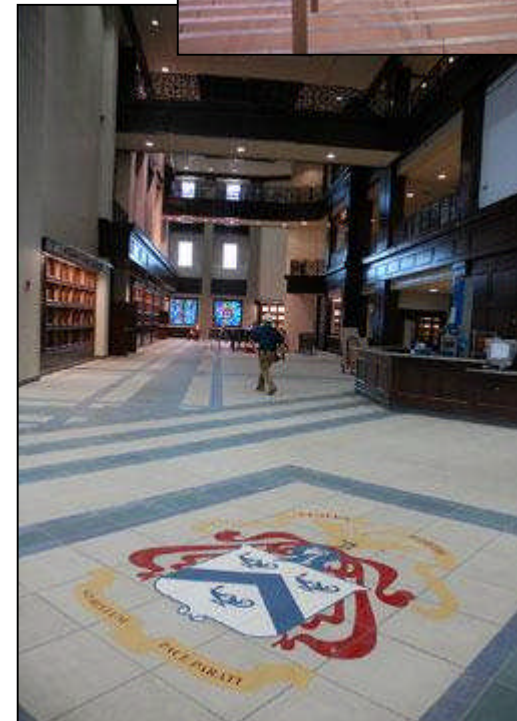
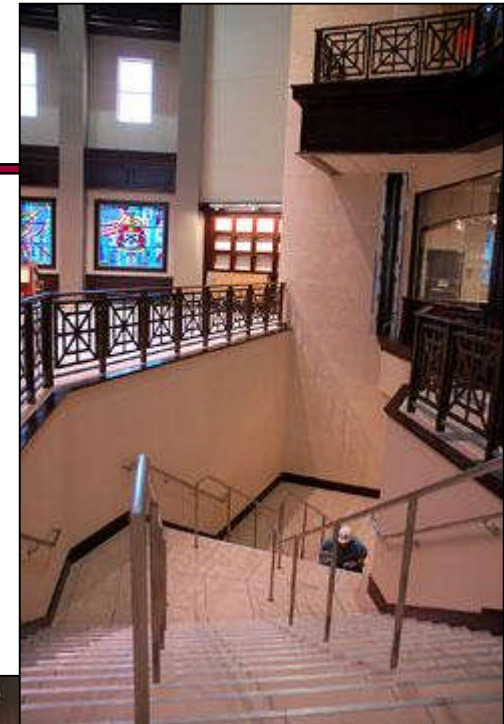
(Awards)

- (NWK) FY04 Command & General Staff College (Lewis & Clark Center), Fort Leavenworth, KS, \$115.6M
- (NWK) FY06 Tuttle Creek Dam Seismic Upgrade, Tuttle Creek Lake, Manhattan, KS, \$200M
- (NWK) FY06 1st ID Headquarters Fort Riley, KS, \$50.4M
- (NWO) Mni Waste' Water Intake, SD, \$18.6M (Civil Works/ Emergency Response project for local tribe)
- (NWO) FY07 4th ID Headquarters, Fort Carson, CO, \$38.4M
- (NWK) FY07 Regional Correctional Facility, Fort Leavenworth, KS, \$95M
- (NWK) FY07 Civilian Education System (OMA), Fort Leavenworth, KS, \$29.2M
- (NWK) FY09 Prime Power School, Fort Leonard Wood, MO, \$28M
- (NAB) BRAC05, National Geospacial Intelligence Agency, Ft. Belvoir, VA \$1.7B
- (NAO) BRAC05, Community Hospital, Fort Belvoir, VA \$747B
- (SWF) BRAC05, Battle Field Health Trauma Lab, San Antonio TX \$107M
- (SWF) San Antonio Military Medical Center, TX \$630M



Lewis & Clark Center

Ft. Leavenworth, KS



March 06 photos

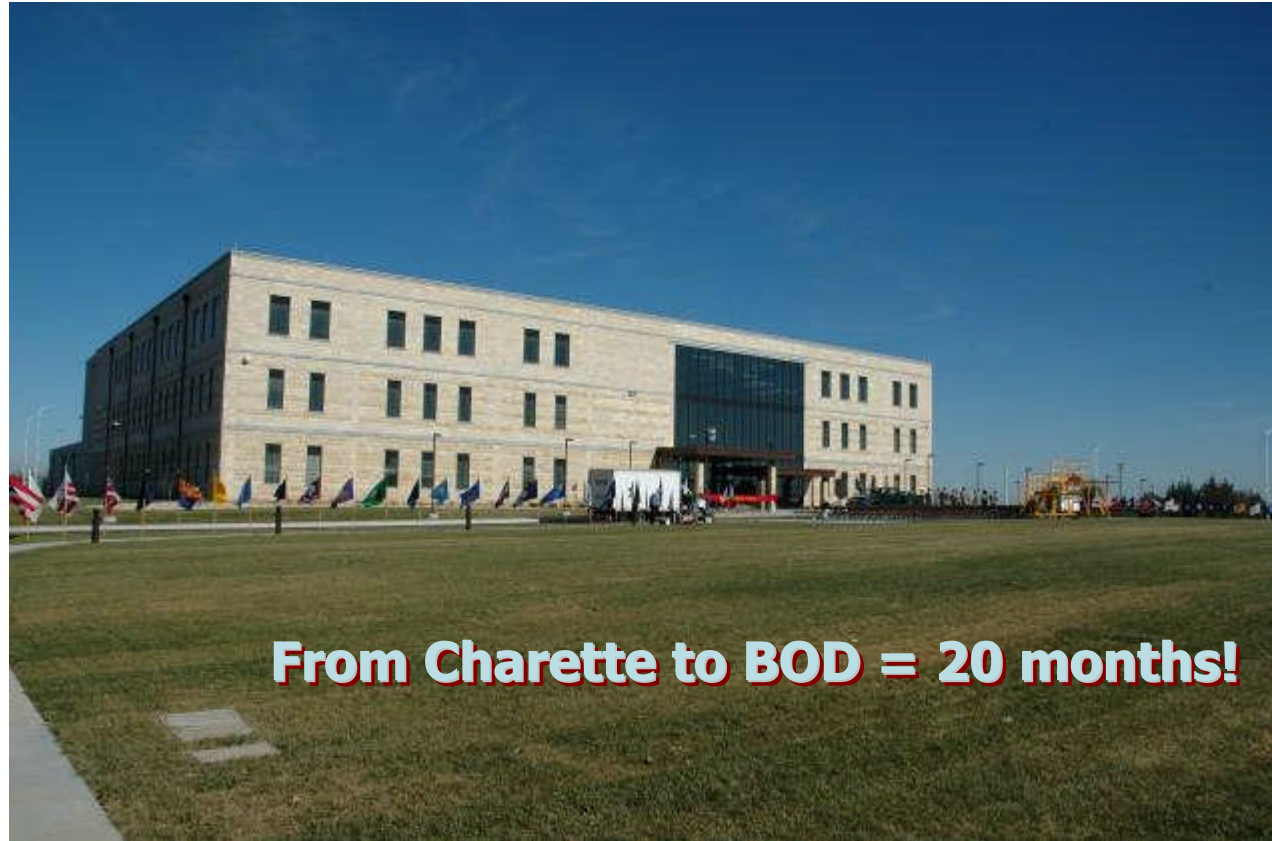


1st ID Division Headquarters

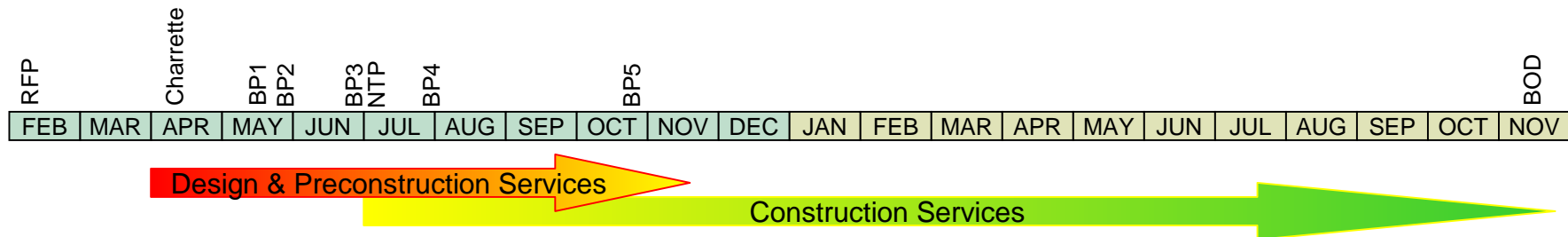
Construction Ceiling:
\$46.5M

Scope:
136,000 SF for 622PN, JOC, SCIF, NOC, 250 PN Briefing Room, General Admin. Office areas, Victory Park and supporting infrastructure

Schedule:
Need turnkey facility by November 2007. Ribbon cutting held 16 Nov.



From Charette to BOD = 20 months!





Tuttle Creek Dam Seismic Upgrade

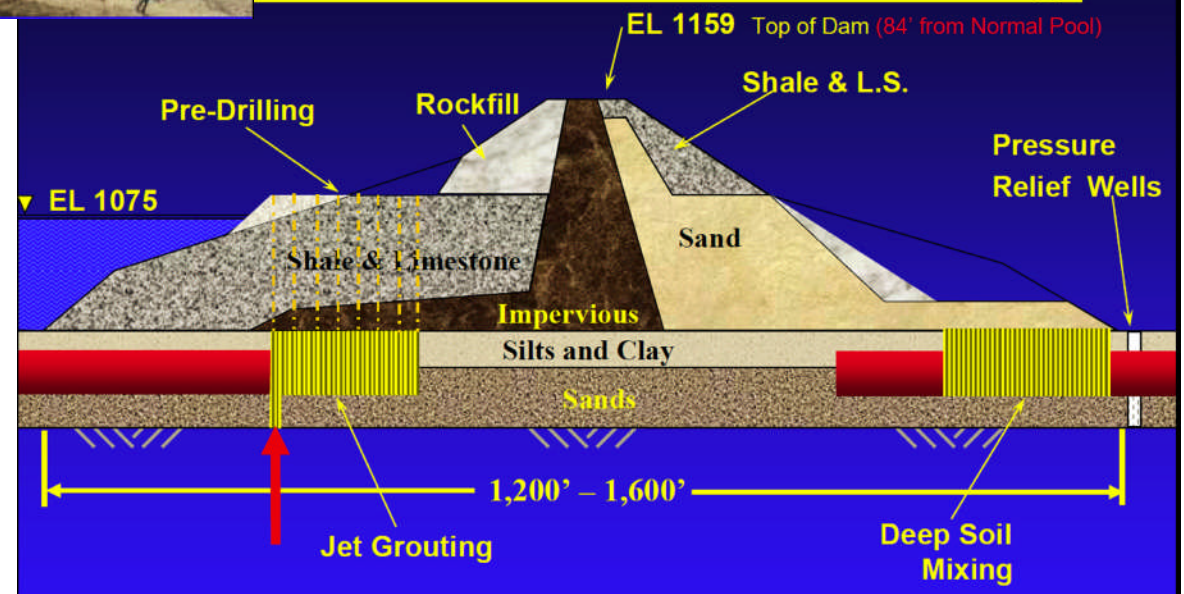


Construction Ceiling: \$200M

Base for the ECI Contract was substantial. District used destructive testing of Jet Grouting methodology to validate production & performance

Ultimately, validated jet grouting methodology for certain applications. Deleted that feature of work because of subsequent seismic modeling. District completing seismic upgrade with appx 30% savings on cost.

Tuttle Creek Dam Original Remedial Action Addresses Deformation and Drainage





NGA New Campus East

- **Scope:** \$1.7 B for NGA relocation and consolidation into 2.4 M square foot office building. Includes SCIF, data center, 10 MW power plant and remote delivery facility.
- **Status:** Project is fast tracked, contractor on board and integrating design and construction, continued coordination for permits and design integration/reviews.
 - Structural Steel for CUP, TEC, and Main Building Ongoing
 - Design is nearing 95% complete
- **Milestones:**
 - 25 SEP 07 – Groundbreaking
 - MAR 09 – Data Center operational
 - APR 11 – Construction Complete
 - SEP 11 – BOD





Fort Belvoir Community Hospital

- **Scope:** \$ 747M for 1.2M square foot hospital complex with central energy plant, helipad, and 2600 vehicle parking garage.
- **Status:** Project is fast tracked, contractor on board and integrating design and construction, continued coordination for permits and design integration/reviews.
 - Sitework complete
 - Foundations, Structural Steel ongoing
 - Nearing 95% design
- **Milestones:**
 - 28 SEP 07 – Contract award
 - 12 OCT 07 – Contract NTP
 - 8 NOV 07 – Groundbreaking
 - FEB 07 – Major construction
 - AUG 10 – BOD Date





The applicable FAR Clause

16.403 Fixed-price incentive contracts.

(b) *Application.* A fixed-price incentive contract is appropriate when—

(1) A firm-fixed-price contract is not suitable;

(2) The nature of the supplies or services being acquired and other circumstances of the acquisition are such that the contractor's assumption of a degree of cost responsibility will provide a positive profit incentive for effective cost control and performance.

(b) *Application.* A fixed-price incentive (successive targets) contract is appropriate when—

(1) Available cost or pricing information is not sufficient to permit the negotiation of a realistic firm target cost and profit before award;

(2) Sufficient information is available to permit negotiation of initial targets; and

(3) There is reasonable assurance that ... information will be available ...to permit negotiation of either (i) a firm fixed price or (ii) firm targets and a formula for establishing final profit and price that will provide a fair and reasonable incentive.

(ii) If negotiation of a firm target cost and profit is not appropriate, they may negotiate a formula for establishing the final price using the firm target cost and profit. The final cost is then negotiated at completion, and the final profit is established by formula, as in a fixed-price incentive (firm target) contract (see [16.403-1](#) above).

(b) *Application.* A fixed-price incentive (successive targets) contract is appropriate when—

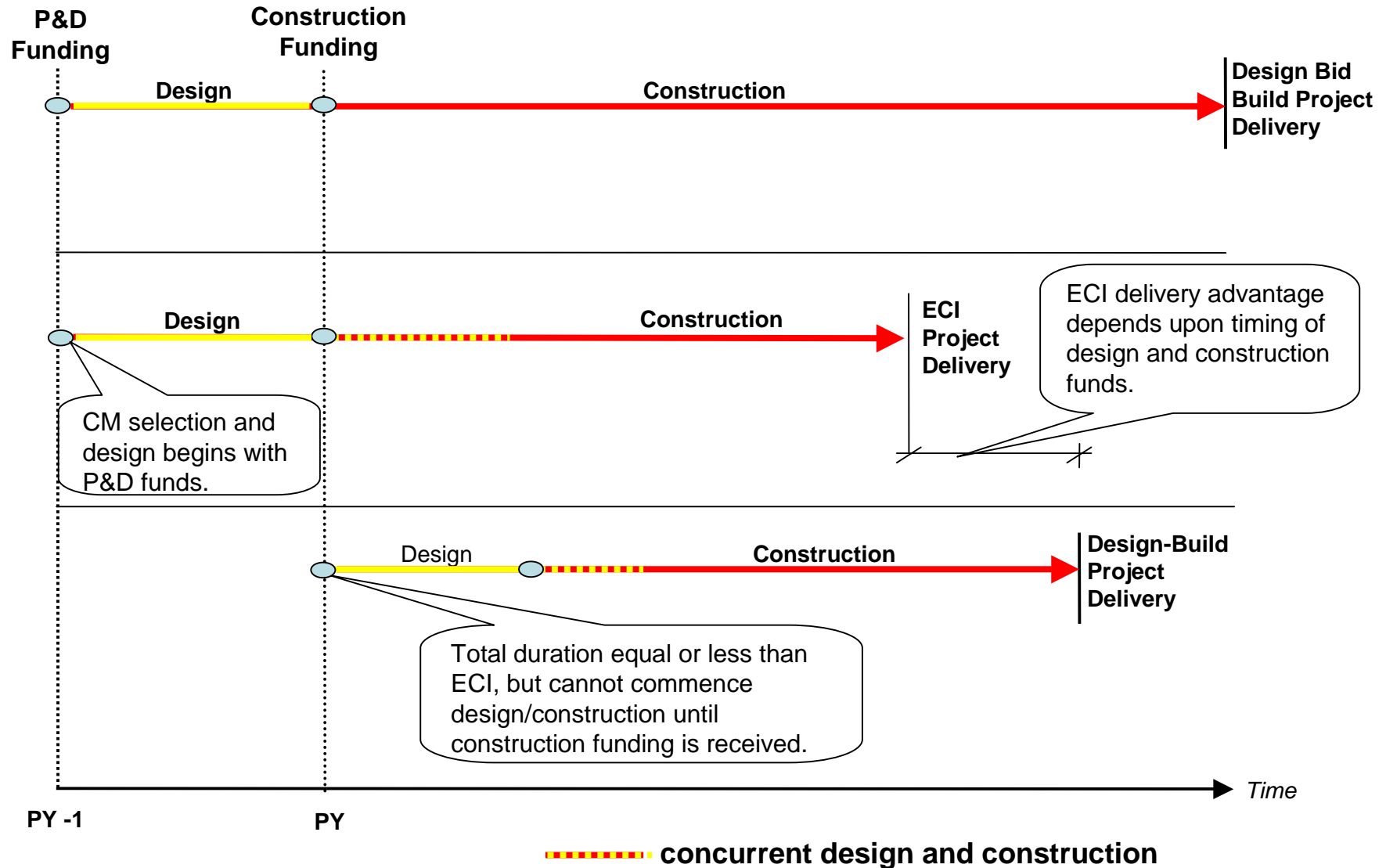
(1) Available cost or pricing information is not sufficient to permit the negotiation of a realistic firm target cost and profit before award;

(2) Sufficient information is available to permit negotiation of initial targets; and

(3) There is reasonable assurance that additional reliable information will be available at an early point in the contract performance so as to permit negotiation of either (i) a firm fixed price or (ii) firm targets and a formula for establishing final profit and price that will provide a fair and reasonable incentive. This additional information is not limited to experience under the contract, itself, but may be drawn from other contracts for the same or similar items.



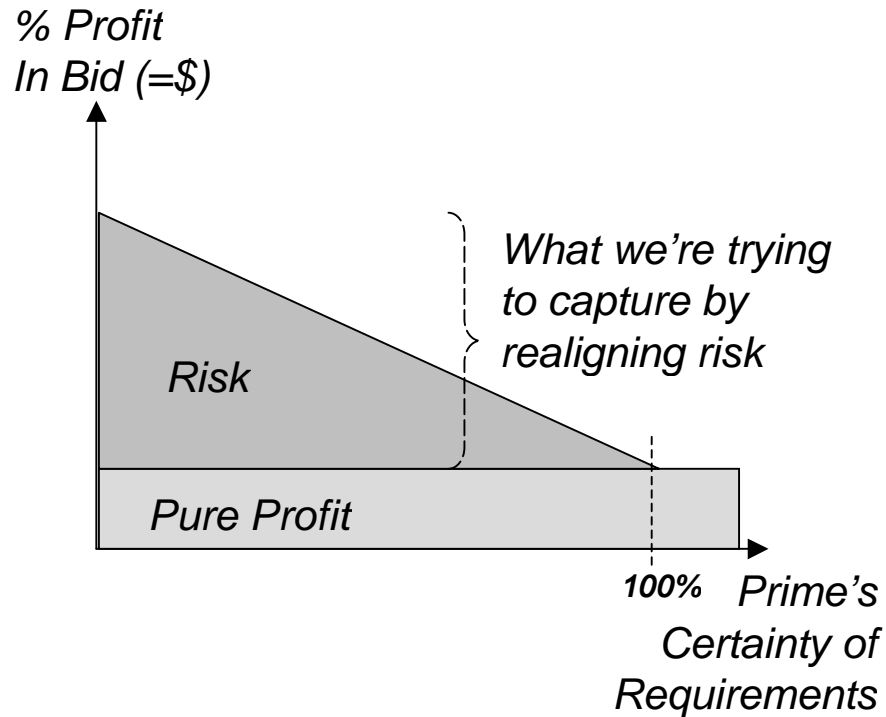
Relative Project Delivery Timelines





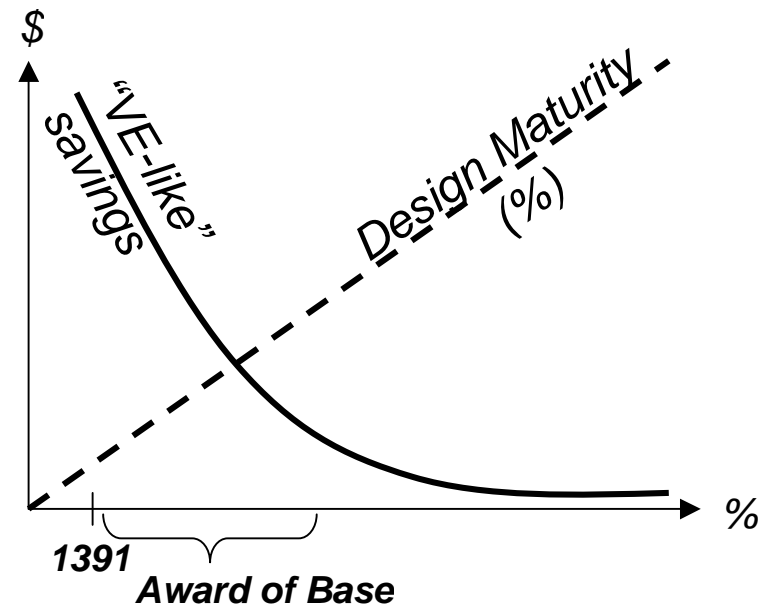
Why Pursue ECI (besides speed)?

“Cheaper” in Two Ways



Less Risk to Prime = Savings or Scope for Customer

Earlier Prime Contractor Input Affords Greater Savings





When to Use ECI

- Complex “one of a kind” project, with no standard design
- Customer wants to provide input/shape design solution during design phase (*“I’ll know it when I see it”*)
- Challenging site, schedule, or other unique aspects that would benefit with a builder’s input during design phase
- When you need/want a collaborative effort during design and construction between Designer, Builder, Owner, User to be assured of project success



Current Template of Best Practices

Structure of the Proposal

ITEM NO	SUPPLIES/SERVICES	QTY	UNIT	UNIT PRICE	AMOUNT
0001 BASE	Preconstruction Services (Fixed Firm Price)	1	Lump Sum	\$ _____	\$ _____
0002 OPTION	Construction (Fixed Price Incentive)				
	Initial Target Cost (ITC)	1	Lump Sum	\$ _____	\$ _____
	Initial Target Profit (ITP)		%	_____ %	
	% Profit (between <u>a</u> % and <u>b</u> %)				
	(ITP = ITC x _____%)	1	Lump Sum	\$ _____	\$ _____
					TOTAL (NET) \$ _____

Initial Target Price

Initial Target Price < Ceiling Price



Current Template of Best Practices

“TTP”

- “KISS”
- Earlier the better
- Split options at natural break in the work (eg: sitework; testing/validation; color/timing of funds; by-station...)
- Require updated (target) pricing prior to awarding construction option
- Require 3 prequalified subcontractor quotes for all subcontracts over \$100K
- Require CM to obtain “Consent to Subcontract” (FAR 44.2) from the KO prior to entering subcontracts for features of work (design packages) released for construction
- Government provides the ceiling price (don’t compete it)



Current Template of Best Practices *Incentives*

Establishing firm fixed price or final profit adjustment formula

Excerpt from FAR Clause 52.126-17(d)(2)

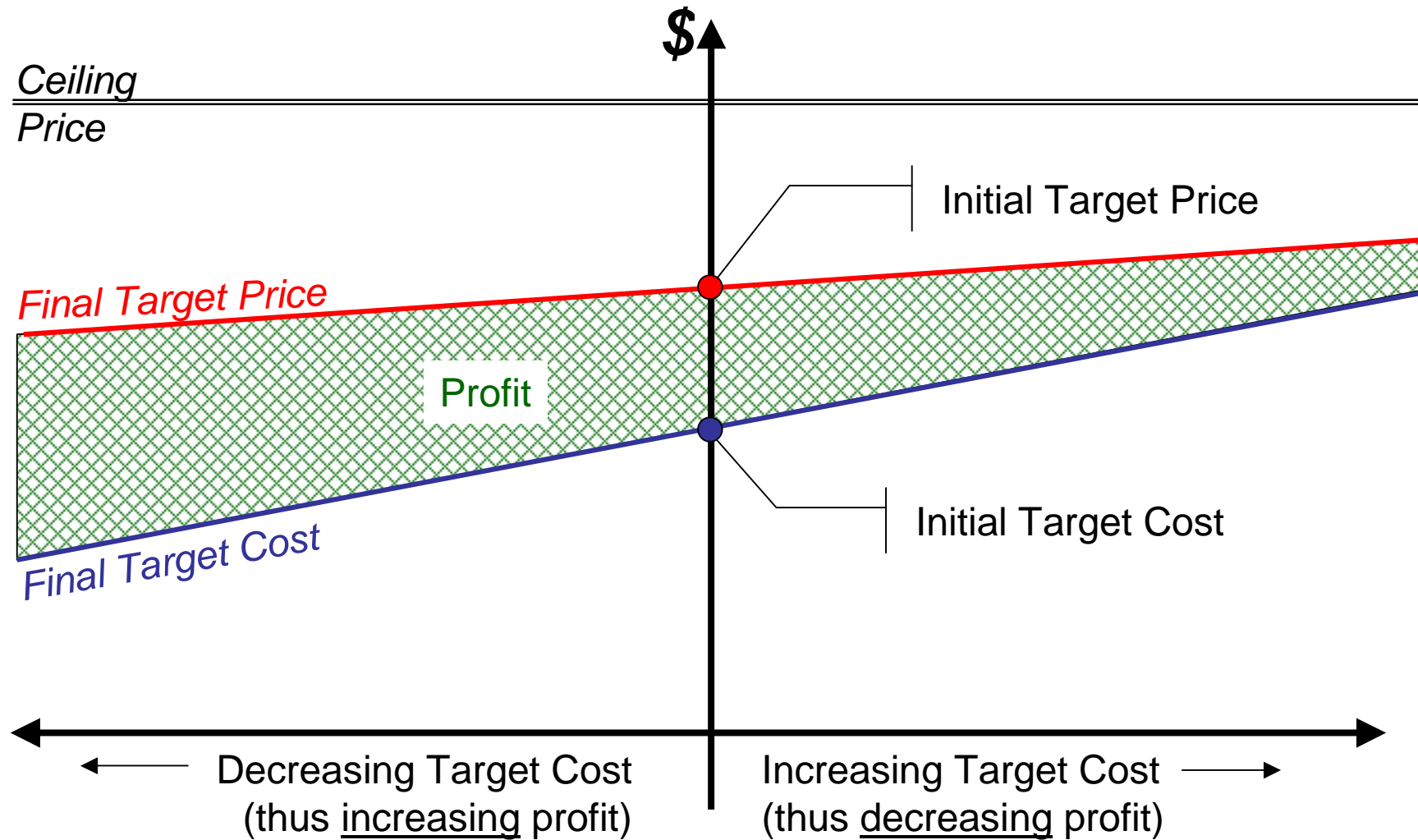
“If the total firm target cost is more than the total initial target cost, the total initial target profit shall be decreased. If the total firm target cost is less than the total initial target cost, the total initial target profit shall be increased. The initial target profit shall be increased or decreased by **TBN** percent of the difference between the total initial target cost and the total firm target cost. The resulting amount shall be the total firm target profit; provided, that in no event shall the total firm target profit be less than **x%** or more than **y%** of the total initial cost. ”

(***TBN***: To be determined by negotiation)



Current Template of Best Practices

Final Profit Adjustment—How it works





Example RFP Factors for ECI

- Corporate Experience
- Past Performance
- Preconstruction Services Management Plan
 - Staffing Plan
 - Interaction and Communication Plan (w/A-E)
 - Schedule Management Approach
 - Cost Estimating Approach
- Construction Management Plan
 - Approach Narrative (means and methods for SUCCESS)
 - Schedule and Resource Management (WBS and network of M&M; recovery plan)
 - Quality and Safety Management
 - Earned Value Management System Experience and Plan



Exec Summary of ECI

“Early Contractor Involvement”

- Modeled after Private Sector’s CM@Risk (see AIA/AGC primer)
- History of USACE application
 - **KC and NWD (“CM@Risk”): 4+ yrs, 8+ projects (L&C; 1ID HQs; ...)**
 - **NAD (“IDBB”): 2+ yrs, 2 mega-projects recently awarded (NGA, Hosp)**
 - **SWD (“IDBB”): 1+yr, 2 projects on-deck (Ft. Sam Med Ctr & Trauma Ctr)**
- Basics
 - **“different allocation of risk among parties”**
 - **Uses FAR 16.403-2 Incentive Price Revision (Successive Targets) to get at private sector model**
 - **AE selection is by normal procedures (or design can be In-House)**
 - **Construction Contractor solicitation and award is via RFP / Best Value Source Selection (procured IAW FAR 15 and application of FAR 16.403-2)**
 - **Fastest of the Fast Track methodologies**
 - **Vetted through USACE Counsel and the procurement risks/requirements are spelled-out in USACE Chief Counsel opinion**
- Observations/Lessons Learned
 - **When to use ECI (vice DBB and DB)**
 - **Key’s to Success (Earlier the Better; KISS)**