Leading Change: “Birthing” Early Contractor Involvement (ECI) in the Corps of Engineers

CMAA Spring Leadership Forum
17-19 May 2009
Agenda

- ECI 101 – Big Picture
- Leading Change in a Bureaucracy
  - TTP (Tactics, Techniques, and Procedures)
- ECI 301 – How and Why it works
Terms of Reference

• So, what is the key to Acquisition Strategy Theory?

ANS: RISK

• “Design-Bid-Build (DBB)”
• “Design-Build (DB)”
• “Construction Management at Risk (CM@R)”

• For definition of terms, let’s use Project Delivery Primer, AGC/AIA 2004©
# Project Delivery Methods

## Defining Characteristics

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

Source: *Primer on Project Delivery*, by Joint Committee of AIA and AGC 2004©
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<tr>
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<td>1) Three linear phases -- design, bid, build</td>
<td>1) Project-by-project basis for establishing and documenting roles</td>
<td>1) Overlapping phases -- design and build (fast track)</td>
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<tr>
<td>2) Well-established and broadly documented roles</td>
<td>2) Continuous execution of design and construction</td>
<td>2) Hiring of the construction manager during the design phase</td>
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<tr>
<td>3) Carefully crafted legal and procedural guidelines</td>
<td>3) Overlapping phases -- design and build (fast track)</td>
<td>3) Specific contractual arrangement determines the roles of players</td>
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<tr>
<td>4) Contract documents that are typically completed in a single package before construction begins, requiring construction-related decisions in advance of actual execution</td>
<td>4) Two prime players -- owner, design-build entity</td>
<td>4) Preconstruction services offered by the constructor (such as constructability review, bid climate development and bid management)</td>
<td></td>
</tr>
<tr>
<td>5) An opportunity for construction planning based on completed documents</td>
<td>5) Carefully crafted legal and procedural guidelines for public owners</td>
<td>5) Clear quality standards produced by the contract's prescriptive specifications</td>
<td></td>
</tr>
<tr>
<td>6) Complete specifications that produce clear quality standards</td>
<td>6) Some construction-related decisions after the start of the project</td>
<td></td>
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</tr>
<tr>
<td>7) Configuration and details of finished product agreed to by all parties before construction begins</td>
<td>7) Overall project planning and scheduling by the design-build entity prior to mobilization (made possible by the single point of responsibility)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8) Either cost or solution as the basis for selection of the design-build entity</td>
<td></td>
<td></td>
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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 option(s) for the construction
- Contract includes terms and conditions to allocate risk among the parties
- A Fixed Price Incentive contract IAW FAR 16.403
- A FAR-Compliant means to do CM@Risk
When to Use ECI

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

TTP
(Tactics, Techniques, and Procedures)

• Propose
  – leaders assume risk for the organization
  – know the rules/regs/laws better than your HQs
  – “permission” and “forgiveness” depend on risk/reward

• Perform
  – demonstrate it can be done better

• Persist
  – this is war: victory is a matter of will

• Patience
  – nothing happens quickly in a bureaucracy
ECI Exec Summary
“Early Contractor Involvement”

• Modeled after Private Sector’s CM@Risk (see AIA/AGC primer)
• Abbreviated History of USACE application
  – KC and NWD (“CM@Risk”): 5+ yrs, 8+ projects (L&C; 1ID HQs; ...)
  – NAD (“IDBB”): 3+ yrs, 2 mega-projects (NGA, Belvoir Hosp)
  – SWD (“IDBB”): 2+yr, 2 projects (Ft. Sam Med Ctr & Trauma Ctr)
  – MVD (ECI): < 1 yr, 5 mega-projects in New Orleans (WCC, L111, L145,...)
• 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)
Relative Project Delivery Timelines

- **P&D Funding**
  - Design

- **Construction Funding**
  - Construction

- **Design-Bid-Build Project Delivery**
  - ECI Project Delivery

- **CM selection and design begins with P&D funds.**

- **Total duration equal or less than ECI, but cannot commence design/construction until construction funding is received.**

- **ECI delivery advantage depends upon timing of design and construction funds.**

- **concurrent design and construction**
Why Pursue ECI (besides speed)?
“Cheaper” in Two Ways

% Profit
In Bid (=$)

Risk

What we’re trying
to capture by
realigning risk

Pure Profit

100%
Prime’s
Certainty of
Requirements

Less Risk to Prime =
Savings or Scope for Customer

Earlier Prime Contractor Input
Affords Greater Savings

$ "VE-like savings

Design Maturity (%)

Award of Base

1391
# Typical Bid Schedule

## Notes to Offerors

- The Ceiling Price is not to exceed $XXX,000,000.00.
- Initial Target Price < Ceiling Price established in FAR 52.216-17.
- The Initial Target Profit Percent must fall in the percent range specified in the Bid Schedule.
- See FAR 52.216-17, Incentive Price Revision – Successive Targets. Items included in the Options (0002, 0003) are subject to price revision in accordance with this clause.
- See FAR 52.216-17, Incentive Price Revision – Successive Targets. The Total Firm Target Profit Percent Range is established by the Government in paragraph (d) (2).
- See FAR 52.216-17, Incentive Price Revision – Successive Targets. The profit adjustment percentage blank in paragraph (d) (2) shall be established during the negotiations of the fixed firm price for all options.

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>SUPPLIES/SERVICES</th>
<th>QTY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001 BASE</td>
<td>Preconstruction Services (Fixed Firm Price)</td>
<td>1</td>
<td>LS</td>
<td>$_________</td>
<td>$___________</td>
</tr>
<tr>
<td>0002 OPTION</td>
<td>Construction Phase Option Initial Target Cost (Fixed Price Incentive)</td>
<td>1</td>
<td>LS</td>
<td>$_________</td>
<td>$___________</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>Subtotal Options (0002 + 0003) Initial Target Cost (ITC)</td>
<td>1</td>
<td>LS</td>
<td>$____________</td>
<td></td>
</tr>
<tr>
<td>% PROFIT</td>
<td>Initial Target Profit Percent (Bid Between x % and y %)</td>
<td></td>
<td></td>
<td>________%</td>
<td></td>
</tr>
<tr>
<td>PROFIT</td>
<td>Initial Target Profit (ITP) (ITP = ITC x Initial Target Profit Percent)</td>
<td>1</td>
<td>LS</td>
<td>$____________</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>Initial Target Price (Initial Target Price = 0001 + 0002 + ITP) NOT-TO-EXCEED $XXX,000,000.00</td>
<td>1</td>
<td>LS</td>
<td>$____________</td>
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**Initial Target Price < Ceiling Price**
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 \( a \% \) or more than \( b \% \) of the total initial cost.”

\( TBN \): To be determined by negotiation
Final Profit Adjustment

How it works

Ceiling Price

Final Target Price

Initial Target Price

Final Target Cost

Initial Target Cost

$-

Decreasing Target Cost (thus increasing profit)

Increasing Target Cost (thus decreasing profit)

Profit
Example of ECI RFP
Best Value Evaluation Factors

• Factor 1: Technical Experience
  – Complex Levee and Floodwall Construction
  – Preconstruction Services
  – Local Market Knowledge
• Factor 2: Past Performance
  – Quality of Product/Service
  – Customer Satisfaction
  – Adherence to Project Schedules and Budgets
• Factor 3: Preconstruction Services Management Plan
  – Staffing Plan
  – Interaction and Communication Plan
  – Schedule Management and Cost Estimating Approach
• Factor 4: Construction Approach
  – Construction Narrative
  – Schedule and Resource Management
  – Quality and Safety Management
• Factor 5: Small Business Participation Plan
• Factor 6: Price
EVMS and ECI

FAR Requires EVMS on a Cost Reimbursable or Incentive Contract

“...based on ANSI/EIA Standard 748”

And what does that mean?

ANSI/EIA 748 provides a list of guidelines

- Organization
- Planning, Scheduling, and Budgeting
- Accounting Considerations
- Analysis and Management Reports
- Revisions and Data Maintenance

But, ANSI/EIA 748 doesn’t identify ‘approved systems’
EVMS Requirements

• Proper WBS Design
• Baseline Budget Control Accounts
• Baseline Schedule
• Work measurement by Control Account
  • work-hours, dollars, units, etc.
• Good Project Management Practices
Questions?

Mike Rossi, PE
mike@valiint.com