The Pros and Cons of Collaborative Delivery Models in Missouri
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Discussion Framework

01 The Rise of Alternative Delivery for Public Sector Projects
02 Alternative Project Delivery Model Comparison
03 Alternative Delivery in Missouri
04 The Role of the Owner’s Representative
The Rise of Alternative Delivery for Public Sector Projects
- Public Agencies ‘customizing’ delivery models/procurement requirements to maximize return on CIP investments
- Owners no longer constrained by “business as usual”
- *Progressive advancement* of Delivery Models incorporate valuable lessons learned (FP DB...../CMAR...../Prog DB)
Design Build in Public Sector Projects is Growing Rapidly

Design-build is anticipated to continue to gain market share over the 2018-2021 period.

- Dissatisfaction with the adversarial nature and limitations of design-bid-build as well as increasingly challenging project characteristics and demands has resulted in greater interest in and use of design-build and other alternative delivery methods.
- Negative project owner experience and perceptions of design-bid-build are most influenced by limited opportunity for innovation, lack of a fast-track process and higher risk profile for the project owner.

*Other includes EPC and IFD
**CMGC/CMAR, design-bid-build and Other percentages are based on estimated utilization across construction spending.
Alternative Delivery

Drivers

- Schedule efficiencies
- Less risk (avoid dilution of responsibility)
- Fewer claims
- Best Value based selection
- Guaranteed Maximum Price (non FP models)
- Collaborative Design

Public Agencies are realizing Collaborative Delivery tools best help them attain goals
Earlier Application of Resources Enables Innovation Otherwise Untapped

The diagram illustrates the relationship between project cost, ability to influence, and the stages of project development:

- **High Influence** leads to high ability to influence and typical project cost.
- **Low Influence** leads to low ability to influence and typical project cost.
- **Major Influence** is the stage where innovation can be most effectively enabled.

The stages of project development are:
- **Preliminary Engineering**
- **Detailed Design**
- **Construction**
- **Operations**
02 Alternative Project Delivery Models
Project Delivery
Most Commonly Used Approaches

Design-Bid-Build
• “Traditional Delivery”

Fixed Price Design-Build
• AKA – Lump Sum Design Build

Construction Manager at Risk
• (CMAR)

Progressive Design-Build
Design-Bid-Build
(Traditional Delivery)
Design-Bid-Build

Disadvantages

- Low-bid contractor selection (can be adversarial)
- Multiple contracts for owner to manage
- Owner warrants design documents
- Owner bears majority of risk
- Reduced collaboration between designer and contractor
- Minimal ability to consider non-cost factors
Design-Build
(Fixed Price)
Fixed Price Design-Build Approach

1. Select Criteria Engineer
2. Prepare RFQ's
3. Prepare Quals
4. Develop short list most qualified DB
5. Define Project Concepts, Performance Criteria, Preliminary Design to 10%-30%
6. Produce RFP Docs at 10%-30% Design
7. Prepare and Submit Proposal (based on 30%)
8. Select Design-Builder
9. Final Design, Construction and QC
10. Review Submittals
11. Conduct Field QA
12. Pay Estimates
13. RFIs

Owner
Criteria Engineer
Design-Builder
Fixed Price Design-Build

Advantages

• Single Point of Accountability (Contractually and Functionally)
• Receive Comprehensive (undiluted) Performance Guarantee
• Reduced cost as result of fewer claims
• Accelerated Schedule
• Fixed Price Early in Process
Fixed Price Design-Build

Disadvantages

- Owner involvement is limited once price is established (30% Design)
- Increased potential for change orders or claims since price set so early
- RFP documents (Basis of Design and Preliminary Drawings) for D-B procurement take time and cost $ to prepare
- “Accuracy of Price”
**Design-Bid-Build**

- **Bid Documents**
  - 100% Specs
  - 100% Drawings
- **Prelimin Engineering/BODR**
  - Contract Executed (Price Locked)
  - Contingency
    - Market risk
    - Estimating risk

**DB Fixed Price**

- **Bid Documents**
  - 30% Specs
  - 30% Drawings
- **Prelimin Engineering/BODR**
  - Contract Executed (Price Locked)
  - Undeveloped Design
    - Scope risk
    - Estimating risk
    - Market risk
    - Misinterpretation

**Prog DB and CMAR**

- **Bid Documents**
  - 60-80% Specs
  - 60-80% Drawings
- **Prelimin Engineering/BODR**
  - Contract Executed (Price Locked)
  - Contingency
    - Market risk
    - Scope risk
    - Estimating risk

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**GMP Contract Mitigates Pricing Risk**

- **Price is directly proportional to risk**
- **Risk shed control inversely proportional to risk delegation**
CMAR
Construction Manager at Risk
CMAR Approach

Cost Estimating, Value Engineering, Constructability Reviews

Select Designer

Select CMAR

Set Target Price

CMAR Input

Design to 30%

Check Budget

Design to 60%

Check Budget

“Finish” Design

Long Lead Items

Early Work Packages

Construction

Approve GMP

Submit GMP

Owner

Owner, CMAR, Engineer

Engineer

CMAR

No? Off Ramp
CMAR

Advantages

• Owner remains involved in design development (similar to DBB)
• Constructor input during design phase
• GMP Contract Model (accuracy and transparency)
• Competitively bid packages drives cost
• Can maximize local subcontractor participation
CMAR Disadvantages

- Split Design & Build responsibilities
- Owner Warrants Design to CMAR
- Owner loses “Performance Guarantee”
- Owner must manage multiple contracts
- Timing of Constructability Reviews (wrt design progression)
- GMP by “non-designer” still contains “unknowns”
- Self-Performing CMAR may discourage competition for bid packages
Progressive Design-Build
Progressive Design-Build Flow

Select Design-Builder

Baseline Budget

Design to 30%
Validate Existing Conditions

Check Budget

Design to 60%
Secure Labor, Equip & Material Bids

Check Budget

Submit GMP Proposal

On Time and Under GMP
Construction by DB Contractor

“Finish” Design and any Remaining Procurement

Secure Board or Council Approval

Approve GMP (Off Ramp)

Cost Estimating, Selective Bidding, Value Engineering, Constructability Reviews

Long Lead Items

Early Work Packages

Owner

Owner and DB

Design-Builder
Progressive Design-Build

Advantages

• Return to Single Point of Responsibility
• Qualifications contribute to selection
• Accelerated Schedule
• Owner has specific preferences and desires high degree of involvement
• Promotes innovation during design with input from contractor and owner
• Provides cost and schedule benefits
• GMP Contract Model
Progressive Design-Build
Advantages cont’d

- All Benefits of DB WITH accuracy and transparency of GMP contract
GUARANTEED MAXIMUM PRICE (GMP) CONTRACT

- Protects Owner from overruns
- Owner receives benefit of efficiencies
- More accurate than Fixed Price (LS)

* Consider “shared savings” clause to keep DB team motivated to innovate
Progressive Design-Build

Disadvantages

• Perceived lack of competitive selection by governing bodies
• Owner access to engineer may be through contractor
Alternative Delivery in Missouri
2018
States With Design-Build Qualifications Based Selection

- Qualifications-based selection is not authorized
- Qualifications-based selection is limited to one specific agency
- Qualifications-based selection is authorized with certain limitations
- Qualifications-based selection is widely permitted

As of January 2018
Revised Statutes of Missouri (MO 67.5060)

- 3 Stage, Qualifications based selection
  - I – Statement of Qualifications
  - II – Technical Proposal, including detailed design
  - III – Construction Cost (Firm/Fixed Price)
3 Stage, Qualifications based selection

- I – Statement of Qualifications
- II – Technical Proposal, including detailed design
- III – Construction Cost (Firm/Fixed Price)

Stage II and Stage III proposals are submitted at the same time, but in separate envelopes.

Shortlist of not less than 2 and not more than 5 firms created as result of Stage I proposal.
Revised Statutes of Missouri (MO 67.5060)

- Stage I Criteria
  - Ability to perform comparable design/scope/complexity
  - References from past Owners
  - Quals of proposed personnel
  - DB team members (subconsultants/subcontractors)
  - Cannot consider $ at this Stage

- Stage II – (Tech Proposal) > 40% of Selection Criteria

- Stipend – no less than ½% of Total Project Budget

- Water/Wastewater Projects – must use Design Criteria Consultant
The Role of the Owner’s Representative
The Owner's Representative is typically a 3rd party (individual or company) that serves to advocate the Owner's best interest throughout the planning, design and construction phases of the project.
Owner’s Rep has similar project experience.

Owner’s Rep develops parallel cost estimates.

Owner’s Rep protects Owner’s Interest.

Owner’s Rep involved prior to procurement.

Owner’s Rep also performs design review.

Establish Project Budget Early

Process Evaluation

Single Point of Accountability

Cost Certainty

Early Collaboration

Owner’s Representative Role

Owner’s Project
Clearly define roles of Owner’s Representative in the OR Agreement
Recommend OR facilitate the DB Procurement Process
Budget Design Reviews in Owner’s Representative Fee

Progressive Design Build Model:
- OR Should Prepare Parallel Cost Estimates at 30%/60% + GMP
- Establish GMP at 60+% Design Milestone (minimum)
- Specify all deliverables required at 30%, 60%, and 90% Milestones