PROGRESSIVE DESIGN-BUILD OVERVIEW

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VDOT Project Delivery Options

- **Design-Bid-Build**
  - VA Code Section 2.2-4300 et seq.

- **Public Private Transportation Act (1995)**
  - VA Code Section 33.2-1800 et seq.
  - Design-Build-Finance-Operate-Maintain
  - Design-Build-Operate-Maintain
  - Design-Build-Finance

- **Design-Build (2001)**
  - VA Code Section 33.2-209 (B)
VDOT’s Design-Build Program

- **VDOT’s design-build program has steadily grown since 2004**
  - Nationally recognized program
    - VDOT named 2016 Transportation Owner of the Year by Design-Build Institute of America (DBIA)
  - **VDOT D-B Project Awards**
    - 27/244 Interchange – 2016 DBIA Merit Award (Transportation)
    - I-64 Capacity Improvements, Segment I – 2018 DBIA Merit Award (Transportation)
    - I-66/Route 15 Interchange – 2018 DBIA Project of the Year Award (All Sectors)
    - DBIA Mid-Atlantic Chapter – Numerous Awards

- **Next Step**
  - Add Progressive Design-Build delivery option
Next Step….Completed

- CTB Policy Change Approved February 2019
  - Amendment to Design-Build Objective Criteria
    - Expedited Schedule
    - Established Budget
    - Well Defined Scope
    - Risk Analysis
    - Pre-Qualification of Design-Build Firm
    - Competitive Bidding Process Basis for Award
      - Lump Sum
      - Fixed Price
      - Best Value
      - Guaranteed Maximum Price
Project Delivery Options

Traditional Delivery

Design-Bid-Build (DBB)

Owner

Designer

Builder

Alternative Delivery

Design-Build - Lump Sum (LS)

Owner

Design-Build - Progressive (GMP)

Owner

Design-Builder

Local Subcontractors and Subconsultants

Design-Build - Operate/Finance, etc.

Owner

Design-Builder Operator

Operator
Design-Bid-Build Attributes

- No contractor involvement during design development
- Price is the only consideration for selection
- Project is totally defined at time of award
- No contractor involvement in ROW acquisition
Design-Build Attributes (VDOT’s Two-Phase Best Value)

• Some early contractor involvement
  • Proprietary meetings
• Opportunities for innovation
  • Alternative Technical Concepts
• Risk transfer in ROW acquisition and Utility Relocation
• VDOT selects the most highly qualified teams
Progressive Design-Build (PDB)

A procurement tool that provides the following benefits on high risk, complex projects:

- Involvement of most qualified Design-Builder at the earliest point of project development
- Collaboration with the Design-Builder on key scope and risk issues
- Owner’s involvement in the selection of subconsultants, subcontractors, vendors and suppliers (including DBE & SWaM)
- Transparency in cost development using open-book pricing

As a result, PDB reduces project risk for Owner and Design-Builder
PDB Advantages

• Design-Builder becomes a strategic partner in planning and project definition
• Allows involvement of public and private stakeholders throughout design development
• Single point responsibility avoids Spearin liability (errors and omissions) as there is no design “handoff”
• Potential cost & schedule savings
  • Preliminary Engineering - No duplication of effort as bridging documents are not required
  • Use of early work packages (R/W acquisition and utility relocation)
• Expedited procurement
When to use PDB

- **Design and Construction Challenges**
  - Interface with other planned construction
  - Need for early contractor involvement
  - Unproven technology
  - Operational impacts during construction
  - Input on specific performance parameters
  - Urban areas with dense commercial and residential development

- **Environmental Challenges**
  - NEPA
  - Permits
  - 4F Properties
  - HAZMAT
  - USACE
When to use PDB

• **Right of Way Challenges**
  - Large number of parcels impacted
  - Federal and State property
  - Third Parties (railroad and transit authorities)

• **Utility Challenges**
  - High volume
  - Unknown and/or dark utilities

• **Stakeholder Involvement**
  - Extensive input during design development
    - Advisory panels
    - Business entities, developers
    - Military, municipalities, governmental agencies, Homeowners Associations, Architecture Review Boards
    - Public transit and airports
Progressive Design-Build Process

- RFQ Advertisement
- RFQ
- RFP
- Phase 1A - Proof of Concept
- Phase 1B – Project Development
- Phase 2 – Final Design and Construction
- GMP

Decision Point #1
Proof of Concept within GMP or Off Ramp

Decision Point #2
Lump Sum Price Established at 40-60% Design or Off Ramp
RFQ Process

- Similar to traditional D-B RFQ
  - Qualifications of Key Personnel
  - Past Performance and Experience
    - Design and Construction Experience on Similar Projects
    - Past Performance
  - Organizational Structure
  - Narratives on Risk or Challenges
- Other potential evaluation factors
  - Manpower and Equipment Resources
  - History of attaining DBE goals
  - Financial Capability/Stability
  - Self-Performance Plan
RFP Process

- **Potential Evaluation Factors**
  - Presentations/Interviews
  - Phase 1A and Phase 1B Management Approach
    - Overview
    - Design
    - Constructability Process
    - Quality Management
    - Risk Management
    - Communication Plan
    - Cost Modeling Plan
  - **Schedule**
  - Procurement, Subcontracting and Self-Performance Plan
  - Format of Open Book Pricing
    - Sample Estimate
PDB Execution - Phase 1A Proof of Concept

• Establish project scope
• Project limits
• Design Criteria
• Schedule
• Budget
• Alternative Technical Concepts
• Surveying, geotechnical or NEPA process may be initiated
• Decision Point No. 1
  • Proof of Concept within established GMP?
PDB Execution - Phase 1B Project Development

- Collaborative design and project decisions based on cost, schedule, operability, life cycle and other factors
- Ongoing and transparent cost estimates to meet Owner’s budget (Open Book Pricing)
- Formal commercial proposal for Phase 2 services
- Early Work Packages (utility relocation, R/W acquisition…)
- Overall contract price often provided when design is 40-60% complete
- Decision Point No. 2
  - Lump Sum Price below GMP?
PDB Execution – Phase 2 Final Design and Construction

- Start when Lump Sum Price has been agreed upon
- Finalize requirements
- Design completion
- Construction
PDB – Open Book Pricing

• Collaborative effort between Owner and Design-Builder
• Ongoing and transparent cost estimating process
  • Goal is to stay below established GMP
• Similar to existing escrow information
  • Real time quotes from Design-Builder, subcontractors and subconsultants
    • Quantity take-offs
    • Crew size and shifts
    • Equipment
    • Direct labor
    • Indirect costs
    • Bond rates
    • Insurance costs
    • Mark-up and contingency
• Better understanding of risk
• High confidence in price throughout process
Owner’s Off-Ramp Rights

- Operates as a termination for convenience
- Commercial terms generally include:
  - Right to use work product
    - Design-Builder is paid for services rendered; VDOT owns design
  - Right to contract directly with designer to finish the design
  - Right to use any other type of delivery system
Thank You!

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