

PROGRESSIVE DESIGN-BUILD

Commonwealth Transportation Board

Shailendra Patel, P.E., DBIA
State Alternative Project Delivery Engineer

VDOT Project Delivery Options

- Design-Bid-Build
- Emergency Force Account
- Public Private Transportation Act
 - Design-Build-Finance-Operate-Maintain
 - Design-Build-Operate-Maintain
 - Design-Build-Finance
- Design-Build
 - Lump Sum
 - Fixed Price
 - Best Value
 - Guaranteed Maximum Price



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



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

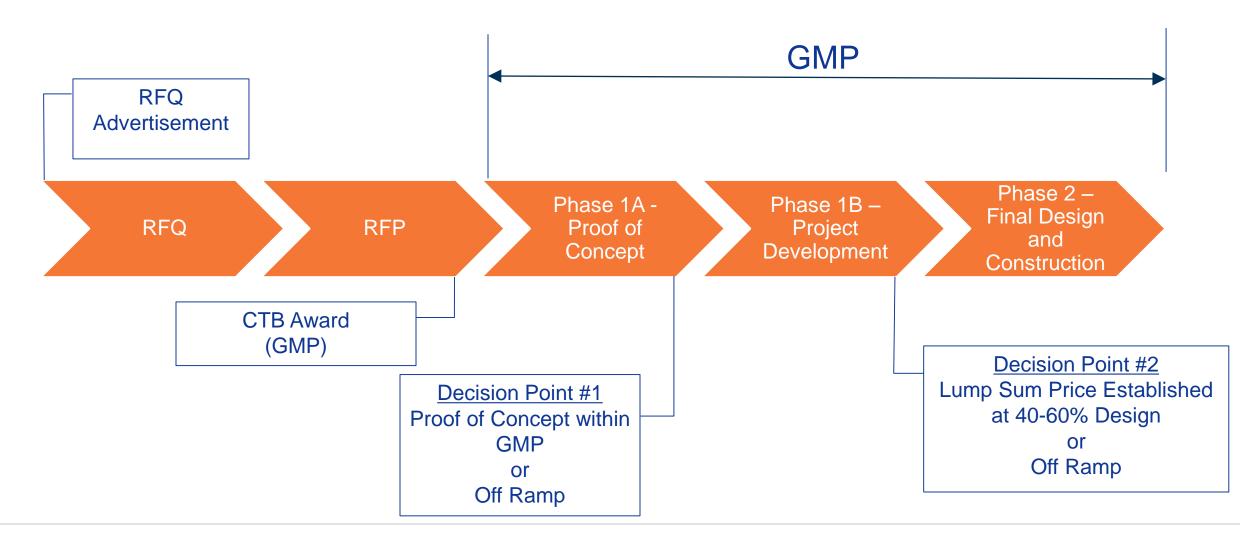


When to use PDB

- 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





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



Next Steps

- CTB Policy Change is Required
 - 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

