

# HOW TO PDB WITH VDOT

## A Progressive Design-Build Overview

VDOT-VTCA Webinar

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

Jeffrey S. Austin, Vice President  
Shirley Contracting Company, LLC

Darell L. Fischer, PE, DBIA  
Rinker Design Associates

March 8, 2022

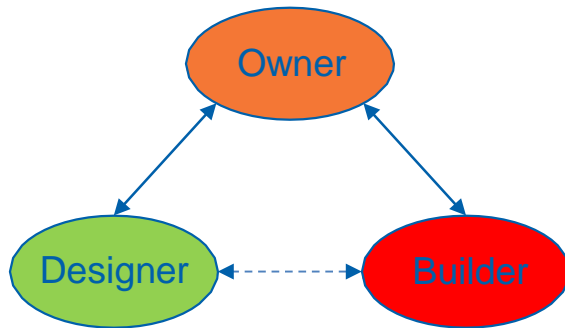
# What is Progressive Design-Build (PDB)

- **Phased design-build procurement approach**
- **Design-Builder engaged before significant design is performed**
- **Design-Builder selected primarily based on qualifications**
- **Initial phase of the Design-Build contract is for Preliminary Design only**
- **Owner and Design-Builder collaborate to:**
  - **Develop the conceptual design and scope of work**
  - **Address concerns of 3<sup>rd</sup>-party stakeholders**
  - **Assess the cost impact of preliminary design changes through transparent open-book pricing**
  - **Minimize risk and need for contingencies**
- **Design-builder commits to lump sum price and schedule after design progresses to an acceptable level (Usually 40% to 60%).**

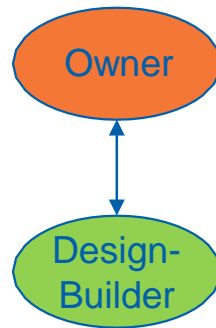
# Project Delivery Options

## Traditional Delivery

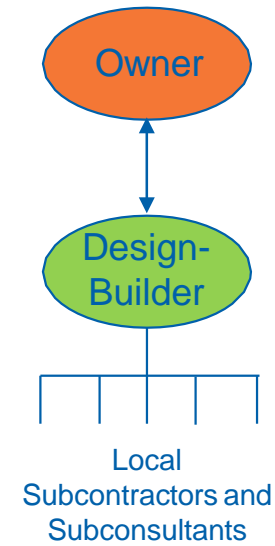
### Design-Bid-Build (DBB)



### Design-Build - Lump Sum (LS)

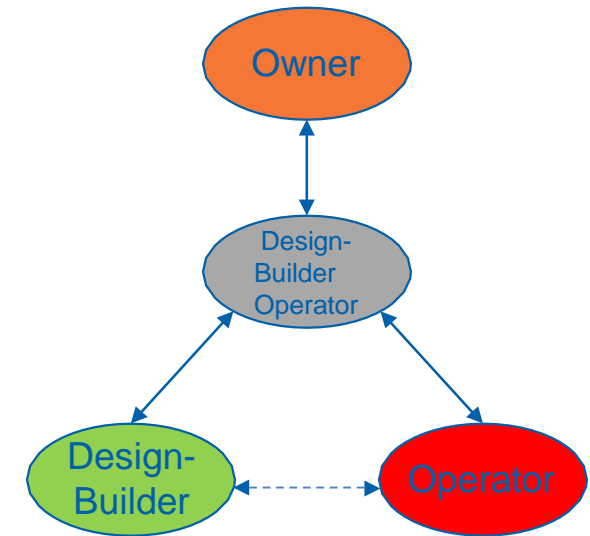


### Design-Build - Progressive (GMP)



## Alternative Delivery

### Design-Build-Operate/Finance, etc.



# PDB Advantages

- **Design-Builder becomes a strategic partner in planning and project definition**
- **Allows involvement of public and private stakeholders throughout design development**
- **Engagement of Design-Builder at start of design eliminates Spearin liability (Owner errors and omissions)**
- **Potential cost & schedule savings**
  - **Preliminary Engineering - No duplication of effort as bridging documents are not required**
  - **Design-Builder's innovation not limited by prescriptive RFP Design elements**
  - **Use of early work packages (R/W acquisition and utility relocation)**
- **Owner involvement in selection of subs and suppliers (including DBE and SWaM)**
- **Expedited procurement**

# PDB Advantages for Design-Builder

- **Expedited procurement**
- **Low cost to pursue**
  - Primary focus is on qualifications of team
  - No technical proposal design or construction cost estimating
- **Collaborate with the Department early in project development**
  - Greater influence over preliminary design decisions
- **Reduction in risk compared to traditional D-B**
  - Targeted preliminary exploration and studies to mitigate risk
  - Design (at 40% to 60%) is better defined at time of Lump Sum Agreement
- **Resources are aligned with project development**
- **First right to negotiate lump sum price**
- **Payment for developing preliminary design prior to Lump Sum Pricing**

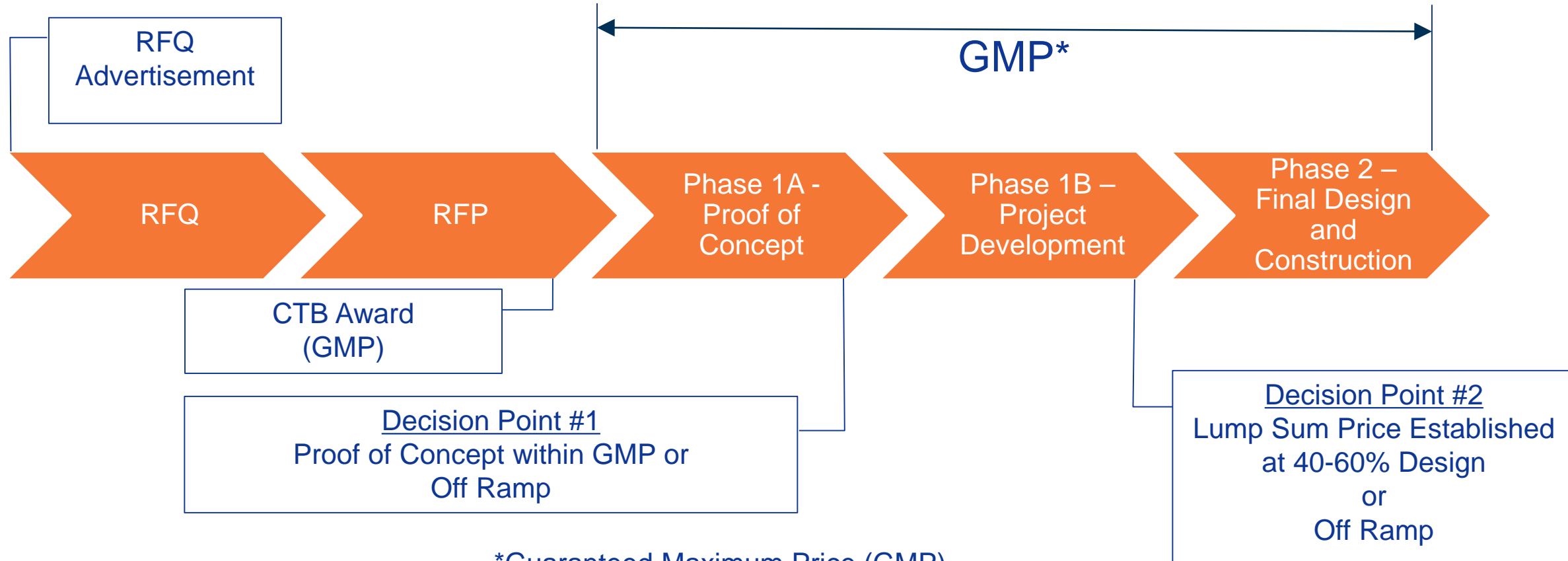
# When to use PDB

- **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



\*Guaranteed Maximum Price (GMP)

The budget established by VDOT for the DB contract which the DB firm's lump sum price (Phase 1A+1B+2) will not exceed.



# RFQ Process

## Qualifications of Key Personnel

- Project Manager
- Design Manager
- Construction Manager
- Estimator/ Scheduler– Contractor Employee

## Organizational Structure and Narrative

- Team shall remain intact

## Past Performance and Experience

- Design and Construction Experience on Similar Projects
- CMGC and/or PDB Experience

## Risks

## Understanding and Approach to PDB Process

# RFP Process

- **Technical Proposal Evaluation Factors**
  - **Design Development and Cost Management Plan**
    - Design Development Plan
    - Early Work Packages
    - Design-to-Budget Control
    - Management/Change Control Process
    - Risk Management

# RFP Process

- **Technical Proposal Evaluation Factors (cont.)**
  - **Approach to Subcontracting and Self-Performance Plan**
    - DBE and SWaM
  - **Cost Modeling and Negotiations Approach**
    - Sample Estimate
    - Open Book Pricing
  - **Schedule for Phase 1A and Narrative for Accomplishing Work for Entire Project**
  - **Technical Presentation/Interview**

# RFP Best-Value Selection Process

- **Technical Proposal Initial Scoring**
- **Technical Presentation/ Interviews**
  - **Occurs after submission and initial scoring of Technical Proposals**
  - **Objectives and Goals**
    - Tests team collaboration and creativity
    - Opportunity to see teams function
    - Presentation of Qualifications, Project Approach, etc.
    - Follow-up questions/clarifications of Technical Proposal
  - **Final Scoring**
    - Adjustments to initial score if needed
    - Changes will be documented

# RFP Best-Value Selection Process

- **Price Proposal (Two-Sealed Envelopes)**
  - **Envelope 1 - Phase 1A Lump Sum Price**
    - Opened at Price Proposal opening
  - **Envelope 2 - Pricing Information and Supporting Documents**
    - Lead Contractor
      - Labor burden
      - Home office overhead
      - Profit
    - Lead Designer
      - Fixed billable rates

# Determination of Highest-Ranked Offeror

- **Based on a combined score for SOQ (20%), Technical Proposal & Presentation (70%) and Price Proposal for Phase 1A (10%)**
- **Disproportionate price for Phase 1A efforts can be grounds for disqualification**
  - Provide rational and sufficient detail (man hours and cost) to support proposed compensation



# Reasonableness of Pricing Information (Envelope 2)

- Will not be opened until the Highest-Ranked Offeror has been determined
- The Department will open all envelopes and intends to use such information in negotiating fair and reasonable price for the Contract with the Highest-Ranked Offeror
- In the event the Department does not come to an agreement with the Highest-Ranked Offeror during negotiations, the Department will officially in writing terminate the negotiations with such Offeror prior to initiating negotiations with the second Highest-Ranked Offeror

# Design-Builder's Execution of Phase 1A

- **Refine scope**
- **Project limits**
- **Proof of Concept design development**
- **Schedule**
- **Estimate**
- **Proposal for Phase 1B services**
- **Preliminary Design Activities Permitted by FHWA**
  - **Surveying, geotechnical or NEPA process may be initiated**
- **Decision Point No. 1**
  - **Proof of Concept Estimate for whole project within 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 and estimating instructions)
- Proposal for Phase 2 services
- Early Work Packages (utility relocation, R/W acquisition...)
  - Cannot begin until NEPA is completed
- Overall contract price often provided when design is 40-60% complete
- Decision Point No. 2
  - Proposed Final Contract Price (Phase 1A+1B+2) at or below GMP?

# 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**

# PDB Execution – Phase 2 Final Design and Construction

- **Start when Lump Sum Price has been agreed upon**
- **No changes from traditional Design-Build contract**
- **Final design and construction completion**

# Thank You!

**Shailendra G. Patel, PE, DBIA**  
**State Alternative Project Delivery Engineer**

**Phone: 804-692-0476**

**Email: [shailendra.patel@vdot.virginia.gov](mailto:shailendra.patel@vdot.virginia.gov)**

**Web: <http://www.virginiadot.org/business/design-build.asp>**

# HOW TO PDB WITH VDOT

## A Progressive Design-Build Overview

VDOT-VTCA Webinar

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

Jeffrey S. Austin, Vice President  
Shirley Contracting Company, LLC

Darell L. Fischer, PE, DBIA  
Rinker Design Associates

March 8, 2022