Progressive Design Build –
an Alternative Take on Alternative Project Delivery

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Meeting with you today

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Session Agenda

- Progressive Design-Build –
  - What it is, what it isn’t, and how it differs from traditional DB or CM/GC
  - Timeline for its adoption and where it is currently being used within the US

- Project Spotlight – Long Bridge Project, Washington DC
  - Summary of project location, scope, and highlights
  - Why PDB was the right fit for this project?

- Other PDB projects and options for next steps for Massachusetts

- Panelist Q&A
Progressive Design Build

What is it? How is it different from DB? From CM/GC?

- Qualifications-Based selection of a DB Team
  - (General Contractor + Engineer) is contracted by an Owner to “Progress” toward a Final Design and Construction Contract

- Traditional Design-Build (DB)
  - Integrates design and construction under one entity (DB Team), providing a single point of responsibility, but can limit Owner involvement and flexibility once the project scope is defined and final design and construction contract is awarded.

- Construction Manager / General Contractor (CM/GC)
  - Similar to PDB, but the Owner contracts with the Engineer and General Contractor separately, which can lead to a lack of accountability or clear lines of responsibility

*PDB seeks to allocate and manage risk more equitably between all parties while leveraging the benefits of both DB and CM/GC.*
Progressive Design Build

What are the steps?

- DB Team retained by Owner early in project development, often before design is developed at all.

- DB Team selected primarily (or exclusively) on qualifications only.
  - Final project cost/price or schedule commitment is not part of the selection

- PDB projects are typically delivered in two phases -
  - Phase 1: Budget-level design development, preconstruction services, and negotiation of a fixed contract price (either LS or GMP) for Phase 2
  - Phase 2: Final design, construction, and commissioning
PDB - Phase 1

- DB Team collaborates w/ Owner to determine project’s basis of design and other program requirements

- DB Team progresses preliminary design - in close coordination with Owner and other 3rd Party Stakeholders
  - Project decisions made based on cost, schedule, quality, operability, and life cycle considerations.
  - DB Team provides ongoing, transparent, cost estimates to compare against Owner’s budgetary requirements.

- At conclusion of Phase 1, DB Team develops a formal commercial proposal (scope, price, and schedule) to deliver Phase 2.
  - Typically, Phase 1 takes a project to around the 50% design level, but this can vary widely based on Owner preferences and amount of control they prefer over design definition.
If the Owner and DB Team agree on the terms of the proposal:
- The DB Team then completes design and construction in accordance w/ the contract
- This is essentially the same as a traditional DB project

If the DB Team and Owner cannot reach an agreement on the terms:
- Owner is permitted to take an “off-ramp” – using the preliminary design as-is and moving forward with the project through another contract strategy.

Off-Ramp can allow the Owner to:
- Contract w/ the DB Team’s designer directly to complete design and ultimately put out the project as a traditional DBB. (Generally, the DB Team’s GC is permitted to bid on the contract)
- Put the preliminary design out as a traditional DB procurement
- Cancel or re-bid the project entirely

Historically, use of Off-Ramps have been very rare.
Design-Build Legislative Authority

- Over 160 bills introduced in 2023 with an 78% success rate.
- Major Expansion of DB authority
- Record Number of Bills Passed in California
- Record Number of Progressive Design-Build Bills
- Record Funding for Design-Build Projects
# Helpful Distinctions

<table>
<thead>
<tr>
<th>Project Delivery System</th>
<th>Procurement Method</th>
<th>Contract Format</th>
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<tbody>
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<td>Identifies contractual relationships between parties in a construction project. It defines when and how each party will fulfill its responsibilities.</td>
<td>Establishes how the Owner will select the providers of design and construction services needed to complete the project.</td>
<td>Designates the basis on which the parties will be paid for performing the work of the project.</td>
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**Most Common Project Delivery Systems:**
- Design-Build
- Construction Management at Risk
- Design/Bid/Build

**Less Common Project Delivery Systems:**
- Integrated Project Delivery (IPD)
- Public-Private Partnerships (P3)
- Multiple Prime Contracts

**Common Procurement Methods:**
- Best Value
- Progressive – Qualifications-Based Selection
- Low Bid
- Negotiated
- Sole Source (Direct Select)

**Common Contract Formats:**
- Lump Sum (or Fixed Price)
- Guaranteed Maximum Price (GMP)
- Cost Plus Fee
- Target Price
- Unit Price
PDB Legislation/Rulemaking 2021-2022

- **Washington** – State/Local Governments (Pre-2021 -1st PDB State)
- **California** – State Agencies
- **Illinois** - Transportation
- **Nebraska** - Transportation
- **North Carolina** - Transportation
- **Florida** - Transportation
- **Kansas** - Transportation
- **Virginia** - Transportation
Progressive Design-Build Legislation 2023

- Nebraska - WWW sector  Enacted
- Florida – Transportation  Enacted
- Louisiana – Aviation  Enacted
- Tennessee – Transportation  Enacted
- California – Transportation/WWW  Enacted
- California – State/Local Govt’s  Enacted
- Arizona – Transportation  Failed
Progressive Design-Build Legislation 2024

- New York - New York City: Pending in Committee
- South Carolina - Transportation: Pending in Committee
- Mississippi - Transportation: Passed, awaiting Governor’s signature
- Illinois - State Buildings: Pending in Committee
- California - Wind: Pending in Committee
- Rhode Island - Transit: Pending in Committee
- Washington - Transportation: Passed, awaiting Governor’s signature
- Nebraska - Transportation: Carried over
Progressive Design-Build Not Authorized

- Progressive Design-Build not authorized for MassDOT
- Current DB Authority is not conducive to PDB

“The overall value rating shall be the total price divided by the quality score or another objective formula in the RFP. The awarding authority shall enter into good faith negotiations with the responsible proposer with the lowest price per quality score point. In the event that two or more proposers have the same lowest price per quality score, the awarding authority shall enter into good faith negotiations with the responsible proposer who submitted the lowest price.”

- Utilization of PDB would require changes to Massachusetts Law
Spotlight – Long Bridge Project, Washington DC
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Spotlight – Long Bridge Project, Washington DC

1.8 mile
Project

5.8 Million
Annual Passengers

70
Daily Trains

37+
Stakeholders

20,000
Feet of Track

4,000 ft
Retaining Walls

6,500 ft
Rail Bridges

5
New Rail Bridges

2,800 ft
Potomac River
Bike-Ped Bridge

3,000 ft
Potomac River
Rail Bridge
Spotlight – Long Bridge Project, Washington DC

- Typical Section looking towards DC
- Renderings of bridges from Virginia
- Rendering of DC landing
- Renderings of bridges
- Rendering of VA landing
Spotlight – Long Bridge Project, Washington DC

Existing GW Parkway Rail Bridge

Proposed Rail Bridge over GW Parkway

Long Bridge (1904)

Rendering of Proposed Rail Bridge over the Potomac River

Existing Potomac River Pier
Spotlight – Long Bridge Project, Washington DC

Proposed WMATA/I-395 Bridge Rendering

Proposed Ohio Drive Bridge Rendering

Proposed Washington Channel Bridge Rendering

Proposed Maine Avenue Bridge Rendering
Spotlight – Long Bridge Project, Washington DC

Underground Structure and Utility Conflicts
Entirety of East Potomac Park Island created by dredge filling a tidal flat in late 1890s.

Technical Requirements:
Embankments shall be designed to keep estimated total long-term settlement to not more than 1 inch over design life.
Spotlight – Long Bridge Project, Washington DC

Quaternary Deposits and Potomac Group Soils are good bearing soils
Spotlight – Long Bridge Project, Washington DC

...and more
(37 major stakeholders)
Spotlight – Long Bridge Project, Washington DC

**DDOT Led**

2011–2016
Pre-NEPA

- 2011 FRA ARRA Grant
- Phase I Study 2012–2015
- Phase II Study 2015–2016
- DDOT-DRPT Partnership through MOU

2016–2020
NEPA

- 2016 FRA TIGER Grant
- FEIS/ROD Complete September 2020
- Long Bridge Act December 2020
- Identified Mitigation Commitments & Permit Identification

**VPRA Led**

2021–2023
Preliminary Engineering (PE)

- Design 15% to 30%
- Determine Project Delivery Method
- Begin Environmental Mitigation & Permits
- Agreements with Partner Organizations

2024–2030
Final Design & Construction

- Alternative Delivery
- Land Acquisition Activities
- Permitting
- Final Design & Construction

Identified Mitigation & Permit Identification

Design 15% to 30%

Determine Project Delivery Method

Begin Environmental Mitigation & Permits

Agreements with Partner Organizations

Alternative Delivery

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Why PDB for Long Bridge?

- Coordination with numerous stakeholders
  - Means and methods coordination required approvals
  - Uncertainty of approvals would create price risk in other methods
- Limited staging areas
- Numerous sequencing constraints
- Strict environmental and permitting requirements
- Vibration, settlement, scour assessments
Why PDB for Long Bridge?

- Packaging -
  - Split into 2 packages: North (PDB) and South (DB)
  - Single project would be over $1.4 billion

- Industry Feedback Positive -
  - Packaging decision
  - PDB method
  - Reduce risk by understanding constraints and limitations before setting price and construction schedule
Why PDB for Long Bridge?

- **Price Control** -
  - 50% competitive bidding requirement
  - ICE as comparison
  - 10% ICE threshold
  - Price proposal included construction markup (profit + home office overhead)
  - Off-ramp (with ability to retain Designer)
Completed PDB Projects in US

- Murphy Corridor Improvements
  - Oregon, $32.3M, completed 2021

- US 15 over Indian Field Swamp Bridge Replacement Project
  - South Carolina, $4M, completed 2020

- CSX Virginia Avenue Tunnel Reconstruction
  - Washington DC, $250M, completed 2018

- Nearly a dozen Aviation projects
  - Completed since 2018, most within the $25M to $300M
Suggested Best Practices

- Legislation that allows some flexibility. (If you’ve worked on one PDB, it means you’ve worked on one PDB. They are all different.)

- Chose the right project, at the right time.
  - Large enough to warrant the investment in alternative delivery but not too large as to stifle competition
  - Complex enough to require a level of collaboration with 3rd parties that would otherwise be problematic for DBB or DB projects, and
  - Sufficient project schedule to allow time for the PDB process to take place

- Embrace Trust - committed team members from all sides required.

- Strong estimator on the DB Team – conceptual estimates are critical.
Q & A

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Thank you!

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