Design-Bid-Build
What is Design-Bid-Build?:

Planning
- Department scopes project
- Department clears project Environmentally

Design
- Department produces preliminary design
- Department produces final design

Letting
- Department advertises final design
- Contractor’s first involvement-produces a unit price bid on construction of project as designed
- Construction contract awarded to the lowest responsive bid

Construction
- Contractor constructs project as designed at the unit prices bid
Time Considerations:
- Department sets contract time.
- Liquidated Damages for exceeding contract time.
- No incentives for early completion.

### Arkansas Department of Transportation
Contract Schedule of Prices

<table>
<thead>
<tr>
<th>Line Number</th>
<th>Item Code and Description</th>
<th>Estimated Quantity</th>
<th>Unit Bid Price</th>
<th>Price Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>0022</td>
<td>642 - RUMBLE STRIPS IN ASPHALT SHOULDERS</td>
<td>51,744.000 LF</td>
<td>0.30</td>
<td>15,523.20</td>
</tr>
<tr>
<td>0023</td>
<td>SP8642 - MUMBLE STRIPS IN ASPHALT SHOULDERS</td>
<td>22,704.000 LF</td>
<td>0.40</td>
<td>9,081.60</td>
</tr>
<tr>
<td>0024</td>
<td>SP8642 - CENTERLINE MUMBLE STRIPES IN ASPHALT ROADWAYS</td>
<td>22,704.000 LF</td>
<td>0.40</td>
<td>9,081.60</td>
</tr>
<tr>
<td>0025</td>
<td>718 - REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10&quot;)</td>
<td>250.000 LF</td>
<td>5.00</td>
<td>1,250.00</td>
</tr>
<tr>
<td>0026</td>
<td>719 - THERMOPLASTIC PAVEMENT MARKING WHITE (6&quot;)</td>
<td>87,700.000 LF</td>
<td>1.00</td>
<td>87,700.00</td>
</tr>
<tr>
<td>0027</td>
<td>719 - THERMOPLASTIC PAVEMENT MARKING WHITE (8&quot;)</td>
<td>350.000 LF</td>
<td>2.00</td>
<td>700.00</td>
</tr>
<tr>
<td>0028</td>
<td>719 - THERMOPLASTIC PAVEMENT MARKING WHITE (12&quot;)</td>
<td>8,610.000 LF</td>
<td>5.00</td>
<td>43,050.00</td>
</tr>
<tr>
<td>0029</td>
<td>719 - THERMOPLASTIC PAVEMENT MARKING WHITE (24&quot;)</td>
<td>2,550.000 LF</td>
<td>10.00</td>
<td>25,500.00</td>
</tr>
<tr>
<td>0030</td>
<td>719 - THERMOPLASTIC PAVEMENT MARKING YELLOW (6&quot;)</td>
<td>185,164.000 LF</td>
<td>1.00</td>
<td>185,164.00</td>
</tr>
</tbody>
</table>
### Time Considerations:

- Contractor bids number of days to complete project.
- Department calculates Road User Cost.
- Typically incentives for early completion and disincentives for late completion, both equal to Road User Cost.

### Unit Prices

<table>
<thead>
<tr>
<th>BIDDERS</th>
<th>AMOUNT BID</th>
<th>DAYS BID</th>
<th>AMOUNT FOR AWARD CONSIDERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIEWIT INFRASTRUCTURE SOUTH CO.</td>
<td>$94,824,907.70</td>
<td>450</td>
<td>$181,224,907.70</td>
</tr>
<tr>
<td>MANHATTAN ROAD &amp; BRIDGE CO.</td>
<td>$110,582,836.67</td>
<td>545</td>
<td>$215,222,836.67</td>
</tr>
<tr>
<td>EMERY SAPP &amp; SONS, INC.</td>
<td>$91,928,840.75</td>
<td>652</td>
<td>$217,112,840.75</td>
</tr>
<tr>
<td>W.G. YATES &amp; SONS CONST. CO.</td>
<td>$109,761,716.93</td>
<td>640</td>
<td>$232,641,716.93</td>
</tr>
<tr>
<td>CROSSLAND CONSTRUCTION CO., INC.</td>
<td>$95,121,336.15</td>
<td>900</td>
<td>$267,921,336.15</td>
</tr>
</tbody>
</table>
Contract Cost + Time Bidding (A+B+C)

Time Considerations:

• Contractor bids number of days to complete project and number of days to complete milestone.
• Department calculates two Road User Cost values.
• Typically incentives for early completion and disincentives for late completion on both.

Unit Prices

\[ \text{Contract Time} \times \text{Road User Cost} \]

\[ \text{Milestone Time} \times \text{Road User Cost} \]

Amount for Award Consideration

---

<table>
<thead>
<tr>
<th>Bidders</th>
<th>Amount Bid</th>
<th>Contract Time Days</th>
<th>Site Use B: $18,000</th>
<th>Contract Site Time Days</th>
<th>Site Use C: $9,000</th>
<th>Amount for Award Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td>APAC-CENTRAL, INC.</td>
<td>$26,897,563.15</td>
<td>520</td>
<td></td>
<td>680</td>
<td></td>
<td>$42,377,563.15</td>
</tr>
<tr>
<td>FAYETTEVILLE, AR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHILLIPS HARDY, INC.</td>
<td>$27,834,432.49</td>
<td>580</td>
<td></td>
<td>700</td>
<td></td>
<td>$44,574,432.49</td>
</tr>
<tr>
<td>COLUMBIA, MO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMER SAPP &amp; SONS, INC.</td>
<td>$32,353,206.61</td>
<td>800</td>
<td></td>
<td>800</td>
<td></td>
<td>$53,953,206.61</td>
</tr>
<tr>
<td>COLUMBIA, MO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Contract Cost + Time Bidding

Purpose:
• To expedite projects by allowing contract time to be set under a competitive bidding scenario.
• Incentivize completion of the project on schedule.

Requirements:
• Contract Time bid must be supported by a Critical Path Method (CPM) schedule.
• CPM schedule is used through project to determine Contractor’s progress and to evaluate the time impact of any change orders.

Benefit:
• 6,909 days saved on 110 projects (2014-2018)
• Days saved is the difference in days bid between winning bidder and 2nd low bidder.
Alternative Delivery
**What is Alternative Delivery?:**

**Definition**
- Any delivery method that involves a construction Contractor in a project’s pre-construction activities.

**Authority**
- Specific legislative authority is necessary before alternative delivery methods can be used.

**Types**
- Construction Manager/General Contractor (pilot legislation) - 2017
- Design-Build (broad authority) - 2017

**Purpose**
- Foster innovation, identify and mitigate risk, improve constructability of design, improve cost controls, and optimize construction schedules.
# Alternative Delivery

## When should Alternative Delivery be used?:

### Innovation
- On projects where innovation is desired to address project complexities. Design-Build is best for maximizing the use of innovations.

### Design
- On projects with complicated design and maintenance of traffic components that could introduce constructability concerns.
- On projects with tight corridors, extensive third party involvement.

### Cost
- On projects that need some level of cost certainty or cost control.

### Schedule
- On projects that have tight timelines for completion or where impacts on customers need to be minimized.
## Qualifications Based Selection (QBS)

### What is Qualifications Based Selection?:

<table>
<thead>
<tr>
<th>QBS</th>
<th>An attempt to identify the most qualified team of experienced professionals in order to provide the best solutions for the unique problems and goals of a specific project.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td>Seeks to select committed Key Personnel who are experienced and successful in the specific need areas of the project.</td>
</tr>
<tr>
<td>Firm</td>
<td>Seeks to select a firm that is experienced and successful in work that is similar to the project in scope, environment, and complexity.</td>
</tr>
<tr>
<td>Selection</td>
<td>Based on a team scoring consensus using a scoring process that is disclosed in the procurement documents and contains both subjective and objective components.</td>
</tr>
</tbody>
</table>
Design-Build

Planning
• Department uses qualifications based selection (QBS) to select a Design-Builder to assist in preconstruction.

Letting
• Proposals submitted during QBS contain details on the project design and cost. Selection of a Design-Builder is typically by best-value formula containing both technical and cost components.

Design
• Contractor develops final design.
• Level of Department involvement in design determined by project goals

Construction
• Design-Builder constructs the project for a lump sum amount.
• Request for Qualifications (RFQ) is open to anyone who wants to respond with a Statement of Qualifications (SOQ).
Design-Build Scoring

Arkansas Highway Commission

Ardot Director

Steering Committee

Project Director

Pass/Fail Evaluation Team

Proposal Scoring Team

Steering Committee typically consists of Department upper management. Steering Committee remains “blind” throughout scoring.

Team members consist of Department personnel from relevant Divisions.

Project Director is a Department employee from the Alternative Delivery Program.
3 Project Evaluation Teams (ARDOT)

Step 1:
- Submittals are checked against the pass/fail criteria of the procurement document.

Step 2:
- Passing Submittals are scored using the scoring process described in the procurement documents.
## Qualitative Ratings

<table>
<thead>
<tr>
<th>Qualitative Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceptional</td>
<td>The Respondent has provided information relative to the requirements of the RFQ which are considered to SIGNIFICANTLY EXCEED the stated objectives/requirements in a beneficial way and indicates a consistently EXCEPTIONAL level of quality. The SOQ includes many strengths, including significant strengths, and very few weaknesses which must be considered minor weaknesses.</td>
</tr>
<tr>
<td>Very Good</td>
<td>The Respondent has provided information relative to the requirements of the RFQ which are considered to EXCEED the stated objectives/requirements in a beneficial way and indicates a VERY GOOD level of quality. The SOQ includes many strengths and only few weaknesses which must be considered minor weaknesses.</td>
</tr>
<tr>
<td>Good</td>
<td>The Respondent has provided information relative to the requirements of the RFQ which are considered to SLIGHTLY EXCEED the stated objectives/requirements and offers a generally GOOD level of quality. The number and/or significance of strengths must outweigh the number and/or significance of weaknesses.</td>
</tr>
<tr>
<td>Acceptable</td>
<td>The Respondent has provided information relative to the requirements of the RFQ which are considered to MEET the stated objectives/requirements and offers an ACCEPTABLE level of quality. The number and/or significance of strengths and weaknesses should be approximately balanced, but weaknesses may outweigh strengths.</td>
</tr>
<tr>
<td>Poor</td>
<td>The Respondent has provided information relative to the requirements of the RFQ which are considered to NOT MEET the stated objectives/requirements due to lack of essential information, presence of conflicting information, and use of an approach that creates undo risk for ARDOT and offers a POOR level of quality creating risk that the Respondent would fail to satisfy the requirements of the Agreement. Number and/or significance of weaknesses substantially outweighs any strengths.</td>
</tr>
</tbody>
</table>
Step 1:

- Submittals are checked against the pass/fail criteria of the procurement document.
- Recommendations are reviewed by the Project Director and presented to the Steering Committee.
Design-Build Procurement (2-Phase)

**RFQ**
- Request for Qualifications (RFQ) is open to anyone who wants to respond with a Statement of Qualifications (SOQ).

**Short List**
- SOQ are scored by the Department using a scoring process that is described in the RFQ. Typically the top three scorers are selected for the Short List.

**RFP**
- A Request for Proposals (RFP) is sent to each team on the Short List. A Proposal is prepared by each team in accordance with the RFP and submitted to the Department for consideration. The Proposal will typically include both a technical and a price component.
Short Listed Firms (SOQ)

- Project Information
- Proposal Details

- The form of the Design-Build Contract
- The legal obligations of all parties

- The “sand box” for design
- Specifications

Instructions to Proposers
Design-Build Agreement
Technical Provisions
Proposal Scoring

• Passing Submittals are scored using the scoring process described in the procurement documents.

• Recommendations are reviewed by the Project Director and presented to the Steering Committee for Approval.

• Steering Committee Chairman and Project Director present Approved scoring results to the ARDOT Director for Concurrence.

• ARDOT Director presents Selection recommendation to Commission for final Selection.
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RFQ</strong></td>
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</tr>
<tr>
<td><strong>Selection</strong></td>
<td>Proposals are scored by the Department using a scoring process that is described in the RFP. The team with the highest overall score will be selected as the Design-Builder.</td>
</tr>
</tbody>
</table>
Post-Procurement Activities

DBA
- Execution of the Design-Build Agreement by Department and D-B contractor.

NTP 1
- Notice to Proceed (NTP) 1 authorizes and initiates Preliminary Engineering activities, including geotechnical borings, design, utility coordination, and ROW acquisition.

NTP 2
- NTP 2 authorizes and initiates construction activities.
I-30 Project

- 7.3-mile Interstate project
- Convergence of six major interstates/highways
- Major River Crossing
- Two UPRR Yard crossings
- Highest traffic volume in the State
- Complex merging and weaving throughout corridor
- Interactions with the business districts of two municipalities
- Infrastructure that is functionally and structurally deficient.
30 Crossing History

Design-Build Timeline

- **2012**
  - Half-cent sales tax approved by voters (Nov.)

- **2015**
  - PEL Study completed (July)
  - NEPA Study begins (Aug.)

- **2014**
  - PEL Study begins (April)

- **2017**
  - RFQ released for D-B firms (May)
  - SOQ due (June)
  - D-B firms shortlisted to three firms (Sept.)

- **2018**
  - RFP issued for shortlisted D-B firms (May)
  - Proposals Due (Dec.)

- **2019**

- **2020**
I-30 Project

- 7.3-mile Interstate project
- Convergence of six major interstates/highways
- Major River Crossing
- Two UPRR Yard crossings
- Highest traffic volume in the State
- Complex merging and weaving throughout corridor
- Interactions with the business districts of two municipalities
- Infrastructure that is functionally and structurally deficient.

- **$535M – Available Public Funds**
Design-Build Procurement (2-Phase)

**RFQ**
- Request for Qualifications (RFQ) is open to anyone who wants to respond with a Statement of Qualifications (SOQ).

**Short List**
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**Selection**
- Proposals are scored by the Department using a scoring process that is described in the RFP. The team with the highest overall score will be selected as the Design-Builder.

*Note: The Optimization and Refinement (OR) component is mentioned in the slide but not elaborated upon in the text.*
Proposal Scoring

Technical Proposal = 450 points

Financial Proposal = 1,400 points

Optimization and Refinement Proposal = 150 points

Total Available Points = 2,000 points
Maximize the project scope for the Available Public Funds

- Post award optimization and refinement period ("OR Period")
  - Six months
  - Lump sump monthly payments to D-B
  - Jointly mitigate costly risks
  - Robust Value Engineering process

- Designed to accommodate concurrent D-B procurement and NEPA analysis (CFR 636.109)

- Ability to incorporate work product from non-selected proposer into plan
30 Crossing History

Design-Build Timeline

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  - PEL Study begins (April)

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  - SOQ due (June)
  - D-B firms shortlisted to three firms (Sept.)

- **2018**
  - RFP issued for shortlisted D-B firms (May)
  - Proposals Due (Dec.)

- **2019**
  - KMC selected as D-B firm (Jan.)
  - FONSI signed by FHWA (Feb.)
  - OR Period (March – Dec.)
  - DBA signed (Dec.)

- **2020**
  - NTP #1 issued (Jan.)
  - NTP #2 anticipated (Fall)
Questions?

“If you want a better answer, ask a better question!”

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