

## North Carolina DOT

General Information	
<b>Contact Information</b>	<p><b>Rodger Rochelle</b>            Director of Technical Services  <a href="mailto:rrochelle@ncdot.gov">rrochelle@ncdot.gov</a></p>
<b>Relevant Statute</b>	<p><i>NC Gen. Stat. §136-28-.11</i></p> <ul style="list-style-type: none"> <li>Allows use of DB for construction of transportation projects of any amount, but also stipulates that the DOT must:               <ul style="list-style-type: none"> <li>ensure that DB projects are awarded on a basis to maximize participation, competition, and cost benefit</li> <li>attempt to structure and size the contracts such that contracting and engineering firms based in the state have a fair and equal opportunity to compete for the contracts</li> </ul> </li> <li>Requires the DOT to present to the Joint Legislative Transportation Oversight Committee information about any DB project with construction costs estimated to exceed \$50 million, including the reasons as to why executing the project on a DB basis would best serve the public interest</li> </ul> <p><i>Evolution of Legislation:</i></p> <ul style="list-style-type: none"> <li>1997: DOT allowed to use DB on up to 3 projects annually for projects that must be expedited and for which it is not in the public's best interest to comply with normal design and construction procedures</li> <li>2002: authority extended to 10 projects for fiscal year 2002-2003; up to 25 projects annually through fiscal year 2008-2009</li> <li>2007: sunset removed</li> <li>2011: annual limit removed</li> </ul>
<b>DB Program Characteristics</b>	<ul style="list-style-type: none"> <li>Annual capital construction program ranges from \$1.4 to \$1.8 billion</li> <li>First 3 pilot DB projects were about 15 years ago</li> <li>DB program began in earnest about 11 years ago (i.e., with a dedicated organizational unit)</li> <li>111 DB projects performed, approximately \$5.5 billion</li> <li>Largest "pure" DB was \$460 million</li> <li>Smallest DB project was \$2 million</li> </ul>

Agency Culture, Organization and Training	
<b>Dedicated DB Program Staff</b>	<ul style="list-style-type: none"> <li>All DB projects are developed, procured, and managed at the Central Office</li> <li>Dedicated staff of about 15 to alternative project delivery (DB and P3)</li> <li>DB staff generally get involved after NEPA and assist with drafting the RFQ/RFP, managing the procurement process, reviewing designs, etc.</li> <li>Division personnel get more involved after the design is complete</li> </ul>
<b>Outsourcing</b>	DOT is currently soliciting a GEC to act as an extension of staff
<b>DB Project Team Makeup</b>	Project Teams are multi-disciplined, intended to mirror the expertise needed on the DB Team
<b>Internal Issues Related to DB Use</b>	Initially staff had some concerns regarding DB, but NCDOT has now shifted from an organization that asked "why should we use DB" to one that asks "why not DB?"

<b>Industry Issues Related to DB Use</b>	<ul style="list-style-type: none"> <li>• When the DOT first started the DB program, industry had angst that it would just be a “beauty contest” with no work for smaller firms</li> <li>• Fears have subsided through: <ul style="list-style-type: none"> <li>- NCDOT hosting a quarterly joint meeting with AGC and ACEC to discuss refinements to the specifications, evaluation criteria, etc.</li> <li>- Use of DB on a healthy mix (size and type) of projects</li> </ul> </li> </ul>
<b>Procedural Guidance and Template Documents</b>	<ul style="list-style-type: none"> <li>• DB Policy &amp; Procedures manual (Oct. 6, 2011) outlines the DOT’s process for selecting, procuring, and administering DB contracts</li> <li>• Have a standard format/layout for DB contracts that can be adapted as needed</li> <li>• RFPs generally contain the following: <ul style="list-style-type: none"> <li>- Project Special Provisions</li> <li>- General (includes information related to proposal submittal and evaluation process)</li> <li>- Scope of Work</li> <li>- Standard Special Provisions, including modifications to Division 100 for DB projects</li> <li>- Proposal Forms</li> </ul> </li> </ul>
<b>Training</b>	No formal training program; when each Division got their first DB project, they were trained on contract administration issues (e.g., if a DSC occurs on a DB project, it is up to the DB team to come up with a solution, not the DOT)

<b>Selection of Project Delivery Method</b>	
<b>Drivers for Using DB</b>	<ul style="list-style-type: none"> <li>• Expedited schedule</li> <li>• Effective risk allocation</li> </ul>
<b>Process and Tools</b>	<ul style="list-style-type: none"> <li>• Loosely use a selection matrix to qualitatively compare the relative merits of DB and DBB</li> <li>• Qualitative analysis should then be coupled with a quantitative analysis of cost and schedule</li> </ul>
<b>Key Considerations</b>	<p><i>Key Considerations</i></p> <ul style="list-style-type: none"> <li>• Opportunity for innovation</li> <li>• Constructability</li> <li>• Safety</li> <li>• Potential effects of third party constraints such as permitting and utilities</li> <li>• Traffic management</li> <li>• Public/business perception</li> </ul> <p><i>Project Characteristics Suitable for DB</i></p> <ul style="list-style-type: none"> <li>• Projects where design and construction need to be expedited for the public good or to capitalize on advanced or specific funding opportunities</li> <li>• Emergency projects</li> <li>• Projects with complex constructability or traffic phasing issues</li> <li>• Projects affording opportunities for innovation</li> <li>• Unusual projects that do not lend themselves to normal design-bid-build procedures</li> </ul> <p><i>Project Types Suitable for DB</i></p> <ul style="list-style-type: none"> <li>• New location projects</li> <li>• Large interstate widening or rehabilitation projects</li> <li>• Projects with heavy traffic volume</li> <li>• Large or unique bridge projects</li> </ul>

	<p><i>Project Characteristics that are <u>not</u> Suitable for DB</i></p> <ul style="list-style-type: none"> <li>• Compact projects with extraordinary utility conflicts</li> </ul>
<b>Entity Making the Delivery Decision</b>	DB Executive Committee approves which projects will be delivered using DB (committee also approves the amount of the stipend and who should serve on the evaluation committee)

<b>DB Project Development</b>	
<b>Project Development Activities</b>	Project is developed to about 20-25% for NEPA process
<b>Use of Performance Requirements</b>	<ul style="list-style-type: none"> <li>• Performance specifications are being used in the area of traffic control (e.g., length of queues)</li> </ul>
<b>Lessons Learned</b>	<ul style="list-style-type: none"> <li>• Use of performance specifications <ul style="list-style-type: none"> <li>- Performance requirements can be difficult to develop</li> <li>- Even with prescriptive specifications, innovation can still be obtained through the ATC process</li> <li>- If more prescriptive, will likely receive better bids</li> </ul> </li> <li>• Risk management <ul style="list-style-type: none"> <li>- Transfer risks related to permitting and utility coordination to the DB Team so that DOT stays off of the critical path</li> </ul> </li> </ul>

<b>Procurement Process</b>	
<b>Delivery Options</b>	<p><i>Two-step Best Value DB</i></p> <ul style="list-style-type: none"> <li>• Bulk of NCDOT's program</li> </ul> <p><i>Express DB</i></p> <ul style="list-style-type: none"> <li>• Low bid DB process used for bundling small bridges (contracts range from \$6 to \$12 million)</li> <li>• About 40 such projects completed to date</li> <li>• About 150 bridges were completed in one year with 14 different contractors</li> <li>• High-level bid items are specified so all firms will be bidding the same scope (e.g., bridge length in linear feet; foundation length in linear feet; ROW acquisition per each parcel; and a lump sum for all design work and ancillary construction work such as minor approach work, approach slabs, drainage, erosion control, traffic control, etc.)</li> <li>• Industry likes Express DB because it removes a lot of risk (proposal does not entail a large effort)</li> <li>• Express DB contracts allow contractors a generous amount of <i>total</i> time to complete the contract work, but once a road is closed, there is a set amount of time in which to finish the construction (similar to a windows contract)</li> <li>• Process has brought a lot of local firms (approximately 2 dozen) into the DB arena</li> <li>• May extend Express DB to safety or signal projects</li> </ul> <p><i>Modified DB</i></p> <ul style="list-style-type: none"> <li>• Part of the design is completed and sealed by the DOT</li> <li>• RFP states that the DOT is responsible for errors and omissions in the plans the DOT seals</li> <li>• Award made on a best value basis</li> <li>• Payment may be either lump sum or by quantities</li> </ul> <p><i>Nested DB</i></p> <ul style="list-style-type: none"> <li>• Contractor completes a portion of the design using a subcontracted design firm</li> <li>• Award made on a low bid basis (no Technical Proposals are required)</li> </ul>

<p><b>Procurement Steps</b></p>	<p><i>Best Value DB</i></p> <ol style="list-style-type: none"> <li>1. Selection of the Technical Review Committee (TRC is composed of at least 5 DOT employees nominated by the Director of Transportation Program Management to represent the primary technical expertise required for the particular project)</li> <li>2. Advertisement and notification to all prequalified bidders</li> <li>3. DB Teams submit SOQs</li> <li>4. TRC evaluates SOQs and reaches a consensus determination of what teams should be shortlisted (minimum of 2)</li> <li>5. Issuance of draft RFP</li> <li>6. One-on-one meetings with teams to discuss project</li> <li>7. Issuance of final RFP</li> <li>8. Teams submit Technical and Price Proposals</li> <li>9. TRC evaluation of Technical Proposals <ul style="list-style-type: none"> <li>- Responsiveness review</li> <li>- Preliminary evaluation</li> <li>- Presentation by each shortlisted firm with Q&amp;A by the TRC</li> <li>- TRC convenes with a facilitator(s) to determine the Committee’s consensus score in each evaluation category</li> </ul> </li> <li>10. Opening of Price Proposals</li> <li>11. Request BAFO, if desirable</li> <li>12. Determine Best-Value DB Team</li> <li>13. Recommend for action by the Secretary of Transportation</li> </ol> <p><i>Express DB</i></p> <ol style="list-style-type: none"> <li>1. DOT advertises project</li> <li>2. DB Teams submit SOQs</li> <li>3. DOT reviews SOQs and shortlists using a QBS process</li> <li>4. Shortlisted teams submit a price proposal</li> <li>5. Project awarded to the DB Team that submits the lowest price proposal</li> </ol>
<p><b>Selection Method</b></p>	<p><i>For Best Value DB (price adjusted by quality credits):</i></p> <ul style="list-style-type: none"> <li>• A maximum Quality Credit percentage is assigned to each project as determined by the Director of Transportation Program Management and endorsed by the Design-Build Executive Committee (percentage typically ranges from 15% to 30% depending on the complexity and size of the project)</li> <li>• Technical Proposal is scored (usually using a range of 70-100)</li> <li>• Quality credits are assigned to correspond to the total technical score (RFP includes chart of quality credits – e.g., a technical score of 100 may get a quality credit of 15%, while a score of 70 gets 0%)</li> <li>• Team’s Price Proposal is multiplied by the Quality Credit percentage to arrive at the Quality Value</li> <li>• Adjusted Price is calculated by subtracting the Quality Value from the Price Proposal</li> </ul> <p><i>For Express DB,</i></p> <ul style="list-style-type: none"> <li>• Public opening of Price Proposals to determine the lowest apparent Price Proposal</li> </ul>
<p><b>Bundling DB Projects</b></p>	<ul style="list-style-type: none"> <li>• Bridges are bundled based on geography and type (e.g., split bridges from culverts because the DOT felt they could receive better pricing from firms with specialized culvert experience)</li> <li>• Express DB procurement process used</li> </ul>

<b>Use of Alternative Technical Concepts (ATC)</b>	<ul style="list-style-type: none"> <li>• ATCs are used on a project by project basis (e.g., not used on bundled bridge projects as there is little room for innovation)</li> <li>• Significant effort is required to manage the ATC process <ul style="list-style-type: none"> <li>- Receive an average of about 50 ATCs per project</li> <li>- NCDOT does not want to limit the number of ATCs proposers are allowed to submit</li> <li>- A lot of the concepts that are submitted do not actually require an ATC, but industry likes to receive assurance that an idea is acceptable – in this respect, the ATC process helps to lower risk pricing</li> <li>- ATC provision allows NCDOT to revise the RFP if multiple proposers submit the same concept (i.e., better to just incorporate the concept as part of the required criteria)</li> </ul> </li> <li>• VE proposals that alter the DB Team’s proposal and/or the requirements of the RFP are considered</li> </ul>
<b>Stipends</b>	<ul style="list-style-type: none"> <li>• Stipends are awarded to each short-listed firm that provides a responsive but unsuccessful proposal</li> <li>• In response to concerns that stipends were too low, a research study was performed, which suggested that NCDOT’s stipends (which range from \$45,000 to \$150,000) seemed to generally be in line with amounts other owners were paying</li> </ul>
<b>Other Comments</b>	<p>Focus throughout the procurement process is on equity. For example, if during the ATC process the DOT gets the sense that the teams are interpreting some criteria differently, one-on-one meetings will be held with each DB team to provide a forum through which each team can present its approach and receive feedback from the DOT.</p>

<b>Risk Allocation</b>	
<b>Risk Management Philosophy</b>	<p>DOT’s philosophy is to stay off of the critical path of the DB Team; therefore, most risks (e.g., ROW and utility coordination) are transferred to the DB Team</p>
<b>Differing Site Conditions</b>	<ul style="list-style-type: none"> <li>• DOT has offered to take more borings during the procurement period</li> </ul>
<b>Permitting</b>	<ul style="list-style-type: none"> <li>• DOT will generally prepare the NEPA documents (RFP should clearly define any commitments made during NEPA) <ul style="list-style-type: none"> <li>- If the DB Team’s design solution is rejected and the alternative approach is costly, the DOT will facilitate follow-up meetings with the permitting agencies</li> </ul> </li> <li>• RFP must clearly define all permitting requirements that are placed on the DB Team <ul style="list-style-type: none"> <li>- DOT is the permittee, but DB Team generally handles the application process</li> <li>- RFP should state the expected duration of the permitting process</li> </ul> </li> <li>• Mitigation of wetland, stream and other environmental impacts, except as may be required on-site, are generally retained as a DOT function</li> </ul>
<b>Utilities</b>	<ul style="list-style-type: none"> <li>• DOT will investigate the presence of existing utility facilities in the project area, provide the location and ownership of these utilities to the prospective DB Teams, and enter into utility agreements where appropriate</li> <li>• DOT will make a determination as to which entity is to be responsible for relocation of existing utilities (typically utility services are included in the DB contract with the caveat that DB is generally not suited to compact projects with extraordinary utility conflicts)</li> <li>• When utility relocation is the DB Team's responsibility, the DB Team, through consultation with utility companies, is to verify utility conflicts and make arrangements for relocation or adjustments as required</li> </ul>
<b>Right-of-Way</b>	<ul style="list-style-type: none"> <li>• ROW acquisition requirements must be clearly defined in the RFP</li> <li>• DOT pays for the ROW acquisition, but the DB Team often handles the ROW process</li> <li>• Proposal evaluation criteria often include minimization of ROW costs</li> </ul>

<b>Third Parties</b>	<ul style="list-style-type: none"> <li>• RFP should clearly state third party constraints</li> <li>• DOT should mitigate unnecessary risk to the DB Team in the areas of geoenvironmental remediation, utility relocation, railroad coordination, and FEMA compliance</li> </ul>
<b>Other Comments</b>	<ul style="list-style-type: none"> <li>• RFP must clearly define all services that will be the responsibility of the DB Team (e.g., ROW acquisition services, utility relocation coordination services, geotechnical investigations, surveys, permitting, and on-site mitigation)</li> <li>• Similarly, the RFP should clearly define all preconstruction activities the DOT will be performing</li> </ul>

**DB Contract Administration**

<b>Design Oversight</b>	<ul style="list-style-type: none"> <li>• Keeping design reviews within the Alternative Delivery Group helps ensure review efficiency (process can get bogged down if experts outside of the group have to review)</li> <li>• Limiting the review time helps ensure discipline (some DOT designers had been getting too picky with regard to their own preferences)</li> </ul>
<b>Construction Oversight and Quality Management</b>	<ul style="list-style-type: none"> <li>• Third party CEI firm under DOT control</li> <li>• QC by DB Team</li> <li>• Acceptance or verification by DOT Division</li> <li>• IA by DOT Central Office</li> </ul>
<b>Payment</b>	Not discussed
<b>Best Practices and/or Lessons Learned</b>	Not discussed

**Performance Outcomes**

<b>Tracking of Metrics</b>	No formal process to track metrics (but would like to formalize in the future)
<b>Success Factors</b>	<p><i>Primary Success Factors</i></p> <ul style="list-style-type: none"> <li>• Interaction of the DB Team</li> <li>• Equitable risk allocation</li> <li>• Clarity of RFP scope</li> <li>• ATCs</li> <li>• Timely owner reviews/approvals</li> </ul> <p><i>Secondary Success Factors</i></p> <ul style="list-style-type: none"> <li>• DB Team qualifications (a lot of qualified firms in the state – mature DB industry)</li> <li>• Communication and coordination between DOT, DB Team, and all other project stakeholders</li> <li>• Use of performance specifications</li> </ul>
<b>Other Comments</b>	At a programmatic level, listen to your engineering consulting and contracting industry, especially when just starting a program or looking to expand a program