Committee on Right of Way, Utilities and Outdoor Advertising Control 2019 Annual Meeting

Chattanooga, Tennessee
April 28–May 2, 2019
Tennessee’s Alternative Contracting Program

“Integration of All Functional Disciplines”
Innovative Project Delivery Method

- Design Build… A Single Contract to accomplish design and construction

*Single Point of Accountability
Design Build VS. Design Bid Build

Design-Build

- Concept Planning
- Select Design/Builder
- Preliminary Design
- Final Design & Project Clearance
- Construction

- Minimal to Extensive Contractor Input

Design-Bid-Build

- Concept Planning
- Preliminary Design
- Final Design & Project Clearance
- Select Contractor
- Construction

- Minimal Contractor Input
- Extensive Contractor Input
- Design-Build-Associated Time Saving
### Design Build to Date

#### Table 1 | Design Build Project Metrics

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Bid Amount</th>
<th>Change Order Amount</th>
<th>Net Change Order Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 1: I-40 Stewarts Ferry Pike Ramp</td>
<td>$649,445.00</td>
<td>0</td>
<td>$-</td>
</tr>
<tr>
<td>Project 2: SR-104 Bridge over I-40</td>
<td>$2,082,749.75</td>
<td>1</td>
<td>$48,125.69</td>
</tr>
<tr>
<td>Project 3: SR-317 Realignment</td>
<td>$7,312,885.36</td>
<td>4</td>
<td>$401,048.54</td>
</tr>
<tr>
<td>Project 4: I-40 Widening</td>
<td>$56,592,101.00</td>
<td>9</td>
<td>$(-1,402,314.38)</td>
</tr>
<tr>
<td>Project 5: I-40 Interchange at SR-222</td>
<td>$9,949,785.55</td>
<td>4</td>
<td>$68,915.54</td>
</tr>
<tr>
<td>Project 6: Saturn Parkway Extension</td>
<td>$17,134,607.55</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Project 7: I-440 Widening</td>
<td>$152,959,352.00</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Project 8: I-75 Interchange at I-24</td>
<td>$132,644,398.00</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Project 9: US-64 Bridge over Ocoee</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Project 10: Region 4 Bridge Bundle</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

*Value is to be determined

**Completed projects depicted in green and projects that are active or in procurement depicted in blue*
Design Build to Date

Sum of Contract Dollars per Year

- Project 1
- Project 2
- Project 3
- Project 4
- Project 5
- Project 6
- Project 7
- Project 8


$\text{-} \text{ to } \$50,000,000.00$
Role of Functional Areas

- Development of Contract...

Development Input

- Creativity
- Preliminary Design & Structural Concepts
- Environmental, ROW, Utilities, RR
- Scope

*Key: Fast Start Up Schedule
Making the Decision

• *Faster, Delivery, Construction Speed & Innovation.*

  – 5 contracts per fiscal year > 1,000,000.00 per contract.
  – 15 contracts per fiscal year < 1,000,000.00 per contract.
Factors to Consider.....

- Type of Project
- Project Urgency
- Resources
- Risk
- Quality
- Budget
Next Steps: Design-Build Committees

- DB Executive Oversight Committee (DBEOC)
- DB Review Committees (DBRC)
- The DB Program Manager shall serve as the DBRC chairperson and will oversee the administration of the overall contract once awarded.

What is your role?
The DB Executive Oversight Committee (DBEOC) includes the…

- Chief Engineer
- Assistant Chief Engineer
- Director/Assistant Chief Engineer for The Region
- Director of Construction
The DB Review Committees (DBRC) ensures oversight, development, support and management of the DB project requirements…

Representatives include…

- Construction
- Design
- Structures
- Geotechnical
- Environmental
- Right of Way
- Utilities
Lessons Learned

- Carefully choosing projects appropriate for Design Build;
- Adequately preparing to procure and manage a Design Build project;
- Better allocation of risk;
- Leaving design scope “dynamic”; 
- Allowing Alternate Technical Concepts;
- Maintaining communications;
- Reducing the potential for design errors and omissions;
- Allowing for more concurrent processing of design and constructing activities for different portions of the same project;
- Time vs. Value
Saturn Parkway Extension
Design Build Construction Project
Maury County

- Right of way acquisition
- Utility relocation
- Railroad involvement
- Environmental concerns
TDOT provided 30% plans to all potential design builders. Plans required ROW acquisition from 15 tracts.
The successful bidder proposed a shift in alignment to the west, reducing tracts needed to 6 and eliminating 1 of the 2 bridges over McCormack Branch.
Saturn Parkway Extension
Final ROW Plans

Number of tracts to be acquired was reduced from 15 to 6.
Saturn Parkway Extension
Final ROW Plans

Number of tracts to be acquired was reduced from 15 to 6.
Design Builder Responsibilities: Right of Way

- Must select TDOT approved: appraisers, review appraisers, and acquisition/relocation firms
- Title reports
- Appraisal/Appraisal Review
- Acquisition/Relocation/Property Management
- Closing
- The cost of the consultants is the responsibility of the Design Builder
Agency Responsibilities: TDOT

- General Motors: process donation
- Approve all fair market value (FMV) offers, administrative increases, and any relocation computations
- Condemnations will be handled by the Attorney General’s Office
- Payments for acquisition (FMV), relocation assistance and releases
Utility relocations caused by TDOT projects are reimbursable if:

- The utility has a property right
- OR
- The project is “Chapter 86” eligible (TDOT Policy 340-07)
Types of “Chapter 86” projects

- “Grade and Drain” projects with R.O.W. acquisition.
- Bridge Replacements (on State Routes)
- Non-qualified projects
- Commissioner approved exceptions
Criteria for meeting “Chapter 86”

- Utility must respond within 120 of receiving plans per TCA 54-5-803(b)
- Utility must have a valid permit to occupy R.O.W.
- Utility must enter into an agreement with TDOT per TCA 54-5-804(a)(2)
In order to be eligible for “Chapter 86” reimbursement, all utilities had to agree to allow the highway contractor to relocate them (Move in State Contract) as part of project construction. Regional and HQ staff coordinated this effort and reached an agreement with all utilities.
Utility Involvement

“In Conflict”

- Cable (public/private)
- Electric (private)
- Gas (private)
- Telephone (public)
- Water (public/private)
- Sewer (private)
- Fiber (public)
Railroad Involvement

- Preliminary Survey to determine railroad width
- Determination of Railroad property rights:
  - Easement corridor
  - Fee Simple
- Railroad Coordination achieved through HQ State Railroad Coordinator
Railroad Coordination
Railroad Coordination

- Could not meet railroad standards for tract span or maintenance space.
- Requested variance from the 200’ span standard
- Railroad accepted a 102’ span which permitted 98 feet of proposed structure on railroad row
• Closing an at grade crossing and replacing with a proposed grade separated crossing. Requires contribution from the railroad for a theoretical structure.

• Preliminary bridge plans are being reviewed. If approved, final bridge plans will be submitted.
I-440 Widening
Design Build Construction Project
Davidson County

- Right of way acquisition (1 tract)
- Utility relocation (minimal)
- Railroad (5 grade separated crossings)
Railroad Coordination

- Easement Corridors (4 crossings)
- Fee Simple (1 crossing)
  - Appraise property
  - Acquire property rights
    - Permanent easement
    - Air rights
    - Construction easement
- Discovered ROW being used that was never acquired
Grade Separated RR Crossings
I-440 Widening
Grade Separated RR Crossings
I-440 Widening
Grade Separated RR Crossings
I-440 Widening
Railroad Coordination

Additional Right of Way not purchased during the original project.
US 64 Bridge over Ocoee River Design Build Project
Ocoee, Polk County, Tennessee

• Right of way acquisition
• Utility relocation
• Environmental concerns
Phase 1 – Short-listing of potential Design-Builders based on Statements of Qualifications in response to an RFQ (Request for Qualifications) – Winter 2018

Phase 2 – Submission of price and technical proposals in response to an RFP (Request for Proposals) – Summer 2019

Phase 3 – Award of Design/Build contract
Project Overview – Project Location
This project is

- Replacement of bridge over Ocoee River
- Intersection improvements at Welcome Valley Road
New bridge will be constructed to the north
With approximately 35 feet clear from the existing bridge

Existing bridge will be removed after the new bridge is opened to traffic
Project Overview – ROW Acquisition and Easements

ROW Phase may include:

- ROW acquisition
- Construction easements
- Slope easements
- Drainage easements
Ocoee River Bridge Rendering
CM/GC Explained

Traditional Design Bid Build

Design ➔ Construction

Design-Build

Design ➔ RFP ➔ Selection of both Designer and Builder ➔ Construction

CM/GC

Design ➔ RFP ➔ Selection of both Designer and CM ➔ Construction

Award

Early Construction
Why CM/GC?

- Expedite complex project delivery
- Design based on contractor capabilities and TDOT expectations
- Mutually agreed distribution of risk
- Provide highest value in the shortest time frame at an agreed upon price (one contractor, one price)
- Facilitates a collaborative partnership
- Early involvement of Third Parties during Design (Utilities, Railroad, Cities, Major Stakeholders)
- Continuous Peer Exchange
Pilot Projects

**Fast Facts**

**Let on March 13, 2015**
- TDOT Original Estimate of $56,412,792.06
- TDOT Original Completion Date at June 15, 2016 (13 Weekend Closures)
- Awarded to Kiewit Infrastructure South Co.
  - Original Bid of $61,859,996.00
  - 4 Change Orders Totaling $-40,538.52
  - Substantial Work Completed by January 31, 2016 (10 Weekend Closures)

**Fast Facts**

**Let on November 15, 2017**
- TDOT Original Estimate of $49,759,281.45
- TDOT Original Completion Date at June 30, 2019
- Awarded to Kiewit Infrastructure South Co.
  - Original Bid of $54,098,033.76
  - 70.20% of Time Elapsed
  - 81.13% of Work Currently Completed (Ahead of Schedule)
  - 6 Change Orders Totaling $389,015.07 to Date (0.72% of Original Contract Amount)

**Fast Facts**

**Final Pilot Project**
- In Procurement Stage
- Final Design Fall 2019
- Construction Begins Spring 2020
Pilot Project Results

Estimated Design - Bid-Build vs. CM/GC
Construction Cost on TDOT Pilot Projects

Cost (Dollars, $)

$100,000,000,000.00

$80,000,000,000.00

$60,000,000,000.00

$40,000,000,000.00

$20,000,000,000.00

$-

DBB  CM/GC  DBB  CM/GC  DBB  CM/GC

Fast Fix 8  Mem Fix 4  I-24

Time  C.O.'s  Cost
Project Purpose and Need

- Provide an Eight (8) Lane I-240 Mainline (complete the planned widening of I-240)
- Improve Four (4) Deficient Bridges over I-240
  - Replace WB & EB Poplar Avenue
  - Replace NS Railroad (bridge owned by TDOT)
  - Rehab or Replace Park Avenue
- Improve Horizontal and Vertical Clearances
- Minimize Construction Time and Impacts by using Accelerated Bridge Construction (ABC)
- Minimize Impacts to NS Railroad
Project Overview
Existing Norfolk Southern Railroad

- 320’ – 6 Span
- Tangent
- Steel Beam

- 2 Track Ballast Deck
- Min. Vert. Clearance 15.61’
- 100’ Railroad ROW
Existing Park Ave. and NS RR

35' BRIDGE TO BRIDGE
Existing Norfolk Southern Railroad
Shoofly Options
Weekend Closure Option
Utility Coordination

Construct crash wall within 14’ of MLGW Tower

For temporary RR shoofly confirm the protection requirements for the 10” gas line

Temporary or permanent relocation of overhead powerlines along Park Avenue
Utility Coordination & Relocations

Temporary or permanent relocation of the powerline crossing the loop ramp
Utility Coordination & Relocations

Confirm the 2” gas line can be shut off on each approach during construction.

Confirm protection requirements for the 26” high pressure gas line.

Confirm the power line can be de-energized during construction.

Confirm the 10” water line can be shut off on each approach during construction.
Initial Project Schedule

- CM Contract Execution: September 2016
- Project Kick Off: September 9, 2016
- 30% Plans: 3 months
- 60% Plans: 3 months
- 90% Plans: 3 months
- 100% Plans and GMP: 1-2 months
- Construction Begin: Summer 2017
COMMUNICATION IS KEY TO A SUCCESSFUL ALTERNATIVE DELIVERY PROJECT!

Thank you!!!!