

# Post Design-Build Evaluation Report

**Project Description: I-24 at SR 299 Bridge Replacement  
(Accelerated Bridge Construction)**

**P.I. Number: 0011682  
County: Dade  
GDOT District: District 6**

**Date Conducted: August 1, 2017**

I-24 at SR 299 Bridge under construction during 56 hour move



1. **Project Description:** The proposed project [P.I. No. 0011682] replaced the existing, structurally deficient State Route (SR) 299 bridge over Interstate 24 (I-24) in Dade County, Georgia. This overpass is approximately 0.6 miles south of the Georgia/Tennessee state line at the I-24 Exit 169 interchange. The bridge was replaced on the existing alignment using Accelerated Bridge Construction (ABC) techniques.
  
2. **Design-Build delivery goal(s):** Expedite delivery and, as the first ABC project leverage the DB process and the industry to provide a solution which met the project goals. ABC will allow the existing bridge removal and new bridge installation to occur within a time period of 56 hours, minimizing the project’s impact to the traveling public. The project will be delivered using Design-Build.
  
3. **Project stakeholders:**
  - GDOT – Innovative Delivery, District 6, Environmental Services, Bridge Design, State Utilities
  - Wright Brothers Construction Company – Prime Contractor
  - Parsons Brinckerhoff, Inc. – Prime Designer/ Engineer of Record
  - TN DOT
  - EPD
  - FHWA
  - Dade County
  
4. **Project Summary:**

	<b>Project Milestone</b>	<b>Date</b>
Pre-Let	Public Notice Advertisement (PNA)	04/24/2015
	Request for Qualifications (RFQ)	05/26/2015
	Letter of Interest (LOI)/Statement of Qualifications (SOQ)	06/26/2015
	Notice to Finalists	07/14/2015
	Request for Proposals (RFP)	07/27/2015
	Administrative Package Due	11/06/2015
	Technical Package Due	11/06/2015
	Price Proposal / Project Letting	11/20/2015
Post-Let	Project Award	12/07/2015
	NTP1 – Preliminary Design	01/27/2016
	NTP2 – Final Design Activities	06/01/2016
	NEPA (EER) Post-Award Re-Evaluation	09/23/2016
	NTP 3 – Construction Phase	01/05/2017
	Milestone Deadline – New Bridge Open to Traffic	05/16/2017
	Contract Completion Date	12/13/2017
	Substantial Project Completion	06/16/2017

**5. Design-Build Proposers:**

	<b>Contractor</b>	<b>Designer</b>	<b>Total Bid</b>
<b>1</b>	<b>Wright Brothers Construction Co. Inc.</b>	<b>Parsons Brinckerhoff, Inc.</b>	<b>\$7,274,656.32</b>
2	Kiewit Infrastructure South Company	Heath & Lineback Engineers, Inc.	\$11,205,716.00
3	Bell & Associates Construction., L.P.	STV/ Ralph Whitehead	\$16,303,000.00

**6. Stipend**

- a. Was a stipend (stipulated fee) offered to proposing Design-Build Teams?  Yes  No  
 If yes, how much per firm: \$40,000

**7. Design-Build Request for Proposals (RFP)**

- a. Type of procurement:  One Phase/Low Bid  Two Phase/Low Bid  Best Value  
**Note:** Three Design-Build Teams submitted LOI/SOQ packages in response to the RFQ and three were notified to be finalists. On November 6, 2015 the Department received three price proposals and corresponding technical proposals.
- b. Advertisement duration:  30 days  60 days  90 days  90 days +  
**Note:** Based on Procurement summary provided to FHWA Advertisement duration was 105 days.
- c. Was a draft RFP released for this project?  Yes  No  
 If yes # of releases: - Note  
**Note:** Draft RFP was issued to FHWA on 07/16/2015  
 Was a Q&A format provided?  Yes  No
- d. Were One-on-One meetings held with proposers?  Yes  No
- e. List GDOT offices involved in the RFP development: Design Policy & Support, Engineering Services, Environmental Services, Innovative Delivery, Utilities, Construction, Bridge, District 6, Traffic Operations

**8. Design-Build RFP Package**

- a. List items included in the RFP package:

<b>Item</b>	<b>Yes</b>	<b>No</b>	<b>Notes</b>
Approved Traffic Study	X		Provided on GDOT's FTP site
Bridge layouts	X		Provided on GDOT's FTP site
Approved Survey Files	X		Provided on GDOT's FTP site
Approved Concept Report	X		Provided on GDOT's FTP site
Microstation Design files	X		Provided on GDOT's FTP site
Approved Design Exceptions/Variations		X	DE for sight distance was approved after RFP was issued and was included in technical scoring. Document was not included but issue was known.
Original Bridge Foundation Investigation	X		Provided on GDOT's FTP site
Approved Pavement Design	X		
Approved Overhead/Subsurface Utility	X		Existing utility information provided.

Engineering (SUE) Quality Level "B"		
Utility Memorandum of Understanding (MOU)	X	MOUs included in contract
NEPA Categorical Exclusion	X	Provided on GDOT's FTP site

b. General observations of the RFP contents and/or procurement process:

- o Geotechnical information was inadequate for design.

c. Were conflicts in project scope identified:  Yes  No

If yes, what sections should be revised for future RFPs:

- o In the communications Section 3 of Vol 2 of the RFP need to clearly define the requirements for Time-Lapse Cameras during construction.
- o Geotechnical investigation for MSE Wall 3 could have been more clearly defined. Specifically providing strength data for foundation soils, and rock strength for drilled shafts.
- o Need to clearly define the role of the Engineer of Record in Exhibit 1 of Vol 1 of the DB Contract.
- o The DB Teams role in construction Quality Management in Sec 2.3 of Vol 2 & 3. The contract needs to clearly identify the deliverables the Department wants.
- o Need to provide more project specific requirement in Public Information and Communications Sec 3 of Vol 2.

**9. Environmental**

a. Type of document:  NEPA: Level:  PCE  CE  EA/FONSI  EIS/ROD  
 GEPA: Level:  Type A  Type B  EER/NOD

b. Was the environmental document approved prior to the RFP advertisement?  Yes  No  
 If no, when was the NEPA/GEPA document approved?

c. Was a re-evaluation performed post-let?  Yes  No  
 If yes, describe scenario why a re-evaluation was required:

d. General observations of the pre-let or post-let environmental process:  
 o ABC method eliminated the need for environmental coordination in this project.

**10. Environmental Permitting**

- a. Type of 404 permit required:  NWP  IP  Other  None
- b. Was mitigation required as part of the permit?  Yes  No  
 If yes, did the Design-Build Team perform mitigation and/or acquire credits?  Yes  No
- c. Was a Stream Buffer Variance (SBV) required?  Yes  No
- d. List any other permits required by the project (not counting NPDES Permit): None
- e. General observations of the environmental permitting process: None

**11. NPDES Permit**

- a. Did the Design-Build Team prepare the Notice of Intent (NOI)?  Yes  No  NA
- b. Did the Design-Build Team pay the NPDES permitting fee?  Yes  No  NA
- c. Were the ESPCP regularly redlined?  Yes  No  NA
- d. Did any self-report actions occur?  Yes  No

e. Was a consent order filed?  Yes  No

i. Additional comments:

## 12. Right of Way (R/W)

a. Was R/W required?  Yes  No

If yes, who was responsible for R/W?  GDOT  Locals  Design-Build Team

If yes, was it acquired prior to award of the Design-Build contract?  Yes  No

If yes, did R/W acquisition activities impact the project schedule?  Yes  No

b. How were R/W commitments or cost-to-cure elements handled on this project:

c. List any special circumstances, conditions, or property owner commitments of R/W acquisition:

d. General observations of the R/W acquisition process:

- o ABC eliminated the need for ROW impacts.

## 13. Utilities

a. Was SUE performed pre-let and included in the RFP package?  Yes  No

If yes, what level?  QL-D  QL-C  QL-B  QL-A

If No, what was the mitigating activity (e.g. white lining specification, "no-conflict" letters, first submission plans):

b. Were Design-Build Utility MOU's executed?  Yes  No

c. List the utility owners, if any, which were included in the Design-Build contract: AT&T, Georgia Power Distribution, Dade County Water Authority, AGL & Charter.

d. Generally describe observations with respect to Design-Build utility coordination:

- o There were existing telecommunications attached to the bridge. Due to the minimal timeframe for utility relocations during construction, AT&T relocation occurred prior to NTP3. AT&T's amenities were not relocated as directed by GDOT which created issues.

e. Generally describe any areas of improvement with respect to Design-Build utility coordination:

- o If utilities are on the bridge it can make the ABC method difficult.

f. What was the frequency of utility coordination meetings?

- o Monthly during design.

## 14. Geotechnical

a. Was an approved Soils Report included in the RFP package?  Yes  No

If no, was a Soils Report required for the project?  Yes  No

b. Was an approved BFI included in the RFP package?  Yes  No

If no, was a BFI required for this project?  Yes  No

c. Was an approved WFI included in the RFP package?  Yes  No

If no, was a WFI required for this project?  Yes  No

d. Was an approved High Mast Foundation Investigation report included in the RFP package?  Yes  No

If no, was a HMFI required for this project?  Yes  No

e. Were there any geotechnical issues encountered on construction?  Yes  No

If yes, describe issues and outcome:

- There was wall slope failure at existing Bent 5 prior to the ABC Period but it did not compromise the stability of the abutment. A soil-nail wall was installed to quickly stabilize the location.

**15. Design and Construction Phases**

- a. Did the Design-Build Team advance portions of the project to the construction phase while other portions of the project continued to be designed and/or permits obtained?  Yes  No

If yes, describe: Temporary bridge work including drilled rock cores for drilled shafts, and drilled temporary caissons prior to bridge plan approval. Conditional NTP 3a (for phased construction activities) initially included language to allow erosion control installation, clearing and grubbing and maintenance of traffic. NTP 3 for all remaining construction activities was issued on January 5, 2017.

- b. Describe the typical frequency for progress meetings? During the Design phase the meetings were monthly. During construction Phase the meetings were 2 times a month.

- c. Were the Design-Build Team plans/submittals of acceptable quality?  Yes  No

Plans were acceptable, however the following issues were documented: -

- Bridge plans lacked the necessary details for Bent Caps Reinforcing.
- The utility openings at the end walls were detailed to the wrong depth/elevation on the plans
- Deck reinforcing steel clearance was installed incorrectly due to misinterpretation of the RFC plans which resulted in raising the profile grade of deck one inch.
- Median cross over paving thickness at tie-ins was not adequate towards the end of the ABC period. For future projects extend the asphalt further along the existing alignment to provide a smoother transition onto the new pavement.

- d. Were GDOT's review times adequate?  Yes  No

If no, describe: Design review times were fine.

General observations of review times: None

- e. Was the Asphalt Index specification included in this project?  Yes  No

- f. Was the Fuel Index specification included in this project?  Yes  No

- g. Was construction of the Maintenance of Traffic (MOT) acceptable?  Yes  No

MOT was acceptable, however the following observations were provided:

- DOT should consider in-filling the rumble strips within the limits of the cross-over to minimize motorists shifting into adjacent lanes.
- Consider allowing daytime closures of SR 299 or other low impact roads.
- Overall traffic shifts & maintenance of traffic were a success on the project.

- h. Was the Schedule of Values adequate?  Yes  No

If no, describe:

- i. Was the pay voucher and overall payment process acceptable?  Yes  No

If no, describe:

- j. Was the Critical Path Method (CPM) schedule specification used on this project?  Yes  No

If yes, describe general experiences (pro or con) using the CPM specification:

- The WBS schedule specification requirements were too stringent.
- The hour by hour break down for the ABC Period was helpful. Excel spreadsheet including resources was as beneficial as the actual P6 ABC schedule.

If yes, any suggested improvements to the use of CPM schedule: None

- k. Were there any unique issues (to Design-Build) that occurred?  Yes  No

If yes, describe:

- o The demolition of the existing bridge was more challenging than anticipated. There was not forensic information provided to the DB Team during the proposal stage.
- o For future projects consider providing 3-D Lidar of existing bridge.

- l. Were sound barriers required on this project?  Yes  No

If yes, describe the material/color:

If yes, was the sound barrier material/color specified in the contract?  Yes  No

If yes, was the sound barrier height/location specified in the contract?  Yes  No

- m. Were there lane closure restrictions on this project?  Yes  No

If yes, were they adequate or could they have been modified for efficiency:

- o Restrictions were adequate. For future projects provide more flexibility for daytime closures, especially on low volume roadways.

- n. Were there ITS outage restrictions on this project?  Yes  No  NA

If yes, were they adequate or could they have been modified for efficiency:

- o. Were there new or existing Traffic Signal modifications required?  Yes  No

If yes, were the traffic signal permits obtained by GDOT:  Yes  No

- p. Were As-built plans prepared by the Design-Build Team?  Yes  No  Pending

**16. Design-Build Innovations**

- a. Were there innovative designs, solutions or materials used on this project?  Yes  No

If yes, describe:

- o Self-Propelled Modular Transport for Bridge Move during 56 hour weekend
- o Pre-Cast Approach Slabs and Pedestals
- o Use of #57 Crushed Stone to backfill approaches prior to the move as opposed to dirt.
- o Only known project in the country to move two spans over live traffic in one-weekend, which may have been overly aggressive.
- o Maintaining traffic flow on interstate I-24 went very smoothly.

- b. Were any Value Engineering Proposals (VEP) submitted?  Yes  No

If yes, fill out the below information:

No.	VECP Description	Total Savings	Approved
1		\$	N/A

- e. List other benefits that are not reflected in the cost savings:

**17. Supplemental Agreement Summary- Pending liquidated damages final determination.**

SA No.	Amount	Description

**18. DBE**

- a. What was the project's DBE goal? 8%

- b. Was it or will it be met?  Yes  No

If yes, generally describe utilization:

- o Multiple disciplines within construction phase.

**19. Summary of observations from Office of Innovative Delivery (OID), Construction, DB Team, and FHWA**

- a. Overall project was successful considering project goals and I-24 Maintenance of Traffic.
- b. Lessons were learned on ABC period. (See attached)
- c. Coordination and Communication between DB Team and GDOT during ABC period was absolutely critical to project success.
- d. FHWA praised GDOT and the Contractor for completing the project. The parameters specified and learned in this project will help guide future accelerated bridge construction projects in Georgia.

**20. Recommendations**

- a. Consider ABC period timeframe based on complexity of the project.
- b. Overestimate the closure times prior to and during the ABC period when performing public outreach.
- c. Consider complex bridge geometry (horizontal & vertical) when choosing ABC candidates.
- d. Keeping I-24 open during the ABC Period increased the complexity of the project greatly. Many of the other ABC projects were able to shut down the surrounding roadway network.
- e. RFP was somewhat restrictive requiring the use of either SPMT or slide-in. Allowing more flexibility by contractor could allow significant savings.
- f. Consider providing additional Geotechnical information to DB Team.
- g. Consider adding language in the specification requiring the EOR to perform biweekly on-site inspection during the construction.

**21. Notable achievements by early interaction of design and contractor**

- a. By working closely with the contractor the engineer of record was able to improve the design.



22. Post Design-Build Evaluation participants:

SIGN IN SHEET

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Attachment: PI 0011682 56-Hour Period ABC Method Lessons Learned Overview