

**GDOT ENGINEERING DESIGN SERVICES**

**PHASE II RESPONSE**

**RFQ-484-101713**

**Project/Contract/County: 0007842 / #5 / Fulton**  
I-85 at SR 138/Jonesboro Road Interchange  
Reconstruction and Widening

**Parsons Brinckerhoff, Inc.**

**January 6, 2014**



# A. TECHNICAL APPROACH

**1. Technical Approach to Delivering the Project:** Project 5/Contract P.I. #0007842: I-85 at SR 138 / Jonesboro Road Interchange Reconstruction and Widening, Fulton County.

Subconsultants: Atlanta Consulting Engineers; Cindy Miller Communications; Dianna Hunt & Associates, Inc.; Edwards-Pitman Environmental, Inc. (DBE); MC Squared, Inc. (DBE); Rochester & Associates; Sycamore Consulting, Inc. (DBE); and The Sanborn Map Company, Inc.

## a) Technical Approaches



*Project Manager and roadway, bridge, traffic, and environmental staff working side-by-side from beginning to end of project.*

### We will bring an Integrated Team Approach

The Parsons Brinckerhoff Team will serve as an extension of the Georgia Department of Transportation (GDOT) staff, working directly for the GDOT Project Manager. The Parsons Brinckerhoff staff and the staffs of the subconsultant firms teamed for this project have an extensive history of working together on a variety of projects, providing GDOT with a team that effectively works together as a “one-stop-shop” and creates a seamless communication process. This integrated team approach, with all of the project disciplines working side-by-side from the beginning to the end of the project, increases awareness of project expectations, coordination, and collaboration, resulting in more efficient project delivery, less opportunity for miscommunication and a better end product. It allows issues to be addressed immediately as they arise and resolved quickly and significantly aides in delivery of the project within a shorter timeframe.

As part of the integrated team approach, the Parsons Brinckerhoff Project Manager will be the person responsible for focusing on communication with the GDOT Project Manager. He will work closely with that Project Manager to develop and maintain the project schedule, schedule meetings and resolve issues that may arise.

### We will bring a Complete Streets Approach

This project presents an opportunity to create a “front door” gateway for Union City that solves the complex operational issues while providing enhancements that will support

economic development in a manner consistent and coordinated with the Union City 2003 Livable Centers Initiative (LCI) and 2013 LCI Supplement.

The Parsons Brinckerhoff Team will utilize a “complete streets approach” to ensure that pedestrian, bicycle, motorist and bus needs are met. This is particularly important for this project since, despite a lack of sidewalks and adequate shoulders on the bridge, we noticed a number of pedestrians crossing the bridge during a recent site visit. Furthermore, there are worn pedestrian paths approaching the bridge, indicating that the area is often used by pedestrians. In addition to sidewalks, some other enhancements that will be explored as part of the complete streets approach include incorporating lighting and landscaping into the project. The interchange already has high-mast lighting, but street-level lighting could improve visibility and the safety of pedestrians and bicyclists. Attractive, but low-maintenance landscaping, combined with attention to the bridge aesthetics, will reinforce the interchange as the entrance to Union City, while giving the area a more pedestrian sense of scale.

### We will bring Innovative, Cost-Effective Design Solutions

The current Bridge (ID # 121-00138D-003.59E) is a four-span structure consisting of a steel superstructure and concrete substructure. It was constructed in 1966 then widened in 1978. Its sufficiency rating as of February 2013 was 66.40. Based on our field review and data collected, there appears to be a number of maintenance issues associated with the existing bridge, which will continually increase its life-cycle cost.

The location of the current bridge structure is in a horizontal curve along Jonesboro Road. This geometry lends itself to a replacement bridge structure immediately north of the current bridge. We will explore the opportunity to fully construct a new, wider bridge clear of the existing structure. Traffic could be maintained on the current bridge thus reducing maintenance of traffic costs and impacts. The new, wider bridge could accommodate additional turn lanes, sidewalks and bike lanes, and tie back into existing Jonesboro Road with limited impacts to right-of-way and property access. The figure below illustrates the footprint and potential impacts of a new bridge north of the existing bridge.



Our Team proposes replacing the existing four-span bridge with a two-span bridge, eliminating the current piers on the outside shoulder of I-85. The use of a two-span structure over I-85 will provide for future widening of I-85 to accommodate managed lanes, while also reducing cost in both materials and future maintenance. The new structure will consist of concrete girders supported on a multi-column center pier and abutments with wrap-around MSE walls on each end. The new span arrangement along with the use of concrete girders will require an increase in the vertical profile of about 36 inches to maintain existing clearances over I-85. The use of concrete components instead of steel will increase the service life while simultaneously decreasing life-cycle cost.

Our Team also has looked at one example of an innovative interchange design that could be applied to the I-85 at Jonesboro Road interchange. While frequently used as a stop-gap measure to delay replacing an existing bridge structure, a Diverging Diamond Interchange with a new bridge structure (illustrated below) has several potential advantages compared to a conventional bridge construction in this particular location, including:

- Narrower bridge width, *reducing bridge construction costs by as much as 25 percent.*
- Improved maintenance of traffic during construction.
- Improved interchange capacity and efficiency, as the ramp terminal intersections would become two-phase signals, rather than three-phase, lessening the time vehicles would have to stop at either intersection.
- Improved pedestrian safety (barrier-separated in center median across the bridge).
- Reduced impact to the drainage course in the northeast quadrant.



### **We will bring an Expedited Environmental Approach**

Based on a review of the project site and some of the team's initial design concepts, we believe that the NEPA document could be a Categorical Exclusion (CE). It could be elevated to an Environmental Assessment (EA) if public controversy arises or if potential adverse impacts are identified. In order to minimize the potential for public controversy, we propose a proactive approach to stakeholder outreach, particularly the local business community, to diffuse the potential for public

opposition early in the process and create stakeholder buy-in and sense of ownership in the project. We will design the project to minimize impacts to keep the environmental document at the CE level.

The Parsons Brinckerhoff Team is aware that projects often experience delays during the NEPA process regardless of the type of environmental document. A key to maintaining the schedule is to avoid common NEPA pitfalls such as: defining purpose and need too narrowly; defining project goals too vaguely or too broadly; improperly defining logical termini; poorly defining and documenting alternatives; and changing the design numerous times after the technical studies have been conducted. Our environmental lead, Valerie Birch, AICP, a certified NEPA instructor for the National Highway Institute (NHI), brings with her a hands-on working knowledge of demonstrated best practices for avoiding these common pitfalls and moving projects forward to meet or accelerate the project schedule.

### **b) Unique Challenges**

#### **Operational and Design Challenges**

Initial observations showed that the southbound I-85 off-ramp has long queues that can back up onto the interstate. Also, the shared center-turn lane on Jonesboro Road between the ramp terminals limits left-turn storage on the bridge and can cause inefficient operations at the ramp terminal intersections.

There are several large automobile dealerships along Jonesboro Road east of I-85 and there is heavy commercial development along Jonesboro Road west of I-85, including a Kroger-anchored shopping center and a Walmart-anchored shopping center. A large warehouse/distribution center operates in the northeast quadrant of the interchange. The design of the interchange will need to address through movements and a high truck percentage both in the existing conditions and in future traffic projections.

An important future land use consideration is the redevelopment of the currently vacant Union Station Mall site in the northwest quadrant of the interchange. The 2013 LCI Supplement envisions creating a new town center on this site with a new city hall and greenspace, but also office/industrial and residential properties and potentially a hotel. Such a development would have different traffic patterns than if the site was to again be redeveloped as a mall.

#### **Addressing Community and Business Impacts**

There are existing driveways and intersections close to the existing interchange. GDOT's policy is to control access for a minimum of 300 feet from the radius return along the cross street at each ramp terminal. This will result in loss of access to some existing businesses. This will be one of the main right-of-way costs and could be a source of opposition to the project. We recommend disclosing this early in the public involvement process to address opposition in a timely manner. We will carefully design the staging / maintenance of traffic for the

project so that impacts to motorists and business owners are minimized during construction.

### Proactive Stakeholder Outreach

Early proactive stakeholder outreach, particularly to the local government and business community, is key to minimizing the potential for controversy and creating buy-in and a sense of ownership in the project. The Parsons Brinckerhoff Team includes Sycamore Consulting, Inc. and Cindy Miller Communications for public involvement and public relations. Through stakeholder interviews and small group meetings with elected officials, major employers and neighborhoods, we will confirm or identify the key project issues and goals. We recommend an initial public meeting to introduce the project and receive input early in the process, followed by a formal public information open house later - once an alternative (or alternatives) has been developed. A project website, linked to the GDOT public involvement webpage, will be established to have information available to the public at all times. Fact sheets, simulations and surveys will be maintained on the website.

### Effective Quality Control/Quality Assurance

Parsons Brinckerhoff has a long-standing commitment to quality and our business systems support that commitment. Specifically, the firm maintains a documented quality system that conforms to the international standard for Quality Systems, ISO 9001:2008.

Our Project Manager Geoff Donald, PE, will ensure the quality of each work product and ensure that work is performed in accordance with the contractual terms, GDOT's expectations and Parsons Brinckerhoff's core values. The Parsons Brinckerhoff Team also includes Wade Harris, PE, who completed his 32-year GDOT career in the Office of Engineering Services reviewing final plans prior to letting and helping to write the GDOT QA/QC Manual. He will review design plans prior to submittal to GDOT to ensure that the plans meet GDOT expectations and are complete for letting. We know that a thorough review typically results in some revision and rework that takes time. Internal deadlines will be set so deliverables are completed to allow time both for review and revision before submission.

The Parsons Brinckerhoff Quality System requires that each subconsultant has a documented quality system of their own or agrees in writing to incorporate the Parsons Brinckerhoff Quality System into their operations for any work done on the project. The Parsons Brinckerhoff system provides for detailed review of all subconsultant deliverables to ensure overall quality and compliance with the scope of work. It is Parsons Brinckerhoff's policy that "no document shall be released or officially transmitted to the client or any third party without having received a suitable quality review." This is true for studies, documents and reports early in the project, as well as construction and right-of-way plans later in the project.

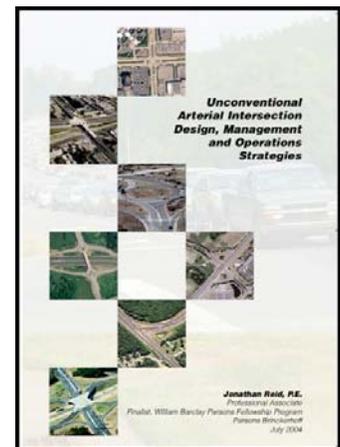
## 2. Specific Qualifications, Skills and Knowledge:

### Traffic Analysis Process

Our Team brings innovation in traffic modeling and analysis by our proven approach to move from traffic data collection to volume balancing and analysis to microsimulation results. We have developed a tool to automate volume growth and intersection volume-balancing (using the NCHRP 255 methodology) to provide traffic projections that can be readily validated by GDOT. The resultant data is easily imported into HCS/Synchro and microsimulation analysis tools such as VISSIM, reducing both time requirements and potential for error. Our automated and systematic approach led to the completion of the IMR/IJR for the I-75/I-575 Northwest Corridor Project (the largest IMR/IJR document the state of Georgia has ever undertaken) ahead of schedule because it was reviewed by FHWA's Washington office and returned with a letter of acceptance *without any comments for review or clarification*.

### Innovative Interchange Design

Parsons Brinckerhoff has unique capabilities in innovative design and traffic analysis. Our Traffic Analysis Lead Jonathan Reid, PE, PTOE, has literally "written the book" on non-traditional and innovative interchange design solutions, which will help ensure that all available solutions will be addressed in the course of the study.



### Project Visualization

Due to the complexity of the project, the Parsons Brinckerhoff Team suggests utilizing visualizations that promote a deeper understanding of what is proposed in the various concepts that will be considered. Examples of visualization techniques pioneered by Parsons Brinckerhoff can be found at [www.pbprojectviz.com](http://www.pbprojectviz.com).

