

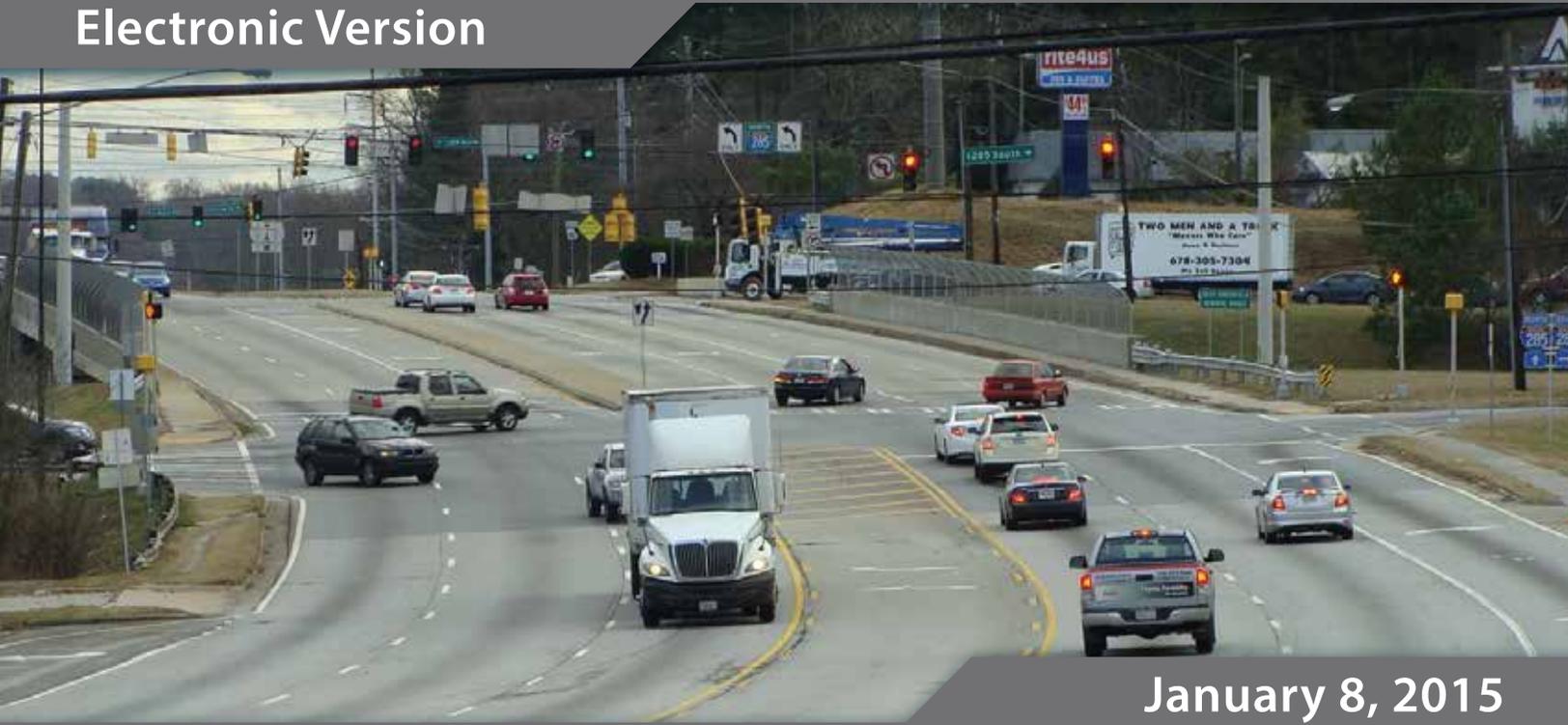
SUBMITTAL # 2 PHASE II RESPONSE

Contract 1 | B3-2014 | RFQ-484-111414

STATEMENT OF QUALIFICATIONS Engineering Design Services

PI/Project # 0006048 | I-285 West at State Route 280 | Cobb County

Electronic Version



Submitted to:
Georgia
Department
of Transportation

Submitted by:

PARSONS TRANSPORTATION GROUP INC.

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A. TECHNICAL APPROACH

A.1 Technical Approach to Delivering the Project

Over the past several years, Parsons has successfully led some of the most complex urban interchange and corridor widening projects in Georgia. Our experience includes the I-75 South Express Lanes project involving 12 miles of interstate widening including modifications to the I-75/I-675 interchange and the Jimmy Deloach Connector project that provides a 3-mile long new-location roadway for truck traffic around the Port of Savannah. Parsons is the lead designer for the Northwest Corridor project, currently under construction in Cobb County, which adds 30 miles of reversible managed lanes to I-75 and I-575 with new connections at the I-75/I-285 and I-75/I-575 system interchanges. Success on these complex projects has given the Parsons' design team significant experience in developing cost effective and innovative technical approaches to design challenges that we can directly apply to the I-285 West at SR 280 interchange project. With Bill Rountree, PE, leading our team as project manager, we have the skills, experience, knowledge and leadership to make this project a success for all project stakeholders and the Georgia Department of Transportation (GDOT).

EXISTING CONDITIONS

SR 280 is an urban minor arterial street that starts at the intersection of SR 139 in Fulton County, traverses north into Cobb County through the City of Smyrna and ends at the interchange with I-75. The I-285 interchange at SR 280 is located at the southeast edge of City of Smyrna. The SR 280 corridor in Cobb County has seen tremendous growth in the last 10 years resulting in severe congestion requiring capacity and operational improvements. Land-use adjacent to the interchange includes two hotels in the southeast and southwest quadrants, a public storage facility in the northeast quadrant and an undeveloped parcel in the northwest quadrant. Three of the four quadrants also include multi-family housing complexes. A GDOT ITS facility is located within the interchange right-of-way between the northbound on-ramp and I-285. I-285 ramp intersections are spaced approximately 570 feet apart along SR 280. The interchange ramps are one to three lane sections with variable shoulders and a combination of curb/gutter and roadside ditches. The posted speed limit on SR 280 is 45 mph. West of I-285, SR 280 is a 7-lane facility with three lanes in each direction and a two-way left turn lane. East of I-285, SR 280 includes 2 lanes in each direction and a two-way left turn lane. The corridor includes intermittent sidewalks and our field inspection indicated visibly worn pedestrian trails in sections where sidewalks are absent indicating a fair amount of pedestrian traffic. Several commercial properties have direct access to SR 280 and the corridor is on a school bus route. Signalized intersections adjacent to the interchange include Highlands Parkway on the west and Riverview Road on the east.

A GDOT "quick project" (PI 0010363) was executed in 2013 to add a westbound right turn lane at the SR 280 intersection with northbound I-285 on-ramp. Based on approved traffic volumes and operational analyses, both ramp intersections will operate at acceptable level of service (LOS) in the design year. Heaviest movements at the southbound I-285 ramps intersection include the southbound right turn and eastbound right turn. At the northbound I-285 ramps, primary movements include the eastbound left turns and northbound left turns. Access management issues along SR 280 adjacent to the interchange could impact overall performance of the interchange. Incorporating simple strategies such as consolidation of driveways and providing alternate access from side streets could help improve the operational performance at the interchange.



Existing SR 280 bridge over I-285

The existing SR 280 bridge over I-285 was constructed in 1969 and is comprised of four spans, rolled steel beams on concrete bents supported on steel H-piles. The bridge was reconfigured in 2008 as part of an operational improvement project (GDOT PI 0006295) that added an additional eastbound left turn lane by reducing lane widths and median width. The bridge has a current sufficiency rating of 67.00. The current typical section consists of two through lanes in each direction, a left turn lane in the westbound direction and dual left turn lanes in the eastbound direction separated by an 11-foot wide raised median. All travel lanes are 11-feet wide with 5-foot sidewalks in each direction. Utility attachments on the south side of the bridge include telephone conduits, a 6-inch gas main and a 12-inch water main. The bridge provides a vertical clearance of 16'-9" over I-285.

ALTERNATIVE CONCEPTS

The need for this project was initially identified in the I-285 Strategic Implementation Plan that called for additional managed lanes on I-285. Capacity and operational improvements at the interchange will be an additional goal for this project. Similar to the South Atlanta Road and Paces Ferry Road interchange bridges to the north, we anticipate a longer bridge structure to be constructed on SR 280 to accommodate future managed lanes on I-285. Ramp intersections would be moved out to meet current standards. Given the urban nature of this interchange and considerable development in its vicinity, we anticipate significant challenges in construction staging and in maintaining an acceptable operational LOS



during construction. Barry Brown, who is now a member of our structural design team, was the engineer of record for reconfiguration of this bridge in 2008. Based on his familiarity with this bridge and preliminary traffic operational analysis, we have considered the following innovative concept alternatives.

Complete bridge reconstruction by utilizing reversible lanes during construction. As discussed above, the primary movements at this interchange impacting operations are the eastbound left turns in the AM peak. This movement is not as significant during the PM peak and therefore one of the eastbound left turn lanes could be converted to a combination westbound left turn and through lane, thereby reducing the number of operational lanes on the bridge from seven to six. This change, along with a temporary reduction in lane width to 10.5 feet, will allow additional room to stage construct the bridge. By offsetting SR 280 centerline approximately 40 feet to the north, the proposed bridge could be constructed in two stages maintaining the same six lane configuration in both stages. It should be noted that 10.5 foot lanes with 1 foot offsets were utilized during staging for the 2008 bridge superstructure reconfiguration project. To meet the future I-285 lane width requirements, spans in the range of 95 feet would be required. Bulb Tee 54-inch PSC beams, designed per LRFD would be economical for this span length.

Complete bridge reconstruction by reconfiguring traffic during construction to a diverging diamond configuration. This would result in improved operations for the eastbound left turning movement and provide acceptable LOS with a single dedicated left turn lane and a combination left turn/through lane for both directions. It appears that the switch point can be moved far enough from the bridge to provide adequate through lane storage so that the number of lanes can be reduced to four. This change along with a temporary reduction in lane width to 10.5 feet will allow additional room to stage construct the bridge and reduce the required offset to the proposed bridge to approximately 20 feet. To meet the future I-285 lane width requirements spans in the range of 95 feet would be required. Bulb Tee 54-inch PSC beams, designed per LRFD would be economical for this span length .

Modification of bridge end spans to achieve required bridge length. This concept would leave spans 2 and 3 as they are and rebuild the end spans to meet the requirements of the future lanes on I-285. However, due to the required span lengths, heavy, wide flange beams would be required, and the depth to span ratio may not meet code requirements. Because the new spans would be structural steel, and because stage construction would still be required, the cost of this alternative would be close to that of a full replacement with PSC beams. Further this alternative would retain two spans nearly 50 years old that do not provide desirable shoulder widths along I-285; therefore, Parsons would not recommend this alternative.

With each alternative outlined above, the design team will attempt to retain existing ramp tapers to/from I-285. This will minimize project costs

and avoid potential widening of the I-285 northbound bridge over Church Road. Power transmission lines immediately north and south of the bridge may need to be relocated to facilitate bridge construction. ITS cameras and facilities will need to be relocated to conform with the future lanes on I-285 and the updated interchange configuration. Existing highway lighting on SR 280 will be updated as per GDOT requirements and standards. Drainage design will comply with MS4 requirements that are applicable in Cobb County. All alternatives discussed here and several others will be reviewed in detail based on GDOT input during the concept design phase.



Raised median separation on the bridge could be removed during construction to minimize construction footprint.

NEPA DOCUMENTATION

This project appears to meet the criteria for a Categorical Exclusion under the National Environmental Policy Act (NEPA). Accordingly, GDOT's standard Categorical Exclusion form would be completed, along with adequate supporting documentation to show that no significant environmental impacts would occur as a result of implementing the project. Key elements of the documentation would be a record of concurrences from state and federal authorities with jurisdiction that effects on protected resources would not be significant. In summary, the documentation would meet the requirements of, and demonstrate compliance with, all applicable environmental regulations.

Cultural Resources. Based on desktop search for historic properties, there are several properties 50 years old or older within the project area that would need to be evaluated to determine their National Register of Historic Places (NRHP) eligibility. These properties include a 1950s house, a 1950s Ranch House District, a 1960s industrial property, a circa 1950s church, and potentially the railroad corridor. A full Historic Resources Survey Report will be prepared.

One previously recorded archaeological site (9C0254, Late Archaic lithic scatter) was identified within ½ mile of the project area. Three previous projects have been conducted within or adjacent to the proposed interchange improvement project. One of the projects was for improvements to the SR 280/I-285 interchange and no archaeological resources were found. An addendum to the previous report will be required only if the current design affects areas not previously surveyed.



Ecological Resources. Waters of the US and state include two perennial streams. One stream crosses I-285, north of the interchange, and the other stream flows parallel to I-285 in the southeast quadrant. Both streams are tributaries to the Chattahoochee River. Additional resources would be delineated as part of the ecology survey. In order to streamline ecology review, the Parsons' team will schedule a meeting with the US Army Corps of Engineers (USACE) and the Georgia Environmental Protection Division (GAEPD) early in the project schedule to verify federal jurisdictional and state water determinations. Coordination with US Fish and Wildlife Service (USFWS) and Georgia Department of Natural Resources (GADNR) regarding threatened and endangered species would be conducted immediately following the project's kickoff. Seasonal survey for protected aquatic species, will likely be required. Federally protected species listed on the USFWS IPAC for Cobb County include the Cherokee darter, little amphianthus, and northern long-eared bat. Suitable habitat for these species is not likely to be present within the project area. Impacts to the waters of the US would require a Section 404 Permit through the USACE and non-exempt encroachments into the state mandated vegetative buffers will require a Stream Buffer Variance from the GAEPD.

Air Quality. A PM2.5 Letter of Determination is required, but the project is not likely to be a Project of Concern. We anticipate no potential MSAT effects, but CO modeling would be required based on available traffic volumes.

Noise. Based on potential widening and/or realignment of interchange ramps, a Type I noise analysis using TNM2.5 will be required. Noise walls may be a consideration since there are apartment complexes in three of the four quadrants and two nearby hotels.

Public Outreach. Public involvement will be an integral element of the NEPA processes. A Public Involvement Plan (PIP) will be developed immediately upon notice to proceed. The PIP will outline the methods and means to collaborate with project stakeholders and general public to find the best solution for this project. At a minimum, one Public Involvement Open House (PIOH) will be required.

A.2 Specific Qualifications, Skills, or Knowledge which could Benefit the Project

Parsons has executed some of the most complex urban interstate and interchange projects in the last five years – including Northwest Corridor and I-75 South Express Lanes. Additional interchange projects include I-75 at Brighton Road in Tift County and I-75 at SR 215 in Dooly County. This experience makes our team exceptionally qualified to deliver the I-285/SR 280 interchange project.

Our proposed project manager, Bill Rountree, PE, has managed and delivered a large number of urban interchange projects during his time with GDOT District 3. He just completed final design on the I-75 interchange at SR 215 which is scheduled for March 2015 letting. Our bridge design team is

supported by Barry Brown, PE. Barry has extensive experience on Northwest Corridor and the I-285/South Atlanta Road interchange project, just north of the subject project. Both projects are currently under construction. Barry was also the bridge engineer of record for the 2008 reconfiguration of SR 280 interchange bridge and therefore has intricate knowledge of this project. Our traffic lead, Sunita Nadella, PE, PTOE, served as traffic lead on Northwest Corridor and I-75 South Express Lanes. She has managed and led complex modeling efforts on both projects and has extensive knowledge of NEPA documentation and FHWA requirements that allows for timely approval of IMRs and NEPA documents.

While utility coordination is not a required area class for this contract, the Parsons' team is fully qualified to provide these services if required by the Department. In any case, our familiarity with the utility coordination process will ensure that timely actions are taken to avoid unexpected issues as the project is prepared for construction letting.

Parsons' quality control processes are recognized as one of the best in the industry. We were the first engineering firm to achieve International Organization for Standardization (ISO) 9001 certification for our quality control/quality assurance (QC/QA) procedures. Our procedures for GDOT projects are a combination of GDOT-required checklists and Parsons' internal QC/QA requirements. We make sure that all reports and drawings are reviewed by multiple cross discipline reviewers and specialists before submittal to GDOT, which brings cost and schedule efficiency to the design process.

ABILITY & WILLINGNESS TO MEET TIME REQUIREMENTS

Several members of our design team have finished their efforts on Northwest Corridor and have ample availability to deliver this project. As evidence of our ability to deliver projects on expedited schedule, our design team completed final design on Northwest Corridor to begin construction in 11 months from Notice to Proceed. This project included complex staging for bridge and roadway construction, significant ITS design, utility coordination and relocation, complex geotechnical analysis, noise analysis and abatement – all aspects that are common to the I-285 and SR 280 interchange project. We completed the EA/FONSI document on I-75 South Express Lanes project in 12 months – a significant achievement made possible due to team work with GDOT OES staff and the leadership of Stuart Tyler as Parsons' NEPA lead. Stuart is our proposed NEPA lead on this project as well. The current GDOT baseline schedule calls for concept approval in January of 2018, ROW plans approval in October of 2020 and construction letting in November of 2021. We are confident that the Parsons' team can deliver this project ahead of the baseline schedule and exceed GDOT's expectations in all areas including technical ability, quality, communication and responsiveness.