R-2829B Project Synopsis

Stipend

A stipulated fee of **$530,000.00** will be awarded to each short-listed Design-Build Team that provides a responsive, but unsuccessful, Design-Build Proposal in response to the Final Request for Proposals and all associated Addenda. If a contract award is not made, all short-listed Design-Build Teams that provide a responsive Design-Build Proposal shall receive the stipulated fee. In the event that the Department suspends or discontinues the procurement process prior to the Technical Proposal or Price Proposal submittal date current at the time of the suspension, no stipulated fee will be paid.

Project Description and Purpose

The proposed Complete 540 - Triangle Expressway Southeast Extension will extend the existing Triangle Expressway from the NC 55 Bypass in Apex to I-87/US 64/US 264 in Knightdale and is comprised of five Transportation Improvement Program projects, R-2721A, R-2721B, R-2828, R-2829A and R-2829B.

Two primary purposes have been established for the Complete 540 project, based on general transportation needs in the area and, specifically, for more localized challenges:

- To improve mobility within or through the project area during peak travel periods.
- To reduce forecast congestion on the existing roadway network within the project area. The project is anticipated to ease congestion on area roadways.

A secondary purpose of the project is to improve system linkage in the regional roadway network by extending the 540 outer loop around the greater Raleigh area. It is expected that construction of this link will benefit local commuters living south and east of Raleigh as well as motorists making longer trips through the Triangle Region to and from points south and east.

Additional project information, including the Draft and Final Environmental Impact Statements, and supporting technical documents are available at the following link:

https://www.ncdot.gov/projects/complete-540/

Phase 1 of the Complete 540 project includes three projects, R-2721A, R-2721B, and R-2828, which are currently under construction to extend the Triangle Expressway from NC 55 Bypass to I-40. Phase 2 of the Complete 540 project will extend the Triangle Expressway from I-40 to I-87/US 64/US 264 and is comprised of two Transportation Improvement Program (TIP) projects, R-2829A and R-2829B. Phase 2 of the Complete 540 project will be procured in a staggered approach, offsetting the project lettings by two months. This advertisement, for R-2829B, will be followed by R-2829A.

This synopsis further describes the elements associated with the Design-Build contract for TIP Project R-2829B.

Planning

The Final Environmental Impact Statement was signed in December 2017. The Record of Decision was signed in June 2018. The Design-Build Team shall adhere to all environmental commitments contained, or referred to, in these documents.

Roadway

The project will construct a 70 mph (posted) six-lane facility with a 70-foot median from south of Rock Quarry Road (SR 2542) to I-87/US 64/US 264.

Interchanges will be located at Rock Quarry Road (SR 2542), Auburn Knightdale Road (SR 2555), and Poole Road (SR 1007). The completion of the interchange at NC 540/I-540/I-87/US 64/US 264 will also be included in this project.

The southern terminus of the project is located approximately 1,900 feet south of Rock Quarry Road (SR 2542) and the northern terminus is located near the southern limits of the I-540 bridges over Mingo Creek. These limits will require coordination with the Design-Build Team on the R-2829A project to the south. The termini will be further defined in the Request for Proposals.

The Design-Build Team shall design and construct -Y- Lines, ramps, loops, service roads, and cul-de-sacs/turnarounds providing the same or better access, widening, improvements and traffic measures of effectiveness included in the Preliminary Roadway Plans to be provided by NCTA to the short-listed Design-Build Teams.

The NCDOT will provide a Traffic Noise Report Addendum that was completed in December 2017 for the entire Complete 540 project and a second Traffic Noise Report Addendum for R-2829A and R-2829B anticipated to be completed in March 2023. The Design-Build Team shall develop the Design Noise Report based on the final roadway plans developed by the Design-Build Team.

Structures

The Design-Build Team shall design and construct all structures necessary to complete the project including, but not limited to, structures at the following locations:

- Bridge on Rock Quarry Road (SR 2542) over Triangle Expressway
- Dual bridges on Triangle Expressway over Battle Bridge Road (SR 2552)
- Dual bridges on Triangle Expressway over the Neuse River, Neuse River Greenway, City of Raleigh sewer easement and future greenway north of the Neuse River
- Bridge on Auburn Knightdale Road (SR 2555) over Triangle Expressway
- Dual bridges on Triangle Expressway over Poole Road (SR 1007)
- Bridge on -Y30LPBR- over Poole Road (SR 1007)
- Dual bridges on Triangle Expressway over wetlands and unnamed tributary to the Neuse River
- Bridge on I-540 westbound over I-87/US 64/US 264
- Bridge on -Y31RPDBR- over I-87/US 64/US 264 and Triangle Expressway

The Design-Build Team shall design and construct bridge widening at the following locations:

- Bridge on I-540 eastbound over I-87/US 64/US 264

The Design-Build Team shall design and construct all necessary reinforced concrete box culverts including, but not limited to, extending/replacing existing reinforced concrete box culverts impacted by the project's design and/or construction.

The Design-Build Team shall design and construct all retaining walls and sound barrier walls.

Pavement Design

Alternate asphalt and concrete mainline pavement designs will be provided in the Request for Proposals along with asphalt -Y- Line pavement designs.

The Design-Build Team shall design all temporary pavements and evaluate existing shoulders and roadways regarding their suitability for carrying traffic during construction, if necessary.

Hydraulics

The Design-Build Team shall design and construct all storm drainage and develop a Stormwater Management Plan.

The Design-Build Team shall obtain FEMA compliance for the regulated stream crossings.

The Design-Build Team shall be responsible for all Bridge Survey Reports and Culvert Survey Reports.

Geotechnical

Roadway and structure subsurface investigations will be provided to the short-listed Design-Build Teams. The Design-Build Team shall be responsible for all recommendations, as well as supplemental roadway and structural investigations.

The Design-Build Team shall design and construct all foundations, embankments, slopes, retaining walls and temporary structures.

Environmental

NCTA has obtained a corridor-wide US Army Corps of Engineers Section 404 Permit and a corridor-wide NC Department of Environmental Quality, Division of Water Quality (DWQ) Section 401 Water Quality Certification for both Phase 1 and Phase 2 of the Complete 540 project. This permit only included preliminary impacts for Phase 2. Therefore, the R-2829B Design-Build Team will be responsible for all work necessary for NCTA to secure any permit modification necessary for the Design-Build Team's design or construction methods needed for construction of R-2829B.

The acquisition of this major permit modification will include at least two meetings with the interagency team on this project to review hydraulic plans and permit impact sheets prior to the submission of the application for the major permit modification.

GeoEnvironmental

The Department identified three sites of concern within the proposed project study area. The Design-Build Team and NCDOT responsibilities for geoenvironmental remediation will be outlined in the Request for Proposals.

Transportation Management

The Design-Build Team shall develop and implement the Transportation Management Plans. A list of parameters, such as lane closures, time restrictions and general guidelines will be provided in the Request for Proposals.

Signing

The Design-Build Team shall design, fabricate and install all roadway signs along the Triangle Expressway and all -Y- lines, service roads, ramps, loops, etc. within the project limits and outside the project limits as necessary. Signs, overlays, etc. that will be required within the R-2829A project limits will be the responsibility of the Design-Build Team awarded that contract.

Pavement Markings

The Design-Build Team shall develop Pavement Marking Plans and install all required temporary and permanent pavement markings and markers.

Traffic Signals

The Design-Build Team shall design and install all temporary and permanent traffic signals and modify existing traffic signals within the project limits. All traffic signals at Triangle Expressway ramp and loop terminals shall be designed with mast-arm or metal strain poles.

Lighting

The NCDOT will provide signed and sealed interchange lighting plans for the Design-Build Team to furnish and construct. In addition, lighting shall be provided at All-Electronic Toll site parking areas.

ITS

The Design-Build Team shall design and install civil ITS infrastructure including, but not limited to, conduit, sign supports structures and foundations, poles and foundations, junction boxes, cabinets, and electrical service. Coordination with NCDOT or its roadside technology provider will be required as part of the design and installation processes.

The Design-Build Team shall design, install, and test the fiber-optic communications cable network.

The Design-Build Team shall design, install, and test Dynamic Message Signs for traffic management.

NCDOT or its roadside technology provider shall design, install, and test all other ITS devices including, but not limited to, CCTV cameras, vehicle detectors, Ethernet hub switches, and wrong-way vehicle detection systems. NCDOT or its roadside technology provider will be responsible for the integration of all ITS devices, including the Dynamic Message Signs, into the Triangle Transportation Management Center ITS software.

All-Electronic Tolling (AET) Infrastructure

The Design-Build Team shall design and install AET civil infrastructure including, but not limited to, toll gantries, spanning trusses, toll site vaults, generators, propane tanks, site work, electrical work, HVAC, conduit duct banks, cabinet pads, and other associated equipment necessary for the infrastructure of the AET system.

The Design-Build Team shall coordinate throughout the project with NCDOT and its roadside technology provider as it relates to the design, construction, and turn-over of the toll collection sites.

NCDOT or its roadside technology provider will design, install, test and commission all AET technology including, but not limited to, antennas, cameras, scanners, detection loops, and servers.

Erosion Control

The Design-Build Team shall be responsible for all erosion control designs and implementation and maintenance during construction.

Location and Surveys

Electronic surveys will be provided to the short-listed teams. The Design-Build Team shall be responsible for supplemental surveys and all structure surveys. Known existing utilities have been located and will be included with the survey data provided to the short-listed teams. The Design-Build Team shall be responsible for all supplemental SUE work.

Utility Rights of Way, Conflicts and Construction

The Design-Build Team shall be responsible for all utility conflicts/relocations and utility construction plans. Coordination shall include, but not be limited to, preparations and/or obtaining all necessary utility agreements. The Design-Build Team shall also coordinate the construction/relocation of private utilities with the appropriate owners.

NCTA has begun coordination with Duke Transmission and Duke Distribution in regards to the design and relocation of their assets crossing the corridor. NCTA will provide a schedule for their work and provide updates during the procurement. The Design-Build Team shall assume coordination lead with Duke 60 days after execution of the contract.

NCTA has begun coordination with Aqua NC in regards to the design and relocation of their water supply assets within the corridor. NCTA will provide a schedule for their work and provide updates during the procurement. The Design-Build Team shall assume coordination lead with Aqua NC 60 days after execution of the contract.

NCTA has begun coordination with Knightdale Estates in regards to the design and relocation of their well and wastewater package treatment plant assets impacted by the project. NCTA will provide a schedule for their work and provide updates during the procurement.

NCTA has begun coordination with the City of Raleigh in regards to the design and relocation of their water and sewer assets crossing the corridor. NCTA will provide a schedule for their work and provide updates during the procurement. The Design-Build Team shall assume coordination lead with the City of Raleigh 60 days after execution of the contract.

It is anticipated that the Design-Build Team will design and construct most of the required relocations for water and sewer facilities in conflict with the project. The Design-Build Team's responsibilities for relocation of water and sewer facilities will be outlined in the Request for Proposals.

Right of Way

Excluding advanced acquisition parcels to be acquired by NCTA, the Design-Build Team shall acquire all right of way, control of access, and easements necessary for the project.

NCTA has begun some advance acquisition of right of way along the project. NCTA will provide updates on these acquisitions during the procurement. These advance acquisitions include coordination with FAA and SBA Communications relative to the relocation of their facilities within the corridor.

Public Involvement

During the project's construction, the Design-Build Team shall coordinate with NCTA and the NCDOT Division 5 Office to inform the public of lane closures, construction progress, etc.

Aesthetic Design

Aesthetic guidelines will be provided for the project, to include aesthetic treatments for the bridges, sound barrier walls, retaining walls, gantries, overhead sign structures, and AET vaults. The Design-Build Team shall design and construct the project to include the aesthetic treatments.

Construction Engineering Inspection (CEI)

NCTA will be responsible for CEI work.