

R-2721A Project Synopsis

Stipend

A stipulated fee of **\$125,000** 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 Design-Build 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 US 64/264/I-495/I-87 in Knightdale and is comprised of four Transportation Improvement Program projects, R-2721A, R-2721B, R-2828, and R-2829.

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.

A project breakdown map and 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/complete540/>

The first three projects, R-2721A, R-2721B, and R-2828 will extend the Triangle Expressway from NC 55 Bypass to I-40 and will be procured in a phased approach, staggering the project lettings by 3 – 4 months. This third advertisement, for R-2721A, is preceded by R-2828 and R-2721B.

This synopsis further describes the elements associated with the Design-Build contract for TIP Project R-2721A.

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 the NC 55 Bypass to east of Pierce Olive Road.

An interchange will be located at Holly Springs Road (SR 1152) and the completion of the interchange at the NC 55 Bypass will also be included in this project.

The western terminus of the project is located west of the existing NC 55 Bypass interchange and the eastern terminus is just east of Pierce Olive Road. These limits will require coordination with the Design-Build Team on the R-2721B project to the east. The termini will be further defined in the applicable Request for Proposals.

The Design-Build Team shall design and construct -Y- Lines, ramps, 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 provided by the NCTA.

Structures

The Design-Build Team shall design and construct all structures necessary to complete the project, including those at the aforementioned interchanges, and including bridges at the following locations:

- East Williams Street (NC 55) at Triangle Expressway
- Pedestrian Culvert at Woodcreek Subdivision (not shown on public hearing map)
- Dual Bridges on the Triangle Expressway over Middle Creek
- Sunset Lake Road (SR 1301 - two locations) at Triangle Expressway
- Pierce Olive Road (SR 1389) at Triangle Expressway
- Bridge on Sunset Lake Road (SR 1301) over Middle Creek

The Design-Build Team shall design and construct all necessary reinforced concrete box culverts, retaining walls and sound walls. A Design Noise Report will be completed by NCDOT for the project. Design changes during the final design process may require the Design-Build Team to generate an addendum or revision to the Design Noise Report.

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 is in the process of obtaining 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 the entire corridor from the NC 55 Bypass to US 64/264/I-495/I-87. It is anticipated that this permit will be obtained in January or February 2019. This permit will be based on final impacts for the R-2721A and R-2721B projects, but only preliminary impacts for R-2828 and R-2829. Therefore the R-2721A Design-Build Team will be responsible for all work necessary for the NCTA to secure any permit modification necessary for the Design-Build Team's design or construction methods needed for construction of R-2721A.

The potential for on-site mitigation is being evaluated currently and if feasible sites are identified, the Design-Build Team will likely be asked to engage a qualified subcontractor to construct such mitigation. At this time, it is anticipated that NCDOT will provide the design for on-site mitigation sites.

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-2721B or R-2828 project limits will be the responsibility of the Design-Build Teams awarded those contracts.

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 Toll NC 540 ramp terminals shall be designed with metal 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, parking area lighting shall be provided at AET Toll Sites.

ITS

The Design-Build Team shall design and install ITS civil infrastructure including, but not limited to, conduit, sign supports, structures and foundations, poles and foundations, junction boxes, cabinets, and electrical service. ITS civil infrastructure design should consider methods to optimize maintainability, personnel access to equipment and site security. 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 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, toll site vaults, generators, site work, electrical work, conduit duct banks, cabinet foundations, 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 shall 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, 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. 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 and structure surveys.

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.

The NCTA has begun coordination with Colonial Pipeline in regards to the design and relocation of their assets along the corridor. The NCTA will provide a schedule for their

work and provide updates during the procurement. The Design-Build Team will assume coordination lead with Colonial Pipeline upon execution of the contract.

It is anticipated that the Design-Build Team will design and construct all required relocations for water and sewer facilities in conflict with the project.

Right of Way

The NCTA will hire a right of way firm or firms to acquire the right of way for this project. The Design-Build Team will be responsible for acquiring right of way for second takings and any new parcels not otherwise required by the Right of Way Plans provided by the NCTA.

Public Information

During the project's construction, the Design-Build Team shall coordinate with the 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, noise 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)

The NCDOT/NCTA will be responsible for CEI work.