

Monroe Connector/Bypass (R-3329/R-2559) Project Synopsis

Project Description and Purpose:

- The North Carolina Turnpike Authority (NCTA), a division of the North Carolina Department of Transportation (NCDOT), proposes to construct a project known as the Monroe Connector/Bypass (US 74 Toll). The Preferred Alternative is proposed as a four to six-lane controlled-access All-Electronic Toll Collection facility. The Preferred Alternative follows existing US 74 for approximately one mile from just east of I-485 to east of Stallings Road (SR 1365) and then proceeds on a new location alignment from east of Stallings Road (SR 1365) to the project terminus at existing US 74 between the towns of Wingate and Marshville. The total length of the Preferred Alternative is approximately 19.7 miles.
- The proposed action is included in the NCDOT 2009–2015 State Transportation Improvement Program (STIP) as Project R-3329 (Monroe Connector) and Project R-2559 (Monroe Bypass) as a toll facility.
- The purpose of the project is to improve mobility and capacity within the project study area by providing a facility for the US 74 corridor from US 74 near I-485 in Mecklenburg County to US 74 between the towns of Wingate and Marshville in Union County that allows for high-speed regional travel consistent with the designations of the North Carolina Strategic Highway Corridor program and the North Carolina Intrastate System, while maintaining access to properties along existing US 74.

Planning:

- A Draft Environmental Impact Statement (EIS) for the Monroe Connector/Bypass project was approved in March 2009. Combined Corridor/Design Public Hearings were held in May 2009. A Final EIS is expected to be approved in April 2010, followed by a Record of Decision (ROD) in June 2010. The Design-Build Team shall adhere to all commitments as finalized in the ROD. Copies of these documents will be made available.

Roadway Scope of Work:

- The Design-Build Team shall design and construct a controlled access freeway facility from US 74 near I-485 to US 74 between the towns of Wingate and Marshville. For the approximately 1-mile section of the facility that includes upgrading existing US 74, the freeway facility shall include six travel lanes with adjacent at-grade two to three lane one-way frontage roads to serve local businesses. For the remaining new location portion, the facility shall have four lanes with a grass median.

- From west to east, interchanges are located at US 74, Indian Trail-Fairview Road (SR 1520), Unionville-Indian Trail Road (SR 1367), Rocky River Road (SR 1514), US 601, NC 200, and Austin Chaney Road (SR 1758). Partial interchanges are located at Forest Hills School Road (SR 1754) and US 74 at the eastern end of the project.

Environmental Scope of Work:

- NCTA will obtain preliminary corridor permits from the US Army Corps of Engineers (USACE) and NC Division of Water Quality (NCDWQ) for the project. The Design-Build Team will be responsible for preparing permit modifications to reflect final design plans to obtain final permits for this project. Mitigation based on anticipated impacts of the Preferred Alternative will be provided by NC Ecosystem Enhancement Program (EEP) and shall be funded by NCTA/NCDOT. Additional mitigation required as a result of design changes by the Design-Build Team shall be the responsibility of the Design-Build Team.

Public Involvement Scope of Work:

- During the project’s construction, the Design-Build Team shall coordinate with the NCDOT; including the NCTA and Division 10; the Towns of Mint Hill, Matthews, Stallings, Hemby Bridge, Indian Trail, Wingate, and Marshville; the Village of Lake Park; the City of Monroe; Mecklenburg County; Union County; and other appropriate entities to inform the public of lane closures, construction progress, etc. A website shall be developed and maintained with current project information, progress updates, operations taking place, and general project-related information (right of way acquisition, noise walls, etc.).

Structure Scope of Work

- There are multiple grade separated crossings, some requiring multiple structures, anticipated for this project. The Design-Build Team shall design and construct bridges that adhere to the *AASHTO LRFD Bridge Design Specifications* at the following locations that intersect US 74 Toll:
 - McKee Road
 - Stallings Road
 - US 74 Business EB
 - US 74 Business WB
 - Stinson Hartis Road
 - Indian Trail-Fairview Road
 - Secret Shortcut Road
 - Faith Church Road
 - Unionville-Indian Trail Road
 - South Fork Crooked Creek
 - Rocky River Road

- Willis Long Road
 - Roanoke Church Road
 - Fowler Road
 - US 601 (Concord Highway)
 - Deese Road
 - Stewarts Creek
 - Morgan Mill Road (NC 200)
 - Olive Branch Road
 - Richardson Creek
 - Rays Fork
 - Monroe Ansonville Road
 - Old Williams Road
 - Austin Chaney Road
 - McIntyre Road and Meadow Branch
 - Ansonville Road
 - Forest Hills School Road
 - CSX Railroad and US 74 Business WB
- The Design-Build Team shall design and construct bridges that adhere to the *AASHTO LRFD Bridge Design Specifications* at the following locations:
 - Rocky River Road over South Fork Crooked Creek
 - Forest Hills School Road over CSX Railroad
 - Approximately 26 reinforced box concrete culverts will be required.

Railroad Coordination Scope of Work:

- The Design-Build Team shall be responsible for all coordination required with CSX Transportation to obtain construction agreements, permits, plan approvals and Railroad Force Account agreement.

Hydraulics Scope of Work:

- The Design-Build Team shall design and install all storm drainage systems.
- The Design Build Team shall develop a Stormwater Management Plan.
- The Design-Build Team will be responsible for all Culvert and Bridge Survey Reports.
- The Design-Build Team shall prepare CLOMR packages for all regulated floodway crossings and LOMR packages for any regulated streams for NCTA's submittal to FEMA.

All-Electronic Toll Zone Scope of Work:

- The Design-Build Team shall be responsible for the design and construction of the infrastructure (toll zone pull off and parking areas, toll gantries, toll zone conduit, toll facility buildings, facility building HVAC, back-up generators, etc.) for All-Electronic Tolling (AET) collection facilities necessary to complete the project. All toll technology components will be designed and installed by the toll system integrator.

Communication/ITS Network Conduit System

- The Design-Build Team shall design, construct and integrate an Intelligent Transportation System (ITS) for the Monroe Connector/Bypass. The ITS devices will include Closed Circuit Television (CCTV) cameras, Microwave Vehicle Detection Stations (MVDS), full-matrix color Dynamic Message Signs (DMS) and a Road Weather Information System (RWIS). The ITS system will be integrated into the toll collection system to allow for the possibility of congestion pricing.
- The Design-Build Team shall design and construct a fiber-optic communications system using Gigabit Ethernet technology. The redundant fiber-optic communications system will consist of a trunk line and will connect all ITS devices as well as the AET toll zones.
- The system shall provide for the sharing of video and data with the NCTA Traffic Management Centers (TMCs) (located at the State Transportation Operations Center and the NCTA Customer Service Center) the NCTA Executive offices, and NCDOT's regional traffic management centers.

Location & Surveys Scope of Work:

- Survey control and GPS calibrations will be provided to the short-listed teams. Additional surveys shall be the responsibility of the Design-Build Team.
- Known existing utilities have been located and will be provided to the short-listed teams. Subsurface utility engineering (SUE) work shall be the responsibility of the Design-Build Team.
- Design mapping created from the reduction of aerial photography and supplemented with field surveys will be provided to the short-listed teams. Mapping needed outside of the areas provided will be the responsibility of the Design-Build Team. NCTA will provide the photography for the entire corridor width.

Geotechnical Engineering Scope of Work:

- The Project is located within the eastern Charlotte Belt and Carolina Slate Belt. Portions of the proposed alignment have been previously disturbed or previously graded prior to these explorations. The Charlotte Belt consists of metamorphosed rocks such as Phyllite. The Carolina Slate Belt consists of metavolcanic rocks such as argillite. Both formations

weather to residual soils of both varying consistency and character. Typically the residual soils increase in stiffness and relative density with depth before transitioning to partially weathered rock and hard rock. The depth of weathering depends on the chemical composition of the underlying parent rock material.

- Information from the soil test borings obtained along the roadway alignment and at proposed bridge and culvert locations will be provided to the short-listed teams. Soil test boring logs will be presented on the roadway profile and cross section sheets. Individual logs will be provided for proposed bridge structures.
- NCDOT previously drilled the roadway alignment and structure locations from US 601 to Marshville. These explorations are in metric units and will be provided in their original form. The NCDOT boring locations will be transcribed onto the current alignment file for information purposes.
- The Design-Build Team shall be responsible for the design and construction of all foundations, embankments, slopes, retaining walls and temporary structures.

Erosion Control Scope of Work:

- All erosion control designs and implementation shall be the responsibility of the Design-Build Team. NCDOT's *Design Standards in Sensitive Watersheds* shall be used along the entire project for designing and implementing erosion and sediment control BMPs.
- The Design-Build Team shall utilize NCDOT Certified Installers and Inspectors on the project.

Traffic Control Scope of Work:

- The Design-Build Team shall be responsible for development and installation of the Traffic Management Plans.
- A list of parameters, such as lane closures, time restrictions, and general guidelines will be provided to the short-listed proposers.

Pavement Marking Scope of Work:

- The Design-Build Team shall be responsible for development and installation of the Pavement Marking Plans.

Pavement Scope of Work:

- The NCTA is developing an alternate pavement selection provision which may not be completed prior to the procurement of the Monroe project. If this provision is completed, in cooperation with construction industry partners, the Design-Build Team will have the option of selecting the pavement type and designing the pavement structure.

- If the alternate pavement selection provision has not been finalized in time for awarding the Monroe project, then flexibility in selection of the final pavement designs will be provided by providing multiple NCTA-approved pavement structure options.
- The Design-Build Team shall be responsible for all temporary pavement designs and the evaluation of existing shoulders and roadways regarding their suitability for carrying traffic during construction, if necessary. If required, the Design-Build Team shall be responsible for strengthening existing facilities prior to routing traffic on them.

Right of Way Scope of Work:

- The right of way and easement will be acquired by NCTA. The cost of the right of way or easements will be borne by the NCTA.
- The Design-Build Team will be required to prioritize parcel acquisition based on critical path construction activities.

Utility Conflicts and/or Construction Scope of Work:

- The Design-Build Team shall be responsible for all utility conflicts/relocations. Coordination shall include any and all necessary utility agreements when applicable.
- Utility By Others Plans will be provided to all short-listed proposers. The Design-Build Team shall be responsible for coordinating the construction / relocation of private utilities with the appropriate owners.
- The Design-Build Team shall be responsible for relocating any water and sewer conflicts associated with this project. Preliminary routing plans will be provided to short-listed proposers.

Signing Scope of Work:

- The Design-Build Team shall be responsible for the design, fabrication, and installation of all toll and standard signs required through the construction limits, and outside the construction limits to provide appropriate signing of the mainline, all –Y-lines, all service roads, all cul-de-sacs and toll zone signing showing toll rates and payment options, and signing directing customers to a walk in customer service center. A signing strip map will be provided to all short-listed proposers.

Signals Scope of Work:

- The design and installation of signals and associated equipment shall be the responsibility of the Design-Build Team.
- New or revised signals will be required at approximately 11 intersections.

Lighting Scope of Work:

- The Design-Build Team shall be responsible for the design and construction of lighting for this facility.

Critical Path Method (CPM):

- The Design-Build Team shall provide a cost-loaded critical path method project schedule.

Construction Engineering Inspection (CEI) Scope of Work:

- The Design-Build Team shall be responsible for quality control, to include construction inspection, materials sampling and testing, and contract administration required for construction of this project hereinafter referred to as “Construction Engineering & Inspection” (CEI). The Design-Build Team shall employ a private engineering firm to perform Construction Engineering & Inspection for all work required under this contract. This private engineering firm is to be a separate entity, unaffiliated with the Design-Build Team. Limited work may be allowed to be performed for the Design-Build Team by the CEI firm, if that specific work is pre-approved in writing by the NCDOT State Contract Officer.

Aesthetic Design Scope of Work:

- 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 buildings. The Design-Build Team shall design and construct the project to include the aesthetic treatments and may elect to include other Voluntary Aesthetic Treatments in their Technical Proposal.