

Next Generation Roadside Toll Collection System

Request for Information

RFI Response Due Date

07/17/2025 (4:00 p.m. EST)

Issue Date: 05/19/2025

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1. Request for Information (RFI) Overview

The North Carolina Turnpike Authority (NCTA), a division of the North Carolina Department of Transportation (NCDOT), is seeking information from qualified vendors and technology providers regarding the implementation of a minimal infrastructure toll collection system. This RFI aims to gather innovative solutions that can streamline toll collection operations while minimizing physical infrastructure, reducing costs, and improving efficiency.

Interested parties are invited to respond to this RFI in accordance with the schedule below in **Table 1-1**.

Table 1-1: RFI Schedule

Milestone	Responsibility	Date
RFI Issuance	NCTA	May 19, 2025
Response to RFI Due	Vendor	July 17, 2025 (4:00 PM EST)
Notification to Proposers: Invitation to Industry Feedback Meeting	NCTA	August 19, 2025
Industry Feedback Meetings	NCTA	Week of September 1 & Week of September 8, 2025

NOTE: NCTA reserves the right to modify the schedule at any time and for any reason.

Table 1-2: General Information

Item	Contact Information
Contact Person's Contact Information	Eliza Davis Procurement Specialist II Phone: 919-526-6134
RFI Questions & Responses	Email: NCTA_NextGenRTCS_RFI@ncdot.gov
RFI Posting Locations	NCTA Connect Site IBTTA Toll Roads News

2. NCTA Program

The N.C. Turnpike Authority is authorized by North Carolina General Statute to study, plan, develop, build, operate and maintain toll projects. All toll projects in North Carolina have been approved and requested by local planning organizations for consideration.

2.1. Toll Roads Open to Traffic

Triangle Expressway (aka Tri-Ex)

This project is an all-electronic toll (AET) facility with no cash toll collection. Tolls are collected electronically through a pre-paid transponder program (NC Quick Pass®) or a post-paid video program (Toll Invoice). Motorists who pay their tolls using properly mounted transponders on their vehicles pay a discounted rate compared to video toll customers.

Monroe Expressway

The 19.8-mile Monroe Expressway (also known as Toll U.S. 74) is a four-lane toll road extending from U.S. 74 near I-485 in eastern Mecklenburg County southeast to U.S. 74 between Wingate and Marshville in Union County. The Monroe Expressway opened in 2018.

I-77 Express Lanes

The project includes approximately 26 miles of dedicated express lanes on I-77. The northern section of the I-77 Express Lanes from Hambright Road near I-485 to N.C. 150 opened June 2019. The southern section from I-277/N.C. 16 (Brookshire Freeway) to Hambright Road opened November 2019. NCTA collects the toll revenue for the I-77 Express Lanes. NCTA is not responsible for the operation or maintenance of the I-77 Express Lanes. The lanes are operated and maintained by I-77 Mobility Partners.

Complete 540

N.C. Turnpike Authority's largest construction project, Complete 540, is being constructed in two phases. Phase 1 extends the Triangle Expressway approximately 18 miles from the existing corridor at N.C. 55 to I-40/I-42. Phase 1 of the Complete 540 project opened to traffic on Sept. 25, 2024. Phase 2 of the project will extend the Triangle Expressway an additional 10 miles from I-40 to the existing I-540/I-87/U.S. 64/U.S. 264 interchange in Knightdale, providing the missing link to complete the outer 540 loop.

2.2. Future Toll Roads

Several new NCTA toll projects are currently under construction and development as listed below. These are currently funded and scheduled for construction within the next several years. At this time, it is anticipated that all future toll projects will be AET facilities, will be integrated into the current NCTA Back Office System, and will use the NC Quick Pass® program.

I-485 Express Lanes

The I-485 Express Lanes will add one express lane in each direction for approximately 17 miles between I-77 and U.S. 74 in southern Charlotte. The project includes an additional general-purpose lane in each direction from Rea Road to Providence Road. **Currently under construction.*

Mid-Currituck Bridge

The 7-mile toll project would include a two-lane bridge that spans the Currituck Sound and connects the Currituck County mainland to the Outer Banks. It also includes a second two-lane bridge that spans Maple Swamp on the Currituck County mainland, connecting Aydtlett to U.S. 158. **Under development.*

U.S. 74 Express Lanes from I-277 to West of Idlewild Road

The proposed 5-mile toll project would convert the existing bus lane in the median of Independence Boulevard (U.S. 74) in Charlotte from I-277 to west of Idlewild Road to express lanes, one in each direction. **Under development.*

U.S. 74 Express Lanes from West of Idlewild Road to I-485

The proposed 6.3-mile toll project would widen and add express lanes, one in each direction, to Independence Boulevard (U.S. 74) from west of Idlewild Road to I-485 in Charlotte. **Under development.*

I-77 Express Lanes (I-277/NC 16 (Brookshire Freeway) to S.C. State Line)

The proposed project would widen approximately 11 miles of I-77 to 10 lanes by constructing express lanes from the South Carolina State Line to I-277/NC 16 (Brookshire Freeway) in Charlotte. **Under development.*

*Current information and project descriptions can be found on the NCDOT website:

<https://www.ncdot.gov/divisions/turnpike/turnpike-projects/Pages/default.aspx>.

3. Request for Information

Interested parties may provide and submit responses to this Request for Information (RFI) in accordance with the guidelines and schedule set forth herein. This RFI does not constitute a Request for Qualifications (RFQ), a Request for Proposals (RFP), or any other solicitation document. This RFI does not commit the NCTA to contract for any supply or service whatsoever, nor will any response to this RFI be considered in the evaluation of any response to a solicitation document.

None of the materials provided in response to this RFI will be used to evaluate potential suppliers of products and vendors requested or used in any way as part of the evaluation of proposals received in response to any future RFPs. Vendors are advised that materials provided in response to this RFI may be used as a basis for developing requirements and specifications to support the NCTA's development of an RFP.

3.1. Intent

The primary objective of this project is to implement a toll collection system that leverages advanced technology to reduce physical infrastructure needs, manual operations, and associated overheads. The system should ensure seamless vehicle flow, and accurate fee collection.

These technologies should be reliable, accurate, cost efficient, and tested and proven in conditions typically found in a toll environment. Traditional tolling systems rely heavily on extensive infrastructure, such as gantries, roadside computing, fiber optic networks, and centralized power systems. While these systems have been effective, they are costly to deploy and maintain, environmentally intrusive, and difficult to implement in remote or constrained locations. The need for a low-infrastructure, high-performance tolling solution has grown significantly as transportation networks expand and evolve.

Interested parties are invited to provide information on their products, systems, innovations and services that are applicable to this RFI.

3.2. Requested Information

The NCTA requests information on the following areas at a minimum, and respondents are asked to provide details on the following aspects:

- An expressway mainline with three (3) travel lanes and two (2) shoulder lanes
- Express lanes with two (2) travel lanes and one (1) shoulder lane

1. Technology Overview:

- a. Description of the proposed toll collection technology (e.g., RFID-based, GPS-based, mobile app integration, Bluetooth).
- b. Compatibility with existing systems or infrastructure.
- c. Scalability and adaptability to varying traffic volumes and lane counts (travel lanes and shoulders)

2. Primary Objectives:

- a. Vehicle Detection: Achieve near-perfect detection accuracy under all traffic conditions.
- b. Classification: Describe classification of vehicles, including multi-axle configurations, shape based (if applicable).
- c. License Plate Capture: Provide reliable license plate recognition, even at high speeds and under varying conditions.
- d. Future-Proofing Tolling Infrastructure: As connected vehicle technology (V2X) continues to evolve this objective would be to plan for moving away from paying for tolls with physical transponders. (Direct replacement or a compliment to RFID during a transition and evaluation phase approach).
- e. Minimal roadside footprint via centralized cloud processing.

3. Secondary Objectives:

- a. Minimize infrastructure dependency by avoiding the need for overhead construction and leveraging ground-based or roadside technologies.
- b. Reduce reliance on traditional services such as fiber internet and main power by integrating wireless communication and renewable energy solutions.
- c. Offer optional integration with AVI systems to ensure compatibility with existing technologies while maintaining cost-effectiveness.
- d. Use of AI and/or ML for improved analytics issue detection, reliability and accuracy.
- e. Use of AI and/or ML and/or video analytics for safety use cases, including but not limited to, wrong-way vehicle detection and notification, pedestrians, stopped vehicles, etc.

4. Operational Details:

- a. KPI scheme that represents the best value for the agency.
- b. System accuracy and reliability metrics.

5. Environmental and Cost Implications:

- a. Energy and environmental efficiency of the system.
- b. Long-term cost-effectiveness for operators and users.

3.3. Industry Feedback Meetings

As part of this RFI, NCTA is allotting time and may elect to meet with respondents to participate in interviews and discuss submissions to obtain further knowledge of presented solutions.

Meetings are expected to be held the weeks of September 1 and September 8 of 2025. In-person meetings will be held at the NCTA office located at 2501 Aerial Center Pkwy, Suite 200, Morrisville, NC 27560.

Conference calls are also available for those who are unable to meet in person. As a courtesy to allow for advanced travel planning, these meetings may be requested by NCTA at any time following the receipt of the RFI responses but no later than August 19, 2025. NCTA will contact vendors to request Industry Feedback Meetings via the contact information included in your responses.

Meetings will be limited to no more than one (1) hour, and up to five (5) representatives from your firm. NCTA would like to focus on discussing your specific technical solutions and participating in any demonstrations, as applicable.

3.4. Cost Incurred Responsibility

NCTA shall not be liable for any costs incurred by respondent in preparation of its response.

3.5. Liability

This RFI is completely voluntary and is not a pre-qualification for any future procurement. This RFI has been issued to obtain information only and is not intended to result in a contract or agreement with any respondent.

This solicitation for information does not commit the NCTA to publish an RFP or award a contract. Any company regardless of size or service specialty is encouraged and welcomed to participate in this RFI.

3.6. Confidentiality and RFP Ownership

Trade secrets or similar proprietary data which the respondent does not wish disclosed to persons other than personnel involved with this RFI will be kept confidential to the extent permitted by N.C.G.S. § 132-1.2 if identified as follows: Each page shall be identified in boldface at the top and bottom as "CONFIDENTIAL". Any section of the RFI that is to remain confidential shall also be so marked in boldface on the title page of that section. Cost information may not be deemed confidential. In spite of what is labeled as confidential, the determination as to whether or not it is shall be determined by North Carolina law.

In addition to the above, the State intends to keep every Response received confidential as a whole until such time as an RFP has been awarded or canceled (the "Confidentiality Period"). After the expiration of the Confidentiality Period, all Response information will be subject to the normal confidentiality provisions of the State as set out above. Exception: Respondents expressly acknowledge that the concepts, methods, equipment and procedures presented in a response may be wholly or partially incorporated into an RFP.

3.7. Response Format

3.7.1. Cover Letter

Please include a cover letter (2-page max) with the RFI submittal package. A single point of contact shall be identified along with the person's title, email address, phone number and mailing address. An overview of the firm's background shall be included, providing highlights about the company, products, services, and existing projects.

3.7.2. Responses to RFI

Companies that provide some or all of the solutions contemplated within this RFI are encouraged to respond. Innovative solutions are encouraged.

The response shall be limited to a maximum of 20 (twenty) pages and have a font size of 12 or above. The cover letter is not included in the 20-page maximum. Brevity and conciseness are appreciated. It is encouraged that the response be focused on your solutions and how they would help NCTA in expanding our goals. For purposes of this RFI, information regarding respondent's history, background, and personnel, should be limited to the cover letter. Resumes should not be submitted.

3.8. Submittal

RFI response submittals shall be delivered via email, to the email address below, by the due date listed in the RFI schedule.

Response submittals shall be emailed in .PDF format only.

NOTE: In case of delayed email receipt, vendors shall provide a time stamp confirming the email submittal was sent before 4:00 PM EST on July 17, 2025.

Email Address: NCTA_NextGenRTCS_RFI@ncdot.gov