

To: Robert W. Cook, AICP, CRTPO  
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Date: May 14, 2019  
Subject: Responses to I-77 North Peak-Period Shoulder Lanes Questions

The following responses to the request made by CRTPO in the memorandum dated May 7, 2019, are based on information available as of the date of this memorandum. Note that NCDOT's research and analysis for the Peak Period Shoulder Lanes (PPSL) is ongoing and the following responses are subject to change.

## General

Q.1) What is the problem on I-77 that is being addressed by the implementation of peak hour shoulder use? Is there an identified/forecasted traffic/operational deficiency that this project will address? Does approval of this project give the perception that we believe there are problems with the express lanes project before it even opens?

A: The purpose of express lanes is to provide reliable travel time. In response to the Local Advisory Group (LAG)/communities' concerns about traffic flow, Secretary Trogon developed a long-range strategy, which was released on August 15, 2018: Improve, Expand, Protect ([click here](#) to view press release). The strategy includes evaluating the feasibility of both near-term and long-term improvement options.

As part of this plan, NCDOT is evaluating the feasibility of adding another general purpose (GP) lane along I-77 North. PPSLs are being evaluated as near-term improvements at certain locations along the corridor.

Similar to the direct connectors added at Hambright Road and Lakeview Road to enhance traffic flow along I-77 North, PPSLs are anticipated to enhance peak period traffic conditions on I-77 North for local trips until additional non-toll capacity improvements are viable.

Q.2) Are impacts to emergency responders being evaluated? If so, are emergency responders integrated into the discussion?

A: Impacts to emergency responders are part of the evaluation and design process. For example, the delineators used to separate the lanes are flexible to allow emergency vehicles to drive over them in order to reach an emergency location. Coordination with emergency responders and other stakeholders will occur at a later date and is part of the National Environmental Policy Act (NEPA) process.

Q.3) What, if any, are the effects on the contract with I-77 Mobility Partners? Is this project a compensation event? Has I-77 Mobility Partners been contacted/ consulted with on this proposal? If so, have they stated they will not oppose it? Does any potential litigation endanger the use of Bonus Allocation (BA) funds/ deadline?

A: Exhibit 1 of the I-77 Comprehensive Agreement (CA) defines what constitutes an unplanned revenue impacting facility and lists specific exclusions (see language below). NCDOT has not discussed this project specifically with I-77 Mobility Partners. Based on the I-77 CA, NCDOT does not anticipate any potential litigation that would endanger the use of BA funds/deadline.

Exhibit 1 language:

**Unplanned Revenue Impacting Facilities** means any limited access main lane of a highway that did not exist prior to the Effective Date, which NCDOT, or an entity pursuant to a contract with NCDOT and on NCDOT's behalf, builds within the Airspace and opens to traffic during the Term, excluding, however, the following:.....

g) Any work and improvements undertaken to increase traffic capacity by modifying already-constituted highway projects through the installation of traffic sensors, metering devices, Intelligent Vehicle Highway System equipment or other intelligent transportation systems, through reconstructing existing lanes including localized operational improvements that add lanes, through new or improved frontage roads, crossing streets or crossing street by-pass lanes, through intersection grade separations, or localized operational improvements through the restriping of traffic lanes, medians and Shoulders, including restriping that adds lanes;

Q.4) Is there a chance the project will not achieve construction authorization by the BA deadline?

A: The BA authorization deadline is June 30, 2020. NCDOT is confident BA funds will be authorized for construction by that date. Also, achieving this authorization is less risky than each individual BA funded project trying to achieve authorization, particularly since no additional right of way is expected to be required for the PPSL project.

Q.5) Why isn't the environmental document looking forward 20 years?

A: Unlike large, long-term capital projects, traffic analysis for short-term operational improvement projects is typically performed for shorter periods (5-15 years). Since the proposed PPSLs are an operational improvement, the project team is performing traffic analysis for the PPSL project for the year 2035, which is 16 years into future.

Q.6) If the CRTPO board decides to move forward with NCDOT's request, how will NCDOT and the NCTA participate in public involvement? How will it assist in effectively conveying its request to the public?

A: As part of the NEPA process, NCDOT will undertake public involvement for the PPSL project. Public involvement will include videos/visualizations, meetings and open houses as well as other strategies. The department also will maintain open communication with CRTPO throughout this process.

Q.7) Does this project affect the existing environmental document for the express lanes project?

A: No. This is a new project; therefore, requires a separate environmental document called a Categorical Exclusion.

Q.8) Will this project affect the construction of any phase of the project currently under construction?

A: No, the PPSL project construction is anticipated to begin after the express lanes on I-77 are open north of I-485.

Q.9) Will this project affect the initial operations of the project currently under construction?

A: See previous answer.

Q.10) Will the construction phase of this project affect the operations of the general purpose lanes?

A: During construction, NCDOT will work to minimize traffic impacts and shifts. Any required lane closures will likely be conducted during nights and weekends to reduce impacts to traffic flow along I-77 North.

### **Timing**

Q.1) Why is there an urgency to act on this request?

A: NCDOT is working to improve traffic flow as soon as possible by evaluating the feasibility of implementing the near-term improvements of Secretary Trogdon's strategy.

Also, funds that have been identified for the project are time-sensitive. A rescission of the State Congestion Mitigation and Air Quality (CMAQ) funds will occur in FY 2019, and all unauthorized state CMAQ funds will be lost.

While the PPSL project is not eligible for CMAQ funds, several projects currently funded through Surface Transportation Block Grant-Direct Attributable (STBG-DA) or BA funds are eligible for CMAQ funds. Reallocating CMAQ funds to these projects frees up the STBG-DA and BA funds to be used for the PPSL project. In addition to the impending rescission, funding is further complicated by the fact that some of the projects eligible for reallocation will be authorized for funding soon and once funds are obligated, funds cannot be reallocated.

While there may be other projects of equal or greater importance to CRTPO, and other projects that address north-south movement in the region, the PPSL project can be implemented quickly, has viable funding identified, and meets the Secretary's strategy for improvements along I-77 North.

Q.2) Is it possible to postpone the project—perhaps an additional 6-12 months—to fully evaluate the operation of the express lanes?

A: NCDOT is evaluating this project to verify it is going to achieve the expected benefits in the corridor. Once verified, there is no reason to postpone project funding and implementation. In addition, by postponing the project, there is a risk the majority of the funds identified will be lost. Without these STBG-DA/BA funds, implementing the PPSL project in the near-term will not be possible.

Q.3) How are priorities determined for constructing individual segments of the project?

A: Currently, NCDOT is preparing preliminary designs and cost estimates. Once this information is available, NCDOT will identify segments that provide the highest benefit with lower costs and impacts. Factors such as anticipated traffic operational improvements, geometric constraints, constructability, estimated costs, etc. will be used to prioritize the segment construction.

Q.4) What is the timing for start of construction?

A: Construction is anticipated to begin Spring/Summer 2020.

## **Operations**

Q.1) Regarding shoulder use in other regions, how was success measured (for projects where shoulder lanes do not extend through interchanges)?

A: As part of the project development process, NCDOT is researching other PPSL projects to determine how successes were measured.

Q.2) Of the peak-period shoulder lanes facilities nationwide that the TCC presentation identified, how many exist concurrent with tolled express lanes?

A: As part of the project development process, NCDOT is conducting research to determine if any express lane facilities operate concurrently with PPSLs.

Q.3) How will drivers know that the shoulder lanes are for use at peak periods only?

A: NCDOT recognizes this project is new and will be unfamiliar to drivers in this region. Proven signage standards and techniques will be utilized to alert drivers when the shoulder lanes are available for use along I-77 North.

- Q.4) What will prevent the shoulder lanes from being used as de facto general purpose lanes?
- A: This project, as proposed, would construct interchange to interchange connections only, during peak periods. All other statutory restrictions for shoulders would apply during other times and in all other locations.
- Q.5) Does the analysis include the area of turbulence where traffic must move from the shoulder into the general purpose lanes in order to get through the interchange (compounded by traffic getting from the express lanes to the interchange)?
- A: Yes. Also as part of the project development process, NCDOT is evaluating traffic operations of this project, which will include evaluation of the express lanes interactions, express lane access points, GP lanes, PPSLs, and interchange ramps along I-77 North.
- Q.6) The public has identified weaving between express lanes and general purpose lanes as a potential safety problem. Will this project exacerbate potential weaving problems? How has weaving been managed in the cases where express lanes exist with shoulder use? Should there be a longer-term analysis due to the contract constraints?
- A: As a part of the project development process, NCDOT is evaluating traffic operations of this project, which will include evaluation of the express lanes interactions, express lane access points, GP lanes, PPSLs, and interchange ramps along I-77 North.
- As a long-term solution, NCDOT is evaluating the feasibility of adding another GP lane along the I-77 North corridor.
- Q.7) Will a traffic impact analysis be prepared to determine the extent to which peak period shoulder use will improve the level of service on I-77? When will it be provided to the CRTPO? Will it be provided before the CRTPO is requested to make a decision on this project?
- A: A traffic operations analysis is currently underway. Results of the analysis will be shared with CRTPO before it is requested to add the project to the Transportation Improvement Program.
- Q.8) Does this adversely affect ramp metering and the potential for managed motorways for I-77?
- A: The project is not expected to adversely affect implementing ramp metering/managed motorways along I-77 North.

### **Funding Swap**

- Q.1) Is this the only option that the State is willing to commit this magnitude of statewide CMAQ dollars?
- A: Part of the annual CMAQ funding historically has been allocated for projects that have a statewide significance. NCDOT is currently reevaluating the process for CMAQ project

selection. Assuming a decision is made to continue allocating a portion of the annual CMAQ funding to projects of statewide significance, a project of this size could be considered in the future. It should be noted that this situation is unique because the I-77 PPSL project is not eligible for CMAQ funding and the funding for this project is being achieved by swapping funds.

Q.2) Can we evaluate other feasible mobility projects to use the available CMAQ funding?

A: If it can be demonstrated that there is a project that would achieve similar or superior operational benefits for I-77 North, and this project can be constructed in a similar timeframe and budget, then consideration would be given to funding such a project.

Q.3-1) What else can we use the CMAQ funds for?

A: See previous answer.

Q.3-2) What other projects are eligible for CMAQ funds?

A: Please refer to the FHWA publication "A Guide to Federal-Aid Programs and Projects" for CMAQ eligibility.

Q.3-3) Is this the highest and best use of the funds to achieve improved north-south connectivity?

A: NCDOT believes PPSLs are a cost-effective way to improve the operations of I-77 North. The improvements can be constructed relatively quickly with minimal disruption to the existing roadway. If the MPO identifies other projects that will provide additional north-south connectivity, NCDOT will work with the MPO to get those projects funded as quickly as possible through STI; however, NCDOT sees no reason to delay the implementation of the PPSLs while other solutions are explored.

Q.4) Will CRTPO be consulted in the future if other CMAQ or similar funds are again at risk of rescission to see if there is a local option for their use?

A: NCDOT is currently reevaluating the process for CMAQ selection and implementation. The revised policy will have safeguards to ensure that CMAQ funds are used in a timely manner so that potential fund lapses and rescissions are not an issue.

Q.5) What is the complete federal rescission picture for North Carolina? How much is the FHWA expected to request back this cycle, or is all unobligated money at risk?

A: Due to the complexity of the issue, a thorough discussion will be required for CRTPO to gain an understanding of what will likely occur as a result of the rescission. If the MPO would like to request a presentation and discussion on this issue, NCDOT would gladly oblige.