APPENDIX H

TECHNICAL MEMORANDUM - HOT3+ AND ETL OPTION COMPARISON

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE CSNHS-0009-00(156) & CSNHS-0009-00(157)
I-75 Express Lanes, Henry County
PI Nos. 0009156 & 0009157

OFFICE Innovative Program Delivery

DATE December 15, 2011

FROM Darryl D. VanMeter, P.E., State Innovative Program Delivery Engineer

TO Keith Golden, P.E., Commissioner

SUBJECT **I-75 Express Lanes Toll Policy Recommendation**

Please find the attached Toll Policy Technical Memorandum for the above referenced project. This memorandum discusses the advantages and disadvantages of the Express Toll Lanes (ETL) policy and the High Occupancy Toll Lanes (HOT 3+) policy.

Based on the information provided in the attached technical memorandum, project engineering and financial assessment, the Office of Innovative Program Delivery is recommending that ETL be selected as the tolling policy for the I-75 Express Lanes project referred to above.

In order to advance the projects, a decision must be made as to which tolling policy will be employed. The Department was authorized by the State Transportation Board with its adoption of the Managed Lane System Plan (MLSP) to make the decision between HOT3+ and ETL. The projects are located in Congressional Districts 3 and 13.

This office recommends your favorable approval of this request.

CONCUR: _____ DATE: 12/21/11
Gerald M. Ross, P.E., Chief Engineer

CONCUR: _____ DATE: 1-3-11
Todd I. Long, P.E., Director of Planning

APPROVE: _____ DATE: 1-11-12
Keith Golden, P.E, Commissioner

CONCUR: _____ DATE: 2/15/12
Sam Wellborn, State Transportation Board – CD #3

CONCUR: _____ DATE: 2-15-2012
Dana Lemon, State Transportation Board – CD #13

APPROVE: _____ DATE: 2-15-2012
Rudy Bowen, State Transportation Board Chairman

If additional information is needed, please contact Mike Dover at (404) 631-1733 or Kelvin Mullins at (404) 631-1675.

DVM:KHM

cc: Gerald M. Ross, P.E, Chief Engineer
Todd I. Long, P.E., Director of Planning
Dana Lemon, State Transportation Board
Sam Wellborn, State Transportation Board
Chetna Dixon, FHWA
Christy Poon-Atkins, P.E., FHWA
General Files

Technical Memorandum

Evaluation of the Tolling Policy for the I-75 Express Lanes

November 18, 2011

Introduction

The decision on the tolling policy for the I-75 Express Lanes Project (the Project) has implications for system-wide managed lane consistency and operations, financial feasibility and environmental documentation in accordance with the laws, regulations, and statutes that fall under the umbrella of the National Environmental Policy Act (NEPA), in particular Executive Order 12898 on Environmental Justice. The two toll policies under consideration for the Project are Express Toll Lanes (ETL) and High-Occupancy Toll (HOT) lanes. The ETL and HOT toll policies differ in terms of vehicle eligibility, that is, which vehicles are required to pay to use the lanes, and which vehicles can use the lanes for free under that policy. The purpose of this memorandum is to provide a summary of these two separate tolling policies and to highlight key advantages associated with each.

Toll Policy Definitions

HOT3+ is a managed lane designation where vehicles with 3 or more occupants are permitted in the lanes at no charge, while vehicles with only 1 or 2 occupants can access the lanes only by paying a toll. ETL is a managed lane designation in which all vehicles in the managed lanes pay a toll.

With either HOT3+ or ETL, free managed lane eligibility can potentially be extended to specific types of vehicles such as transit vehicles, emergency vehicles and military vehicles, among others. GDOT anticipates that both the HOT3+ and ETL policy alternatives for the I-75 Express Lanes will allow Exempt Vehicles (registered transit vehicles, emergency vehicles, military vehicles, maintenance vehicles and school buses) to use the managed lanes without paying a toll. Detailed definitions of these Exempt Vehicles can be found in the I-75 Express Lanes Concept of Operations.

Toll Policy Comparison

The following discussion provides additional details on both of these toll policies. However, the two key issues for consideration in selecting a preferred toll policy are managed lane operations and revenue-generating potential. These issues have significant implications for the financial viability of the Project and are described in more detail below, along with other similarities and differences between the two toll policies.

<u>Similarities between HOT3+ and ETL</u>

Both tolling policies achieve the goal of providing reliable travel times in the I-75 corridor, as toll rates are set to maintain minimum operating speeds of 45 mph. By providing reliable travel times, the Project will introduce a valuable mobility option in the corridor and increase travel choices. The I-75 Express Lanes will be new capacity with benefits accruing to general purpose lanes as well, and both HOT3+ and ETL tolling policies will provide equal opportunities to accommodate regional growth and anticipated increases in travel demand. Both policies are also

consistent with regional transportation planning initiatives, including GDOT's Managed Lane System Plan (MLSP) and the latest Regional Transportation Plan, *Plan 2040*, from the Atlanta Regional Commission. The I-75 Express Lanes Project is included in both the MLSP and *Plan 2040*. In addition, both HOT3+ and ETL are explicitly mentioned as potential tolling policies in the MLSP. Finally, both HOT3+ and ETL tolling policies are in line with, and support, the need and purpose established for the Project as described in the draft Environmental Assessment (EA).

Executive Order 12898 on Environmental Justice (EJ) dictates that federal agencies, through their programs, policies and activities, must to the extent practicable identify and address disproportionately high and adverse human health or environmental effects to minority and low-income populations. As part of the EA, an analysis was conducted to determine the effects of toll policies on low-income populations in the corridor. Through this analysis, which is documented both in the EA and in an EJ technical memorandum, it has been demonstrated that HOT3+ and ETL toll policies both anticipate no disproportionately high and adverse impacts to these communities. In addition, studies of similar facilities in operation throughout the country also show no disproportionately high and adverse impacts to low-income populations.

<u>Differences between HOT3+ and ETL</u>

The two policies differ in three areas as described below:

1. **Revenue-Generating Potential**

   Establishing a viable tolling framework is critical in providing financial assistance for future improvements, assisting in bond payments, and contributing towards operation and maintenance of the facility. ETL is projected to provide higher revenue than a HOT3+ policy. ETL also minimizes revenue collection risks because future changes in occupancy levels have no impact on future revenue collections. Higher revenue yields mean there is a more significant funding stream that can be leveraged to finance the construction of the Project.

   According to GDOT's *I-75 Express Lanes Level 2 Traffic and Revenue Study* from August 2011, 50-year accumulated gross revenues for a reversible, HOT3+ scenario, with trucks prohibited from the managed lanes, are projected to be $556M in 2011 dollars. An ETL scenario will generate over $585M, a 5% increase over the HOT3+ alternative. In spite of these significant projected amounts for 50-year accumulated gross revenue, ongoing infrastructure maintenance expenses and customer service center costs are projected to erode the revenue stream such that net receipts are forecast to be on the order of 40% of these values. In addition, out-year revenues are heavily discounted, such that the bonding capacity of the revenue stream is less than the capital cost of the project, leaving a gap to be covered by other funding sources. The additional revenue and reduced toll collection costs associated with an ETL tolling policy helps to minimize this funding gap.

2. Managed Lane Operations

ETL has advantages associated with ease of use and simplicity of operations because there is no ambiguity concerning free vehicles and those that are required to pay. For this reason, ETL is deemed to be less complex operationally than a HOT3+ policy. Under an ETL toll policy, violation rates are also likely to be lower than violation rates under a HOT3+ policy because there is no ambiguity regarding eligibility and no need for users to initiate status changes on their transponder accounts to reflect the number of vehicle occupants present for each trip. HOT3+ introduces additional complexities regarding enforcement, since occupancy must be monitored. This will lead to higher enforcement costs and subsequent lower net revenues, relative to an ETL policy. In these ways, HOT3+ will likely be a more complex tolling policy for the Project.

3. Accommodate Accessibility

HOT3+ encourages both HOV formation and transit usage since carpools of 3 or more persons and transit vehicles are guaranteed a congestion-free ride at no additional charge. An ETL policy does not provide for non-tolled carpool formation but it does encourage carpools based on the mobility provided and in sharing of the toll cost among the carpoolers. Additionally, transit users can enjoy the enhanced mobility for additional cost.

Toll Policy Comparison Summary

This memorandum provides a summary comparison of two potential tolling polices for the I-75 Express Lanes Project: HOT3+ and ETL. Clearly, there are tradeoffs associated with the decision on which policy to pursue moving forward. Overall, ETL is easier and less costly to operate and enforce, less costly to implement, generates higher revenues, and carries less revenue risk than HOT3+. A HOT3+ policy accommodates a segment of the HOV population, and does more to encourage HOV formation than does ETL, but this policy introduces an increased burden in accurately accounting for these free vehicles and requires additional processing costs for transactions that generate no revenue.