

Interface Project Executive Summary

Gwinnett County, Georgia (USA)

Objective

To determine if an improved solution exists for traffic management on I-85 from I-285 to Old Peachtree Road for the benefit of current traffic and connecting traffic from an extension of the Ronald Reagan Parkway (RRP).

Project Need

The RRP feasibility study concluded that the proposed roadway has excellent utility however its direct connection to I-85 would disrupt current I-85 traffic patterns. The Interface Project will consider how to best optimize the RRP access point with full consideration of the existing interchange network and the GDOT HOV to HOT conversion Project.

Background

About the Reagan Parkway feasibility study
Gwinnett County and Skanska signed a Pre-Development Agreement in Sep 2009 to analyze the feasibility of a Ronald Reagan Parkway (RRP) Extension from Pleasant Hill Road to I-85, specifically as a Public Private Partnership (PPP). RRP feasibility was analyzed from technical, financial and public viewpoints to assess engineering, environmental, community, construction, cost, financial, operation, maintenance, and legal issues.

I-85 current and future traffic management

I-85 through Gwinnett County is one of the most highly congested stretches of interstate in the Atlanta region. GDOT is currently converting the single High Occupancy Vehicle (HOV) lanes from I-285 to Old Peachtree Road to High Occupancy Toll (HOT) lanes in an attempt to manage peak traffic to ensure at least one free flow lane (defined as operating at 45 MPH or greater) is available to I-85 users at all times. This will benefit those willing to pay to use the HOT lane or create an HOV of three or more persons in their vehicle.

In addition, express buses will be able to use the HOT facility. By observation, the existing HOV lanes are at capacity during peak periods with speeds lower than the design speed for the proposed HOT facility. Hence, the general purpose (GP) lanes will likely see little benefit from the HOT lanes and in fact will likely become more crowded in future years as the HOT lanes will be managed to operate at capacity for a free flow facility from opening day.



As the interchange options of the RRP and I-85 were studied, it became clear that allowing RRP traffic to interchange directly with I-85 at a new location or existing locations will cause severe disruption to the existing I-85 system. It became clear that potential options to better manage traffic along I-85 could be employed that also benefited the access of the RRP Extension. The Interface Project will assess the technical and financial viability of an RRP direct connection by improving I-85 throughput from an expanded HOT lanes configuration.

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Key Facts

In trying to solve the RRP/I-85 interchange issues, a number of details surfaced that became important not just to the RRP Extension, but to the operation of I-85 itself with or without the RRP Extension.

- A. The RRP has good utility and will cause a large traffic volume inflow on to I-85 impacting existing I-85 GP and HOT lanes users.
- B. The HOV to HOT conversion project while benefiting those willing to pay for reliable trip times, does not increase I-85 capacity during peak travel periods.
- C. The HOT lanes are designed to run concurrent with the I-85 GP lanes as are the current HOV lanes. With the higher speed differentials introduced between the HOT and GP lanes, safety is a concern.

Interface Project Concept

An initial analysis to best mitigate and address these issues concluded that a two-lane reversible managed lane system could replace the current HOT system under construction. Due to the highly directional nature of the traffic flows on I-85 during peak periods, i.e. southbound in the morning and northbound in the evening, it may be possible to use the underutilized HOT lane in the off-peak direction to add a second lane in the peak direction. This two-lane reversible system has the potential to increase rush hour traffic capacity of the entire I-85 system by 20-25% benefiting both the GP lanes and providing two free-flow HOT lanes. In addition, this system could be managed to allow the RRP to directly access I-85 through the two-lane HOT system. Achieving this would dramatically reduce traffic on the existing I-85 interchanges in the area (Pleasant Hill, Steve Reynolds, and Beaver Ruin) and reduce the associated weaving delays at these interchanges. Moreover, a reasonable business case is envisioned since construction cost are greatly reduced by capturing the existing two inside lanes and shoulders, HOT revenue is doubled and the overall interstate system throughput is optimized through a public-private partnership (PPP).

The Interface Project will take approximately nine months to:

- A. Perform a conceptual engineering study of implementing the two-lane reversible system
- B. Develop the cost of implementing this system
- C. Determine benefits to HOT lane, GP lane and RRP users
- D. Study resulting traffic patterns created by the new system to assess operational characteristics
- E. Determine revenue generated by the HOT lanes
- F. Perform a financial analysis to determine if implementation as a PPP type project is feasible
- G. Determine potential configurations for an RRP/I85 interchange and the necessary revisions to the current RRP concepts to implement this system

For more information, contact:

Brian Allen
Director
Gwinnett County Department of Transportation
Phone: 770.822.7400
Email: Brian.Allen@GwinnettCounty.com

David Nachman
Project Director
Skanska Infrastructure Development
Phone: 512-329-2044
Email: David.Nachman@Skanska.com