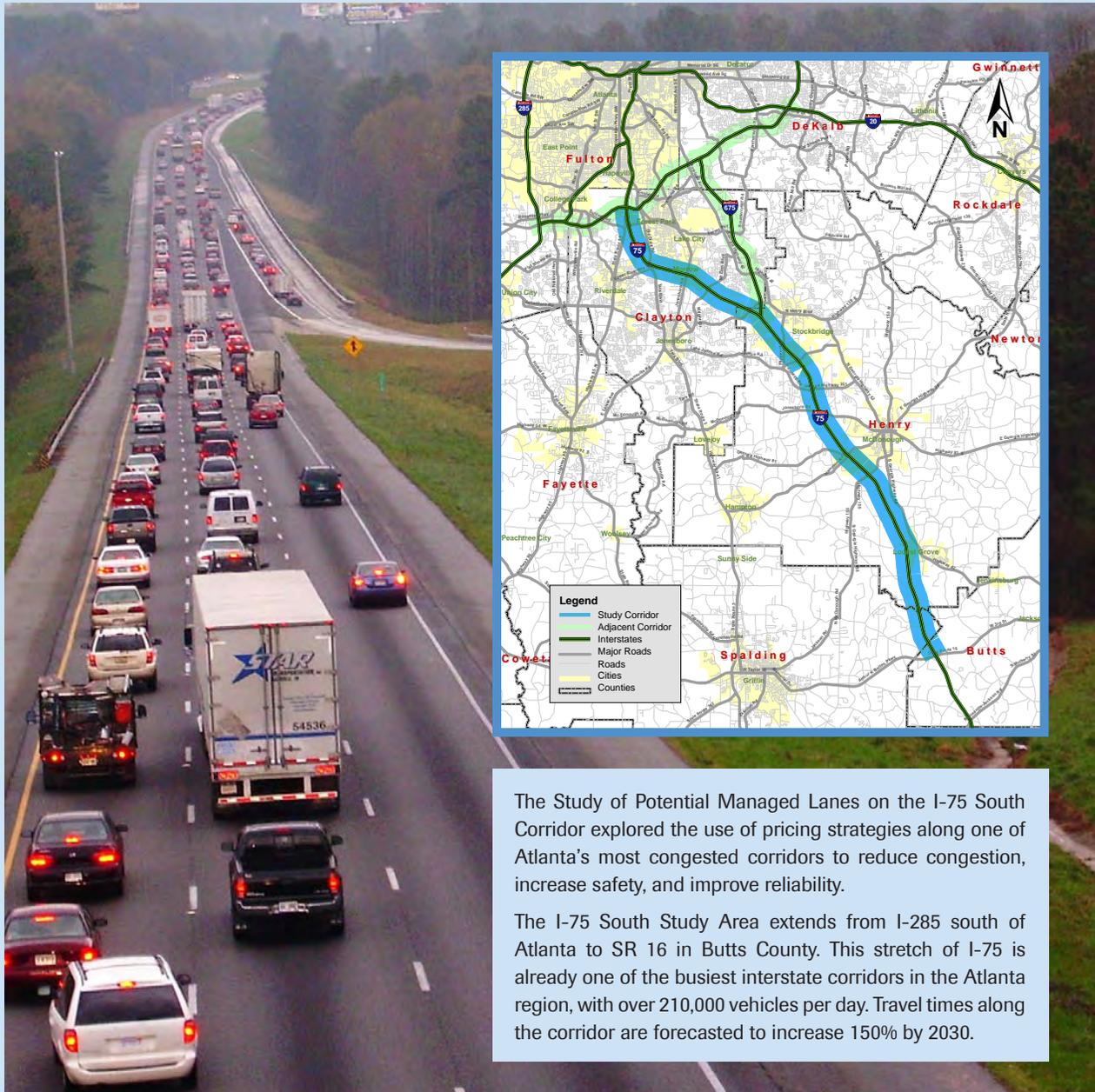


Study of

Potential Managed Lanes I-75 South Corridor



The Study of Potential Managed Lanes on the I-75 South Corridor explored the use of pricing strategies along one of Atlanta's most congested corridors to reduce congestion, increase safety, and improve reliability.

The I-75 South Study Area extends from I-285 south of Atlanta to SR 16 in Butts County. This stretch of I-75 is already one of the busiest interstate corridors in the Atlanta region, with over 210,000 vehicles per day. Travel times along the corridor are forecasted to increase 150% by 2030.

I-75 Southbound near Hudson Bridge Road



Study Goals

The I-75 South Managed Lanes Study was intended to evaluate the proper combination and configuration of managed lanes along the I-75 South corridor from I-285 south to SR 16 in Butts County. Managed lanes are proposed to accommodate the expected increase in travel demand, provide a corridor with guaranteed mobility referred to also as “congestion insurance”, and provide a guideway for the increasingly popular commuter express bus services operating in the corridor. The study goals were three fold:

- ◆ Evaluate the feasibility of value pricing techniques on the I-75 corridor to better manage travel and optimize the use of the corridor;
- ◆ Evaluate specific techniques to address the efficient movement of freight; and
- ◆ Identify the most efficient use of public funds in the corridor to optimize system benefits.

The following objectives were identified for the I-75 South Managed Lanes:

- ◆ Increase throughput of people and vehicles in the corridor.
- ◆ Maintain free-flow speeds in the managed lanes.
- ◆ Increase trip reliability through predictable travel times.
- ◆ Provide travel alternatives by accommodating transit and/or carpools.

Types of Managed Lanes

Managed lanes refer to a combination of management tools and techniques used to improve efficiency and meet certain corridor and community objectives. Types of managed lanes include High Occupancy Vehicle Lanes (**HOV**), High Occupancy Toll Lanes (**HOT**), Truck Only Toll (**TOT**) Lanes, and Express Toll Lanes (**ETL**). Managed lane types vary based on vehicle eligibility, pricing, and access control. High Occupancy Toll lanes that allow vehicles with two or more people to utilize the lanes for free are referred to as **HOT2+**, while those requiring three or more people to ride for free are called **HOT3+**. **ETL** lanes require all users to pay a toll with the exception of some transit vehicles. **ETL** lanes may allow passenger cars only or be available to cars and trucks. **TOT** lanes are voluntary lanes that can only be utilized by predefined classes of trucks and potentially some transit vehicles. A managed lane increases “throughput” and moves more people than a regular highway lane by accommodating transit, carpools, and paying vehicles.

What was studied?

The study explored eight different managed lanes options – each combining different applications of vehicle eligibility, pricing, and access control. These options included :

Alternative A-1	Two HOT2+ lanes each direction along I-75 from I-285 to SR 16
Alternative A-2	Two HOT3+ lanes each direction along I-75 from I-285 to SR 16
Alternative A-3	Two ETL for passenger cars each direction along I-75 from I-285 to SR 16
Alternative B	Two voluntary TOT lanes each direction along I-675 and along I-75 from I-675 to SR 16
Alternative C-1	Two HOT2+ lanes each direction along I-75 from I-285 to SR 16 and two voluntary TOT lanes each direction along I-675 and along I-75 from I-675 to SR 16
Alternative C-2	Two HOT3+ lanes each direction along I-75 from I-285 to SR 16 and two voluntary TOT lanes each direction along I-675 and along I-75 from I-675 to SR 16
Alternative C-3	Two ETL for passenger cars each direction along I-75 from I-285 to SR 16 and two voluntary TOT lanes each direction along I-675 and along I-75 from I-675 to SR 16
Alternative D	Two ETL lanes for cars and trucks each direction along I-75 from I-285 to SR 16

The following tasks were included as part of the study:

Existing Traffic Conditions Analysis – assessment of travel patterns along the corridor using field data and microsimulation tools.

Stated Preference Survey – evaluation of the public perception and the potential pricing structure for the usage of the lane.

Public Outreach – education and outreach to drivers in the area and the freight community.

Traffic and Revenue Analysis – assessment of the viability of tolling and the expected revenue over a long-term time frame.

System Analysis – evaluation of managed lane alternatives and their impact on the operations of the I-75 South corridor and the surrounding transportation system.

Toll Collection Design Concepts – assessment of potential toll technology alternatives for the corridor.

Sensitivity Tests – “what if” testing of scenarios on a series of key risk factors to quantify the potential impacts to the resulting managed lane concepts and traffic and revenue streams.

Capital Cost Estimation – development of conceptual level capital cost estimates for four potential managed lane configurations.

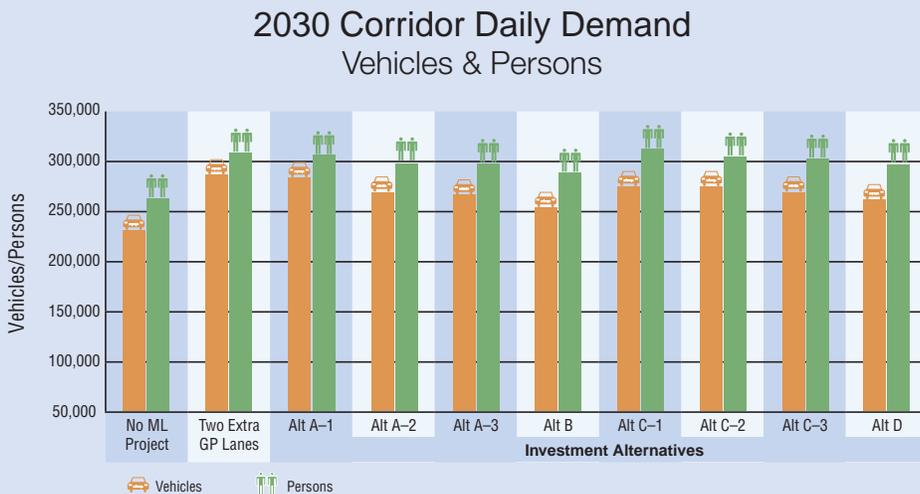
Next Steps – recommendations for project phasing, funding options, and next steps for improvements to the corridor.

What did the study find?

- ◆ Constructing managed lanes will have an overall impact on the travel demand, travel patterns, and traffic operations in the I-75 South corridor.
- ◆ Constructing managed lanes will have a significant reduction in total vehicle delay within the 5-mile transportation system and parallel corridors. The total daily vehicle delay decreases by a range of 10 percent to 33 percent in 2030.
- ◆ Transit vehicles (permitted to ride for free in the managed lanes) benefit from higher operating speeds, reliable travel times, additional mobility, and increased headways with a need for fewer buses.
- ◆ Capital costs for constructing managed lanes on the I-75 South Corridor range from \$1.4 Billion to \$3.4 Billion depending on lane configuration and available right of way (in 2007 dollars). Thirty year accumulated gross revenue streams are estimated in the \$1.4 Billion to \$2.4 Billion range (in 2007 dollars), indicating the project is likely financially viable.



- ◆ Constructing managed lanes can provide reliable travel times (at or above 45 mph) for people who choose to use managed lanes. The average speeds on the existing general purpose lanes along the corridor improve from six to 13 mph by 2030. However, congestion is NOT eliminated in the existing lanes, due to the attraction of additional vehicles from parallel facilities.



- ◆ Managed lanes will increase the volume throughput of both persons and vehicles along the I-75 South corridor. The total daily vehicle volume is forecasted to increase by a range of seven percent to 16 percent in 2030; while the total daily person volume is forecasted to increase by a range of eight percent to 20 percent in 2030.

Conclusions

The intent of this study is to determine the financial and operational feasibility of the managed lanes (HOT, ETL, TOT) on the I-75 South corridor, through a planning-level analysis, and to initiate a process that may ultimately lead to future project implementation and operations.

Based on the combined assessment of traffic and toll revenue, system analysis, toll technology, and capital costs, **Alternative A-3 Express Toll Lanes (Cars Only)** was selected as the preferred alternative for the corridor - due to revenue potential vs. estimated costs. It is considered to be the alternative that provides the most efficient use of public funds.

Alternatives A-1 (HOT2+) and A-2 (HOT3+) were eliminated based on the service provided, cost vs. benefits, and vehicle occupancy enforcement limitations.

Alternative B (TOT) does not maximize benefits during the peak periods since passenger cars can not take advantage of the lane and 94% of peak period congestion is cars.

Alternatives C-1 (HOT2+/TOT), C-2 (HOT3+/TOT), & C-3 (ETL/TOT) have a very large footprint due to the number of lanes (4 additional lanes each direction) and therefore have a very high cost for the amount of traffic that will benefit, impacting financial viability.

Alternative D (Mixed ETL) is another alternative to keep in close consideration for further evaluation. Operationally, Alternative D (Mixed ETL) needs further analysis of larger vehicles mixing with smaller vehicles when planning roadway characteristics of the managed lane facility. Extra planning is required to guarantee that cars and trucks can share the facility safely and efficiently.

Moving Forward

If a decision is made to proceed with the implementation of the lanes, the following steps should occur:

- ◆ Financial Feasibility Study
- ◆ Engineering Design and Traffic Analysis
- ◆ Public Outreach Program and Marketing Program
- ◆ Federal Highway Administration (FHWA) Coordination and Approval
- ◆ Atlanta Metro and Local Transit and Transportation System Connections
- ◆ Operations and Enforcements
- ◆ Monitoring Program
- ◆ NEPA Process.

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