Executive Summary

PURPOSE OF STUDY

The study was done to evaluate safety, operations, and develop improvements for State Route 316 (SR 316) Corridor, also known as University Parkway. The study addressed safety issues, congestion, economic development and other transportation improvements planned for Gwinnett, Barrow and Oconee counties. The study produced:

- *List of improvements specific to SR 316/University Parkway;*
- *Prioritization of improvements and implementation schedule; and*
- *Funding plan.*

SR 316 is an important regional roadway. Elected officials, representing Gwinnett, Barrow and Oconee counties, adopted a joint resolution to urge fast-tracking of the study and future improvements. The State Senate and House of Representatives formed a joint legislative study committee to study SR 316 and identify improvements. The University Parkway Alliance, a private non-profit organization composed of individuals, landowners, companies, state agencies, the University of Georgia, chambers of commerce, and the area's elected officials, is interested in improving the corridor. The study area is also being actively promoted as an attractive setting for development, expansion or relocation of businesses specializing in high technology, biotech research and light industrial businesses.

The study involved:

- *Data collection (use of travel surveys, demographic data, traffic counts, land use data, existing plans);*
- *Description of existing conditions as well as a projection of future conditions;*
- *Initial screening of potential improvement strategies;*
- *Evaluation of a specific improvement alternative;*
- *Recommended implementation plan for SR 316/UniversityParkway corridor; and*
- *Public outreach.*

EVALUATION CRITERIA

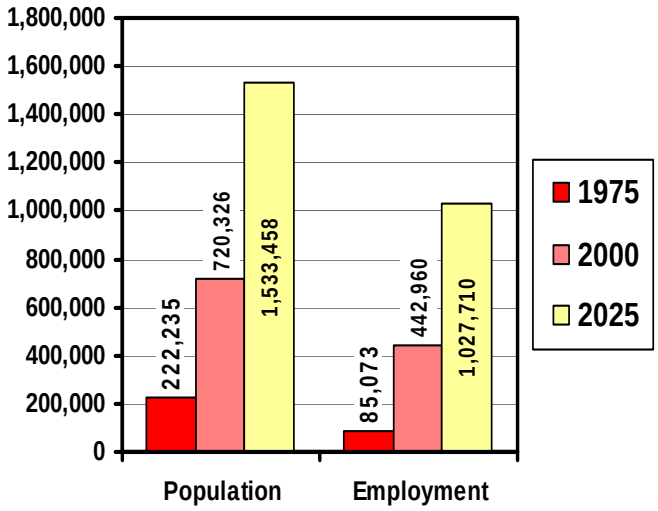
Existing and Projected Conditions

The strong relationship between development and travel is evident in the corridor. Population and employment growth place large demands on the transportation system. Therefore, developments along the corridor and the condition of the transportation system were important parts of the SR 316 evaluation.

Demographics

Historic trends and future forecasts indicate a continuing level of high growth throughout the study area. Based on U.S. Census Bureau figures from 1975 and 2000, population in the corridor study area more than tripled, rising from 222,235 in 1975 to 720,326 in 2000. Population forecasts for 2025 estimate that the study area will have approximately 1.5 million people.

Study Area Population and Total Employment
1975, 2000, 2025



Sources: 1975 & 2000 – U. S. Bureau of Census
2025 – Cooper Ross$_{sv}$

Employment trends and forecasts mirror the population trend. From 1975 to 2000 the employment within the study area more than quadrupled from approximately 85,000 to over 440,000 in 2000. Employment forecast project the number of employees will more than double from 2000 to 2025.

Transportation Trends

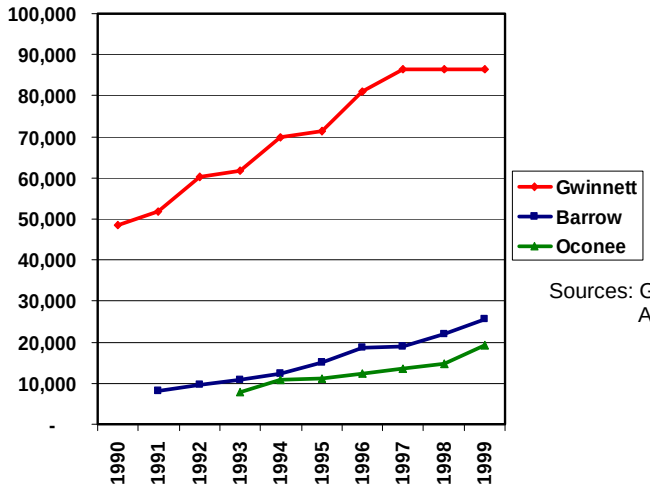
Several transportation system measurements were used to evaluate existing and future conditions. These included:

- *Traffic volume trends and projections;*
- *Congestion severity; and*
- *Safety and roadway characteristics*

Traffic Volume Trends

Traffic volume trends mirrored the high growth exhibited by population and employment. In Gwinnett County, daily traffic grew from 48,000 to 86,000 vehicles per day on SR 316. However, during the last three years of this period, the traffic in Gwinnett County did not grow as quickly, indicating that congestion is influencing travel patterns there. In Barrow and Oconee counties, the amount of daily traffic is much lower than in Gwinnett County. Daily traffic on SR 316 in Barrow County increased from 8,000 to 25,000 vehicles per day between 1991 and 1999. From 1993 to 1999 at the eastern end in Oconee County, daily traffic grew from 8,000 to 19,000 vehicles per day.

Daily Traffic Trends 1990-1999



Sources: Georgia DOT Traffic Counting Program
ADT- Average Daily Traffic Volume

Safety

Safety on SR 316 was the most pressing concern voiced at the study's Issues Forums. Accident data was analyzed in this study by time-of-day, month-of-year, intersection, segment, accident type, severity, type facility, traffic volume, relation to level of service and by incidents on weekends during the University of Georgia football season.

KEY FINDINGS

Traffic Volume

Projected traffic volume for the year 2025 virtually mirrored the demographic forecasts. On average, daily traffic on SR 316/University Parkway was estimated to double over the 2000 to 2025 planning window used in the study. Changes were most notable in Barrow County, where daily traffic was forecasted to grow from 25,000 in 2000 to 70,000 vehicles per day by 2025.

Congestion Severity

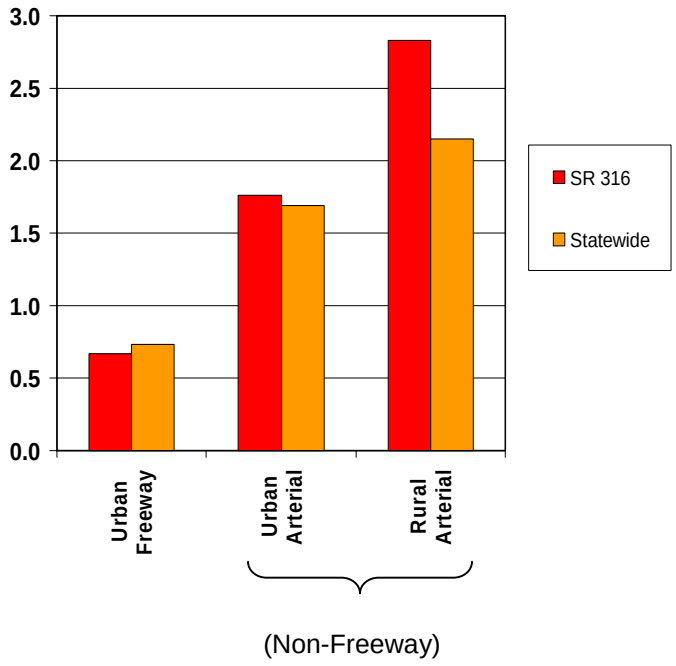
Currently, the most severe delays occur at three at-grade intersections located on the north side of Lawrenceville, Collins Hill Road, SR 20 and Hi-Hope Road. As the traffic volumes increase along the corridor, the number of locations experiencing severe congestion and delays will grow expanding from Gwinnett County into both Barrow and Oconee Counties.

Safety

The safety analysis showed:

- *On the freeway portion of SR 316 in Gwinnett County, the rate of accidents involving injuries or fatalities was lower than on similar roadways elsewhere in the state.*
- *On the non-freeway portion of SR 316, the rate of accidents involving injuries or fatalities was higher than on similar roadways elsewhere in the state. These types of accidents have typically occurred at (or near) rural intersections.*
- *Numerous non-fatal and non-injury types of accidents typically occurred at (or near) intersections within the non-freeway portion of SR 316, an area characterized by high levels of congestion and traffic volumes.*

Fatal Accident Rate Comparison:
SR 316 vs. Statewide Average, 1996-1998



As shown above, SR 316 is classified into three sections between I-85 and Oconee County. The fatal accident rate, measured per 100 million miles of vehicle travel, varies by each section of roadway type.

In Gwinnett County where a portion of SR 316 is a freeway with no "at grade" intersections, the fatal accident rate is below the statewide average. East of this section, from State Route 120 to Winder Highway, SR 316 is classified as an "urban arterial" (non-freeway) type of roadway and has a slightly higher fatal accident rate than the statewide average. The remaining portion of SR 316 from Winder Highway to the Athens Loop is classified as a "rural arterial" (non-freeway). The fatal accident rate on this section of SR 316 is significantly higher than the statewide average.

In 2000 there were seven fatalities on the entire SR 316 corridor. If SR 316 had been a freeway facility for its entire length, it is estimated that there would have been two fatalities. Similarly, the predicted reduction in injury accidents would have been equally as dramatic, from 255 to 17. The reduction in severe accidents was one of the major factors used in the development of improvement strategies.

POTENTIAL SOLUTIONS

Roadway Design

Six potential strategies were identified to address the numerous issues facing the SR 316 corridor. These six strategies are described below. While safety was the dominant factor considered as the strategies were screened for further analysis, the ability of each to reduce congestion and support economic development was also analyzed. The six strategies are:

A. Baseline - Assumes that all projects and programs previously adopted by the metro Atlanta, metro Athens and State Transportation Planning Process will be constructed or implemented by 2025:

Projects Assumed in Baseline Condition

Gwinnett	Reconstruct interchange between I-85 and SR 316
Gwinnett	Connection into SR 316 from the proposed Northern Arc
Gwinnett	Extend ITS infrastructure from I-85 to SR 20 along SR 316
Gwinnett	Widen SR 120 (Riverside Pkwy. to Sugarloaf Pkwy.)
Barrow	Connection into SR 316 from the proposed Winder Bypass
Oconee	Widen SR 53/Mars Hill Rd. (SR 15 to SR 316)
Oconee	Widen US 78/SR 10 (Atlanta Hwy. to Athens Loop)
Oconee	Construct new interchange between Jennings Mill Extension and Athens Loop
Oconee	Construct new connector between Daniels Bridge Rd. and Epps Bridge Rd.

B. Intelligent Transportation System (ITS) – Same as Strategy A plus deployment of the GDOT's basic ITS infrastructure east of SR 20. This would also include operational and safety improvements, such as: turn lanes at intersections; traffic control modifications; access management; and selective roadway realignments and/or improvements to drivers' sight distance at existing intersections.

C. Four-Lane Freeway Design Without HOV (High Occupancy Vehicle) Lanes - Same as strategy A plus the reconstruction of SR 316 into a freeway type roadway on the 35-mile section from SR 120 to the Athens Loop with essentially the same type facility that exists between I-85 and SR 120.

D. Four-Lane Freeway Design With HOV Lanes - Same as Strategy C, except one HOV lane would be added in each direction.

E. Six-Lane Freeway Without HOV Lanes - Same as Strategy C plus one travel lane in each direction for through-traffic.

F. Six-Lane Arterial (non-freeway) Without HOV Lanes – Same as Strategy A with the addition of one additional travel lane in each direction east of SR 20.

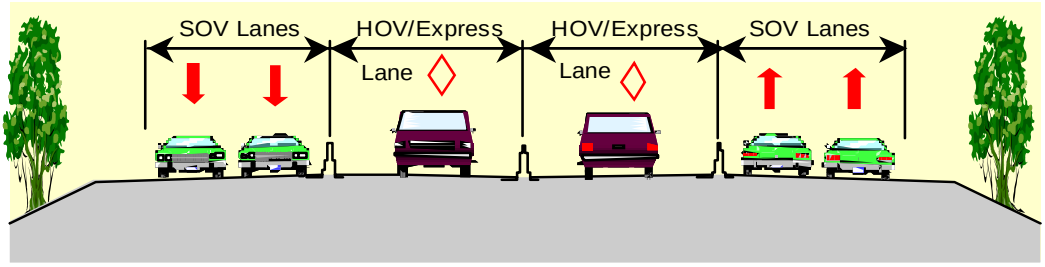
Recommendations

After testing the six strategies, Strategy D was selected for further study because it was the only strategy that adequately responded to safety issues and offered relief to existing and future congestion. Elements of Strategy B were also included for analysis as part of the overall improvement goals for the corridor.

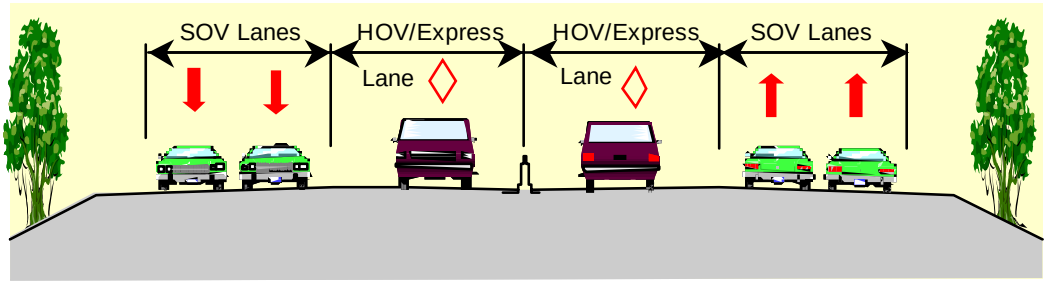
Evaluation of Recommended Alternatives

After Strategy D (a four-lane design with HOV lanes) was selected for further analysis, two different variations ("alternatives") of this strategy were tested. These alternatives, which are shown below, are equivalent in terms of their treatment of existing at-grade intersections and the number of general purpose (Non-HOV) lanes on SR 316. This concept is consistent with Strategy D, where all the existing at-grade intersections along SR 316 would be eliminated so that access to SR 316 would only be from an interchange.

The alternatives differ by whether the HOV lanes are separated from the non-HOV lanes by a barrier. Analysis performed to evaluate the two alternates indicated that there was a significant difference in the safety of the two types of HOV operations. National statistics indicate HOV facilities similar to Alternate 1 are safer and operate more efficiently than those like Alternate 2. Alternate 1 also provides better enforcement of the lanes. Thus, Alternate 1 was chosen as the recommended alternate.



Alternate 1: Barrier Separated HOV



Alternate 2: Non-Barrier Separated HOV

Implementation Considerations

Improvements to SR 316, by themselves, will not solve all of the corridor's anticipated transportation needs. Other improvements will be needed for the HOV lanes to reach their full potential of moving more people in less vehicles. The specific improvements recommended in this study consist of four basic elements:

- *Reconstructing SR 316 into a freeway-type facility from SR 120 to the Athens Loop;*
- *Adding auxiliary lanes between existing interchanges on SR 316 between SR 120 and Boggs Road in Gwinnett County;*
- *Adding two barrier separated HOV lanes, one in each direction of travel, over the entire length of SR 316; and*
- *Constructing new collector-distributor facility in Gwinnett County (SR 120 to Winder Highway/SR 8).*

The cost of implementing these improvements is estimated to be between $750 and $850 million. The estimate includes preliminary engineering/design, right-of-way acquisition and construction; however, the costs will be further refined as design-specific and right-of-way decisions are made during the project's development. For example, modifications to interchange locations, interchange configurations, grade separation (cross over) locations could substantially change the estimate of the project implementation costs.

POTENTIAL SR 316 ACCESS LOCATIONS

General Purpose/SOV Access Locations Under Consideration

Boggs Road	Drowning Creek Rd.
Sugarloaf Parkway	Patrick Mill Road
Riverside Parkway	SR 81
SR 120	SR 11
Collins Hill Road	Winder Bypass
SR 20	Hog Mt. Road/SR 53
High Hope Road	Statham Road/SR 324
Cedars Road	Bogart Parkway
Hurricane Trail	US 78/SR 10
US 29/SR 8	Jimmy Daniel Road
Northern Arc	Oconee Connector
Harbins Road	Athens Bypass

HOV Access Locations Under Consideration

Herrington Rd.	Kilcrease Road
Lawrenceville-Suwanee Road	Bethlehem Road
Walther Blvd./Hurricane Shoals	Harry McCarty Road
High Hope Road	Harrison Mill Road
Cedars Road	Barber Creek Road
Northern Arc	Dials Mill Road
Harbins Road	Virgil Langford Road
Drowning Creek Rd.	

Funding

Funding for new projects is limited, especially from traditional federal and state sources. GDOT is currently working with its planning partners to identify innovative funding sources for SR 316 improvements. Based upon the findings in this study, full implementation could take as long as 20-25 years if only traditional state and federal funding sources are pursued. However, the safety and mobility service needs in this corridor are too critical to delay implementation of the recommended improvements over such a lengthy period.

In an effort to find an alternative source of funding, toll financing was considered. The preliminary results suggest that a substantial share, if not all, of the cost for the improvements could come from money generated by tolls. Thus, the study recommends that toll revenues, in combination with available funding from traditional federal and state sources, be used to accelerate improvements to SR 316.

Coordination Efforts

Continued coordination with other transportation providers and planning partners will be extensive as the project moves forward. For HOV lanes to achieve their potential, express bus service and park-and-ride lots at convenient locations will be needed. The costs of these auxiliary transportation improvements and services were not included in the study's estimated costs for improving SR 316. However, local government and regional transportation planners have proposed these auxiliary improvements and the findings of this study support the need for these projects. To the extent possible, scheduling of these auxiliary improvements should coincide with the construction of improvements recommended by this study.

During its development, the study took into account the recommendations from a Commuter Rail study for the proposed passenger rail service between Athens and Atlanta. Analysis from the SR 316 study suggest that improvements to the corridor, in addition to the implementation of passenger rail service, will be vital to meeting future mobility and travel options in the entire corridor.

Next Steps

The improvements recommended must be implemented as quickly as possible. The following immediate steps must be taken concurrently to ensure that the process continues toward implementation:

- *Preliminary Engineering Concept Studies;*
- *Traffic and Revenue Studies; and*
- *Environmental Studies.*

GEORGIA DEPARTMENT OF TRANSPORTATION
Division of Transportation Planning, Data and Intermodal Development
No. 2 Capitol Square
Atlanta, Georgia 30334