



## **Needs Assessment**

### **Douglas County Comprehensive Transportation Plan**

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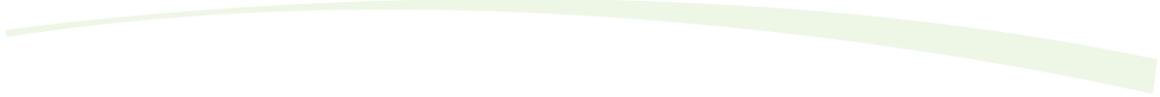


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## INTRODUCTION

Douglas County, located 17 miles southwest of downtown Atlanta, typifies the natural beauty of the Georgia Piedmont from rolling hills, abundant pine and hardwood forests, to scenic rivers and streams. The image of Douglas County as expressed through the county's vision is that of a small town with ties to its rural and scenic roots. The proximity to Atlanta has spurred development and transformed the county from rural to urban.

Previously a bedroom community for the metropolitan Atlanta region, the county's population more than doubled between 1980 and 2000. Forecasts indicate continued population escalation. Between 2005 and 2030 county population is anticipated to increase by over 90 percent while county total employment is expected to increase by more than 110 percent.

The Comprehensive Transportation Plan (CTP) process will help meet the growth challenge by supporting the Comprehensive Plan's population and housing forecasts, natural and cultural resource protection, economic development policies and land use policy and plans. In some cases transportation demand and the lack of adequate systems may influence significant change in land use character and patterns. Likewise, land use changes will dictate needs for expansion of the transportation infrastructure. The purpose of this report is to document and assess the county's multimodal transportation needs through 2030.

### DOUGLAS COUNTY DOT AND COMPREHENSIVE TRANSPORTATION PLAN

Douglas County created a Department of Transportation from its Public Works and Engineering Department in response to the county's existing and anticipated growth. Once created, the DC DOT strategically planned to identify and meet the challenges of a rapidly urbanizing rural county on the transportation network.

As part of the federally mandated transportation planning process, metropolitan planning organizations (MPOs) prepare long range transportation plans for their region. The Atlanta Regional Commission (ARC), the designated MPO for the region, initiated a funding assistance program in 2005 to encourage member counties and their municipalities to develop joint long-range transportation plans. The final CTP will serve as input in developing ARC's future regional plans. Working cooperatively with ARC and county municipalities, the CTP process became a vehicle to implement long-range strategic, policy, and program planning beginning in April 2007. The CTP was an excellent opportunity to meet transportation challenges head-on and to proactively anticipate countywide future transportation demands within the local and regional framework.

The purpose of the Douglas County Comprehensive Transportation Plan (CTP) is to evaluate current and future transportation demands resulting from significant current and predicted residential and business growth over the next 25 years. The CTP will provide policy guidance and recommend projects to be implemented in Douglas County through local and regional planning efforts to meet the identified needs. This

first ever CTP for Douglas County will offer a framework for future updates for planning and managing transportation within the county.

## **COMMUNITY NEEDS**

Effective transportation decision-making requires wide-ranging planning, design, funding and communication. The Douglas County CTP process is involving decision-makers and the public in plan development to ensure that appropriate priorities are assigned to desired policy and program choices. The early and continuous involvement of interested parties from inception should reduce costly conflicts during later development stages. A broad base of stakeholders was included in the process to holistically address transportation facility development. Often the needs of one group conflict with those of another. Bringing these groups together through the Project Advisory Team (PAT) creates a balance between the desired facilities and provides an improved understanding of how different modes and uses of the transportation system interact. A variety of public involvement techniques has been employed through the CTP process.

## **PROJECT ADVISORY TEAM**

The Project Advisory Team (PAT) was established as a first step in the CTP development and meet regularly to provide guidance and recommendations on plan elements. PAT meetings were scheduled every other month and members were advised on project progress. They were also asked to provide input on key plan elements, including major transportation deficiencies, safe routes to schools, identification of the sub areas, citizen concerns and issues, intelligent transportation systems (ITS) and freight movement.

The participation of the PAT members was instrumental in the development of the project goals and objectives. Their input was used to draft recommended goals and objectives to present to the public during the community visioning sessions. A survey was developed to support the CTP process and members disseminated the surveys and plan information to constituents. The participation of the PAT members has been invaluable in attracting attention to the CTP and in involving Douglas County residents and employees. A list of the PAT members is provided in Appendix A.

General comments from the PAT regarding the needs in Douglas County include:

- Identify lower cost solutions to more efficiently spend transportation dollars to get the “most bang for the buck.”
- Consider bicycle and pedestrian facilities in the development of new corridors or improvements to existing corridors.
- Focus attention on highly congested areas to relieve bottlenecks and maintain area attractions. (Arbor Place Mall)
- Improve safety for all users of the system, vehicles, trucks, bicycles, pedestrian, etc.
- Manage signal timing.
- Preserve characteristics that attracted residents to Douglas County, neighborhood character, natural resources and good quality of life.

## STAKEHOLDER INTERVIEWS

A series of stakeholder interviews were conducted at project inception to get an overall understanding of the transportation issues confronting Douglas County. A total of eight interviews were held with local elected officials, transportation and planning staff, and citizen organizations. The following roadways were identified as areas of concern by the stakeholders:

- Chapel Hill Road
- Thornton Road (Especially for trucks)
- SR 5
- Liberty Road and I-20 overpass
- Fairburn Road/SR 92
- US 78
- Temple Street at the railroad crossing
- Rose Avenue

Intersections of concern are:

- SR 5/Douglas Boulevard/I-20
- Chapel Hill Road/Douglas Boulevard
- Maxham Road/Alabama Road
- Fairburn Road/I-20
- Brown Street/SR 92

Other transportation issues from the stakeholder interviews include:

- Congestion and safety were ranked as the most important issues related to the transportation network. Many of the respondents feel that significant attention needs to be placed on alternative modes of transportation and other solutions rather than adding capacity to combat congestion.
- Commuter traffic from Paulding and Cobb Counties trying to access I-20.
- Safety at school locations, especially around Eastside Elementary and Burnett Elementary.
- The amount of truck traffic and the lack of designated truck routes. Specific problem areas for trucks are:
  - Thornton Road/SR 6
  - Conners Road/Liberty Road
  - SR 92
  - Chapel Hill Road
  - Lee Road
  - Campbellton Road at railroad crossing
  - Loading zones for trucks needed in downtown Douglasville
- Development and changes in land use have outpaced improvements to the transportation infrastructure. Narrow county roads are not equipped to handle the growth and may need to be widened on routes that connect multiple subdivisions.
- Apply special purpose local option sales tax (SPLOST), development impact fees, and community improvement districts (CIDs) as means to counteract funding shortfalls at the state and federal level.

## PUBLIC INVOLVEMENT MEETINGS

Traditional public outreach activities include those that establish an identity for the project and proactively offer opportunities for input to the public. Traditional public involvement techniques generally reach the majority of the public but may not be as effective in engaging the “traditionally underserved” including minority, low-income and disabled populations. Outreach techniques employed in the CTP process were designed to serve all segments of the Douglas County population. Assuring equity in the planning process is not only a federal requirement and sound public policy, but also a key to successful plan implementation. A series of community visioning meetings were held to garner an understanding of what the public would like to see in the transportation network.

These meetings were conducted in October 2007, and resulted in over 250 attendees to five meetings. Participants were briefed on the CTP process and asked to provide feedback on transportation deficiencies, goals, and objectives and how limited resources should be spent.

Participants were asked to complete a survey about transportation in Douglas County, the majority of respondents (53%) reside in the City of Douglasville and most of the rest live in unincorporated Douglas County. The full results summary may be found in Appendix A. The following issues were raised by respondents:

- The most congested areas are:
  - Chapel Hill Road
  - Highway 5
  - Douglas Boulevard
  - Fairburn Road (SR 92)
- Respondents were asked which transportation facilities they would use more if they were available:
  - 50% would use sidewalks
  - 47% would use transit
  - 35% would use bicycle or multi-use trails

A further result of the community meetings was the development of CTP goals and objectives as follows:

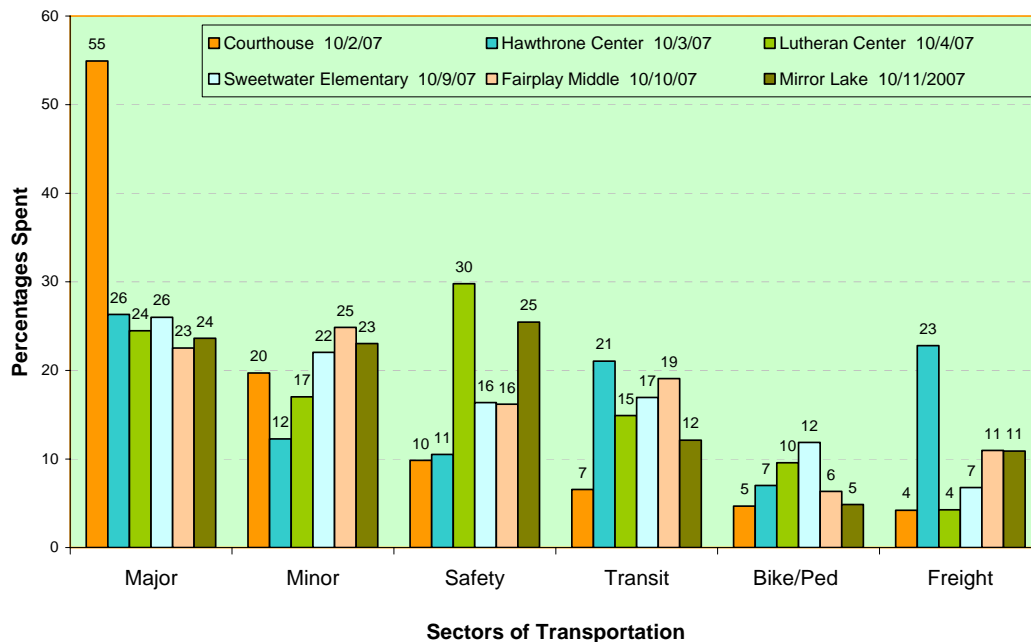
- Enhance safety and mobility for all travelers
  - Incorporate multimodal facilities into transportation planning
  - Provide safe, accessible, and efficient transportation facilities
  - Prioritize and balance transportation projects with political and public support
- Preserve and protect neighborhood integrity
  - Preserve existing neighborhood characteristics and aesthetics
  - Maintain consistency with comprehensive land use plans
  - Implement density appropriate facilities
- Preserve the environment
  - Incorporate connectivity to greenways

- Identify priority environmental resources
- Sustain water quality
- Support alternative modes that reduce negative air quality impacts
- Promote economic development
  - Focus new developments in economically depressed areas
  - Locate transportation facilities near economic development activities
- Encourage public involvement
  - Provide updated information through various media in accessible locations
  - Offer multiple opportunities for participation

Transportation funding is limited, and the challenge to decision makers is how to best balance the community needs with finite resources. Participants at the public meetings were asked to place themselves in this role and to fund projects that were most important to them. Each participant received \$5 million in “Douglas County Dollars” and were allowed to spend in six categories: major improvements, minor improvements, safety, transit, freight, and bicycle/pedestrian. Figure 1 shows the breakdown of the spending exercise.

- A majority of participants expressed an interest in focusing resources on major and minor transportation capacity project investment
- Safety, transit, freight, and bicycle-pedestrian investment followed respectively
- A major concern was neighborhood preservation

**Figure 1 – Community Spending Percent of Total by Meeting Location**



## LAND USE AND TRANSPORTATION

Consideration of existing and future land use may reveal specific transportation system needs. The *Inventory of Existing Conditions* discussed Douglas County's existing and proposed future land use largely dominated by residential uses with strategically placed employment uses.

### EXISTING LAND USE

Until recently, residential development has dominated the largely rural county. However, during the past decade, new non-residential development in Douglas has appeared clustered largely within two areas, the unincorporated area adjacent to the City of Douglasville and the eastern end of the County along the Thornton Road corridor. The center of retail growth in the county, Arbor Place Mall and the Chapel Hill Road corridor within the City of Douglasville, are locations of significant employment growth. As the market grows and traffic becomes heavier, the SR 5 corridor has transitioned from residential to small retail establishments. The Comprehensive Plan emphasized careful transportation and land use planning and how to adequately support transitional compatible growth within these corridors to ensure sustained livability.

### FUTURE LAND USE

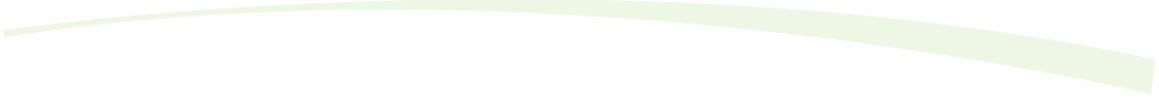
The future land use map (Figure 2) was developed to illustrate the most desirable pattern of land use in Douglas County. It took into consideration the land use patterns illustrated on the county's existing land use map, the current zoning map, approved planned unit developments (PUDs), developments of regional impact (DRIs) and other developments, topographic characteristics, natural resource sensitivity, the availability of infrastructure, and needs demonstrated by residential and employment forecasts. A review of the future land use map highlights areas where transportation infrastructure improvements may be needed to support the proposed land use.

Douglas County's Comprehensive Plan emphasized that maintenance of the county's current rural and small town nature is central to the quality of life. The majority of the developed land uses within the county (excluding agricultural and public institutional) is residential, over 90 percent, and of that total, over 90 percent of all housing units within the county are single-family residences. Douglasville, Villa Rica and Austell contain a large portion of the multi-family units within the County. Although master planned developments and village retail areas are planned, unincorporated Douglas County is expected to continue to be predominately single family residential in nature.

As demonstrated by Figure 3, a large number of DRIs are being planned. The Georgia Regional Transportation Authority defines DRI as a large-scale development likely to have effects outside of its local jurisdiction. Impact on the county transportation system by these DRIs was measured through the travel demand modeling process. Demographic changes resulting from planned DRIs were incorporated into the socio-economic elements of the travel demand model so that

transportation impacts were quantified. To measure the impact of land use on the transportation network, ARC's *Envision 6* travel demand model includes current and future (2030) population, households and employment assignments to specific traffic analysis zones. As a result, traffic volumes are forecast for anticipated land uses. The model's projections are based on future population, employment, and household numbers for the horizon year of 2030.





Douglas County will soon be in the process of updating its Comprehensive Plan. Information generated as a part of the CTP process will be used to inform the Comprehensive Plan update. The final CTP will be included in the Comprehensive Plan as the Transportation element. An example of complementary use of the CTP and the Comprehensive Plan was considering future land use, population, and development intensity when determining need for transportation facilities, transit services, and appropriate freight routes through the County. Enhanced density may offer a market for transit or other travel demand management strategies such as increased vanpool, park and ride lots, and carpooling.

Table 1 describes major land use categories in Douglas County and the appropriate types of transportation facilities needed to support the land use. Compatibility between the transportation network and the land use ensures that the facilities not only match the activity of the area but support the traffic generated by that activity. When new projects are identified or improvements are being planned for existing facilities the area land use should be taken into consideration. The influence of the land use may spur additional needs that can be incorporated into the overall project or design standards may be established within specific land uses. Joint policies may be developed between the department of transportation and planning department that outline how transportation projects should be approached in terms of land use and vice versa.

Project stakeholders recognized that the changes in area land use are outpacing the improvements and changes to transportation infrastructure. Short-term projects that can improve conditions and are compatible with existing land uses should be considered in the interim as a means of closing the gap between new development and the existing transportation infrastructure.

Part of the CTP process is to explore enhanced elements of transportation planning that can be incorporated into the Comprehensive Plan update that creates compatibility between land use and transportation functionality. The Plan enhanced elements include intelligent transportation systems (ITS), alternative transportation modes and transportation demand management (TDM), bicycle and pedestrian facilities, and safe-routes to school.



**Table 1 – Compatibility between Land Use Classification and Transportation Improvements**

Land Use Classification	Transportation Needs
<p>Suburban Residential</p> <ul style="list-style-type: none"> <li>• Low density (up to 4 units per acre)</li> <li>• Single family units</li> <li>• Detached units</li> <li>• Neighborhoods</li> </ul>	<p>Slower traffic speeds (45 mph or less)</p> <p>Bicycle and pedestrian facilities</p> <p>Very limited truck traffic (through trucks prohibited)</p> <p>Street-scaping</p> <p>Traffic calming</p> <p>Safety measures</p>
<p>Urban Residential</p> <ul style="list-style-type: none"> <li>• Higher density (5-15 units per acre)</li> <li>• Multifamily units including duplexes, townhouses and apartments</li> <li>• Smaller lots for single family units</li> </ul>	<p>Transit</p> <p>Bicycle and pedestrian facilities</p> <p>Street-scaping</p> <p>Safety measures</p>
<p>Commercial</p> <ul style="list-style-type: none"> <li>• Retail activity centers</li> <li>• Concentration in City of Douglasville and other municipalities</li> <li>• More intense office units</li> </ul>	<p>Transit</p> <p>Bicycle and pedestrian facilities</p> <p>Design features for safe truck movement</p> <p>Parking</p> <p>Street-scaping</p> <p>Safety measures</p> <p>Operational improvements</p> <p>Access management</p>
<p>Industrial</p> <ul style="list-style-type: none"> <li>• Light industrial-manufacturing, warehousing, and wholesaling</li> <li>• Restricted light industrial-office/admin in front with storage in rear-loading</li> </ul>	<p>Design features for safe truck movement</p> <p>Truck route designations</p>

Land Use Classification	Transportation Needs
<p>docks-could be campus type business centers</p> <ul style="list-style-type: none"> <li>• Heavy industrial-major noise, traffic, odor impacts. Require major transportation and utilities as well as sufficient land for buffering. Assembly, mining, intense manufacturing</li> </ul>	<p>Safety measures</p> <p>Noise abatement</p> <p>Intelligent Transportation Systems</p> <p>Operational improvements</p> <p>Access management</p>
<p>Mixed Use</p> <ul style="list-style-type: none"> <li>• Compatible, yet distinct uses co-located</li> <li>• Neighborhood retail (dry cleaners, small grocery) with residential</li> <li>• Higher density, transit-oriented development such as multi-family residential co-located with large office/retail commercial development-live, work, play</li> <li>• Mixed use residential-multifamily buffered by townhouses then single family detached planned development</li> </ul>	<p>Transit</p> <p>Bicycle and pedestrian facilities</p> <p>Design features for safe truck movement</p> <p>Parking</p> <p>Street-scaping</p> <p>Safety measures</p>
<p>Employment Centers</p> <ul style="list-style-type: none"> <li>• Intense office, retail, industrial development</li> </ul>	<p>Transit</p> <p>Bicycle and pedestrian facilities</p> <p>Parking</p> <p>Street-scaping</p> <p>Safety measures</p> <p>Intelligent Transportation Systems</p> <p>Operational improvements</p> <p>Access management</p>

## ACCESS MANAGEMENT

Traditionally, congestion has been addressed through intrusive and expensive road widenings. In keeping with the plan objective to explore creative transportation solutions that are less expensive and intrusive, the county is exploring access management policy and practices. Access management is the “systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to the roadway.” Effective access management policy and practices protect roadway network investment by enhancing safety for all modes, access, mobility, land use integration, and preservation of roadway functional integrity and efficiency.

Access management practices include traffic control and geometric treatments within the roadway right of way to reduce interference and conflicting traffic movements. Also measures such as consolidating driveways and parking lots involve significant collaboration with adjacent property owners and developers. Key elements of an effective access management program are:

- Functional classification system to apply appropriate access management standards
- Level of access permitted
  - Direct property access
  - Traffic control device, i.e. signal, raised median, roundabout
  - Spacing and setback standards
- Policy development and institutional administration
- Coordination with land use planning department/agency

To effectively administer access management policy, coordination between land use planning and transportation planning is essential. The County uses the transportation planning process to develop and implement access management solutions in a seamless and professional manner. Retrofitting access management solutions is more costly and more disruptive than adopting and consistently administering established policy and practices. Corridors that would benefit from extensive access management retrofits include:

- Chapel Hill Road
- SR 92
- SR 6
- US 78/Bankhead Highway

Access management treatments under consideration include:

- Driveway consolidations
- Adjoined parking areas
- Pullovers and auxiliary lanes
- Intersection control modifications
- Median and lane separation treatments
- Turn restrictions and channelization

## TRAVEL DEMAND

To develop an understanding of the impact of increasing growth on the existing and future transportation network, a calculation of forecasted travel demand is essential. Travel demand is calculated on a regional basis through the use of mathematical computer modeling. The travel demand model uses socioeconomic data, specifically population, housing and employment, to forecast future conditions.

## DEMOGRAPHIC PROFILE

The population of Douglas County in 2005 was estimated to be over 111,000 people, and is expected to increase to more than 216,000 people in 2030, an increase of over 93 percent. The employment in Douglas County in 2005 was estimated to be approximately 38,000 and forecast to almost 83,000 in 2030. This is an increase of over 118 percent. The current transportation system is already congested in many areas in the county. To meet the doubling of people and jobs, changes need to be made in the transportation system to support this growth. New developments in Douglas County including Tributary, Riverwalk and Mirror Lake communities are attracting much of the projected growth in population and employment.

### Population and Employment

Population and employment data from the Atlanta Regional Commission's Envision 6+ model were used as a basis for travel demand forecasting. The ARC model, however, was refined to capture unique Douglas County related trends to better forecast specific changes for the future. The data is divided in several different categories to highlight specific areas of interest that provide insight for the needs assessment. For the CTP, 2005 is considered the base year and 2030 is being used as the forecast year. Figures 4 and 5 show the estimated population and employment for the years 2005 and 2030, the percent change in population or employment between 2005 and 2030 and the percentage of total population or employment for both 2005 and 2030.

The data was calculated using transportation analysis zones (TAZs). A TAZ is a geographic unit used by transportation professionals in computerized models to understand transportation patterns for vehicles, transit and bicycle and pedestrian use. The TAZs presented in Figures 1 and 2 include refinements of the regional model used by ARC to evaluate transportation in the metropolitan region. To provide a more precise level of detail, several regional TAZs from the ARC model were split to create an additional 51 TAZs. It is important to note that the TAZ splits do not violate the regional TAZ geography in the original ARC model.

The most populated area of the county in 2005 was on both sides of I-20 and to the west of Lee Road. Population growth is moving south of this area, along the Highway 92 corridor. However, the TAZ just west of the intersection of Highway 92 and Highway 166 at the county's southern border will have the greatest percentage of growth between 2005 and 2030; increasing by more than 1,000 percent. The dramatic growth is a result of increasing residential development occurring in this area bordering Fulton County. The TAZ in Douglasville just northwest of the

intersection of Highway 92 and US 78 is the second most populated in 2005 and is expected to remain the second most populated in 2030. Douglasville has experienced substantial residential growth in the portion of the city north of I-20.

The majority of the employment in the county in 2005 is on the eastern edge bordering with Cobb County and in the TAZ that contains the Arbor Place Mall. These areas are forecast to retain the highest level of employment through 2030; however, employment opportunities through 2030 are increasing throughout the county. Employment south of I-20 along the Highway 92 and Fairburn Road corridors in southeast Douglas County is expected to increase by more than 2,000 percent. North of I-20 in the Villa Rica area, employment is expected to increase by nearly 500 percent.

### **Housing and Density**

The 2000 population density within the City of Douglasville (1.47 persons per acre) was the lowest among 14 cities above 20,000 population in ARC's ten-county planning area. According to census tract data by ARC, residential densities in 2006 were highest in central Douglasville (1.2 dwelling units per acre) and the Arbor Place/Northern Chapel Hill area (1.1 dwelling units per acre).

From 2000 to 2006, multifamily housing growth slightly outpaced the growth in single-family housing. Census Bureau data obtained by ARC indicates there were no multifamily permits issued in 2006 by Douglas County, one of only two counties in the Atlanta urbanized area that did not issue permits during this year. Nonetheless, several areas of Douglas County experienced significant growth in multifamily housing units between 2000 and 2006. Based on census tract data from ARC, notable areas of multifamily housing growth include the Bright Star area (increase from 7 to 305 units), the West Lithia Springs/County Line Road area (increase from 68 to 610 units) and central Douglasville (increase from 611 to 1,202 units). Multifamily housing units within the entire City of Douglasville grew by 78.8 percent during this period, the highest rate among twelve cities in the ARC planning area with more than 3,000 multifamily units. Meanwhile, the 2004-2025 Comprehensive Plan reports a high proportion of three-bedroom apartments, approximately 40 percent of all rental units, within the unincorporated area.





## TRAVEL PATTERNS

Select Census 2000 and 1990 data were compared to understand travel patterns within Douglas County and to identify areas of transportation needs to serve those travel patterns that are most dominant. Data being used include commuting patterns, travel time to work, vehicle availability, and means of transportation to work. The following sections describe the analysis and the relevance of the information to understanding transportation needs within the county.

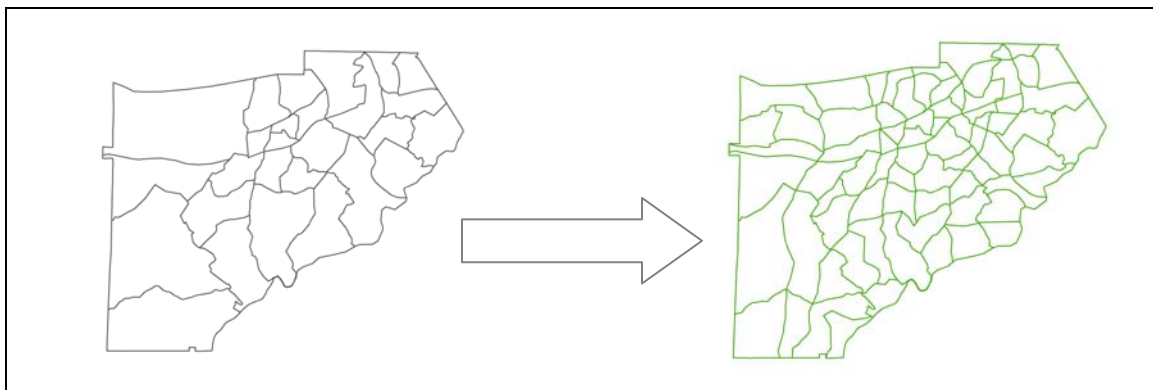
### Commuting Patterns

According to the Douglas County Comprehensive Plan using Census data, over 36 percent of county residents work in the county. This is a three percent increase from 1990, which demonstrates that more employment opportunities are available to residents within the county, therefore travel to work is shorter, but may place a greater demand on some local roads that are used for intra-county travel.

## MODEL REFINEMENTS AND FINDINGS

The ARC regional travel demand model was used as a basis for measuring congestion in Douglas County by using the appropriate travel network and existing and future population, households, and employment. To ensure proper detail additional traffic analysis zones (TAZs) were created and assigned socio-economic data. The existing 27 TAZs were subdivided to provide more detail for a total for 78 TAZs countywide. Smaller TAZs were assigned mostly in areas anticipated to experience significant growth and increasing densification. Figure 6 shows the refinement of the TAZs.

**Figure 6 – TAZ Refinement for Douglas County**



The refined travel demand model was applied using base year 2005 and future year 2030 data to determine the impact of growth on the transportation system. The model network remained unchanged with the exception of additional capacity-adding projects from the approved Envision 6 Regional Transportation Plan (RTP). The impact of forecast growth on the transportation system is dramatic. The following

table shows the percentage of the network by level of service (congestion) for 2005 and 2030.

**Table 2 – Percentage of network congested**

Level of Service	Volume/Capacity ratio	% of network Congested 2005	% of network Congested 2030
A	<0.5	22.3%	13.4%
B	0.5 to 0.69	12.4%	13.0%
C	0.7 to 0.84	25.5%	8.0%
D	0.85 to 1.0	17.2%	13.2%
F	=>1.0	22.6%	52.4%

If no action is taken and growth continues as expected, over 52 percent of the county's transportation network will be operating at more than capacity, causing unacceptable congestion. Another interesting measure of performance for the network is average speed. The travel demand forecasting model predicts a significant decrease in travel speed on the 2030 network. As Table 3 shows the estimated average travel speed in 2005 will decrease on the average from 28 mph to 24 mph 2030. All functional classifications are impacted.

**Table 3 – Average Speed by Functional Classification**

Functional Class	2005 Speed	2030 Speed	Percentage Difference
Freeway	42 mph	36.8 mph	-12.4%
Arterial	32.9 mph	27.2 mph	-17.3%
Collector	25.6 mph	21.3 mph	-16.8%
Local	11.9 mph	11.6 mph	-2.5%
<b>Total</b>	<b>28.1 mph</b>	<b>24.2 mph</b>	<b>-13.8%</b>

Figure 7 maps anticipated congestion of the 2030 using the 2005 network and reflects model results that forecast significant congestion resulting from the county's growth. Over one-half of the network will be operating at an unacceptable level of service (LOS) spread throughout the study area. There are significant deficiencies in the transportation networks as shown by the anticipated LOS. Major areas of concern detected using the model are limited improvements to north-south connections to major routes such as I-20 and US 78, commuter traffic from outside the county and a limited number of river crossings between Fulton and Douglas Counties. Roadways needing additional improvements include:

- I-20 westbound from the Cobb County line to Lee Road
- I-20 eastbound and westbound, west of Bright Star Road
- Highway 5 from I-20 to S. Giles Road
- Bright Star Road between I-20 and Highway 5
- US 78

- All north-south links connecting Paulding and Cobb Counties north of I-20
  - Paulding Connections
    - Dorris Road/S. Flat Rock Road
    - SR 92
    - Burnt Hickory Road
  - Cobb Connections
    - Brownsville Road
    - Sweetwater Road
    - SR 6
- Chattahoochee River crossings
  - Capps Ferry Road
  - Campbellton/Fairburn/Highway 92



Land use and transportation strategies including development policies will be required to maintain level of service and expected quality of life. To focus the assessment of county transportation needs, three subareas were identified and analyzed.

## **SUBAREA ANALYSIS**

Subarea studies assist local governments in assessing needs and developing improvements for smaller activity centers or nodes to respond to anticipated growth as well as increasing transportation demands. Subareas are defined with a particular geographic focus, such as adjacent to a major activity center, and are used to better refine projects, programs, and concepts for inclusion in larger countywide or regional plans.

As part of the CTP, three subareas were selected for focused analysis based upon factors such as:

- Activity nodes
- Existing and future land uses
- Existing and anticipated development patterns
- Economic development trends
- Community boundaries
- Areas of major congestion, especially those centered around major attractions/destinations (e.g. busy shopping corridors/activity centers)
- Traffic counts
- Information about transit, bicycle, and pedestrian facilities and usage
- Collision/crash data
- Descriptions of the roadway, pedestrian, bicycle, transit facilities/service, and roadways in the subarea
- Previous transportation studies
- Information on planned and/or programmed projects

The analysis is the result of a collaborative effort of multiple agencies through their participation in a Project Advisory Team. Subareas were defined with the primary goal of the identification of short and long-term transportation needs and potential system improvements for each area that will enhance connectivity and mobility for internal/local trips. Subarea assessment also will result in strategies that ease demand on major corridors so that they may serve broader inter-county and regional functions.

The subarea selection process focused on regional destinations within Douglas County with unique traffic generation characteristics. As a result of this analysis, three subareas were selected for review.

### **ARBOR PLACE SUBAREA**

Anchored by Arbor Place Mall along Douglas Boulevard in central Douglas County, the Arbor Place subarea is bordered by SR 5/Bill Arp Road to the west and Chapel

Hill Road on the east. It serves as the center of retail activity for Douglas County and draws patrons from the western suburbs of metropolitan Atlanta to eastern Alabama. The primary focus of this subarea analysis was bottlenecking traffic at the Douglas Boulevard intersections of SR 5/Bill Arp Road and Chapel Hill Road including individual turning movements into and out of the mall and travel into, out of, and within the subarea.

### Arbor Place Needs

- Congestion.** Congestion issues were identified in previous studies such as the *Douglasville Livable Centers Initiative (LCI)*, the *City of Douglasville Comprehensive Transportation Plan (CTP)* and the *Arbor Place Mall Transportation Study*. Despite improvements implemented through these studies, travel demand forecast modeling has identified continued congestion. The Congestion Monitoring Network (CMN) is a part of the ARC's Congestion Management Process (CMP) - a federally mandated process that identifies congested areas in the Atlanta metro area. Roadways that have been identified on the CMN which have an impact on the subarea are shown in Table 4. Roadways in the subarea were modeled for level of service. As experienced countywide, congestion in the subarea prevails. Table 5 shows the segments and their forecast level of service.

**Table 4 – Roadways on CMN**

Location	Boundary
Chapel Hill Road	SR 166 to I-20 West
Douglas Boulevard	Bright Star Road to Chapel Hill Road
I-20 West	Douglas/Carroll County line to SR 6/Thornton Road/Camp Creek Parkway

**Table 5 – Level of Service**

Roadway	GDOT Count Station	Existing Segment LOS
I-20 east of Campbellton Street	116	D
Douglas Boulevard east of SR 5	4181	D
SR 5 at Dogwood Hills Drive	14	D

- **Northeast Mall entrance.** Traffic queuing at the northeast mall entrance due to proximity to the Douglas Boulevard/Chapel Hill Road intersection creates bottleneck on Douglas Boulevard between the mall entrance and Chapel Hill Road. A variety of solutions have been implemented since the mall opened mainly involving lane configurations, signal coordination and timing and dedicated striping. City and county staff have expressed the current configuration represents the fourth iteration of improvements and maximizes the available land and signal timing capabilities.
- **I-20 ramps.** Weaving issues at the I-20 exit/entrance ramps immediately to the north.
- **Use of Interstate 20 as a local connector road.** Given the limited amount of east-west mobility options south of I-20, local residents use I-20 as a connector to move across the County. This “puddle-jumping” from exit to exit adds local volume to an already congested facility and pressures interchanges such as Chapel Hill Road, SR 92/Fairburn Road and Lee Road, especially at peak hours. Potentially, auxiliary lanes that serve the collector-distributor function can be used to smooth transitions from merging or exiting traffic to the mainline roadway by adding a lane at the entrance ramp which drops at the next exit. An example exists between the Chapel Hill Road and SR 5 exits in central Douglas County.
- **Safety** issues exist on SR 5 from West Stewarts Mill Road to Rose Avenue. 101 injury crashes were recorded on this segment. This is the only roadway that was reported to have high injury crashes within the Arbor Place Mall subarea.

## DOWNTOWN/GOVERNMENT SUBAREA

As the county seat, Douglasville serves as a major economic, historic, and cultural area. Traffic flow from Paulding and south Cobb Counties along SR 92 and US 78 (Broad Street) impacts local downtown streets as commuters access the Arbor Place Mall retail areas and I-20. Interpreting how streets in the area can be used as major thoroughfares while maintaining the “community feel” is one of the objectives of this subarea analysis.

Coupled with the downtown district is the significant draw of the Douglas County Courthouse, Douglas County Transportation Center, and Wellstar Douglas Hospital. These destinations are clustered southeast of downtown along Hospital Drive. While there is more roadway capacity in the area, the area suffers from peak hour congestion that will increase as the area grows. The challenge will be how the CTP can ensure the area remains attractive to development while not sacrificing level of service.

### Downtown/Government Center Needs

- **Broad Street congestion.** Broad Street experiences some level of congestion especially during train crossing events. Coupled with angled and parallel parking along a short segment of the road, Broad Street can become bottlenecked at certain times of the day. As traffic volumes increased, the need for additional capacity along the corridor has been suggested. However,

- most concepts included removing buildings in the immediate area around the Campbellton Street intersection.
- **Campbellton Street congestion.** Campbellton Street bisects the downtown historic district and serves as a popular cut-through route for residents from Paulding and south Cobb Counties to access the Arbor Place Mall shopping area and I-20 to the south. North of Broad Street, Campbellton Street becomes Dallas Street and carries SR 92. Heavy freight traffic travels into the downtown area using SR 92 to access I-20 as well the western metropolitan area via Paulding and south Cobb Counties. This freight movement coupled with the existing commuter traffic exacerbates the bottleneck in the central downtown area. When a train is crossing during peak hours, delays can become significant. Freight traffic continuing on SR 92 south through downtown cannot cross over the railroad tracks at Campbellton Street due to the steep incline. Trucks must travel east on Strickland Street (parallel to Broad Street to the north of the railroad tracks), turn to cross at Malone Street, turn again on Broad Street, and lastly turn onto SR 92 south. This extra maneuvering contributes to area congestion due to the large turning radii of these vehicles as well as the delay caused by starting and stopping several times over a short distance. The city of Douglasville has initiated the SR 92 relocation project to move SR 92 about ½ mile to the east of its southern leg. The new roadway will tunnel under Broad Street (US 78) and the railroad effectively removing the need to detour tractor-trailer trucks through a maze of city streets. Design work for this project is nearly complete and right-of-way acquisition will begin shortly thereafter. Construction of the project is scheduled for several years into the future.
  - **Cut-through traffic on Campbellton Street.** The relocation project, which ties into the existing SR 92 at Brown Street to the north and Hospital Drive to the south, would bypass the downtown district and reduce cut-through traffic on Campbellton Street, a major thoroughfare from the downtown area and points north to Arbor Place Mall. City officials as well as residents would like Campbellton Street to be used as was originally intended – a residential street. Returning Campbellton Street to a strictly residential street; however, would be a challenging task in the absence of the SR 92 Relocation Project.
  - **Hospital Drive congestion and walkability.** A project to widen Hospital Drive to four lanes from Prestley Mill Road to SR 92/Fairburn Road was recently completed adding much-needed capacity to this vital link connecting SR 92 to the Campbellton Street/Chapel Hill Road area. However, as the area continues to grow, Hospital Drive is forecast for peak hour congestion and proactive improvements are in order. To improve walkability of this area, additional crosswalks are needed to complement existing sidewalks. Also, the center turn lane provides no refuge for pedestrians wishing to cross at non-signalized intersections. In essence, Hospital Drive is a pedestrian barrier between the residential areas to the north and destinations to the south.
  - **Safety.** Fairburn Road is listed as one of the areas “hot spots” for injury crashes. From Newman Street to Eunice Street, Fairburn Road experienced 65 injury crashes between 2002 and 2004.

- Congestion.** Roadways in the subarea were modeled for level of service. Table 6 shows the segments and their forecast level of service. Broad Street and SR 92 showed the lowest LOS in the subarea coming in at D or F. Campbellton Street at Church Street earned the score of F. SR 92 recorded LOS D at its intersection with Spring Street and near Hospital Drive. SR 92 recorded LOS F at the Thompson Street intersection. Conversely, Chicago Avenue, Campbellton Street (south of Church Street) and Prestley Mill Road all received high ratings of LOS A-B.

**Table 6 - Level of Service**

Roadway	GDOT Count Station	Existing Segment LOS
Broad Street at Eunice Street	27	D
Campbellton Street at Broad Street and Church Street	25	F
Broad Street at Club Drive	23	D
SR 92 at Thompson Street	85	F
SR 92 at Spring Street	83	D
SR 92 near Hospital Drive	97	D
Chicago Avenue north of Strickland Street	209	A
Campbellton Street at Adair Place	201	B
Campbellton Street at Wood Valley Drive	198	B
Prestley Mill at Vansant Street	196	B

## SR 6 INDUSTRIAL SUBAREA

As one of the newer freight distribution centers in the metropolitan Atlanta region, the Industrial subarea is becoming strategically important not only to the Atlanta region but to the southeast United States. Increased traffic flow in this area benefits the local economy. However, as tractor-trailer traffic increases, impact mitigation strategies must be considered. The area's unique topography adds a layer of complexity to the problem. It will be important to guide development and improve the area to avoid a blighted or "industrial" appearance as in other industrial areas of the Atlanta region.

### SR 6 Industrial Subarea Needs

- Design for truck traffic.** Turning radii for trucks are much larger than for smaller vehicles, and when not planned for, medians, curbs and shoulders can be damaged. By increasing the radii of curves and turns at intersections, trucks can negotiate turns without damage. Turn lane storage could also be

lengthened to accommodate larger vehicles. SR 6 is a high-speed principal arterial roadway serving as a major connection to Hartsfield-Jackson Atlanta International Airport to the south.

- **Congestion.** A sizeable amount of congestion exists outside of the study area at the SR 6 intersections with Fulton Industrial Boulevard and I-20. As the subarea continues to grow and truck volumes continue to increase, the potential for significant peak hour congestion exists.
- **Aesthetics.** Further improvements to the SR 6 Industrial subarea could include aesthetic improvements focusing on branding and marketing the area. As its name states, this subarea has an industrial feel. Therefore, upgrades could be made to make the area more driver-friendly and aesthetically pleasing. The use of stone treatments for signs and building façades could make the area more appealing.
- **Safety.** Analysis of crash data for the SR 6 Industrial subarea identified three roadways within the subarea that are currently on the Congestion Monitoring Network (CMN) and shown in Table 7.

**Table 7 – Roadways listed on the CMN**

Location	Boundary
SR 6/Camp Creek Parkway	I-285 to I-20 West
I-20 West	SR 6/Camp Creek Parkway to I-285
Riverside Parkway	SR 92 to SR 6/Camp Creek Parkway

With a total of 205, SR 6/Thornton Road experienced the highest frequency of injury crashes in Douglas County. Since this is the logistics center of Douglas County, these accidents frequently involve freight trucks and smaller vehicles. It is understandable that these accidents would be more prone to injury than in other areas. High-speed movement along SR 6 also contributes to the high volume of injury crashes.

**Table 8 – Injury Crashes**

Location	Boundary	Injury Crashes
SR 6/Thornton Road	Oak Ridge Road to South Blairs Bridge Road	141
SR 6/Thornton Road	South Blairs Bridge Road	64

- **Congestion.** Table 9 shows the segments and their forecast level of service. Overall the SR 6 Industrial Subarea averaged the highest LOS of the subareas reviewed. The lowest rating was given to I-20 at SR 6/Thornton Road which received a LOS of F. This is understandable for a variety of reasons including ramp configurations, area topography and large peak hour movements.

**Table 9 – Level of Service**

<b>Roadway</b>	<b>GDOT Count Station</b>	<b>Existing Segment LOS</b>
I-20 at SR 6/Thornton Road	126	F
SR 6/Thornton Road at Interstate West Parkway	325	B
SR 6/Thornton Road north of Riverside Parkway	323	B
SR 6/Thornton Road south of Riverside Parkway	321	B
Six Flags Road south of Interstate West Parkway	4185	B
Six Flags Road north of Riverside Parkway	785	A
Riverside Parkway east of SR 6/Thornton Road	167	B
Six Flags Road north of Factory Shoals Road	43	A

## **INTELLIGENT TRANSPORTATION SYSTEMS**

Traffic operations strategies are an essential and affordable alternative to major capacity additions. Douglas County has identified Intelligent Transportation Systems (ITS) as an important part of their CTP. Although the county's transportation infrastructure does not currently include a significant amount of ITS, the county has recently aggressively pursued ITS options as part of their future overall transportation investment. The goal of ITS is to maximize the performance of the county's existing transportation infrastructure to facilitate safer, quicker travel and enhanced mobility for the public.

Douglas County ITS-related infrastructure consists largely of traffic signal systems. However, a fiber optic network services the Douglas County School System that could be used to provide the School System's Transportation Department real-time access to County traffic information. In addition, there are a few fiber optic cabling projects in the county in various stages of completion that will provide communication to signals and other ITS field devices in the near future. With a cooperative effort from area jurisdictions, ITS infrastructure could be substantially enhanced.

The following describes roles and responsibilities each organization within the county can offer to help implement ITS. Additional roles and responsibilities may be undertaken by these agencies following the implementation of ITS.

County Department of Transportation (*Douglas County DOT*)

- Incident management
- Traffic signal control on arterials
- Arterial traffic prediction capability
- Arterial alternate route plans and communication of information to other operating agencies
- Maintenance of incident data

County and City Departments of Public Works & Maintenance (*Douglas County, Douglasville, Austell and Villa Rica*)

- Manage work zones and disseminate maintenance and construction work activity information to transportation operating agencies and the public.
- Operate road condition and maintenance resource database.
- Process current and forecast weather data, road condition information and local environmental data, and use internal models to develop specialized detailed forecasts of local weather and surface conditions.
- Recommend maintenance courses of action based on current and forecast environmental and road conditions and additional application specific information.
- Track the location of maintenance and construction vehicles and other equipment through manual means.

County 911 Center (*Douglas County 911*)

- Identify necessary responding resources and incident notification to emergency responders (police, fire, medical, hazmat etc.)
- Provide incident information to other incident response agencies.
- Dispatch emergency vehicles.
- Initiate and monitor coordinated incident response.
- Take emergency calls, collecting available information about the caller and the reported emergency, and forwarding this information when necessary.
- Develop and store emergency response plans.

County and City Police, Sheriff, EMS, Fire and Rescue (*Douglas County, Douglasville, Austell and Villa Rica*)

- Provide incident management: verification, response and clearance.
- Provide incident status updates to the 911 center and operating agencies.
- Close roads and notify the 911 center and operating agencies.
- Restore roadway capacity and provide information to 911 centers and operating agencies.
- Enforce traffic laws.
- Enforce red light running violations.
- Provide a direct communications interface between the emergency vehicle and public safety personnel.

Potential ITS projects that will help meet the overall transportation need and should be considered as part of the CTP include the following.

## ITS MASTER PLAN

To appropriately plan ITS investments, a full countywide master plan is needed. The plan will provide long-term policy direction and program projects that will prepare the transportation system for future demands. Specific items to be addressed in the plan include:

- Concept of Operations
- TCC functionality including operations manual, staffing hours, and operating budget
- ITS Infrastructure Maintenance Plan
- Projects describing future ITS components which may include:
  - Fiber optic infrastructure throughout the County, especially in the vicinity of Douglasville
  - Remote communication to ITS devices in rural areas of the County
  - Interconnected traffic signal controllers, centrally controlled from the Douglas County TCC
  - CCTV at major intersections, monitored and controlled from the Douglas County TCC with video connections with GDOT NaviGator
  - Changeable Message Signs (CMS) in advance of exit ramps to I-20 on arterials
  - Regional Incident Management – coordination of incident management activities with neighboring counties and expansion of the HERO patrol route west on I-20 (coordinate with GDOT)
  - Highway Advisory Radio (HAR) to broadcast significant incidents or special event information
  - Ramp Metering at major I-20 crossings (coordinated with GDOT)
  - Automatic Vehicle Location (AVL) on County vehicles include transit vehicles
  - Maintenance and Construction Transportation Management plans
  - CMS and CCTV at the Douglas County Transportation Center
  - Method for sending pertinent information to the GDOT 511 system

## TRAFFIC CONTROL CENTER (TCC)

The TCC will house the central management of ITS devices including traffic signals. The TCC will also share video with GDOT and other agencies and will offer a location for monitoring video and controlling signals. Initially, the TCC may include only a single workstation but wall screens could be in the near future.

## CLOSED CIRCUIT TELEVISION SURVEILLANCE (CCTV)

At various locations throughout the county known as trouble spots, CCTV cameras will be placed to monitor real-time traffic and direct responders in the event of incidents. As a result, problems will be resolved in a timely fashion and traffic will flow more smoothly. Potential locations can be prioritized using crash or congestion data, however, two locations, I-20 near Tyson Road and Arbor Place Mall, are recommended initially.

## EARLY WARNING – SPEED MONITORING SYSTEM

Warning signs with flashing lights and speed display can be placed in advance of trouble intersections to slow approaching traffic. The driver's speed would flash if higher than the recommended speed which can be changed due to conditions from the TCC. The initially recommended location for the display is near the intersection of Chapel Hill Road and SR 166. The purpose is to prevent accidents at safety hot spots.

## RAILROAD CROSSING WARNING SYSTEMS

Due to an unusually large volume of trains through Douglasville, a sophisticated, ITS-based railroad crossing warning system that can be controlled through the TCC is recommended. The purpose is to manage the busy crossings and features include:

- Warning alert to be broadcast when vehicles are stuck on at-grade rail crossings
- Notification when long trains are approaching and will cause significant queuing
- Notification that a train is stopped on the tracks

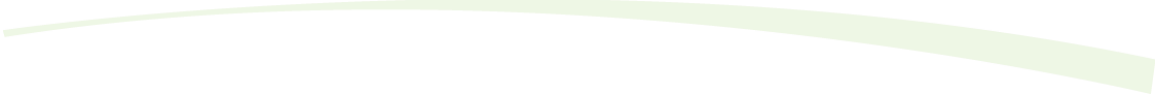
Notification to motorists will be by strategically placed CMS's controlled by the TCC. Norfolk Southern will automatically receive the information as well. The ITS infrastructure should benefit the flow of traffic through the county.

## SAFETY ASSESSMENT

According to the accident data provided by the GDOT Office of Traffic Safety and Design, a total of 14,876 crashes, 51 fatalities and 6,698 injuries were recorded in Douglas County during the 3-year period from 2003 to 2005. Excluding the accident data without RC Link Identifier or Milepost, the locations of the highest crash frequencies in Douglas County were identified and shown in Table 10. High accident locations are shown in Figure 8.

According to the data in Table 10, the top five locations where the highest number of crashes occurred in Douglas County were not on I-20. However, 43 percent of the top 30 locations were on I-20.

As previously discussed, Volume to Capacity Ratio (V/C ratio) is a primary factor for understanding the traffic congestion of a route system, and based on the Douglas County data, there appears to be a relationship between accidents and V/C ratio. The eastern portion of I-20 within Douglas County had a V/C ratio of more than 0.9, which corresponds to highly congested conditions, and the V/C ratio decreased gradually on the western portion of I-20. Figure 8 displays the accident points among the top 30 crash frequency locations that occurred on I-20 and its interchanges between 2003 and 2005. They were all within the segments with highly congested conditions. Moreover, 85 percent of I-20 accident locations among the top 30 crash frequency locations were within the Douglasville city limits.



As shown in Table 10, the majority of accidents have been rear end and angle collisions. Sight distance problems and stop-and-go conditions at driveways and unsignalized intersections may result in a higher number of rear-end collisions. Angle collisions typically occur at attempted turns into unsignalized intersections and locations with sight distance problems. This is evident from the data for accident events on I-20 in Table 10. For the top 30 crash frequency locations not on I-20, most of them are signalized. Thus, the high number of angle collisions at these locations is likely attributed to sight distance problems.

Recent crash history is a predictor of future concerns in the absence of improvements. Therefore, projects will be programmed in the CTP to address locations with historically significant safety concerns.



Rank	Route	Milepost	# of Crashes	Injury	Fatality	Manner of Collision*						3-Year Ave of Crashes
						1	2	3	4	5	6	
1	SR 5	12.82	232	42	0	87	4	105	29	1	6	77.3
2	Douglas Blvd	0.73	189	59	0	74	5	83	25	1	1	63.0
3	US 78(SR 78)	23.53	150	67	0	36	8	86	15	0	5	50.0
4	SR 6	2.15	136	51	0	33	5	70	23	1	4	45.3
5	SR 6	3.01	132	45	0	25	5	82	14	1	5	44.0
6	I-20 (SR 402)	9.52	131	41	0	16	1	97	11	0	6	43.7
7	SR 92	10.25	118	24	0	48	4	52	8	1	5	39.3
8	I-20 (SR 402)	9.06	115	30	0	13	0	92	7	0	3	38.3
9	SR 92	9.17	112	89	0	67	1	33	2	5	4	37.3
10	SR 6	3.84	103	39	0	26	4	55	14	2	2	34.3
11	I-20 (SR 402)	18.60	101	34	0	11	2	49	24	0	15	33.7
12	I-20 (SR 402)	12.38	91	21	0	14	0	64	7	0	6	30.3
13	I-20 (SR 402)	12.02	91	23	0	13	1	68	2	1	6	30.3
14	I-20 (SR 402)	11.90	90	34	0	33	4	44	4	2	3	30.0
15	I-20 (SR 402)	18.99	82	27	1	7	1	48	16	0	10	27.3
16	I-20 (SR 402)	9.08	77	25	0	31	3	32	8	0	3	25.7
17	SR 92	9.61	76	40	0	52	2	16	4	1	1	25.3
18	I-20 (SR 402)	8.73	74	35	0	36	1	26	6	1	4	24.7
19	SR 6	3.30	72	32	0	26	2	32	12	0	0	24.0
20	SR 5	13.27	71	14	0	44	0	12	5	0	10	23.7
21	I-20 (SR 402)	12.36	69	29	0	23	3	30	8	0	5	23.0
22	SR 5	12.64	68	16	0	15	2	40	9	0	2	22.7
23	SR 92	9.97	67	34	0	31	1	29	5	0	1	22.3
24	SR 92	8.32	64	52	0	26	2	29	5	1	1	21.3
25	I-20 (SR 402)	18.91	56	25	0	8	0	31	10	0	7	18.7
26	SR 5	12.35	55	34	0	16	2	32	3	1	1	18.3
27	US 78(SR 78)	16.61	54	10	0	17	0	32	5	0	0	18.0
28	I-20 (SR 402)	8.68	54	9	0	6	0	38	5	0	5	18.0
29	I-20 (SR 402)	10.57	53	6	0	6	0	34	3	0	10	17.7
30	US 78(SR 78)	8.33	52	10	0	24	1	25	1	0	1	17.3

\*Manner of Collision: 1 = Angle, 2 = Head On, 3 = Rear End, 4 = Sideswipe Same Direction, 5 = Sideswipe Opposite Direction, 6 = Not With Motor Vehicle

## RAILROAD CROSSINGS

An active east-west rail line runs from Atlanta to Birmingham passing entirely through Douglas County. The tracks run parallel to US 78 and carry freight as well as Amtrak's passenger rail service. Between Atlanta and Austell is some of the heaviest rail traffic in Georgia. The majority of the railroad crossings in the county are at-grade meaning that rail lines cross roads at the same elevation as the road. As a result the rail crossings can be safety hazards for drivers and train operators. The railroad is also a barrier for emergency vehicles and for emergency evacuation, especially when a train is on the tracks. Over twenty at-grade rail crossings in Douglas County present many challenges in limiting interaction between rail traffic and automobile traffic. By limiting or better managing the rail crossings delays could be reduced thereby improving safety and traffic flow in the county. Figure 9 shows the location of the railroad crossings in Douglas County.



## FREIGHT TRANSPORTATION

The Atlanta region is one of the strongest and fastest growing logistics clusters in the nation. Metro Atlanta ranks fifth in the nation in transportation and logistics employment and the State of Georgia was recently ranked as the best state for logistics because of its air, ground, rail and sea facilities as well as corporate logistics centers and intellectual capital. As a result of the strategic role the region plays in the nation's freight system, identifying and programming effective improvements to accommodate increasing freight, goods, and services movement in the Atlanta area is critical to the region's economic vitality and quality of life.

### ATLANTA REGIONAL PRIORITY FREIGHT HIGHWAY NETWORK

The ARC Freight Plan developed a Regional Priority Freight Highway Network (PFHN) in an effort to guide the limited resources to maximize regional benefit. The PFHN was identified based on the following criteria:

- Average Annual Truck Volume
- Average Annual Truck Percentage
- Connectivity to significant freight generator
- Designation as truck route
- Stakeholder identified route
- Intermodal Connectors
- Role in terms of servicing local versus regional freight needs

The PFHN was reviewed with the freight stakeholders during development of the freight plan. This network shall be monitored and adjusted where needed based on stakeholder input in the future.

The trucking industry transports about 70 percent of the total freight moved in the United States. In comparison, trucked freight represents nearly 84 percent of the freight tonnage moving in the Atlanta region with 53 percent of the outbound, 77 percent of the inbound, and 79 percent of the through freight traveling by truck. Because of the heavy reliance on truck transportation, the highway system is instrumental in the efficient movement of freight in the Atlanta region. Motor carriers utilize the highway system to transport freight to customers throughout the region and to distribute goods to consolidation and intermodal freight facilities.

Following are key observations regarding the network:

- The interstate routes, i.e., I-75, I-85, I-20 and I-285, are severely congested, which is exacerbated by the lack of good alternatives;
- The stem routes embed the interstates into the commercial community. They travel north-south and east-west cutting a partial path through the dense northern territory, and they link up with each other;
- Stem routes can be city streets in some of the denser parts of town, and can operate in a series, such as the corridor linking Fulton Industrial Boulevard to the airport and Douglasville via Camp Creek Parkway and Thornton Road;
- The stem routes bear a close relationship to the economic geography, but they are less the routes that businesses grew up around (although some are),

- as they are the routes for getting *between* businesses. This is a crucial consideration for network and land use management, because cross-town corridors are most efficient when they are not heavily laden with local, turning traffic from roadside development; and
- The prior point notwithstanding, freight carriers (including commercial fleets and the private fleets of local industries) do not describe most of these routes as "truck friendly". In other words, they are not a well-conceived freight transport system; rather they are just the most practical or direct facilities available. Neither are the stem routes a really viable alternative to the congested interstates: carriers consistently report that they cannot avoid the interstates because other options are inadequate. This last perspective is best illustrated by reproducing a map using ARC's travel demand model.

The volumes include overhead truck traffic, which emphasizes the interstate system. Nevertheless, almost no facilities stand out on this map other than the interstate system (the main exception is the Camp Creek-Thornton Road connection to I-20, which passes through the Fulton Industrial Park). Indeed, the map demonstrates the very thing that stakeholders report: no viable interstate alternatives exist, so they are obliged to use them.

## TRUCK MOVEMENT

A summary of the top ten commodities, by weight, shipped by truck and representing inbound and outbound flows is provided in Table 11. The table includes existing tons as well as forecast 2030 tons. The top ten commodities in terms of weight represent 94 percent of the total tonnages of the county's goods movement. The top commodities are nonmetallic minerals (2005-5.7 million tons; 2030-24.8 million tons), secondary traffic/manufactured goods (2005-5.6 million tons; 2030-6.3 million tons) and lumber or wood products (2005-2 million tons; 2030-2.5 million tons). Commodities by weight passing through Douglas County by truck will increase over 132 percent by 2030.

**Table 11 - Top Ten Commodities, by Weight, To and From Douglas County by Truck**

<b>Commodity</b>	<b>2005 Tons</b>	<b>2030 Tons</b>	<b>Percentage Increase</b>
Nonmetallic Minerals	5,678,758	24,731,791	335.5%
Secondary Traffic/Manufactured Goods	5,629,504	6,342,766	12.7%
Lumber or Wood Products	1,988,044	2,543,055	27.9%
Clay, Concrete, Glass or Stone	1,254,667	2,382,297	89.9%
Petroleum or Coal Products	633,679	1,413,288	123.0%
Food or Kindred Products	632,698	1,127,420	78.2%
Metallic Ores	550,754	1,017,123	84.7%
Primary Metal Products	550,362	796,531	44.7%
Transportation Equipment	351,250	542,749	54.5%
Pulp, Paper or Allied Products	342,352	484,141	41.4%
Other	1,028,997	2,023,034	96.6%
<b>Grand Total</b>	<b>18,641,066</b>	<b>43,404,195</b>	<b>132.8%</b>

A summary of the top ten commodities, by vehicles, is provided in Table 12. The number of vehicles carrying the top freight commodities through Douglas County will increase over 133 percent by 2030.

**Table 12 - Top Ten Commodities, by Vehicles, To and From Douglas County by Truck**

<b>Commodity</b>	<b>2005 Vehicles</b>	<b>2030 Vehicles</b>	<b>Percentage Increase</b>
Shipping Containers	717,144	1,828,670	155.0%
Secondary Traffic/Manufactured Goods	417,203	1,367,615	227.8%
Nonmetallic Minerals	269,716	301,308	11.7%
Lumber or Wood Products	79,138	149,088	88.4%
Clay, Concrete, Glass Or Stone	78,332	101,203	29.2%
Food or Kindred Products	27,755	61,924	123.1%
Petroleum or Coal Products	26,481	47,138	78.0%
Transportation Equipment	25,000	40,077	60.3%
Primary Metal Products	22,249	33,537	50.7%
Metallic Ores	21,701	32,243	48.6%
Other	74,237	145,310	95.7%
<b>Grand Total</b>	<b>1,758,956</b>	<b>4,108,113</b>	<b>133.6%</b>

Like most other counties in the Atlanta region, freight and goods movement is projected to increase dramatically over the next twenty-five years. This presents both opportunities for continued economic development as well as substantial challenges to the existing freight movement infrastructure. Strategies to accommodate the

anticipated growth to ensure that an adequate freight transportation network is maintained follow.

### **Key Truck Corridors**

Douglas County has a well developed network of roadways and designated truck routes that play specific roles in network distribution of goods. Deficiencies on the identified key truck corridors should be addressed either with operational improvements (signalization improvements and ITS implementation are two potential examples) or with roadway improvements such as geometric improvements or additional capacity. Potentially, TIP projects could be developed to enhance the freight corridors. There are also design strategies that can be implemented to improve corridor deficiencies on local roadways used by heavy trucks.

Designated truck routes should be designed to handle the higher percentage of trucks and their heavier weights. For example, truck routes should be designed to have greater turning radii and wider shoulders to accommodate the difficult turning movements that must be made by trucks. In addition, truck routes in the area should be designed with higher pavement condition ratings to accommodate the greater load weights. These recommendations along with others are explained in further detail below.

### **Design Standards for Freight Infrastructure**

Officially recognized infrastructure and operational design guidelines implemented by jurisdictions within the county are a fundamental element of effective freight and goods movement planning. Following are a few guidelines recommended to enhance Douglas County's freight movement capacity.

*Design Guidelines for Roadway Elements* - Truck traffic causes a disproportionate amount of roadway wear in comparison to passenger vehicles. Designated truck routes should be designed to higher lane and curb lane widths, as well as shoulder widths. Pavement condition ratings, as well as intersection radii, should also be designed to accommodate significantly higher volumes of freight traffic.

*Signalization Guidelines* - Special traffic signalization considerations should be made along freight facilities. Signal timing plans along freight corridors should be adjusted to account for the larger size and slower acceleration of trucks. Inter-jurisdictional cooperation is essential to ensure coordination of signal timing for maximum benefit.

*Signage* - Guidelines for sign design and placement facilitate the efficient movement of goods, especially for drivers not familiar with the area. This applies to roadway identification and directional signage. Areas without specific guidelines regarding the placement of address signs consequently produce businesses and residences that either lack address signage or place signs in locations difficult to see from the street, making it difficult for unfamiliar delivery drivers to locate individual stops. This can result in delivery trucks having to stop several times to find the right location, which adds to congestion problems, VMT, fuel consumption, and air pollution.

## Incorporating Trucks into Traffic Design

Truck turning radii on narrow roads and narrow roads with roadside ditches are potential barriers facing process shippers and motor carriers. For a large truck, and especially for a driver unfamiliar with the surroundings, ditches can be hazardous; a solution might be a program to cover the trenches with grates, in heavily traveled freight zones. The same problem of road width is exacerbated in a different form by the encroachment of structures on the right of way. Traffic design issues often contribute to a less reliable freight network. By developing a defined network, such as the ARC priority freight network, and understanding the specific freight roles played by the highways, roadway improvement strategies are likely to be more successful. Roadway design standards to accommodate truck traffic include:

- Intersection Design;
- Cross-Section and Geometric Design;
- Signalization; and
- Separation.

*Intersection Design* affects accessibility through delayed right turns due to oncoming traffic. To avoid oncoming traffic, trucks may be forced to “cut corners” onto curbs, while in other instances “curb hopping” may be attributed to lane-dividing medians. In either case, when forced onto curbs or medians while negotiating a right turn, trucks run the risk of load shifts and cargo damage, not to mention damage to the roadway, curb, and sidewalk.

Left hand turning requirements can be accommodated through offset turn lanes where vehicles are held back to a stop bar short of an intersection creating wider turning space for commercial vehicles negotiating corners. Offset turn lanes were cited by motor carriers as sensible management for narrow road widths in districts with significant truck activity. Appropriate intersection design throughout the county to introduce offset lanes where practical should be planned for implementation over a defined time period.

*Cross-Section and Geometric Design* – The geometry of a specific roadway, including the turning radii, lane widths, and other cross-sectional factors should be based upon the intended use or role of the facility. Interstate truck routes tend to accommodate large, as well as smaller trucks and, therefore, should be designed to accommodate those vehicles without creating significant traffic impacts. Local truck routes also should accommodate a variety of truck sizes.

*Signalization* – Signal timing optimization is often performed using data collected from only one or two days and typically does not include truck volumes. Studies to develop better signal plans for heavily traveled truck corridors would benefit the study area. The spacing of traffic signals and the individual timing patterns, while accounting for light-vehicle mobility, in many instances fails to account for the time it takes heavy truck traffic to attain a reasonable speed or to stop. Abrupt starting and stopping by heavy trucks wastes fuel, increases transport costs, and diminishes air quality. Truckers must maintain tight delivery schedules so the less delivery

schedules are impeded by inadequate signalization or intersection maneuverability, the greater the ability for truck drivers to make multiple deliveries with one trip.

The Douglas County Area is an important freight and goods movement and distribution center within the Atlanta region. The area has great potential to improve goods movement within the county and throughout the region. Access to a network of truck routes and CSX rail lines provide the foundation of a network to facilitate freight mobility. Surrounding industrial and freight intensive land uses also offer support to goods movement in the area. As the area continues to grow and change, it will be important for planners and policy-makers to be proactive and ensure planning decisions are well-coordinated to avoid looming conflicts between land uses and transportation activities. Such coordination will also help facilitate sustaining additional economic activity while maintaining residents' quality of life.

## **BRIDGE MAINTENANCE AND PRESERVATION**

Bridges are critical links in the roadway network and in the consideration of safety and capacity. The GDOT Bridge Maintenance Office conducts periodic inspections on structures and prepares a Bridge Conditions Report every two years. The report includes a National Bridge Inspection rating known as the sufficiency rating. On a range of 0 to 100, a bridge is considered deficient and in need of rehabilitation/replacement when its score is 50 or below. Another indicator is the age of a structure. While the age alone does not determine a bridge's condition, most structures are designed for a 50-year life. The Douglas County bridge data was obtained from GDOT and includes location, facility type, size, length, year built, and sufficiency rating.

Table 13 presents the structures (countywide) that either have a sufficiency rating at 50 or below and those structures approaching or exceeding 50 years in age. Eight bridges, highlighted in bold text, are considered deficient: State Route 166 at Anneewakee Creek, Anneewakee Creek Road at Anneewakee Creek, North County Line Road at Interstate 20, Lee Road at Interstate 20, Burnt Hickory Road at Interstate 20, Mason Creek Road at Mobley Creek Tributary, West Tyson Road at Keaton Creek Tributary, and Stockmar Road at Mud Creek. Nine additional structures are approaching or exceeding 50 years in age. The bridges of Douglas County are shown in Figure 10.

**Table 13 – Existing Bridges of Concern**

<b>Facility Carried</b>	<b>Feature Intersected</b>	<b>Year Built</b>	<b>Sufficiency Rating</b>
Bill Arp Road	Hurricane Creek	1956	98.45
Bill Arp Road	Hurricane Creek Tributary	1956	98.45
State Route 61	Mud Creek	1937	89.80
State Route 166	Bear Creek	1957	66.34
State Route 166	Anneewakee Creek	1957	<b>31.82</b>
Anneewakee Creek Road	Anneewakee Creek	1963	<b>48.43</b>
North County Line Road	Interstate 20	1963	<b>35.17</b>
Bridge Road	Sweetwater Creek Tributary	1958	63.50
Lee Road	Beaver Run Creek	1958	87.33
Lee Road	Interstate 20	1962	<b>48.57</b>
Rose Avenue	Anneewakee Creek	1955	90.09
Chapel Hill Road	Anneewakee Creek	1949	87.24
Burnt Hickory Road	Interstate 20	1962	<b>41.76</b>
Mason Creek Road	Mobley Creek Tributary	1936	<b>9.89</b>
West Tyson Road	Keaton Creek Tributary	1956	<b>21.36</b>
Stockmar Road	Mud Creek	1950	<b>16.04</b>
Post Road	Dog River	1951	52.41

Source: GDOT Bridge Maintenance Office, 2007.



## ALTERNATIVE TRANSPORTATION ANALYSIS

Travel demand management (TDM) strategies represent a broad range of mobility options that improve overall transportation efficiency. TDM strategies aimed at improving person throughput via special facilities, programs or public transportation choices are discussed in this section. Existing programs that provide alternative transportation services are inventoried below.

### DOUGLAS COUNTY RIDESHARE

The Douglas County Rideshare Program has provided commuter vanpool service since 1986. A department of Douglas County, Rideshare offers 41 routes currently through a fleet of 57 vans. The vanpools travel between the county and various metro Atlanta destinations such as Downtown Atlanta, Decatur, Midtown Atlanta, Buckhead, Emory University, Perimeter Center, Chamblee-Tucker, Marietta, and the SR 400 corridor. Approximately 400 daily patrons use Rideshare routes, equating to about 115,000 one-way trips annually.

### COMMUTER FACILITIES

During the mid 1990s, Douglas County identified a need for a transportation center to adequately support the Rideshare Program, Georgia Regional Transportation Authority's (GRTA) Xpress bus service, and future public transportation services. Working through local, regional, state, and federal planning partners, funding was secured to develop the Douglas County Transportation Center on Dorris Road adjacent to the proposed I-20/Fairburn Road managed lane interchange. The facility houses a combination administration/terminal building, a bus platform with bays and canopy, and parking for over 600 vehicles. Average daily occupancy for parking ranges between 50 and 75 percent of capacity.

Three park-and-ride lots are currently operated by Douglas County in the northeast quadrant of three I-20 interchange areas:

- Lee Road: Average daily occupancy between 50 and 75 percent of capacity of 145 spaces
- Thornton Road: Accessed from Blair Bridge Road north of I-20 and average daily occupancy between 25 and 50 percent of 116 space capacity.
- Post Road: Average daily occupancy typically ranges between 70 and 90 percent of 78 space capacity.

Rideshare vanpoolers also use lots at the K-Mart store on SR 5, the Target store on Chapel Hill Road, First Presbyterian Church on Campbellton Street, the Courtyard by Marriott off Thornton Road, and the Chevron service station on Liberty Road in Villa Rica.

## PUBLIC TRANSPORTATION

GRTA launched the Xpress bus program in June 2004 to provide regional express bus service in major commute corridors. The GRTA Xpress bus routes serving Douglas County are Route 460 – Douglasville/ Downtown Atlanta, inaugurated in July 2004 and Route 461-Douglasville/Midtown Atlanta, inaugurated in January 2006. Routes 460 and 461 originate at the Douglas County Transportation Center located on Dorris Road in Douglasville and travel via I-20 to Downtown and Midtown Atlanta respectively. Two daily reverse commute trips are provided on these routes during each peak travel period. The following table shows ridership information on these routes:

GRTA Route	Average Daily Ridership			
	2004*	2005	2006	2007**
<b>460 (Arbor Place-Douglasville- Downtown Atlanta)</b>	170.5	307.5	335.1	404.9
<b>461 (Douglasville – Midtown Atlanta)</b>			183.8	210.0

\*Service beginning July 2004

\*\*Services through May 2007

In June 2005, GRTA inaugurated Route 467-Douglasville/Cumberland which was the first Xpress service operating between suburban locations; however, this service was discontinued in March 2006 due to low ridership.

Route 470, inaugurated in January 2005, is an express service operated by Cobb Community Transit (CCT) that originates at the Movies 278 Theater park-and-ride facility on U.S. Highway 278 in the City of Hiram (Paulding County), continuing east to Powder Springs in Cobb County. Buses stop at the Thornton Road park-and-ride lot in Douglas County before traveling via I-20 to Downtown Atlanta. A single trip in the opposite direction, designated Route 47, is provided for reverse commuters.

## PLANNED OR PROGRAMMED SERVICES AND IMPROVEMENTS

Sources used to identify the planned and programmed improvements for transportation demand management and public transportation included Douglas County budget, Atlanta Regional Commission's Envision 6 Regional Transportation Plan (RTP) and 2008-2013 Transportation Improvement Program (TIP), GRTA's Regional Transit Action Plan (RTAP), and interviews with the Douglas County Rideshare Director and other county staff.

- Section 5307 grant funds from the Federal Transit Administration (FTA) may be used to fund up to 80 percent of capital and planning project costs and up to 50 percent for operating costs using a formula based on population, population density, and other service and ridership data. The Section 5307 funds to be distributed to Douglas County in the current 2008-2013 TIP, allocates approximately \$5 million for the six year coverage. The federal grant program provides just over \$4 million with local matching funds of approximately \$1

million. Between 2008-2013 the rideshare program anticipates acquiring new low-emission vans, adding two new park-and-ride facilities, upgrading the Douglas County Transportation Center, upgrading signage at existing park-and-ride facilities, and improving revenue collection and customer interface capacities.

- As part of its Arterial Improvements Program, GRTA is sponsoring an extension of Duralee Lane to Dorris Road, currently in the TIP for construction in 2008. The extension will allow for improved access between the Transportation Center and Fairburn Road near the I-20 interchange.
- A park-and-ride lot on Thornton Road south of I-20, near Riverside Parkway and the New Manchester community is expected to be added during 2010. A park-and-ride lot on Douglas Boulevard near Bright Star Road is sponsored by GRTA, programmed in the 2008-2013 TIP, and estimated to be constructed in 2009. It will be located near the future I-20/Bright Star Road managed lane interchange. On a nine-acre site, the facility will be built in two phases and have accommodations for buses and ultimately over 500 parking spaces. The total projected construction cost of this facility is approximately \$3.6 million.
- An additional park-and-ride lot will be constructed in the vicinity of the future I-20/Thornton Road managed lane interchange at Blairs Bridge Road. The new 11-acre facility will replace the existing Thornton Road park-and-ride and will have accommodations for buses and approximately 500 parking spaces. The projected cost is approximately \$5 million and completion is anticipated in 2013.
- Managed lanes are planned for I-20 in Douglas County to Bright Star Road. The portion of I-20 from Bright Star Road to the western border of the county has been identified as an unfunded need in the Envision 6 RTP.
- As a part of GRTA's RTAP Regional Express Bus Service Plan, future Xpress routes in Douglas County include Route 462 from the new park-and-ride lot at I-20 and Bright Star Road to the MARTA Hamilton E. Holmes Station and Route 465 from the Transportation Center via I-20 and Thornton Road/Camp Creek Parkway to the Hartsfield-Jackson Atlanta International Airport. Additional intermediate-range plans include Xpress Routes 463 and 466 from the Bright Star Road and Thornton Road park-and-ride lots, respectively, to Midtown Atlanta.
- Interested in expanding public transportation in the county and coordinating with regional partners to make Douglas County more accessible and mobile through TDM strategies and public transportation services, the county is planning a bus feasibility study for 2010 to determine the feasibility of bus transit service in Douglas County.

## DEMOGRAPHICS FOR TRANSIT PURPOSES

Douglas County demographic data was used as a preliminary screening to determine the potential for fixed-route bus service.

### Population, Housing and Employment

Population density is often used as an indicator of transit feasibility. Higher population/housing densities often positively correlate with public transportation use. The type and location of employment can direct transit development. Highly dense employment centers are excellent locations for transit service. However, the need for

public transportation often exists in any corridor that is highly congested, and transit may be offered in highly traveled corridors between dense nodes of activities.

The City of Douglasville's 2000 population density (1.47 persons per acre) was the lowest among the 14 cities with a population greater than 20,000 in ARC's ten-county planning area. According to census tract data collected by ARC, residential densities in 2006 were highest in central Douglasville (1.2 dwelling units per acre) and the Arbor Place/Northern Chapel Hill area (1.1 dwelling units per acre). These figures remain well below industry standards (three or more dwelling units per gross acre) supporting hourly fixed-route services in urban areas.

From 2000 to 2006, multifamily housing growth slightly outpaced the growth in single-family housing. Census Bureau data obtained by ARC indicates there were no multifamily permits issued in 2006 by Douglas County, one of only two counties in the Atlanta urbanized area that did not issue permits during this year. Nonetheless, several areas of Douglas County experienced significant growth in multifamily housing units between 2000 and 2006. Based on census tract data from ARC, notable areas of multifamily housing growth include the Bright Star area (increase from 7 to 305 units), the West Lithia Springs/County Line Road area (increase from 68 to 610 units) and central Douglasville (increase from 611 to 1,202 units). Multifamily housing units within the entire City of Douglasville grew by 78.8 percent during this period, the highest rate among twelve cities in the ARC planning area with more than 3,000 multifamily units. Meanwhile, the 2004-2025 Comprehensive Plan reports a high proportion of three-bedroom apartments, approximately 40 percent of all rental units, within the unincorporated area. Normalized by household income, residents of multifamily housing conventionally have a higher propensity for choosing available transit modes than residents of single-family housing.

The Douglas County workforce remains predominantly blue-collar goods production and service sectors. The ARC-estimated net gain of 436 manufacturing jobs in Douglas County between 2000 and 2005 was the highest among the 20 counties in Atlanta's urbanized area. Douglas County was among only four counties during this period to experience employment growth in this sector. The labor force analysis provided in the 2004-2025 Douglas County Comprehensive Plan suggests a future need for public transportation and other mobility options for workers in production industries. Production industry jobs typically follow shift work, which defines specific times for transit services. Routes that serve the manufacturing centers may run less frequently and be available during shift changes.

Further, ARC notes that through 2005 Douglas County had the highest estimated percentage of retail employment (30 percent) in Atlanta's 20-county urbanized area. This is largely due to the preponderance of retail jobs within the Arbor Place/North Chapel Hill and Bright Star census tracts. Average wages in the retail trade are typically lower than in other labor sectors. Improving mobility options in the face of rising commute-related costs can benefit both cost-burdened employees and employers. The retail centers are prime locations for transit services because they are major destinations for employees and county residents.

## Age

About 16.2 percent of the Douglas County population is aged 55 years and above, similar to the 16.5 percent of the population for the ten core counties in the ARC planning area (which includes Douglas County). ARC estimates also indicate the 2000-2005 percentage growth rate among older adults for Douglas County (26.3 percent) lags behind that of the ten-county ARC planning area (30.6 percent). However, ARC projects that persons age 55 and older in Douglas County will increase by 235 percent between 2000 and 2030, compared to a projected growth of 127 percent for the ten-county ARC planning area. Over time, older county residents, particularly those with mobility limitations, will seek accessible transportation options beyond single-occupant travel. According to a 2006 study conducted for ARC by the Carl Vinson Institute of the University of Georgia, six percent of county residents intend to use public transportation once they are no longer capable of driving. Comparatively, without the ability to drive, 21 percent of older adults in the county did not know how they will get around, 63 percent intend to be driven around by other persons, and ten percent plan to find some other means for mobility.

According to the 2006 ARC-Carl Vinson Institute survey, 41 percent of Douglas County's older adults (age 55 and above) are currently employed, the highest proportion within the ten-county ARC planning area, including 27 percent employed full-time. Among the working population, at least 49 percent of those surveyed intend to continue working at least part-time, while only 41 percent have near-term plans for retirement. The survey also revealed that three percent of the county's older adults currently use public transportation, compared to four percent within the ten-county ARC planning area. Workers aged 60 years and above conventionally have a higher propensity to choose available transit modes for work trips than adults aged 30-59.

## Income

Income may be an indicator of transit use; because lower income persons may have less access to a vehicle and would be more dependent on transit service. However, there are many reasons that individuals choose transit, including longer travel times. The success of the Douglas County vanpool and the GRTA Xpress bus service to the county demonstrates that public transportation can be an attractive choice for long distance commutes. The median household income for Douglas County was \$50,108 in 1999 exceeding the national median household income of \$41,994, but below the Atlanta metropolitan statistical area (MSA) income of \$51,948 for the same year. Just under eight percent of the population is living below the poverty level according to the U.S. Bureau of the Census, compared to over nine percent for the Atlanta MSA and 12 percent for the U.S. Douglas County does not have a high percentage of low income persons in comparison with other locations, therefore income may not be a factor in a riders' choice to use transit.

## Vehicle Availability

Approximately five percent of households in Douglas County had no vehicle available in 2000 according to the U.S. Bureau of the Census. Additionally, over 26 percent of households have only one vehicle available. Households nationwide average more

than two people; therefore one vehicle may not be enough to serve the travel needs of one household. Vehicle availability may indicate the need for public transportation services because individuals with no access or limited access to a vehicle may have restricted options because of a lack of other transportation alternatives.

## **BICYCLE/PEDESTRIAN ASSESSMENT**

A comprehensive bicycle/pedestrian plan can increase safety of motorists, cyclists, and pedestrians by recommending facilities and making motorists more aware of safety laws and their immediate surroundings. Dedicated facilities, such as bike lanes, sidewalks or multi-use trails, contribute to fewer conflicts between motorists, cyclists, and pedestrians. The implementation of a bicycle/pedestrian plan offers more economical modes of transportation. For example, the restriping of an existing roadway to allow for a bike lane is less costly than the widening of a roadway.

A more “walkable” community benefits residents by providing bicycle/pedestrian facilities for exercise and outdoor recreation. Increasing obesity issues have caused citizens to incorporate more physical activity into their daily lives. In addition, children have options for greater physical activity by having access to sidewalks and/or bike lanes which would give them an opportunity to walk or bike to school.

Communities are increasingly focusing on how to improve environmental conditions such as noise pollution, air quality, and energy consumption. The implementation of bicycle/pedestrian facilities strategically located throughout the county provides solutions to improve environmental concerns. As more people choose to walk and/or use bikes on dedicated facilities, fewer vehicles occupy roadways resulting in less noise pollution and fuel consumption. Fewer vehicles also results in less emissions contributing to air pollution, improving air quality. Users of the bicycle and pedestrian facilities also benefit from lower fuel cost. Multi-use trails offer access to sensitive environmental areas where the construction of a roadway may be too costly and/or adversely impact environmental resources.

This assessment provides Douglas County guidelines for implementing a bicycle/pedestrian network to aid county staff in plan preparation and development review. Furthermore, these guidelines will address community needs by providing a higher quality of life through greater transportation choice.

## **SUMMARY OF EXISTING AND EMERGING BICYCLE/PEDESTRIAN INFRASTRUCTURE NEEDS**

According to the adopted 2004 Douglas County Comprehensive Plan, Transportation Element, and the 2008 Douglas County Comprehensive Transportation Plan, Inventory of Existing Conditions, limited on-road or off-road bicycle facilities and no multi-use trails are available within unincorporated Douglas County. Some sidewalks exist and are required along public right-of-way as part of the adopted Unified Development Code. However, the sidewalks that currently exist are fragmented and do not provide a connective system. Other plans and studies were evaluated.

- GDOT's *BIKE GA 2002 Plan* includes a route (Route 15) that enters Douglas County in the south where SR 92 crosses the Chattahoochee River and exits along North Sweetwater Road into Cobb County. Route 15 includes 10.8 miles through Douglas County that are suitable for experienced bicyclists and is located along environmental areas such as Sweetwater Creek. However, existing pavement conditions along portions of Route 15 are not ideal for bicycling. Some segments will need rehabilitation and there are rumble strips along shoulders and adjacent to intersections that preclude bicycle use.
- The *Douglas County School-Related Transportation Needs Assessment*, completed in March 2008, focused on Douglas County schools to determine if the transportation and development characteristics around schools can support safe walking and/or bicycling to school. The analysis identified which elementary and middle schools within Douglas County had the most potential for implementing a SRTS program.
- The *Atlanta Regional Bicycle and Pedestrian Walkways Plan* was initiated in June 2006 and a Draft Final Report was published in June 2007. It updated the former (2002) *Atlanta Regional Commission Bicycle and Pedestrian Plan* and covers the 18-county metropolitan Atlanta region. The plan includes priorities for the implementation of projects and improvements within Douglas County that will increase regional connectivity. The designated Regional Strategic Transportation System (RSTS) route within Douglas County follows Bankhead Highway (US 78) from Bill Arp Road (SR 5) in Douglasville and extends east into Cobb County. This route was determined to have a bicycle level of service (LOS) rating of "D" and "E". A Latent Demand analysis was conducted for the study network for bicycling and pedestrian modes. The results of the analysis for the Regional Strategic Transportation System route within Douglas County indicated a low score for latent demand shown below:

Latent Demand Results for Douglas County Strategic Bicycle Corridor	
0-20	Segment Portions – generally located between SR 5 to SR 92 and another portion from Thornton Road to the Douglas/Cobb County line
21-40	Segment Portion – SR 92 to Thornton Road
Latent Demand Results for Douglas County Strategic Pedestrian Corridor	
0-20	Segment Portion – generally located between SR 5 and Rose Avenue

21-40	Segment Portion – located from Rose Avenue to the Douglas/Cobb County line
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*Note: Scores range between 1- 100, with the score of 100 having the greatest potential of generating bicycling and walking trips, while the score of 1 provides the least potential.*

In addition, ARC completed a suitability ranking to rate county roadways for bicycle viability within the existing conditions of Douglas County. The ratings range from best to difficult in ease of use for cyclists on the road. The rating categories are:

**Best Conditions for Bicycling** – These roads typically have low traffic volumes, lower speed limits, wide right lane, bikeable shoulder, low truck traffic, and very few, if any, right turn lanes and commercial driveways.

**Medium Conditions for Bicycling** – Requires more caution than Best Conditions. Includes two or more of the following conditions: Low traffic volumes, lower speed limits, wide right bikeable lane, low truck traffic, and few right turn lanes or commercial driveways.

**Difficult Conditions for Bicycling** – Cyclist should exercise high level of caution and awareness when cycling on these roads. These roads typically have all or most of the following conditions: high traffic volumes, high traffic speed, relatively narrow lanes, high truck traffic, and a high number of right lanes and commercial driveways.

The average suitability rating for bicycle travel routes within Douglas County was between medium and difficult conditions for bicycling. Bankhead Highway, Fairburn Road, SR 92, SR 166, Capps Ferry Road, and SR 5 were all considered to be difficult for bicyclists and were rated low. Fairburn Road and SR 92 are both part of the Central Route Corridor (Route 15) of the State Bicycle Routes Network, as mentioned above. As documented in the state plan, rehabilitation of existing corridors would be necessary to properly serve cyclists on these routes. However, Willow Ridge Road, Sweetwater Industrial Boulevard, and East Church Street between Campbellton Street and Fairburn Road were determined to have the best conditions for bicycling.

- The City of Douglasville has the most concentration of existing, programmed, and proposed sidewalks predominantly in the areas north and south of Bankhead Highway (US 78). A west/east multi-use trail exists along Selman Drive between SR 5 and Campbellton Street. Proposed multi-trails are located north and south of Sweetwater Creek State Park, with the northern segment terminating at Blairs Bridge Road and the southern segment terminating at the Douglas/Fulton County line. Another trail is proposed west of I-20 connecting the relocation of Dorris Road and Prestley Mill Road. At the north end of Malone Street, a trail is proposed to connect a proposed sidewalk to Autry Circle. In addition, bike paths are proposed in three locations: along the entire portion of Prestley Mill Road continuing north along Campbellton Street connecting with the existing multi-use trail at Selman Drive; along the entire

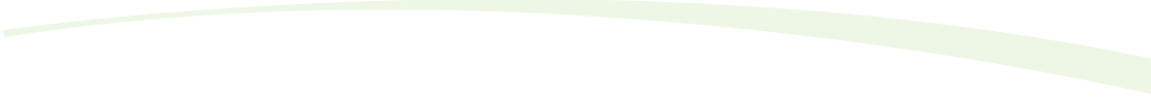
- Riverside Parkway existing within the city limits; and along Blairs Bridge Road between Mount Vernon Road and Thornton Road (SR 6).
- The Liveable Centers Initiative (LCI) program was developed by ARC to help create sustainable, livable, and walkable communities by linking transportation and land use planning consistent with local and regional policies. Since 2000, the LCI program has provided \$3.6 million to implement projects in the City of Douglasville. The Highway 92 study corridor begins at Lake Monroe Road and continues northwest to I-20. One of the primary goals of the program is to provide access to a range of travel modes, including walking and bicycling to enable all uses within the study area. As part of the draft plan, the study team illustrated a number of potential trails parallel to and intersecting Highway 92. One of the trails runs south along Highway 92, east of Pine Drive, and continues east to the proposed Lee Road extension. Other south/north trails are proposed through the study area along Hillcrest Drive, Midway Road, Pope Road, proposed Lee Road extension, and along a proposed unnamed street connecting Douglas County Soccer Association and Deer Lick Park. These proposed trails will serve as a guide for recommending future bicycle/pedestrian facilities within Douglas County.
  - Trails are proposed throughout Douglas County as part of the Chattahoochee Hill Country Regional Greenway Trail Master Plan. All of the proposed trails originate from the larger network along the Chattahoochee River and branch northward into Douglas County. This 98-mile trail is proposed to connect four counties and will enter Douglas County at locations along the Chattahoochee River. One trail is proposed to follow Sweetwater Creek and continue north through the park. Another trail will continue northward into Douglas County near Boundary Waters Park. A trail is also proposed to link the river to Dog River Park and continue northward.

## ACTIVITY CENTERS

In addition to the existing and emerging facilities listed above, other notable attractors within Douglas County should be considered when determining future bicycle/pedestrian infrastructure and connecting systems. These locations may be attractors to cyclists and pedestrians.

- **Sweetwater Creek State Park**  
The only state park located within Douglas County, Sweetwater Creek State Park covers 2,549 acres and provides a variety of activities such as hiking, fishing at the 215-acre George Sparks Reservoir, canoes, picnic facilities, and playgrounds. A visitor center and museum are also located on the premises. Ruins of the New Manchester Manufacturing Company, a textile mill burned during the Civil War, is located along the park trails. Four hiking trails totaling nine miles exist within the park: Red (History) Trail, Blue (Nature or Non-Game Wildlife) Trail, White (Non-Game Wildlife) Trail, and Yellow (East Side) Trail. All of the hiking trails are accessed from Factory Shoals Road.
- **Arbor Place Mall**  
The Arbor Place Mall is a regional mall serving most of the communities west of Atlanta and consists of five department stores, 120 shops and restaurants, 20 eateries and 18 theater screens. The mall's convenient location along I-20

- and neighborhoods just to the south has attracted millions of shoppers since the mall opening in 1999. Existing sidewalks along Douglas Boulevard and Arbor Place Boulevard allow pedestrians to directly access the mall from surrounding communities. A Park & Ride lot at the mall is served by the Georgia Regional Transportation Authority (GRTA) *Xpress* Bus Service.
- **Douglas County Courthouse & Wellstar Douglas Hospital**  
The courthouse, hospital, and Douglas County Municipal Complex are located on Hospital Drive in Douglasville. The courthouse handles cases relating to criminal misdemeanors, civil cases, and traffic citations. According to the City of Douglasville “Sidewalk/Bicycle/Multi-Use Path Map,” sidewalks exist along Hospital Drive and Dorris Road directly adjacent to the government buildings and hospital. A sidewalk is programmed along Prestley Mill Road south of the hospital. A bike path is also proposed along the same portion of Prestley Road, while a multi-use trail is proposed on the eastern side of the property connecting to the Dorris Road relocation. Bicycle/pedestrian facilities located around the courthouse and hospital are beneficial to both residents and employees living in the surrounding communities.
  - **Douglas County Transportation Center**  
The Transportation Center is located on Dorris Road near the courthouse and hospital and provides another alternative for visitors and employees to access these sites without having to drive their own vehicle. A Park & Ride lot is available at the Transportation Center and is served by the GRTA *Xpress* Bus Service and the Douglas County Rideshare/Vanpool program, which provides convenient services for those traveling throughout the county and to Atlanta. This facility benefits pedestrians with sidewalks in place to access the Transportation Center. Bicycle lanes would be a recommended improvement to the Transportation Center because the GRTA buses provide bike racks for riders.
  - **Downtown Douglasville**  
Downtown Douglasville houses the city administrative facilities and is home to a variety of local businesses. This area has the highest concentration of urbanized development in the county. The downtown area provides a destination for special events such as the Art and Antiques Market.
  - **Bicycle Outfitters**  
The store is located at 4900 Stewart Mill Road, southeast of the Arbor Place Mall. A variety of bicycles and gear are sold at the store. An existing sidewalk is provided along Campbellton Street, but terminates at Stewart Mill Road. However, a sidewalk is proposed along Stewart Mill Road between Campbellton Street and Creekwood Drive to the south. Although a bike path is not provided along any of streets adjacent to the store, there are opportunities for pedestrians.
  - **Clinton Nature Preserve**  
The 200-acre preserve is located on the west side Ephesus Church Road and offers a variety of trails for hiking and mountain biking. Carnes Cabin, a pre-Civil War residence, is located along one of the trails and is listed on the National Register of Historic Places.
  - **Dog River Park**



The park is located on the north side of SR 166 and has access on River Road. According to the Douglas County Parks and Recreation Department, there are future plans for trails with trailheads, public access to the river, and active recreational areas.

## IMPROVEMENTS AND CORRIDOR NEEDS

A group of short, mid, and long term bicycle and pedestrian needs were identified.

### Short-Term Needs

Short-term needs for bicycle/pedestrian efforts for Douglas County include:

- Improving the bicycle/pedestrian facilities around schools to provide safe and efficient transportation for students
- Striping and signaling Intersections and crosswalks to be consistent with Americans with Disabilities Act (ADA) guidelines and standards.
- Enhancing the Central Route Corridor (Route 15) project identified in the *Bike GA 2002 Plan*, as well as the RSTS route identified by the *Atlanta Regional Bicycle and Pedestrian Walkways Plan* which follows Bankhead Highway (US 78) from Bill Arp Road (SR 5) in Douglasville and east to the Douglas/Cobb County line.
- Incorporate bicycle/pedestrian facilities into any new roadway projects that have the capacity to include a safe, efficient, and environmentally friendly network while remaining consistent with the design standards and guidelines.
- Other short-term recommendations are shown in Figure 11.

### Mid-Term Needs

Opportunities to incorporate bicycle/pedestrian facilities into potential development or redevelopment projects include:

- Highway 92 Corridor, as part of the LCI
- Bankhead Highway Corridor, between Highway 5 and the City of Villa Rica

It is imperative to capitalize on these opportunities to avoid greater expense to implement bicycle/pedestrian facilities after construction.

### Long-Term Needs

Potential long-term corridors have been identified for further analysis. Below are eight corridors to be considered to enhance local and regional connectivity. These corridors are presented in Figure 12.

1. Bright Star Road/Central Church Road – This segment from Douglas Boulevard south to Stewart Mill Road will allow a connection between the existing sidewalk along Douglas Boulevard to the proposed sidewalk on Stewart Mill Road. Furthermore, a Park and Ride Lot is proposed near the intersection of Douglas Boulevard and Bright Star Road.
2. US 78/Bankhead Highway – As more analysis is completed for the Bankhead Highway Corridor, it is recommended that any opportunities be identified for



connecting a bicycle/pedestrian network along this corridor between the City of Douglasville and the City of Villa Rica.

3. South Hillcrest Drive – A bike path and sidewalk are proposed for Prestley Mill Road in the City of Douglasville terminating at Slater Mill Road. As part of the LCI study for Highway 92, a trail is proposed along South Hillcrest Drive between Longview Drive and Midway Road. If implemented, there is an opportunity to continue a trail south along Hillcrest Drive connecting these two segments.
4. Lee Road – The portion of roadway between I-20 and Highway 92 should be considered to provide connectivity between attractors such as the Highway 92 Activity Center, the Park and Ride Lot near the I-20 interchange, and access to roads leading to Sweetwater Creek State Park.
5. Highway 92/Riverside Parkway – A bike path and sidewalk are proposed along Riverside Parkway in the City of Douglasville. With trails proposed as part of the Highway 92 LCI study, there may be an opportunity to connect these two segments by continuing the facilities along Riverside Parkway west to Highway 166/Fairburn Road, then north to the proposed trails along Highway 92. Further analysis should be completed to determine if a trail could be located along or parallel to the highway.
6. Riverside Parkway – A bike path and sidewalk are proposed along Riverside Parkway in the City of Douglasville. A portion of Riverside Parkway, east of the Douglasville city limits, continues east to Thornton Road. With a new Park and Ride Lot proposed near the intersection of Riverside Parkway and Thornton Road, there is an opportunity to continue the trail along this portion of roadway.
7. Thornton Road – To extend the Riverside Parkway segment, bicycle/pedestrian facilities implemented along the portion of roadway between I-20 and Riverside Parkway could contribute to the regional network that connects attractors across the county and into the City of Douglasville and the City of Villa Rica. A Park and Ride Lot exists near the I-20 interchange and a lot is proposed near the intersection of Thornton Road and Riverside Parkway.
8. Brookmont Parkway/Bomar Road – A trail is proposed to Bomar Road, northeast of Pope Road as part of the Highway 92 LCI study. If implemented, there is an opportunity to connect the trail to the proposed sidewalk along the intersection of Chapel Hill Road and Brookmont Parkway. Furthermore, this portion of the network could link Fowler Field, Douglas County Soccer Complex, and Deer Lick Park.





## SUMMARY OF NEEDS

The transportation needs in Douglas County were determined using multiple criteria including, projected population and employment, roadway deficiencies, travel demand model results and community input. The following summarizes the transportation needs for Douglas County.

### COMMUNITY NEEDS

- Explore lower cost solutions rather than increasing capacity
- Consider bicycle and pedestrian facilities when developing new transportation projects or improving existing
- Reduce bottlenecks and manage congestion
  - Arbor Place Mall
  - Chapel Hill Road
  - Thornton Road
  - Highway 5
  - Fairburn Road/Highway 92
  - Rose Avenue
  - Liberty Road
- Safety improvements
  - Better signing and marking
  - School areas and connections
- Operational improvements
  - Signal timing
  - Turning lanes

### LAND USE AND TRANSPORTATION

- Ensure compatibility between land use and transportation infrastructure
- Implement policies that evaluate land use as a component of transportation project development
- Apply access management strategies
- Retrofit roadways for improved access management:
  - Chapel Hill Road
  - Fairburn Road/Highway 92
  - State Route 6
  - Bankhead Highway/US 78
- Consider the following access management treatments as appropriate for associated land use and travel demand
  - Driveway consolidations
  - Adjoined parking areas
  - Pullovers and auxiliary lanes
  - Intersection control modifications
  - Median and lane separation treatments
  - Turn restrictions and channelization

## TRAVEL DEMAND

Roadways needing improvements based on the travel demand model results include:

- I-20 westbound from the Cobb County line to Lee Road
- I-20 eastbound and westbound, west of Bright Star Road
- Highway 5 from I-20 to S. Giles Road
- Bright Star Road between I-20 and Highway 5
- US 78
- All north-south links connecting Paulding and Cobb Counties north of I-20
  - Paulding Connections
    - Dorris Road/S. Flat Rock Road
    - SR 92
    - Burnt Hickory Road
  - Cobb Connections
    - Brownsville Road
    - Sweetwater Road
    - SR 6
- Chattahoochee River crossings
  - Capps Ferry Road
  - Campbellton/Fairburn/Highway 92

## SUB-AREAS

Three sub-areas were identified and analyzed within Douglas County. The following needs were identified within each sub-area.

### Arbor Place Mall

- Improve the northeast entrance
- I-20 ramps to Chapel Hill Road
- Diversion of local traffic from I-20 (I-20 being used as local connection)
- Alleviation of safety hazards; primarily on Chapel Hill Road and Douglas Boulevard
- Better signage directing travelers to mall entrances

### Downtown/Government Center

- Relieve congestion on downtown streets
  - Broad Street
  - Campbellton Street
  - Hospital Drive
  - Fairburn Road/Highway 92
- Improve safety conditions, especially at railroad crossings
- Enhance walkability
- Provide truck loading locations

### SR 6 Industrial Area

- Upgrade to truck friendly design standards

- Provide alternative routes for vehicular traffic
- Improve area aesthetics to buffer industrial from residential areas
- Improve safety of SR 6 because this roadway has the highest frequency of injury in Douglas County
- Reconfigure the interchange of SR 6 and I-20

## INTELLIGENT TRANSPORTATION SYSTEMS

- Coordinate between multiple jurisdictions and agencies
- Develop an ITS Master Plan
- Consider the following potential ITS treatments:
  - Traffic Control Center (TCC)
  - Closed Circuit Television (CCTV) Cameras
  - Speed monitoring
  - Railroad crossing signals

## SAFETY

Resolution of the needs met some safety concerns. However, high accident rates were used to identify locations to be reviewed for potential roadway deficiencies. The following locations have been identified as high accident locations:

- SR 6 and I-20
- SR 6 and US 78
- SR 92 and I-20
- SR 92 and US 78
- SR 92 between I-20 and US 78
- Chapel Hill Road and I-20
- SR 5 and I-20
- SR 5 and Douglas Boulevard
- SR 5 and US 78

## RAILROAD CROSSINGS

- Reduce the number of at-grade crossings
- Improve the geometrics of existing at-grade crossings
- Consider ITS treatments to better manage interaction between trains and traffic

## BRIDGES

- Replace or rehabilitate bridges with low sufficiency ratings
  - SR 166 at Anneewakee Creek
  - Anneewakee Road at Anneewakee Creek
  - North County Line Road at I-20
  - Lee Road at I-20
  - Burnt Hickory Road at I-20
  - Mason Creek Road at Mobley Creek Tributary
  - West Tyson Road at Keaton Creek Tributary
  - Stockmar Road at Mud Creek

- When possible combine bridge project with roadway improvement project

### ALTERNATIVE TRANSPORTATION MODES/TRANSPORTATION DEMAND MANAGEMENT

- Conduct a Bus Feasibility Study
- Provide support infrastructure for existing service (e.g. park and ride, direct access)
- Improve connectivity to planned or programmed projects that carry transit (e.g. managed lanes)
- Consider TDM strategies to manage congestion rather than capacity adding projects

### BICYCLE AND PEDESTRIAN FACILITIES

- Connect major activity centers with sidewalks and bicycle lanes
- Improve bicycle and pedestrian facilities around schools
- Provide safe and accessible bicycle and pedestrian facilities