# CONNECT CENTRAL GEORGIA STUDY

Connect Central Georgia

# FINAL REPORT

July 2013

Georgia Department of Transportation
Office of Planning

*Photo: SR 88*

# TABLE OF CONTENTS

## List of Tables



## List of FIGURES

# 1 INTRODUCTION

## 1.1 BACKGROUND

For many years, improved safety and connectivity across Central Georgia has been a priority for the state. Home to three of Georgia's largest cities, the study area has been a strategic target for economic development initiatives and is identified as a critical freight and mobility link between Georgia and the Southeastern U.S. Though this area has long been on the minds and agendas of many state, regional and local leaders, interest has recently been revived. Investing in Tomorrow's Transportation Today (IT3), a "business case" for transportation in Georgia, identified completion of the Fall Line Freeway, the key east-west roadway connection across the state, as part of a potential inter-regional solution to improve freight and people mobility in the state.

Facilitating efficient movement through central Georgia is critical for several reasons. The 31-county study area, shown in Figure 1-1, is home to three military bases: Fort Benning in Columbus, Robins Air Force Base in Warner Robins, and Fort Gordon in Augusta. Additionally, the "fall line" area is known for its abundance of kaolin, one of Georgia's largest natural resources. Over 8 million tons of this white rock are mined annually in the state, at an estimated value of over $1 billion. Kaolin can be found in a variety of household products, including paper, ceramics, plastic, paint and pharmaceuticals. As part of this study, kaolin and other important economic and natural resources within the study area were considered while planning for future transportation needs.

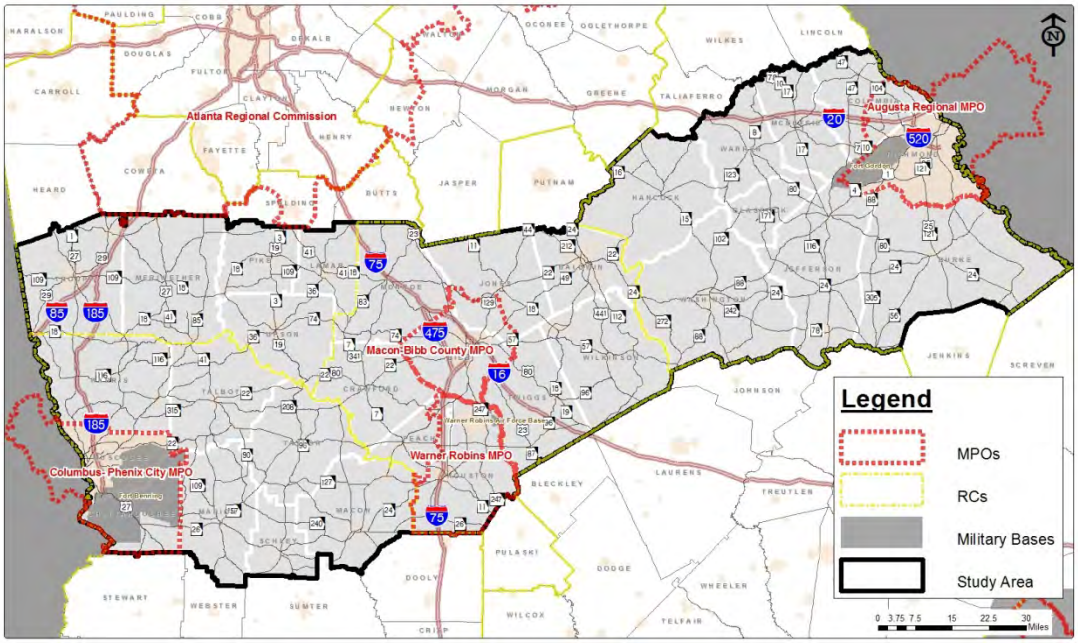



*Figure 1-1: Connect Central Georgia Study Area*

Several past studies have recommended improvements which traverse the Central Georgia region, however, this study will be the first to focus on traffic and goods movement through the entirety of the defined study area. To name a few, IT3 provided high level analysis on the need for and impact of improved connectivity through Central Georgia. The High Priority Corridor 6 study provided recommendations for connecting Columbus, GA to the ports of Savannah, GA. Additionally, the 14th Amendment Highway study conducted by the Federal Highway Administation (FHWA) developed alternatives and a cost for an interstate route from Augusta, GA to Natchez, MS based on established control points. The Connect Central Georgia Study builds upon these efforts, basing recommendations on specific demand-based and data-sourced travel needs in the study area through the year 2035.

*Several past studies have recommended improvements which traverse the Central Georgia region, however, this study will be the first to focus on traffic and goods movement through the entirety of the defined study area.*

Transportation initiatives, including the Governor's Road Improvement Program (GRIP), have historically been implemented to improve transportation infrastructure throughout Georgia and have benefited the Connect Central Georgia study area. The GRIP system consists of nineteen primary routes and truck routes which are, or are proposed to be, imporved or widened to multi-lane highways; eight of which, described below, traverse the study area:

- US 82 and SR 520 (South Georgia Parkway) from Columbus, GA east to Brunswick, GA - Runs northwest to southeast in southwestern portion of study area. This 262 mile corridor is 100 percent completed to GRIP standards.
- US 27 from Amsterdam, GA north to East Ridge, GA – Runs north to south in western portion of study area. Currently, 86 percent of this 352 mile corridor has been improved.
- US 341 (Golden Isles Parkway) from Brunswick, GA northwest to Perry, GA – Runs northwest to southeast in south central portion of study area. This 168 mile corridor is 100 percent complete.
- US 441 from Fargo, GA to Dillard, GA – Runs north to south through central portion of study area. At 371 miles, this is the longest of the GRIP corridors and is currently 53 percent complete.
- SR 121 and US 25 (Savannah River Parkway) from Savannah to Augusta (includes a potential section of the proposed I-3 south of Augusta); a spur route follows US 25 south to I- 16 south of Statesboro – Runs north to south in eastern portion of study area. This 156 mile corridor is complete.
- Fall Line Freeway (US 80, SR 96, SR 49, SR 24, SR 88, US 1) from Columbus east to Augusta - a portion of this route between Macon and

Augusta is being considered for I-14 – Runs east to west through the middle of the study area. Currently, approximately 86 percent (185 miles) is open to traffic. [This number includes a section through Macon which routes on I-16 and I-75.] The remaining upgrades exist along the segment between Macon and Augusta, as the section from Columbus to Macon is fully complete.

- US 19 (Florida-Georgia Parkway) from Thomasville, GA north to Griffin, GA – Runs north to south in western portion of the study area. This 194 mile corridor is 100 percent complete.
- US 1 from Folkston north to Augusta, GA and SR 17 from Augusta north to Toccoa, GA (includes a potential section of the proposed I-3 north of Augusta) – Runs north to south in eastern portion of the study area. Currently, 47 percent of this 331 mile corridor is complete or under construction.
- US 280 (Power Alley) from Columbus, GA east to Savannah, GA – Runs northwest to southeast through southwestern portion of the study area. Currently, 27 miles of this corridor are in project development, with the remaining 77 miles incomplete.
- SR 15 from US 441/SR 24 in Watkinsville, GA to US 1 in Toombs County – Runs north to south in eastern portion of the study area. This 150 mile corridor has not yet been funded.

Project sheets for each of the GRIP corridors can be accessed at:

http://www.dot.ga.gov/informationcenter/programs/roadimprovement/GRIP/Pages/GRIPFactsandMap.aspx

The GRIP system's goal is to place 98 percent of Georgia's population within twenty miles of a multi-lane highway, and provide access for oversized trucks to all cities having populations above 2,000. Significant investment has already been made throughout the study area to upgrade the Fall Line Freeway. Currently, approximately 86 percent (185 miles) of the Fall Line Freeway has been improved. The final section south of Milledgeville is currently under construction. Capitalizing on prior investment, such as this, will be an important consideration in developing recommendations in the 31-County study area.

## 1.2 Study Development Process

In order to identify needs and develop recommendations for the study area, the Project Team has employed a process that combines both quantitative and qualitative analysis, guided by input from key stakeholders and the public. This section documents the first phase of this process, which included the development of goals and objectives, the review of previous studies and the technical analysis of existing population, employment, land use, crash data and various traffic data.

### 1.2.1 STUDY PURPOSE

As noted earlier, many efforts have identified a need for east-west transportation facilities in the study area. It is the goal of this study to build upon these efforts, learning from the obstacles encountered, to arrive at a solution that best meets the regional and local connectivity needs.

The purpose of this study is to:

- ***Assess capacity and operational needs*** through the horizon year 2035 for travel through Central Georgia;
- Develop recommendations for safe and efficient regional connections that ***meet future demand*** while ***maximizing and preserving existing assets;*** *and*
- ***Enhance connectivity*** through Central Georgia.

### 1.2.2 REVIEW OF PREVIOUS EFFORTS

Over the past few decades, a great deal of time and resources have been allocated to studying improvements for east–west mobility in the study area which were ultimately deemed infeasible for a variety of reasons, including environmental constraints, political controversy, and funding shortfalls. Additionally, the Metropolitan Planning Organizations (MPO's) in the area, which include the Columbus-Phenix City MPO, the Macon MPO, the Warner Robins MPO, and the Augusta-Richmond County MPO, as well as several of the counties in the study area, have recently conducted comprehensive plans, all of which were reviewed for the purpose of this study. After reviewing these documents, it became clear that a majority of the east-west mobility investments have been focused on the Fall Line Freeway.

The goal of this study is to build upon these previous efforts to develop a comprehensive solution to improving east-west mobility through central Georgia. It is critical to understand the issues, opportunities and recommendations that resulted from these previous studies. Therefore, a review of previous efforts that were relevant to the development of this plan, above and beyond the comprehensive plans noted above, was conducted throughout the study area. The review was separated into corridor focused efforts, statewide efforts and regional/local efforts. The corridor focused and statewide efforts are illustrated on the timeline below. Regional efforts entail mostly ongoing activities, such as updates to their current program of projects and are, therefore, not included on the timeline.

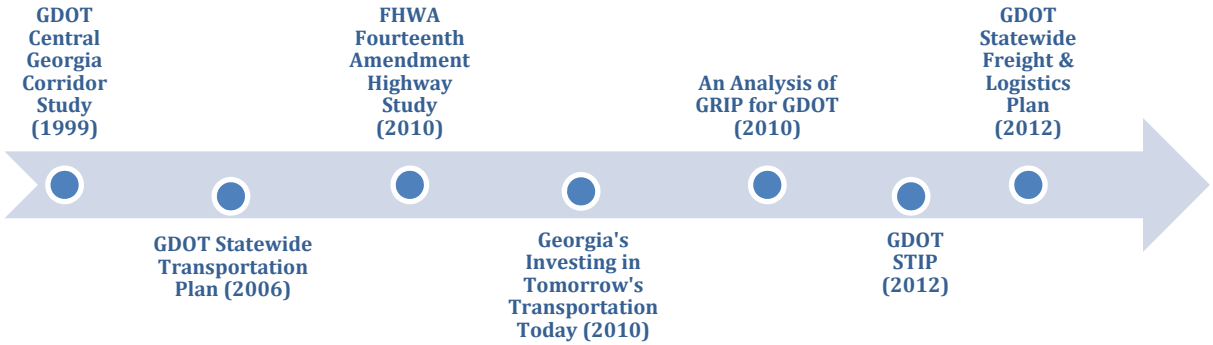



*Figure 1-2: Timeline of Statewide and Corridor Studies*

### *Central Georgia Corridor Study*

In May of 1999, the United States Department of Transportation (USDOT) awarded the Georgia Department of Transportation (GDOT) a grant from the National Corridor Planning and Development (NCPD) Program to perform an evaluation of High Priority Corridor Six (HPC 6), through the Central Georgia Corridor Study. The ultimate goal of this strategic east-west corridor was to connect Georgia's ports to those across the nation, and on the western U.S. coast. GDOT expanded the scope of this study to include a focus on economic development in a 45-county study area (shown in Figure 1-3), which spanned from Columbus to Savannah, GA.

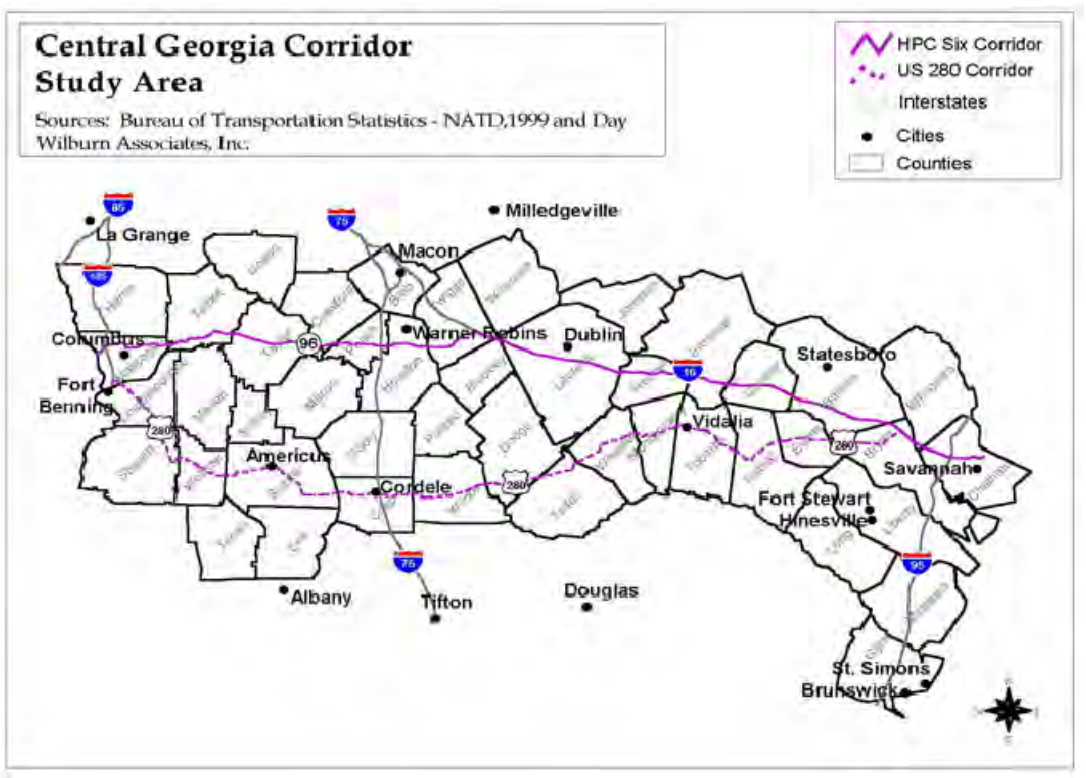



*Figure 1-3: Central Georgia Corridor Study Area*

The study included the evaluation of the HPC Six corridor, as well as the US 280 corridor, as shown in Figure 1-4. The study area varies from that of the Connect Central Georgia Study in that it takes a more southern path, connecting to Savannah, instead of Augusta and does not travel through Macon. Safety was a primary concern of this study.

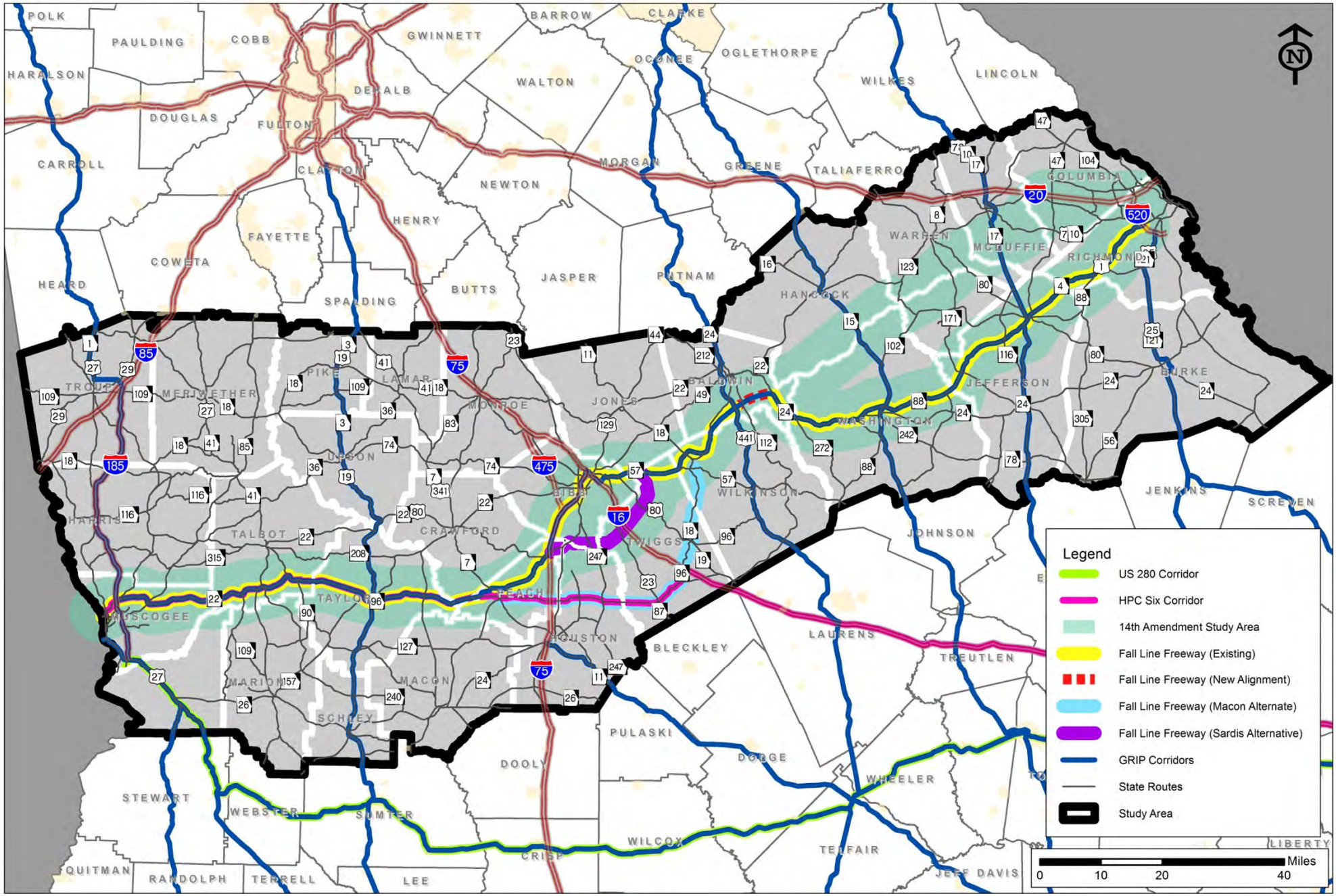
Recommendations from the study included a number of projects that would result in a 4-lane divided facility for the full extent of both HPC 6 and US 280. Along US 280, the remaining non-upgraded roadway was split into 15 segments, which were prioritized based on connectivity, accessibility and economic vitality, safety, system usage and congestion and pavement condition. These projects totaled $322 million. US 280 was later added to the GRIP system by state legislature in the year 2001.

On the HPC 6 corridor, $2.03 billion in improvements were recommended. From these, seven projects were identified as being most eligible for National Corridor Planning and Development (NCPD), of which one is currently in design, four are covered by the proposed SR 96 widening projects under development, and the remaining two are not being carried forward.

### *Fourteenth Amendment Highway Study*

In June of 2010, the Federal Highway Administration (FHWA) kicked off a study of the 14th Amendment Highway. In order to guide the development of alternatives, control points through which a hypothetical interstate could traverse were established. These points include the endpoints of Augusta, GA and Natchez, MS, and midpoints of Montgomery, AL, Columbus, GA and Macon, GA. Sub-control points were also established. Within the Connect Central Georgia study area, these include the cities of Fort Valley and Wrens.

In Georgia, the facility would follow the Fall Line Freeway alignment between control points Columbus and Fort Valley. From this point, the corridor would use SR 96 to I-16, then continue on SR 96 to SR 18, then SR 57 (Fall Line Freeway) east to Wrens. Another option the study considered would follow the Fort Valley Bypass to SR 49 to I-75, which it would follow to I-16 to US 129/SR 87, to US 80, to SR 57 (Fall Line Freeway) to Wrens. Though this route would require more 2-lane road improvements, it could avoid the Ocmulgee National Monument. Past Macon, the corridor would follow either US 1 to I-520 or SR 221 to I-20, on to Augusta, the end point.




*Source: GDOT*

# Previously Studied Corridors

Figure 1-4

### *GDOT 2005-2035 Statewide Transportation Plan*

While GDOT is currently beginning an update to the Statewide Transportation Plan, the existing plan is in place having been adopted in January 2006 and spanning the 2005 to 2035 planning horizon. The SWTP assesses the current and future statewide multi-modal transportation needs and the linkages between modes. The plan includes forecasted employment and population and the resulting transportation demand for year 2035.

The plan resulted in a constrained transportation program, based on the $86 billion in funding projected for the 30 year study horizon. It also included an unconstrained program, which totaled $160 billion in needs, which results in a projected funding gap of $74 billion. To mitigate the economic impact of this underfunding of the transportation system, the plan focuses on strategic resource allocation and economic growth via transportation enhancements as a key factor in developing recommendations.

### *2012 Statewide Freight & Logistics Plan*

The Georgia Statewide Freight and Logistics Action Plan represents the next step in this progression of freight interest and activity. It was led by GDOT and was developed through an innovative partnership of a broad set of stakeholders, including the Georgia Department of Economic Development, the Governor's Office, and a private-sector stakeholder advisory committee. This collaboration allowed for a strategic, business-oriented approach that developed specific freight and logistics improvement solutions that would support continued economic impact from the state's growing freight & logistics sectors.

The Freight and Logistics Plan determined that by investing $18-$20 billion over the next 40 years in freight improvement projects, the State could generate over $65 billion in additional economic output and thousands of new jobs. One focus of this investment is through the deepening of the Savannah Harbor, a top freight priority for Georgia. The importance of this project for Georgia's economic competitiveness was reinforced both through technical analysis conducted by the U.S. Army Corps of Engineers and several rounds of input from the private sector during the study.

An average of 70 percent of all trucks entering Georgia have a final destination somewhere in the State, and the vast majority of goods moved in Georgia are carried by truck. Multi-modal connections are important in the state and Interstate mobility is the critical need for Georgia's trucking industry. Adding capacity to I-85 between the Atlanta metropolitan region and the South Carolina border was identified as on eof the greatest needs in relation to the state's long-haul corridor network. Additional need was identified along I-75, particularly between Atlanta and Macon, as well as further investigating the specific needs of a general corridor connecting the LaGrange and Macon areas.

### *Investing in Tomorrow's Transportation Today (IT3)*

"Investing in Tomorrow's Transportation Today" (IT3), was developed to guide transportation investment in Georgia over the next 20 years. This plan, adopted by the Governor and the State Transportation Board in June 2010, assessed needs and recommended resource allocations based on three categories: statewide freight and logistics, people mobility in metro Atlanta, and people mobility in the rest of the state.

GRIP corridors were key to the recommended investment strategy for several reasons. It predicted that investment in key GRIP corridors could enhance the efficiency and reliability of goods movement, which, in turn could improve economic vitality; completion of certain GRIP system routes could help provide seamless connections from border to border. Also, investment in important GRIP corridors can help satisfy some of the $14 billion of needs in rural areas and mid-sized cities.

### *An Analysis of GRIP for GDOT*

In August of 2010, GDOT conducted an analysis of the 16 uncompleted GRIP corridors. The purpose of the study was to prioritize the remaining GRIP projects so that the segments that best meet the state's transportation network investment objectives (as defined in the Statewide Strategic Transportation Plan) received the limited available funding. The total cost for the 1,175 miles of remaining GRIP Corridor was estimated at $11.1 billion. The remaining portion of the Fall Line Freeway, a 30 mile segment east of Macon, had an estimated cost of $396 million. This project was ranked 5th out of the 13 segments.

## 1.2.3 TRANSPORTATION PROGRAMS

In addition to the statewide and corridor focused planning efforts, recognition of local and regional transportation initiatives had to be incorporated. These efforts, defined below, reflect those consideration for regions within the Connect Central Georgia study area.

### *Transportation Investment Act*

In June 2010, the Transportation Investment Act (TIA) was signed into law as a potential funding source for Georgia's transportation system. This law allowed Georgia's 12 regions to each develop proposed transportation project lists to be considered by voters for funding via a potential one percent regional sales tax. These regions were based on the existing regional commission boundaries. Project lists were developed by Regional Roundtables, consisting of one elected official from each participating county and one mayor from each county (elected at large by all mayors of that county). These roundtables worked together to develop a transportation project list for their region. Four regions were represented within the study area, including the Three Rivers

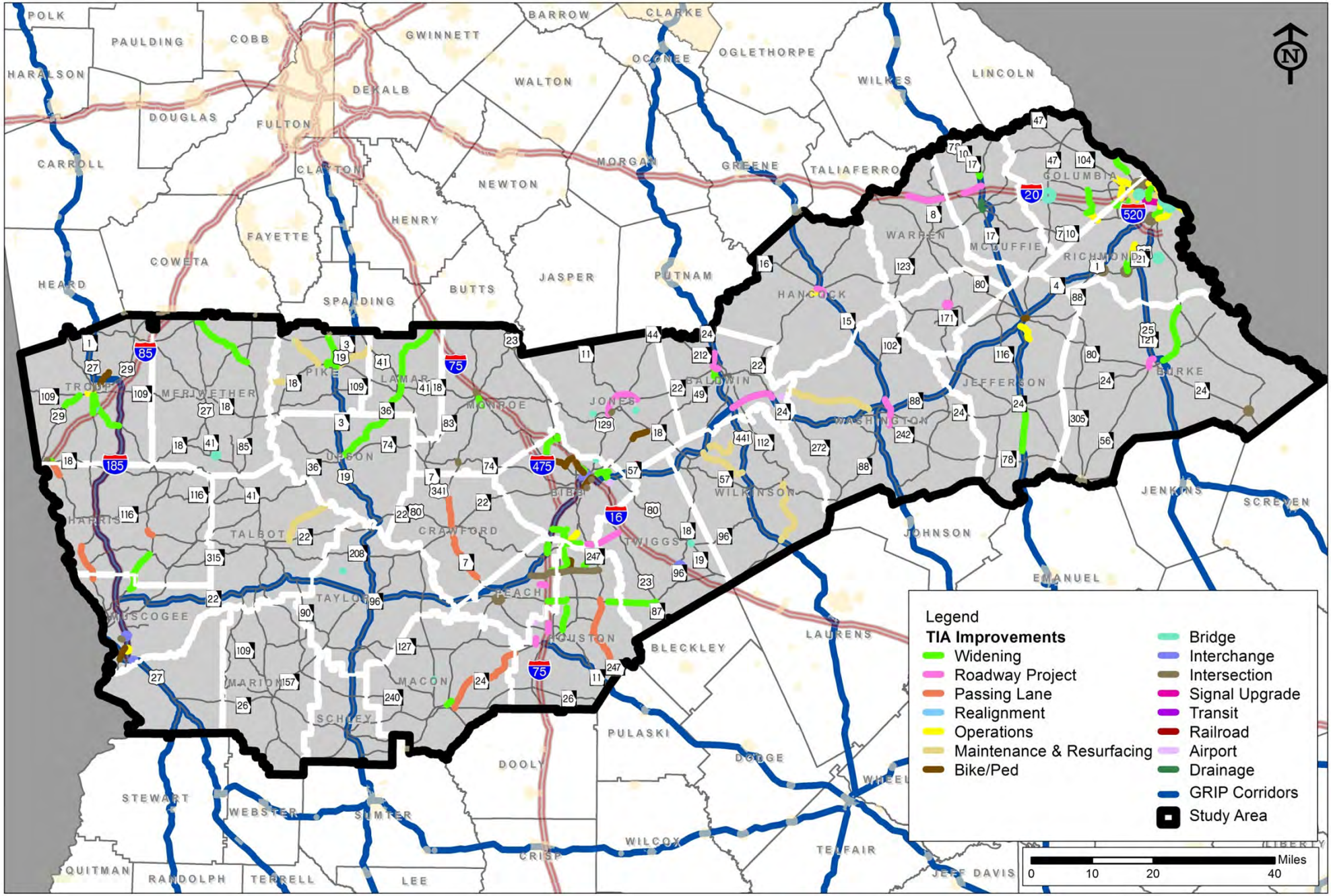
*TIA was passed in 3 of the 12 regional commissions, all of which were within the study area. Two of these regions, River Valley RC and Central Savannah River Area RC, are in the study area.*

RC, the River Valley RC, the Middle Georgia RC and the Central Savannah River Area RC. Of these four regions, two passed the 1% sales tax - River Valley RC and Central Savannah River Area RC.

If approved, the sales tax money collected under TIA would be spent within each region, with 75 percent of the funds going towards the roundtable-approved project list and 25 percent left to local discretion. This referendum vote occurred at the July 31, 2012 primary election on a region by region basis, by majority vote. Roundtable-approve projects on the TIA lists within the study area are shown in Figure 1-5; detailed descriptions can be found in Appendix A.

### *GDOT Statewide Transportation Improvement Program (STIP)*

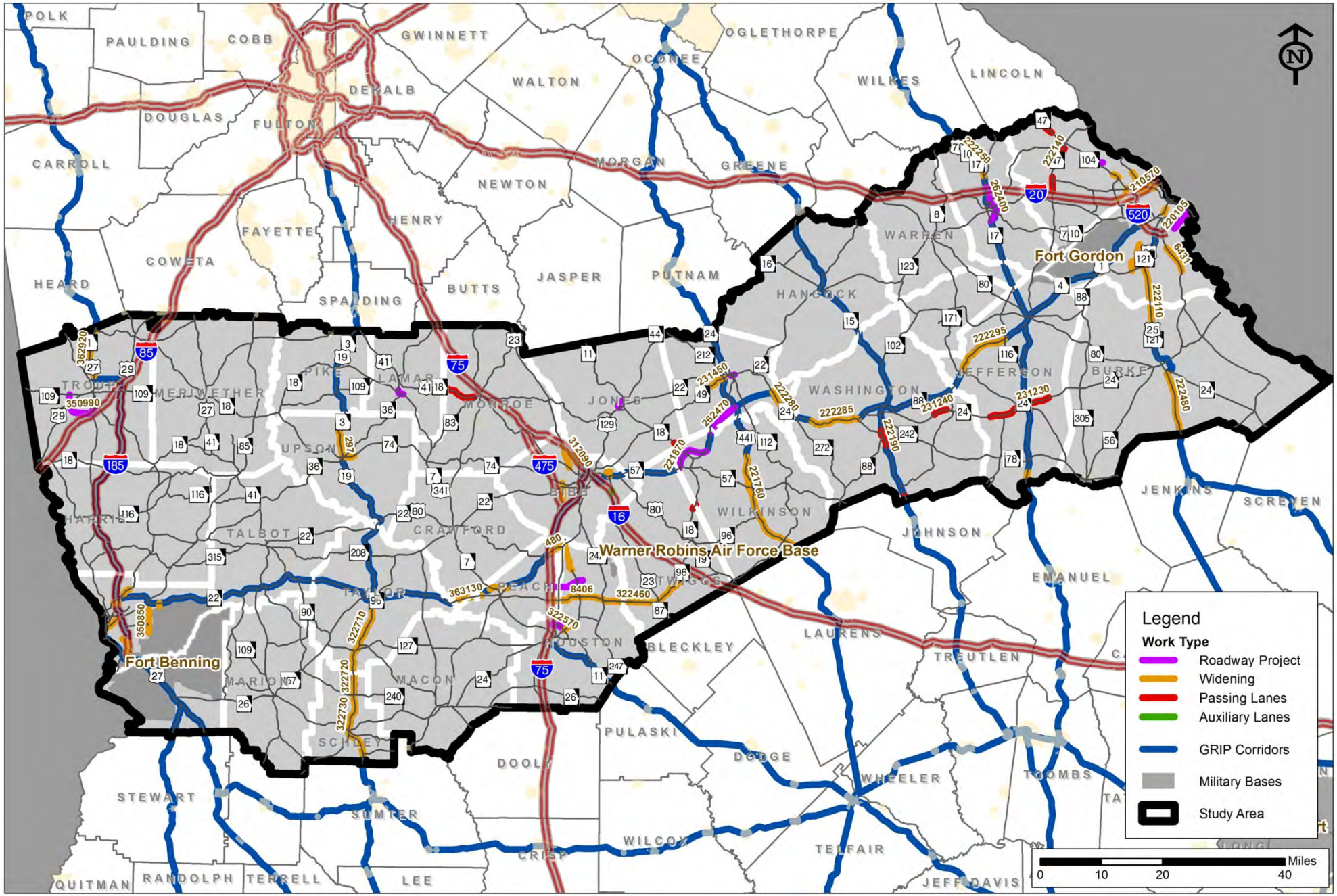
GDOT is responsible for maintaining both a long range transportation plan and a short term (4-year) Statewide Transportation Improvement Program (STIP) for areas throughout the state that are not covered by MPOs. At the time of this study, the current STIP includes projects utilizing federal transporaton funds attributed to Georgia and programmed for Fiscal Years 2012-2015. Figure 1-6 illustrates the capacity-adding projects (widenings, new construction and passing lanes) included in the current STIP. This figure also illustrates the TIP projects included in the four MPO regions within the study area, which are discussed in the following section.




*Source: GDOT*

# 2012 TIA Projects

Figure 1-5




*Source: FY 2012-2015 STIP-GDOT*

# FY 2012-2015 STIP Projects

Figure 1-6

### *Augusta-Richmond County Transportation Improvement Program (TIP) and Long Range Transportation Plan (LRTP)*

In September 2010, the Augusta-Richmond County Planning Commission (the designated MPO for the Augusta urbanized area) adopted their 2035 LRTP, which addresses the issues of limiting funding resources and the need to prioritize recommendations based on anticipated funding. The plan notes that the portion of the Fall Line Freeway within the region (US 1/Dean Forest Road) is part of the Strategic Highway Network (STRAHNET). According to the model analysis, this roadway will require additional capacity improvements within the planning horizon of 25 years. To ensure continued efficient travel along this key regional corridor, the plan recommends widening of US 1/Dean Forest Road to six through lanes from Meadowbrook Drive to Tobacco Road, at an estimated cost of $102 million. This project was defined as a "Tier II" project, with implementation planned for years 2015-2024.

The current (2012-2015) Augusta-Richmond County Planning Commission TIP includes over $30 million in road widenings and new roadway projects. However, these projects were not considered regional in nature, as related to the Connect Central Georgia study area, and likely would not significantly impact inter-regional connectivity.

### *Columbus-Phenix City TIP and LRTP*

The Columbus-Phenix City MPO (C-PCMPO), as the MPO for the Columbus urbanized area, adopted their 2035 LRTP in December 2009 and their 2012-2015 TIP in June 2011. The LRTP forecasts a 0.4 percent annual growth in population in the MPO area, to a total population of almost 294,500 in 2035. The LRTP also projected that employment is expected to grow at a faster rate (1.2 percent annually) to almost 254,400 employees in 2040. The plan takes into consideration these growth rates, the geographical distribution of this growth, and other factors in developing transportation recommendations for the MPO area.

Several projects in the C-PCMPO LRTP and TIP enhance east-west connectivity through the Connect Central Georgia study area, including improvements to US 80, such as the widening of the ramp from US 80 East to Veterans Parkway and the widening from I-185 to Ladonia from 4 to 6 lanes ($70 million). The LRTP also includes funding for a study of the MPO's portion of the 14th Amendment Highway. Goals for the LRTP and TIP which were considered in the development of recommendations for the Connect Central Georgia Study such as improving the efficiency of the multi-modal transportation system.

### *Macon Area Transportation Study 2035 LRTP and 2011-2014 TIP*

The Macon-Bibb County Planning and Zoning Commission (Macon's designated MPO) adopted their 2035 LRTP in May 2009 (and subsequently amended in January 2010), which aided in the development and adoption of the 2012-2015 TIP (adopted in May of 2011). In addition, the latest LRTP was under development during the most recent timeframe (and adopted in April 2013)

and was considered in development of the Connect Central Georgia Study. The MPO plans provide comprehensive, multi-modal solutions for the future of the MPO area's transportation network. As with most MPO plans, funding was a major issue in developing a prioritized list for the Macon region; their plan describes the factors used to prioritize projects in order to develop a financially constrained project list.

Widening projects on I-75 are included to the north, from I-16 to Arkwright Road. Additionally, modifications to the interchange of I-75/I-16 have been recommended. These modifications consist of a collector-distributor system, at an estimated cost of $231 million. Through Macon, much of the Fall Line Freeway is co-routed with I-75. The issue with how best to provide the Fall Line Freeway connection through Macon has been a critical one, which falls concurrent with I-75 and I-16 through Macon. Historically, several options have been investigated to bring bring the Fall Line across the Ocmulgee River on new alignment, these have encountered serious environmental considerations and issues. Most recently, the Middle Georgia Regional Commission has also endorsed a proposal to extend the existing Sardis Church Road to I-16 at Sgoda Road and to extend Sgoda Road to SR 57, thus tying into the existing Fall Line Freeway. The Sardis Extension project was recently added to the Macon/Bibb County 2040 LRTP in April 2013 and is listed in the 2040 network year.

### *Local Transportation Studies*

In addition to those efforts, local jurisdictions throughout the study area have been involved in comprehensive studies which focus on the transportation needs of their communities. These plans document specific strategies and recommended improvements for the jurisdiction. An overview of the outcomes of these studies is provided in Appendix B.

## 1.3 Public and Stakeholder Involvement

In order to educate, inform and involve the public on the purpose and status of the project, and to collect relevant information from stakeholders and the public, the Connect Central Georgia study included extensive and innovative public and stakeholder outreach. Techniques were developed to maximize convenient opportunities for participation for individuals throughout the study area. The study's Public Involvement Plan (PIP), included in Appendix C, had a goal to ensure participation from a broad demographic, socioeconomic and geographic base of citizens.

Table 1-1 summarizes the public outreach techniques employed; Appendix C provides documentation of the results of the stakeholder outreach efforts. This includes a summary of survey responses, stakeholder meeting minutes and comment forms.

### 1.3.1 STAKEHOLDER INTERVIEWS

One of the first steps in the data collection process involved interviewing local leaders, government officials and other key stakeholders. These interviews provided insight into local perceptions regarding transportation deficiencies, primary travel needs in the corridor, types of improvements most needed, and anticipated growth which informed the key components of the technical approach. Figure 1-7 illustrates the major issues and opportunities identified in these interviews; detailed summaries are included in Appendix C. The following points and questions were made during these interviews, which helped to drive the study process:

- What are the needs and potential solutions for a new-alignment of the Fall Line Freeway through Macon;
- Is there the need and feasibility for an additional crossing of the Ocmulgee River?;
- What is the need to improve eastern access to Robins AFB?;
- Is there a most efficient way to get from Macon to Augusta?;
- What are the opportunities and potential for improving connectivity and supporting economic development?; and
- How do roundtable-identified TIA project lists fit in with this study and others that have been completed?

### 1.3.2 STAKEHOLDER ADVISORY GROUP

In addition to stakeholder interviews, a standing Stakeholder Advisory Group was formed to guide the development of the plan and help gather input at key points throughout the study process. This group was composed of representatives from the 31 counties, MPOs (Columbus, Macon, Warner Robins, & Augusta), Regional Commissions, major employers and interest groups. A detailed list of participants is included in Appendix C.

*Table 1-1: Stakeholder Outreach Methods*

| Activity | Description | Time-frame | Audience Reached |
|---|---|---|---|
| Stakeholder Interviews | One-on-one interviews with key stakeholders early in the study process to answer key questions regarding local perspectives, issues and opportunities and to guide the development of the study. | 2 weeks | • 5 Regional Commissions<br>• 4 Metropolitan Planning Organization |
| Stakeholder Advisory Group Meetings | A stakeholder advisory group, consisting of representatives from local jurisdictions, planning agencies, major employers and other key constituents, was developed to help guide the study process. This group was briefed on the status of the study and asked to provide insight on topics relevant to that stage of the study. | 5 meetings | • Local governments<br>• Regional Commissions<br>• MPOs<br>• Trade Associations<br>• Military Bases |
| Survey | Survey distributed via hard copy at public events (such as Kaolin Festival), distributed via hard copy and link to online survey to school systems throughout the study area, as well as through the Chambers of Commerce. A link to the survey was available on the project website as well. | 2 months | • Parents of public school students throughout study area<br>• All attendees at local events attended<br>• Business community<br>• General public (via project website)<br>• 2,600 responses |
| Kiosks at Public Locations/ Events | Two informational kiosks were manned by project staff at the Cherry Blossom Festival in Macon and the Kaolin Festival in Sandersville. Fact sheets and study status information were distributed. | Key Study Milestones | • Attendees at local events<br>• General public at key destinations |
| Stakeholder Distribution | The Stakeholder Advisory Groups were asked to add links to the study website and to distribute informational materials via existing distribution lists. | Duration of the project (18 months) | • Distribution lists developed by local jurisdictions<br>• General public (via local websites) |
| Website | Project website with fact sheet, schedule, survey, presentations from stakeholder meetings and information on study progress. Jurisdictions within the study area were asked to provide a link to the study website on their site. Study website was also included on surveys which have been distributed by various means. | Duration of the project (18 months) | • General public (with internet access) |
| Speakers Bureau | Study Team was available to present study findings to stakeholder groups upon request. Team members presented at each of the 4 RCs and 4 MPOs. | Duration of the study (18 months) | • Civic Organizations<br>• General public (via City Council or County Commission meetings) |
| Media | The study team coordinated with newspapers, providing information as requested throughout the study and participated in a television interview to advertise the study. | Duration of the study (18 months) | • General public |

Due to their local perspective, the Stakeholder Advisory Group was asked to convene at set points throughout the study to provide input on several topics that provided the framework for the study process. This group was asked to establish the study's goals and objectives, which helped guide and frame the work of the group. Because the study area was large but had unique aspects throughout, they were also asked to define 'character areas' and identify issues and opportunities as described below.

### *Goals and Objectives*

A key step in ensuring that the Connect Central Georgia study best met the needs of the region was to establish a set of consensus goals and objectives for the transportation system. Early in the stakeholder outreach process, participants were asked to provide input on what they deemed important in regards to the future of the study area with respect to transportation, the economy and quality of life. Their input, combined with input from the Governor's Strategic Goals for the state and the guidelines established for the current federal transportation legislation through MAP-21 (Moving Ahead for Progress in the 21st Century), helped frame stakeholder consensus of five key goals for the study area. More details on the development of goals and objectives can be found in Section 6.1.

**Study Goals and Objectives**

1. Improve safety, accessibility, and mobility options available to people and for freight;
2. Enhance the inter-regional connectivity and reliability of the transportation system for people and freight and facilitate economic growth;
3. Emphasize the efficiency, operation, and preservation of the existing transportation system while promoting environmental sustainability;
4. Protect quality of life and promote consistency between transportation improvements and state and local planned growth and economic development patterns; and
5. Improve public health with accessible care and active lifestyles.

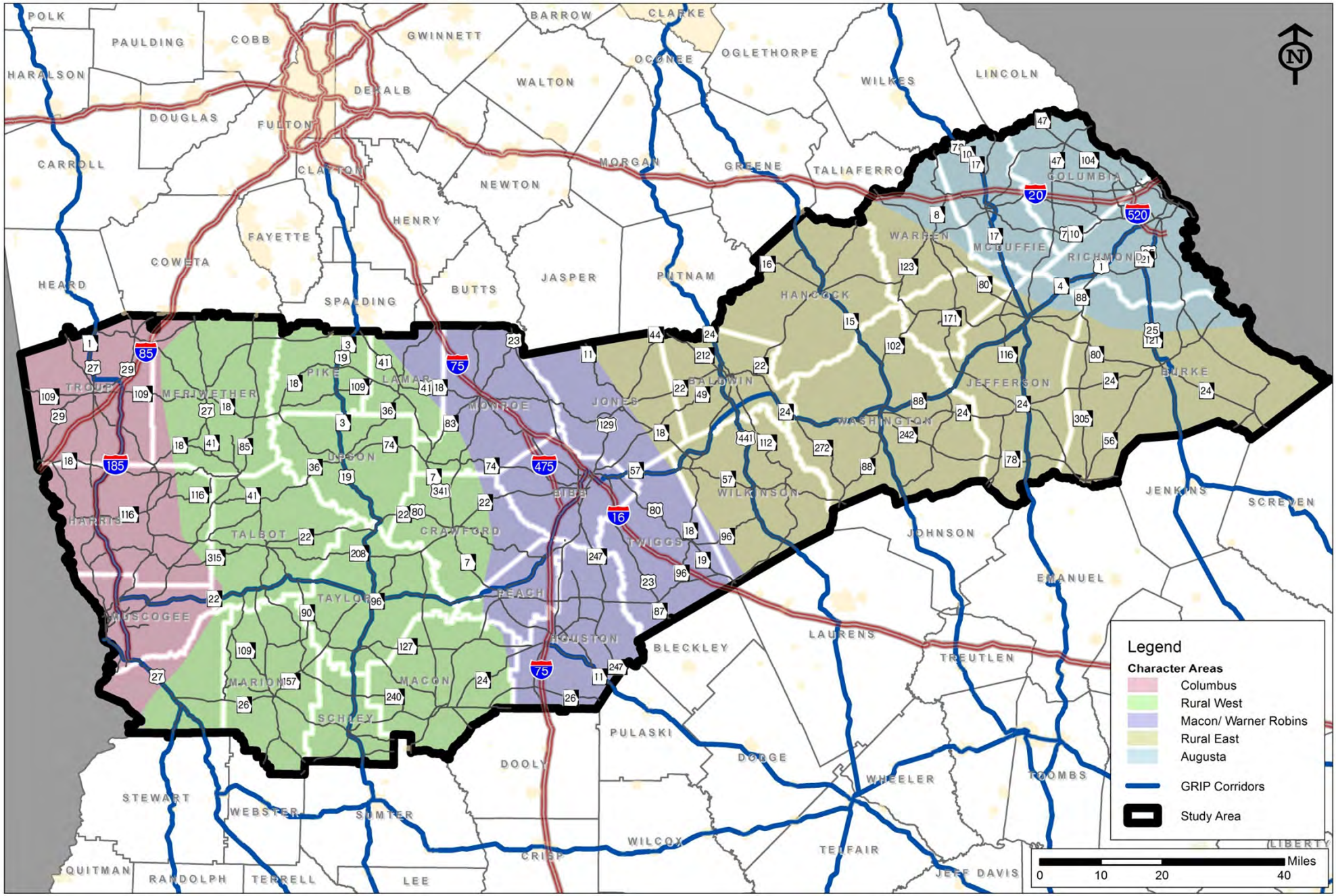
### *Character Areas*

Spanning 31 counties and the width of the state, the demographic, economic and land use characteristics, and transportation needs of the study area vary widely. Though specific characteristics vary throughout the study area, similarities exist that create somewhat homogeneous subregions based on population density, economic activity and existing development. To develop recommendations that best meet the needs of the study area as a whole, stakeholder-identified Character Areas were defined based on these geographic regions with similar characteristics. The Character Areas are shown in Figure 1-7.

### *Issues and Opportunities*

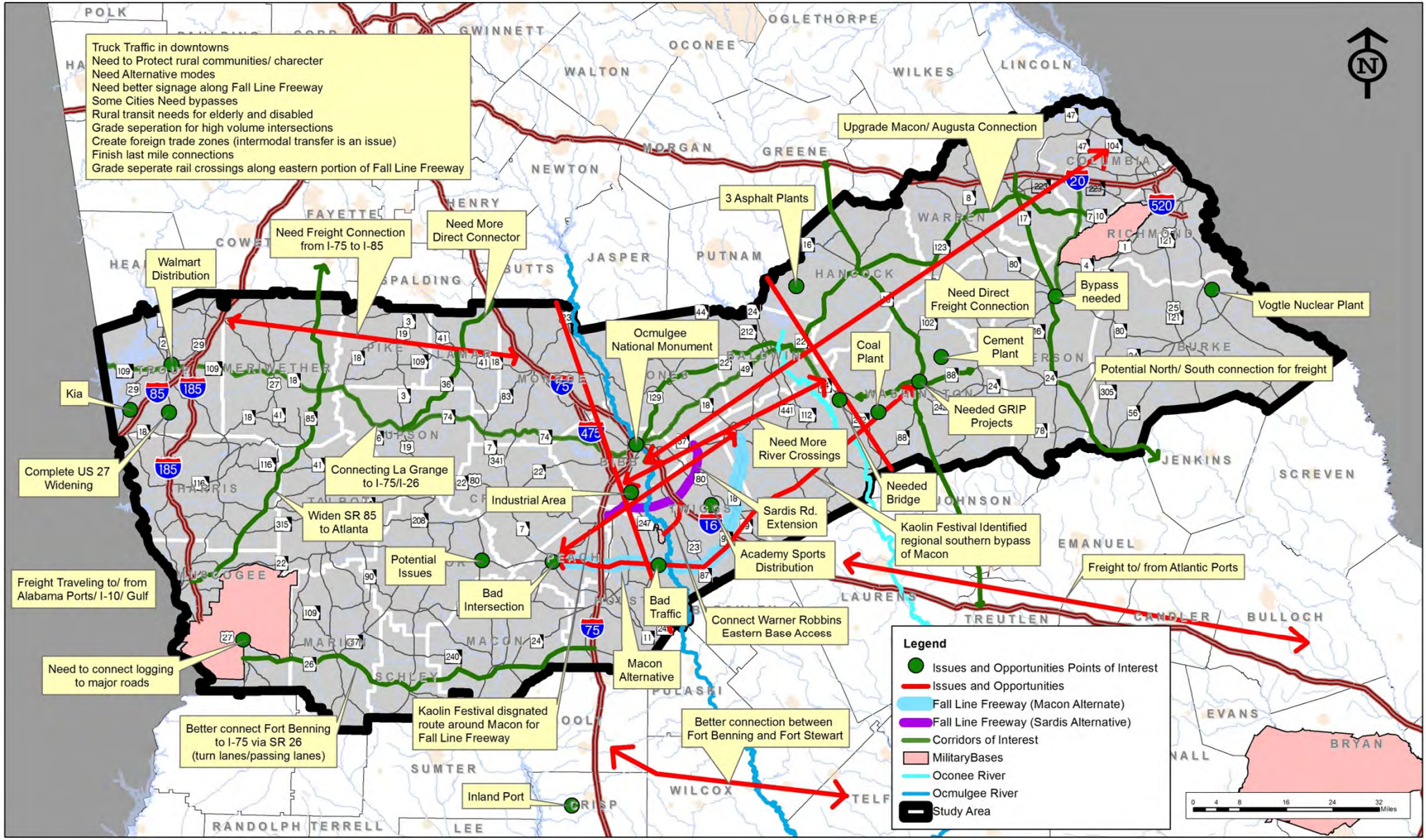
To supplement field assessment and technical analysis, stakeholders were asked to provide input on the issues and potential opportunities for improvement within the study area. Figure 1-8 illustrates input received from

stakeholders at the first Stakeholder Advisory Group meeting. Issues include perceived traffic congestion, lack of connectivity and the consideration of bypasses. Opportunities noted include the potential for enhanced freight movement through the study area and increased economic vitality due to Kia plant, Fort Benning expansion and the inland port in Cordele.




# Character Areas

Figure 1-7




# Issues and Opportunities

Figure 1-8

# 2 EXISTING CONDITIONS

In order to determine future transportation needs in Central Georgia, it is necessary to understand the existing conditions of transportation facilities within the region as well as the demographic and economic characteristics of the area. The following sections provide documentation of the assessment of current conditions, based on field review of the study area, data collection and the review of previous studies.

## 2.1 STUDY AREA

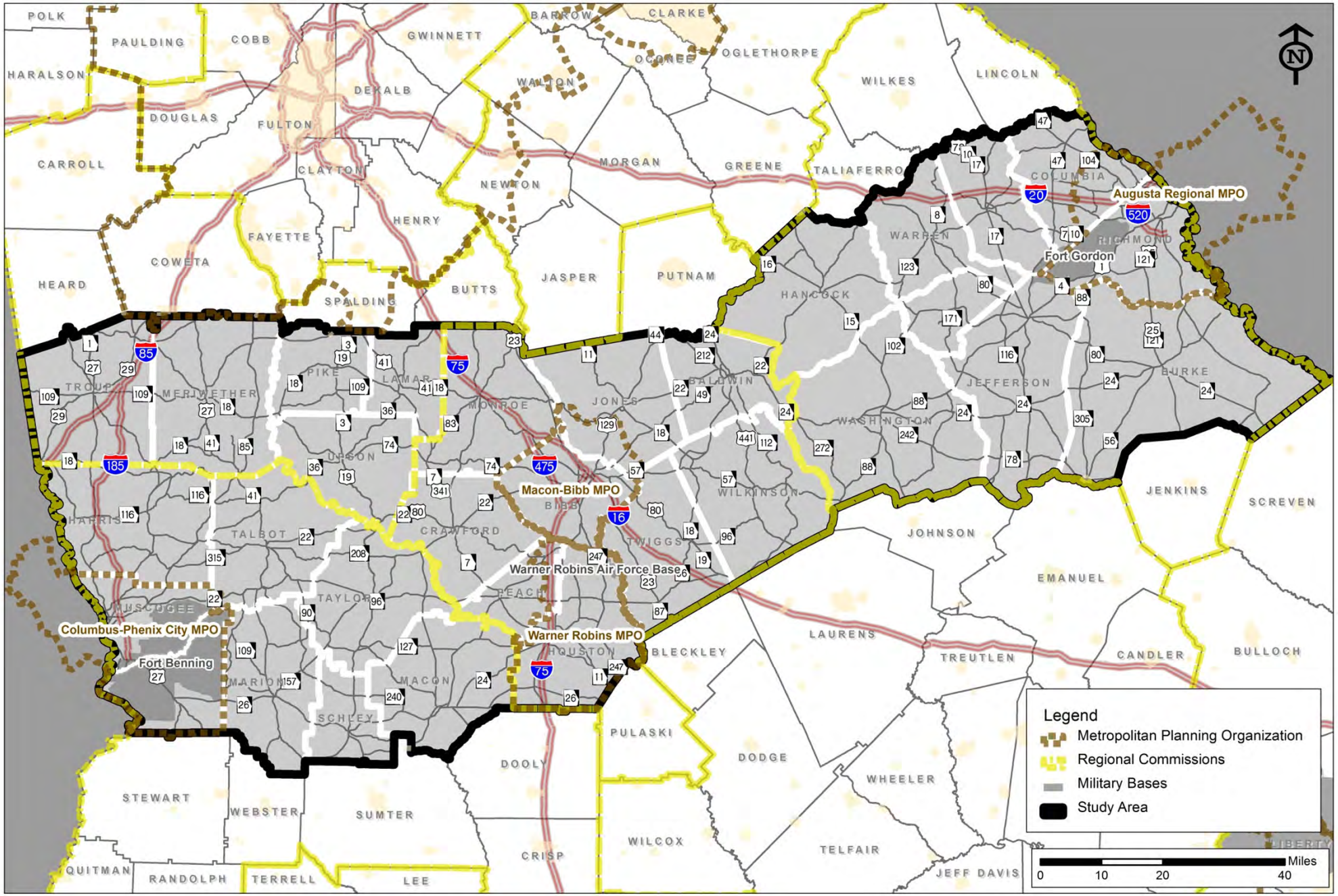
To understand the travel patterns across Central Georgia, the Team assessed a 31-county study area spanning the region, as shown in Figure 2-1. The study area consists of considerable undeveloped and agricultural land with several major cities and many medium- and smaller-cities spread throughout the study area. The second (Augusta), third (Columbus) and seventh (Macon) largest Georgia cities are located within the study area. Additionally, several military bases, including Fort Benning in Columbus, Robins Air Force Base in Warner Robins and Fort Gordon in Augusta, serve as major employment and population centers within the study area.

Major interstates that run through the study area, mostly on a generally north-south route, include I-75, I-85, I-185, and I-16. I-20 provides some east-west mobility in the northeast quadrant of the study area and as an alternative to traveling through the study area. With this lack of east-west interstate facilities, most of the existing connectivity is provided by state routes, most of which are two lanes. For the purpose of this study, only state routes were evaluated for future improvements, as these roads typically provide the highest capacity and best serve as a foundation for regional accessibility and connectivity.

*With this lack of east-west interstate facilities, most of the existing connectivity is provided by state routes, most of which are only 2-lanes.*

## 2.2 DEMOGRAPHICS

Many different factors can influence transportation needs of an area. Population, employment mix, land use, and location of major travel destinations helps to define travel patterns and can impact mode choices. Therefore, a thorough analysis of existing demographic and socioeconomic characteristics of the study area was performed and the results are documented in the following sections.




Connect Central Georgia

GDOT Georgia Department of Transportation Office of Planning

# Study Area

Figure 2-1

### 2.2.1 POPULATION

Understanding the distribution and characteristics of an area's population is one major input factor to transportation planning. A reliable transportation system is necessary to provide mobility to residents throughout the study area. Population growth should be considered in planning efforts, as increases in population can cause capacity constraints on public infrastructure, including the transportation network.

#### *Existing Population*

For the purpose of assessing population, data was reviewed and aggregated from a county level from the 2010 U.S. Census. The total existing (2010) population of the 31 counties is approximately 1.2 million or 12.4 percent of the total state's population. As illustrated in Figure 2-2, population densities are relatively low throughout the study area, and it is not surprising that the more densely populated areas correspond with the Columbus, LaGrange, Warner Robins, Macon, Milledgeville and Augusta areas.

#### *Historic Population Growth*

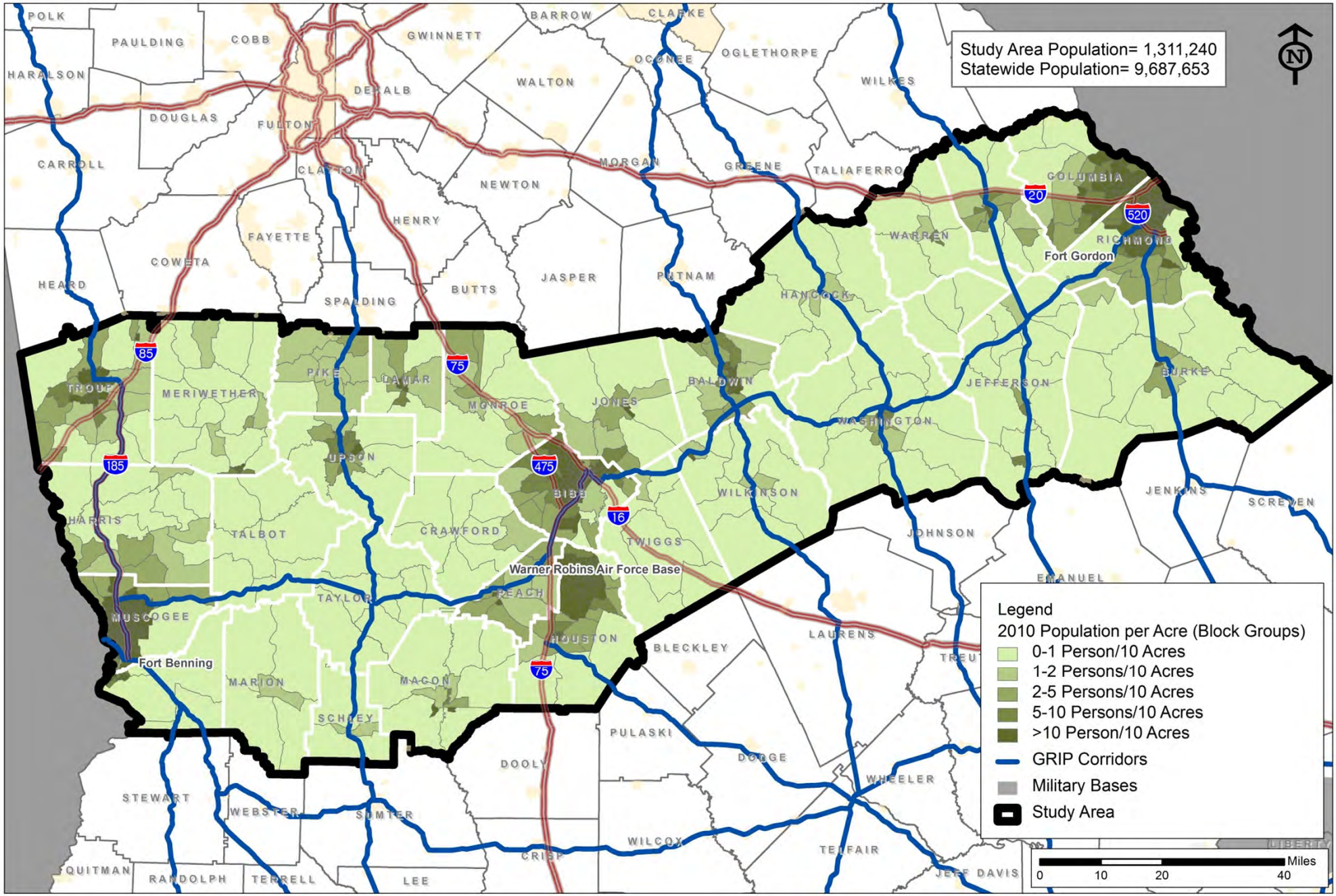
*Between 1970 to 2010, population increased by 43 percent in the study area compared to a 107 percent growth for the state of Georgia.*

Population growth in an area can drive the need for enhancements to the transportation network. Figure 2-3 illustrates the growth in the study area over the past ten years. As shown in this figure, many of the study area counties experienced growth of more than 20 percent. Table 2-1 provides detailed data on the historic (1970 to 2010 timeframe) population growth for each of the 31 counties in the study area. Over this 40 year time period, population increased by 43 percent in the study area compared to a 107 percent growth for the state of Georgia. Seven of the study area counties, shown in bold in the table, experienced growth of over 100 percent during this timeframe.

*Table 2-1: Historic Population Growth*

| County | Total Population | | | Percent Change | |
|---|---|---|---|---|---|
| | 1970 | 2000 | 2010 | 2000-2010 | 1970-2010 |
| Baldwin | 34,240 | 44,700 | 45,720 | 2.3% | 33.5% |
| Bibb | 143,418 | 153,887 | 155,547 | 1.1% | 8.5% |
| Burke | 18,255 | 22,243 | 23,316 | 4.8% | 27.7% |
| Chattahoochee | 25,813 | 14,882 | 11,267 | -24.3% | -56.4% |
| **Columbia** | **22,327** | **89,288** | **124,053** | **38.9%** | **455.6%** |
| **Crawford** | **5,748** | **12,495** | **12,630** | **1.1%** | **119.7%** |
| Glascock | 2,280 | 2,556 | 3,082 | 20.6% | 35.2% |
| Hancock | 9,019 | 10,076 | 9,429 | -6.4% | 4.5% |
| **Harris** | **11,520** | **23,695** | **32,024** | **35.2%** | **178.0%** |
| **Houston** | **62,924** | **110,765** | **139,900** | **26.3%** | **122.3%** |
| Jefferson | 17,174 | 17,266 | 16,930 | -1.9% | -1.4% |
| **Jones** | **12,218** | **23,639** | **28,669** | **21.3%** | **134.6%** |
| Lamar | 10,688 | 15,912 | 18,317 | 15.1% | 71.4% |
| Macon | 12,933 | 14,074 | 14,740 | 4.7% | 14.0% |
| Marion | 5,099 | 7,144 | 8,742 | 22.4% | 71.4% |
| McDuffie | 15,276 | 21,231 | 21,875 | 3.0% | 43.2% |
| Meriwether | 19,461 | 22,534 | 21,992 | -2.4% | 13.0% |
| **Monroe** | **10,991** | **21,757** | **26,424** | **21.5%** | **140.4%** |
| Muscogee | 167,377 | 186,291 | 189,885 | 1.9% | 13.4% |
| Peach | 15,990 | 23,668 | 27,695 | 17.0% | 73.2% |
| **Pike** | **7,316** | **13,688** | **17,869** | **30.5%** | **144.2%** |
| Richmond | 162,437 | 199,775 | 200,549 | 0.4% | 23.5% |
| Schley | 3,097 | 3,766 | 5,010 | 33.0% | 61.8% |
| Talbot | 6,625 | 6,498 | 6,865 | 5.6% | 3.6% |
| Taylor | 7,865 | 8,815 | 8,906 | 1.0% | 13.2% |
| Troup | 44,466 | 58,779 | 67,044 | 14.1% | 50.8% |
| Twiggs | 8,222 | 10,590 | 9,023 | -14.8% | 9.7% |
| Upson | 23,505 | 27,597 | 27,153 | -1.6% | 15.5% |
| Warren | 6,669 | 6,336 | 5,834 | -7.9% | -12.5% |
| Washington | 17,480 | 21,176 | 21,187 | 0.1% | 21.2% |
| Wilkinson | 9,393 | 10,220 | 9,563 | -6.4% | 1.8% |
| ***Study Area*** | ***919,826*** | ***1,205,343*** | ***1,311,240*** | ***8.8%*** | ***42.5%*** |
| ***State*** | ***4,694,491*** | ***8,186,453*** | ***9,687,653*** | ***18.3%*** | ***106.4%*** |

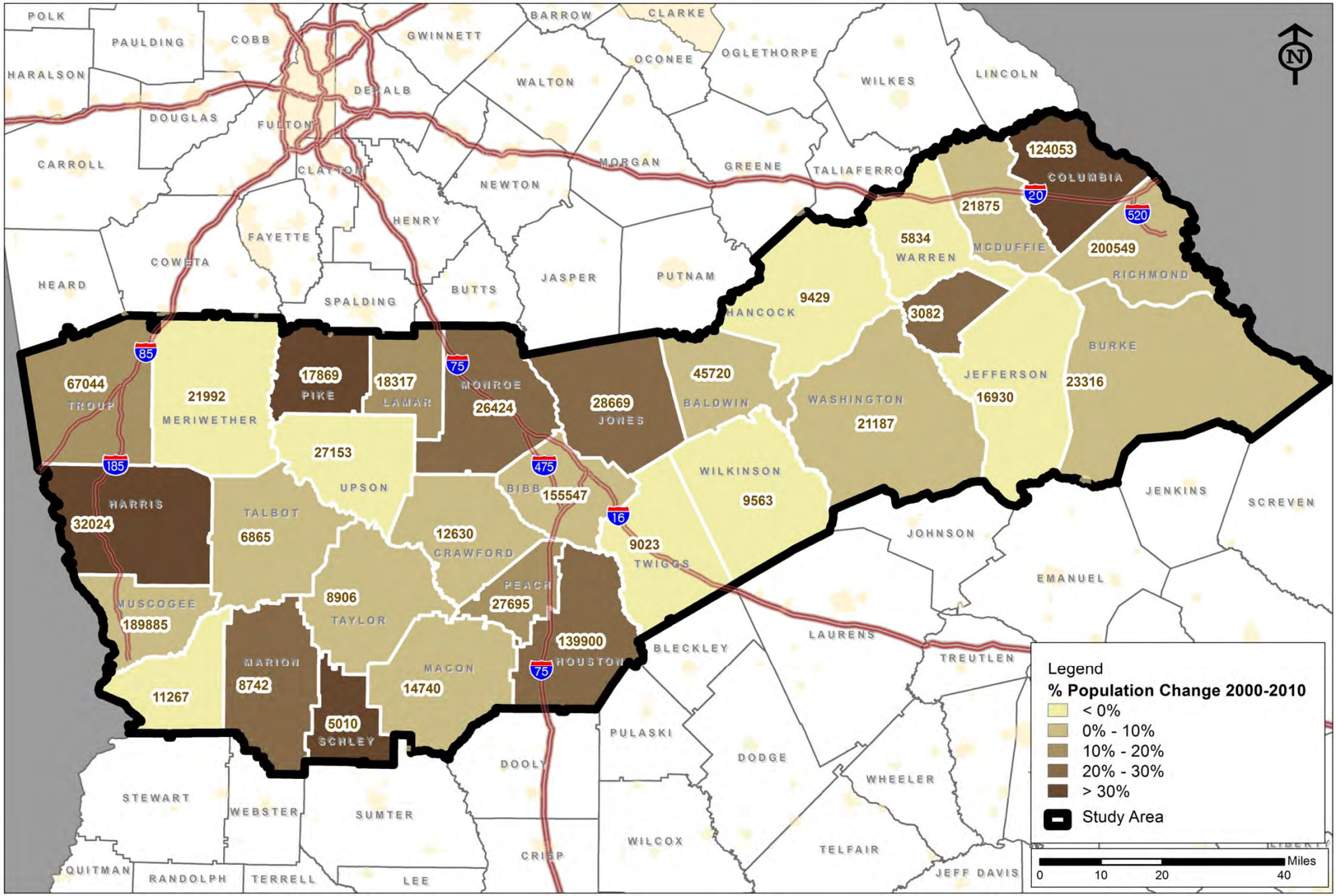
*Source: U.S. Census 2010*




*Source: 2010 Census*

# Existing Population (2010)

Figure 2-2




*Source: 2010 Census*

# Population Change (2000 to 2010)

Figure 2-3

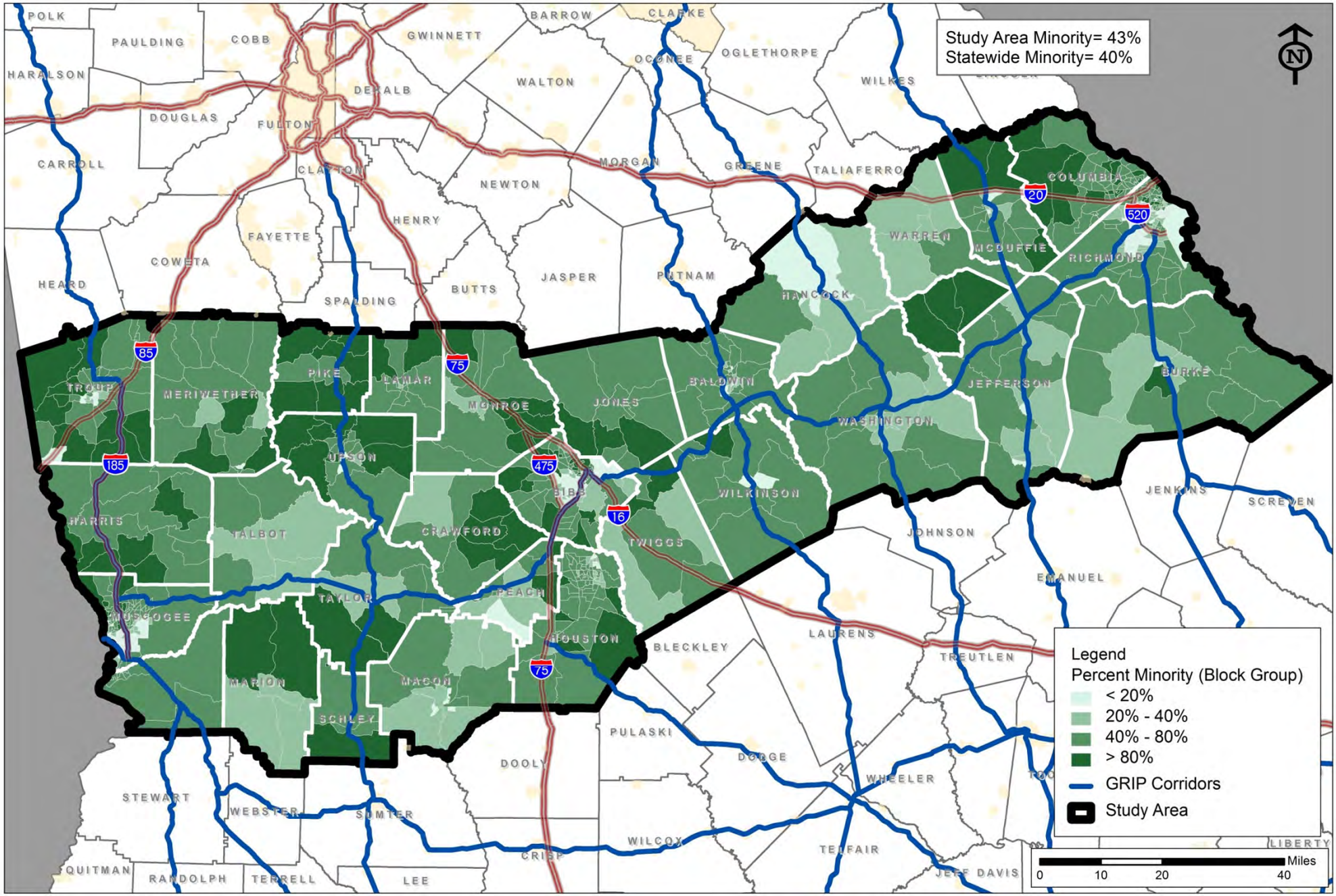
## 2.3 ENVIRONMENTAL JUSTICE

Title VI, Executive Order 12898 and Section 450 of TEA-21 define Environmental Justice (EJ) regulations, which are continued through current legislation MAP-21. These regulations are intended to ensure that recommendations in transportation plans consider minority and low-income communities. For the purpose of transportation planning, U.S. DOT Order (5610.2) on Environmental Justice defines EJ communities as black, Hispanic, Asian American, Native American or Alaskan Native, and low-income (a community or group, whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines).

It is important to look at the distribution and concentration of minority and low-income populations to determine potential EJ impacts. The intent of EJ analysis was to locate these populations and investigate ways for the Connect Central Georgia study to involve them early and continuously through the process, as well as to use data to analytically assess impacts from a preliminary, general planning-level perspective (not involving detailed design decisions). Within MPO areas, this work is part of the MPO planning process, so the Connect Central Georgia study relied on that more detailed work they do through such products as their LRTP updates and TIPs.

*Approximately 43 percent of the study area population is considered a minority, compared to 40 percent for the state.*

The distribution of minority population throughout the study area is shown in Figure 2-4. Though a number of Census Block Groups show high percentages of minority populations, many of these regions have low populations. The Block Groups with higher populations, such as those surrounding Columbus, Macon and Augusta have lower proportions of minority populations. In total, 43 percent of the study area population is considered a minority, compared to 40 percent for the state. Table 2-2 provides the percentage of population by race for the 31 study area counties. Those with minority populations above the statewide average are shown in bold. These counties will be considered in future outreach efforts and in the development of recommendations.




*Source: 2010 Census*

# Distribution of Minority Population

Figure 2-4

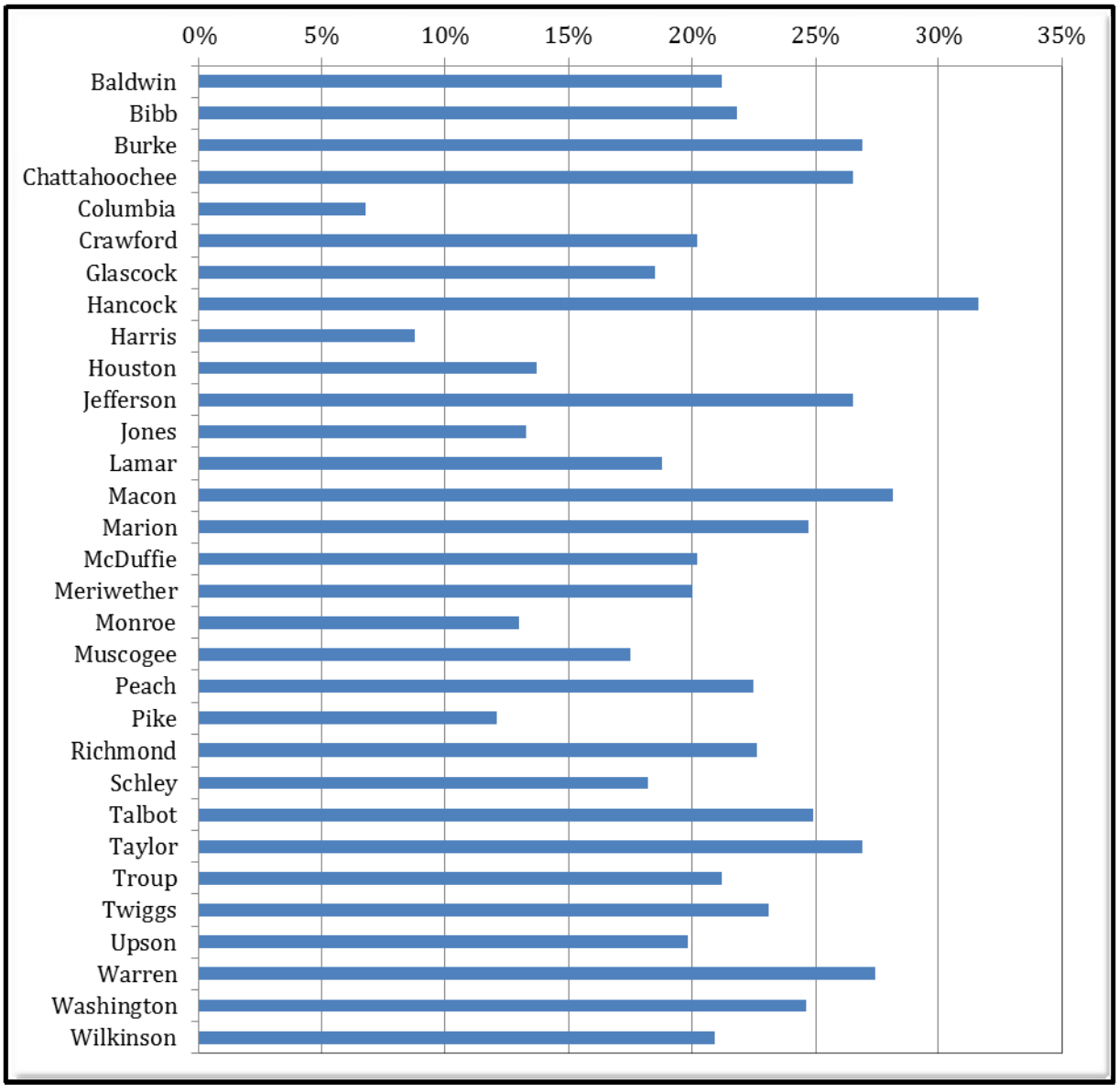
*Table 2-2: 2010 Minority Populations by County*

| County | White | Hispanic | Black | Other Minority | Total Minority |
|---|---|---|---|---|---|
| **Baldwin** | **54.0%** | **2.0%** | **41.3%** | **2.7%** | **46.0%** |
| **Bibb** | **42.1%** | **2.8%** | **51.9%** | **3.2%** | **57.9%** |
| **Burke** | **46.5%** | **2.6%** | **49.2%** | **1.7%** | **53.5%** |
| Chattahoochee | 62.9% | 12.4% | 18.2% | 6.5% | 37.1% |
| Columbia | 73.8% | 5.0% | 14.6% | 6.7% | 26.3% |
| Crawford | 73.5% | 2.4% | 22.2% | 1.9% | 26.5% |
| Glascock | 89.2% | 1.1% | 8.1% | 1.6% | 10.8% |
| **Hancock** | **23.5%** | **1.5%** | **73.8%** | **1.3%** | **76.6%** |
| Harris | 77.6% | 2.7% | 17.0% | 2.6% | 22.3% |
| Houston | 60.5% | 6.1% | 28.3% | 5.1% | 39.5% |
| **Jefferson** | **41.4%** | **3.1%** | **54.3%** | **1.2%** | **58.6%** |
| Jones | 72.7% | 1.1% | 24.3% | 1.9% | 27.3% |
| Lamar | 65.2% | 1.9% | 30.7% | 2.2% | 34.8% |
| **Macon** | **33.7%** | **3.6%** | **60.4%** | **2.4%** | **66.4%** |
| **Marion** | **58.3%** | **6.5%** | **32.5%** | **2.7%** | **41.7%** |
| **McDuffie** | **56.3%** | **2.2%** | **39.6%** | **2.0%** | **43.8%** |
| **Meriwether** | **57.3%** | **1.6%** | **39.0%** | **2.1%** | **42.7%** |
| Monroe | 72.3% | 2.0% | 23.6% | 2.0% | 27.6% |
| **Muscogee** | **43.7%** | **6.4%** | **44.8%** | **5.1%** | **56.3%** |
| **Peach** | **45.1%** | **6.8%** | **45.7%** | **2.4%** | **54.9%** |
| Pike | 86.8% | 1.1% | 10.2% | 1.9% | 13.2% |
| **Richmond** | **38.0%** | **4.1%** | **53.5%** | **4.4%** | **62.0%** |
| Schley | 72.1% | 3.2% | 23.3% | 1.4% | 27.9% |
| **Talbot** | **38.4%** | **1.3%** | **58.8%** | **1.4%** | **61.5%** |
| **Taylor** | **57.5%** | **1.8%** | **39.1%** | **1.5%** | **42.4%** |
| Troup | 60.3% | 3.2% | 33.3% | 3.2% | 39.7% |
| **Twiggs** | **56.1%** | **1.4%** | **41.0%** | **1.5%** | **43.9%** |
| Upson | 68.2% | 2.2% | 27.8% | 1.8% | 31.8% |
| **Warren** | **36.6%** | **0.9%** | **61.4%** | **1.1%** | **63.4%** |
| **Washington** | **44.1%** | **1.9%** | **52.5%** | **1.5%** | **55.9%** |
| **Wilkinson** | **57.8%** | **2.2%** | **38.3%** | **1.6%** | **42.1%** |

*Source: Census 2010*

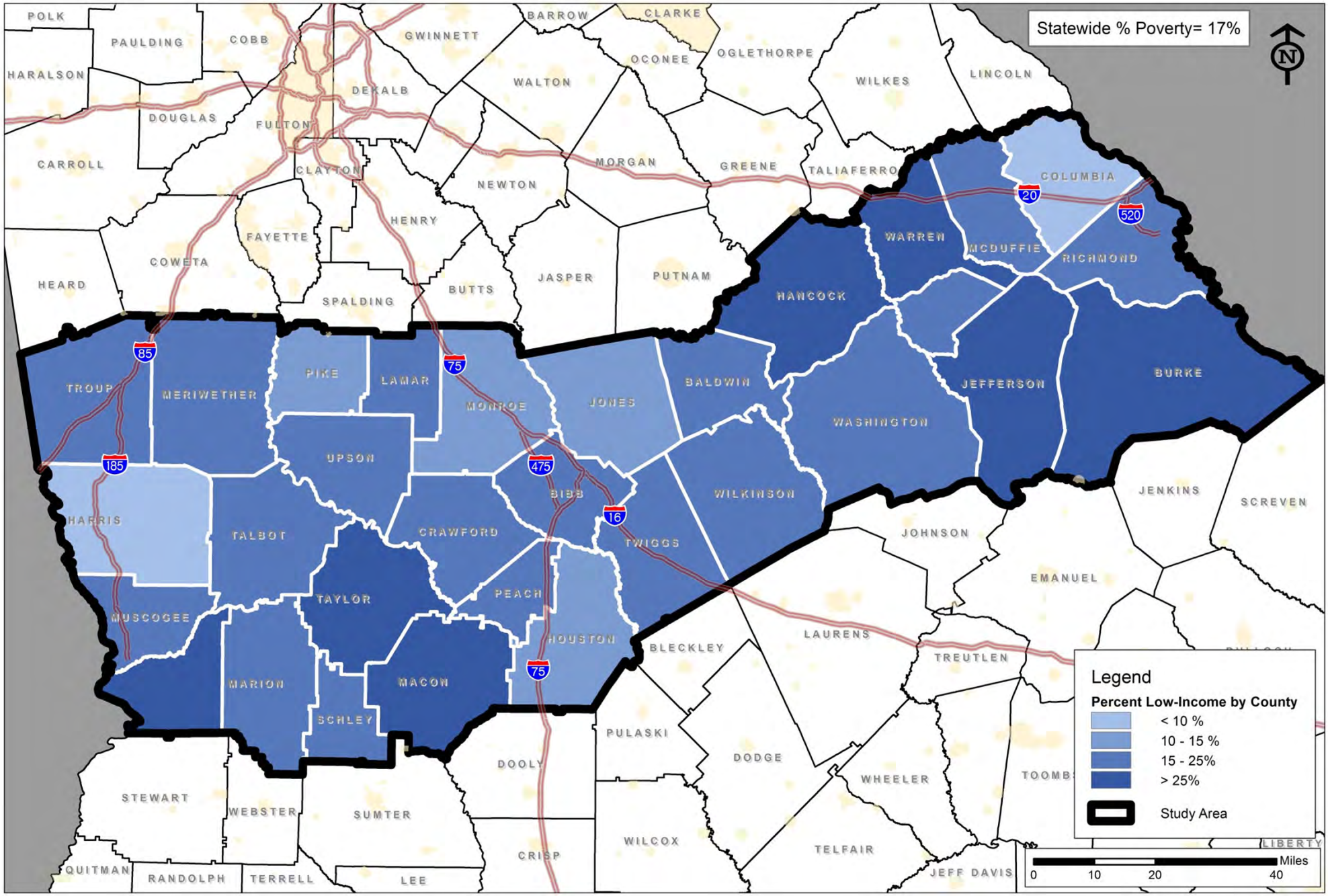
Figure 2-5 shows the portion of low-income individuals living in each study area county and Figure 2-6 illustrates the distribution of these persons within the study area, defined as those living below the poverty level. In general, the areas surrounding the major interstates (I-75, I-85 and I-20) maintain a lower percentage of low-income residents, as do those counties in the northwest and north central portions of the study area.

*Approximately 18 percent of the study area population is considered low-income, compared to 15 percent for the state.*




*Source: American Community Survey (2005-2009)*

***Figure 2-5: Low-Income Percentage by Study Area County***




*Source: American Community Survey (2005-2009)*

# Distribution of Low-Income Population

Figure 2-6

### 2.3.1 EMPLOYMENT

The distribution of employment and location of major employment centers in an area helps identify trip-making patterns and transportation needs. Areas with high employment serve as the destination of a majority of regular trips made, both work trips and non-work trips (i.e. shopping, school, etc). Figure 2-7 illustrates employment density throughout the study area.

*Connectivity and access through Central Georgia is important for commercial travel through the study area and reliable commutes to major employment and recreation areas.*

The employment density in the study area reflect major employment centers which include hospitals, universities, shopping malls, military bases, mining operations, agriculture, distribution centers and public amenities.

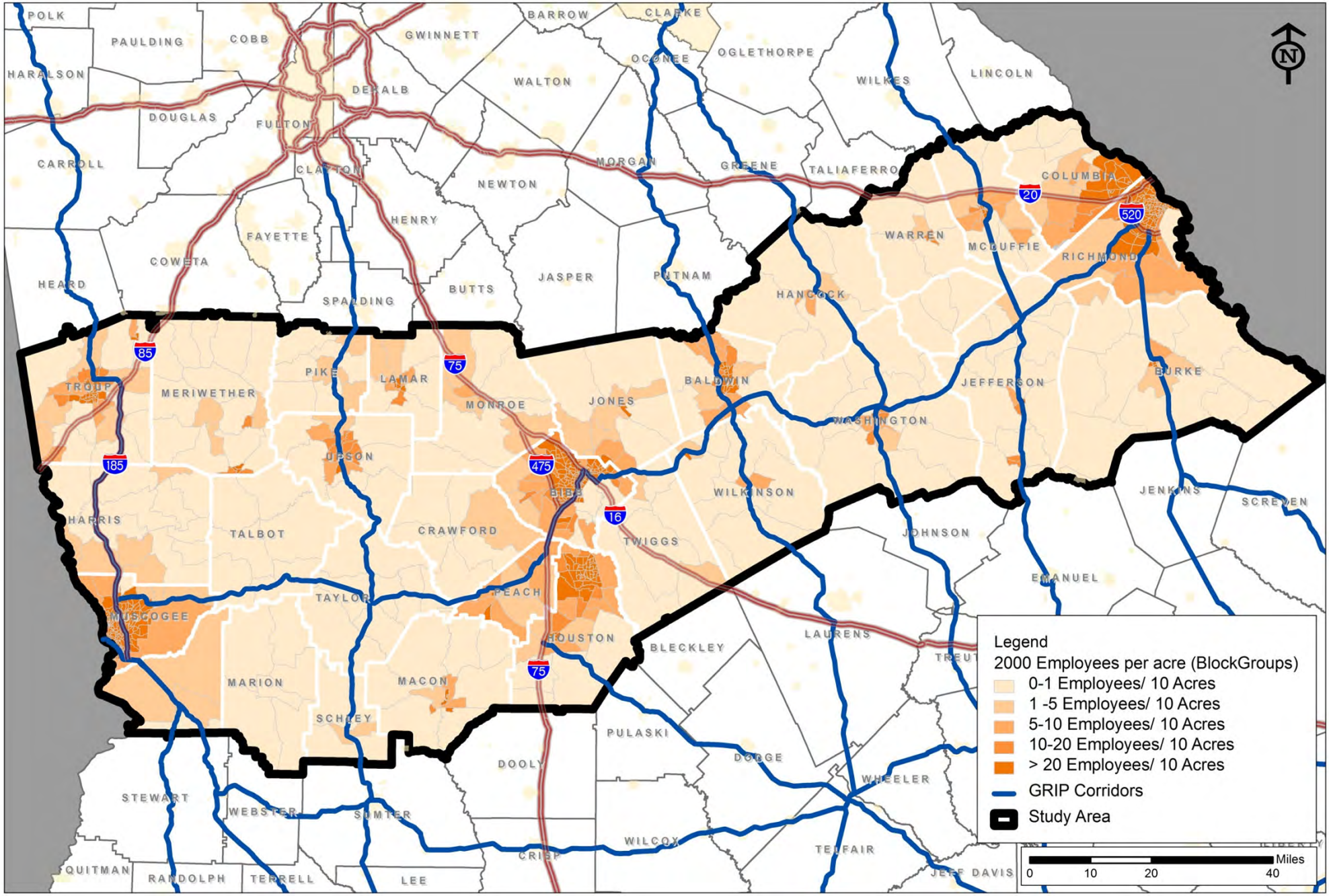
Specifically, there are a number of major employments centers within the study area, including 19 major universities, 45 major hospitals, and 3 military bases. In the study area there are 45 active mines that extract minerals such as kaolin, perlite and others. The mining industry stimulates a $1.8 billion dollar industry and employs over 4,800 employees in the mines and plants alone. Further, there is a multitude of major national and international firms represented throughout the study area which employ thousands of the area's residents the largest of which include KIA, AFLAC, TSYS and Geico. The military bases employ large numbers of civilian and military personnel. Fort Benning tops this list with over 40,000, Fort Gordon with 30,000, and Robins Air Force Base with 23,000 employees.

### 2.3.2 WORKFORCE DISTRIBUTION

Understanding the commute travel patterns in the study area can help identify transportation needs. Figures 2-8 through 2-10 show the distribution of employees travelling to the Columbus, Macon, Warner Robins, and Augusta MPO's. As shown in these figures, a majority (70 percent or more) of each of the regions' employment resides within that region.

## 2.4 COMMUNITY FACILITIES

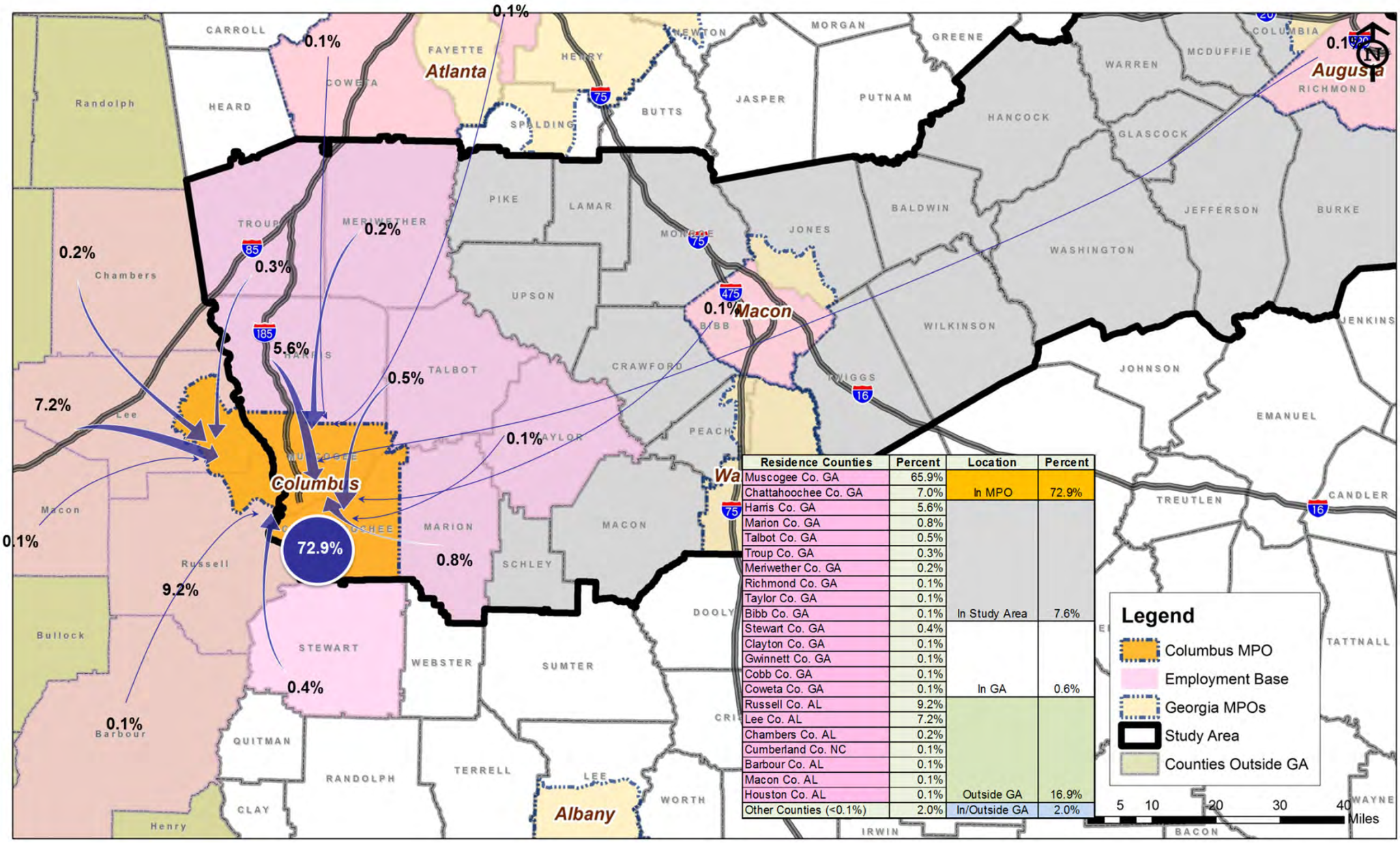
It is important to provide efficient connections to and between key community resources. Therefore, one component of this study is to understand where these resources are located and to determine the accessibility provided to these facilities. The Connect Central Georgia study area identified many community facilities, as shown in Figure 2-11. These include 171 elementary schools, 45 middle schools, 74 high schools, 34 emergency hospitals, 40 non-emergency medical centers, 20 airports, 91 city halls, 305 fire stations, 61 libraries, 19 universities and many historical sites.




*Source: 2000 Census*

# Employment Density (2000)

Figure 2-7



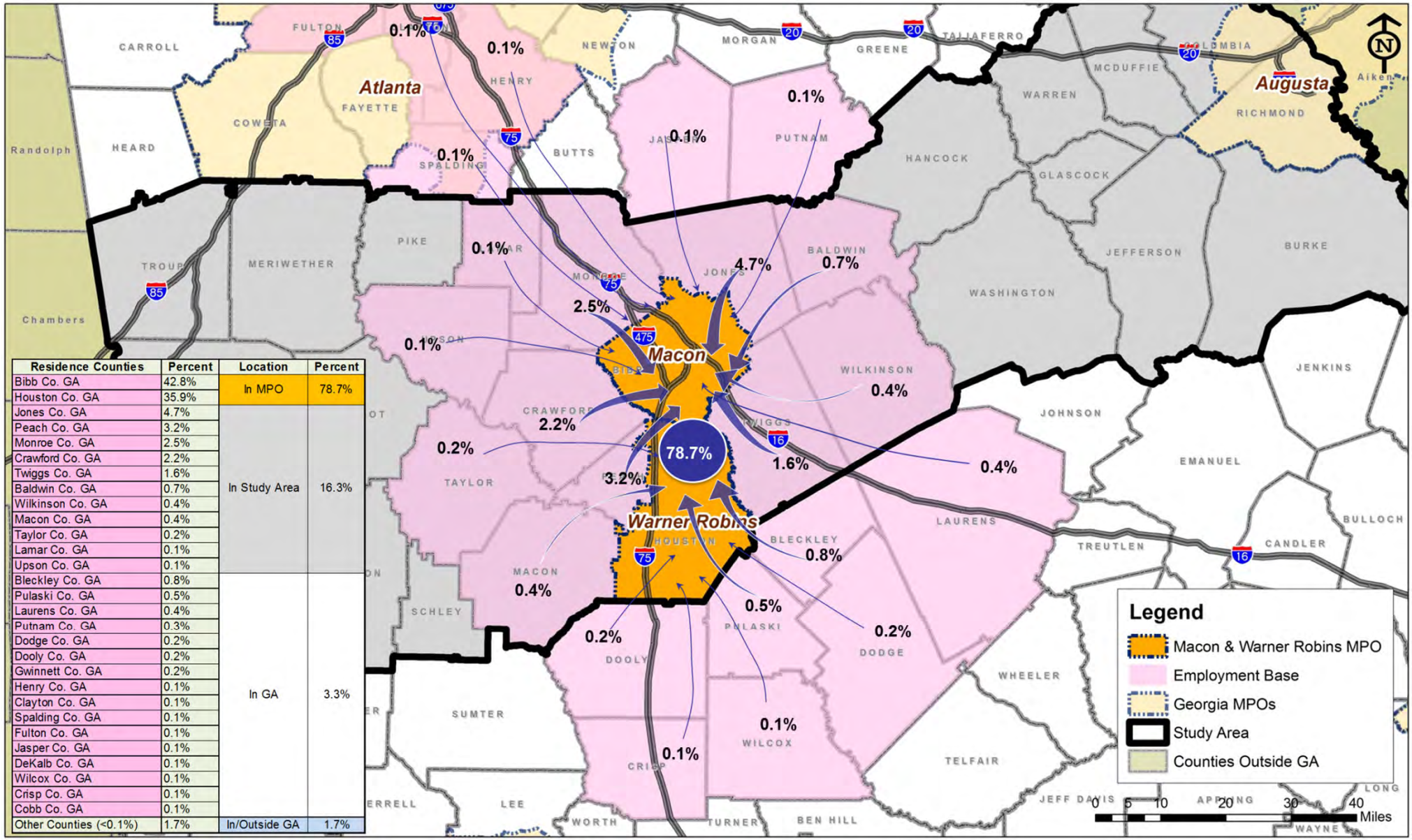

| Residence Counties | Percent | Location | Percent |
|---|---|---|---|
| Muscogee Co. GA | 65.9% | | |
| Chattahoochee Co. GA | 7.0% | In MPO | 72.9% |
| Harris Co. GA | 5.6% | | |
| Marion Co. GA | 0.8% | | |
| Talbot Co. GA | 0.5% | | |
| Troup Co. GA | 0.3% | | |
| Meriwether Co. GA | 0.2% | | |
| Richmond Co. GA | 0.1% | | |
| Taylor Co. GA | 0.1% | | |
| Bibb Co. GA | 0.1% | In Study Area | 7.6% |
| Stewart Co. GA | 0.4% | | |
| Clayton Co. GA | 0.1% | | |
| Gwinnett Co. GA | 0.1% | | |
| Cobb Co. GA | 0.1% | | |
| Coweta Co. GA | 0.1% | In GA | 0.6% |
| Russell Co. AL | 9.2% | | |
| Lee Co. AL | 7.2% | | |
| Chambers Co. AL | 0.2% | | |
| Cumberland Co. NC | 0.1% | | |
| Barbour Co. AL | 0.1% | | |
| Macon Co. AL | 0.1% | | |
| Houston Co. AL | 0.1% | Outside GA | 16.9% |
| Other Counties (<0.1%) | 2.0% | In/Outside GA | 2.0% |

Legend
- Columbus MPO
- Employment Base
- Georgia MPOs
- Study Area
- Counties Outside GA

*Source: 2000 Census County-to-County Work Flow Data*

# Columbus-Phenix City MPO Employment Base

Figure 2-8

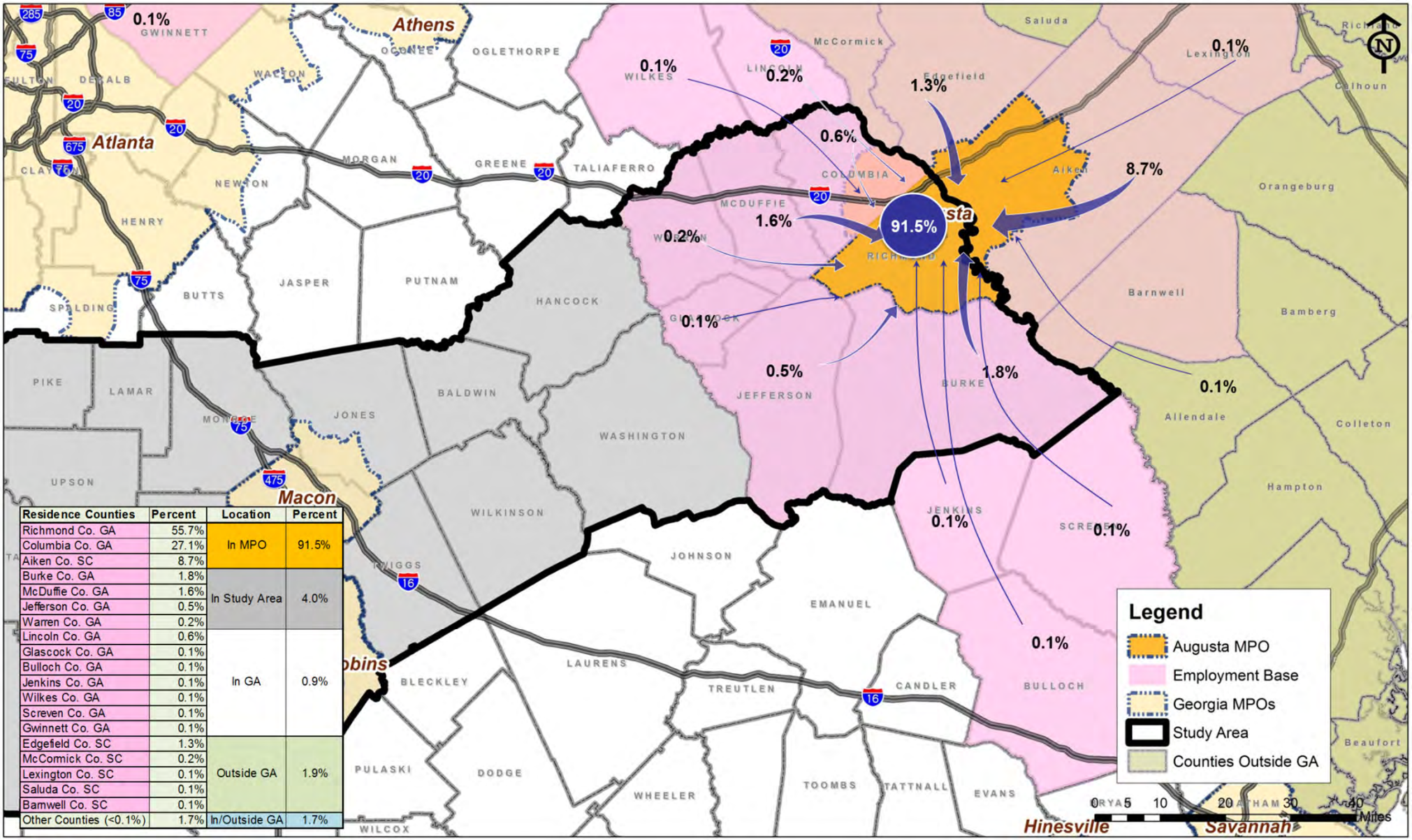



| Residence Counties | Percent | Location | Percent |
|---|---|---|---|
| Bibb Co. GA | 42.8% | | |
| Houston Co. GA | 35.9% | In MPO | 78.7% |
| Jones Co. GA | 4.7% | | |
| Peach Co. GA | 3.2% | | |
| Monroe Co. GA | 2.5% | | |
| Crawford Co. GA | 2.2% | | |
| Twiggs Co. GA | 1.6% | | |
| Baldwin Co. GA | 0.7% | In Study Area | 16.3% |
| Wilkinson Co. GA | 0.4% | | |
| Macon Co. GA | 0.4% | | |
| Taylor Co. GA | 0.2% | | |
| Lamar Co. GA | 0.1% | | |
| Upson Co. GA | 0.1% | | |
| Bleckley Co. GA | 0.8% | | |
| Pulaski Co. GA | 0.5% | | |
| Laurens Co. GA | 0.4% | | |
| Putnam Co. GA | 0.3% | | |
| Dodge Co. GA | 0.2% | | |
| Dooly Co. GA | 0.2% | | |
| Gwinnett Co. GA | 0.2% | | |
| Henry Co. GA | 0.1% | | |
| Clayton Co. GA | 0.1% | In GA | 3.3% |
| Spalding Co. GA | 0.1% | | |
| Fulton Co. GA | 0.1% | | |
| Jasper Co. GA | 0.1% | | |
| DeKalb Co. GA | 0.1% | | |
| Wilcox Co. GA | 0.1% | | |
| Crisp Co. GA | 0.1% | | |
| Cobb Co. GA | 0.1% | | |
| Other Counties (<0.1%) | 1.7% | In/Outside GA | 1.7% |

*Source: 2000 Census County-to-County Work Flow Data*

# Macon and Warner Robins MPO Employment Base

Figure 2-9

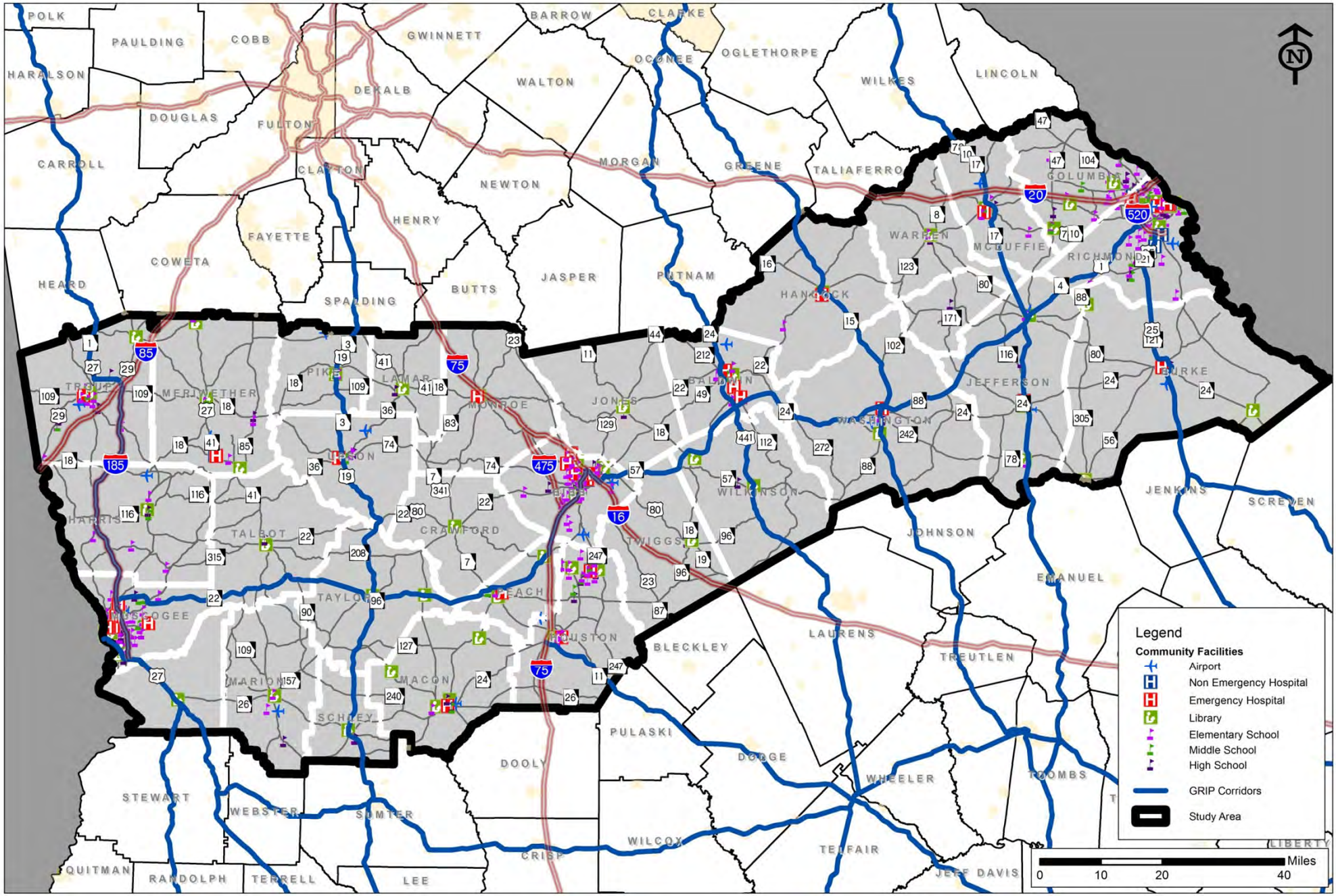



| Residence Counties | Percent | Location | Percent |
|---|---|---|---|
| Richmond Co. GA | 55.7% | In MPO | 91.5% |
| Columbia Co. GA | 27.1% | | |
| Aiken Co. SC | 8.7% | | |
| Burke Co. GA | 1.8% | In Study Area | 4.0% |
| McDuffie Co. GA | 1.6% | | |
| Jefferson Co. GA | 0.5% | | |
| Warren Co. GA | 0.2% | | |
| Lincoln Co. GA | 0.6% | In GA | 0.9% |
| Glascock Co. GA | 0.1% | | |
| Bulloch Co. GA | 0.1% | | |
| Jenkins Co. GA | 0.1% | | |
| Wilkes Co. GA | 0.1% | | |
| Screven Co. GA | 0.1% | | |
| Gwinnett Co. GA | 0.1% | | |
| Edgefield Co. SC | 1.3% | Outside GA | 1.9% |
| McCormick Co. SC | 0.2% | | |
| Lexington Co. SC | 0.1% | | |
| Saluda Co. SC | 0.1% | | |
| Barnwell Co. SC | 0.1% | | |
| Other Counties (<0.1%) | 1.7% | In/Outside GA | 1.7% |

*Source: 2000 Census County-to-County Work Flow data*

# Augusta MPO Employment Base

Figure 2-10




*Source: Georgia GIS Data Clearinghouse*

# Community Facilities

Figure 2-11

## 2.5 NATURAL RESOURCES

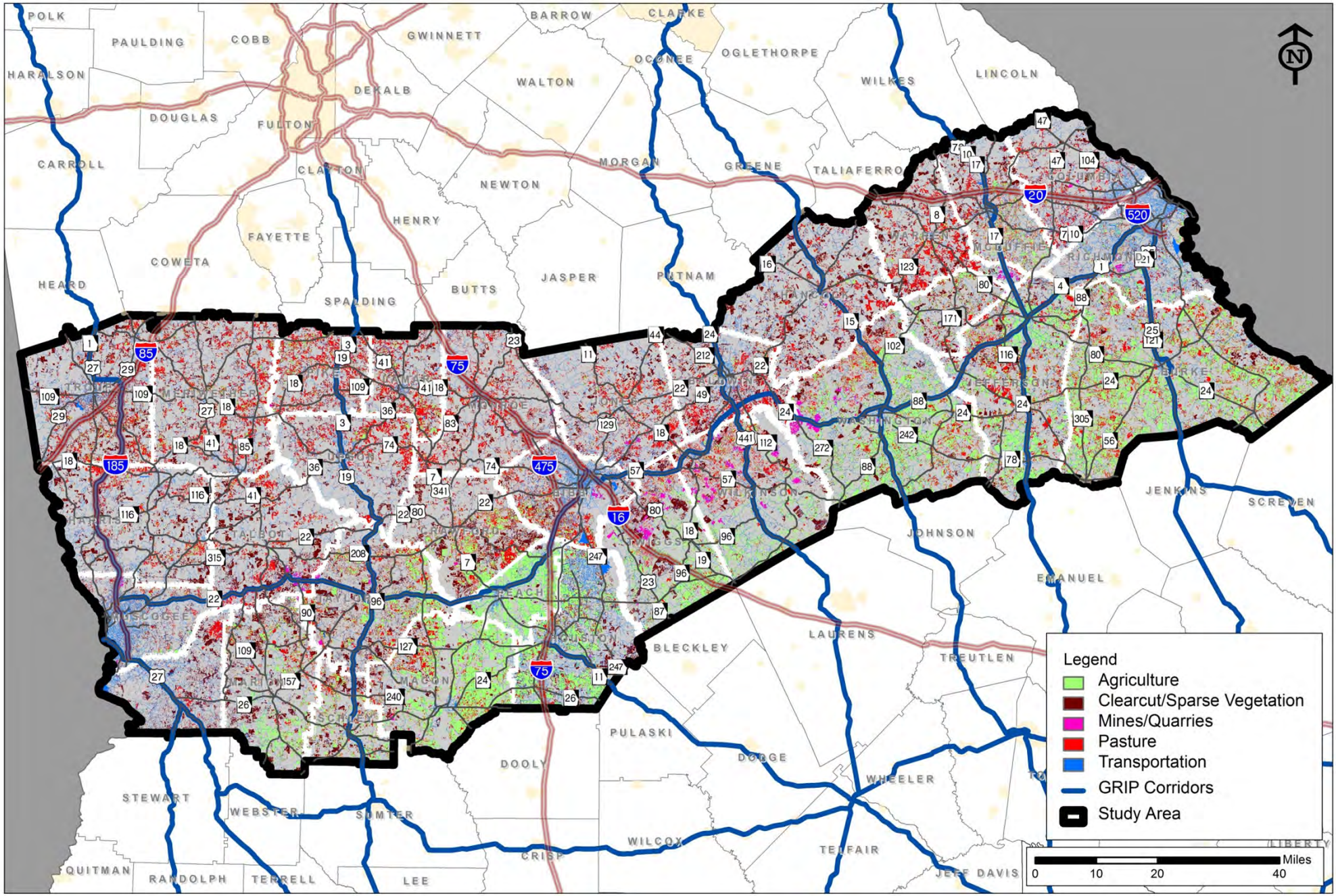
A vast array of natural resources exist in the study area such as minerals, lumber, and enriched soils for agriculture, turf grass and livestock. The distribution of these resources is illustrated in Figure 2-12. In the study area, this translates into $65 billion dollars in annual economic activity from onions, cotton, peanuts, peaches, lumber, and minerals. Significant presence of the forestry industry throughout the study area also contributes to Georgia's title as the leader in the lumber production east of the Mississippi River.

A portion of the study area is also known as the world leader of the production and processing of kaolin and clay. Washington, Wilkinson, Bibb, Twiggs and Baldwin Counties (all within the study area) are the top five counties in number of persons employed in the Kaolin industry. An efficient transportation network, which provides both north-south and east-west regional connectivity, helps to ensure these resources continue to meet their economic potential. Figure 2-13 illustrates locations where minerals have been identified and the status of activity as defined below:

*An efficient transportation network, which provides both north-south and east-west regional connectivity, helps to ensure these resources continue to meet their economic potential.*

- Occurrence - No production has taken place and there has been no or little activity since discovery;
- Prospect - Enough work has been done to at least estimate grade and tonnage. The deposits may or may not have undergone feasibility studies that would lead to a decision on going into production;
- Producer - A mine is currently in production.
- Past Producer - A mine formerly operating that has closed, where the equipment or structures may have been removed or abandoned; and
- Plant - A processing plant (smelter, refiner, beneficiation, etc.) that may or may not be currently producing.

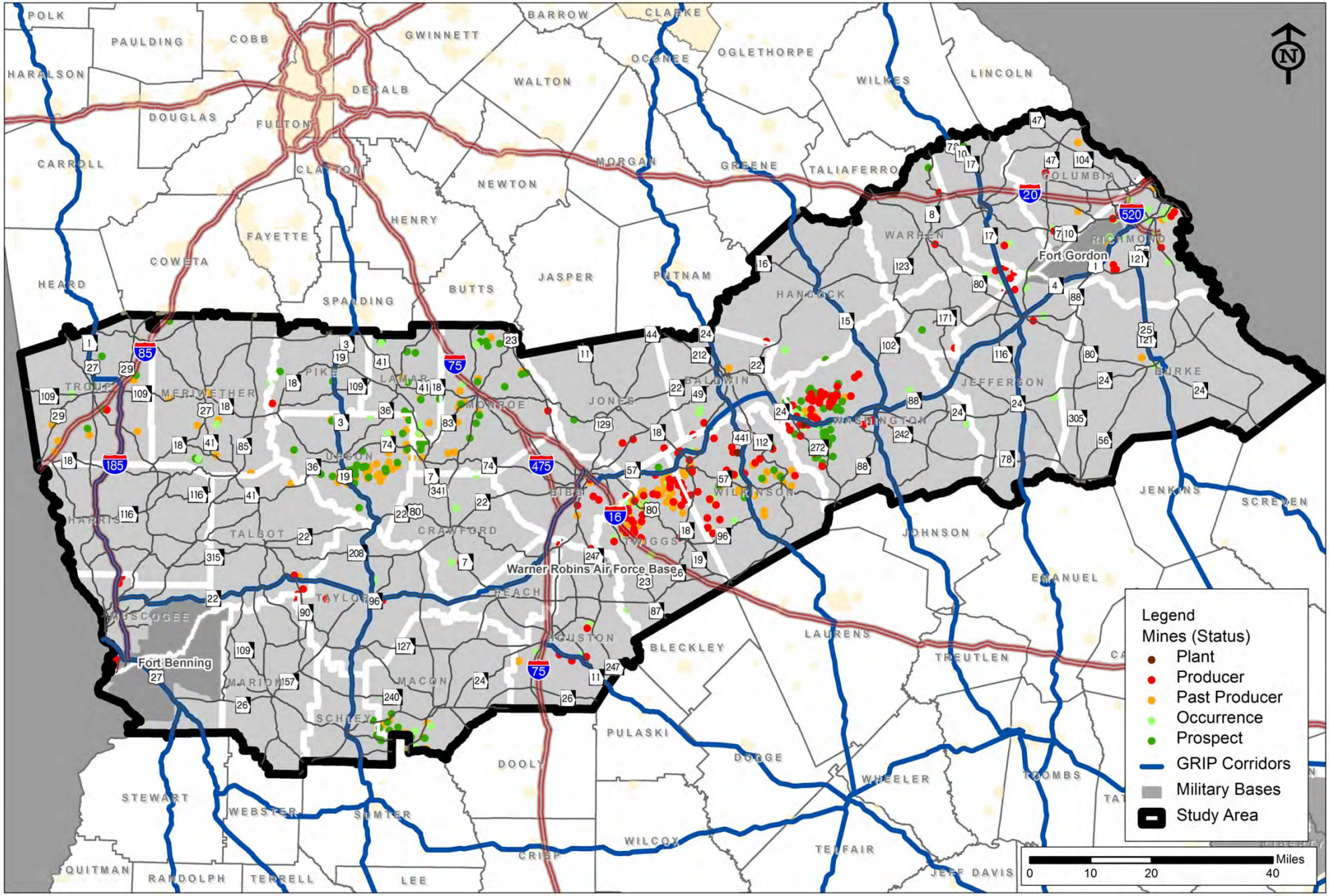
The location of streams and wetlands should be noted in assessing transportation needs as they sometimes affect connectivity. These considerations are often balanced with the issue of potential environmental impacts associated developing new water crossings (for example, this is primarily the case with the wetlands of the wide Ocmulgee River basin on the development of a new Fall Line Freeway crossing in the Macon area). Figure 2-14 illustrates the wetlands throughout the study area, which will be considered in the development of recommendations. (Please note this identification is being done from a planning-level scope and does not indicate the level of detail required should potential projects continue to a design and development stage.




*Source: Natural Resource Spatial Analysis Laboratory, Institute of Ecology, University of Georgia (1998)*

# Natural Resources

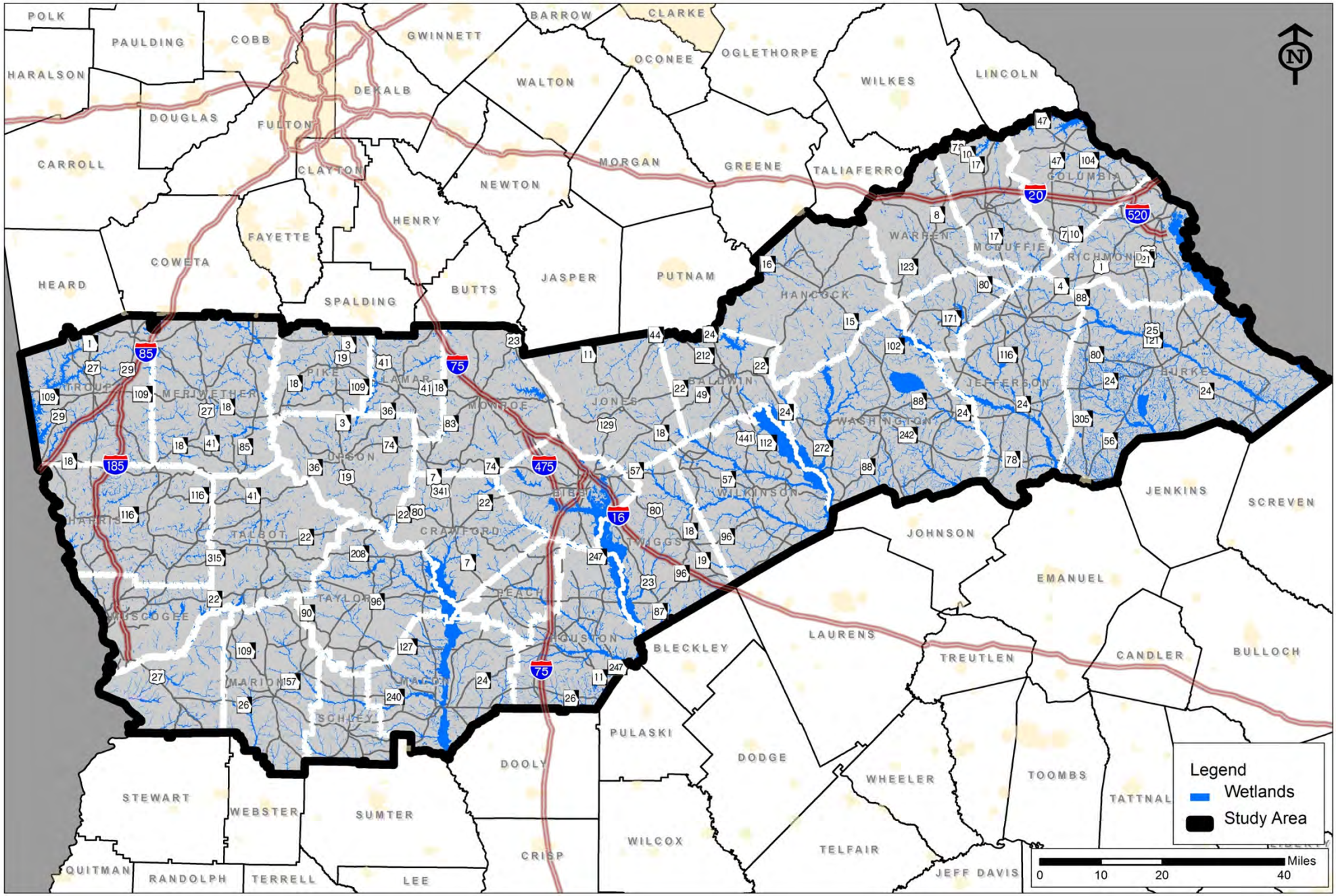
Figure 2-12




*Source: USGS Mineral Resources Data Systems (2011)*

# Active Mines and Plants

Figure 2-13




*Source: Georgia GIS Data Clearinghouse*

# Wetlands

Figure 2-14

## 2.6 EXISTING ROADWAY NETWORK

In assessing the potential for enhancing cross-state mobility, it is important to understand the existing roadway network. For the purpose of this study, only roadways designated as State Routes or Interstate Highways were analyzed. This section reviews various conditions of the state roadways in the 31-county study area. The data is provided from GDOT's most recent roadway conditions (RC) database. The following data was reviewed to facilitate the study process:

*For the purpose of this study, only roadways designated as State Routes or Interstate Highways were analyzed.*

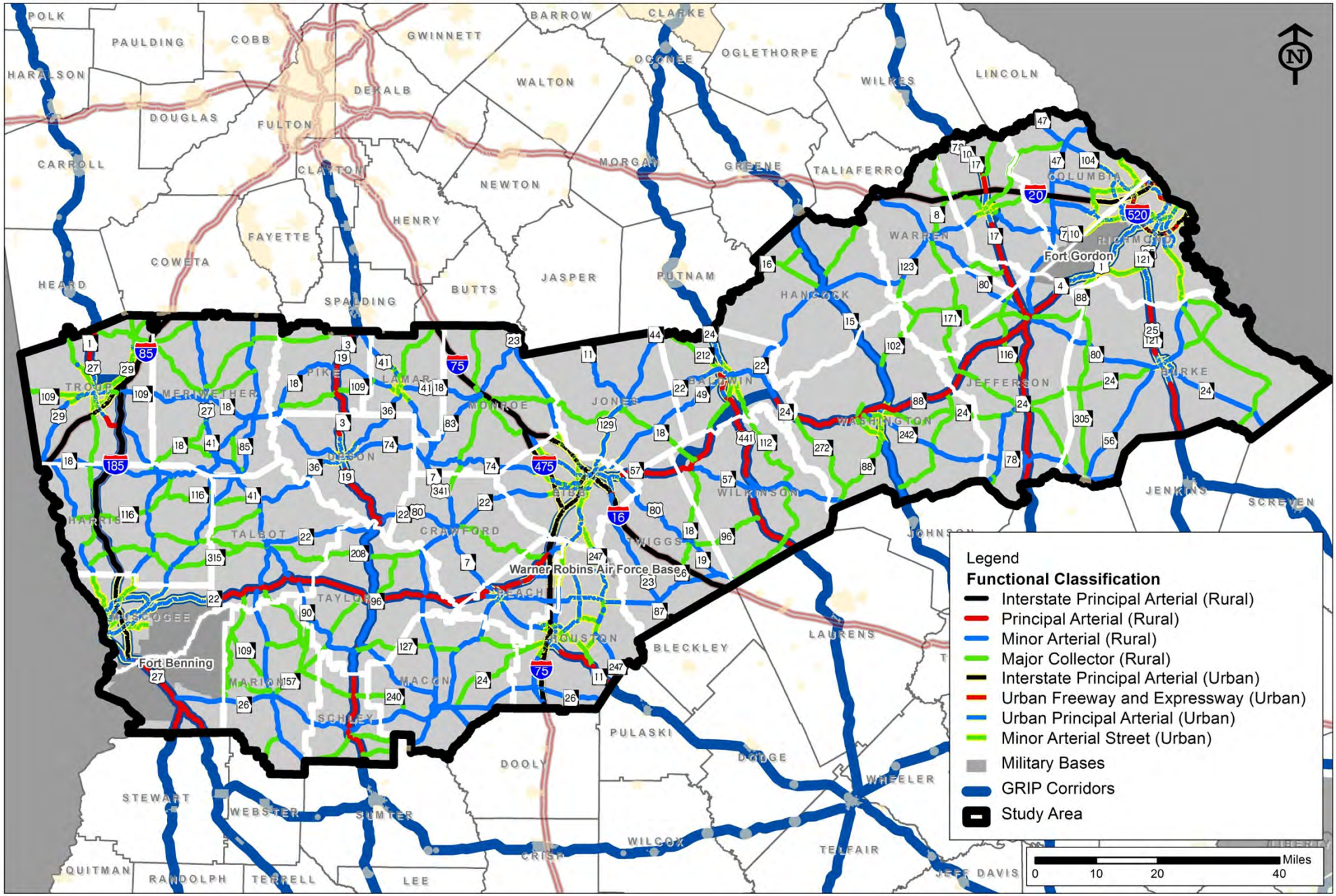
- Functional classification of a road;
- Number of road lanes (through); and
- Width of roadway shoulders.

### 2.6.1 FUNCTIONAL CLASSIFICATION

Roadways are grouped into functional classes according to the character of traffic they are intended to serve. There are four highway functional classifications: expressway/freeway, arterial, collector, and local roads:

- **Expressway/Freeway** - Provides the highest level of service at higher speeds for long uninterrupted distance, with some degree of access control;
- **Arterial** - Provides the next highest level of service at moderate to higher speeds, with some degree of access control. Arterials are typically classified as major arterial and minor arterial;
- **Collector** - Provides a lower level of service at a lower speeds for shorter distances by collecting traffic from local roads and connecting them with arterials. Collectors are typically classified as major collector and minor collector; and
- **Local** - Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or minimal "through" movement.

In the study area, there are approximately 267 miles of interstate routes (67 percent urban and 33 percent rural) represented by portions of I-20, I-75, I-16, I-185 and I-85. There are also 2,461 miles of arterial facilities and 1,101 miles of collectors and local streets. Figure 2-15 displays the functional class of roadways in the study area.




*Source: GDOT Roadway Characteristics (2010)*

# Roadway Functional Classification

Figure 2-15

### 2.6.2 ROAD LANES

*A majority of the roads in the study area are two lane roads with the exception of interstate facilities and portions of GRIP corridors.*

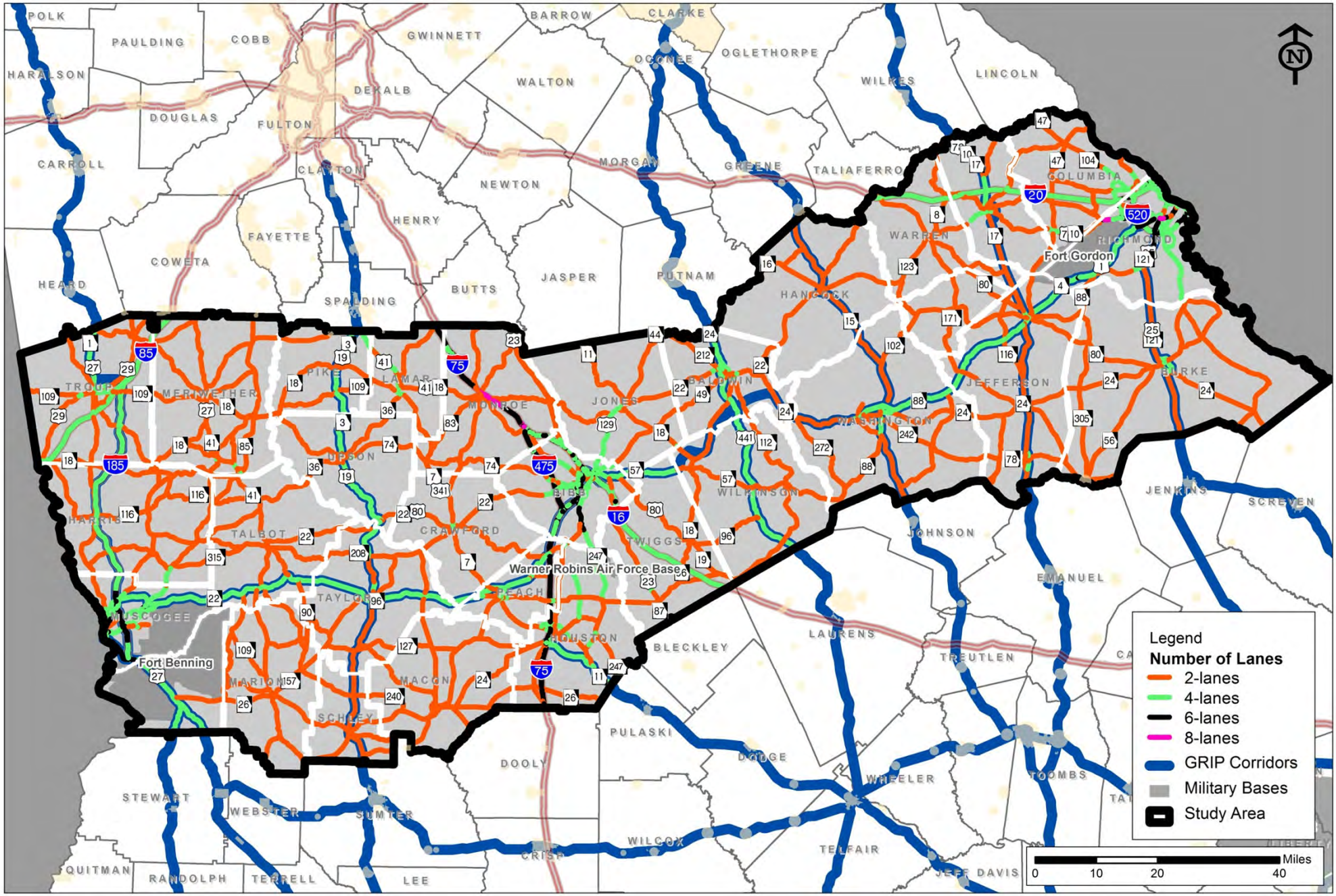
Another important attribute reviewed from the GDOT RC Database is the number of lanes provided on each road. The roads in the study area predominately serve traffic in both directions; however some of the downtown areas have roads which serve only one-way traffic. Figure 2-16 displays the number of lanes on the roads in the study area.

### 2.6.3 ROADWAY SHOULDERS

*Roadway shoulders can impact operations. Higher speeds can be achieved safely on roads with wider shoulders. Also, trucks can better be accommodated by roads with sufficient shoulder width.*

GDOT's RC Database provides shoulder information for state roads. Figure 2-17 shows the width of shoulder provided on state roads through the study area. For this analysis, both the shoulder type and shoulder width were reviewed to determine segments of roadways in need of potential upgrade. A wide variety of shoulder widths and types are present throughout the study area. The objective of this analysis is to determine areas where the shoulder is narrow. Insufficient shoulder width sometimes affects travel speeds, safety considerations, and bicycle and pedestrian usage. The following thresholds, established based on desirable engineering design standards, were used to determine potential shoulder areas:

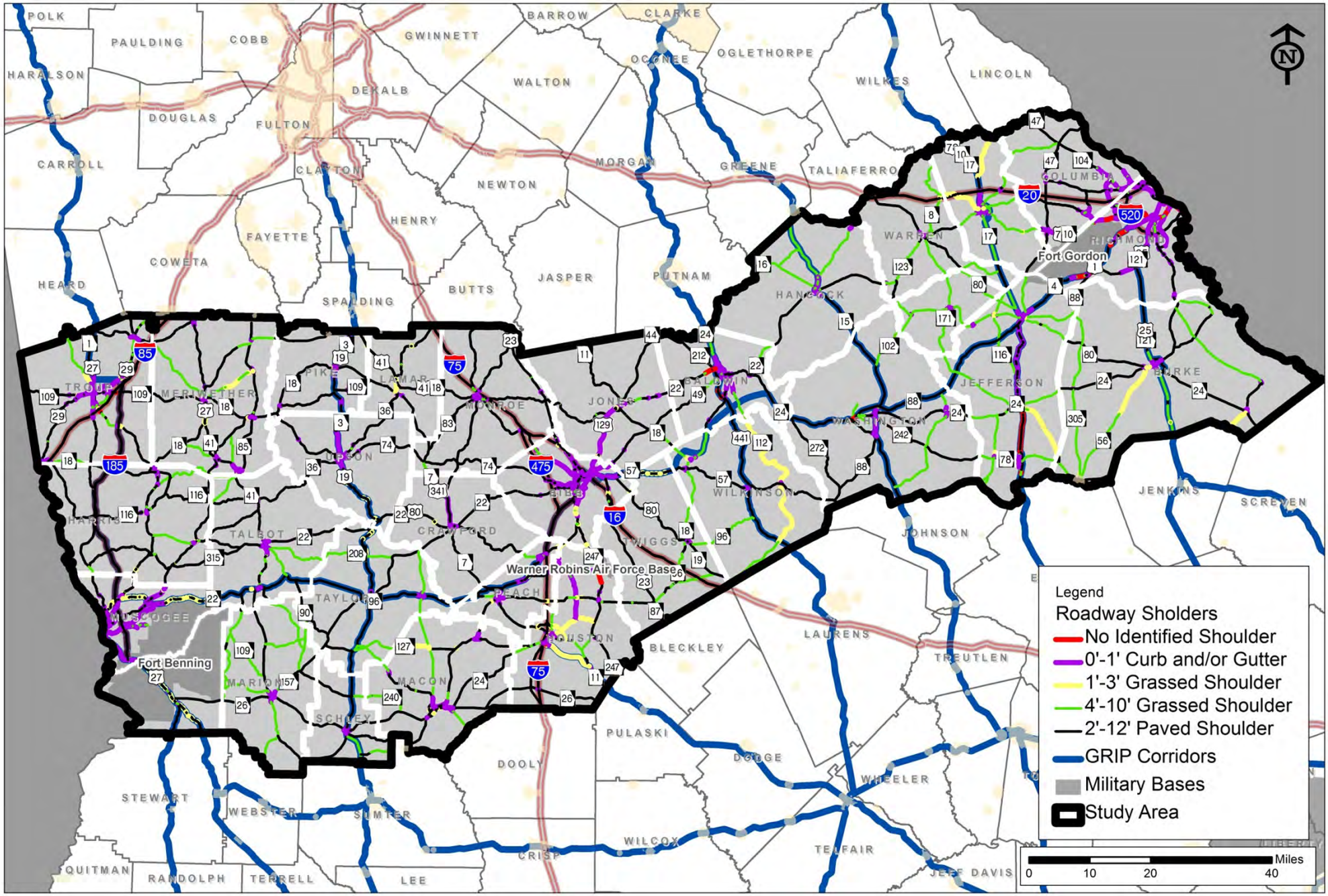
- No shoulder or an unidentifiable shoulder;
- Grass shoulder less than 4 feet; and
- Paved shoulder less than 2 feet.




*Source: GDOT Roadway Characteristics (2010)*

# Number of Lanes

Figure 2-16




*Source: GDOT Roadway Characteristics (2010)*

# Roadway Shoulder Characteristics

Figure 2-17

### 2.6.4 BRIDGES

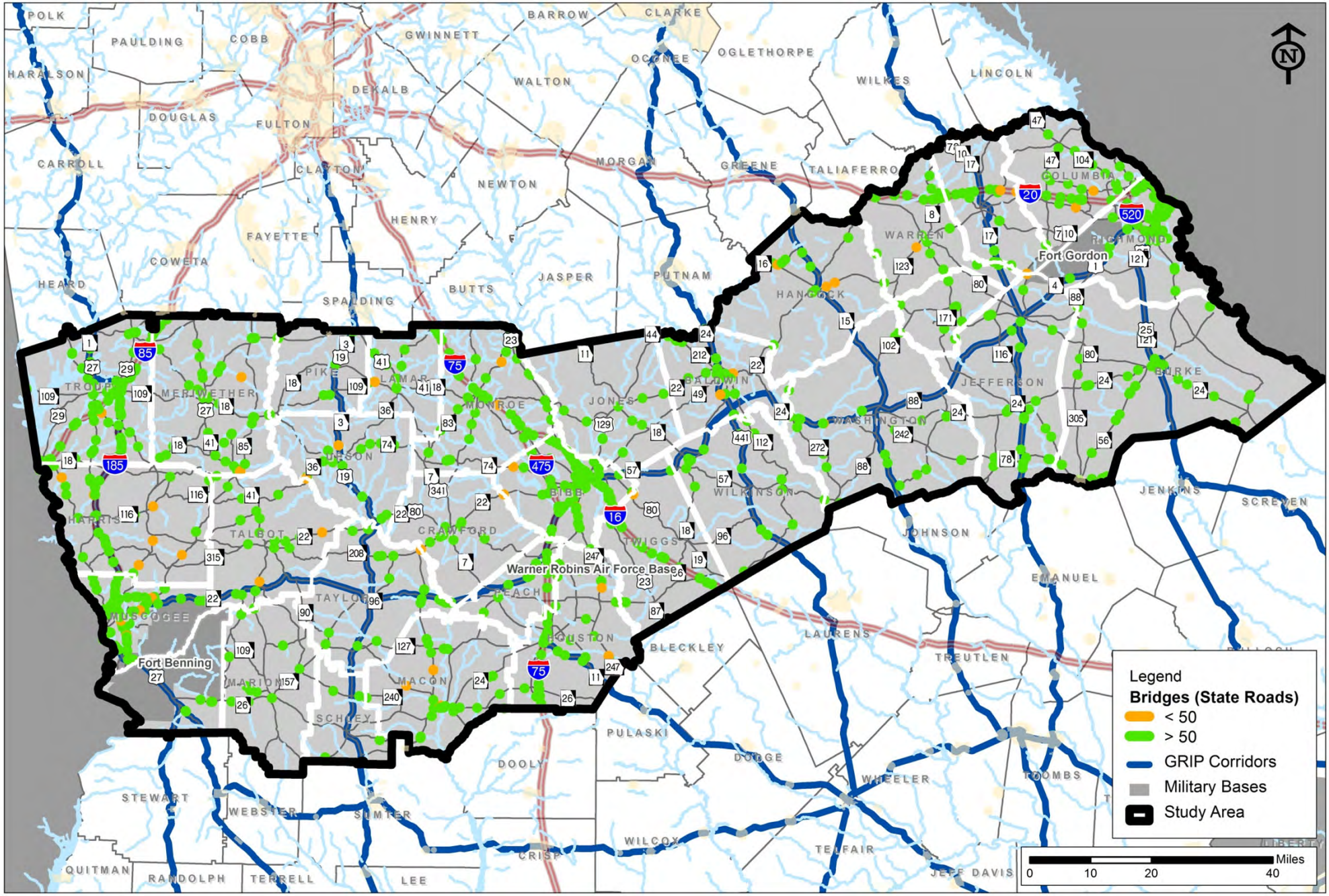
The condition of bridges throughout the study area can impact mobility, especially for freight transport. Bridges were evaluated to determine the need for potential improvement. Bridges can pose a major obstacle to a road network due to load limits or other restrictions. All bridges along state routes within the study area were assessed for improvement need.

To facilitate this analysis, GDOT provided bridge condition reports for each of the 989 bridges within the study area. Sufficiency rating is the general measure of the condition of each bridge. The sufficiency rating is used to determine the structural and geometric condition of the bridge, and represents the structural safety, adequacy, serviceability, and necessity of public use. This measure is used to identify the need for maintenance, rehabilitation or reconstruction of a bridge structure. Bridges are rated on a point system from 1 to 100 (the maximum rating). Bridges with a sufficiency rating of less than 80, which includes 413 bridges (41.8 percent), are candidates for federal rehabilitation funds.

*Bridges with ratings below 50 can still safely accommodate traffic; however, upgrading these bridges to modern design and load standards will improve the operation and safety of the bridge.*

All bridges with a sufficiency rating of 50 or lower, which includes 56 bridges (5.7 percent) were identified are candidates for federal bridge replacement funds. Figure 2-18 illustrates the bridges below this threshold.

While this study reviewed bridge condition reports and identified bridges eligible for federal rehabilitation and replacement funds, GDOT's Bridge Group continously monitor all bridges throughout the state for maintenece, rehabilitation and replacements needs.




*Source: GDOT Bridge Inventory Management System*

# Bridge Sufficiency Rating

Figure 2-18

## 2.7 PEDESTRIAN AND BICYCLE NETWORK

Non-vehicular transportation facilities, such as sidewalks, trails and bike paths, can provide an alternative mode of transportation for short trips in addition to serving recreational purposes. Pedestrian and bicycle facilities are found throughout the study area, with a concentration in more densely populated areas.

*Often, major roadways can serve as an obstacle to pedestrians and bicyclists. If proper crossing facilities are not provided, roadways can not only make travel more difficult for these travelers, but can cause a safety issue.*

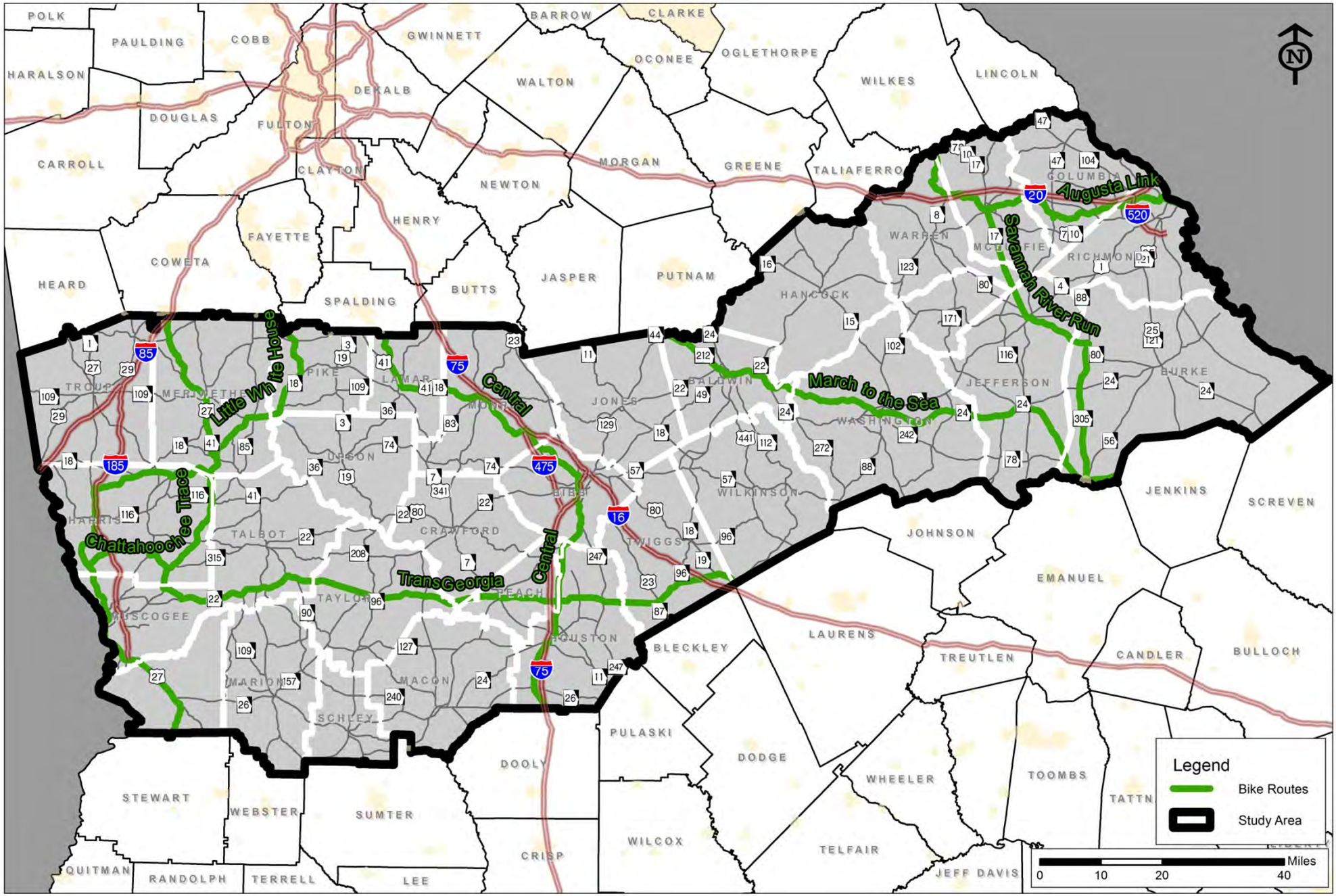
The Georgia Department of Transportation initiated a Statewide Bicycle Plan in the mid-1990s with the goal of promoting mobility options in urban and rural areas, providing connectivity for intrastate and interstate bicycle travel, encouraging economic development through cycling and walking, and promoting the establishment of U.S. numbered bicycle routes in Georgia. To help achieve the plan's goals, GDOT established fourteen cross-state bicycle routes traveling north-south and east-west across the state. Several of these routes pass through the study area as shown in Figure 2-19.

Often, major roadways include a mix of users such as pedestrians and bicyclists. Several locations, primarily in MPO areas, have higher number of pedestrian crashes, as noted in Table 2-3. Of these nine locations, 13 of the 74 pedestrian crashes were fatal between 2007 and 2009. While this study reviewed crash reports, GDOT continously monitors high crash areas as part of their safety program.

***Table 2-3: High Pedestrian Crash Rate Segments (2007 – 2009)***

| Route | County | Location | Pedestrian Crashes | Fatal Pedestrian Crashes | Crash Rate (crashes/mi) |
|---|---|---|---|---|---|
| SR 10 | Richmond | MP 10.5 to 15.2 | 7 | 3 | 1.49 |
| SR 1043 | Muscogee | MP 1.8 to 2.8 | 4 | 1 | 4 |
| SR 19 | Bibb | MP 4.6 to 14.6 | 8 | 1 | 0.8 |
| SR 22 | Bibb | MP 11.1 to 16.0 | 7 | 2 | 1.43 |
| SR 247 | Bibb | MP 8.0 to 14.6 | 11 | 2 | 1.67 |
| SR 4 | Richmond | MP 20.5 to 25.0 | 16 | 0 | 3.56 |
| SR 74 | Bibb | MP 6.6 to 11.6 | 6 | 1 | 1.2 |
| SR 85 | Muscogee | MP 0.9 to 5.9 | 7 | 1 | 1.4 |
| SR 87 | Bibb | MP 6.5 to 13.1 | 8 | 2 | 1.21 |

*Source: 2007 – 2009 CARE data*




*Source: GDOT 2004 Bike Routes*

# Existing Bicycle Network

Figure 2-19

## 2.8 PUBLIC TRANSIT NETWORK

The availability of public transit as a viable transportation option was assessed throughout the study area. Within these areas, various transit options are operating or the potential exists. The services are provided with federal funds from the Federal Transit Administration for rural or urban systems (FTA Section 5311 and Section 5307) and local funds.

*A majority of the public transportation systems operate a demand response service, which requires riders to call in advance to schedule a service and does not operate on a regular fixed route.*

Public transit services in some form are provided in all study area counties with the exception of Chattahoochee, Harris, Marion, Monroe, Schley, and Washington. Table 2-4 describes the type of service provided by these transit systems. A majority of the public transportation systems operate a "demand response" service (sometimes called 'dial-a-ride'), which requires riders to call in advance to schedule a service because they are not regular fixed route services. Fixed route services are available in the MPO areas of Macon, Augusta and Columbus.

*Table 2-4: Existing Public Transit Service*

| County | Service Provider Name | Hours of Operations | Description of Services Provided |
|---|---|---|---|
| Baldwin | Baldwin County Transit | M-F 7AM – 4:30PM | Demand Response; Service within county; Advanced notice required; Offered to all citizens |
| Bibb | MTA Macon Transit Authority | N/A | Para-Transit Point-to-Point and Demand Response; 24 hours advanced notice required; Riders must certify eligibility before riding |
| Bibb | MTA Macon Transit Authority | M-Sat 5: AM – 11 PM | Fixed Route; Service within Macon; Reference route maps and schedules |
| Burke | Burke County Transit | M-F 6 AM – 7 PM | Demand Response; Call for service area; Advanced notice required; Offered to all citizens |
| Columbia | Columbia County Transit | M-F 7AM – 6PM | Demand Response; Service within Columbia County and north of Gordon Hwy/US 278 in Richmond; Advanced notice required; Offered to all citizens county with one day advance notice |
| Crawford | Crawford County Transit | M-F 8AM-4PM | Demand Response; Call for service area; Advanced notice required; Available to all citizens |
| Glascock | Glascock County Transit | N/A | Demand Response; Call for service area; Advanced notice required; Available to all citizens |
| Hancock | Hancock County Transit | M-F 8AM – 5PM | Demand Response; Call for service area; Advanced notice required; Available to all citizens |
| Jefferson | Jefferson County Transit | M-F 4:30AM-11PM | Demand Response; Service within county; Advanced notice required; Available to all citizens |
| Jones | Jones County Transit | N/A | Demand Response; Services area of Butts, Dodge, Jones, Montgomery, Peach, Pulaski, Telfair, Twiggs & Wilcox; 24 hours notice r'qd; Offer to all citizens |
| Lamar | Three Rivers Transit System | M-F 8AM-5PM | Demand Response; Services area includes Butts, Lamar, Pike, Spalding, Upson counties; 24 hours |

| County | Service Provider Name | Hours of Operations | Description of Services Provided |
|---|---|---|---|
| | | | notice required; Offered to all citizens |
| Macon | Macon County Transit | N/A | N/A |
| McDuffie | McDuffie County Transit | M-F 8AM – 5PM | Demand Response; Call for service area; Advanced notice required; Available to all citizens |
| Meriwether | Meriwether County | N/A | County is in process of developing services and receiving 5311 funding; Call for status update |
| Muscogee | Metra | M-Sa 4:30AM-6:30PM | Demand Response Dial-A-Ride; Service in the Columbus area; Advanced notice required; Available to all citizens |
| Muscogee | Metra | M-Sa 5:00AM-8:00PM | Fixed Route service in Columbus Area; reference route map and schedule |
| Peach | Peach County Transit | N/A | Demand Response; Call for service area; Advanced notice required; Available to all citizens |
| Pike | Three Rivers Transit System | M-F 8:00AM-5:00PM | Demand Response; Services area includes Butts, Lamar, Pike, Spalding, Upson counties; 24 hours notice required; Offered to all citizens |
| Richmond | Augusta Transit | N/A | Demand Response; Service area within city of Augusta-begins south of Bobby Jones Expressway to Hephziah, McBean and Blythe; Advanced notice required; Available to all citizens |
| Richmond | Augusta Transit | M-Sa 6:30AM – 6:45PM | Fixed Route; Service within city of Augusta; Reference route map and schedule |
| Talbot | Talbot County Transit | N/A | Demand Response; Call for service area; Advanced notice required; Available to all citizens |
| Taylor | Taylor County Transit | M-F 8:00AM – 5:00PM | Demand Response; Service within Taylor county and to Bibb, Houston Muscogee, Sumter, Macon, Peach, Schley, Talbot and Upson; 3 day advanced notice preferred; Available to all citizens |
| Troup | Troup Transit | M-F 9:00AM-4:00PM | Demand Response; Call for service area; 24 hour advanced notice required; Offered to all citizens |
| Twiggs | Twiggs County Transit | N/A | Demand Response. Call for service area; Advanced notice required; Available to all citizens |
| Upson | Three Rivers Transit System | M-F 8:00AM-5:00PM | Demand Response; Services area includes Butts, Lamar, Pike, Spalding Upson counties; 24 hours notice required; Offered to all citizens |
| Warren | Warren County Transit | N/A | Demand Response; Service to local and neighboring counties; 24 hour notice required; Offered to all citizens |
| Wilkinson | Wilkinson Pubic Transit | M-F 8:00AM-5:00PM | Demand Response; Advanced reservations required; Available to all citizens |

## 2.9 CURRENT OPERATIONS

### 2.9.1 SAFETY

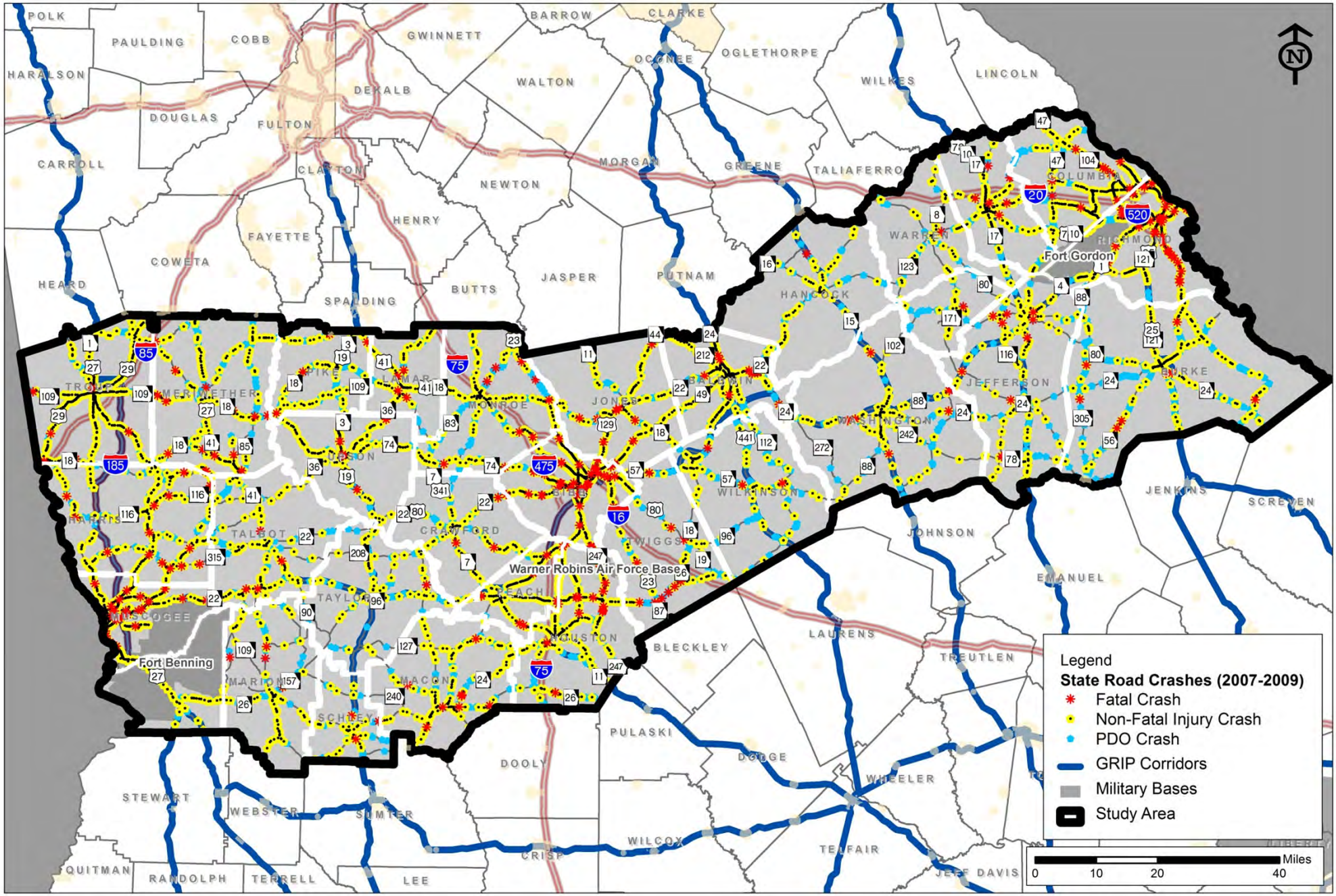
The most recent vehicular crash data from GDOT (2007 – 2009 are the latest years available with complete data) was collected and analyzed for state roads in the 31-county study area. The crash data was analyzed using the Critical Analysis Reporting Environment (CARE) software developed by the University of Alabama with supporting crash data from GDOT's Office of Traffic Safety and Design. Crash data for all types of vehicular crashes were used to determine roadway locations with potential safety deficiencies throughout the study area. The study area experienced a total of 53,756 crashes with 14,313 non-fatal, injury crashes and 306 fatal crashes during the three-year analysis period. During the same analysis period, the State of Georgia experienced a total of 911,980 crashes with 231,315 non-fatal injured crashes and 4,065 fatal-crashes. The distribution of crashes by severity along state routes in the study area is shown in Figure 2-20.

*I-185 south of Columbus, SR 49 west of I-75 and SR 15 south of Sandersville sustained crash rates of more than twice the statewide average between 2007-2009.*

For comparison purposes, the crash rate for segments along the GRIP corridors in the study area were compared to the statewide average for similar facilities. Figure 2-21 shows the results of this analysis. Most segments experienced similar crash rates as compared to the average. Three segments - I-185 south of Columbus, SR 49 west of I-75 and SR 15 south of Sandersville - sustained crash rates of more than twice the statewide average for similarly classified roadways.

### 2.9.2 TRAFFIC VOLUMES

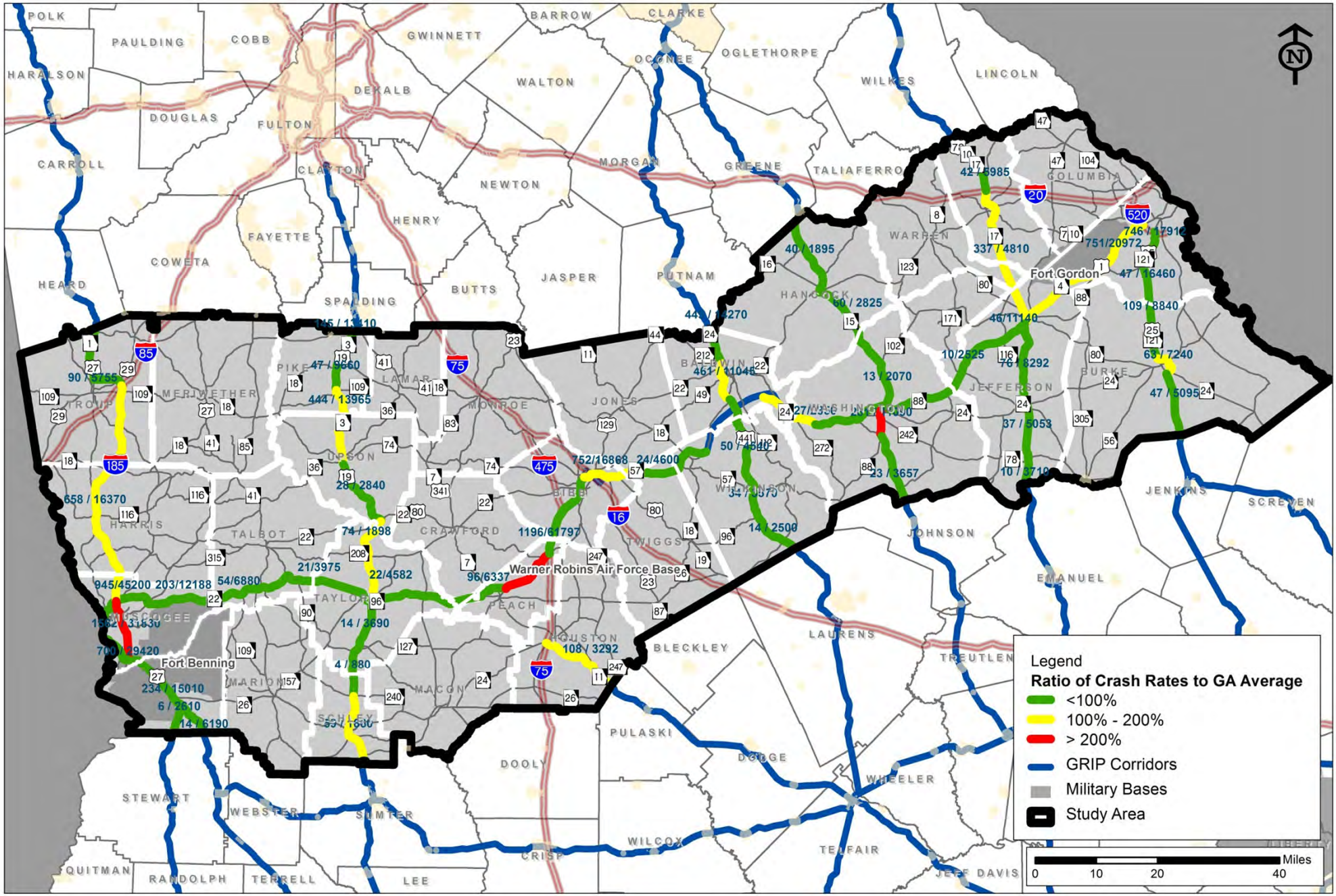
Existing traffic information was collected from GDOT's Annual Count Program for the year 2010. Figure 2-22 illustrates Annual Average Daily Traffic (AADT) volumes on state routes in the study area. As shown in this figure, routes through much of the study area experience traffic volumes of less than 5,000 vehicles per day. Traffic volumes increase around key study area cities, exceeding 40,000 vehicles per day on roads throughout Columbus, LaGrange, Warner Robins, Macon and Augusta.




*Source: GDOT CARE 2007 – 2009 Crash Data*

# Crash Severity (2007-2009) along State Routes

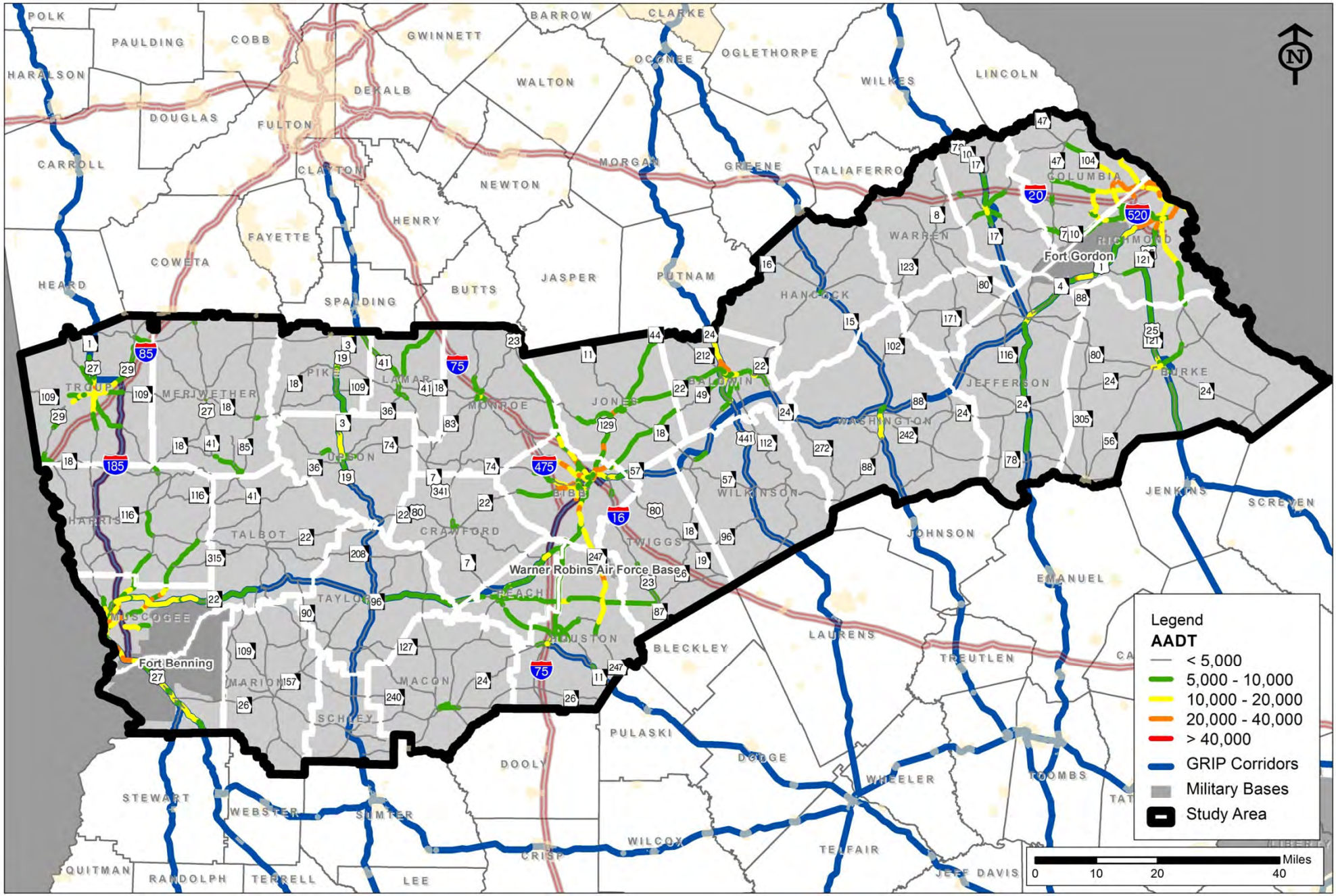
Figure 2-20




*Source: GDOT CARE 2007 – 2009 Crash Data*

# Ratio of Crash Rates to Georgia's Average

Figure 2-21




*Source: GDOT Annual Court Program*

# 2010 Average Annual Daily Traffic (AADT)

Figure 2-22

### 2.9.3 ROADWAY OPERATIONS

A travel demand model was used to supplement the evaluation of existing travel conditions and forecast future travel conditions throughout the study area. This model was based on GDOT's statewide travel demand model, which was calibrated to the year 2006 based on each of the MPO models within the study area. The key output from the travel demand model is the daily volume to capacity ratio for each roadway segment. Each volume to capacity ratio corresponds to a level of service (LOS) based on accepted methodologies from the 2000 Highway Capacity Manual. Existing (2006) operating conditions for the study area are summarized in this section.

Prior to documenting operating conditions, it is useful to summarize level of service. Level of service (LOS) is a qualitative measure of traffic flow describing operating conditions. Six levels of service are defined by the Federal Highway Administration (FHWA) in the Highway Capacity Manual for use in evaluating roadway operating conditions. They are given letter designations from A to F, with LOS "A" representing the best operating conditions and LOS "F" the worst. A facility may operate at a range of levels of service depending upon time of day, day of week or period of the year. A qualitative description of the different levels of service is provided below. Figure 2-23 provides visual representation of the various levels of service.

- **LOS A** – Drivers perceive little or no delay and easily progress along a corridor.
- **LOS B** – Drivers experience some delay but generally driving conditions are favorable.
- **LOS C** – Travel speeds are slightly lower than the posted speed with noticeable delay in intersection areas.
- **LOS D** – Travel speeds are well below the posted speed with few opportunities to pass and considerable intersection delay.
- **LOS E** – The facility is operating at capacity and there are virtually no useable gaps in the traffic.
- **LOS F** – More traffic desires to use a particular facility than it is designed to handle resulting in extreme delays.

The recommended approach used to identify deficient segments was to analyze the volume of traffic on the roadway segments compared to the capacity of those segments, also known as the volume-to-capacity (V/C) ratio. For daily operating conditions, any segment identified as LOS "E" or "F" was considered deficient.

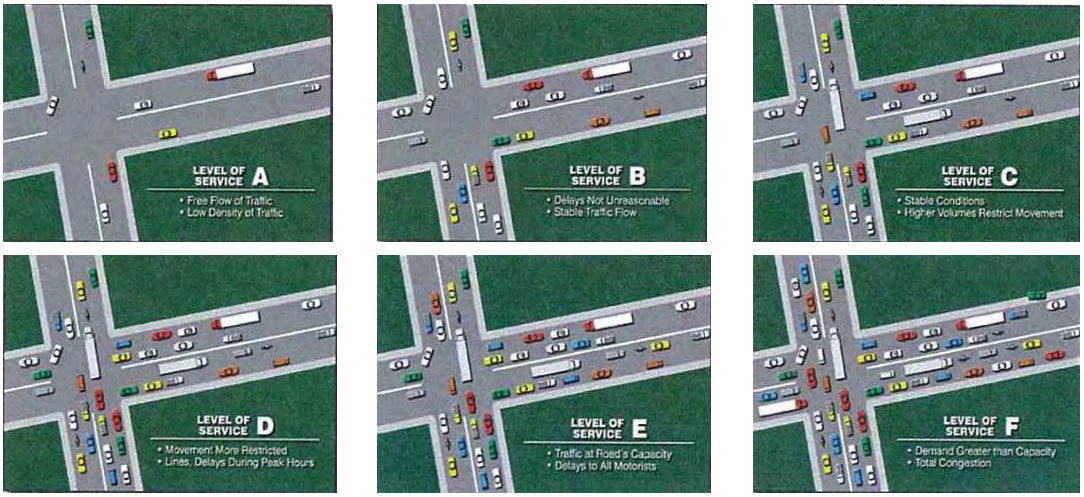



***Figure 2-23: Level of Service***

Within MPO jurisdictions, the MPO models were used to define LOS, while the statewide model was used to assess LOS outside of these regions. Additionally, unique thresholds were established to define LOS in urban versus rural areas due to differences in driver expectancy. The urban areas, as defined by the models, include Columbus, Macon, Warner Robins, Milledgeville, Thomaston and Augusta. The following thresholds were used to assign a level of service to the V/C ratios for rural and urban facilities:

**Rural**

- V/C < 0.35: LOS C or better;
- V/C = 0.35 - 0.55: LOS D;
- V/C = 0.55 - 1.00: LOS E; and,
- V/C > 1.00: LOS F.

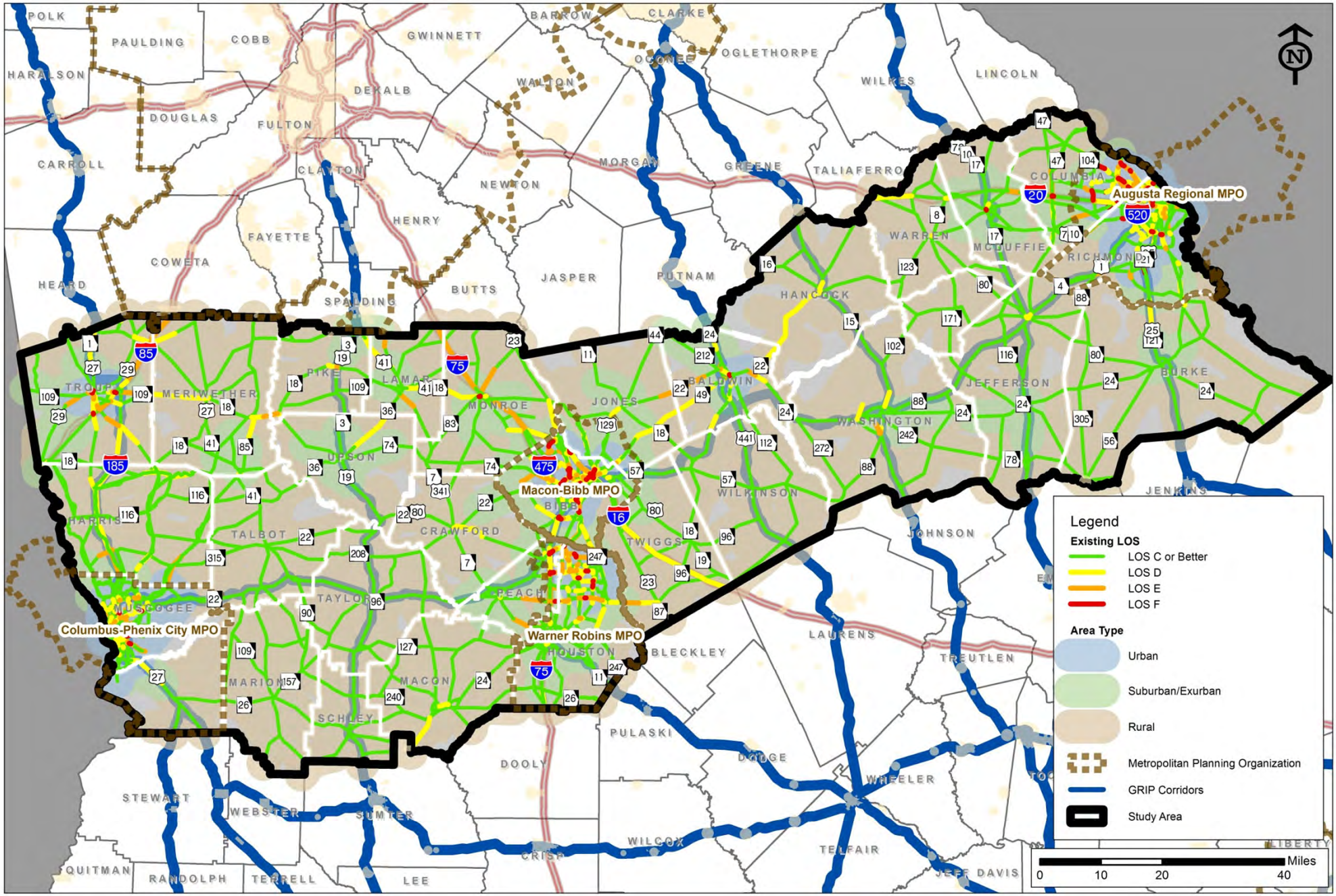
**Urban**

- V/C < 0.70: LOS C or better;
- V/C = 0.70 - 0.85: LOS D;
- V/C = 0.85 - 1.00: LOS E; and,
- V/C > 1.00: LOS F.

*For existing (2006) conditions, over 95 percent of the model network operates at a level of service D or better.*

Figure 2-24 displays the existing LOS for state roads within the study area. As shown, most of the roadways in rural areas operate at LOS C or better, which is an acceptable level. In the urban areas of Columbus, Macon, Warner Robins and Augusta, many roadway segments currently exceed LOS D. Additionally, segments of I-85 and I-75 towards the northern portion of the study area experience LOS E, which signifies these segments operate at or near capacity.

These are consistent with what is expected in areas with developed or developing/changing land use patterns that have limited roadway capacity.




*Source: 2006 Georgia Statewide Model, 2006 CPCMPO Model, 2006 MATS Model, 2006 WRATS Model and 2006 ARTS Model*

# 2006 Level of Service (LOS)

Figure 2-24

### 2.9.4 FREIGHT MOVEMENT

As noted previously, the study area is home to abundant natural resources and other freight-intensive industries. It also provides connections from the Port of Savannah to the west. As a result, an in-depth freight analysis was conducted as the efficient movement of freight and goods is critical to economic growth and the performance of the transportation system. This section describes the freight movement in the study area. It provides information and data on where the freight traffic is coming from and going to, how much freight traffic there is on the roadway network, what the key industry drivers are for freight traffic, and how these flows may change in the future. Additional detail on truck traffic and freight flows can be found in Appendix D.

#### *Freight Flow Analysis*

*23 percent of total freight moved in Georgia occurred in the study area in 2007.*

Based on TRANSEARCH freight flow data, in 2007, more than 128 million tons of freight moved into, out of, and within the study area counties. This equates to about 23 percent of total freight moved in Georgia. Approximately, two-thirds of the freight traffic is moved by trucks and one-third is moved by rail. Air cargo moves less than 0.1 percent of the goods, which are typically higher-value and/or very time dependent. There are no active marine cargo facilities in the region.

The study area has a higher rail flow percentage than the State as a whole, where 79 percent of freight is moved by trucks and 20 percent by rail (Table 2-5). The higher share of rail tonnage in the study area is due in part to the presence of the kaolin industry in the region, where outbound shipments are done in part by rail.

***Table 2-5: 2007 Freight Tons by Mode***

| Mode | CCG Area | Percent of Total | Georgia[a] | Percent of Total |
|---|---|---|---|---|
| Truck | 86,369,169 | 67% | 450,473,978 | 79% |
| Rail | 41,994,790 | 33% | 115,529,731 | 20% |
| Air | 1,515 | < 0.1% | 537,197 | 0.1% |
| Water | 0 | 0% | 1,724,864 | 0.3% |
| ***Total*** | ***128,365,474*** | ***100%*** | ***568,265,771*** | ***100%*** |

*Source: 2007 Georgia TRANSEARCH database.*
*a Includes Inbound, Outbound, and Intrastate flows.*

Table 2.6 shows inbound and outbound freight tonnages generated by each county in the study area. Monroe County alone is responsible for 15 percent of freight movements in the study area, primarily due to the inbound rail shipments of coal for the power plant.

Richmond County (Augusta) is responsible for 13 percent of all freight movements. This freight represents the consumption of Augusta's local population which is the third largest in Georgia. It also represents local manufacturing activity in the Augusta metropolitan area. Similarly, the nine

percent of flows from Bibb County are due to the large population and economy of the Macon region.

*Table 2-6: Freight Tons by Direction for Each County, 2007*

| County | Outbound | Inbound | Total | Percent Total |
|---|---|---|---|---|
| Monroe | 1,615,476 | 17,311,296 | 18,926,773 | 15% |
| Richmond | 8,413,032 | 7,387,093 | 15,800,126 | 13% |
| Washington | 6,949,013 | 4,254,105 | 11,203,118 | 9% |
| Bibb | 5,672,615 | 5,225,321 | 10,897,936 | 9% |
| Muscogee | 3,994,851 | 5,370,983 | 9,365,833 | 7% |
| Talbot | 4,969,127 | 2,626,661 | 7,595,787 | 6% |
| Wilkinson | 3,106,893 | 4,364,689 | 7,471,581 | 6% |
| Jones | 2,768,764 | 3,425,449 | 6,194,213 | 5% |
| Troup | 2,400,996 | 2,440,893 | 4,841,889 | 4% |
| Jefferson | 3,718,424 | 1,071,085 | 4,789,509 | 4% |
| Warren | 2,446,721 | 2,211,136 | 4,657,857 | 4% |
| Houston | 1,762,216 | 2,529,651 | 4,291,867 | 3% |
| Columbia | 2,746,446 | 1,297,296 | 4,043,743 | 3% |
| Twiggs | 2,090,800 | 274,202 | 2,365,002 | 2% |
| Meriwether | 1,905,600 | 455,339 | 2,360,939 | 2% |
| McDuffie | 1,221,089 | 1,137,829 | 2,358,918 | 2% |
| Macon | 783,462 | 823,770 | 1,607,232 | 1% |
| Lamar | 981,366 | 529,883 | 1,511,250 | 1% |
| Baldwin | 526,687 | 442,083 | 968,770 | 1% |
| Peach | 337,238 | 429,264 | 766,501 | 1% |
| Upson | 116,420 | 594,377 | 710,797 | 1% |
| Hancock | 486,332 | 118,014 | 604,346 | 0% |
| Harris | 197,743 | 354,306 | 552,049 | 0% |
| Burke | 321,933 | 219,823 | 541,757 | 0% |
| Crawford | 241,042 | 186,502 | 427,544 | 0% |
| Taylor | 19,227 | 398,374 | 417,601 | 0% |
| Marion | 173,649 | 111,830 | 285,479 | 0% |
| Pike | 9,068 | 267,007 | 276,075 | 0% |
| Chattahoochee | 5,752 | 87,173 | 92,925 | 0% |
| Schley | 40,730 | 51,297 | 92,026 | 0% |
| Glascock | 10,230 | 79,613 | 89,843 | 0% |
| ***Total*** | ***60,032,942*** | ***66,076,346*** | ***126,109,288*** | ***100%*** |

*Source: 2007 Georgia TRANSEARCH database.*

Washington County's 11.2 million tons of goods represent nine percent of the total goods movement in the region; the majority of this tonnage is bulk goods that are mined in the region such as kaolin. The processing of kaolin requires several different inputs generating the inbound tonnage of goods for this county.

*The urbanized areas of Macon, Augusta, and Columbus are among those with the heaviest truck flows. Monroe County has the heaviest rail activity in the study area (43 percent of all rail activity in the region).*

Figures 2-25 and 2-26 show the amount of freight traffic generated in each county for truck and rail, respectively. In terms of truck-

focused movements, the urbanized areas of Macon, Augusta, and Columbus are among those with the heaviest truck flows. In addition, Washington County and its neighboring Wilkinson County, also have significant truck tonnages from the movement of its mining/mineral extraction industries.

For rail-focused movements, the county with the heaviest rail activity is Monroe County. Other rail-intensive counties include Richmond County (Augusta) and the kaolin belt counties (Washington, Wilkinson, and Jefferson).

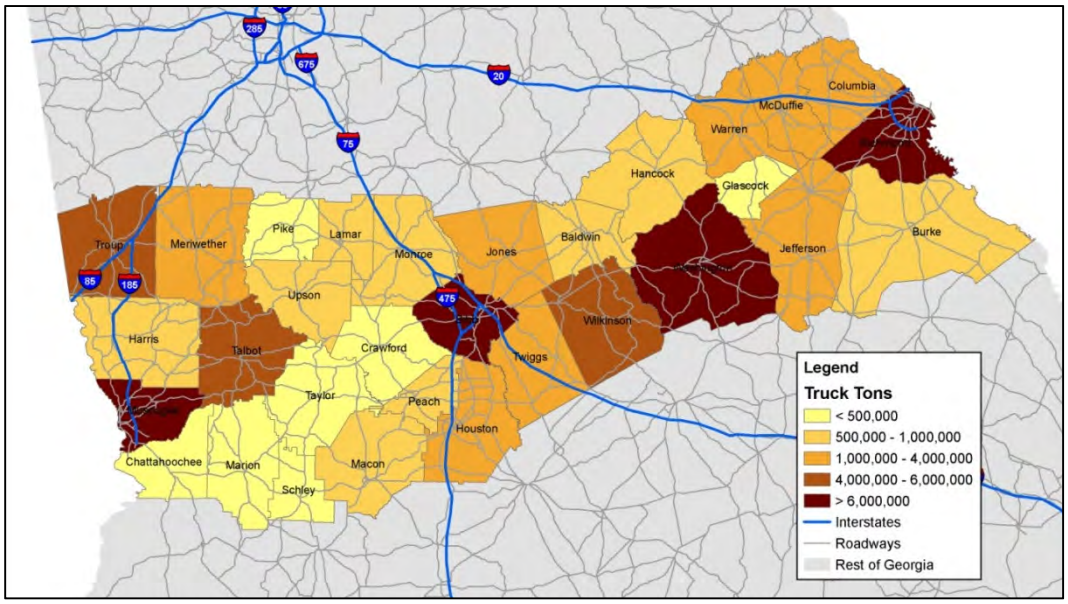



***Figure 2-25: Inbound and Outbound Tons of Freight Moved by Truck (2007)***

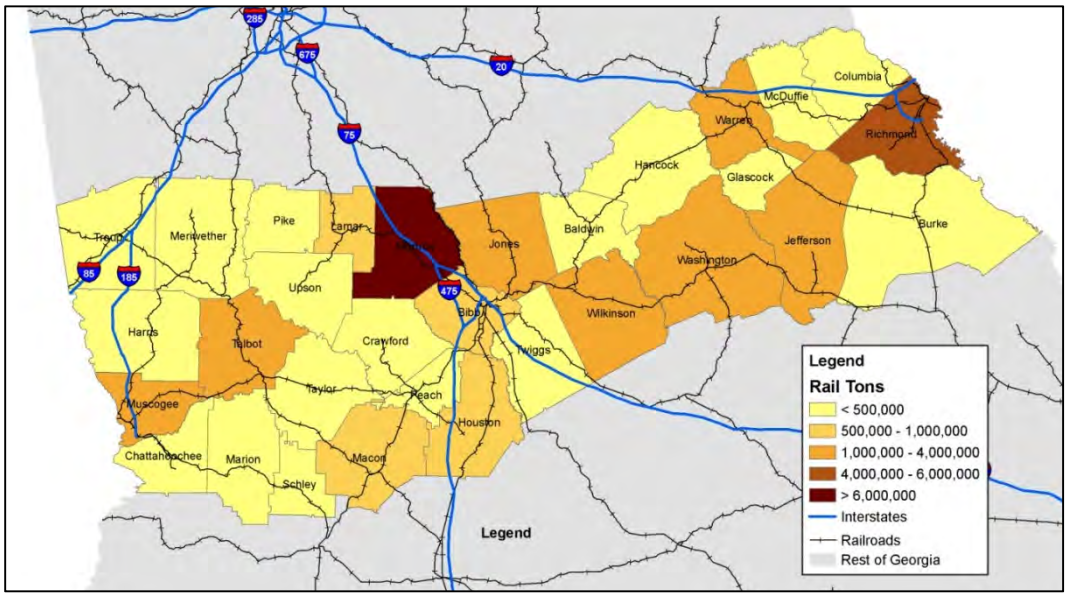



***Figure 2-26: Inbound and Outbound Tons of Freight Moved by Rail (2007)***

### *Truck O-D Survey Analysis*

According to the TRANSEARCH database, over 90 percent of the freight tonnage in the study area have at least one trip end outside the study area. Therefore, understanding long-haul flows is critical to understanding the Connect Central Georgia's freight movement. Roadside truck surveys are a good source of long-haul truck traffic information. This section describes the origin-destination pairs of truck traffic in the Connect Central Georgia study area through examination of roadside truck origin-destination surveys at six weigh stations on the interstates in the study area.

*Over 90 percent of the freight tonnage in the study area have at least one trip end outside the study area. Therefore, understanding long-haul flows is critical to understanding the Connect Central Georgia's freight movement.*

In 2006, GDOT conducted roadside truck origin-destination surveys at weigh stations as part of the GDOT Truck Lane Needs Identification Study. The data collected through the GDOT surveys were combined with similar surveys conducted by the Atlanta Regional Commission as part of the Atlanta Regional Freight Mobility Plan to develop a statewide database of truck survey data. As part of the Connect Central Georgia study, an additional survey was conducted at the Augusta weigh station in the westbound direction to validate results of the previously-completed GDOT Office of Planning's "Truck Lane Needs Identification Study" for this segment, as it was closed for re-construction during that study.

The data from six roadside truck surveys of most relevance for the Connect Central Georgia study were the locations at:

1. I-20 Augusta eastbound weigh station;
2. I-20 Augusta westbound weigh station**;
3. I-85 LaGrange northbound weigh station;
4. I-85 LaGrange southbound weigh station;
5. I-16 Pembroke eastbound weigh station; and
6. I-16 Pembroke westbound weigh station.

***These were supplemented with additional surveys collected in 2011 for this site, as it was under construction during the 2006 survey.*

These surveys are particularly helpful in identifying the number of trucks that have travel paths through the Central Georgia study area that currently utilize the interstate system rather than the shortest-path route through the study area using state highways. This was calculated by using the percent of trucks that travel this pathway captured in the surveys and multiplying that by the total number of trucks at the location.

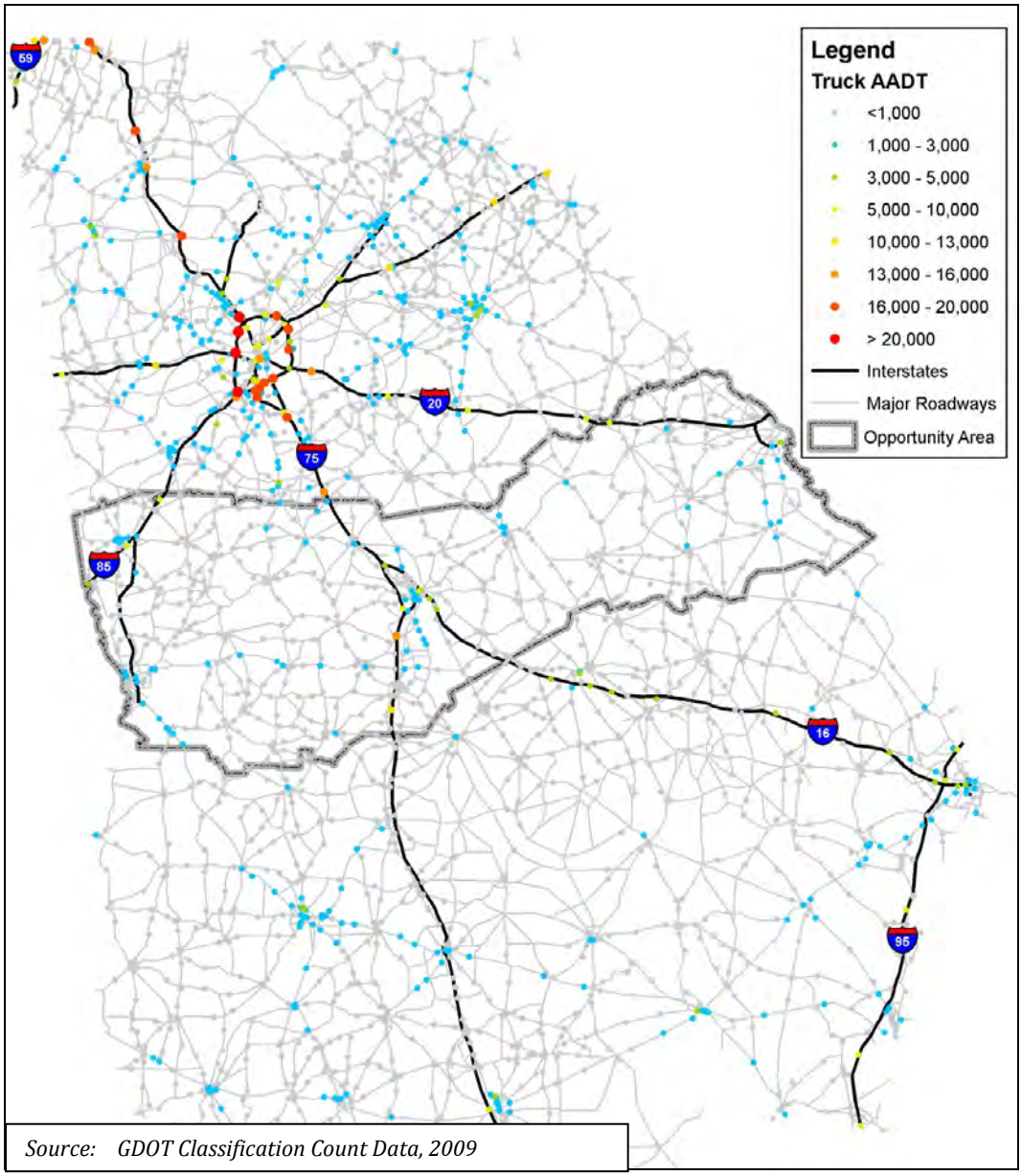
This analysis indicates that there are between 1,400 and 2,100 trucks per day that travel along the Interstate that have the potential to use some portion of the state highway system within the study area as an alternative, if the highways were improved to provide a level of service at or above that provided on the interstate system. Most notable are the 1,400 trucks estimated using the Augusta surveys that have travel paths through the study area. The I-85 surveys identified over 500 trucks with this travel path, and the I-16 surveys captured over 100 trucks on the Interstate with travel paths through the study area. The I-16 surveys capture truck flows from the Port of Savannah through Macon to points due west of Macon, including Alabama and states further to the west. Note that there is some overlap between the truck origin-destination pairs captured through these surveys. Therefore, the range of 1,400 to 2,100 trucks per day is required to account for the potential size of this overlap.

*Between 1,400 and 2,100 trucks per day that travel along the Interstate have the potential to use some portion of the state highway system within the study area as an alternative, if the highways were improved to provide a level of service at or above that provided on the interstate system.*

The Augusta surveys indicate that about 26.7 percent of eastbound and 22.4 percent of the westbound trucks have travel paths through study area. The LaGrange northbound and southbound surveys serve similar purposes as the Augusta surveys to understand the truck travel patterns from the western edge of the study area to the other parts of Georgia. However, due to the small sample size, it is hard to determine the relevance of the data. The I-16 Surveys are useful in the sense that it can help us measure, among the trucks that come from, or go to Savannah, how many of them actually go to/come from Alabama. The results showed that a very low percentage (less than 4 percent) was making this trip. More detailed information about specific travel patterns determined from surveys is provided in Appendix D.

### *Truck Count Data*

Figure 2-27 shows the truck AADT for major roadways in Georgia. The roadways with the average/typical highest daily truck counts are located in the Atlanta region, around I-285, and along I-75, where there can be more than 20,000 trucks per day passing through. The study area in comparison has moderate truck activity. The highest truck counts are found on I-75, where the number of trucks falls between 13,000 and 16,000 per day. The only locations with truck counts above 3,000 in the study area are on the interstate system (I-75, I-85, and I-16). There are several counts in the study area in the 1,000 to 3,000 range.

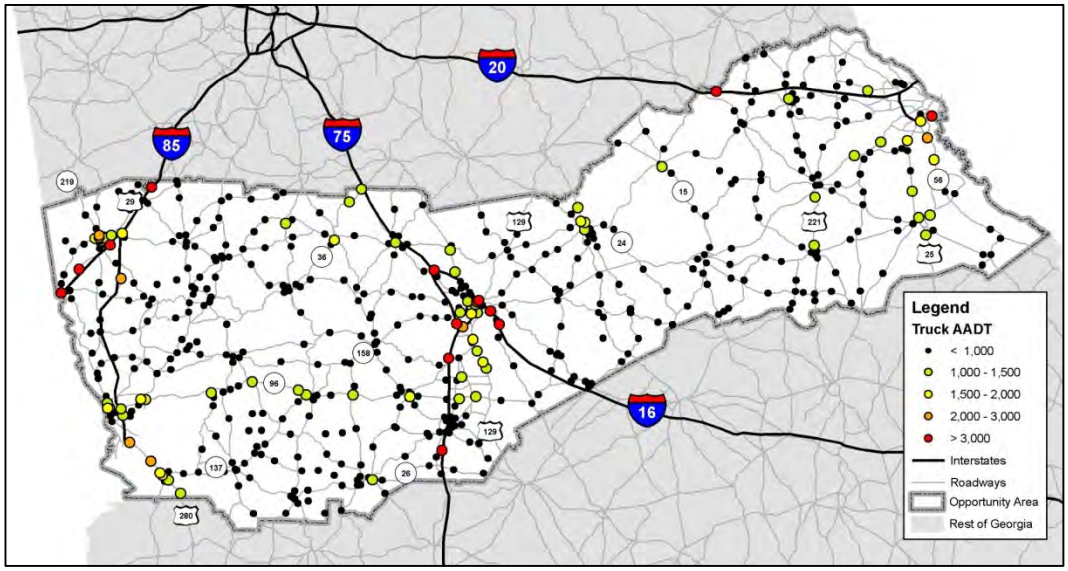



*Source: GDOT Classification Count Data, 2009*

***Figure 2-27: Truck AADT for Major Roadways in Georgia (2009)***

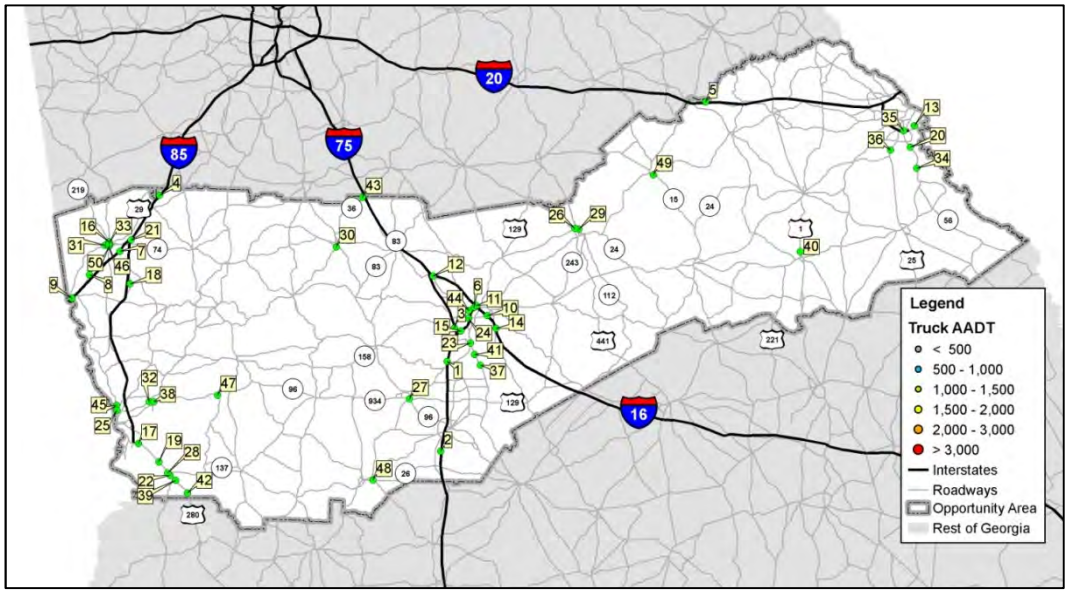
Figure 2-28 shows the truck AADT in the study area only. This map better differentiates between smaller truck count ranges. As noted above, truck counts above 3,000 daily all occur on the Interstates, indicating that Interstates are the primary routes for trucks. Other high truck count locations include: US 280 near Columbus due in part to military traffic from Ft. Benning, several state roads just outside of Augusta, and SR 96 (part of Fall Line Freeway) between Columbus and Macon. It is noteworthy that the SR 96 corridor is the only non-Interstate corridor in the study area with a consistent flow of over 1,000 trucks per day. There are no corridors between Augusta and Macon with over 1,000 trucks per day.

Figure 2-29 shows the top 50 top truck count locations in the study area. These top locations are on interstates and state road segments near the metro areas of Columbus, Macon, and Augusta. There also are several high truck count locations on US 280 connecting to Ft. Benning.




*Source: GDOT Classification Count Data, 2009*

***Figure 2-28: Truck AADT for Major Roadways in Study Area (2009)***




*Source: GDOT Classification Count Data, 2009*

***Figure 2-29: Top 50 High Truck AADT Locations in Study Area (2009)***

### *Comparison of Truck Data to IT3 Figures*

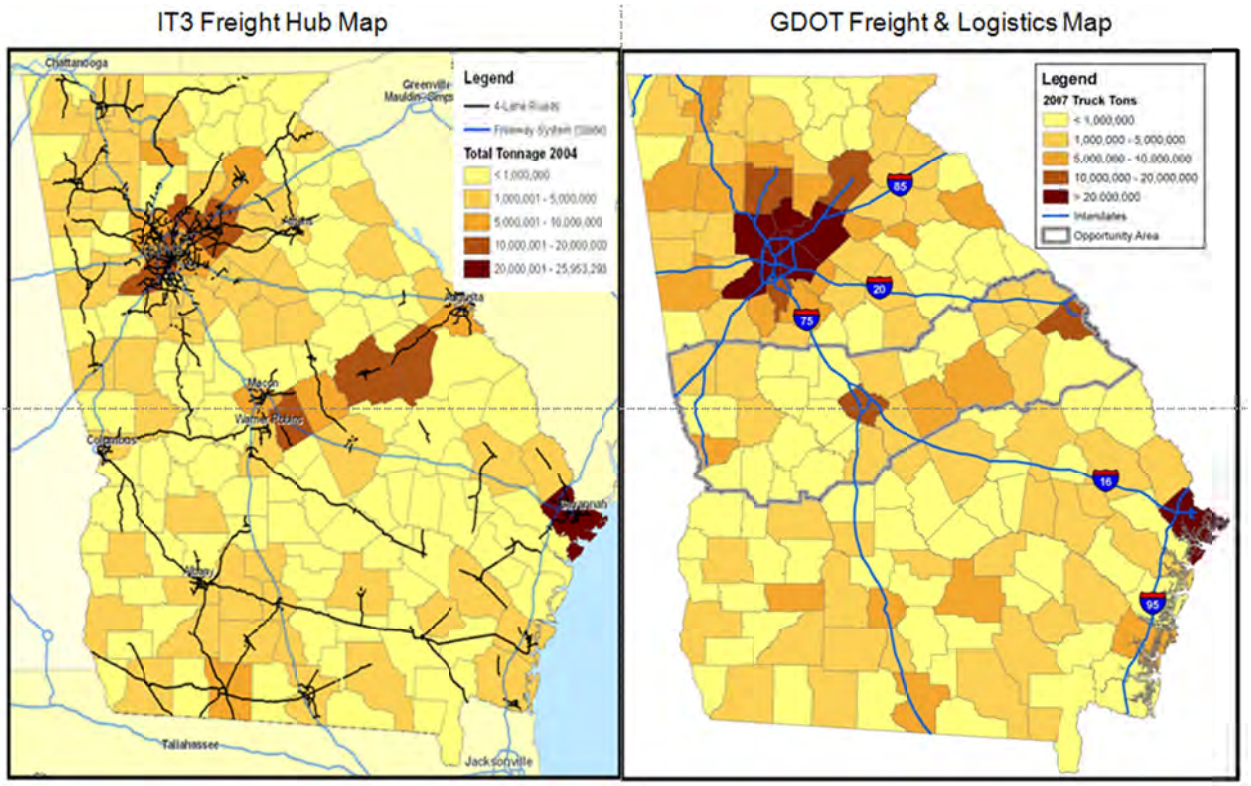
The Investing in Tomorrow's Transportation Today (IT3) initiative identified the Columbus-Augusta corridor as one of three major truck flows in the State.

This section revisits that analysis using more recent and more varied data sources. Figure 2-30 compares the IT3 truck flows developed using 2004 TRANSEARCH freight flow data to the more recently obtained 2007 TRANSEARCH truck flow data. The more recent data have a much lower truck tonnage total between Augusta and Macon compared to the older freight flow data.

Figure 2-31 shows truck counts for the entire State of Georgia next to the IT3 truck flows map. This comparison highlights that the IT3 map identifies a significant amount of truck flows between Augusta and Macon. However, the truck count data do not identify any high truck volumes in the corridor.

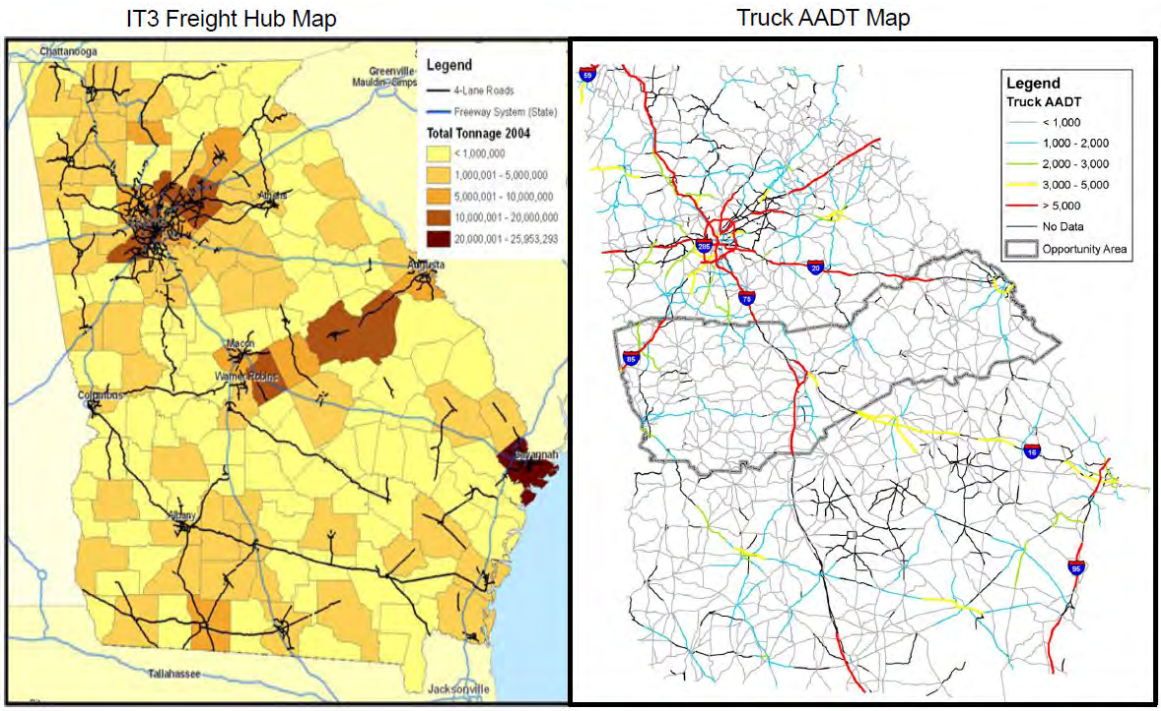
Figure 2-32 compares the IT3 truck flows map to the GPS-equipped truck trip end data. Similar to the truck counts, the GPS data also did not identify any locations between Augusta and Macon that generate significant truck trips.

These following three figures taken together indicate that the Augusta to Macon truck corridor identified using IT3 overestimated the number of trucks and that only a moderate amount of truck activity exists between the two city pairs.



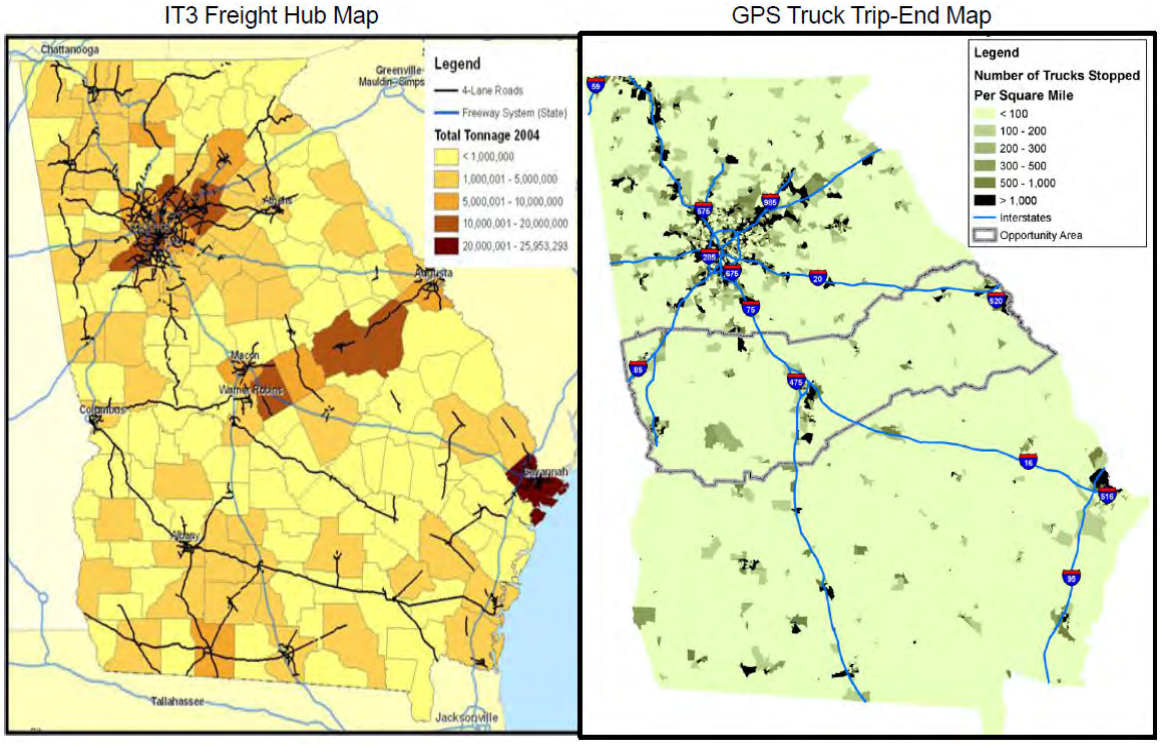

*Source: IT3 Presentation to Joint GRTA, GDOT Board by McKinsey; 2007 TRANSEARCH Data.*

***Figure 2-30: Comparison between IT3 Truck Flows and 2007 TRANSEARCH Truck Flows***




*Source: IT3 Presentation to Joint GRTA, GDOT Classification Count Data.*

***Figure 2-31: Comparison between IT3 Freight Flows and Truck AADTs***




*Source: IT3 Presentation to Joint GRTA, ATRI GPS Truck-Stopped Data.*

***Figure 2-32: Comparison between IT3 Freight Flows and GPS Truck Trip-Ends***

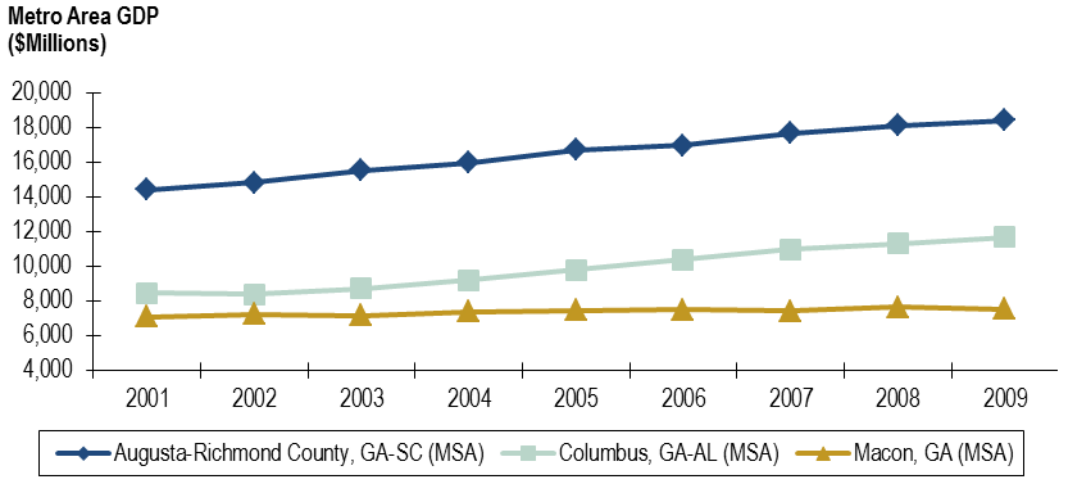
## *Economic Analysis*

Economic activity is a key driver for freight movements, and growth in output is inextricably linked with growth in freight activity in a region. This section first overviews the economic patterns of the study area, and then zooms in to look at the top freight-intensive counties to understand the key drivers for freight movements in these top locations.

### Freight-Related Economic Activity

*Augusta and Columbus have incurred more rapid growth in truck and rail traffic relative to Macon.*

Figure 2-31 shows the gross domestic product (GDP) in Augusta, Columbus, and Macon between 2001 and 2009. The GDP of Augusta and Columbus have grown at a compound annual rate of 2.8 percent and 3.7 percent, respectively. These growth rates are comparable to the Georgia Statewide growth rate of 3.6 percent in the same time period.[1] However, Macon had relatively little growth from 2001 to 2009, indicating that the industrial and economic base has not changed over these years. This likely translates to much more rapid growth in truck and rail traffic in the Augusta and Columbus regions over this time period relative to Macon.




*Source: U.S. Bureau of Economic Analysis*

***Figure 2-33: GDP Trends of Top Three Metro Regions (2001-2009)***

[1] *U.S. Bureau of Economic Analysis.*

The 2009 GDP of all industrial sectors in the study area are shown in Table 2-7. The top freight-dependent industry sectors are manufacturing, retail trade, wholesale trade, and construction, which are traditionally freight-intensive sectors. The manufacturing sector alone contributes about 10 percent of the total GDP, while wholesale and retail constitutes another 10 percent. Mining, which is a key industry in the region due to kaolin mines, only constitutes about 0.2 percent of the total GDP. In total, 29 percent of the economic activity in the study area is related to freight. This is roughly comparable to the 35 percent of economic activity statewide that is related to freight.

GDP and population are highly correlated in the study area. However, GDP and freight movements are not as highly correlated. Table 2-8 compares the freight movements with goods-dependent GDP. It identifies counties with differences between freight traffic and the local freight-related economy. Monroe County has the highest freight tonnage in 2007, which is 15 percent of the total freight moved in the region. However, its share of GDP is only 1.8 percent. In addition, its rail share is more than 18 times its truck share. This is because the county is importing coal to supply a large coal fire plant. Richmond County has the second highest freight tonnages, and makes up 12.5 percent of total tonnages in the study area. Its freight GDP share on the other hand is 17.5 percent, even higher than its freight tonnage share. Washington County also has high tonnages and low freight-related economy. This is due to the high volumes of kaolin that are mined in this county.

The amount of freight tonnages and freight-dependent GDP also is shown in graphical format in Figures 2-34 and 2-35. The maps more clearly demonstrate the fact that areas with low GDP also can have high freight tonnages. These high tonnages areas that are not metro regions include counties making up the Kaolin belt (between Augusta and Macon), and also Monroe and Talbot Counties.

*Table 2-7: Economic Output of Industries in the Study Area (Thousand Dollars, 2009)*

| Description | Type | Economic Output | Percent Total |
|---|---|---|---|
| Retail Trade | Freight Dependent | 2,044 | 4.1% |
| Manufacturing | Freight Dependent | 2,004 | 4.1% |
| Construction | Freight Dependent | 1,744 | 3.5% |
| Wholesale Trade | Freight Dependent | 1,731 | 3.5% |
| Manufacturing | Freight Dependent | 1,641 | 3.3% |
| Manufacturing | Freight Dependent | 1,442 | 2.9% |
| Utilities | Freight Dependent | 1,128 | 2.3% |
| Retail Trade | Freight Dependent | 889 | 1.8% |
| Transportation and Warehousing | Freight Dependent | 782 | 1.6% |
| Agriculture, Forestry, Fishing and Hunting | Freight Dependent | 615 | 1.2% |
| Transportation and Warehousing | Freight Dependent | 224 | 0.5% |
| Mining | Freight Dependent | 104 | 0.2% |
| **Total Freight-Dependent Industries** | | **14,348** | **29.0%** |
| Public Administration | Services | 5,690 | 11.5% |
| Public Administration | Services | 4,721 | 9.6% |
| Real Estate and Rental and Leasing | Services | 3,837 | 7.8% |
| Health Care and Social Assistance | Services | 3,776 | 7.6% |
| Public Administration | Services | 3,630 | 7.4% |
| Information | Services | 3,301 | 6.7% |
| Finance and Insurance | Services | 3,058 | 6.2% |
| Professional, Scientific, and Technical Services | Services | 2,218 | 4.5% |
| Administrative and Support and Waste Management and Remediation Services | Services | 1,422 | 2.9% |
| Accommodation and Food Services | Services | 1,364 | 2.8% |
| Other Services (except Public Administration) | Services | 847 | 1.7% |
| Management of Companies and Enterprises | Services | 622 | 1.3% |
| Educational Services | Services | 270 | 0.5% |
| Arts, Entertainment, and Recreation | Services | 258 | 0.5% |
| **Total Services** | | **35,014** | **71.0%** |
| ***Total Economic Output*** | | ***49,363*** | ***100.0%*** |

*Source: Economy.com Data*

*Table 2-8: Tons by County by Type of Movement as Compared to GDP (2007, 2009)*

| Name | Tons | | | | Percent Total | Freight GDP ($,000) | Percent Total |
|---|---|---|---|---|---|---|---|
| | Truck | Rail | Air | Total | | | |
| Monroe | 884,408 | 18,042,365 | – | 18,926,773 | 15.00% | 255 | 1.8% |
| Richmond | 11,279,213 | 4,520,837 | 75 | 15,800,126 | 12.50% | 2,522 | 17.6% |
| Washington | 7,825,906 | 3,377,212 | – | 11,203,118 | 8.90% | 221 | 1.5% |
| Bibb | 10,038,298 | 859,628 | 9 | 10,897,936 | 8.60% | 2,296 | 16.0% |
| Muscogee | 8,196,206 | 1,169,239 | 388 | 9,365,833 | 7.40% | 2,093 | 14.6% |
| Talbot | 4,484,504 | 3,111,283 | – | 7,595,787 | 6.00% | 42 | 0.3% |
| Wilkinson | 5,996,021 | 1,475,560 | – | 7,471,581 | 5.90% | 146 | 1.0% |
| Jones | 3,455,901 | 2,738,312 | – | 6,194,213 | 4.90% | 122 | 0.9% |
| Troup | 4,745,969 | 95,920 | – | 4,841,889 | 3.80% | 1,101 | 7.7% |
| Jefferson | 3,194,608 | 1,594,901 | – | 4,789,509 | 3.80% | 270 | 1.9% |
| Warren | 2,625,899 | 2,031,958 | – | 4,657,857 | 3.70% | 65 | 0.5% |
| Houston | 3,535,666 | 755,160 | 1,042 | 4,291,867 | 3.40% | 1,352 | 9.4% |
| Columbia | 3,855,707 | 188,036 | – | 4,043,743 | 3.20% | 879 | 6.1% |
| Twiggs | 2,112,322 | 252,680 | – | 2,365,002 | 1.90% | 35 | 0.2% |
| Meriwether | 2,167,939 | 193,000 | – | 2,360,939 | 1.90% | 185 | 1.3% |
| McDuffie | 2,291,878 | 67,040 | – | 2,358,918 | 1.90% | 193 | 1.3% |
| Macon | 972,578 | 634,654 | – | 1,607,232 | 1.30% | 101 | 0.7% |
| Lamar | 984,428 | 526,822 | – | 1,511,250 | 1.20% | 132 | 0.9% |
| Baldwin | 961,730 | 7,040 | – | 968,770 | 0.80% | 399 | 2.8% |
| Peach | 766,501 | – | – | 766,501 | 0.60% | 407 | 2.8% |
| Upson | 635,397 | 75,400 | – | 710,797 | 0.60% | 235 | 1.6% |
| Hancock | 604,346 | – | – | 604,346 | 0.50% | 31 | 0.2% |
| Harris | 552,049 | – | – | 552,049 | 0.40% | 105 | 0.7% |
| Burke | 526,517 | 15,240 | – | 541,757 | 0.40% | 455 | 3.2% |
| Crawford | 308,868 | 118,676 | – | 427,544 | 0.30% | 59 | 0.4% |
| Taylor | 386,881 | 30,720 | – | 417,601 | 0.30% | 85 | 0.6% |
| Marion | 285,479 | – | – | 285,479 | 0.20% | 317 | 2.2% |
| Pike | 276,075 | – | – | 276,075 | 0.20% | 99 | 0.7% |
| Chattahoochee | 65,898 | 27,027 | – | 92,925 | 0.10% | 52 | 0.4% |
| Schley | 87,986 | 4,040 | – | 92,026 | 0.10% | 80 | 0.6% |
| Glascock | 89,843 | – | – | 89,843 | 0.10% | 15 | 0.1% |
| ***Total*** | ***84,195,023*** | ***41,912,750*** | ***1,515*** | ***126,109,288*** | ***100.00%*** | ***14,349*** | ***100.0%*** |

*Source: TRANSEARCH (2007), Economy.com (2009)*

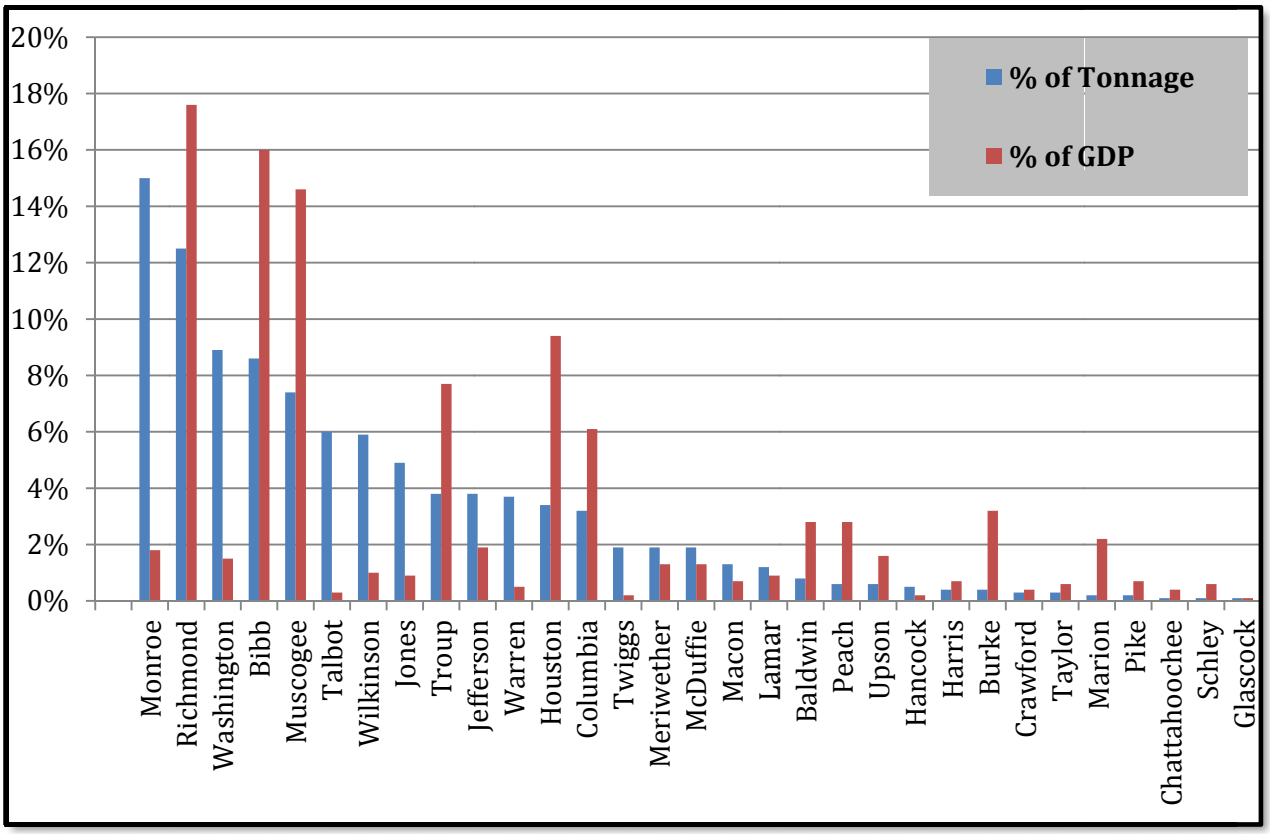



*Figure 2-34: Comparison of Tonnage to GDP Percentage by County*

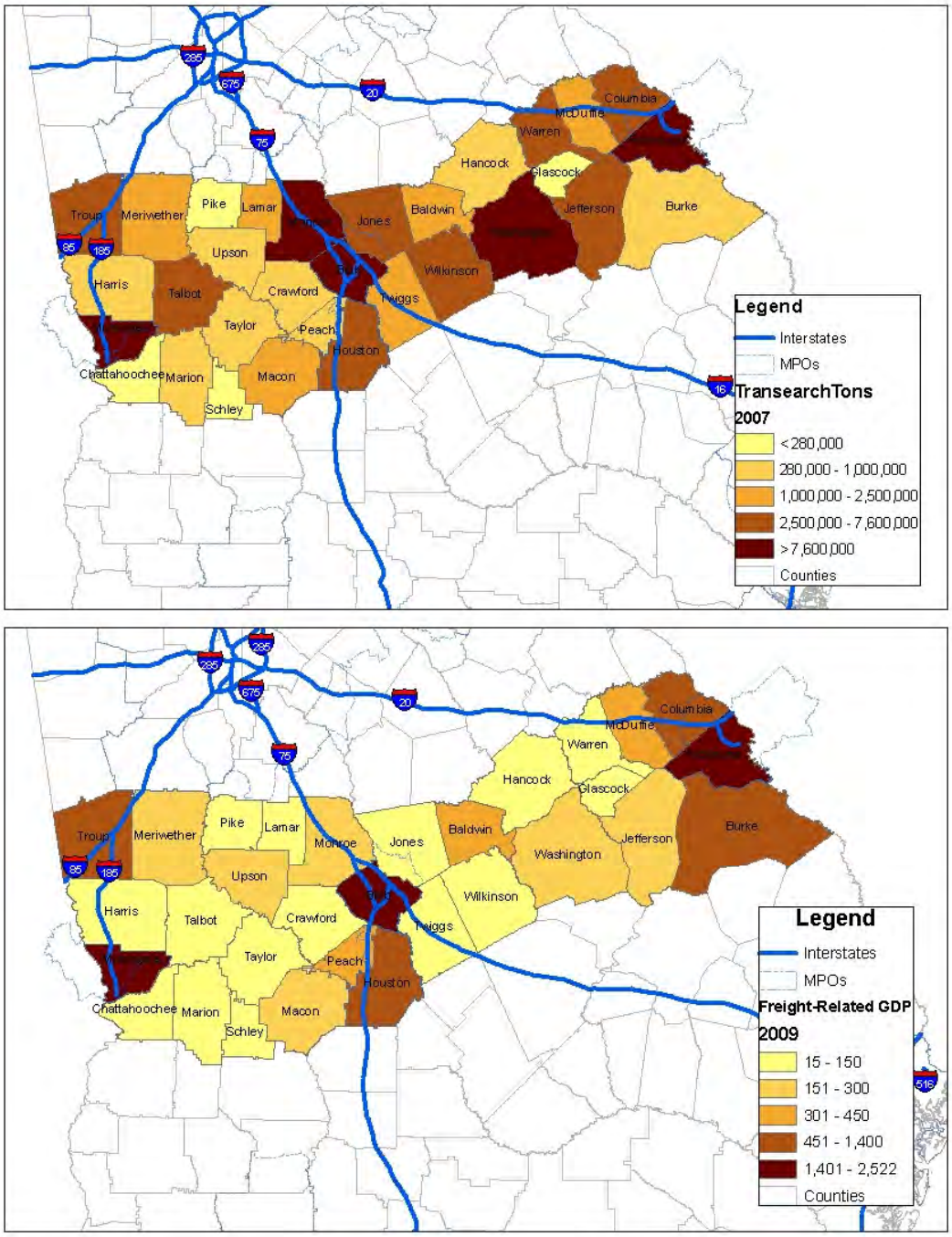



*Figure 2-35: Comparison of Tonnage to GDP (in thousands of dollars)*

### *Commodity Analysis*

Table 2-9 shows commodity by direction and mode for the entire study area. Of particular note is that non-metallic minerals is the top commodity with just over 42 million tons and stone/clay/concrete/glass is the fourth largest commodity at just over 15 million tons. Combined, these two commodities account for roughly half of the total goods moved in the study area. These commodities are also closely related in that non-metallic minerals are developed from transforming mined or quarried items such as sand, gravel, stone, clay, and refractory minerals into products for intermediate or final consumption. Kaolin is a major commodity produced and refined in the study area.

*Non-metallic minerals and stone/clay/concrete/glass account for roughly half of the total goods moved in the study area.*

Most of the inbound shipments of both nonmetallic minerals and clay/concrete/glass/stone are done by trucks. These shipments are made from local mines to local processing facilities. Many of the processing facilities are co-located with the mines, so these truck trips are relatively short. Outbound shipments of these goods are roughly evenly split between truck and rail. Some of these shipments also occur by pipeline, but that is not included in the Transearch database. Many of trucked outbound shipments are to the Port of Savannah for export. Domestic shipments are done mostly by rail to the Midwest and northeast.

According to an interview of the Georgia Miners Association, mining activity between Macon and Augusta is concentrated in three counties: Washington, Wilkinson, and Twiggs. There are between 15 to 20 medium and large mines in these three counties that produce the vast majority of kaolin in the state. The association estimates that about 10 million tons of material is mined every year which produces 5 million tons of kaolin. Approximately 3 million tons of kaolin are shipped by rail to the Midwest and northeast. Another roughly two million tons of kaolin is trucked to the Port of Savannah and shipped all over the world. These shipments are done by containerized trucks. The trucks are exclusively for-hire as none of the mining companies own their own trucking fleet.

*Over 33 percent of the commodities moved in the study area are moved by rail, compared to only 25 percent for the state.*

*Table 2-9: Commodities by Direction by Mode in the Study Area (2007, Tons)*

| Commodity | Inbound | | Outbound | | Total |
|---|---|---|---|---|---|
| | Truck | Rail | Truck | Rail | |
| Non-Metallic Minerals | 17,538,284 | 170,920 | 13,604,166 | 10,710,058 | 42,023,428 |
| Secondary Traffic | 15,124,643 | – | 4,806,107 | – | 19,930,750 |
| Coal | 57,039 | 16,330,038 | – | – | 16,387,077 |
| Clay/Concrete/Glass/Stone | 3,958,908 | 451,600 | 4,705,147 | 6,192,000 | 15,307,655 |
| Lumber/Wood | 2,661,648 | 539,380 | 6,606,710 | 1,552,588 | 11,360,326 |
| Chemical/Allied | 118,949 | 1,651,376 | 2,451,960 | 1,318,900 | 5,541,184 |
| Food/Kindred | 1,432,057 | 370,960 | 2,756,887 | 24,160 | 4,584,064 |
| Farm Products | 807,317 | 776,171 | 578,105 | 44,568 | 2,206,160 |
| Pulp/Paper/Allied | 329,386 | 374,400 | 570,674 | 699,652 | 1,974,111 |
| Petroleum/Coal | 934,479 | 10,320 | 484,665 | 22,728 | 1,452,192 |
| Textile Mill | 122,834 | – | 799,145 | – | 921,980 |
| Primary Metal | 439,892 | 26,116 | 152,481 | 3,680 | 622,170 |
| Rubber/Plastics | 245,248 | – | 361,053 | – | 606,301 |
| Metallic Ores | 496,861 | 35,680 | – | – | 532,541 |
| Waste/Scrap Materials | – | 194,064 | – | 317,756 | 511,820 |
| Transportation Equipment | 113,646 | 45,176 | 285,313 | 21,440 | 465,575 |
| Fabricated Metal | 139,117 | – | 200,562 | – | 339,680 |
| Machinery Exc. Electrical | 119,193 | – | 196,532 | – | 315,725 |
| Printed Matter | 103,844 | – | 189,741 | – | 293,585 |
| Electrical | 121,646 | – | 130,606 | – | 252,252 |
| Furniture/Fixtures | 102,125 | – | 73,252 | – | 175,377 |
| Apparel | 43,131 | – | 83,440 | – | 126,571 |
| Tobacco | 8,381 | – | 66,547 | – | 74,928 |
| Miscellaneous Manufacturing | 38,109 | – | 6,888 | – | 44,997 |
| Miscellaneous Shipping | – | 21,275 | – | 7,744 | 29,019 |
| Instr/Optical/Watches/Clock | 19,206 | – | 6,555 | – | 25,761 |
| Leather | 2,543 | – | | | 2,543 |
| ***Total*** | ***45,078,48*** | ***20,997,47*** | ***39,116,53*** | ***20,915,27*** | ***126,107,77*** |

*Source: TRANSEARCH*

### *Truck Network Key Findings*

The key findings associated with truck traffic in the study area are as follows:

- Over 128 million tons of freight are moved in, out, and around the study area. Two-thirds of this is moved by truck, one-third by rail, and far less than 1 percent by air cargo. The rail percentage is higher than the 20 percent State average, primarily due to a coal-fired power plant in Monroe County and kaolin shipments from Washington and neighboring counties.
- Freight movements are concentrated in the three largest metro areas in the study area – Augusta, Columbus, and Macon. The major non-urban sources of freight are coal into Monroe County and shipments related to the kaolin belt as mentioned previously.

- Over 90 percent of freight shipments in the study area are to/from external locations, 44 percent to other parts of Georgia, and 48 percent to other states in the U.S.
- It is estimated that between 1,400 and 2,100 trucks have travel paths through the study area, but elect to take the longer interstate routes rather than utilize the roads inside the study area. This is likely due to the higher speeds and better road conditions of Georgia's interstate system relative to the non-interstate system. The vast majority of these trucks travel between I-20 in Augusta and I-85 at Georgia's border with Alabama.
- None of the non-interstate portions of the study area have more than 3,000 trucks per day. The most truck-intensive non-Interstate corridor is SR 96 between Warner Robins and Columbus. This is the only non-interstate *corridor* with over 1,000 trucks per day. Other locations with over 1,000 trucks per day are points rather than entire corridors.
- While economic growth in Augusta and Columbus are similar to that of the Georgia average, growth in Macon has been flat over the past decade. If this trend continues, it has significant implications for the long-term transportation-related needs of the freight industry in the study area.
- Mining is a significant industry in Connect Central Georgia region, and it contributes to nearly half of freight movement in the region. A big portion of the mined material is kaolin. The processed materials are shipped by rail to the Midwest and northeast, while the trucking mode is used to ship goods to the Port of Savannah for export around the world.
- In the future, outbound shipments from the study area are forecast to grow at more than twice the rate of inbound traffic. Shipments to/from the region as a whole will grow at about the same rate as the rest of Georgia. The only notable exceptions are coal shipments which are expected to decline based on substitution with other energy producing methods.

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# 3 FUTURE CONDITIONS

The purpose of this study is to assess improvements necessary to facilitate enhanced and continued mobility through Central Georgia into the future. In this section, future year conditions will be discussed in terms of future land use, demographic, infrastructure and economic conditions.

## 3.1 DEMOGRAPHICS

As existing-year population and employment influence existing-year travel patterns, so do future-year demographics illustrate the location, type and intensity of transportation needs in the future. This section will discuss population and employment projections and their use in assessing transportation needs throughout the study area for a horizon year of 2035.

### 3.1.1 POPULATION

*An annual average growth rate of 1.2 percent is predicted for the study area compared to 1.6 percent for the state of Georgia.*

Compared to Statewide population projections, population growth in the study area is expected to continue at a more moderate rate in the future. Detailed population forecasts developed for the statewide travel demand model through horizon year 2035 are provided in Table 3-1. These served as input into the development of the "year 2035 base" forecast* traffic volumes. Projections show an annual average growth rate of 1.2 percent expected for the study area compared to 1.6 percent for the state of Georgia. This is consistent with historical trends in which the study area grew at a slower rate (0.9 percent annually) compared to the state (1.8 percent annually) over the past 40 years (1970 to 2010).

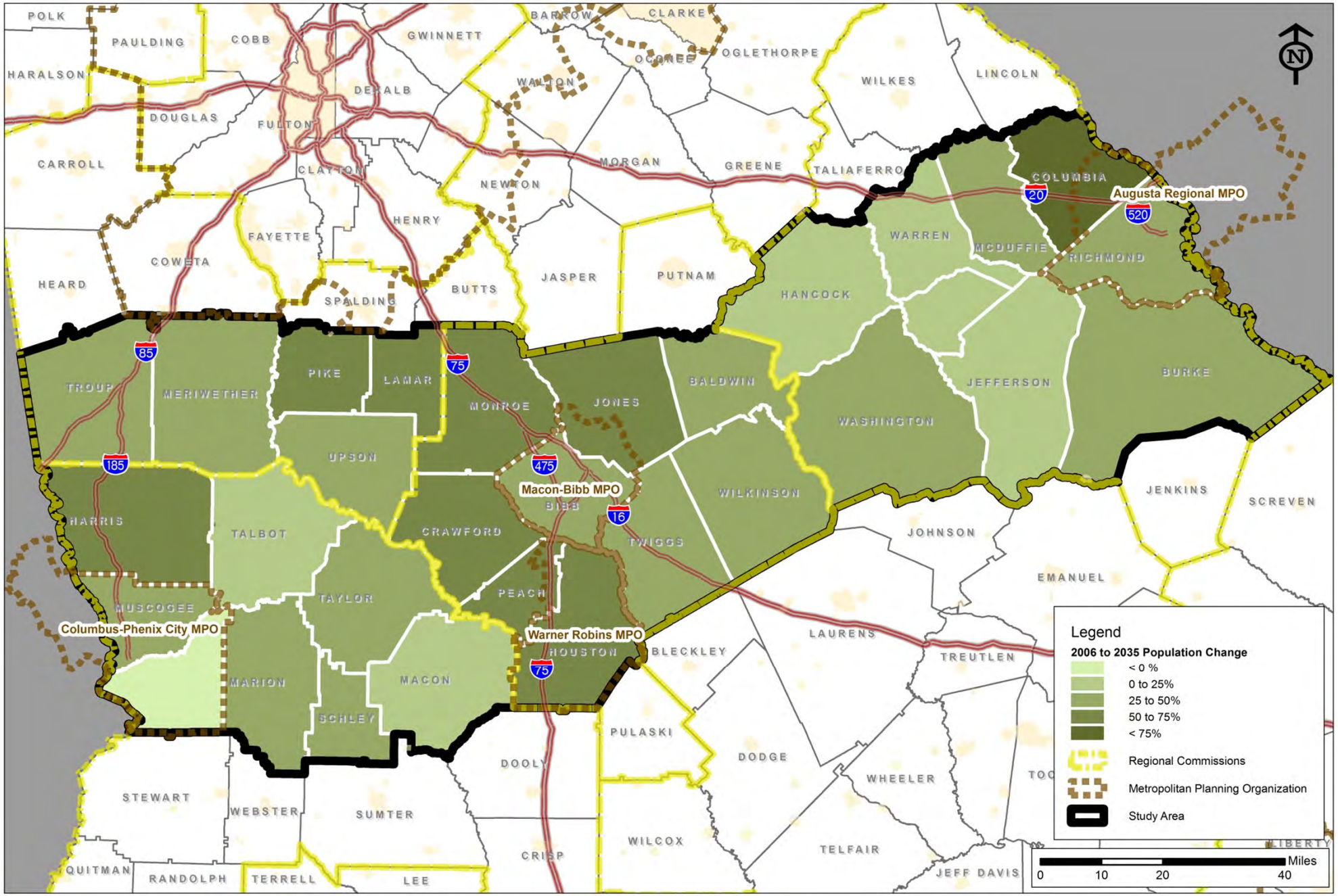
***Table 3-1: Population and Employment Growth***

| Geography | Population | | | Employment | | |
|---|---|---|---|---|---|---|
| | 2006 | 2035 | Percent Growth | 2006 | 2035 | Percent Growth |
| Study Area | 1,258,397 | 1,816,422 | 44.3% | 585,035 | 825,605 | 41.1% |
| State | 9,687,653 | 15,321,262 | 58.2% | 4,621,715 | 7,767,342 | 68.1% |

*Source: GDOT Statewide Travel Demand Model*

Figure 3-1 shows population growth (from year 2006 to 2035) by county throughout the study area. High growth rates can be seen to the North and West of Macon as well as north of Columbus and Augusta. Figure 3-2 illustrates 2035 population density, which indicates the MPO areas (Columbus, Macon, Warner Robins and Augusta) will maintain higher population density while the more rural areas will sustain low densities.

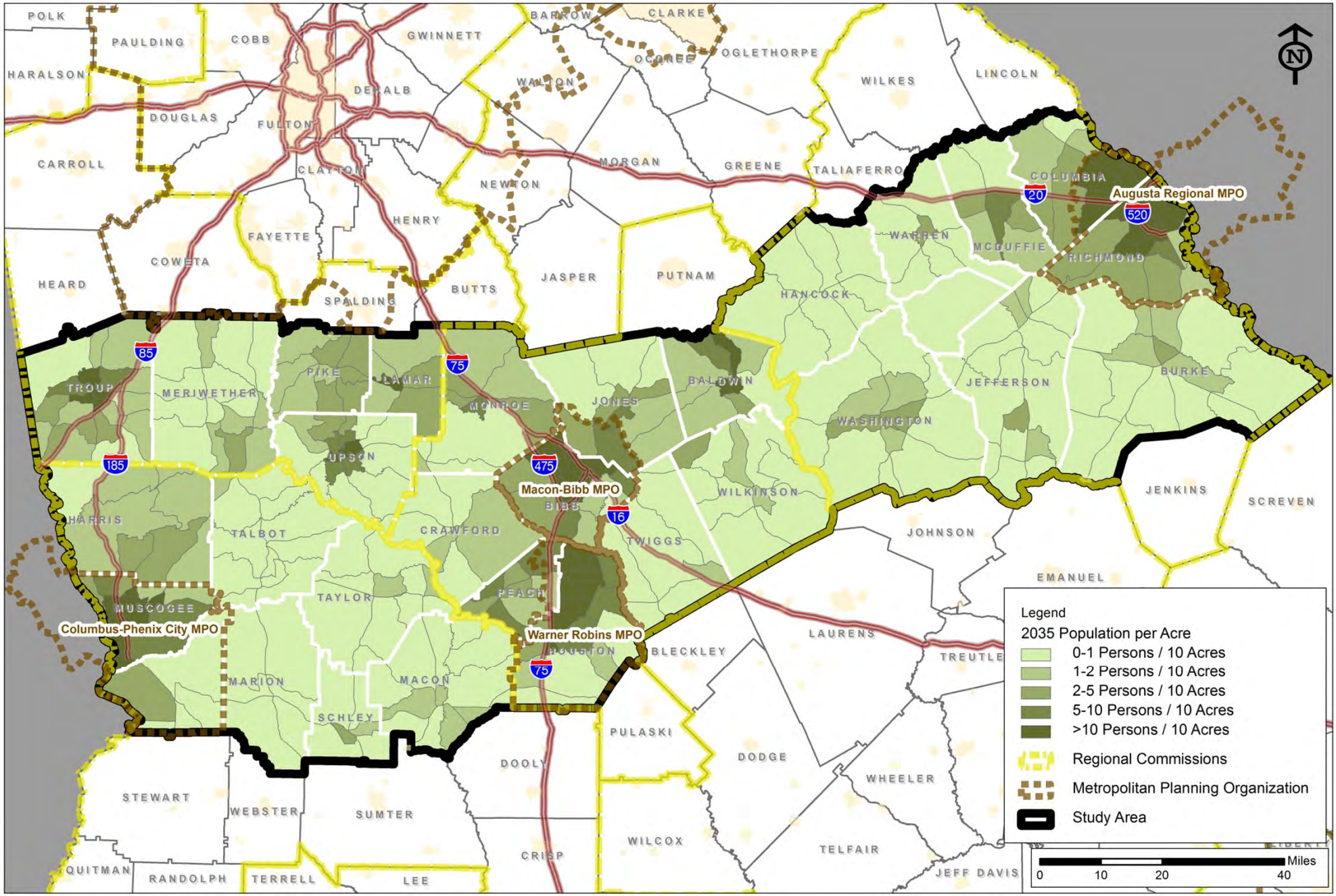
**Base and forecast traffic volumes from the statewide travel demand model are considered "planning-level" and not analogous or appropriate for detailed traffic volume data needs such as those used in project development/"design-level" acitivites).*




*Source: GDOT Statewide Travel Demand Model (2006, 2035)*

# Population Change from Years 2006 to 2035

Figure 3-1




*Source: GDOT Statewide Travel Demand Model (2035)*

# Year 2035 Population

Figure 3-2

### 3.1.2 EMPLOYMENT

*Average employment growth in the study area is projected to lag behind the state.*

Employment projections were also developed as inputs into GDOT's statewide travel demand model, as shown in Table 3-1. Average growth in the study area (41.1 percent or 1.3 percent annually) is projected to lag behind the state (58.2 percent or 1.6 percent annually).

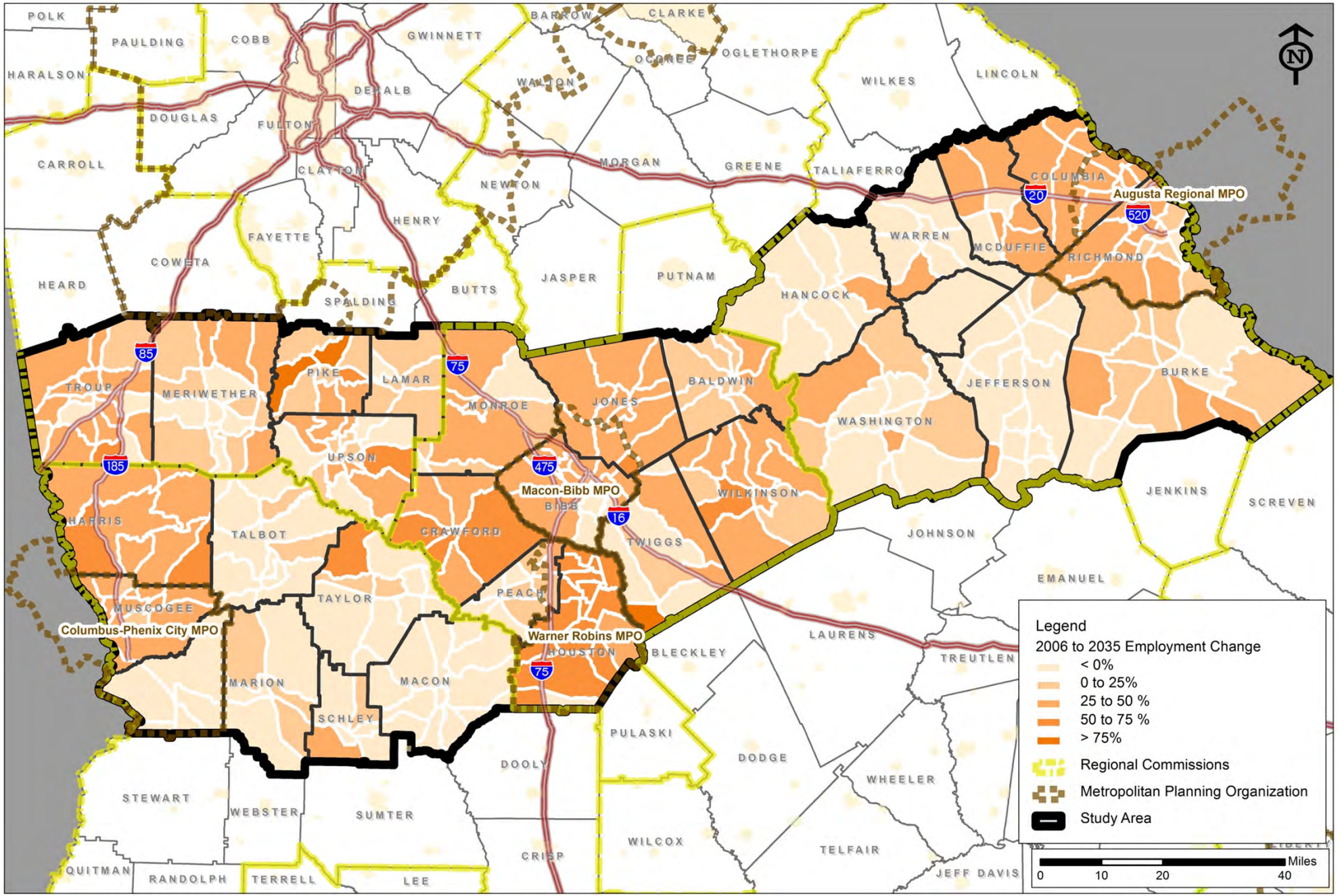
Figure 3-3 depicts employment growth from the years 2006 to 2035 based on the travel demand model data. It predicts significant growth in the Middle Georgia RC area as well as north of Augusta, while less growth (and perhaps flat growth) in the rural areas between the major cities of Columbus, Macon and Augusta. Figure 3-4 shows 2035 employment density; similar to the existing conditions analysis, future employment is concentrated primarily in the MPO areas of Columbus, Macon, Warner Robins and Augusta.

## 3.2 FUTURE LAND USE

Just as existing land use defines current travel patterns through the study area, future land use (determined by local governments) affects where population and employment will be located and, thereby, where and how trips will likely be made in the future. Future land use data, available from each of the Regional Commission's, is illustrated in Figure 3-5. These comprehensive plans provide insight on the likely location of population and employment through horizon year 2035 --both are key inputs into the travel demand model.

*When comparing existing and planned future land uses within the study area, the most significant change is the shift of much of the agricultural land to residential in the western half of the study area.*

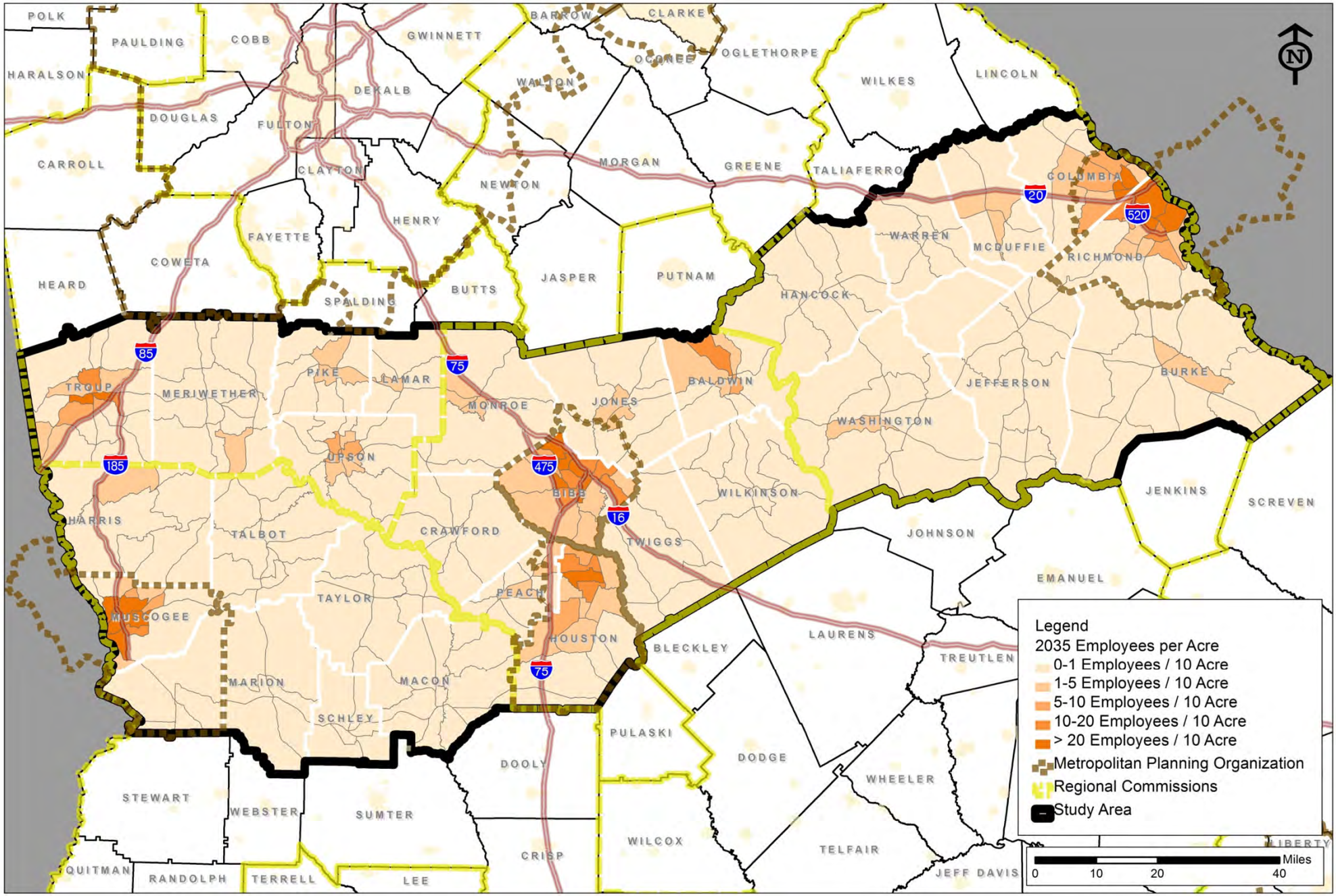
A comparison of existing land uses and planned future land uses within the study area indicate many changes. The most significant change is the transition of much of the agricultural land to residential in the western half of the study area. Several counties, currently typified by agricultural land uses, are designated almost completely as residential in the future. Though this shift to residential is anticipated, it is unlikely that this will occur within the timeframe of this study.




*Source: GDOT Statewide Travel Demand Model (2006, 2035)*

# Employment Change From Years 2006 to 2035

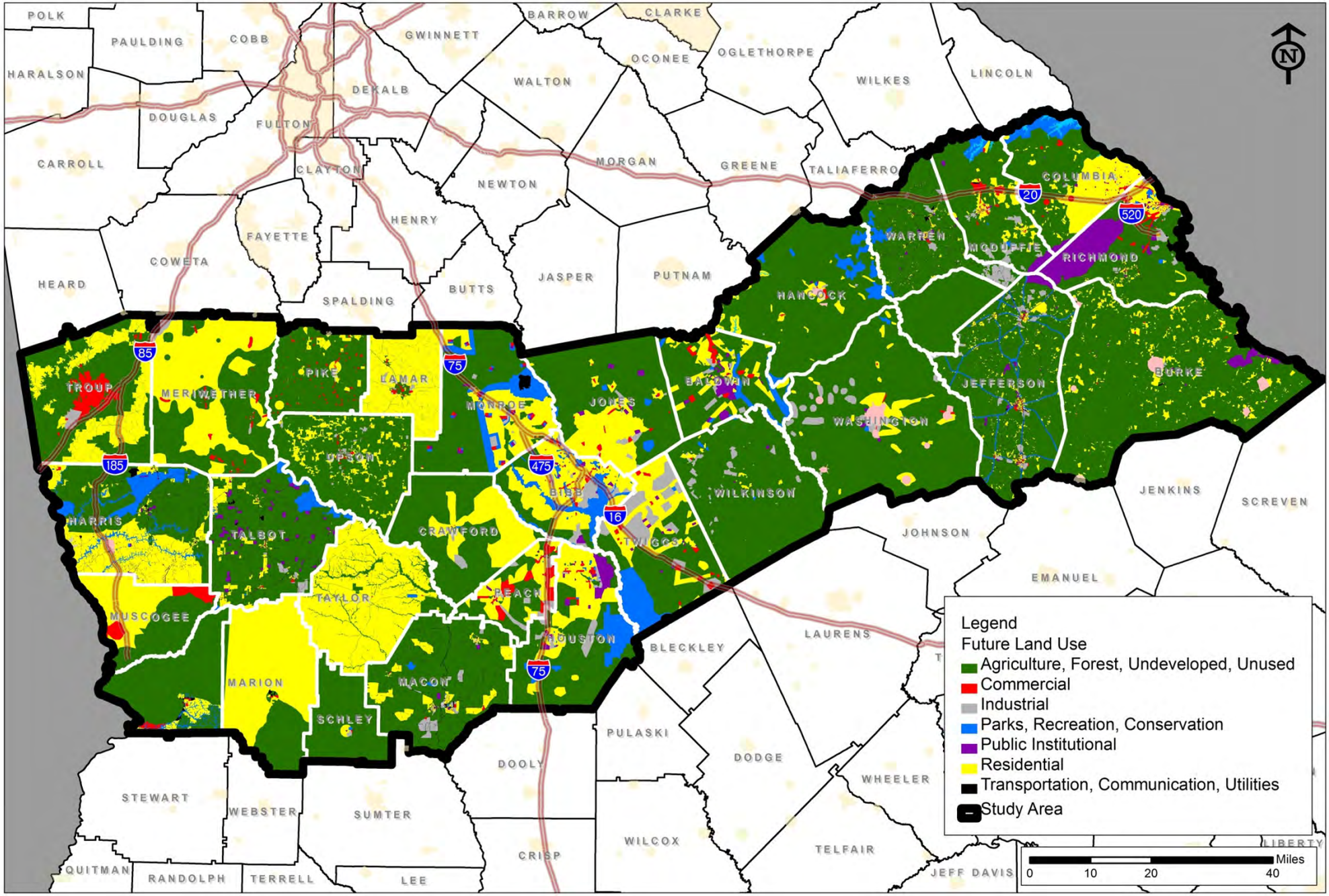
Figure 3-3




*Source: GDOT Statewide Travel Demand Model (2035)*

# Year 2035 Employment

Figure 3-4




*Source: Regional Commissions*

# Year 2035 Future Land Use

Figure 3-5

## 3.3 Future Transportation Network

### 3.3.1 Future Travel Demand Model

As noted in this report's existing conditions section, GDOT's statewide travel demand model (as calibrated to the MPO models) was used to assess roadway capacity needs. The "base" year (2006) model was used to assess current needs. For the future years (2020 and 2035), an "Existing Plus Committed" (E+C) model run was performed; E+C is a network that represents the existing road network plus projects with a phase of funding identified as ROW or constructionin the FY 2012-2015 Statewide Transportation Improvement Program (STIP) that are assumed to be constructed by 2020. Figure 3-6 and Table 3-2 describe STIP projects within the study area.

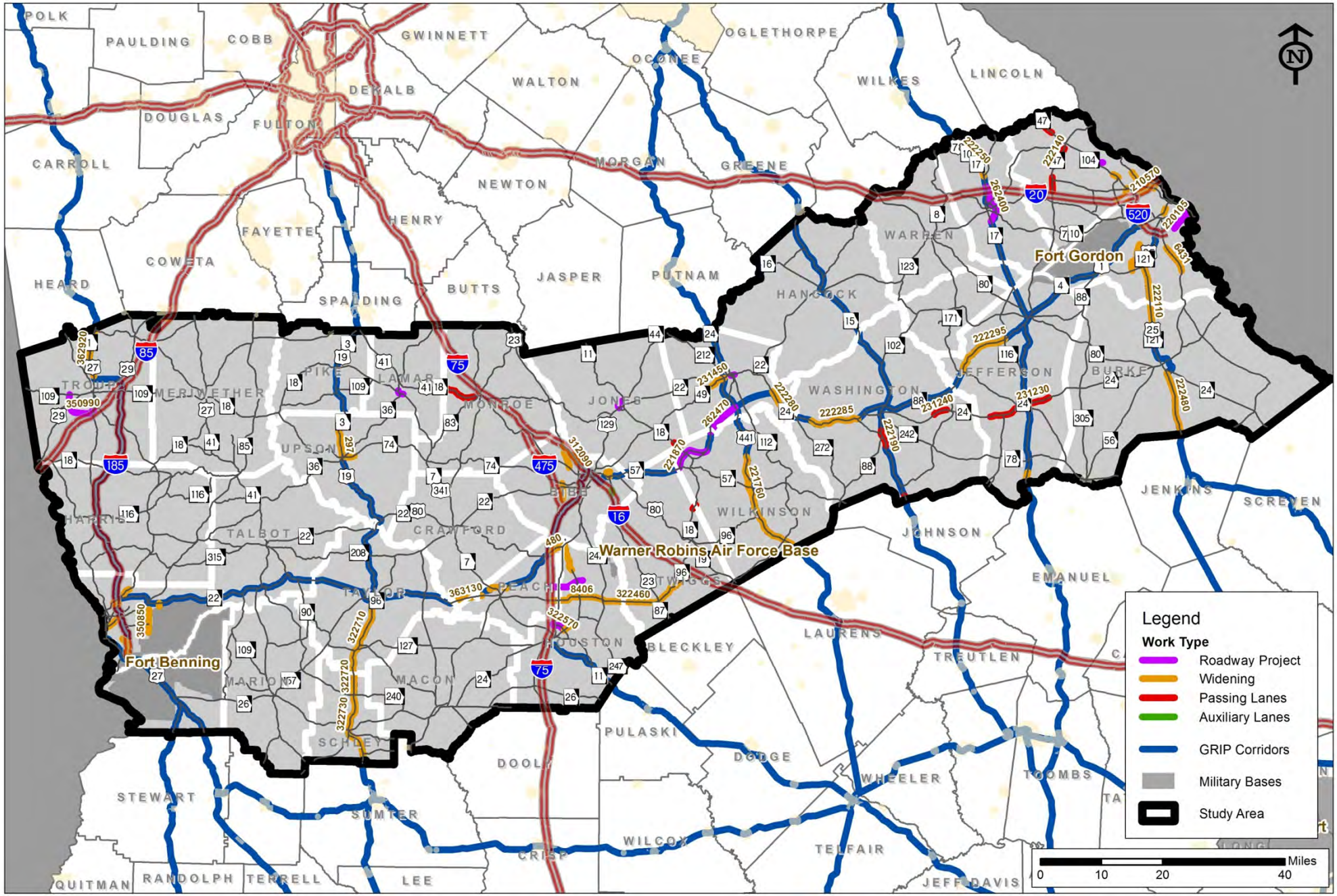
### 3.3.2 Future Roadway Operations

#### *Future Volumes*

Figures 3-7 and 3-8 illustrate the future (2020 and 2035) AADT volumes for the study area, as forecasted by the travel demand model. For both horizon years, volumes remain below 5,000 vehicles per day (vpd) through most of the study area. The urban areas of LaGrange, Columbus, Warner Robins, Macon and Augusta contain segments of arterial roads with volumes ranging from 10,000 to 40,000 vpd. Much of I-20 within the study area, as well as I-85 near LaGrange and I-185 near Columbus, sustain volumes between 20,000 to 40,000 vpd, while I-75 volumes exceed 40,000 vpd through Macon and Warner Robins.

#### *Future LOS*

Future roadway conditions were assessed based on these 2020 and 2035 model volumes compared to the capacity for each roadway segment. Each volume-to-capacity ratio corresponds to a level of service (LOS) as described in Section 2.9.3. As with the existing conditions analysis, MPO models were used to define LOS within MPO areas, while the statewide model was used to assess LOS outside of MPOs.




*Source: FY 2012 – 2015 STIP - GDOT*

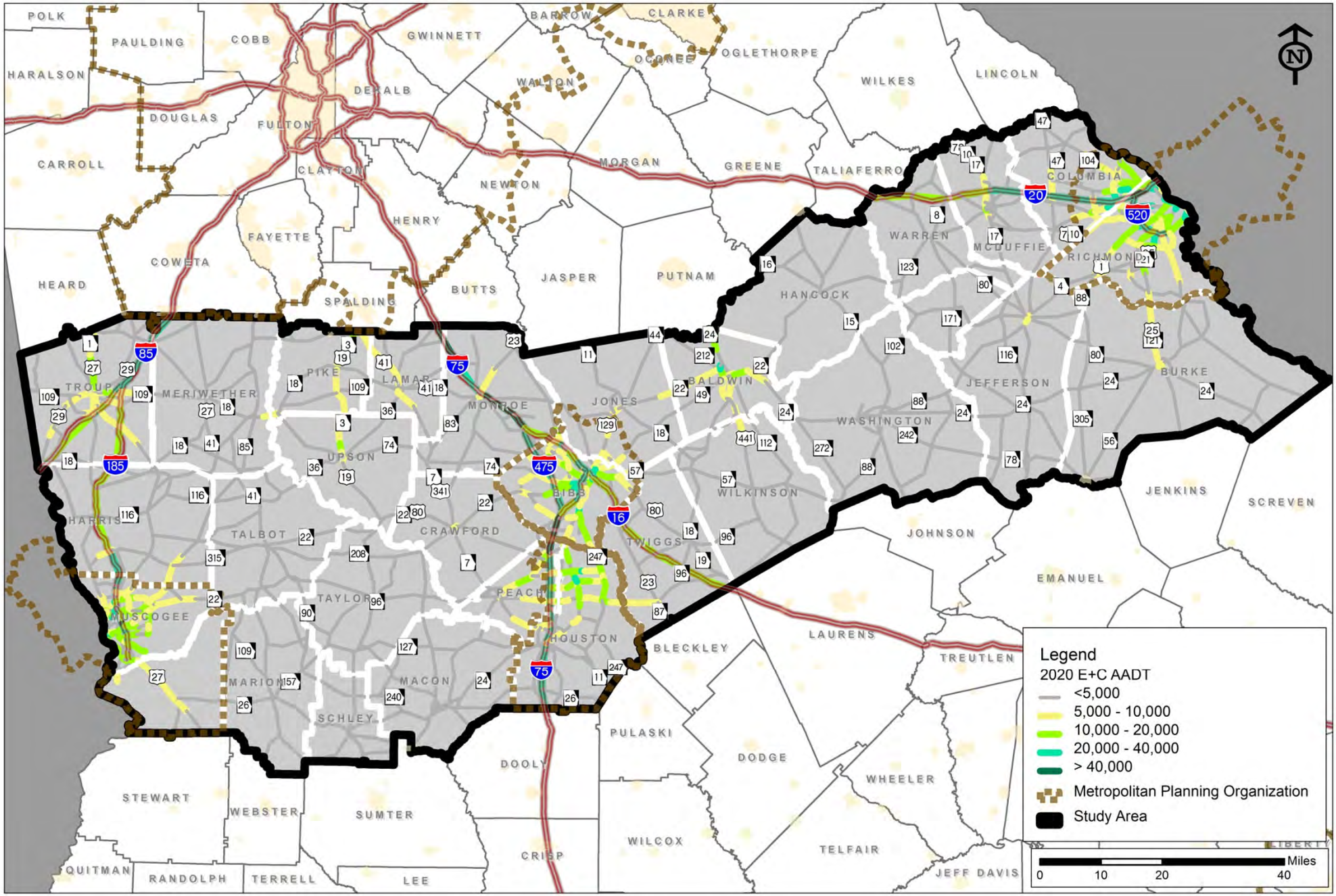
*Table 3-2: STIP Projects within Central Georgia Region*

| Project Number | Primary Work | Description | County |
|---|---|---|---|
| HPPNE-0027-00(123) | Widening | SR 1/ US 27 from SR 54 (Troup) to SR 34 (Heard) | Troup |
| CSSTP-0008-00(292) | Roadway Project | South LaGrange Loop from West of Wiley Rd to Wiley Rd- Phase 1 | Troup |
| EDS00-0027-00(122) | Widening | SR 1/ US 27 from near CR 673 North to SR 54 includes bridge | Troup |
| NHIM0-0185-01(317) | Widening | I-185 (Columbus) from SR 520 to Saint Mary's Rd | Muscogee |
| STP00-0011-01(053) | Widening | SR 1/ US 27 from Old Moon Rd to Turnberry Ln | Muscogee |
| STP00-8038-00(007) | Widening | CS 2108/ Saint Mary's Rd (Columbus) from Buena Vista to Robin Dr | Muscogee |
| STP00-8016-00(003) | Widening | SR 982/ Talbotton Rd (Columbus) from Buena Vista to Robin Dr | Muscogee |
| CSSTP-0008-00(635) | Widening | Schatulga Rd/ Eastern Connector from Chatsworth Rd to SR 22/ Macon Rd | Muscogee |
| STP00-8042-00(006) | Widening | Schatulga Rd/ Eastern Connector from Buena Vista to Chattsworth Rd | Muscogee |
| MSL00-0003-00(161) | Widening | I-85 from N of CR 417/ Forest Rd to N of SR 34 | Meriwether |
| NHS00-0000-00(297) | Widening | SR 3/ US 19 from CR 73/ East- West County Rd to CR 8/ Atwater Rd | Upson |
| STP00-0156-01(011) | Widening | SR 74 from Holstun Dr to Trice Rd (Thomaston) | Upson |
| EDS00-0019-00(065) | Widening | SR 3/ US 19 from CR 201/ Cooper Rd to Butler Bypass and New Location | Taylor |
| EDS00-0019-00(063) | Widening | SR 3/ US19 from SR 240 (Schley) to CR 201/ Cooper Rd (Taylor) | Schley/Taylor |
| EDS00-0019-00(064) | Widening | SR 3/ US 19 from SR 271 to SR 240 | Schley |
| EDS00-0019-00(055) | Widening | SR 3/ US 19 from Angelica Ct (Sumter) to SR 271 (Schley) | Schley |
| FLF00-0540-00(011) | Widening | SR 96 from East of Flint River to SR 49C/ Fort Valley BP and Bridge (Peach) | Crawford/Peach |
| STP00-0005-02(015) | Passing Lanes | SR 18 from West of Cole Creek/ Lamar to Potts Pond Rd (Monroe) at 4 Locations | Lamar/Monroe |
| STP00-0001-03(031) | Roadway Project | Barnesville Bypass (Truck Bypass) from SR 7/ US 341 North to SR 18/ US 41 | Lamar |
| STP00-1833-00(016) | Passing Lanes | SR 18 Eastbound from Mile Point 24.39/ Jones to Mile Point 0.71 (Wilkinson) | Jones/Wilkinson |
| NHIM0-0075-02(211) | Widening | I-75 from SR 247/ US 41/ Pierce Avenue to Arkwright Rd | Bibb |
| STP00-0037-01(018) | Widening | SR 87/ Riverside Dr (Macon) from Hall Rd to Northside Dr | Bibb |
| STP00-0066-01(036) | Auxiliary Lanes | SR 87/ Macon from Joe Tamplin Extension to Weaver Rd to West Elk | Bibb |
| STP00-3213-00(001) | Widening | CR 723/ Forest Hill Rd ( Macon) from Forsyth Rd to Wimbish Rd | Bibb |
| STP00-3223-00(005) | Widening | Jeffersonville Rd from Recreaction Rd to Fall Line Freeway/ US 80 | Bibb |
| STP00-3201-00(009) | Widening | Log Cabin Dr from Eisenhower Pkwy to SR 74/ Mercer University Dr | Bibb |
| STP00-3201-00(010) | Widening | Bloomfield Rd/ Log Cabin Dr from Rocky Rd to SR 22/ Eisenhower Pkwy | Bibb |
| STP00-0155-01(021) | Widening | SR 96 from I-75 (Peach) to CS 1121/ Lake Joy Rd (Houston)- Phase 1 | Houston/Peach |
| FLF00-0540-00(030) | Widening | SR 49 Connector/ Fort Valley Bypass from Beverly Rd NE to SR 49- Add 2 Lanes | Peach |

| Project Number | Primary Work | Description | County |
|---|---|---|---|
| PRP00-0178-01(225) | Roadway Project | Richard Russell Pkwy from East of I-75 (Peach) to Corder Rd (Houston) | Houston/Peach |
| CSNHS-0008-00(407) | Widening | SR 96 from East of Moody Rd to East of Old Hawkinsville Rd- Phase 3 | Houston |
| CSNHS-0008-00(406) | Widening | SR 96 from CS 1121/ Lake Joy Rd to CR 156/ Moody Rd- Phase 2 | Houston |
| STP00-0214-01(001) | Roadway Project | Southwest Perry Pkwy (Bypass) from SR 127 SE to Lower Walker Pkwy | Houston |
| STP00-0668-00(007) | Widening | Houston Lake Rd from SR 127 at CR 279 to SR 96/ Interstate at CR 188 | Houston |
| STP00-0675-00(008) | Widening | SR 127 from North Perry Pkwy to Bear Branch Rd | Houston |
| STP00-5121-00(003) | Widening | CR 535/ Houston Lake Rd from SR 96 to Richard Russell Pkwy | Houston |
| STP00-0155-01(023) | Widening | SR 96 from 0.48 West of SR 87 to South of I-16 | Twiggs |
| EDS00-0441-00(022) | Widening | SR 29/ US 441 from Irwinton Bypass to North CR 182 Near Mcintyre | Wilkinson |
| EDS00-0441-00(052) | Widening | SR 29/ US 441 from South of 96 to the Irwinton Bypass near CR 81 | Wilkinson |
| HPPNF-0540-00(019) | Roadway Project | Fall Line Freeway/ North Gordon Bypass from SR 57 to SR 243 | Wilkinson |
| EDS00-0441-00(038) | Widening | SR 29/ US 441 from SR 112 to SR 96 include bridges | Wilkinson |
| EDS00-0441-00(039) | Widening | SR 29/ US 441 from CR 471/ Laurens to SR 112 (Wilkinson) | Wilkinson |
| FLF00-0540-00(022) | Roadway Project | Fall Line Freeway on New Location from SR 243 at Morningside to US 441 | Baldwin/Wilkinson |
| HPPNF-0540-00(026) | Widening | SR 24/ SR 540 from South of CR186 to CR 10 in (Washington) | Baldwin/Washington |
| NH000-0089-01(026) | Widening | SR 49 from just West of Felton Rd to East of Milledgeville Bypass | Baldwin |
| CSHPP-0007-00(531) | Roadway Project | East Greene Street Extension in Milledgeville | Baldwin |
| HPPNF-0540-00(029) | Widening | SR 24/ SR 540 from West of CR 10/ CR 342 to West of SR 68 | Washington |
| STP00-2837-00(002) | Passing Lanes | SR 24 from Mile Point 6.9 to Mile Point 5.3 West of Davisboro | Washington |
| FLF00-0540-00(028) | Widening | SR 88/ SR 540 from SR 171 at Grange to SR 296 Southwest of Wrens | Jefferson |
| EDS00-0545-00(048) | Widening | SR 4/ US 1 from CR 104 to SR 4/ US 1 Business near Wadley and Jefferson | Jefferson |
| STP00-00MS-00(001) | Passing Lanes | SR 24/ US 221 EB Mile Point 12.6 - 13.8; WB 10.0 - 11.3; EB 3.2 - 4.3 | Jefferson |
| EDS00-0545-00(040) | Widening | SR 10/ SR 17/ US 78 from SR 43 to CR 6/ Smith Mill Rd | McDuffie |
| EDS00-0545-00(053) | Widening | SR 10/ SR 17 from CR 6/ Smith Mill Rd to Washington Bypass (Wilkes) | McDuffie |
| EDS00-0545-00(003) | Roadway Project | Thomson East Bypass from SR 17 at CR 311 NE New Location to SR 17 at CR 20 | McDuffie |
| CSNHS-0008-00(219) | Widening | I-20 from SR 383/ Belair Rd to East of CR 601/ Wheeler Rd | Columbia/Richmond |
| STP00-0048-01(033) | Widening | SR 28/ Fury's Ferry Rd from River Watch Pkwy (Richmond) to N of CR 98 | Columbia/Richmond |
| STP00-0176-01(005) | Passing Lanes | SR 47 NB Mile Point 8.33 - 9.53; SB and NB 13.48 - 15.18 | Columbia |
| STP00-0076-01(028) | Passing Lanes | SR 47 SB from Mile Point 2.45 Near Keg Creek South to Mile Point 3.88 | Columbia |
| STP00-7062-00(001) | Widening | SR 1017/ Flowing Wells Rd from I-20 to SR 104/ Washington Rd | Columbia |

| Project Number | Primary Work | Description | County |
|---|---|---|---|
| STP00-7073-00(001) | Roadway Project | William Few Pkwy Extension from SR 104 to Hardy McManus Rd | Columbia/Richmond |
| STP00-0076-01(023) | Widening | SR 104 from SR 383 to East of CR 515 (Included Bridges) | Columbia |
| STP00-0001-00(794) | Widening | CR 560/ Alexander Drive from Washington Rd to Riverwatch Pkwy | Richmond |
| CSSTP-0006-00(431) | Widening | SR 56 from CR 17/ Bennock Mill Rd to CR 1516/ Old Waynesboro Rd | Richmond |
| NHIM0-0020-02(145) | Widening | I-20 from East of CR 842/ Warren Rd to West of Augusta Canal | Richmond |
| NH000-0520-01(017) | Widening | I-520 from SR 4/ US 1 to SR 10/ Gordon Hwy | Richmond |
| NH000-0117-01(013) | Roadway Project | I-520 from Beaver Dam to Merry Utility and Laney Walker to West of River | Richmond |
| STP00-0043-01(057) | Widening | SR 4/15th St (Augusta) from Milledgeville Rd to Government St | Richmond |
| EDS00-0565-00(009) | Widening | SR 121/ US 25 from CR 438 (Burke) to SR 88 (Richmond) | Burke/Richmond |
| STP00-1105-00(004) | Widening | CR 65/ Windsor Springs Rd from SR 88 to CR 1515/ Willis Foreman | Richmond |
| STP00-7007-00(006) | Widening | CR 65/ Windsor Springs Rd from Willis Forman Rd to Tobacco Rd | Richmond |
| DE000-00MS-00(389) | Roadway Project | Saint Sebastian/ Greene St Extension near CSX Railroad and 15th St | Richmond |
| EDS00-0565-00(012) | Widening | SR 121/ US 25 Savannah River Pkwy from CR 118/ 354 to SR 24 at Bypass | Burke |
| EDS00-0565-00(011) | Widening | SR 121/ US 25/ Savannah River Pkwy from CR 16 to CR 118 ( Burke) | Burke |
| | Widening | SR 49 from 5 Lane in Byron (Peach) to US 41 (Houston) | Houston |
| STP00-0090-02(023) | Passing Lanes | SR 15 at 2 locations between Wrightsville and Tennille | Washington |
| | Widening | SR 96 from East of CR 540/ Old Hawkinsville Rd to West of SR 87 | Houston |
| | Widening | Widen Jeffersonville Rd from Walnut Creek to Recreation Rd; Millerfield to Bristol | Bibb |
| STP00-2921-00(004) | Roadway Project | South LaGrange Loop from SR 109 SE along Fling and Pegasus to SR 219- Phase 2 | Troup |
| | Widening | Whittlesey Rd and Veteran/ East Pkwy from Rollins Way to Gepca Dr | Muscogee |
| | Widening | Forest Hill Rd from Wimbish Rd to Northside Dr | Bibb |
| | Roadway Project | SR 899/ Gray North Bypass from SR 18 Northeast to SR 22 | Jones |
| STP00-0090-02(023) | Passing Lanes | SR 15 at 2 locations between Wrightsville and Tennille | Washington |

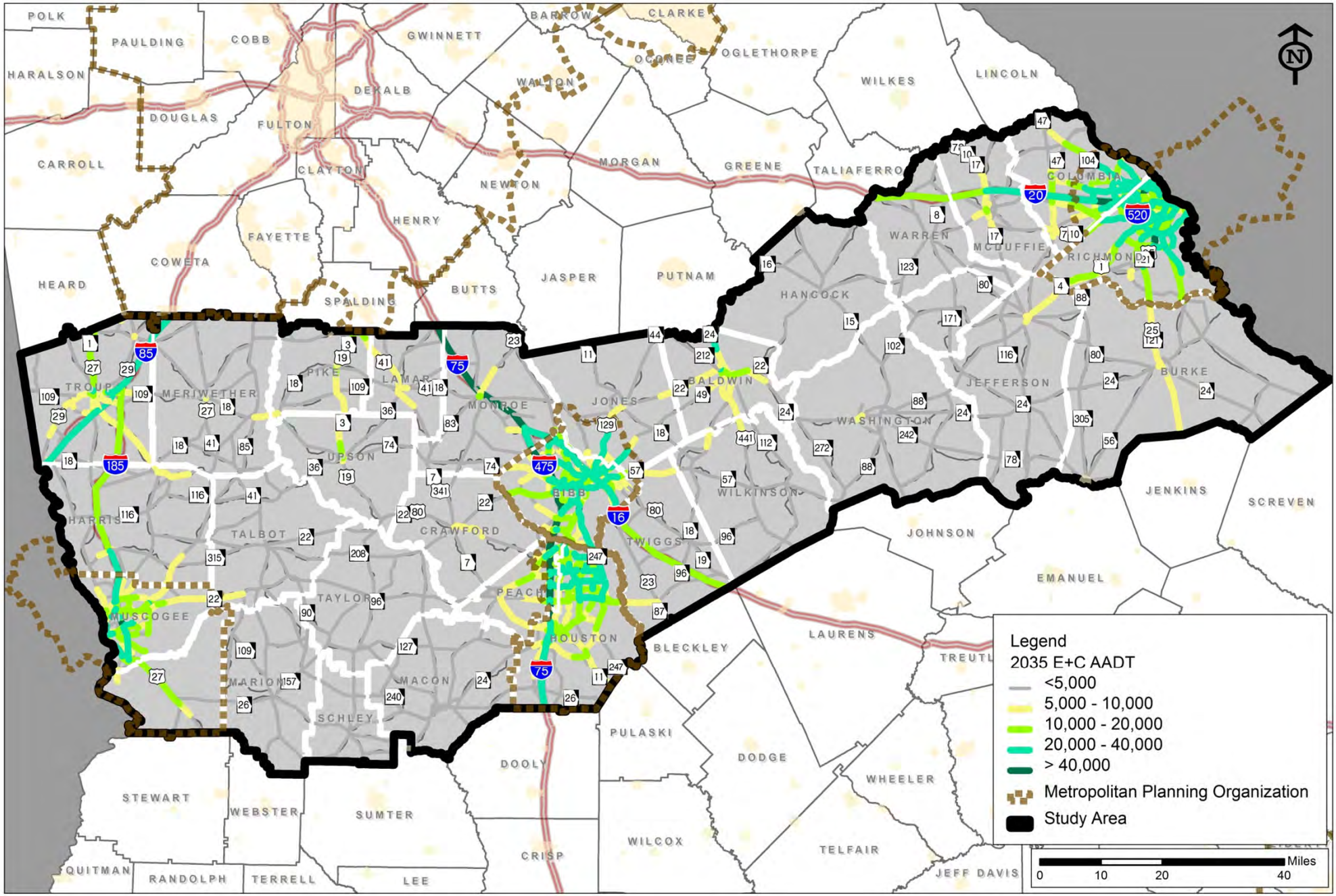
*Source: GDOT FY 2012-2015 STIP*




*Source: 2020/ 2040 Georgia Statewide Model, 2035 CPCMPO Model, 2035 MATS Model, 2035 WRATS Model and 2035 ARTS Model*

# Year 2020 Projected Traffic Volumes

Figure 3-7




*Source: 2020/ 2040 Georgia Statewide Model, 2035 CPCMPO Model, 2035 MATS Model, 2035 WRATS Model and 2035 ARTS Model*

# Year 2035 Projected Traffic Volumes

Figure 3-8

*Future (2020) conditions result in 92 percent of the model network operating at a Level of Service D or better, indicating the STIP projects adequately meet the capacity needs through 2020. However, by 2035 several roadways can be expected to operate at LOS D, even with the committed projects.*

Figures 3-9 and 3-10 display the years 2020 and 2035 LOS for state roads within the study area, respectively. As shown in Figure 3-9, in 2020 most of the roadways are expected to operate at LOS C or better, which is an acceptable level. This indicates that the projects defined in the STIP adequately meet the capacity needs through this future year. For future (2020) conditions, most --92 percent -- of the model network operates at a Level of Service D or better.

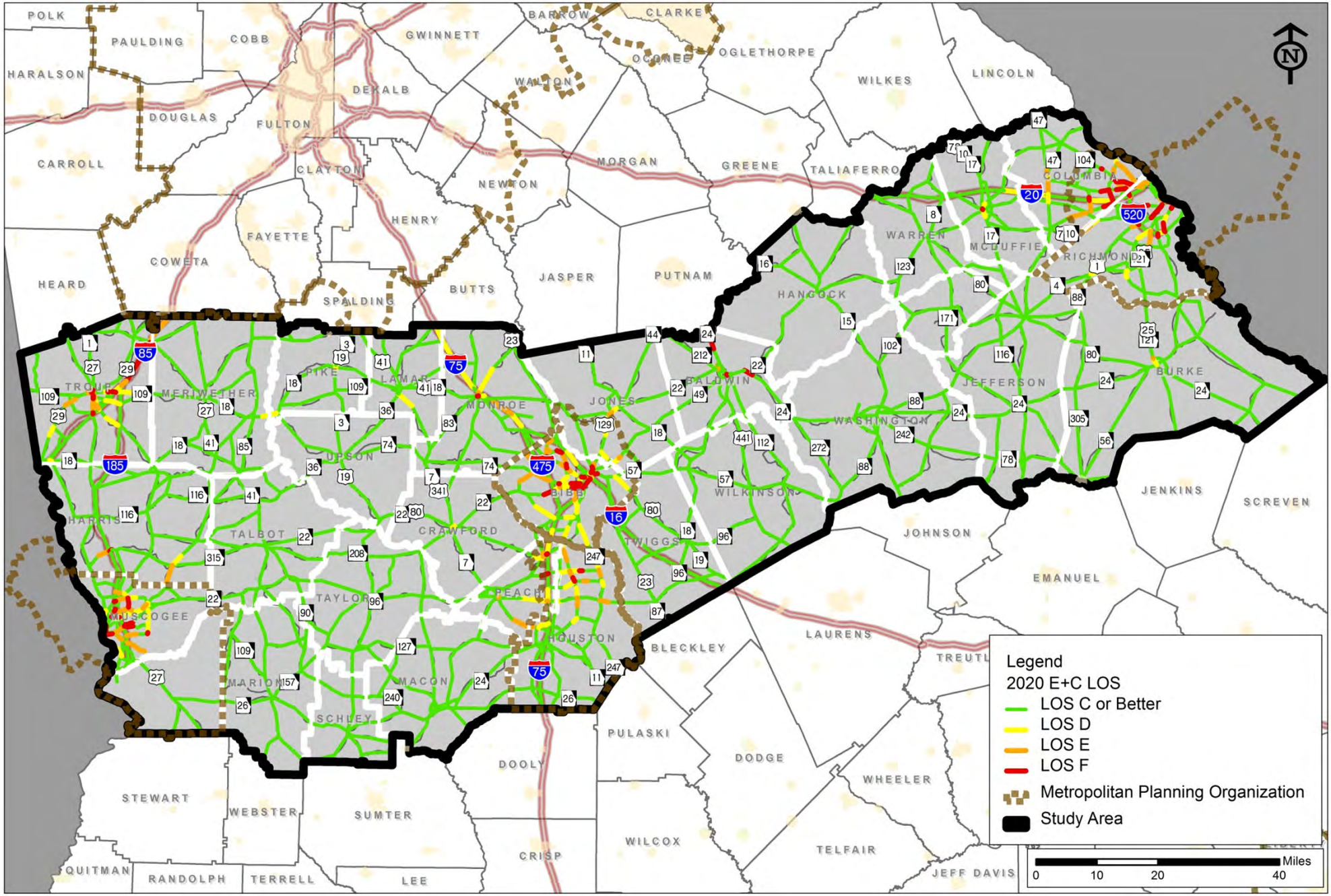
However, by 2035 several roadways can be expected to operate at LOS E or worse even with the committed projects. In the urbanized areas of Columbus, Macon, Warner Robins, and Augusta, and the cities of LaGrange and Milledgeville, several localized roadway segments are projected to exceed LOS D in 2035. Additionally, connections between some of these areas, such as from LaGrange to Macon and from Macon to Milledgeville, are projected to experience some congestion. Overall, for future (2035) conditions, most -- 89 percent -- of the model network operates at a Level of Service D or better.

### *Future Truck Traffic*

This section describes the forecasted growth of freight activity in the study area. Table 3-3 displays the forecasated freight tonnages (inbound, outbound and total) in the year 2050 for each of the counties in the study area. The forecasts were developed using a combination of TRANSEARCH base data and the Freight Analysis Framework (FAF) growth rates, as performed as part of the Georgia Statewide Freight and Logistics Plan. The FAF growth factors were applied because they were more recent than the forecasts developed in the 2007 TRANSEARCH database.

In general, outbound tonnages are expected to grow faster with a compound annual growth rate (CAGR) of 2.3 percent, compared to the CAGR for inbound tons, which is expected to grow at 1.0 percent. Compared to the CAGR of 1.5 percent for the whole State of Georgia for the same time period, the Connect Central Georgia region exhibits slightly higher growth rate at 1.7 percent. On a county level, the majority of counties will likely exhibit growth similar to study area averages in 2050.

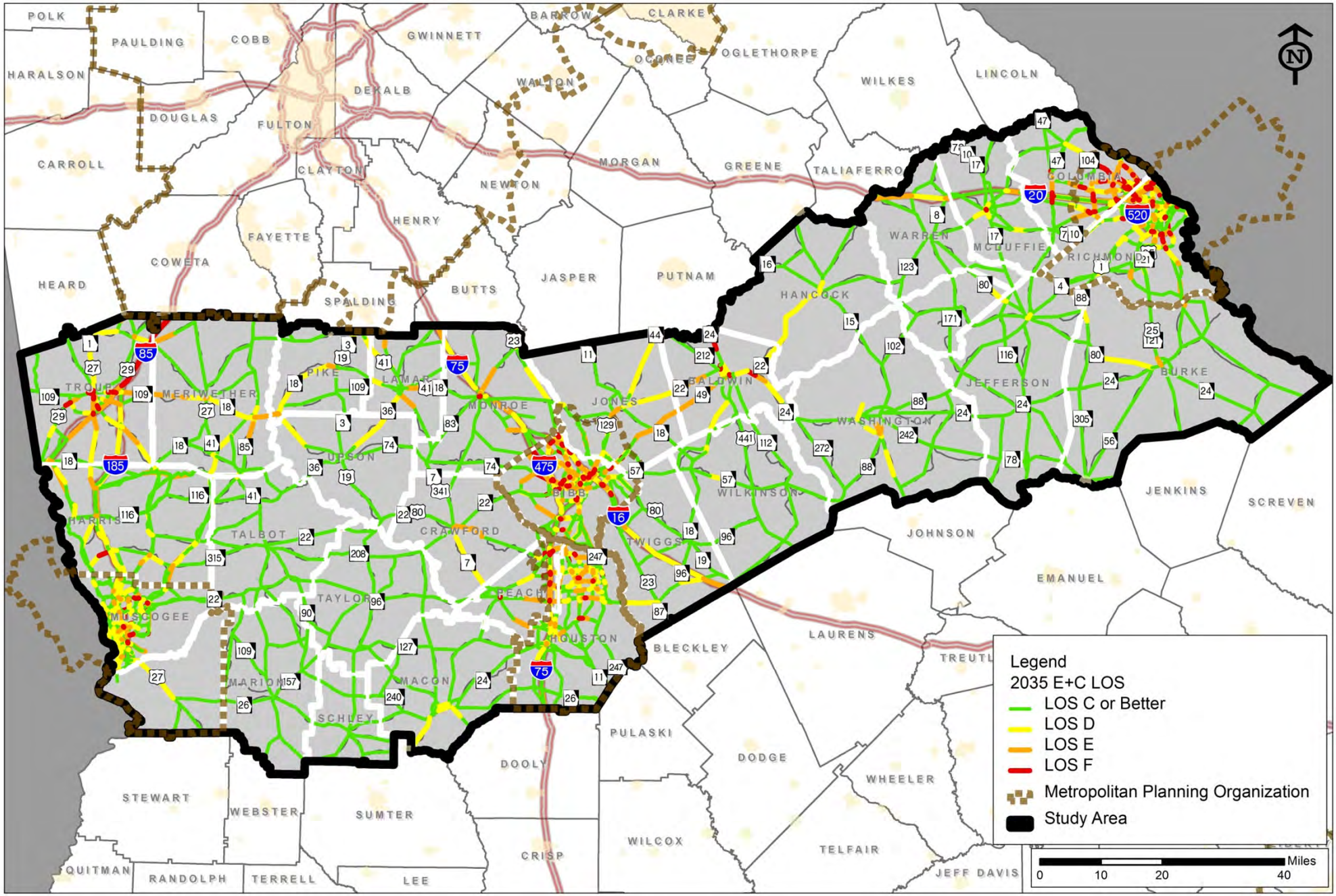
Monroe County (which has the highest tonnages in 2007) is expected to have declines in freight activity by 2050 relative to 2007. This is likely based on the assumption that the coal-fired power plant in Monroe County will decrease its production over time as more cost-effective and emission-efficient power generation methods are adopted. Growth in the top 13 counties in terms of tonnage varies between 1.7 percent and 2.7 percent annually.




*Source: GDOT Statewide Travel Demand Model*

# Year 2020 Level of Service (LOS)

Figure 3-9




*Source:2020/ 2040 Georgia Statewide Model, 2035 CPCMPO Model, 2035 MATS Model, 2035 WRATS Model and 2035 ARTS Model*

# Year 2035 Level of Service (LOS)

Figure 3-10

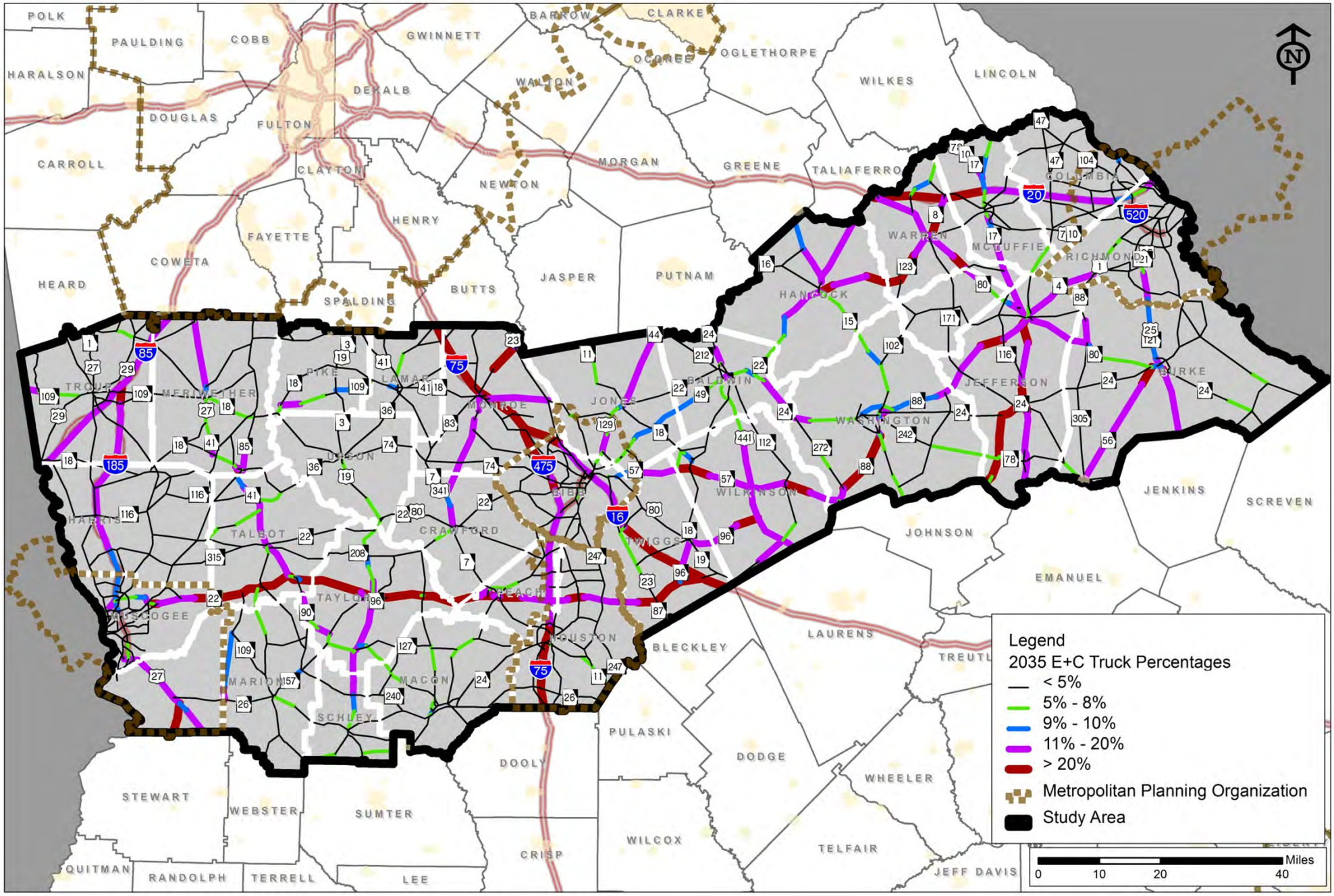
However, the January 2007 edition of Georgia Trend magazine notes the kaolin industry in Georgia has been scaling back in recent years due to lower prices in the marketplace, primarily from increased competition in Brazil. Brazilian production costs are cheaper (lower labor costs) and shipping costs are lower (proximity to the Amazon River where shipping is used.) Economic development officials in the study area are aware of this trend and are actively looking to grow other (non-kaolin) economic sectors to support the region.

A majority of study area counties (see bold in Table 3-3) are projected to more than double in freight tonnage, with the study area experiencing 122 percent growth from the year 2007 to 2050. Statewide, freight tonnage is anticipated to grow from 571 million tons in 2007 to 1,084 tons in 2050 (90 percent increase). Figure 3-11 illustrates the projected 2035 truck percentages.

***Table 3-3: 2050 Future Projected Freight Tonnage***

| | Outbound | | Inbound | | Total | | % |
|---|---|---|---|---|---|---|---|
| Name | 2007 | 2050 | 2007 | 2050 | 2007 | 2050 | Growth |
| Monroe | 1.62 | 3.67 | 17.31 | 6.43 | 18.93 | 10.09 | -47% |
| **Richmond** | **8.41** | **20.73** | **7.39** | **12.97** | **15.80** | **33.70** | **113%** |
| **Washington** | **6.95** | **18.94** | **4.25** | **10.36** | **11.20** | **29.30** | **162%** |
| **Bibb** | **5.67** | **14.19** | **5.23** | **9.21** | **10.90** | **23.40** | **115%** |
| **Muscogee** | **3.99** | **9.95** | **5.37** | **13.19** | **9.37** | **23.14** | **147%** |
| **Talbot** | **4.97** | **13.64** | **2.63** | **6.94** | **7.60** | **20.58** | **171%** |
| **Wilkinson** | **3.11** | **8.20** | **4.36** | **10.84** | **7.47** | **19.04** | **155%** |
| **Jones** | **2.77** | **8.29** | **3.43** | **5.64** | **6.19** | **13.93** | **125%** |
| **Troup** | **2.40** | **7.74** | **2.44** | **6.03** | **4.84** | **13.76** | **184%** |
| **Jefferson** | **3.72** | **10.91** | **1.07** | **1.68** | **4.79** | **12.59** | **163%** |
| **Warren** | **2.45** | **8.40** | **2.21** | **3.03** | **4.66** | **11.43** | **145%** |
| Houston | 1.76 | 3.81 | 2.53 | 4.38 | 4.29 | 8.20 | 91% |
| **Columbia** | **2.75** | **9.00** | **1.30** | **1.82** | **4.04** | **10.81** | **168%** |
| **Twiggs** | **2.09** | **7.18** | **0.27** | **0.40** | **2.37** | **7.58** | **220%** |
| **Meriwether** | **1.91** | **5.46** | **0.46** | **0.79** | **2.36** | **6.25** | **165%** |
| McDuffie | 1.22 | 2.76 | 1.14 | 1.89 | 2.36 | 4.65 | 97% |
| **Macon** | **0.78** | **1.82** | **0.82** | **1.83** | **1.61** | **3.65** | **127%** |
| **Lamar** | **0.98** | **3.07** | **0.53** | **0.68** | **1.51** | **3.76** | **149%** |
| Baldwin | 0.53 | 0.94 | 0.44 | 0.73 | 0.97 | 1.67 | 72% |
| **Peach** | **0.34** | **0.88** | **0.43** | **0.73** | **0.77** | **1.61** | **109%** |
| Upson | 0.12 | 0.31 | 0.59 | 0.90 | 0.71 | 1.22 | 72% |
| Hancock | 0.49 | 1.07 | 0.12 | 0.11 | 0.60 | 1.17 | 95% |
| **Harris** | **0.20** | **0.45** | **0.35** | **0.72** | **0.55** | **1.17** | **113%** |
| **Burke** | **0.32** | **0.79** | **0.22** | **0.39** | **0.54** | **1.18** | **119%** |
| **Crawford** | **0.24** | **0.65** | **0.19** | **0.25** | **0.43** | **0.90** | **109%** |
| Taylor | 0.02 | 0.05 | 0.40 | 0.59 | 0.42 | 0.65 | 55% |
| Marion | 0.17 | 0.37 | 0.11 | 0.14 | 0.29 | 0.51 | 76% |
| Pike | 0.01 | 0.02 | 0.27 | 0.33 | 0.28 | 0.35 | 25% |
| **Chattahoochee** | **0.01** | **0.01** | **0.09** | **0.21** | **0.09** | **0.22** | **144%** |
| **Schley** | **0.04** | **0.09** | **0.05** | **0.11** | **0.09** | **0.20** | **122%** |
| **Glascock** | **0.01** | **0.02** | **0.08** | **0.18** | **0.09** | **0.20** | **122%** |
| ***Total*** | ***60.03*** | ***163.43*** | ***66.08*** | ***103.50*** | ***126.11*** | ***266.92*** | ***112%*** |

*Source: 2007 TRANSEARCH data factored by FAF growth rates*




*Source: GDOT Statewide Travel Demand Model*

# Year 2035 Truck Percentages

Figure 3-11

### 3.3.3 Future Pedestrian and Bicycle Network

*Additional pedestrian and bicycle facilities should be considered in coordination with any roadway network improvements.*

As pedestrian and bicycle activity increases throughout the study area, appropriate considerations should be made for these modes of travel. Additional pedestrian and bicycle facilities initiatives should be coordinated with those bike and pedestrian plans that already exist to maximize coordination with planned roadway improvements.

Recently, in 2012, GDOT's State Transportation Board adopted a complete streets resolution. The primary strategy for implementing complete streets is to incorporate bicycle, pedestrian, and transit accommodations into roadway construction and reconstruction projects. As noted in the Existing Conditions section, several of Georgia's State Bicycle Routes run along roadways in the study area:

- US 27 from the southern study area boundary to I-185
- US 80 / SR 22 from SR 85 to west of I-16;
- US 27 / SR 85 from the northern study area boundary to US 80 / SR 22;
- SR 18 from northern study area boundary to US 27 / SR 85;
- US 41 from northern study area boundary to southern study area boundary; and
- US 24 / SR 212 / SR 17 from northern study area boundary to southern study area boundary.

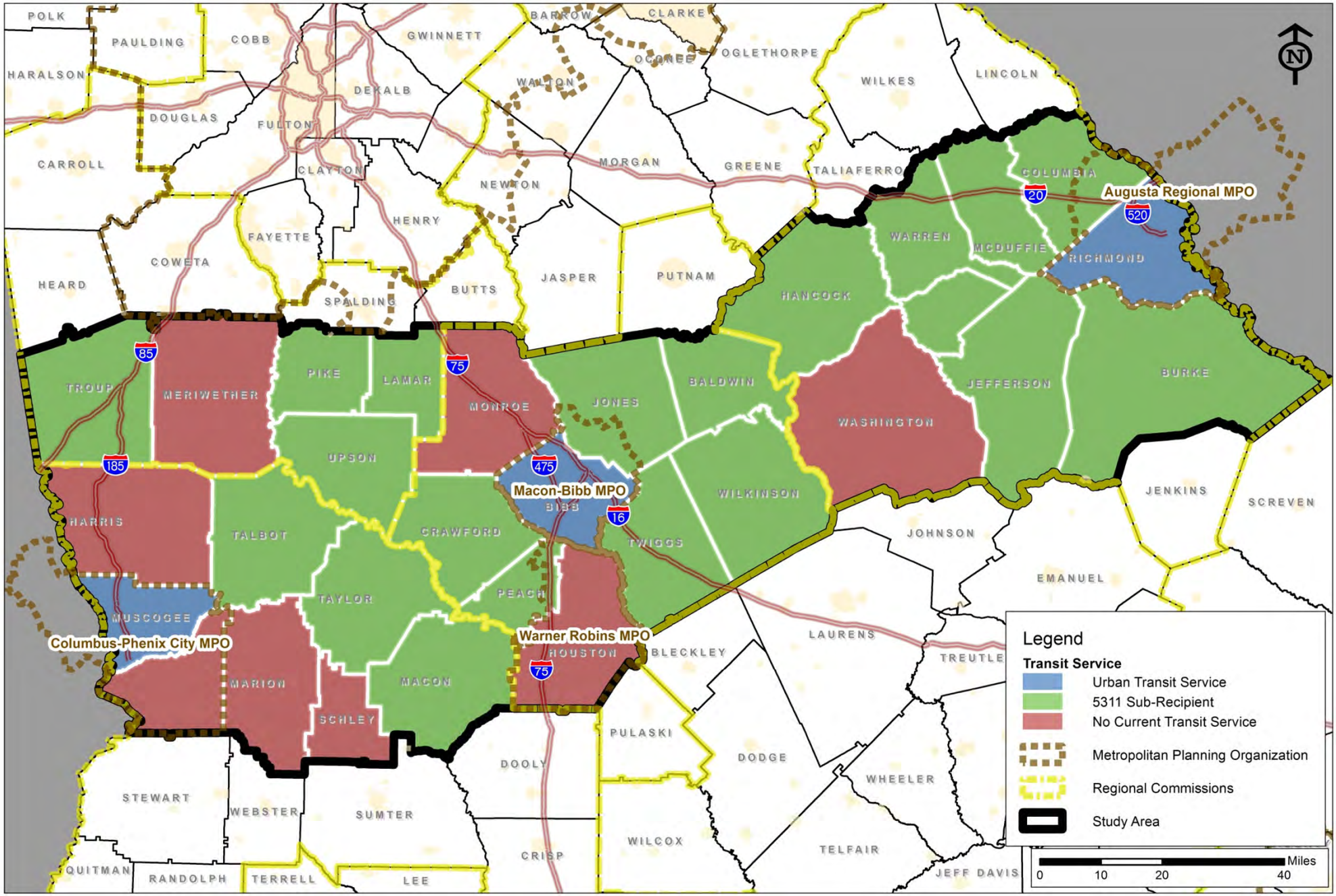
Emphasis on complete street policies will likely be a focus and incorporated into the project development process for improvements recommended along thse facilities.

Additionally, each RC is responsible for maintaining an updated bicycle plan for the region. These localized and focused plans serve as the best source for recommending bicycle improvements, as these types of improvements require detailed understanding of the local resources that would benefit from enhanced bicycle connectivity. Therefore, this plan defers to the bicycle plans developed for the Three Rivers RC, the River Valley RC, the Middle Georgia RC and the Central Savannah River Area RC for local bicycle recommendations.

### 3.3.4 Future Transit Service

*Throughout the outreach efforts, stakeholders noted the need to plan for the aging population.*

Throughout the outreach efforts, stakeholders noted the need to plan for the aging population. Figure 3-12 illustrates the availability of public transit service within the study area. As indicated, most counties are served by either "Section 5311" rural transit service (demand response, commonly known as "dial-a-ride") or by urban transit service. The rural transit services are typically lead




*Source: Georgia Rural and Human Services Transportation Coordination Plan Update*

# Current Transit Service

Figure 3-12

by the respective RC or locally at the county or city level. Meriwether County is in the process of implementing rural transit, while Harris, Chattahoochee, Marion, Schley, Monroe, Houston and Washington Counties have no public transit service. In order to ensure adequate mobility options for the aging population, the goal would be to provide service in all counties across the state.

Current efforts are underway to address the need for coordination between rural transit providers to improve efficiency and better serve the needs of rural communities. GDOT is working with Department of Human Services (DHS) and Department of Community Health (DCH) to update the State's Coordinated Rural and Human Services Transportation (RHST) Plan. To date, this effort has involved assessing the current extent of coordinated RHST efforts within Georgia and identifying ways to serve more trips across the state by improving efficiency, reducing redundancy, and leveraging new funding opportunities. At the state level, the three major funders of rural and human services transportation (GDOT, DHS, DCH), along with the Governor's Development Council (GDC) and other state agencies, have established an ongoing *Technical Coordinating Group (TCG)*. The TCG is comprised of staff representatives from each agency to oversee the state's coordination efforts in cooperation with GDC's RHST Committee and Advisory Subcommittee.

In the course of these activities, GDOT has been working with the 12 regional commissions and has conducted a series of workshops to determine the existing RHST services, as well as RHST needs for each of the regions. Portions of three Regional Commission areas (Middle Georgia, River Valley and Three Rivers) were selected to implement mobility management pilot projects to enhance and support regional coordination efforts. These three regions initiated Mobility Management tasks in late 2011. The projects will be assessed throughout the year to determine if the program should be expanded to other areas of the state.

***Mobility management** is a strategic approach that designates a dedicated resource, or Mobility Manager, to focus on identifying and implementing coordination principals and strategies that enhance and improve efficiency and levels of service for customers, ultimately helping to stretch the transportation dollar further.*

## 3.4 FUTURE ECONOMY

*In Central Georgia, transportation can positively impact economic performance through improvements in connectivity, safety, and/or access.*

The existing conditions for travel demand in the study area indicate that congestion is not widespread, but focused in MPO areas. However, transportation needs are sometimes not solely based on congestion mitigation; consideration of economic benefits through other means are also considered. Consideration should also be made on how transportation may support economic development through improvements focused on connectivity, safety, and/or access.

To accomplish this, the study performed an economic analysis to identify strategic opportunities for increasing economic performance. Specifically, it looked at the strategic role transportation could play in the area's economic advancement. Products of this work provided economic and demographic profiles of the study area, reviewed economic goals and strategies, assessed the importance of transportation to Central Georgia and presented three case studies which distill the impacts of various transportation improvements. This section details some of the results from this study, which can be found in further detail in Appendix E.

### 3.4.1 Demographic and Economic Profiles

The demographic and economic profiles indicate that population growth in the state has outpaced that of the study area and the share of population within the study area has also declined. Compared to the state's share, total employment in the study area has been declining, however since the recent "Great Recession", higher-growth areas of the state which got boosts from the construction and real estate expansion of the 2000's have since declined more than in the study area. Wages in the study area are lower compared to the state average and percent living in poverty is higher.

### 3.4.2 Importance of Transportation to Key Industries

It was also noted that critical sectors of the Central Georgia economy are particularly reliant on a strong transportation system to perform day-to-day activities and compete in domestic and global markets. In fact, transportation-dependent industries are targeted in a number of economic development plans that have been completed in the study area. Warehousing and distribution industries are a focus throughout the study area, given the strong performance of the Port of Savannah and Central Georgia's strategic location relative to Florida and the Southeast. Auto parts and manufacturing to support Kia operations is a focus of the western and west-central parts of the study area. Aerospace and defense sectors reflect the presence of three major defense installations and an expanding cluster of aerospace companies (both manufacturers and services) in the study area. Food processing, capitalizing on inputs raised or grown in Georgia and proximity to major markets, is also an identified target industry for the study area.

Transportation is clearly essential to the industries that Central Georgia has targeted for growth. Initiatives to improve transportation access, connectivity, and reliability resonate with its key industries by improving linkages to markets and suppliers. In the evaluation of areas for expansion, transportation, given its importance and associated costs as a factor of production, rises to the top (similar to

*Transportation is clearly essential to the industries that Central Georgia has targeted for growth. Initiatives to improve transportation access, connectivity, and reliability will resonate with its key industries by improving linkages to markets and suppliers.*

labor cost considerations) as common criteria used in the site selection process for the industries key to Central Georgia's future growth. For example, an I-75 location was a key factor in a decision by an Ohio-based plastics manufacturer to locate in Forsyth, "The prime location on I-75 gives us room to expand and lower freight costs to our customers allowing us to remain a cost-efficient producer of plastic packaging for our coast-to-coast customers", said Encore Plastics president Craig Rathbun, in an Atlanta Business Journal article from November 23, 2010.

### 3.4.3 Case Studies

The study area is certainly a large, diverse region. For this reason, three sample case studies were completed, representing the west, central, and east of the study area in order to illustrate the challenges and opportunities present within the study area. These case studies were selected based on previously identified potential for economic growth as a result of a transportation improvement. While there are many that could be researched, with input from the study's Stakeholder Committee, each case study provides an example of the types of economic impacts that may be expected in response to a particular transportation improvement. The three case studies include:

- West – proposed "Macon to LaGrange Connection";
- Central – proposed "Sardis Church Road Extension to I-16"; and
- East – proposed "Wrens Bypass and Operational Improvements".

An overview of each follows; additional details can be found in Appendix E.

#### *West – proposed "Macon to LaGrange Connection"*

This case study focused on the impacts of improving access between Macon and LaGrange. Analyses showed that two of the primary potential benefits could be:

1. Expanding the area in Central Georgia where Kia (located in West Point) and Hyundai (located in Montgomery, Alabama) suppliers could locate; and
2. Providing more efficient access through improved travel times to the Port of Savannah and, to a lesser extent, to the Port of Brunswick. The improved linkages to the Ports of Savannah and Brunswick provided by the Macon-LaGrange connector may include benefits for the auto industry and perhaps could enhance Central Georgia's appeal for warehousing and distribution activities.

Current plans to deepen and expand the Port of Savannah's capacity may also provide an economic development opportunity to expand warehousing and distribution and other industries into Central Georgia. According to a study by the University of Georgia "The

*Current plans to deepen and expand the Port of Savannah's capacity could result in almost 45,000 additional jobs in the study area.*

Economic Impact of Georgia's Deepwater Ports On Georgia's Economy in FY 2011," the study area could gain almost 45,000 jobs as a result of this expansion. This means thirteen percent of the anticipated jobs created statewide, as cited in the UGA study, could be realized captured in the study area.

The growth in trade in this region was compared to the national average between the years 2000 and 2009. Analyses showed that if the Western Region of the study area had followed national industry growth trends, it would have resulted in over 9,000 additional manufacturing jobs. Improvements such as the Macon-LaGrange connector could help the region capitalize on the $400 million deficit in lost wages.

### *Central – proposed "Sardis Church Road Extension to I-16"*

This case study considered a project connecting south of Macon to the Fall Line Freeway east of Macon and could serve as a southern bypass of Macon. Analysis showed the extension may provides several benefits, including:

1. Improving the movement of trucks servicing the kaolin industry;
2. Potentially improved flow of freight traffic (originating in the western part of Central Georgia) destined for the Port of Savannah (by providing a link from points westward to I-16); and
3. More direct access south of Macon to Robins Air Force Base. *(Deeper understanding of the base's current & future mobility plans, and how a project would be affected, would be the result of more detailed study.)*

Analyses were performed comparing the growth in trades in this region to the national average (from the years 2000 to 2009), as well as to estimate the potential future impact of improvements, such as the Sardis Church Road Extension. Further detail on the methodology of these analyses are provided in Appendix E. The historical analyses showed that the Central Region of the study area had a deficit of over 1,500 manufacturing jobs and 935 mining jobs compared to national growth trends, resulting in an annual $97 million deficit in lost wages.

*If full build-out of office parks served by the Sardis Church Road Extension was achieved, the region could gain over 8,000 jobs at an annual payroll of over $300 million.*

In addition, the shift towards greater North American production could provide opportunities for future growth in related industries. Given these market dynamics, the potential benefits of attracting increased manufacturing and distribution activity to areas affected by the completion of the Sardis Church Road Extension were estimated. Based on assumptions detailed in Appendix E, it was estimated that if the locally-adopted future land use vision is completely achieved and full build-out of office parks served by the Sardis Church Road Extension was completed, the region could gain 8,000+ jobs at an annual payroll of over $300 million.

### *East – proposed "Wrens Bypass and Operational Improvements"*

The third case study was in the study's eastern section and investigated a bypass to allow the Fall Line Freeway to move traffic uninterrupted around Wrens. This possible improvement also assumed numerous smaller operational-type improvements to enhance freight mobility and safety. The energy industry is growing in East Georgia, with a new coal plant planned in Washington County, two new nuclear reactors in Waynesboro and a new biomass plant planned for Jefferson County. The completion of the Fall Line Freeway will complement these changes by making more land accessible to limited access roadways and by providing better connectivity to additional markets. Improved connectivity could also help develop Augusta's Bush Airport to attract more freight movement, as limited opportunity for air cargo was a noted deficiency, according to the Augusta-Richmond MPO Regional Freight Plan.

Analyses, detailed in Appendix E, were performed comparing the growth in trades in this region to the national average (from 2000 to 2009). Analyses predicts if the eastern portion of the study area had mirrored national industry growth trends, it would have resulted in 1,477 manufacturing jobs and 471 mining jobs. Improvements such as the Wrens Bypass could possibly support the region to capitalize on the $71 million deficit in lost wages.

*The completion of the Fall Line Freeway will complement the growing energy industry in the study area by making more land accessible to limited access roadways and by providing better connectivity to additional markets.*

# 4 SCENARIO BUILDING

FHWA encourages enhanced planning through the development and analysis of potential future scenarios. Scenario planning allows for the consideration of *multiple* land use, demographic, economic, policy and other inputs as assumed variables, rather than as constants. This technique helps illustrate how changes in *several* of these factors can impact the future needs of the study area and, thereby, inform the analyses of the study.

## 4.1 METHODOLOGY

Scenarios are built based upon plausible assumptions for the future, considering a *range* of possibilities. These could include situations of higher or lower than expected population or employment growth, changing demographics of the population, varying economic trends, and policy decisions. Scenarios can be based on one specific theme or a combination of factors, as described below:

- **Baseline scenarios:** What might the future look like given the continuation of current policies, programs, and development forms?
- **Growth/socioeconomic scenarios:** What might the future look like given different population or growth projections?
- **Policy scenarios:** What might the future look like assuming combinations of different policies, actions, or strategies, such as policies focused on mode splits, access management, or preservation?
- **Environmental scenarios:** What might the future look like given different environmental trends and needs?
- **Economic scenarios:** What might the future look like given different trends in various sectors of the economy?
- **Hybrid scenarios:** How would things change under a combination of several scenario types?

## 4.2 RECOMMENDED SCENARIOS

To best understand the potential variables impacting the future of transportation in the 31-county study area, the Stakeholder Committee was extensively engaged in developing potential future scenarios to consider for the study. Specifically, as part of the third stakeholder meeting attendees were educated on the scenario planning concept, given information from multiple sources regarding futue conditions and trends, asked to help determine what factors might influence the future of the study area. This information, documented in detail in Appendix C, was compiled and condensed into three scenarios, described in Table 4-1. Analysis techniques were developed to test

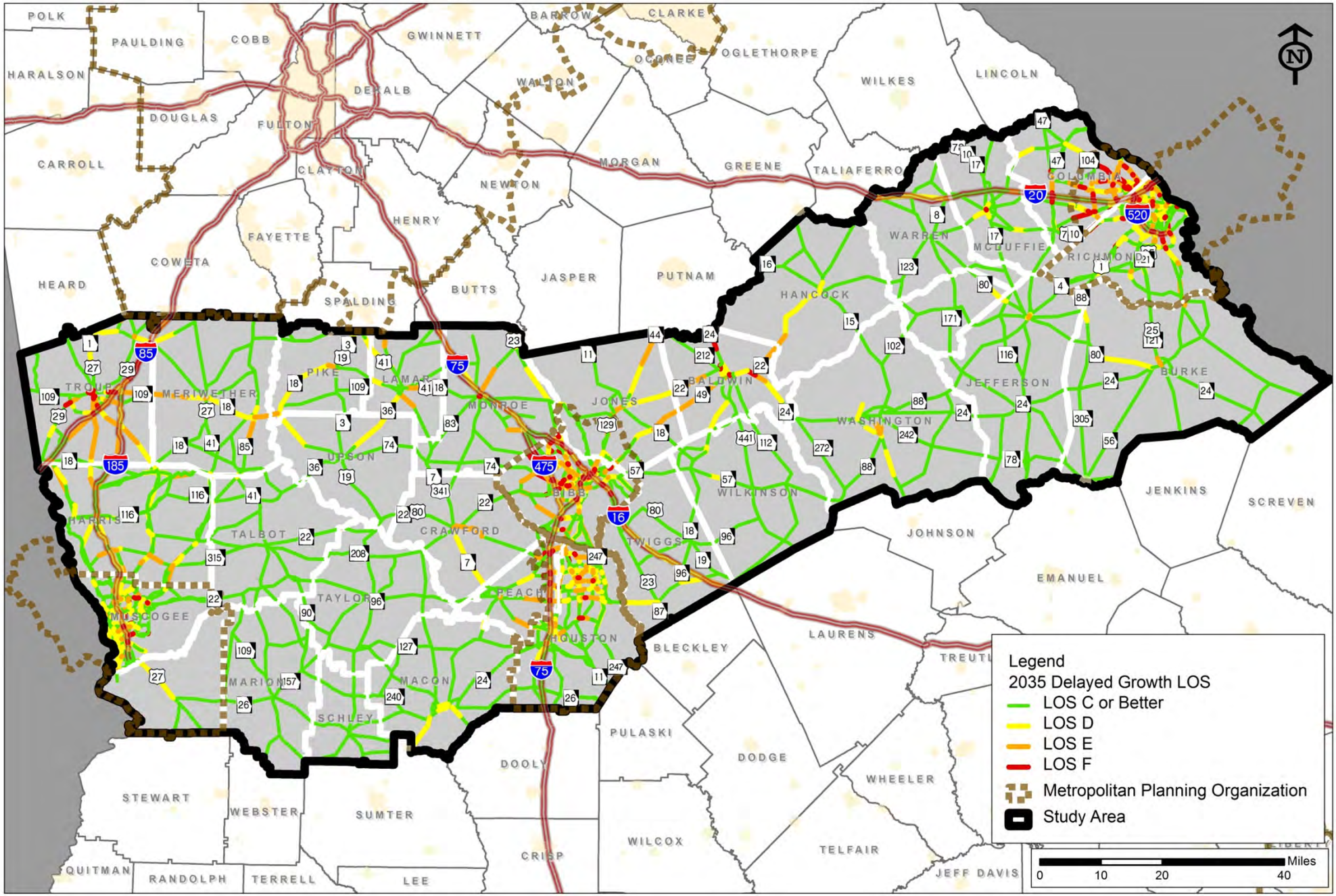
the impact of each of these scenarios on the future transportation network, as defined in Table 4-1.

*Table 4-1: Recommended Scenarios*

| Scenario | Testing Strategy |
|---|---|
| ***Delayed Growth:*** How would a decline in projected population and employment affect our study area? | • Run travel demand model with decreased population and employment in MPO areas. |
| ***Increased Freight*:** How would the increase in freight demand affect our study area? | • Run travel demand model with increased freight activity entering/exiting the study area and at key locations, such as Macon Airport, Kia, major mines, and major industrial parks.<br>• Research potential/planned developments in the study area to determine if model accurately represents potential growth in freight at these locations.<br>• Increase population and employment associated with military bases. |
| ***TIA:*** How do the Transportation Investment Act projects affect the transportation needs for each Regional Commission in the study area? | • Analyze impact of TIA projects (new capacity along State Roads) for all four RCs. |

## 4.3 SCENARIO RESULTS

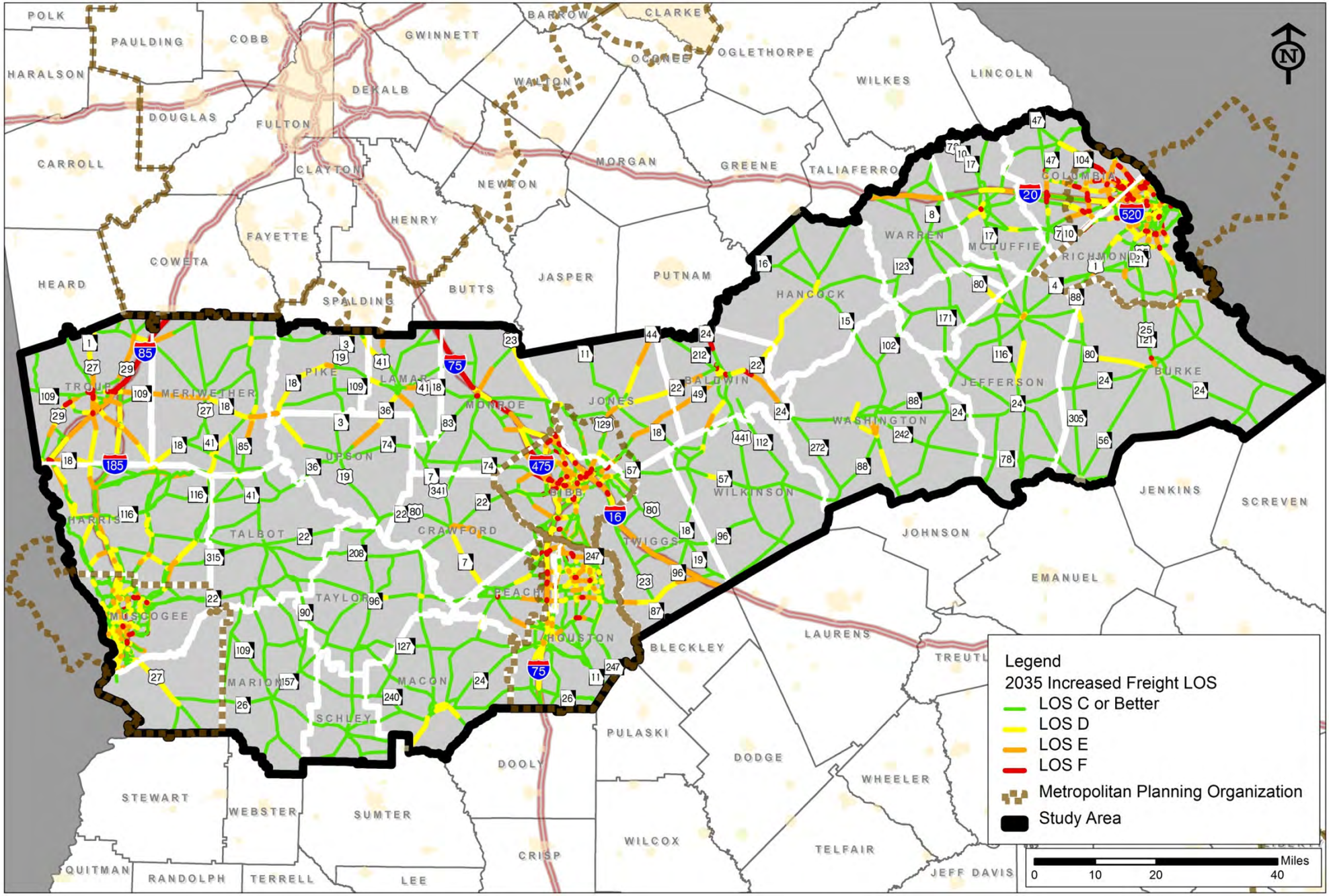
The travel demand model was adjusted based on the strategies described for each scenario. To assess the impact of each of these potential scenarios, levels of service (LOS) were compared to the base case, which was previously described as the "year 2035 E+C model" (shown in Figure 3-10). Figures 4-1 through 4-3 illustrate the LOS for the three scenarios: Delayed Growth, Increased Freight and TIA.




*Source: 2020/ 2040 Georgia Statewide Model, 2035 CPCMPO Model, 2035 MATS Model, 2035 WRATS Model and 2035 ARTS Model*

# Year 2035 Delayed Growth Scenario LOS

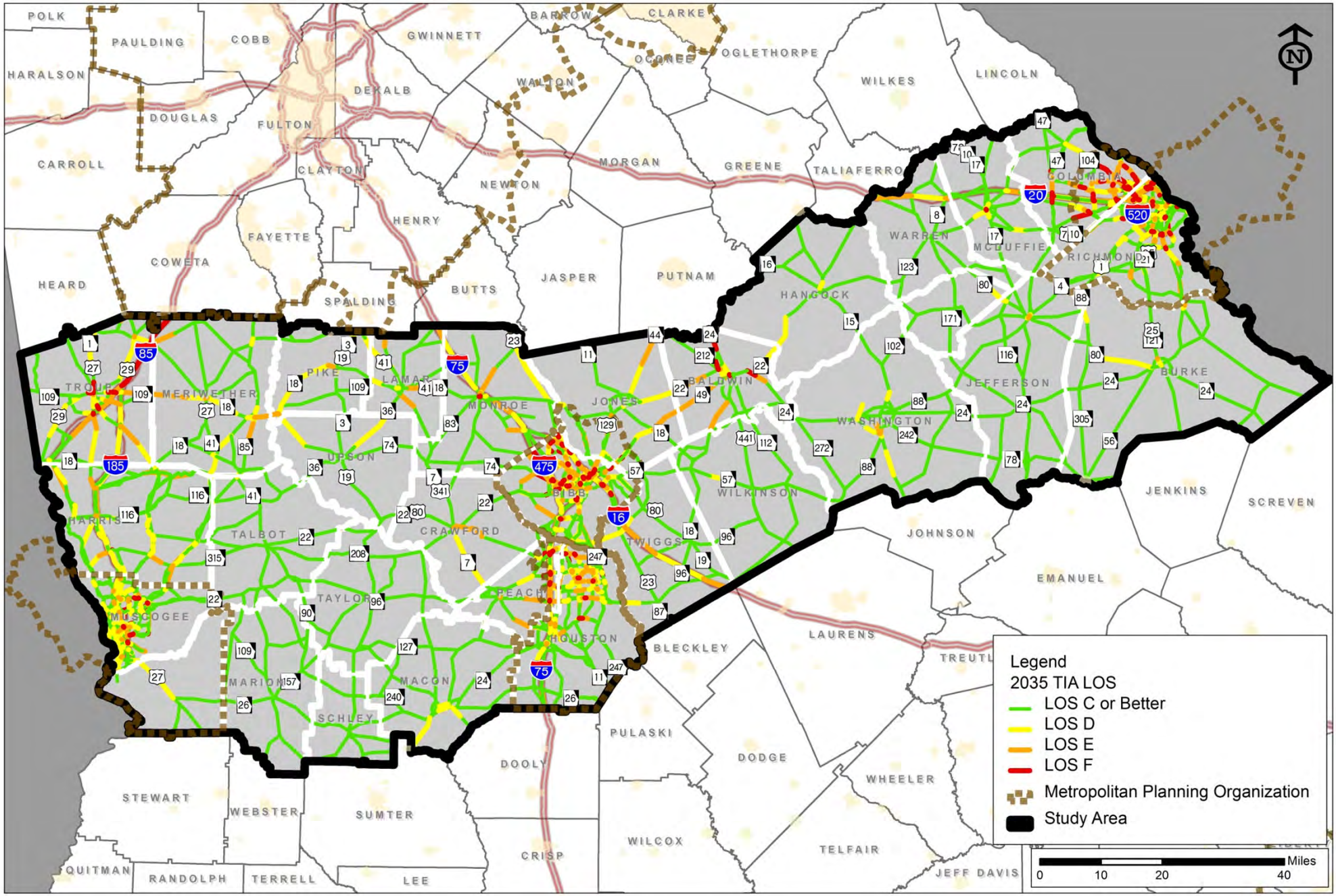
Figure 4-1




*Source: 2020/ 2040 Georgia Statewide Model, 2035 CPCMPO Model, 2035 MATS Model, 2035 WRATS Model and 2035 ARTS Model*

# Year 2035 Increased Freight Scenario LOS

Figure 4-2




*Source: 2020/ 2040 Georgia Statewide Model, 2035 CPCMPO Model, 2035 MATS Model, 2035 WRATS Model and 2035 ARTS Model*

# Year 2035 LOS Based on TIA Projects

Figure 4-3

Roadway needs were assessed based on the results of this capacity analysis as well as from stakeholder input and needs identified in previous studies and planning efforts. Table 4-2 provides a list of potential needs, scored based on whether they meet the following criteria:

- **Previously Identified:** Indicates if a project has been identified through previous efforts, including GDOT's Statewide Transportation Plan, the a TIA Roundtable-adopted project list, or another study.
- **Outreach:** Indicates if a need was identified through public outreach efforts or through stakeholder coordination.
- **Capacity Deficiency:** Indicates if the segment operates below an acceptable LOS (E or F) for the various years and scenarios.

Roadway needs were assigned one point for each of the criteria met. The cumulative scores, shown in Table 4-2, were used to determine which potential needs should be considered for improvements. *(Though this list does not represent the prioritization of projects for the Connect Central Georgia study, it was used to develop improvement strategies that were then prioritized based on a process described in later sections).*

| Route | From | To | Identification of Need | | | | | | | | | Cumulative Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Previously Identified | | | | Capacity Deficiency (LOS) | | | | | |
| | | | LR Program | TIA Project | Other Study | Outreach | 2006 Existing | 2035 Baseline | 2035 Scenario 1 | 2035 Scenario 2 | 2035 Scenario 3 | |
| **Character Area 1** | **Columbus** | | | | | | | | | | | |
| I-85 | Northern Study Area | Western Study Area | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | 7 |
| I-185 | SR 219 | SR 116 (S of LaGrange) | | | | | | ✓ | | | | 1 |
| US 27 / SR 1 | View Pointe Dr | I-85 | ✓ | | | ✓ | | ✓ | ✓ | ✓ | | 5 |
| SR 1/ Hamilton Rd | Lower Big Springs Rd | I-185 | ✓ | ✓ | | ✓ | ✓ | | | ✓ | ✓ | 6 |
| US 27 / SR 1 | I-185 | Smokey Rd | | | | ✓ | | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 14 / US 29/ Vernon Rd | SR 109/ Roanoke Rd | Upper Glass Bridge Rd | ✓ | ✓ | | | ✓ | ✓ | | | | 4 |
| SR 14 / US 29/ Vernon Rd | Upper Glass Bridge Rd | Reeds Rd (West Point) | ✓ | ✓ | | | | | | ✓ | | 3 |
| US 29 | Hogansville Highway | Hines Road | | | | | | | | ✓ | | 1 |
| Upper Big Springs Rd | SR 14 Spur/S Davis Rd | I-85 | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 18 | I-85 | Salem Rd | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 18/ SR 354 | Hopewell Church Rd | SR 190 | | | | | | ✓ | | ✓ | ✓ | 3 |
| SR 18/ SR 355 | SR 190 | Hines Gap Rd (Pine Mt) | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 85 | Midland Rd | Ossahatchie Creek Rd | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 109/ Lafayette Pkwy/ Greenville Rd | Ragland St | I-185 | ✓ | | | | | ✓ | | | | 2 |
| SR 109/ Lafayette Pkwy/ Greenville Rd | I-185 | Big Springs Mountville Rd | ✓ | | | | ✓ | ✓ | | | | 3 |
| SR 109/ Lafayette Pkwy/ Greenville Rd | Big Springs Mountville Rd | Hill Haven Rd | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 109/ Lafayette Pkwy/ Greenville Rd | Hill Haven Rd | US 27 | | | | | ✓ | ✓ | | ✓ | | 3 |
| SR 219/ Moody Bridge Rd | N Greenwood St | Main St | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | 6 |
| SR 219/ Moody Bridge Rd | Main St | I-85 | ✓ | | | | | ✓ | ✓ | ✓ | | 4 |
| SR 219/ Moody Bridge Rd | I-85 | Bartley Rd (S of LaGrange) | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 315/ Mountain Hill Rd | Huling Rd | East of I-185 | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| Flat Rock Rd | US 27 | Macon Rd | | | | | ✓ | ✓ | | ✓ | ✓ | 4 |
| Flat Rock Rd/ Schatulga Rd | Macon Rd | Buena Vista Rd | | | | | | ✓ | | ✓ | ✓ | 3 |
| Luthersville Road | I-85 | Forrest Road | | | | | | | | ✓ | | 1 |
| **Character Area 2** | **Rural West** | | | | | | | | | | | |
| SR 18 | US 19 | County Farm Rd (Zebulon) | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 18/ Forsyth St/US 41 | College Dr | Crawford Rd (Barnesville) | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| US 41/ SR 7 | Main St | Grove St (Barnesville) | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| US 41/ 341 / SR 7 | Thomaston St | SR 83 (Barnesville) | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 42 | East Crusselle St | Walton Rd (E of Roberta) | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 74/ Woodbury Rd | SR 85 | Raven Dr | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 74/ Woodbury Rd/SR 109 | Raven Dr | SR 109/ S Main St (Molena) | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 74/ SR 109/ S Main St | Carrolls Martin Rd | Lawrence Mill Rd | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 85 | Cove Rd | Pebblebrook Rd (Woodbury) | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| Old Hwy 41 | Northern Study Area | Trice Rd | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 36 | Trice Cemetary Rd | The Rock Rd | | | | | | | | ✓ | | 1 |
| **Character Area 3** | **Macon/Warner Robins** | | | | | | | | | | | |
| I-75 | Northern Study Area | Highfalls Park Rd | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 7 |
| I-75 | Highfalls Park Rd | Johnstonville Rd | ✓ | | ✓ | ✓ | ✓ | | ✓ | ✓ | | 6 |
| I-75 | Johnstonville Rd | SR 42 | ✓ | | ✓ | ✓ | ✓ | | | ✓ | | 5 |
| I-75 | SR 18 | Rumble Rd | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | 6 |
| I-16 | Marion Rd/ SR 87 | Sgoda Rd | | | | ✓ | | ✓ | ✓ | ✓ | ✓ | 5 |
| I-75 | Centerville Rd | Miami Valley Rd | | | | ✓ | | ✓ | ✓ | ✓ | ✓ | 5 |
| I-16 | I-75 | SR 87 | ✓ | | | | | ✓ | ✓ | ✓ | ✓ | 5 |
| I-16 | Sgoda Rd | Southern Border of Study Area | | | | | | | | ✓ | | 1 |
| I-475 | Colaparchee Rd | SR 74 | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| US 23/ Emery St/ Spring St | Poplar St | Jeffersonville Rd | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| US 41/ SR 18 | College Dr (Barnesville) | Crawford Rd | ✓ | | | | | ✓ | ✓ | ✓ | ✓ | 5 |
| US 129 | US 41 | Middle Georgia Regional Airport | ✓ | ✓ | | | ✓ | | | | | 3 |
| US 129 | Greenwood Rd | Downtown Gray (b/w Macon and Gray) | ✓ | | | | | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 11 / Houston Rd/ Houston Lake Rd | Sardis Church Rd | South of SR 96 (Macon to Warner Robins) | ✓ | | | | | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 49/ Old Garrison Rd | Joycliff Rd | Character Area 4 | ✓ | | | ✓ | | ✓ | | ✓ | | 4 |
| SR 83 | I-75 | Byars Rd (Near Forsyth) | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 96 | Borders Rd | Royal Oak Ln | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 7 |
| SR 96 | Ocmulgee River | Westlake Rd | | ✓ | | ✓ | | | | ✓ | | 3 |
| SR 96 | SR 247 | Thompson Mill Rd | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 341 / SR 7/ Sam Nunn Blvd | Perry Pkwy | Hendricks Rd | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | 7 |
| Watson Rd | | | | | | ✓ | | | | | | 1 |
| **Character Area 4** | **Rural East** | | | | | | | | | | | |
| US 441 | Northern Study Area | Corral Rd (N of Milledgeville) | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 15 | I-16 | | ✓ | | | ✓ | | | | | | 2 |
| I-20 | SR 150 / Cobbham Rd | SR 47 / US 221 | ✓ | | | | | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 22 | Stembridge Rd (N) | Stembridge Rd (S) | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 6 |
| SR 22 / Glynn St | Old Monticello Rd | Roberts Rd | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 49 | Allen Memorial Rd | Character Area 3 | ✓ | | | ✓ | | ✓ | ✓ | ✓ | ✓ | 6 |
| Smith Rd | Kaolin Rd | SR 15 | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| SR 44 | Northern Study Area | Etheridge Rd | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 17 | | | ✓ | | | | | | | | | 1 |
| **Character Area 5** | **Augusta** | | | | | | | | | | | |
| I-20 | Northern Study Area | County Rd 185 / Cadley Rd | ✓ | ✓ | | ✓ | | ✓ | | ✓ | ✓ | 6 |
| I-20 | CR 185 / Cadley Rd | SR 80 | ✓ | | | ✓ | | | | ✓ | | 3 |
| US 1 | | | ✓ | | | ✓ | | | | | | 2 |
| US 221 / SR 47 | White Oak Rd | US 223/ Wrightsboro Rd (W of Grovetown) | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 88 | SR 121 | Brown Rd ( S of Augusta) | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 104/ Washington Rd | | | ✓ | | | ✓ | | | | | | 2 |
| SR 388/ Lewiston Rd | Columbia Rd | Old Wrightsboro Rd | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 6 |
| Old Evans Rd | Tubman Rd | Old Washington Rd | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 6 |
| Harlem Grovetown Rd | Grovetown | Old Louisville Rd (W of Grovetown) | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| US 78/ US 278 | SR 223 | Downtown Harlem | | | | | | | | | | 0 |
| SR4 / US 1 | Tobacco Rd | Willis Foreman Rd | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | 6 |
| SR 104 | US 221 | I-20 | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| Belair Rd | I-20 | SR 28 | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |
| SR 28 | SR 232 | Belair Rd | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | 5 |
| Hereford Farm Rd | SR 104 | Columbia Rd | | | | | | ✓ | ✓ | ✓ | ✓ | 4 |

*Table 4-2: Cumulative Needs Matrix*

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# 5 DEVELOPMENT OF STRATEGIES

As previously described, the scenario testing helped identify possible transportation needs occurring based on multiple economic, land use and/or transportation investment situations. A number of steps were then taken to determine what improvement strategies could most efficiently address these needs and meet the goals of the plan.

## 5.1 CONSIDERING TIA PROJECTS

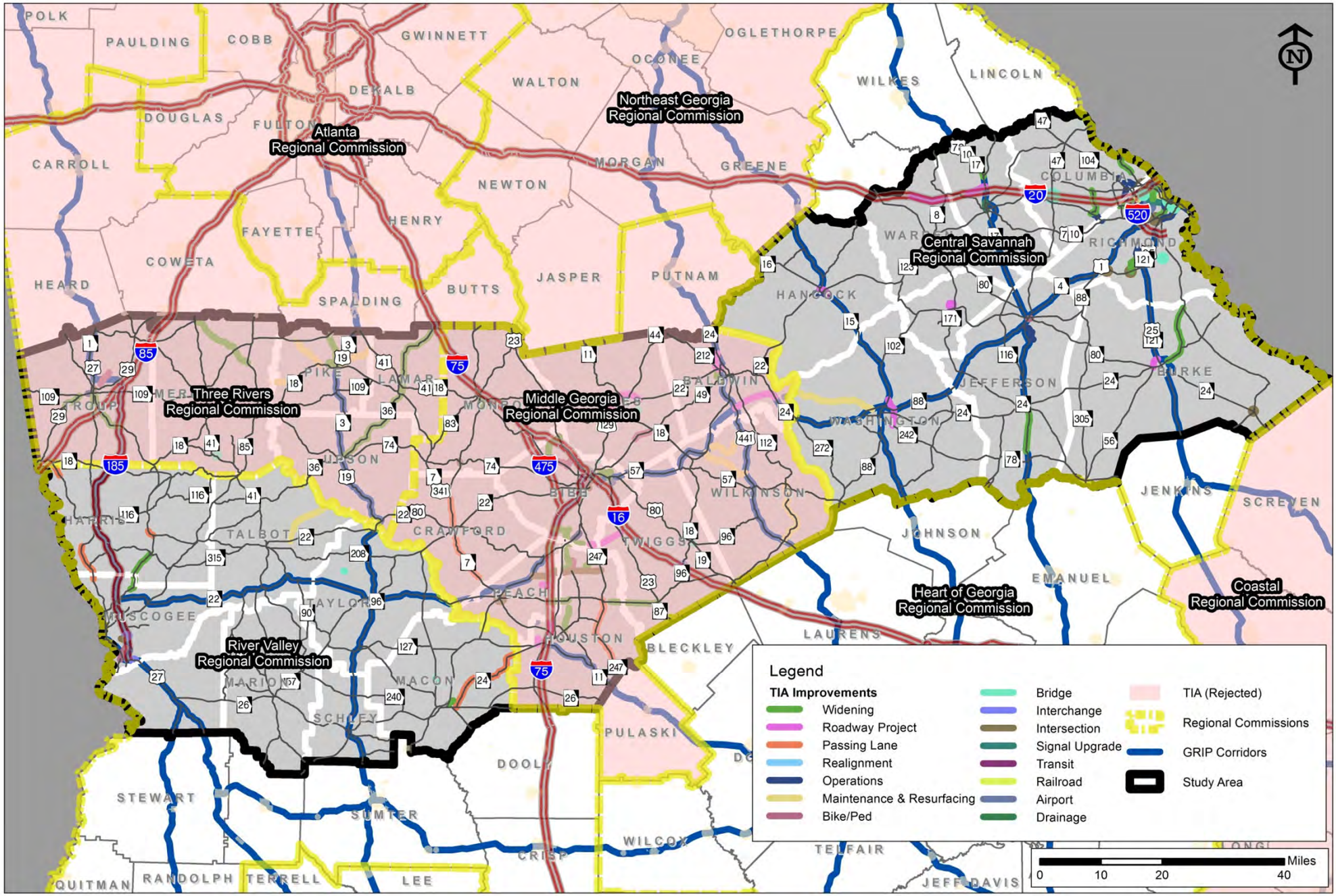
The timeframe of the TIA vote was such that the results were known prior to the development of the study's improvement strategies. As illustrated in Figure 5.1, TIA was approved by the voters in two regional commissions in the study area: the Central Savannah River Area Regional Commission (CSRARC) in the Augusta area and the River Valley Regional Commission (RVRC) in the Columbus Area. The TIA Rountable-approved project lists (illustrated in Figure 5.1) in these two areas consist of 93 multi-modal projects representing bicycle/pedestrian improvements, roadway widenings and resurfacings, airport enhancements, bridge rehabilitations, intersection and operational improvements, and public transit projects. These are the projects that are considered fully committed for completion and were included for their role in complementing study-identified needs.

These TIA projects were graphically combined with the previously identified needs, as illustrated in Figure 5.2. Needs not remedied by approved TIA projects were carried forward for further consideration.

## 5.2 STRATEGIC CONNECTIONS

*18 Strategic Connections were identified to serve as the basis for recommendations for the Connect Central Georgia Study.*

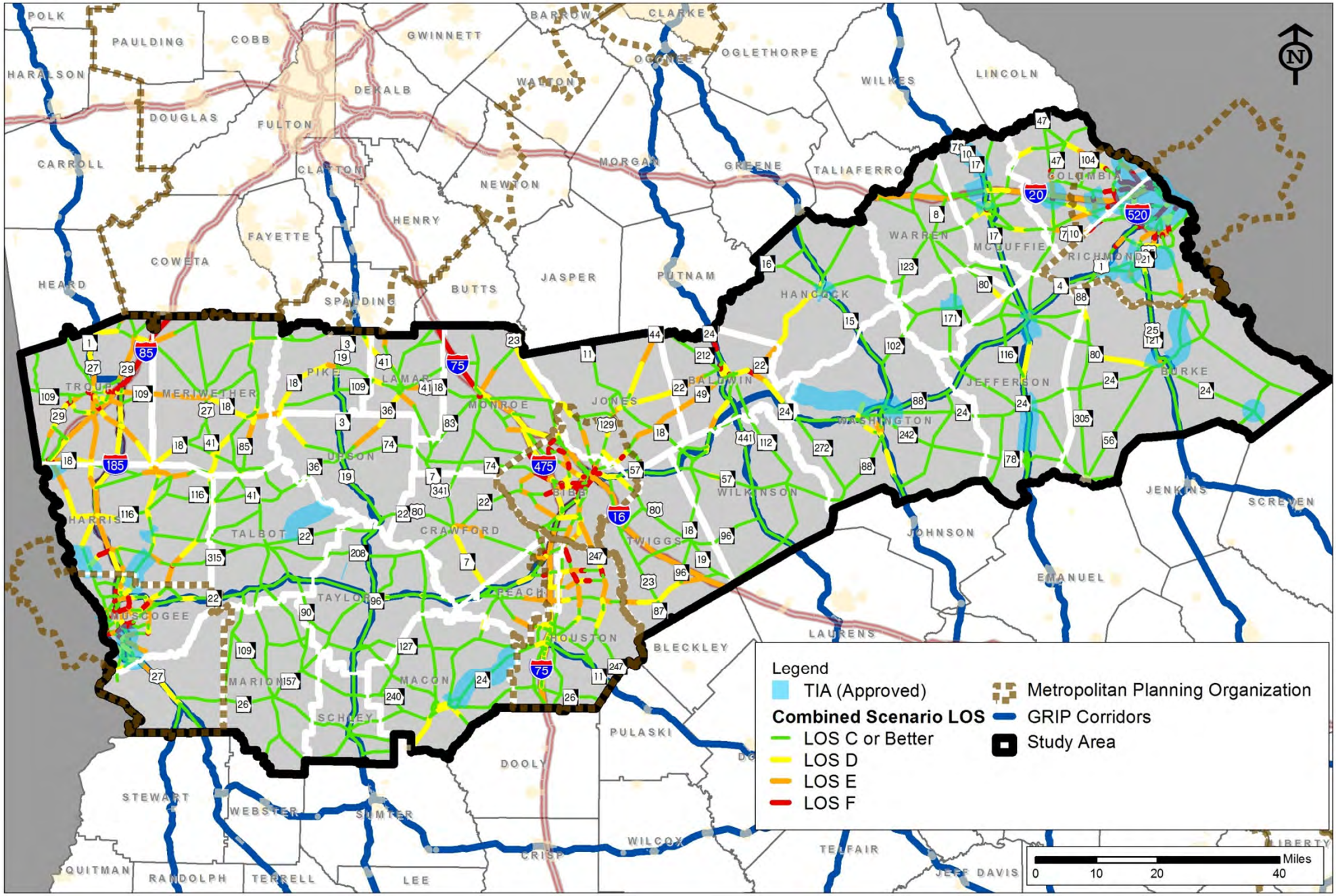
Through a combination of technical analyses, qualitative assessment and heavy Stakeholder Committee input, 18 Strategic Connections were identified, as illustrated in Figure 5.3 and described in Table 5.1. These Strategic Connections include corridors which were projected to need additional capacity in the future as well as those that provide critical freight and person mobility and economic connectivity throughout the study area, the state and the nation. These Strategic Connections, illustrated in Figure 5.3, served as the framework for which subsequent project-specific recommendations were identified.




*Source: GDOT Approved TIA Lists*

# Voter-Approved TIA Projects

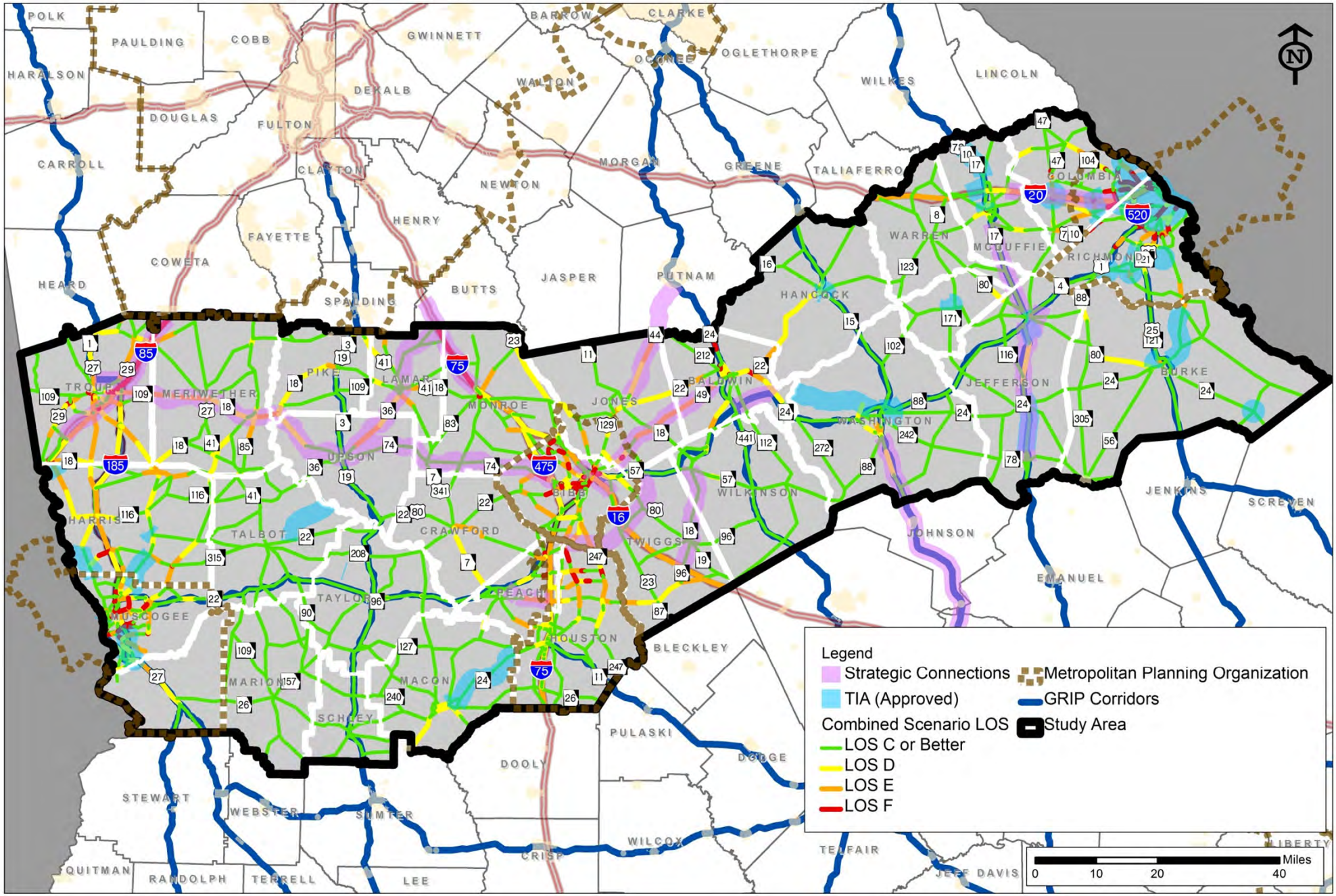
Figure 5-1




*Source: 2020/ 2040 Georgia Statewide Model, 2035 CPCMPO Model, 2035 MATS Model, 2035 WRATS Model and 2035 ARTS Model*

# Approved TIA Projects Overlayed with Year 2035 LOS

Figure 5-2



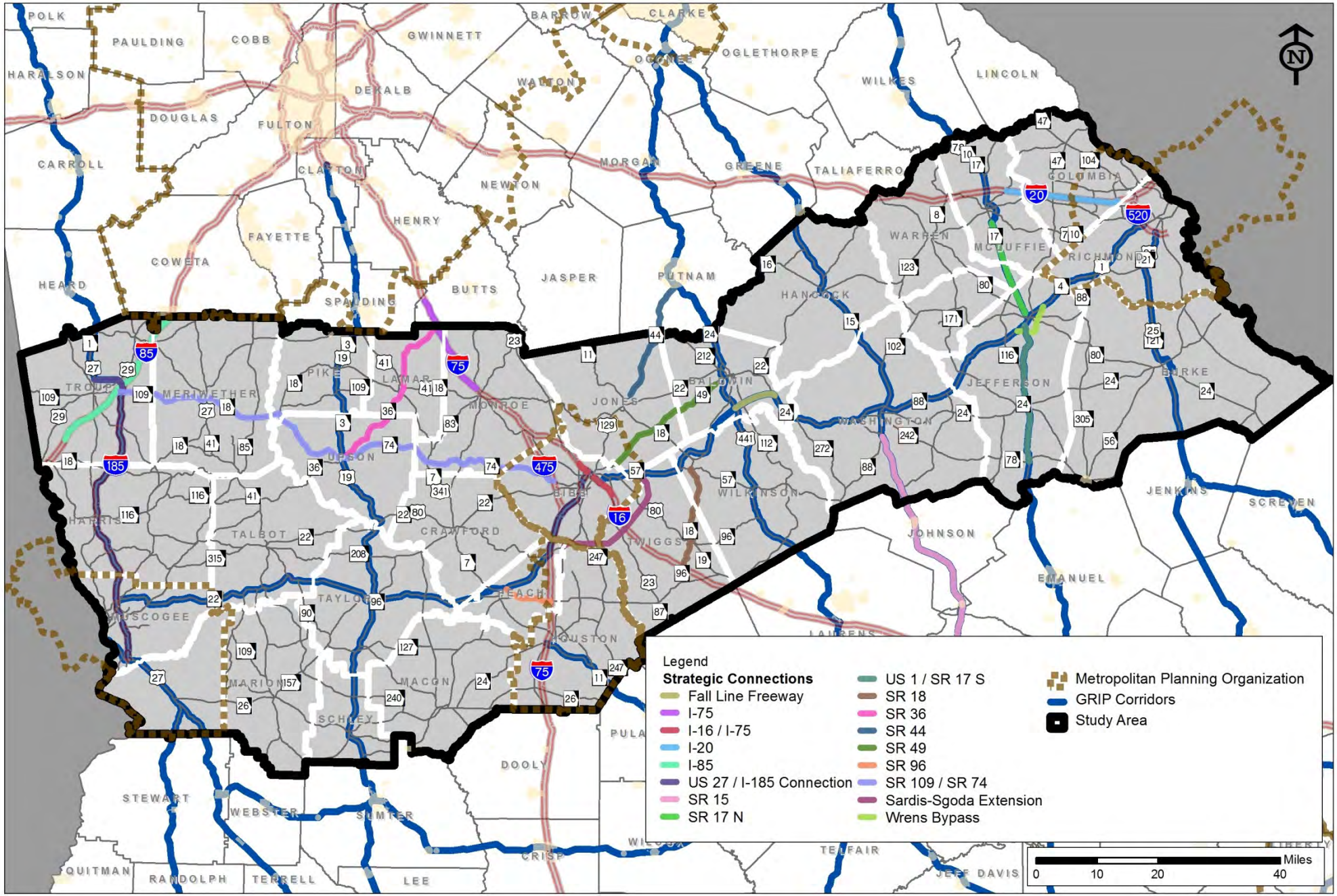

*Source: 2020/ 2040 Georgia Statewide Model, 2035 CPCMPO Model, 2035 MATS Model, 2035 WRATS Model and 2035 ARTS Model*

# Strategic Connections Development

Figure 5-3

*Table 5-1: Strategic Connections*

| Connection | Termini |
|---|---|
| I-16 / I-75 (Segment 1) | from Pierce Ave to I-16 |
| I-16 / I-75 (Seg 2) | I-16 and I-75 Interchange |
| I-16 / I-75 (Seg 3) | from SR 11 to SR 87 |
| I-20 | from SR 150 to SR 383 |
| I-75 (Seg 1) | from SR 42 to High Falls Rd |
| I-75 (Seg 2) | from High Falls Rd to SR 16 |
| I-85 (Seg 1) | from Kia Blvd to SR 109 |
| I-85 (Seg 2) | from SR 109 to CR 417 (Meriwether) |
| US 1 / SR 17 South (Seg 1) | from Wadley Bypass to Louisville Bypass |
| US 1 / SR 17 South (Seg 2) | from Louisville Bypass to CR 138 / Mennonite Church Rd |
| US 1 / SR 17 South (Seg 3) | from CR 138 / Mennonite Church Rd to SR 88 |
| US 27 / I-185 Conn. | from US 27 to I-85 / I-185 |
| SR 15 (Seg 1) | from SR 88 to south of SR 231 |
| SR 15 (Seg 2) | from south of SR 231 to I-16 |
| SR 17 North (Seg 1) | from SR 296 to CR 59 / Quaker Rd |
| SR 17 North (Seg 2) | from CR 311 / Wire Rd to SR 296 |
| SR 18 (Seg 1) | from I-16 to US 80 |
| SR 18 (Seg 2) | from US 80 to SR 57 |
| SR 36 (Seg 1) | from SR 74 to US 41 |
| SR 36 (Seg 2) | from US 41 to I-75 |
| SR 44 (Seg 1) | from Gray Bypass to Mathis Rd |
| SR 44 (Seg 2) | from Mathis Rd to US 29 / US 441 |
| SR 49 (Seg 1) | from Griswoldeville Rd to SR 18 |
| SR 49 (Seg 2) | from SR 18 to Felton Rd |
| SR 96 (Seg 1) | from Fall Line Freeway to SR 96 |
| SR 96 (Seg 2) | from Firetower Rd to Housers Mill Rd |
| SR 109 / SR 74 (Seg 1) | from I-85 to SR 41 |
| SR 109 / SR 74 (Seg 2) | from SR 41 to SR 18 |
| SR 109 / SR 74 (Seg 3) | from SR 18 to US 19 |
| SR 109 / SR 74 (Seg 4) | from US 19 to US 341 / SR 7 |
| SR 109 / SR 74 (Seg 5) | from US 341 / SR 7 to I-75 |
| Fall Line Freeway | from US 441 to SR 24 |
| Sardis-Sgoda Ext. (Seg 1) | from SR 11 to I-16 |
| Sardis-Sgoda Ext. (Seg 2) | from I-16 to SR 57 |
| Wrens Bypass | from SR 88 to US 1 |




# Strategic Connections

Figure 5-4

## 5.3 Economic Opportunity

Promoting economic growth is one of the main goals of this study and is considered a top priority in the Governor's strategic goals for the state. In addition to the economic case studies performed, several strategies were employed to ensure that the development of improvement strategies consider economic improvement opportunities. This was accomplished at this screening stage by comparing the study-identified Strategic Connections to the key economic opportunity areas. Figure 5.5 illustrates the future (2035) employment for the study area. Areas which have been identified as future employment activity centers include the continued employment areas in the major cities of Columbus, Macon, Warner Robins and Augusta, as well as the area surrounding the Kia plant in West Point and the city of Milledgeville. As shown, the Strategic Connections, which include connections between Macon and LaGrange, Macon and Milledgeville and several local connections to economic activity centers, adequately serve the areas of high employment in the future.

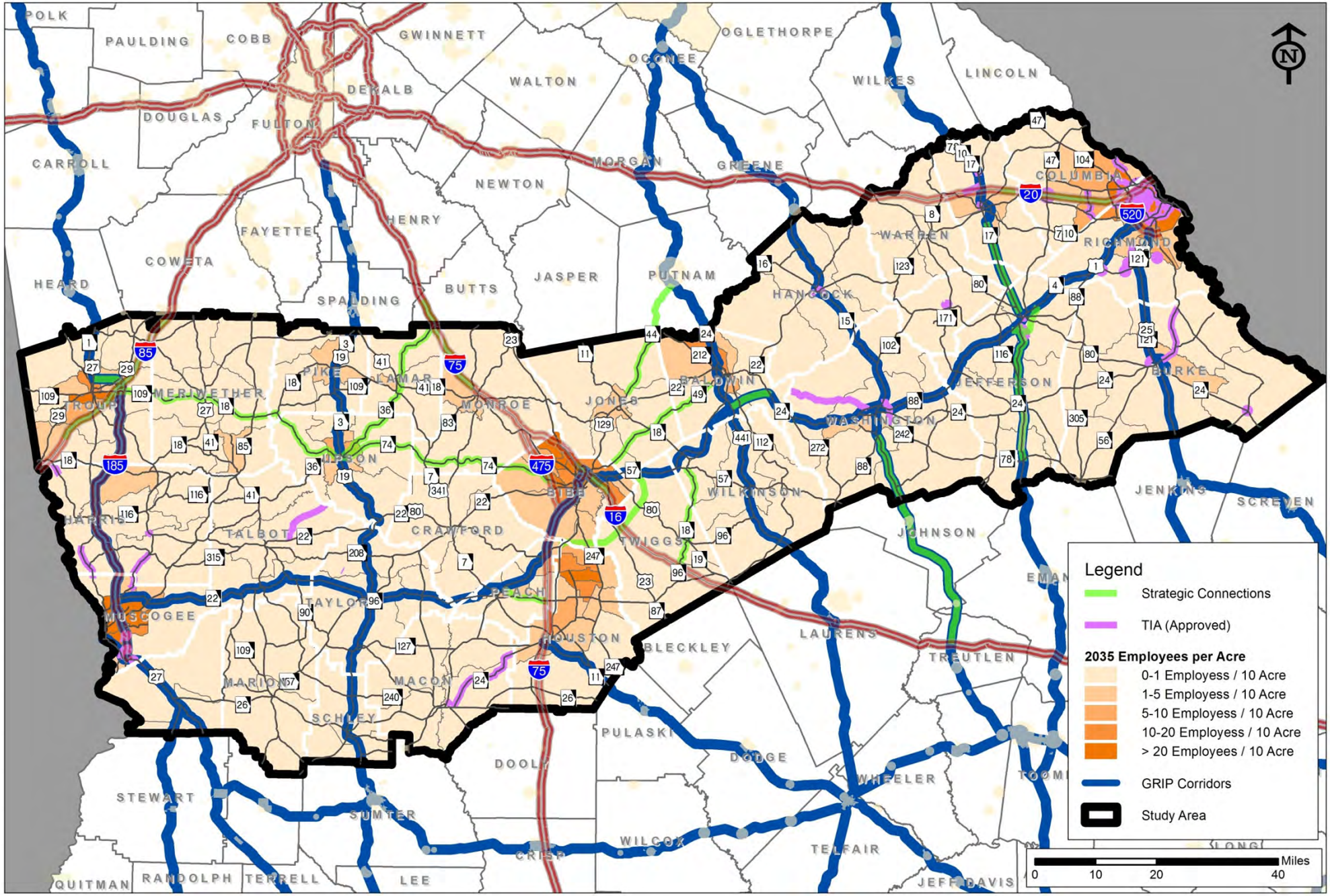
*Promoting economic growth is one of the main goals of this study and is considered as a top priority in the Governor's strategic goals for the state.*

In addition to serving high employment areas within the study area, the Strategic Connections may serve statewide economic opportunities by improving both east/west and north/south mobility in the study area. As an example, the Macon to LaGrange connection would serve longer distance vehicular and freight traffic both internal to the study area, as well as traffic originating outside of the study area (i.e. truck traffic from the Port of Savannah.)

## 5.4 Development of Potential Solutions

The Connect Central Georgia study used a systematic process to evaluate potential strategies for addressing deficiencies within the study area. Through federal legislation, FHWA has developed supporting Congestion Management Process (CMP) regulations, which guided the identification of potential strategies for deficient corridors. This process served as a framework for the study's identification of potential strategies for deficient corridors. Strategies include demand management, operational management and capital-intensive approaches; the key is to identify those strategies that are reasonable for the particular location or specific deficiency. This section discusses the steps in the corridor improvement screening process:

1. Discussion of Strategies; and
2. Corridor Strategy Screening Process.




*Source: GDOT Statewide Travel Demand Model (2035)*

# Consideration of Economic Opportunity

Figure 5-5

### 5.4.1 RANGE OF STRATEGIES

The CMP regulations include a comprehensive listing of strategies broken into twelve (12) categories or groups. The boundaries between these groups are not distinct and individual measures may be included in more than one category. For example, park-and-ride lots both encourage the use of high occupancy vehicles (HOVs) and transit. For the purposes of applying the SAFETEA-LU and CMP requirements in the Connect Central Georgia study, an attempt was made to separate potential strategies into a hierarchical order that first considers those actions which address the fundamental transportation and land use relationships that stimulate trips. If the reason for the trip can be eliminated, so too can the trip and its contribution to congestion. In successive rounds, the residual trips not mitigated by previous levels of actions are successively addressed using techniques aimed at the next higher level of concern. This process is described below:

- **Level One:** Actions that could decrease the need for trip making (i.e. growth management, activity centers, congestion pricing, and some transportation demand management measures);
- **Level Two:** Actions that could place trips into transit or other non-auto modes (i.e. public transit capital and operating improvements, and parking management);
- **Level Three:** Actions that could put as many trips as possible into HOVs;
- **Level Four:** Actions that could optimize the highway system's operation for single-occupancy vehicles (SOV) trips and for all other trips using highway facilities/modes; examples: traffic signalization syncronization & intelligent transportation systems; and
- **Level Five:** Actions that would increase the capacity of the highway system for SOVs by adding general-purpose lanes.

While it is not required that this process be followed in consecutive order, this hierarchy responds to the intent of the regulations, as well as the intent of this study. Many of these actions may not apply to the transportation and land use character of the study area.

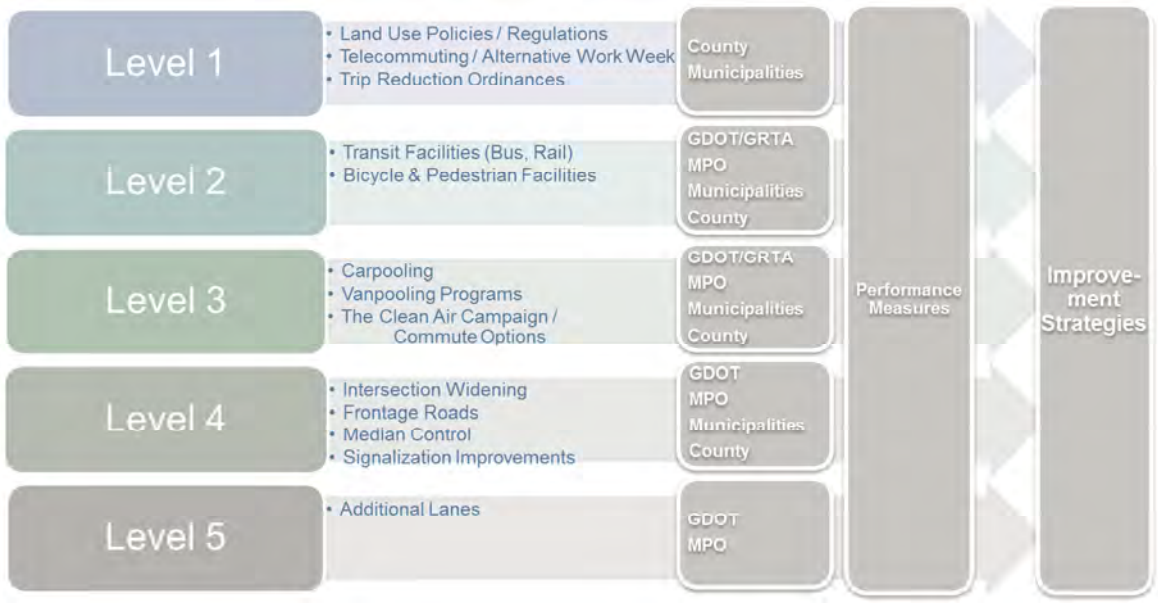



***Figure 5-6: Process for Developing Improvement Strategies***

### *Level One Strategies*

The first level includes actions that could decrease the need for making the trip by vehicle. This could be accomplished through growth management and the development of activity centers, congestion pricing and also certain types of transportation demand management. It is anticipated that several of these strategies may be appropriate candidates for implementation throughout the study area. Examples of Level One strategies include:

*The **first level** includes actions that decrease the need for making the trip by vehicle.*

- **Growth Management/Activity Centers** - Land use strategies which seek to achieve concurrence between transportation infrastructure and land development, including land use policies, zoning/design standards, encouragement of job/housing balance, and mixed use development.
- **Congestion Pricing** - Implementing strategies which charge roadway users at a time-differentiated rate to discourage trips during congested periods, including road fees, parking fees and subsidies for commuters.
- **Transportation Demand Management** - Strategies aimed at eliminating vehicle trips, which include telecommuting and trip reduction ordinances.

### *Level Two Strategies*

*The **second level** includes actions which attempt to place the trips not addressed in Level One into transit or other non-auto modes.*

The second level includes actions which attempt to place the trips not addressed in Level One into transit or other non-auto modes. This can be accomplished through capital investments in public transit, public transit operational improvements, intelligent transportation systems, methods to encourage the

use of non-traditional modes and certain types of transportation demand management. It is anticipated that these strategies may have select applications throughout the study area. Samples of Level Two strategies include:

- **Public Transit Capital Improvements** - Improvements designed to increase transit ridership, such as: new rail lines, busways, or bus lanes; preferential treatment of buses; vehicle replacement/upgrades; park-and-ride lots; new or improved transit stations; paratransit services; and increased transit security.
- **Public Transit Operational Improvements** – Operational issues that can be implemented on specific routes or regionally. Strategies include: increases in service frequency; increased operating hours; additional/extended bus routes; traffic signal preemption; fare reductions; improved marketing of transit; and transit passenger information systems.
- **Advanced Public Transportation Systems** - Coordinated operational strategies implemented through technology. Elements may include: travel planning (pre-trip information) and traveler information (real-time traffic information).
- **Non-Motorized Modes** - Strategies to increase non-vehicular trips, such as implementation of new pedestrian and bicycle facilities; improved facilities and bicycle storage improvements.
- **Parking Management** - These strategies can include establishing maximum limits on the total number of spaces in a given area or for each employer, and increased parking charges (which may be reduced or eliminated for carpool/vanpool users).

### *Level Three Strategies*

The third level includes actions which attempt to place the trips not addressed in Levels One and Two into high occupancy vehicles (HOVs) defines as those that carry two or more passengers per vehicle. This can be accomplished through various strategies which encourage HOV use and certain types of transportation demand management.

*The **third level** includes actions which attempt to place the trips not addressed in Levels One and Two into high occupancy vehicles (HOVs).*

The key to success with HOV strategies is a holistic approach which considers how to aggregate HOV riders at the residential trip end, how to provide preferential treatment of the line-haul portion of the trip (in terms of time and/or cost savings), preferential treatment on the work trip end (i.e. parking availability, location and costs), as well as flexibility (i.e. guaranteed rides home). Strategies in this level, if constructed into packages, likely would be more successful than if independently evaluated and implemented. It is anticipated that these strategies may have limited applicability throughout the study area.

- **High Occupancy Vehicle (HOV)** - HOV facilities are designed to increase person throughput by increasing vehicle occupancies on a facility or in a corridor. Even though most HOV measures are applied to specific facilities, strategies to support HOV use, such as travel demand management strategies and HOV incentives (such as HOV only lanes and HOV toll savings on priced facilities), must occur throughout a transportation corridor to be effective.
- **Rideshare Matching Services** – Service that helps match commuters with similar trips in an effort to facilitate carpooling. This strategy needs effective public education, marketing campaigns and employer support to stir interest.
- **Vanpooling Programs** - These programs are often linked to rideshare matching services, as they both require the same types of information, public education, marketing and employer support. Vanpool programs typically require a seed agency to provide the initial financial support for the van purchase; however, they can be self-supporting.

### *Level Four Strategies*

*The **fourth level** includes actions to optimize the existing highway system's operation for residual automobile trips, whether HOV or SOV.*

Despite the best possible results from strategies in the first three levels, a significant portion of trips in the study area is expected to remain via the automobile. Thus, the fourth level includes actions to optimize the existing highway system's operation for these residual automobile trips, whether HOV or SOV. This could be accomplished through traffic operational improvements and management, access management techniques, and intelligent transportation systems (ITS). It is anticipated that a majority of these strategies could be appropriate candidates for implementation in the study area.

- **Traffic Operational Improvements** - Improvements in traffic operations are designed to allow more effective and efficient management of the supply and use of existing roadways. These improvements include intersection geometric improvements, intersection turn restrictions, traffic signal improvements, traffic control centers, advanced traffic surveillance, and truck restrictions.
- **Access Management** - These strategies are designed to improve arterial flow by controlling access to and from arterial roadways. GDOT has adopted standards which govern road design and driveway connections.
- **Intelligent Transportation Systems** - Intelligent Transportation Systems (ITS) include coordinated operational strategies implemented through technology. These systems can be applied to many of the strategies described above, especially in the areas of traffic operations, transit operations, and incident management. In addition, ITS can be

applied throughout a region, along a transportation corridor, or on a specific facility.

### *Level Five Strategies*

The fifth level includes strategies to increase the capacity of the highway system by adding general purpose lanes. It is anticipated that these strategies may be appropriate candidates for implementation in the study area.

*The **fifth level** includes strategies to increase the capacity of the highway system by providing additional general purpose lanes.*

- **Addition of General Purpose Lanes** - General purpose lanes may generally be used by all vehicular traffic modes (i.e., SOVs, HOVs, transit, and trucks). The addition of general purpose lanes may include the addition of lanes to an existing facility or the construction of a new facility. These infrastructure improvements can be the best approach to congestion management in some cases, as long as appropriate elements of the other strategies are incorporated into its design and operation. It should also be noted that several measures that would increase the number of general purpose lane miles are also identified under traffic operational improvements (Level Four). The improvements in that section generally refer to smaller scale additions (such as turn lanes) or those for specific purposes (an example includes passing lanes).

## 5.4.2 POTENTIAL IMPROVEMENTS

Based on the five levels defined by the CMP process, the character areas were assessed to determine which improvements would best meet the goals and objectives as well as the needs established for each region. At their fourth meeting, Stakeholder Committee members were asked their opinion on how these improvement types related to the goals they helped develop for the future transportation network. Table 5.2 illustrates the results of this discussion, indicating which strategies they felt best applied to the study's character areas.

*Based on the five levels defined by the CMP process, the character areas were assessed to determine which improvements would best meet the goals and objectives as well as the needs established for each region.*

Based on this input, potential improvements were developed for each segment of the Strategic Connections described in Table 5.3. It should be noted that not all potentially beneficial improvements are explicitly mentioned in Table 5.3. For example, land use policy improvements are applicable throughout the region, but are not indicated in this table. Focus on these types of solutions is just as important as the roadway projects which are defined. Issues such as land use and other Level One solutions, are commonly the purview of local governments as the implementing agency.

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| | Character Area | | Columbus | Rural West | Macon/ WR | Rural East | Augusta |
|---|---|---|---|---|---|---|---|
| Level 1 | *Growth Management/ Activity Centers* | Land Use Policies/Regulations | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Design Standards | ✓ | | ✓ | | ✓ |
| | | Locations of Jobs & Housing | ✓ | | ✓ | | ✓ |
| | *Congestion Pricing* | Road User Fees | | | | | |
| | | Parking Fees | | | | | |
| | *Transportation Demand Management* | Telecommuting/Alternate Work Week | ✓ | | | | |
| | | Trip Reduction Ordinances | | | | | |
| Level 2 | *Public Transit Capital Improvements* | Rapid Rail (Exclusive ROW) | ✓ | | | | |
| | | Commuter Rail (Exclusive ROW) | ✓ | | | | |
| | | Busways (Exclusive ROW) | | | | | |
| | | Bus Lanes (Exclusive ROW) | ✓ | | | | |
| | | Bus Bypass Ramp | | | | | |
| | | Fleet Expansion | ✓ | | ✓ | | ✓ |
| | | Transit Park & Ride Facilities | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Other Intermodal Facilities | ✓ | | ✓ | | ✓ |
| | | Paratransit Services | | ✓ | | ✓ | |
| | | Increased Transit Security | | | | | |
| | *Public Transit Operational Improvements* | Service Enhancement/Expansion | | ✓ | | ✓ | |
| | | Traffic Signal Preemption | | | | | |
| | | Fare Reductions | | | | | |
| | | Transit Coordination | | ✓ | | ✓ | |
| | | Transit Marketing | | ✓ | | ✓ | |
| | *Advance Public Transportation Systems* | Intelligent Bus Stops | | | | | |
| | | Advance Mode Choice Systems | ✓ | | | | |
| | *Encourage the use of Non-Motorized Modes* | Bicycle Facilities | ✓ | | ✓ | | ✓ |
| | | Bicycle Storage System | ✓ | | ✓ | | ✓ |
| | | Pedestrian Facilities | ✓ | | ✓ | | ✓ |
| | *Trans. Demand Management* | Parking Management | ✓ | | | | |
| Level 3 | *Encourage High Occupancy Vehicle Use* | HOV Lanes | | | ✓ | | |
| | | HOV Ramp Bypass Lanes | | | ✓ | | |
| | | HOV Toll Savings (HOT Lanes) | | | | | |
| | | HOV Park & Ride Facilities | | | | | |
| | | Commute Options | ✓ | | ✓ | | ✓ |
| | | Employer Trip Reduction Ordinances | | | | | |
| | *Trans. Demand Management* | Carpooling | | ✓ | | ✓ | |
| | | Vanpooling Programs | ✓ | ✓ | ✓ | ✓ | ✓ |
| Level 4 | *Traffic Operational Improvements* | Intersection Widening | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Channelization | | | ✓ | | ✓ |
| | | Intersection Turn Restrictions | ✓ | | | | |
| | | One-Way Pairs | ✓ | | ✓ | | |
| | | Signalization Improvements | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Traffic Control Centers | ✓ | | | | ✓ |
| | | Computerized Signal Systems | | | | | |
| | | Traffic Surveillance & Control Systems | | | | | |
| | | Geometric Enhancements | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Truck Restrictions | ✓ | ✓ | ✓ | ✓ | ✓ |
| | *Access Management* | Driveway Control | ✓ | ✓ | | ✓ | ✓ |
| | | Median Control | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Frontage Roads | | ✓ | | ✓ | |
| | *Intelligent Transportation Systems* | Automated Toll Collection | | | | | |
| | | Advance Traveler Information Systems | | ✓ | | ✓ | |
| | | Commercial Vehicle Operations | | | | | |
| | | Advance Vehicle Control Systems | | | | | |
| Level 5 | *Additional General Purpose Lanes* | Construct Freeway Lanes | ✓ | | ✓ | | ✓ |
| | | Construct Arterial Lanes | ✓ | ✓ | ✓ | ✓ | ✓ |

*Table 5.2: Strategy Screening*

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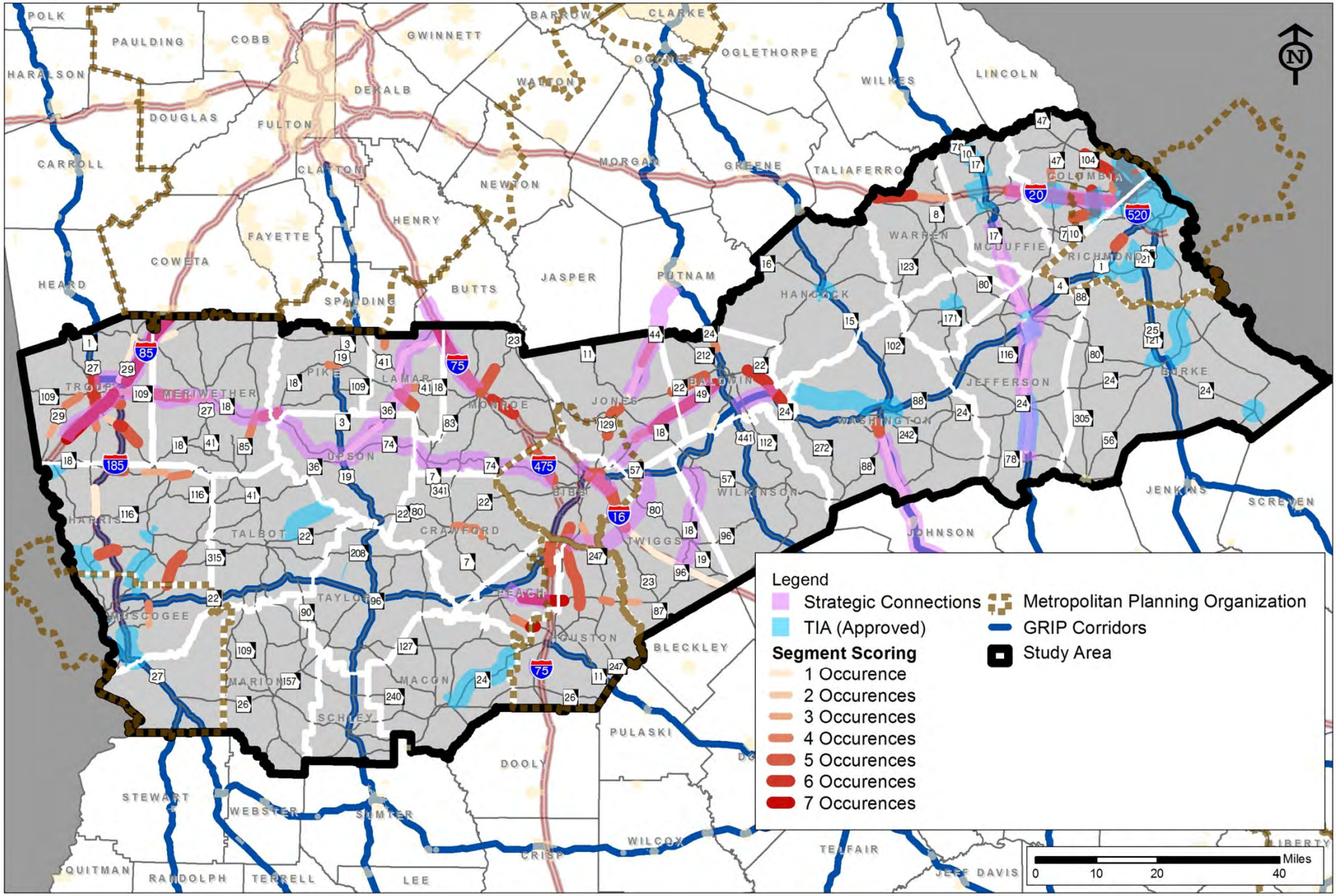
*Table 5-3: Potential Improvements*

| Corridor | Description | Cost |
|---|---|---|
| Widening | | |
| I-20 | from SR 150 to SR 383 | $268,226,000 |
| I-16 / I-75 (Seg 1) | from Pierce Ave to I-16 | $41,400,000 |
| I-16 / I-75 (Seg 3) | from SR 211 to SR 87 | $59,700,000 |
| I-75 (Seg 1) | from SR 42 to High Falls Rd | $107,632,000 |
| I-75 (Seg 2) | from High Falls Rd to SR 16 | $81,244,000 |
| I-85 (Seg 1) | from SR 109 to CR 417 (Meriwether) | $81,100,000 |
| I-85 (Seg 2) | from Kia Vld to SR 109 | $211,139,000 |
| US 27/I-185 Conn. | from US 27 to I-185 | $106,256,000 |
| US 1 / SR 17 S (Seg 1) | from Wadley Byp to Louisville Byp | $28,700,000 |
| US 1 / SR 17 S (Seg 2) | from Louisville Byp to CR 138 / Mennonite Church Rd | $24,800,000 |
| US 1 / SR 17 S (Seg 3) | from CR 138 / Mennonite Church Rd to SR 88 | $51,800,000 |
| SR 17 N (Seg 1) | from SR 296 to CR 59 / Quaker Rd | $23,200,000 |
| SR 17 N (Seg 2) | from CR 311 / Wire Rd to SR 296 | $48,800,000 |
| SR 18 (Seg 1) | from I-16 to US 80 | $52,001,000 |
| SR 18 (Seg 2) | from US 80 to SR 57 | $121,129,000 |
| SR 44 (Seg 1) | from Gray Bypass to Mathis Rd | $49,300,000 |
| SR 44 (Seg 2) | from Mathis Rd to US 29 / US 441 | $41,300,000 |
| SR 49 (Seg 1) | from Griswoldeville Rd to SR 18 | $105,021,000 |
| SR 49 (Seg 2) | from SR 18 to Felton Rd | $135,798,000 |
| SR 96 (Seg 2) | from Firetower Rd to Housers Mill Rd | $34,700,000 |
| SR 109 / SR 74 (Seg 1) | from I-85 to SR 41 | $146,621,000 |
| SR 109 / SR 74 (Seg 2) | from US 41 to SR 18 | $ 154,645,000 |
| Fall Line Freeway | from US 441 to SR 24 | $75,300,000 |
| 4-lane New Alignment | | |
| SR 96 (Seg 1) | from SR 49 to SR 96 | $30,965,000 |
| Sardis-Sgoda Ext (Seg 1) | from SR 11 to I-16 | $212,844,000 |
| Sardis-Sgoda Ext (Seg 2) | from I-16 to SR 57 | $131,632,000 |
| Wrens Bypass | from SR 88 to US 1 | $84,859,000 |
| 2-lane New Alignment | | |
| Sardis-Sgoda Ext (Seg 1) | from SR 11 to I-16 | $48,869,000 |
| Sardis-Sgoda Ext (Seg 2) | from I-16 to SR 57 | $8,565,000 |
| Passing Lane | | |
| SR 15 (Seg 1) | from SR 88 to south of SR 231 | $13,331,000 |
| SR 15 (Seg 2) | from south of SR 231 to I-16 | $13,574,000 |
| SR 36 (Seg 1) | from SR 74 to US 41 | $13,308,000 |
| SR 36 (Seg 2) | from US 41 to I-75 | $13,674,000 |
| SR 109 / SR 74 (Seg 3) | from SR 18 to US 19 | $13,236,000 |
| SR 109 / SR 74 (Seg 4) | from US 19 to US 341 / SR 7 | $13,401,000 |
| SR 109 / SR 74 (Seg 5) | from US 341 / SR 7 to I-75 | $13,882,000 |
| Interchange Improvement | | |
| I-16 / I-75 (Seg 2) | | $164,500,000 |

## 5.5 Comparison to Needs Analysis

To ensure that the needs discussed in Chapter 4 were addressed via the study's identification of Strategic Connections, an exercise was performed to overlay needs with the proposed strategic connections. Figure 5.7 illustrates the needs, categorized by the cumulative score assigned to each segment. Scores were based on a combination of whether the need had been identified through previous planning efforts/studies, through public outreach efforts, or was deemed a capacity deficiency for the various years and scenarios tested. As shown in Figure 5.7, the strategic connections, combined with TIA projects, addressed almost all of the needs identified through this scoring process.




# Potential Strategic Connections vs Segment Scoring

Figure 5-7

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# 6 PROJECT PRIORITIZATION

Based on the Strategic Connections, potential improvement projects were identified to address future transportation needs within the study area. These potential improvement projects were further prioritized based on criteria that were consistent with the study goals. These criteria are further defined in Section 6.2.

This section presents the potential improvement projects and estimated capital costs, as well as an assessment of how well they meet the goals of this study. The evaluation methodology produces a score for each potential project, resulting in a prioritization of improvement options to meet the transportation needs of the region.

*The evaluation methodology produces a score for each potential project, resulting in a prioritization of improvement options to meet the transportation needs of the region.*

## 6.1 GOALS

Transportation projects should align with the goals and values of a transportation study. Early in the study process, Metropolitan Planning Organization (MPO) and County Long Range Transportation Plans (LRTPs) within the region were reviewed to develop a preliminary list of goals for the study, which were vetted by stakeholders. In addition, in April 2012 Governor Deal released the Governor's Strategic Goals for Georgia, which included a vision of "a lean and responsive state government that allows communities, individuals and businesses to prosper." Specifically, it envisioned a Georgia that is Educated, Mobile, Growing, Healthy, Safe, and Fiscally responsible; several of these are very relavent to transporation. Specificially they were also considered inlight of the Connect Central Georgia study:

*In April 2012, Governor Deal released the Governor's Strategic Goals for Georgia, which included a vision of "a lean and responsive state government that allows communities, individuals and businesses to prosper."*

- **Mobile:** Transporting people and products by improving the movement of people and goods across and within the state, expanding Georgia's role as a major logistics hub for global commerce, and leveraging public-private partnerships and improve intergovernmental cooperation for successful infrastructure development;
- **Growing:** Creating jobs and growing businesses;
- **Healthy:** Accessible care and active lifestyles; and

- **Safe:** Protecting the public's safety and security by reducing injury and loss of life on Georgia's roads.

In addition, at the Federal level President Obama signed into law the Moving Ahead for Progress in the 21st Century (MAP-21) transportation bill in July 2012 which which included national transportation goals and consideration of:

- Safety;
- Infrastructure condition;
- Congestion reduction;
- System reliability;
- Freight movement and economic vitality;
- Environmental sustainability; and
- Reduced project delivery delays.

All goals, regardless of their source, have some level of commonality; Figure 6.1 illustrates the various sources of transportation goals considered in this study.

***Figure 6-1: Development and Integration of All Goals, Regardless of Their Genesis***


As a result, the preliminary goals developed for this study prior to the release of the Governor's Strategic Goals and MAP-21 were revisited and modified to integrate and reflect those as appropriate. Table 6.1 generally demonstrates how all goals were integrated into a more robust set of final study goals:

1. Improve safety, accessibility, and mobility options available to people and for freight;
2. Enhance the inter-regional connectivity and reliability of the transportation system for people and freight and facilitate economic growth;

3. Emphasize the efficiency, operation, and preservation of the existing transportation system while promoting environmental sustainability;
4. Protect quality of life and promote consistency between transportation improvements and state and local planned growth and economic development patterns; and
5. Improve public health with accessible care and active lifestyles.

*Table 6-1: Inclusion of Local/Regional, State, and National Goals*

| | Goals | Local/ Regional | State | Federal |
|---|---|---|---|---|
| 1 | Improve safety, accessibility, and mobility options available to people and for freight. | ■ | ■ | ■ |
| 2 | Enhance the inter-regional connectivity and reliability of the transportation system for people and freight and facilitate economic growth. | ■ | ■ | ■ |
| 3 | Emphasize the efficient, operation, and preservation of the existing transportation system while promoting environmental sustainability. | ■ | | ■ |
| 4 | Protect quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns. | ■ | | |
| 5 | Improve public health with accessible care and active lifestyles. | | ■ | |

## 6.2 PROJECT PRIORITIZATION CRITERIA

Both qualitative and quantitative evaluation factors were established to evaluate the potential improvement projects. The project prioritization criteria were categorized into five themes corresponding to those developed through the study process, as noted earlier. They are listed here, in no particular order:

1. Transportation safety and mobility;
2. Connectivity, economic growth and system reliability;
3. System preservation and environmental sustainability;
4. Project support and readiness; and
5. Accessible care and active lifestyles.

The following sections present the individual metrics and project prioritization criteria within each theme that were used to evaluate and rank improvement projects.

### 6.2.1 THEME 1 – TRANSPORTATION SAFETY AND MOBILITY

Theme 1 was used to identify potential improvement projects that are considered to have higher future operational deficiency and safety needs. The following two individual performance measures are included in Theme 1:

***Theme 1** was used to identify potential improvement projects that are considered to have higher future operational deficiency and safety needs.*

#### *Future Level of Service*

Would the project address a road with significant future operation deficiency and need? This criterion evaluated the future year "no build" operational conditions on roadway segments based on the travel demand model's year 2035 "E+C network" LOS. All projects were assigned scores from 0 to 1, with highest scores (1) indicating those projects with LOS F, and lowest scores (0) indicating those projects with LOS C and above. The ordinal rating scheme employed for assigning points for future LOS is presented in Table 6.2.

*Table 6-2: Future Level of Service Ordinal Ranking*

| Level of Service | Ordinal Rating |
|---|---|
| C + | 0.0 |
| D | 0.25 |
| E | 0.5 |
| F | 1.0 |

#### *Safety*

Would the investment address or mitigate a facility with a high crash history? The crash rate based on the latest three years (2007-2009) of available crash data on each project segment was calculated and compared to the Georgia statewide average crash rates for similar road types. All projects were assigned scores of either 0 or 1, with 1 indicating those projects with crash rates above the statewide average and 0 for those below the statewide average.

### 6.2.2 THEME 2 – CONNECTIVITY, ECONOMIC GROWTH AND SYSTEM RELIABILITY

Theme 2 was used to identify potential improvement projects that are generally considered to support connectivity, system reliability and economic growth. The following five individual performance measures are included in Theme 2:

***Theme 2** was used to identify potential improvement projects that are considered to provide better connectivity, system reliability and promote economic growth.*

#### *Corridor Type*

What is the corridor type and in what level would it support regional connectivity and system reliability? The criterion of corridor type was used to assign a higher priority to interstates and lower priority to local roads. The ordinal rating scheme employed for assigning points for corridor type is presented in Table 6-4.

*Table 6-3: Corridor Type Ordinal Ranking*

| Corridor Type | Ordinal Rating |
|---|---|
| Local | 0.0 |
| National Highway System/State Route | 0.25 |
| GRIP Corridor | 0.5 |
| Interstate | 1.0 |

### *Connecting to Metropolitan Planning Organization (MPO) areas*

Does project provide connection to MPO areas? A qualitative analysis was performed to determine whether projects provided connection to Atlanta and other MPOs within the study area including Columbus-Phoenix, Macon, Warner Robins and Augusta-Richmond. All projects were assigned scores of either 0 or 1, with 1 indicating those projects providing connection and 0 indicating those that do not.

### *Connecting to other Employment Centers*

Does project provide connection to other employment centers? A spatial analysis utilizing the year 2035 employment density map was performed to determine whether projects provided connection to employment centers such as: the military bases including Fort Benning, Robins Air Force Base and Fort Gordon; cities including Thomaston, Milledgeville, LaGrange, etc.; and large industries such as the Kia Plant and education and technology centers. All projects were assigned scores of either 0 or 1, with 1 indicating those projects providing connection and 0 indicating those that do not.

### *Connecting to Truck Trip Generators/Freight Movement*

Does project provide connection to local truck trip generators and facilitate the movement of freight traffic? Truck trip generators and truck corridors within the study area, which were defined based on FHWA/ATRI Freight Performance Measurement Data for the year 2010, were used in a spatial analysis. Projects that provided connection to these truck trip generators and enhanced the operational performance of freight carriers received a score of 1 while the others received a score of 0.

### *Supporting New Development Opportunities*

Does project support new development opportunities? Projects that involved a new alignment, bypass and roadway widening from 2-lane to 4-lane were generally considered to better support and attract new business development opportunities and received a score of 1. Projects with shoulder widening or roadway widening from 4-lane to 6-lane are considered to have less impact and received a score of 0.

### 6.2.3 THEME 3 – SYSTEM PRESERVATION AND ENVIRONMENTAL SUSTAINABILITY

Theme 3 was used to identify potential improvement projects that were considered to better preserve transportation system and

***Theme 3*** *was used to identify potential improvement projects that are considered to better preserve transportation system and provide environmental sustainability.*

provide environmental sustainability. The following two individual performance measures are included in Theme 3:

### *System Preservation*

Does the project build on or maximize the use of existing transportation infrastructure? Projects that require development of new transportation infrastructure were assigned a score of 0 while projects that maximized the use of existing transportation infrastructure were assigned a score of 1. The ordinal rating scheme employed for assigning points for system preservation is presented in Table 6.5.

*Table 6-4: System Preservation Ordinal Ranking*

| System Preservation | Ordinal Rating |
|---|---|
| Requires construction of new transportation infrastructure | 0.0 |
| Improves existing transportation infrastructure | 0.5 |
| Maximizes the use of existing transportation infrastructure | 1.0 |

### *Level of Environmental Impacts*

Based on a very high-level screening, what is the level of environmental impacts of the project? General environmental screening, while not nearly as detailed or robust as that completed when a project is being developed and designed, was completed as a level appropriate for a transportation planning study such as this. It was based on a series of qualitative environmental factors to determine its anectdotal level of environmental impacts. [Details are included in Appendix F.]

All projects were assigned scores from 0 to 1, with highest scores (1) indicating those projects with low or limited environmental impacts and lowest score (0) indicating those projects with heavy or significant environmental impacts. The ordinal rating scheme employed for assigning points for level of environmental impacts is presented in Table 6.6.

*Table 6-5: Level of Environmental Impacts Ordinal Ranking*

| Level of Environmental Impacts | Ordinal Rating |
|---|---|
| Heavy | 0.0 |
| Moderate | 0.5 |
| Limited | 1.0 |

### 6.2.4 THEME 4 – PROJECT SUPPORT AND READINESS

Theme 4 was used to identify potential improvement projects with project support and readiness. The following three individual performance measures are included in Theme 4:

***Theme 4** was used to identify potential improvement projects with project support and readiness.*

### *Stakeholder Input*

Does the project have public and political support? During the planning process, a survey was conducted among Advisory Committee members to identify high, medium, and low priority connections of importance from the perspective to each of the state, study area, and local communitie's level of geography. The scores from the state, study area, and local perspectives were then combined to identify five (5) corridors with highest priority ranking. Projects that were identified as one of the top five (5) corridors received score of 1 while the others received score of 0. [Details of this survey are discussed in Appendix C.]

### *Project Readiness*

Which proposed phase or milestone is the project in? Projects having preliminary engineering activities (PE) and right-of-way acquisition (ROW) completed received a score of 1; projects that have PE initiated but still need to acquire ROW received a score of 0.5. Projects that have not had PE initiated received a score of 0.

### *Consistency with Comprehensive Plan / Land Use Plan*

Is the project consistent with existing comprehensive plans, land use plans and programs? The level of consistency with existing plans and programs were evaluated for each project. All projects received scores of either 0 or 1, with 1 indicating those projects with higher consistency and 0 with low consistency.

## 6.2.5 THEME 5 – ACCESSIBLE CARE AND ACTIVE LIFESTYLES

Theme 5 was used to identify potential improvement projects that better support accessible care and active lifestyles. The following two individual performance measures are included in the Theme 5:

***Theme 5** was used to identify potential improvement projects that better support accessible care and active lifestyles.*

### *Active Lifestyle - Multi-Modal Options – Transit*

Would the project improve active lifestyle and provide transit options? This criterion evaluated the level of accessibility to existing ride-sharing facilities within the study area for each project. Projects provide connection to the existing ride-sharing facilities received a score of 1; projects improve the travel time to the existing ride sharing facilities received a score of 0.5 and projects that do not improve the movement to the existing ride sharing facilities received a score of 0.

### *Active Lifestyle - Multi-Modal Options - Bike/Pedestrian*

Would the project comtribute to improving active lifestyle and provide bike/pedestrian options? This criterion evaluated whether the project is located on a state bike/pedestrian routes. Projects on a designated route received a score of 1 while projects that are not on a route received a score of 0.

### *Accessible Care*

Would the project improve contribute to public health with accessible care? This criterion evaluated the level of accessibility to major medical facilities within the study area for each project. Projects providing connections to major medical facilities received a score of 1; projects improving the travel time to major medical facilities received a score of 0.5 and projects that do not improve the movement to the major medical facilities received a score of 0.

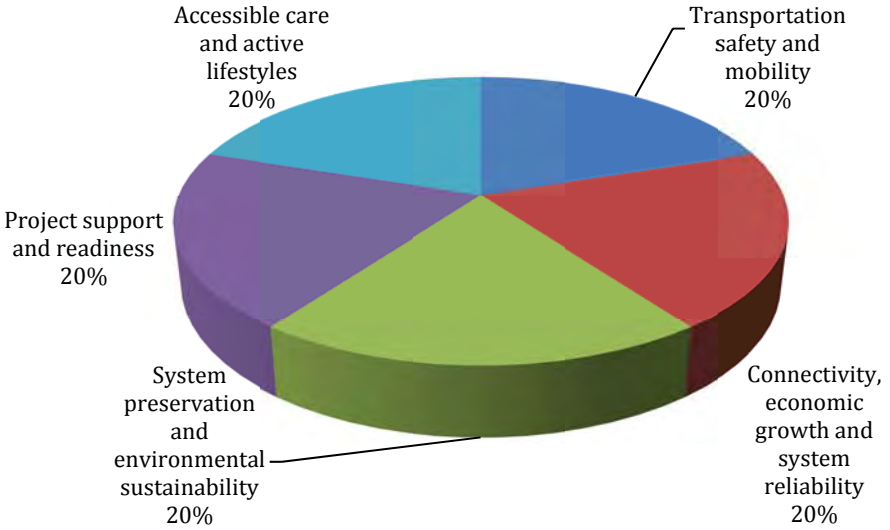
Based on the established criteria and associated ordinal ranking, an initial scoring was computed. The highest score based on the prioritization criteria is 100 points. Projects with higher scores are considered to achieve more of the goals and objectives previously established during the planning process. It is important to note that a score is *relative to all other projects*.

## 6.3 PRIORITY SCHEMES

After each project was evaluated and scored based on the project prioritization criteria, the study team initiated priority schemes based on the goals of the study to understand the impact of each theme and how the project rankings changed based on different weights and schemes. The purpose of testing six unique schemes was to identify potential improvements that consistently appeared near the top of the ranking, regardless of where the emphasis was placed.

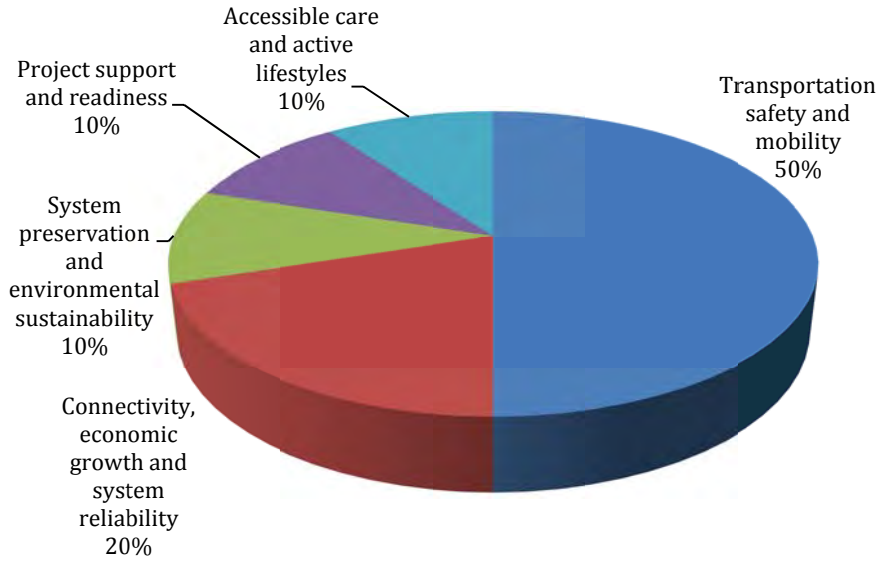
The importance of each criterion varies under different circumstances. Six priority schemes were developed by assigning different weights to each of the themes on a percentage basis:

- **Balanced** – this scheme assumes that all themes receive the same level of significance. Each theme receives a weighting factor of 20 percent.

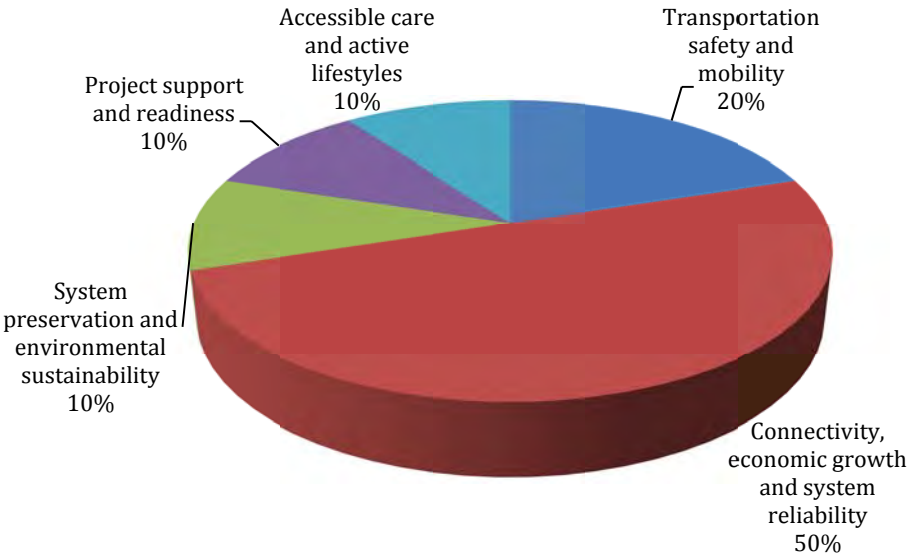



- **Mobility and safety focused** – this scheme assumed that the most important goal is to improve mobility and safety. Theme 1 received a

weighting factor of 50 percent, Theme 2 received 20 percent and the other three themes receive a weighting of 10 percent of each.

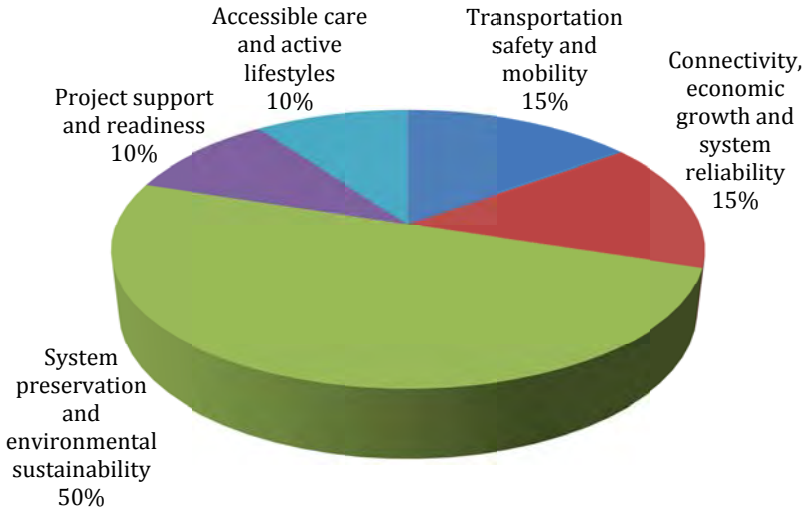



- **Connectivity and economic development focused** – this scheme assumed that the most important goal would be to provide connectivity and consider economic development in the study area. Theme 2 received a weighting factor of 50 percent, Theme 1 received 20 percent and the other three themes each received a weighting of 10 percent.

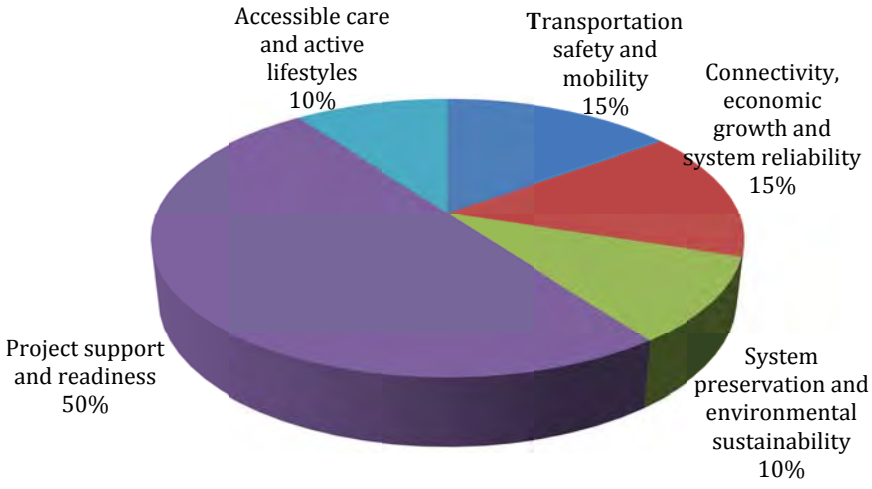



- **System preservation and environmental sustainability focused** – this scheme assumed that the most significant impact on the project selection would be considering environmental impacts and preserving existing transportation system. A weight factor of 50 percent was assigned to the Theme 3. The weighting factors for the other four themes: "Mobility and safety"; "Connectivity and economic development"; "Project support and readiness"; and "Accessible care

and active lifestyles" were assigned 15 percent, 15 percent, 10 percent and 10 percent, respectively.




- **Project support and readiness focused** - this scheme assumed projects with strong stakeholder/public support and project readiness would be ranked higher in the project prioritization process. Theme 4 - received a weighting factor of 50 percent. The weighting factors for the other four themes: "Mobility and safety"; "Connectivity and economic development"; "System preservation and environmental sustainability"; and "Accessible care and active lifestyles" were 15 percent, 15 percent, 10 percent and 10 percent, respectively.




- **Accessible care and multi-modal focused** – this scheme assumed the most significant impact on the project selection would be whether projects provided a multi-modal option and improved access to care. A weight factor of 50 percent was assigned to Theme 5 and the weighting factors for the other four themes: "Mobility and safety"; "Connectivity and economic development"; "System preservation and environmental

sustainability"; and "Project support and readiness" were 15 percent, 15 percent, 10 percent and 10 percent, respectively.

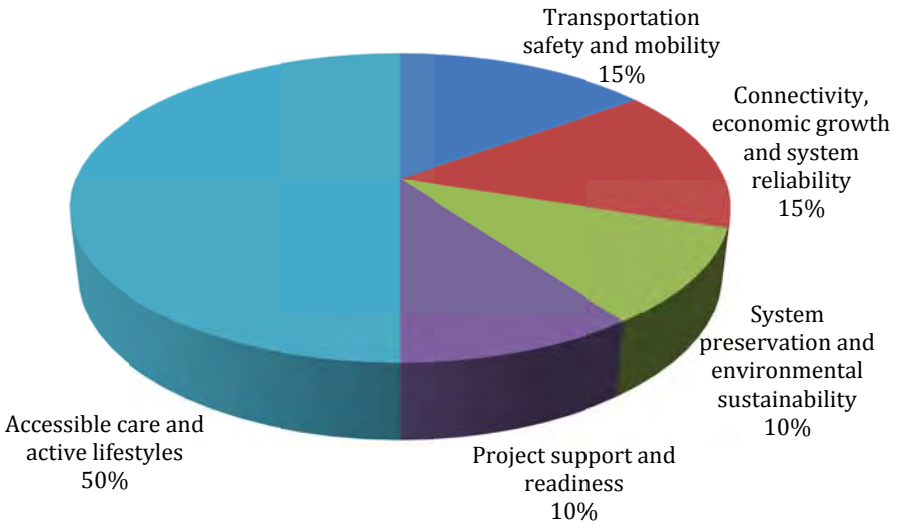



Table 6.7 summarizes the ranking of each project for all six priority schemes. Appendix G provides detailed breakdowns of each project's score for each scheme.

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*Table 6-6: Summary of Project Rankings by Priority Theme*

| Project Segments | Improvement Type | Description | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| Fall Line Freeway | New Connection | from US 441 to SR 24 | 2 | 5 | 1 | 23 | 2 | 1 |
| I-16 / I-75 Segment 1 | Widening | from Pierce Ave to I-16 | 7 | 4 | 6 | 15 | 5 | 16 |
| I-16 / I-75 Segment 2 | Interchange Improvements | I-16 and I-75 Interchange | 10 | 10 | 11 | 18 | 8 | 21 |
| I-16 / I-75 Segment 3 | Widening | from SR 11 to SR 87 | 4 | 3 | 4 | 12 | 3 | 3 |
| I-20 | Widening | from SR 150 to SR 383 | 13 | 18 | 6 | 8 | 17 | 8 |
| I-75 Segment 1 | Widening | from SR 42 to High Falls Rd | 20 | 15 | 9 | 25 | 21 | 24 |
| I-75 Segment 2 | Widening | from High Falls Rd to SR 16 | 17 | 6 | 11 | 21 | 19 | 22 |
| I-85 Segment 1 | Widening | from Kia Blvd to SR 109 | 5 | 2 | 3 | 3 | 12 | 11 |
| I-85 Segment 2 | Widening | from SR 109 to CR 417 (Meriwether) | 13 | 8 | 4 | 6 | 16 | 20 |
| Sardis-Sgoda Ext.Segment 1 | New Connection | from SR 11 to I-16 | 32 | 29 | 29 | 34 | 14 | 33 |
| Sardis-Sgoda Ext. Segment 2 | New Connection | from I-16 to SR 57 | 30 | 33 | 33 | 32 | 13 | 29 |
| SR 109 / SR 74 Segment 1 | Widening | from I-85 to SR 41 | 15 | 12 | 16 | 22 | 10 | 23 |
| SR 109 / SR 74 Segment 2 | Widening | from SR 41 to SR 18 | 18 | 21 | 24 | 28 | 11 | 14 |
| SR 109 / SR 74 Segment 3 | Operational (Passing Lanes) | from SR 18 to US 19 | 9 | 20 | 17 | 9 | 9 | 9 |
| SR 109 / SR 74 Segment 4 | Operational (Passing Lanes) | from US 19 to US 341 / SR 7 | 3 | 11 | 11 | 1 | 4 | 5 |
| SR 109 / SR 74 Segment 5 | Operational (Passing Lanes) | from US 341 / SR 7 to I-75 | 6 | 13 | 14 | 2 | 6 | 18 |
| SR 15 Segment 1 | Operational (Passing Lanes) | from SR 88 to south of SR 231 | 19 | 22 | 19 | 13 | 22 | 13 |
| SR 15 Segment 2 | Operational (Passing Lanes) | from south of SR 231 to I-16 | 26 | 28 | 27 | 19 | 29 | 25 |
| SR 17 North Segment 1 | Widening | from SR 296 to CR 59 / Quaker Rd | 21 | 19 | 22 | 27 | 23 | 4 |
| SR 17 North Segment 2 | Widening | from CR 311 / Wire Rd to SR 296 | 12 | 16 | 15 | 10 | 18 | 6 |
| SR 18 Segment 1 | Widening | from I-16 to US 80 | 29 | 30 | 30 | 24 | 31 | 28 |
| SR 18 Segment 2 | Widening | from US 80 to SR 57 | 31 | 31 | 31 | 26 | 32 | 30 |
| SR 36 Segment 1 | Operational (Passing Lanes) | from SR 74 to US 41 | 22 | 23 | 21 | 14 | 24 | 15 |
| SR 36 Segment 2 | Operational (Passing Lanes) | from US 41 to I-75 | 25 | 27 | 28 | 7 | 28 | 27 |
| SR 44 Segment 1 | Widening | from Gray Bypass to Mathis Rd | 28 | 25 | 23 | 20 | 30 | 32 |
| SR 44 Segment 2 | Widening | from Mathis Rd to US 29 / US 441 | 33 | 32 | 32 | 30 | 33 | 34 |
| SR 49 Segment 1 | Widening | from Griswoldeville Rd to SR 18 | 16 | 13 | 17 | 11 | 20 | 17 |
| SR 49 Segment 2 | Widening | from SR 18 to Felton Rd | 8 | 7 | 6 | 5 | 15 | 7 |
| SR 96 Segment 1 | New Connection | from Fall Line Freeway to SR 96 | 11 | 9 | 9 | 29 | 7 | 12 |
| SR 96 Segment 2 | Widening | from Firetower Rd to Housers Mill Rd | 1 | 1 | 2 | 4 | 1 | 2 |
| US 1 / SR 17 South Segment 2 | Widening | from Louisville Bypass to CR 138 / Mennonite Church Rd | 23 | 24 | 25 | 16 | 25 | 10 |
| US 1 / SR 17 South Segment 3 | Widening | from CR 138 / Mennonite Church Rd to SR 88 | 24 | 26 | 26 | 17 | 27 | 19 |
| US 27 / I-185 Connection | New Connection | from US 27 to I-85 / I-185 | 27 | 17 | 20 | 31 | 26 | 26 |
| Wrens Bypass | New Connection | from SR 88 to US 1 | 34 | 34 | 34 | 33 | 34 | 31 |

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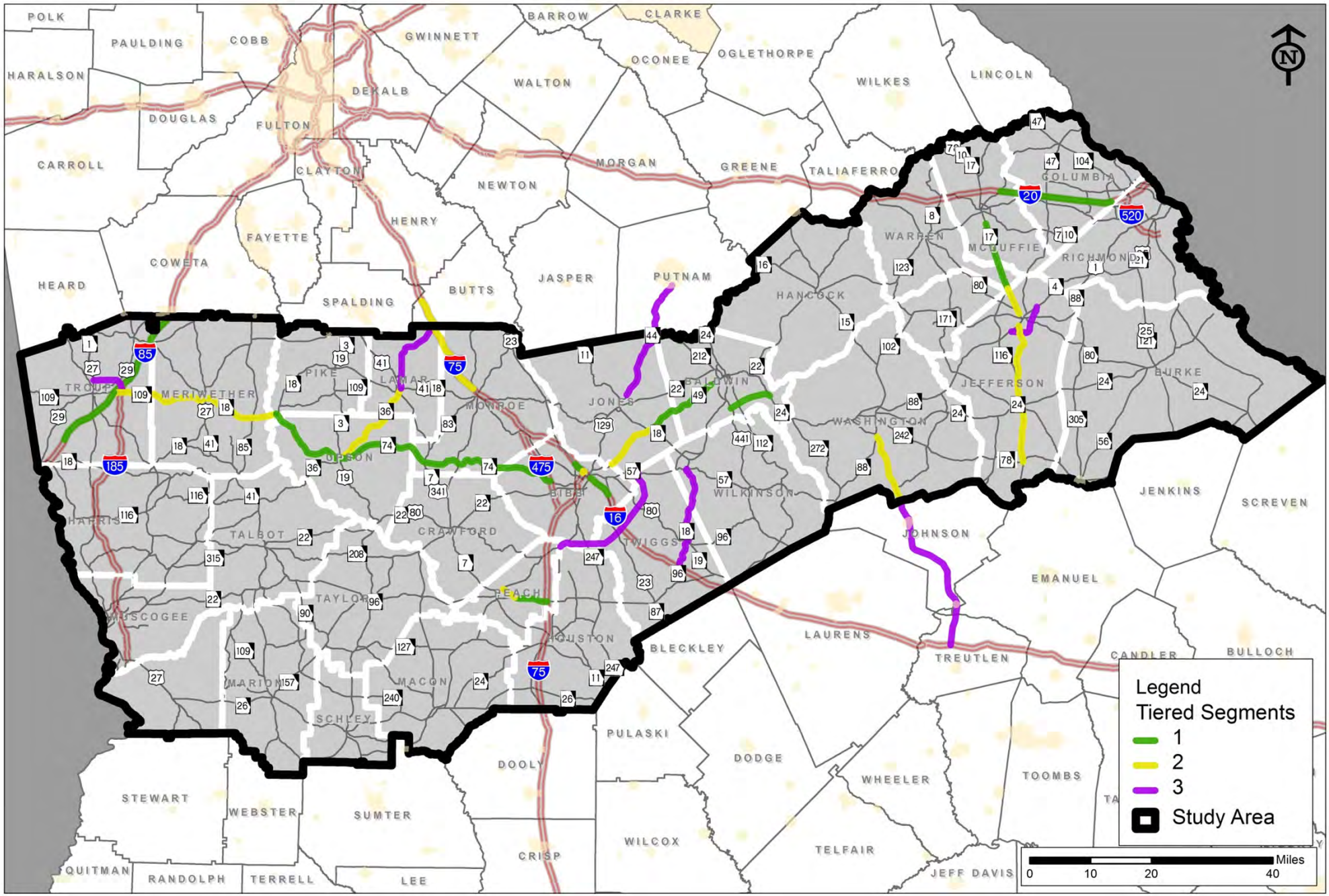
While the priority rankings were based on the qualitative and quantitative criteria discussed previously, it should be noted that the scores in those tables are not meant to be the final decision on whether a project should be implemented or not; rather they reflect the prioritization ranking of each project improvement within the study area under different schemes and weighting factors. They provide input and guidance for planners and decision-makers.

*Priority rankings are based on the qualitative and quantitative criteria discussed previously but are not meant to be the final decision on whether a project should be implemented or not; rather they reflect the prioritization ranking of each project improvement within the study area under different schemes and weighting factors.*

Upon review of the results of the project prioritization improvements in all six schemes, the projects (whose improvement type and costs are detailed in sections 5.4 and 5.5) were categorized into the three tiers shown in Table 6-8. This table categorizes the potential improvement projects in a summary the study's final recommendations – what improvement types and areas that are most recommended by tier of importance.

***Table 6-7: Final Strategic Connection Tiers***

| Tier 1 | Tier 2 | Tier 3 |
|---|---|---|
| I-16 / I-75 Segment 1 | I-16 / I-75 Segment 2 | US 27 / I-185 Connection |
| I-16 / I-75 Segment 3 | I-75 Segment 1 | SR 15 Segment 2 |
| I-20 | I-75 Segment 2 | SR 18 Segment 1 |
| I-85 Segment 1 | US 1 / SR 17 S Segment 2 | SR 18 Segment 2 |
| I-85 Segment 2 | US 1 / SR 17 S Segment 3 | SR 36 Segment 2 |
| US 1 / SR 17 S Segment 1 | SR 15 Segment 1 | SR 44 Segment 1 |
| SR 17 North Segment 2 | SR 17 N Segment 1 | SR 44 Segment 2 |
| SR 49 Segment 2 | SR 49 Segment 1 | Sardis-Sgoda Ext. Segment 2 |
| SR 96 Segment 2 | SR 36 Segment 1 | Sardis-Sgoda Ext. Segment 1 |
| SR 109 / SR 74 Segment 3 | SR 96 Segment 1 | Wrens Bypass |
| SR 109 / SR 74 Segment 4 | SR 109 / SR 74 Segment 1 | |
| SR 109 / SR 74 Segment 5 | SR 109 / SR 74 Segment 2 | |
| Fall Line Freeway | | |




# Tiered Strategic Connection Segments

Figure 6-2

# 7 IMPLEMENTATION

## 7.1 FUNDING RESOURCES

Funding for most transportation projects statewide comes in part through GDOT. To understand the ability of GDOT to continue to fund the projects identified in this plan, it is useful to understand an overview of GDOT funding, which include federal apportionments and state motor fuel taxes. The following sections generally explain these federal and state funding options as well as local funding options.

### 7.1.1 FEDERAL HIGHWAY FUNDING SOURCES

A substantial portion of GDOT funding comes through Federal Title I Apportionments. The primary funding source for Title I is the Federal gasoline tax collected at the state level. The U.S. Congress authorizes federal transportation funding to the states and other public entities, typically every six years. The previous federal legislation, known as "SAFETEA-LU", authorized the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period from 2005 through 2009.

*Projects defined in these lists should be considered for implementation when funding becomes available at these different levels. Tier 1 projects should be incorporated into statewide planning efforts, and be considered for state and federal funds.*

*Of the $105 billion in MAP-21 funds for highways, safety and transit, Georgia receives a 3.33 percent share of highway funding at $1.25 billion annually and $166 million in transit funds.*

The current authorization, "Moving Ahead for Progress in the 21st Century Act" (MAP-21), was signed into law on July 6, 2012. As the first long-term authorization in seven years, MAP-21 was much anticipated and needed to fund critical transportation projects. It provides over $105 billion for fiscal years (FY) 2013 and 2014 for all highways, safety and transit. Of this amount, Georgia receives a 3.33 percent share of highway funding at $1.25 billion annually and $166 million in transit funds. It is important to understand that this authorization has a short-time frame and the there is a downward trend in the levels of historical federal funding available.

### 7.1.2 STATE FUNDING RESOURCES

State funding for transportation projects in Georgia, as outlined in the Oficial Code of Georgia Annotated (OCGA) Title 32 Chapter 5, is derived from the following sources:

- State tax on motor fuels (7.5 cents per gallon)(provides majority of revenue);
- State license tag fees;
- State title registrations;
- State motor carrier fuels tax;
- State sales tax on gasoline; and
- State personal property tax.

The current (2013-2016) STIP has identified $1.46 billion in state funds from these sources for the four year horizon of this plan, 72.6 percent of which will be used for federal match. The plan designates 82 percent of these funds to construction and maintenance projects on state highways, 8 percent to local roads and the remaining funds to general funding programs not associated with a specific road.

*The Georiga STIP designates 82 percent of state funds to construction and maintenance projects on state highways, 8 percent to local roads and the remaining funds to general funding programs not associated with a specific road.*

### 7.1.3 Local Funding Resources

In recent years, uncertainties in the funding of infrastructure projects have encouraged the development of new options for funding transportation projects, especially at a local level. Local sources of revenue are important and relevant for even major projects because a portion of these funds could be provided as local matching funds for federally and state-funded transportation improvements.

Increasingly, counties in Georgia have enacted Special Purpose Local Option Sales Taxes (SPLOST) to fund specifically identified capital projects. Like the regional TIA funding tool, SPLOST taxes require voter approval and are time-limited. SPLOST funds can be used for transportation projects, including matching federal and/or state transportation funds. Cities and counties may also use Local Option Sales Taxes (LOST) for transportation purposes, including providing local matching funds for GDOT projects. Other local sources of transportation funding include impact fees or other exactions paid by developers according to local ordinances and the creation of self-taxing entities, such as Community Improvement Districts. In addition, counties in Georgia may issue general obligation bonds to support transportation capital projects.

### 7.1.4 Roles and Responsibilities

The transportation planning process for Connect Central Georgia does not end with the documentation. The following provides a brief overview of future activities related to intergovernmental planning, coordination and program monitoring. Although this planning process and resulting documentation were

initiated by GDOT, the coordination of multiple agencies will be required. While GDOT can oversee the recommended projects through the planning process, they must also work with the study area MPO's to include these recommendations in the RTP and TIP. Additionally, it will be the responsibility of the local jurisdictions to advance many of the plan's recommendations. GDOT commitment includes:

- Working with planning partners of their commitments;
- Working for inclusion of the plan recommendations in the STIP, TIP and RTP; and
- Following the road typologies, access management strategies and Plan recommendations as guidelines for the study area.

The region's MPO's are currently in different stages of their long range plan processes. As the four MPO's undertake these updates, they should make a commitment to:

- Supporting the Connect Central Georgia study through inclusion of recommendations in the updated TIPs and RTPs;
- Coordinating with GDOT and local jurisdictions to advance projects in future updates; and
- Ensuring projects are implemented in a logical sequence to maximize benefits and utilize scarce resources efficiently.

Local jurisdictions will be responsible for implementing the land use portions of the Connect Central Georgia Study. The kind of commitments that will be needed include:

- Maintain land use plans that are the basis for this study, or make changes that would not have an adverse effect on the rest of the study area;
- Coordination with abutting jurisdictions to undertake area plans;
- Require that developments consider access management as part of the land use and zoning approval process; and
- Require, as part of the land use and zoning approval process, that some roads be funded and built as part of the developments.

The local jurisdictions will likely be requested to take responsibility for implementing some aspects of the roadway projects. This could place responsibility on local jurisdictions for some of the following:

- Require some pedestrian/bike trails as part of development approvals;
- Possibly pay for landscape and urban design elements;
- Possibly pay for sidewalks and pedestrian/bike trails;
- Assist with right-of-way acquisition; and

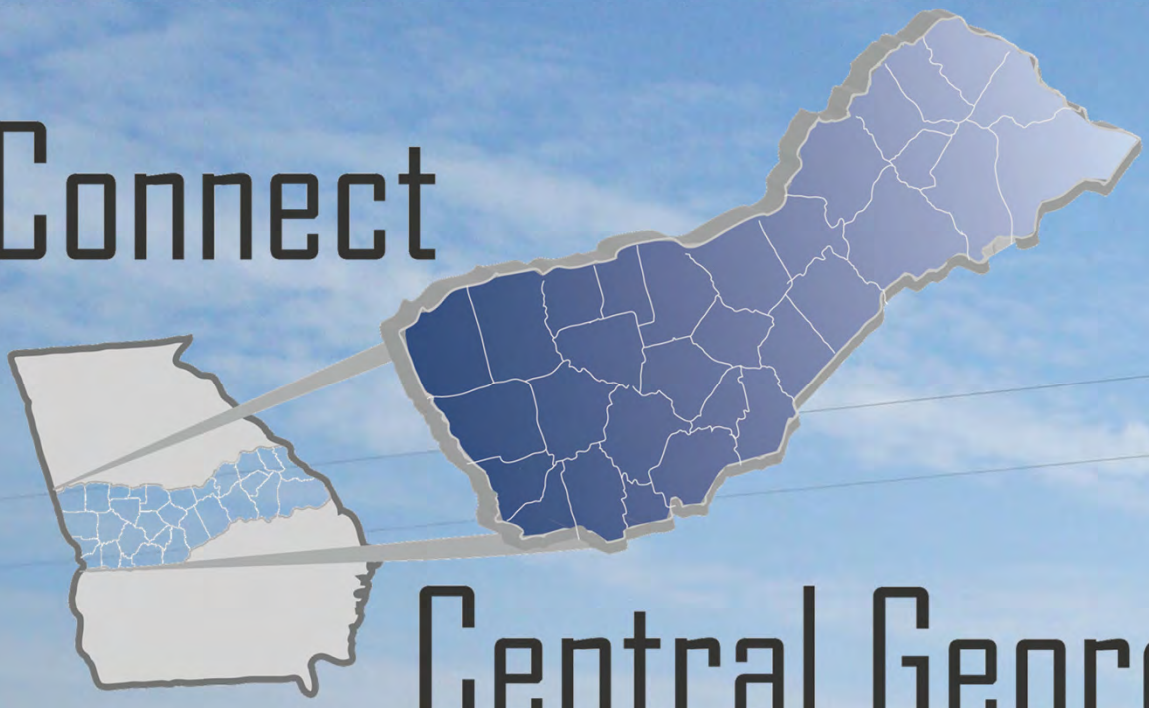
- Possibly maintain “amenities” in the right-of-way.

### 7.1.5 NEXT STEPS

In order to capitalize on the momentum of the Connect Central Georgia Study and implement the transportation recommendations, there are key steps that need to be taken. Many of these next steps will occur through GDOT with coordination with MPOs, RCs and the local municipalities. Potential next steps may include:

- Establishing a multi-jurisdictional working group to discuss and review land use opportunities, access management and transportation implementation throughout the study area. The Regional Commissions could be a natural fit for leading these efforts due to their regional nature and existing relationships. Some initial topics this group could address are:
    - Specifying near and long term zoning and comprehensive plan changes needed to support the study;
    - Identifying any specific land use and zoning conflicts with study recommendations within each jurisdiction; and
    - Incorporating transit-supportive development into activity center development.
- Conducting ongoing outreach to communities, business owners, and other users within the study area to build consensus for recommended programs and policies; and
- Preparing for funding requests in future TIP/RTP updates.

# Connect Central Georgia



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