East Georgia Multi-County Transportation Study
Greene, Jasper, Morgan and Putnam Counties

Greene County Multi-Modal Transportation Plan

August 2007

HNTB

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Preface

This document serves as a guide to the County's transportation needs, in the form of a Long Range Transportation Plan (LRTP), through the horizon year, 2030. LRTPs are required to have a planning horizon of 20 or more years. This time frame provides a basic structure and overall goal for meeting the long-term transportation needs for the County. Since many factors influencing the development of the LRTP, such as demographics, forecast revenue, and project costs, change over time, long range transportation plans should be updated at least every five years.

The Transportation Plan is a useful tool that empowers a County to act on its current and expected needs. GDOT programs projects for all 159 counties in the state of Georgia, and it is extremely helpful to them to know the true needs of each county. The Transportation Plan follows an accepted process that documents existing and future needs. These needs are then addressed by potential improvements which are prioritized.

The Transportation Plan is a living document, that should be revisited as the County changes and development occurs. Typically Transportation Plans are updated every three to five years. The current Transportation Plan was based on existing data and forecasts developed with the best information available. It is expected that the inputs into this original planning process, particularly public comment and opinion; population forecasts; development forecasts; and, the distribution of population and employment within the county will change over time in response to changing realities through the study area. A critical mass of new information should provide a stimulus to the update the plan and refine the planning process. The following key components of the Transportation Plan should be reviewed and updated as necessary:

- Transportation Plan Goals;
- Population Forecasts;
- Employment Forecasts;
- Distribution of Population and Employment;
- Needs;
- Projects;
- Costs; and,
- Funding.

Updating the Transportation Plan acknowledges changes to 20-year growth forecasts, ongoing refinements in travel demand forecasting, updated revenue forecasts, and other factors influencing the development and outcome of the Plan and its recommendations.

The outcome of the Transportation Plan is a prioritized list of improvements that meet the transportation goals and objectives of the County. This list is recognized by planning partners as the most important projects for the County – and correspondingly is the focus of funding and implementation efforts. It is important to recognize that these priorities are not static. As the inputs to the planning process change so will the priorities. Re-prioritizing all projects every year does not make sense – nothing would get constructed if priorities

changed on a year to year basis. Typically, even with updated information core priorities remain unchanged over a number of years.

The interested resident should utilize the Plan in several ways to actively contribute to the planning process and quality of life within the County:

1. Review the documented input from the public involvement process and provide additional comment when conditions change;
2. Review the list of prioritized projects to understand where the County will be investing its limited transportation resources;
3. Understand that the improvements recommended in the Plan relate to deficiencies identified through the planning process – the Plan has an established methodology for assessing need and determining improvements;
4. Use the Plan as a mechanism to provide input to the County to reflect changing realities within the County;
5. Understand the goals for the Transportation Plan and hold the County and other planning partners accountable for achieving the established outcomes.

The planning partners (County, Regional Development Center, GDOT and others) also make use the Plan for key activities including:

1. Clear documentation and technical analysis to support the need for transportation investment using proven analytical methods and analysis tools and approaches;
2. An understanding of County priorities for transportation investment;
3. A role to assist with development of a Special Purpose Local Option Sales Tax (SPLOST) Program;
4. A framework for continuous transportation planning activities; and,
5. A mechanism for ensuring active dialogue of transportation issues and opportunities.

A transportation plan is made more effective by an informed public that actively contributes to the planning process.

1.0 Introduction

Growth in Greene, Jasper, Morgan, and Putnam Counties has resulted in increased travel demand through the 4-County Region. The Georgia Department of Transportation (GDOT) Office of Planning, in conjunction with these four Counties, initiated the East Georgia Multi-County Transportation Study to develop a Long Range Transportation Plan (LRTP) to serve the 4-County Region through the planning horizon, 2030. Currently, the transportation planning function for the Counties is provided by GDOT through coordination with each County. The Multi-County Transportation Study is built upon existing work efforts to date, and provides a mechanism for guiding transportation decision-making as development pressures increase through the 4-County Region.

Although this Multi-County Transportation Study involved four counties, a transportation plan was developed for each County individually. Additionally, an Executive Summary was developed that included the entire 4 County study area. This allowed each of the Counties to understand what was recommended within the 4-County Region. This document focuses specifically on Greene County.

The purpose of this technical memorandum was to identify existing and future operating conditions for the multi-modal transportation system and then identify multi-modal improvements and prioritize project implementation for Greene County. As part of this effort, a travel demand model was developed for the 4-County Region to represent the transportation network of the study area and to assist with analysis of future operating conditions.

HNTB coordinated with GDOT, Greene, Jasper, Morgan, and Putnam Counties, local cities, and other partners in the planning, development, review, and approval of potential improvements. Additionally, a comprehensive and interactive public involvement program was conducted. This ensured that alternative transportation improvements were not only coordinated with various governments, but afforded individual citizens and interested groups the opportunity to provide their input in developing and evaluating potential improvements to each County's transportation network.

Ultimately, study efforts produced a LRTP that provides for the efficient movement of people and goods within and through the study area through the study horizon year (2030). Interim analysis was conducted for the year 2015. As part of this effort, existing and future operating conditions were documented for the following modes: roadways, bicycle and pedestrian facilities, freight, transit, railways, and airports.

1.1 Study Purpose

The purpose of the LRTP is to identify long-range transportation needs, determine resources to meet those needs, and outline a framework of projects that meet the transportation needs of a community to the extent allowed by existing and future resources. While the 4-County Region is not within a Metropolitan Planning Organization (MPO) service area, the transportation plan development process followed the guidelines

established for MPO's. This more rigorous process established a strong framework for transportation planning and decision-making. The format of the LRTP, and the process by which it was developed, is prescribed by federal legislation known the Safe, Accountable, Flexible, Efficient, Transportation Equity Act – A Legacy for Users (SAFETEA-LU).

LRTPs are required to have a planning horizon of 20 or more years. This time frame provides a basic structure and overall goal for meeting the long-term transportation needs for the community. Since many factors influencing the development of the LRTP, such as demographics, forecast revenue, and project costs, change over time, long range transportation plans should be updated at least every five years.

1.2 Study Area Description

The study area is located along the I-20 corridor in northeast Georgia, east of Atlanta. In recent years, communities located in the I-20 corridor from South Carolina to Alabama have recognized the economic importance of the corridor in attracting manufacturing, distribution, logistics, and warehousing operations and the associated residential, commercial, and office development that supports these valuable businesses.

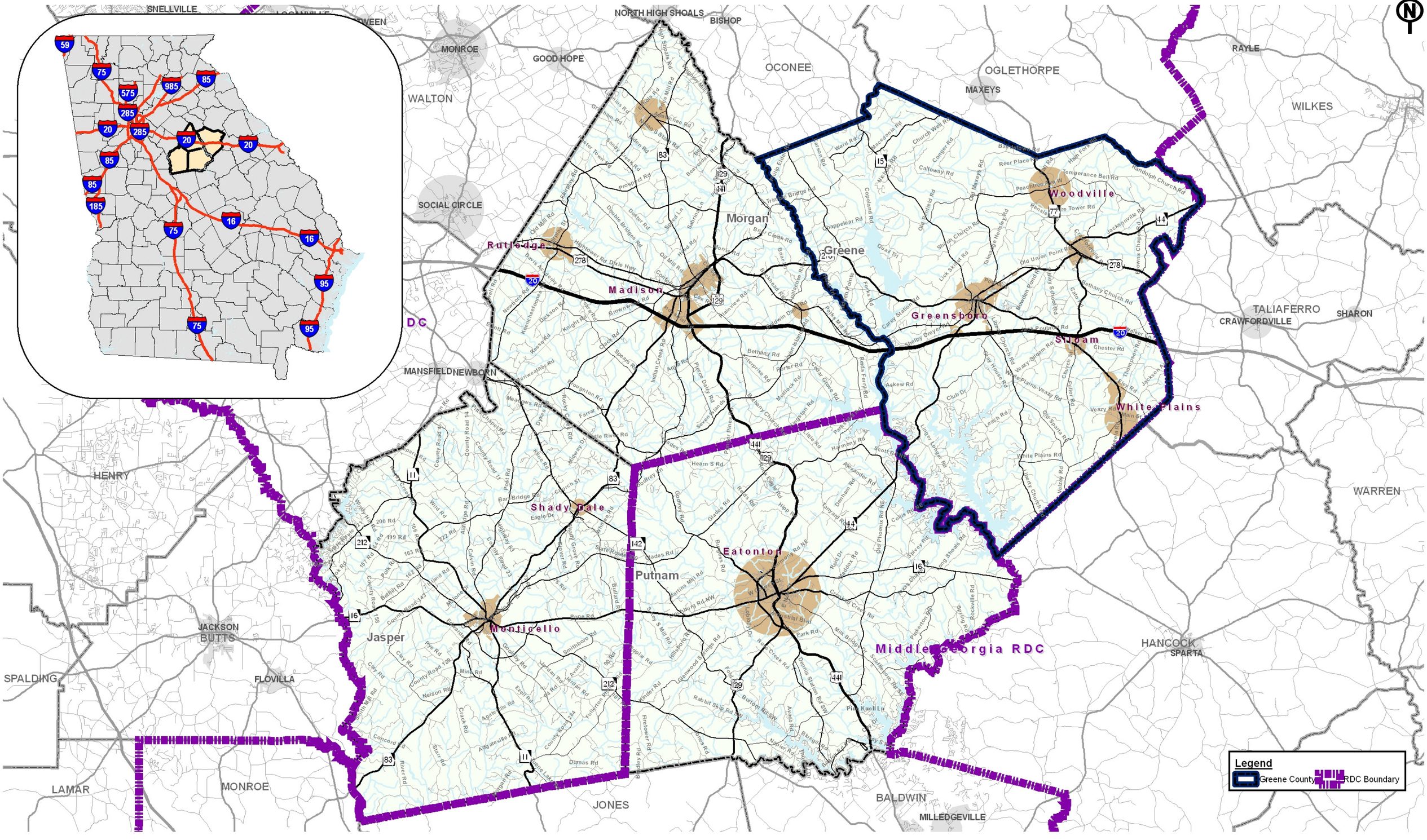
Greene, Jasper, Morgan and Putnam Counties cover a land area of just over 1,453 square miles. Greene County covers approximately 388 square miles. According to the University of Georgia, the area features many appealing points of interest and is significant to the State's natural and built environments as well as its cultural and historic assets, creating unique impacts on its transportation system.

- Greene County was the 11th County formed in Georgia (1786), named after the Revolutionary War hero General Nathaniel Greene.

- Greene County is bordered on the west by Lake Oconee – the second largest lake in Georgia. Lake Oconee has contributed to the recent population and employment growth in the area and represents a large "second home" population for Metro Atlanta residents.

- Points of interest in the County include: Greene County Courthouse; Victorian Gothic Jackson House; and, Reynolds Plantation.

Greene County is part of the Northeast Georgia RDC (NEGRDC). There are five municipalities in Greene County – Greensboro, Siloam, Union Point, White Plains and Woodsville. The study area is displayed in Figure 1.2.



Study Area

East Georgia Multi-County Transportation Study

Figure No: 1.2

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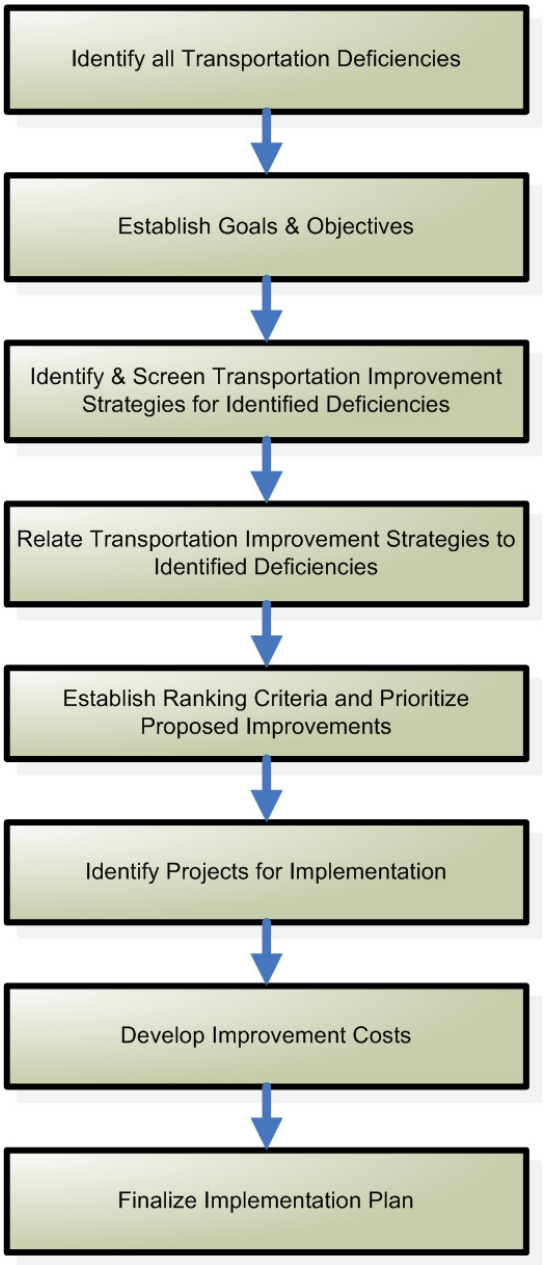
1.3 Study Process

The following activities generally represent the transportation plan development process: data collection and development of analysis tools and methodologies; analysis of existing and future conditions; development of improvement strategies; and, ultimately, project cost development and prioritization.

Figure 1.3 displays a flow chart depicting the study process.

Figure 1.3
Study Process



2.0 Public and Stakeholder Involvement

The purpose of the public involvement program is to inform the public and to include them in the decision-making process. Public concerns were brought to the forefront so that they could be discussed and resolved. This approach engaged the end users (i.e. the residents and business owners of the four Counties) in the identification, development, evaluation, and selection of transportation improvements. The ultimate goal of the Public Involvement effort was to build consensus for the recommended short-term and long-term improvements identified through the transportation planning process.

A public involvement program that results in active participation and interaction throughout the process has a good chance of attaining community consensus. An effective, well-planned, and organized public involvement program helps anticipate and lessen negative perceptions and can build towards acceptance of the study results. The Study Team implemented a public involvement program that utilized consensus-building techniques throughout the study process.

Area stakeholders, individual citizens, and interested groups were given multiple opportunities to become involved in the planning process. Citizens with an interest in the study were informed of the study's progress and provided various forums to contribute input into the decision-making process, including public workshops, study advisory groups, meeting notices, newspapers, newsletters, and web site updates. Through the public involvement process, the Study Team was able to identify improvements that met the needs of stakeholders and residents of Greene County. A complete summary of public involvement activities for the East Georgia Multi-County Transportation Plan is provided in the Public Involvement Report.

2.1 Summary of Activities

Involving the public in the decision-making process was essential for developing consensus or acceptance among the community it is intended to serve. Throughout the process, the public was invited to provide information, offer alternatives, and present their interests and concerns. As stakeholders who live and travel through the study area, citizens were able to provide insightful input to technical and non-technical issues relevant to the plan development.

Several forums were available for citizens to voice their opinions, concerns, and ideas. Two open house workshops were conducted as part of the study. These workshops ensured that public input was reflected accurately for the evaluation and recommendation of the proposed transportation improvements. Each public workshop was used to encourage consensus among citizens, County staff, and area municipalities, as to the planned improvements for the County's multi-modal transportation network.

2.2 Public Information Workshops

A brief presentation was given at each of the public workshops to support facilitation activities and informal review of display materials with the public. The Study Team was available for one-on-one discussions at all of the workshops. In addition, public comment forms were available for citizens to officially record their comments. As appropriate, HNTB developed responses to all comments and coordinated these responses with GDOT.

Based on input from the project Steering Committee, it was determined that two public workshops were appropriate for this study. These workshops took place from 6:00 PM to 8:00 PM on a weekday night with an attempt to avoid any conflicts with any other significant community events or meetings. The Greene County Administration Building was identified for hosting public workshops. This facility is centrally located in the County and provided adequate space for the workshops.

Workshop #1 (Overview of Existing and Future Operating Conditions)
This workshop provided an overview of the study process; documented data collection activities; reviewed existing and future operating conditions; and, identified deficiencies in the transportation system. This workshop also included a formal presentation, followed by an open house period to solicit public input, identify issues and concerns, and to aid the Study Team in evaluation of existing and future deficiencies.

Workshop #2 (Present Preliminary Long Range Transportation Plan)
This workshop presented preliminary improvement recommendations for major deficiencies and the findings to date, including a preliminary project prioritization methodology for public review and comment. A formal presentation of the study results was followed by an open house period to solicit public input on the draft study recommendations.

2.3 Study Advisory Group Meetings

In addition to the public workshops, Study Advisory Group (SAG) meetings were held to solicit stakeholder feedback at key junctures throughout the study. Greene County selected its SAG participants including representatives from the business community, planning staff, elected officials and emergency management staff. Members of the SAG are listed below:

- Byron Lombard - Greene County, County Manager;
- Al Van Malsen - Greene County Public Works Director;
- Anson Gock - Northeast Georgia RDC;
- Gerald Torbert - County Commissioner;
- Bud Sanders - County Commissioner;
- Doran Samples - Planning & Zoning;
- Rabun Neal - Reynolds Plantation;
- Mark Lovett - Greene County GIS; and,
- Glenn Wright - Greensboro Mayor.

This group met a total of three times throughout the study excluding the project kick-off meeting to discuss issues and opportunities and review study progress to date. Meeting dates and locations are documented below:

- Greene County Administration Building – October 26, 2006;
- Greene County Administration Building – February 13, 2007; and,
- Greene County Administration Building – July 12, 2007.

2.4 Program Evaluation

It was important to document and evaluate the effectiveness of the Multi-Modal Transportation Study Public Involvement Plan. The following data was documented:

- Number of newsletters distributed;
- Number of open house attendees; and,
- Number of public comments received.

Feedback from GDOT and SAG members was evaluated to determine the effectiveness of the Public Involvement Plan. Post workshop reviews yielded no changes to the public involvement program. Table 2.4 displays the public workshop participation information.

Table 2.4
Public Workshop Participation

Meetings	Date	Location	# of Newsletters	# of Attendees	# of Comments
Public Workshop #1	16-Nov-06	Greene County Administration Building	200	8	2
Public Workshop #2	28-Feb-07	Greene County Administration Building	185	32	42

3.0 Demographic Information

A review of US Census data shows that Greene County has experienced population growth at a low level during the past 20 years. Table 3.0 presents select demographic data to illustrate the characteristics of the population living in Greene County, its households, and other socio-economic factors. Dialogue with County Staff revealed that many new residents in the County relocated from the Atlanta metro area to live in a more rural area. However, historically employment has not shifted to Greene County. The ratio of residents (14,406) to jobs (5,709) is approximately two and a half to one based on the 2000 Census information. This places increased demand on the transportation system linking County residents to jobs in Atlanta, Macon, Athens, and other employment centers.

The demographic overview of the County documents: historic population growth, future population, environmental justice, and existing employment.

Table 3.0
Year 2000 General Demographic Characteristics

Demographic	Greene County
Total Population	14,406
Median Age	39.1
Households	5,477
Average Household Size	2.59
Total Housing Units	6,653
Occupied Housing Units	5,477 (82.3% of total)
Owner-Occupied Housing Units	4,182 (62.9% of total)
Renter-Occupied Housing Units	1,295 (19.5% of total)
School Enrollment (Age 3+)	3,385 (23.5% of total)
Percent High School Graduate or Higher	70.1%
Total Disabled Population (Age 5+)	3,299
Percent of Population in Same House in 1995	56.4%

Source: 2000 US Census

Over half of the residents (8,485) of Greene County live outside of the cities. The following shows the population of each city for the year 2000:

- Greensboro – 3,238;

- Siloam – 331;
- Union Point – 1,669;
- White Plains – 283; and,
- Woodville – 400.

Perhaps the most significant figure identified in the demographic data is the percent of disabled individuals in the County, 22.9%. This figure exceeds the statewide average of 19%. The US Census Bureau defines disability as:

> *"A long-lasting physical, mental, or emotional condition. This condition can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning, or remembering. This condition can also impede a person from being able to go outside the home alone or to work at a job or business."*

Dialogue with stakeholders revealed that the study area's population is aging and is attracting an older population. As Greene County continues to attract retirement residential land uses, the need will increase for a transportation system that accommodates the aging population.

3.1 Historic Population Growth

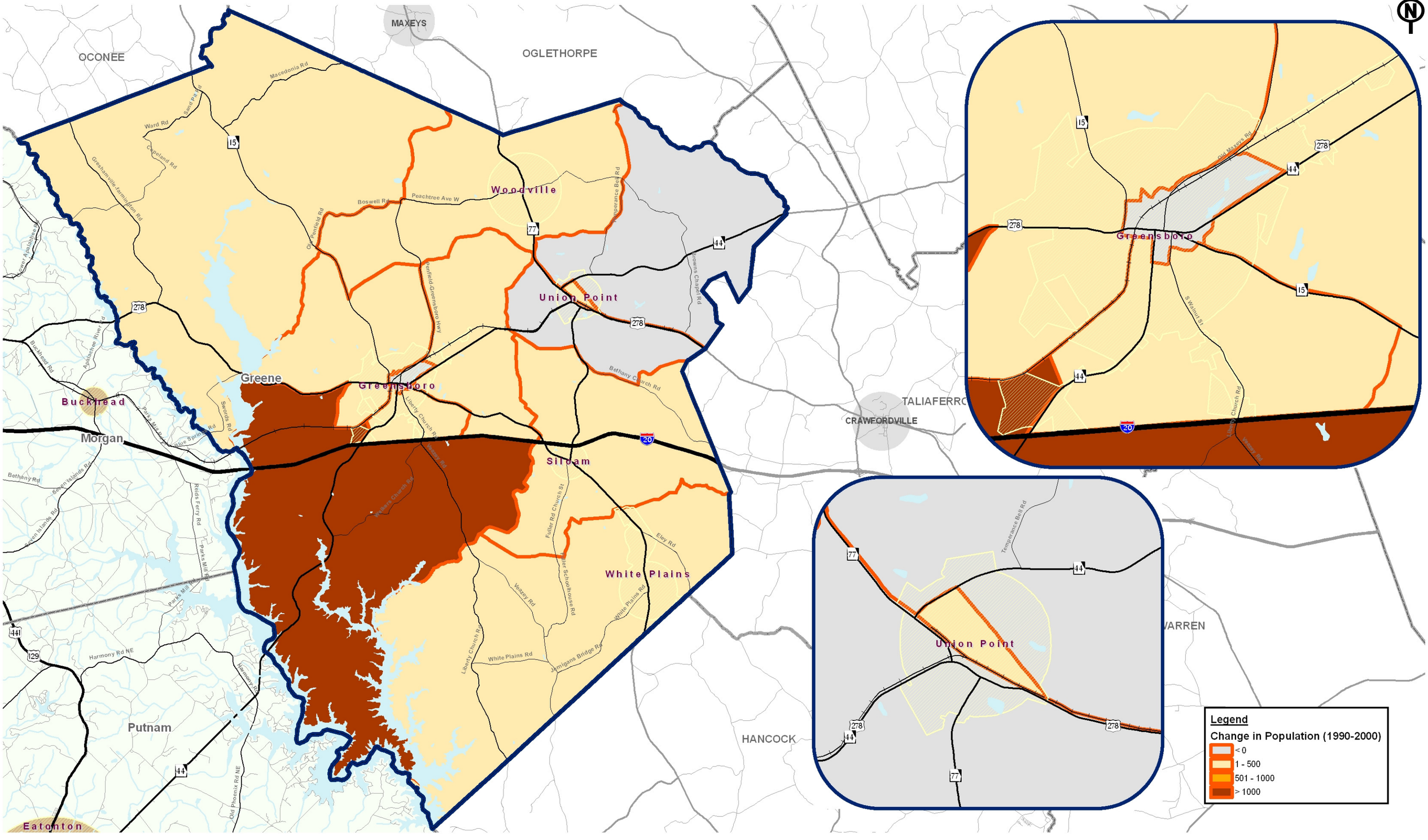
Table 3.1 illustrates the growth trends for Greene County and Georgia from 1900 to 2000. Information in Table 3.1 shows that the area has had low historical growth compared to the growth trend for the State of Georgia between 1980 and 2000. The population for Greene County is expected to increase throughout most of the County through the study horizon year of 2030.

Table 3.1
Historical Population Profile

County	1900	1920	1940	1960	1980	2000	Percent Change 1980 - 2000
Greene	16,542	18,972	13,709	11,193	11,391	14,406	26.5%
Georgia	2,216,331	2,895,832	3,123,723	3,943,116	5,462,982	8,186,453	50.0%

Source: 2000 US Census

Figure 3.1 shows the change in population from 1990 to 2000 in Greene County for each Census Block Group. The greatest change has occurred in the vicinity of Lake Oconee.



Change in Population (1990-2000)

3.2 Future Population

Greene County has received a low amount of growth over the past 20 years (26.5%). This growth trend is expected to change and increase as the area is expected to attract people and business owners who enjoy a rural lifestyle while having good access to nearby amenities in the Atlanta, Macon, and Athens urban areas. Several developments of regional impact (DRIs) have been proposed - particularly residential developments. Table 3.2 displays the projected growth, provided by the Greene County Comprehensive Plan, for Greene County through the horizon year of 2030.

Table 3.2
Projected Population

	2000	2005	2010	2015	2020	2025	2030
Projected Population	14,406	15,740	17,750	19,260	21,520	25,830	26,230

Source: Greene County Comprehensive Plan

Reviewing Greene County's Comprehensive Plan reveals that over the next 30 years the County is projected to nearly double in population. It is important to recognize this growth and the substantial demand for a quality transportation system and transportation services that accompanies the population increase.

3.3 Environmental Justice

Environmental justice (EJ) is intended to acknowledge minority and low-income populations and ensure that these groups are not disproportionately impacted as a result of transportation improvement recommendations. The US DOT Order on Environmental Justice and Executive Order 12898 defines EJ populations as persons belonging to any of the following groups:

- Black;
- Hispanic;
- Asian American;
- American Indian or Alaskan Native; and,
- Low-Income – a person whose household income (or in the case of a community or group, whose median household income) is at or below the US 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 is to locate these populations and to involve them early and continuously through the decision making process, as well as use data to analytically assess if there would be a disproportionate

impact on traditionally underrepresented communities. The following sections document the location of minority and low-income populations.

Minority Populations

The minority populations for Greene County were analyzed using the 2000 Census data. This census data was reviewed by Census Block Group, and shows concentrations of minority populations located in the eastern portion of the County and the southern portion of Greensboro. The average minority population figure for the County is 47% while the statewide average is 34.9%. The minority Census Block Groups are displayed in Figure 3.3.1.

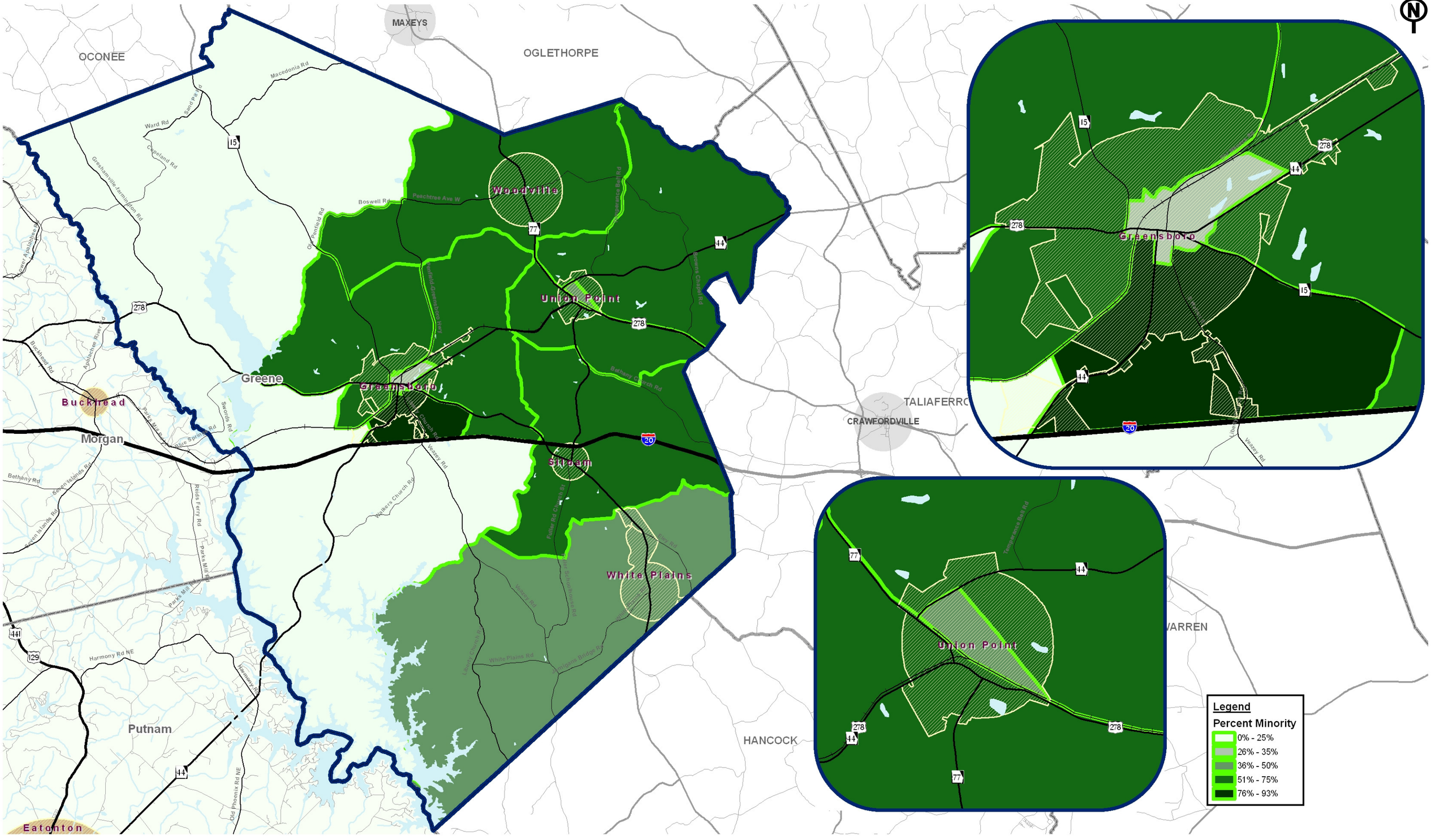
Low-Income Populations

The second component for EJ, poverty level, was also analyzed using the 2000 Census data. This census data was reviewed by Census Block Group, and shows concentrations of low-income populations located in the northern portion of the County. The average number of residents below the poverty line in the County is 22% while the statewide average is 13.0%. The low-income census blocks are displayed in Figure 3.3.2.

It is helpful to analyze the low-income population areas with respect to the location of minority population areas. Interest is drawn to areas with high populations for both of these categories. Figure 3.3.3 combines the minority and low-income population data and presents it in a single graphic.

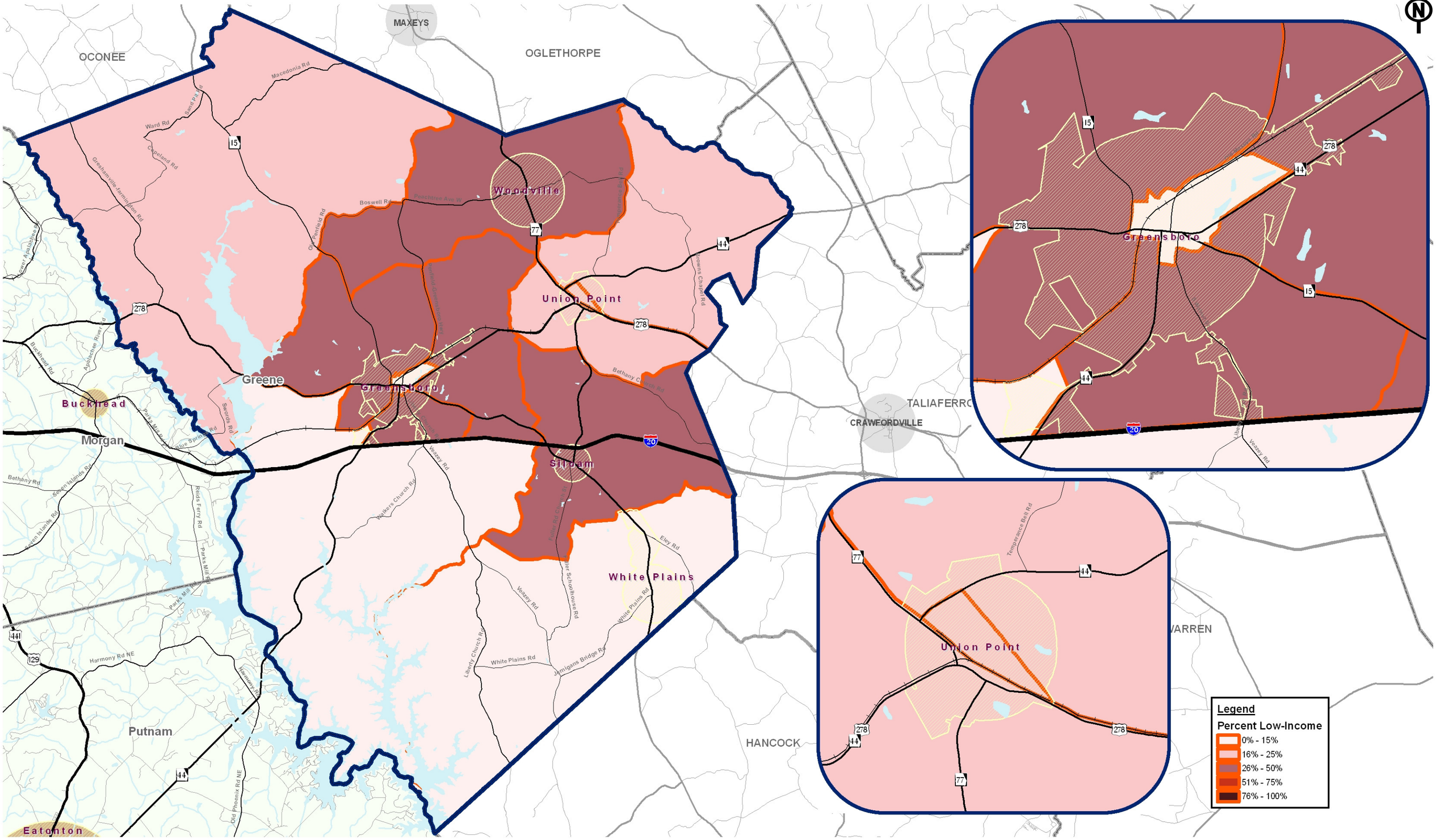
Disadvantaged populations were identified as part of this analysis and extra efforts were made to include these groups in the planning process. These areas include the downtown areas of Greensboro and Union Point. These areas were evaluated to ensure that transportation improvements would benefit and not disproportionately impact these areas in a negative manner. The following tasks were conducted for the identified low-income and minority populations:

- Coordinated with the SAG to identify leaders within these communities;
- Posted notice for workshops in these communities;
- Analyzed recommended projects to ensure that disproportionate impacts did not accrue to these communities; and,
- Analyzed recommended projects to ensure that mobility benefits accrued to these communities – including bicycle and pedestrian amenities.



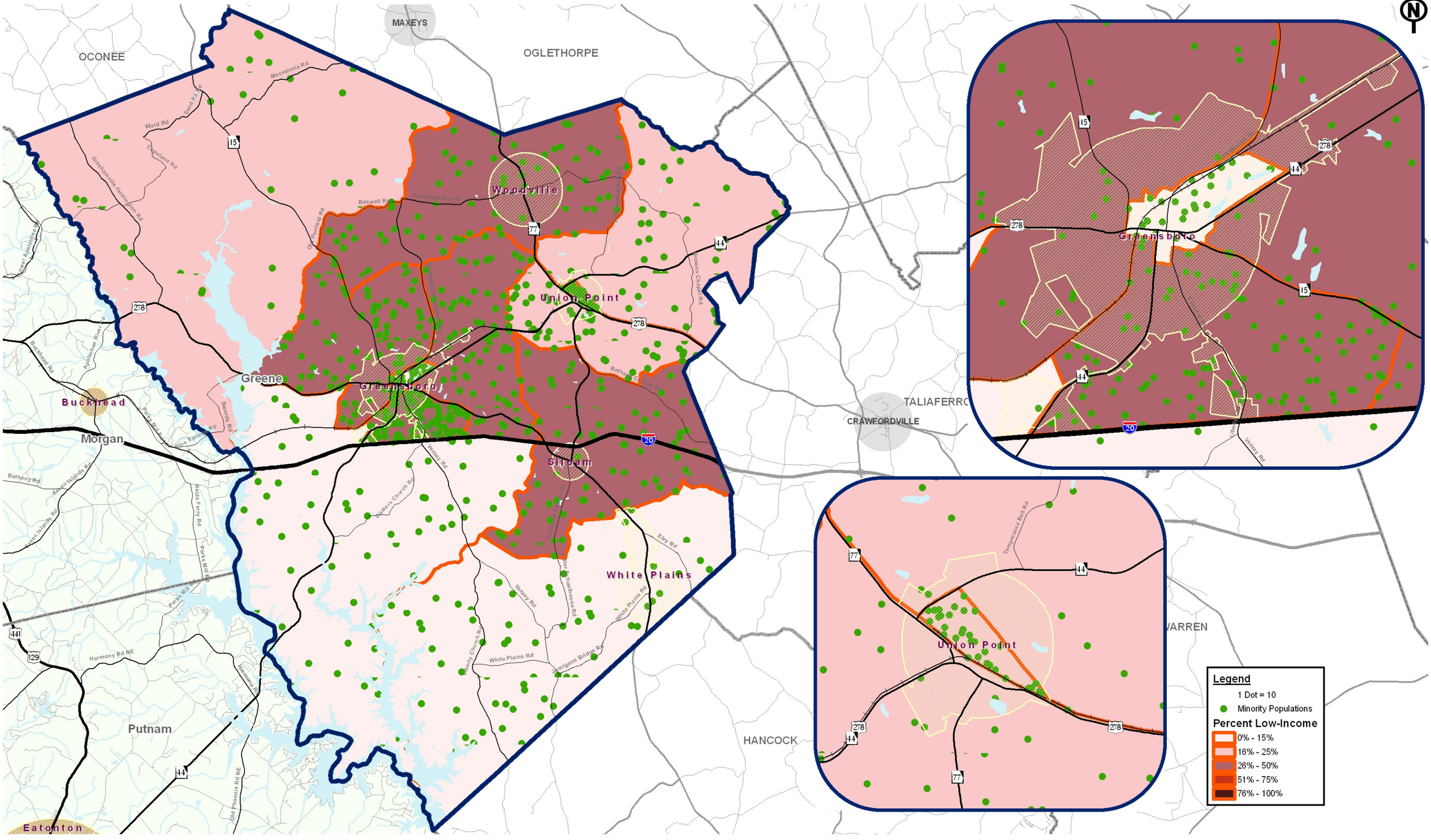
Minority Population Locations

East Georgia Multi-County Transportation Study



Low-Income Population Locations

East Georgia Multi-County Transportation Study



Overlay of Minority & Low-Income Populations

3.4 Employment Data

In Greene County, manufacturing is the largest employment sector providing about one-fourth of the total jobs. Other important sectors are education, health and social services, and retail trade. Among the major employers in the County are Ritz Carlton Hotel (500 employees), Reynolds Plantation (300 employees), Linger Longer Development (300 employees), Minnie G. Boswell Memorial Hospital (150 employees), and Nibco Inv. (115 employees). The number, type, and location of jobs in the County have direct implications to the types of transportation facilities needed by business operators and employees in the area. Table 3.4.1 shows the major categories of jobs and industries located in Greene County.

Table 3.4.1
Existing Industry Jobs

Industry Type	Greene County
Agriculture, Forestry, Fishing, Hunting, and Mining	314
Construction	434
Manufacturing	1,379
Wholesale Trade	297
Retail Trade	564
Transportation, Warehousing, and Utilities	235
Information	33
Finance, Insurance, Real Estate, and Rental and Leasing	387
Professional, Scientific, Management, Administrative, and Waste Management Services	350
Education, Health, and Social Services	866
Arts, Entertainment, Recreation, Accommodation and Food Services	450
Other Services	195
Public Administration	205
TOTAL	5,709

Source: 2000 US Census

The County's per capita income ($23,389) in 1999 was lower than Georgia's statewide average of $27,324 and the national average of $28,546.

Transportation mobility for workers in Greene County is an important consideration for the Plan. Not surprisingly, most workers (93.1%) in the County rely on highway-based

transportation for commute trips, either by driving alone or carpooling. Less than three percent (2.5%) of workers in the County walk or commute to work by other means and four percent (4.4%) work at home. Table 3.4.2 illustrates the breakdowns in commuting modes for Greene County.

Table 3.4.2
Existing Work Commute Patterns

Work Commute	Greene County		Georgia
	Population	Percentage	Percentage
Total Workers (Age 16+)	5,609	100%	100%
Drove Alone	4,035	71.9%	77.5%
Carpooled	1,039	18.5%	14.5%
Transit/Taxi	34	0.6%	2.3%
Biked or Walked	142	2.5%	1.9%
Motorcycle or Other Means	112	2.0%	1.0%
Worked at Home	247	4.4%	2.8%
Mean Travel Time to Work (mins.)	26.0		27.7

Source: 2000 US Census

The County's journey to work data corresponds closely to the statewide averages for the various modes of travel. The mean travel time to work is slightly lower than the statewide average (27.7 minutes). This competitive advantage was cited by County Staff as one reason why the County has become increasingly attractive to people and business owners who enjoy a rural lifestyle while having good access to nearby amenities in the Atlanta urban area as well as proximity to Athens and Macon.

4.0 Land Use and Development

Based on Greene County's Comprehensive Plan the existing and future land use patterns for the County continue to show a substantial percentage of land devoted to residential and agricultural land uses. Development is projected to occur along I-20 and in the vicinity of Lake Oconee.

4.1 Existing Land Use Characteristics

To assess the impact of existing land use on the transportation system the following types of areas were identified for the County: major residential areas; key activity centers; key employment centers; and, primary travel corridors.

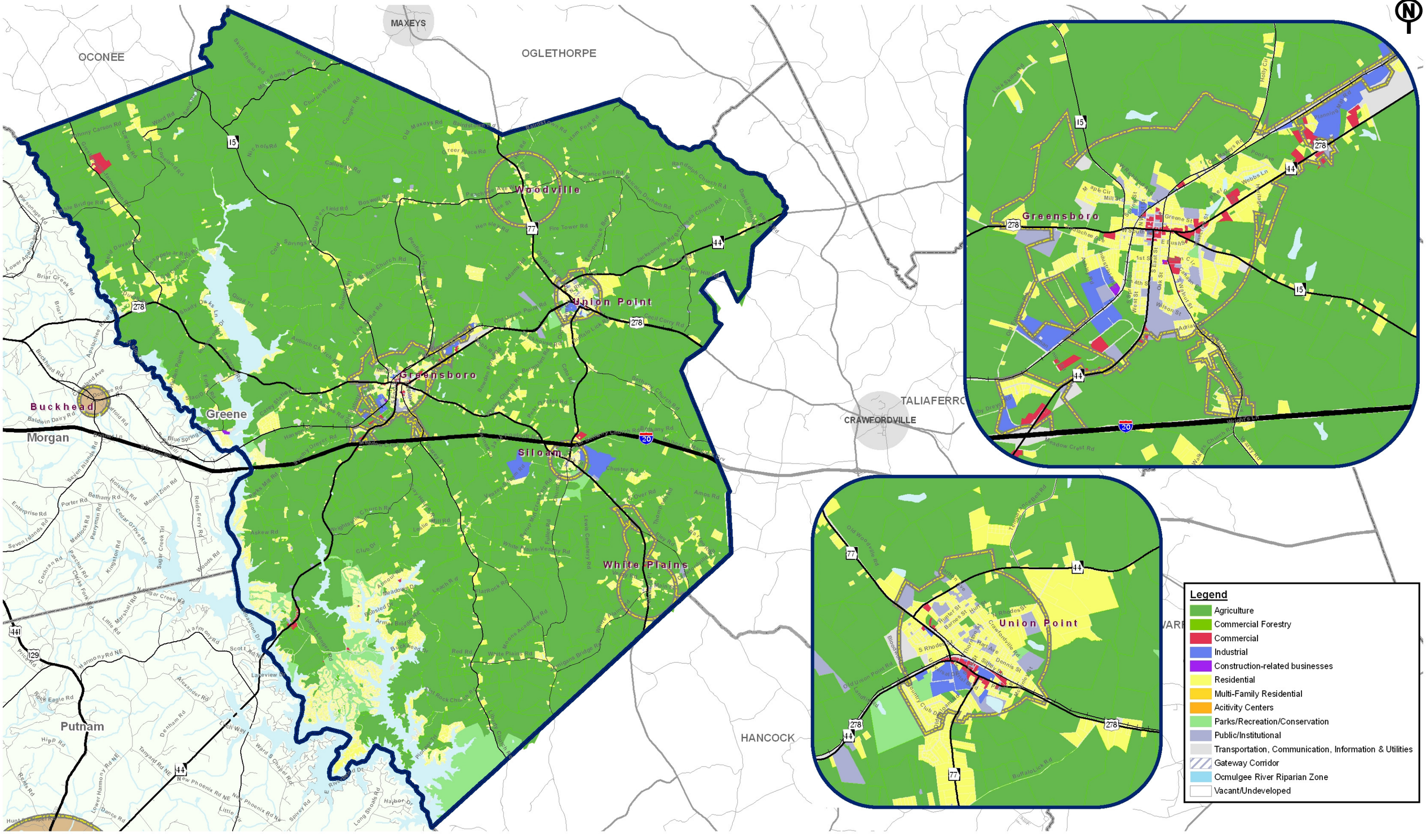
Major Residential Areas
- Cities of Greensboro, Siloam, Union Point, White Plains and Woodville
- Reynolds Plantation
- Lake Oconee

Key Activity Centers
- Cities of Greensboro, Siloam and Union Point
- Greene County Regional Airport
- Reynolds Plantation
- Lake Oconee

Key Employment Centers
- Cities of Greensboro, Siloam and Union Point
- Interchange areas along I-20 at SR 44 and SR 77
- Reynolds Plantation

Primary Travel Corridors
- I-20
- US 278
- SR 15
- SR 44
- SR 77
- CSX Rail line

The existing land use map is presented in Figure 4.1.



Existing Land Use

4.2 Future Land Use Characteristics

It is important to document future land use characteristics because this information is essential in the evaluation of future operating conditions on the County's transportation network. The future land use plan identifies the desired location of population and employment through the horizon year of the study. These two variables are the key inputs into the travel model to forecast future travel volumes and related deficiencies.

For the purposes of this study, it was important to work with the Future Land Use Map contained in the County's Comprehensive Plan. This map identifies where growth is likely to occur in the County through the horizon year of the study. By clearly identifying where growth is allowed to occur in the County, it is possible to more accurately represent travel demand on the roadway network and future year travel conditions.

The Future Land Use Map designates most of the County for rural land uses. The County has plans for growth but much of the County is zoned as agricultural or has no zoning designation. The following growth areas were identified:

Residential
- Cities of Greensboro, Siloam, Union Point, White Plains and Woodville
- Reynolds Plantation
- Lake Oconee

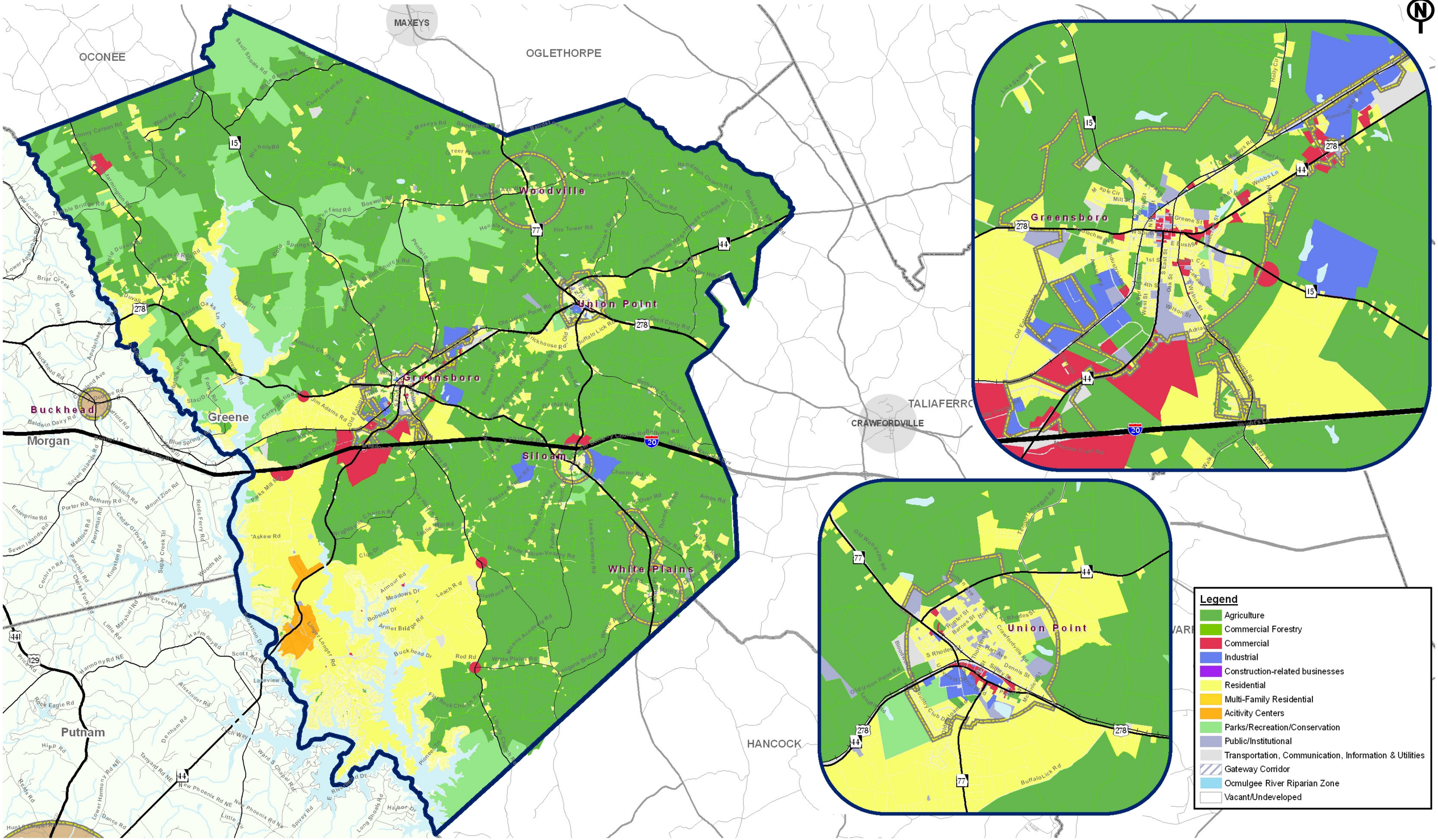
Intensive Agricultural
- A majority of the County is zoned for Agriculture

Commercial Uses
- Cities of Greensboro, Siloam, and Union Point
- Interchange areas along I-20 at SR 44 and SR 77
- Reynolds Plantation
- Lake Oconee

Industrial Uses
- Cities of Greensboro, Siloam and Union Point

Parks/Recreation/Conservation
- Lake Oconee
- Oconee National Forest

Additionally, there have been approximately 18 DRIs recently conducted within the County. This demonstrates the high level of activity currently being planned for the County. The future land use map is presented in Figure 4.2.



Future Land Use

East Georgia Multi-County Transportation Study

Figure No: 4.2

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5.0 Previous Studies

An effective Transportation Plan coordinates with other planning efforts to ensure continuity between planning documents and to ensure that goals and related projects for the transportation system are consistent with the established community vision. It is important to recognize that this Plan is not the first transportation planning effort for the County. GDOT continually conducts planning efforts throughout the state – this study will build on these efforts. The following planning studies and programs were reviewed and key results summarized:

- GDOT's State Transportation Improvement Program and Six Year Construction Work Program;
- GDOT's Statewide Bicycle and Pedestrian Plan;
- GDOT's Statewide Interstate System Plan;
- Northeast Georgia Regional Bicycle and Pedestrian Plan; and,
- Greene County's Comprehensive Plan;

5.1 GDOT's State Transportation Improvement Program & Six Year Construction Work Program

In addition to current studies, there are several planned and programmed multi-modal improvements in Greene County. Programmed improvements, for the purpose of this study, refer to projects with a construction phase included in the State Transportation Improvement Program (STIP) within the first three years of the planning horizon – 2006, 2007, and 2008 with a dedicated funding source identified. Planned projects refer to projects with a construction phase included in the last three years of the Six Year Construction Work Program (CWP). The following list highlights the general types of planned and programmed improvements for the County:

- Bridge Rehabilitation / Replacement;
- Bicycle and Pedestrian Enhancements;
- Roadway Widening;
- New Roadways;
- Intersection Improvements; and,
- Roadway Realignments.

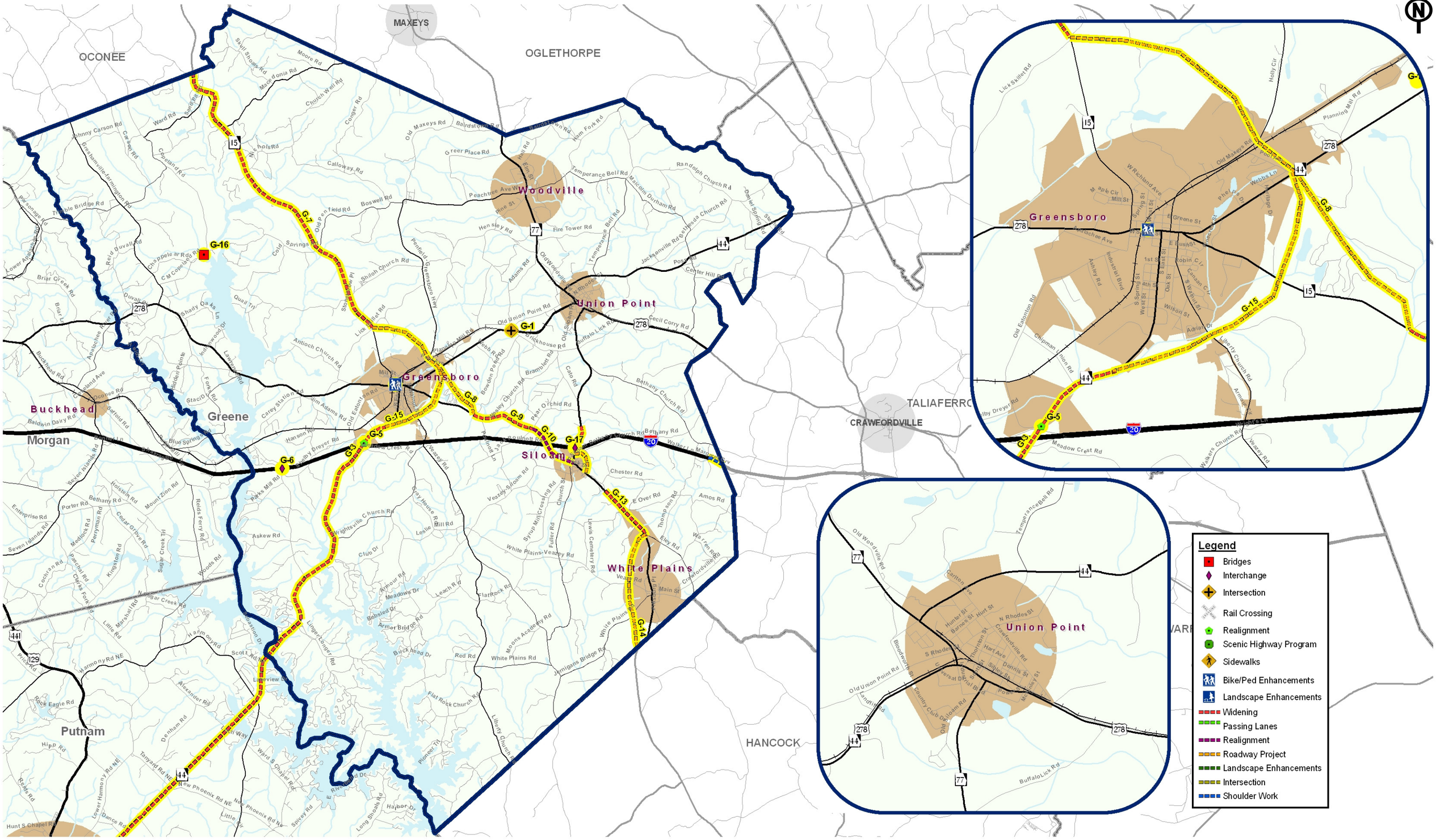
The STIP and CWP were reviewed for projects within and impacting the County and these projects are displayed in Table 5.1. Additionally, these projects are mapped in Figure 5.1. Programmed projects were carried forward and included in the existing conditions network for analysis of future (beyond 2008) transportation scenarios.

Table 5.1
2006 – 2008 STIP & 2006-2011 CWP

Map Id	Project Id	Prime Work Type	Description	Program	Construction Date
G-1	4292	Intersection Improvements	US 278 @ Cunningham Rd	STIP	2013
G-2	6252	Widening	SR 44 from west of US 441 Bypass to Linger Longer Rd	STIP	LR
G-3	6253	Widening	SR 44 from Linger Longer Rd to East Greensboro Bypass	STIP	LR
G-4	6605	TE-Bike/Ped Facility	Greensboro Streetscape Plan - Phase III	STIP	Lump
G-5	6944	Realignment	SR 44 @ Old Eatonton Rd north of I-20 - Intersection Relocation	STIP	2009
G-6	7528	Interchange	I-20 @ Carey Station Rd	CWP	2008
G-7	8007	Widening	SR 15 from Greensboro Bypass to Antioch Church Rd	CWP	LR
G-8	8008	Roadway Project	East Greensboro Bypass from Lick Skillet Rd to Beaver Dam Creek	CWP	LR
G-9	8009	Widening	SR 15 from Pear Orchard Rd to East Greensboro Bypass	CWP	LR
G-10	8010	Realignment	SR 15 Relocate from Pear Orchard Rd to SR 77	CWP	LR
G-11	8011	Widening	SR 77 from Siloam Bypass to SR 15 (Relocate)	CWP	LR
G-12	8012	Roadway Project	East Siloam Bypass from SR 77 to S of I-20	CWP	LR
G-13	8013	Widening	SR 15 from White Plains Bypass to east of English School Rd	CWP	LR
G-14	8014	Roadway Project	West White Plains Bypass from Edwards Rd to Eley Rd	CWP	LR
G-15	232210	Roadway Project	East Greensboro Bypass from SR 44 (S) to US 278 / SR 44 (N)	CWP	LR
G-16	270683	Bridges	Copeland Rd @ Greenbrier Creek southwest of Penfield	CWP	LR
G-17	M002468	Shoulder Work	I-20 Ramps @ SR 77	STIP	Lump
G-18	S007127	Miscellaneous Improvements	14 Various County Roads - Engineering Assistance	CWP	PRECST
G-19	T001666	Airport	Phase I - Part V - Land Acquisition for Runway Extension	CWP	PRECST

Source: GDOT Department of Planning

Some of the planned projects may have a dramatic effect on the movement of traffic in the County. For example, the Greensboro Bypass could help traffic through the downtown area by providing additional connectivity.



GDOT's Planned & Programmed Projects

East Georgia Multi-County Transportation Study

Figure No: 5.1

5.2 GDOT's Statewide Bicycle & Pedestrian Plan

GDOT's Bicycle and Pedestrian Plan (GABPP) was approved in August 1997 and focuses on developing a statewide primary route network. The network contains 14 routes totaling 2,943 miles. A statewide advisory committee consisting of staff from GDOT, the Federal Highway Administration, Metropolitan Planning Organizations, Regional Development Centers, the Association of County Commissioners of Georgia, the Georgia Municipal Associations, local planning departments, bicycle clubs, and other state agencies evaluated each proposed corridor and defined routes. The goals developed as part of that study include:

- Promote non-motorized transportation as a means of congestion mitigation;
- Promote non-motorized transportation as an environmentally friendly means of mobility;
- Promote connectivity of non-motorized facilities with other modes of transportation;
- Promote bicycling and walking as mobility options in urban and rural areas of the state;
- Develop a transportation network of primary bicycle routes throughout the state to provide connectivity for intrastate and interstate bicycle travel; and,
- Promote establishment of US numbered bicycle routes in Georgia as part of a national network of bicycle routes.

Several factors were used in evaluating routes, including: accident history; total traffic volumes and truck volumes; speeds; shoulder and travel lane width; pavement condition; network connectivity; access to cities and to major points of interest; aesthetics; and the presence of potentially hazardous spot conditions. Bicyclists were considered the primary users of this route network; however, pedestrian friendly designs are used in urban areas and paved shoulders are constructed on rural sections.

GDOT's Statewide Bicycle and Pedestrian Plan was reviewed to identify proposed facilities through Greene County. There are currently no routes in the plan located in Greene County.

5.3 GDOT's Statewide Interstate System Plan

Sponsored by GDOT, the Statewide Interstate System Plan was designed to evaluate Georgia's Interstate System, identify necessary improvements, and produce a comprehensive and prioritized program of projects to meet increasing traffic demands and ensure future statewide mobility. The study, completed in the summer of 2004, is organized into three phases and focuses primarily on the interstates outside the Atlanta metro area. Review of the Interstate System Plan reveals no proposed improvements along the interstate system (I-20) in Greene County.

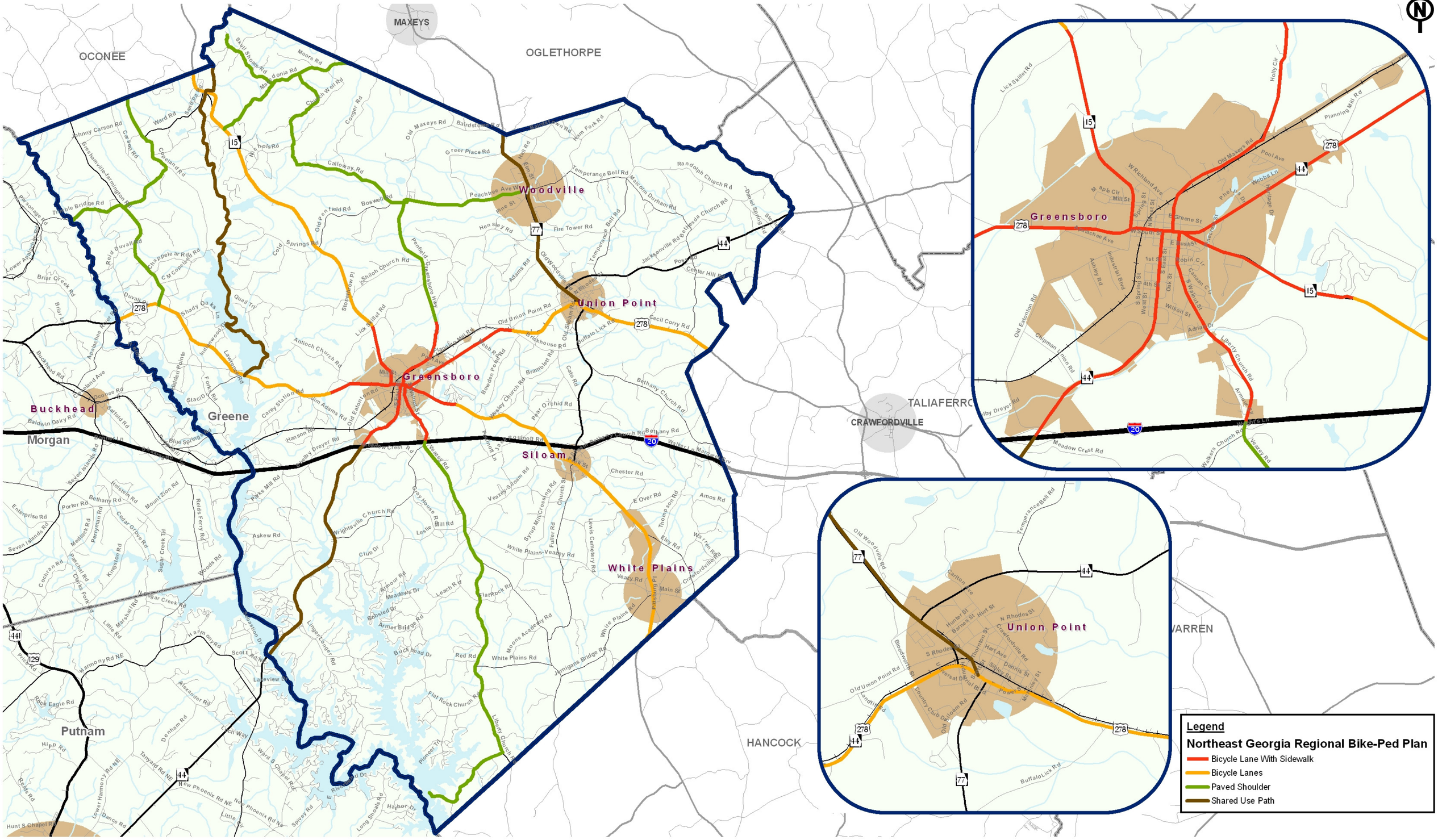
5.4 Northeast Georgia Regional Bicycle and Pedestrian Plan

The NEGRDC, with funding support from GDOT, developed the *Northeast Georgia Regional Bicycle and Pedestrian Plan*. The plan was completed in April 2005 and focuses to establish a system of streets, roads, and highways designed to provide a safe, convenient, and accessible environment for bicycles and pedestrians. Further, the plan intends to provide opportunity for integration of bicycle and pedestrian facilities into the existing transportation framework and to enhance the natural environment, improve public health, and improve the quality of life in the Northeast Georgia region. As part of this effort the following goals were created:

- Promote and encourage bicycling and walking as a means of transportation, healthy living, and environmental preservation;
- Create a safe, convenient, and accessible network of bicycle and pedestrian facilities that meets the needs of a wide range of users;
- Integrate bicycle and pedestrian transportation issues into land use decisions; and,
- Actively seek funding resources from local, state, and federal agencies, as well as private sources, for planning, constructing, and maintaining a regional bicycle and pedestrian network.

The Bicycle and Pedestrian Plan includes several types of routes for Greene County such as bike lanes, paved shoulders, sidewalks and shared use paths. The routes total 99.3 miles in Greene County. Recommendations from the *Northeast Georgia Regional Bicycle and Pedestrian Plan* are presented in Figure 5.4.1.

Additionally, the *Northeast Georgia Regional Bicycle and Pedestrian Plan* identifies the suitability of major roadways in the twelve-county Northeast Georgia Region for bicycling considering traffic volume, posted speed limit, shoulder width, volume of truck traffic, and roadway functional classification. Figure 5.4.2 illustrates the findings in Greene County ranging from “Very Difficult” to “Medium” regarding cycling conditions on the existing roadways in the County. No routes in Greene County were considered “Best”.

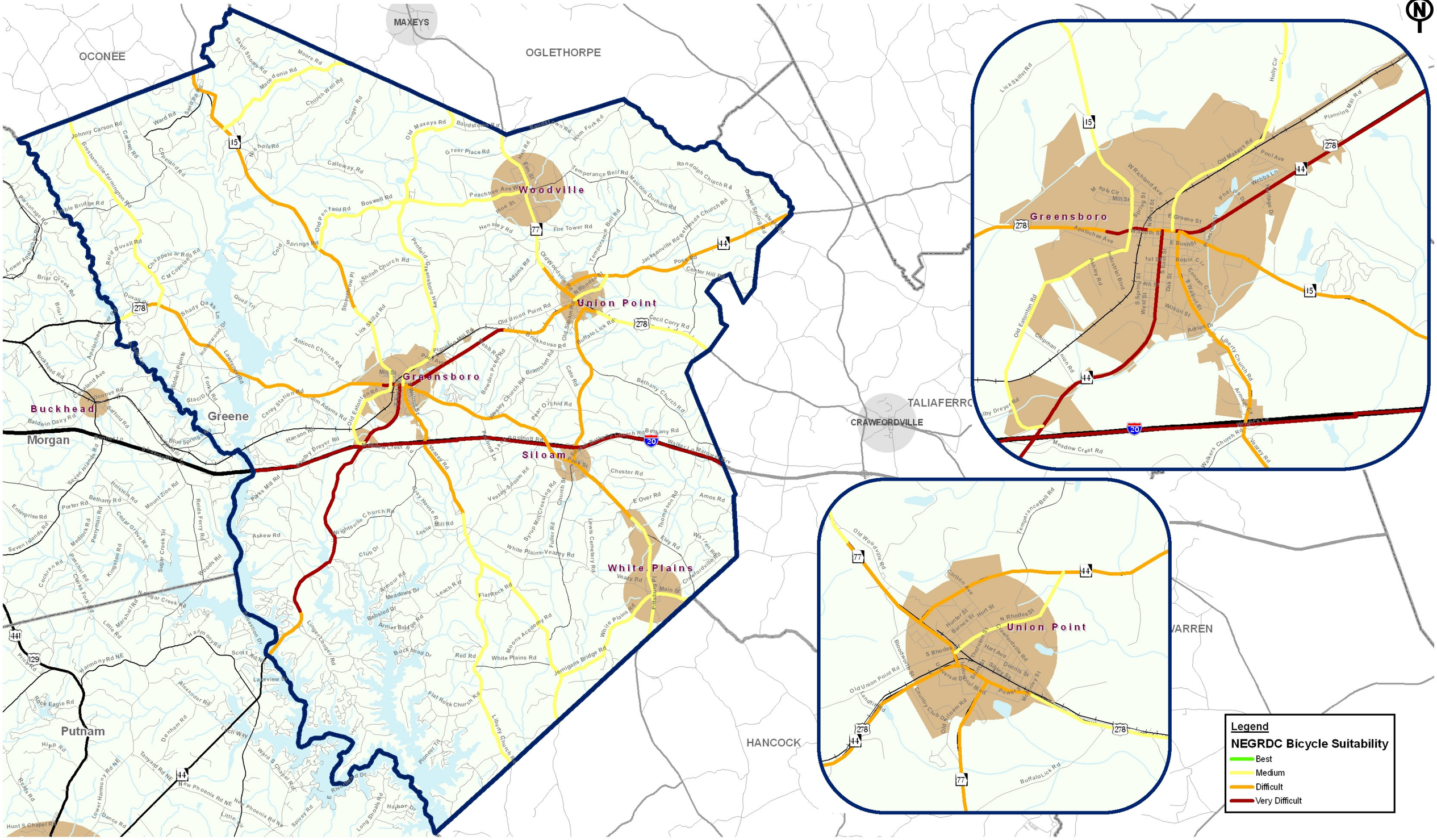


NEGRDC's Bicycle & Pedestrian Plan

East Georgia Multi-County Transportation Study

Figure No: 5.4.1

HNTB



NEGRDC's Bicycle Suitability Map

East Georgia Multi-County Transportation Study

5.5 Greene County Comprehensive Plan

The Greene County Comprehensive Plan was updated and completed in 2004. The Comprehensive Plan was developed to guide the growth of the County through 2024. To the greatest extent possible, the transportation planning effort is being developed with respect to land use issues and opportunities in Greene County. It is important to review the Comprehensive Plan because of the critical linkage between land use and transportation. Table 5.5 presents key findings in the Comprehensive Plan.

Table 5.5
Summary of Greene County Comprehensive Plan

Key Data/Trends	Description		
Population		**RDC Estimates (W&P)**	**US Census Estimates**
	1980:	11,407	11,193
	1990:	11,848	11,793
	2000:	14,416	14,406
	2005:	15,010	N/A
	2010:	15,662	17,750
	2015:	16,756	19,260
Commute Patterns	Living and working in Greene:	68.7%	
	Living in Greene and working in Jasper:	0.0%	
	Living in Greene and working in Morgan:	7.1%	
	Living in Greene and working in Putnam:	4.1%	
	Living in Greene and working elsewhere:	20.1%	
Largest Employers in 2000	Ritz Carlton Hotel (500 employees)		
	Reynolds Plantation (300 employees)		
	Linger Longer Development (300 employees)		
Land Uses		**2004**	**2024**
	Agriculture/Forestry:	87.36%	65.50%
	Residential (single family and mobile homes):	7.46%	18.60%
	Public/Institutional:	0.36%	0.20%
	Transportation/Communications/Utilities:	2.96%	1.50%
	Commercial:	0.21%	0.40%
	Industrial:	N/A	0.60%
	Parks/Recreation/Conservation:	N/A	12.00%
	Undeveloped:	1.65%	1.20%

Key Data/Trends	Description
Growth Areas in the County	**Residential Uses** • The Lake Oconee area has experienced tremendous growth and developed into a suburban community. • The County has become an attractive retirement destination, which has contributed to the increase in residential development. • Infill development may become more desirable in the future to create a more contiguous development pattern. **Intensive Agricultural (Poultry Farms, etc.)** • Majority of land use is agricultural. **Commercial Uses** • Major transportation corridors and intersections are commercial corridors. • Areas along SR 44 adjacent to Greensboro and along the East Greensboro Bypass are considered suitable for commercial development. • Veazey Road and Liberty Church Road are expected to increase in residential development which will increase the neighborhood commercial developments in these areas. **Industrial Uses** • Future expansion of existing industrial parks adjacent to Greensboro will occur. **Parks/Recreation/Conservation** • Oconee Wildlife Management Area • Redlands Wildlife Management Area • Scull Shoals Historic Site
Planning Issues in Cities	• The majority of land in the City of Greensboro has already been developed. Some opportunities for infill development may exist. • Little has changed in the remaining municipalities of Siloam, Union Point, White Plains, and Woodville; and the future forecast illustrate similar trends.
Land Use Issues	• Despite increases in residential development, majority of the County is expected to remain in agricultural, vacant, or state ownership. • Additional acreage will be needed for institutional uses as the population increases. • The County intends to concentrate future commercial development in nodes.
Transportation-Related Goals, Objectives, and Strategies	• Currently, no comprehensive sidewalk inventory exists. • Maintain existing bridges and signalized intersections, add new facilities and equipment as needed.

6.0 Assessment of Transportation Facilities

Extensive data was collected for the transportation facilities within Greene County. This data collection effort included inventorying existing roadways, bicycle and pedestrian facilities, transit, freight, bridges, traffic collisions, rail, and airport services. The following sections provide an overview of the existing transportation system. This information will form the basis for evaluating its performance and determining potential future improvements.

Based on the existing conditions inventory and assessment, an analysis of operating conditions was conducted for the following elements:

- Public Transportation;
- Freight Transport;
- Airport Facilities;
- Bicycle and Pedestrian Facilities;
- Bridges;
- Safety;
- Roadway Characteristics;
- Roadway Operating Conditions; and,
- Citizen and Stakeholder Input.

This analysis documents the baseline operating conditions for each element of the transportation system and forms the foundation for development of improvement recommendations.

6.1 Public Transportation

Greene County has a rural transit system operated by Advantage Behavioral Health Systems. This “fare box” service is part of the Section 5311 Rural Transportation Program, contracted through GDOT. The program offers improved accessibility to shopping, medical, educational, employment, and social activity centers for residents of the County. Service is available Monday through Friday from 6 a.m. until 5 p.m. The public may phone 24 hours in advance to arrange a round-trip pick up and return. The fare is $2.00 for one-way in-town trips (within Greensboro) and $3.00 for trips elsewhere in the County.

Advantage Behavioral Health Systems operates three 15-passenger buses, one of which is equipped with a wheel chair lift, and two vans. In addition to the 5311 services, they transport Greene County’s seniors, developmentally disabled, and individuals referred by the Department of Family and Children Services, all contracted and funded by the Department of Human Resources (DHR). The breakdown of services provided by each department/agency is shown in Table 6.1.1 below.

Table 6.1.1
Greene County Percent Transit Trips by Department/Agency

	GDOT 5311 Rural Transportation Program	DHR Seniors	DHR Disabled	DHR Family and Children Services
2006 (January to August)	22%	46%	26%	6%
2005	17%	45%	30%	8%

Source: Advantage Behavioral Health Systems

Service statistics for all vehicles for 2006 year-to-date and 2005 are presented below in Table 6.1.2 below.

Table 6.1.2
Greene County Rural Transit Service Statistics

Service Statistics – 2006 (January to August) All Vehicles	
Average Total Miles per Month	15,283
Average Total Hours of Service per Month	805
Average Number of One-Way Passenger Trips per Month	2,113
Average Trips per Vehicle per Day	22

Source: Advantage Behavioral Health Systems

Table 6.1.3 further characterizes the passengers that utilize Greene County's transportation services each month. The data shows that two-thirds of its passengers are senior citizens and the disabled. Historically, these populations, along with low-income residents, are at a disadvantage with private transportation, and access to employment, medical, educational, and recreational opportunities is severely diminished.

Table 6.1.3
Greene County Rural Transit Ridership Statistics

Elderly	Non - Elderly	Disabled		White	Black	Hispanic	Other
56%	34%	10%		11%	88%	0%	1%

Note: From January-February 2006
Source: Advantage Behavioral Health Systems

Planning for additional services needs to consider future population projections for seniors. Table 6.1.4 presents the US Census reports projections for these potential transit system users.

Table 6.1.4
US Census Population Projections

	2000		2010		2025	
	Number of Persons	Percent of County	Number of Persons	Percent of County	Number of Persons	Percent of County
Total Population	14,406	-	15,914	-	18,175	-
Population 65 years of age or older	2,073	14.4%	2,279	14.3%	2,588	14.2%

Source: US Bureau of the Census

Greene County's percentage of population age 65 and over (14%) exceeds the Georgia statewide average of 9.6%. While the overall number of elderly persons is expected to increase to 2,588 persons by 2025, the percentage of population 65 and over is expected to slightly decrease. Planning for future services needs to consider the projected growth in number of elderly individuals in the next 20 years.

Approximately 32% of Greene County's households had income below $20,000 per year in 2000 according to the US Census. This high percentage of low-income households indicates strong need for rural transportation services to provide access to jobs and educational opportunities. In addition, the population of persons with a disability, age 21 and over, was 2,957, or 20.5% of the County's total population in the year 2000. This disabled population benefits from access to medical care, shopping, and recreational facilities provided by the transit program.

The 5311 Program appears to adequately accommodate County residents. Advantage Behavioral Health Systems reports that they have not had to refuse a trip to any customer due to lack of service availability. Limited funding for the DHR program prohibits these services from being expanded. The County feels that, overall, both programs sufficiently meet the needs of its residents at this point in time.

6.2 Freight Transport

The identification of freight corridors and preservation of freight mobility is a key component of the Greene County Multi-Modal Transportation Plan. There are currently five roadways in Greene County that are designated as truck routes and one active rail line. The following sections summarize the existing freight activity and facilities in Greene County.

CSX Railroad operates up to 15 trains per day along 20 miles of rail through Greene County on a route which runs between Atlanta, Augusta, and Savannah. The track transports about 15 million gross ton miles per mile of track per year (MGTM/M). This measure of rail traffic density provides an indication of the relative use of the rail system and demand for service along a particular track section. By comparison, some of Georgia's most heavily used mainlines transport more than 30 MGTM/M per year.

Products transported through the County via rail include intermodal containers, coal, lumber and wood products, and pulp and paper products. Greene County, however, is not a point of origination or termination for any of these commodities, meaning that they typically move through the County after originating in other counties or that they are moving through Greene County to reach other destinations in or out of the state.

Greene County has 40 railroad crossings. Thirty-three of these are at-grade, four are underpasses, and three are overpasses. The crossings located at Corry Road and at Washington Highway are most utilized by vehicles, each with Average Annual Daily Traffic (AADT) counts in their vicinity exceeding 1,500 vehicles per day. (GDOT Office of Traffic Safety and Design)

The Federal Railroad Administration, Office of Safety Analysis, reports 24 accidents at rail crossings in Greene County for the period 1975 to 2005. Locations with the greatest frequency of accidents are Chapel Street with four, Pool Road with three, and Planning Mill Road with three. Table 6.2 displays the accidents which have occurred in the last 10 years.

Table 6.2
Greene County Railroad Crossing Accident Data (1995 to 2005)

Crossing ID	Location	City	Date of Incident	Highway User Involved	Position	Injuries
279568K	McKinley St	Union Point	08/01/05	Auto	Moving over crossing	No injuries
279564H	Dirt Crossover CR 119	Union Point	09/26/05	Auto	Stopped on crossing	Crossing user injured
279577J	Pool Rd	Greensboro	08/15/01	Truck	Moving over crossing	Crossing user killed
279573G	Cunningham Rd	Union Point	10/03/00	Truck-trailer	Stopped on crossing	No injuries
279577J	Pool Rd	Greensboro	06/10/00	Auto	Moving over crossing	Crossing user injured
279575V	Planning Mill Rd	Greensboro	12/11/99	Auto	Stopped on crossing	No injuries
279575V	Planning Mill Rd	Greensboro	01/18/97	Auto	Stopped on crossing	No injuries
279578R	Chapel St	Greensboro	4/30/96	Auto	Moving over crossing	Crossing user injured
279575V	Planning Mill Rd	Greensboro	09/29/95	Auto	Stalled on crossing	No injuries

Source: Federal Railroad Administration – Highway-Rail Grade Crossing Accident/Incident Report, 2006

The SAG has expressed concern over two crossings in need of improvements. Crossing #279573G - Cunningham Road forms a misaligned intersection with Brick House Road, creating cumbersome vehicular movement over this crossing. This crossing is also located near the park, and pedestrian usage to access the park further compromises safety.

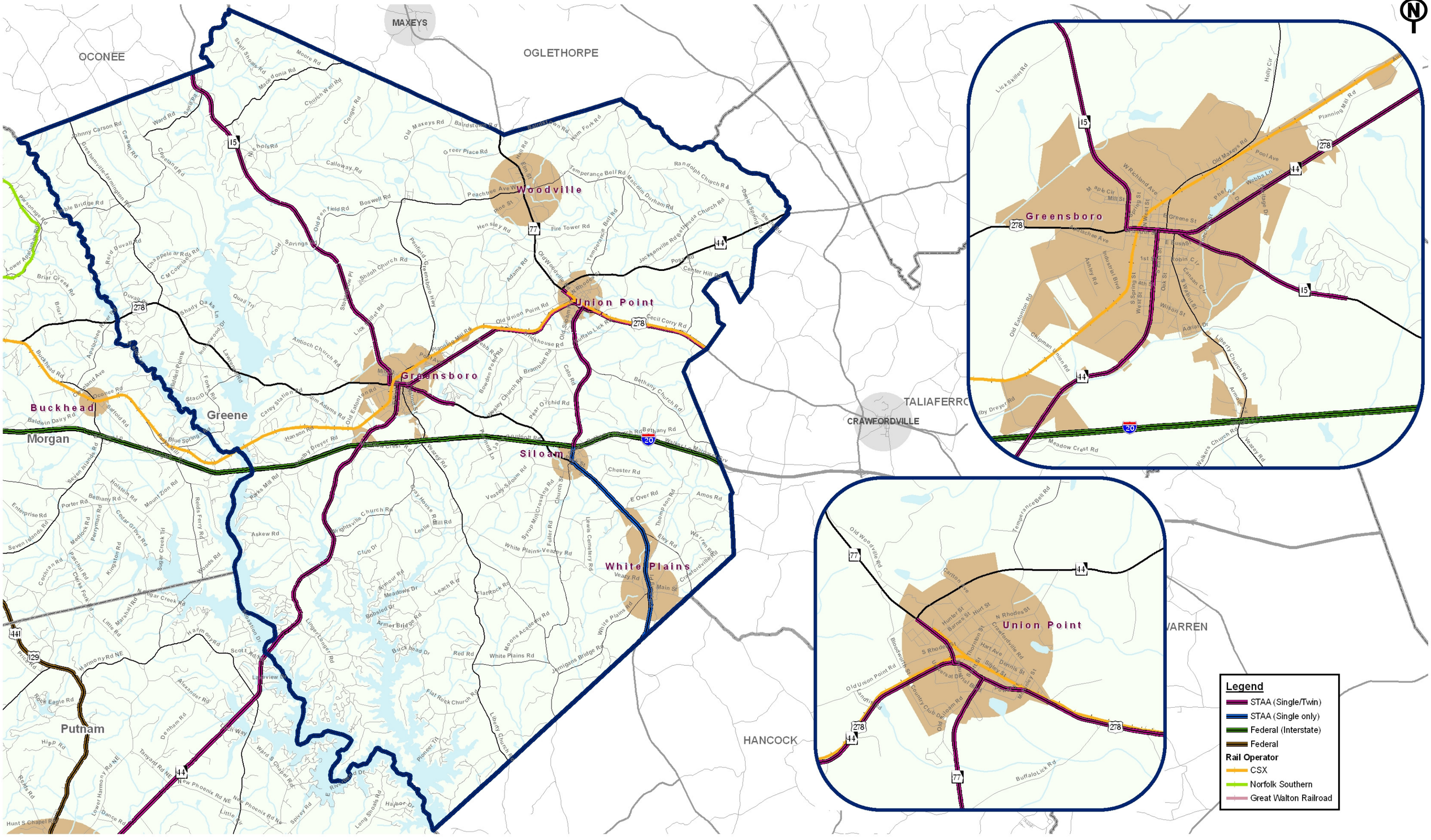
In addition, traffic congestion is prevalent at the Willow Run Road crossing. This crossing is also part of the main route law enforcement use to reach I-20. While this crossing is well equipped with safety features, the Group expressed that it would be beneficial to have the grade-separated crossing at Stagecoach Road, currently closed, as an alternate route.

There are no programmed railroad improvements in the GDOT Construction Work Program scheduled for Greene County at this time.

Surface Freight Movement

The primary surface freight movement in Greene County is occurring on I-20, SR 15, SR 44, and US 278. In order to better understand the movement of freight in Greene County, local industries were surveyed to determine the average number of trucks entering and exiting their facilities on a daily basis as well as the predominant route the freight traffic uses coming to and departing from their facilities. This information along with truck traffic counts entering and exiting the County was calculated to ensure that freight movement is accounted for in the transportation planning process.

Figure 6.2 displays the freight and rail facilities in the County.



Freight Transportation Facilities

6.3 Airport Facilities

There is currently one airport located in the County. Greene County Regional Airport is located two miles east of Greensboro along US 278. The Greene County Airport Authority, established in 1978, oversees the operation, maintenance, and development of the facility and leases the airport to a fixed-base operator, Oconee Air Service. The airport is classified as a Level II airport - A Business Airport of Local Impact, by the state of Georgia classification system. Airports are classified based on runway length and width, lighting systems, visual aids, approach systems, general aviation facilities, and services. All of the following information about the airports in the study area is taken from GDOT's 2006-2007 Aviation Directory or GDOT's 2003 General Aviation System Plan.

The nearest commercial aviation airport is Athens Ben Epps Airport which provides service to Charlotte and other regional locations. Additionally, Hartsfield-Jackson International Airport is located south of Downtown Atlanta via I-20. It is approximately 70 miles west, or about an hour's drive, of the study area. The Augusta Regional Airport is located about an hour and half drive east of the study area along I-20.

Situated on 131 acres, Greene County Regional Airport has one runway, Runway 06/24, which is 5,000 feet long and 75 feet wide. The runway is equipped with medium intensity runway lighting, turnarounds on both runway ends, a precision approach path indicator, and a visual approach slope indicator. The airport also has a rotating beacon, a segmented circle, a wind cone, and GPS approach to Runway 6 and 24.

The airport has approximately 7,000 annual aircraft takeoffs and landings, averaging 20 operations per day. The airport accommodates a variety of aviation related activities, 80% of which are corporate travel with the remaining 20% consisting of recreational flying and other activities. The airport has recently been improved with a runway overlay to increase capacity to accommodate large business jets. Other improvements include a new parking ramp expansion and a new parallel taxiway. These upgrades have increased executive and tourist use of the facility and have aided industrial growth in the County.

Current landside facilities and services include a full-service fixed based operator, Oconee Air Service, who offers limited maintenance service, a fuel concession providing AvGas and Jet A fuels, and aircraft security. The airport also has a 3,500 square foot administration building/terminal with an air traveler's lounge, conference room, pilot's lounge, and flight planning computers. There are 40 auto parking spaces, 19 apron parking spaces, 22 hangar spaces, and a rental car service.

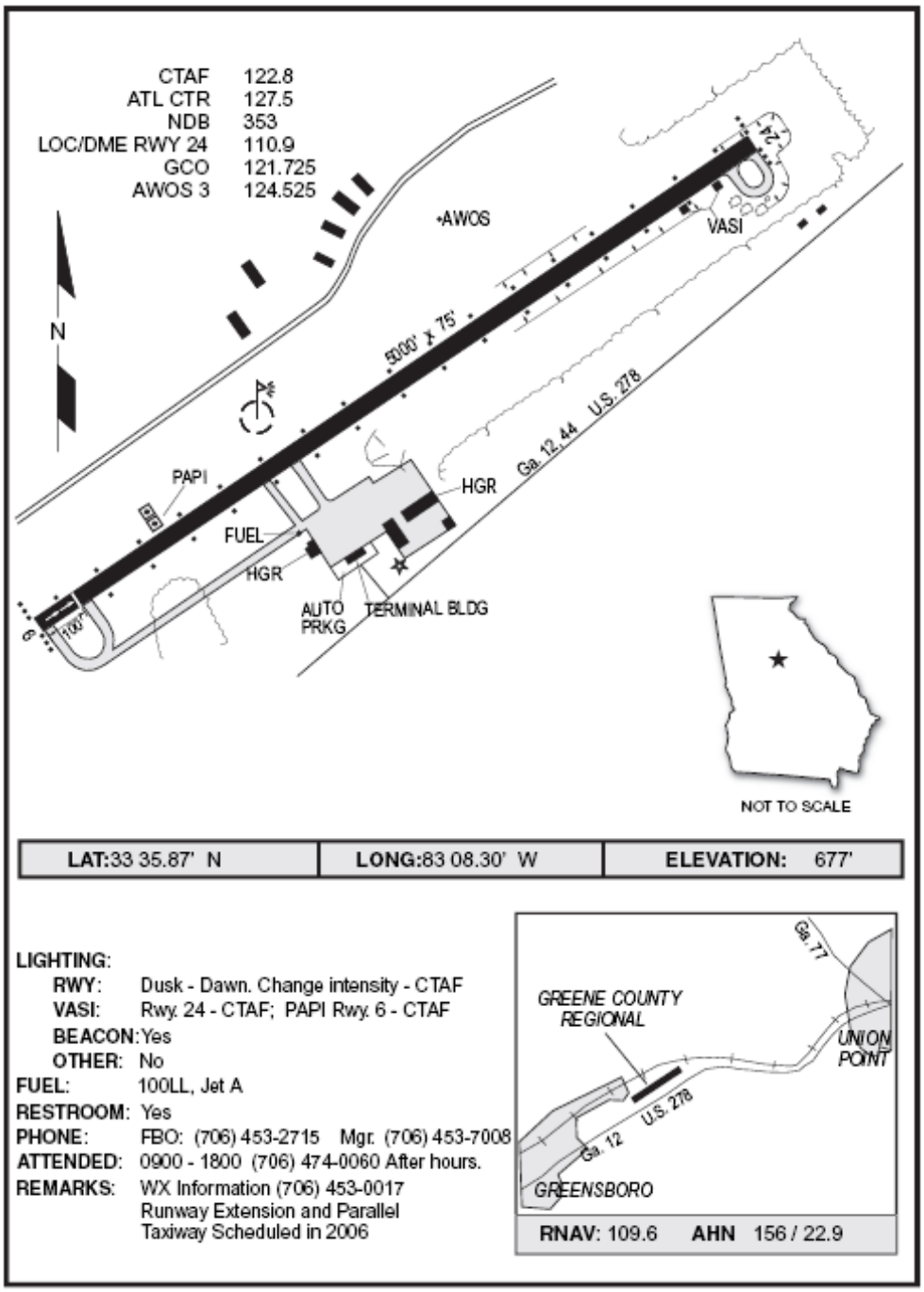
Future plans call for the runway to be extended to 5,500 feet, widened from 75 to 100 feet, and for the installation of an instrument landing system for inclement weather. This will upgrade the airport to Level III (business airport of regional impact) standards, and requires acquisition of additional property to increase the facility's boundary.

The airport serves an important function for tourists, industrial prospects and developers, the Ritz Carlton resort, and other primary and secondary residential developments in

Greene County. Limited site distance on US 278, however, hinders vehicle access to the airport and creates a potentially dangerous intersection. A turn lane into the facility from US 278 could improve this condition.

Figure 6.3 shows a schematic layout of the Greene County Regional Airport. Table 6.3 presents the airport's Capital Improvement Program for 2007 to 2011.

Figure 6.3
Greene County Regional Airport



Source: Georgia Department of Transportation

Table 6.3
Greene County Regional Airport Capital Improvement Program

Fiscal Year	Description	Federal Cost	State Cost	Local Cost	Total Cost
2007	Precision Approach	$760,000	$20,000	$20,000	$800,000
	Apron Expansion	$190,000	$5,000	$5,000	$200,000
	Annual Total:	*$950,000*	*$25,000*	*$25,000*	*$1,000,000*
2008	Security Fencing - Perimeter	$570,000	$15,000	$15,000	$600,000
	Annual Total:	*$570,000*	*$15,000*	*$15,000*	*$600,000*
2009	Hangar Relocation	$0	$0	$120,000	$120,000
	Annual Total:	*$0*	*$0*	*$120,000*	*$120,000*
2010	Crack Seal Apron/Taxiway	$14,250	$375	$375	$15,000
	Environmental Assessment – North Terminal	$71,250	$1,875	$1,875	$75,000
	Annual Total:	*$85,500*	*$2,250*	*$2,250*	*$90,000*
2011	Land Acquisition – North Terminal	$237,500	$6,250	$6,250	$250,000
	Annual Total:	*$237,500*	*$6,250*	*$6,250*	*$250,000*
	Grand Total:	**$1,843,000**	**$48,500**	**$168,500**	**$2,060,000**

Source: Georgia Department of Transportation

6.4 Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities are an important part of a multi-modal transportation system designed to efficiently move people. It is important to consider that everyone is a pedestrian at one point in almost every trip, even if the primary mode of travel for a trip involves a personal vehicle or transit. Sidewalks are an important element along roadways near local activity centers such as schools, commercial centers, and public recreation areas, all of which attract significant pedestrian and vehicular traffic. Crosswalks at roadway intersections in areas with pedestrian activity can be utilized to minimize conflicts between motor vehicles and pedestrians. Fortunately, bicycle and pedestrian planning is already well underway in Greene County with assistance from the Northeast Georgia RDC.

Greene County has many recreational attractions that inspire the need for alternative forms of transportation to enable residents and tourists to enjoy all the County has to offer. Several examples of these attractions are Lake Oconee, Reynolds Plantation/Ritz Carlton Lodge, Greshamville/Scull Shoals, Harbor Club on Lake Oconee, Granite Shoals Marina, Old Salem Park, Parks Ferry, and Oconee National Forest. These attractions will be

considered when developing recommendations for additional facilities to foster bicycle and pedestrian connectivity.

The sidewalk network in Greene County is very sparse. The existing sidewalk network in Greensboro provides adequate connectivity between downtown and the surrounding neighborhoods. The City of Greensboro continues to monitor the adequacy of the sidewalk network, particularly in the downtown district. The third phase of the Greensboro Streetscape Plan will further enhance the City's bicycle and pedestrian facilities. The sidewalk network in Union Point is in need of improvement. The City of Woodville has identified the need to extend sidewalks into residential areas. Greensboro and Woodville are both in need of street lighting to increase public safety.

According to GDOT's crash database, from 2003 to 2005, there were six reported bicycle and pedestrian related crashes in Greene County. Of these reported crashes, one was a fatality which occurred along US 278 south of Planning Mill Road. A review of the information in the crash database did not identify system contributing causes.

Existing Recommendations

The *Northeast Georgia Regional Bicycle and Pedestrian Plan* identifies the suitability of major roadways in the twelve-county Northeast Georgia Region for bicycling considering traffic volume, posted speed limit, shoulder width, volume of truck traffic, and roadway functional classification. Figure 5.4.2 previously illustrated the findings in Greene County ranging from "Very Difficult" to "Best" regarding cycling conditions on the existing roadways in the County. No routes in Greene County were identified as "Best" for cycling. The routes listed below were identified as "Medium" indicating the most favorable routes in the County:

- Liberty Church Road from Veazey Road south to the Hancock County Line;
- Veazey Road from just north of Liberty Church Road south to the Hancock County Line;
- Jernigans Bridge Road from Veazey Road east to the Hancock County Line;
- SR 15 from Eley Road south to the Hancock County Line;
- US 278 from SR 44 east to the Taliaferro County Line;
- SR 77 north of Union Point north to the Oglethorpe Line;
- Farmington Road from US 278 north to the Oconee County Line;
- Macedonia Road from SR 15 east to the Oglethorpe County Line;
- Maxeys Road from Penfield Road north to the Oglethorpe County Line;
- Penfield Road from Maxeys Road south into Greensboro;
- Boswell Road from SR 15 east to Callaway Road;
- Callaway Road from Boswell Road east to Penfield Road; and
- Penfield Road from Callaway Road east to SR 77 in Woodville.

The Northeast Georgia Regional Bicycle and Pedestrian Plan outlines recommendations for future improvements to the transportation system to better accommodate bicyclists and pedestrians. Table 6.4 shows these recommended improvements as previously presented in Figure 5.4.1.

Table 6.4
Proposed NEGRDC Bicycle and Pedestrian Facility Improvements

Location	Description
SR 15 from US 278 to Bowden Pond Rd	Bicycle Lane with Sidewalk
SR 15 from US 278 to Lick Skillet Rd	Bicycle Lane with Sidewalk
SR 44 from US 278 to I-20 Interchange	Bicycle Lane with Sidewalk
Martin Luther King Dr from US 278 to Veazey Rd	Bicycle Lane with Sidewalk
Penfield Rd from US 278 to Richland Creek Bridge	Bicycle Lane with Sidewalk
US 278 from Vandiver Rd to Brick House Rd	Bicycle Lane with Sidewalk
SR 15 from Lick Skillet Rd to Oconee County Line	Bicycle Lanes
SR 15 from Bowden Pond Rd to Hancock County Line	Bicycle Lanes
US 278 from Morgan County Line to Vandiver Rd	Bicycle Lanes
US 278 from Brick House Rd to Taliaferro County Line	Bicycle Lanes
Callaway Rd from Macedonia Church Rd to Penfield Rd	Paved Shoulder
Copeland Rd from Double Bridges Rd to US 278	Paved Shoulder
Double Bridges Rd from Copeland to Farmington Rd	Paved Shoulder
Farmington Rd from Double Bridges Rd to US 278	Paved Shoulder
HD Gentry Rd from Liberty Church Rd to Oconee Wildlife Management Area	Paved Shoulder
Liberty Church Rd from Veazey Rd to HD Gentry Rd	Paved Shoulder
Macedonia Church Rd from SR 15 to Nichols Rd	Paved Shoulder
Nichols Rd from Macedonia Church Rd to Oglethorpe County Line	Paved Shoulder
Penfield Rd from Richland Creek Bridge to Callaway Rd	Paved Shoulder
Penfield Rd from Callaway Rd to SR 77	Paved Shoulder
Scull Shoals Rd from Macedonia Church to Scull Shoals Historic Site	Paved Shoulder
Trimble Bridge Rd from Farmington Rd to Morgan County Line	Paved Shoulder
Veazey Rd from Martin Luther King Dr to Liberty Church Rd	Paved Shoulder
SR 44 from I-20 Interchange to Putnam County Line	Shared Use Path
SR 77 from US 278 to Oglethorpe County Line	Shared Use Path
Oconee River from US 278 to Oconee County Line	Shared Use Path

Source: Northeast Georgia Regional Bicycle and Pedestrian Plan

Additional Considerations

In addition to the recommendations outlined in the recently prepared *Northeast Georgia Regional Bicycle and Pedestrian Plan*, several further concerns have been identified for consideration when evaluating the needs and future conditions in Greene County. The following issues of local concern will be evaluated in the development of the multi-modal plan:

- Bicycle and pedestrian connectivity between businesses on SR 44 in and around Greensboro;
- Bicycle facilities on Carey Station Road;

- Bicycle Facilities on Linger Longer Road; and,
- Bicycle Facilities on Walker Church Road.

Also, locations such as schools, major recreational sites, and activity centers within the County should also be considered for bicycle and pedestrian improvements. Greene County has four public schools and one private school:

- Greensboro Elementary School;
- Union Point Elementary School;
- Anita White Carson Middle School in Greensboro;
- Greene County High School in Greensboro; and,
- Nathaniel Greene Academy in Siloam.

There is potential for a new Charter elementary, middle, and high school in Greene County. The new school site will likely be located on Carey Station Road near SR 44. A specific site location is not known yet. As the potential for new bicycle and pedestrian facilities are being evaluated, these locations will be considered as primary locations that would be desirable for improved bicycle and pedestrian access.

To help reduce overall costs of implementing a bicycle and pedestrian network, new facilities should be implemented concurrent with subdivision development and roadway resurfacing, widening, or utility upgrade improvements. Recommendations for development of a countywide system for bicyclists and pedestrians will focus on connectivity with the existing designated bicycle routes, system of sidewalks, neighborhood streets, and pathway connections. Select planned improvements, listed below, included in GDOT's Construction Work Program will be evaluated to ensure that any opportunities for the inclusion of bicycle or pedestrian facilities in the project scope are considered.

- #4292 - Intersection improvements at SR 12 and Cunningham Drive
- #5310 - Roadway work along SR 15 Bypass from US 278 to SR 15
- #6252 - Widening of SR 44 from west of US 441 Bypass to Linger Longer Road
- #6253 - Widening of SR 44 from Linger Longer Road to East Greensboro Bypass
- #6605 - Greensboro Streetscape Plan – Phase III
- #6944 – Realignment of SR 44 at Old Eatonton Road north of I-20 intersection relocation
- #7528 - Interchange at I-20 and Carey Station Road
- #8007 - Widening of SR 15 from Greensboro Bypass to Antioch Church Road
- #8008 - Roadway project along Greensboro Bypass from Lick Skillet Road to Beaver Dam Creek
- #8009 - Widening of SR 15 from Peach Orchard Road to Greensboro Bypass
- #8010 - Realignment of SR 15 Relocate from Pear Orchard Road to SR 77
- #8011 - Widening of SR 77 Relocate from Siloam Bypass to SR 15 Relocate
- #8012 - Roadway project along East Siloam Bypass from SR 77 to south of I-20
- #8013 - Widening of SR 15 from White Plains Bypass to east of English School Road

- #8014 - Roadway project along West White Plains Bypass from Edwards Road to Eley Road
- #222080 - Passing lanes on SR 15 N/Greensboro at milepost 15.4-17.3
- #232210 - Roadway project along East Greensboro Bypass from SR 44 S to SR 44 NE
- #270683 - Bridge at Copeland Road and Greenbrier Creek southwest of Penfield
- #M003596 - Shoulder work on SR 402 Mill and Pave Shoulders (Greene/ Taliaferro)
- #S005782 - Roadway project along Meadow Crest Road (SR 44 to CR 63 acceleration and deceleration)
- #S005876 - Preliminary engineering for Point Royal Road and Stewart Creek
- #S007127 - Miscellaneous improvements to 14 various County Roads

Public outreach identified bicycle and pedestrian enhancements as a desired quality of life improvement in selected areas including downtown areas and around schools. Field observations were conducted to identify existing deficiencies in the pedestrian and bicycle networks. There are areas where sidewalks have been provided, but in a limited manner that inhibits their usefulness by breaking up the sidewalks with a gap of unfinished surface. Another deficiency common to all areas is the lack of pedestrian accommodation at intersections. Several locations lack pedestrian signals, crosswalk striping, or both.

There may be opportunities for new multi-use trails linking town centers, recreational areas, schools, and other locations. Transportation improvements to the pedestrian, bicycle, and trail networks should be considered in the appropriate areas and corridors to better meet the needs of pedestrians and bicyclists in Greene County.

Bicycle System Elements

Once a location for improved bicycle connectivity is determined, the type of improvement must also be considered. Factors such as lane width, vehicle speed, sight distance, frequency of intersections, pavement surface quality, and hazard removal need to be considered in the facility selection and design process. In addition to facility selection and design, bicycle systems should be designed to ensure the security of bicycles at typical bicyclist destinations. Primary destinations such as schools, public recreation areas, commercial businesses, and restaurants should include bicycle racks or lockers for securing bicycles.

There are four primary types of bicycle facilities: bike paths, bike routes, bike lanes, and bike shoulders. A description of each type of facility along with design considerations are listed below. Transportation Planners and Engineers should refer to AASHTO's Guide for the Development of Bicycle Facilities when selecting and designing bicycle facilities.

- **Bike Paths -** A bike path is a special pathway designated for the exclusive use of bicycles where cross flows by pedestrians and motorists are minimized. A bike path is usually buffered from vehicular roadways through the use of a landscaped strip or physical barrier. It is also usually grade separated but may have at-grade crossings. Bike paths are identified through proper signing and also may have pavement markings.

The paved width and the operating width of the bicycle path are primary design factors. Under most conditions, a paved width for a two-directional shared (bicycles and pedestrians) path is 10 feet. In rare instances, a reduced width of 8 feet may be adequate. Under certain conditions including anticipated high use or the need for maintenance vehicle use, a paved width of 12 feet is required. A minimum of 2-foot width graded area should be maintained adjacent to both sides of the paving.

- **Bike Routes** - A bike route is a roadway identified as a bicycle facility by guide signage only. There are no special lane markings and bicycle traffic shares the roadway with motor vehicles. There are several reasons for designating signed bike routes. A route may be signed if it provides continuity to other bicycle facilities such as bike lanes or bike paths. A route may be signed if it is a common route for bicyclists through a high demand corridor or if the route is preferred for bicycling due to low motor vehicle traffic or paved shoulder availability. Route signage may be preferred if the route extends along local neighborhood streets and collectors leading to an internal destination such as a park, school, or commercial district.

  Bicycle routes should be plainly marked and easy for the bicyclist to interpret. The route should provide through and direct travel in bicycle-demand corridors. Traffic control devices (stop signs and signals) should be adjusted to accommodate bicyclists on the route. Street parking should be removed where possible to increase the safety of the rider. A smooth surface should be provided and maintained. Wide curbs are desirable on designated bike routes.

- **Bike Lanes** - A bike lane is a designated strip usually located along the edge of the paved area outside the travel lanes or between the parking lane and the outside motor vehicle through lane. Bike lanes should be one way facilities and carry bike traffic in the same direction as adjacent motor vehicle traffic. On one way streets, bike lanes should typically be placed on the right side of the street. Bike lanes are identified by "Bike Lane" markings on the pavement and other pavement markings or signs deemed appropriate to give adequate guidance to users of the facility. Bicyclists usually have exclusive use of a bike lane for travel, but must be aware of cross flows by motorists at driveways and intersections and also by pedestrians.

  For roadways with no curb and gutter, the minimum bicycle lane width is 4 feet. If parking is permitted, the bike lane should be placed between the travel lane and the parking area and should have a minimum width of 5 feet. If a curb and gutter is present, the minimum width from the face of the curb to the bike lane stripe should be 5 feet if the gutter pan is smooth for bicycle travel. Four feet of maneuverable surface is always necessary.

- **Bike Shoulders** - Bike shoulders are paved shoulders that are smooth and sufficiently wide enough for use by bicyclists. Paved shoulders are used by bicyclists if they relatively smooth, sufficiently wide enough, and kept clean of debris. Adding or improving paved shoulders often can be the best way to accommodate

bicyclists in rural areas. Paved shoulders also provide valuable maneuvering room and reduce potential motor vehicle conflicts for slow-moving bicycles traveling up a hill.

Ideally, a paved bicycle shoulder should be at least 4 feet wide. However, where 4 feet cannot be accommodated, any shoulder is better than none. Rumble strips used to alert motorists that they are driving on the shoulder are not recommended on bike shoulders in the travel path of the cyclist. If rumble strips are placed on the shoulder, there should be additional shoulder adequate for bicycle travel in order to designate a shoulder as a bike shoulder. A bike shoulder is multi-faceted in that it can serve more than one function (i.e. it can serve as a temporary parking lane, an emergency lane, or a bus stop as well as an area for cyclists to travel within).

Pedestrian System Elements

There are also several considerations when selecting the type of pedestrian facility to implement. Along local streets in residential areas, sidewalks with a four-foot clear width should be used. Five-foot clear width sidewalks should be used along collector streets, and six-foot clear width should be used along arterials. In commercial areas with high pedestrian and vehicular volumes, sidewalks of six or more feet should be considered. In order to maintain clear sidewalk widths, obstructions such as traffic signs, utility poles and supports should be placed outside the specified 4 to 6 foot sidewalk width. Grades on sidewalks should be limited to 6 to 8 percent in order to allow a consistent walking pace and ease of wheelchair use. Handicapped accessible ramps should be provided at driveways and intersections to provide accessibility to the system for everyone.

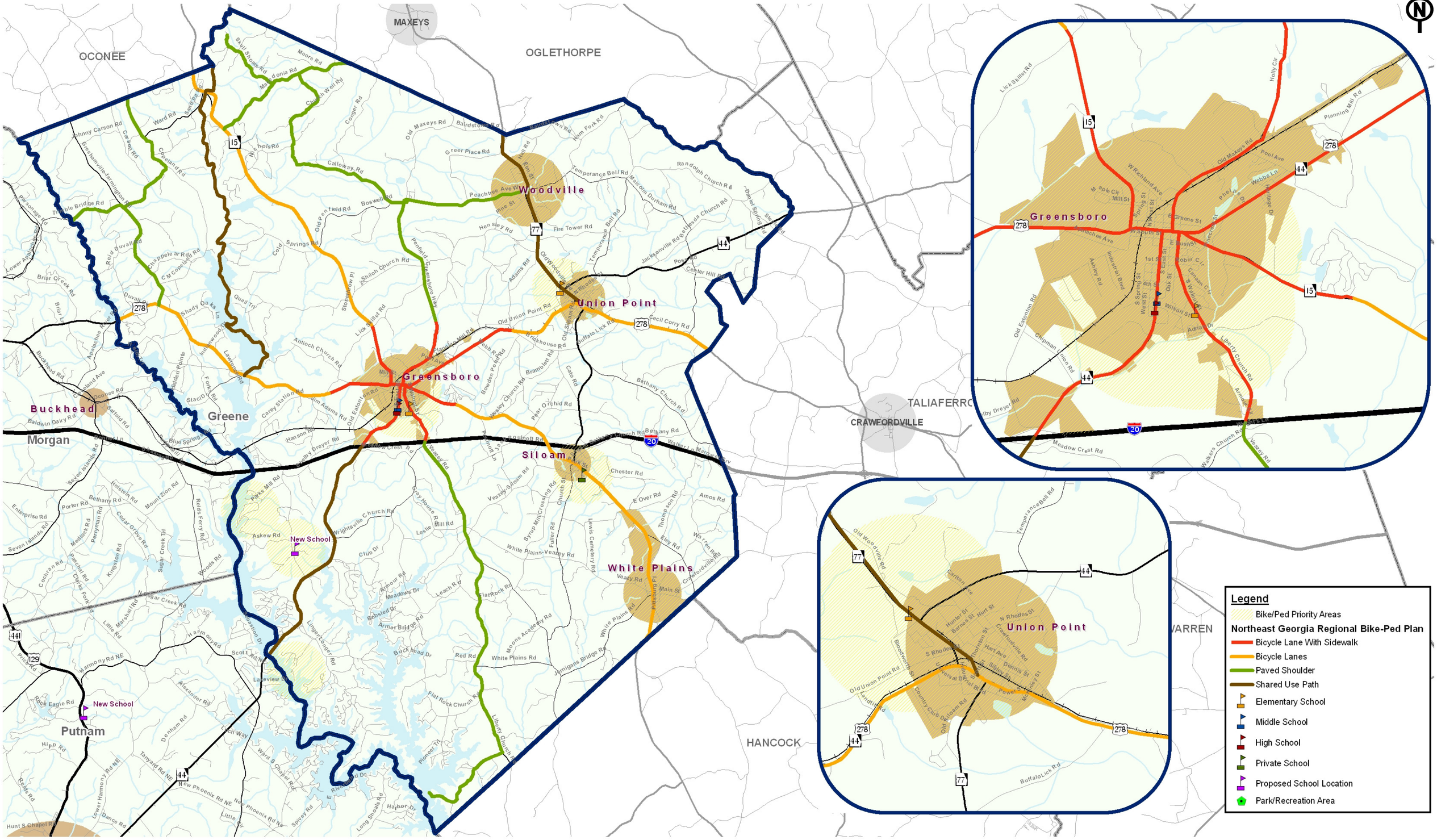
The following criteria are provided as a basis for determining when sidewalks should be considered:

- When streets are within ½ mile of a school;
- When a street is classified as a collector or arterial;
- When health and safety are threatened due to pedestrian/vehicular traffic conflicts;
- When sidewalks would provide system continuity between existing pedestrian destinations;
- When parks, playgrounds, libraries, or other attractors of small children are not served by sidewalks;
- When there is an existing, frequently traveled, unpaved path along a roadway; and,
- When sidewalks would provide an easy and safe route for pedestrians to gain access to public transportation.

Priorities for enhancing bicycle and pedestrian facilities are based on proximity to schools, libraries, and activity centers. The goal is to provide a bicycle and pedestrian network to serve the local and regional needs of the communities. Criteria were developed to identify and prioritize potential bicycle and pedestrian enhancements beyond those established in the RDC's Bicycle and Pedestrian Plan. Key bicycle and pedestrian prioritization criteria include:

- Proximity to Schools and other public facilities;
- Infill – Connecting existing pieces of the sidewalk network;
- Connectivity – Access between major bicycle and pedestrian origins and destinations;
- Roadway Expansion – Where roads are reconstructed or constructed along new alignments, provide sidewalks as appropriate;
- As new development occurs, encourage development to provide adequate right of way for bicycle and pedestrian facilities;
- Consistency with the GDOT Statewide Bicycle and Pedestrian Plan; and,
- Consistency with the Northeast Georgia Bicycle and Pedestrian Plan.

The bicycle and pedestrian priority areas are mapped in Figure 6.4.



Bicycle & Pedestrian Priority Improvement Areas

East Georgia Multi-County Transportation Study

Figure No: 6.4

HNTB

6.5 Bridges

One of the critical concerns for the County was bridge conditions. The County's bridges were evaluated to determine the need for potential improvement. Deficient bridges pose a major obstacle to a fully functional road network due to load limits or other restrictions. The study area was reviewed to identify all bridges and assess the need for potential improvements.

To facilitate the completion of this effort GDOT provided bridge condition reports for each bridge within the study area. A general measure of the condition of each bridge is the sufficiency rating. The sufficiency rating is used to determine the need for maintenance, rehabilitation or reconstruction of a bridge structure. Consultation with structural/bridge engineers shows that generally a bridge with a sufficiency rating above 75 should maintain an acceptable rating for at least 20 years with adequate maintenance. Structures with a sufficiency rating of 75 or lower have a useful life of less than twenty years and will require major rehabilitation or reconstruction work during the study horizon. All bridges with a sufficiency rating of fifty (50) or lower were identified as potentially deficient.

The study area was reviewed to identify all bridges within Greene County and document a sufficiency rating. Currently, 63 bridges exist within the County. Table 6.5 displays the collected information.

Table 6.5
Bridge Inventory

Road	Feature	Sufficiency Rating
Rail Fence Rd	Griffin Creek	13.65
Centennial Church Rd	Little Shoulderbone Creek	15.13
Old Eatonton Rd	CSX Railroad (279584U)	18.39
Copeland Rd*	Greenbrier Creek	31.68
Bethesda Church Rd	South Fork Little River	36.09
Randolph Church Rd	North Fork Little River	37.86
Geer Rd	McWhorter Creek	38.19
Woodville Rd	North Fork Little River	40.67
Johnny Carson Rd	Greenbrier Creek	45.14
Little Creek Church Rd	Little Greenbrier Creek	45.95
Cold Springs Rd	Town Creek	52.68
SR 44	South Fork Little River	58.53
Veazey Rd	Beaverdam Creek	62.41
Stage Coach Rd	I-20	66.07
Carey Station Rd	I-20	69.46
SR 15 - SR 77	Pierce Creek	76.41
North Pool Rd	CSX Railroad (279580S)	78.91

Road	Feature	Sufficiency Rating
SR 44	Town Creek	78.92
Greg Land Rd	Bowden Creek	81.47
Jernigan Bridge Rd	Bruce Creek	81.54
Swords Rd	Apalachee River	82.11
Callaway Rd	Fishing Creek	83.17
SR 15	Beaverdam Creek	83.38
White Plains Rd	Stewarts Creek	84.43
I-20	S Fork Ogeechee River	84.92
Chico Rd	I-20	86.11
Club Dr	Equestrian Trail	86.21
Walkers Church Rd	Beaverdam Creek	86.43
SR 44	I-20	87.30
SR 44	Richland Creek	88.13
Veazey Rd	I-20	88.30
Bethany Church Rd	I-20	88.39
I-20 (EB Lane)	Richland Creek	89.60
I-20 (WB Lane)	Richland Creek	89.60
I-20 (EB Lane)	SR 15	89.93
I-20 (WB Lane)	SR 15	89.93
Carey Station Rd	CSX Railroad (279586H)	90.29
SR 15	Beaverdam Creek	90.51
SR 15	Bowden Creek	91.37
Martin Luther King Jr Dr	Town Creek	91.39
Veazey Rd	Stewarts Creek	92.21
Penfield Rd	Town Creek	92.38
White Plains-Veazey Rd	Bruce Creek	92.45
US 278	CSX Railroad (279582F)	94.42
SR 15	Town Creek	95.39
SR 15	Harris Creek	95.86
SR 15	Oconee River	95.86
I-20	Beaverdam Creek	96.13
I-20	Oliver Creek	96.13
I-20	Bowden Creek	96.13
SR 15	Richland Creek	97.14
US 278	Lake Oconee (Oconee River)	97.43
Lake Oconee Trail	Browns Ford (Private)	99.00
Temperance Bell Rd	Thornton Creek	99.41
Leslie Mill Rd	Beaverdam Creek	99.62

Road	Feature	Sufficiency Rating
Stage Coach Rd	Richland Creek	99.67
Bethany Rd	S. Fork Ogeechee River	99.67
SR 44	North Fork Little River	99.71
Lanier Rd	Kimbro Creek	99.80
US 278	Richland Creek	99.84
US 278	Richland Creek	99.84
Penfield Rd	Richland Creek	99.86
Old Eatonton Rd	Town Creek	99.91

Source: GDOT
** These bridges are currently part of the 2006–2008 STIP or 2006-2011 CWP*

Based on the sufficiency rating, a majority of the bridges are in good condition and not in need of any major maintenance or upgrade activities. There are ten (10) bridges that have a sufficiency rating below 50 and are potentially in need of maintenance and rehabilitation:

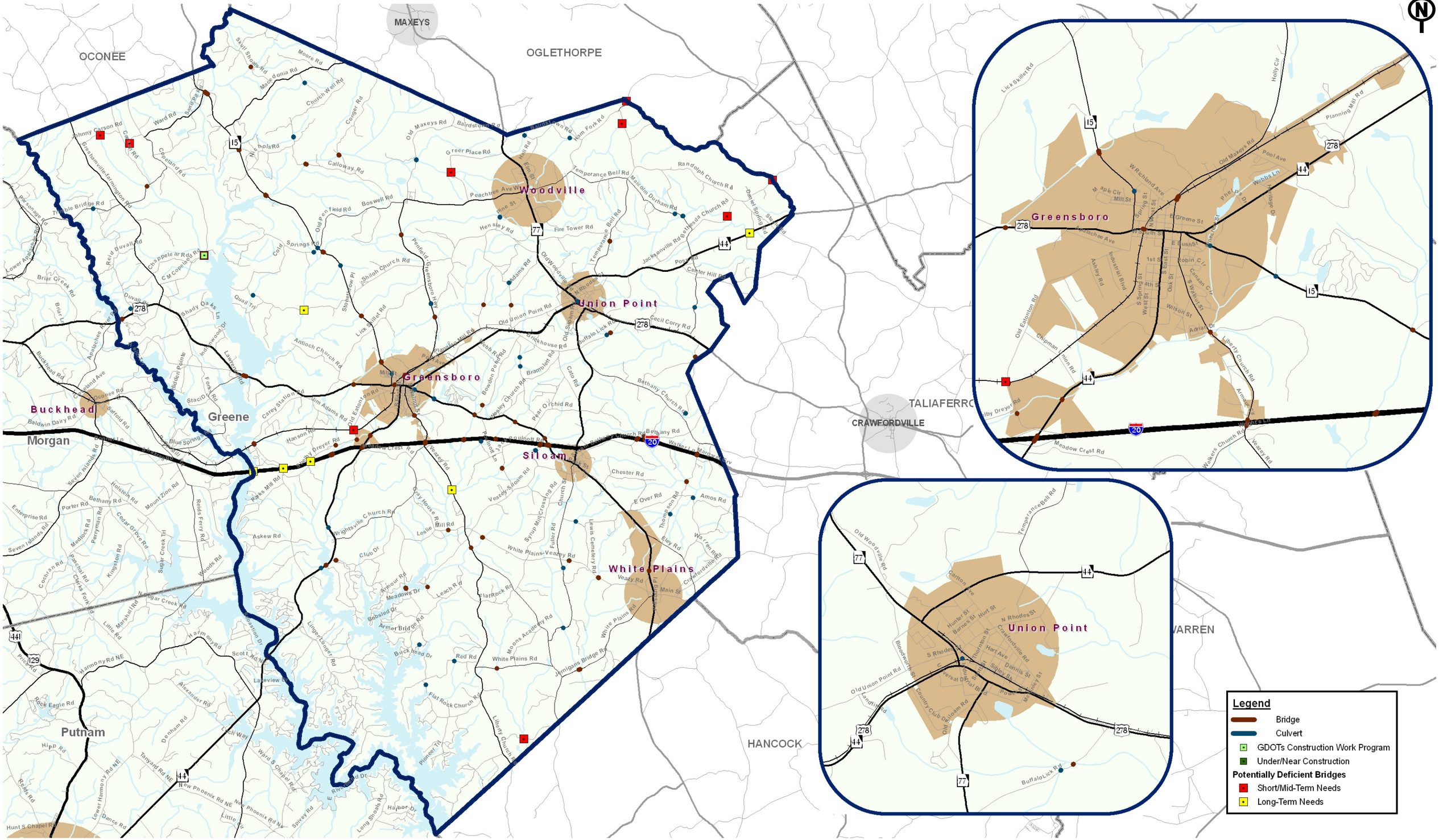
- Rail Fence Road at Griffin Creek;
- Centennial Church Road at Little Shoulderbone Creek;
- Old Eatonton Road at CSX Railroad;
- Copeland Road at Greenbrier Creek;
- Bethesda Church Road at South Fork Little River;
- Randolph Church Road at North Fork Little River;
- Geer Road at McWhorter Creek;
- Woodville Road at North Fork Little River;
- Johnny Carson Road at Greenbrier Creek; and,
- Little Creek Ch Road at Little Greenbrier Creek.

The Copeland Road bridge over Greenbrier Creek is part of the 2006-2011 CWP, however this bridge is currently listed as long range for construction.

Additionally, there are five (5) bridges that have a sufficiency rating below 75 and should be considered candidates for maintenance and rehabilitation within the next 20 years. The following bridges have a sufficiency rating below 75:

- Cold Springs Road at Town Creek;
- SR 44 at South Fork Little River;
- Veazey Road at Beaverdam Creek;
- Stage Coach Road at I-20; and,
- Carey Station Road at I-20.

The candidate bridges for maintenance and rehabilitation are mapped in Figure 6.5.



Bridges for Potential Maintenance or Rehabilitation

6.6 Safety

The latest three years of available vehicular crash data from GDOT (2003, 2004, and 2005) was collected and analyzed for Greene County. The crash data was used to determine roadway locations with potential safety deficiencies throughout the study area. Greene County experienced a total of 1,359 crashes with 358 injuries and 14 fatalities during the three-year period. A majority of the fatalities (29%) were concentrated on I-20. Additionally, SR 15 had three fatalities during the analyzed time period.

When analyzing the crash data, it was determined that a threshold of 10 crashes over the three-year period (averaging over three crashes per year) would serve to identify "high crash" locations for planning purposes. This provided the ability to pinpoint locations that may potentially have safety issues. Table 6.6 displays the intersections with the highest amount of crashes in the County.

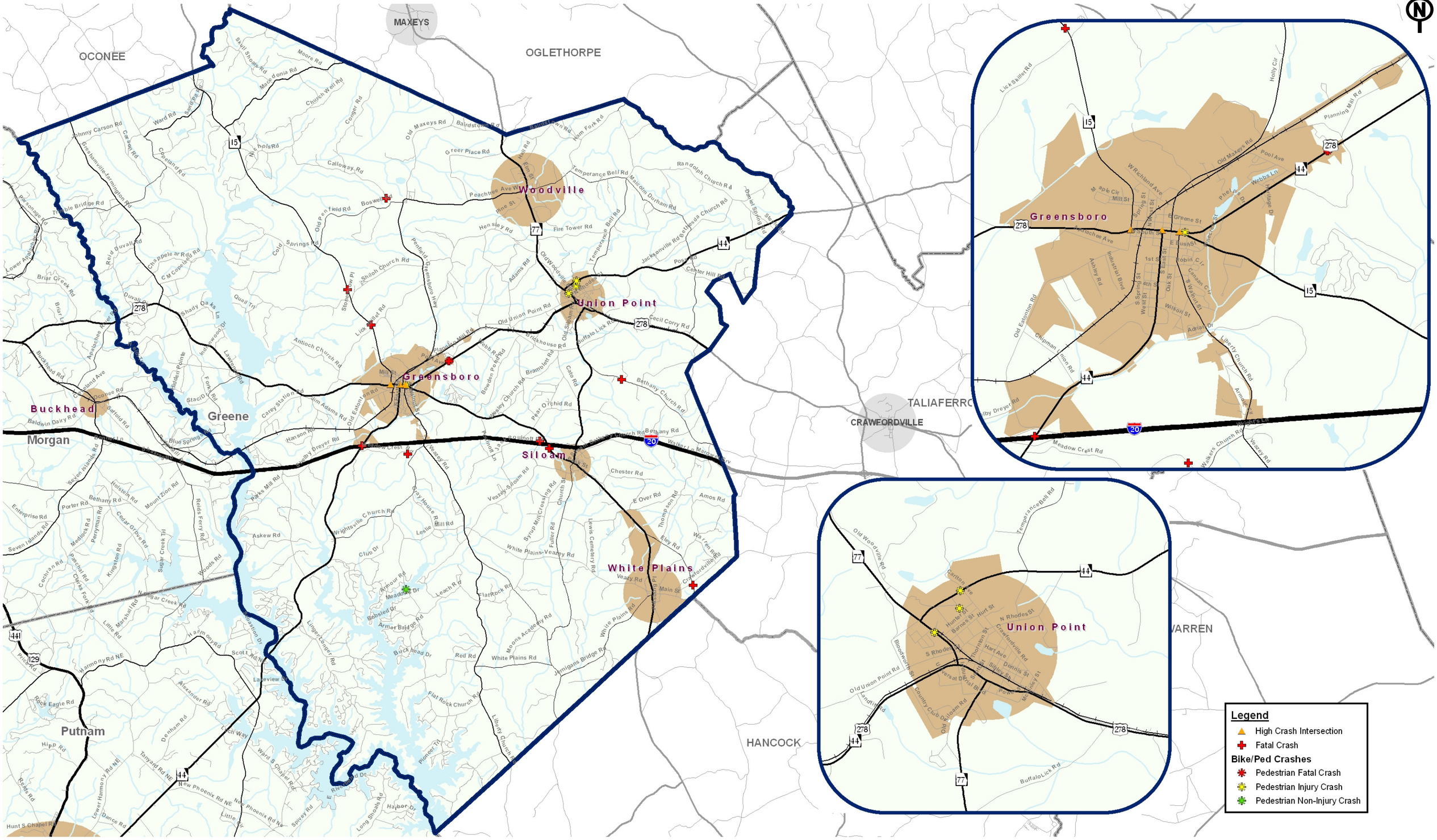
Table 6.6
High Crash Segments

Roadway	Intersection	Crashes	Fatalities	Injuries
US 278 (Broad St)	SR 44 (Main St)	24	0	4
US 278 (E Broad St)	Walnut St	12	0	6
US 278 (W Broad St)	SR 15 (Laurel St)	10	0	2

In addition to the high crash locations, an area of focus and concern was the location of fatal crashes. The locations listed below experienced at least one (1) fatality crash during the three-year analysis period. Interstate crashes were excluded from this analysis.

- Bethany Church Road between milepost 1.0 and 1.5
- CR 177 between milepost 0.0 and 0.5
- Callaway Road at Boswell Road
- CR 68 between milepost 1.9 and 2.4
- Eley Road at Crawfordville Road
- SR 12 between N Pool Road and Airport Road
- SR 15 at Lick Skillet Road
- SR 15 between milepost 18 and 18.5
- SR 44 at Meadow Crest Road
- SR 15 between Grey Land Road and Jernigan Lane

Segments with potential safety issues include a section of SR 15 between Lick Skillet Road and Old Penfield Road. Figure 6.6 shows intersections with more than 10 crashes over the three year analysis period as well as fatality and pedestrian related crash locations.



High Crash Intersections & Fatality Locations

East Georgia Multi-County Transportation Study

Figure No: 6.6

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6.7 Roadway Characteristics

This section reviews various conditions of the roadways in Greene County. The data is provided from GDOT's most recent Roadway Conditions (RC) Database. The following data was reviewed to facilitate the study process:

- Functional Classification;
- Road Lanes;
- Roadway Surface Type; and,
- Roadway Shoulders.

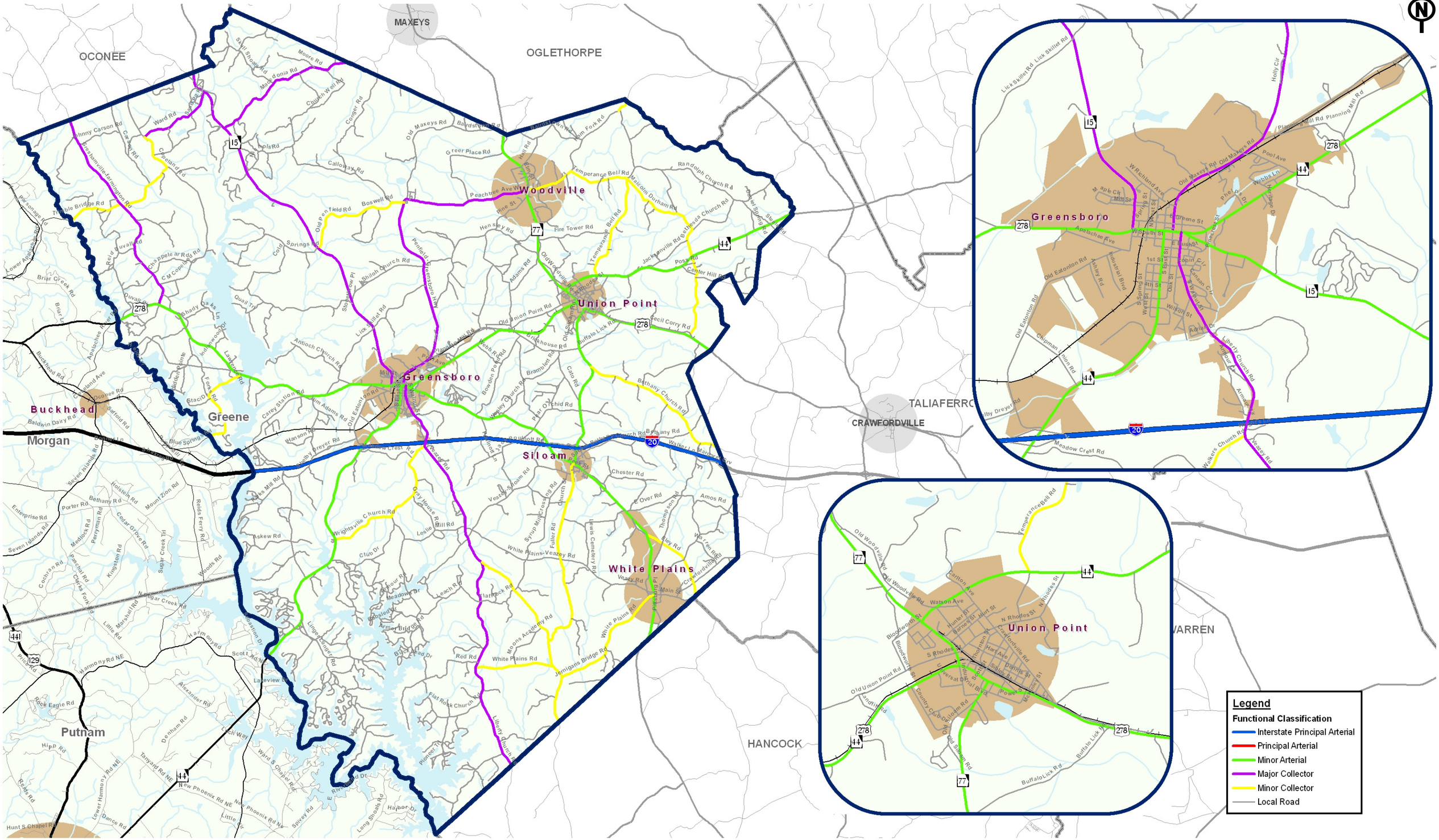
6.7.1 Functional Classification

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, and these can be defined as:

- **Expressway/Freeway** - Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.
- **Arterial -** Provides the next highest level of service at moderate to high 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 speed for shorter distances by collecting traffic from local roads and connecting them with arterials. Collectors are typically classified as major collector and minor collector.
- **Local -** Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or no through movement.

Greene County has over 16 miles of expressway/freeway, all of which are I-20. There are also approximately 69 miles of arterial facilities in the study area and 460 miles of collectors and local streets. Figure 6.7.1 displays the functional class of roadways in Greene County.

Table 6.7.1 displays the mileage and vehicle miles traveled for the different roadway classifications in Greene County. The County is served by multiple State Roads, (approximately 17% of the lane miles) which handle a majority of the traffic (72%). This closely matches the statewide averages of 16% State Roads, handling 63% of the total traffic. To ensure future mobility, it will be important to evaluate and identify needed improvements to the State Road system through close coordination with GDOT.



Functional Classification

Table 6.7.1
Existing Mileage and Vehicle Miles Traveled

County	State Roads		County Roads		Local Roads		Total	
	Miles	VMT	Miles	VMT	Miles	VMT	Miles	VMT
Greene	99	701,396	417	246,582	59	23,404	575	971,383
State	18,084	190,346,464	83,549	89,443,319	14,669	23,508,912	116,303	303,298,695

Source: GDOT

6.7.2 Road Lanes

Another important attribute reviewed from GDOT's RC Database is the number of lanes provided on each road. The roads in Greene County predominately serve traffic in both directions. Additionally, the majority of the roads in the County are 2-lane facilities. The dependency on a largely 2-lane roadway network may become strained in the future as traffic levels increase. Section 6.8 will analyze the existing and future forecasted traffic on the current roadway network and determine potential deficiencies.

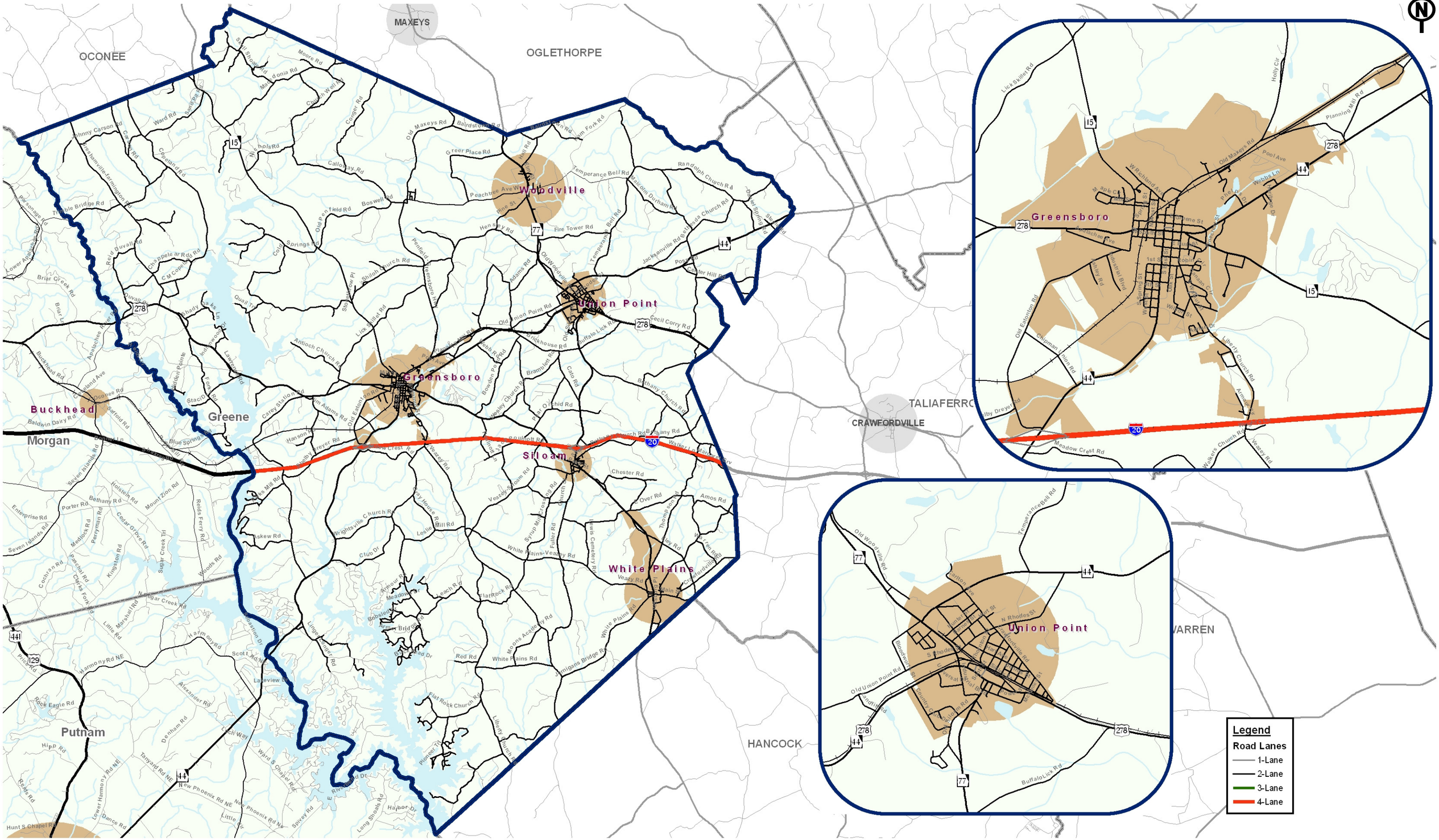
Figure 6.7.2 displays the number of lanes on the roads in Greene County.

6.7.3 Roadway Shoulders

The final attribute reviewed from GDOT's RC Database is roadway shoulder. 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 Greene County. The objective of this analysis is to determine areas where the shoulder is potentially deficient. Insufficient shoulder width can contribute to travel speed reductions, potential impact safety and influence bicycle and pedestrian usage. The following guidelines were used to determine potential shoulder deficiencies:

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

Figure 6.7.3 displays the roadway shoulder type and widths according to GDOT's RC Database for the County. Roadway segments with potential deficient shoulders will become candidates for recommended upgrades.



Roadway Lanes

East Georgia Multi-County Transportation Study

Figure No: 6.7.2

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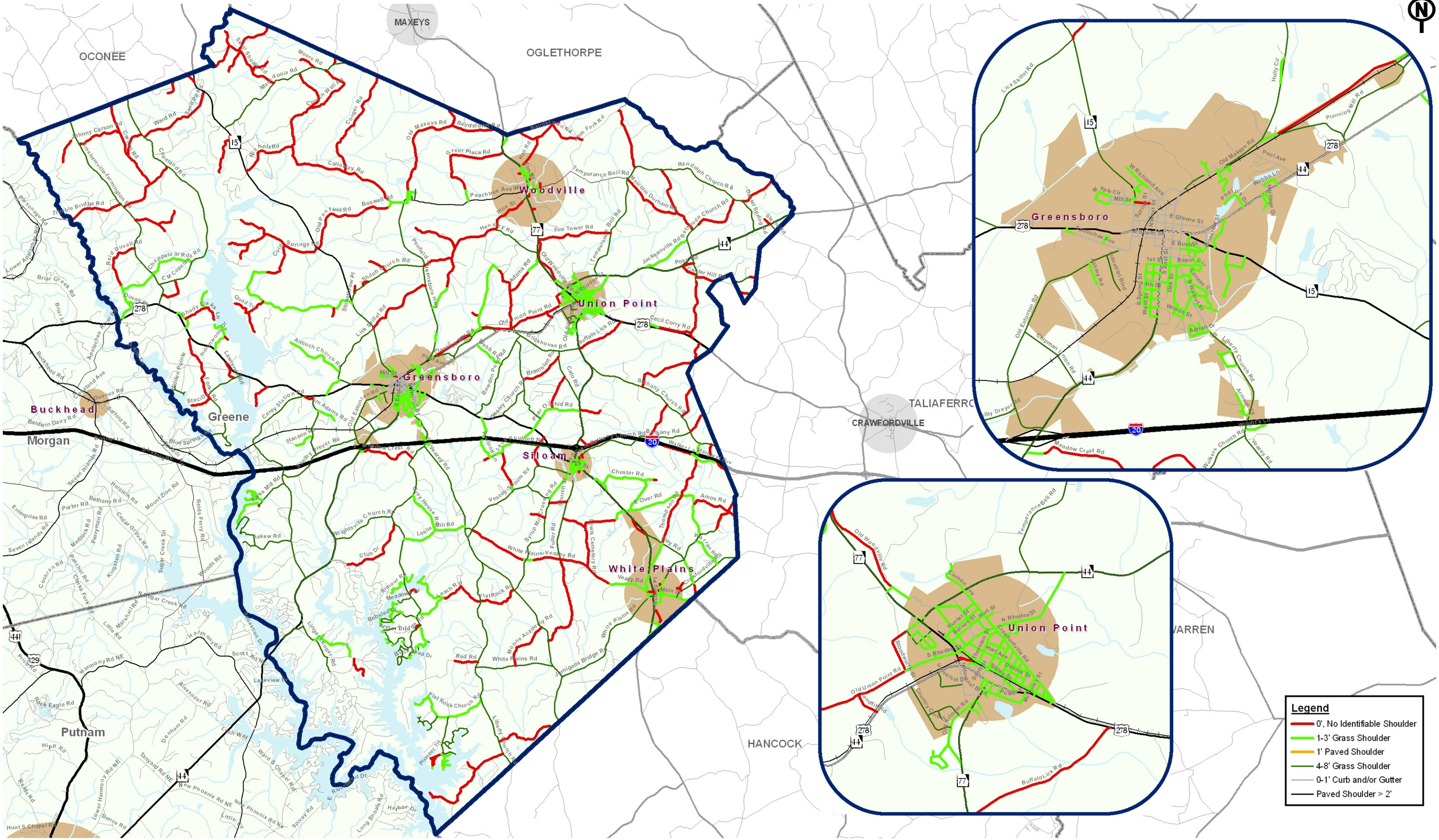

Roadway Shoulders

East Georgia Multi-County Transportation Study

Figure No: 6.7.3

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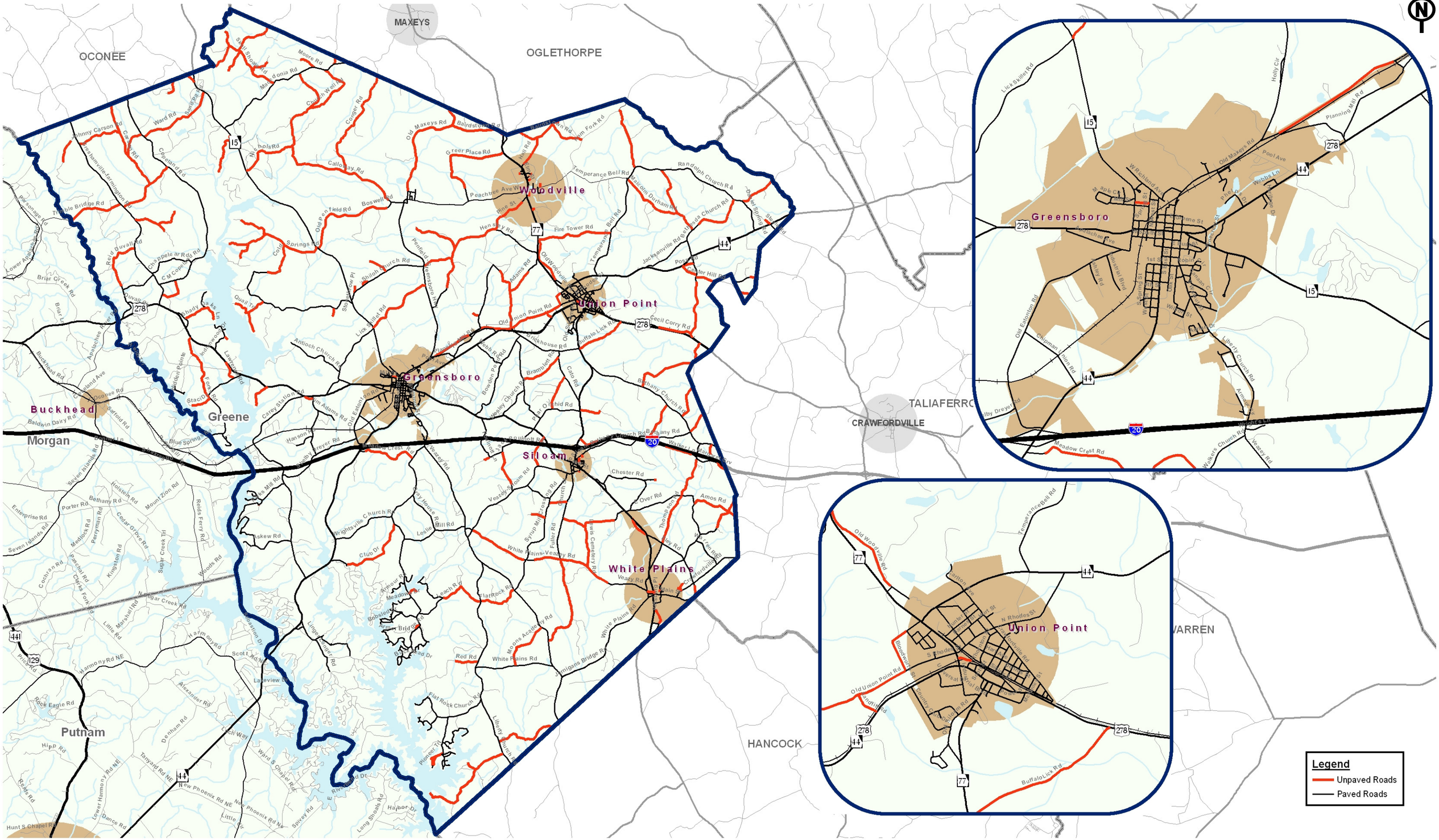
6.7.4 Roadway Surface Type

Another important attribute reviewed from GDOT's RC Database is roadway surface type. Roadway surface dramatically affects the capacity, useful life and safety of a particular facility. The list below details the surface types used in study area.

- Paved Roads
  - High Rigid - Portland cement concrete pavements with or without bituminous surface if less than one inch.
  - High Flexible - Mixed bituminous penetration road on a rigid or flexible base with a combined (surface and base) thickness of seven inches or more. Includes any bituminous concrete, sheet asphalt, or rock asphalt.
  - Mixed Bituminous Penetration - Low type (less than seven inches combined thickness surface and base). Surface is one inch or more.
  - Mixed Bituminous Pavement - A road, the surface course of which is one inch or more in compacted thickness composed of gravel, stone, sand, or similar material, mixed with bituminous material under partial control as to grading and proportions.
  - Bituminous Surfaced Treated - An earth road, a soil-surfaced road, or a gravel or stone road to which has been added by any process a bituminous surface course with or without a seal coat, the total compacted thickness which is less than one inch. Seal coats include those known as chip seals, drag seals, plant mix seals, and rock asphalt seals.
- Unpaved Roads
  - Gravel or Stone Road - A road, the surface of which consists of gravel or stone. Surfaces may be stabilized.
  - Graded and Drained - A road of natural earth aligned and graded to permit reasonable convenient use by motor vehicles and drained by longitudinal and transverse drainage systems (natural and artificial) sufficient to prevent serious impairment of the road by normal surface water, with or without dust palliative treatment or a continuous course of special borrow material to protect the new roadbed temporarily and to facilitate immediate traffic service.

There are several roads in Greene County that are dirt or gravel. It may be appropriate to upgrade and pave some of these facilities to provide better connectivity throughout the study area. Figure 6.7.3 displays the roadway surface type according to GDOT's RC Database for the study area.



Roadway Surface Type

East Georgia Multi-County Transportation Study

Figure No: 6.7.4

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6.8 Roadway Operating Conditions

A travel demand model was developed to assist in the evaluation of existing and future travel conditions through the 4-County Region. More detailed information regarding the model and model development process is presented in the *Travel Demand Model Technical Memorandum*. The key output from the travel demand model is volume to capacity ratio for each roadway segment. The volume to capacity ratios correspond to a level of service based on accepted methodologies from the 2000 Highway Capacity Manual. Existing (2005) and future (2030) operating conditions for the study are summarized in the following sections.

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 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.

- **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 to determine deficient segments in Greene County 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 D or worse was considered deficient.

The following thresholds were used to assign a level of service to the V/C ratios for rural facilities based on GDOT standards:

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

6.8.1 Existing Operating Conditions

The existing conditions scenario results derived from the 4-County travel demand model were used to determine deficient roadway segments in Greene County. Deficient segments were determined by analyzing the volume of traffic on the roadway segments compared to the capacity of those segments. The corresponding V/C ratios were related to LOS. The minimum acceptable LOS for daily roadway operating conditions is LOS C based on GDOT standards.

The existing analysis shows that four segments currently operate at or below LOS D under daily conditions. Table 6.8.1 displays the deficient roadway segments with the LOS for daily operating conditions. Figure 6.8.1 displays the existing LOS for Greene County.

Table 6.8.1
Existing (2005) Deficient Segments

Roadway	From	To	Volume(1)	V/C	LOS
SR 44	US 278	I-20	8,032	0.54	D
SR 44	I-20	Putnam County Line	7,128	0.57	E
US 278	SR 15 (W)	SR 15 (E)	7,862	0.53	D
US 278	SR 15 (E)	Brick House Rd	4,784	0.37	D

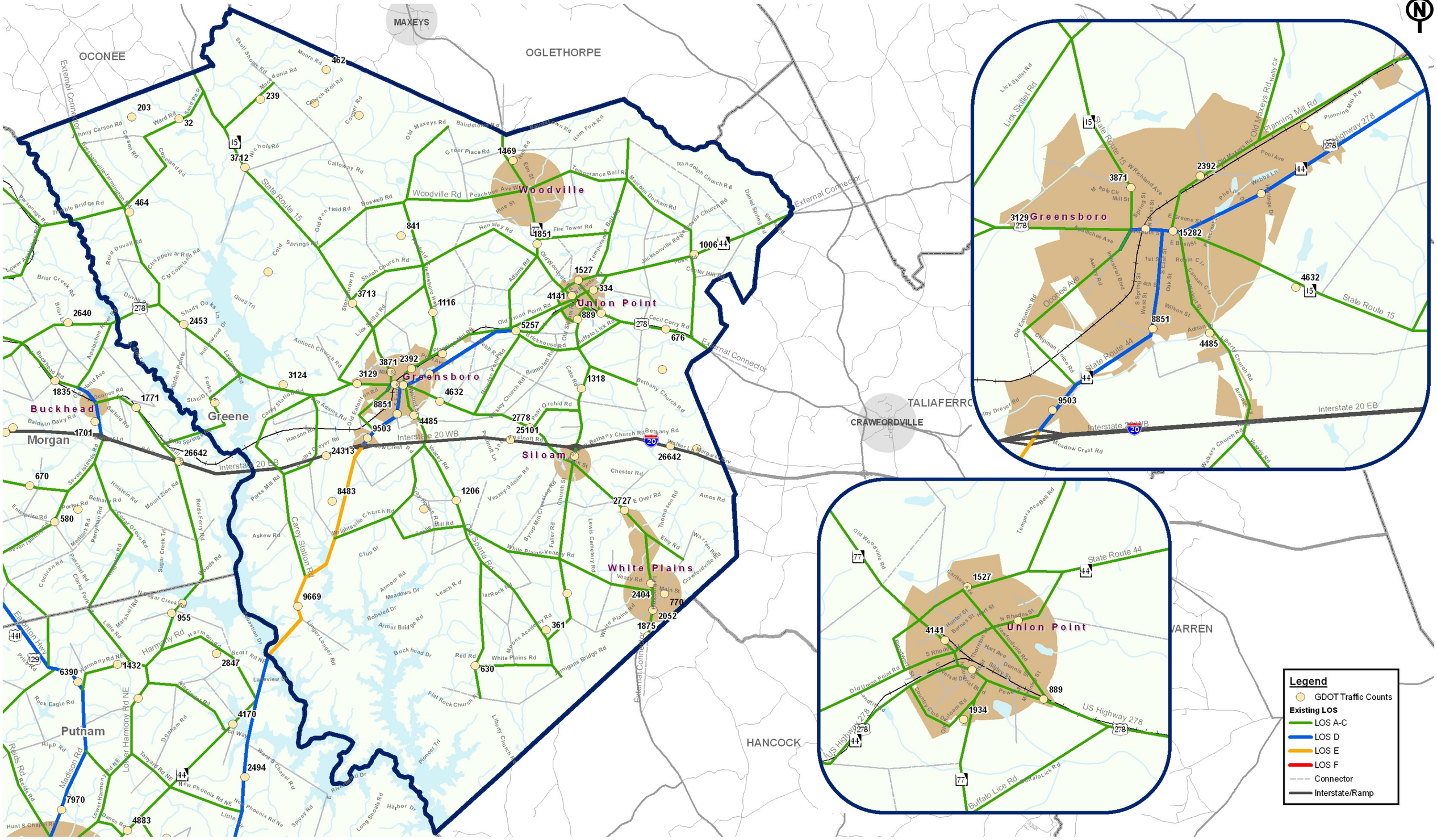
(1) - Two-way volumes

It can be seen that generally the majority of roadways in Greene County operate at an acceptable LOS during daily conditions. As traffic volumes continue to increase, it is likely that some of these roadways will degrade to an unacceptable LOS.

6.8.2 Future Operating Conditions

Future operating conditions were evaluated for the years 2015 and 2030, the study interim and horizon years respectively. In order to develop and evaluate future travel conditions an existing plus committed (E+C) network was developed based on the existing network with the addition of committed projects identified in GDOT's Construction Work Program. There are currently no committed projects in the CWP that add additional capacity to Greene County.

The evaluation of the future travel conditions provides an opportunity to determine how well the E+C roadway network will serve 2015 and 2030 population and employment in Greene County. It is useful to point out that the long-term projections for population and employment are the least reliable. This is not due to any inaccuracies with projection techniques but simply because it requires the judgment of stakeholders to assign population and employment throughout the study area. This in turn impacts estimates of



Existing Daily Deficient Segments

traffic demand. These long term results should be considered preliminary and when the transportation plan is updated every 3 to 5 years, the projects should be amended as necessary.

The 2015 analysis shows that 5 segments can be expected to operate at or below LOS D under daily conditions. Table 6.8.2.1 displays the 2015 roadway segments operating at an unacceptable LOS.

Table 6.8.2.1
2015 Deficient Segments

Roadway	From	To	Volume(1)	V/C	LOS
SR 44	US 278	I-20	9,382	0.63	E
SR 44	I-20	Putnam County Line	8,822	0.66	E
SR 77	SR 15	I-20	5,792	0.45	D
US 278	SR 15 (W)	SR 15 (E)	9,954	0.68	E
US 278	SR 15 (E)	Brick House Rd	5,304	0.41	D

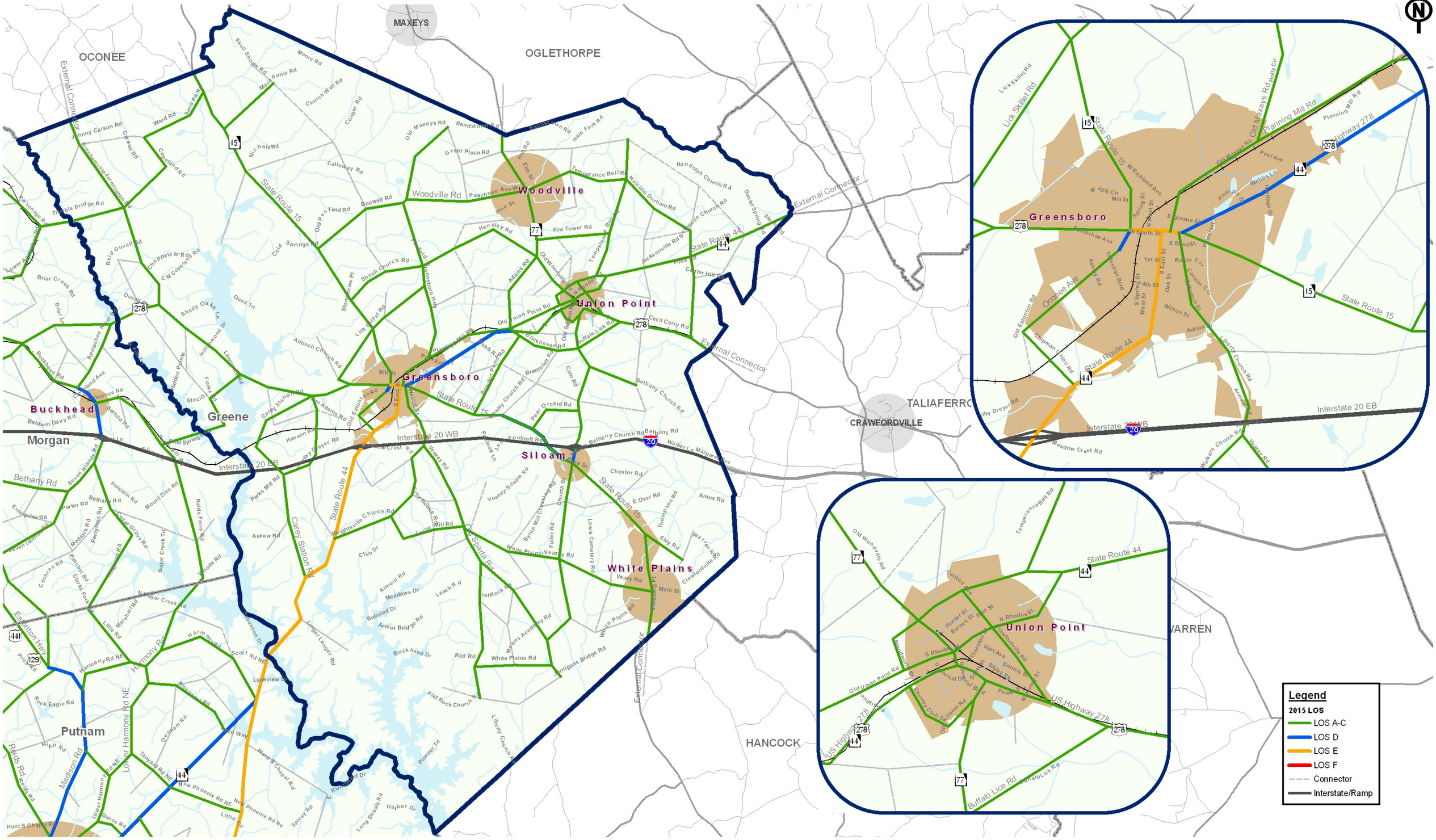
(1) - Two-way volumes

Additionally, the following roadways segments are approaching LOS D and/or have short links associated with them that are currently operating below LOS C:

- SR 15 from Oconee County Line to Old Penfield Road;
- SR 15 from Old Penfield Road to W Broad Street; and,
- Liberty Church Road from Old Sparta Road to Leslie Mill Road.

Figure 6.8.2.1 presents the 2015 daily deficient segments along the existing plus committed roadway network.

The 2030 analysis shows that 18 segments can be expected to operate at or below LOS D under daily conditions. Table 6.8.2.2 displays the 2030 roadway segments operating at an unacceptable LOS.



2015 Daily Deficient Segments

East Georgia Multi-County Transportation Study

Figure No:6.8.2.1

HNTB

Table 6.8.2.2
2030 Deficient Segments

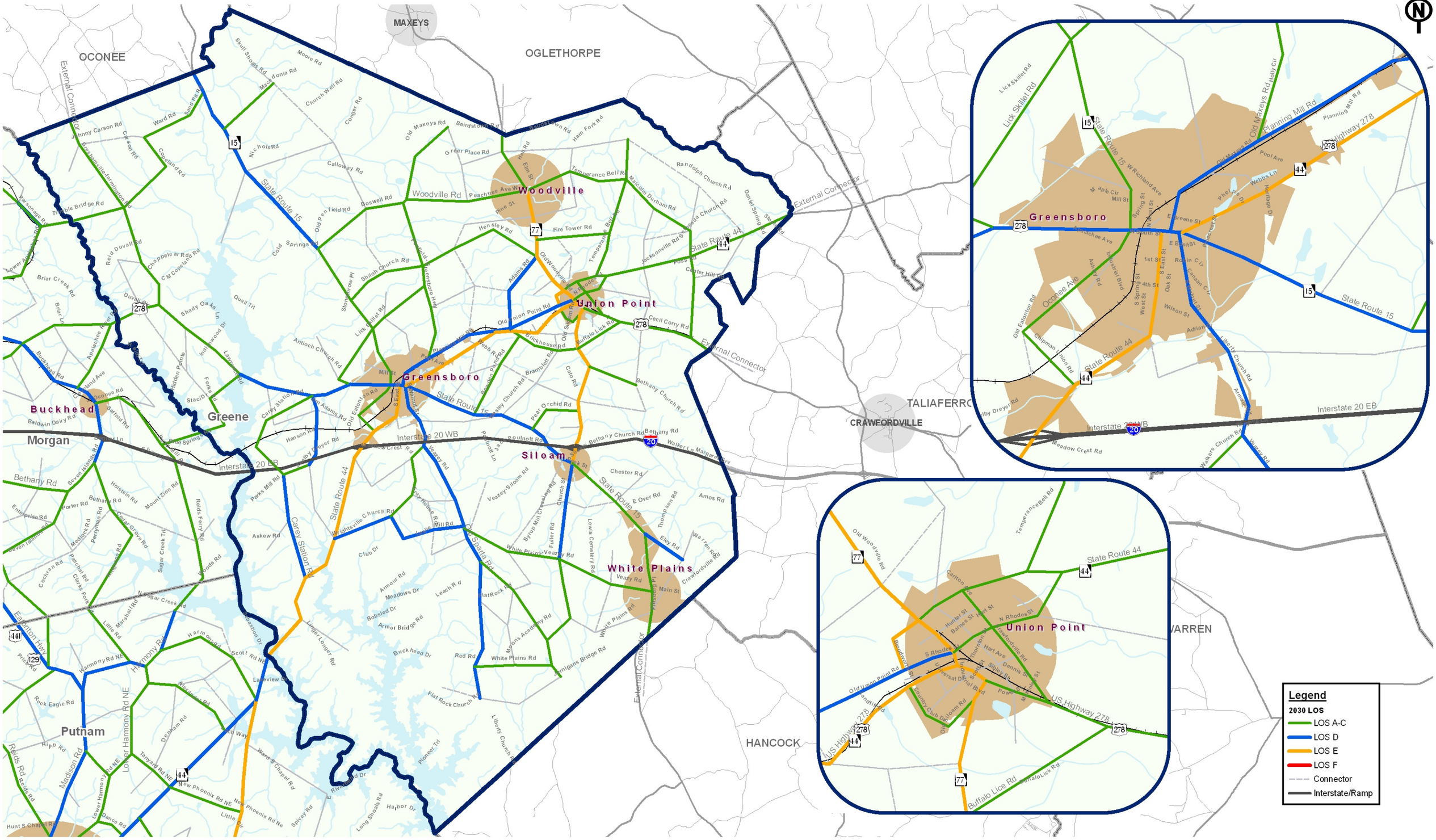
Roadway	From	To	Volume(1)	V/C	LOS
Adams Rd / Cunningham Rd	SR 77	US 278	2,676	0.40	D
Bloodworth St	SR 77	Old Union Point Rd	3,000	0.71	E
Carey Station Rd	Shelby Dreyer Rd	SR 44	2,590	0.37	D
Cedar Grove Rd	US 278	Shelby Dreyer Rd	5,944	0.48	D
Church St	SR 15	White Plains-Veazey Rd	3,880	0.49	D
Eley Rd	SR 15	Hancock County Line	3,040	0.38	D
Leslie Mill Rd / Wrightsville Church Rd	SR 44	Liberty Church Rd	3,624	0.46	D
Liberty Church Rd / S Walnut St	US 278	Walkers Church Rd	5,022	0.45	D
Liberty Church Rd	Walkers Church Rd	Hancock County Line	4,056	0.44	D
Old Union Point Rd / N Rhodes St / Planning Mill Rd	US 278	SR 77	3,060	0.48	D
SR 15	Oconee County Line	Old Penfield Rd	4,934	0.47	D
SR 15	US 278	SR 77	4,548	0.38	D
SR 44	US 278	I-20	11,986	0.86	E
SR 44	I-20	Putnam County Line	11,872	0.93	E
SR 77	Peachtree Ave W	US 278	7,232	0.61	E
SR 77	US 278	SR 15	12,402	0.94	E
US 278	Swords Rd	SR 15	6,124	0.49	D
US 278	SR 15	SR 77	10,722	0.84	E

(1) - Two-way volumes

Additionally, the following roadway segment is approaching LOS D and/or has short links associated with it that are currently operating below LOS C:

- SR 15 from SR 77 to Hancock County Line.

Figure 6.8.2.2 presents the 2030 daily deficient segments along the existing plus committed roadway network.



2030 Daily Deficient Segments

East Georgia Multi-County Transportation Study

Figure No:6.8.2.2

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6.9 Citizen and Stakeholder Input

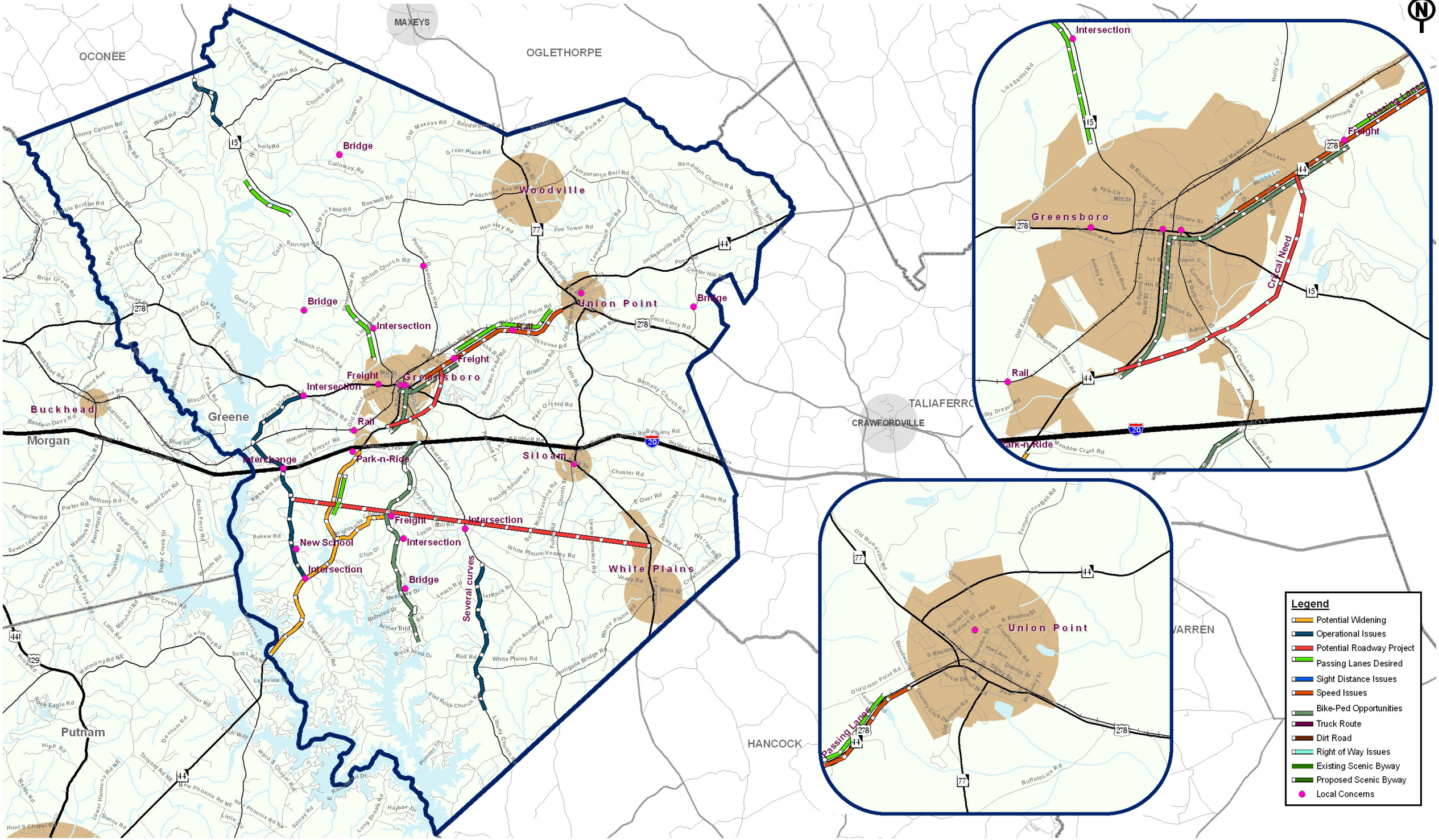
It was important to understand deficiencies as perceived by citizens and key stakeholders in addition to those identified through technical analysis. In combination, technical analysis, and citizen and stakeholder input should clearly define transportation issues and opportunities in Greene County. The Study Team met individually with the County, City, and key stakeholders to discuss their issues and concerns. Additionally, comment cards were used to collect thoughts and ideas from local citizens during the Public Workshops and throughout the study process. Table 6.9 summarizes the general themes expressed by citizens and stakeholders relative to transportation issues, opportunities, and needs.

Table 6.9
Citizen & Stakeholder Input

Transportation & Land Use
• Need a Greensboro Bypass
• New interchange at Carey Station Rd and improve Carey Station Rd
• Desire for overlay district along SR 44 and Carey Station Rd
• Need better east-west connectivity south of I-20
Roadway and Operational Improvements
• Widen SR 44 from I-20 to Putnam County
• Widen US 278 from Greensboro to Union Point
• Several curves along Liberty Church Rd
• Vertical curves along SR 15 north of Greensboro
• Need passing lanes on SR 15 north of Greensboro
• Need passing lanes on SR 44
• Need passing lanes on US 278
• Capacity issues along Wrightsville Church Rd and Liberty Church Rd
Intersection Improvements
• Carey Station Rd and US 278
• Carey Station Rd and SR 44
• Lesley Mill Rd and Walker Church Rd
• Wesley Chapel Rd and US 278
• SR 77 and SR 15
• Realign Brick House Rd and Cunningham Rd along US 278
• Realign Leslie Mill Rd and White Plains Rd along Veazey Rd
• Realign Lick Skillet Rd (E) and Lick Skillet Rd (W) along SR 15
• Realign Shiloh Church Rd and Hensley Rd along Penfield Greensboro Hwy
Maintenance
• Bridges in need of upgrade
• Installation of guardrail
• Paving dirt roads
• Need to replace a removed bridge on Conger Rd
• Cold Springs Bridge needs an upgrade – currently only a single lane bridge
Bicycle and Pedestrian
• Reynolds Plantation would like to tie commercial centers together with walking trails
• Ordinance on SR 44 for developers to provide sidewalks

• Need better sidewalks in Union Point
• Bikers use Walker Church Rd
• Need to monitor new school locations
• Need pedestrian connection on SR 44 between Greensboro and schools
Public Transportation
• Park and ride lots along I-20
• Provide a regional transit system
Freight & Rail
• Truck traffic issues in downtown areas
• Cunningham crossing is worst in County
• Stagecoach Rd crossing no longer open
Aviation
• The Greene County Regional Airport is important to the economy of the County and Region.

Figure 6.9 displays the citizen and stakeholder comments.



Citizen & Stakeholder Input

East Georgia Multi-County Transportation Study

Figure No: 6.9

HNTB

7.0 Goals and Objectives

Goals and Objectives are the building block components of the long range planning process. They guide the development of the LRTP by providing a basis for evaluating Transportation Plan improvements by reflecting the intentions that the Plan is meant to achieve. It is necessary to establish long-range goals and objectives to guide the Transportation Plan development process for Greene County. The goals represent the general themes and overall directions that Greene County, GDOT, and the local planning authorities envision for the County. The objectives provide additional specificity and focus for each associated goal. Combined, they provide the policy framework for development and implementation of the Transportation Plan.

7.1 Background

Goals and Objectives should be consistent with relevant federal, state, and local plans and legislation. With the passage of SAFETEA-LU, eight factors must now be considered when a Metropolitan Planning Organization (MPO) develops a LRTP. **It is understood that Greene County is not within an MPO service area; however, the guidelines for MPO's were followed to provide a strong framework for transportation decisions.** Specifically, the LRTP must be designed to:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and,
- Emphasize the preservation of the existing transportation system.

7.2 Methodology

The goals and objectives were developed based on a review of relevant planning documents including the Greene County Comprehensive Plan and the GDOT Statewide Transportation Plan. Additionally, through input obtained at various public workshops, development of the goals and objectives was also tailored to reflect the vision of County residents and business owners.

Table 7.2, excerpted from the "SAFETEA-LU Users Guide," shows how LRTP policies and Transportation Improvement Program (TIP) evaluation criteria are related. There can be

different ways of evaluating projects for the same SAFETEA-LU planning factors, depending on whether systems or individual projects are being evaluated.

Table 7.2
Applying the SAFETEA-LU Planning Factors

Factor	Long Range Considerations	Project Selection Criteria	Sample Projects
1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency	• Intermodal facilities • Rail and port access • Public/private partnerships • Land use policies • Economic development • Energy consumption	• Community integration • Long-term, meaningful employment opportunities • Accessibility • Modal connectivity • Infrastructure impacts	• Demand management • System preservation • Planned community development • Transit-oriented design
2. Increase the safety of the transportation system for motorized and non-motorized users	• Community access • Social equity • System upgrades	• Number of crashes • Number of rail grade crashes • Bicycle and pedestrian crashes	• Sidewalks • Rail crossing upgrades • Traffic calming • Dedicated right-of-way for different modes
3. Increase the security of the transportation system for motorized and non-motorized users	• Accessibility • Reliability	• Crashes • Potential for security hazard • Access to critical infrastructure • Access to power sources • Access to reservoirs • Access to population centers	• System access and security • Bridge security
4. Increase the accessibility and mobility of people and for freight	• Multi-modal considerations • Transit accessibility and level of service	• Prevention of bottlenecks • Segmentation prevented • Intermodal connectivity • Community-based economic development	• System maintenance • Intermodal facilities • Planned Communities • Mixed use zoning • Transit-oriented development • Land use controls

Factor	Long Range Considerations	Project Selection Criteria	Sample Projects
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns	• Air and water quality • Energy consumption • Livability of communities --social cohesion, physical connection, urban design, and potential for growth	• Environmental impact • Emissions reductions • Waterway preservation • Preservation and conservation of resources	• Demand management • Scenic and historic preservation • Planned community development • Transit services • Transit-oriented development
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight	• Intermodal transfer facilities • Rail access roads • Container policies • Freight policies/needs	• Intermodal connectivity • Accessibility for people and freight • Congestion relief	• Intermodal facilities • Modal coordination with social services
7. Promote efficient system management and operation	• Life cycle costs • Development of intermodal congestion strategies • Deferral of capacity increases	• Use of existing system • Congestion impacts • Community and natural impacts • Maintenance of existing facilities	• Traffic, incident and congestion management programs
8. Emphasize the preservation of the existing transportation system	• Maintenance priorities • Demand reduction strategies • Reasonable growth assumptions • Alternative modes	• Maintenance vs. new capacity • Reallocates use among modes • Reflects planning strategies	• Management System development • Maintenance of roads, bridges, highways, rail • Traffic calming • Take-a-lane HOV • Enhancement of alternative modes

Source: SAFETEA-LU Users Guide

7.3 Consistency with Other Planning Documents

In addition to SAFETEA-LU, goals and objectives should also be consistent with other state and local plans, such as local comprehensive plans and regional policy plans. In this way, the goals and objectives of the LRTP support the planning efforts of local governments and agencies. In particular, emphasis was placed on the Comprehensive Plan for Greene County. Key transportation related goals, objectives and strategies from Greene County's most recently adopted Comprehensive Plan include:

- Upgrade and expand the existing transportation facilities, as needed, to accommodate future growth in the most efficient manner;
- Improve the mobility of pedestrians and bicyclists throughout the county;
- Invest in needed improvements at the Greene County Regional Airport; and,

- Improve additional street lighting in priority areas defined by the cities.

7.4 Goals and Objectives

Using existing plans, meetings with County and GDOT staff and input received from the general public, the following Goals and Objectives were established to guide the transportation decision-making process for Greene County.

GOAL 1.0 Maintain Distinctive Rural and Suburban Areas in the County

Objective 1.1 *Consider the overall social, land use compatibility, economic, energy, and environmental effects when making transportation decisions.*

Objective 1.2 *Encourage local governments to develop a Transportation Corridor Management Plan (Right-of-Way or Thoroughfare Plan Map) that coordinates with local government Comprehensive Land Use Plan and the Long Range Transportation Plan.*

GOAL 2.0 Maintain Infrastructure Ahead of Needs

Objective 2.1 *In coordination with the County and municipalities, develop a cooperative program to maintain existing transportation facilities in the County - capitalizing on the recommendations of the Transportation Plan.*

Objective 2.2 *All transportation engineering studies and designs shall consider life cycle costs of capital investments.*

Objective 2.3 *Existing and future roadway deficiencies, based on level of service standards, shall be mitigated through a continuous roadway or transportation system improvement program.*

Objective 2.4 *The County shall encourage each member unit of government (with responsibility) to properly maintain the various types of transportation facilities including streets, sidewalks, trails, and other modes.*

Objective 2.5 *As development is permitted, review the impact to the transportation system to ensure mobility is protected as parcel level development occurs.*

Objective 2.6 *Update the Long Range Transportation Plan a minimum of every five years to evaluate and provide for future needed transportation system links within the County.*

GOAL 3.0 Coordinate and Balance Land Use and Transportation Decisions

Objective 3.1 *The Long Range Transportation Plan shall be reviewed annually in conjunction with the annual project priority listing to evaluate the impact of any changes in the future land use element of the local government comprehensive plans, approved during the previous year, on the overall transportation system.*

Objective 3.2 *Identify intermodal roadway linkages between major travel destinations such as airports and population concentrations that are operating, or will operate, below acceptable minimum levels of service and develop transportation and land use strategies to overcome these conditions.*

Objective 3.3 *Coordinate transportation and land use decision-making to encourage viability of alternative modes.*

GOAL 4.0 Maintain an Efficient Transportation System through Access Management

Objective 4.1 *Assess connectivity and accessibility as part of new construction, reconstruction of existing facilities, and maintenance activities.*

Objective 4.2 *Maximize the use of existing transportation facilities through the use of Transportation System Management (TSM), Transportation Demand Management (TDM), and Access Management strategies.*

GOAL 5.0 Enhance the Quality of Life in Downtown Areas through Transportation Investment

Objective 5.1 *Landscape transportation rights-of-way with native and/or "low-impact" vegetation on shoulders and medians, in order to conserve water, reduce pesticide use, conserve energy, and reduce costs by minimizing maintenance requirements.*

Objective 5.2 *Reduce transportation related accidents, injuries, and deaths through regular analysis of high crash locations and identification of safety related funding streams.*

Objective 5.3 *Ensure that funding is established for bicycle and pedestrian improvements identified in the Long Range Transportation Plan.*

Objective 5.4 *Develop and review annually the Transit Development Plan (TDP) and Transportation Disadvantaged Service Plan (TDSP) to provide for public transit and Paratransit.*

Objective 5.5 Consider transportation investments and land use management strategies that remove or discourage heavy trucks from cutting through downtown areas.

Table 7.4 shows how the 2030 Goals and Objectives address the Federal guidelines as presented in SAFETEA-LU.

Table 7.4
LRTP Goals and Objectives
Compared to SAFETEA-LU Planning Factors

Objective	SAFETEA-LU Planning Factors							
	Economic	Safety	Security	Accessibility	Environment	Intermodalism	Efficiency	Preservation
1.1	✓	✓	✓		✓		✓	
1.2	✓		✓				✓	✓
2.1	✓	✓	✓				✓	✓
2.2	✓						✓	
2.3		✓	✓	✓			✓	✓
2.4		✓	✓			✓		✓
2.5	✓			✓			✓	✓
2.6	✓		✓	✓			✓	
3.1				✓		✓	✓	
3.2	✓			✓		✓	✓	
3.3	✓			✓		✓	✓	
4.1	✓			✓				✓
4.2	✓	✓					✓	✓
5.1					✓		✓	
5.2	✓	✓	✓					
5.3	✓	✓		✓		✓		
5.4	✓						✓	✓
5.5	✓	✓	✓				✓	✓

Note: The eight Planning Factors are listed in their entirety on page 66.

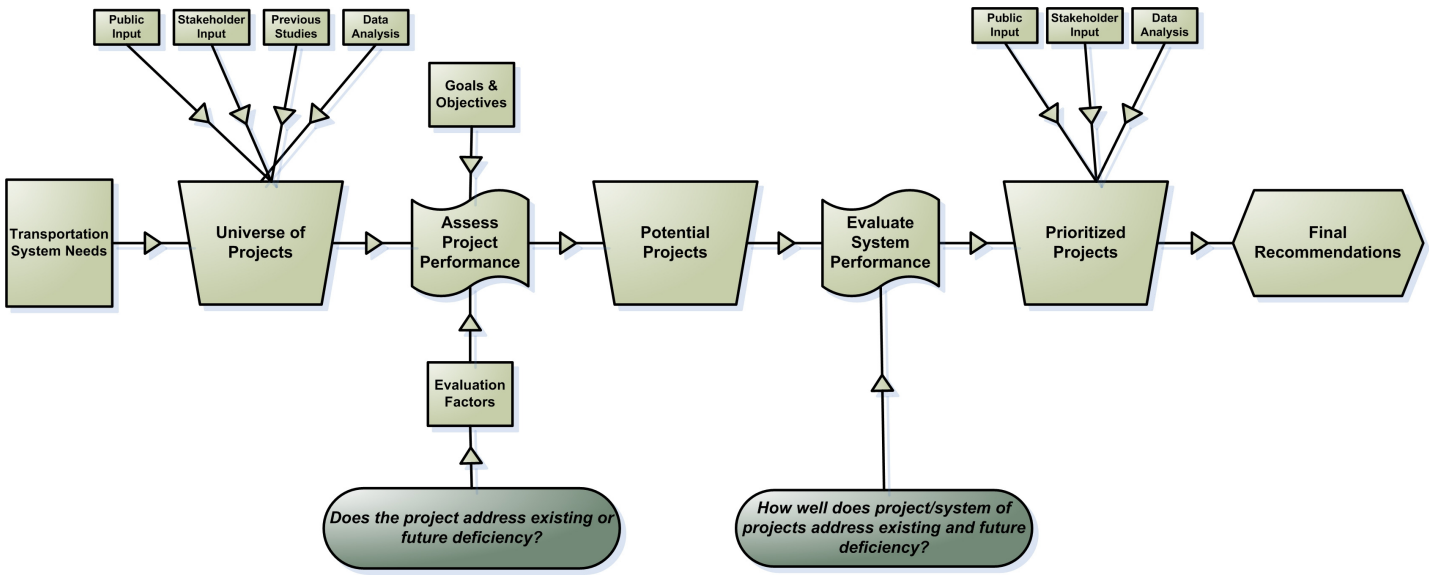
The Goals and Objectives were determined to be consistent with the needs and vision for the County, based on input from GDOT, Greene County, and the public. The study's Goals and Objectives adhere to the SAFETEA-LU planning factors and can be used as the foundation for ranking or choosing among individual projects.

8.0 Improvement Development Process

After the existing and future conditions were evaluated, strategies were developed to address identified deficiencies. Improvements were developed for each element of the transportation system:

- Deficient Roadways;
- Bicycle and Pedestrian;
- Public Transportation;
- Freight;
- Aviation; and,
- Citizen and Stakeholder Input.

The following sections document the potential improvements in detail, ultimately producing preferred improvements for Greene County's transportation system which are documented in Section 10. The figure below illustrates the improvement development process.



8.1 Deficient Roadways

With the aid of the travel demand model, which was developed as part of this study, future travels volumes were forecasted and operating conditions analyzed. This analysis revealed that the E+C roadway network generally serves Greene County well through the year 2015. From the 2030 operational analysis it was revealed that several roadways begin to perform below the acceptable level of service.

Based on the operational analysis results presented in Section 6.8, the following roadway segments are recommended for upgrade:

- SR 44 from Putnam County to Linger Longer Road;
- SR 44 from Linger Longer Road to East Greensboro Bypass;
- SR 15 from Antioch Church Road (Oconee County) to Greensboro Bypass;
- SR 15 from Greensboro Bypass to Pear Orchard Road;
- SR 15 from Pear Orchard Road to SR 77;
- SR 77 from Peachtree Avenue to US 278;
- SR 77 from US 278 to SR 15; and,
- US 278 from SR 15 to SR 77.

Additionally, review of the existing roadway typical sections, conducted in Section 6.7, revealed several of the facilities in the County do not meet the ideal typical section of 12-foot lanes with 2-foot paved shoulders. Key corridors were selected based on traffic volumes and input from the SAG. These corridors include:

- Wrightsville Church Road from SR 44 to Walkers Church Road;
- Liberty Church Road from Veazey Road to Hancock County;
- Leslie Mill Road from Walker Church Road to Veazey Road;
- White Plains Veazey Road from Veazey Road to SR 15;
- Carey Station Road from US 278 to SR 44;
- Veazey Road from Walkers Church Road to Hancock County;
- Penfield Greensboro Highway from Planning Mill Road to Peachtree Road;
- Church Street from SR 77 to White Plains Veazey Road; and,
- Leach Road from Liberty Church Road to Walker Church Road.

8.2 Bicycle and Pedestrian Improvements

The evaluation of existing bicycle and pedestrian systems in the County revealed the presence of a sidewalk network in most of the existing town centers in Greene County. Where the sidewalk system is developed, there remain gaps in connectivity between residential areas and schools, parks, and libraries. Some gaps were also identified in commercial areas where people may desire to walk between businesses or from their homes to businesses. The network adjacent to each of the elementary, middle, and high schools and established commercial areas was examined carefully to identify locations where sidewalk placement would be beneficial.

The bicycle network is currently non-existent in Greene County. The NEGRDC recently developed a Bicycle and Pedestrian Plan for Greene County. During the development of the plan, RDC staff worked with an advisory committee to determine detailed locations for bicycle facilities. Along with newly identified sidewalk segments identified in this study, the bicycle facilities identified in the Northeast Georgia Bicycle and Pedestrian Plan have been incorporated into this plan.

The sidewalk improvements are targeted in the vicinity of the elementary, middle, and high schools in Greensboro and the elementary school in Union Point. Some of the

improvements identified to serve the population that could walk to school also provide connectivity to commercial areas, particularly in Union Point.

Greensboro
There are several schools within the city limits of Greensboro and are as follows:

- Greensboro Elementary School;
- Anita White Carson Middle School; and,
- Greene County High School.

Recommendations:
- Construct sidewalks along the east side of Martin Luther King Jr Drive from E. Brighton Road south to Adriane Drive.
- Construct sidewalks along both sides of Martin Luther King Jr Drive from Adriane Drive to Armour Circle (N).
- Install sidewalks on along east side of SR 44 from Anita White Carson Middle School to Sixth Street.
- Install sidewalks along both sides of SR 44 from Sixth Street to Fourth Street.

Union Point
Sidewalks in Union Point are either in poor condition or are non-existent. Union Point Elementary is located within the City of Union Point northwest of downtown. The school is located in close proximity to several residential neighborhoods. The school is well served by sidewalks except on the east side.

Recommendations
- Replace sidewalks along US 278 from SR 77 east to Hilliard Street.
- Construct new sidewalks on the south side of US 278 from Universal Drive to SR 77 (N).
- Construct sidewalks along SR 77 from US 278 to the Elementary School (just north of SR 44).
- Construct sidewalks along SR 44 from SR 77 (N) east to Crawfordville Road/ Orear Road.

Siloam
Nathanael Greene Academy is located within the City of Siloam southeast of downtown. The school is located in close proximity to several residential neighborhoods. There are currently no recommended bicycle or pedestrian enhancements for this area.

Woodville
Woodville has a nice sidewalk system. Sidewalks exist on the east side of SR 77 from the south city limits to Ash Street, on the west side near the north city limits, and along the north side of East Peachtree Avenue. There are no recommendations for improvement in Woodville.

Additional Bicycle Needs

While the majority of the County is rural, there are key locations, such as schools and parks outside of the city limits, where bicycle transportation is a desirable alternative mode. Improving bicycle transportation, specifically, the continuity of the bicycle transportation network was a topic discussed by several attendees of the public workshops. Wrightsville Church Road was mentioned as a popular road for cyclists.

Recommendations:

- Widen Wrightsville Church Road to include extra pavement for bicycles.

8.3 Public Transportation Improvements

Greene County's Section 5311 Rural Transportation Program transports the County's citizens to a variety of shopping, medical, educational, employment and social destinations. Advantage Behavioral Health Systems currently operates as the provider of this on-demand, fare-based service. Additionally, Advantage Behavioral transports the County's seniors, developmentally disabled, and Department of Family and Children's Services (DFCS) clients as part of services funded by the Georgia Department of Human Resources (DHR). In 2006, fare-paying passengers (5311 program) accounted for 22% of trips while (DHR program) seniors, disabled, and DFCS passengers accounted 88% of trips. The County's elderly population accounted for 56% of the entire service ridership.

Greene County's use of Advantage Behavioral as the service provider allows them greater flexibility with their program as Advantage Behavioral also provides much of the DHR Region Five transportation services. The vans will cross county lines to deliver passengers to medical appointments, shopping, and other needed destinations. The County has been able to expand its operation, adding vans and trips in recent years.

Despite the County's success with its 5311 program, there are shortcomings which the County is seeking to address. The on-demand service may not be an ideal alternative for those needing to reach a particular destination on a daily basis, such as a job or school. The van operating hours may not be coordinated with work schedules, and daily reservations must be made for service. The location of a job may be outside of the city limits, making it more expensive ($2 within Greensboro, $3 outside the city), or outside of the service area entirely. In Greene County, the burgeoning job market in the lake communities (service jobs in resorts, hotels, cleaning services, etc.) has resulted in increased demand for transportation to these jobs. In addition, the area has seen a dramatic proliferation of medical and physician offices as well as plans for a new hospital, thereby creating demand for trips to these destinations. As a result, the County is exploring the idea of implementing a fixed-route service with designated stops to accommodate this growing transportation demand in and around the lake communities.

Greene County's current program serves a large seniors population. During the 1990's, the County experienced rapid growth in residents in the older age groups – retired persons and well-to-do "empty nesters" who have located primarily in the Lake Oconee area. This trend

is expected to continue. According to the County's Comprehensive Plan, 2004-2024, the percentage of population over 65 years of age is projected to increase from 2,075 persons in 2000 to 3,526 persons by 2024, a 70% increase. While the aging population is generally more affluent in Greene County, there will likely be increased need for transportation services for the elderly in future years.

An important planning activity is recently underway which will help Greene County know how best to expand its program. The Georgia Department of Human Resources, in conjunction with the GDOT, is developing a Public Transit - Coordinated Human Services Plan for each DHR region. By federal statute, the plan will be required prior to future funding for projects under the following federal programs:

- Section 5310 – Elderly Persons and Persons with Disabilities, a program whose goal is to improve mobility for elderly individuals and individuals with disabilities;

- Section 5316 – Job Access and Reverse Commute, a program that offers job access and reverse commute services to provide transportation for low income individuals who may live in the city core and work in suburban locations; and

- Section 5317 – New Freedom, a new program under SAFETEA-LU which provides transportation for the disabled that goes beyond those required by the Americans with Disabilities Act.

The overall goal of the coordinated planning process is to identify the need for and gaps in transportation services and to recommend strategies/projects to address the need. The plans must be locally developed, coordinated, and include participation by the public as well as transportation and human services providers. The Georgia DHR Region Five Plan, which includes Greene County, is expected to be completed by May of 2007.

Park and Ride Facility

GDOT provides park and ride facilities through its Rideshare Program in locations where there is a need for commuter options. Greene County's Comprehensive Land Use Plan 2004-2024 reports that, in 2000, the majority of workers residing in Greene County work in Greene County (69%) while 31% commute outside the county. Most of the employment migration is into contiguous Morgan and Putnam Counties, followed by the Athens metropolitan area. A small percentage commutes into the Atlanta metropolitan area. The SAG has expressed interest in a park and ride facility within the County along the I-20 corridor. At present, the nearest rideshare facility to Greene County is located in Newton County on I-20 at US 278, approximately 35 miles away. This facility is currently at capacity and in the process of being expanded from 55 spaces to 110 spaces.

Recommendations:

- Greene County needs to actively participate in the coordinated human services planning process being led by the Department of Human Resources Region Five Coordinator (Peggy Hacket 706-227-5306). According to DHR, targeting the needs

of and gathering data about the general public will be difficult without participation/communication from the counties.

- The coordinated human services planning process, described above, will address needs to be met by the aforementioned programs. The County, through its active participation in this planning process, needs to ensure that the transportation needs of all of its residents are identified, not just those whose needs can be met by one of these programs.
- The coordinated plan will also likely identify needs and make recommendations regarding the 5311 Rural Transportation Service. As mentioned previously, the demand for public transportation has increased to and around the lake communities. Working with GDOT, the County needs to determine if a fixed-route service would better accommodate access to jobs and medical services.
- The SAG has expressed interest in a regional transit service that would accommodate public transportation to surrounding counties. Although Greene County's 5311 vans do cross county lines, many county-operated programs do not transport residents beyond county lines due to scheduling and cost constraints. Jasper, Morgan, Greene, Putnam, and other interested counties need to instigate exploratory planning initiatives for this with GDOT.
- Coordinate with GDOT to further analyze commuter patterns to determine possible locations for a park and ride facility. A potential site is the I-20 corridor at SR 44.

8.4 Freight & Rail Improvements

CSX railroad operates approximately 15 trains per day through Greene County, traversing 20 miles of track and 40 railroad crossings. Thirty-three of the 40 crossings are "at grade" crossings, four are underpasses, and three are overpasses.

Highway-rail crossings which are "at grade" pose risks because the train always has the right of way. These crossings require traffic control devices (passive and active) to permit reasonably safe and efficient operation of both the rail and traffic. Passive devices are signs and pavement markings that are not activated by trains. Types of passive devices include:

- Highway-Rail Grade Crossing Crossbuck Signs, the white crisscrossed sign with RAILROAD CROSSING in black lettering. These are required in each highway approach to every highway-rail grade crossing, either alone or in combination with other traffic control devices.

- Stop and Yield Signs, formerly recommend with crossbucks only where two or more trains operate daily, but now recommended along with crossbucks for all crossings. A YIELD sign should be the default choice, with a STOP sign required when an engineering study deems conditions necessary for a vehicle to make full stop. Factors to be considered include:
    - The line of sight from an approaching highway vehicle to an approaching train;

- Characteristics of the highway, such as the functional classification, geometric conditions, and traffic volumes and speed;
- Characteristics of the railroad including frequency, type and speed of trains, and number of tracks;
- Crossing crash history; and,
- Need for active control devices.

Active traffic control devices are controlled by the train operator and give warning of the approach or presence of a train. Types of active traffic control devices include:

- Flashing-Light Signals, two red lights in a horizontal line flashing alternately at approaching highway traffic.

- Cantilever Flashing Light Signals, additional one or two sets of lights mounted over the roadway on a cantilever arm and directed at approaching highway traffic. Supplemental to the standard flashing light, used frequently on multi-lane approaches, high speed, two lane highways, roads with a high percentage of trucks or where obstacles obstruct visibility of standard flashing lights.

- Automatic Gates, consisting of a drive unit and gate arm. Supplemental to flashing and cantilever lights.

- Additional Flashing Light Signals, used for additional approaches to active highway rail grade crossings. These lights can be mounted on existing flashing light masts, extension arms, additional traffic signal masts, cantilever supports, and in medians or other locations on the left side of the road.

- Active Advance Warning Signs with Flashers, a train activated advance warning sign, considered at locations where sight distance is restricted on the approach to a crossing and the flashing light signals can not be seen until an approaching driver has passed the decision point. Two amber lights can be placed on the sign to warn drivers in advance of a crossing where the control devices are activated. The continuously flashing amber caution lights can influence driver speed and provide warning for stopped vehicles ahead.

- Active Turn Restriction Signs which display 'No Right Turn' or 'No Left Turn' on a parallel street within 50 feet of the tracks, at a signalized highway intersection.

- Barrier devices, which are median separation devices to prohibit crossing gate violations.

The GDOT, Office of Traffic Safety and Design, maintains an inventory of the State's railroad crossings and a priority list for those requiring improvements. Local governments are encouraged to report crossings within their jurisdictions which appear to be unsafe, deficient in their current traffic control devices, candidates for closure, or in need of an

upgrade. GDOT will schedule a field review to conduct a Highway Rail Engineering Analysis of the crossing in question, evaluating a number of criteria, including:

- The maximum number of passenger trains per day;
- Maximum number of freight trains per day;
- Distance to alternate crossings;
- Accident history of the crossing for the immediately preceding five year period;
- Type of warning device present at the crossing;
- The horizontal and vertical alignment of the roadway;
- The average daily traffic volume in proportion to the population of the jurisdiction;
- The posted speed limit over the crossing;
- The effect of closing/altering the crossing for persons utilizing it (hospitals and medical facilities; federal state and local government services such as court, postal, library, sanitation, and park facilities; commercial, industrial and other areas of public commerce);
- Any use of the crossing by trucks carrying hazardous material, vehicles carrying passengers for hire, school buses, emergency vehicles, public or private utility vehicles; and,
- Other relevant factors such as clearing sight distance, traversing the crossing, high profile or "hump" crossings, land locked property, at-grade crossing signalized with bells, lights, and proximity to other crossings.

Upon review, if traffic control devices are found to be deficient, GDOT will assign a priority and program an improvement project to correct the deficiency.

There are no programmed railroad improvements in the GDOT Construction Work Program scheduled for Greene County at this time. Given the procedures outlined above and input provided by the SAG, the public, and from analysis of the existing rail crossing and accident data, several Greene County crossings have been identified for further examination by GDOT. Review of these crossings may result in railroad crossing improvement projects to be programmed for future completion. Each of these crossings is discussed below.

Cunningham Road

Cunningham Road has a "jogging" intersection with Brick House Road at US 278. The SAG noted that this was the most precarious crossing the County. Pedestrians cross the tracks here also as a large county recreation facility (ball fields) are located off of Cunningham Road on the north side of the railroad.

Recommendation:

- This crossing only has passive traffic control devices (crossbucks, STOP sign). Review this crossing with GDOT to determine if it is eligible for safety upgrades.

Cunningham Road with Brick House Road to far left. Misaligned intersection is dangerous for vehicles and area pedestrians.

Chapel Street (Crossing #279578R)

This crossing has experienced the highest number of accidents and is in close proximity to homes and buildings.

Recommendation:

- Review closing this crossing with GDOT and CSX Railroad. If Chapel Street is recommended for closure, pave Railroad Street between Chapel Street and North Pool Street so that residents can access the North Pool crossing.

The Chapel Street crossing's close proximity to homes creates accident risks.

Planning Mill Road (Crossing #279575V)
Despite gates and flashing warning devices, a fatality recently occurred.

Recommendation:

- Review with Georgia DOT to determine if additional improvements can enhance safety.

Rail crossing at Planning Mill Road has gates and flashing lights.

Willow Run Road (Crossing #279584U) / Old Eatonton Road
Traffic congestion is prevalent at the Willow Run Road crossing. This crossing is also part of the main route law enforcement and emergency vehicles use to reach I-20. While this crossing is well equipped with safety features, the SAG expressed that it would be beneficial to have the grade-separated crossing at Old Eatonton Road, currently closed, as an alternate route.

Recommendation:

- Address repair and reopening of the Old Eatonton Road Bridge with the GDOT Commissioner. Residential and commercial growth, changes in the roadway network, the current traffic congestion at the Willow Run Road crossing, and the need for emergency and law enforcement access into the area dictate the need for an additional functioning rail crossing in this location.

Crossing at Willow Run Road experiences significant traffic congestion.

The Old Eatonton Road overpass was closed by GDOT due to unsafe pillar supports. If repaired and reopened, it would offer a good alternative for the congested Willow Run Road crossing.

McKinley Street (Union Point)

Several accidents have occurred at this crossing. It is currently equipped with crossbucks and STOP sign.

Recommendation:

- Replace the STOP sign on McKinley Road heading south. Trim overgrown brush on the west side of McKinley Road to improve sight distance.

Commuter and Intercity Rail

The Georgia Rail Passenger Program (GRPP) proposes two passenger rail options which will be accessible to Greene County residents. An intercity rail service is proposed between Atlanta, Madison and Augusta which will operate three daily trains each way, stopping in each city. In addition to this, a commuter train from Atlanta to Madison is also planned. This train will make stops in Newton, DeKalb, and Fulton Counties. Multi-modal train stations will be constructed in Madison and in Augusta to accommodate both of these services. The 2006 timeline shows service to Madison being implemented by 2017 and extended to Augusta by 2019.

Recommendations:

- Participate in appropriate planning activities with GDOT, the Georgia Passenger Rail Authority (GRPA), and the Georgia Regional Transportation Authority (GRTA). Expand transit services to provide/enable/encourage use of the passenger rail service by county citizens. Provide methods to facilitate transportation (via vans, buses, vanpools, carpools, etc.) between households to the multi-modal terminal.

Overall Recommendations

- Crossings described above should be reported to the GDOT Railroad Crossing Program Manager at the following:

  Key Phillips
  Railroad Crossing Program Manager
  Georgia Department of Transportation
  Office of Traffic Safety and Design
  Phone – 404-635-8120
  Fax – 404-635-8116

  The Crossing Program Manager will schedule a field review to conduct a Highway Rail Engineering Analysis of each crossing in question.

- Limit construction of any new “at grade” rail crossings. The County has a high number of these crossings which pose risks for vehicular and pedestrian accidents.

- GDOT offers local government incentive payments for at-grade rail-highway crossing closures, a provision of U.S. Code 23, section 130 (SAFETEA-LU section 1401(d)). The amount of the incentive grant may be up to $7,500 to local governments for the permanent closure of public-at-grade crossings if matched by the railroad involved, for a total incentive of $15,000. The local government receiving the incentive payment must use the portion received from the State for transportation safety improvements. Types of safety improvements include:
  - Grading, paving and drainage improvements associated with crossing removal;
  - Guardrail, barricades and barrier wall;
  - Traffic signals;
  - Highway signs;

- Turn lanes;
- Pavement markings;
- Sidewalks;
- Emergency vehicles primarily responding to highway incidents;
- Emergency equipment (i.e. "Jaws of Life);
- Sirens and flashing lights for emergency response vehicles;
- Radar guns; and,
- Sponsorship of a community driver's education class.

- Report train standing problems to the Federal Railroad Administration at:

61 Forsyth Street, SW – Suite 16T20
Atlanta, Georgia 30303-3104
Phone – 404-562-3800
Hot Line – 1-800-724-5993
www.fra.dot.gov

- Utilize available programs to address crossings with safety concerns and crossing violations.

  The Georgia Operation Lifesaver Program is a national, non-profit education and awareness program dedicated to ending tragic collisions, fatalities and injuries at highway-rail grade crossing and on railroad rights of way. The organization promotes safety through:
  - Education for drivers and pedestrians to make safe decisions at crossings and around railroad tracks;
  - Active enforcement of traffic laws relating to crossing signs and signals; and
  - Continued engineering research and innovation to improve the safety of railroad crossings.

  Free programs are presented to schools, businesses, civic organizations, school bus drivers, professional drivers, law enforcement and emergency responders.

Georgia Operation Lifesaver Program
P.O. Box 76526
Atlanta, Georgia 30358
Phone – 770-393-2711
Fax – 770-393-3751
georgiaol.org

8.5 Aviation Improvements

Greene County Regional Airport has experienced dramatic increases in traffic over the past ten years as the resort community, known as a "fly-in community," around Lake Oconee has developed. Take-offs and landings have increased by 25% per year, with an average

of 20 such operations occurring every day. Operations are expected to double over the next five years to 40 take-offs and landings per day and triple to 60 operations per day by the year 2016.

Recommendations:

- Improve vehicle access to the airport on Highway 278 with a turn lane into the facility. At present, limited site distance to the west from the entrance/exit of the airport creates a problematic intersection.
- Prioritize airport improvements/funding to accommodate the demand for larger aircraft and increased operations, as follows:
    - Five-year improvements:
        - Expand the aircraft parking apron by 100 percent (approximately 500 feet x 800 feet currently) to accommodate more aircraft;
        - Extend the runway by 500 feet to 5,500 feet and widen from 75 feet to 100 feet to accommodate larger jets;
        - Construct a full parallel taxiway to free the runway from planes once they land;
        - Complete airport security fencing (currently 90 percent completed); and
        - Install precision approach equipment for inclement weather.
    - Twenty year improvements:
        - Further increase aircraft parking;
        - Expand the automotive parking area;
        - Evaluate the need for a north terminal. The existing terminal is only two years old and only lightly utilized.

The airport is currently buffered by land that is owned and operated by the airport that can be used for expansion. The majority of the property acquisition needed for the runway expansion is complete. The extended runway and taxiway, and other improvements, described above, would elevate the airport's Georgia Aviation System classification from a Level II - Business Airport of Local Impact to a Level III – Business Airport of Regional Impact. It is anticipated that these improvements would provide adequate accommodations to meet the demands of the airport for the twenty year planning period.

8.6 Citizen and Stakeholder Input

Throughout the course of the study public comment and stakeholder input contributed significantly to the development of projects for improving travel conditions through Greene County. Projects identified by the public and stakeholders are documented in Table 8.6.

All comments received from the public are important and care was taken to evaluate each recommendation for inclusion in the plan. If the recommendation addressed issues beyond the scope of the plan, these were forwarded to the appropriate agency to address. Similarly, some recommendations could not be supported with technical planning or engineering justifications – these instances are noted and these recommendations were flagged for reevaluation as the Plan is periodically updated in the future.

Table 8.6
Suggested Improvements

#	Comment or Concern	Comment Type	Response	Recommended for Inclusion in Plan
1	Need a Greensboro Bypass	Roadway Project	This project is currently in GDOT's CWP	Yes
2	New interchange at Carey Station Rd and improve Carey Station Rd	Interchange	This project is currently in GDOT's CWP, additionally a Feasibility Study is currently being conducted for this proposed interchange	Yes
3	Widen US 278 between Greensboro and Union Point	Widening	The improvement of this roadway is a recommended improvement	Yes
4	Widen SR 44 from I-20 to Putnam County	Widening	This project is currently in GDOT's CWP	Yes
5	Need passing lanes on SR 15 north of Greensboro	Passing Lanes	A widening project for this facility is currently in GDOT's CWP	No
6	Passing Lanes on SR 44	Passing Lanes	A widening project for this facility is currently in GDOT's CWP	No
7	Passing Lanes on US 278	Passing Lanes	There are currently passing lanes on US 278 between Greensboro and Union Point	No
8	Several curves along Liberty Church Rd	Geometric	The improvement of this roadway is a recommended improvement	Yes
9	Vertical curves along SR 15 north of Greensboro	Geometric	A widening project for this facility is currently in GDOT's CWP, this will deal with the curves	Yes
10	Need better east-west connectivity south of I-20	Operational	Facilities such as Wrightsville Church Rd and White Plains - Veazey Rd are recommended for improvement	Yes
11	Capacity issues along Wrightsville Church Rd and Liberty Church Rd	Operational	These roadways are being recommended for improvement	Yes
12	Carey Station Rd and US 278	Intersection	This intersection is recommended for improvement	Yes
13	Carey Station Rd and SR 44	Intersection	This intersection is recommended for improvement	Yes
14	Leslie Mill Rd and Walker Church Rd	Intersection	This intersection is recommended for improvement	Yes
15	Wesley Chapel Rd and SR 15	Intersection	This intersection is recommended for improvement	Yes
16	SR 77 and SR 15	Intersection	This intersection is recommended for improvement	Yes
17	Realign Brick House Rd and Cunningham Rd along US 278	Intersection	The realignment of these intersections are recommended improvements	Yes
18	Realign Leslie Mill Rd and White Plains Rd along Veazey Rd	Intersection	The realignment of these intersections are recommended improvements	Yes
19	Realign Lick Skillet Rd (E) and Lick Skillet Rd (W) along SR 15	Intersection	The realignment of these intersections are recommended improvements	Yes
20	Realign Shiloh Church Rd and Hensley Rd along Penfield Greensboro Hwy	Intersection	The realignment of these intersections are recommended improvements	Yes

#	Comment or Concern	Comment Type	Response	Recommended for Inclusion in Plan
21	Installation of guardrail	Maintenance	This is beyond the scope of the project. This comment has been forwarded to Greene County Public Works	No
22	Paving dirt roads	Maintenance	This is beyond the scope of the project. This comment has been forwarded to Greene County Public Works	No
23	Bridges in need of upgrade	Bridge	Several bridges are being recommended for upgrade as part of this study	Yes
24	Need to replace a removed bridge on Conger Rd	Bridge	This bridge is being recommended for improvement	Yes
25	Cold Springs Bridge needs an upgrade – currently only a single lane bridge	Bridge	This bridge is being recommended for improvement	Yes
26	Stagecoach Rd crossing no longer open	Bridge	This bridge is being recommended to be rebuilt as part of this study	Yes
27	Need better sidewalks in Union Point	Bike-Ped	Sidewalk upgrades are being recommended for Union Point	Yes
28	Bikers use Walker Church Rd	Bike-Ped	Upgrades are being recommended to Walker Church Rd	Yes
29	Need to monitor new school locations	Bike-Ped	New school locations are being considered as part of this study	Yes
31	Need pedestrian connection on SR 44 between Greensboro and schools	Bike-Ped		
32	Park and ride lots along I-20	Transit	A park and ride lot is being recommended at I-20 and SR 44	Yes
33	Provide a regional transit system	Transit	A regional transit system is a recommended improvement	Yes
34	Truck traffic issues in downtown areas	Freight	Improvements such as the Greensboro Bypass will help address this issue	Yes
35	Cunningham crossing is worst in County	Rail	This crossing is recommended for upgrade	Yes
36	The Greene County Regional Airport is important to the economy of the County and Region.	Airport	Land is currently being purchased to upgrade the runways to Level III standards	Yes

9.0 Improvement Recommendations

Greene County has received low growth over the last two decades. This growth is expected to accelerate and the transportation infrastructure of the County needs to be maintained and enhanced to accommodate this growth. County needs for transportation improvements are supported by the deficiencies identified in Section 6.0. These deficiencies include:

- Public Transportation;
- Freight Transport;
- Airport Facilities;
- Bicycle and Pedestrian Facilities;
- Bridges;
- Safety;
- Roadway Characteristics; and,
- Roadway Operating Conditions.

Several transportation improvements were identified in Section 8.0, which address these deficiencies. This section will identify the recommended improvements and the estimated costs associated with these improvements.

9.1 Estimated Costs

A necessary element of the LRTP is estimating the costs associated with the numerous recommended improvements. An estimated cost needs to be associated with each project to aid the County in planning for, and funding of, recommended improvements. GDOT is currently updating their cost information; however the Atlanta Regional Commission (ARC) recently completed a costing tool. This costing tool presents cost estimates for both urban and rural conditions and was the tool used to develop costs for this study. The rural cost estimates were used for the proposed projects in Greene County.

The estimated costs were generated for planning purposes and may vary from actual costs. **The cost of right of way was omitted from the cost estimate due to the high variation associated with this cost.** Therefore, the estimated costs can be expected to be considerably less than actual costs. Additional variations in cost could be the result of several factors, such as, design, utility relocation or environmental impacts. Typical roadway cost estimates can be found in Table 9.1.

Table 9.1
ARC Construction Cots

Project Name	Construction Costs	
Roadways	with Median ($/Lane Mile)	without Median ($/Lane Mile)
Surface Street Widening	$1,960,000	$1,740,000
Surface Street Upgrade		$680,000
Surface Street New	$2,720,000	$2,450,000
Intersections	Const Cost per Each	
Arterial to Arterial	$2,300,000	
Arterial to Collector	$1,900,000	
Collector to Local	$1,400,000	
Traffic Signal Upgrade	$160,000	
Interchanges & Grade Separations	Const Cost per Each	
Compressed Diamond	$11,800,000	
Single Point Urban	$20,200,000	
Diamond	$10,200,000	
Half Diamond	$6,100,000	
Grade Sep - 4 lanes	$7,300,000	
Grade Sep - 2 lanes	$4,700,000	
Non-Vehicular Elements	Const. Cost per Mile	
Multi-Use Trail (10 ft)	$590,000	
Sidewalk (2 @ 5 ft)	$190,000	
Park Ride Lot	$1,000	per space

Source: ARC Costing Tool

A review of recent GDOT bridge costs revealed that bridges are generally being constructed for approximately $140 per square foot. This value was used to estimate the cost for improving the deficient bridges in Greene County.

These estimates were used to develop costs for the recommended improvements presented in Section 9.2 (Table 9.2). These costs should be considered preliminary in nature and taken with appropriate care. **Costs do not include right of way**. More detailed engineering studies are required to identify highly accurate cost estimates.

Over the past several years construction material costs have increased dramatically throughout the United States. Some typical GDOT pay items have increased over 60% in the last few years. Much of this cost increase can be attributed to the demand for construction materials in the Gulf Coast area and Iraq. As one of the most variable components of the LRTP, it is important that costs are revisited on a regular basis to ensure accuracy. In recognition of this situation, GDOT is in the process of evaluating all project costs in the Construction Work Program and establishing guidelines for cost updates.

9.2 Summary of Recommended Improvements

Based on the analysis completed as part of this study, a listing of recommended projects was created for Greene County. This information is presented in Table 9.2. This listing includes:

- Capacity Improvements and New Roadways;
- Minor Roadway Widening (increasing travel lane widths and/or shoulders);
- Intersection and Geometric Improvements;
- Bridge Improvements;
- Bicycle and Pedestrian Improvements;
- Airport Improvements;
- Rail Improvements; and,
- Transit Improvements.

For each recommendation several informational elements were produced including: facility; limits; existing and improved configuration; comments; source; improvement type; need; anticipated benefit; phasing; cost and potential funding sources. For successful implementation of these projects it is recommended that additional detailed engineering studies be conducted to determine the most appropriate design, cost and phasing of the particular project. Additionally, successful project implementation will require identified funding mechanisms, political support, and public recognition of the project need and benefit.

Recommended roadway improvements are mapped in Figure 9.2.1 and recommended bicycle and pedestrian improvements are mapped in Figure 9.2.2

Table 9.2
Recommended Improvements

Project Ref. No.	Facility	Segment Limits From	Segment Limits To	Existing Configuration	Improved Configuration	Notes/Comments	Source	Improvement Type	Need	Anticipated Benefit	Implementation Near	Implementation Mid	Implementation Long	Estimated Cost	Potential Funding Source Federal	Potential Funding Source State	Potential Funding County	Potential Funding Source Local
Capacity Improvements/New Roadways																		
G1	SR 44	Putnam County	Linger Longer Rd	2-Lanes	4-Lanes, Divided	1.60 miles	CWP	Arterial Widening	Capacity Deficiency	Increase Capacity & Improved Safety		✓		$5,551,000	✓	✓	✓	
G2	SR 44	Linger Longer Rd	East Greensboro Bypass	2-Lanes	4-Lanes, Divided	7.94 miles	CWP	Arterial Widening	Capacity Deficiency	Increase Capacity & Improved Safety		✓		$28,807,000	✓	✓	✓	
G3	Greensboro Bypass	Lick Skillet Rd	Beaver Dam Creek	N/A	4-Lanes, Divided	4.38 miles	CWP	New Roadway	Connectivity	Improved Connectivity		✓		$14,438,000	✓	✓	✓	✓
G4	East Greensboro Bypass	SR 44 (S)	US 278/SR 44 (NE)	N/A	4-Lanes, Divided	3.61 miles	CWP	New Roadway	Connectivity	Improved Connectivity		✓		$8,766,000	✓	✓	✓	✓
G5	SR 15	Antioch Church Rd (Oconee County)	Greensboro Bypass	2-Lanes	4-Lanes, Divided	13.93 miles	CWP	Arterial Widening	Capacity Deficiency	Increase Capacity & Improved Safety			✓	$47,388,000	✓	✓	✓	
G6	SR 15	Greensboro Bypass	Pear Orchard Rd	2-Lanes	4-Lanes, Divided	2.75 miles	CWP	Arterial Widening	Capacity Deficiency	Increase Capacity & Improved Safety			✓	$9,075,000	✓	✓	✓	
G7	SR 15	Pear Orchard Rd	SR 77	N/A	4-Lanes, Divided	2.00 miles	CWP	New Roadway	Connectivity	Improved Connectivity			✓	$6,600,000	✓	✓	✓	
G9	East Siloam Bypass	SR 77	I-20	N/A	4-Lanes, Divided	0.75 miles	CWP	New Roadway	Connectivity	Improved Connectivity			✓	$2,475,000	✓	✓	✓	
G10	SR 15	English School Rd	White Plains Bypass	2-Lanes	4-Lanes, Divided	3.15 miles	CWP	Arterial Widening	Capacity Deficiency	Increase Capacity & Improved Safety			✓	$10,725,000	✓	✓	✓	
G11	West White Plains Bypass	Edwards Rd (Hancock County)	Eley Rd	N/A	4-Lanes, Divided	5.00 miles	CWP	New Roadway	Connectivity	Improved Connectivity			✓	$16,500,000	✓	✓	✓	
G12	SR 77	Peachtree Ave	US 278	2-Lanes	4-Lanes	4.45 miles	Analysis	Arterial Widening	Capacity Deficiency	Increase Capacity & Improved Safety			✓	$15,486,000	✓	✓	✓	
G13	SR 77	US 278	SR 15	2-Lanes	4-Lanes	5.75 miles	Analysis	Arterial Widening	Capacity Deficiency	Increase Capacity & Improved Safety		✓		$20,010,000	✓	✓	✓	
G14	US 278	SR 15	SR 77	2-Lanes	4-Lanes	5.74 miles	Analysis	Arterial Widening	Capacity Deficiency	Increase Capacity & Improved Safety		✓		$19,975,200	✓	✓	✓	
G15	Wrightsville Church Rd Extension (E)	Walker Church Rd	Leslie Mill Rd	N/A	2-Lanes	1.56 miles	Public	New Roadway	Connectivity	Improved Connectivity			✓	$7,644,000		✓	✓	✓
G16	Wrightsville Church Rd Extension (W)	SR 44	Carey Station Rd	N/A	2-Lanes	1.47 miles	Public	New Roadway	Connectivity	Improved Connectivity			✓	$7,203,000		✓	✓	✓
														$220,643,200				
Minor Widenings																		
G17	Wrightsville Church Rd	SR 44	Walkers Church Rd	< ideal typical section	12' lanes and 2' paved shoulders	2.22 miles	Public	Minor Widening	Sub-Standard Typical Section	Improved Safety & Capacity		✓		$1,509,600		✓	✓	✓
G18	Liberty Church Rd	Veazey Rd	Hancock County	< ideal typical section	12' lanes and 2' paved shoulders	1.00 miles	Public	Minor Widening	Sub-Standard Typical Section	Improved Safety & Capacity			✓	$680,000		✓	✓	✓
G19	Leslie Mill Rd	Walker Church Rd	Veazey Rd	< ideal typical section	12' lanes and 2' paved shoulders	2.22 miles	Public	Minor Widening	Sub-Standard Typical Section	Improved Safety & Capacity		✓		$1,509,600		✓	✓	✓
G20	White Plains Veazey Rd	Veazey Rd	SR 15	< ideal typical section	12' lanes and 2' paved shoulders	7.07 miles	Public	Minor Widening	Sub-Standard Typical Section	Improved Safety & Capacity		✓		$4,807,600		✓	✓	✓
G21	Carey Station Rd	US 278	SR 44	< ideal typical section	12' lanes and 2' paved shoulders	7.90 miles	Public	Minor Widening	Sub-Standard Typical Section	Improved Safety & Capacity		✓		$5,372,000		✓	✓	✓
G22	Veazey Rd	Walkers Church Rd	Hancock County	< ideal typical section	12' lanes and 2' paved shoulders	11.25 miles	Analysis	Minor Widening	Sub-Standard Typical Section	Improved Safety & Capacity			✓	$7,650,000		✓	✓	✓
G23	Penfield Greensboro Hwy	Planning Mill Rd	Peachtree Rd	< ideal typical section	12' lanes and 2' paved shoulders	6.80 miles	Analysis	Minor Widening	Sub-Standard Typical Section	Improved Safety & Capacity			✓	$4,624,000		✓	✓	✓
G24	Church St	SR 77	White Plains Veazey Rd	< ideal typical section	12' lanes and 2' paved shoulders	3.41 miles	Analysis	Minor Widening	Sub-Standard Typical Section	Improved Safety & Capacity			✓	$2,318,800		✓	✓	✓
G25	Leach Rd	Liberty Church Rd	Walker Church Rd	< ideal typical section	12' lanes and 2' paved shoulders	2.73 miles	Analysis	Minor Widening	Sub-Standard Typical Section	Improved Safety & Capacity			✓	$1,856,400		✓	✓	✓
														$30,328,000				
Intersection/Geometric Improvements																		
G26	Carey Station Rd Interchange	I-20		no interchange	interchange	feasibility study	CWP	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity	✓				✓	✓	✓	✓
G27	US 278	Cunningham Rd					CWP	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity	✓			$1,629,000	✓	✓	✓	✓
G28	US 278 (Broad St)	SR 44 (Main St)				24 crashes	Analysis	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity	✓			$250,000	✓	✓	✓	✓
G29	US 278 (E Broad St)	Walnut St				12 crashes	Analysis	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity	✓			$250,000	✓	✓	✓	✓
G30	US 278 (W Broad St)	SR 15 (Laurel St)				10 crashes	Analysis	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity	✓			$250,000	✓	✓	✓	✓
G31	Carey Station Rd	US 278		angled intersection			Public	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity	✓			$250,000	✓	✓	✓	✓
G32	Carey Station Rd	SR 44					Public	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity	✓			$250,000	✓	✓	✓	✓
G33	Leslie Mill Rd	Walker Church Rd					Public	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity		✓		$250,000		✓	✓	✓
G34	SR 77	SR 15					Public	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity	✓			$250,000	✓	✓	✓	✓
G35	Veazey Rd	Leslie Mill Rd/White Plains - Veazey Rd		offset intersections	align intersections		Public	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity	✓			$250,000		✓	✓	✓
G36	Penfield Greensboro Hwy	Shiloh Church Rd/Hensley Rd		offset intersections	align intersections		Public	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity		✓		$250,000		✓	✓	✓
G37	SR 15	Lick Skillet Rd		offset intersections	align intersections		Public	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity		✓		$250,000	✓	✓	✓	✓
G38	Wesley Chapel Rd	SR 15					Public	Intersection Improvement	Operational & Safety Issues	Improved Safety & Capacity	✓			$250,000	✓	✓	✓	✓
														$4,379,000				
Bridge Improvements																		
G39	Rail Fence Rd	Griffin Creek		365 sq ft		14.00 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations	✓			$56,210	✓	✓	✓	
G40	Centennial Church Rd	Little Shoulderbone Creek		576 sq ft		15.13 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations	✓			$88,704	✓	✓	✓	
G41	Old Eatonton Rd	CSX Railroad (279584U)		1,731 sq ft	Reopen bridge	18.39 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations	✓			$266,574	✓	✓	✓	
G42	Copeland Rd	Greenbrier Creek		2,016 sq ft		31.68 sufficiency rating	CWP	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations	✓			$299,000	✓	✓	✓	
G43	Bethesda Church Rd	South Fork Little River		672 sq ft		36.09 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations	✓			$103,488	✓	✓	✓	
G44	Randolph Church Rd	North Fork Little River		340 sq ft		37.86 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations		✓		$52,360	✓	✓	✓	
G45	Geer Rd	McWhorter Creek		360 sq ft		38.19 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations		✓		$55,440	✓	✓	✓	
G46	Woodville Rd	North Fork Little River		6,102 sq ft		40.67 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations		✓		$939,708	✓	✓	✓	
G47	Johnny Carson Rd	Greenbrier Creek		366 sq ft		45.14 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations		✓		$56,364	✓	✓	✓	
G48	Little Creek Church Rd	Little Greenbrier Creek		426 sq ft		45.95 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations		✓		$65,604	✓	✓	✓	
G49	Cold Springs Rd	Town Creek		891 sq ft	Expand bridge from 1-lane to 2-lane	52.68 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations			✓	$137,214	✓	✓	✓	
G50	SR 44	South Fork Little River		3,816 sq ft		58.53 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations			✓	$587,664	✓	✓	✓	
G51	Veazey Rd	Beaverdam Creek		3,636 sq ft		62.41 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations			✓	$559,944	✓	✓	✓	
G52	Stage Coach Rd	I-20		10,039 sq ft		66.07 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations			✓	$1,546,006	✓	✓	✓	
G53	Carey Station Rd	I-20		8,666 sq ft		69.46 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations			✓	$1,334,564	✓	✓	✓	
G54	Conger Rd	Fishing Creek		bridge has been removed	replace bridge		Analysis	Upgrade Bridge	Rehabilitation or Maintenance	Improved Safety & Operations	✓			$400,000	✓	✓	✓	
														$6,548,844				
Bicycle & Pedestrian Improvements																		
G55	Walker Church Rd Bike Lanes	Veazey Rd	end	no bike lanes/narrow shoulder	bike lanes on both sides	7.77 miles	Public	Bike Lane	Bike/Ped Facilities	Enhanced Multi-Modal System		✓		$1,165,500	✓	✓	✓	✓
G56	MLK Jr Dr Sidewalks	E Brighton St	Adriane Dr	no sidewalk on east	sidewalk on east side	0.31 miles	Analysis	Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System	✓			$31,000	✓	✓	✓	✓
G57	MLK Jr Dr Sidewalks	Adriane Dr	Armour Cir	no sidewalks	sidewalks on both sides	0.30 miles	Analysis	Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System	✓			$60,000	✓	✓	✓	✓
G58	SR 44 Sidewalks	Anita White Carson Middle School	Sixth St	no sidewalk on east	sidewalk on east side	0.22 miles	Analysis	Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System	✓			$22,000	✓	✓	✓	✓
G59	SR 44 Sidewalks	Sixth St	Fourth St	no sidewalks	sidewalks on both sides	0.18 miles	Analysis	Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System	✓			$36,000	✓	✓	✓	✓
G60	US 278 Sidewalks	SR 77 (N)	Hillard St	deficient sidewalks	replace sidewalks	0.48 miles	Analysis	Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System	✓			$96,000	✓	✓	✓	✓
G61	US 278 Sidewalks	Universal Dr	SR 77 (N)	no sidewalks	sidewalks on both sides	0.23 miles	Analysis	Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System	✓			$23,000	✓	✓	✓	✓
G62	SR 77 (N) Sidewalks	US 278	Elementary School	no sidewalks	sidewalks on both sides	0.76 miles	Analysis	Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System	✓			$152,000	✓	✓	✓	✓
G63	SR 44 Sidewalks	SR 77 (N)	Crawfordville Rd/Orear Rd	no sidewalks	sidewalks on both sides	0.54 miles	Analysis	Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System	✓			$108,000	✓	✓	✓	✓
G64	SR 15 Bike Lanes & Sidewalks	US 278	Bowden Pond Rd	no bike lanes/narrow shoulder	bike lanes and sidewalks on both sides	2.56 miles	RDC	Bike Lane & Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System		✓		$896,000	✓	✓	✓	✓
G65	SR 15 Bike Lanes & Sidewalks	US 278	Lick Skillet Rd	no bike lanes/narrow shoulder	bike lanes and sidewalks on both sides	2.11 miles	RDC	Bike Lane & Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System		✓		$738,500	✓	✓	✓	✓
G66	SR 44 Bike Lanes & Sidewalks	US 278	I-20	no bike lanes/narrow shoulder	bike lanes and sidewalks on both sides	2.69 miles	RDC	Bike Lane & Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System		✓		$941,500	✓	✓	✓	✓
G67	MLK Jr Dr Bike Lanes & Sidewalks	US 278	Veazey Rd	no bike lanes/narrow shoulder	bike lanes and sidewalks on both sides	1.13 miles	RDC	Bike Lane & Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System		✓		$395,500	✓	✓	✓	✓
G68	Penfield Rd Bike Lanes & Sidewalks	US 278	Richland Creek Bridge	no bike lanes/narrow shoulder	bike lanes and sidewalks on both sides	2.87 miles	RDC	Bike Lane & Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System		✓		$1,004,500	✓	✓	✓	✓
G69	US 278 Bike Lanes & Sidewalks	Vandiver Rd	Brick House Rd	no bike lanes/narrow shoulder	bike lanes and sidewalks on both sides	6.92 miles	RDC	Bike Lane & Sidewalk	Bike/Ped Facilities	Enhanced Multi-Modal System			✓	$2,422,000	✓	✓	✓	✓
G70	SR 15 Bike Lanes	Lick Skillet Rd	Oconee County	no bike lanes/narrow shoulder	bike lanes on both sides	11.40 miles	RDC	Bike Lane	Bike/Ped Facilities	Enhanced Multi-Modal System			✓	$1,710,000	✓	✓	✓	✓
G71	SR 15 Bike Lanes	Bowden Pond Rd	Hancock County	no bike lanes/narrow shoulder	bike lanes on both sides	11.45 miles	RDC	Bike Lane	Bike/Ped Facilities	Enhanced Multi-Modal System			✓	$1,717,500	✓	✓	✓	✓
G72	US 278 Bike Lanes	Morgan County	Vandiver Rd	no bike lanes/narrow shoulder	bike lanes on both sides	8.67 miles	RDC	Bike Lane	Bike/Ped Facilities	Enhanced Multi-Modal System			✓	$1,300,500	✓	✓	✓	✓
G73	US 278 Bike Lanes	Brick House Rd	Taliaferro County	no bike lanes/narrow shoulder	bike lanes on both sides	7.45 miles	RDC	Bike Lane	Bike/Ped Facilities	Enhanced Multi-Modal System			✓	$1,117,500	✓	✓	✓	✓
G74	SR 44 Multi-Use Path	I-20	Putnam County		multi-use path	8.70 miles	RDC	Multi-Use Path	Bike/Ped Facilities	Enhanced Multi-Modal System		✓		$3,045,000	✓	✓	✓	✓
G75	SR 77 Multi-Use Path	US 278	Oglethorpe County		multi-use path	6.94 miles	RDC	Multi-Use Path	Bike/Ped Facilities	Enhanced Multi-Modal System			✓	$2,429,000	✓	✓	✓	✓
G76	Oconee River Multi-Use Path	US 278	Oconee County		multi-use path	14.42 miles	RDC	Multi-Use Path	Bike/Ped Facilities	Enhanced Multi-Modal System			✓	$5,047,000	✓	✓	✓	✓

Table 9.2
Recommended Improvements

Project Ref. No.	Facility	Segment Limits From	Segment Limits To	Existing Configuration	Improved Configuration	Notes/Comments	Source	Improvement Type	Need	Anticipated Benefit	Implementation Near	Implementation Mid	Implementation Long	Estimated Cost	Potential Funding Source Federal	Potential Funding Source State	Potential Funding Source County	Potential Funding Source Local
														$24,458,000				
Airport Improvements																		
G77	Expand Aircraft Parking Apron			500' x 800'	2x current size		Analysis	Apron Upgrade	Airport Upgrade	accommodate more aircraft	✓			$200,000	✓	✓	✓	✓
G78	Extend Runway			5,000' x 75	5,500' x 100'		Analysis	Runway Extension	Level III Facility	accommodate larger aircraft		✓			✓	✓	✓	✓
G79	Parallel Taxiway			partial	full		Analysis	Taxiway Extension	Airport Upgrade			✓			✓	✓	✓	✓
G80	Security fencing			90% complete	100% complete		Analysis	Fencing	Airport Upgrade		✓			$600,000	✓	✓	✓	✓
G81	Precision Approach						Analysis	Equipment Upgrade	Airport Upgrade		✓			$800,000	✓	✓	✓	✓
G82	Expand Automotive Parking						Analysis	Parking	Airport Upgrade						✓	✓	✓	✓
	Hangar Relocation						Analysis		Airport Upgrade		✓			$120,000	✓	✓	✓	✓
	Crack Seal Apron/Taxiway						Analysis		Airport Upgrade		✓			$15,000	✓	✓	✓	✓
	EA and Land Acquisiton North Terminal						Analysis		Airport Upgrade		✓			$325,000	✓	✓	✓	✓
														$2,060,000				
Rail Improvements																		
G83	Cunningham Rd Crossing	CSX #279573G		passive traffic control	Upgrade crossing	Review for proper upgrades	Public	Upgrade Crossing	Operational & Safety Issues	Improved Safety & Operations	✓					✓	✓	✓
G84	Chapel St Crossing	CSX #279578R			close crossing		Analysis	Close Crossing	Operational & Safety Issues	Improved Safety & Operations	✓			$5,000		✓	✓	✓
G85	Planning Mill Rd Crossing	CSX #279575V		Gates & Warning Devices	Additional Signage		Analysis	Upgrade Crossing	Operational & Safety Issues	Improved Safety & Operations	✓			$300		✓	✓	✓
G86	McKinley St Crossing	CSX #279568K			Upgrade Signage		Analysis	Upgrade Crossing	Operational & Safety Issues	Improved Safety & Operations	✓			$150		✓	✓	✓
														$5,450				
Transit Improvements																		
G87	Regional Transit System						Analysis	Transit	Commute Options	Enhanced Multi-Modal System			✓		✓	✓	✓	✓
G88	Fixed Route Service						Analysis	Transit	Commute Options	Enhanced Multi-Modal System			✓		✓	✓	✓	✓
G89	Park & Ride Lot	I-20 & SR 44			50 parking spaces		Analysis	Transit	Commute Options	Enhanced Multi-Modal System			✓	$50,000	✓	✓	✓	✓
														$50,000				
														$288,472,494				

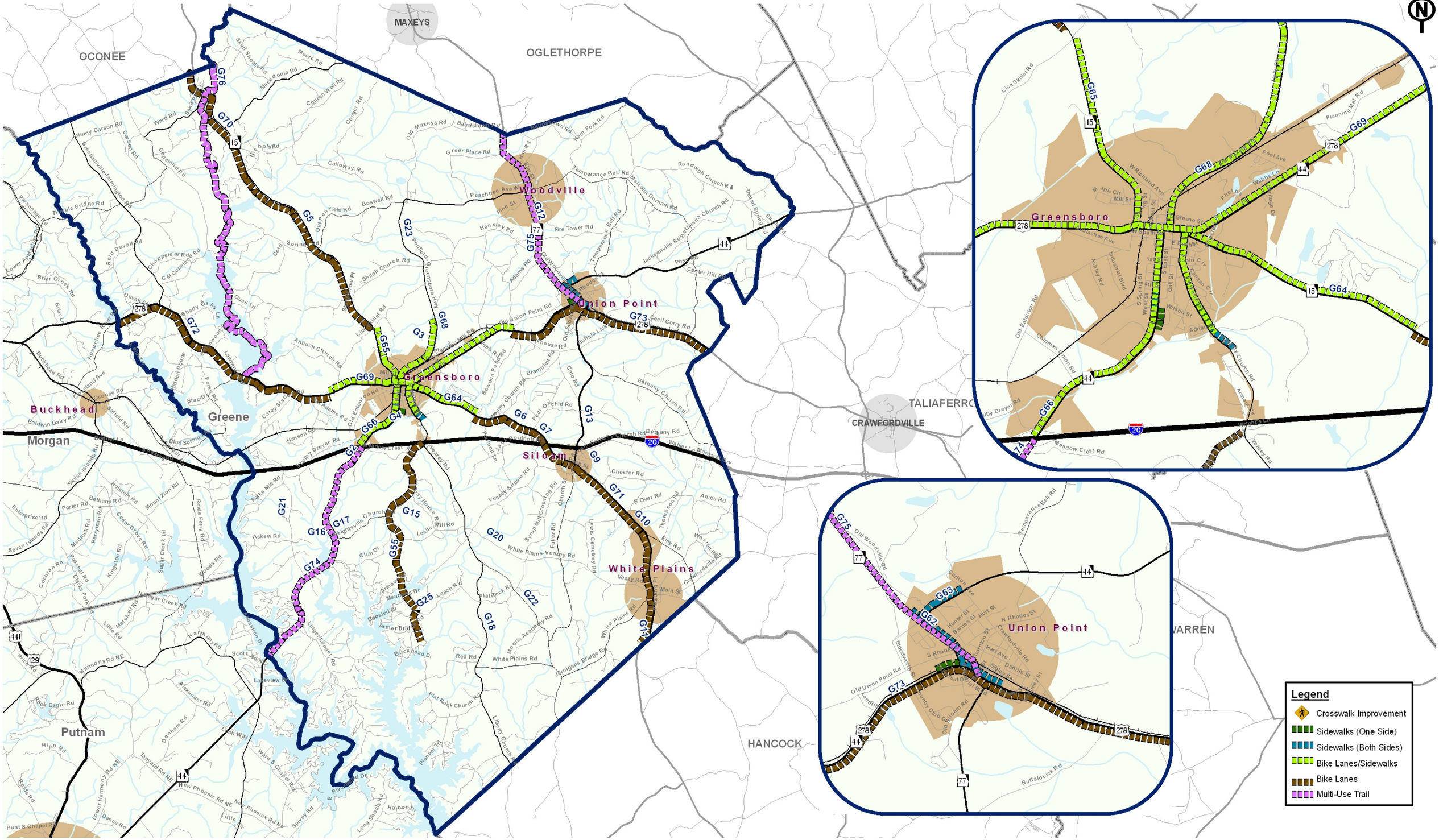
Notes: 1. Intersection Improvements listed include all intersections developed through the public involvement process. Many of these locations may not warrant improvements, however additional study is required to make this determination.
2. Intersection costs assumed a unit cost of $250,000
3. Bridge replacement costs are based off of $140 per square foot
4. Estimated costs DO NOT include Right of Way

Recommended Improvements - Roadway

East Georgia Multi-County Transportation Study

Figure No: 9.2.1

HNTB



Recommended Improvements – Bicycle & Pedestrian

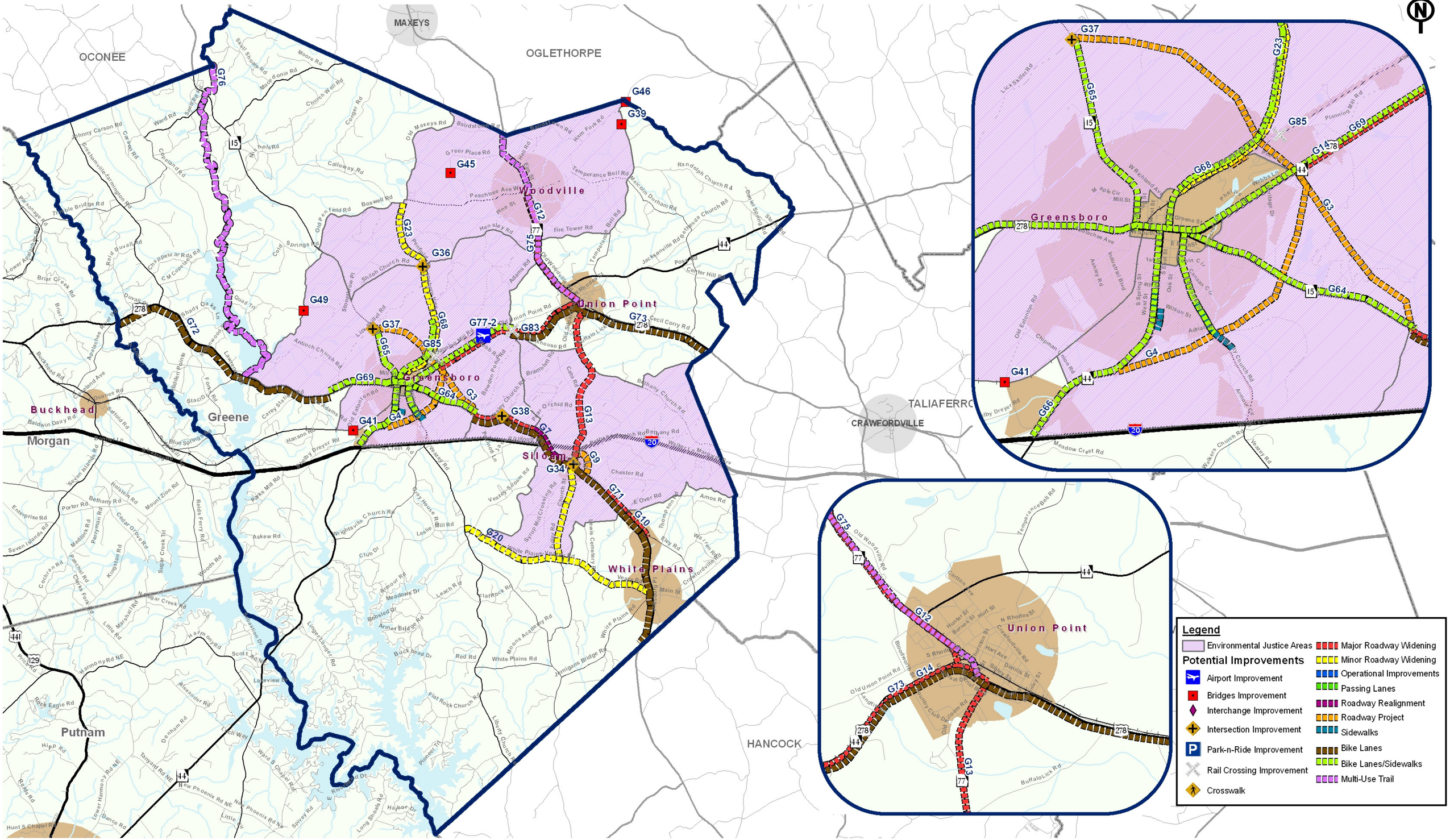
9.3 Environmental Justice Considerations

Another key point of concern in evaluating proposed transportation improvements is environmental justice. This ensures that areas with high concentrations of low-income or minority populations are not adversely impacted by transportation improvements. The following recommended projects are located in EJ areas:

- G3 – Construction of Greensboro Bypass from Lick Skillet Road to Beaver Dam;
- G4 – Construction of East Greensboro Bypass from SR 44 (S) to SR 44/12;
- G6 - Widening of SR 15 from Pear Orchard Road to Greensboro Bypass;
- G7 - Realigning SR 15 from Pear Orchard Road to SR 77;
- G9 – Construction of East Siloam Bypass from SR 77 to south of I-20;
- G10 - Widening of SR 15 from White Plains Bypass to English School Road;
- G12 - Widening of SR 77 from Peachtree Avenue to US 278;
- G13 - Widening of SR 77 from US 278 to SR 15;
- G14 - Widening of US 278 from SR 15 to SR 77;
- G20 - Minor widening of White Plains Veazey Road from Veazey Road to SR 15;
- G23 - Minor widening of Penfield Greensboro Road from Planning Mill Road to Peachtree Road;
- G24 - Minor widening of Church Street from SR 77 to White Plains Veazey Road;
- G34 - Intersection improvements for SR 77 and SR 15 at I-20;
- G36 - Intersection improvements for Shiloh Church Road and Hensley Road at Penfield Highway;
- G37 - Intersection improvements for Lick Skillet Road at SR 15;
- G38 - Intersection improvements for SR 15 at Wesley Chapel;
- G39 - Bridge upgrade for Rail Fence Road at Griffin Creek;
- G41 - Bridge upgrade for Old Eatonton Road at CSX Railroad;
- G45 - Bridge upgrade for Geer Road at McWhorter Creek;
- G46 - Bridge upgrade for Woodville Road at North Fork Little River;
- G49 - Bridge upgrade for Cold Springs Road at Town Creek;
- G56 - Sidewalks along MLK Jr Drive from Brighton Road to Adriane Street;
- G57 - Sidewalks along MLK Jr Drive from Adriane Street to Armour Road;
- G58 - Sidewalks along SR 44 from Middle School to 6th Street;
- G59 - Sidewalks along SR 44 from 6th Street to 4th Street;
- G64 - Bike lanes and sidewalks along SR 15 from US 278 to Bowden Pond Road;
- G65 - Bike lanes and sidewalks along SR 15 from US 278 to Lick Skillet Road;
- G66 - Bike lanes and sidewalks along SR 44 from US 278 to I-20;
- G67 - Bike lanes and sidewalks along MLK Jr Drive from US 278 to Veazey;
- G68 - Bike lanes and sidewalks along Penfield Road from US 278 to Richland Creek Bridge;
- G69 - Bike lanes and sidewalks along US 278 from Vandiver Road to Brick House Road;
- G71 - Bike lanes along SR 15 from Bowden Pond Road to Hancock County;
- G72 - Bike lanes along US 278 from Morgan County to Vandiver Road;

- G73 - Bike lanes along US 278 from Brick House Road to Taliaferro County;
- G75 - Multi-use trail along SR 77 from US 278 to Oglethorpe County;
- G76 - Multi-use trail along Oconee Trail from US 278 to Oconee County;
- G77-82 - Miscellaneous Airport Improvements;
- G83 - Railroad crossing upgrade at Cunningham Road;
- G84 - Roadway extension of Railroad Street to Pool Avenue; and,
- G85 - Railroad crossing upgrade at Planning Mill Road.

The recommended improvements will improve safety, mobility, and access for all users on a county-wide basis. These projects include the need for roadway widening and the possibility of additional right of way. Additional projects that will benefit the EJ communities include: bicycle and pedestrian improvements; transit park and ride lots along I-20; and, numerous safety and capacity enhancements throughout the study area, as shown in Table 9.2. Figure 9.3 shows the recommended projects in the vicinity of the environmental justice areas.



Environmental Justice Evaluation

East Georgia Multi-County Transportation Study

Figure No: 9.3

HNTB

10.0 Project Prioritization

In order to aid GDOT and County staff, potential improvements were ranked by mode based on several evaluation factors. The following sections document the prioritization of improvements for Greene County.

10.1 Corridor Prioritization

Qualitative and Quantitative Evaluation Factors were established so that the potential improvements for Greene County could be evaluated objectively by County staff. These factors were developed by HNTB with the assistance of the SAG, public comment, and GDOT. This evaluation serves as a ranking for potential projects, resulting in a prioritization of improvement options to meet the County's transportation needs. Prioritization criteria were developed for four types of projects – roadway capacity, bicycle and pedestrian improvements, intersections, and bridges.

Qualitative Criteria
Qualitative criteria were established to evaluate the deficient corridors based on various conditions or standards established through the study process. The following list documents the qualitative criteria established for the roadway network improvement evaluation. These correspond to the vision established in the Goals and Objectives documented in Section 7.0.

- Continuation of Existing Road Widening Project
- Governor's Road Improvement Program (GRIP) / National Highway System
- Supports Comprehensive Plan
- Right of Way Protection Corridor
- Connectivity
- Construction Designs in Progress
- Parallel Relief
- Protection of Downtown
- Ideal Typical Section
- Development Conditions

By comparing potential projects to these established criteria, it was possible to determine which projects scored highest against these critical measures. This information was used as an input for prioritizing projects. Table 10.1.1 displays the qualitative criteria and the associated scoring. The total points established by the Qualitative Criteria range from 0 to 36 points. These points were added to the points received from the Quantitative Criteria, which are documented on the following pages.

Table 10.1.1
Qualitative Criteria and Scoring

Corridor Prioritization Criteria	Possible Points
Continuation of Existing Road Widening Project Is the proposed project a continuation of any previously completed or current project providing added lanes to the specific transportation corridor?	No = 0 Yes = 4
Governor's Road Improvement Program/National Highway System Is the project identified as a GRIP Corridor or part of the National Highway System?	No = 0 Yes = 2
Supports Comprehensive Plan Does the proposed project support the Comprehensive Plan?	No = 0 Yes = 3
Right of Way Protection Corridor Is the proposed project located in a developing area where right of way protection or early acquisition is needed?	No = 0 Yes = 3
Connectivity Does the proposed project improve access between activity centers or link existing or proposed projects or provide regional connectivity?	No = 0 Yes = 4
Construction Designs in Progress Are the design plans for the proposed project already complete or in the process of being completed?	No = 0 Yes = 2
Parallel Relief Does the proposed project provide relief to parallel congested/ deficient corridors?	No = 0 Yes = 4
Protection of Downtown Does the proposed project enhance the quality of life in downtown areas?	No = 0 Yes = 4
Ideal Typical Section Does the proposed project address upgrading sub standard roadway segments?	No = 0 Yes = 4
Development Conditions A - Is the proposed project located within a development area, or, is the specific project part of an approved plan for the redevelopment or revitalization of a developed area, or does the specific project provide access infrastructure to a mixed-use project area?	No = 0 Yes = 2
B - Does the proposed project maintain the distinct rural or suburban areas of the County?	No = 0 Yes = 2
C - Has the proposed project coordinated with, or support, land use decisions in the area?	No = 0 Yes = 2
Sub-Total Possible Points	36

Quantitative Criteria

Quantitative criteria were set up to evaluate the deficient corridors based on various measurable conditions. The following list documents the quantitative criteria established for the roadway network improvement evaluation.

- Volume to Capacity Ratio
- Ratio of Corridor Crash Rate (Number of Crashes per 100 Million Vehicle Miles Traveled) to Statewide Crash Rate Average
- Number of Fatalities

Table 10.1.2 displays the quantitative criteria and the associated scoring. The total points established by the Quantitative Criteria range from 0 to 25 points.

Table 10.1.2
Quantitative Criteria and Scoring

Corridor Prioritization Criteria	Possible Points
Volume to Capacity Ratio	
0.00 - 0.349	0.00
0.350 - 0.399	2.00
0.400 - 0.449	2.50
0.450 - 0.499	3.00
0.500 - 0.549	3.50
0.550 - 0.599	4.00
0.600 - 0.649	4.50
0.650 - 0.699	5.00
0.700 - 0.749	5.50
0.750 - 0.799	6.00
0.800 - 0.849	6.50
0.850 - 0.899	7.00
0.900 - 0.949	7.50
0.950 - 1.049	8.00
1.050 - 1.149	9.00
1.150 - 1.249	10.00
1.250 - 1.349	11.00
1.350 - 1.449	12.00
1.450 - 1.549	14.00
1.550 - 1.649	16.00
1.650 -	18.00
Ratio of Corridor Crash Rate to Statewide Crash Rate	
0.01-0.49	0..50
0.50-0.99	1.00
1.00 -1.99	1.50
2.00-2.49	2.00
2.50-2.99	2.50
3.00-3.99	3.00
4.00-5.99	3.50
6.00	4.00
Number of Fatalities	
1	1
2 or more	3
Sub-Total Possible Points	25

The total points that a facility can receive for both the qualitative and quantitative criteria is 61 points. Based upon the identified improvements and the evaluations made during the quantitative and qualitative evaluation, a set of recommended near, mid, and long-term transportation projects was established. The scoring for the deficient corridors is displayed in Table 10.1.3.

Table 10.1.3
Corridor Prioritization

Project Ref. No.	Facility	Segment Limits		Qualitative Criteria	Continuation of Existing Road Widening Project	Governor's Road Improvement Program / National Highway System	Supports Comprehensive Plan	Right of Way Protection Corridor	Connectivity	Construction Designs in Progress	Parallel Relief	Protection of Downtown	Ideal Typical Section	Development Conditions			*Sub-Total Qualitative Criteria*	Quantitative Criteria	Volume/Capacity Ratio	Ratio of 100 Million VMT to Statewide Average	Number of Fatalities	*Sub-Total Quantitative Criteria*	Total Score for Project
		From	To											A	B	C							
					0-4	*0-2*	*0-3*	*0-3*	*0-4*	*0-2*	*0-4*	*0-4*	*0-4*	*0-2*	*0-2*	*0-2*							
G1	SR 44	Putnam County	Linger Longer Rd				✓		✓	✓				✓	✓	✓	*15.00*		0.93	0.60	0	*8.50*	**23.50**
G2	SR 44	Linger Longer Rd	East Greensboro Bypass				✓		✓	✓				✓	✓	✓	*15.00*		0.93	0.45	1	*9.00*	**24.00**
G3	Greensboro Bypass	Lick Skillet Rd	Beaver Dam Creek					✓	✓		✓	✓		✓	✓	✓	*21.00*		0.00	0.00	0	*0.50*	**21.50**
G4	East Greensboro Bypass	SR 44 (S)	SR 44 (NE)				✓	✓	✓	✓	✓	✓		✓	✓	✓	*26.00*		0.00	0.00	0	*0.50*	**26.50**
G5	SR 15	Oconee County	Greensboro Bypass			✓			✓							✓	*8.00*		0.47	0.66	2	*7.00*	**15.00**
G6	SR 15	Greensboro Bypass	Pear Orchard Rd			✓			✓							✓	*8.00*		0.38	0.84	0	*3.00*	**11.00**
G7	SR 15	Pear Orchard Rd	SR 77			✓			✓							✓	*8.00*		0.38	0.95	1	*4.00*	**12.00**
G9	East Siloam Bypass	SR 77	I-20			✓		✓			✓	✓					*13.00*		0.00	0.00	0	*0.50*	**13.50**
G10	SR 15	English School Rd	White Plains Bypass			✓			✓							✓	*8.00*		0.39	0.92	0	*3.00*	**11.00**
G11	West White Plains Bypass	Hancock County	Eley Rd			✓		✓			✓	✓					*13.00*		0.00	0.00	0	*0.50*	**13.50**
G12	SR 77	Peachtree Ave	US 278						✓							✓	*6.00*		0.61	1.31	0	*6.00*	**12.00**
G13	SR 77	US 278	SR 15						✓					✓		✓	*8.00*		0.94	0.82	0	*8.50*	**16.50**
G14	US 278	SR 15	SR 77						✓		✓			✓	✓	✓	*14.00*		0.84	0.64	1	*8.50*	**22.50**
G15	Wrightsville Church Rd Ext (E)	Walker Church Rd	Leslie Mill Rd					✓	✓		✓						*11.00*		0.00	0.00	0	*0.50*	**11.50**
G16	Wrightsville Church Rd Ext (W)	SR 44	Carey Station Rd					✓	✓		✓						*11.00*		0.00	0.00	0	*0.50*	**11.50**
G17	Wrightsville Church Rd	SR 44	Walkers Church Rd						✓		✓		✓				*12.00*		0.46	1.04	0	*4.50*	**16.50**
G18	Liberty Church Rd	Veazey Rd	Hancock County								✓		✓				*8.00*		0.42	1.78	0	*4.00*	**12.00**
G19	Leslie Mill Rd	Walker Church Rd	Veazey Rd						✓		✓		✓				*12.00*		0.46	1.93	0	*4.50*	**16.50**
G20	White Plains Veazey Rd	Veazey Rd	SR 15						✓		✓		✓				*12.00*		0.17	7.45	0	*4.00*	**16.00**
G21	Carey Station Rd	US 278	SR 44						✓		✓		✓	✓			*14.00*		0.39	1.60	0	*3.50*	**17.50**
G22	Veazey Rd	Walkers Church Rd	Hancock County								✓		✓				*8.00*		0.25	1.93	0	*1.50*	**9.50**
G23	Penfield Greensboro Hwy	Planning Mill Rd	Peachtree Rd								✓		✓				*8.00*		0.14	1.34	0	*1.50*	**9.50**
G24	Church St	SR 77	White Plains Veazey Rd								✓		✓				*8.00*		0.49	0.00	0	*3.50*	**11.50**
G25	Leach Rd	Liberty Church Rd	Walker Church Rd								✓		✓				*8.00*		0.00	0.72	0	*1.00*	**9.00**

The prioritization resulted in the following ranking of top roadway improvements:

- East Greensboro Bypass from SR 44 (S) to SR 44 (NE);
- SR 44 from Linger Longer Road to East Greensboro Bypass;
- SR 44 from Putnam County to Linger Longer Road;
- US 278 from SR 15 to SR 77;
- Greensboro Bypass from Lick Skillet Road to Beaver Dam Creek;
- Carey Station Road from US 278 to SR 44;
- SR 77 from US 278 to SR 15;
- Wrightsville Church Road from SR 44 to Walkers Church Road;
- Leslie Mill Road from Walker Church Road to Veazey Road; and,
- White Plains Veazey Road from Veazey Road to SR 15.

Corridors with higher points are considered to achieve more of the goals and objectives established for the LRTP. The points are not meant to be the final decision on whether a project should be implemented or not. Instead these rankings should be employed in conjunction with input from key technical staff from the County and GDOT; input from political decision makers; and, public comment. However, the total points, from the Qualitative and Quantitative scoring, could be used to establish a priority ranking.

10.2 Bicycle & Pedestrian Prioritization

Criteria were established to evaluate the potential bicycle and pedestrian improvements based on various conditions or standards established through the study process. The following list documents the criteria established for the bicycle and pedestrian evaluation. These correspond to the established Goals and Objectives and project evaluation factors.

- Is the project within a bicycle or pedestrian priority area (1-mile buffer around schools, parks & libraries)?
- Did a bicycle or pedestrian related injury or fatality occur in the proposed project area?
- Does the proposed project improve access between activity centers or link existing or proposed projects or provide regional bicycle and pedestrian connectivity?
- Was the proposed project previously identified (STIP, RDC Bike/Ped Plan, Comprehensive Plan)?
- Does the proposed project link to a major bicycle or pedestrian origin or destination?

By comparing potential projects to these established criteria, it was possible to determine which projects scored highest against these critical measures. This information was used as a means for prioritizing projects. Table 10.2.1 documents the scoring used for the bicycle and pedestrian prioritization and Table 10.2.2 displays the scoring applied to the proposed bicycle and pedestrian improvements.

Table 10.2.1
Bicycle & Pedestrian Scoring Criteria

Corridor Prioritization Criteria	Possible Points
Bike Ped Priority Area Is the project within a bicycle or pedestrian priority area (1-mile buffer around schools, parks & libraries)?	No = 0 Partial = 5 Yes = 10
Injury or Fatality Did a bicycle or pedestrian related injury or fatality occur in the proposed project area?	None = 0 Injury = 5 Fatality = 10
Connectivity Does the proposed project improve access between activity centers or link existing or proposed projects or provide regional bicycle and pedestrian connectivity?	No = 0 Yes = 5
Previously Identified Improvement Was the proposed project previously identified (STIP, RDC Bike/Ped Plan, Comprehensive Plan)?	No = 0 Yes = # * 2
Origin & Destination Does the proposed project link to a major bicycle or pedestrian origin or destination?	No = 0 Yes = # * 2

*# * 2 – the number of projects or origins/destinations multiplied by 2*

The prioritization scoring resulted in the following ranking of bicycle and pedestrian improvements:

- US 278 bike lanes & sidewalks from Vandiver Road to Brick House Road;
- SR 77 (N) sidewalks from US 278 to Elementary School;
- SR 44 sidewalks from SR 77 (N) to Crawfordville Road/Orear Road;
- SR 44 sidewalks from Anita Carson Middle School to Sixth Street; and,
- SR 44 sidewalks from Sixth Street to Fourth Street.

The remaining bicycle and pedestrian improvements scored lower and, at this time, should be considered a lower priority.

Table 10.2.2
Bicycle & Pedestrian Prioritization

Road	From	To	Priority Area	Injury / Fatality	Connectivity	Previously Id	O & D	Score
Walker Church Rd Bike Lanes	Veazey Rd	end						0
MLK Jr Dr Sidewalks	E Brighton St	Adriane Dr	✓		✓		1	17
MLK Jr Dr Sidewalks	Adriane Dr	Armour Cir	✓		✓		1	17
SR 44 Sidewalks	Anita White Carson Middle School	Sixth St	✓		✓		2	19
SR 44 Sidewalks	Sixth St	Fourth St	✓		✓		2	19
US 278 Sidewalks	SR 77 (N)	Hillard St	✓		✓			15
US 278 Sidewalks	Universal Dr	SR 77 (N)	✓		✓			15
SR 77 (N) Sidewalks	US 278	Elementary School	✓	I	✓		1	22
SR 44 Sidewalks	SR 77 (N)	Crawfordville Rd / Orear Rd	✓	I	✓			20
SR 15 Bike Lanes & Sidewalks	US 278	Bowden Pond Rd	✓		✓	1		12
SR 15 Bike Lanes & Sidewalks	US 278	Lick Skillet Rd	✓		✓	1		12
SR 44 Bike Lanes & Sidewalks	US 278	I-20	✓		✓	1		17
MLK Jr Dr Bike Lanes & Sidewalks	US 278	Veazey Rd	✓		✓	1		17
Penfield Rd Bike Lanes & Sidewalks	US 278	Richland Creek Bridge	✓			1		12
US 278 Bike Lanes & Sidewalks	Vandiver Rd	Brick House Rd	✓	F	✓	1		27
SR 15 Bike Lanes	Lick Skillet Rd	Oconee County				1		2
SR 15 Bike Lanes	Bowden Pond Rd	Hancock County				1	1	4
US 278 Bike Lanes	Morgan County	Vandiver Rd				1		2
US 278 Bike Lanes	Brick House Rd	Taliaferro County				1		2
SR 44 Multi-Use Path	I-20	Putnam County			✓	1		7
SR 77 Multi-Use Path	US 278	Oglethorpe County				1		2
Oconee River Multi-Use Path	US 278	Oconee County				1		2

10.3 Intersection Prioritization

Criteria were established to evaluate the potential intersection improvements based on various conditions or standards established through the study process. The following list documents the criteria established for the intersection evaluation. These correspond to the established Goals and Objectives and project evaluation factors.

- What is the Average Annual Daily Traffic (AADT) on the facility?
- How many crashes occurred at the intersection between 2003 and 2005?
- Did a fatality occur at the intersection?
- Was the intersection currently identified by the County/City?
- Can operational issues be addressed without installing a traffic signal?

By comparing potential projects to these established criteria, it was possible to determine which projects scored highest against these critical measures. This information was used as a means of prioritizing projects. Table 10.3.1 documents the scoring used for the intersection prioritization and Table 10.3.2 displays the scoring applied to the proposed intersection improvements.

Table 10.3.1
Intersection Scoring Criteria

Corridor Prioritization Criteria	Possible Points
AADT What is the Average AADT at the intersection?	> 4,000 = 5 2,500 - 4,000 = 4 1,000 - 2,500 = 2 < 1,000 = 0
Crashes How many crashes occurred at the intersection between 2002 and 2004?	> 20 = 10 10 - 20 = 5 5 - 10 = 2 <5 = 0
Fatality Did a fatality occur at the intersection?	No = 0 Yes = 10
Previously Identified Improvement Was the intersection currently identified by the County/City?	No = 0 Yes = 5
Improvement Opportunities Can operational issues be addressed without installing a traffic signal?	No = 0 Yes = 5

Table 10.3.2
Intersection Prioritization

Project Ref. No.	Road	Intersection	AADT	Crashes	Fatalities	County / City List	Score
G26	Carey Station Rd Interchange	I-20	6,670	0	0	✓	10
G27	US 278	Cunningham Rd	1,273	9	0	✓	9
G28	US 278 (Broad St)	SR 44 (Main St)	4,300	24	0		15
G29	US 278 (E Broad St)	Walnut St	3,283	12	0	✓	14
G30	US 278 (W Broad St)	SR 15 (Laurel St)	2,063	10	0		7
G31	Carey Station Rd	US 278	660	2	0	✓	5
G32	Carey Station Rd	SR 44	2,727	9	0	✓	11
G33	Leslie Mill Rd	Walker Church Rd	510	1	0	✓	5
G34	SR 77	SR 15	1,575	3	0	✓	7
G35	Veazey Rd	Leslie Mill Rd/White Plains-Veazey Rd	588	5	0	✓	7
G36	Penfield Greensboro Hwy	Shiloh Church Rd/Hensley Rd	160	3	0	✓	5
G37	SR 15	Lick Skillet Rd	813	1	0	✓	5
G39	Wesley Chapel Rd	SR 15	1,090	3	0	✓	7

The prioritization scoring resulted in the following ranking of intersection improvements:

- US 278 (Broad Street) and SR 44 (Main Street);
- US 278 (E Broad Street) and Walnut Street;
- Carey Station Road and SR 44;
- Interchange at Carey Station Road and I-20;
- US 278 and Cunningham Road;
- US 278 (W Broad Street) and SR 15 (Laurel Street);
- SR 77 and SR 15;
- Veazey Road and Leslie Mill Road/White Plains - Veazey Road;
- Wesley Chapel Road and SR 15; and,
- Carey Station Road and US 278.

The remaining intersections scored lower and, at this time, should be considered a lower priority.

10.4 Bridge Prioritization

Bridges with a sufficiency rating of 75 or lower were recommended for improvements. The sufficiency rating was also used to prioritize the bridges in need of rehabilitation or maintenance. The lower the sufficiency rating, the higher the improvement priority.

The prioritization scoring resulted in the following ranking of bridge improvements:

- Rail Fence Road at Griffin Creek;
- Centennial Church Road at Little Shoulderbone Creek;
- Old Eatonton Road at CSX Railroad;
- Copeland Road at Greenbrier Creek;
- Bethesda Church Road at South Fork Little River;
- Randolph Church Road at North Fork Little River;
- Geer Road at McWhorter Creek;
- Woodville Road at North Fork Little River;
- Johnny Carson Road at Greenbrier Creek;
- Little Creek Ch Road at Little Greenbrier Creek; and,
- Conger Road at Fishing Creek.

The remaining bridges have a higher sufficiency rating and, at this time, should be considered a lower priority.

11.0 Funding

Several funding sources will be used to construct as many of the recommended projects as possible. This is usually controlled by the agencies responsible for maintaining and operating the roadway. Most major facilities in Greene County are either operated by GDOT or the County. Should the County desire to accelerate projects on state owned and maintained facilities, it is highly likely that overmatching of local funds could accelerate the process.

Funding for most transportation projects in the County comes in part through GDOT. To understand the ability of GDOT to continue to provide funds to Greene County, it is useful to understand the components of GDOT funding. Key components include:

- Federal Title I Apportionments;
- State Motor Fuels Taxes;
- State License Tag Fees;
- State Title Registrations;
- State Motor Carrier Fuels Tax;
- State Personal Property Tax; and,
- Tax Allocation Districts.

} Accounts for approximately 98% of the budget

While detailed analysis of these funding sources is beyond the scope of this study, it is useful to point out that all of the revenue streams identified as key components of GDOT funding have positive growth rates historically, and it is anticipated that they will continue to grow in the future.

While GDOT funding components have positive growth rates, the Department is experiencing some funding challenges. Construction costs have increased up to 65% over the past two to three years forcing the Department to continually assess which projects it can reasonably fund. It is anticipated that in the future local funding sources will become more significant. A review of project implementation shows that locations with a Special Purpose Option Sales Tax (SPLOST) have been in the best position to leverage funds and ultimately construct projects.

11.1 Federal Funding Sources for Transportation

A substantial portion of GDOT funding comes from the Federal Government through Federal Title I Apportionments. The primary funding source for Title I is the Federal gasoline tax collected at the state level. The US Congress authorizes federal transportation funding to the states and other public entities, generally every six years. The previous authorization was known as the "Transportation Efficiency Act for the 21st Century" or TEA 21. The reauthorization of TEA 21 in August 2005 was SAFETEA-LU which authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005 through 2009.

Based on the reauthorization, Table 11.1 illustrates funding levels for major highway transportation programs and apportionments and allocations to Georgia over the five-year time frame (FY 2005, 2006, 2007, 2008, and 2009).

Table 11.1
Estimated Five-Year SAFETEA-LU Highway Apportionments and Allocations*

Area	Georgia	US
Interstate Maintenance	$922	$25,202
National Highway System	$859	$30,542
Surface Transportation System	$1,119	$32,550
Bridge Replacement & Rehabilitation	$272	$21,607
Congress Mitigation & Air Quality	$186	$8,609
Appalachian Development Highway System	$90	$2,350
Recreational Trails	$10	$370
Metropolitan Planning	$37	$1,481
Safety	$141	$5,064
Rail Highway Crossings	$30	$880
Safe Route to Schools	$18	$612
High Priority Projects	$350	$14,832
Equity Bonus	$2,324	$40,896
Total	$6,356	$183,466

** In millions of dollars (rounded to the nearest million) for FY 2005 through 2009.*
Source: US Department of Transportation

Federal funding for the majority of highway system improvements (excluding interstate highways) planned in Greene County is expected to come from the Surface Transportation Program (STP) and Minimum Guarantee Program. Locally-sponsored projects within the County will generally require a 20% local funding commitment to match federal funds. The local government is also generally responsible for completing the planning and design of the projects as well. Federal and state funds are programmed by GDOT for right of way and construction costs. State-sponsored projects generally require a 10%-20% local funding match.

As part of the federal apportionment and allocation, there are opportunities for local governments to collaborate with GDOT on special transportation projects. These programs include:

- *Scenic Byway Program* - GDOT has initiated a Scenic Byways Program to help communities preserve and promote the cultural and historic resources found along the roadways in Georgia. Once a road becomes designated as a Georgia Scenic Byway, it becomes eligible for federal Scenic Byway funds. Funds can be used to develop corridor management plans to protect the natural and cultural assets along the route.

- *Transportation Enhancement Program (TE Funds)* - Currently, the TE Grant Program provides federal transportation funds through GDOT to local governments through a competitive process for non-highway projects. Eligible projects include bicycle and pedestrian facilities, multi-use trails, the preservation of historic sites related to transportation, etc.

11.2 Federal Funds for Public Transportation

The need for better mobility and access to transportation extends far beyond city limits. In Greene County, a very limited amount of public transportation services are available for people who cannot or choose not to drive their private autos. As the population grows and demographic trends change with a larger percentage of the population being elderly, the needs for special public transit to serve seniors and disabled people will grow.

In addition, as the study area urbanizes and households with workers are formed, there will be growing demands to serve commuter travel needs. Commuter-oriented public transportation services, such as vanpooling programs and express bus services as well as transit facilities, such as park and ride lots will be needed in the area. All of these programs are eligible for federal funding, with the local share ranging from 10 percent for transit vehicle purchases and the construction of park and ride lots up to 50 percent for rural transit operating assistance.

As Greene County evolves, the County should monitor its needs for local and regional public transportation services and identify opportunities to tap into the available federal sources for these programs. Table 11.2 shows the estimated federal funds included in SAFETEA-LU. Generally, for public transit projects proposed in Greene County, the federal funding programs will be the Non-Urbanized Area Program; the Rural Transit Assistance Program; Transit for Elderly and Disabled Persons, Job Access and Reverse Commute; and SAFETEA's New Freedom Program.

Table 11.2
Four-Year Apportionments and Allocations for Public Transportation*

Area	Georgia	US
Urban Areas	$308	$12,723
Fixed Guideway Motorization	$150	$6,076
Non-Urbanized Areas	$62	$1,880
Rural Transit Assistance Program (RTAP)	$1	$29
Job Access/Reverse Commute Program	$13	$603
Elderly & Persons with Disabilities	$12	$490
New Freedoms	$10	$339
Metropolitan Planning	$9	$343
State Planning	$2	$72
Total	$567	$22,598

** In millions of dollars (rounded to the nearest million) for the period from FY 2006 – 2009.*
Source: US Department of Transportation

11.3 State Funding Sources for Transportation

State funding for transportation projects in Georgia 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; and,
- State personal property tax.

It is also useful to note that Georgia currently has one of the nation's lowest state motor fuels taxes, excluding sales taxes. Even when including the additional 4% sales tax, Georgia's motor fuel taxes are the third lowest in the US.

A major element of Georgia's Statewide Transportation Plan is the Governor's Road Improvement Program (GRIP). The program is viewed as a priority funding program for GDOT. The GRIP program was started in 1989 through action by the Georgia Legislature. The program's goal is to connect 95% of the state's cities with a population of 2,500 or more to the Interstate Highway System through a four-lane facility.

11.4 Local Funding Sources for Transportation

Local governments (cities and counties) receive revenues from a number of sources to support the public facilities and services they provide to citizens. These sources include federal and state funds, "own source" funds, such as property tax revenues and other monies, and discretionary grant funds from federal and/or state agencies.

Increasingly, counties in Georgia have enacted SPLOST to fund specifically identified capital projects. 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.

County governments use a portion of their own revenues for transportation-related purposes, including capital projects, and operations and maintenance of transportation facilities within their own jurisdiction. A key determinant of the ability to improve an area's transportation facilities is the availability of local funds to match state and/or federal transportation funds. Data on the County's expenditures for transportation were not available.

According to the Georgia Department of Community Affairs (DCA), the County's "own source" revenues, including revenues from property taxes, sales taxes, excise and special use taxes and service charges and fees were estimated. Own source revenues are relevant because a portion of these funds could be provided as local matching funds for federally and state-funded transportation improvements or for locally-funded projects, depending on the County's other funding priorities. Table 11.4 illustrates this data. In 2004, Greene County had per capita own source amounts of $1,057, which is greater than the statewide average of $611.

Table 11.4
Own Source Revenues

County	2000 Own Source Revenues	2004 Own Source Revenues	% Change from 1996 to 2000	Per Capita Amount*
Greene County	$11.9 million	$16.5 million	39.3%	$1,057

** Statewide per capita amount equals $736.*
Source: Georgia Department of Community Affairs

11.5 GDOT State Transportation Improvement Program (STIP)

Each year, GDOT develops its State Transportation Improvement Program (STIP), a listing of all projects and project phases anticipated to be funded with federal and state funds within the current three-year period. The STIP also contains "lump sum" projects for transportation activities that benefit more than one county jurisdiction, for example, roadway beautification projects.

In its 2006-2008 STIP, GDOT estimated that nearly $8 billion were allocated for various transportation functions throughout Georgia. Table 11.5.1 shows the allocation of these funds across major functional areas.

Table 11.5.1
STIP Fund Allocations (2006 – 2008)

Transportation Function	Amount Allocated	Percent of Total
New Construction	$517,556,000	6.44%
Reconstruction and Rehabilitation	$2,692,175,000	33.52%
Bridges	$1,151,520,000	14.34%
Safety	$778,927,000	9.70%
Maintenance	$785,263,000	9.78%
Transportation Enhancement	$348,825,000	4.34%
Transit	$1,393,728,000	17.35%
Other	$363,293,000	4.52%
Total	$8,031,287,000	100.00%

Additionally, GDOT develops a Construction Work Program, a listing of projects expected to be funded within a six-year period (current year plus five subsequent years). The fourth, fifth, and sixth years of the CWP are viewed as an expression of GDOT's intention to proceed with the projects as funding becomes available to develop the projects (complete engineering design, acquire right-of-way, if needed, and construct the improvement). These projects are documented in this Plan.

According to GDOT's latest STIP for Greene County, a total of 5 major projects have been programmed utilizing nearly $5 million in federal and state funds. Table 11.5.2 summarizes these programmed amounts.

Table 11.5.2
GDOT State Transportation Improvement Program (STIP)

Project	Total Funds Programmed
Greensboro Streetscape Plan - Phase III	$750,000
SR 44 @ Old Eatonton Rd N of I-20 - Intersection Relocation	$1,974,000
I-20 Ramps @ SR 77	$1,198,000
14 Various County Roads - Engineering Assistance	$150,000
Phase I - Part V - Land Acquisition for Runway Extension	$506,860
TOTAL PROGRAMMED FUNDS	**$4,578,860**

11.6 Future Transportation Funding Needs

A combination of federal, state, local, and private funding sources should be pursued for individual projects to improve transportation facilities in the study area. These sources should be pursued depending on GDOT (state), regional and local investment priorities considering the safety, convenience, and economic benefits of the projects throughout the planning period.

12.0 Conclusions

Growth in Greene, Jasper, Morgan, and Putnam Counties has resulted in increased travel demand through the 4-County Region. GDOT Office of Planning, in conjunction with these four Counties, initiated the East Georgia Multi-County Transportation Study to develop a LRTP to serve the 4-County Region through the planning horizon, 2030. Recommended projects were identified and selected according to all applicable rules and regulations with the intent of enhancing the quality of life for County residents and visitors. Efforts were taken to ensure that proposed projects impacted the community as little as possible while providing maximum benefits. Analysis was conducted to ensure that the projects benefited and did not disproportionately impact low-income and minority communities. Ultimately, the study identified multi-modal improvements and prioritized project implementation in the form of a Long Range Transportation Plan.

HNTB coordinated with GDOT, Greene, Jasper, Morgan, and Putnam Counties, local cities, citizens, and other partners in the planning, development, review, and approval of potential improvements. Additionally, a comprehensive and interactive public involvement program was conducted. This ensured that alternative transportation improvements were not only coordinated with various governments, but afforded individual citizens and interested groups the opportunity to provide their input in developing and evaluating potential improvements to each County's transportation network.

The end product for this study was a LRTP that provided for the efficient movement of people and goods within and through Greene County through the horizon year of this study, 2030. Interim year analysis was conducted for the year 2015. As part of this effort existing and future operating conditions were documented for the following modes: highways and bridges, bicycle and pedestrian improvements, freight, transit, railways and airports.

This document should be reviewed and updated periodically to ensure that the planning factors and other assumptions are still relevant and effectively address transportation needs. This document should serve as the foundation for Greene County's transportation planning efforts and a starting point for addressing transportation needs.