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1. Introduction

1.1. *Background*

The Georgia Department of Transportation (GDOT) Office of Planning, in conjunction with Carroll County, initiated the development of a Long Range Transportation Plan (LRTP) to guide transportation planning decisions in Carroll County through 2040. The development of the Carroll County LRTP includes an in-depth look at transportation and economic conditions in order to identify potential projects that address existing and future transportation needs.

This study will evaluate multiple modes including public transit, bicycle and pedestrian, rail, and freight and the transportation infrastructure serving each mode. The Transportation Plan is built upon existing work efforts to date, and provide a mechanism for guiding future transportation decision-making.

The purpose of this technical memorandum is to evaluate existing and future conditions of the multi-modal transportation system within Carroll County. Ultimately, the LRTP will identify multi-modal transportation improvements and discuss project implementation. As part of this effort, a travel demand model was developed for the County to represent the transportation network of the study area and to assist with analysis of future operating conditions.

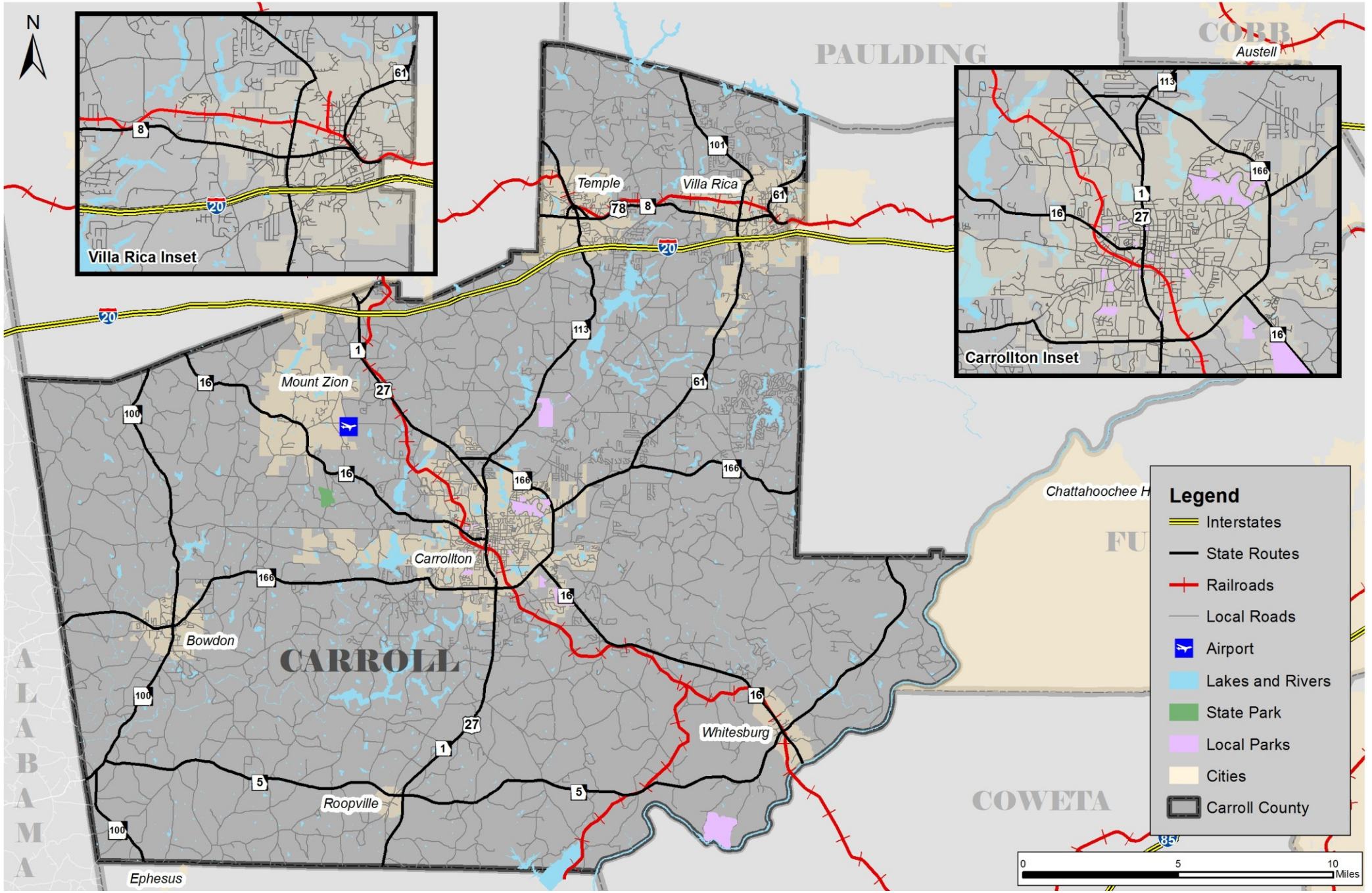
1.2. *Study Area*

Carroll County is situated approximately 40 miles west of Atlanta along the central west Georgia border, adjacent to the Alabama state line to the west and is surrounded by Haralson, Paulding, Douglas, Fulton, Coweta and Heard counties to the north, east and south. Although Carroll County has strong economic ties to the metropolitan Atlanta area, the County with seven small municipalities generally maintains a rural feel, especially in the southern half of the County. The City of Carrollton is the county seat and is home to the State University of West Georgia, a public four-year institution. The other municipalities in Carroll County are Bowdon, Bremen, Mount Zion, Roopville, Temple, Villa Rica and Whitesburg. Figure 1.1 illustrates the study area.

1.3. *Purpose*

The purpose of the Carroll County 2040 LRTP is to build upon previous long-range transportation planning efforts in Carroll County and the region. The updated LRTP will build upon previous plans that have identified long-range transportation needs. The plan will propose a new program of projects and strategies that meets the County's future needs and provide guidance in making decisions regarding resources to meet those needs.

Carroll County is not within a Metropolitan Planning Organization (MPO) service area, but the transportation plan development process followed the guidelines established for MPO's. This 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 as Moving Ahead for Progress in the 21st Century (MAP-21).



Carroll County Long Range Transportation Plan

Figure 1.1: Study Area

Georgia Department of Transportation
Office of Planning

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.

1.3.1. Study Goals

The goal of this plan is to ensure that the County's current and future transportation needs are identified and solutions are developed to address these transportation needs. The goals of this study were developed by evaluating transportation related goals outlined in previous studies in the County including the 2004 Carroll County LRTP and 2008 Comprehensive Plan as well as through input from the stakeholder advisory group. Then those goals were aligned with the Governor's 2012 Strategic Goals and the national transportation planning goals outlined in MAP-21. The study goals for the Carroll County 2040 LRTP are outlined below.

- Improve safety, accessibility and mobility options for people and goods movement
- Promote and protect quality of life by integrating local planned growth, land use patterns and economic development patterns with transportation analysis and planning.
- Emphasize the efficient, operation, and preservation of the existing transportation system while promoting environmental sustainability.
- Accommodate users without access to automobiles and promote health and quality of life by providing a range of mobility options

Documentation on the development of the Goals are provided in Section 7.

2. Review of Previous Studies

It is critical to understand the issues, opportunities and recommendations that resulted from previous studies. Therefore, a review of previous studies that were relevant to the development of this plan was conducted throughout the study area. The Carroll County 2040 LRTP will build upon previous planning efforts to develop a comprehensive transportation solution for Carroll County.

2.1. *Land Use, Socioeconomic and Development Plans*

The *Carroll County Comprehensive Plan*[1] was adopted in September of 2008. It established development strategies to implement Carroll County's vision through the year 2030. The future expressed in the plan reflected local community values, ideals and aspirations developed through stakeholder outreach conducted throughout the County. It general, the plan advocated a managed growth strategy through ongoing coordination between the County's multiple transportation service providers.

The plan developed three managed growth scenarios to be considered for implementation over the plan's 20-year horizon. The first development scenario called for rural residential growth that maintained existing land uses and zoning practices to minimize public infrastructure developments in the County. The second scenario called for mixed-use corridor development between two highway corridors (US 27 and US 61) to preserve agricultural and greenway space while providing economic development opportunities and expanding public infrastructure development in the northeastern part of the County. The third scenario focused on promoting future growth within and near existing urban centers to preserve agricultural lands by limiting rural development to infill of existing parcels.

Each of the scenarios was then evaluated for:

- The ability to accommodate projected growth;
- Impact on community character in incorporated and unincorporated areas;
- Effect on timber and agricultural productivity;
- Promotion of economic development prospects;
- Transportation and utility costs and impacts; and
- Community facility and service costs.

After evaluating each of the alternatives and receiving input from the public, the Planning Commission and the Board of County Commissioners, planners selected a preferred alternative to shape future development in the County. The proposed future land use map for Carroll County is provided in Section 3.5.

In 2003, Carroll County initiated a countywide Greenspace Program that is a collaborative effort between the County and five of its municipalities. The *Carroll County Greenspace Plan* is a comprehensive document that identifies scenic views and watersheds targeted for preservation. The goals of the program were to preserve 20 percent of Carroll County's land base while protecting watersheds and drinking water quality. The program was implemented

[1] http://www.carrollcountyga.com/pages/comprehensive_plan/

through a variety of tools including: transferable development rights; zoning and subdivision code revisions; landscape ordinances; and use of special purpose local option sales tax funding. Major obstacles to implementation of the plan were the high costs of land acquisition and a lack of sewer service that made the clustering of homes difficult. However, authorization to use community wastewater systems helped overcome limitations on cluster developments.[2]

Carroll Tomorrow is an economic development organization created in 2001 to promote economic growth in Carroll County. The initiative's leaders work closely with state economic developers to promote the development of clean industries within Carroll County, while also recognizing the value of historic preservation as a vital ingredient to maintaining and enhancing the community's quality of life. The group has worked closely with local, merchant organizations, and other groups engaged in economic development throughout the County.[3]

2.2. Transit, Roadway and Bridge Plans

The last Carroll County LRTP was completed in 2008. The purpose of the plan was to meet federal and state planning requirements and provide the County with the tools to understand its transportation network and the challenges that it faces in the future. The major challenges identified in the plan were based on accommodating an increasingly urbanized population while minimizing environmental impacts on the County's natural resources. As a result, Carroll County and GDOT worked together through a long range transportation planning process to develop the County's Planning Process Manual. The steps were closely followed during the two-year process and a resulting plan was developed.

Public involvement and technical data were featured and emphasized during the process. The public involvement process utilized techniques such as media releases, stakeholder meetings, community dialogue sessions and extensive interaction with County staff. The plan also evaluated transportation and population data that was entered into a travel demand forecasting model to compare several future growth scenarios. Based on the public involvement process, data collection, model runs, and extensive discussions with County staff, a multi-modal program of projects was then prepared to ensure the County would meet its future capacity needs.

Public transit in Carroll County is limited to several non-profit services within the largest communities in the County. The Georgia Department of Human Resources provides limited transportation services through its Coordinated Transportation System. This system assists county residents in reaching services of the Division of Aging Services, Mental Health/Developmental Disabilities/Addictive Diseases, and Family and Children Services. The *Rural Human Services Transit Plan* completed in 2012 suggested that the County should coordinate more with regional transit entities to explore potential commuter bus services over the next five years.

In 2003, GDOT inspected all county and federal aid secondary bridges in Carroll County and submitted a *Locally Owned Federal Aid Route Bridge Inspections Report* detailing their

[2] Carroll County Comprehensive Plan Update: Appendix A. 2008.
[3] http://www.carrolltomorrow.com/

findings. The inspection evaluated 97 bridges in Carroll County. The results of this study are further discussed later in this document.

2.3. Rail Plans

The Georgia Department of Transportation (GDOT), in partnership with the Regional Planning Commission of Greater Birmingham (RPCGB) analyzed the corridor between the Hartsfield-Jackson Atlanta International Airport (H-JAIA) and downtown Birmingham, AL as a part of a feasibility study evaluating the connection between the Gulf Coast High-Speed Rail Corridor (New Orleans-Birmingham-Atlanta) and the Southeast High-Speed Rail Corridor (Atlanta-Charlotte-Raleigh-Washington D.C.). The alternatives considered follow the general path of I-20 through northern Carroll County. The study found that high-speed rail service was feasible in the Atlanta-Birmingham Corridor and the results of this analysis were used to set priorities for future state planning and corridor development activities.

2.4. Bike and Pedestrian Plans[4]

In 2005, the Chattahoochee-Flint Regional Development Commission completed a *Regional Bicycle and Pedestrian Plan*[5] that included Carroll County, as well as Coweta, Heard, Meriwether and Troup Counties. Along with inventorying existing bicycle and pedestrian facilities and activities, the plan formulated goals and strategies for the ongoing development of these modes of transportation. The Chattahoochee Trace state bicycle route passes through Carroll County. Approximately 23 miles of the route are located within the County. The Chattahoochee Trace is a north-south bicycle route that extends from the Tennessee state line south to Seminole State Park. The plan identified significant bicycling and pedestrian facilities development opportunities in McIntosh Reserve in Carroll County. The plan proposed 287 miles of bicycle system improvements totaling more than $9.3 million. In addition, the plan proposed 35-miles of additional off-road pedestrian facility improvements totaling $16 million.

Also in 2005, the city of Carrollton completed a Downtown Master Plan that focused on creating a vibrant, accessible downtown that served as a popular destination for residents. The plan recommended new parking decks, enhanced streetscapes, and open space amenities to effectively establish bike and pedestrian connections in the downtown area.

While there are extensive sidewalk networks within incorporated cities, Carroll County does not require or maintain sidewalks in the unincorporated areas of the County. The County is coordinating with its cities to develop urban standards in Urban Growth Areas to address the installation and maintenance of sidewalks. In addition, the County is participating in the Safe Routes to Schools programs, in conjunction with the school district, to develop pedestrian friendly networks around schools located in residential areas.

In 2002, Carroll County worked with the Chattahoochee Hill Country Alliance and PATH Foundation to develop a four-county *Greenway Trail Master Plan* along 98-miles of the Chattahoochee River. The County Board adopted a resolution supporting the master plan in

[4] http://www.carrollcountyga.com/uploads/documents/plan/AppendixB-Map15-BicyclePaths.pdf
[5] http://www.dot.state.ga.us/travelingingeorgia/bikepedestrian/documents/plans/ChattahoocheeFlint_Region_BikePed_Plan_2005.pdf

2003. In 2005, Congress authorized $2 million for capital investment in the Greenway Trail Master Plan.

Carroll County conducted the *Passive Recreation Master Plan*[6] in August of 2007 that planned improvements for parks across the County. Prior to the study, the County purchased several sites, including a 270-acre tract along the Little Tallapoosa River, a 320-acre tract on the Heard County line, and a 150-acre former site of Oak Mountain Academy. These sites, when included with McIntosh Reserve, a 527-acre tract owned by Carroll County since 1978, and other smaller County sites, total of over 1,400-acres of greenspace in Carroll County that will be developed for passive recreation and greenspace through the Passive Recreation Master Plan.

Carroll County first developed a passive recreation "Needs Assessment" that encouraged public input and comment during the planning process. Then, using the public input received, the County developed conceptual master plans for all four parks. The master plan outlined probable construction costs for each park and suggested an implementation plan for each. The study also suggested program elements that could be implemented at each park location.

In 2009, Carroll County purchased Moore's Bridge Park for use as a passive recreation park. This park is located near Whitesburg, Georgia in Southeast Carroll County and borders the Chattahoochee River. Priority will be placed on conserving and interpreting the property's rich history and notable features. The project will include trail and bridge improvements throughout the park that cater to both horseback riding and walking patrons.

2.5. *Freight Transportation Plans*

The *Georgia Statewide Freight and Logistics Plan* evaluated the state's freight transportation network and the opportunity for Georgia to develop additional freight capacity to improve the movement of goods across the state. The study also considered the development of public-private partnerships in Georgia and neighboring states to ensure future freight growth not only in Georgia, but also across the entire Southeast US region. Carroll is the 12th largest county for freight movement (by total tonnage) and ships about 1.6 percent of the state's overall freight (to, from, and within). There is an interesting dynamic between the truck and rail modes in the County. Carroll County ships nearly 60 percent of its goods by rail, which is different than most other counties in the state that ship a large majority of their goods by truck.

The freight study identified some statewide initiatives that may indirectly impact Carroll County. The first is the development of the Crescent Corridor, an expansion of the Norfolk Southern rail corridor between Louisiana and New Jersey. The Crescent Corridor is a major project that will help the state achieve its freight rail planning goals. The second initiative is the widening of the Panama Canal in 2014. It is expected that container traffic will increase significantly, and that if the Port of Savannah could capture just 10 percent of the projected container traffic increases, the port could double its size over a 10-year period. State freight planners gave the port specific consideration because of the potential impacts it could have on

[6] http://www.carrollcountyga.com/uploads/documents/CarrollCoMasterPlan-Intro.pdf

other freight modes. Positioning the port with sufficient portside, landside, and inland road and railroad infrastructure will ensure that Savannah can attract freight growth that may be transported through the Panama Canal. The study estimated that the potential economic growth from an improved freight transportation system could be $16 billion over the next 30 years. However, it will require timely and significant investments in freight transportation to become a reality.

2.6. *Planned and Programmed Improvements*

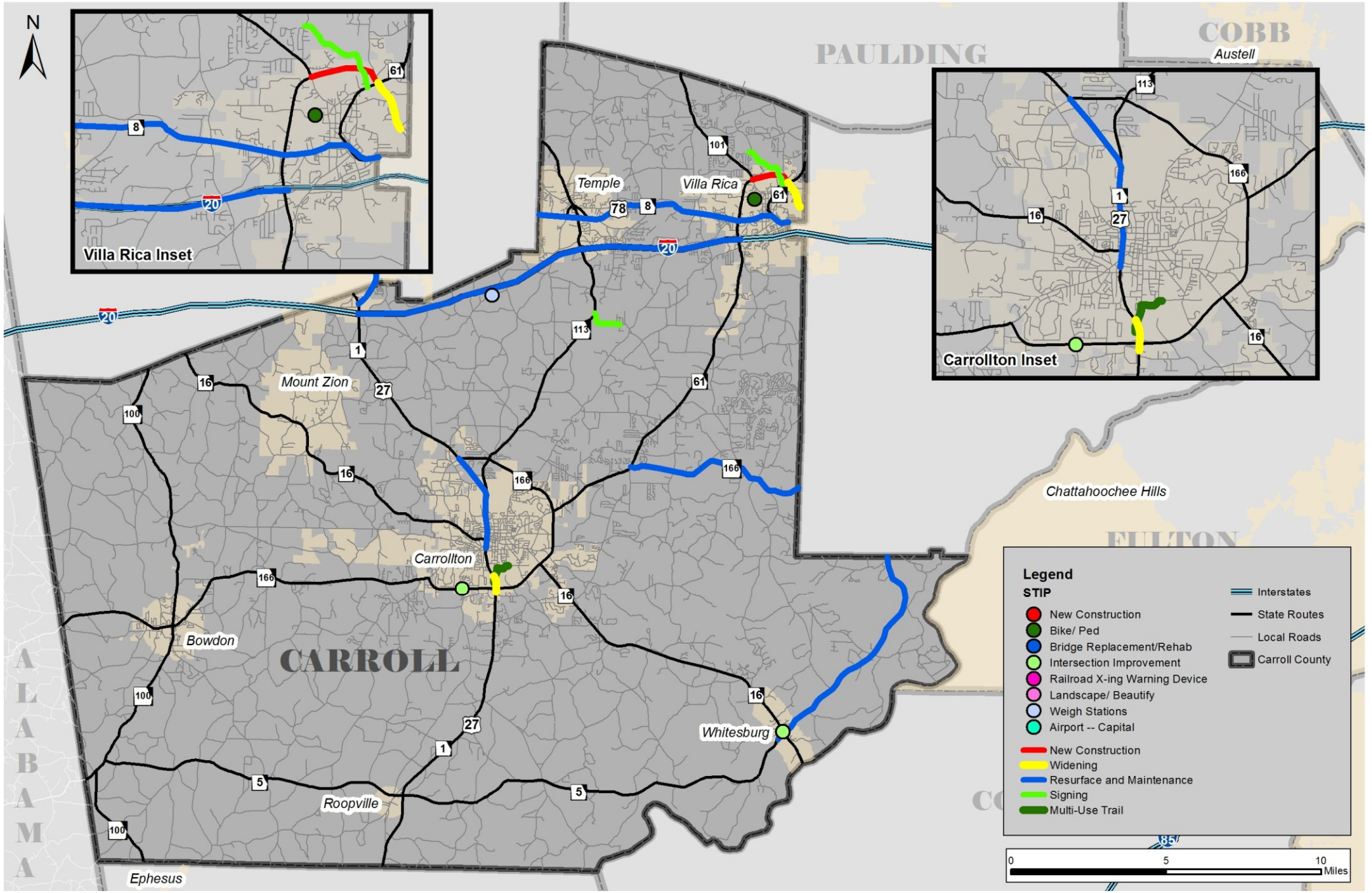
Carroll County has several planned and programmed improvements currently listed in the 2014-2017 State Transportation Improvement Program (STIP). The following list highlights the general types of planned and programmed improvements for the County:

- Roadway widening;
- Intersection improvements;
- Bicycle and pedestrian enhancements;
- New roadways; and
- Resurfacing and maintenance.

The STIP was reviewed for specific projects impacting Carroll County and its municipalities through 2040 and these projects are listed in Table 2.1 and mapped in Figure 2.1.

Table 2.1: FY 2014-2017 STIP Projects

PI Number	Type	Location	Total Cost
0000312	Widening	SR 1/US 27 from Central Rd N to Dixie St	$17,506,561
0005827	Intersection Improvement	SR 166 at Hays Mill Rd	$424,258
0006026	Intersection Improvement	SR 5 at SR 16/US 27 ALT	$1,617,262
0007640	Multi-use Trail	Chattahoochee Hills Regional Greenway Trail	$562,437
0010457	TE – Bicycle/Ped Facility	Villa Rica Trailhead	$625,000
0010493	Signing	McCurdy Rd from SR 61 to Harlan Lane Rd & W Hickory Level Rd from SR 113 to Hickory Level Ln	$45,000
0010948	Multi-use Trail	Carrollton Greenbelt from SR 166 Bypass to E of Strickland Rd	$2,182,150
631490-	New Construction	Villa Rica Bypass extend W from proposed SR 61 Bypass to SR 101	$11,226,488
662540-	New Construction	SR 61 Conn. from SR 61 to S of Shoreline Pkwy	$8,614,423
M003308	Pavement Rehab	I-20 from SR 1/US 27 to SR 61	$33,222,424
M003688	New Weigh Station	I-20 from Pleasant Ridge Rd to Levans Rd	$19,336,509
M004550	Resurface & Maintenance	SR 5 from .07 miles S of NS #719394H to Douglas County	$1,285,748
M004648	Resurface & Maintenance	SR 1 BU from N of SR 1 (Carroll) to S of SR 1 (Haralson)	$1,128,794
M004796	Resurface & Maintenance	Districtwide ROW Tree Cutting	$200,000
M004837	Resurface & Maintenance	SR 166 from Douglas County to SR 61	$1,037,417
M004838	Resurface & Maintenance	SR 1/US 27 from NS #719232F to SR 166	$945,263
M004839	Resurface & Maintenance	SR 8 from Haralson County to Douglas County	$3,262,804
		Total	**$103,222,538**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Mount Zion
Carrollton
Bowdon
CARROLL
Whitesburg
Roopville
Ephesus
Chattahoochee Hills
FULTON
ALABAMA
Legend
STIP
New Construction
Bike/ Ped
Bridge Replacement/Rehab
Intersection Improvement
Railroad X-ing Warning Device
Landscape/ Beautify
Weigh Stations
Airport -- Capital
New Construction
Widening
Resurface and Maintenance
Signing
Multi-Use Trail
Interstates
State Routes
Local Roads
Carroll County
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3. Land Use Assessment

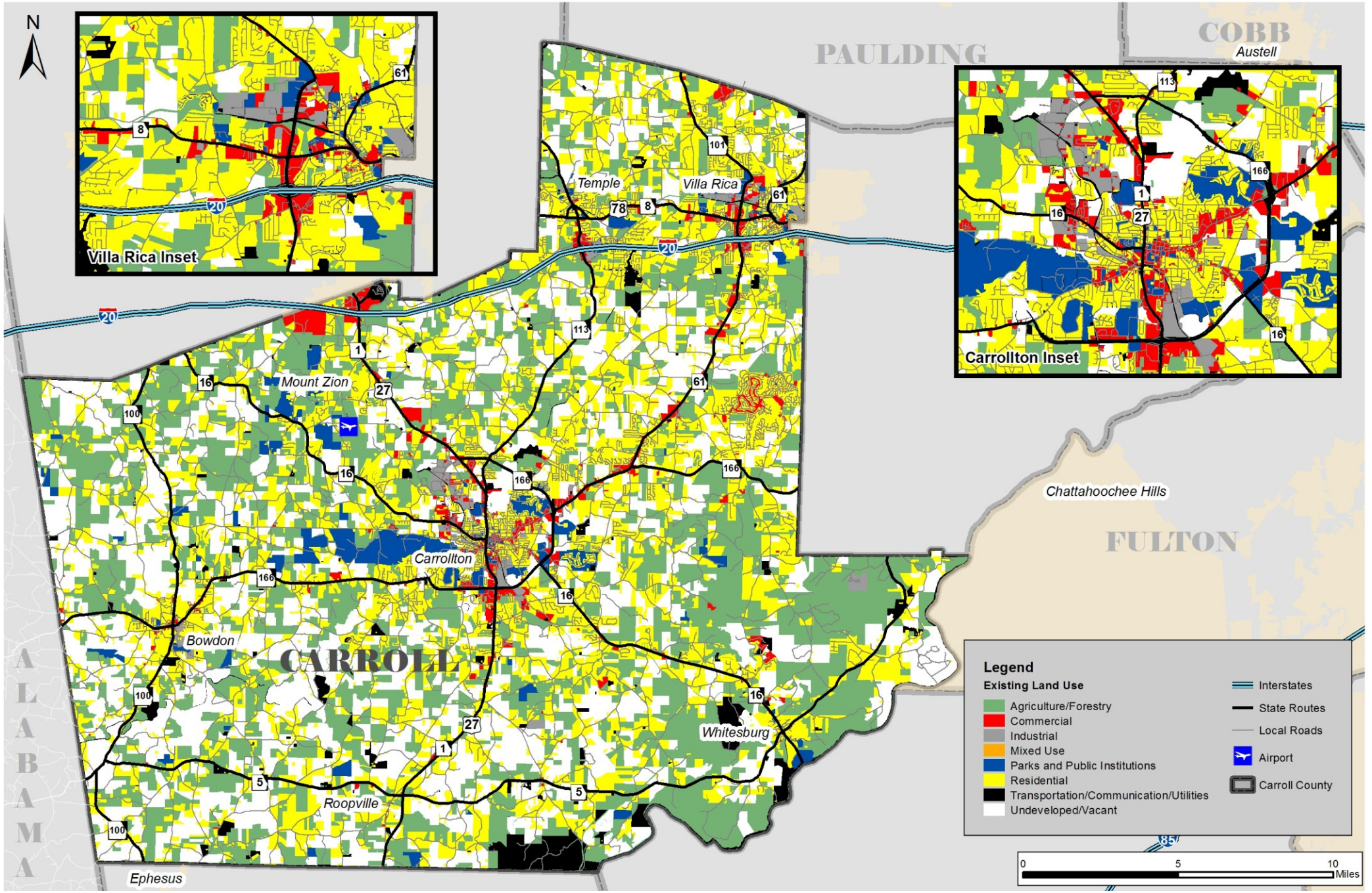
3.1. *Existing Land Use*

Forest and agricultural lands cover much of the landscape in the southern parts of Carroll County, along with some vacant or undeveloped land and low-density residential uses. Overall, agriculture and forestry lands cover approximately 34 percent of the County. Residential uses cover approximately 27 percent, while undeveloped/vacant lands cover a slightly higher 28 percent. Commercial land uses only account for 2 percent of land. Low-density residential uses are concentrated in the northern half of the County, mostly around Carrollton and between Temple and Villa Rica. Typical lot sizes range from 2-4 acres in rural areas to ½ acre in higher density areas. The existing land use patterns for Carroll County are shown in Figure 3.1. Table 3.1 shows the number of acres for each land use type in the County and the total percentage of the County's land use.

Table 3.1: Existing Land Uses

Land Use	Acres	Total %
Agriculture/Forestry	235,467	34%
Undeveloped/Vacant	191,458	28%
Residential	185,513	27%
Transportation/Communication/Utilities	43,993	6%
Commercial	12,929	2%
Public/Institutional	11,349	2%
Industrial	4,458	1%
Park/Recreation/Conservation	4,261	1%
Mixed Use	4	0%
Total	**689,432**	

Infrastructure investments in the County have had major influences on the County's development patterns. Major transportation routes including I-20, US 27, and SR 61, have attracted a mix of commercial and residential development adjacent to their corridors. Public water infrastructure has also attracted greater density developments as the Carroll County Water Authority (CCWA) has increased services around Mt. Zion and Villa Rica. Wastewater treatment facilities in the County's major towns have also contributed to higher densities in the northern part of the County. In the unincorporated parts of the County, residents rely on septic systems that require larger lot sizes. In the County's previous comprehensive plan, officials called for more development of centralized water systems in designated urban growth areas to facilitate further residential growth in the County.



Source: Three Rivers Regional Commission

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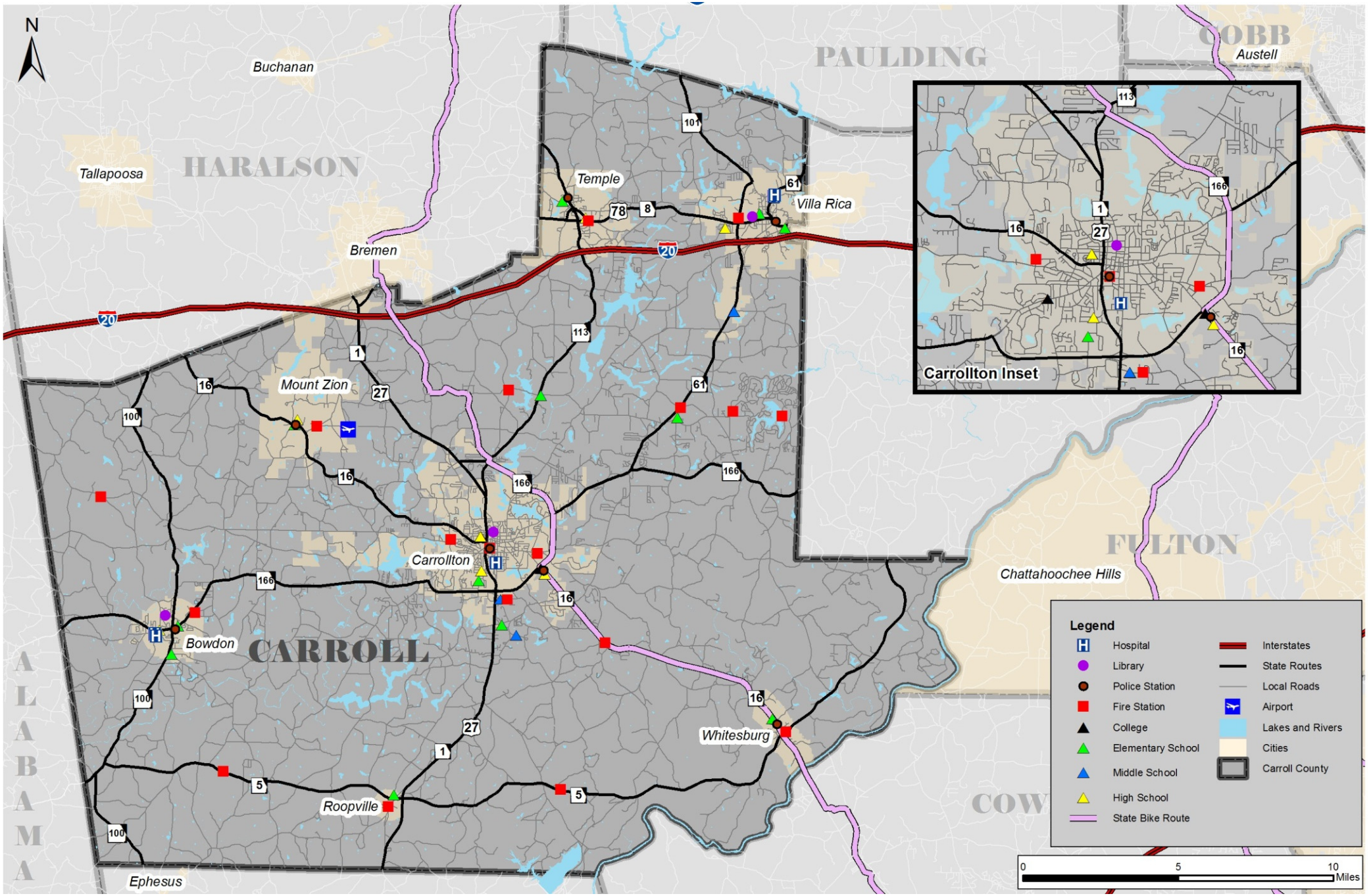
3.2. *Parcel Data/Zoning*

Carroll County controls zoning and land use development through several regulations. Agricultural zoning districts permit land to be split into tracts of four acres or more, which has led to many agricultural zoned tracts being developed for low-density residential use. Residential zoning districts allow for varied lot sizes with minimums ranging from ½ acre (R-3) to 3-acre minimums for (R-1) and no maximum lot size regulation.

3.3. *Community Facilities*

It is important to provide efficient connections between key community facilities. Therefore, one component of the Carroll County 2040 LRTP is to understand where these resources are located and to evaluate the communities' access to these vital facilities. Carroll County has many community facilities dispersed throughout the study area, as shown in Figure 3.2. These include 12 elementary schools, 3 middle schools, 11 high schools, 5 private schools, 6 hospitals, 6 city halls, 18 fire stations, 3 libraries, and 2 universities.


N
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Chattahoochee Hills
FULTON
CARROLL
Bowdon
Whitesburg
Roopville
Ephesus
ALABAMA
Legend
Hospital
Library
Police Station
Fire Station
College
Elementary School
Middle School
High School
State Bike Route
Interstates
State Routes
Local Roads
Airport
Lakes and Rivers
Cities
Carroll County
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3.4. *Environment*

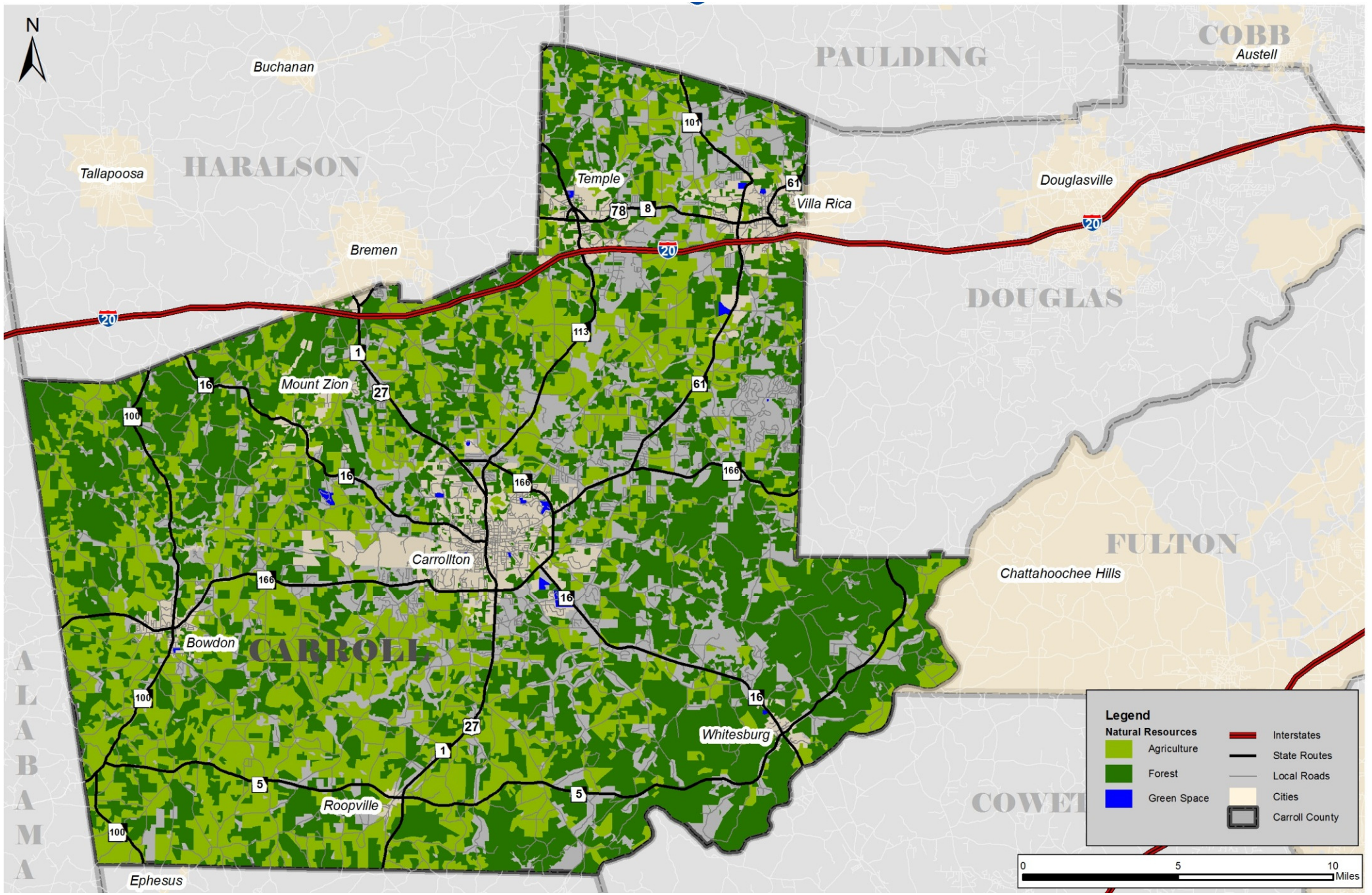
Environmental conservation of natural and historic resources in Carroll County is essential to improving the community's quality of life. The County's long-term economic and cultural stability is dependent on these resources, and it is important to preserve them for future residents and visitors. The following section describes the County's environmental resources.

3.4.1. Natural Resources

Many natural resources exist in Carroll County including prime agricultural soils, forest land, rivers, wetlands, and green spaces. Figure 3.3 illustrates the natural resources in the County. The Carroll County comprehensive plan estimated that prime agricultural soils account for 12.5 percent of the land in the County. Much of the rest of the County is forest land, consisting of pine, oak, and hickory trees on upland locations with willow, beech, poplar, dogwood, and ash trees in the lowlands. Forest areas are prevalent in the northwest and southeast parts of the County, and the production of forest products is most common in these areas.

The Chattahoochee and Little Tallapoosa river basins carry water southwesterly through Carroll County. The Chattahoochee River traverses along the southeast border of the County while the Little Tallapoosa River runs from Villa Rica, through Carrollton, and south of Bowdon to the County's west border with Alabama. The tributaries of both rivers include Snake and Whooping Creeks flowing into the Chattahoochee River and Big Indian and Buck Creeks flowing into the Little Tallapoosa River.

Carroll County also includes nearly 3,000 acres of state, public, and private recreational facilities including the MacIntosh Reserve, John Tanner State Park, Lake Carroll, Lake Buckhorn, and Lake Tisinger. The County's parks offer camping, lodging, fishing, boating, hiking, swimming and other recreational activities; and are a major environmental asset for the County's residents.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Douglasville
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Mount Zion
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Chattahoochee Hills
FULTON
Bowdon
CARROLL
Whitesburg
Roopville
Ephesus
ALABAMA
Legend
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Agriculture
Forest
Green Space
Interstates
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Local Roads
Cities
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3.4.2. Historic Resources/Structures

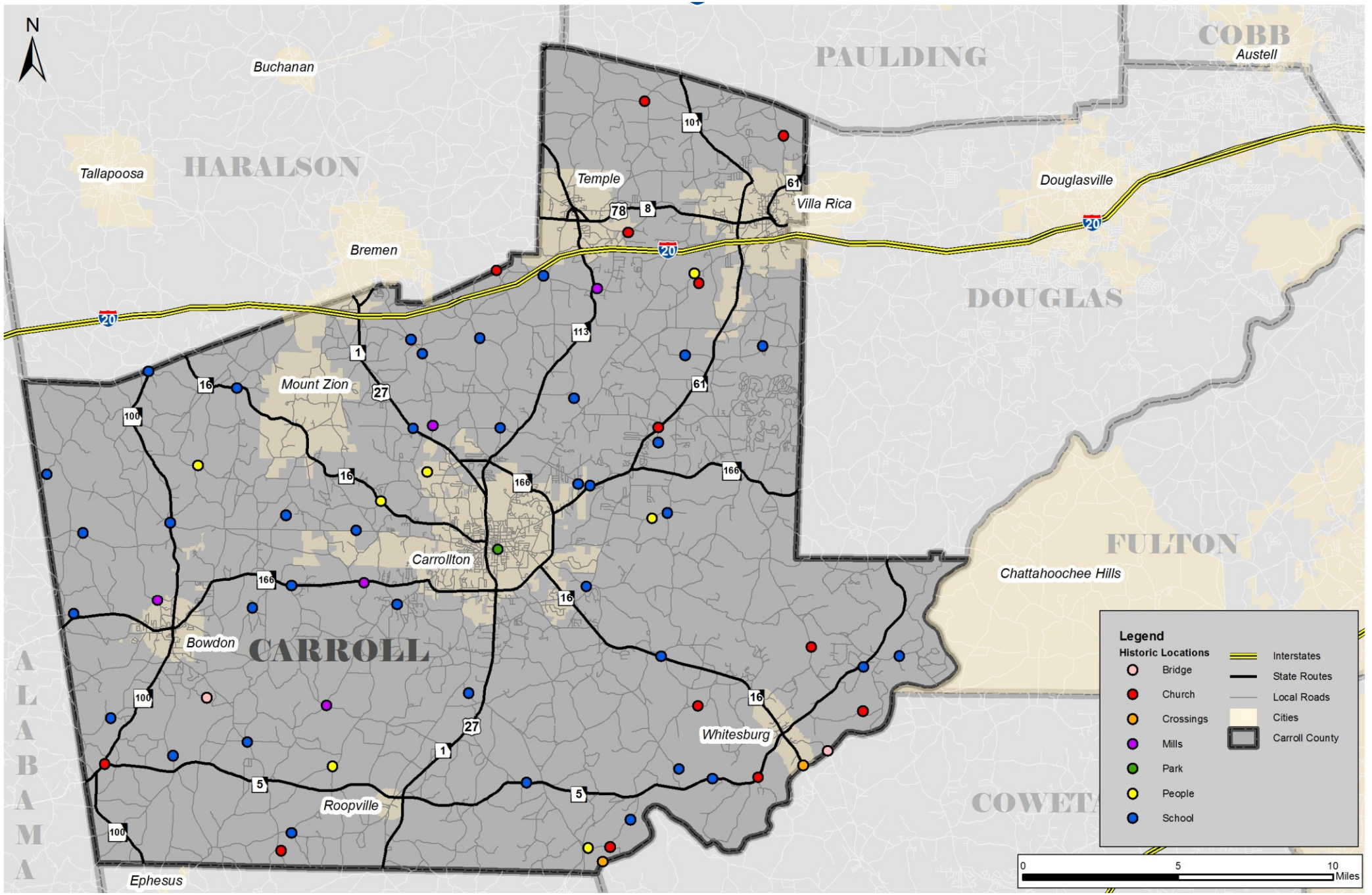
Carroll County has protected numerous historical resources within the County. The County has developed partnerships in the past that have combined to preserve a historic district in Bowdon, the Stockmar Gold Mine in Villa Rica, the renovated Folds House in Carrollton, and the Veal School; to name a few. Table 3.2 lists the sites on the National Historical Register in Carroll County as of 2013. Figure 3.4 illustrates the location of historic resources.

Table 3.2: Sites on the National Register of Historic Places

Name	Location	City	Listed
Bonner-Sharp-Gunn House	University of West Georgia Campus	Carrollton	1970
Bowdon Historic District	SR 166 and SR 100	Bowdon	2009
Burns Quarry	Information Restricted	Carrollton	1980
Carroll County Courthouse	Newnan St and Dixie St	Carrollton	1980
Carrollton Downtown Historic District	Around Downtown Square	Carrollton	2007
Dorough Round Barn and Farm	Villa Rica Rd north of Hickory Level Rd	Villa Rica	1980
Eric Vernon Folds House	1575 SR 16 S	Carrollton	2005
Lawler Hosiery Mill	301 Bradley St	Carrollton	2005
Dr. James L. Lovvorn House	113 E College St	Bowdon	1988
Mandeville Mills and Mill Village Historic District	Aycock St, Lovvorn Rd, and Burson Ave	Carrollton	2006
McDaniel-Huie Place	1238 SR 166 West	Bowdon	1990
North Villa Rica Commercial Historic District	Southern RR, North Ave, E Gordon St, and W Church St	Villa Rica	2002
South Carrollton Residential Historical District	RR tracks, Harmon Ave, Bradley St, Mill St and Garrett St, Tillman Dr and Hill Dr	Carrollton	1984
U.S. Post Office	402 Newnan St	Carrollton	1983
Veal School	2753 Old Columbus Rd	Roopville	2005
Whitesburg Baptist Church	662 Main St	Whitesburg	2002
Williams Family Farm	55 Goldworth Rd	Villa Rica	2005

3.5. *Future Land Use*

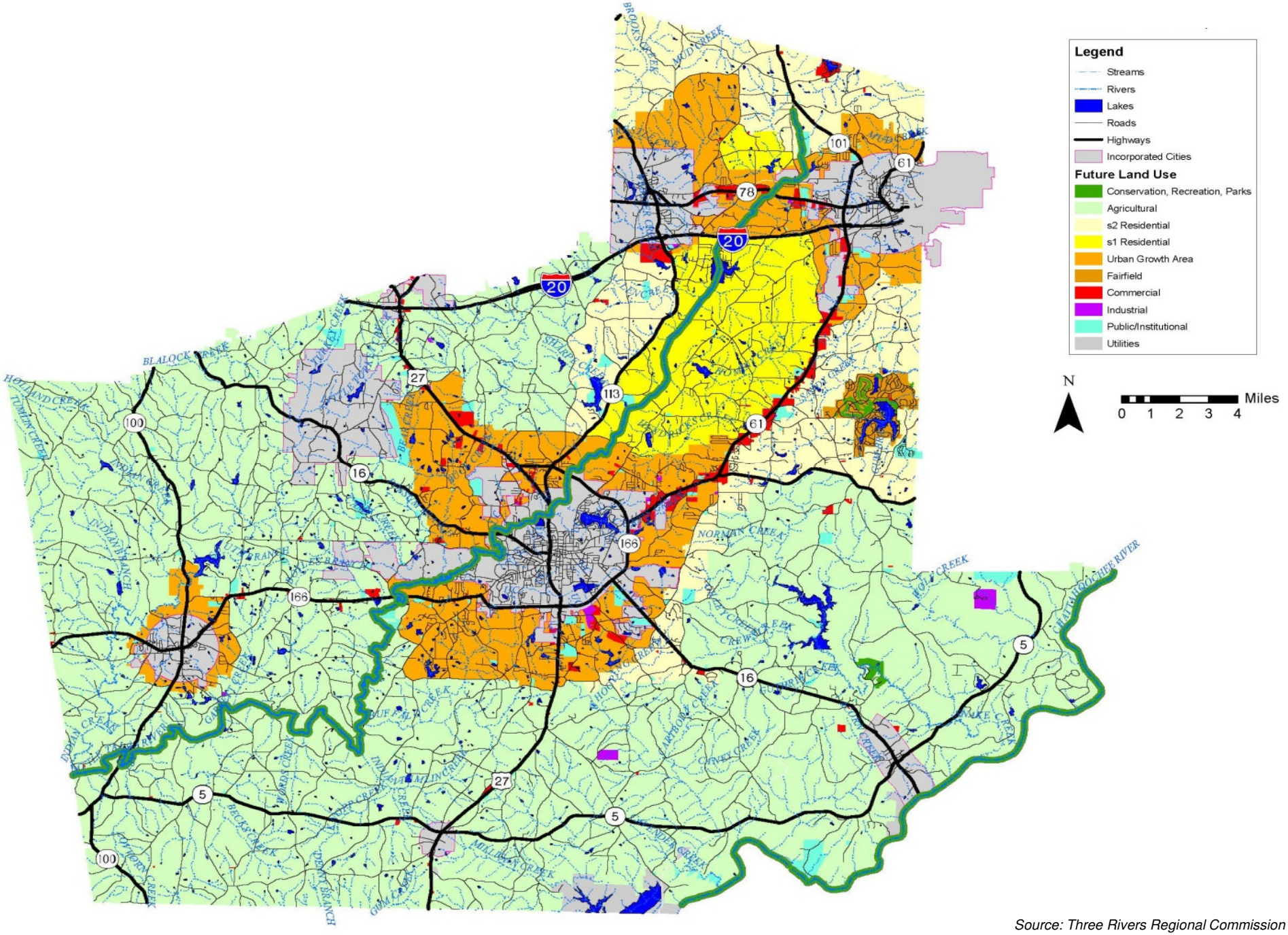
As part of the Carroll County Comprehensive Plan, a future land use map was developed based on existing land use, lot patterns, future growth needs and existing infrastructure. As shown in Figure 3.5, the plan developed Urban Growth Areas indicating the areas which are expected to reasonably be served by municipal water and wastewater within the Comprehensive Plan horizon (year 2030). These areas generally surround the cities of Temple, Villa Rica, Carrollton and Bowman. The map indicates that land use patterns will follow historical growth, with development focused around the existing cities as well as along the transportation corridors that connect these cities to I-20, including SR 61, SR 113 and US 27. Future residential growth will be concentrated on the northeast quadrant of the County from Carrollton, along SR 61 and SR 113 to north of I-20 in Temple and Villa Rica.



Carroll County Long Range Transportation Plan

Figure 3.4: Historical Places

Georgia Department of Transportation
Office of Planning



Source: Three Rivers Regional Commission

4. Demographics

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

4.1. *Existing Population*

Understanding the distribution and characteristics of Carroll County's population will have profound impacts on transportation planning in the County. A reliable transportation network is essential to provide mobility to residents throughout the study area. Population growth should be considered in all future planning efforts, as increases in population can cause capacity constraints on public infrastructure, including the transportation network.

The population data evaluated for the Carroll County 2040 LRTP came from the U.S. Census. In 2010, the total population for Carroll County was 110,527 or 1.1 percent of the total state's population.[7] Figure 4.1 illustrates the existing population density. As shown, the highest population density occurs within the cities of Carrollton and Villa Rica as well as along SR 61 between these two areas. The Census Block Group containing the University of West Georgia presents the highest population density, with more than 1,000 persons per square mile.

4.2. *Historic Population Growth (1970-2010)*

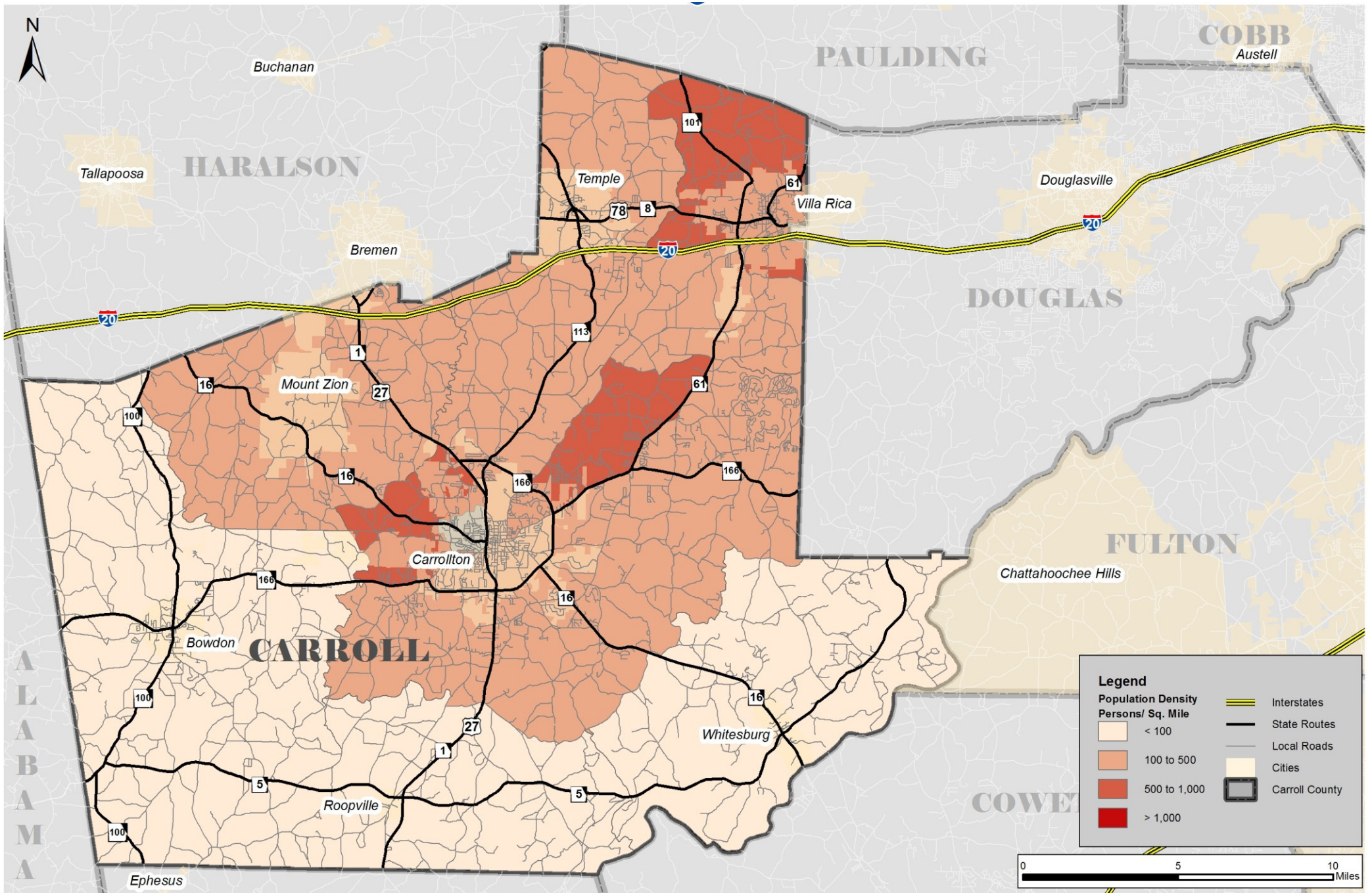
Table 4.1 illustrates the historic population growth trends for Carroll County from 1970 to 2010, which have averaged 2.3 percent annually. The table shows that the area has had consistent growth over the last 40 years. During the 20-year period from 1970 to 1990 the County showed strong population growth of 57 percent. During the same length of time between 1990 and 2010 the County population grew a total of 54 percent.

Table 4.1: Population Growth

Year	Population
1970	45,404
1980	56,346
1990	71,422
2000	87,268
2010	110,527

Source: Georgia Department of Labor

[7] U.S. Census 2010 Data



Source: 2010 US Census

Figure 4.1: Population Density

4.3. *Future Population*

Carroll County population will continue to grow over the next three decades and will have a major impact on the County's transportation and land use outlook for the future. It will be essential for County decision-makers to plan for continued population growth by through transportation enhancements and smart growth policies. To guide transportation recommendations that best foster smart growth and serve the future population of Carroll County, it is necessary to consider the magnitude and character of this population growth.

The Governor's Office of Planning and Budget (OPB) is responsible (as denoted by state law – OCGA 45-12-171) for developing state and county population projections for the purpose of planning for statewide infrastructure including transportation, public buildings and water. The most recent projections (shown in Table 4.2), which use 2010 Census information as a baseline, provide annual population projections for the years 2012 through 2020 and in five year increments by county for 2020 through 2030.

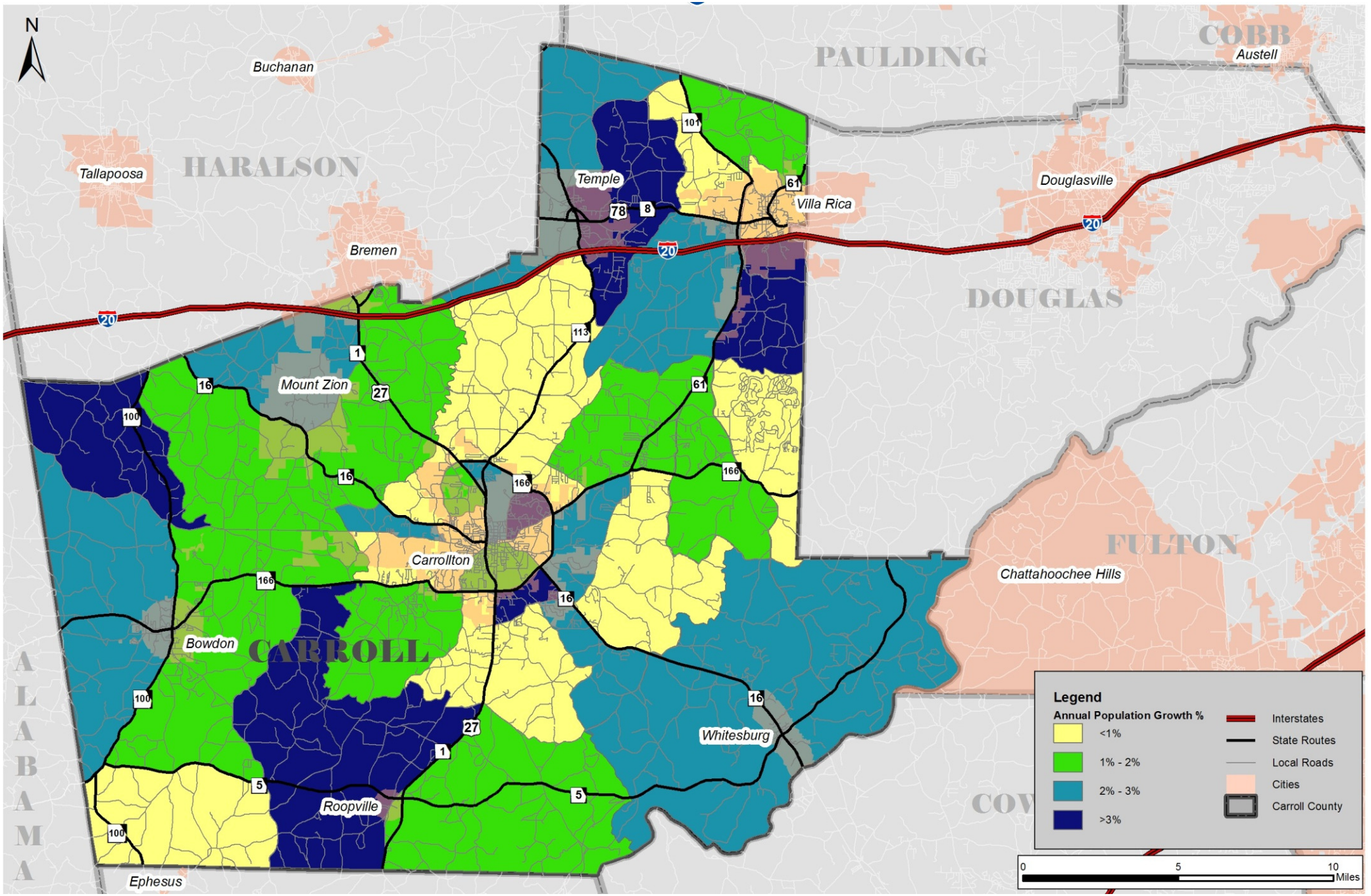
Table 4.2: Population Projections (2012-2030)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030
Population	113,965	115,681	117,398	119,115	120,816	122,517	124,219	125,920	127,621	136,118	144,699
Annual Growth Rate		1.51%	1.48%	1.46%	1.43%	1.41%	1.39%	1.37%	1.35%	1.30%	1.23%

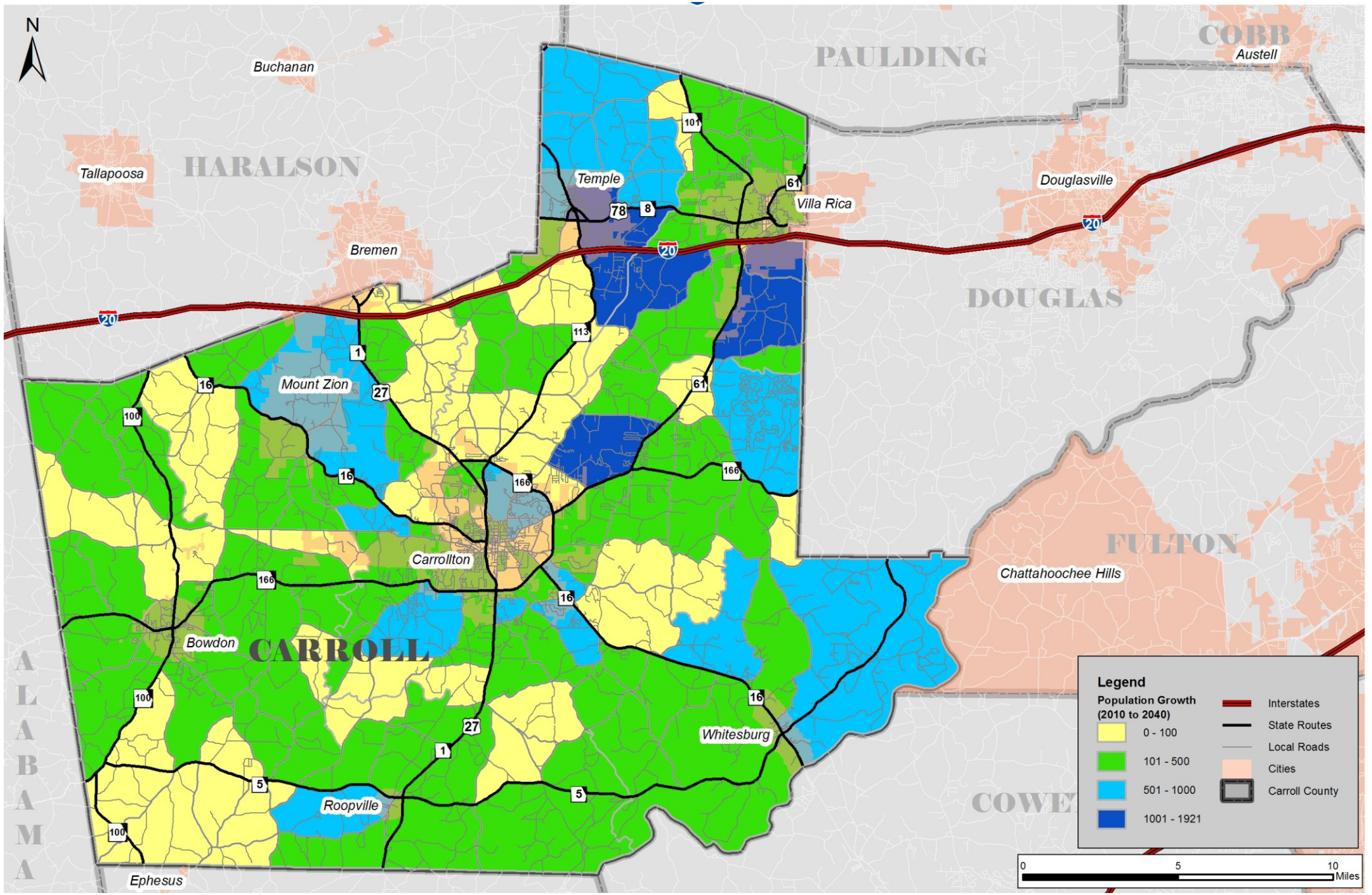
As shown in Table 4.2, the annual growth rate during this timeframe has averaged 1.34 percent. Additional sources were also considered in the development of future population projections. The Carroll County Comprehensive Plan projected population through 2030, at an annual growth rate of 1.4 percent. For the purpose of this study, an annual growth rate of 1.4 percent was assumed for the County through 2040. This resulted in a future year 2040 population of 168,200.

Due to various reasons, including sewer and transportation infrastructure and future growth strategies, the growth will not occur in a uniform manner. The Atlanta Regional Commission (ARC) develops population projections for counties within the 20 County metropolitan Atlanta region for input into their regional travel demand model. These projections are developed for traffic analysis zones (TAZ), which intend to consider local development plans and other factors. Figure 4.2 illustrates the average annual growth rate projected for each TAZ. For the purpose of this study, growth was distributed following the same geographic growth pattern as indicated in the ARC model and in this figure.

It should be noted that a high growth rate percentage does not always indicate high growth in persons, as many of the TAZs with high growth rates have very low existing populations. The 1.4 percent annual growth rate resulted in a total growth of 57,673 over the timeframe from 2010 to 2040. This growth was distributed reflecting the geographic pattern shown in Figure 4.2. The resulting projected growth is shown by TAZ in Figure 4.3. As shown, the majority of population growth is projected to occur in the vicinity of I-20 near Villa Rica and Temple, as well as along SR 61 between Carrollton and I-20. SR 16 also serves as a corridor where growth is expected, both near I-20 and along the western border of the County.



Source: Atlanta Regional Commission – Plan2040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FULTON
Bowdon
CARROLL
Whitesburg
Roopville
COWE
Ephesus
ALABAMA
Legend
Population Growth (2010 to 2040)
0 - 100
101 - 500
501 - 1000
1001 - 1921
Interstates
State Routes
Local Roads
Cities
Carroll County
0
5
10
Miles

4.4. *Current Employment*

The Georgia Department of Labor (GDOL) collects, analyzes, and documents a variety of data related to the state's economy and labor market. Existing (2010) GDOL employment for Carroll County was calculated, based on an average of quarterly counts, to be 35,236. This data also includes information on the distribution of jobs by sector, as shown in Table 4.3. The industry sector with the highest employment was Manufacturing, with almost 7,000 employees (20 percent of total jobs). The Health Care and Social Assistance industry sector was also a major employer in the County, with nearly 6,000 employees (16 percent). Educational Services and Retail Trade also represent major employment industry sectors in Carroll County.

Table 4.3: Industry Employment

Industry	Employees
Manufacturing	6,878
Health Care and Social Assistance	5,706
Educational Services	4,652
Retail Trade	4,421
Accommodation and Food Services	3,018
Construction	1,866
Public Administration	1,553
Administrative and Support and Waste Management and Remediation Services	1,321
Wholesale Trade	977
Finance and Insurance	843
Transportation and Warehousing	680
Information	647
Management of Companies and Enterprises	617
Other Services (except Public Administration)	611
Professional, Scientific, and Technical Services	579
Real Estate and Rental and Leasing	241
Arts, Entertainment, and Recreation	196
Utilities	182
Agriculture, Forestry, Fishing and Hunting	172
Mining, Quarrying, and Oil and Gas Extraction	20
N/A	56
Total	***35,236***

Source: Georgia Department of Labor

Table 4.4 illustrates Carroll County's top ten employers. The County's largest employer is Tanner Medical Center, with over 1,000 employees. This employer maintains hospitals and medical facilities throughout the County, with two main hospitals in Carrollton and Villa Rica. Other large employers include the Georgia Department of Human Resources, Walmart, Restaff, Southwire Company, and Pilgrim's Pride Corp.

Table 4.4: Top 10 Employers

Employer	Employees
Tanner Medical Center, Inc.	1,074
GA Dept. of Human Resources	397
Walmart Inc.	353
Restaff Inc.	349
Southwire Company	337
Pilgrim's Pride Corp.	326
Air Tran Airways Inc.	169
Printpack Inc.	137
Jones & Lanier Electric Inc.	131
HLC Foods of Carrollton	124

Source: Georgia Department of Labor

4.5. *Future Employment*

Employment projections were also developed as inputs into GDOT's statewide travel demand model. As noted in the existing conditions section, the Georgia Department of Labor collects and distributes detailed employment data by county for the entire state. Table 4.5 presents the historical employment for Carroll County from 2000 to 2012. As shown, employment growth has not followed a consistent trend in recent years. The average annual growth rate over this period of time is 1.4 percent. Considering the recent economic downturn as well as ARC's projected 2 percent annual growth rate for the County for 2010 through 2040, a future growth rate of 1.7 percent per year was assumed. This growth rate is in line with the County's Comprehensive plan, which projects a growth rate of 1.7 percent annually from 2010 to 2030.

Table 4.5: Department of Labor

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Employment	31,623	30,639	31,394	32,072	33,320	34,852	39,879	40,105	38,105	36,084	35,285	36,027	37,307
Annual Growth Rate		-3.1%	2.5%	2.2%	3.9%	4.6%	14.4%	0.6%	-4.9%	-5.4%	-2.2%	2.1%	3.6%

Source: 2008 Carroll County Comprehensive Plan, U.S. Census

As with the population projections, growth was distributed based on the geographic growth pattern used for the ARC model. This distribution is shown in Figure 4.4. Again, areas showing high percentage growth are not necessarily projected to have high volumes of new jobs. For example, the southern border of the County, though showing growth rates of more than 5 percent annually, are adding less than 250 jobs over the 30 year study horizon. Figure 4.5 illustrates total projected growth in jobs over this time horizon.

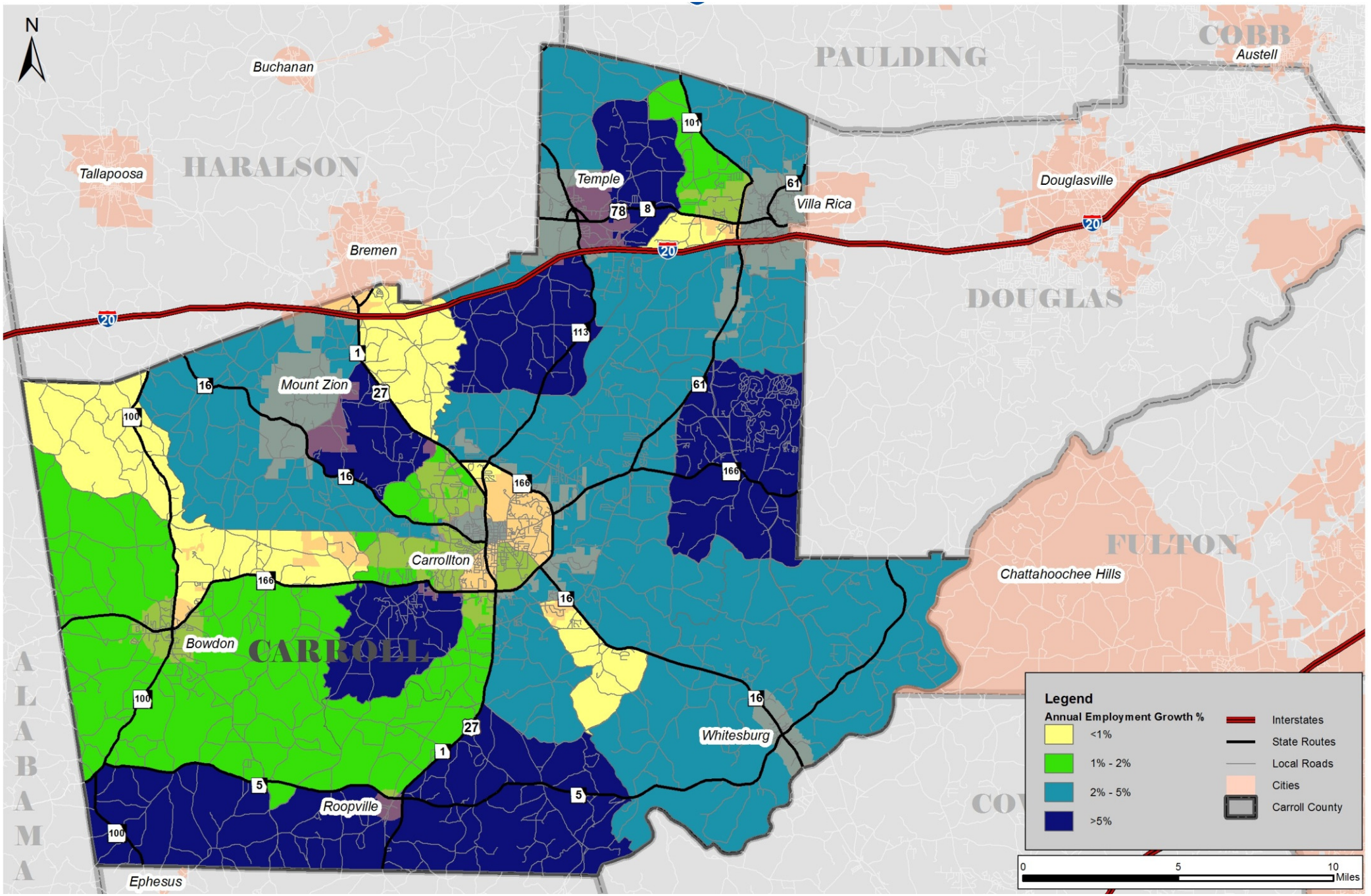
4.6. Environmental Justice

The population diversity in Carroll County has shown small changes between 1985 and 2010. Table 4.6 shows the racial diversity in the County over the last 25 years. Between 1985 and 2010 the white population has decreased from 82.4 percent of the total population to 73.5 percent. The African American population has increased from 16.2 percent to 18.2 percent over the same period. The most significant ethnic population growth in the County is the Hispanic population, growing from 0.8 percent to 6.2 percent.

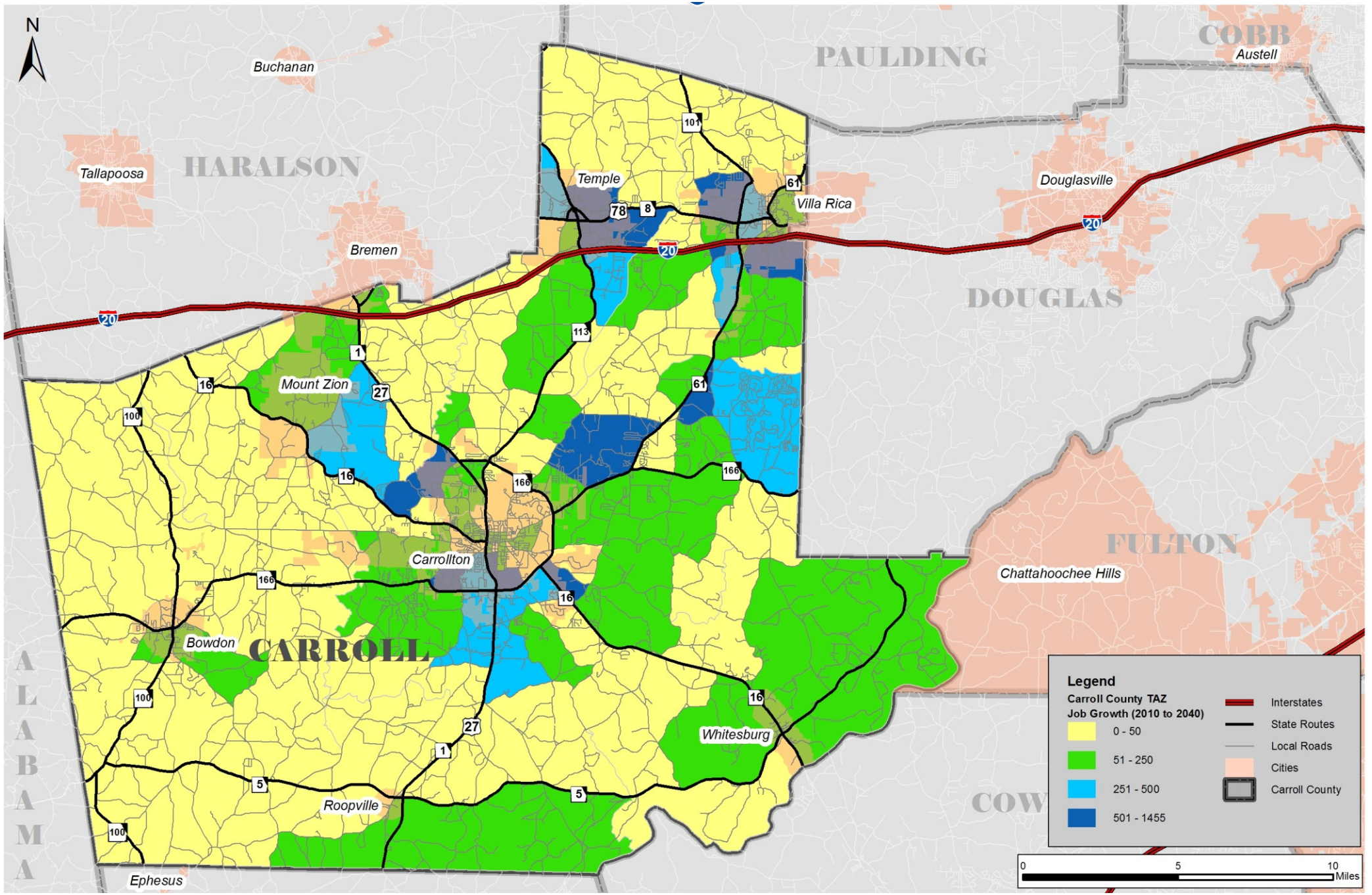
Table 4.6: Racial Composition

Race	1985	1990	1995	2000	2005	2010
White	82.4%	82.8%	80.9%	79.4%	76.9%	73.5%
Black & African American	16.2%	15.6%	15.9%	16.1%	16.9%	18.2%
Hispanic	0.8%	0.8%	1.8%	2.5%	4.3%	6.2%
Indian & Alaska Native	0.2%	0.2%	0.2%	0.3%	0.1%	0.1%
Asian or Pacific Islander	0.2%	0.3%	0.5%	0.6%	0.7%	0.8%
Other	0.2%	0.2%	0.7%	1.1%	1.2%	1.2%

Source: 2008 Carroll County Comprehensive Plan, U.S. Census



Source: Atlanta Regional Commission – Plan2040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Mount Zion
Carrollton
Chattahoochee Hills
FULTON
Bowdon
CARROLL
Whitesburg
Roopville
Ephesus
ALABAMA
Legend
Carroll County TAZ
Job Growth (2010 to 2040)
0 - 50
51 - 250
251 - 500
501 - 1455
Interstates
State Routes
Local Roads
Cities
Carroll County
0
5
10
Miles

5. Transportation Network

The multi-modal transportation network in Carroll County is essential for the efficient movement of people, commodities, goods and services within and through the County. This section summarizes Carroll County's existing transportation network and its condition. Existing conditions data was analyzed to prepare and calibrate the associated travel demand model discussed in the following section. By gathering this data, existing deficiencies in Carroll County's transportation network can be identified.

5.1. *Functional Classification and Characteristics*

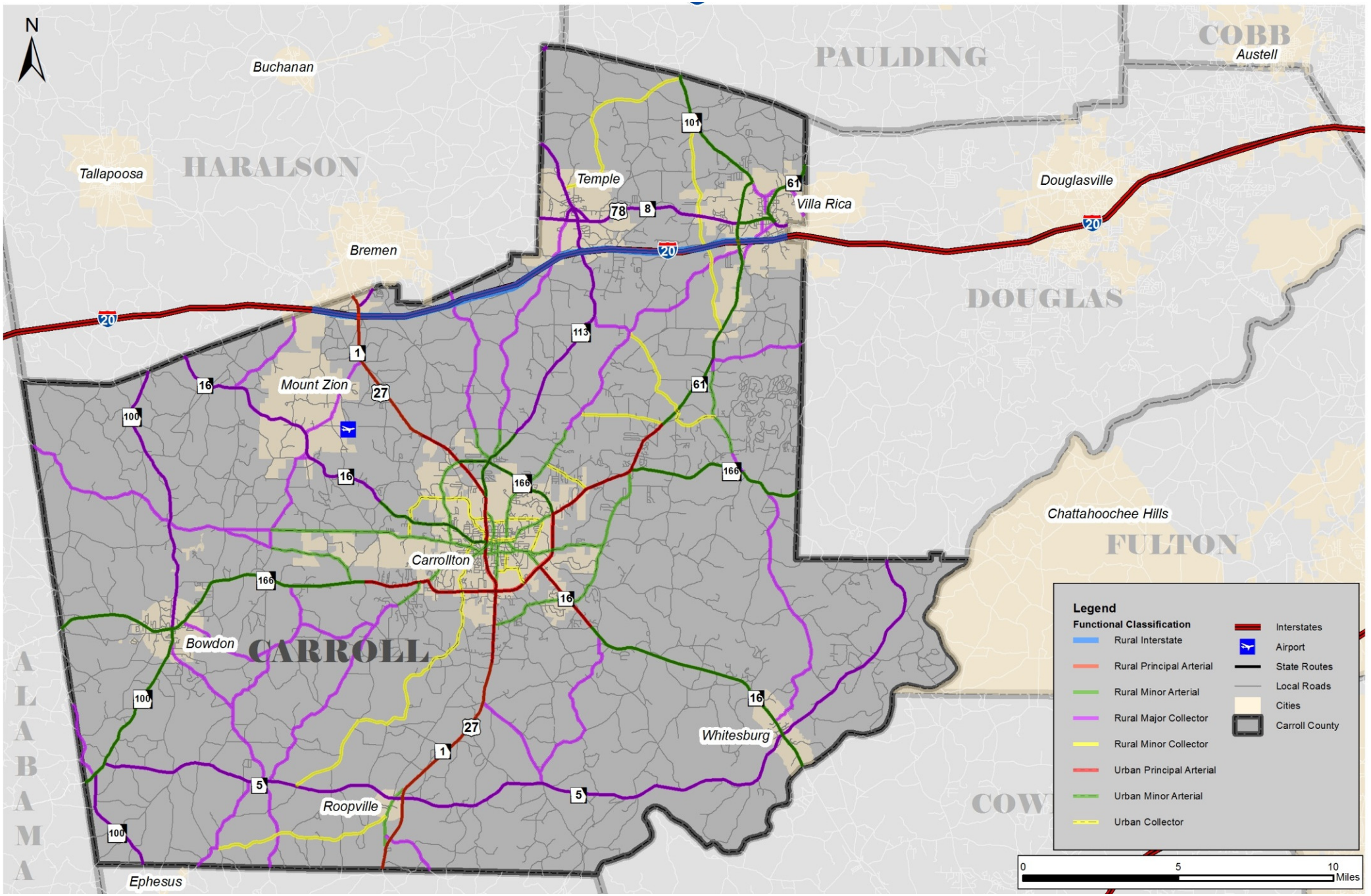
Roadways are grouped into functional classes according to the character of traffic they are intended to serve. They may also be further classified as rural or urban based on the population surrounding a particular roadway. There are four highway functional classifications: expressway/freeway, arterial, collector, and local roads, and these can be defined as:

- **Interstate** - 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 also classified as major and minor collectors.
- **Local** - Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or minimal "through" movement.

As noted in Table 5.1, the study area has 17 miles of interstate (0.8 percent of total highway miles), consisting of I-20 that runs through the northern portion of the County. There are also approximately 136 miles of arterial routes in the County and 236 miles of collectors. Local roads account for a majority (81.8 percent) of the lane miles within the County. Figure 5.1 displays the functional class of roadways in the study area.

Table 5.1: Roadway Functional Classifications

Classification	Centerline Miles	% of Total Miles
Interstate	17	0.8%
Principal Arterial	41	1.9%
Minor Arterial	95	4.4%
Major Collector	202	9.4%
Minor Collector	34	1.6%
Local Roads	1,748	81.8%
Total	***2,136***	



Source: GDOT Roadway Characteristics Database

5.2. *Road Lanes*

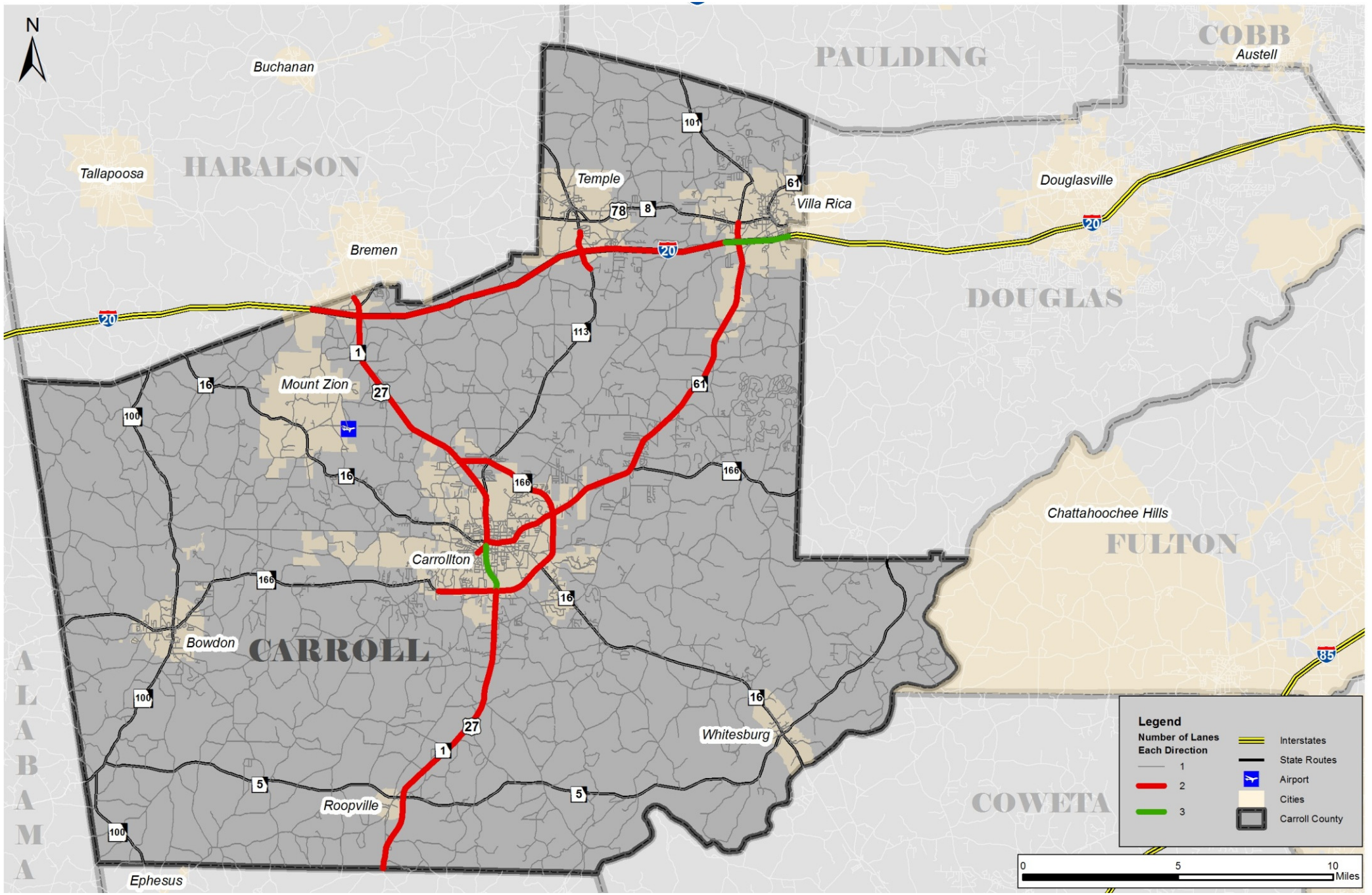
Another important attribute reviewed from the GDOT RC Database is the number of lanes provided on each road. The roads in the study area predominately serve traffic in both directions; however some of the downtown areas have roads which serve only one-way traffic. Figure 5.2 displays the number of lanes on the roads in the study area.

5.3. *Roadway Shoulders*

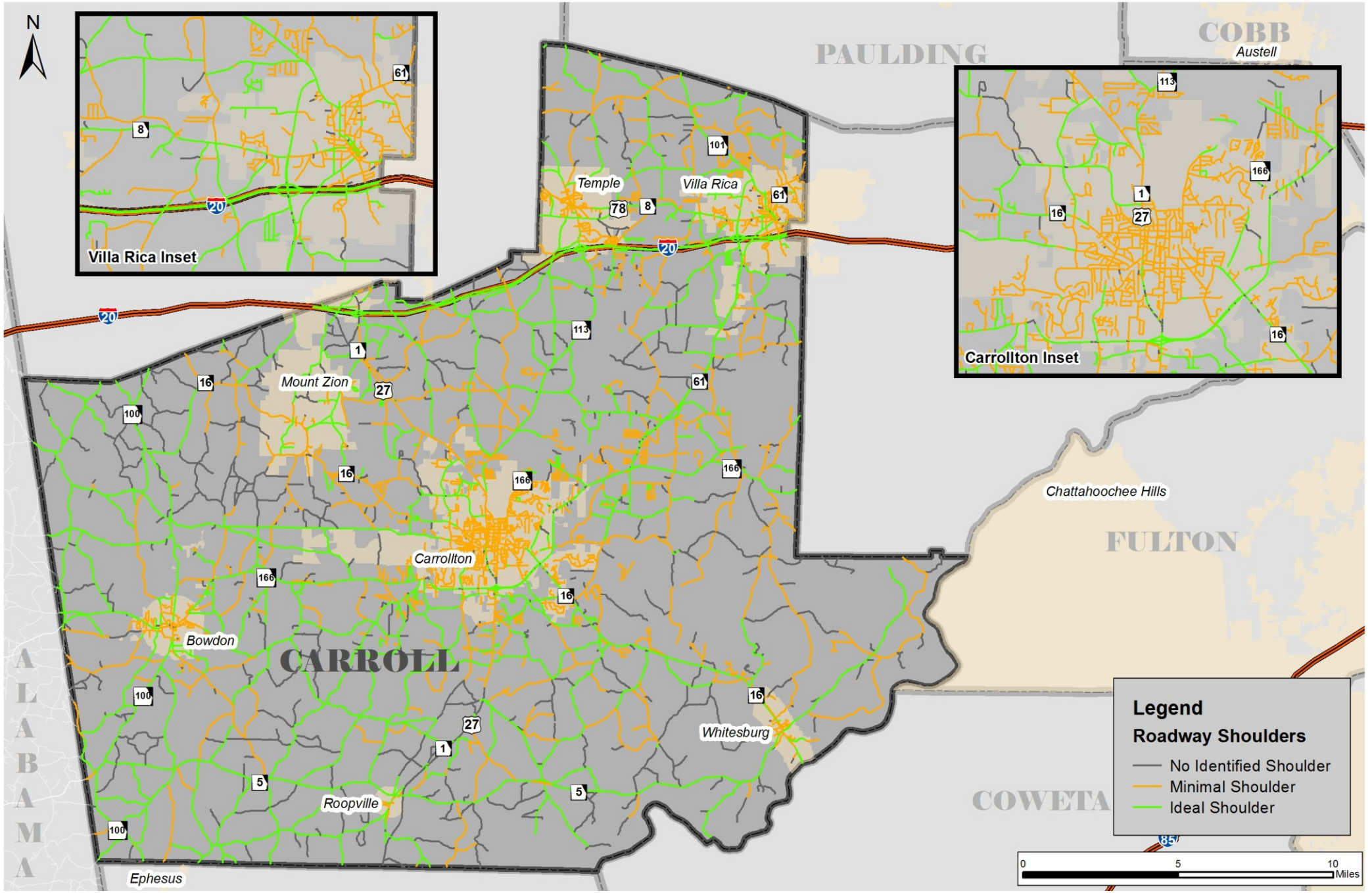
GDOT's RC Database also provides information on roadway shoulders. For this analysis, both the shoulder type and shoulder width were reviewed to determine segments of roadways in need of potential shoulder upgrades or operational widening. A wide variety of shoulder widths and types are present throughout Carroll County. Insufficient shoulder width can contribute to travel speed reductions, potentially impact safety, and influence bicycle and pedestrian usage of facilities. The following guidelines are 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 5.3 displays the roadway shoulder types and widths according to GDOT's RC Database for Carroll County. Roadway segments with potential deficient shoulders may become candidates for recommended upgrades when evaluated with other metrics such as safety and connectivity.



Source: GDOT Roadway Characteristics Database



Source: GDOT Roadway Characteristics Database

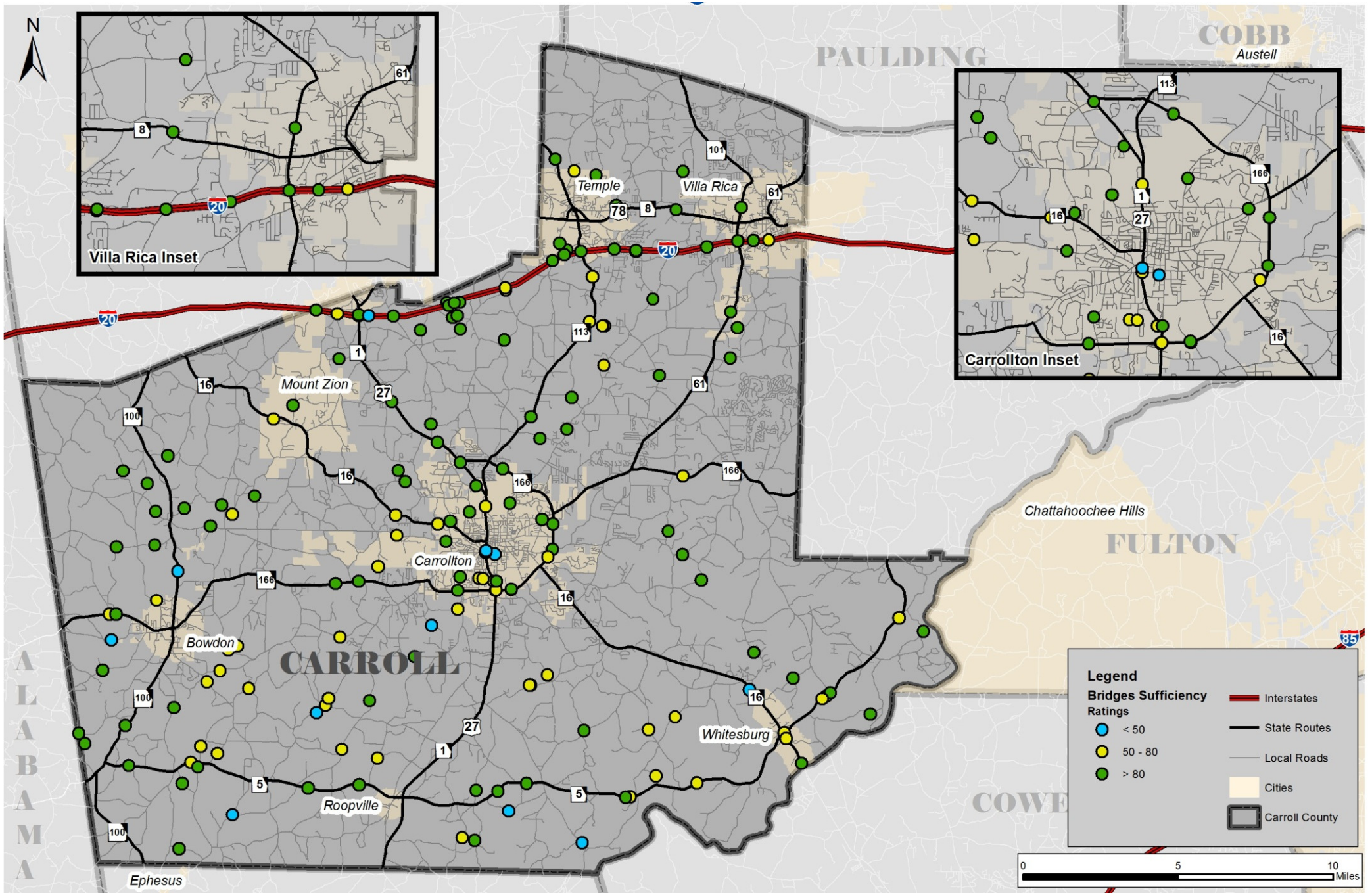
5.4. *Bridges*

Another critical transportation area of emphasis in Carroll County is bridge conditions. Bridges were evaluated to determine the need for potential improvement. Deficient bridges can pose an 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.

Sufficiency rating is the general measure of the condition of each bridge. The sufficiency rating is used to determine the structural and geometric condition of the bridge, and represents the structural safety, adequacy, serviceability, and necessity of public use. This measure is used to identify need for maintenance, rehabilitation or reconstruction of a bridge structure. Bridges are rated on a point system from 1 to 100 (the maximum rating). Bridges with a sufficiency rating of less than 80 are candidates for federal rehabilitation funds. Bridges with ratings below 50 are still able to safely accommodate traffic; however, upgrading these bridges to modern design and load standards will improve the operation and safety of the bridge as well as the capacity of the roadway. All bridges with a sufficiency rating of 50 or lower were identified as deficient for purposes of the study. Additionally, these bridges are candidates for federal bridge replacement funds.

Based on the sufficiency rating, the majority of the 169 bridges in Carroll County are in good condition and not in need of any major maintenance or upgrade activities. Additionally, there are 4 bridges that are owned and maintained by Norfolk Southern. There are seven bridges that have a sufficiency rating below 50 and are potentially in need of maintenance and rehabilitation in the next 10-15 years. Additionally, there are 55 bridges that have a sufficiency rating between 50 and 80 and should be considered candidates for maintenance and rehabilitation within the horizon year of the plan (2040). Figure 5.4 below displays the bridges with a sufficiency rating.

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



Source: GDOT Bridge Inventory

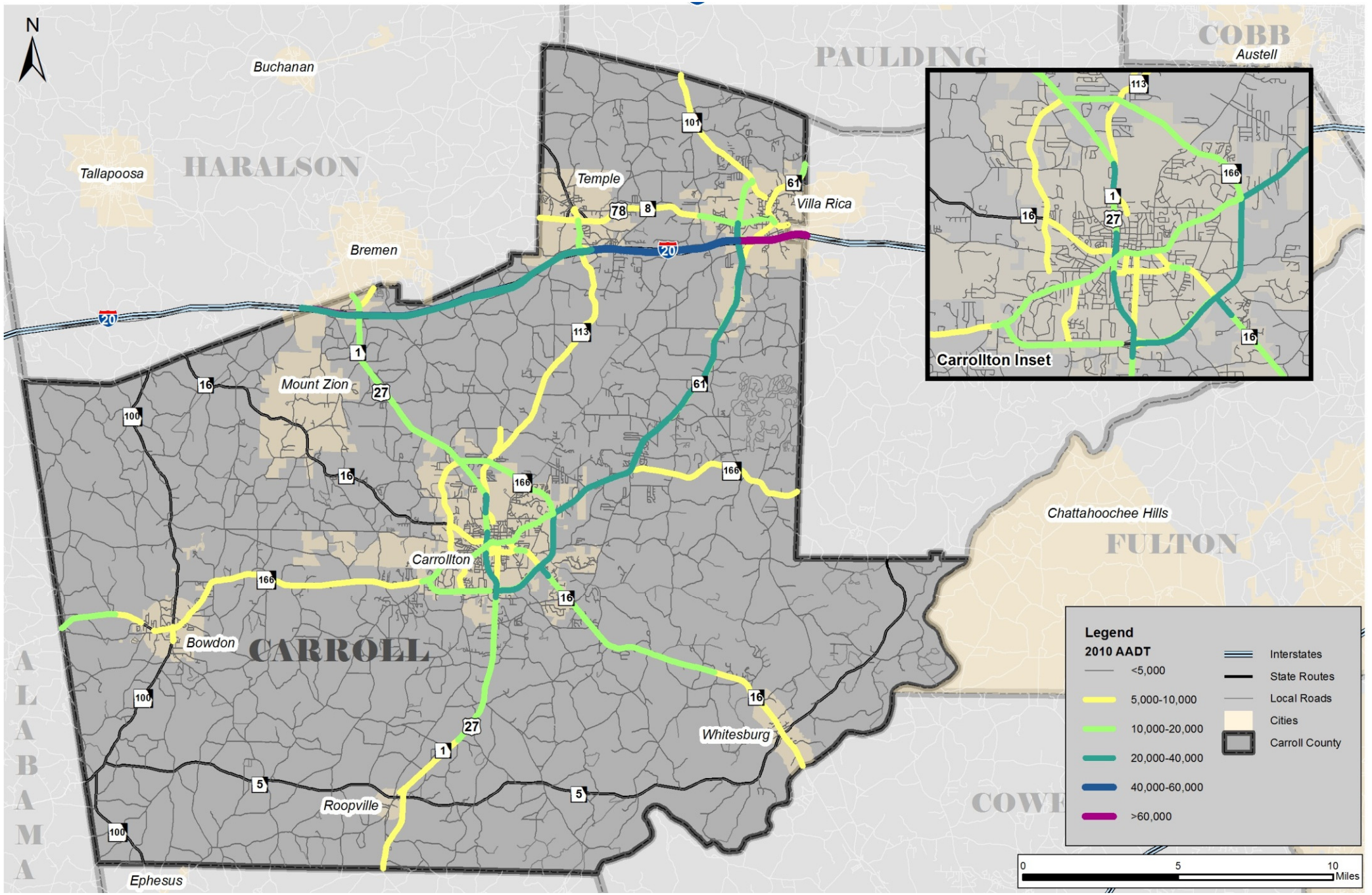
5.5. *Roadway Operations*

5.5.1. Traffic Volumes

Existing traffic information was collected from GDOT's Annual Count Program. Figure 5.5 and Table 5.2 illustrate Annual Average Daily Traffic (AADT) volumes in the study area. As shown in this figure, routes through much of the study area experience traffic volumes of less than 5,000 vehicles per day. Traffic volumes increase between major study area cities, exceeding 40,000 vehicles per day on I-20 between Villa Rica, Temple, and Mt. Zion.

Table 5.2: Average Annual Daily Traffic

Road	Count Location	2005	2011	Truck %	AADT Percent Increase
I-20, east of SR 61	284	65,780	62,160	N/A	6%
I-20 between Temple and Bremen	283	46,140	41,810	N/A	-9%
SR 1, northwest of Carrollton	36	18,110	18,500	8	2%
SR 61, west of Villa Rica	159	14,120	14,580	12	3%
SR 1, south of Carrollton	5	7,930	11,720	6	48%
SR 16, southeast of Carrollton	134	10,970	11,400	11	4%
SR 61, northeast of Villa Rica	169	8,360	10,400	5	24%
SR 166, west of Carrollton	249	8,200	9,770	8	19%
SR 16 southeast of Whitesburg	143	8,920	9,160	9	3%
SR 113, northeast of Carrollton	216	6,720	8,040	6	20%
SR 101, northwest of Villa Rica	203	7,690	7,660	5	0%
US 78, east of Temple	94	5,910	6,120	4	4%
SR 100, south of Bowdon	181	4,030	4,760	7	18%
SR 16, northwest of Carrollton	118	3,740	4,130	12	10%
SR 166 east of Carrollton	396	2,460	2,970	7	21%
SR 100, north of Bowdon	192	3,180	2,810	12	-12%
SR 5, east of Whitesburg	81	2,690	2,700	6	0%
SR 5, west of Whitesburg	74	2,540	2,410	9	-5%
SR 5, west of Roopville	58	1,760	1,890	8	7%



Source: GDOT Annual Traffic Program

5.5.2. Level of Service

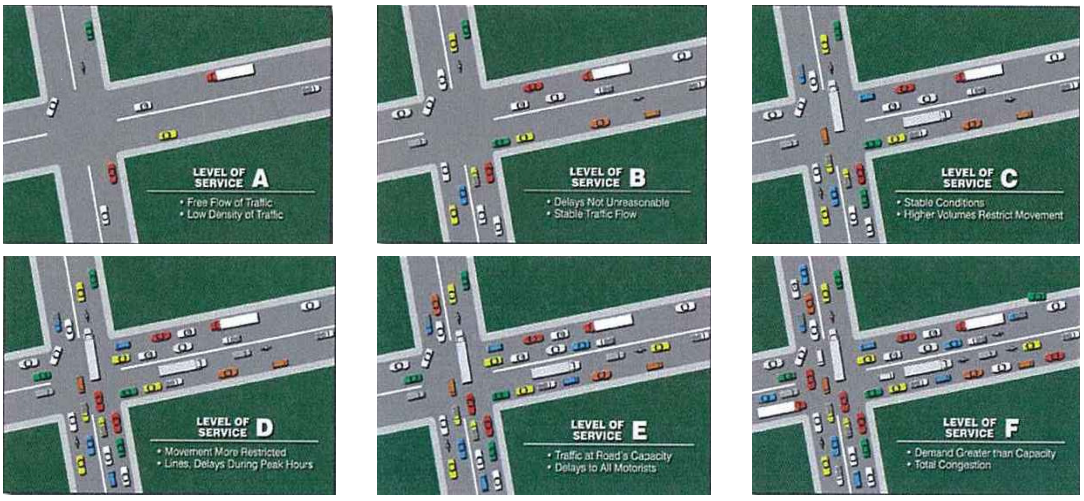
A travel demand model was developed to supplement the evaluation of existing travel conditions and forecast future travel conditions throughout the study area. The development process was performed following the *GDOT General Summary of Travel Demand Model Development Procedures for Consultants, MPOs and Modelers ("GDOT Procedures")* that was prepared in December 2012. A report detailing the development of this model can be found in Appendix A.

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 used to identify deficient segments was to analyze the volume of traffic on the roadway segments compared to the capacity of those segments, also known as the volume to capacity (V/C) ratio. For daily operating conditions, any segment identified as LOS D or worse was considered deficient. Figure 5.6 below illustrates LOS characteristics.

Figure 5.6: Level of Service



The following thresholds were used to assign a level of service to the V/C ratios, based on the general resulting operations described in Figure 5.7.

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

Figure 5.6 displays the existing LOS for roadways within the study area. As shown, almost all segments operate at LOS C or better, which is an acceptable level. These results are consistent with knowledge of current operating conditions.

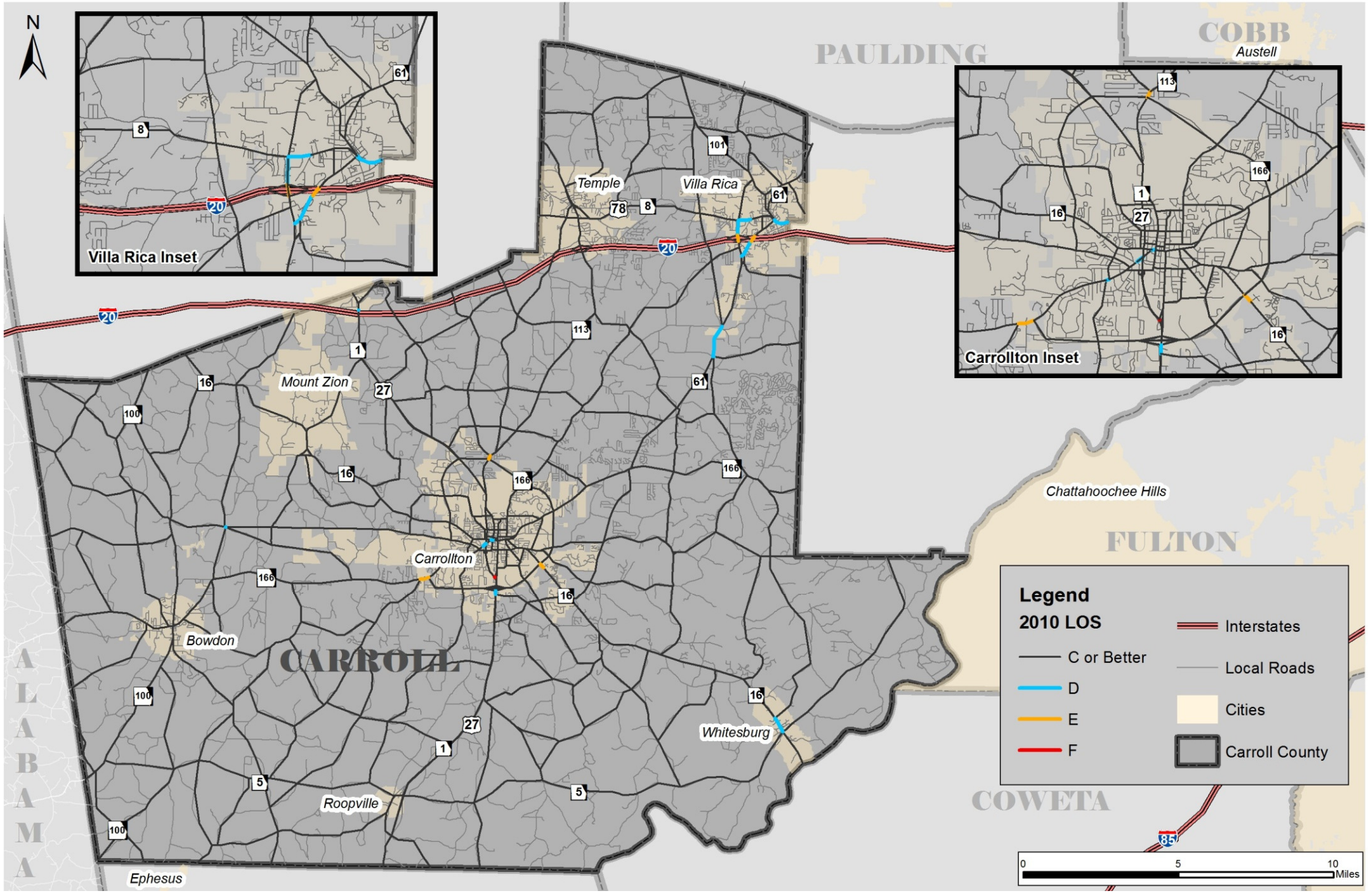
The 2010 analysis shows that five segments can be expected to operate at or below LOS D under daily conditions. Table 5.3 displays the existing roadway segments operating at an unacceptable LOS.

Table 5.3: Existing Deficient Segments

Roadway	From	To	LOS
SR 8 / W Bankhead Hwy	SR 61 / Dallas Hwy	SR 1 / Industrial Blvd	D
S Carroll Rd	I-20	SR 61	D to E
SR 61	SR 8	I-20	D to E
SR 61	Ithica Gin Rd	Flat Rock Rd	D
SR 166	SR 166	Tyus Carrollton Rd	E

Additionally the following locations are approaching LOS D and/or has short links associated with them that are currently operating below LOS C:

- SR 113 from Pleasant Ridge Road to Northside Drive;
- SR 16 / Alabama Street from Barns Avenue to Rome Street;
- SR 166 / Maple Street from US 27 / N Park Street to S Aycock Street;
- SR 166 / Maple Street from Burson Avenue to Hays Mill Road;
- US 27 / S Park Street from SR 166 Bypass to Central High Road; and
- SR 16 / Newnan Road from SR 166 Bypass to Independence Drive.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Local Roads
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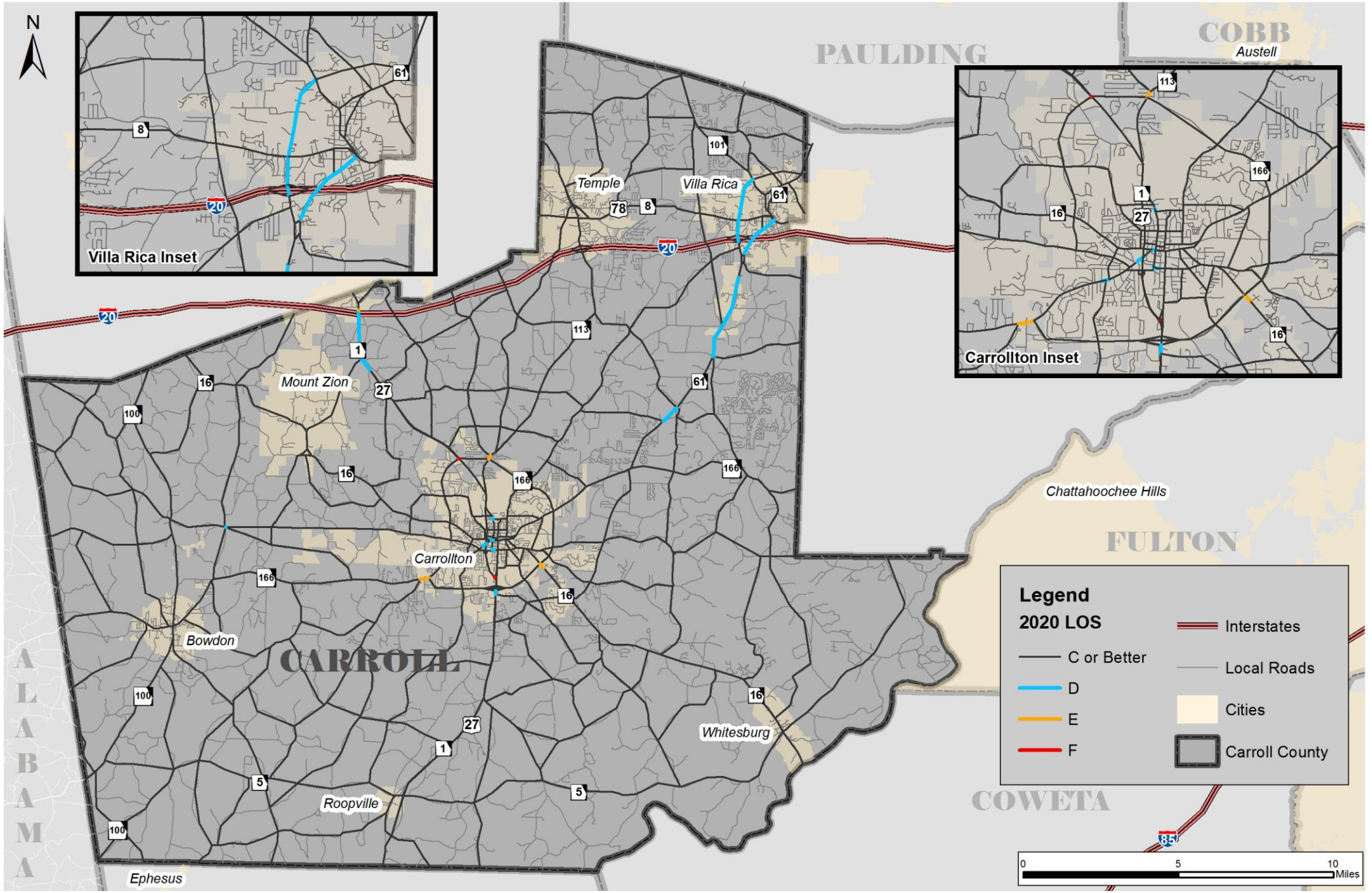
5.5.3. Future Level of Service

Future operating conditions were evaluated for the years 2020, 2030 and 2040, 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 STIP. Projects with funding associated to the ROW or Construction phases of the project were considered "committed." The only capacity adding project in this plan was the Villa Rica Bypass.

The evaluation of the future travel conditions provides an opportunity to determine how well the E+C roadway network will serve 2020, 2030 and 2040 and employment in the 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 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.

Figures 5.8 to 5.10 presents the 2020, 2030 and 2040 LOS on the E+C roadway network, respectively.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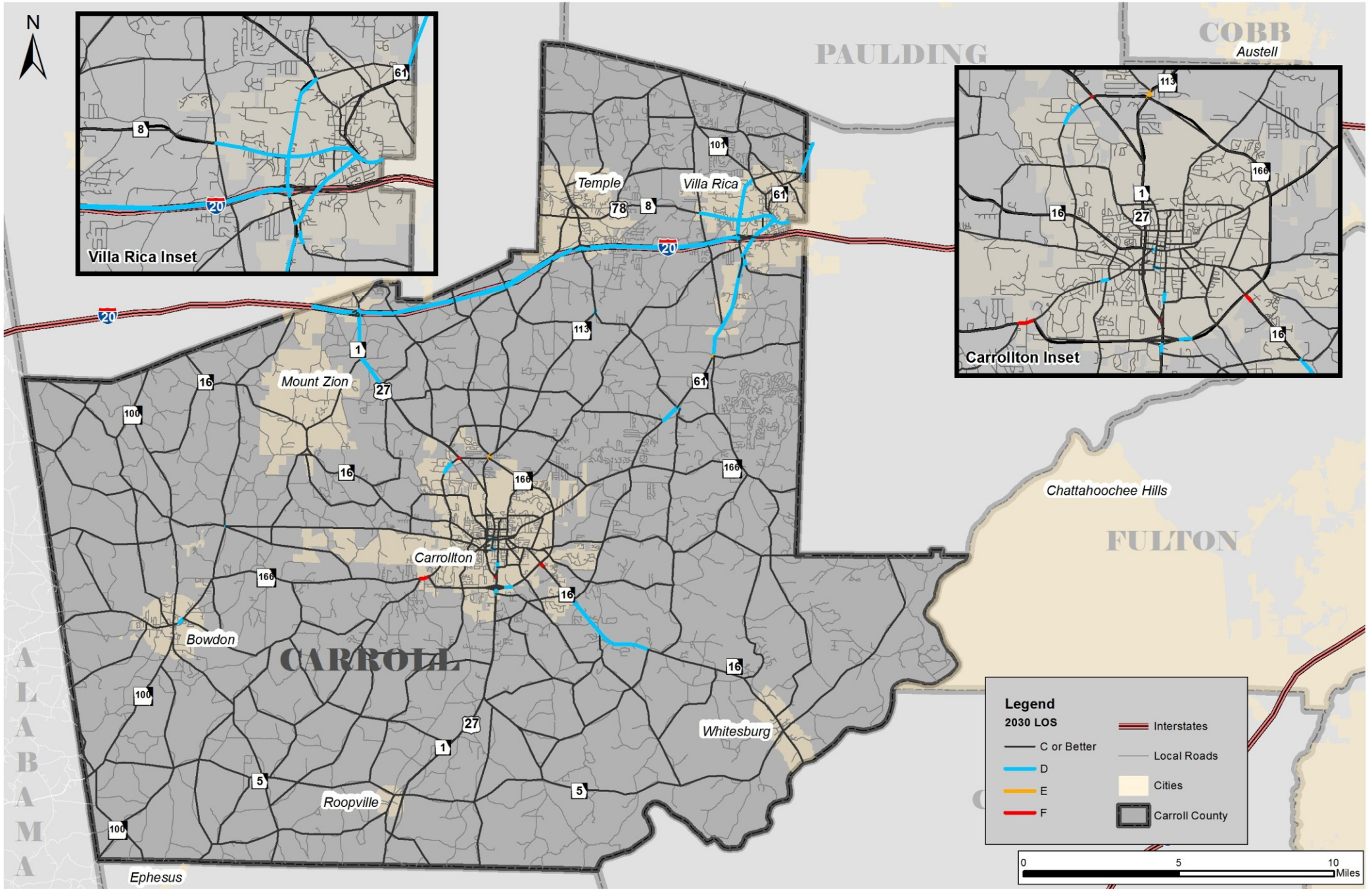
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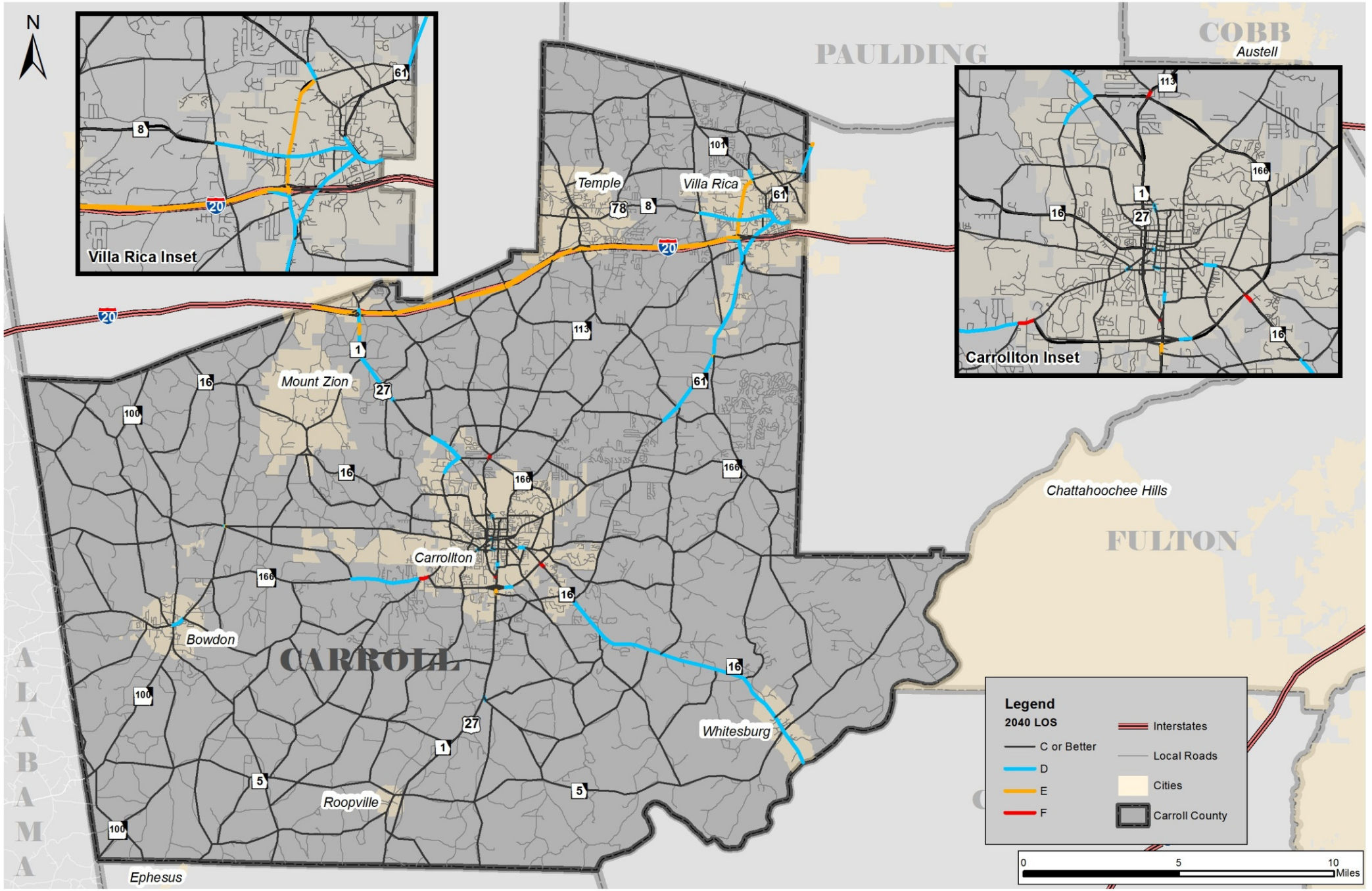
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The 2040 analysis shows that thirteen segments can be expected to operate at or below LOS D under daily conditions. Table 5.4 displays the 2040 roadway segments operating at an unacceptable LOS.

Table 5.4: 2040 Deficient Segments

Roadway	From	To	LOS
SR 61 / Dallas Hwy	Ledbetter Rd	Punkintown Rd	D
SR 61 / Industrial Blvd	Rockmart Rd	I-20	E
SR 8 / W Bankhead Hwy	Cleghorn St	N Van Wert Rd	D
S Carroll Road	SR 8 / W Bankhead Hwy	SR 61	D
SR 61	I-20	Sand Hill Shady Grove Rd	D
SR 16	Oak Mountain Rd	Dyer Rd / Park Rd (Coweta County)	D
Bremen Bypass	I-20	Hog Liver Rd	D
US 27 / N Park St	Miller Academy Rd	Columbia Dr	D
Columbia Dr	Bremen Bypass	Adamson Industrial Blvd	D
SR 166	SR 166	Tyus Carrollton Rd	F
SR 166	Tyus Carrollton Rd	Burwell Rd	D
E College St	Tarpley Ave	Wedowee Rd	D

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

- Rome Street from William Street to W White Street;
- SR 113 from Pleasant Ridge Road to Northside Drive;
- SR 16 / Alabama Street from Maple Street to Bradley Street;
- SR 16 / Newnan Road from Bennett Circle to Old Newnan Road;
- Dixie Street from Henry Burson Avenue to Southwire Drive;
- Roop Street near US 27 / S Park Street;
- US 27 / S Park Street from SR 166 to Central High Road;
- SR 166 Bypass near US 27 / S Park Street;
- SR 16 from Independence Drive to SR 166 Bypass;
- SR 166 / Maple Street from US 27 / N Park Street to S Aycock Street;
- SR 166 / Maple Street from Lovvorn Road to South Street; and
- Smithfield Road at Barnes Road.

5.5.4. Crash Analysis

The most recent available vehicular crash data from GDOT (2007 - 2009) was collected and analyzed for state roads in the County. The crash data was analyzed using the Critical Analysis Reporting Environment (CARE) software developed by the University of Alabama. Crash data was used to determine roadway locations with potential safety deficiencies throughout the study area. The study area experienced a total of 8,658 crashes, less than one percent of which were fatal crashes and 32 percent were non-fatal injury crashes. During the same analysis period, the State of Georgia experienced a total of 911,980 crashes, less than one

half a percent of which involved fatalities and 25 percent were non-fatal crashes involving injury.

Table 5.5 and Figure 5.11 illustrate the top ten crash locations (which represent intersections having an average of 15 or more crashes per year) in Carroll County. The highest crash location in the study area is at the intersection of SR 16 and SR 166, with nearly 200 crashes between 2007 and 2009, 41 of them with injuries reported. The next highest crash location in the study area is at the intersection of SR 8 and SR 61, with nearly 140 crashes, 24 with injuries. Of the top ten crash locations from 2007 to 2009, one fatality occurred at the intersection of SR 166 and Old Airport Road.

Table 5.5: Top 10 Crash Locations

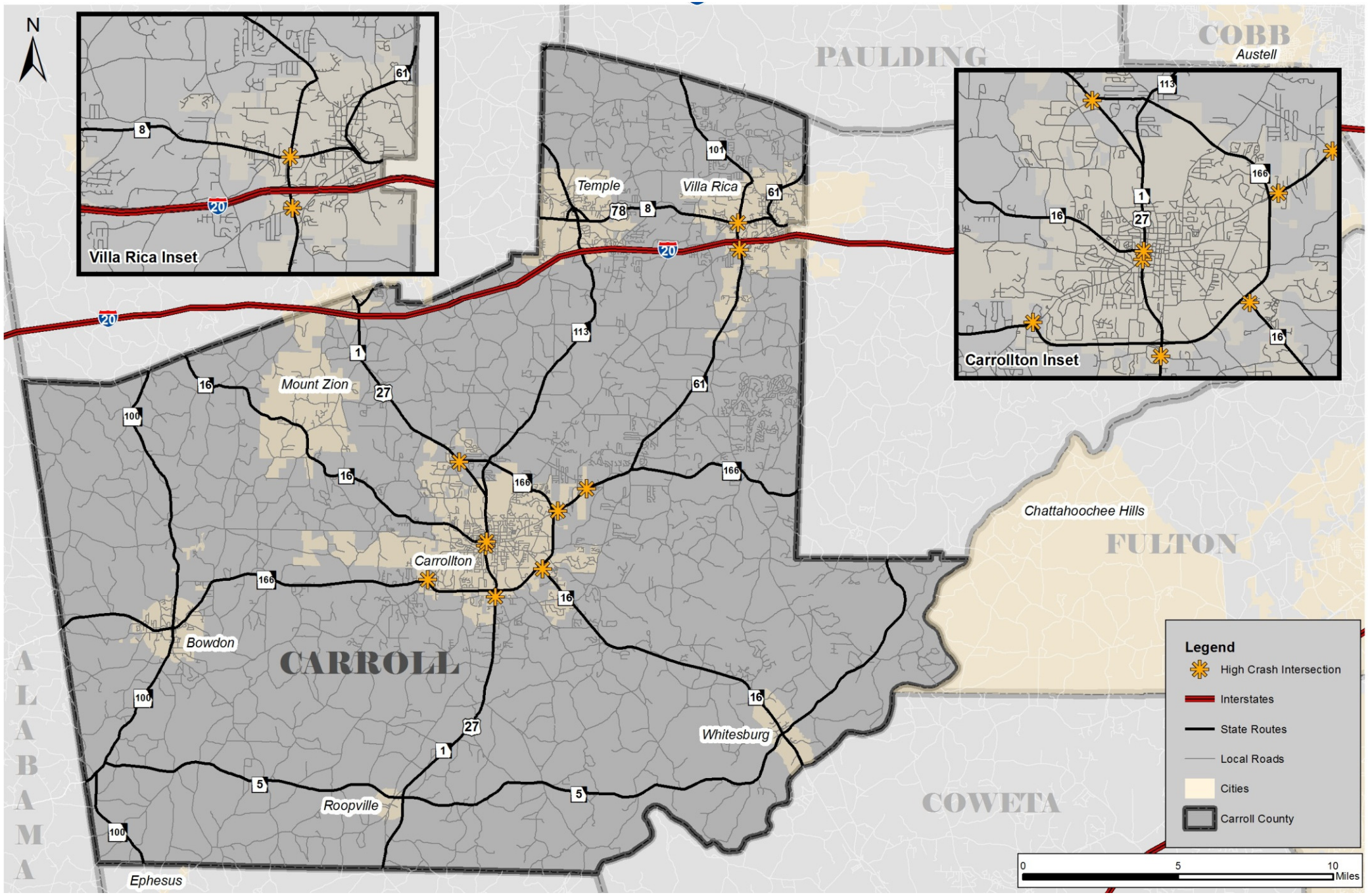
Intersection	Fatality	Injury	Total Crashes
SR 166 Bypass at SR 16	0	46	187
US 78/SR 8 at SR 61	0	24	138
SR 61 at North Hickory Level Rd	0	35	115
US 27/SR 1 at Cottage Hill Rd/Central High Rd	0	14	73
US27/SR 1/Park St at SR 166/Maple St	0	19	59
SR 166 at Old Airport Rd	1	29	58
SR 166 at Somerset Pl	0	20	55
US 27/SR 1/Park St at SR 16/Alabama St	0	9	50
SR 166 Bypass at SR 166/Maple St	0	12	50
US 27/SR 1 at Linda Ln	0	21	47

5.5.5. Truck Traffic

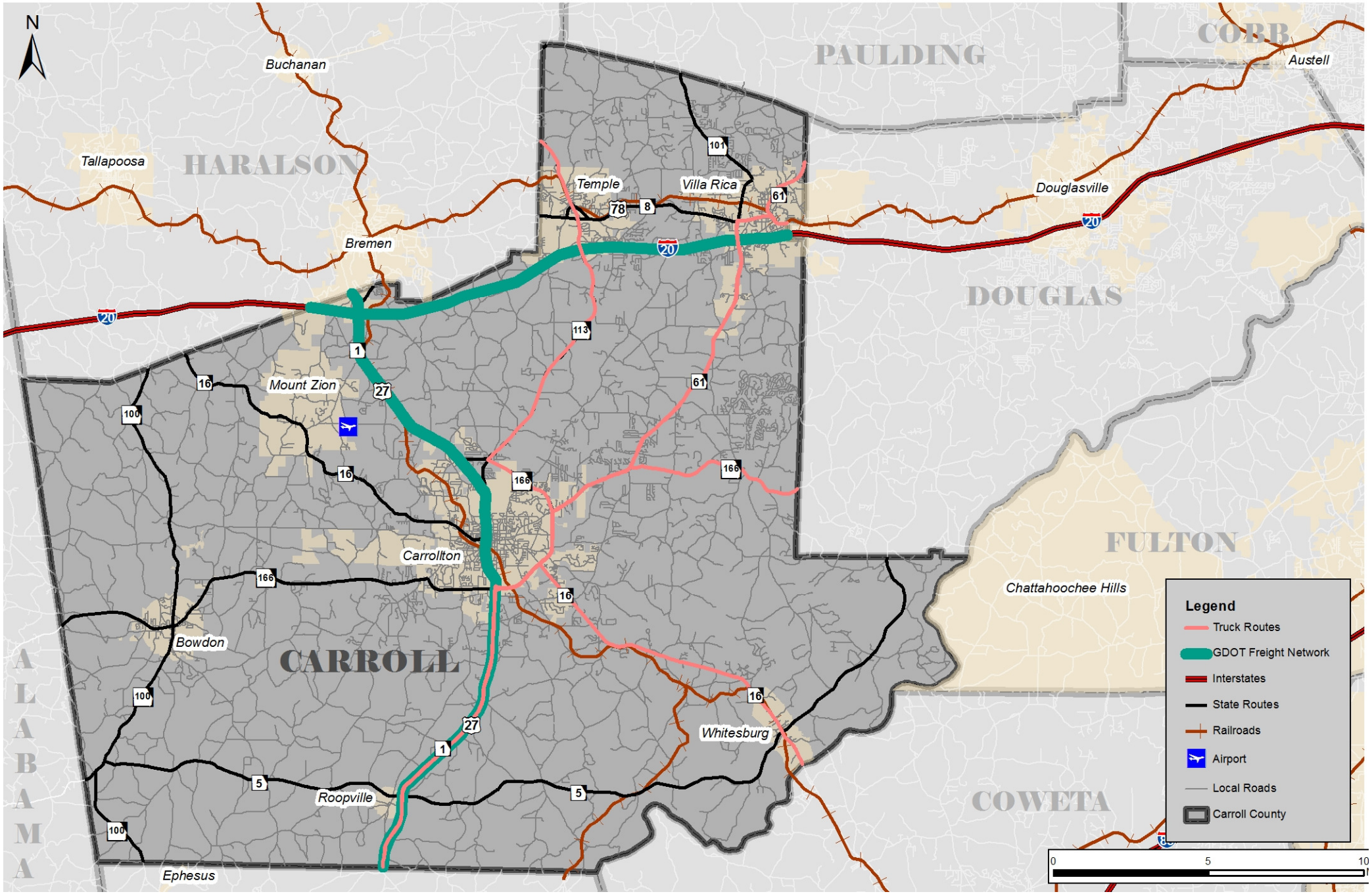
The preservation of freight mobility is a key component of the Carroll County Transportation Study. Figure 5.12 shows the freight network in Carroll County as denoted by National Highway System routes and GDOT's Oversize Truck Routes.

There are five designated truck routes illustrated in Figure 5.11: SR 100; SR 166; SR 61; SR 16; and US 27/SR 1. GDOT's Statewide Freight and Logistics Plan identified the Atlanta to Alabama Corridor as a strategic highway corridor and suggested adding additional capacity to the I-20 corridor through Carroll County to ensure that the corridor is free of freight congestion in the future.

The stakeholder advisory group identified several rail crossing issues, particularly grade crossings that prevent access for large trucks. These grade crossing issues occur in several locations in downtown Temple, in downtown Carrollton (Bradley Street at Dixie Street) and at Jones Mill Road at SR 16 (across from Whitesburg High School).



Source: CARE – 2007-2009


N
Buchanan
PAULDING
COBB
Austell
Tallapoosa
HARALSON
Temple
Villa Rica
Douglasville
Bremen
DOUGLAS
Mount Zion
Carrollton
FULTON
Chattahoochee Hills
CARROLL
Bowdon
Whitesburg
Roopville
COWETA
Ephesus
ALABAMA
Legend
Truck Routes
GDOT Freight Network
Interstates
State Routes
Railroads
Airport
Local Roads
Carroll County
0
5
10

5.6. *Rail*

Norfolk Southern Railway operates two rail routes in Carroll County. The East-West line runs parallel to I-20 through the historic downtowns of Temple and Villa Rica. Approximately 20-25 trains travel this route per day transporting 25 to 49 million gross tons per year. The State Rail plan identified the East/West Norfolk Southern route as a double stack capable corridor expecting significant growth in the future and Carroll County should prepare for continued rail freight capacity growth along the corridor.

Amtrak also operates passenger service on this rail line. The Amtrak Crescent has a daily run from New York City to New Orleans by way of Greensboro, NC and Atlanta, GA. There are no passenger stops for this route in Villa Rica or Temple.

The North-South rail line runs through Bowden Junction, Carrollton, and Whitesburg with a spur to deliver coal to Georgia Power Plant Wansley. This route carries an average of five freight trains daily transporting three to as much as ten million gross tons per year.

There are no abandoned rail lines in Carroll County.

5.6.1. Rail Crossings

Carroll County has 70 public crossings, 12 of which are currently closed. There are an additional 29 private crossings. Fifty-eight of the 70 public crossings are at grade. There are eight railroad crossings under the roadway and four railroad crossings over the roadway. Several crossings experience heavy vehicle traffic volume. Table 5.6 presents the top five Carroll County rail crossings with the highest AADT.

Table 5.6: Rail Crossings with Highest AADT

Rail Crossing	Location	AADT
719234U	SR 166 / Maple St (Carrollton)	9,410
719237P	SR 16 / Alabama St (Carrollton)	8,520
719419B	Columbia Dr (Carrollton)	8,500
719229X	Dixie St (Carrollton)	7,564
719231Y	Bradley St (Carrollton)	6,090

Source: Federal Railroad Administration, 2013

5.6.2. Rail Crash Data

The Federal Railroad Administration (FRA), Office of Safety, Analysis, reports crashes which involved trains at rail crossings. Over the past five years (2008 to present), nine crashes have occurred at crossings in Carroll County as outlined in Table 5.7.

Table 5.7: FRA Railroad Crossing Crash Data, 2008-2013 (Crashes Involving Trains)

Crossing ID	Location	City or Community	Date/Type of Incident	Type of Crash	Injuries
719227J	Southwire Dr	Carrollton	02-07-13 Auto 03-09-12 Ped	Rail equipment struck highway user	Rail crossing user injured
719401R	Wellington Mill Rd	Whitesburg	11-11-10 Truck 02-23-09 Truck	Highway user went around the gate	None
719411W	Byrd Trail	Carrollton	01-21-10 Van	Highway user stopped on crossing	None
904893G	Private Crossing		08-24-09 Truck 06-15-09 Auto	Highway user stopped or stopped and then proceeded	Rail crossing user injured
719229X	Dixie St	Carrollton	02-24-08 Van	Highway user did not stop	Rail crossing user injured
726612E	Jones St	Villa Rica	12-13-08 Auto	Highway user stopped on crossing	None

Source: Federal Railroad Administration. Highway-Rail Grade Crossing Accident/Incident Report. 2013.

5.6.3. Crash Prediction

The Federal Railroad Administration Web Accident Prediction System (WBAPS) is a computer model which predicts rail crossing collision rates, based on basic data about a crossing's physical and operating characteristics and on its five-year crash history. The System computes a predicted collision value for each crossing which is the probability that a collision between a train and a highway vehicle will occur at that particular crossing in a year. Crossings are then ranked according to their predicted collision value, with a ranking of "1" corresponding to the crossing with highest probability of a collision. While none of the 70 public rail crossings in Carroll County present a significant predicted collision rate, those with the highest rates are shown in Table 5.8.

Table 5.8: Top Collision Locations

Crossing ID	Location	City or Community	Rank	Predicted Collision Value	AADT
719401R	Wellington Mill Rd	Whitesburg	1	0.078	620
726612E	Jones St	Villa Rica	2	0.045	620
719411W	Byrd Trail	Carrollton	3	0.032	320
726622K	Van Wert Rd	Villa Rica	4	0.023	4,390
726631J	Carrollton Ave	Temple	5	0.023	3,620

Source: Federal Railroad Administration, Office of Safety Analysis. Web Accident Prediction System. 2013.

5.6.4. Planned Railroad Transportation Improvements

As shown previously, there is one planned railroad improvement within the STIP. Table 5.9 describes this improvement.

Table 5.9: STIP Railroad Improvement Projects

Project ID	Work Type	Work Description	Location	Status
0010841	RRX Warning Device	CR1208/Laurel Lane at Norfolk Southern #719412D	Southeast of Carrollton	Construction Authorized 3/6/2013

Source: GDOT STIP 2013-2016

5.6.5. Local Concerns

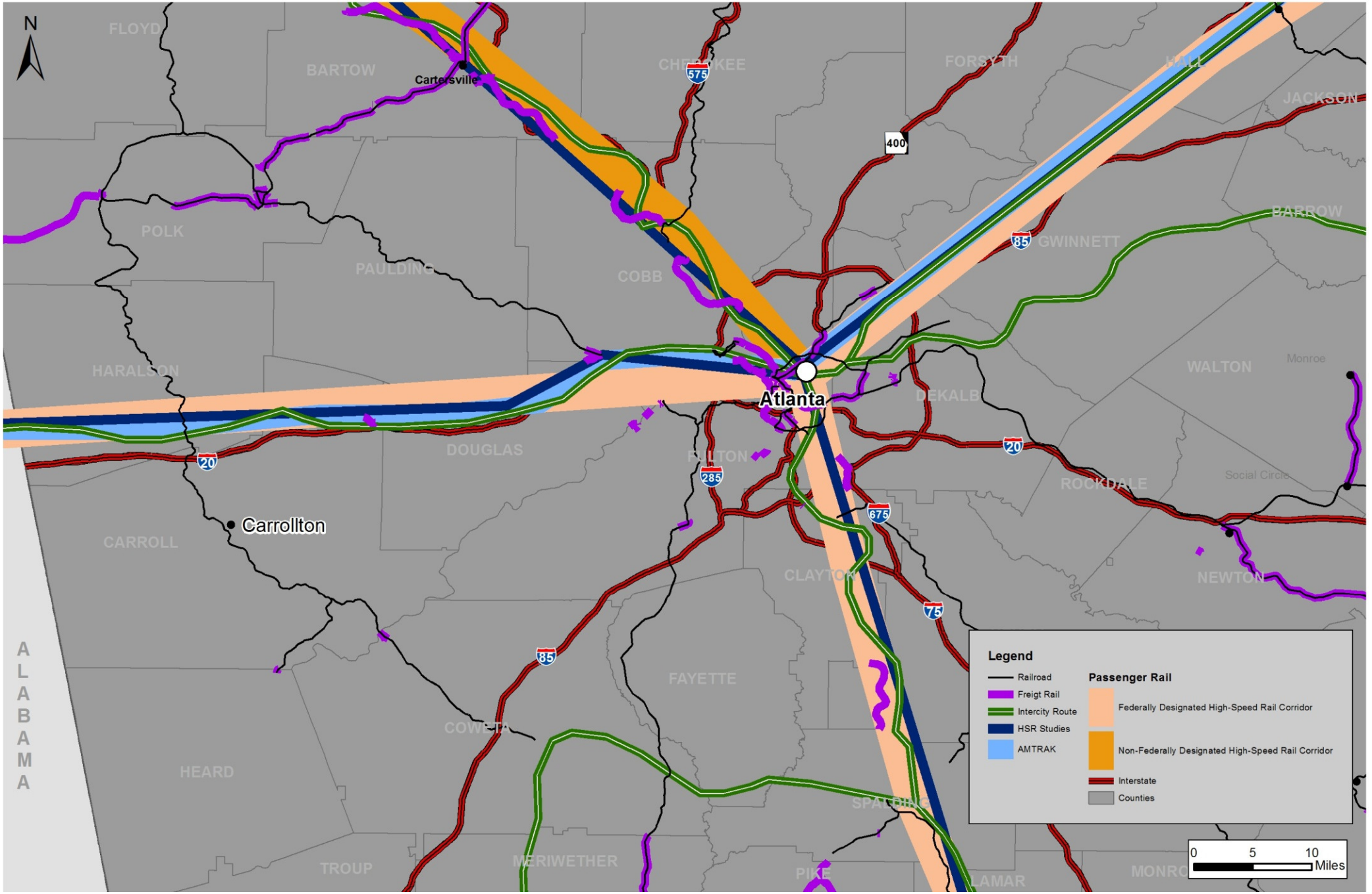
The study's Stakeholder Advisory Group expressed concerns and problems with railroad crossings in Carroll County. Two crossing locations, Dixie Street crossing in Carrollton and Jones Mill Road crossing near SR 16 (across from Whitesburg High School), we said to need grade improvements to ease difficulty trucks experience in crossing the tracks. After a review of the crash data and field assessment, there was no warranted need or potential improvement identified. There are no recent crashes at these locations and in the case of Jones Mill Road, there were no observed trucks utilizing this crossing.

The Advisory Group also discussed the location of the rail line through Temple. The rail line essentially divides Temple in half. This is problematic for industrial property on the north side of Temple to be marketed and utilized. The Group also noted that the proposed SR 113 Flyover Bridge would help to address the rail crossing issues in Temple; however, the current SR 133 crossing in the southeast portion of downtown Temple provides an at-grade crossing that can be used to accommodate truck traffic.

5.6.6. Passenger Rail

The Georgia Rail Passenger Program (GRPP) contains seven commuter rail lines, seven lines of intercity rail service as well as the Multi-Modal Passenger Terminal (MMPT). The state's seven commuter lines serve 55 communities. The intercity lines link nine of Georgia's largest cities and towns with the metro Atlanta/Macon area. Figure 5.13 illustrates the proposed commuter rail network.

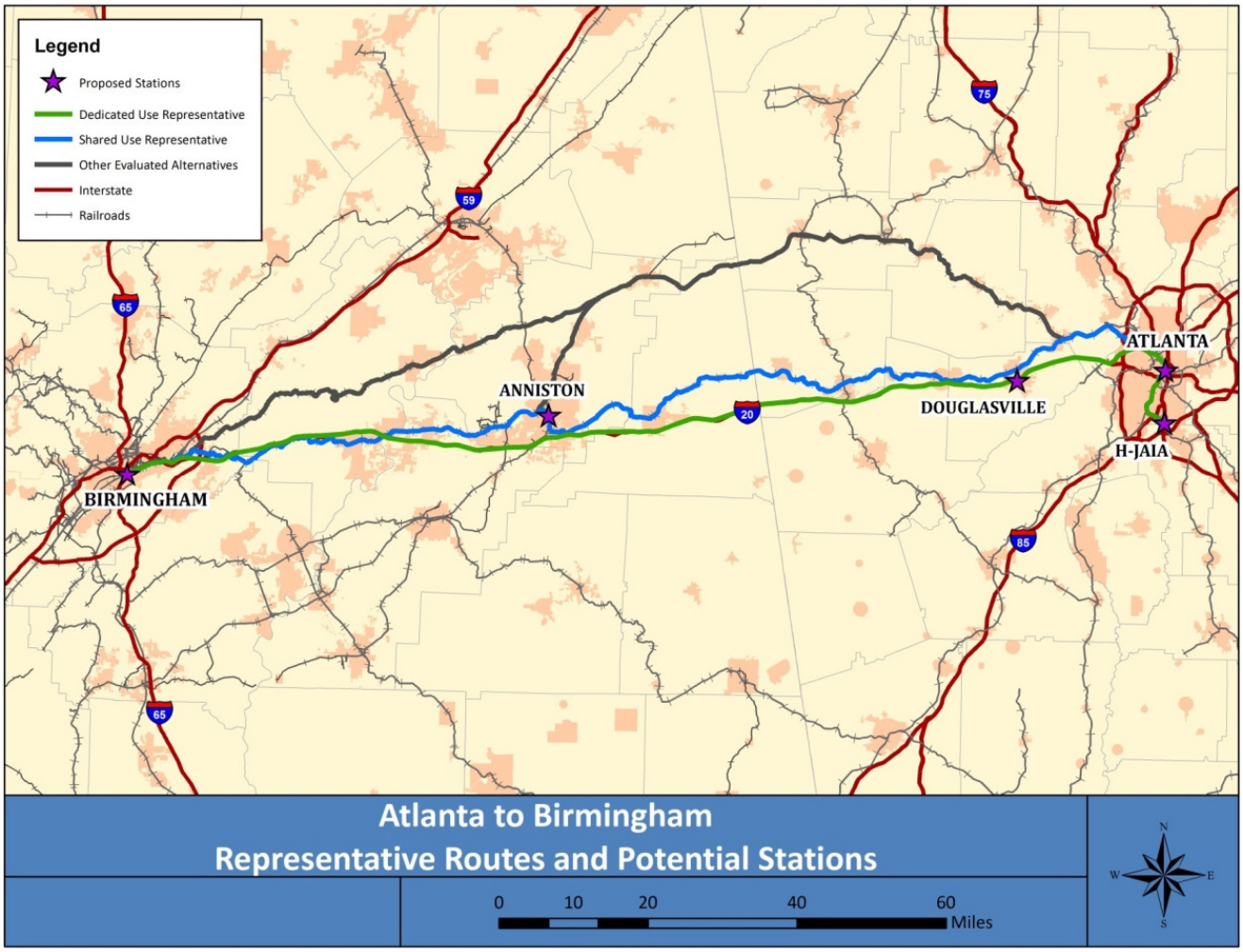
Once the 425-mile system is complete, commuter trains will transport over 40,000 people to and from work every day. Intercity trains will run on over a thousand miles of Georgia's railroads, connecting communities all over the state. While funding sources and a timetable are currently uncertain, one proposed route would terminate at Bremen, with a station in Villa Rica.



Source: GDOT Passenger Rail – Commuter Rail Service Map 2013

In addition to commuter rail, a high-speed rail corridor is being considered between Atlanta and Birmingham. Two of the three alternatives being considered pass through northern Carroll County. Figure 5.14 illustrates the potential alternatives.

Figure 5.14: Atlanta to Birmingham High Speed Rail Alternative Alignments



Source: Atlanta-Birmingham High-Speed Rail Planning Study

5.7. *Bicycle and Pedestrian*

Bicycle and pedestrian facilities are an important component of the roadway network, providing healthy, non-polluting means of transportation to many residents, especially for those too young or too old to drive, or those without financial means to own a car. Walkable communities not only provide additional transportation alternatives, but they also promote physical activity and healthy lifestyles, provide recreational opportunities, and can enhance economic development. Likewise, an intercity on-street bicycle route system or trail network can spur tourism, provide recreation and fitness opportunities for residents, while also creating the backbone of an alternative transportation network.

This section provides a description of the existing bicycle and pedestrian conditions in the County, with a focus on the primary bike and pedestrian trip generators: town and activity centers, schools, and parks. It also provides a summary of policies, plans, and crash data that relate to bicycle and pedestrian facilities.

While there are extensive sidewalk networks within incorporated cities, Carroll County does not require or maintain sidewalks in the unincorporated areas of the County. The County coordinates with its cities to develop urban standards in Urban Growth Areas to address the installation and maintenance of sidewalks. In addition, the County is participating in the Safe Routes to Schools programs, in conjunction with the school district, to develop pedestrian friendly networks around schools located in residential areas.

5.7.1. Existing and Planned Facilities

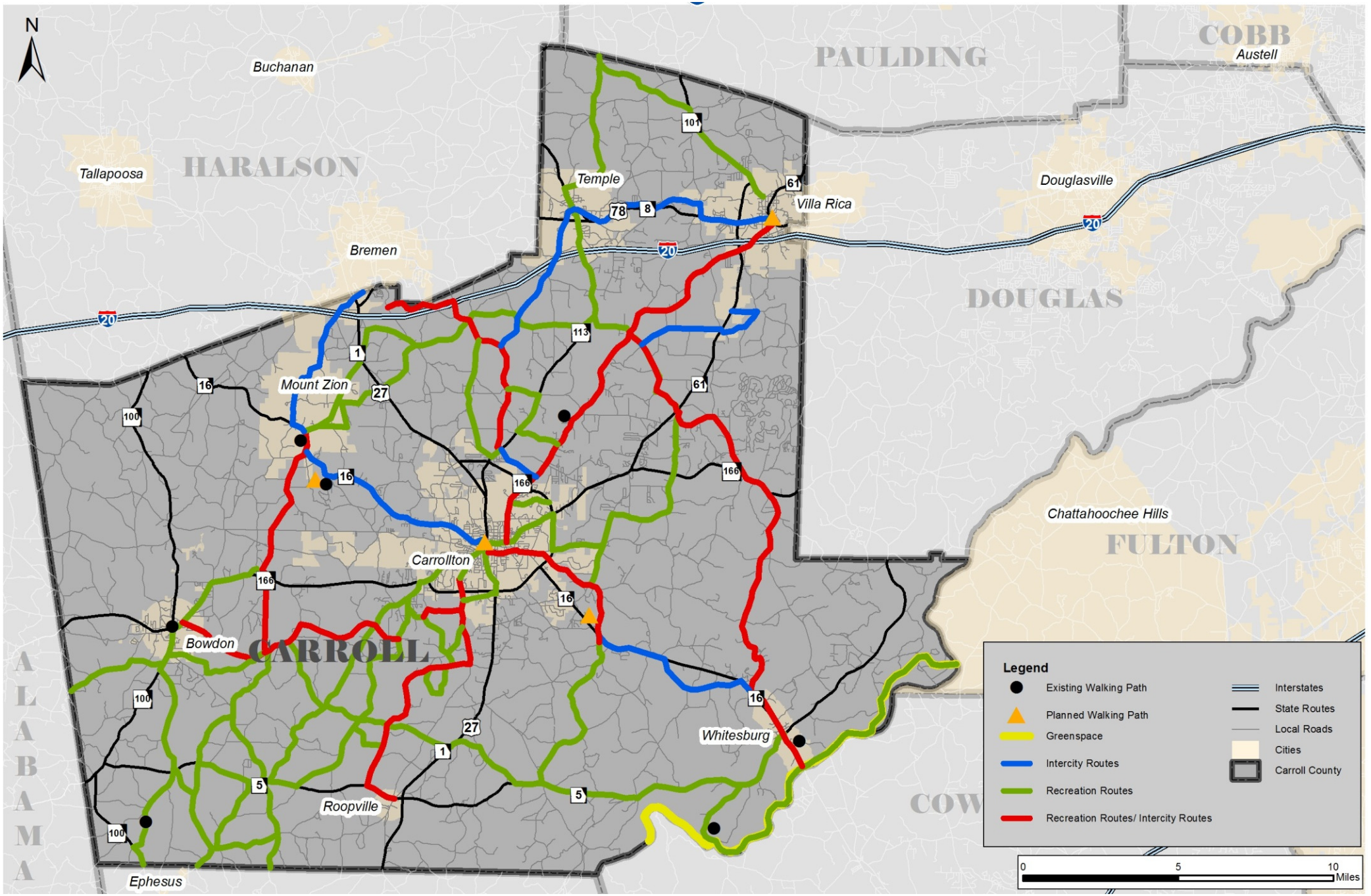
Chattahoochee Trace State Bicycle Route - The Chattahoochee Trace state bicycle route passes through Carroll County. Approximately 23 miles of the route are located within the County. The Chattahoochee Trace is a 408-mile north-south bicycle route that extends from the Tennessee state line south to Seminole State Park in Seminole County.

Chattahoochee-Flint Bicycle and Pedestrian Plan - In 2005, the Chattahoochee-Flint Regional Development Center completed a Regional Bicycle and Pedestrian Plan that includes Carroll County, as well as Coweta, Heard, Meriwether and Troup Counties. Along with development of an inventory of existing bicycle and pedestrian facilities and activities, the plan formulated goals and strategies for the ongoing development of bicycle and pedestrian transportation. Figure 5.15 illustrates the existing and proposed bicycle and pedestrian network. The plan identifies recreational routes, intercity routes, sidewalk areas, walking paths, and a greenspace trail.

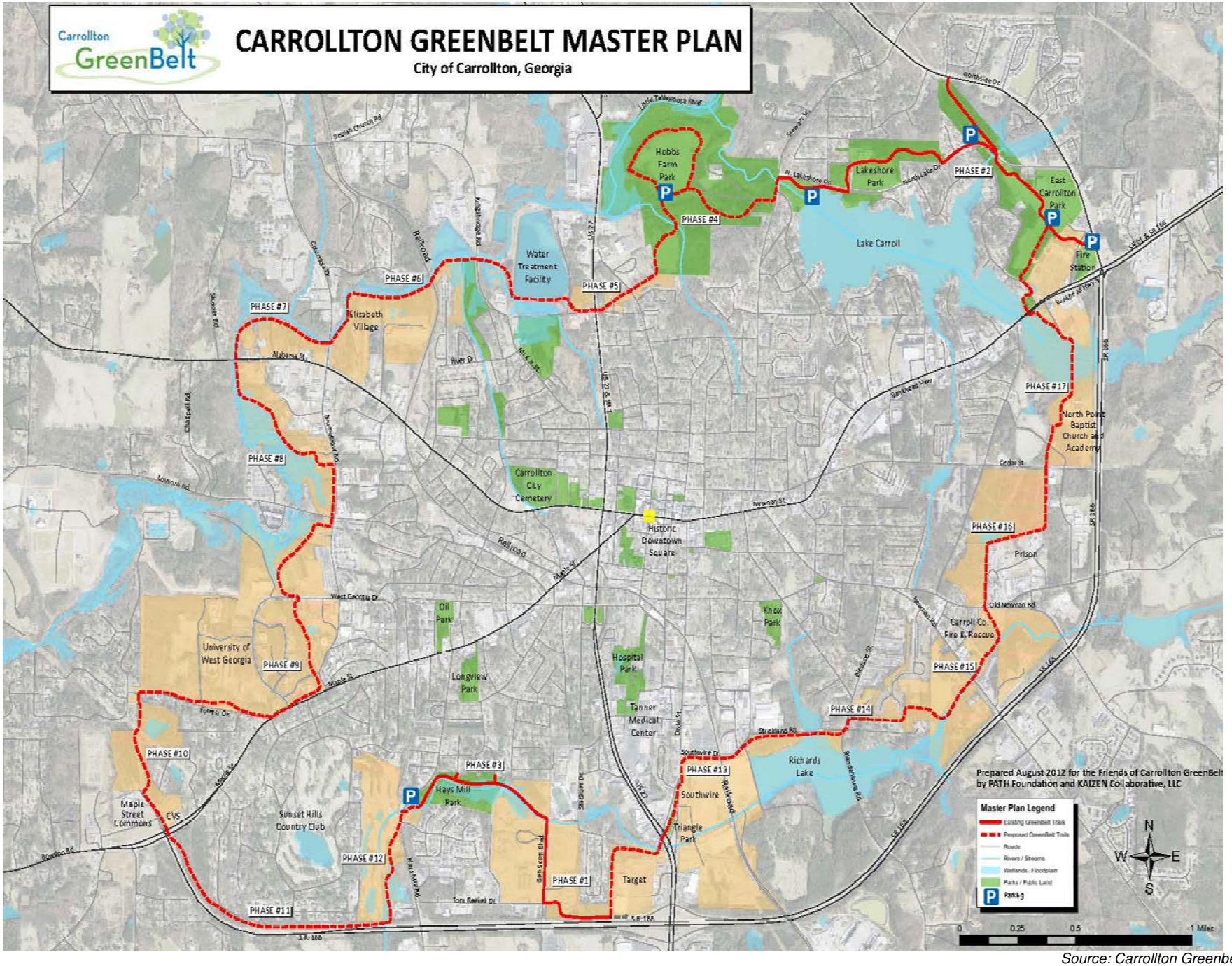
Carrollton GreenBelt - The Carrollton GreenBelt is a planned 16-mile hard surface trail system designed for pedestrians and non-motorized uses. Once it is complete, the trail will connect existing neighborhoods with the city school campus, the University of West Georgia, the city parks, and several commercial shopping areas.

The Carrollton GreenBelt is the largest greenspace and greenway conservation project that the City of Carrollton has undertaken. Once complete, it will also be the largest paved loop trail system in the state of Georgia.

The Carrollton GreenBelt serves the community in several capacities. Primarily, it serves as a recreational opportunity. Given the planned, strategic location of the trail, the community can also utilize the trail as an alternative to vehicular travel. The GreenBelt provides an opportunity to integrate recreation with transportation. Figure 5.16 illustrates the concept for the trail.



Source: Chattahoochee-Flint Bicycle and Pedestrian Plan



Source: Carrollton Greenbelt Master Plan

Carrollton Downtown Master Plan - The following information related to bicycle and pedestrian facilities was reported in the Carrollton Downtown Master Plan.

Sidewalk Data
An inventory of the existing sidewalk conditions in the city was completed in 2005. This inventory describes roadways with sidewalks on either one or both sides and areas with no sidewalk (recommended areas for new or improved sidewalk access). The inventory of existing sidewalks in the city included the downtown Carrollton area only.

The overall pedestrian network is in good condition, as it relates to sidewalks and pedestrian enhancements on the downtown square. This is due to sidewalk and other streetscape elements recently installed. In terms of the conditions of the existing sidewalks in other Central Business District areas, they should be considered only fair as it relates to the actual existence of sidewalks. However, in terms of the conditions there are some minor deficiencies that do not meet the American Association of State Highway and Transportation Officials (AASHTO), Americans with Disabilities Act (ADA) or GDOT standards.

Multi-Use Paths and Bike Lanes
There are currently no multi-use paths or bicycle lanes that exist in the downtown area of the City of Carrollton. Areas such as parks, schools and neighborhoods were assessed and ADA and AASHTO guidelines were considered as well as those of GDOT and other state agencies in making recommendations.

The following improvements related to bicycle and pedestrian facilities were recommended in the Carrollton Downtown Master Plan.

- Intersection Improvements
- Crosswalks & Pedestrian Signals Upgrade Downtown Square (where appropriate)
- Crosswalks & Pedestrian Signals Maple Street at South Park Street (US 27)
- Signal Timing Upgrade Barnes Street at Alabama Street
- Crosswalks & Pedestrian Signals Rome Street at City Hall Avenue
- Crosswalks & Pedestrian Signals City Hall Avenue at College Street
- Crosswalks & Pedestrian Signals North Park Street at Alabama Street
- Pedestrian Mid-Block Crossings
- Dixie Street
- Tanner Street
- Bradley Street – Presbyterian Avenue to Alley/Proposed Path
- Barnes Street – from Cultural Arts Center to Proposed Parking Deck
- Rome Street – Pedestrian Path to Proposed Parking Deck
- City Hall Avenue at Tanner Street
- Plan and Implement Streetscape Enhancements
- along Maple Street
- along Rome Street
- along City Hall Avenue
- along College Street
- Streetscape Enhancements – Benches, Trees & Lights
- Newnan Street – Downtown Square to Bankhead Hwy Intersection

- Dixie Street – East Center Street to Newnan Street
- Tanner Street – East Center Street to Newnan Street
- Bradley Street – East Center Street to Downtown Square
- Maple Street – Barnes Street to South Park Street (US 27)
- Street – Downtown Square to Ward Street
- Barnes Street – Alabama Street to Ward Street
- City Hall Ave. – Rome Street to College Street
- College Street – Newnan Street to Ward Street
- Pedestrian Path/Trail
- from Presbyterian Church to City Hall
- from the Methodist Church to Rome Street
- Pedestrian Path
- from Bank Parking
- to Proposed Parking Deck
- Multi-Use Path/Trail From College Street to Rome Street
- Create Pedestrian Walkway between Presbyterian Church and City Hall Parking Area
- Enhance Crosswalks at Pedestrian Intersections on Bradley and Newnan Streets

5.7.2. Programmed Improvements

As noted previously, there are several bicycle and pedestrian improvements identified in the STIP, as outlined in Table 5.10.

Table 5.10: STIP Bicycle and Pedestrian Projects

Project ID	Work Type	Work Description	Location	Status
0007640	Multi-Use Trail	Chattahoochee Hills Regional Greenway Trail	Carroll County	Preconstruction; Construction Proposed 2016
0008083	Bicycle/Pedestrian Facility	Carrollton GreenBelt from Hays Mill Road to SR1/US 27	Carrollton	Preconstruction; Construction Proposed 2013
0010457	Bicycle/Pedestrian Facility	Villa Rica Trailhead	Villa Rica	Preconstruction; Final Design in Lump
0010948	Multi-Use Trail	Carrollton GreenBelt from SR 166 Bypass to East of Strickland Road	Carrollton	Preconstruction

Source: GDOT, State Transportation Improvement Program 2013-2016

5.8. *Public Transportation*

Carroll County does not currently provide public transit nor does it participate in the regional rural transit system, Three Rivers Transit, administered by the Three River Regional Commission. The Three Rivers Transit System uses a demand response service model whereby passengers call to schedule a trip and trips are provided by vans for a one-way or round-trip fare. Spalding, Butts, Pike, Lamar, and Upson Counties currently participate in Three Rivers Transit which allows their residents to cross county lines for trips to jobs, medical facilities, and other activity centers. The regional approach has proved to be a cost effective

way for counties to provide public transportation for its senior citizens, local workforce, the disabled, and the general public. Data collected for the Three Rivers Transit System – FY2012 shows that most trips were made for employment (49%), for seniors (27%) and for medical reasons (13%). The remaining trips were for social/recreational (6%), shopping/personal (3%), and educational reasons (2%).

Public transportation in Carroll County is limited to selective non-profit services within the larger communities of the County. The Georgia Department of Human Resources provides limited transportation services through its Coordinated Transportation System. This system assists county residents in reaching services of the Division of Aging Services (DAS), Mental Health/Developmental Disabilities/Addictive Diseases (MHDDAD), and Division of Family and Children's Services (DFCS).

Under the Georgia Department of Human Services (DHS) Coordinated Transportation program, door-to-door transportation is provided to consumers of Aging Services, the Division of Family and Children Services, the Department of Behavioral Health and Development Disabilities, and the Georgia Vocational Rehabilitation Agency. Services are available 24 hours per day, 7 days per week, but most services are performed during the hours of 6:00 am and 6:00 pm Monday through Friday. Services are provided through a contract with Three Rivers Regional Commission, the agency that manages a regional system of transportation services for DHS and the Georgia Department of Transportation (GDOT). There are no plans to expand DHS transit services at this time.

Table 5.11 shows information regarding unduplicated passengers transported and number of trips provided for each site in Carroll County during Fiscal Year 2012. The average cost per trip in the region is $11.50 and is currently averaging $11.51 in Fiscal Year 2013.

Table 5.11: Transit Ridership and Trips (FY 2012)

Site Served	Clients Served	Trips Provided	Site Served
Carrollton Senior Center	21	4,204	Carrollton Senior Center
Villa Rica Senior Center	10	2,462	Villa Rica Senior Center
Carroll County DFCS	83	2,316	Carroll County DFCS
Carroll County Training Center	52	20,310	Carroll County Training Center
Pathways	0	0	Pathways
GVRA Carrollton Unit	11	43	GVRA Carrollton Unit
TOTAL	177	29,335	

Both the City of Carrollton and the County Board of Commissioners have studied and evaluated participation in a public transportation system in the past three years. Such evaluations have revealed that while there is definite need for services, such a program is cost-prohibitive.

5.8.1. Needs Assessment

Carroll County has taken initial steps to examine transit options and participation in the regional Three Rivers Transit System. The County should continue actively exploring the regional rural transit system and its costs with the TRRC, considering the factors below:

- **The Growing Senior Population** - The growing senior population in Carroll County represents perhaps the largest group of residents potentially seeking public transportation options in future years. The Governor's Office of Planning and Budget shows a staggering increase in the percentage and number of seniors in the County by the year 2020 (age-specific projections beyond 2020 are not currently available), as shown in Table 5.12 below.

Table 5.12: Carroll County Population Projections – 2010 and 2020.

Population	2010	2020	Percent Change
Total Population	110,531	127,621	15%
Seniors Age 65 and Over	12,108	18,155	50%

Source: Governor's Office of Planning and Budget, 2012 Series

While the overall County population is expected to increase by 15% between 2010 and 2020, the population of seniors is expected to increase by 50% or over 6,000 individuals by the year 2020. The growing population of elderly citizens will also mean that the population of disabled citizens will likely increase in coming years as well.

- **Workers** - 2012 ridership data for the Three Rivers Transit System shows that the majority of trips (49%) were made for employment. Some counties in the current Three Rivers Transit System have as many as 70% of their trips being made for employment purposes. Access to transportation allows many, particularly low-income citizens, to work. While further study would need to be done, Carroll County likely has a segment of its population who need transportation of some type in order to work.

  An able workforce impacts the economic development of the community. The Carroll County Chamber of Commerce Blue Ribbon Task Force has initiated several workforce development programs to connect high school students (including at-risk students) with major employers including Southwire, Tanner Connections, and others. With plans to expand these initiatives, adequate transportation will require further study for these students as they transition from the school environment to the workforce.

- **Veterans -** The Trinka Davis Veterans Village Outpatient Clinic opened in Carrollton in late 2012. The outpatient clinic and future-planned community living center will serve up to 3,000 local veterans who participated in US military conflicts since WWII. The Clinic does provide some transportation for local veterans however, as the population of veterans age, additional transportation services will likely be needed by veterans to access services available at the Clinic.

- **Students** –University of West Georgia has a shuttle system that services its campus. The shuttle system has routes circulating nearby apartment complexes including

Campus Quad, River's Edge, River Pointe and The Grove. A shopper service is also available on Tuesdays and Wednesdays, transporting students to the nearby Kroger Center and other retail shopping areas.

University of West Georgia has a sister campus in Newnan. Right now there is no shuttle service between the two for students taking courses at both campuses. There are currently no transportation services for student wishing to come into Carrollton for shopping, entertainment and other activities. Thus transportation services would perhaps be utilized by students who do not own personal vehicles or who wish to use public transit to reach various destinations.

5.8.2. University of West Georgia Shuttles

The University of West Georgia operates a shuttle system when classes are in session. The campus shuttle system includes four routes, as follows:

- Red Route: Travels clockwise on the inside of the Perimeter. Service runs Monday-Thursday 7:30 am until 10:00 pm, Friday 7:30 am until 6:00 pm.
- Blue Route: Travels counter-clockwise on the outside of the Perimeter. Service is Monday-Thursday 7:30 am until 8:00 pm, Friday 7:30 am until 3:00 pm.
- Apartment Shuttle: Leaves the Quad Bus shelter Monday-Friday 7:20 am until 6:00 pm. This route serves Campus Quad, River's Edge, River Pointe, and The Grove.
- Grey Route: Connects the Campus to the Stadium Parking Lot "C". Service runs Monday-Thursday 7:30 am until 10:00 pm. Friday service begins at 7:30 am and ends at 6:00 pm. Friday Service after 3:00 pm is called Red/Grey and runs the regular Red but also going to the Stadium.

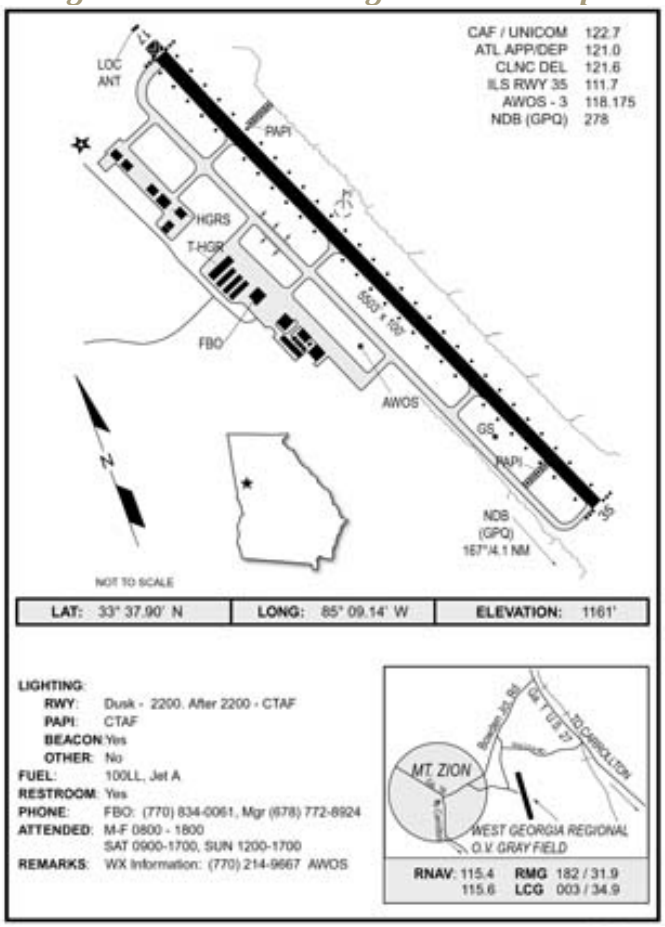
5.9. *Aviation*

West Georgia Regional Airport (CTJ) – O.V. Gray Field is located five miles northwest of Carrollton along US 27. The airport is situated on 396 acres and is under the authority of the West Georgia Airport Authority. The existing facility accommodates:

- Corporate/business jets;
- Police/law enforcement;
- Recreational flying;
- Aerial agricultural operations;
- Aerial inspection flights;
- Emergency medical and patient transfer;
- Aerial photography;
- Military training;
- Experimental aircraft; and
- Ultra-lights.

Figure 5.17 shows a schematic layout and aerial view of West Georgia Regional Airport.

Figure 5.17: West Georgia Reional Airport



The West Georgia Regional Airport has one runway that is 5,500 feet long by 100 feet wide, equipped with medium-intensity runway lighting (MIRL), precision approach indicators (PAPIs), and a full parallel taxiway with medium-intensity taxiway lighting (MITL). The airport has a rotating beacon, segmented circle, wind cone, and an Automated Weather Observing System (AWOS-3). An updated Airport Layout Plan is being prepared in 2013 that identify an action item to extend the runway length to 6,500 feet.

The airport, owned and operated by West Georgia Airport Authority, provides 24-hour fueling (AV gas and Jet A fuel), hangar storage, and aircraft maintenance services in its 40,000 square foot hangar. The airport includes 74 hangar parking spaces, 28 apron parking spaces, 40 auto parking spaces and a 1,000 square foot terminal/administration building. Car rental services, flight instruction, and aircraft maintenance services are also available. There are 77 aircraft based on the field, 66 of these are single engine airplanes, 7 multi-engine airplanes, 1 jet airplane, and 3 helicopters.

West Georgia Regional Airport averages 67 aircraft operations per day. Forty-nine percent of these are transient general aviation operations, 49 percent of daily operations are for local general aviation, and 2 percent are military operations. (Federal Aviation Administration, May 2013). The airport supports corporate flight departments for local major employers including GBC Technologies, L&A Investments and SMI Inc. The airport also plays a vital role by providing air transportation to retail and manufacturing companies including Wal-Mart, Honda Lock, and Southwire. The facility also serves as a gateway for local sportsmen to meet and fly out during hunting season. Local study stakeholders expressed the need for better access between US 27 and the West Georgia Regional Airport.

Table 5.13 outlines the Capital Improvement Plan for the West Georgia Regional Airport.

Table 5.13: West Georgia Regional Airport Capital Improvement Plan

Fiscal Year	Description	Federal Cost	State Cost	Local Cost	Total Cost
2014	Construct North Apron Phase I	$1,446,525	$80,363	$80,363	$1,607,251
2015	Erosion Control	$90,000	$5,000	$5,000	$100,000
	Expand Apron and Tie Down Area	$0	$45,000	$15,000	$60,000
	Install Security Fencing Phase II	$815,053	$42,898	$42,898	$900,849
2016	Install MALSF	$198,000	$11,000	$11,000	$220,000
2017	NBD- Replace Antennas	$54,000	$3,000	$3,000	$60,000
2018	Construct North Apron Phase II	$1,261463	$70,081	$70,081	$1,410,625
	TOTAL	**$3,865,041**	**$257,342**	**$227,342**	**$4,349,725**

The Airport has been working to bring in additional sources of operations. These include training operations and fractional ownerships. The Airport now has an Air Message Lift Flight service available 24 hours a day, seven days a week.

West Georgia Regional offers economic development opportunity for the County. Adjacent, undeveloped land is suitable for airport expansion, as well as the development of industrial sites nearby. Complimentary industries, such as aircraft building, assembly, and part manufacturing, could also be attracted to the area. Carroll Tomorrow has been working diligently with the airport to attract industry that would be appropriately located next to the Airport.

The Airport's five-mile proximity to I-20 is a major benefit for attracting growth to the airport and its surrounding areas. The Airport is in need of improved access from US 27, particularly to attract corporate customers. At present, the two access points require travel through neighborhoods to reach the Airport. Improving access with a divided road, signage, and landscaping would serve to upgrade the facility and create appeal for new businesses as well as local and non-local customers.

6. Public Involvement Activities

6.1. *Citizen and Stakeholder Input*

Building on the experience of previous public outreach efforts, this LRTP developed a process consistent with public involvement efforts at the state and regional levels. In order to educate, inform and involve the public on the purpose and status of the study, and to collect relevant information from stakeholders and the public, the study included public and stakeholder outreach. Techniques were developed to maximize participation opportunities for individuals throughout the study area.

6.2. *Stakeholder Advisory Group*

A Stakeholder Advisory Group was formed to guide the development of the plan and help gather input at key milestones during the LRTP development process. Stakeholder members were identified with assistance from County staff and represented different perspectives from state, regional and local agencies. Representatives included members of GDOT, Three Rivers Regional Commission (TRRC), Carroll County, the Cities of Bowdon, Bremen, Mount Zion, Roopville, Temple, Villa Rica and Whitesburg. Members of the Stakeholder Advisory Group are listed in Table 6.1.

Table 6.1: Stakeholder Advisory Group Members

Participant Name	Title	Organization
Steve Walker	Project Manager	GDOT Planning
Dave Cox	Branch Chief	GDOT Planning
Radney Simpson	Assistant State Planning Administrator	GDOT Planning
Nancy Cobb	Intermodal Administrator	GDOT Intermodal
DeWayne Comer	District Engineer	GDOT District
Mike Haithcock	District Preconstruction Engineer	GDOT District
Cherie Marsh	District Planning & Programming Engineer	GDOT District
Lee Gorman	Director	Carroll County
Amy Goolsby	Planner	Carroll County
Charles Pope	Public Works	Carroll County
Brian Kent	County Engineer	Carroll County
Casey Coleman	City Manager	City of Carrollton
Tommy Hollan		City of Carrollton
Robert Gamble	Public Works Superintendent	City of Whitesburg
Jimmy Meigs	City Manager	City of Bowdon
Kim Pope	Public Works Director	City of Temple
Ernest Crussell		City of Temple
Larry Wood	City Manager	City of Villa Rica
Randy Simms	Mayor	City of Mt Zion

Participant Name	Title	Organization
Robert Hiett	Government Services Director	Three Rivers Regional Commission
Jeannie Brantley	Planning Director	Three Rivers Regional Commission
Lanier Boatwright	Director	Three Rivers Regional Commission
Tracy Sanchez	Regional Mobility Manager	Three Rivers Regional Commission
Jennifer Baptiste		Three Rivers Regional Commission
Dr. Faye McIntyre	Dean	University of West GA
Dr. Kent Edwards	Superintendent	Carrollton City Schools
Scott Cowart	Superintendent	Carroll County Schools
Craig Jones		Carroll County Schools
Mike Sanders		Carroll County Schools
Anita Jones	Continuing Education Manager	West Georgia Technical College
Jacqueline C. Dost	Executive Director	Keep Carroll Beautiful
Brian Dill	VP Economic Development	Carroll Tomorrow
Daniel Jackson	President/CEO	Carroll County Chamber of Commerce
Loy Howard	President/CEO	Tanner Health System
Gary Leftwich	Director of Marketing	Southwire Company (Wire and Cable)
David Meier	General Manager	Decostar Industries, Inc. (Auto Parts)
Elizabeth Buttimer	Owner	Bremen Bowdon Investments (Apparel)

The Stakeholder Advisory Group was asked to provide local input on several topics that provide the framework for the overall study process. This group helped to establish the LRTP goals and define the intended outcomes of the plan.

The Stakeholder Advisory Group met at two key milestones during the plan development effort as listed below:

- Meeting #1 - March 12, 2013 at 10:00 AM in the Carroll County Commission Chamber
- Meeting #2 – October 23, 2013 at 1:30 PM in the Carroll County Commission Chamber

The first meeting took place early in the study process to discuss issues and opportunities, establish priorities, and finalize study goals. The second meeting provided an opportunity to gather feedback on preliminary recommendations and assist with prioritization criteria. Documentation of each Stakeholder Advisory Group meeting can be found in Appendix B.

6.3. *Study Website*

A study webpage was developed and included as part of GDOT's website, located at:

http://www.dot.ga.gov/carrollcountystudy

The study website provided study information, including a calendar of upcoming meetings and all meeting materials were made available for download from the project website.

6.4. *Public Survey*

The Carroll County Long Range Transportation Plan's Public Survey was developed as a primary tool for gathering public input regarding travel conditions and needed transportation improvements in the study area. The intent of the survey was to gather data and input throughout the County. The Survey queried the public about various transportation topics through 21-questions. Questions related to traffic operations, safety, trucks, road conditions, bridges, sidewalks and bicycle routes, and public transportation were included and provided the public with the option to express their thoughts and concerns.

The survey effort sought to reach not only the decision-makers and community leaders, but also to reach citizens who live, work, and travel in the study area. Efforts were made to gather input from those individuals who might not otherwise attend a public meeting or community forum by promoting the survey through non-traditional mediums, via distribution through the local school district, the project website and email distribution lists of the Stakeholder Advisory Group. As a result, 134 responses were received across the County.

A number of common themes and issues emerged from the responses. These include the following:

- Fifty percent (50%) of respondents commute to work within the County – most to Carrollton or Villa Rica.
- The three highest priority transportation improvements needed are safety (60%), traffic congestion (60%), and the need for sidewalk and pedestrian options (49%).
- US 27 (congestion and traffic signals), SR 161 (congestion and high speed), SR 101 (congestion, crashes), and SR 113 (congestion) were of most concern to survey respondents.
- Traffic congestion is most experienced at:
- SR 101 at SR 61
- US 27 at SR 61
- US 78 at SR 61
- US 27
- Traffic signals or stop signs are needed at:
- The three-way stop at SR 101 and SR 61
- Old Newnan Road and Cross Plains Road
- Old Newnan Road and SR 166 Bypass
- Additional turn lanes are needed in:
- Villa Rica
- Along US 78
- Along SR 113 and SR 61 (particularly at Ithaca Elementary School)
- Thirty-three percent (33%) of respondents have experienced a need for public transit. Locations mentioned include Carrollton, between University of West Georgia and Carrollton, countywide, and between counties.
- Respondents would like to see more sidewalks in Villa Rica, on Bankhead Highway, and on SR 61. Respondents would like to see bicycle routes throughout the County.

- Safety is a concern:
- With buses leaving schools
- Along SR 61, particularly in the school zone
- In the Carrollton Square.
- Speeding is a noted concern on the SR 166 Bypass, on SR 61, and on US 27. Truck traffic causes problems on US 27 and SR 113.
- Respondents experience difficulty getting onto roads at:
- Harnlan Lane Road at SR 101
- Along SR 61
- US 27 at SR 113
- Difficulty passing slow-moving vehicles occurs along SR 113 between Carrollton and Temple, along SR 101, and along SR 166.
- Problems with railroad crossings occur most frequently in downtown Villa Rica, in Temple, and at crossings on Industrial Boulevard.
- Other transportation improvements most needed in the County, according to respondents, include:
- Additional traffic signals and stop signs or replacing stop signs with traffic signals
- Additional turn lanes
- Coordination and re-timing of traffic signals for better traffic flow
- Improvements to road conditions (potholes, rail crossing pavement, shoulders, grass maintenance)
- Buses to provide transit and commuter options
- Additional sidewalks and bike routes/lanes to promote alternative travel options and a healthier lifestyle
- Enforcement of Speed limits and stop signs

The Public Survey and the results are provided in Appendix C.

7. LRTP Goals

7.1. *Background*

Goals are the foundation of the long range planning process. The goals represent the general themes and overall direction that Carroll County and its residents envision for the future of the County. They guide the development of the LRTP by providing a basis for evaluating transportation plan improvements – reflecting the intentions that the Plan is meant to achieve. It is necessary to establish long range goals to guide the transportation plan development process for Carroll County.

7.2. *National Goals*

Goals and objectives should be consistent with relevant federal, state, and local plans and legislation. The Moving Ahead for Progress in the 21st Century (MAP-21) includes seven performance goals that must be considered when a Metropolitan Planning Organization (MPO) develops an LRTP. **It is understood that Carroll County is not currently an MPO; however, the guidelines for MPO's were followed to provide a strong framework for transportation decisions.** Specifically, the LRTP must be designed around the following performance goals:

- Safety - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- Infrastructure condition - To maintain the highway infrastructure asset system in a state of good repair.
- Congestion reduction - To achieve a significant reduction in congestion on the National Highway System.
- System reliability - To improve the efficiency of the surface transportation system
- Freight movement and economic vitality - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- Environmental sustainability - To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- Reduced project delivery delays - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

7.3. *Local and State Goals*

The goal of this plan is to ensure that the County's current and future transportation needs are identified and solutions are developed to address future transportation needs. The goals of this study were developed by evaluating transportation related goals outlined in previous studies in the County including the 2004 Carroll County LRTP and 2008 Comprehensive Plan as well as through input from the stakeholder advisory group. Then those goals were aligned with the Governor's 2012 Strategic Goals and the national transportation planning goals outlined in MAP-21. The study goals, and how they align with national, state and local goals, for the Carroll County 2040 LRTP are outlined in Table 7.1 on the next page.

Governor's Strategic Goals (2012)

- Mobile: Improving the movement of people and goods across and within the state, expanding GA's role as a major logistics hub, and leveraging public-private partnerships
- Growing: Creating jobs and growing businesses
- Healthy: Accessible care and active lifestyles
- Safe: Protecting the public's safety and security by reducing injury and loss of life on Georgia's roads

Carroll County Comprehensive Plan (2008)

- Provide a convenient and cost effective transportation system that emphasizes connectivity, safety, choices of modes and harmony between transportation modes and land uses

Carroll County LRTP (2004)

- Improve safety, environment, and quality of life
- Increase accessibility and mobility of people and goods
- Support the attainment of air quality in conjunction with neighboring counties
- Integrate land use decisions with transportation analysis and planning

Table 7.1: National, State & Local Goals

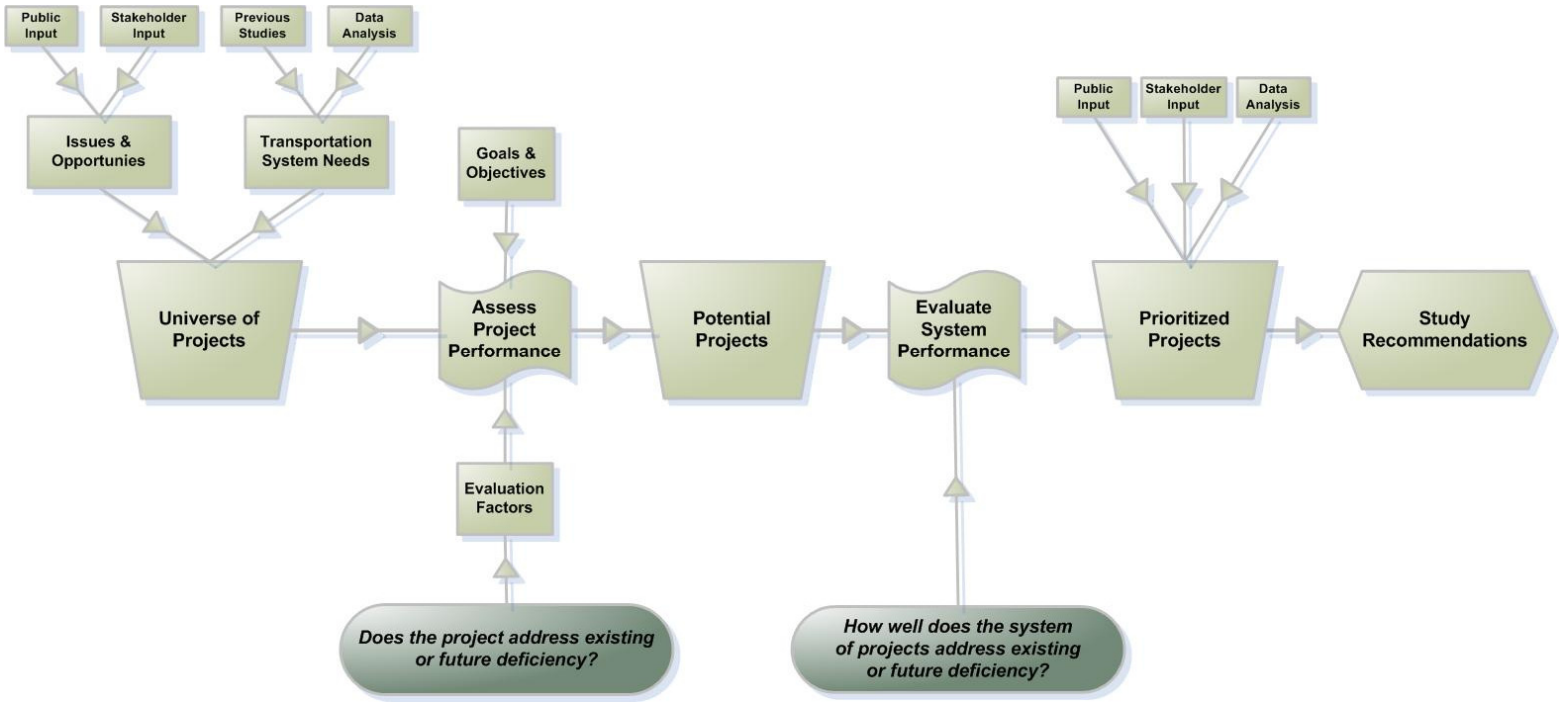
Study Goals	Local	State	National
Improve **safety**, **accessibility** and **mobility** options for the movement of people and goods	✓	✓	
Promote and protect **quality of life** by integrating local planned growth, land use patterns and economic development patterns with transportation analysis and planning	✓	✓	
Emphasize the efficient, operation, and **preservation** of the existing transportation system while promoting environmental **sustainability**	✓	✓	✓
Accommodate users without access to automobiles and promote health and quality of life by providing a range of **mobility options**	✓	✓	

8. Improvement Needs

8.1. *Needs Evaluation*

Based on the activities summarized in Sections 1 – 6 of this document, an assessment of future conditions was conducted and identified a series of potential improvements to address Carroll County's transportation needs. Potential improvements were identified in various areas of transportation, including roadway, bridges, rail, bicycle, and pedestrian. Aviation and transit were also considered in the evaluation and several recommendations to enhance these modes are also included in the document. These potential improvements were developed in consultation with the Stakeholder Advisory Group and Carroll County citizens as outlined in Section 6. Figure 8.1 below illustrates the overall approach to the future improvement development process:

Figure 8.1: Transportation Improvement Development Process



8.2. *Roadway Needs*

The transportation network in Carroll County was analyzed for three different types of potential roadway improvements: capacity improvements (including new roadways), operational improvements, and intersection improvements. Needs were evaluated through the analysis of safety data, discussed in Section 5.5. Stakeholder Advisory input was also considered in the identification of improvements consistent with the goals of the study, discussed in Section 6.

8.2.1. Logical Termini

For roadway capacity improvements, logical termini were determined to help link the long range planning process with National Environmental Policy 2003 and 2007 (NEPA) regulations.

The Federal Highway Administration (FHWA) Code of Federal Regulations (CFR) includes three general principles at 23 CFR 771.111(f) that should be used to frame a highway project:

- In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated in each environmental impact statement (EIS) or finding of no significant impact (FONSI) shall:
- Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
- Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Logical termini for each corridor improvement were examined and revised based on the analysis conducted to date.

8.2.2. Capacity Improvements

Based on the existing and future deficiencies identified in Section 5, the following capacity improvements are recommended:

- US 27 from Central Road to Dixie Street
- SR 166 from Burwell Road to 4-lane section in Carrollton
- SR 61 Connector from SR 61 to Shoreline Parkway
- Villa Rica Bypass from SR 61 to SR 101

The first three capacity recommendations include capacity widening of existing facilities. The remaining recommendation is a new roadway that connects existing facilities.

8.2.3. Operational Improvements

Operational improvements address geometric concerns and other issues that impact the flow of traffic on an existing roadway facility. Operational improvements may include the addition of turn lanes or passing lanes to improve through movements, shoulder widening or upgrades, introduction of traffic calming elements, improved curve or turning radii, and / or paving projects. Operational upgrades of facilities can provide relief to adjacent facilities experiencing capacity problems by providing for viable movement of increased traffic flows without the major investment associated with a capacity enhancement or new roadway facility.

Recommendations for operational improvements are developed based on safety data, roadway characteristics, and Stakeholder Advisory input received during the LRTP development process and should be regarded as planning-level. Detailed location-specific traffic analysis by a professional engineer, Carroll County, and / or further review by GDOT District 6 are necessary in order to make specific improvement recommendations.

Passing Lanes

The following roadway is recommended for passing lanes:

- SR 16 from W Miles Road to Little New York Road

Shoulder Upgrade

The following roadways are recommended for upgrade shoulders:

- SR 16 from Buncombe-Waco Road to Beulah Church Road
- Hog Liver Road from US 27 to Spence Road
- Oak Mountain Road from US 27 to Horsley Mill Road
- Cross Plain Hulett Road from SR 166 to SR 16
- Jones Mill Road from SR 166 to SR 16

Access Management

The following roadways are expected to operate at LOS D in 2040 and are ideal candidates for access management polices to ensure they maintain their appropriate operational levels:

- SR 61 from SR 166 to SR 101
- US 78 from SR 101 to Villa Rica
- US 27 from Linden Road to SR 1
- SR 16 from south of Whitesburg to Oak Mountain Road

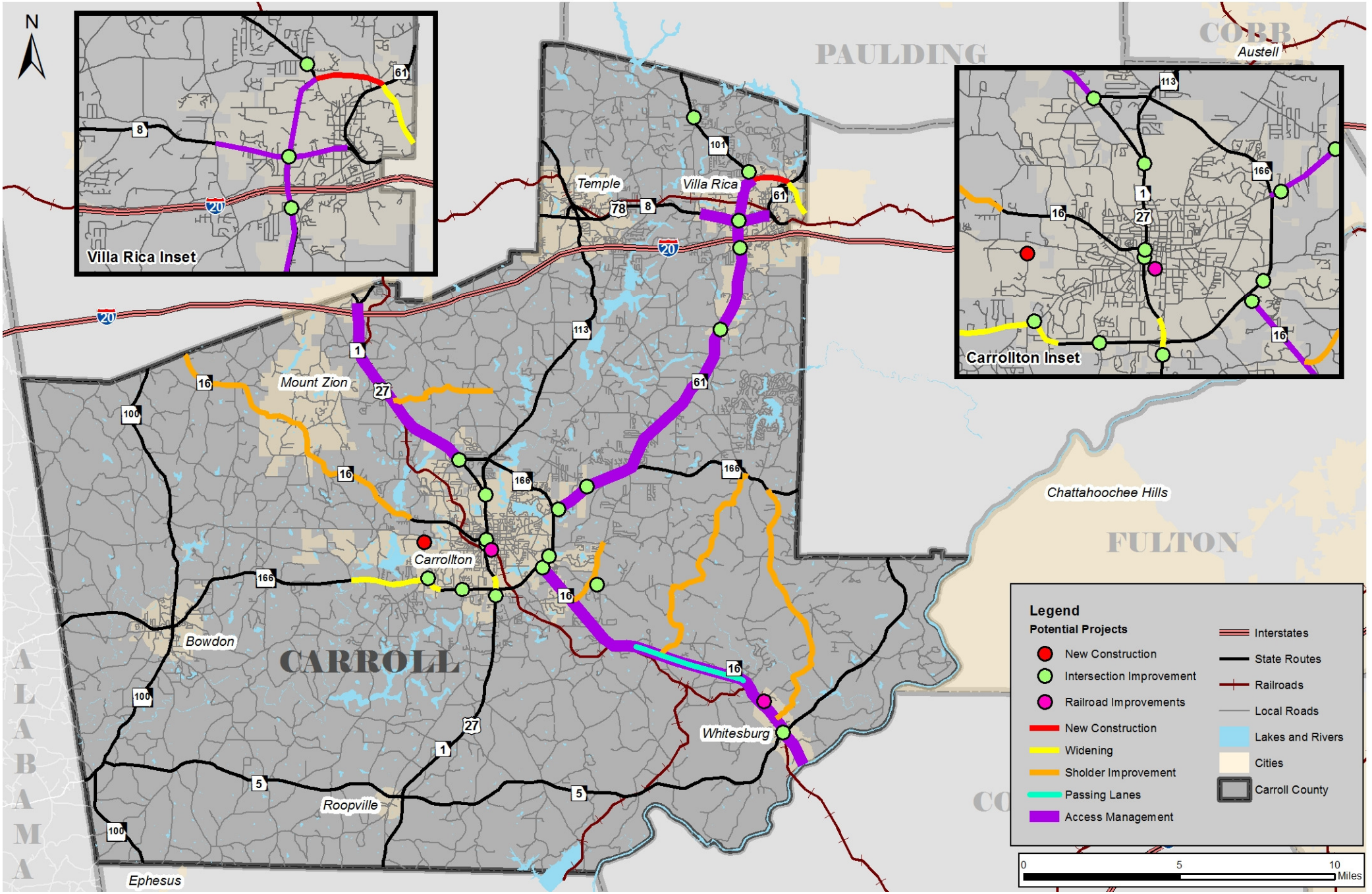
8.2.4. Intersection Improvements

Intersection improvements are proposed to address needs identified based on safety analysis, existing and future traffic volumes, as well as safety concerns raised by the Stakeholder Advisory Group. Improvements may include an adjustment in intersection controls, signage improvements, signal timing improvements and /or geometric realignment of an intersection. Recommendations for intersection improvements as part of the LRTP process are based on planning-level data, and require detailed location-specific analysis by a professional engineer, and / or further review by GDOT District 6 to refine specific project improvement recommendations. Considerations include available right-of-way, traffic volumes, safety, driver expectancy, and the context of the area.

The following intersections are recommended for improvement:

- US 27 / SR 1 / Park Street at SR 166 / Maple Street
- US 27 / SR 1 / Park Street at SR 16 / Alabama Street
- US 27 / SR 1 at Linda Lane
- US 27 at SR 113
- US 27 at Cottage Hill Road / Central High Road
- US 78 at SR 61
- SR 16 at SR 5
- SR 61 at North Hickory Level Road
- SR 101 at Tumlin Lake Road (Villa Rica Middle School)
- SR 101 at Harlan Lane Road
- SR 166 Bypass at Hays Mill Road
- SR 166 at Old Airport Road
- SR 166 at Somerset Place
- SR 166 Bypass at SR 166
- SR 166 Bypass at SR 166 / Maple Street
- SR 166 Bypass at Old Newnan Road
- Old Newnan Road at Cross Plains Road

See Figure 8.2 on the next page for a map displaying the recommended roadway improvements including capacity, operational and intersection improvements.


N
Villa Rica Inset
Carrollton Inset
PAULDING
COBB
Austell
Temple
Villa Rica
Mount Zion
Carrollton
Bowdon
Roopville
Whitesburg
Ephesus
Chattahoochee Hills
FULTON
CARROLL
ALABAMA
Legend
Potential Projects
New Construction
Intersection Improvement
Railroad Improvements
New Construction
Widening
Sholder Improvement
Passing Lanes
Access Management
Interstates
State Routes
Railroads
Local Roads
Lakes and Rivers
Cities
Carroll County
0
5
10
Miles

8.3. *Rail Crossing Needs*

Seventy of Carroll County's 99 railroad crossings are public crossings and 29 cross private roads. A majority of the crossings provide adequate control devices and signing.

The following rail crossing improvements are recommended:

- Bradley Street crossing in Carrollton - add pavement markings on both approaches
- Wellington Mill Road in Whitesburg - add pavement markings on both approaches

To better accommodate freight movement through downtown Temple, signage should be implemented along SR 113 and Sage Street to direct freight traffic appropriately across the railroad tracks.

Villa Rica is currently studying improvements to the placement of the railroad crossing arms at the N Carrollton crossing to better accommodate freight movement in downtown Villa Rica particularly for traffic heading west along US 78 and then north along SR 61. It is recommended that Villa Rica continues to work with Norfolk Southern and GDOT District 6 on this project which will enhance safety and operations for both trucks and pedestrians.

8.4. *Bridge Needs*

Based on the sufficiency ratings identified in Section 5.4, bridges were identified as eligible for mid-term and long-term improvement recommendations. Bridges with a sufficiency rating 50 or below are eligible for improvements by 2025. Bridges with a sufficiency rating between 50 and 80 are eligible for improvement by 2040.

The seven bridges with sufficiency ratings below 50 that are currently eligible for improvement include:

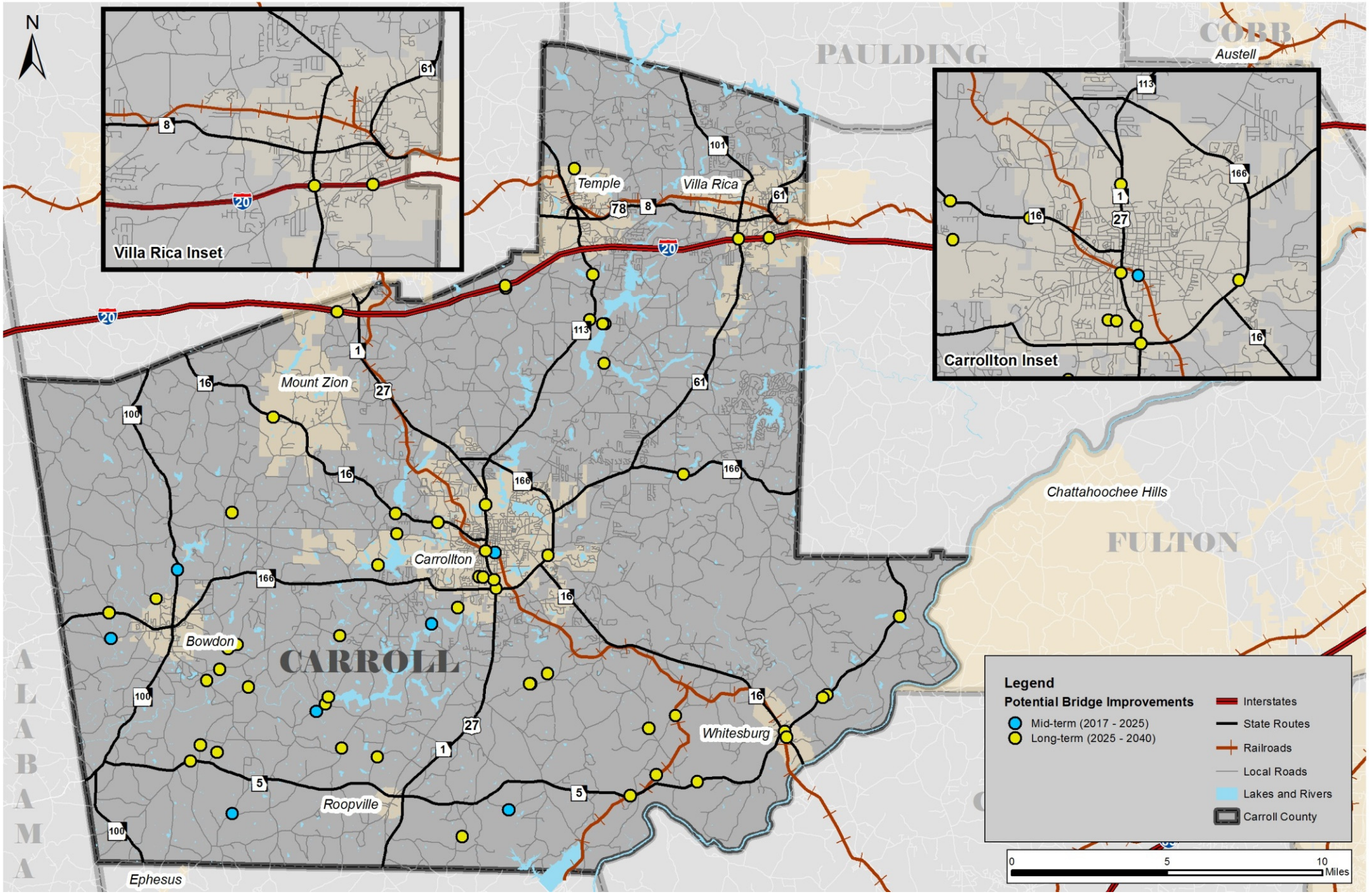
- Brickyard Road over Big Indian Creek
- Croft Street over Norfolk Southern Railroad (719230S)
- Tyus Veal Road over Beckmill Creek
- Tyus-Carrollton Road over Little Tallapoosa River
- Old Lowell Mill Road over Yellowdirt Creek
- Buffalo Creek Road over Buffalo Creek
- SR 100 over Turkey Creek

Fifty-five bridges were identified with sufficiency ratings between 50 and 80 and will likely be eligible for improvement by 2040 which include:

- Thomas-Wilson Road over Tumlin Creek
- Shady Grove Road over Harmony Creek
- South Street over US 27 / SR 1
- Blackwelder Road over Mountain Creek Tributary
- W Hickory Level Road over Little Tallapoosa River
- Asbury Road over Trestle Creek
- Lovvorn Mill Road over Big Indian Creek
- Old Newnan Road over Buffalo Creek
- SR 16 over Turkey Creek
- Salem Church Road over Little Tallapoosa River
- SR 5 over Mountain Creek

- Roop Street over Buffalo Creek
- Whooping Creek Church Road over Whooping Creek
- SR 16 over Little Tallapoosa River
- Bowdon-Tyus Road over Little Tallapoosa River
- SR 5 over Snake Creek Overflow
- SR 5 over Snake Creek
- Victory Church Road over Little Tallapoosa River
- Stadium Drive over Buffalo Creek
- Milligan Creek Road over Milligan Creek
- SR 5 over Norfolk Southern Railroad (719394H)
- SR 5 over Wolf Creek
- Whooping Creek Church Road over Whooping Creek Tributary
- Martin-Cemetery Road over Buffalo Creek
- SR 5 over Whooping Creek
- Happy Mill Road over Caney Creek
- South Little New York Trail over Norfolk Southern Railroad Spur
- SR 5 over Acorn Creek
- Ballard Bridge Road over Little Tallapoosa River
- Bethesda Church Road over Indian Creek
- Bremen Mt Zion Road over I-20
- US 27 NB over SR 166 (US 27 Alt)
- Whooping Creek Road over Whooping Creek
- Levans Road over I-20 EB
- Lovvorn Road over Buck Creek
- SR 166 over Snake Creek
- Taylor Road over Norfolk Southern Railroad Spur
- Tyus-Carrollton Road over Buffalo Creek
- Levans Road over I-20 WB
- Old Antioch Road over Garrett Creek Tributary
- Rowland Road over Garrett Creek
- Garrett Creek Road over Garrett Creek
- W Hickory Level Road over Little Tallapoosa River Tributary
- SR 166 over Indian Creek Tributary
- SR 16 over Buck Creek
- Daniel Street over I-20
- US 27 over Little Tallapoosa River
- North Allison Road over Buffalo Creek
- Tyus-Carrollton Road over Little Tallapoosa River
- Smith-Chapel Road over Turkey Creek
- Old Columbus Road over Mountain Creek Tributary
- US 27 Alt over Norfolk Southern Railroad (719394H)
- SR 113 over Allen Creek
- SR 113 over Bethel Creek
- SR 61 NB over I-20

See Figure 8.3 on the next page for a map displaying the recommended bridges for improvement.


N
Villa Rica Inset
Carrollton Inset
PAULDING
COBB
Austell
Temple
Villa Rica
Mount Zion
Carrollton
Bowdon
Roopville
Whitesburg
Ephesus
Chattahoochee Hills
FULTON
CARROLL
ALABAMA
Legend
Potential Bridge Improvements
Mid-term (2017 - 2025)
Long-term (2025 - 2040)
Interstates
State Routes
Railroads
Local Roads
Lakes and Rivers
Carroll County
0
5
10
Miles

8.5. *Bicycle and Pedestrian Needs*

Several bicycle and pedestrian system initiatives are underway in Carroll County. On-going planning initiatives should be implemented as outlined in the existing planning initiatives and incorporated into transportation system improvement projects as opportunities are available. The following initiatives are currently in progress in the County:

- Chattahoochee Trace state bicycle route development
- Regional Bicycle and Pedestrian Plan for the Three Rivers Area
- Chattahoochee Hills Regional Greenway Trail Master Plan
- Passive Recreation Master Plan
- Carrollton GreenBelt (16 mile hard surface trail system connecting neighborhoods, schools, parks and shopping)
- Carrollton Downtown Master Plan
- Safe Routes to School Program
- Villa Rica Trailhead
- Moore's Bridge Park Trail and Bridge Improvements

The study recommendations were based on the following:

- Review of existing land use, transportation, and recreation plans
- Analysis of bicycle and pedestrian crash data
- Examination of existing facilities
- Review of current and proposed projects
- Input from Stakeholder Advisory Group and the Public
- Site visits

It is important to note that the scope of this plan does not include an examination of every local street in the county for bike or pedestrian facilities. This plan is intended to evaluate safety problems and identify major bicycle and pedestrian needs and network deficiencies, and to propose potential projects to address those needs. Once the top priorities have been implemented, the plan should be updated to assess the current conditions, new challenges and opportunities and possible solutions. The development of a more detailed bicycle and pedestrian plan for the County is necessary in order to identify an appropriate community-wide network.

8.5.1. Bicycle and Pedestrian Recommendations

In addition to the on-going initiatives mentioned above, the following improvements to the bicycle and pedestrian system should be considered:

- SR 5 and SR 16/US 27 ALT traffic circle in Whitesburg - incorporate pedestrian amenities
- SR 1/US 27/Park Street and SR 166/Maple Street in Carrollton - restripe pedestrian crosswalks
- SR 1/US 27/Park Street and SR 16/Alabama Street in Carrollton - restripe and address ADA compliance
- SR 16 and North Prospect Avenue in Mt. Zion - restripe crosswalk across SR 16 between the Elementary School and High School
- SR 166 and SR 100 in Bowdon - restripe crosswalk
- SR 166 from Tarpley Avenue to Commerce Street in Bowdon - add sidewalks on the south side

- Old Bremen Road from Otis Street to Sage Street in Temple - add sidewalks (.3 miles)
- Sage Street from Montgomery Street north to the end of Sage Street in Temple - add sidewalks on the west side (.5 miles)
- US 78 and SR 101 in Villa Rica - restripe crosswalk at intersection of
- US 78 from Westview Drive East to Westview Drive West near downtown Villa Rica - add sidewalks (.5 miles)

8.5.2. System-wide Infrastructure and Policy Recommendations

The following recommendations should be considered throughout the County:

- Appropriate bicycle and pedestrian facilities should be considered in all roadway improvement projects. The type of facility and level of accommodation will vary depending on need, land use and other factors.

- Where bike lanes are recommended or planned, and it is later determined during the project development process that bike lanes cannot be accommodated for any reason, then shared lane markings (sharrows) should be used in its place rather than just signage or no facility at all.

- For roads with a rural-typical section (i.e. open drainage, no curb and gutter), consider constructing minimum 6.5' paved shoulders as part of future proposed GDOT widening, reconstruction or resurfacing projects, and minimum 4' shoulders on county roads (increase to 6.5' if rumble strips are used).

- Consider constructing and maintaining sidewalks on both sides of the road within a ½-mile radius of all schools, as recommended by GDOT's Pedestrian and Streetscape Guide and supported by GDOT's Safe Routes to School Program. These could be implemented as part of roadway construction projects, developments or subdivisions, in order to help with implementation.

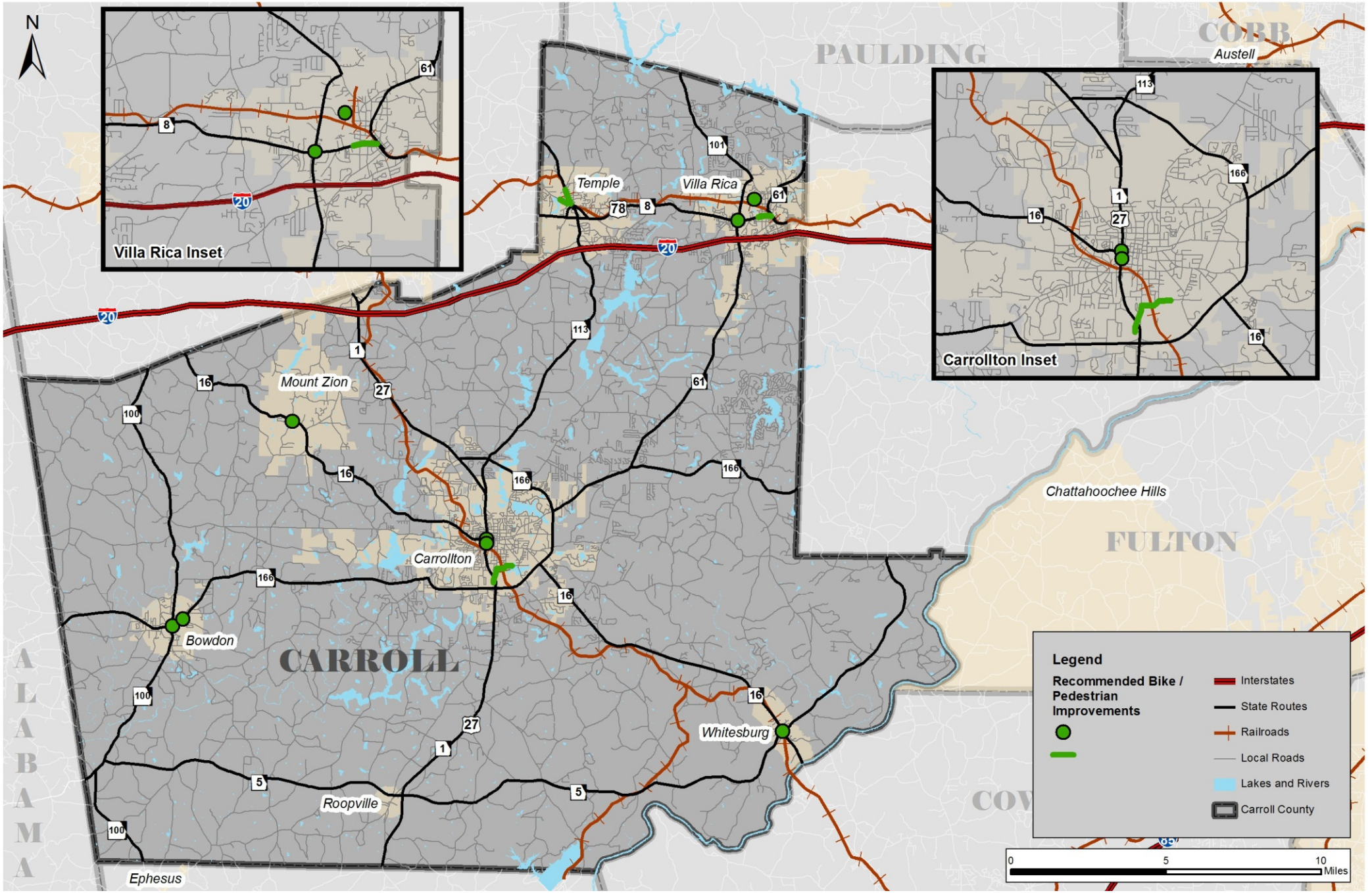
- Consider installing fluorescent green-yellow pedestrian crossing warning signs at all trail crossings to warn motorists of bicycle and pedestrian crossings. In addition, install advance warning signage where sight distance is poor.

- Upgrade intersections for pedestrian and bicycle safety anytime a roadway is improved in the future. Intersection treatments may include, but are not limited to: traffic signals, raised medians or crossing islands, crosswalks, advance crosswalk bars, curb ramps (as required by ADA in all roadway alteration projects), pedestrian countdown signal heads, pedestrian or trail crossing signage, "no turn on red" or other restrictive signage, and signal time adjustments. FHWA's PEDSAFE tool and FHWA's "How to Develop a Pedestrian Safety Action Plan" are helpful aides in choosing the right facility:
- FHWA PEDSAFE tool: http://www.walkinginfo.org/pedsafe/
- FHWA's "How to Develop a Pedestrian Safety Action Plan": http://www.walkinginfo.org/library/details.cfm?id=229.

- Subdivision and Zoning Codes: Update subdivision and zoning regulations to require that developers do the following:

- Construct sidewalks on both sides of the road within subdivisions and along the main street frontage of a subdivision, commercial, office or retail development.
- Provide bicycle parking at large commercial, office, and retail developments
- Construct a path, bike lanes or suitable bicycle facility as part of any new development.
- Provide inter-development or inter-parcel walkways and pedestrian connections not otherwise located parallel to street rights-of-way, and where warranted to improve non-motorized access to major facilities or other activity centers

See Figure 8.5 on the next page for a map displaying the recommended bicycle and pedestrian improvements.


N
Villa Rica Inset
Carrollton Inset
PAULDING
COBB
Austell
Temple
Villa Rica
Mount Zion
Carrollton
Bowdon
Roopville
Whitesburg
Ephesus
Chattahoochee Hills
FULTON
CARROLL
ALABAMA
Legend
Recommended Bike / Pedestrian Improvements
Interstates
State Routes
Railroads
Local Roads
Lakes and Rivers
Carroll County
0
5
10
Miles

8.6. *Transit Needs*

Carroll County does not currently provide public transit nor does it participate in the regional rural transit system, Three Rivers Transit, administered by the Three Rivers Regional Commission. The Three Rivers Transit System uses a demand response service model whereby passengers call to schedule a trip and trips are provided by vans for a one-way or round-trip fare. Spalding, Butts, Pike, Lamar, and Upson Counties currently participate in the Three Rivers Transit Program which provides trips to jobs, medical facilities, and other activity centers. The regional approach has proved to be a cost effective way for counties to provide public transportation for its senior citizens, local workforce, the disabled, and the general public.

Carroll County has taken initial steps to examine transit options and possible future participation in the regional Three Rivers Transit System. The County plans to further explore a transit solution with the TRRC in the first half of 2014. The following provides information, data, and recommendations that should be taken into consideration as the County works toward a transit solution.

8.6.1. Online Survey Results

The online survey, completed as part of this LRTP, queried participants about the need for public transit services in the County. One hundred forty-six (146) individuals participated in the survey process. Twenty-nine percent (29%) of respondents identified the need for public transit as one of the three highest transportation priorities in the County. Similarly, when asked if they had experienced the need for public transit services, 33% indicated that they had while 66% said they had not. Several respondents provided location specific comments, as follows:

- Countywide/Everywhere – 6 comments;
- Inside the City (Carrollton) – 4 comments;
- Between University of West Georgia and downtown – 2 comments; and
- Between counties – 1 comment.

Survey participants were also asked what transportation improvements were most needed by the County. Of the 90 comments received, a number were related to public transportation services. These comments are summarized as follows:

- Public transit is needed – 7 comments;
- Bus system – 2 comments;
- More commuter options needed – 1 comment; and
- Inner city bus line or van line needed – 1 comment.

8.6.2. Transit Recommendations

Rural Transit

Carroll County plans to explore transit options with the TRRC in the first half of 2014. The recommendation is for the County to pursue participation in the Three Rivers Transit System rather than implement an independent, county-sponsored transit system. The benefits of participating in the TRRC regional system include the following:

- The TRRC regional system provides a timely, seamless, turn-key method for the County to initiate a transit program. The TRRC functions as the central contractor and administrator for the program, provides monthly reporting to GDOT, ensures compliance with state and federal regulations, and monitors all work done by the service provider.

- The TRRC will work with the County to set up a local Transportation Coordinating Committee (TCC) that will serve in an advisory role for Carroll County's transit system and will participate as part of the Regional Technical Coordinating Committee.

- The TRRC is able to bundle transit trips provided for the counties participating in the regional TRRC transit system as well as trips provided to disabled and low-income clients of the DHS Human Services Transit Program, creating a significant cost savings to the participating local governments. Thus the regional transit system offers Carroll County a lower cost alternative to transit compared to implementing an independent transit system.

With the County population concentrated within the city limits of Carrollton and Villa Rica, Carroll County should engage its cities to economize the costs of public transportation. The County can establish intergovernmental agreements with participating cities to better provide services which adequately connect transportation need, both rural and urban, with employment and activity centers.

Park and Ride Lots Facilities and Vanpools

There is one GDOT park-and-ride facility in Carroll County, located in Villa Rica on SR 61 north of I-20. There is currently no organized vanpool activity in the County.

A park and ride facility in the Carrollton vicinity would provide a meeting place for those wishing to carpool to destinations in Newnan or to the metro Atlanta area. This lot should be located to complement, and not compete with, the Villa Rica park and ride lot.

To encourage usage of park and ride lots, the County can promote rideshare programs on its website. Rideshare programs formally match commuters interested in carpooling or vanpooling to a particular work location or to other destinations. This would provide a low-cost way to Carroll County to encourage the commuter use of vanpools or carpools to employment centers in Atlanta and Newnan. There are a number of online rideshare programs available. GDOT and the Georgia Commute Options offer matching assistance and financial incentives for commuters who carpool and vanpool (www.gacommuteoptions.com).

8.7. *Aviation Needs*

West Georgia Regional Airport seeks to increase its corporate jet activity in coming years. Therefore, the Airport is focused on upgrading its existing facilities in terms of equipment and services to better attract and accommodate corporate clients. The Airport is working to expand it facilities with a new apron and a five-acre developmental site north of the existing terminal. Engineering for the project will be complete in early 2014 with construction dependent on funding availability. The Airport Authority and Carroll Tomorrow will be working together to promote the site for future corporate opportunities and/or related aviation

industry facilities. Carroll Tomorrow is also working diligently with the Airport to promote available industrial sites surrounding airport property.

The following are recommendations for West Georgia Regional Airport, pursuant to its goals mentioned above.

- **Improve Access to West Georgia Regional Airport via I-20 and US 27** - The Airport's location near Carrollton and I-20 provides convenience for corporate and general aviation users in West Georgia. The Airport's access from US 27, along Bowden Junction Road and Hog Liver Road, however, lacks clear definition and visual appeal. Hog Liver Road offers a direct and viable access path, yet this roadway corridor contains several homesites that are in various levels of condition. Improvements made by the county or Airport Authority to this road or development of a dedicated divided access road with signage and landscaping would provide a clearly marked, destination-oriented corridor be-fitting of an established aviation facility. Funding for these types of improvements is not provided by the State or the Federal Aviation Administration (FAA) but must come from County and Airport Authority resources.

- **Upgrade Airport Amenities to Attract Corporate Clients** - West Georgia Regional's existing 1,000 square-foot terminal and administrative building is well-maintained but the physical facility should be considered for updates to make it more attractive to new corporate clients. Likewise, the auto parking area is in need of repair. Funding for these types of improvements is not provided by the State or the Federal Aviation Administration (FAA) but must come from County and Airport Authority resources.

  The FAA's Airport System Plan for West Georgia Regional recommends a 2,500 square foot terminal, separate from the administrative offices, as well as an additional 136 auto parking spaces to upgrade the facility to meet expected future operations at this Level III Airport. These objectives may not be financially feasible for the Airport as this point in time. Thus, the Authority and County can work to improve the Airport's existing facilities. Improvements can be made to the terminal to upgrade exterior and interior finishes and amenities. The parking areas can be repaved and hardscaped. Such improvements can go a long way to increase the Airport's appeal and to advance its competitive advantage for attracting corporate clients.

9. Prioritized Recommendations

9.1. *Project Prioritization Overview*

Potential improvement projects identified to address future transportation needs in Carroll County were vetted with the Stakeholder Advisory Group and prioritized based on established criteria consistent with the study goals identified in Section 7. This section will present the recommended improvements, the estimated costs associated with these improvements, and the final list of prioritized projects for each improvement category including roadway, bridge, rail crossing, bicycle and pedestrian improvements.

9.2. *Estimated Costs*

The GDOT Office of Planning's Right of Way and Utilities Cost Estimation Tool (RUCEST) and a Construction Cost Estimation Tool (CES) was used in the development of planning-level cost estimates for the Carroll County 2040 LRTP. These tools include area-specific values and the most up-to-date data available for construction lettings in the State of Georgia. Please note that all planning-level costs are current-year dollars, based on the best assumptions and information available at the time this study was completed. All planning-level project costs will be further refined as specific improvements and engineering concepts evolve. Actual project costs could be higher or lower depending on a number of factors including the results of more detailed environmental and engineering studies, fluctuations in the cost of land and materials, and the year of expenditure. All planning-level cost estimates should be considered preliminary in nature and taken with appropriate care. More detailed engineering studies are required to identify highly accurate cost estimates based on specific project characteristics and concepts.

9.2.1. Roadway, Bridge, and Rail Cost Estimates

Roadway assumptions include the planning level cost averages of pavement based on GDOT's recommended typical section for the facility type. All capacity related projects were already a part of GDOT's STIP or Long Range Program; therefore, the current project costs provided by TPro were used. Shoulder lane improvements assumed a cost of $180k per mile to upgrade the shoulder in both directions.

In the case of intersection and operational improvement recommendations, a micro-level analysis and review by GDOT District 6 and/or a professional engineer is required to make specific project recommendations. Specific recommendations may include improvements such as turn lanes at each approach of an intersection or two right turn lanes off a major arterial. For purposes of the Carroll County 2040 LRTP, the planning-level cost estimate used for operational improvements is a placeholder of $270,000. This planning level estimate represents a reasonable average for intersection improvements, but it is important to note that actual costs could be higher or lower depending on the specifics of the improvement identified (for example, addition of a left-hand turn lane vs. geometric modifications). In cases where a specific improvement item is identified, such as a traffic signal or a roundabout, a unit cost for the item is used if available. Planning level construction cost estimates for these types of improvements should be revisited when a more detailed analysis is conducted.

Rail crossing improvement costs were developed based on refurbishing the pavement of approximately 350 yd^2 (50 feet in each direction from the crossing) and providing new

pavement striping. The refurbished asphalt assumed partial depth replacement with a cost of $35/yd^2. The cost for signage assumed $500 per standard size sign.

Bridge improvements were calculated based on the appropriate typical section and square footage of the improved bridge structure with the assumption of a cost of $110 per square foot of bridge deck. Additionally for State Routes, $1,400,000 was added per bridge approach. This assumes 1/3 mile new roadway construction to access the new bridge being built alongside the old bridge.

9.2.2. Bicycle and Pedestrian Cost Estimates

Pedestrian improvement costs assume 5' sidewalks which is a desirable sidewalk width. Construction costs for sidewalks were assumed to be $12 per linear foot, or $63,360 per mile. Minor improvement also included restriping crosswalks which assumed a cost of $1,500. Signage and crossing treatments were assumed to occur within existing ROW.

9.3. *Project Prioritization Criteria*

In order to aid GDOT and County staff, potential improvements were ranked by mode based on evaluation factors developed with input from the Stakeholder Advisory Group discussed in Section 6. Qualitative and quantitative evaluation factors were established and applied to potential improvements. The evaluation methodology produces a score for each potential projects, resulting in a prioritization of improvement options to meet the County's transportation needs. Prioritization criteria were developed for the following types of projects – roadway (capacity and operations), intersections, bridges, and bicycle and pedestrian improvements.

The following sections document the prioritization of recommended improvements for Carroll County.

9.3.1. Corridor Prioritization

Qualitative Criteria

Qualitative criteria were established to evaluate the deficient corridors based on various conditions or standards established through the study process. The same criteria were used for corridors being recommended for capacity improvements as with corridors being recommended with operational improvements. These criteria were vetted with the Stakeholder Advisory Group. The list below documents the qualitative criteria established for the roadway network improvement evaluation. These correspond to the goals documented in Section 7.

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

- Community Preservation
- Transportation Land Use Linkages

Potential projects were considered alongside the established criteria and associated scoring presented in Table 9.1 below. Based on the resulting scores, an initial prioritization list was established. The highest score based on qualitative criteria is 33 points. The qualitative score is combined with the quantitative score documented on the following pages for the ultimate prioritization score.

Table 9.1: Corridor Qualitative Scoring Criteria

Roadway 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 Yes	0 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 Yes	0 2
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 Yes	0 3
Connectivity Does the proposed project improve access between activity centers or link existing or proposed projects or provide regional connectivity?	No Yes	0 3
Construction Designs in Progress Are the design plans for the proposed project already complete or in the process of being completed?	No Yes	0 3
Parallel Relief Does the proposed project provide relief to parallel congested/ deficient corridors?	No Yes	0 4
Protection of Downtown Does the proposed project enhance the quality of life in downtown areas?	No Yes	0 4
Ideal Typical Section Does the proposed project address upgrading substandard roadway segments?	No Yes	0 4
Development Conditions Is the proposed project located within a development area, or, is the specific project part of an approved plan for the redevelopment of revitalization of a developed area, or does the specific project provide access infrastructure to a mixed-use project area?	No Yes	0 2
Community Preservation Does the proposed project preserve or enhance the character of existing communities in the County?	No Yes	0 2
Transportation Land Use Linkage Has the proposed project coordinated with, or support, land use decisions in the area?	No Yes	0 2
Sub-Total Possible Points		33

Quantitative Criteria

Quantitative criteria were identified to evaluate deficient corridors based on various measurable conditions. The same criteria were used for corridors being recommended for capacity improvements as with corridors being recommended with operational improvements. Each measure was vetted with the Stakeholder Advisory Group. The list below 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 9.2 displays the quantitative criteria and the associated scoring. The total points established by the Quantitative Criteria range from 0 to 25 points.

Table 9.2: Corridor Quantitative Scoring Criteria

Roadway 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

Roadway Prioritization Criteria	Possible Points
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 58 points. Based upon the identified improvements and the evaluations made during the quantitative and qualitative evaluation, a prioritized list of recommendations was established. The scoring for the corridor capacity related improvements is displayed below in Table 9.3 and the scoring for the corridor operational improvements is displayed in Table 9.4 on the next page.

Table 9.3: Corridor Capacity Improvement Prioritization Scores

				Qualitative Criteria												Quantitative Criteria				
Ref No.	Facility	From	To	Continuation of Existing Road Widening Project	Governor's Road Improvement Program / National Highway System	Right of Way Protection Corridor	Connectivity	Construction Designs in Progress	Parallel Relief	Protection of Downtown	Ideal Typical Section	Development Conditions	Community Preservation	Transportation Land Use Linkage	*Sub-Total Qualitative Criteria*	Volume/Capacity Ratio	Ratio of 100 Million VMT to Statewide Average	Number of Fatalities	*Sub-Total Quantitative Criteria*	Total Score for Project
				0-4	*0-2*	*0-3*	*0-3*	*0-3*	*0-4*	*0-4*	*0-4*	*0-2*	*0-2*	*0-2*						
C-1	SR 61 Connector	SR 61	S of Shoreline Pkwy			✓	✓	✓	✓	✓		✓	✓		21	0.13	8.27	0	4.0	25.0
C-2	Villa Rica Bypass	SR 61 Bypass	SR 101			✓	✓	✓	✓	✓		✓	✓		21	n/a	n/a	0	0.5	21.5
C-3	US 27 / SR 1	Central Rd	Dixie St	✓	✓			✓				✓		✓	13	0.84	1.16	0	8.0	21.0
C-4	SR 166	Burwell Rd	4-Lane in Carrollton	✓				✓				✓		✓	11	0.71	0.35	1	7.0	18.0

All of the capacity improvements scored relatively closely and should be considered of equal priority.

Table 9.4: Corridor Operational Improvement Prioritization Scores

Ref No.	Facility	From	To	Qualitative Criteria											Quantitative Criteria				Total Score for Project
				Continuation of Existing Road Widening Project	Governor's Road Improvement Program / National Highway System	Right of Way Protection Corridor	Connectivity	Construction Designs in Progress	Parallel Relief	Protection of Downtown	Ideal Typical Section	Development Conditions	Community Preservation	Transportation Land Use Linkage	*Sub-Total Qualitative Criteria*	Volume/Capacity Ratio	Ratio of 100 Million VMT to Statewide Average	Number of Fatalities	*Sub-Total Quantitative Criteria*	
				0-4	*0-2*	*0-3*	*0-3*	*0-3*	*0-4*	*0-4*	*0-4*	*0-2*	*0-2*	*0-2*						
O-1	US 27	Linden Rd	SR 1	✓	✓		✓						✓	✓	13	0.76	1.11	2	10.5	23.5
O-2	US 78	SR 101	Villa Rica	✓			✓						✓	✓	11	0.78	2.87	0	8.5	19.5
O-3	SR 61	SR 166	SR 101	✓			✓						✓	✓	11	0.77	1.25	0	7.5	18.5
O-4	SR 16	Buncombe-Waco Rd	Beulah Church Rd	✓			✓				✓	✓			13	0.48	1.34	0	4.5	17.5
O-5	SR 16	S of Whitesburg	Oak Mountain Rd	✓			✓						✓	✓	9	0.75	0.98	0	6.5	17.5
O-6	SR 16	W Miles Rd	Little New York Rd				✓			✓		✓			9	0.62	0.90	0	5.5	14.5
O-7	Jones Mill Rd	SR 166	SR 16				✓				✓				7	0.48	2.45	0	5.0	12.0
O-8	Oak Mountain Rd	US 27	Horsley Mill Rd				✓				✓				7	0.42	1.52	0	4.0	11.0
O-9	Hog Liver Rd	US 27	Spence Rd				✓				✓	✓			9	0.23	0.77	0	1.0	10.0
O-10	Cross Plain Hulett Rd	SR 166	SR 16				✓				✓				7	0.27	3.15	0	3.0	10.0

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

- Upgrade shoulders along SR 16 from Buncombe-Waco Road to Beulah Church Road
- Maintain access management for SR 61 from SR 166 to SR 101
- Maintain access management for US 78 from SR 101 to Villa Rica
- Maintain access management for US 27 from Linden Road to SR 1

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 GDOT and the County; input from political decision-makers; and public comment.

9.3.2. Intersection Prioritization

Criteria were established to evaluate the potential intersection improvements based on various standards established through the study process. The following list documents the criteria established for the intersection evaluation.

- What is the Average Annual Daily Traffic (AADT) on the facility?
- How many crashes occurred at the intersection between 2007 and 2009?
- Did a fatality occur at the intersection?
- Is the intersection currently identified by GDOT or the County?

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 to prioritize projects. Table 9.5 below documents the scoring used for the intersection prioritization and Table 9.6 on the next page displays the scoring applied to the proposed intersection improvements.

Table 9.5: Intersection Scoring Criteria

Intersection Prioritization Criteria	Possible Points
AADT What is the Average AADT at the intersection?	> 6,000 = 5 6,000 - 4,000 = 4 4,000 - 2,000 = 2 < 2,000 = 0
Crashes How many crashes occurred at the intersection between 2007 and 2009?	> 25 = 10 25 - 20 = 5 20 - 15 = 2 <15 = 0
Fatality Did a fatality occur at the intersection?	No = 0 Yes = 10
Previously Identified Improvement Is the intersection currently identified by GDOT/County?	No = 0 Yes = 5
Improvement Opportunities Can operational issues be addressed without installing a traffic signal?	No = 0 Yes = 5
Sub-Total Possible Points	35

Table 9.6: Intersection Prioritization Scores

Ref. No.	Road	Intersection	AADT	Crashes	Fatalities	Previously Identified	Score
I-1	SR 166 Bypass	at SR 16	13,840	138	0	✓	**17**
I-2	SR 166	at Old Airport Rd	27,300	58	1		**14**
I-3	US 27 / SR 1 / Park St	at SR 16 / Alabama St	21,690	50	0	✓	**9**
I-4	SR 166	at Somerset Pl	33,580	55	0		**7**
I-5	SR 166 Bypass	at Hays Mill Rd	5,540	1	0	✓	**5**
I-6	SR 16	at SR 5	13,210	0	0	✓	**5**
I-7	SR 101	at Tumlin Lake Rd (CR 353)/Villa Rica Middle School	4,810	0	0	✓	**5**
I-8	US 27 / SR 1 / Park St	at SR 166 / Maple St	25,050	59	0		**4**
I-9	US 27 / SR 1	at Linda Ln / Columbia Dr	18,500	47	0		**4**
I-10	US 27 / SR 1	at S Cottage Hill Rd / Central High Rd	26,950	73	0		**4**
I-11	US 78	at SR 61	14,580	123	0		**4**
I-12	SR 61	at North Hickory Level Rd	15,970	115	0		**4**
I-13	SR 166 Bypass	at SR 166 / Maple St	19,270	50	0		**4**
I-14	Old Newnan Rd	at Cross Plains Rd	27,470	1	0		**2**
I-15	SR 166 Bypass	at Old Newnan Rd	1,930	29	0		**2**
I-16	US 27	at SR 113	13,450	6	0		**0**
I-17	SR 101	at Harlan Lane Rd	7,660	0	0		**0**

The prioritization scoring resulted in the following top tier intersection improvements:

- SR 166 Bypass at SR 16
- SR 166 at Old Airport Road
- US 27 / SR 1 / Park Street at SR 16 / Alabama Street
- SR 166 at Somerset Place
- SR 166 Bypass at Hays Mill Road
- SR 16 at SR 5
- SR 101 at Tumlin Lake Road/Villa Rica Middle School

9.3.3. Bridge Prioritization

Bridges with a sufficiency rating of 50 or lower are eligible for improvements by 2025, and those with a rating of 80 to 50 are eligible for improvements by 2040. The seven bridges with sufficiency ratings below 50 eligible for improvement by 2025 include:

- Brickyard Road over Big Indian Creek
- Croft Street over Norfolk Southern Railroad (719230S)
- Tyus Veal Road over Beckmill Creek
- Tyus-Carrollton Road over Little Tallapoosa River
- Old Lowell Mill Road over Yellowdirt Creek
- Buffalo Creek Road over Buffalo Creek

- SR 100 over Turkey Creek

9.3.4. Bicycle and Pedestrian Project Prioritization

The prioritization criteria used to evaluate potential bicycle and pedestrian improvements were based on GDOT's Guidebook for Pedestrian Planning project prioritization framework, as well as on the goals established in this study. In addition to project recommendations, policy recommendations were also made which will have the effect of improving the bicycle and pedestrian network system-wide over the long term.

The evaluation criteria account for both system deficiencies (e.g. where there are no bicycle or pedestrian facilities) as well as pedestrian and bicycle potential factors (i.e. do the land uses and demographics create a need or demand for facilities?). Table 9.7 below documents the scoring used for the bicycle and pedestrian prioritization and Table 9.8 on the following page displays the scoring applied to the proposed bicycle and pedestrian improvements.

Table 9.7: Bicycle & Pedestrian Scoring Criteria

Bike/Ped Prioritization Criteria	Scoring	
Bicycle and Pedestrian Deficiency Factors		
Bicycle/Pedestrian Crashes: Have there been bicycle or pedestrian crashes at this location, along this corridor, how many, and what severity?	1	No more than one crash along this corridor (but not the project location) in past 3 years
	2	No more than one crash at the project location within last 3 years
	3	2 or more crashes on the corridor, but not at the project location in the past 3 years
	4	2 or more crashes at the project location in the past 3 years
	5	1 or more injuries or fatalities at the project location or along the corridor in the past 3 years
Existing Facilities: Is this project replacing an existing facility or do none currently exist?	1	If purely a cosmetic upgrade of existing facility
	2	Existing bike/ped facilities but in poor condition
	3	Existing bike/ped facilities but many gaps or discontinuous
	4	No facilities currently on one side of road
	5	No facilities currently exist on either side of the road, or no street crossing facilities
Traffic Factors: Does the project location have high motor vehicle speeds, high traffic volumes, multiple lanes to cross, or complicated intersections? Some roads due to their traffic and design characteristics are more difficult to cross and less attractive, and sometimes less safe, to walk or bike along. These roads often warrant improvements more so than quiet residential streets that are already bike and pedestrian friendly.	1	Project location is on a quiet, 2-lane residential street with low speeds and low traffic volumes.
	3	Project location is on a street with moderate traffic volumes and speeds, no more than 3 lanes of traffic (not including on-street parking).
	5	Project location is on a major street with high speeds, high traffic volumes, multiple traffic lanes, wide intersections, and few crossing locations.

Bike/Ped Prioritization Criteria	Scoring	
Bicycle and Pedestrian Potential Factors		
Need: Is there evidence of existing demand (bike/pedestrian counts, worn paths along roadside), current or forecasted population densities that rely more heavily on walking and biking (i.e. young, elderly, low-income populations), or existing or future land uses that support biking and walking.	1 - 5	On a scale of 1-to-5, with 1 being the least demand and 5 being the highest demand for bicycle and pedestrian facilities.
Bike/Ped Priority Area: Is the project within a bicycle or pedestrian priority area, i.e. for bicycles, within 1 mile radius of schools, parks, libraries or community facilities (such as senior center, YMCA, community health clinic, etc.); for pedestrians, within ½ mile radius of schools, parks, libraries or community facilities (such as senior center, YMCA, community health clinic, etc.).	0 = No 3 = Partially 5 = Yes	
Connectivity Does the proposed project provide a direct connection to: • Major employment or activity centers • Downtown Commercial Business Districts • Existing or proposed transportation projects or major real estate developments • Other modes of transportation (such as public transit or a shared path access point) • Does the project close a gap in a sidewalk or bike facility?	0 - 5	On a scale of 1-to-5, with 1 providing very little connectivity and 5 providing the greatest connectivity to multiple destinations. 0 = No connectivity.
Previously Identified Improvement Was the proposed project previously identified in a community plan (STIP, CRC Bike/Ped Plan, Comprehensive Plan, Land Use Plan, Recreation Plan, etc.)?	0 = No 3 = Yes	
TOTAL POSSIBLE POINTS	33	

Table 9.8: Bicycle and Pedestrian Improvement Prioritization Scores

Ref. No.	Road / Facility	From	To	Project Length (in miles)	Crashes (1 - 5)	Existing Facilities (1, 3 or 5)	Traffic Factors (1, 3 or 5)	Need (1 - 5)	Priority Area (0, 3 or 5)	Connectivity (0 - 5)	Previously Identified (0 or 3)	Score (Possible pts = 33)
P-1	US 27/SR 1	@ SR 16		0.0	3	1	5	5	3	5	0	**22**
P-2	Chattahoochee Hills Regional Greenway*			0.0	1	5	1	3	3	5	3	**21**
P-3	Villa Rica Trailhead*			0.0	1	5	1	3	3	5	3	**21**
P-4	Carrollton Greenbelt*	SR 166 Bypass	E of Strickland Rd	1.4	1	5	1	3	3	5	3	**21**
P-5	US 78	Westview Dr East	Westview Dr West	0.5	1	5	3	4	3	5	0	**21**
P-6	SR 1/US 27	@ SR 166		0.0	1	1	5	5	3	5	0	**20**
P-7	US 78	@ SR 101		0.0	3	1	3	5	3	5	0	**20**
P-8	SR 166	Tarpley Ave	Commerce St	0.3	1	3	3	4	3	5	0	**19**
P-9	SR 16	@ SR 5		0.0	1	3	3	4	3	4	0	**18**
P-10	SR 16	@ Prospect Ave		0.0	1	1	3	5	3	5	0	**18**
P-11	SR 166	@ SR 100		0.0	1	1	3	5	3	5	0	**18**
P-12	Old Bremen Rd	Otis St	Sage St	0.3	1	5	1	4	3	3	0	**17**
P-13	Sage St	Montgomery St	N end of Sage St	0.5	1	3	1	4	3	4	0	**16**

**Previously identified projects*

The prioritization scoring resulted in the following top tier bicycle and pedestrian improvements:

- US 27 / SR 1 at SR 16 – restripe and address ADA compliance
- Chattahoochee Hills Regional Greenway – multi-use trail
- Villa Rica Trailhead – multi-use trail
- Carrollton Greenbelt – multi-use trail
- US 78 at Westview Drive West to Westview Drive E – sidewalks

9.4. *Summary of Recommended Improvements*

Based on the analysis completed as part of this study, a listing of recommended projects was created for Carroll County. This information is presented in Table 9.9 on the next page. For each recommendation, several informational elements were produced including: facility; limits; existing and improved configuration; comments; source; improvement type; need; and cost. For successful implementation of these projects, additional detailed engineering studies and environmental analysis are required to determine the most appropriate alignment, design, and cost of each project. Additionally, successful project implementation will require identified funding mechanisms, political support, and public recognition of the project need and benefit. The LRTP provides a basis for each of these achievements, but more work is necessary in order to advance and ultimately build each project.

Table 9.9: Prioritized Recommended Improvements

Project Ref. No.	Facility	Segment Limits From	Segment Limits To	Existing Configuration	Improved Configuration	Notes/Comments	Source	Improvement Type	Need	Estimated Cost	Prioritization Score
CAPACITY IMPROVEMENTS AND NEW ROADWAYS with Anticipated Benefits of Increased Capacity and Improved Safety											
C-1	SR 61 Connector	SR 61	S of Shoreline Pkwy	N/A	4-Lanes	1.10 miles	GDOT/Analysis (PI 662540-)	New Road	Connectivity	$ 8,614,422	25.0
C-2	Villa Rica Bypass	SR 61 Bypass	SR 101	N/A	4-Lanes	2.42 miles	GDOT/Analysis (PI 631490-)	New Road	Connectivity	$ 10,790,549	21.5
C-3	US 27 / SR 1	Central Rd (CR 526)	Dixie St	2-Lanes	4-Lanes	0.70 miles	GDOT/Analysis (PI 0000312)	Minor Arterial Widening	Capacity Deficiency	$ 17,506,561	21.0
C-4	SR 166	Burwell Rd	4-Lane in Carrollton	2-Lanes	4-Lanes	2.10 miles	GDOT/Analysis (PI 631300-)	Minor Arterial Widening	Capacity Deficiency	$ 18,107,332	18.0
									Sub-Total	**$ 55,018,864**	
OPERATIONAL IMPORVEMENTS with Anticipated Benefits of Improved Capacity and Safety											
O-1	US 27	Linden Rd	SR 1	4-lane divided highway	maintain access management standards	6.72 miles	Analysis	Operational Improvements	Operational & Safety Issues	$ 134,400	23.5
O-2	US 78	SR 101	Villa Rica	4-lane divided highway	maintain access management standards	2.30 miles	Analysis	Operational Improvements	Operational & Safety Issues	$ 46,000	19.5
O-3	SR 61	SR 166 Bypass	SR 101	4-lane divided highway	maintain access management standards	10.50 miles	Analysis	Operational Improvements	Operational & Safety Issues	$ 210,000	18.5
O-4	SR 16	Buncombe-Waco Rd	Beulah Church Rd	2-lane, grass shoulder	upgrade shoulders	10.10 miles	Analysis	Operational Improvements	Operational & Safety Issues	$ 1,818,000	17.5
O-5	SR 16	S of Whitesburg	Oak Mountain Rd	2-lane divided highway	maintain access management standards	9.50 miles	Analysis	Operational Improvements	Operational & Safety Issues	$ 190,000	17.5
O-6	SR 16	W Miles Rd	Little New York Rd	2-lane, grass shoulder	passing lane pair (1 NB and 1 SB)	2.0 miles	Analysis	Operational Improvements	Operational & Safety Issues	$ 12,000,000	14.5
O-7	Jones Mill Rd	SR 166	SR 16	2-lane, grass shoulder	upgrade shoulders	11 miles	County/Analysis	Operational Improvements	Operational & Safety Issues	$ 1,980,000	12.0
O-8	Oak Mountain Rd	US 27	Horsley Mill Rd	2-lane, grass shoulder	upgrade shoulders	2.3 miles	County/Analysis	Operational Improvements	Operational & Safety Issues	$ 414,000	11.0
O-9	Hog Liver Rd	US 27	Spence Rd	2-lane, grass shoulder	upgrade shoulders	3.6 miles	County/Analysis	Operational Improvements	Operational & Safety Issues	$ 648,000	10.0
O-10	Cross Plain Hulett Rd	SR 166	SR 16	2-lane, grass shoulder, a few turning lanes	upgrade shoulders	8.8 miles	County/Analysis	Operational Improvements	Operational & Safety Issues	$ 1,584,000	10.0
									Sub-Total	**$ 19,024,400**	
INTERSECTION IMPROVEMENTS with Anticipated Benefits of Improved Capacity and Safety											
I-1	SR 166 Bypass	at SR 16		signalized	further study	138 crashes	GDOT/Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	17.0
I-2	SR 166	at Old Airport Rd		signalized	further study	58 crashes / 1 fatality	Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	14.0
I-3	US 27 / SR 1 / Park St	at SR 16 / Alabama St		signalized	further study (incorporate with I-8)	50 crashes	GDOT/Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	9.0
I-4	SR 166	at Somerset Pl		signalized	further study	55 crashes	Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	7.0
I-5	SR 166 Bypass	at Hays Mill Rd		signalized		1 crashes	GDOT/Analysis (PI 0005827)	Intersection Improvements	Operational & Safety Issues	$ 424,258	5.0
I-6	SR 16	at SR 5		roundabout		0 crashes	GDOT/Analysis (PI 0006026)	Intersection Improvements	Operational & Safety Issues	$ 1,617,262	5.0
I-7	SR 101	at Tumlin Lake Rd (CR 353)/Villa Rica Middle School		stop bar	potential for additional turn lanes	0 crashes	GDOT/Analysis (PI 0008423)	Intersection Improvements	Operational & Safety Issues	$ 686,366	5.0
I-8	US 27 / SR 1 / Park St	at SR 166 / Maple St		signalized	further study (incorporate with I-3)	59 crashes	Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	4.0
I-9	US 27 / SR 1	at Linda Ln / Columbia Dr		signalized	further study	47 crashes	Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	4.0
I-10	US 27 / SR 1	at S Cottage Hill Rd / Central High Rd		signalized	further study for potential WB left turn lane	73 crashes	Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	4.0
I-11	US 78	at SR 61		signalized	further study	123 crashes	Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	4.0
I-12	SR 61	at North Hickory Level Rd		signalized	further study	115 crashes	Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	4.0
I-13	SR 166 Bypass	at SR 166 / Maple St		signalized	further study	50 crashes	Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	4.0
I-14	Old Newnan Rd	at Cross Plains Rd		no control devices	further study for upgraded intersection control	1 crashes	Comments	Intersection Improvements	Operational & Safety Issues	$ 270,000	2.0
I-15	SR 166 Bypass	at Old Newnan Rd		signalized	further study for NB and SB left turn lanes	29 crashes	Comments/Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	2.0
I-16	US 27	at SR 113		signalized	further study for improvements related to truck traffic	6 crashes	Comments/Analysis	Intersection Improvements	Operational & Safety Issues	$ 270,000	0.0
I-17	SR 101	at Harlan Lane Rd		no control devices	further study for NB and SB left turn lanes	0 crashes	Comments	Intersection Improvements	Operational & Safety Issues	$ 270,000	0.0
									Sub-Total	**$ 6,507,886**	
BRIDGE IMPORVEMENTS with Anticipated Benefits of Improved Safety and Operations											
B-1	Brickyard Rd	over Big Indian Creek		934 sq ft of deck		25.75 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 102,718	25.8
B-2	Croft St	over Norfolk Southern Railroad (719230S)		2,462 sq ft of deck		28.36 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 270,787	28.4
B-3	Tyus Veal Rd	over Beckmill Creek		1,118 sq ft of deck		36.29 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 123,024	36.3
B-4	Tyus-Carrollton Rd	over Little Tallapoosa River		2,570 sq ft of deck		38.67 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 282,700	38.7
B-5	Old Lowell Mill Rd	over Yellowdirt Creek		906 sq ft of deck		40.45 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 99,660	40.4
B-6	Buffalo Creek Rd	over Buffalo Creek		1,690 sq ft of deck		42.16 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 185,878	42.2
B-7	SR 100	over Turkey Creek		4,499 sq ft of deck		49.00 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 3,294,912	49.0
B-8	Thomas-Wilson Rd	over Tumlin Creek		826 sq ft of deck		51.27 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 90,816	51.3
B-9	Shady Grove Rd	over Harmony Creek		2,907 sq ft of deck		51.74 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 319,770	51.7
B-10	South St	over US 27 / SR 1		9,999 sq ft of deck		51.80 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 1,099,934	51.8
B-11	Blackwelder Rd	over Mountain Creek Tributary		823 sq ft of deck		52.79 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 90,552	52.8
B-12	W Hickory Level Rd	over Little Tallapoosa River		1,752 sq ft of deck		53.53 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 192,720	53.5
B-13	Asbury Rd	over Trestle Creek		1,000 sq ft of deck		53.54 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 109,956	53.5
B-14	Lovvorn Mill Rd	over Big Indian Creek		6,615 sq ft of deck		54.39 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 727,650	54.4
B-15	Old Newnan Rd	over Buffalo Creek		928 sq ft of deck		55.82 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 102,080	55.8
B-16	SR 16	over Turkey Creek		2,592 sq ft of deck		57.93 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 3,085,120	57.9
B-17	Salem Church Rd	over Little Tallapoosa River		3,672 sq ft of deck		58.80 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 403,920	58.8
B-18	SR 5	over Mountain Creek		3,315 sq ft of deck		59.03 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 3,164,650	59.0
B-19	Roop St	over Buffalo Creek		759 sq ft of deck		59.45 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 83,435	59.4
B-20	Whooping Creek Church Rd	over Whooping Creek		958 sq ft of deck		59.48 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 105,413	59.5
B-21	SR 16	over Little Tallapoosa River		6,181 sq ft of deck		61.62 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 3,479,932	61.6
B-22	Bowdon-Tyus Rd	over Little Tallapoosa River		13,680 sq ft of deck		63.43 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 1,504,800	63.4
B-23	SR 5	over Snake Creek Overflow		3,488 sq ft of deck		64.47 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 3,183,724	64.5
B-24	SR 5	over Snake Creek		3,488 sq ft of deck		64.47 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 3,183,724	64.5
B-25	Victory Church Rd	over Little Tallapoosa River		2,103 sq ft of deck		64.71 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 231,352	64.7
B-26	Stadium Dr	over Buffalo Creek		1,690 sq ft of deck		65.36 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 185,900	65.4
B-43	SR 166	over Snake Creek		648 sq ft of deck		73.73 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 2,871,280	73.7
B-51	SR 166	over Indian Creek Tributary		864 sq ft of deck		77.50 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 2,895,040	77.5
B-55	North Allison Rd	over Buffalo Creek		702 sq ft of deck		78.57 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 77,220	78.6
B-56	Tyus-Carrollton Rd	over Little Tallapoosa River		7,866 sq ft of deck		79.03 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 865,260	79.0
B-57	Smith-Chapel Rd	over Turkey Creek		1,416 sq ft of deck		79.33 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 155,760	79.3
B-58	Old Columbus Rd	over Mountain Creek Tributary		1,095 sq ft of deck		79.39 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 120,428	79.4
B-59	US 27 Alt	over Norfolk Southern Railroad (719394H)		8,910 sq ft of deck		79.44 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 3,780,100	79.4
B-60	SR 113	over Allen Creek		756 sq ft of deck		79.96 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 2,883,160	80.0
B-61	SR 113	over Bethel Creek		1,215 sq ft of deck		79.96 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 2,933,650	80.0
B-62	SR 61 NB	over I-20		14,552 sq ft of deck		79.98 sufficiency rating	Analysis	Upgrade Bridge	Rehabilitation or Maintenance	$ 4,400,665	80.0
									Sub-Total	**$ 61,346,598**	
RAILROAD CROSSING IMPROVEMENTS with Anticipated Benefits of Improved Safety and Operations											
R-1	Bradley St	NS #719231Y		no visible pavement markings	refurbish asphalt and pavement markings	0.20 miles	Analysis	Upgrade Crossing	Operational & Safety Issues	$ 13,000	N/A
R-2	Wellington Mill Rd	NS #719401R		no visible pavement markings	refurbish asphalt and pavement markings	0.20 miles	Analysis	Upgrade Crossing	Operational & Safety Issues	$ 13,000	N/A
R-3	SR 113/274 (Temple)	NS #726632R		steep grades at James Rd/Rome St crossing	enhanced guide signage	6 signs	Analysis	Upgrade Signage	Operational & Safety Issues	$ 3,000	N/A
									Sub-Total	**$ 29,000**	
BIKE/PED IMPORVMENETS with Anticipated Benefits of Enhanced Multi-Modal System											
P-1	SR 1/US 27 @ SR 16			no visible pavement markings	restripe and address ADA compliance	0.00 miles	Analysis	Upgrade Crossing	Bike/Ped Facilities	$ 5,000	22.0

Table 9.9: Prioritized Recommended Improvements

Project Ref. No.	Facility	Segment Limits From	Segment Limits To	Existing Configuration	Improved Configuration	Notes/Comments	Source	Improvement Type	Need	Estimated Cost	Prioritization Score
P-2	Chattahoochee Hills Regional Greenway					0.00 miles	GDOT (PI 0007640)	Expand Multi-use Trails	Bike/Ped Facilities	$ 562,437	21.0
P-3	Villa Rica Trailhead					0.00 miles	GDOT (PI 0010457)	Expand Multi-use Trails	Bike/Ped Facilities	$ 625,000	21.0
P-4	Carrolton Greenbelt	SR 166 Bypass	E of Strickland Rd			1.42 miles	GDOT (PI 0010948)	Expand Multi-use Trails	Bike/Ped Facilities	$ 2,182,150	21.0
P-5	US 78	Westview Dr East	Westview Dr West	no sidewalks	add sidewalks on both sides	0.50 miles	Analysis	Expand Sidewalks	Bike/Ped Facilities	$ 520,000	21.0
P-6	SR 1/US 27 @ SR 166			no visible pavement markings	restripe pedestrian crosswalk	0.00 miles	Analysis	Upgrade Crossing	Bike/Ped Facilities	$ 1,500	20.0
P-7	US 78 @ SR 101			no visible pavement markings	restripe crosswalk	0.00 miles	Analysis	Upgrade Crossing	Bike/Ped Facilities	$ 1,500	20.0
P-8	SR 166	Tarpley Ave	Commerce St	no sidewalk on southside	add sidewalks to south side	0.30 miles	Analysis	Expand Sidewalks	Bike/Ped Facilities	$ 156,000	19.0
P-9	SR 16 @ SR 5			no pedestrian amenities	incorporate pedestrian amenities at the roundabout	0.00 miles	Analysis	Upgrade Crossing	Bike/Ped Facilities	$ 5,000	18.0
P-10	SR 16 @ Prospect Ave			no visible pavement markings	restripe crosswalk	0.00 miles	Analysis	Upgrade Crossing	Bike/Ped Facilities	$ 1,500	18.0
P-11	SR 166 @ SR 100			no visible pavement markings	restripe crosswalk	0.00 miles	Analysis	Upgrade Crossing	Bike/Ped Facilities	$ 1,500	18.0
P-12	Old Bremen Rd	Otis St	Sage St	no sidewalks	sidewalks on both sides	0.30 miles	Analysis	Expand Sidewalks	Bike/Ped Facilities	$ 312,000	17.0
P-13	Sage St	Montgomery St	N end of Sage St	no sidewalk on west side	add sidewalks on west side	0.50 miles	Analysis	Expand Sidewalks	Bike/Ped Facilities	$ 260,000	16.0
									Sub-Total	**$ 4,633,587**	
									Total	***$ 146,560,335***	

1. Operational and intersection improvements recommendations are planning level and require further study for specific solutions and refined costs.
2. Intersection costs assume a placeholder cost of $270,000 where further study is required.
3. Cost estimates are in current year dollars (uninflated dollars).
4. Cost estimates are planning-level, based on best available data and assumptions

10. Funding and Implementation

10.1. *Funding Sources*

Several funding sources will be utilized to implement recommended projects. Eligibility for funds is typically dictated by the agencies responsible for maintaining and operating the transportation facility in question and is subject to funding availability. Most major facilities in Carroll 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 has historically come in part through GDOT. To understand the ability of GDOT to continue to provide funds to Carroll County, it is useful to understand the components of GDOT funding. Key components include:

- Federal Title I Apportionments;
- State Motor Fuels Taxes;
- Local Funds; and
- Tax Allocation Districts.

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 traditionally positive growth rates. However, it should be noted that past trends are not a guarantee of future expectations moving forward.

While GDOT funding components have positive growth rates, the Department is experiencing some funding challenges. There are currently more transportation needs in the state than there are dollars to fund projects. In addition, construction costs have fluctuated considerably over the past three years, forcing the Department to continually assess which projects it can reasonably fund. GDOT's Project Prioritization Study, completed in 2008, formulated a prioritization methodology for all projects in the state based upon GDOT's statewide goals and objectives for the performance of the transportation system. Every project eligible for Federal or State funding may be subject to this process, which helps to identify the projects that bring the state the most benefit for the investment. Local funding sources are becoming more significant and will continue to be significant in the future for the successful implementation of projects. A review of project implementation shows that locations with a Special Purpose Local Option Sales Tax (SPLOST) have been in the best position to leverage funds and ultimately construct projects.

10.1.1. 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 "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users" or SAFETEA-LU. The reauthorization of SAFETEA-LU in July 2012 was "Moving Ahead for Progress in the 21st Century Act" (MAP-21) which authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 2-year period of 2012 through 2014. According to the U.S. DOT, funding levels for major highway

transportation programs and apportionments allocated to Georgia over the two-year time frame total approximately $3.7B out of a total of $113B. These lump sum funds are apportioned throughout the state.

Federal funding for the majority of highway system improvements (excluding interstate highways) planned in Carroll 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 percent 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 percent 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. One opportunity is with the 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.

10.1.2. Federal Funds for Public Transportation

As the population of Carroll County 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 likely increase. In addition, as the County continues to urbanize, urbanized area 5307 funds would then become available to the County for public transportation. Commuter-oriented public transportation services, such as vanpooling programs and express bus services as well as transit facilities, such as park and ride lots can begin to be considered 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.

The County should continue to monitor its needs for local and regional public transportation services and identify potential opportunities to tap into the available federal sources for these programs. Generally, the federal funding programs applicable to the types of transit projects for Carroll County will be the Non-Urbanized Area Program; the Rural Transit Assistance Program; Transit for Elderly and Disabled Persons, and Job Access and Reverse Commute.

10.1.3. 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
- 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 percent sales tax, Georgia's motor fuel taxes are the third lowest in the US.

10.1.4. 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, like Carroll, have enacted a Special Purpose Local Option Sales Tax, or 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. A portion of Carroll County's SPLOST funding goes to transportation improvements. 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. Carroll County recently passed the continuation of the SPLOST. Their new SPLOST is for $96M and will begin in March 2015.

County governments typically may elect to 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 $39.6 million in 2004. 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 10.1 below illustrates this data. In 2004, Carroll County had per capita own source amounts of $401, which is less than the statewide revenue per capita of $631.

Table 10.1: Own Source Revenues

County	2000 Own Source Revenues	2004 Own Source Revenues	% Change from 2000 to 2004	2004 Per Capita Amount*
Carroll County	$29.7 million	$39.6 million	33.2%	$401

** Statewide per capita amount equals $631.*
Source: Georgia Department of Community Affairs

In addition, tax revenues jurisdictions in Georgia also have the ability to implement impact fees for transportation infrastructure. Impact fees are one time fees applied to new developments that are used to defray some of the costs of providing additional public facilities and infrastructure to these developments. Impact fees serve to generate additional revenue

to reduce the gap between the resources needed to build new (or improve existing) public facilities that serve new development and the money available for those purposes through traditional revenue sources. Carroll County does not currently have impact fee legislation.

10.1.5. 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 four-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 2014-2017 STIP, GDOT estimated that nearly $8.1 billion were allocated for various transportation functions throughout Georgia. Table 10.2 below shows the allocation of these funds across major functional areas.

Table 10.2: STIP Fund Allocations (2014 – 2017)

Transportation Function	Amount Allocated	Percent of Total
New Construction	$2,282,545,000	25.7%
Reconstruction and Rehabilitation	$2,005,270,000	34.3%
Bridges	$649,907,000	10.3%
Safety	$575,566,000	5.9%
Maintenance	$600,463,000	9.6%
Transportation Enhancement	$312,902,000	5.2%
Transit	$774,593,000	10.1%
Other	$1,676,909,000	11.1%
Total	**$8,878,155,000**	**100.0%**

Source: Georgia Department of Transportation

10.1.6. 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 based on GDOT (state), regional and local investment priorities that weigh the best investments for anticipated benefits of the projects through the planning horizon year of 2040. A combination of sources will increase the likelihood for project implementation.

10.2. *Effective Use of the Plan*

This LRTP Document identifies potential projects for implementation based on local transportation needs and verified by technical analysis. This is an important step towards implementation but additional steps are necessary in order to advance projects into the Georgia Department of Transportation's Project Development Process and / or to identify and solidify funding commitments from the state, if desired. The project implementation process for Georgia outside of an MPO area begins with support from local elected officials. Each County should begin with a thorough review of their LRTP priority projects. If funding is desired beyond what is available locally, the following steps are recommended:

- Step 1: Gather letters of support from local elected officials highlighting the need for the project(s) and the merits of the project(s).
- Step 2: Assess the level of funding support that may be provided by the County as a local match and / or for specific project phases (i.e. PE, ROW, etc.).
- Step 3: Contact your GDOT District Office (District 6 for Carroll County) and coordinate with the GDOT District Engineer regarding the project. Depending on project type, the GDOT District may know of state aid resources that could be used for feasibility studies and potentially for additional match funding sources.
- Step 4: The GDOT District Office typically serves as the project sponsor and submits a project information package to GDOT's Division of Planning for consideration. The information included in the long-range plan and the project sheet, in addition to any supporting information resulting from additional study, is included in this package.
- Step 5: Projects approved by GDOT's Division of Planning are programmed into GDOT's Work Program. As funding is identified, the project will move into GDOT's STIP.

11. Conclusions and Next Steps

Carroll County has experienced sustained growth over the last decade, resulting in increased travel demand in the County. The Georgia Department of Transportation (GDOT) Office of Planning initiated the Carroll County Long Range Transportation Plan to assess needs and identify multi-modal transportation improvement opportunities to help the County address transportation issues through the plan's horizon year of 2040. Recommended projects for Carroll County were identified through analysis of existing and future transportation deficiencies, and selected and prioritized based on local goals and objectives with the intent of enhancing the quality of life for County residents and visitors. Efforts were taken to ensure that proposed projects negatively impacted the community as little as possible while providing maximum benefits. As part of this effort, existing and future operating conditions were documented for the following modes: highways and bridges, bicycle and pedestrian, freight, transit, rail, and airports. Ultimately, the study identified a prioritized list of projects for implementation.

GDOT coordinated with Carroll County and the Cities of Bowdon, Bremen, Mount Zion, Roopville, Temple, Villa Rica and Whitesburg, the University of West Georgia, area residents and business leaders, and other partners in the planning, development, and review of potential improvements. Additionally, a public survey was developed and distributed. 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 the County's transportation network.

The end product for this study is this LRTP document. If implemented, its solutions address future needs and provide for the efficient movement of people and goods within and through Carroll County through the horizon year of this study, 2040. 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 Carroll County's transportation planning efforts and a starting point for addressing future transportation needs.