



Comprehensive Transportation Plan



Macon County
July 2012

Comprehensive Transportation Plan

Macon County

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N.C. Department of Transportation

In Cooperation with:

Macon County
Town of Franklin
Town of Highlands
Southwestern Rural Planning Organization

July 2012

Pam Cook, PE
Mountains Planning Group Supervisor

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Executive Summary

In March of 2009, the Transportation Planning Branch of the North Carolina Department of Transportation and Macon County initiated a study to cooperatively develop the Macon County Comprehensive Transportation Plan (CTP), which includes Franklin and Highlands. This is a long range multi-modal transportation plan that covers transportation needs through 2035. Modes of transportation evaluated as part of this plan include: highway, public transportation and rail, bicycle, and pedestrian. This plan does not cover routine maintenance or minor operations issues. Refer to Appendix A for contact information on these types of issues.

Findings of this CTP study were based on an analysis of the transportation system, environmental screening, and public input. Refer to Figure 1 for the CTP maps, which were mutually endorsed/adopted in 2011. Implementation of the plan is the responsibility of Macon County, its municipalities, and NCDOT. Refer to Chapter 2 for information on the implementation process.

This report documents the recommendations for improvements that are included in the Macon County CTP. The major recommendations for improvements are listed below. More detailed information about these and other recommendations can be found in Chapter 2.

- **MACO0001-H / MACO0009-H, US 23-441:** The CTP proposes improving US 23-441 to expressway standards in accordance with NCDOT's Strategic Highway Corridor Vision Plan. In the interim, US 23-441 from US 64 to Prentiss Bridge Road (SR 1649) is recommended to be upgraded to boulevard standards to improve mobility. This would be accomplished by removing the center turn lane and installing a median.
- **MACO0004-H, NC 28:** It is proposed that NC 28 (Highlands Road) be widened from US 441 to US 441 Bus to a four-lane divided boulevard with limited control of access.
- **MACO0006-H, Depot Street (SR 1729):** The CTP proposes widening Depot Street from US 441 Bus to Wayah Street (SR 1667) to three-lanes with a continuous left turn lane.
- **MACO0001-T:** New bus route between Franklin and Highlands utilizing US 64 – NC 28 and Buck Creek Road (SR 1536).
- **MACO0002-T:** New bus route between Franklin and the Nantahala community utilizing Wayah Road (SR 1310).

- **MACO0001-B:** New bicycle facilities along Siler Road (SR 1660) from Macon Early College to Dowdle Mountain Road (SR 1659).
- **MACO0006-P:** New pedestrian facilities along Watauga Street and Dan Street from Lakeside Drive (SR 1324) to US 421 Bus to serve Eastern Franklin Elementary School.
- **MACO0007-P:** New pedestrian facilities along Wells Grove Road (SR 1667) from Dowdle Mountain Road (SR 1659) to Clarks Chapel Road (SR 1653) to serve Macon Middle School and Mountain View Intermediate School.

Adopted by:

Macon County
Date: September 13, 2011

Town of Franklin
Date: September 5, 2011

Town of Highlands
Date: September 6, 2011

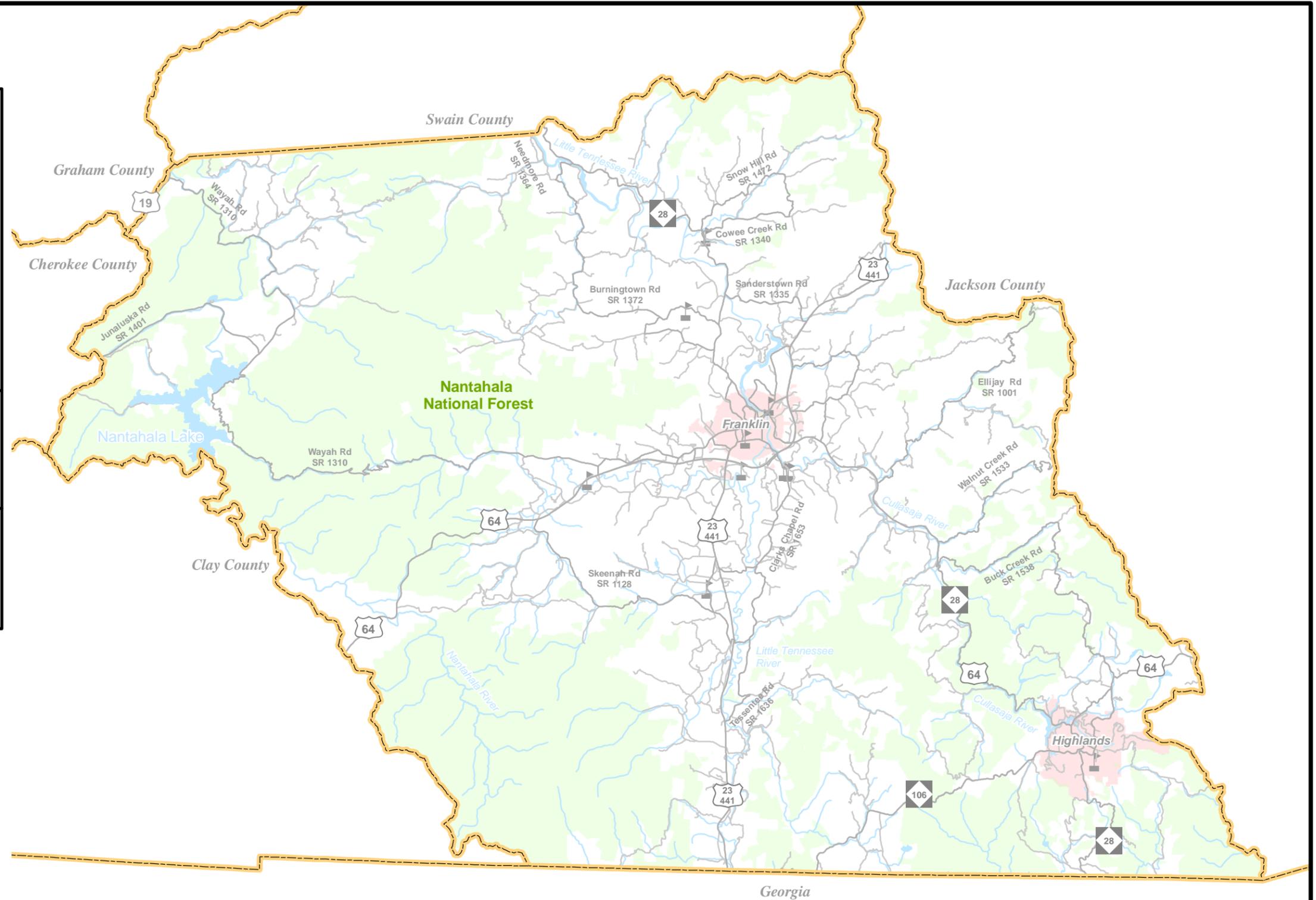
NCDOT
Date: November 3, 2011

Endorsed by:

Southwestern RPO
Date: September 26, 2011

Recommended by:

Transportation Planning Branch
Date: October 4, 2011



Sheet 1 Adoption Sheet

Sheet 2 Highway Map

Sheet 3 Public Transportation
and Rail Map

Sheet 4 Bicycle Map

Sheet 5 Pedestrian Map

Legend

- Roads
- +— Railroads
- Rivers and Streams

- Schools
- County Boundary
- Municipal Boundary
- Conservation Land

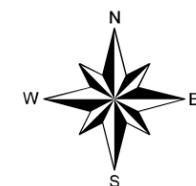


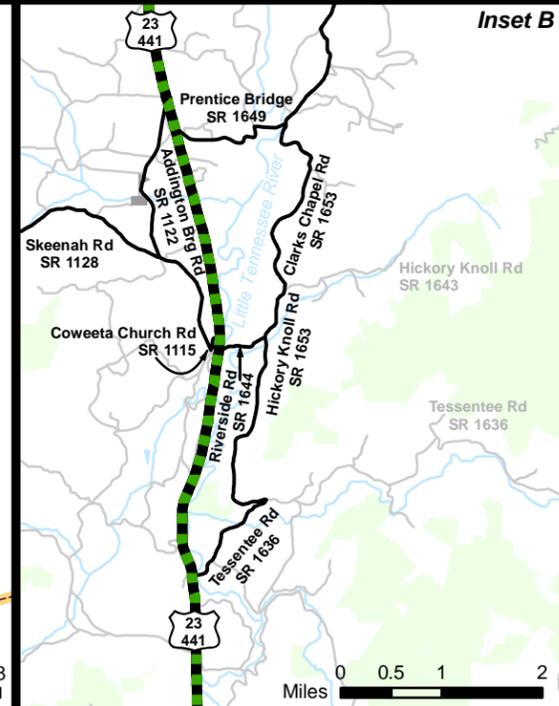
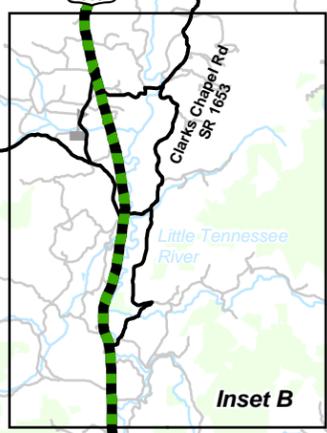
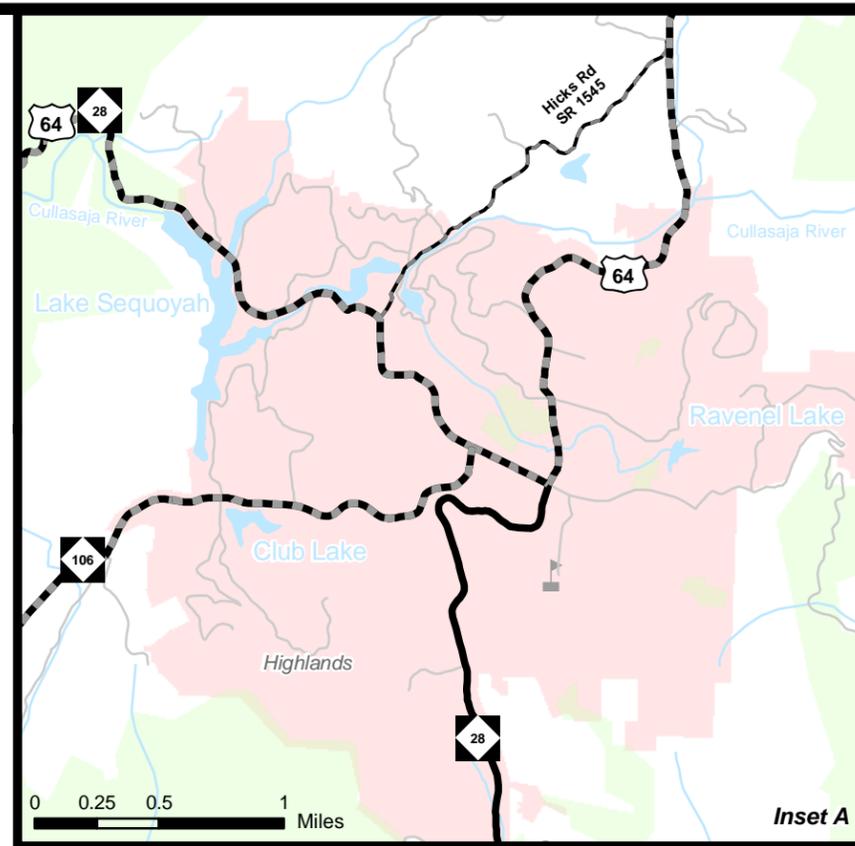
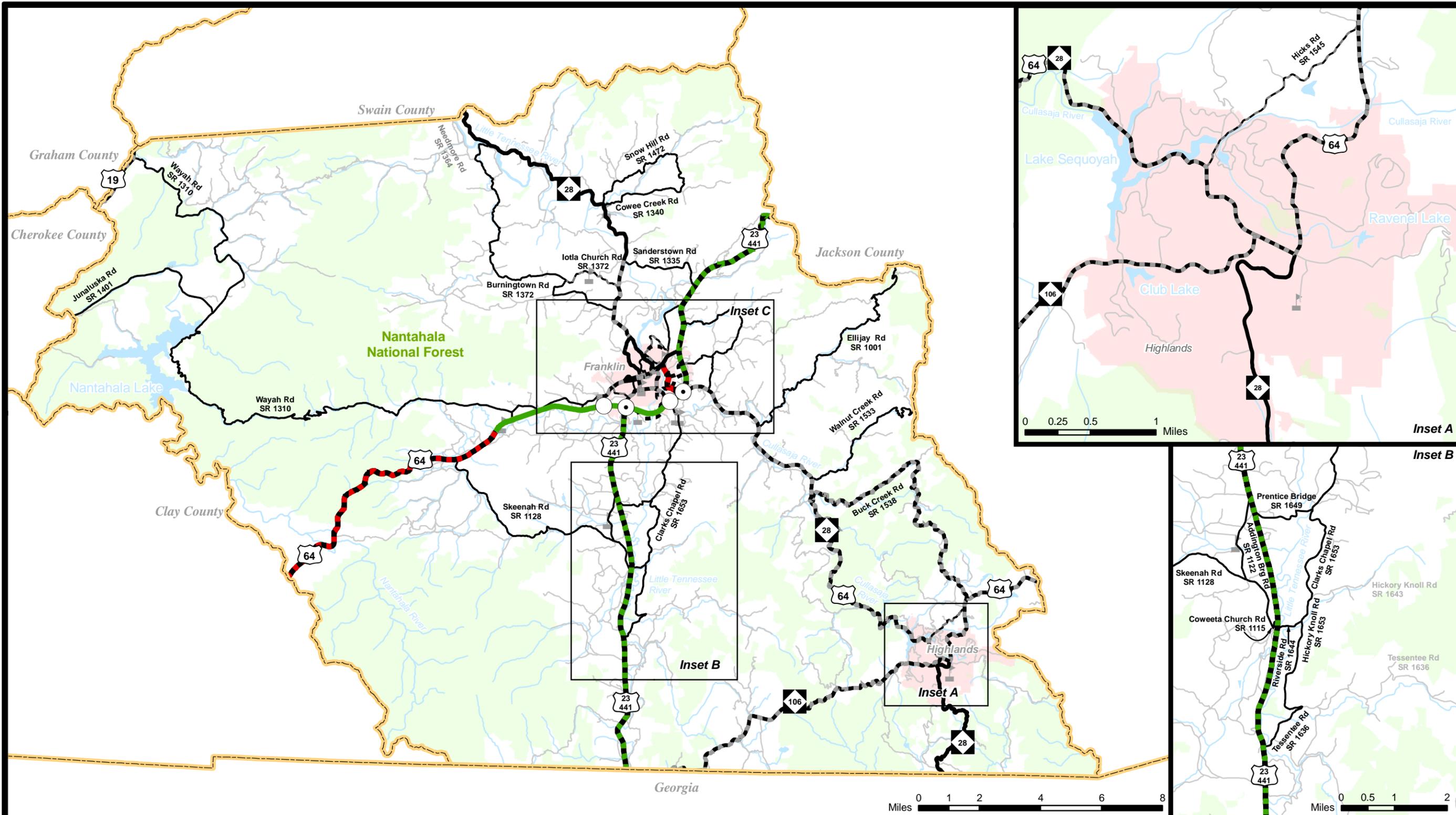
Figure 1
Sheet 1 of 5

Base map date: November 30, 2009
Refer to CTP document for more details

Adoption Sheet

**Macon County
Comprehensive
Transportation Plan**

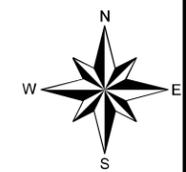
Plan date: August 3, 2011



<p>Freeways</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended <p>Expressways</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended 	<p>Boulevards</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended <p>Other Major Thoroughfares</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended 	<p>Minor Thoroughfares</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended <p> Existing Interchange Proposed Interchange Existing Grade Separation Proposed Grade Separation </p>
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Figure 1
Sheet 2 of 5

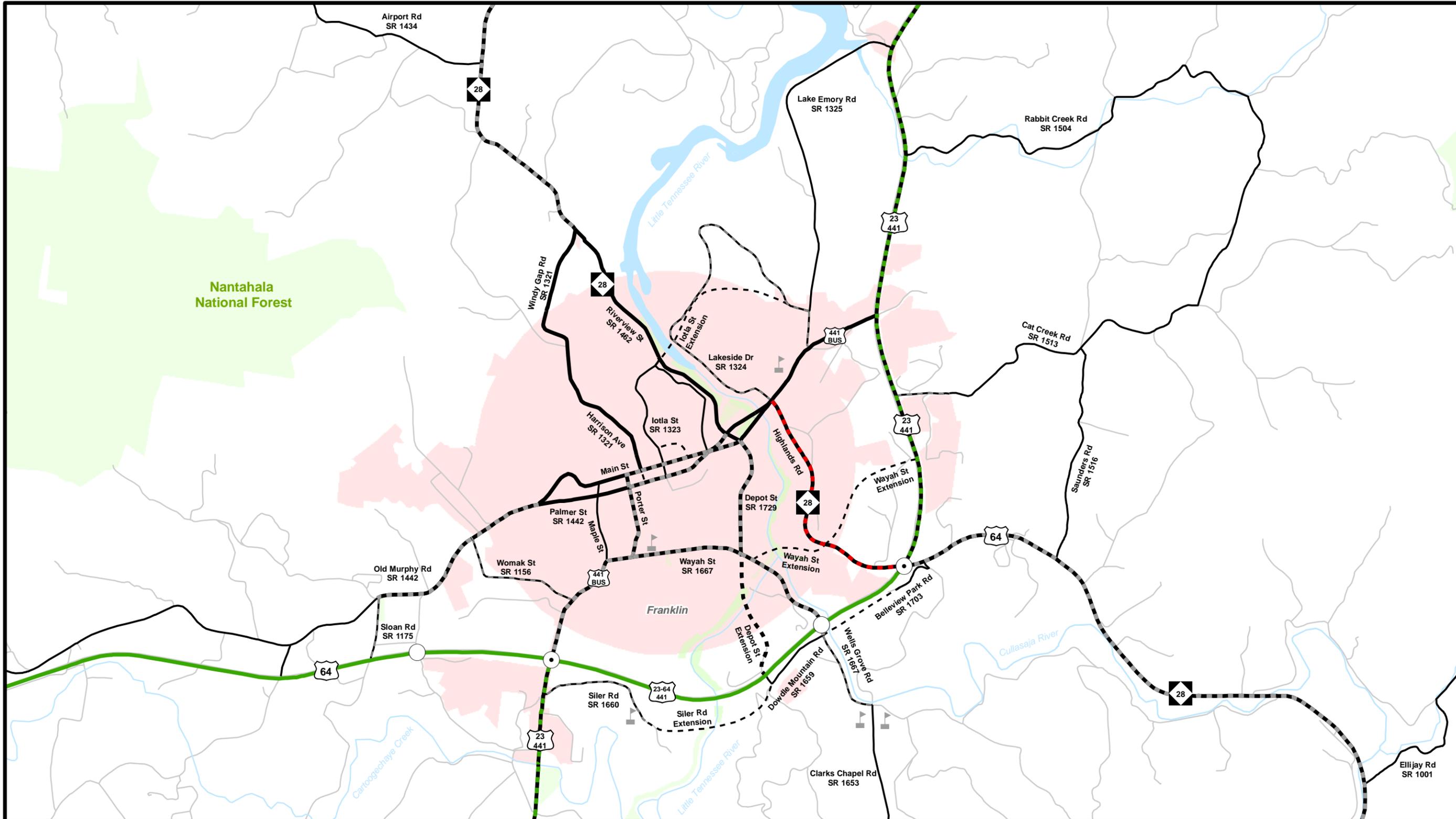
Base map date: November 30, 2009
Refer to CTP document for more details



Highway Map

Macon County Comprehensive Transportation Plan

Plan date: August 3, 2011



<p>Freeways</p> <ul style="list-style-type: none"> — Existing - - - Needs Improvement . . . Recommended <p>Expressways</p> <ul style="list-style-type: none"> — Existing - - - Needs Improvement . . . Recommended 	<p>Boulevards</p> <ul style="list-style-type: none"> — Existing - - - Needs Improvement . . . Recommended <p>Other Major Thoroughfares</p> <ul style="list-style-type: none"> — Existing - - - Needs Improvement . . . Recommended 	<p>Minor Thoroughfares</p> <ul style="list-style-type: none"> — Existing - - - Needs Improvement . . . Recommended <p> <ul style="list-style-type: none"> ● Existing Interchange ● Proposed Interchange ○ Existing Grade Separation ○ Proposed Grade Separation </p>
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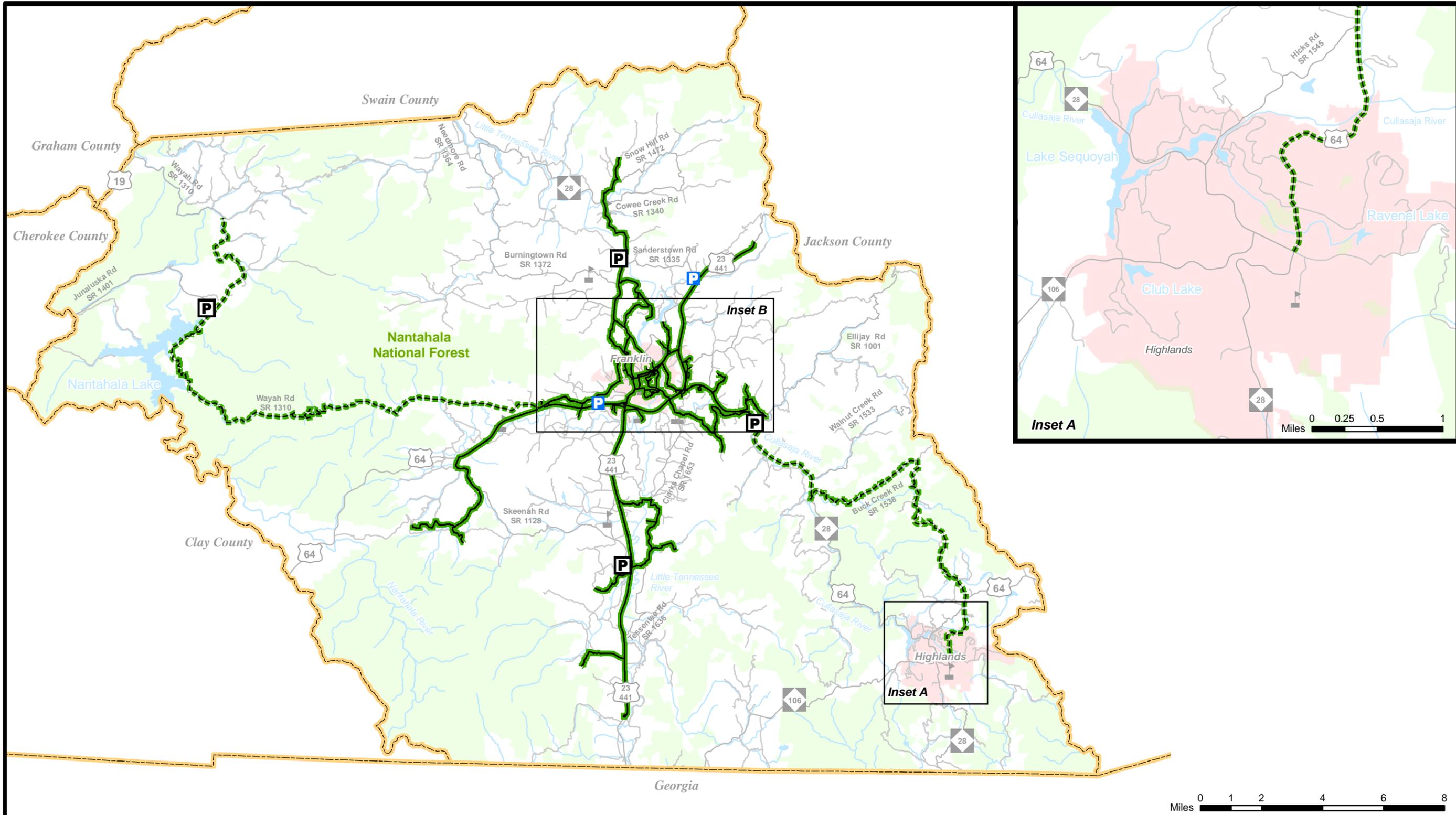
0 0.25 0.5 1 Miles

Figure 1
Sheet 2A of 5

Base map date: November 30, 2009
Refer to CTP document for more details

**Highway Map
Inset C**

**Macon County
Comprehensive
Transportation Plan**
Plan date: August 3, 2011



Bus Routes Existing Needs Improvement Recommended	Operational Strategies Existing Needs Improvement Recommended	High Speed Rail Corridor Existing Recommended	Intermodal Connector Existing Recommended
Fixed Guideway Existing Needs Improvement Recommended	Rail Corridor Active Inactive Recommended	Rail Stops Existing Recommended	Park and Ride Lot Existing Recommended

Figure 1
Sheet 3 of 5

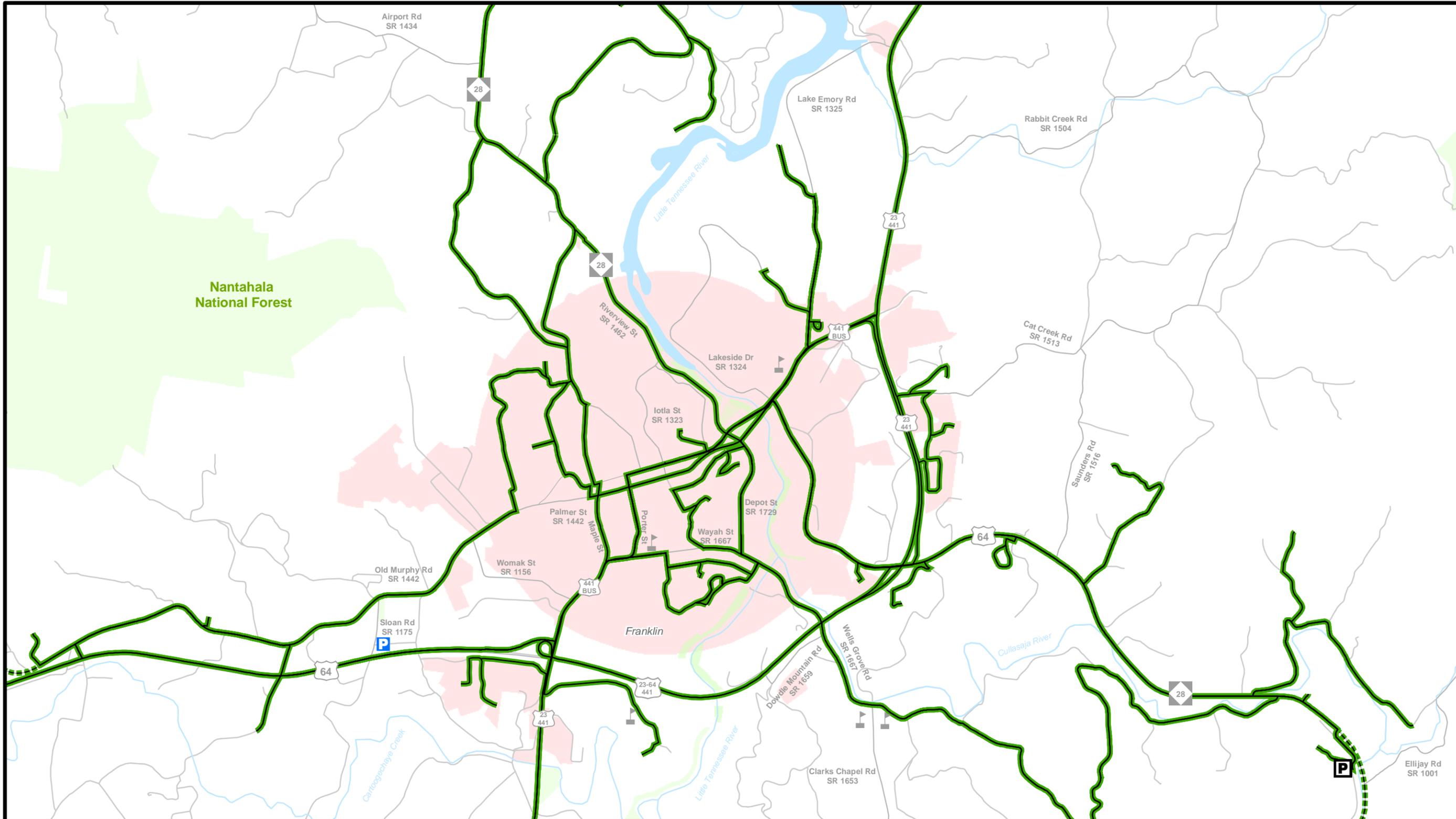
Base map date: November 30, 2009
Refer to CTP document for more details



Public Transportation and Rail Map

Macon County Comprehensive Transportation Plan

Plan date: August 3, 2011



Bus Routes

- Existing
- Needs Improvement
- Recommended

Fixed Guideway

- Existing
- Needs Improvement
- Recommended

Operational Strategies

- Existing
- Needs Improvement
- Recommended

Rail Corridor

- Active
- Inactive
- Recommended

High Speed Rail Corridor

- Existing
- Recommended

Rail Stops

- Existing
- Recommended

Intermodal Connector

- Existing
- Recommended

Park and Ride Lot

- Existing
- Recommended

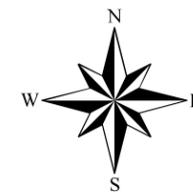
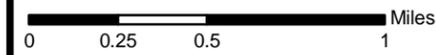
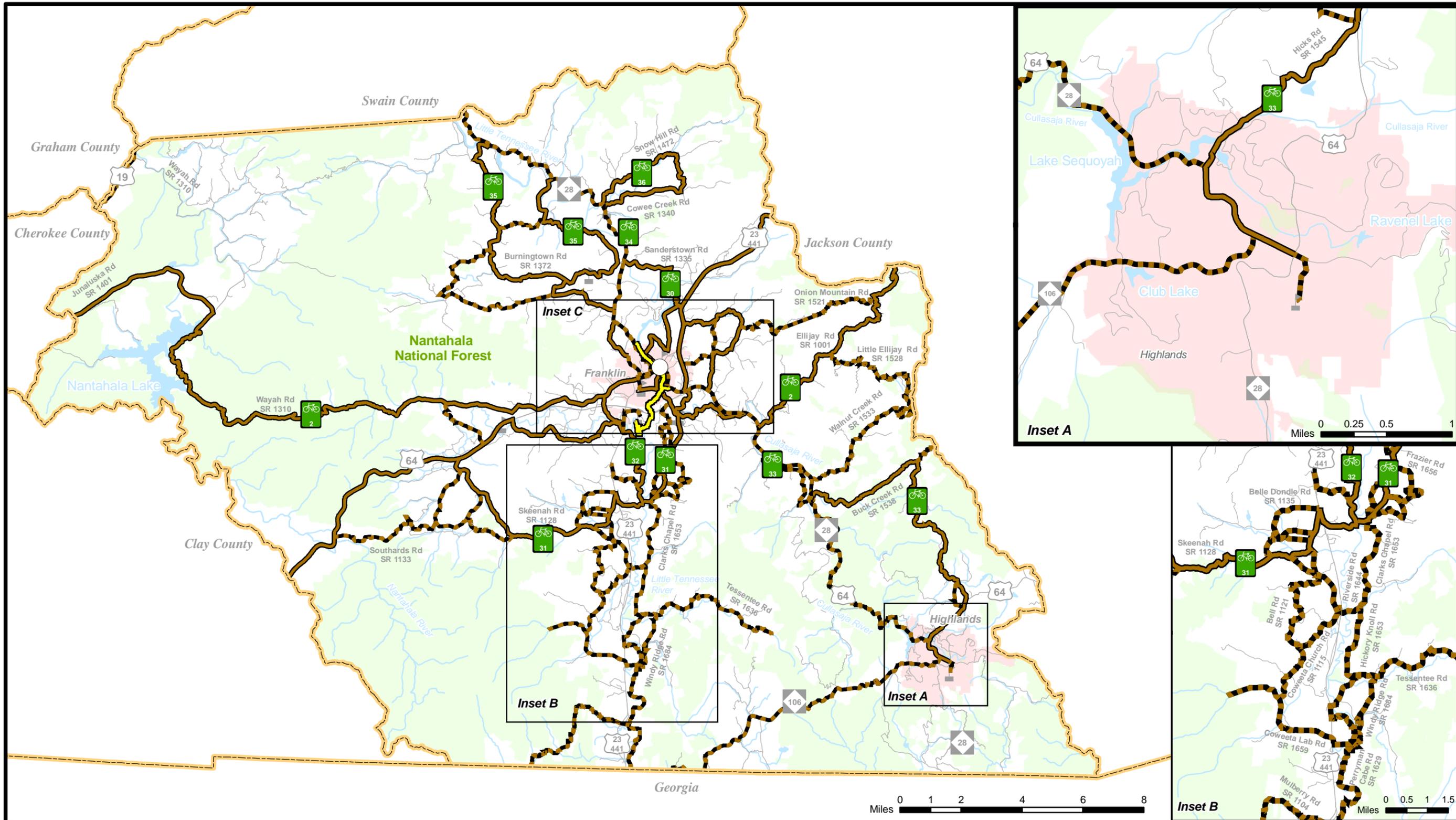


Figure 1
Sheet 3A of 5

Base map date: November 30, 2009
Refer to CTP document for more details

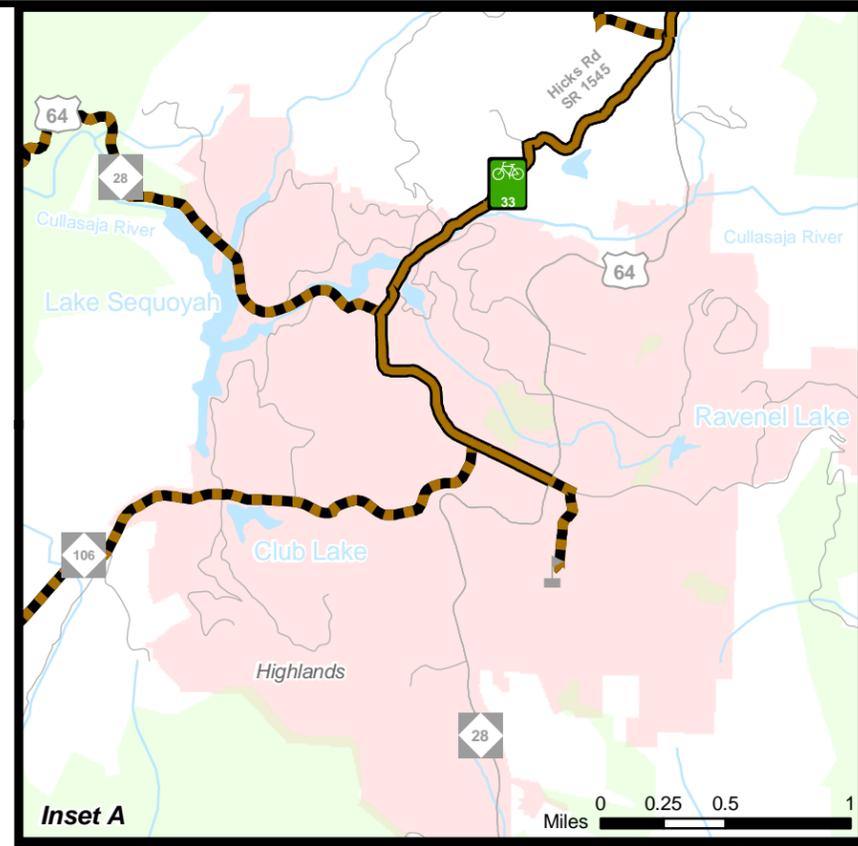
**Public Transportation
and Rail Map
Inset B**

**Macon County
Comprehensive
Transportation Plan**
Plan date: August 3, 2011

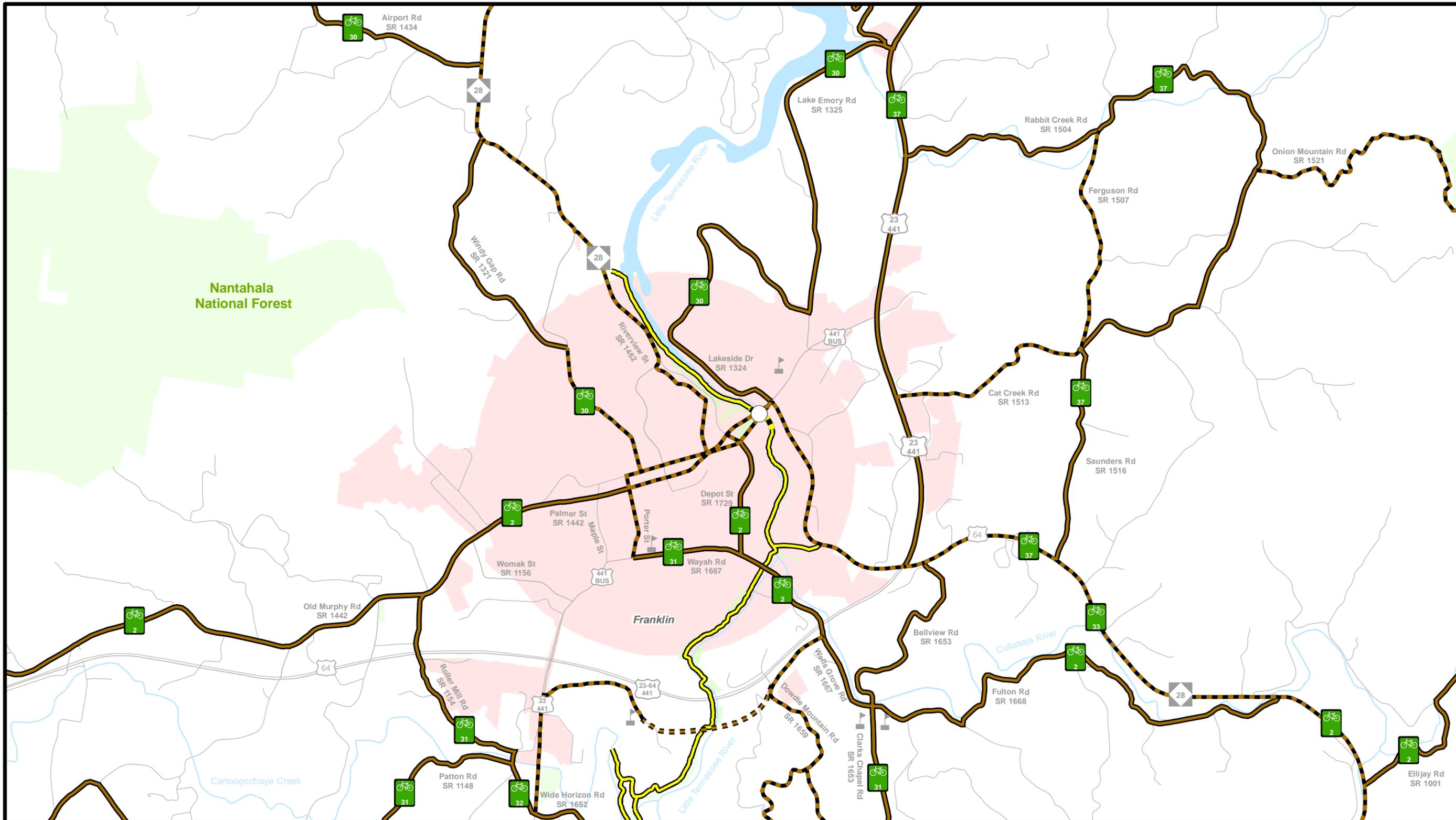


On Road	Off Road	Multi-Use Paths
Existing	Existing	Existing
Needs Improvement	Needs Improvement	Needs Improvement
Recommended	Recommended	Recommended
Existing Grade Separation		
Proposed Grade Separation		

Figure 1
Sheet 4 of 5
Base map date: November 30, 2009
Refer to CTP document for more details



Bicycle Map
Macon County
Comprehensive
Transportation Plan
Plan date: August 3, 2011



On Road		Off Road		Multi-Use Paths	
	Existing		Existing		Existing
	Needs Improvement		Needs Improvement		Needs Improvement
	Recommended		Recommended		Recommended
	Existing Grade Separation				
	Proposed Grade Separation				

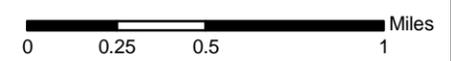
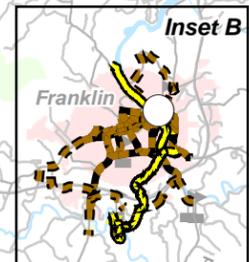
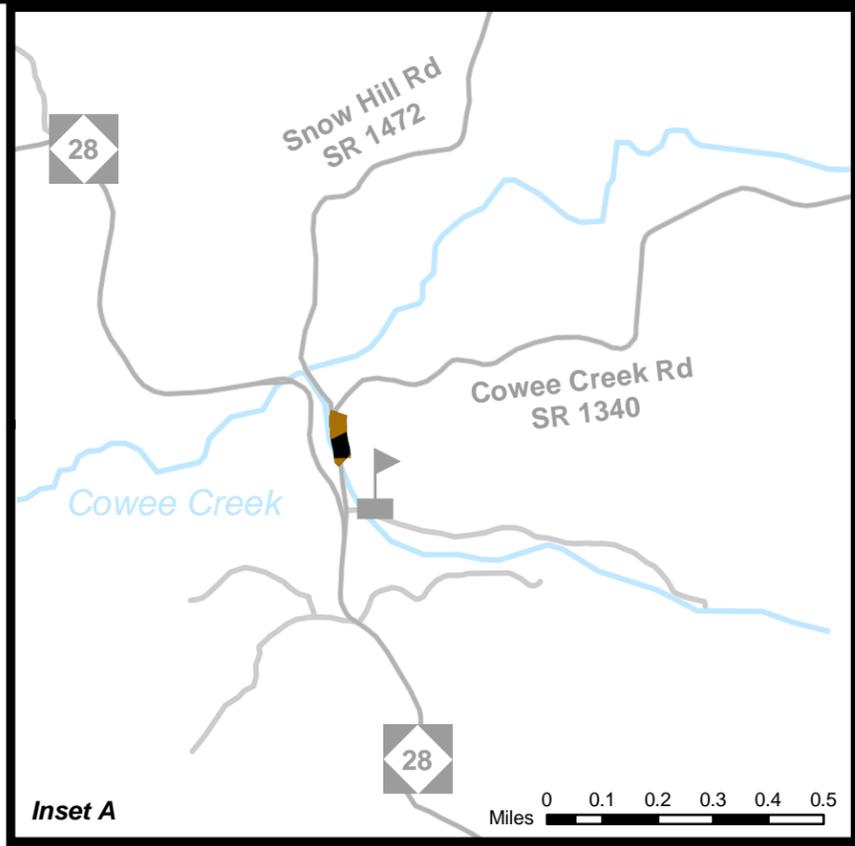
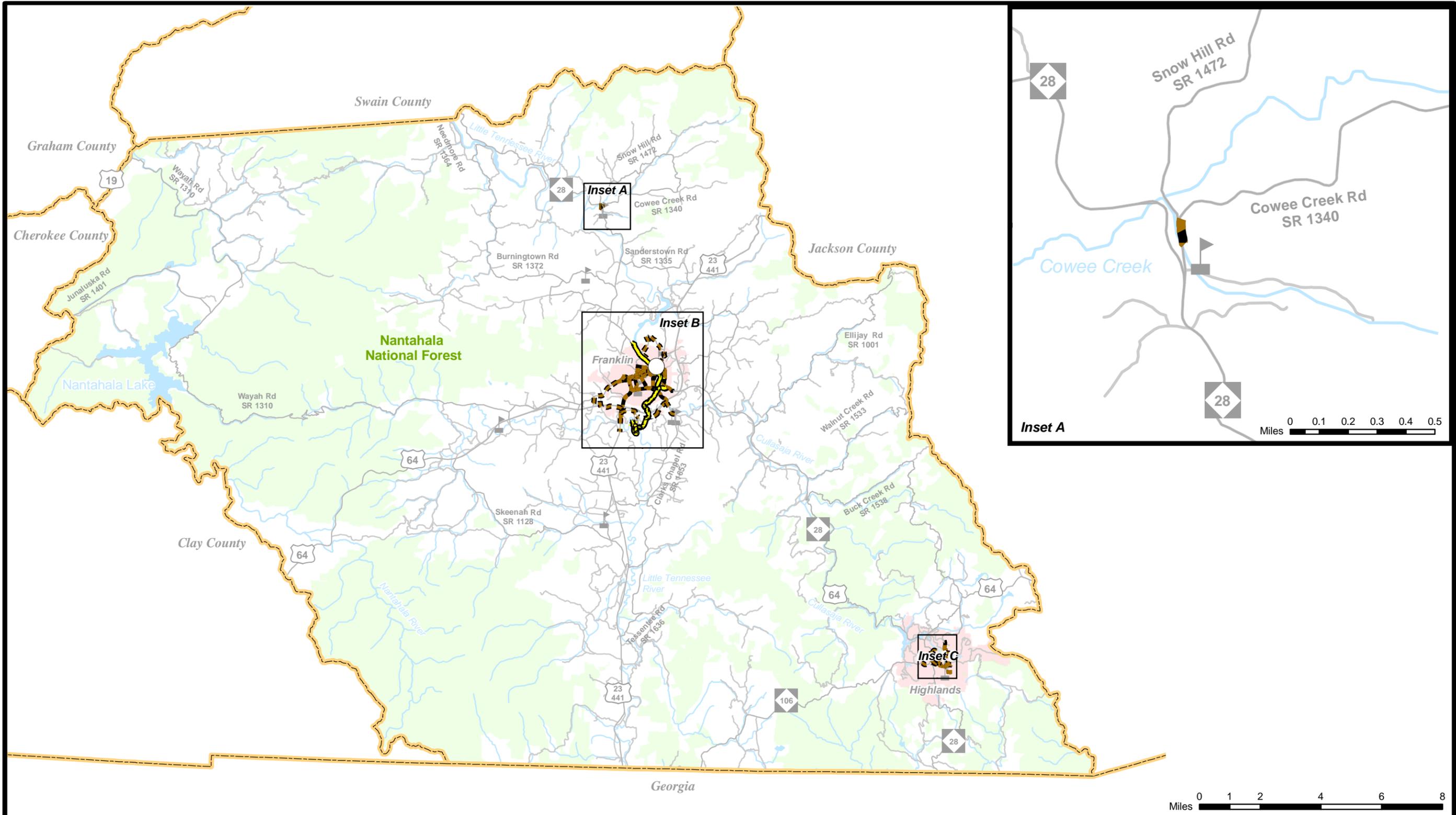


Figure 1
 Sheet 4A of 5
 Base map date: November 30, 2009
 Refer to CTP document for more details

**Bicycle Map
 Inset C**

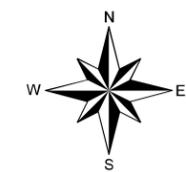
**Macon County
 Comprehensive
 Transportation Plan**
 Plan date: August 3, 2011



- | | | |
|---------------------------|-------------------|------------------------|
| Sidewalks | Off Road | Multi-Use Paths |
| Existing | Existing | Existing |
| Needs Improvement | Needs Improvement | Needs Improvement |
| Recommended | Recommended | Recommended |
| Existing Grade Separation | | |
| Proposed Grade Separation | | |

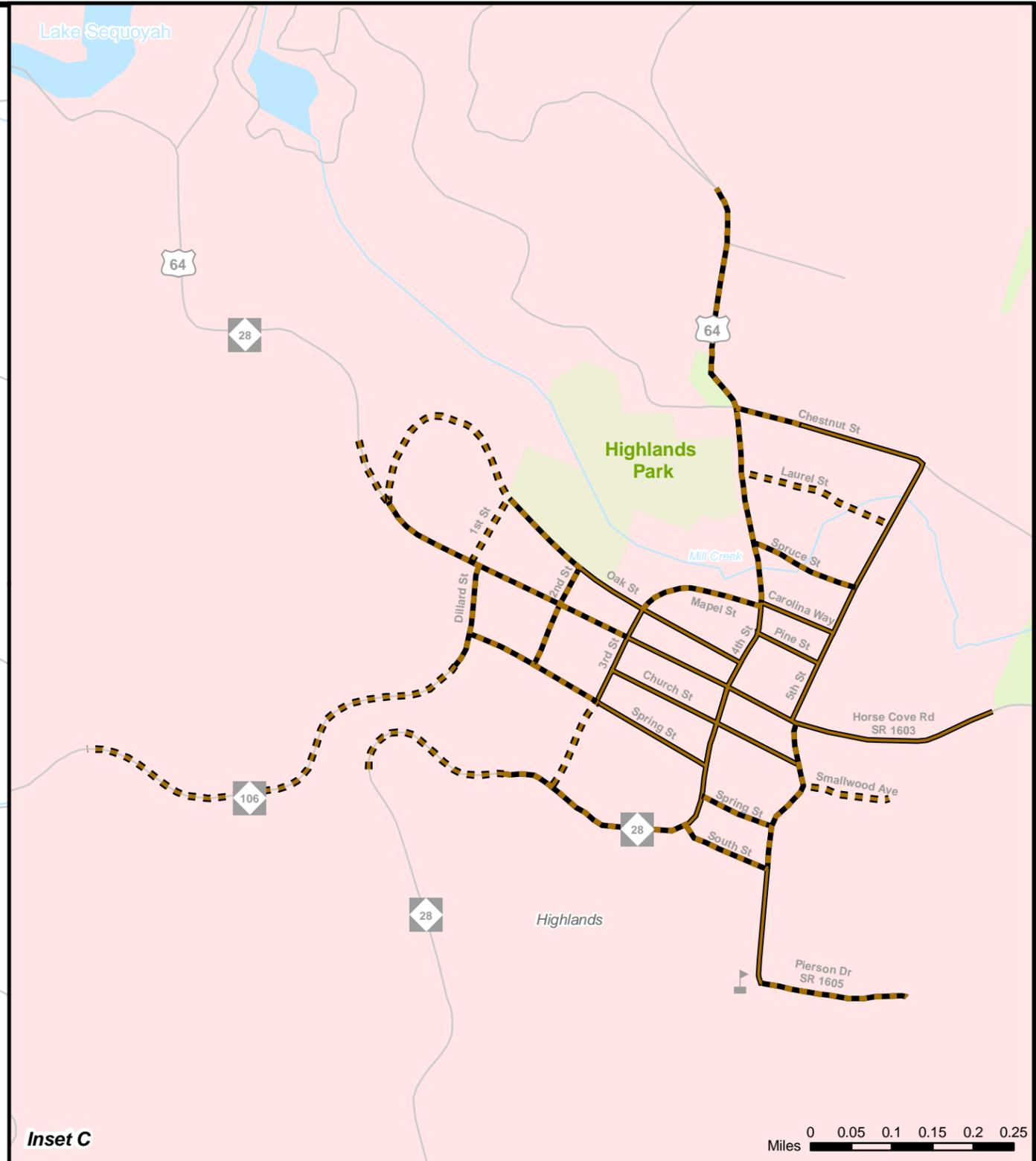
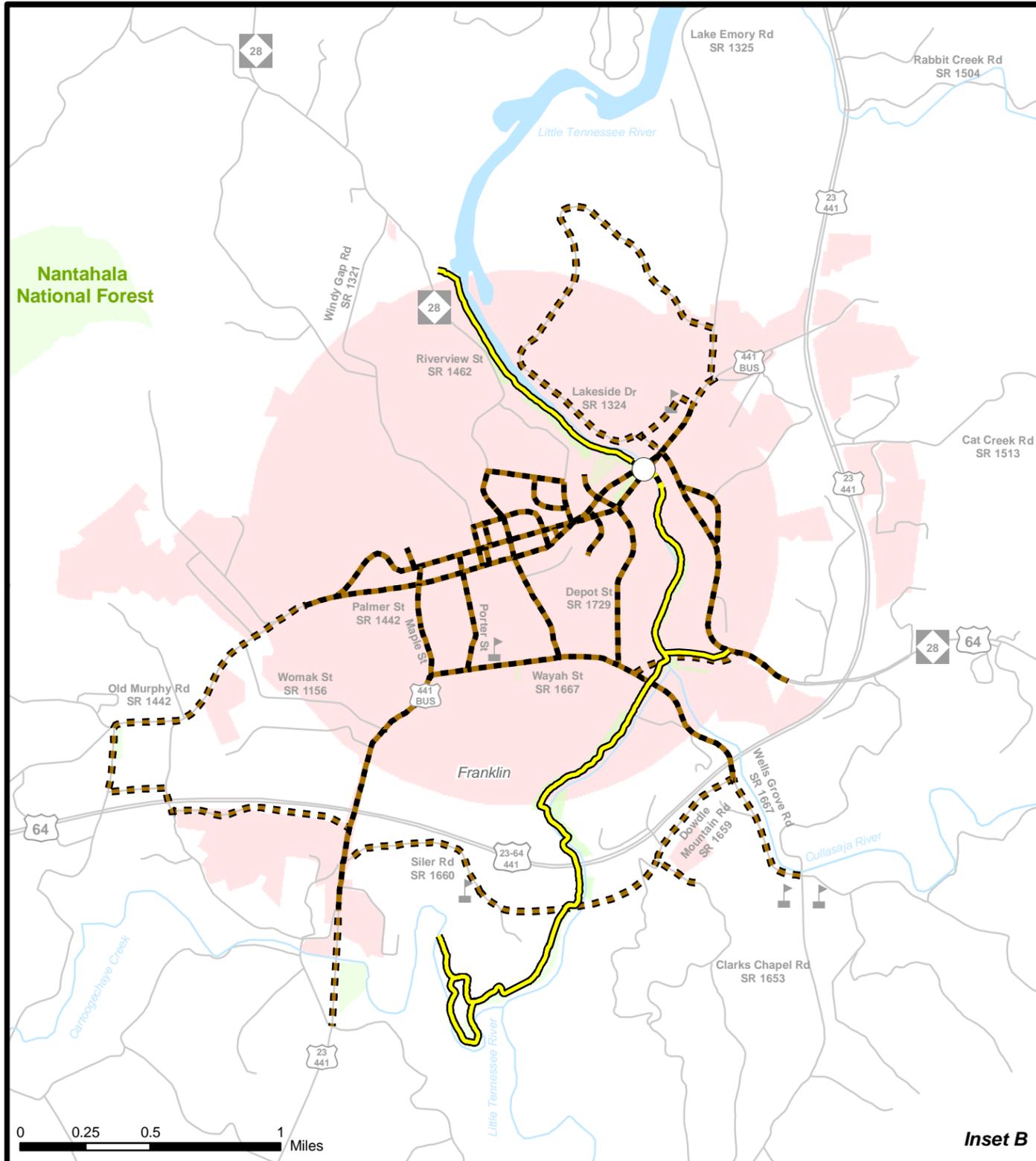
Figure 1
Sheet 5 of 5

Base map date: November 30, 2009
Refer to CTP document for more details



Pedestrian Map

Macon County
Comprehensive
Transportation Plan
Plan date: August 3, 2011



- | | | |
|---------------------------|-------------------|------------------------|
| Sidewalks | Off Road | Multi-Use Paths |
| Existing | Existing | Existing |
| Needs Improvement | Needs Improvement | Needs Improvement |
| Recommended | Recommended | Recommended |
| Existing Grade Separation | | |
| Proposed Grade Separation | | |

Figure 1
Sheet 5A of 5

Base map date: November 30, 2009
Refer to CTP document for more details



**Pedestrian Map
Insets B and C**

**Macon County
Comprehensive
Transportation Plan**

Plan date: August 3, 2011

I. Analysis of the Existing and Future Transportation System

A Comprehensive Transportation Plan (CTP) is developed to ensure that the progressively developed transportation system will meet the needs of the region for the planning period. The CTP serves as an official guide to providing a well-coordinated, efficient, and economical transportation system for the future of the region. This document should be utilized by the local officials to ensure that planned transportation facilities reflect the needs of the public, while minimizing the disruption to local residents, businesses, and environmental resources.

In order to develop a CTP, the following are considered:

- Analysis of the transportation system, including any local and statewide initiatives;
- Impacts to the natural and human environment, including natural resources, historic resources, homes, and businesses;
- Public input, including community vision and goals and objectives.

Analysis Methodology and Data Requirements

Reliable forecasts of future travel patterns must be estimated in order to analyze the ability of the transportation system to meet future travel demand. These forecasts depend on careful analysis of the character and intensity of existing and future land use and travel patterns.

An analysis of the transportation system looks at both current and future travel patterns and identifies existing and anticipated deficiencies. This is usually accomplished through a capacity deficiency analysis, a traffic crash analysis, and a system deficiency analysis. This information, along with population growth, economic development potential, and land use trends, is used to determine the potential impacts on the future transportation system.

Roadway System Analysis

An important stage in the development of a CTP is the analysis of the existing transportation system and its ability to serve the area's travel desires. Emphasis is placed not only on detecting the existing deficiencies but also on understanding the causes of these deficiencies. Roadway deficiencies may result from inadequacies such as pavement widths, intersection geometry, and intersection controls; or system problems, such as the need to construct missing travel links, bypass routes, loop facilities, additional radial routes, or infrastructure improvements to meet statewide initiatives.

One of those statewide initiatives is the Strategic Highway Corridor (SHC) Vision Plan¹ adopted by the Board of Transportation on September 2, 2004 and last revised on July 10, 2008. The SHC Vision Plan represents a timely initiative to protect and maximize the mobility and connectivity on a core set of highway corridors throughout North Carolina, while promoting environmental stewardship through maximizing the use of existing facilities to the extent possible, and fostering economic prosperity through the quick and efficient movement of people and goods.

The primary purpose of the SHC Vision Plan is to provide a network of high-speed, safe, reliable highways throughout North Carolina. The primary goal to support this purpose is to create a greater consensus towards the development of a genuine vision for each corridor – specifically towards the identification of a desired facility type (Freeway, Expressway, Boulevard, or Thoroughfare) for each corridor. Individual Comprehensive Transportation Plans shall incorporate the long-term vision of each corridor. In Macon County US 23-441 and US 64 are designated as SHCs. Refer to Appendix A for contact information.

In the development of this plan, travel demand was projected from 2010 to 2035 using both a travel demand model and a trend line analysis. A travel demand model for the Franklin urban area was developed to replicate travel patterns on the existing transportation system as well as to estimate travel patterns for 2035. Outside of the urban area travel demand was projected using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1990 to 2007. In addition, local land use plans and growth expectations were used to develop future growth rates and patterns. Refer to Appendix I for more details.

Existing and future travel demand is compared to existing roadway capacities. Capacity deficiencies occur when the traffic volume of a roadway exceeds the roadway's capacity. Roadways are considered near capacity when the traffic volume is at least eighty percent of the capacity. Refer to Figures 2 and 3 for existing and future capacity deficiencies.

Capacity is the maximum number of vehicles which have a "reasonable expectation" of passing over a given section of roadway, during a given time period under prevailing roadway and traffic conditions. Many factors contribute to the capacity of a roadway including the following:

- Geometry of the road (including number of lanes), horizontal and vertical alignment, and proximity of perceived obstructions to safe travel along the road;
- Typical users of the road, such as commuters, recreational travelers, and truck traffic;
- Access control, including streets and driveways, or lack thereof, along the roadway;

¹ For more information on SHC, visit: <http://www.ncdot.gov/doh/preconstruct/tpb/SHC/>

- Development along the road, including residential, commercial, agricultural, and industrial developments;
- Number of traffic signals along the route;
- Peaking characteristics of the traffic on the road;
- Characteristics of side-roads feeding into the road; and
- Directional split of traffic or the percentages of vehicles traveling in each direction along a road at any given time.

The relationship of travel demand compared to the roadway capacity determines the level of service (LOS) of a roadway. Six levels of service identify the range of possible conditions. Designations range from LOS A, which represents the best operating conditions, to LOS F, which represents the worst operating conditions.

LOS D indicates “practical capacity” of a roadway, or the capacity at which the public begins to express dissatisfaction. The practical capacity for each roadway was developed based on the 2000 Highway Capacity Manual using the Mountains Methodology. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C for new facilities. Refer to Appendix E for detailed information on LOS.

Traffic Crash Analysis

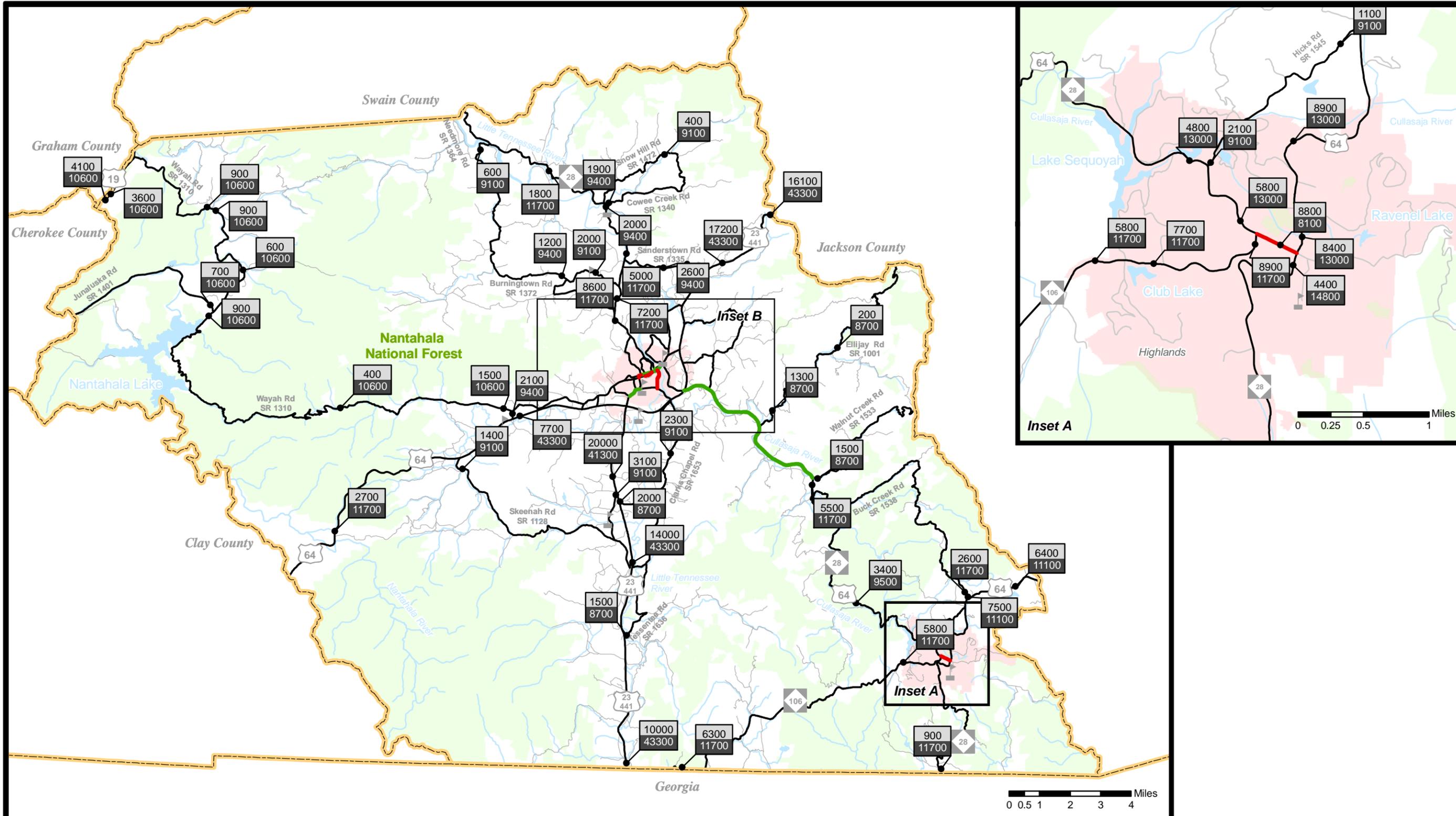
Traffic crashes are often used as an indicator for locating congestion and roadway problems. Crash patterns obtained from an analysis of crash data can lead to the identification of improvements that will reduce the number of crashes. A crash analysis was performed for the Macon County CTP for crashes occurring in the planning area between January 1, 2007 and December 31, 2009. During this period, a total of 37 intersections were identified as having a high number of crashes as illustrated in Figure 3. Refer to Appendix F for a detailed crash analysis.

Bridge Deficiency Assessment

Bridges are a vital and unique element of a highway system. First, they represent the highest unit investment of all elements of the system. Second, any inadequacy or deficiency in a bridge reduces the value of the total investment. Third, a bridge presents the greatest opportunity of all potential highway failures for disruption of community welfare. Finally, and most importantly, a bridge represents the greatest opportunity of all highway failures for loss of life. For these reasons, it is imperative that bridges be constructed to the same design standards as the system of which they are a part.

The NCDOT Structures Management Unit inspects all bridges in North Carolina at least once every two years. Bridges having the highest priority are replaced as Federal and State funds become available. Twenty-eight deficient bridges were identified on roads

evaluated in the CTP and are illustrated in Figure 5. Refer to Appendix G for more detailed information.



Legend

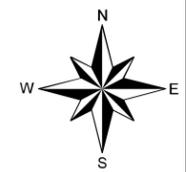
2010 Volumes
2010 Capacity

- Near Capacity
- Over Capacity
- Network Roads
- Other Roads

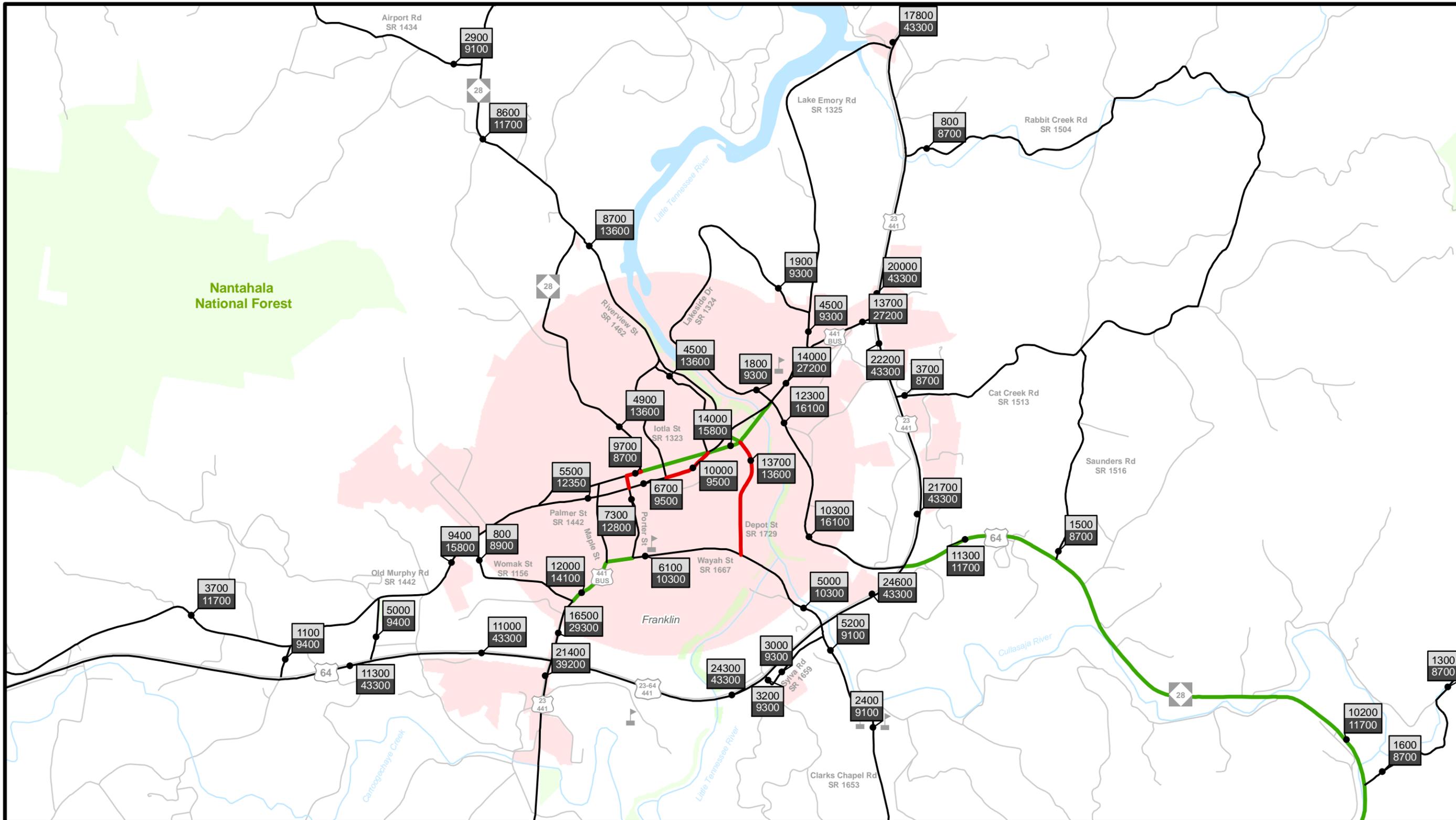
- Schools
- Railroads
- Rivers and Streams
- County Boundary
- Municipal Boundary
- Conservation Land

Figure 2
Sheet 1 of 2

Base map date: November 30, 2009



**2010
Volumes and Capacity
Deficiencies
Macon County
Comprehensive
Transportation Plan**



Legend

- 2010 Volumes
- 2010 Capacity
- Near Capacity
- Over Capacity
- Network Roads
- Other Roads

- Schools
- Railroads
- Rivers and Streams
- County Boundary
- Municipal Boundary
- Conservation Land

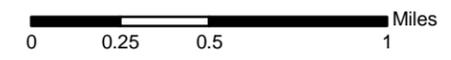
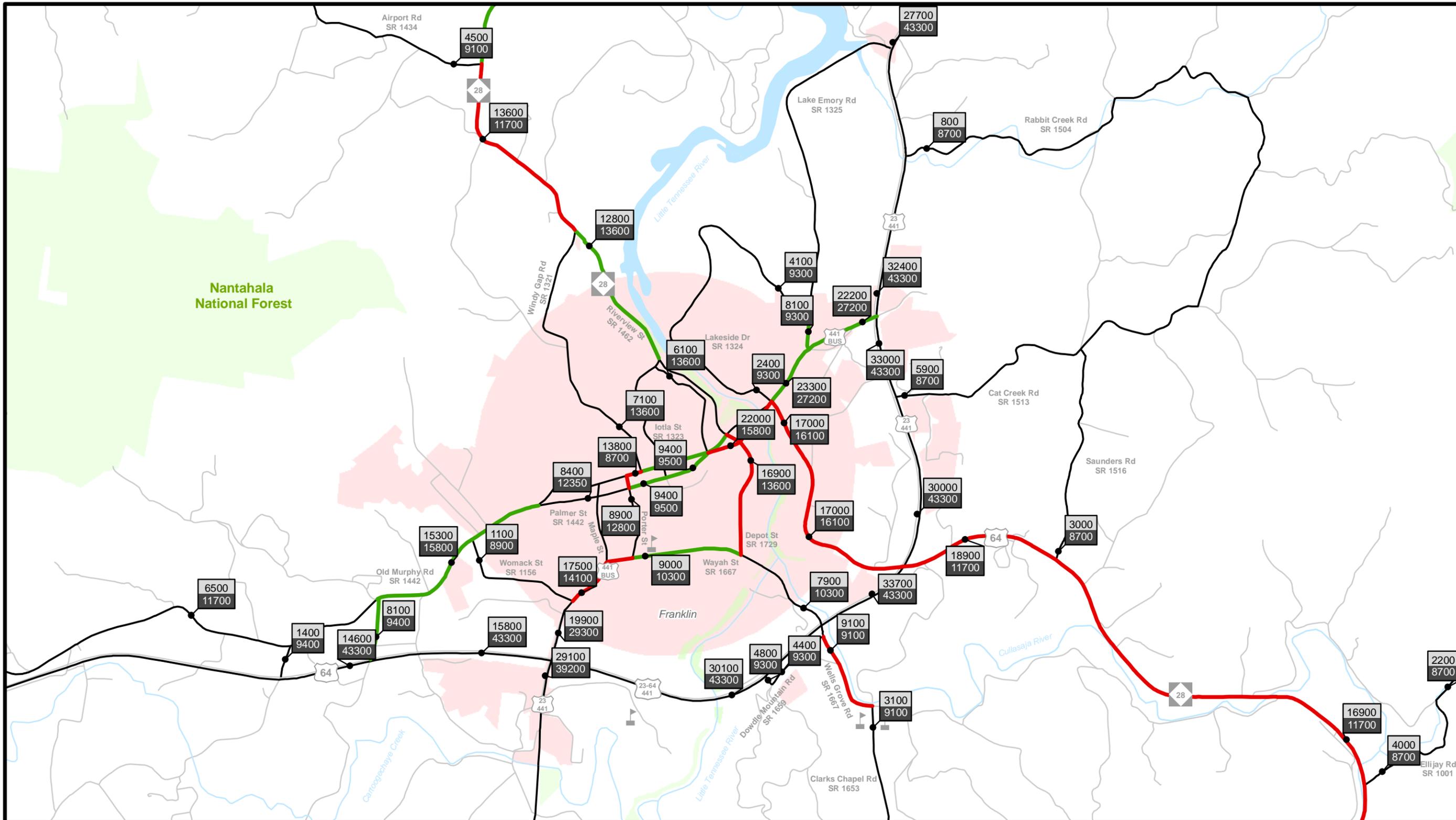


Figure 2
Sheet 2 of 2

Base map date: November 30, 2009

**2010
Volumes and Capacity
Deficiencies
Inset B
Macon County
Comprehensive
Transportation Plan**



Legend

2035 Volumes
2010 Capacity

- Near Capacity
- Over Capacity
- Network Roads
- Other Roads

- Schools
- Railroads
- Rivers and Streams
- County Boundary
- Municipal Boundary
- Conservation Land

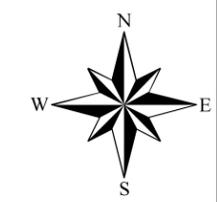
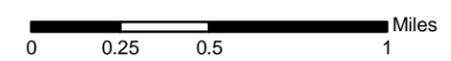
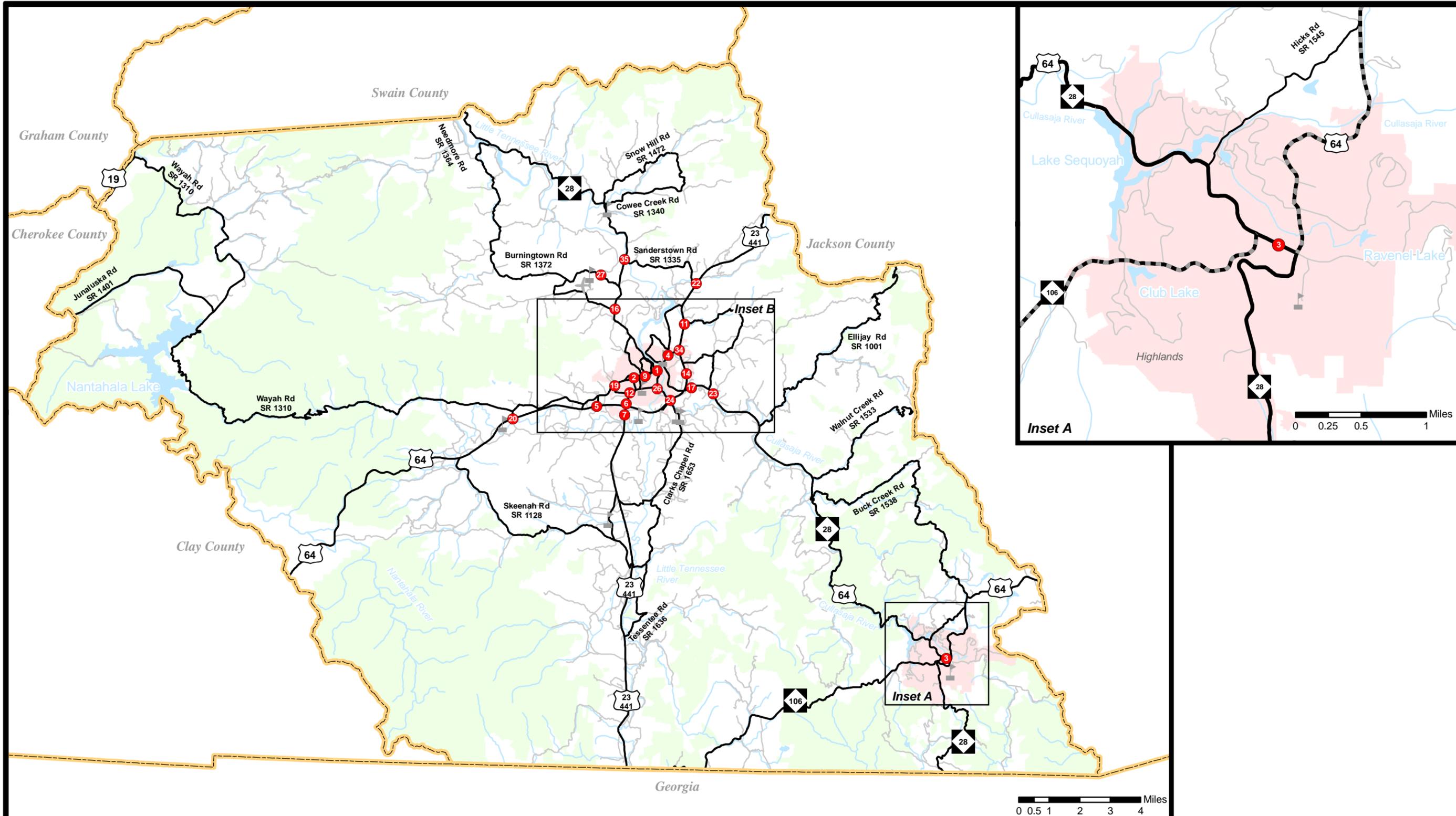


Figure 3
Sheet 2 of 2

Base map date: November 30, 2009

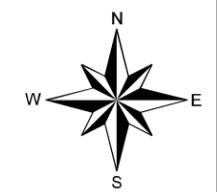
**2035
Volumes and Capacity
Deficiencies
Inset B
Macon County
Comprehensive
Transportation Plan**



Legend

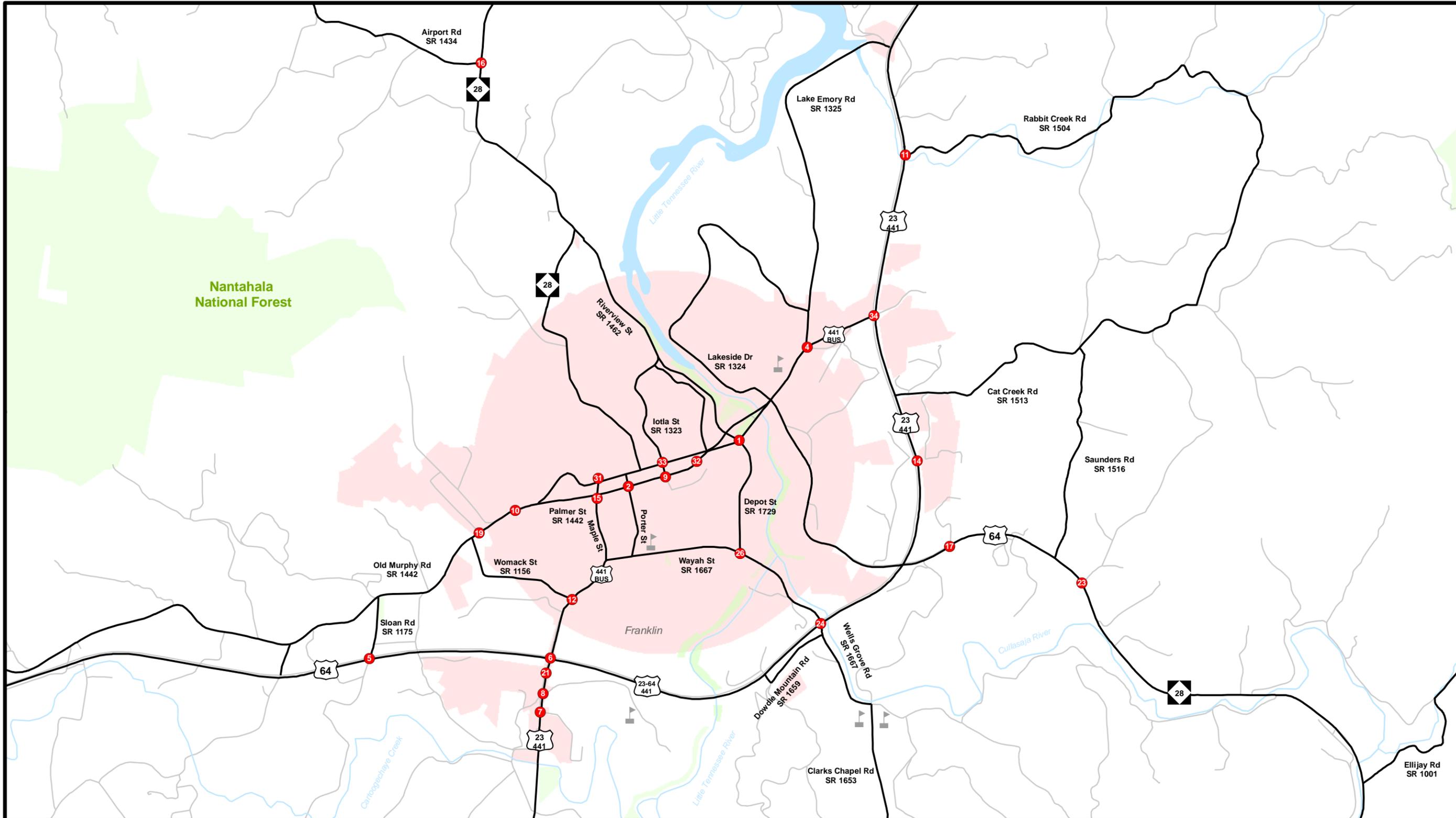
- Crash Locations (# Map Index)
- Network Roads
- Other Roads
- Railroads
- Rivers and Streams
- Schools
- County Boundary
- Municipal Boundary
- Conservation Land

Figure 4
 Sheet 1 of 2
 Base map date: November 30, 2009
 Refer to Appendix F for more details



Crash Locations
 (January 1, 2007 to December 31, 2009)

**Macon County
 Comprehensive
 Transportation Plan**



Legend

- Crash Locations (# Map Index)
- Network Roads
- Other Roads
- Railroads
- Rivers and Streams
- Schools
- County Boundary
- Municipal Boundary
- Conservation Land

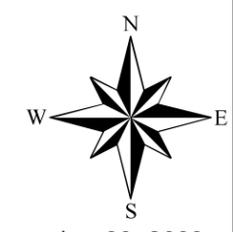
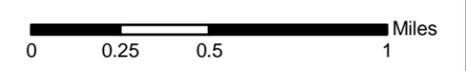
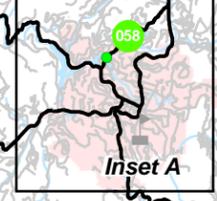
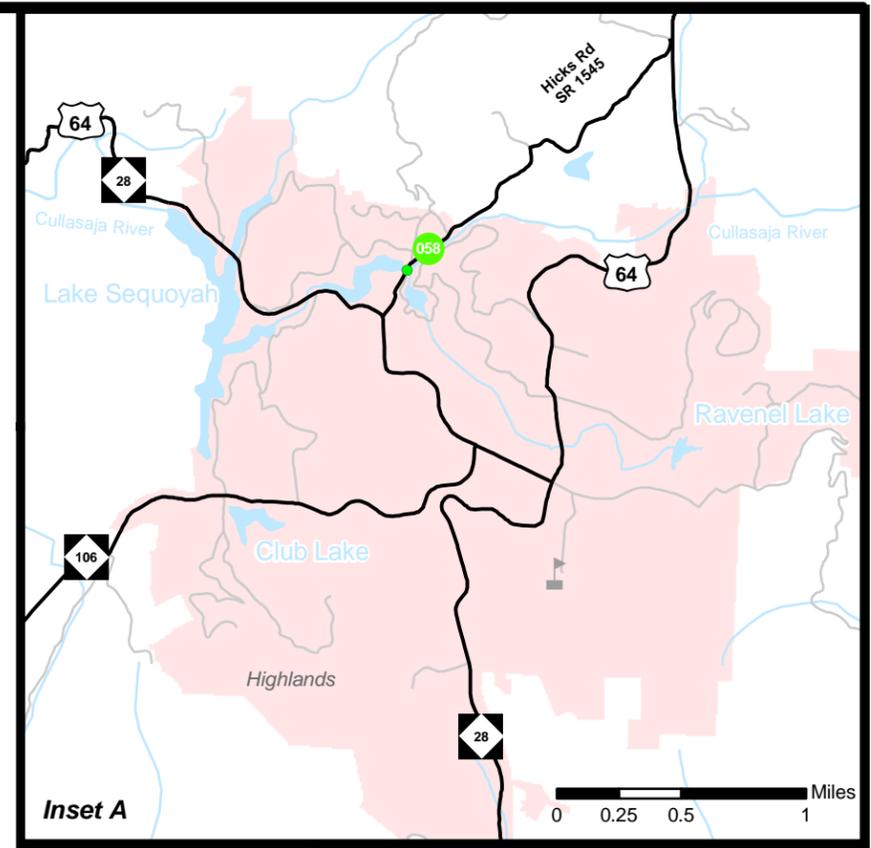
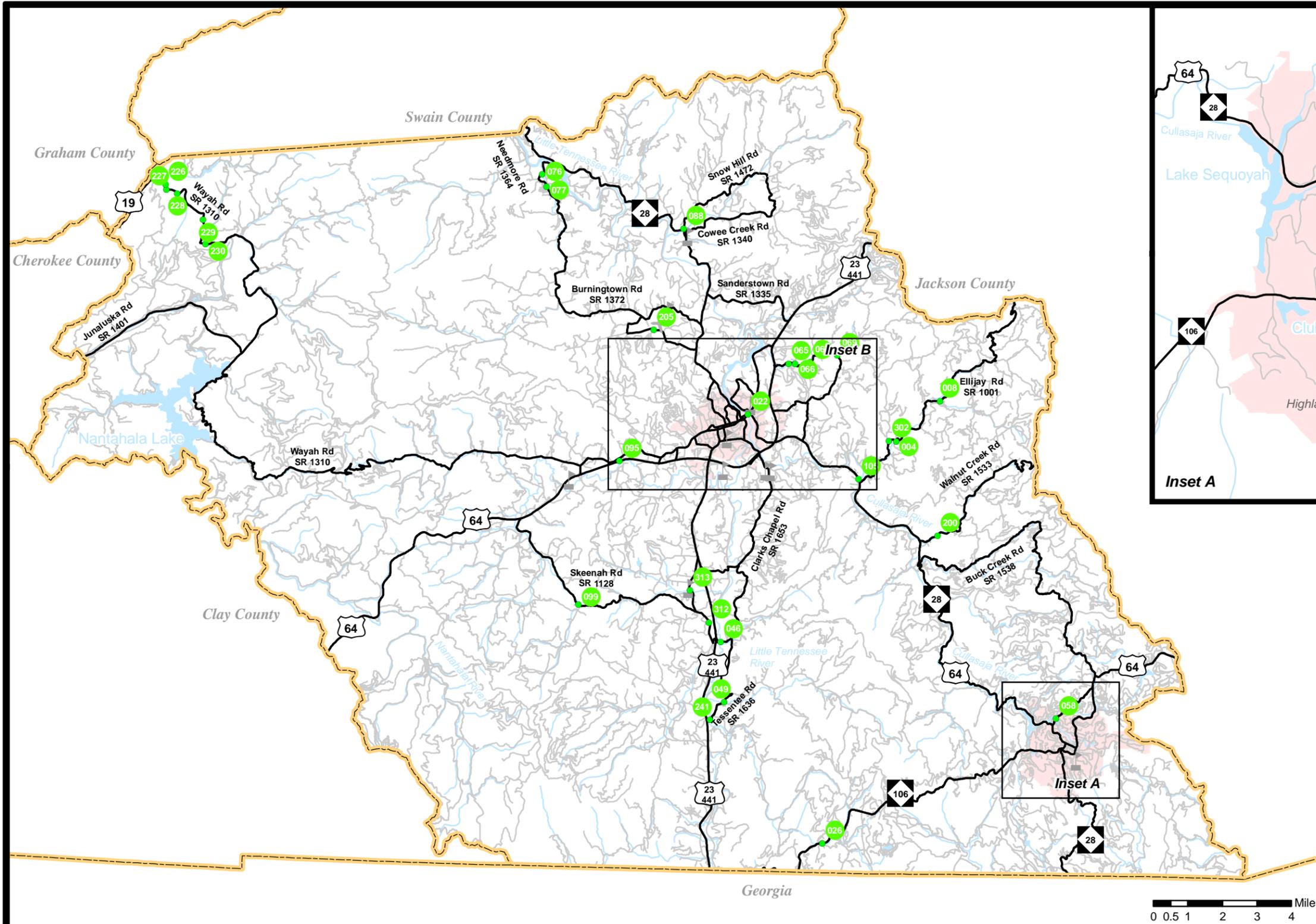


Figure 4
 Sheet 2 of 2
 Base map date: November 30, 2009
 Refer to Appendix F for more details

**Crash Locations
 Inset B**
 (January 1, 2007 to December 31, 2009)

**Macon County
 Comprehensive
 Transportation Plan**



Legend

- Deficient Bridge (# Map Index)
- Network Roads
- Other Roads
- Railroads
- Rivers and Streams
- Schools
- County Boundary
- Municipal Boundary
- Conservation Land

Figure 5
Sheet 1 of 2

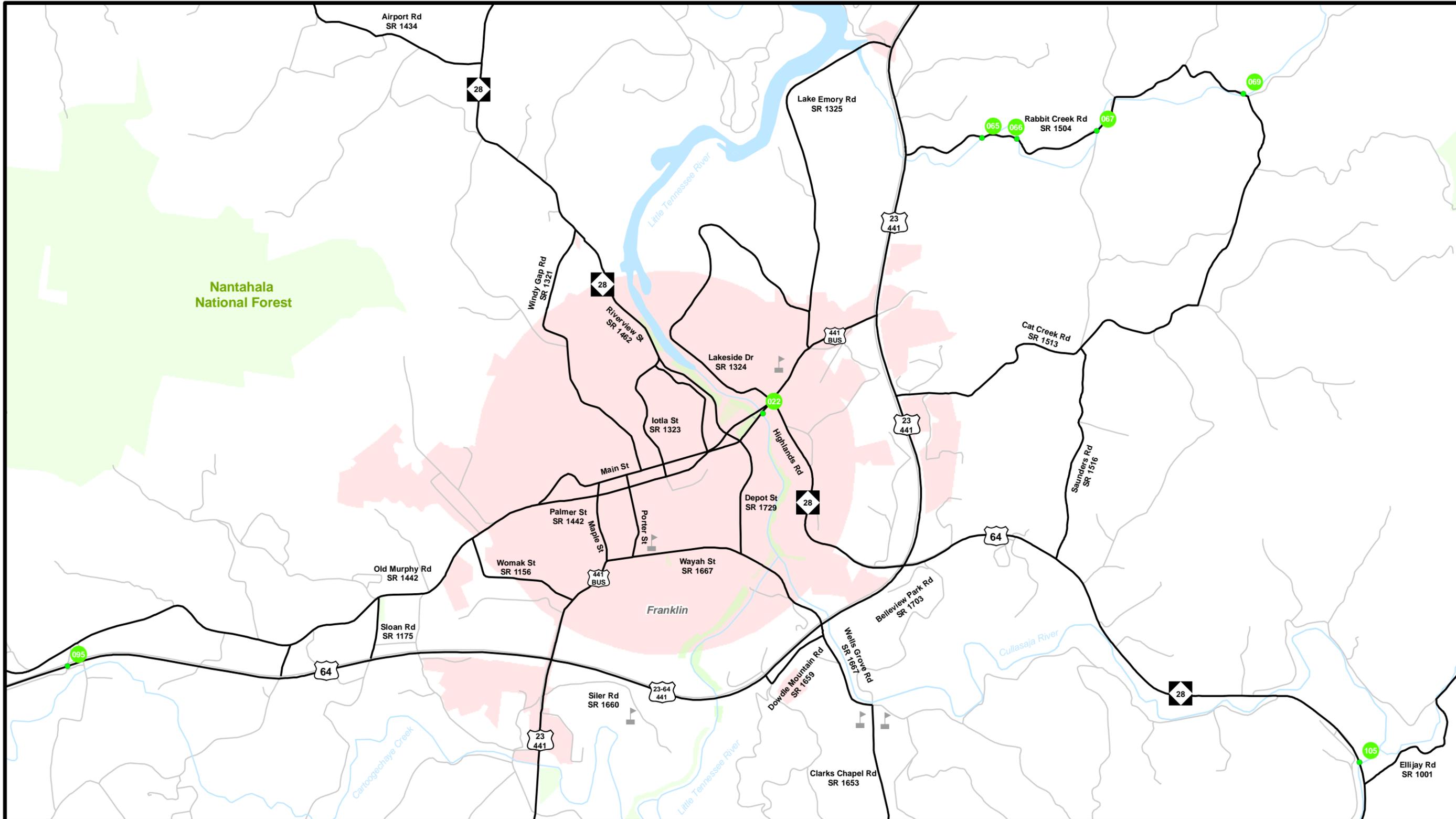
Refer to Table 5 in
Appendix G for more details

Base map date: November 30, 2009



Deficient Bridges

**Macon County
Comprehensive
Transportation Plan**



Legend

- Deficient Bridge (# Map Index)
- Network Roads
- Other Roads
- Railroads
- Rivers and Streams
- Schools
- County Boundary
- Municipal Boundary
- Conservation Land

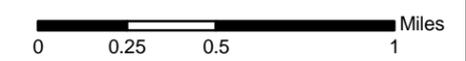


Figure 5
Sheet 2 of 2

Refer to Table 5 in
Appendix G for more details

Base map date: November 30, 2009



**Deficient Bridges
Inset B**

**Macon County
Comprehensive
Transportation Plan**

Public Transportation and Rail

Public transportation and rail are vital modes of transportation that give alternative options for transporting people and goods from one place to another.

Public Transportation

North Carolina's public transportation systems serve more than 50 million passengers each year. Five categories define North Carolina's public transportation system: community, regional community, urban, regional urban and intercity.

- Community Transportation - Local transportation efforts formerly centered on assisting clients of human service agencies. Today, the vast majority of rural systems serve the general public as well as those clients.
- Regional Community Transportation - Regional community transportation systems are composed of two or more contiguous counties providing coordinated / consolidated service. Although such systems are not new, the NCDOT Board of Transportation is encouraging single-county systems to consider mergers to form more regional systems.
- Urban Transportation – There are currently nineteen urban transit systems operating in North Carolina, from locations such as Asheville and Hendersonville in the west to Jacksonville and Wilmington in the east. In addition, small urban systems are at work in three areas of the state. Consolidated urban-community transportation exists in five areas of the state. In those systems, one transportation system provides both urban and rural transportation within the county.
- Regional Urban Transportation - Regional urban transit systems currently operate in three areas of the state. These systems connect multiple municipalities and counties.
- Intercity Transportation - Intercity bus service is one of a few remaining examples of privately owned and operated public transportation in North Carolina. Intercity buses serve many cities and towns throughout the state and provide connections to locations in neighboring states and throughout the United States and Canada. Greyhound/Carolina Trailways operates in North Carolina. However, community, urban and regional transportation systems are providing increasing intercity service in North Carolina.

An inventory of existing and planned fixed public transportation routes for the planning area is presented on Sheet 3 of Figure 1. Macon County Transit currently operates fixed and subscription bus routes in the county and provides out of county services as well. There are two recently completed park-and-ride lots at the intersections of US 64 - Sloan Road (SR 1175) and US 23-441 - Sanderstown Road (SR 1335). All recommendations for public transportation were coordinated with the local governments and the Public Transportation Division of NCDOT. Refer to Appendix A for contact information.

Rail

Today North Carolina has 3,684 miles of railroad tracks throughout the state. There are two types of trains that operate in the state, passenger trains and freight trains.

The North Carolina Department of Transportation sponsors two passenger trains, the Carolinian and Piedmont. The Carolinian runs between Charlotte and New York City, while the Piedmont train carries passengers from Raleigh to Charlotte and back everyday. Combined, the Carolinian and Piedmont carry more than 200,000 passengers each year.

There are two major freight railroad companies that operate in North Carolina, CSX Transportation and Norfolk Southern Corporation. Also, there are more than 20 smaller freight railroads, known as shortlines.

According to the Rail Division of NCDOT there are no active or planned rail lines in Macon County. Refer to Appendix A for contact information.

Bicycles & Pedestrians

Bicyclists and pedestrians are a growing part of the transportation equation in North Carolina. Many communities are working to improve mobility for both cyclists and pedestrians.

NCDOT's Bicycle Policy, updated in 1991, clarifies responsibilities regarding the provision of bicycle facilities upon and along the 77,000-mile state-maintained highway system. The policy details guidelines for planning, design, construction, maintenance, and operations pertaining to bicycle facilities and accommodations. All bicycle improvements undertaken by the NCDOT are based upon this policy.

The 2000 NCDOT Pedestrian Policy Guidelines specifies that NCDOT will participate with localities in the construction of sidewalks as incidental features of highway improvement projects. At the request of a locality, state funds for a sidewalk are made available if matched by the requesting locality, using a sliding scale based on population.

NCDOT's administrative guidelines, adopted in 1994, ensure that greenways and greenway crossings are considered during the highway planning process. This policy was incorporated so that critical corridors which have been adopted by localities for future greenways will not be severed by highway construction.

Inventories of existing and planned bicycle and pedestrian facilities for the planning area are presented on Sheets 4 and 5 of Figure 1. The 2008 Franklin Main Street Program, the 2008 Town of Highlands Master Sidewalk Plan, and the 2009 Downtown Highlands Parking and Circulation Study were utilized in the development of these elements of the CTP. Macon County is home to a section of the Mountains to Sea statewide bicycle route. NCDOT's Bicycle and Pedestrian Division has also designated eight additional

routes for circulation within Macon County. All recommendations for bicycle and pedestrian facilities were coordinated with the local governments and the NCDOT Division of Bicycle and Pedestrian Transportation. Refer to Appendix A for contact information.

Land Use

G.S. §136-66.2 requires that local areas have a current (less than five years old) land development plan prior to adoption of the CTP. For this CTP, the 2011 Macon County Comprehensive Plan was used to meet this requirement; however, it does not include any land use maps.

Land use refers to the physical patterns of activities and functions within an area. Traffic demand in a given area is, in part, attributed to adjacent land use. For example, a large shopping center typically generates higher traffic volumes than a residential area. The spatial distribution of different types of land uses is a predominant determinant of when, where, and to what extent traffic congestion occurs. The travel demand between different land uses and the resulting impact on traffic conditions varies depending on the size, type, intensity, and spatial separation of development. Additionally, traffic volumes have different peaks based on the time of day and the day of the week. For transportation planning purposes, land use is divided into the following categories:

- **Residential**: Land devoted to the housing of people, with the exception of hotels and motels which are considered commercial.
- **Commercial**: Land devoted to retail trade including consumer and business services and their offices; this may be further stratified into retail and special retail classifications. Special retail would include high-traffic establishments, such as fast food restaurants and service stations; all other commercial establishments would be considered retail.
- **Industrial**: Land devoted to the manufacturing, storage, warehousing, and transportation of products.
- **Public**: Land devoted to social, religious, educational, cultural, and political activities; this would include the office and service employment establishments.
- **Agricultural**: Land devoted to the use of buildings or structures for the raising of non-domestic animals and/or growing of plants for food and other production.
- **Mixed Use**: Land devoted to a combination of any of the categories above.

Anticipated future land development is, in general, a logical extension of the present spatial land use distribution. Locations and types of expected growth within the planning area help to determine the location and type of proposed transportation improvements. The majority of growth in Macon County is expected to occur in the vicinity of Franklin and along the US 441 corridor.

Consideration of Natural and Human Environment

In recent years, the environmental considerations have come to the forefront of the transportation planning process. Section 102 of the National Environmental Policy Act (NEPA) requires consideration of impacts on wetlands, wildlife, water quality, historic properties, and public lands. While a full NEPA evaluation was not conducted as part of the CTP, potential impacts to these resources were identified as a part of the project recommendations in Chapter 1 of this report. Prior to implementing transportation recommendations of the CTP, a more detailed environmental study would need to be completed in cooperation with the appropriate environmental resource agencies.

A full listing of environmental features that are typically examined as a part of a CTP study is shown in the following tables utilizing the best available data. Environmental features occurring within Macon County are shown in Figure 6 and are highlighted in Tables 1 and 2.

Table 1 – Environmental Features

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Airport Boundaries • Anadromous Fish Spawning Areas • Beach Access Sites • Bike Routes (NCDOT) • Coastal Marinas • Colleges and Universities • Conservation Tax Credit Properties • Emergency Operation Centers • Federal Land Ownership • Fisheries Nursery Areas • Geology (including Dikes and Faults) • Hazardous Substance Disposal Sites • Hazardous Waste Facilities • High Quality Water and Outstanding Resource Water Management Zones • Hospital Locations • Hydrography (1:24,000 scale) • Land Trust Priority Areas • National Heritage Element Occurrences • National Wetlands Inventory | <ul style="list-style-type: none"> • North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS) • Paddle Trails – Coastal Plain • Railroads (1:24,000 scale) • Recreation Projects – Land and Water Conservation Fund • Sanitary Sewer Systems – Discharges, Land Application Areas, Pipes, Pumps and Treatment Plants • Schools – Public and Non-Public • Shellfish Strata • Significant Natural Heritage Areas • State Parks • Submersed Rooted Vasculars • Target Local Watersheds - EEP • Trout Streams (DWQ) • Trout Waters (WRC) • Water Distribution Systems – Pipes, Pumps, Tanks, Treatment Plants, and Wells • Water Supply Watersheds • Wild and Scenic Rivers |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Additionally, the following environmental features were considered but are not mapped due to restrictions associated with the sensitivity of the data.

Table 2 – Restricted Environmental Features

- **Archaeological Sites**
- **Historic National Register Districts**
- **Historic National Register Structures**
- **Macrosite Boundaries**
- **Managed Areas**
- **Megasite Boundaries**

Public Involvement

Public involvement is a key element in the transportation planning process. Adequate documentation of this process is essential for a seamless transfer of information from systems planning to project planning and design.

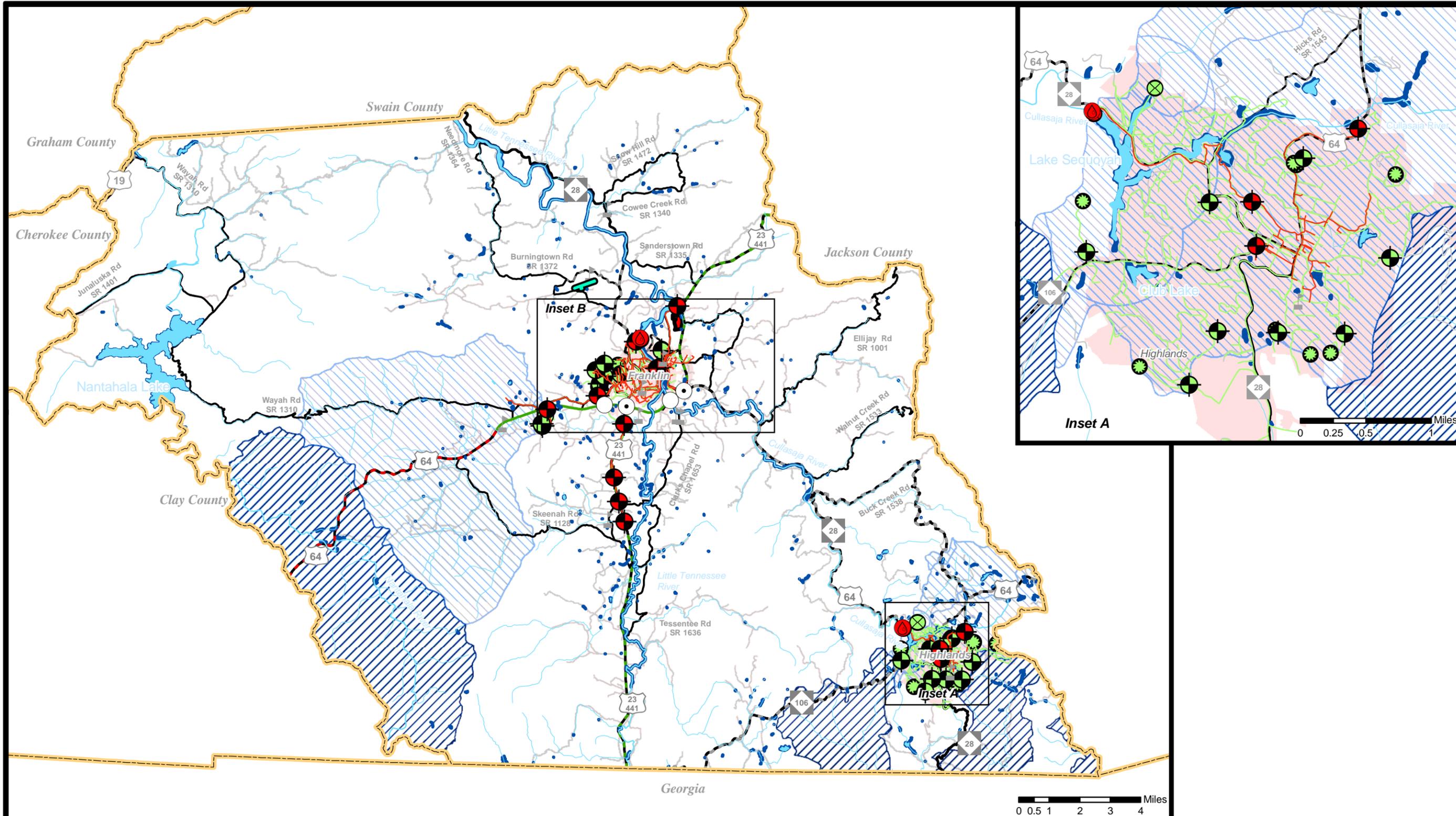
A meeting was held with the Macon County Board of Commissioners in June 2009 to formally initiate the study, provide an overview of the transportation planning process, and to gather input on area transportation needs.

Throughout the course of the study, the Transportation Planning Branch cooperatively worked with the Macon County CTP Coordinating Committee, which included representatives from each municipality, county staff, the transit agency, the RPO, and others, to provide information on current local plans, to develop transportation vision and goals, to discuss population and employment projections, and to develop proposed CTP recommendations. Refer to Appendix H for detailed information on the vision statement, the goals and objectives survey, and a listing of committee members.

The public involvement process included holding two public drop-in sessions in Macon County to present the proposed CTP to the public and solicit comments. The meetings were held on August 26, 2010 and March 24, 2011 at Franklin City Hall. Each session was publicized in the local newspaper and was held from 4pm to 7pm. Thirty-four comments were submitted during the session held on March 24, 2011 or during the thirty day public comment period after the session.

The plan was presented to Macon County on July 12, 2011, to Franklin on August 1, 2011, and to Highlands on August 2, 2011. The purpose of these meetings was to discuss the plan recommendations and to solicit further input from the public. The plan was then adopted by Franklin and Highlands on September 6, 2011. A public hearing was held on September 13, 2011 during the Macon County Commissioners meeting. The purpose of the meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during the meeting.

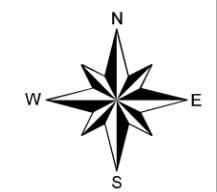
The Southwestern RPO endorsed the CTP on September 26, 2011. The North Carolina Board of Transportation voted to mutually adopt the Macon County CTP on November 3, 2011.



Legend

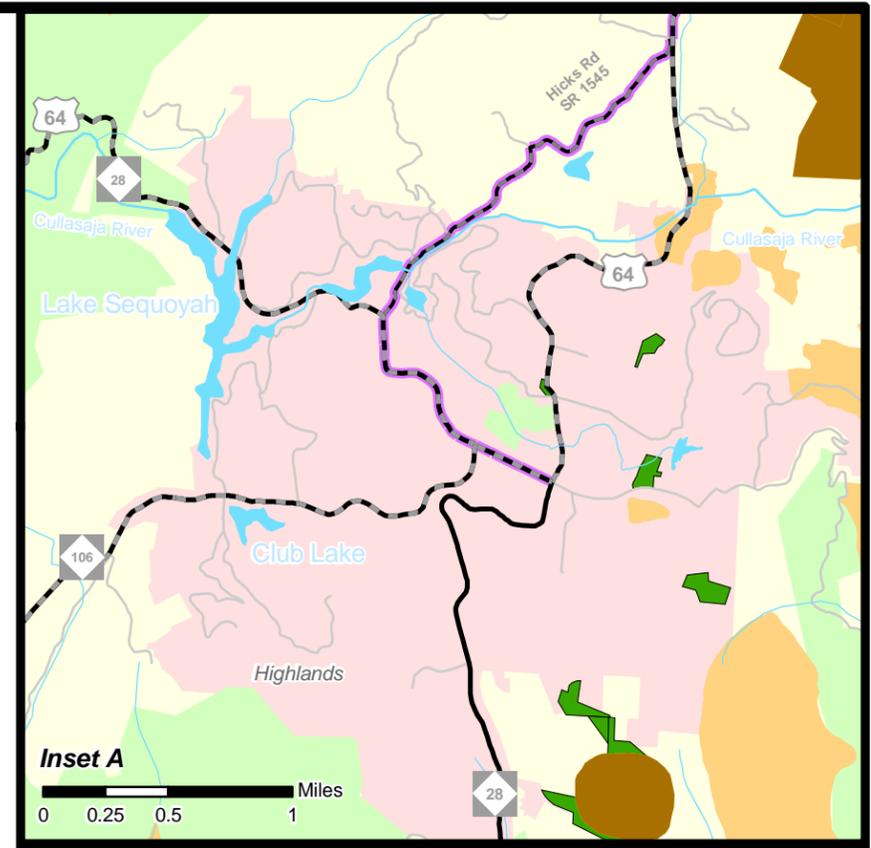
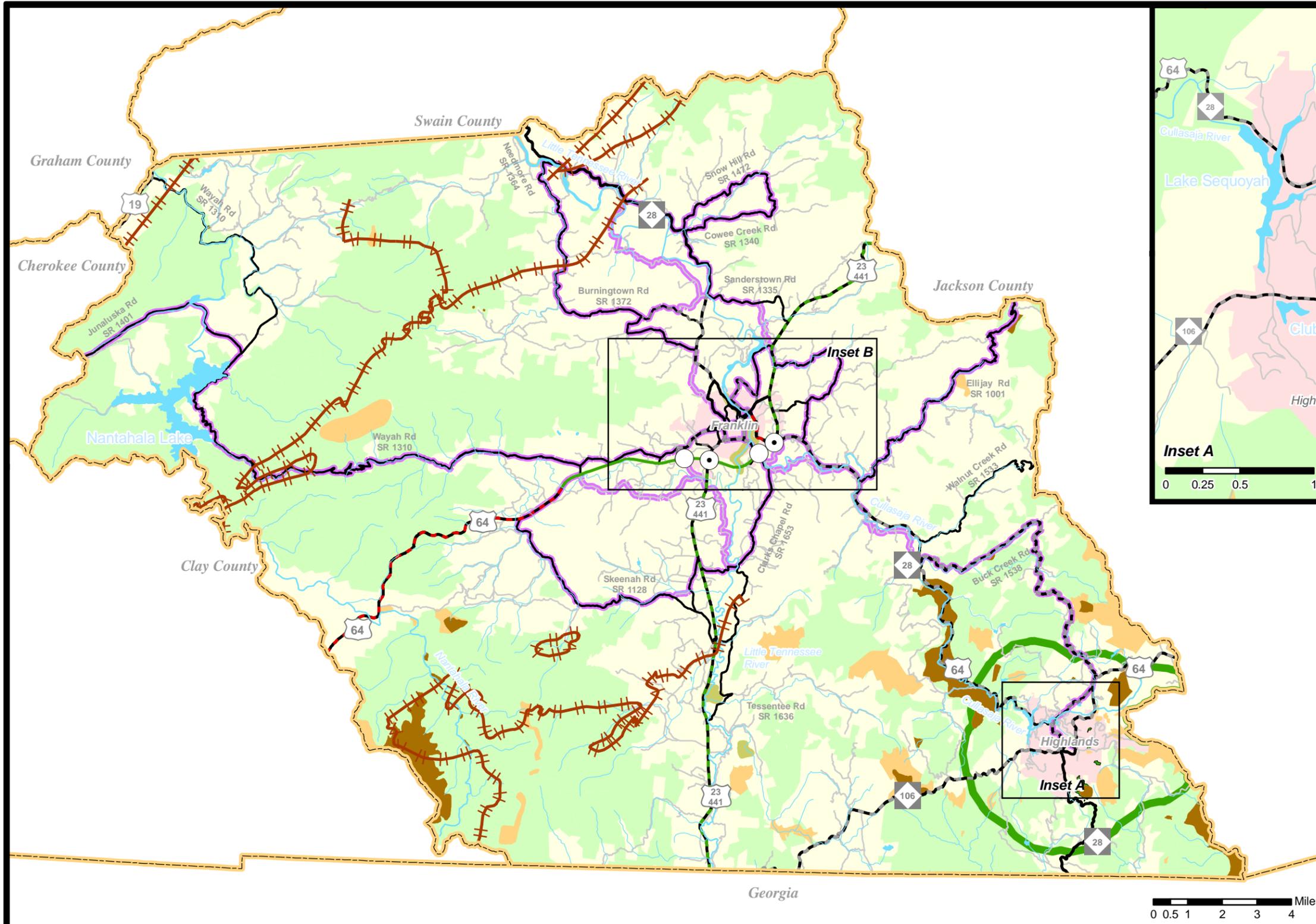
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|------------------|----------------------------------|---------------------------------------|----------------------------|
| County Line | Sewer Systems - Discharges | Water Distribution - Tanks | Rivers and Streams |
| Schools | Sewer Systems - Pumps | Water Distribution - Pumps | Lakes |
| Airport Runways | Sewer Systems - Treatment Plants | Water Distribution - Treatment Plants | Wetlands |
| Roads | Sewer Systems - Pipes | Water Distribution - Pipes | Water Supply Watershed |
| Municipal Limits | Hazard Substance Disposal Sites | | Outstanding Resource Water |

Figure 6
 Sheet 1 of 4
 Base map date: November 30, 2009



Environmental Features

**Macon County
 Comprehensive
 Transportation Plan**



Legend

- County Boundaries
- Municipal Limits
- State Bike Routes
- Roads
- Rivers and Streams
- Lakes
- Fault Lines
- Dedicated and Registered Areas
- Natural Heritage Areas
- Natural Heritage Element Occurrences
- Lands Managed For Conservation
- Land Trust Conservation Properties
- Conservation Tax Credit Properties
- Land Trust Priority Areas

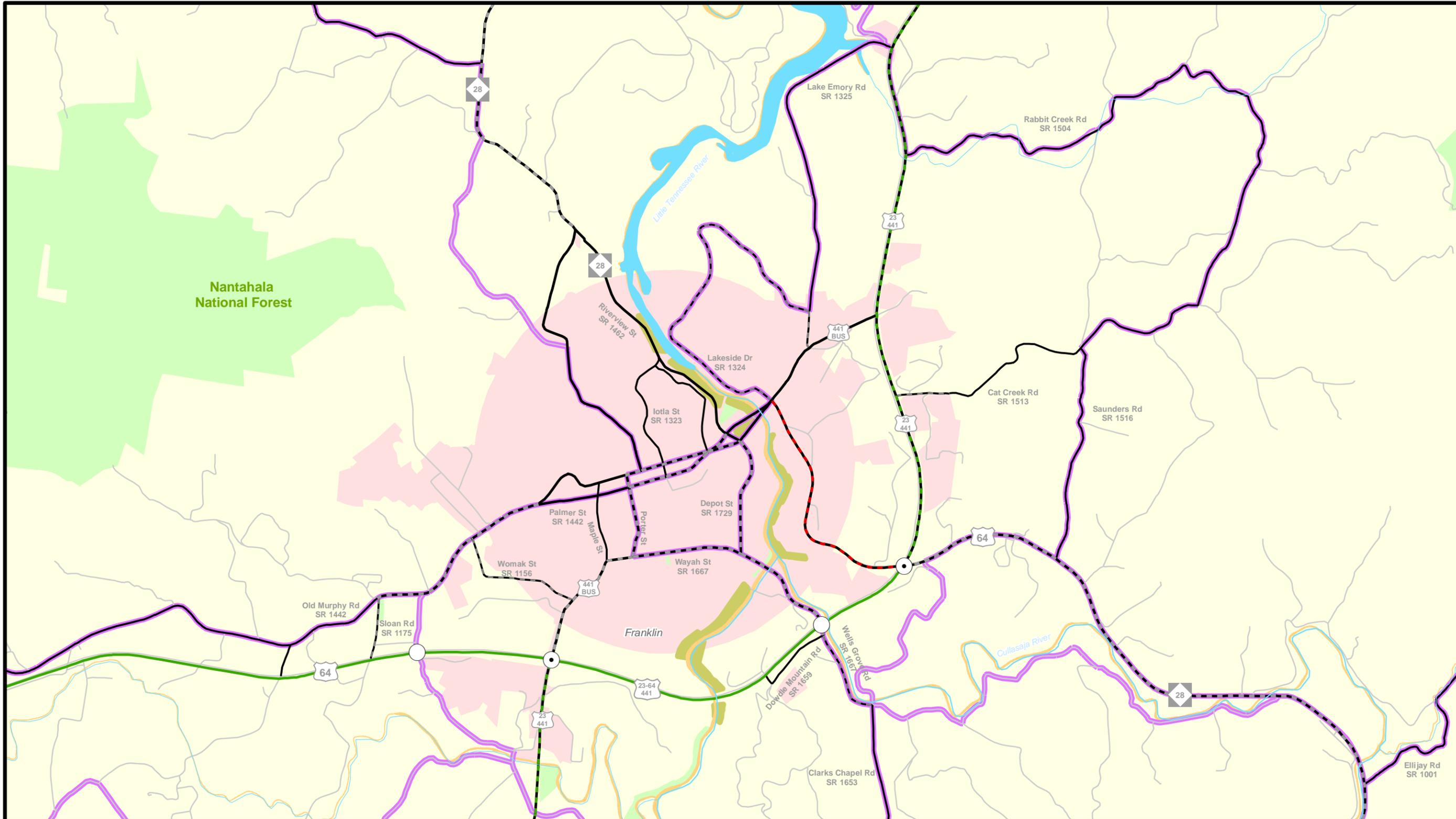
Figure 6
Sheet 3 of 4
Base map date: November 30, 2009



Environmental Features

Macon County

**Comprehensive
Transportation Plan**



Legend

- | | | | |
|-------------------|--------------------|--------------------------------------|------------------------------------|
| County Boundaries | Rivers and Streams | Dedicated and Registered Areas | Lands Managed For Conservation |
| Municipal Limits | Lakes | Natural Heritage Areas | Land Trust Conservation Properties |
| State Bike Routes | Fault Lines | Natural Heritage Element Occurrences | Conservation Tax Credit Properties |
| Roads | | Land Trust Priority Areas | |

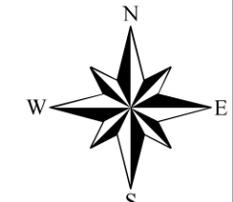
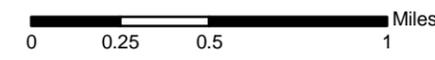


Figure 6
 Sheet 4 of 4
 Base map date: November 30, 2009

**Environmental Features
 Inset B**

**Macon County
 Comprehensive
 Transportation Plan**

II. Recommendations

This report documents the development of the 2011 Macon County CTP as shown in Figure 1. This chapter presents recommendations for each mode of transportation in the county.

Unaddressed Deficiencies

The following deficiencies were identified during the development of the CTP, but they remain unaddressed. The capacity deficiency along NC 28, from Harrison Avenue, west along Main Street, and south along Porter Street to Palmer Street (SR 1442), was left unaddressed due to the recent relocation of NC 28 from Harrison Avenue to Riverview Street (SR 1462) and the new Depot Street Extension (SR 1729). Traffic patterns in the area are changing and may address the deficiency. Therefore this facility will be reanalyzed during the next CTP update.

The capacity deficiency along US 441 BUS from Lakeside Drive (SR 1324) to Riverview Street (SR 1462) / Depot Street (SR 1729) was deferred to the next CTP update. This facility is expected to be 7% over capacity in 2035 and is one of the limited crossings over the Little Tennessee River in the area. There are several other projects in the CTP that would positively impact congestion along this route. Two projects provide for additional crossings of the river, one to the north and one to the south. These projects originated in the 2008 Franklin Main Street Program to improve connectivity and mobility around town. See MACO0026-H and MACO0028-H for more information. The other project expected to have impacts to US 441 BUS is TIP Project B-5125. The replacement of the eastbound bridge on US 441 BUS also includes a relocation of the sidewalk to eliminate two road crossings for the Franklin Greenway. Improved pedestrian and bicyclist movement across the river may also provide relief to the forecasted traffic volumes. See MACO0001-M for more information.

US 64 from NC 106 to NC 28 in downtown Highlands is currently over capacity. Because of physical constraints, no method of improvement was found to be acceptable to Highlands at this time. Central business district storefront development prevents any additions to the current pavement width. While the existing pavement width would be sufficient to provide four travel lanes, Highlands prefers to keep the existing arrangement of two 9-foot travel lanes and roadside parking.

Implementation

The CTP is based on the projected growth for the planning area. It is possible that actual growth patterns will differ from those logically anticipated. As a result, it may be necessary to accelerate or delay the implementation of some recommendations found within this plan. Some portions of the plan may require revisions in order to

accommodate unexpected changes in development. Therefore, any changes made to one element of the CTP should be consistent with the other elements.

Initiative for implementing the CTP rests predominately with the policy boards and citizens of the county and its municipalities. As transportation needs throughout the state exceed available funding, it is imperative that the local planning area aggressively pursue funding for priority projects. Projects should be prioritized locally and submitted to the Southwestern RPO for regional prioritization and submittal to NCDOT. Refer to Appendix A for contact information on funding. Local governments may use the CTP to guide development and protect corridors for the recommended projects. It is critical that NCDOT and local government coordinate on relevant land development reviews and all transportation projects to ensure proper implementation of the CTP. Local governments and the North Carolina Department of Transportation share the responsibility for access management and the planning, design and construction of the recommended projects.

Prior to implementing projects from the CTP, additional analysis will be necessary to meet the National Environmental Policy Act¹ (NEPA) or the North Carolina State Environmental Policy Act² (SEPA). This CTP may be used to provide information in the NEPA/SEPA process.

Problem Statements

The following pages contain problem statements for each recommendation, organized by CTP modal element.

¹ For more information on NEPA, visit: <http://ceq.hss.doe.gov/>

² For more information on SEPA, visit: <http://www.doa.nc.gov/clearing/faq.aspx>

HIGHWAY

**US 23-441 (Georgia Road)
Proposed Improvements from US 64 to Prentiss
Bridge Road (SR 1649)**

ID No. MACO0001-H

Last updated: 7/27/2011

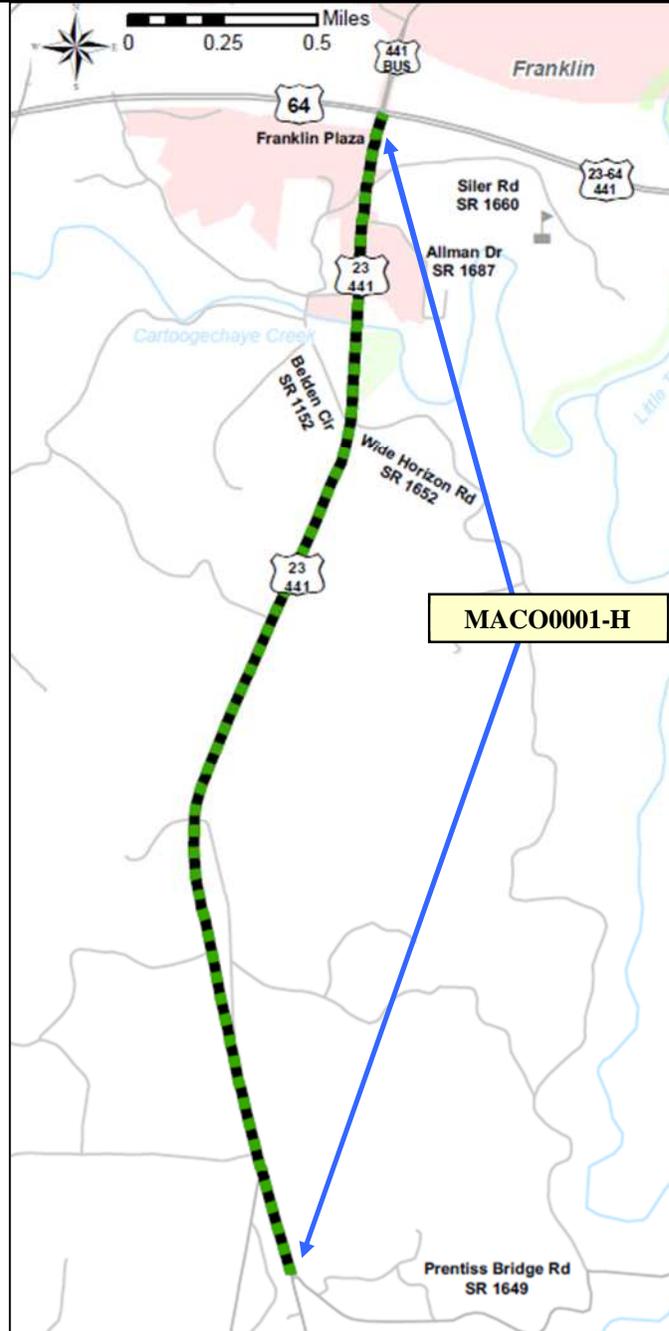
Identified Problem

Existing US 23-441 is not operating at acceptable mobility and access levels. The purpose of this project is to obtain a Level of Service (LOS) D on the facility. The secondary goal is to improve safety.

Justification of Need

US 23-441 is currently a five-lane facility with 12-foot lanes. While congestion is not yet an issue, mobility is compromised by the numerous driveway cuts, unsignalized left turns and density of traffic signals. Additionally four high crash intersections were identified along this facility between US 64 and Wide Horizon Road (SR 1652).

- Allman Drive (SR 1687) is unsignalized and experienced 11 crashes with a severity index of 4.36.
- Siler Road (SR 1660) is a signalized intersection and experienced 11 crashes with a severity index of 3.02. It was also identified specifically in the G&O Survey.
- The Lowes Hardware driveway (Franklin Plaza) is signalized, and only experienced 6 crashes, but had a severity index of 5.93.
- The intersection of Franklin Plaza, US 23-441, and the ramps to and from US 64 eastbound is signalized and had 11 crashes, a fatality, and a severity index of 11.93.



A look at this stretch of US 23-441 as a whole reveals 73 crashes took place from January 1, 2007 to December 31, 2009. The majority of these were “Rear End” or “Left Turn” accident types. Refer to Appendix F for a detailed crash analysis.

Community Vision and Problem History

Part of the Vision Statement developed for the Macon County CTP was to “Ensure Georgia Road [US 23-441] remains attractive for future business growth while maintaining mobility.”

This deficiency was not identified in the 1995 Thoroughfare Plan for Franklin.

CTP Project Proposal

Project Description and Overview

The CTP proposes an interim improvement of this section of road to a boulevard. This would be accomplished by removing the center turn lane and installing a median. Additionally, local support exists for replacing some or all of the signals with a “super-street” design which would meet expressway standards. These improvements can serve as a stepping stone to achieving the Strategic Highway Corridor (SHC) vision for all of US 23-441 to be an expressway. See MACO0009-H for further details. Additionally bicycle and pedestrian improvements are recommended along this facility.

Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, the proposed project is in the vicinity of natural heritage sites. They are: Yellowfin Shiner (*Notropis lutipinnis* – G4Q/S3 Apparently Secure Questionable taxonomy / Vulnerable), one sighting 550 feet from the project; and Olive Darter (*Percina squamata* – G3/S2 Vulnerable/ Imperiled), 900 feet from the project.

The project also crosses the Cartoogechaye Creek, a designated trout stream, and is adjacent to the Macon County Recreation Park.

Relationship to Land Use

The entire project currently has dense commercial development. Major features include restaurants, Lowes Hardware, the UPS Store, the Fun Factory, the Macon County Fair Grounds, the Smokey Mountain Center for the Performing Arts, and via spur roads, a K-Mart, Macon Early College, and the Macon County Library.

Linkages to Other Plans and Proposed Project History

US 23-441 is a principle arterial on the Federal Functional Classification System, and this stretch of US 23-441 is on the statewide tier of the North Carolina Multimodal Investment Network³ (NCMIN). US 23-441 is designated as an expressway in the Strategic Highway Corridor (SHC) Vision Plan adopted by NCDOT. The 1997 Macon County Thoroughfare Plan included an evaluation of US 23-441 but did not recommend any improvements.

³ For more information on NCMIN, visit: <http://www.ncdot.gov/performance/reform/NCMINmaps/>

Multi-modal Considerations

Macon County Transit operates a fixed route bus service along US 23-441. Pedestrian facilities are recommended from US 441 BUS to Belden Circle (SR 1152). From Belden Circle to Wide Horizon Road (SR 1652), new pedestrian facilities are recommended. US 23-441 does not currently accommodate bicycles. State Bicycle Route 32 crosses US 23-441 at Wide Horizon Road. Bicycle accommodations are recommended from Wide Horizon Road to Siler Road to provide access to Macon Early College.

Public/ Stakeholder Involvement

Results from the Goals & Objectives (G&O) survey conducted for this CTP revealed that US 23-441, known as "441 South" and "Georgia Road," was the most identified problem location for the county. Respondents described the problems along US 23-441 using the following terminology: bottle neck, too many red lights, too many access roads, congested, unsafe, too many people trying to turn, too many lanes, it sets people up for accidents, not easy to maneuver, consider a median, middle turn lane is too dangerous, extremely dangerous, terrible, stop and go, crazy, disaster, gridlock, and ingress and egress are tragedies waiting to happen.

US 64 – NC 28

Proposed Improvements from US 23-441 to Buck Creek Road (SR 1538)

ID No. MACO0002-H

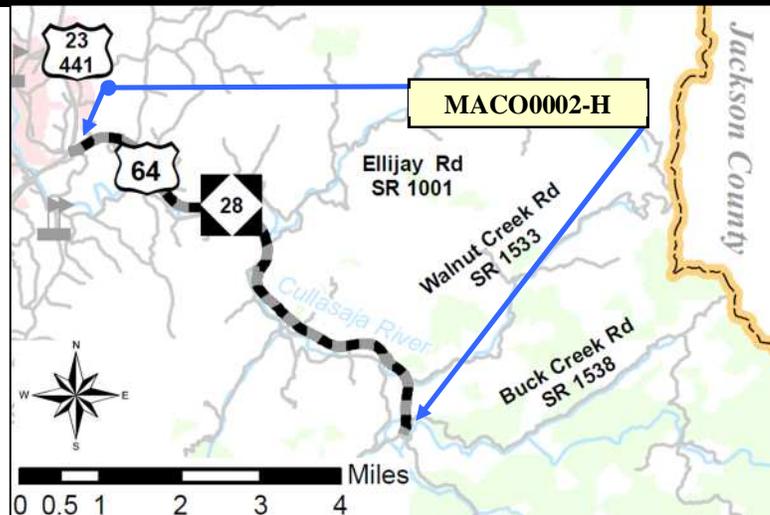
Last updated: 7/27/2011

Identified Problem

Existing US 64 – NC 28 is projected to be over capacity in 2035. The purpose of this project is to accommodate projected traffic volumes in order to maintain a Level of Service (LOS) D on the facility.

Justification of Need

US 64 connects Franklin to Highlands in southeast Macon County. It serves as a through route and provides access to Ellijay Road (SR 1001), Walnut Creek Road (SR 1533), and, until 2010, Cullasaja Elementary School. Average Annual Daily Traffic (AADT) volumes on US 64 in 2010 are approximately 11,000 vehicles per day (vpd) and in 2035 will range from 18,900 vpd near US 23-441 to 9,400 vpd near Buck Creek Road (SR 1538) compared to LOS D capacities of 15,800 vpd and 11,700 vpd respectfully. In the spring of 2010 Cullasaja Elementary School was closed and its classes relocated to other schools. Even with the closing of Cullasaja Elementary School, this facility is projected to be over capacity by 2035.



Community Vision and Problem History

The 1995 Franklin Thoroughfare Plan identified US 64 from US 23 to Bethel Church Road (SR 1517) as over capacity in the design year of 2020, and the 1997 Macon County Thoroughfare Plan identified US 64 from Bethel Church Road (SR 1517) to Ellijay Road (SR 1001) as over capacity in the design year of 2025. At that time, a five-lane alternative was opposed by the County Commissioners who thought a three-lane configuration would be sufficient. An alternative to use a cross section with more than 2 lanes is not deemed acceptable to the community.

CTP Project Proposal

Project Description and Overview

The current roadway has 9 to 12-foot lanes and 1 to 3-foot unpaved shoulders. The CTP proposal would improve the roadway to 12-foot lanes with 4-foot paved shoulders from the US 23-64 bypass of Franklin to Buck Creek Road (SR 1536). Other spot improvements are also recommended by the division. Bicycle accommodations are also recommended as part of this project. This alternative was chosen over a major widening due to local preference. While not fully relieving traffic congestion, it was deemed acceptable to pursue minor upgrades that could serve as a stepping stone to

meeting future needs if future CTP revisions continue to identify US 64 – NC 28 as deficient.

Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, the proposed project is in the vicinity of several natural heritage sites. They are: Wounded Darter (*Etheostoma vulneratum* – G3/S2 Vulnerable/ Imperiled), two sightings 100 and 225 feet from the project; Olive Darter (*Percina squamata* – G3/S2 Vulnerable/ Imperiled), 500 feet from the project; and Little Tennessee River Crayfish (*Cambarus Georgiae* G1/SC - Critically Imperiled/Special Concern), two sightings 50 and 100 feet from the project. The project also runs along side or crosses the Cullasaja River, a designated trout stream, and is adjacent to two US Forest Service parcels.

Additionally, State Bike Routes 2, 33, and 37 traverse this corridor for all or part of its length. Also NCDOT's Structures Management Unit has identified bridge #105 over the Cullasaja River as functionally obsolete.

Relationship to Land Use Plans

Development along US 64 – NC 28 is currently sparse. Commercial development is present alongside the road with residential access primarily provided by cross roads.

Linkages to Other Plans and Proposed Project History

US 64 – NC 28 is a minor arterial on the Federal Functional Classification System, and this stretch of US 64 – NC 28 is on the statewide tier of the North Carolina Multimodal Investment Network (NCMIN). US 64 – NC 28 is designated as a major thoroughfare in the Strategic Highway Corridor (SHC) Vision Plan adopted by NCDOT.

The 1995 Franklin Thoroughfare Plan identified US 64 from US 23 to Bethel Church Road (SR 1517) as over capacity in the design year of 2020 and recommended widening to a five-lane cross section. The 1997 Macon County Thoroughfare Plan recommended widening US 64 from Bethel Church Road to Ellijay Road (SR 1001) to a five-lane cross section. That plan also recommended widening US 64 from Ellijay Road to Jackson County to 24 feet. Projects to add left turn lanes at future developments were recommended in the 1997 plan as a way to “delay the need to widen” US 64 – NC 28.

Multi-modal Considerations

Macon County Transit operates a subscription route that utilizes US 64 – NC 28 from Franklin to the old Cullasaja Elementary School, at the intersection with Ellijay Road (SR 1001), and other nearby destinations. The old school grounds serve as a proposed new location for a park-and-ride lot. Macon County Transit would like to extend service down US 64 – NC 28 to Buck Creek Road and eventually to Highlands. See MACO0001-T for more information on the transit recommendations.

This area is also identified in the Macon County CTP as needing improvements for bicycles. The current shoulder ranges from 2 to 6 feet in width and is unpaved. This section of US 64 – NC 28 is used by a combination of State Bike Routes 2, 33, and 37 for its entire length.

Public/ Stakeholder Involvement

The Goals & Objectives (G&O) survey identified US 64 between Franklin and Highlands repeatedly. Issues included the lack of turn out lanes/bulbs for slow traffic, large volume of trucks, seasonal congestion, narrow winding turns, blind curves, congestion, improper passing, and poor signing. There was also public support for prohibiting trucks from taking the road through Cullasaja Gorge. This recommendation does not include the gorge because improvements were not deemed feasible. See project MACO0005-H, Buck Creek Road (SR 1538) for more details.

US 441 BUS

Proposed improvements from US 23-441 to Porter Street

ID No. MACO0003-H

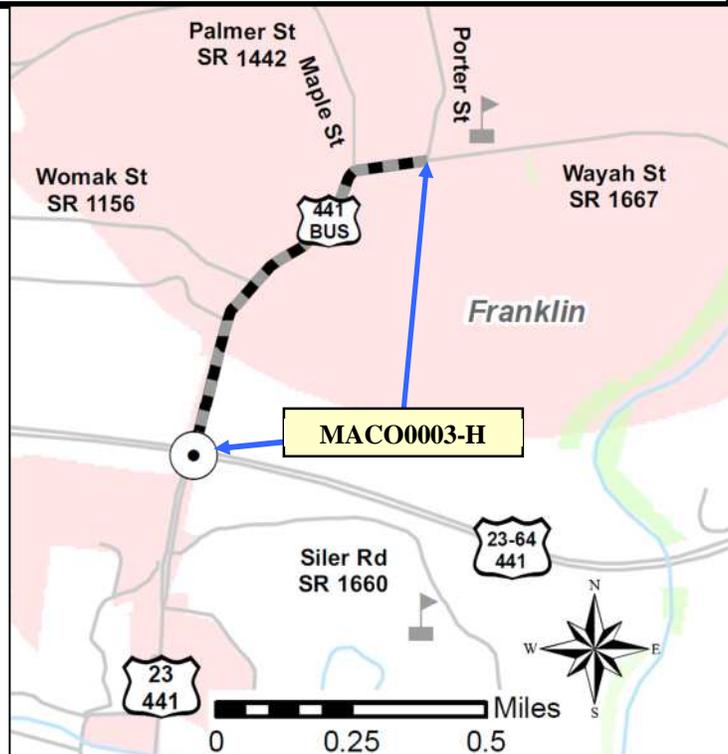
Last updated: 12/1/2010

Identified Problem

Existing US 441 BUS is projected to be over capacity by 2035. The purpose of this project is to accommodate projected traffic volumes in order to maintain a Level of Service (LOS) D on the facility.

Justification of Need

US 441 BUS is a four-lane undivided facility with 12-foot lanes from US 23-441 northward. It quickly narrows to two 11-foot lanes before Womack Street (SR 1156) and continues to Porter Street. The existing four-lane serves current and future traffic volumes, but the two-lane section from west of Womack Street to Porter Street is nearing its LOS D capacity of 14,100 vehicles per day (vpd) with a 2010 AADT of 12,000 and is expected to exceed capacity in 2035 with volumes of 17,500 vpd.



The current traffic flow at two of the intersections along US 441 BUS is primarily local. At the intersection of US 441 BUS and Maple Street, traffic is primarily moving between the southern and eastern legs. Similarly, the intersection of US 441 BUS, Porter Street, and Wayah Street features heavy movement between the western and northern legs. In support of the CTP, the Congestion Management Section of NCDOT conducted an intersection study of these two intersections. That study, SP-2010-43, concluded that both intersections would be operating at LOS F on at least one approach in 2035 without improvements. For further information about Levels of Service (LOS) see Appendix E.

Community Vision and Problem History

This roadway is an important access route into Franklin and is designated as a "Potential Gateway" in the 2008 Franklin Main Street Program. Improvements for this stretch of US 441 BUS were identified in the 1995 Franklin Thoroughfare Plan due to capacity issues. The CTP Coordinating Committee's opinion was that widening would be costly in terms of the impacts to the human environment leading to the "do nothing" alternative for the roadway with only intersection improvements to improve flow.

Additionally, the local desire for a solution prompted the aforementioned intersection study.

CTP Project Proposal

Project Description and Overview

It is proposed that intersection improvements be made along US 441 BUS to improve traffic flow through three intersections. Improvements would start at US 23-64-441 and include the intersections with Womack Street, Maple Street, and Porter Street-Wayah Street. According to the Congestion Management study, the worst segment of the US 441 BUS/Wayah Street and Porter Street intersection can be improved to LOS C in 2035 by implementing a roundabout (traffic circle), and the worst segment of the US 441 BUS/Wayah Street and Maple Street intersection can be improved to LOS D in 2035. These intersections are currently operating at LOS D and F respectfully.

Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, the proposed project is approximately 1000 feet from a sighting of New England Cottontail (*Sylvilagus transitionalis* G4 - Apparently Secure). Additionally, water and sewer pipes are located along the facility.

Relationship to Land Use Plans

The surrounding land use currently includes low density commercial and residential development. The northern intersection with Porter Street and Wayah Street is in the immediate vicinity of the Chamber of Commerce office, Smoky Mountain Pet Supply, and Franklin High School. The intersection with Maple Street features Resurrection Lutheran Church and Saint Francis of Assisi Catholic Church. Other development, while sparse, does not include large setbacks.

Linkages to Other Plans and Proposed Project History

US 441 BUS is a Minor Arterial on the Federal Functional Classification System, and is on the regional tier of the North Carolina Multimodal Investment Network (NCOMIN). This stretch of US 441 BUS was identified in the 1995 Franklin Thoroughfare Plan as needing improvements due to capacity issues. The thoroughfare plan recommended the facility be upgraded to include 12-foot lanes, turning lanes at Womack Street and Maple Street, as well as a center turn lane from Maple Street to Porter Street. In addition, the plan recommended a reconfiguration of the lanes between Porter Street and Harrison Avenue, which has been implemented.

Multi-modal Considerations

Macon County Transit operates both a fixed route bus circulator in Franklin and subscription routes that utilize US 441 BUS. This area is also identified in the Macon County CTP for improvements to the pedestrian facilities, including separating the sidewalk from the curb, because it serves as the connection between downtown Franklin and the shopping centers along US 23-441.

Public/ Stakeholder Involvement

Respondents to the Goals & Objectives (G&O) survey identified US 23-441 south of US 64 and downtown Franklin as locations they went out of their way to avoid. This project terminates to the north and south of those areas. The intersection at Porter Street was also identified in regards to school traffic and congestion.

**NC 28 – Highlands Road
Proposed improvements from US 23-441 to US 441
BUS**

ID No. MACO0004-H

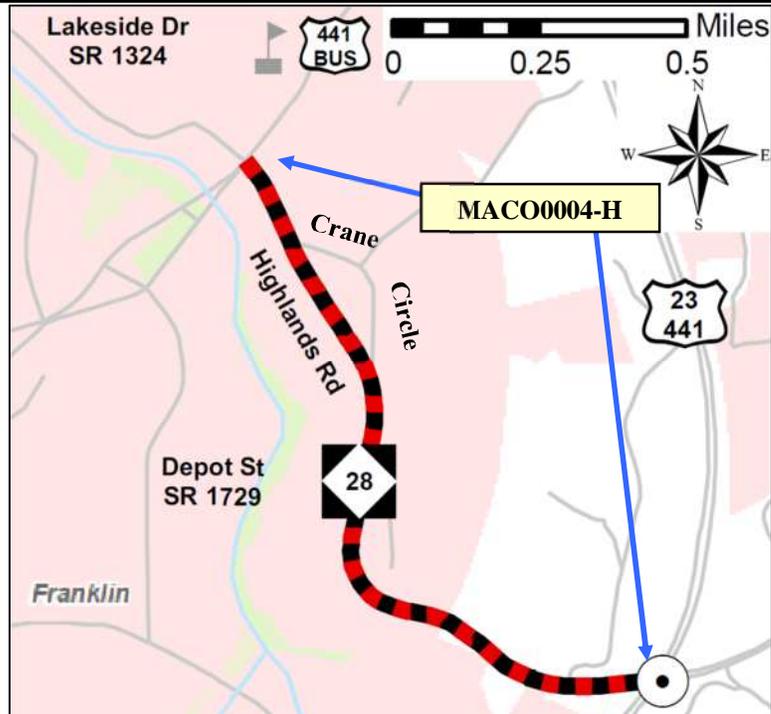
Last updated: 10/25/2010

Identified Problem

Existing NC 28 – Highlands Road is projected to be over capacity by 2035. The purpose of this project is to accommodate projected traffic volumes in order to maintain a Level of Service (LOS) D.

Justification of Need

NC 28 - Highlands Road currently serves as a major access route in eastern Franklin. The southern end of this segment ties into US 23-441 via an interchange. It then proceeds out from the town limits into southeast Macon County. The northern intersection with US 441 BUS is at the end of the downtown one-way pair. It serves through traffic and traffic going to the businesses along the facility. The northern segment, from US 441 BUS to Crane Circle, has a four-lane undivided cross section with 11-foot lanes, and the roadway south of Crane Circle is a three-lane facility with 11-foot lanes. The capacity of the three-lane portion is 16,100 vehicles per day (vpd). Average Annual Daily Traffic (AADT) is projected to increase from 12,300 vpd in 2010 to 17,000 vpd in 2035.



Community Vision and Problem History

During the development of this CTP, Franklin expressed a desire to widen NC 28 to a four-lane divided boulevard. This roadway is an important access route into Franklin and designated as a “Potential Gateway” in the 2008 Franklin Main Street Program. In that plan, access management controls were proposed along the entire stretch of NC 28 within the town limits including shrinking the number of driveway access points to 25 proposed locations, half of the over 50 currently existing on the facility many of which are continuous access parking lots. The 1995 Franklin Thoroughfare Plan identified this segment of road as deficient in the design year of 2020.

CTP Project Proposal

Project Description and Overview

It is proposed that NC 28 – Highlands Road be widened to a four-lane divided boulevard with limited control of access. The improved capacity of 31,900 vpd would be able to accommodate current and projected traffic volumes. Bicycle and pedestrian accommodations are also recommended as a part of this project.

Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, the proposed project is approximately 450 feet from a sighting of Hellbender (*Cryptobranchus alleganiensis* G3/S3 – Vulnerable). It is also parallel to the Little Tennessee River and Cullasaja River with minimum distances of 500 and 1000 feet respectfully. The current facility is also adjacent to two “Freshwater Forested/Shrub Wetlands.” Also, there are water and sewer lines in the road right-of-way.

Relationship to Land Use Plans

Development along this facility is currently dense commercial land use. It includes shopping, restaurants, a car dealership, a bike shop, the flea market, and the Bi-Lo shopping center. The Bi-Lo shopping center is a major traffic generator and has one-way stop control access to NC 28.

Linkages to Other Plans and Proposed Project History

NC 28 – Highlands Road is a Minor Arterial on the Federal Functional Classification System, and this section of NC 28 is on the regional tier of the North Carolina Multimodal Investment Network (NCMIN). The 1995 Franklin Thoroughfare Plan proposed to widen this roadway to 12-foot lanes with paved shoulders to relieve congestion and accommodate bicyclist.

Multi-modal Considerations

Macon County Transit operates both a fixed route bus circulator in Franklin and subscription routes that utilize NC 28. This area is also identified in the Macon County CTP as needing improvements to the pedestrian and bicycle facilities. The southern end of this project ties into State Bike Route 37 while the northern end ties into State Bike Route 30. The 2008 Franklin Main Street Plan includes recommendations for attached sidewalks and bike facilities. Adjacent to the flea market, there is also access to the Little Tennessee River Greenway.

Public/ Stakeholder Involvement

Respondents to the Goals & Objectives (G&O) survey identified the ability to make a left out of the Bi-Lo shopping center as a major problem. It is currently unsignalized, and many respondents requested a signal.

**Buck Creek Road (SR 1538)
Proposed Improvements from US 64 – NC 28 to US
64**

ID No. MACO0005-H

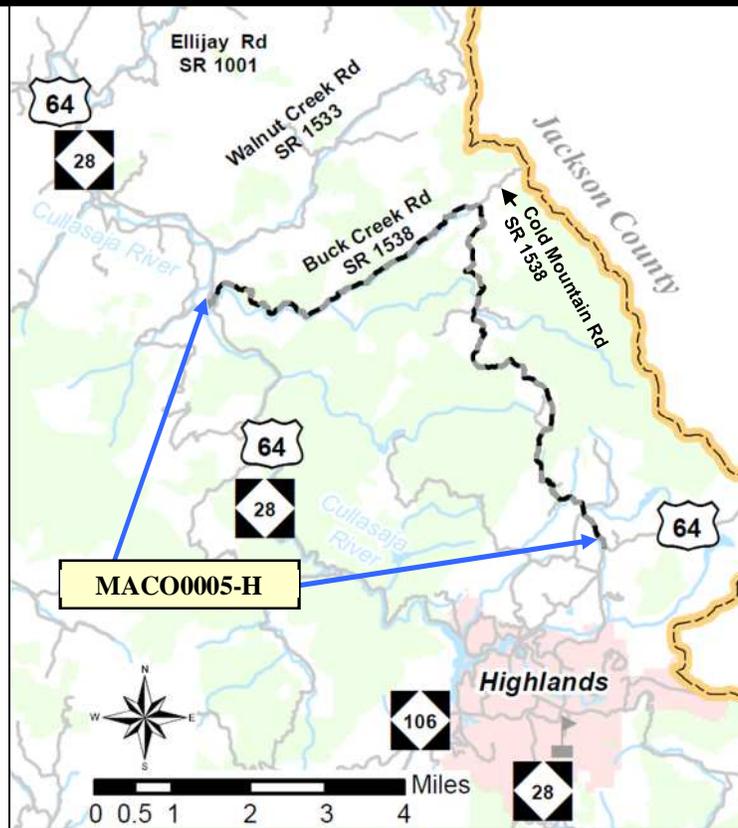
Last updated: 7/27/2011

Identified Problem

US 64 – NC 28 is projected to be near capacity in 2035. The purpose of this project is to maintain mobility at a Level of Service (LOS) D between Franklin and Highlands.

Justification of Need

US 64 is the primary route connecting Franklin to Highlands in southeast Macon County. The section between Buck Creek Road (SR 1538) and Highlands passes through the Cullasaja Gorge. This segment of road is 18 feet wide with no shoulder. In some locations, it has between a 25 and 90 degree cross slope. The capacity of the roadway through the gorge is 9,500 vehicles per day (vpd). The 2010 Average Annual Daily Traffic (AADT) is 5,500 vpd, and the projected 2035 volume is 9,400 vpd.



Additionally, two truck prohibitions exist for US 64 – NC 28. First, trucks with a gross vehicle weight in excess of 20,000 pounds are prohibited from using US 64 east of Franklin to Jackson County for through trips. Second, no truck or trailer combinations with more than 4 axles can use US 64 between Walnut Creek Road (SR 1533) and NC 106 in Highlands.

The alternative to taking US 64 – NC 28 through the gorge is to take Buck Creek Road (SR 1538) over the mountain. Buck Creek Road is 18 feet wide with 2 to 4-foot unpaved shoulders. It currently operates below capacity with only 2,600 vpd using the facility in 2010. This is projected to increase to 5,000 vpd in 2035. The capacity (LOS D) of this road is 11,700 vpd.

Community Vision and Problem History

The 1997 Macon County Thoroughfare Plan recommended widening US 64 from Ellijay Road to Jackson County to a width of 24 feet to accommodate traffic demand. Buck Creek Road was not evaluated at that time.

CTP Project Proposal

Project Description and Overview

TIP project R-3623 is already underway to improve the first mile of Buck Creek Road east of US 64 – NC 28. NCDOT Division 14 will improve the roadway to 10-foot lanes with a 4 to 6-foot unpaved shoulder. Physical constraints may also require retaining walls. The CTP proposes extending these improvements along the entire facility between US 64 – NC 28 and US 64. For additional information about the current TIP project, please contact NCDOT's Division 14 Construction Engineer.

Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, the proposed project is approximately 10 feet from a sighting of Timber Rattlesnake (*Crotalus horridus* G4/SC - Globally Secure but of Special Concern in North Carolina), 125 feet from a sighting of Little Tennessee River Crayfish (*Cambarus georgiae* G1/SC – Critically imperiled / Special Concern), 250 feet from Waterfan Lichen (*Hydrothyria venosa* G3/S3 – Vulnerable), Liverwort (*Cephaloziella spinicaulis* G3/S1 - Imperiled / Critically Imperiled), and a Rich Cove Forest, 300 feet from Southern Dung Moss (*Splachnum pennsylvanicum* G4/SH Globally Secure and Occurred in North Carolina historically), 350 feet from Dwarf Apple Moss (*Bartramidula wilsonii* G4/S1 – Globally Secure but Critically imperiled in North Carolina), and 450 feet from a High elevation granitic dome.

The portion of the project north of Cold Mountain Road (SR 1538) is parallel to the Buck Creek and Little Buck Creek trout streams. South of Cold Mountain Road the project crosses three streams. All three are classified as trout streams, and two of them serve as water supply sources for Highlands. The project also passes the Walking Fern Cover Registered Historic Area, is parallel to the Cold Mountain US Forest Service Preserve, passes through approximately 2 miles of watershed, the southern 4,000 feet are within the Highlands Conservancy priority area, and the project passes through the Nantahala National Forest five times for approximately 4 miles of roadway.

Additionally, bridge #60 over Big Creek has been classified as functionally obsolete by NCDOT's Structures Management Unit.

Relationship to Land Use Plans

Development along this facility is currently sparse residential. The majority of development is not on Buck Creek Road (SR 1538) directly but on side roads that it services. The southern end of the project enters development in Highlands including the Buck Creek Convention Center and Chestnut Hill Senior Living. It then terminates at US 64 near the Highlands Cashiers Hospital.

Linkages to Other Plans and Proposed Project History

The 1997 Macon Thoroughfare Plan analyzed Buck Creek Road (SR 1538) and found it adequate.

Multi-modal Considerations

Macon County Transit does not currently operate a bus route between Franklin and Highlands. Project MACO0001-T addresses the need for such a route. At the direction of Macon County Transit, the Buck Creek Road (SR 1538) alternative was identified as preferable to US 64. Buck Creek Road (SR 1538) is also identified as State Bike Route 37, but no improvements were recommended because of the low vehicle usage.

Public/ Stakeholder Involvement

Buck Creek Road was identified five times in the Goals & Objectives (G&O) survey. Respondents were concerned with safety and maintenance along the facility.

Community input through the G&O Survey identified US 64 through the Cullasaja Gorge as a problem area. Respondents also highlighted truck traffic as an issue.

Depot Street (SR 1729)

Proposed Improvements from US 441 BUS to Wayah Street (SR 1667)

ID No. MACO0006-H

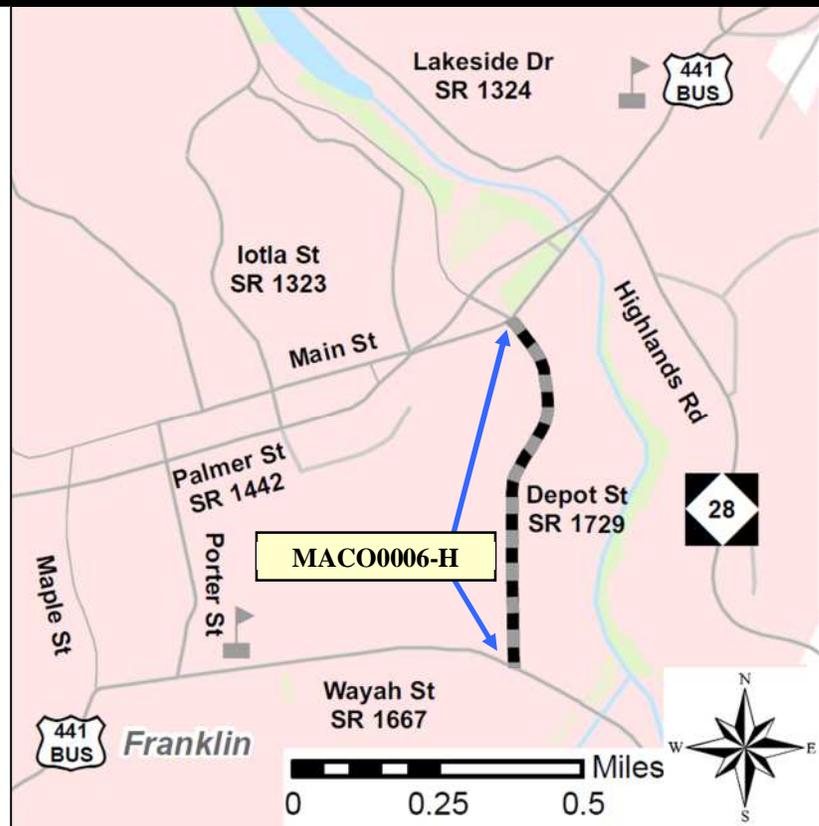
Last updated: 10/25/2010

Identified Problem

Existing Depot Street is projected to be over capacity in 2035. The purpose of this project is to accommodate projected traffic volumes in order to maintain mobility on the facility.

Justification of Need

Depot Street is a two-lane, 20-foot wide facility with a speed limit of 35 mile per hour (mph). It has a large number of driveway access points along it. The facility is currently over capacity with Average Annual Daily Traffic (AADT) of 13,700 vehicles per day (vpd) and capacity of 13,600 vpd. Approximately 16,900 vpd are projected in 2035.



Development along Depot Street is dense. As traffic volumes increase, mobility will suffer because opportunities for left turns will decrease. Congestion is unavoidable due to limited construction options relative to the land use.

Community Vision and Problem History

The 2008 Franklin Main Street Program identified the need for access management and driveway removal on Depot Street. It also identified a desire for new attached sidewalks and new crosswalks. The 1995 Franklin Thoroughfare Plan identified this segment of road as needing improvements to accommodate bicycles and meet design goals.

CTP Project Proposal

Project Description and Overview

The CTP proposes widening the existing facility to three lanes with 14-foot travel lanes and would require expanding NCDOT right-of-way (ROW) from 60 feet to 80 feet. The recommended improvements would provide a capacity of 15,400 vpd, still lower than the projected 2035 traffic volume. The center turn lane would remove vehicles waiting to make left turns from the main flow of traffic. Through traffic would benefit without

compromising access to the existing development. This improvement, when combined with the recommendations from the Franklin Main Street Program, is expected to preserve mobility at a level acceptable to the town.

Improvements tested that would also relieve congestion to a level of service (LOS) D would require more ROW and were deemed too costly in terms of the human environment impacts. With the proposed improvement, congestion would be held to 7% over capacity compared to 25% over capacity without improvement.

Natural & Human Environmental Context

Based on available GIS data, the proposed project is along the western edge of a prehistoric and historic archeology site. State Bike Route 2, "Mountains to Sea," utilizes this facility. Franklin also operates water and sewer lines in the vicinity.

Relationship to Land Use

The entire project currently has dense commercial and industrial development. This strip development contains several large traffic generators such as the US Post Office and the Franklin Press. Industrial sites include Nantahala Lumber which runs half the length of the project and the Franklin Machine Company.

Linkages to Other Plans and Proposed Project History

Depot Street is a Collector on the Federal Functional Classification System and is on the subregional tier of the North Carolina Multimodal Investment Network (NCMIN). The 1995 Franklin Thoroughfare Plan proposed widening Depot Street to a 24-foot cross section with paved shoulders to accommodate bicyclist and to enhance the functional design.

The Congestion Management Section of NCDOT conducted a study of the intersection of Depot Street (SR 1729) and Wayah Street (SR 1667) to evaluate the impacts of different intersection treatments. That study, SP-2010-48, concluded that the intersection would operate at LOS F on at least one approach in 2035 without improvements and recommended installing a single lane roundabout.

Multi-modal Considerations

Macon County Transit operates both a fixed route bus service circulator in Franklin and subscription routes that utilize Depot Street. This area is also identified in the Macon County CTP as needing improvements to the pedestrian facilities. State Bike Route 2, "Mountain to Sea," uses this section of Depot Street.

Public/ Stakeholder Involvement

Resulting from the Goals & Objectives (G&O) survey, respondents expressed the following problems along Depot Street: speeding, narrow lanes, and a lack of sidewalks. Other respondents stated the road was a problem area without giving details. Both the northern intersection with Porter Street (US 441 BUS) and the southern intersection with Wayah Street were identified as problems.

**Wells Grove Road (SR 1667)
Proposed Improvements from Wayah Street (SR
1667) to Clarks Chapel Road (SR 1665)**

ID No. MACO0007-H

Last updated: 10/25/2010

Identified Problem

Existing Wells Grove Road (SR 1667) is projected to be at capacity in 2035 from Depot Street (SR 1729) to Clarks Chapel Road (SR 1653). The purpose of this project is to accommodate projected traffic volumes in order to maintain a Level of Service (LOS) D on the facility.

Justification of Need

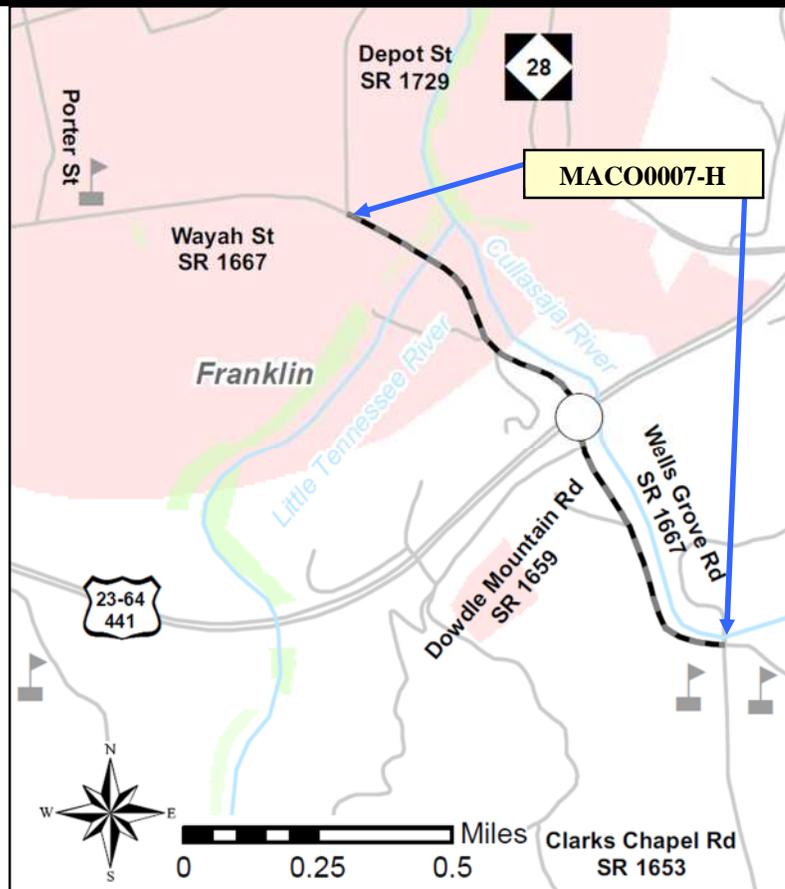
Currently Wells Grove Road (SR 1667) is a collector that serves the area south of Franklin, including Macon County Middle School. It is a two-lane facility with 9-foot lanes, and has a posted speed limit of 45 mph. This facility has a LOS D capacity of 9,100 vpd. The 2010 Average Annual Daily Traffic (AADT) is 5,200 vehicles per day (vpd) and is projected to increase to 9,100 vpd in 2035.

This projected growth does not include the relocation of some Cullasaja Elementary School classes to Mountain View Intermediate or the newly planned Walmart, both of which are expected to worsen the projected capacity deficiency.

In support of the CTP, NCDOT's Congestion Management Section conducted an intersection study for Wells Grove Road (SR 1667) - Clarks Chapel Road (SR 1653) and Wells Grove Road (SR 1667) – Depot Street (SR 1729). That study, SP-2010-48, concluded that both intersections would be operating at LOS F on at least one approach in 2035 without improvements.

Community Vision and Problem History

The 1995 Franklin Thoroughfare Plan identified Wells Grove Road (SR 1667) as both a state and county bike route. At that time no capacity deficiency was identified, but the facility was recommended for widening to 12-foot lanes and paved shoulders to “improve functional design and enhance the safety” on Wells Grove Road (SR 1667).



CTP Project Proposal

Project Description and Overview

The CTP recommendation is to widen Wells Grove Road (SR 1667) to 12-foot lanes with accommodations for bicyclist. Intersection improvements at Dowdle Mountain Road (SR 1659), Clarks Chapel Road (SR 1665), and Wayah Street (SR 1667) – Depot Street (SR 1729) are also recommended.

Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, the project is approximately 200 feet from sightings of Little Tennessee River Crayfish (*Cambarus georgiae* G1/SC - Critically Imperiled/ Special Concern) and Spottfin Chub (*Cyprinella monacha* G2/S1 – Imperiled/ Critically Imperiled). This project is also adjacent to the Cullasaja River/Ellijay Creek Aquatic Habitat for most of its length with less than 100 feet of separation, and is within the 100 year floor plain of the Cullasaja River. Additionally, this project crosses the Little Tennessee River.

Relationship to Land Use Plans

Current development along Wells Grove Road (SR 1667) is primarily residential with two major exceptions. Wal-Mart has frontage property along Wells Grove Road (SR 1667), but access is provided by Dowdle Mountain Road (SR 1659). Wells Grove Road (SR 1667) provides access to Mountain View Intermediate School and Macon County Middle School which is also designated as an emergency shelter.

Linkages to Other Plans and Proposed Project History

Wells Grove Road (SR 1667) is an Urban Collector / Rural Minor Collector on the Federal Functional Classification System. This stretch of Wells Grove Road (SR 1667) is on the subregional tier of the North Carolina Multimodal Investment Network (NCMIN). The 1995 Franklin Thoroughfare Plan proposed widening Wells Grove Road (SR 1667) to a 24-foot cross section with paved shoulders to accommodate bicyclist and to enhance the functional design.

Multi-modal Considerations

Macon County Transit operates a subscription route that utilizes Wells Grove Road (SR 1667). A fixed route also uses the northern stretch from Depot Street (1729) to Ulco Drive which is a distance of approximately 600 feet. This facility is also identified in the Macon County CTP as needing new pedestrian facilities from Dowdle Mountain Road (SR 1659) to Clarks Chapel Road (SR 1665) to service Mountain View Intermediate School and Macon County Middle School. State Bike Route 2, “Mountain to Sea,” uses this section of Wells Grove Road (SR 1667).

Public/ Stakeholder Involvement

Respondents to the Goals & Objectives (G&O) survey described the southern end of Wells Grove Road (SR 1667), around Macon Middle School and Mountain View Intermediate, as “extremely busy,” “dangerous,” and “a disaster.” Another concern expressed was the difficulty of traveling during school hours because of the lack of alternatives.

US 19, Local ID: MACO0008-H

Existing US 19 from Cherokee County to Swain County has two 10-foot wide lanes, unpaved shoulders, and a speed limit of 35 mph. The 2010 Average Annual Daily Traffic (AADT) along this facility is 4,100 vehicles per day (vpd) compared to a LOS D capacity of 10,600 vpd. With a projected 2035 traffic volume of 5,400 vpd, US 19 will not have capacity problems. However, US 19 has steep slopes in Macon County with over 69% of total length rating above 4.5 percent grade and 62% of the roadway is rated above 6.5 percent grade. The CTP proposes widening US 19 to 12-foot lanes with a 4-foot paved shoulder. Consideration should also be given to truck climbing lanes as US 19 is a designated truck route.

US 23-441, Local ID: MACO0009-H

US 23-441 from Jackson County to US 64/NC 28 and from US 64 – US 441 BUS to Georgia does not meet the future mobility and connectivity needs in western North Carolina and into Georgia.

This facility is intended to provide mobility in Macon County and, ultimately, connectivity between Atlanta, GA and Asheville, NC. US 23-441 is part of the Strategic Highway Corridor (SHC) Vision Plan adopted by NCDOT on September 2, 2004 and last updated on July 10, 2008. The section of this facility between US 64 – US 441 BUS and Prentiss Bridge Road (SR 1649) is addressed in MACO0001-H. The section north of US 64 is a four-lane divided facility with 12-foot lanes, and the section south of Prentiss Bridge Road (SR 1649) is a five-lane facility with 12-foot lanes. All sections are proposed to be upgraded to an expressway. As development occurs along this corridor every effort should be made to limit access in order to maintain mobility and connectivity.

US 64, Local ID: MACO0010-H

US 64 through Macon County does not meet the future mobility and connectivity needs in western North Carolina and into Tennessee.

This facility is intended to provide mobility in Macon County and, ultimately, connectivity between Chattanooga, TN and Hendersonville, NC. US 64 is part of the Strategic Highway Corridor (SHC) Vision Plan adopted by NCDOT on September 2, 2004 and last updated on July 10, 2008. From Clay County to West Old Murphy Road (SR 1448), the existing facility is a major thoroughfare and is proposed to be upgraded to a boulevard. From Buck Creek Road (SR 1538) to Jackson County, the existing facility is a major thoroughfare and is proposed to remain as a major thoroughfare with future improvements as needed. As development occurs along this corridor every effort should be made to limit access in order to maintain mobility and connectivity.

NC 28, TIP No. R-2408B

Currently NC 28 from Windy Gap Road (SR 1321) to Sanderstown Road (SR 1335) is a two-lane facility with 10-foot lanes. The 2010 AADT volumes range from 7,000 to 8,600 vehicles per day (vpd) and are not over capacity. The 2035 projected traffic volume of 13,600 vpd will exceed the existing LOS D capacity of 11,700 vpd. A TIP project, R-2408B, is currently underway to address this deficiency. This project will improve the roadway to 12-foot lanes with a 4-foot shoulder. For additional information about this project, including the Purpose and Need, contact NCDOT's Project Development and Environmental Analysis Branch.

In August 2010, NC 28 was designated a Scenic Byway and, therefore, may see additional growth not anticipated in this CTP. Any changes will be captured in the next CTP update.

NC 106, Local ID: MACO00011-H

Existing NC 106 is projected to be near or over capacity in 2035. The purpose of this project is to accommodate projected traffic volumes in order to maintain a Level of Service (LOS) D on NC 106. From US 64 to Georgia, NC 106 is a two-lane, 18-foot facility with a capacity of 11,700 vpd. The 2010 traffic volume ranges from 5,800 to 8,900 vpd. In 2035 traffic demand will range between 8,400 – 9,700 vpd outside Highlands and will be near capacity. Within the town limits, future volumes will range between 13,500 and 15,400 vpd in 2035 and will be over capacity.

The 2009 Downtown Highlands Parking and Circulation study identified NC 106 as a gateway location. As such, the recommended improvements were “a combination of wayfinding signage and island separator[s].” That study also identified the NC 106 intersections with Spring Street and US 64 – NC 28 as having a LOS C in 2030. The CTP proposes improving NC 106 to 12-foot lane widths with 4-foot paved shoulders where possible.

Cat Creek Road (SR 1513), Local ID: MACO0012-H

Cat Creek Road (SR 1513) from US 23-441 to Franklin town limits is a two-lane facility with 9-foot wide lanes, 3-foot unpaved shoulders, and a 35 mph speed limit. While not expected to have capacity problems in the future, truck traffic was identified as a concern by the CTP committee. The CTP recommends widening to a 10-foot lane width with paved shoulders.

Hicks Road (SR 1545), Local ID: MACO0013-H

Hicks Road (SR 1513) from US 64-NC 28 to US 64 is a two-lane facility with 9-foot wide lanes, 2 to 4-foot unpaved shoulders, and a 30 mph speed limit. While not expected to have capacity problems in the future, this road serves as an alternative route around Highlands and was recommended in the 1997 Highlands Thoroughfare Plan to be widened to 10-foot lanes to “improve the functional design and improve the safety of” the road. The CTP recommends widening to a 10-foot lane width with paved shoulders.

lotla Church Road (SR 1372), Local ID MACO0014-H

lotla Church Road (SR 1372) from NC 28 to Burnington Rd (SR 1372) serves the Macon County Airport and is the location of the former lotla Elementary School campus which was being rebuilt at the time of the CTP. The existing facility has two 9-foot lanes, 3-foot unpaved shoulders, and a 35 mph speed limit. While not expected to have capacity problems in the future, school traffic was identified as a concern by the CTP committee. The CTP recommends widening to a 10-foot lane width with paved shoulders.

Old Murphy Road (SR 1442), Local ID: MACO0015-H

Existing Old Murphy Road (SR 1442) from Palmer Street to Sloan Road (SR 1175) has a pair of 10-foot wide lanes and a speed limit of 35 mph. The 2010 AADT volume and capacity are 9,400 vpd and 15,800 vpd respectfully. The estimated 2035 traffic volume is 15,300 vpd. To preserve a LOS D on Old Murphy Road (SR 1442), the CTP proposes improving to 12-foot lane widths with 4-foot paved shoulders.

Siler Road (SR 1660), TIP No. R-4748

Currently, crossings of the Little Tennessee River around Franklin are limited to the bridges on US 23-64-441, US 441 BUS, and Wayah Street (SR 1667). The US 441 BUS bridge is currently approaching capacity and is projected to exceed capacity in 2035. TIP project, R-4748, is already underway to address this deficiency. The project includes extending Siler Road (SR 1660) approximately 4,000 feet to Dowdle Mountain Road (SR 1659). The new facility is proposed to have 12-foot lane widths. For additional information about this project, including the Purpose and Need, contact NCDOT's Project Development and Environmental Analysis Branch (PDEA).

Siler Road (SR 1660) Local ID: MACO0016-H

Existing Siler Road (SR 1660) from US 23-441 to Macon Early College has two 10-foot wide lanes and a speed limit of 35 mph. TIP Project R-4748 is extending Siler Road (SR 1660) to Dowdle Mountain Road (SR 1659). This new facility will have 12-foot lanes. To preserve mobility on Siler Road (SR 1660), the CTP proposes improving the existing facility to 12-foot lane widths. Accommodations for bicycles and pedestrians should also be provided.

Sloan Road (SR 1175), Local ID: MACO0017-H

Existing Sloan Road (SR 1442) from Old Murphy Road (SR 1442) to US 64 has two 10-foot wide lanes and a speed limit of 35 mph. Current AADT volume and capacity are 5,000 vpd and 9,400 vpd respectfully. Sloan Road (SR 1175) will be approaching capacity in 2035 with an estimated traffic volume of 8,100 vpd. To preserve a LOS D on Sloan Road, the CTP proposes improving to 12-foot lane widths with 4-foot shoulders.

OTHER IMPROVMENTS

The following projects within Franklin's Extraterritorial Jurisdiction (ETJ) were identified for upgrading to current NCDOT design standards. These efforts should be coordinated through NCDOT's Highway Division 14 office.

- **MACO0018-H:** Wayah Street (SR 1667) from US 441 BUS to Wells Grove Road (SR 1667) widen to 11-foot lanes.
- **MACO0019-H:** Womack Street (SR 1156) from US 441 BUS to Old Murphy Road (SR 1442) widen to 10-foot lanes.
- **MACO0020-H:** Main Street and Palmer Street from Porter Street to Depot Street restripe as 11-foot lanes.
- **MACO0021-H:** Lakeside Drive (SR 1324) from US 441 BUS to Lake Emory Road (SR 1325) widen to 10-foot lanes.
- **MACO0022-H:** Lake Emory Road (SR 1325) from US 441 BUS to Lakeside Drive (SR 1324) widen to 10-foot lanes.
- **MACO0023-H:** Porter Street from Wayah Street (SR 1667) to Palmer Street widen to 12-foot lanes.

MINOR CONNECTORS

The 2008 Franklin Main Street Program identified several opportunities for new connectors. Some are to increase land access for development, and others are to improve traffic flow in town. The recommendations below are parallel to facilities identified in the CTP as having capacity deficiencies and have been incorporated into the CTP to increase connectivity and mobility.

- **MACO0024-H:** Depot Street Extension from Depot Street (SR 1729) to US 23-64-441 opposite Dowdle Mountain Road (SR 1659)
- **MACO0025-H:** Belleview Park Road Extension from Belleview Park Road (SR 1703) to Wells Grove Road (SR 1667)
- **MACO0026-H:** Wayah Street Extension from Wayah Street (SR 1667) to NC 28 (Highlands Road)
- **MACO0027-H:** Wayah Street Extension from NC 28 (Highlands Road) to US 23-441
- **MACO0028-H:** Iotla Street Extension from NC 28-Riverview Street to Lakeside Drive (SR 1324)
- **MACO0029-H:** Church Street Extension from Iotla Street (SR 1323) opposite Church Street to US 441 BUS (Main Street)
- **MACO0030-H:** Harrison Avenue from Main Street to Palmer Street opposite Windy Gap Rd (SR 1321) / Harrison Avenue

PUBLIC TRANSPORTATION AND RAIL

The transit element of the Macon County CTP is shown in Figure 1, Sheets 3 and 3A. Macon County Transit currently operates fixed and subscription bus routes in the county and provides out of county services as well. In accordance with the CTP vision of developing a multi-modal transportation plan, two new routes were identified as strategic new expansions for Macon County Transit.

- **MACO0001-T:** New bus route between Franklin and Highlands utilizing US 64 – NC 28 and Buck Creek Road (SR 1536).
- **MACO0002-T:** New bus route between Franklin and the Nantahala community utilizing Wayah Road (SR 1310).

Additionally, six locations were identified for potential park and ride lots. Two were constructed with 2009 American Recovery and Reinvestment Act funds during the CTP process. The other four are located at the following intersections:

- **MACO0003-T:** NC 28 and Sanderstown Road (SR 1335)
- **MACO0004-T:** US 23-441 and Coweeta Church Road (SR 1115)
- **MACO0005-T:** Wayah Road (SR 1310) and Junaluska Road (SR 1401)
- **MACO0006-T:** Ellijay Road (SR 1001) and US 64 – NC 28, possibly on the old Cullasaja Elementary School property

BICYCLE

The bicycle element of the Macon County CTP is shown in Figure 1, Sheet 4. In accordance with American Association of State Highway and Transportation Officials (AASHTO), roadways identified as bicycle routes should incorporate the following standards as roadway improvements are made and funding is available:

- Curb and gutter sections require at minimum 4-foot bike lanes or 14-foot outside lanes.
- Shoulder sections require a minimum 4-foot paved shoulder.
- All bridges along roadways where bike facilities are recommended shall be equipped with 54" railings.

New Facilities:

- **MACO0001-B:** Siler Road (SR 1660) from Macon Early College to Dowdle Mountain Road (SR 1659).

Improvement to Existing Facilities:

- **MACO0002-B:** US 19 from Cherokee County to Swain County
- **MACO0001-H:** US 23-441 from Wide Horizon Road (SR 1652) to Siler Road (SR 1660)
- **MACO0002-H:** US 64 – NC 28 from US 23-441 to Buck Creek Road (SR 1538)
- **MACO0004-B:** US 64 – NC 28 from Buck Creek Road (SR 1538) to Hicks Road (SR 1545)

- **MACO0005-B:** US 441 BUS from Lakeside Drive (SR 1324) to Wayah Road (SR 1667) Both Directions
- **MACO0006-B:** NC 28 from US 441 BUS – Main Street to Swain County
- **MACO0004-H:** NC 28 from US 441 BUS – Main Street to US 23-441
- **MACO0008-B:** NC 106 from Georgia to US 64
- **MACO0009-B:** Addington Branch Road (SR 1122) from Coweeta Church Road (SR 1115) to South Skeenah Road (SR 1127)
- **MACO0010-B:** Bates Branch Road from Pine Road (SR 1123) to Addington Branch Road (SR 1122)
- **MACO0011-B:** Bell Road (SR 1121) from Coweeta Church Road (SR 1115) to Pine Road (SR 1123)
- **MACO0012-B:** Belle Dondle Road (SR 1135) from Middle Skeenah Road to US 23-441
- **MACO0013-B:** Brown Road (SR 1633) from US 23-441 to Joe Bradley Road (SR 1632)
- **MACO0014-B:** C R Cabe Road (SR 1661) from Dowdle Mountain Road (SR 1659) to Dowdle Mountain Road (SR 1659) Loop
- **MACO0015-B:** Cart Slagle Road (SR 1309) from Wayah Road (SR 1310) to US 64
- **MACO0016-B:** Cat Creek Road (SR 1513) from US 23-441 to Saunders Road (SR 1516)
- **MACO0017-B:** Cheney Lane (SR 1543) from Buck Creek Road (SR 1538) to Flat Mountain Road (SR 1544)
- **MACO0018-B:** Clarks Chapel Road (SR 1653) from Hickory Knoll Road (SR 1653) to Prentiss Bridge Road (SR 1649)
- **MACO0019-B:** Coweeta Church Road (SR 1115) from Coweeta Lab Road (SR 1659) to US 23-441
- **MACO0020-B:** Coweeta Lab Road (SR 1659) from US 23-441 to Ball Creek Road
- **MACO0006-H:** Depot Street (SR 1729) from US 441 BUS to Wayah Street (SR 1667)
- **MACO0022-B:** Dowdle Mountain Road (SR 1659) from Clarks Chapel Road (SR 1653) to Wells Grove Road (SR 1667)
- **MACO0023-B:** Ferguson Road (SR 1507) from Rabbit Creek Road (SR 1504) to Saunders Road (SR 1516)
- **MACO0024-B:** Fifth Street from Horse Cover Road (SR 1603) to Highlands School

- **MACO0025-B:** Flat Mountain Road (SR 1544) from Cheney Lane (SR 1543) to US 64
- **MACO0026-B:** Frazier Road (SR 1656) from Fulcher Road (SR 1655) to Clarks Chapel Road (SR 1653)
- **MACO0027-B:** Fulcher Road (SR 1655) from Clarks Chapel Road (SR 1653) to Clarks Chapel Road (SR 1653) Loop
- **MACO0028-B:** Harrison Ave from US 441 BUS to Wind Gap Road (SR 1321)
- **MACO0029-B:** Hickory Knoll Road (SR 1653) from Tessentee Road (SR 1636) to Clarks Chapel Road (SR 1653)
- **MACO0030-B:** Horse Cover Road (SR 1603) from Fith Street to US 64
- **MACO0031-B:** Joe Bradley Road (SR 1632) from Perryman Cabe Road (SR 1629) to US 23-441
- **MACO0032-B:** John Teague Road from Wide Horizon Drive (SR 1652) to US 64
- **MACO0033-B:** Little Ellijay Road (SR 1528) from Walnut Creek Road (SR 1533) to Ellijay Road (SR 1001)
- **MACO0034-B:** Middle Burningtown Road from Olive Hill Road (SR 1387) to Burningtown Road (SR 1372)
- **MACO0035-B:** Middle Creek Road (SR 1635) from US 23-441 to Perryman Cabe Road (SR 1629)
- **MACO0036-B:** Middle Skeenah Road from Belle Dondle Road (SR 1135) to Addington Branch Road (SR 1122)
- **MACO0037-B:** Mullbery (SR 1104) from the Georgia State Line to US 23-441
- **MACO0038-B:** Olive Hill Road (SR 1387) from Airport Road (SR 1434) to Middle Burningtown Road
- **MACO0039-B:** Onion Mountain Road (SR 1521) from Rabbit Creek Road (SR 1504) to Ellijay Road (SR 1001)
- **MACO0040-B:** Pete McCoy Road (SR 1653) from Clarks Chapel Road (SR 1653) to Clarks Chapel Road (SR 1653) Loop
- **MACO0041-B:** Pine Road (SR 1123) from Bell Road (SR 1121) to Bates Branch Road
- **MACO0042-B:** Prentiss Bridge Road (SR 1649) from Clarks Chapel Road (SR 1653) to Wide Horizon Drive (SR 1652)
- **MACO0043-B:** River Road (SR 1672) from US 64 – NC 28 to US 64 – NC 28 Loop
- **MACO0044-B:** Riverside Road (SR 1644) from Hickory Knoll Road (SR 1653) to US 23-441

- **MACO0045-B:** Salder Mountain Road (SR 1372) from Burningtown Road (SR 1372) to Rose Creek Road (SR 1372)
- **MACO0016-H:** Siler Road (SR 1660) from US 23-441 to Macon Early College
- **MACO0047-B:** Skeenah Road (SR 1128) from Addington Branch Road (SR 1122) to South Skeenah Road (SR 1127)
- **MACO0048-B:** Southards Road (SR 1133) from Skeenah Road (SR 1128) to US 64, also known as Alison Creek Road.
- **MACO0049-B:** SR 1629 (Sam Corn Road - Perryman Cabe Road - River Valley Road) from Georgia to Middle Creek Road (SR 1635)
- **MACO0050-B:** Stamey Mountain Road (SR 1134) from South Skeenah Road (SR 1127) to Belle Dondle Road (SR 1135)
- **MACO0051-B:** Tessentee Road (SR 1636) from US 23-441 to end of pavement
- **MACO0052-B:** Union School Road (SR 1136) from Middle Skeenah Road to Addington Branch Road (SR 1122)
- **MACO0053-B:** W Old Murphy Road (SR 1448) from Southards Road (SR 1133) to Skeenah Road (SR 1128).
- **MACO0054-B:** Walnut Creek Road (SR 1533) from Little Ellijay Road (SR 1528) to US 64 – NC 28
- **MACO0055-B:** West Dills Creek Road (SR 1303) from Southards Road (SR 1133) to W Old Murphy Road (SR 1448).
- **MACO0056-B:** Windy Ridge Road (SR 1684) from Perryman Cabe Road (SR 1629) to Tessentee Rd (SR 1636)

Multi-Use Path Facilities:

Multi use paths are facilities physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way. Multi-use paths include bicycle paths, rail-trails, or other facilities built for bicycle and pedestrian traffic. The following multi-use path project was identified to serve the needs of Macon County.

- ***Little Tennessee Greenway, Local ID: MACO0001-M***
The Little Tennessee Greenway runs from Suli March at the intersection of Riverview Street (1462) and Arthur Drake Road in the north 4.7 miles to the Cartoogachaye Creek in the south. Currently, the greenway must cross the Little Tennessee River at US 421 BUS. The crossing includes a temporary trail, ramp, and two road crossings. Bridge replacement project B-5125 will address the issues directly related to it, but additional improvements will be needed from the south end of Morris Trace to the north end of the Old Airport Trail to maintain and improve connectivity and mobility.

PEDESTRIAN

Both Franklin and Highlands have existing plans that were utilized in the development of the pedestrian element of the CTP. The 2009 Franklin Main Street Program was completed by Wilbur Smiths Associates. This plan was confined to the central business district (CBD) of Franklin. The 2008 Highlands Master Sidewalk Plan was also limited to the CBD. The Cowee community has also received grant funds to improve the sidewalks around their school. The information from these pedestrian plans was incorporated into the CTP then built upon with the following additional projects.

New Facilities:

- **MACO0001-H (Franklin):** US 23-441 from Belden Circle (SR 1152) to Wide Horizon Road (SR 1652)
- **MACO0002-P (Franklin):** Dowdle Mountain Road (SR 1659) from Wells Grove Road (SR 1667) to Wiley Brown Road (SR 1662)
- **MACO0003-P (Franklin):** Lakeside Drive (SR 1324) from US 441 BUS to Lake Emory Road (SR 1324) and Lake Emory Road from Lakeside Drive to US 441 BUS.
- **MACO0004-P (Highlands):** Oak Street from US 64 – NC 28 to First Street
- **MACO0016-H (Franklin):** Siler Road (SR 1660) from US 23-441 to Macon Early College
- **MACO0005-P (Franklin):** Siler Road (SR 1660) from Macon Early College to Dowdle Mountain Road (SR 1659)
- **MACO0006-P (Franklin):** Watauga Street and Dan Street from Lakeside Drive (SR 1324) to US 421 BUS.
- **MACO0007-P (Franklin):** Wells Grove Road (SR 1667) from Dowdle Mountain Road (SR 1659) to Clarks Chapel Road (SR 1653)
- **MACO0008-P (Franklin):** A western loop including West Palmer Street (SR 1442), Old Murphy Road (SR 1442), Sloan Road (SR 1153), Carolina Drive (SR 1463), Roller Mill Road (SR 1154), and Orchard View Drive.
- **MACO0009-P (Highlands):** An extension of sidewalks along US 62-NC 28-Main Street in Highlands to the bridge providing access to The Bascom: Center for the Visual Arts.

Improvement to Existing Facilities:

- **MACO0001-H (Franklin):** US 23-441 from US 441 BUS to Belden Circle (SR 1152). This facility is shown on the CTP maps as Needs Improvement, but new sidewalk facilities are recommended on both sides of the road.
- **MACO0011-P (Franklin):** US 441 BUS from NC 28 – Highlands Road to Dan Street
- **MACO0003-H (Franklin):** US 441 BUS from Womack Street (SR 1156) to US 23-441
- **MACO0007-H (Franklin):** Wells Grove Road (SR 1667) from Depot Street (SR 1729) to Dowdle Mountain Road (SR 1659)

APPENDICES

Appendix A Resources and Contacts

North Carolina Department of Transportation

Customer Service Office

Contact information for other units within the NCDOT that are not listed in this appendix is available by calling the Customer Service Office or by visiting the NCDOT directory:

1-877-DOT-4YOU (1-877-368-4968)

<https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx>

Secretary of Transportation

1501 Mail Service Center Raleigh, NC 27699-1501 (919) 707-2800
<http://www.ncdot.org/about/leadership/secretary.html>

Board of Transportation

1501 Mail Service Center Raleigh, NC 27699-1501 (919) 707-2820
<http://www.ncdot.gov/about/board/>

Highway Division

253 Webster Rd Sylva, NC 28779 (828) 586-2141
<http://www.ncdot.gov/doh/operations/division14/>

Contact the:

- Division Engineer with general questions concerning NCDOT activities within each Division and for information on Small Urban Funds.
- Division Construction Engineer for information concerning major roadway improvements under construction.
- Division Traffic Engineer for information concerning traffic signals, highway signs, pavement markings, and crash history.
- Division Operations Engineer for information concerning facility operations.
- Division Maintenance Engineer information regarding maintenance of all state roadways, improvement of secondary roads and other small improvement projects. The Division Maintenance Engineer also oversees the District Offices, the Bridge Maintenance Unit, and the Equipment Unit.
- District Engineer for information on outdoor advertising, junkyard control, driveway permits, road additions, subdivision review and approval, Adopt-A-Highway program, encroachments on highway right of way, issuance of oversize/overwidth permits, paving priorities, secondary road construction program and road maintenance.

191 Robbinsville Rd Andrews, NC 28901 (828) 321-4105

Transportation Planning Branch (TPB)

Contact the Transportation Planning Branch for information on long-range multi-modal planning services.

1554 Mail Service Center Raleigh, NC 27699-1554 (919) 707-0900
<http://www.ncdot.gov/doh/preconstruct/tpb/>

Southwestern Rural Planning Organization (RPO)

Contact the RPO for information on long-range multi-modal planning services.

125 Bonnie Lane Sylva, NC 28779 (828) 251-6371
<http://www.regiona.org/rpo.htm>

Strategic Planning Office

Contact the Strategic Planning Office for information concerning prioritization of transportation projects.

1501 Mail Service Center Raleigh, NC 27699-1501 (919) 707-4740
<http://www.ncdot.gov/performance/reform/prioritization/>

Project Development & Environmental Analysis (PDEA)

Contact PDEA for information on environmental studies for projects that are included in the TIP.

1548 Mail Service Center Raleigh, NC 27699-1548 (919) 707-6000
<http://www.ncdot.gov/doh/preconstruct/pe/>

Secondary Roads Unit

Contact the Secondary Roads Unit for information regarding the status for unpaved roads to be paved, additions and deletions of roads to the State maintained system and the Industrial Access Funds program.

1535 Mail Service Center Raleigh, NC 27699-1535 (919) 707-2500
<http://www.ncdot.gov/doh/operations/secondaryroads/>

Program Development Branch

Contact the Program Development Branch for information concerning Roadway Official Corridor Maps, Feasibility Studies, and the Transportation Improvement Program (TIP).

1534 Mail Service Center Raleigh, NC 27699-1534 (919) 707-4610
<http://www.ncdot.org/planning/development/>

Public Transportation Division

Contact the Public Transportation Division for information public transit systems.

1550 Mail Service Center Raleigh, NC 27699-1550 (919) 707-4670
<http://www.ncdot.org/transit/nctransit/>

Rail Division

Contact the Rail Division for rail information throughout the state.

1553 Mail Service Center Raleigh, NC 27699-1553 (919) 707-4700
<http://www.bytrain.org/>

Division of Bicycle and Pedestrian Transportation

Contact this Division for bicycle and pedestrian transportation information throughout the state.

1552 Mail Service Center Raleigh, NC 27699-1552 (919) 707-2600
<http://www.ncdot.gov/transit/bicycle/>

Structures Management Unit

Contact the Structures Management Unit for information on bridge management throughout the state.

1581 Mail Service Center Raleigh, NC 27699-1581 (919) 707-6400
http://www.ncdot.gov/doh/operations/dp_chief_eng/maintenance/bridge/

Roadway Design Unit

Contact the Roadway Design Unit for information regarding design plans and proposals for road and bridge projects throughout the state.

1582 Mail Service Center Raleigh, NC 27699-1582 (919) 707-6200
<http://www.ncdot.org/doh/preconstruct/highway/roadway/>

Other State Government Offices

Department of Commerce – Division of Community Assistance

Contact the Department of Commerce for resources and services to help realize economic prosperity, plan for new growth and address community needs.

<http://www.nccommerce.com/en/CommunityServices/>

Appendix B

Comprehensive Transportation Plan Definitions

Highway Map

For visual depiction of facility types for the following CTP classification, visit <http://www.ncdot.gov/doh/preconstruct/tpb/SHC/facility/>.

Facility Type Definitions

- **Freeways**

- Functional purpose – high mobility, high volume, high speed
- Posted speed – 55 mph or greater
- Cross section – minimum four lanes with continuous median
- Multi-modal elements – High Occupancy Vehicles (HOV)/High Occupancy Transit (HOT) lanes, busways, truck lanes, park-and-ride facilities at/near interchanges, adjacent shared use paths (separate from roadway and outside ROW)
- Type of access control – full control of access
- Access management – interchange spacing (urban – one mile; non-urban – three miles); at interchanges on the intersecting roadway, full control of access for 1,000ft or for 350ft plus 650ft island or median; use of frontage roads, rear service roads
- Intersecting facilities – interchange or grade separation (no signals or at-grade intersections)
- Driveways – not allowed

- **Expressways**

- Functional purpose – high mobility, high volume, medium-high speed
- Posted speed – 45 to 60 mph
- Cross section – minimum four lanes with median
- Multi-modal elements – HOV lanes, busways, very wide paved shoulders (rural), shared use paths (separate from roadway but within ROW)
- Type of access control – limited or partial control of access;
- Access management – minimum interchange/intersection spacing 2,000ft; median breaks only at intersections with minor roadways or to permit U-turns; use of frontage roads, rear service roads; driveways limited in location and number; use of acceleration/deceleration or right turning lanes
- Intersecting facilities – interchange; at-grade intersection for minor roadways; right-in/right-out and/or left-over or grade separation (no signalization for through traffic)
- Driveways – right-in/right-out only; direct driveway access via service roads or other alternate connections

- **Boulevards**

- Functional purpose – moderate mobility; moderate access, moderate volume, medium speed
- Posted speed – 30 to 55 mph
- Cross section – two or more lanes with median (median breaks allowed for U-turns per current NCDOT *Driveway Manual*)
- Multi-modal elements – bus stops, bike lanes (urban) or wide paved shoulders (rural), sidewalks (urban - local government option)
- Type of access control – limited control of access, partial control of access, or no control of access
- Access management – two lane facilities may have medians with crossovers, medians with turning pockets or turning lanes; use of acceleration/deceleration or right turning lanes is optional; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
- Intersecting facilities – at grade intersections and driveways; interchanges at special locations with high volumes
- Driveways – primarily right-in/right-out, some right-in/right-out in combination with median leftovers; major driveways may be full movement when access is not possible using an alternate roadway

- **Other Major Thoroughfares**

- Functional purpose – balanced mobility and access, moderate volume, low to medium speed
- Posted speed – 25 to 55 mph
- Cross section – four or more lanes without median (*US and NC routes may have less than four lanes*)
- Multi-modal elements – bus stops, bike lanes/wide outer lane (urban) or wide paved shoulder (rural), sidewalks (urban)
- Type of access control – no control of access
- Access management – continuous left turn lanes; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
- Intersecting facilities – intersections and driveways
- Driveways – full movement on two lane roadway with center turn lane as permitted by the current NCDOT *Driveway Manual*

- **Minor Thoroughfares**

- Functional purpose – balanced mobility and access, moderate volume, low to medium speed
- Posted speed – 25 to 55 mph
- Cross section – ultimately three lanes (no more than one lane per direction) or less without median
- Multi-modal elements – bus stops, bike lanes/wide outer lane (urban) or wide paved shoulder (rural), sidewalks (urban)
- ROW – no control of access

- Access management – continuous left turn lanes; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
- Intersecting facilities – intersections and driveways
- Driveways – full movement on two lane with center turn lane as permitted by the current NCDOT *Driveway Manual*

Other Highway Map Definitions

- **Existing** – Roadway facilities that are not recommended to be improved.
- **Needs Improvement** – Roadway facilities that need to be improved for capacity, safety, or system continuity. The improvement to the facility may be widening, other operational strategies, increasing the level of access control along the facility, or a combination of improvements and strategies. “Needs improvement” does not refer to the maintenance needs of existing facilities.
- **Recommended** – Roadway facilities on new location that are needed in the future.
- **Interchange** – Through movement on intersecting roads is separated by a structure. Turning movement area accommodated by on/off ramps and loops.
- **Grade Separation** – Through movement on intersecting roads is separated by a structure. There is no direct access between the facilities.
- **Full Control of Access** – Connections to a facility provided only via ramps at interchanges. No private driveway connections allowed.
- **Limited Control of Access** – Connections to a facility provided only via ramps at interchanges (major crossings) and at-grade intersections (minor crossings and service roads). No private driveway connections allowed.
- **Partial Control of Access** – Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways. Private driveway connections shall be defined as a maximum of one connection per parcel. One connection is defined as one ingress and one egress point. These may be combined to form a two-way driveway (most common) or separated to allow for better traffic flow through the parcel. The use of shared or consolidated connections is highly encouraged.
- **No Control of Access** – Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways.

Public Transportation and Rail Map

- **Bus Routes** – The primary fixed route bus system for the area. Does not include demand response systems.
- **Fixed Guideway** – Any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The term includes heavy rail, commuter rail, light rail, monorail, trolleybus, aerial tramway, included plane, cable car, automated guideway transit, and ferryboats.

- **Operational Strategies** – Plans geared toward the non-single occupant vehicle. This includes but is not limited to HOV lanes or express bus service.
- **Rail Corridor** – Locations of railroad tracks that are either active or inactive tracks. These tracks were used for either freight or passenger service.
 - Active – rail service is currently provided in the corridor; may include freight and/or passenger service
 - Inactive – right of way exists; however, there is no service currently provided; tracks may or may not exist
 - Recommended – It is desirable for future rail to be considered to serve an area.
- **High Speed Rail Corridor** – Corridor designated by the U.S. Department of Transportation as a potential high speed rail corridor.
 - Existing – Corridor where high speed rail service is provided (there are currently no existing high speed corridor in North Carolina).
 - Recommended – Proposed corridor for high speed rail service.
- **Rail Stop** – A railroad station or stop along the railroad tracks.
- **Intermodal Connector** – A location where more than one mode of transportation meet such as where light rail and a bus route come together in one location or a bus station.
- **Park and Ride Lot** – A strategically located parking lot that is free of charge to anyone who parks a vehicle and commutes by transit or in a carpool.
- **Existing Grade Separation** – Locations where existing rail facilities and are physically separated from existing highways or other transportation facilities. These may be bridges, culverts, or other structures.
- **Proposed Grade Separation** – Locations where rail facilities are recommended to be physically separated from existing or recommended highways or other transportation facilities. These may be bridges, culverts, or other structures.

Bicycle Map

- **On Road-Existing** – Conditions for bicycling on the highway facility are adequate to safely accommodate cyclists.
- **On Road-Needs Improvement** – At the systems level, it is desirable for **an existing** highway facility to accommodate bicycle transportation; however, highway improvements are necessary to create safe travel conditions for the cyclists.
- **On Road-Recommended** – At the systems level, it is desirable for **a recommended** highway facility to accommodate bicycle transportation. The highway should be designed and built to safely accommodate cyclists.

- **Off Road-Existing** – A facility that accommodates only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way.
- **Off Road-Needs Improvement** – A facility that accommodates only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way that will not adequately serve future bicycle needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment.
- **Off Road-Recommended** – A facility needed to accommodate only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way.
- **Multi-use Path-Existing** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- **Multi-use Path-Needs Improvement** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic that will not adequately serve future needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment. Sidewalks should not be designated as a multi-use path.
- **Multi-use Path-Recommended** – A facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that is needed to serve bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- **Existing Grade Separation** – Locations where existing “Off Road” facilities and “Multi-use Paths” are physically separated from existing highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.
- **Proposed Grade Separation** – Locations where “Off Road” facilities and “Multi-use Paths” are recommended to be physically separated from existing or recommended highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.

Pedestrian Map

- **Sidewalk-Existing** – Paved paths (including but not limited to concrete, asphalt, brick, stone, or wood) on both sides of a highway facility and within the highway right-of-way that are adequate to safely accommodate pedestrian traffic.

- **Sidewalk-Needs Improvement** – Improvements are needed to provide paved paths on both sides of a highway facility. The highway facility may or may not need improvements. Improvements do not include re-paving or other maintenance activities but may include: filling in gaps, widening sidewalks, or meeting ADA (Americans with Disabilities Act) requirements.
- **Sidewalk-Recommended** – At the systems level, it is desirable for a recommended highway facility to accommodate pedestrian transportation **or** to add sidewalks on an existing facility where no sidewalks currently exist. The highway should be designed and built to safely accommodate pedestrian traffic.
- **Off Road-Existing** – A facility that accommodates only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way.
- **Off Road-Needs Improvement** – A facility that accommodates only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way that will not adequately serve future pedestrian needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), improved horizontal or vertical alignment, and meeting ADA requirements.
- **Off Road-Recommended** – A facility needed to accommodate only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way.
- **Multi-use Path-Existing** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- **Multi-use Path-Needs Improvement** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic that will not adequately serve future needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment. Sidewalks should not be designated as a multi-use path.
- **Multi-use Path-Recommended** – A facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that is needed to serve bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- **Existing Grade Separation** – Locations where existing “Off Road” facilities and “Multi-use Paths” are physically separated from existing highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.

- **Proposed Grade Separation** – Locations where “Off Road” facilities and “Multi-use Paths” are recommended to be physically separated from existing or recommended highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.

Appendix C

CTP Inventory and Recommendations

Assumptions/ Notes:

- **Local ID:** This Local ID is the same as the one used for the Prioritization Project Submittal Tool. If a TIP project number exists it is listed as the ID. Otherwise, the following system is used to create a code for each recommended improvement: the first 4 letters of the county name is combined with a 4 digit unique numerical code followed by '-H' for highway, '-T' for public transportation, '-R' for rail, '-B' for bicycle, '-M' for multi-use paths, or '-P' for pedestrian modes. If a different code is used along a route it indicates separate projects will probably be requested. Also, upper case alphabetic characters (i.e. 'A', 'B', or 'C') are included after the numeric portion of the code if it is anticipated that project segmentation or phasing will be recommended.
- **Jurisdiction:** Jurisdictions listed are based on municipal limits, county boundaries, and MPO Metropolitan Planning Area Boundaries (MAB), as applicable.
- **Existing Cross-Section:** Listed under '(ft)' is the approximate width of the roadway from edge of pavement to edge of pavement. Listed under 'lanes' is the total number of lanes, with the letter 'D' if the facility is divided.
- **Existing ROW:** The estimated existing right-of-way is based on NCDOT's Roadway Characteristics Database. These right-of-way amounts are approximate and may vary.
- **Existing and Proposed Capacity:** The estimated capacities are given in vehicles per day (vpd) based on LOS D for existing facilities and LOS C for new facilities. These capacity estimates were developed using the Mountains Methodology, as documented in Chapter I.
- **Existing and Proposed AADT** (Annual Average Daily Traffic) volumes, given in vehicles per day (vpd), are estimates only based on a systems-level analysis. The '2035 AADT E+C' is an estimate of the volume in 2035 with only existing plus committed projects assumed to be in place, where committed is defined as projects programmed for construction in the 2012 - 2018 Transportation Improvement Program (TIP). The '2035 AADT with CTP' is an estimate of the volume in 2035 with all proposed CTP improvements assumed to be in place. The '2035 AADT with CTP' is shown in bold if it exceeds the proposed capacity, indicating an unmet need. For additional information about the assumptions and techniques used to develop the AADT volume estimates, refer to Chapter I.
- **Proposed Cross-section:** The CTP recommended cross-sections are listed by code; for depiction of the cross-section, refer to Appendix D. An entry of 'ADQ' indicates the existing facility is adequate and there are no improvements recommended as part of the CTP.
- **CTP Classification:** The CTP classification is listed, as shown on the adopted CTP Maps (see Figure 1). Abbreviations are F= freeway, E= expressway, B= boulevard, Maj= other major thoroughfare, Min= minor thoroughfare.
- **Tier:** Tiers are defined as part of the North Carolina Multitmodal Investment Network (NCMIN). Abbreviations are Sta= statewide tier, Reg= regional tier, Sub= subregional tier.
- **Other Modes:** If there is an improvement recommended for another mode of transportation that relates to the given recommendation, it is indicated by an alphabetic code (H=highway, T= public transportation, R= rail, B= bicycle, and P= pedestrian).

Table 3 - CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																	
ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	2010 Existing System				2035 Proposed System						CTP Classification	Tier	Reg
					Cross-Section (ft) lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2035 AADT E+C	2035 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)			
MACO0008-H	US 19	Swain County Line to Cherokee County Line	Macon County	2.6	20	2	60	35	10600	4100	5400	5400	10600	2C	50		
MACO0008-H	US 23-441	Georgia State Line to Prentice Bridge (SR 1649)	Macon County	9.0	60	5	100	55	43300	15000	17000	17000	43300	4B	150	E	Sta
MACO0008-H	US 23-441	Prentice Bridge(SR 1649) Wide Horizon Dr (SR 1652)	Macon County	2.4	60	5	100	50	41300	20000	24000	24000	41300	4B	150	E	Sta
MACO0001-H	US 23-441	Wide Horizon Dr (SR 1652) to Cartoogechaye Creek	Macon County	0.3	64	5	100	50	41300	20000	24000	24000	41300	4D	110	E	Sta
MACO0001-H	US 23-441	Cartoogechaye Creek to US 64	Macon County	0.6	64	5	100	45	39200	21400	29100	29100	39200	4D	110	E	Sta
MACO0008-H	US 23-441	US 64 to US 64	Macon County	2.2	48	4-D	90	55	43300	24600	33000	33000	43300	ADQ	90	E	Sta
MACO0008-H	US 23-441	US 64 to US 441 BUS	Macon County	1.4	48	4-D	90	55	43300	24600	33000	33000	43300	4B	150	E	Sta
MACO0008-H	US 23-441	US 441 BUS to Sanderstown Rd (SR 1335)	Macon County	2.4	48	4-D	125	55	43300	24600	33000	33000	43300	4B	150	E	Sta
MACO0008-H	US 23-441	Sanderstown Rd (SR 1335) to Jackson County Line	Macon County	3.8	48	4-D	150	55	43300	17200	30400	30400	43300	4B	150	E	Sta
MACO0010-H	US 64	Clay County Line to W Old Murphy Rd (SR 1448)	Macon County	9.6	24	2	150	55	11700	5100	7700	7700	11700	4B	150	B	Sta
MACO0010-H	US 64	US 23-441 to W Old Murphy Rd (SR 1448)	Macon County	4.5	48	4	75	55	43300	7700	15800	15800	43300	ADQ	75	E	Sta
MACO0002-H	US 64	US 23-441 to Ellijay Rd (SR 1001)	Macon County	3.1	24	2	100	50	11700	11300	18900	18900	11700	2B	60	Maj	Sta
MACO0002-H	US 64	Ellijay Rd (SR 1001) to Old Highlands Rd (SR 1697)	Macon County	1.6	24	2	100	50	11700	11300	18900	18900	11700	2B	60	Maj	Sta
MACO0002-H	US 64	Old Highlands Rd (SR1697) to Walnut Creek Rd (SR 1533)	Macon County	1.3	24	2	--	50	11700	10200	16900	16900	11700	2B	60	Maj	Sta
MACO0002-H	US 64	Walnut Creek Rd (SR 1533) to Buck Creek Rd (SR 1538)	Macon County	0.7	24	2	80	45	11700	5500	9400	9400	11700	2B	60	Maj	Sta
MACO0010-H	US 64	Buck Creek Rd (SR 1538) to Turtle Pond Rd (SR 1620)	Macon County	4.3	18	2	80	45	11700	5500	9400	9400	11700	2B	60	Maj	Sta
MACO0010-H	US 64	Turtle Pond Rd (SR 1620) to Highlands Town Limits	Macon County	4.1	18	2	80	45	9500	3400	5700	5700	9500	2B	60	Maj	Sta

HIGHWAY

ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	2010 Existing System				2035 Proposed System				Other Modes				
					Cross-Section (ft) lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2035 AADT E+C	2035 AADT with CTP	Proposed Capacity (vpd)		Cross-Section	ROW (ft)	CTP Classification	Tier
MACO0010-H	US 64	NC 28 to Highlands Town Limits	Macon County	1.7	18	2	80	13000	8900	13500	13500	13000	2E	60	Maj	Sta	P
MACO0010-H	US 64	NC 106 to NC 28	Macon County	0.3	18	2	100	8100	8800	13700	8100	ADQ	100	Maj	Sta	P	
MACO0010-H	US 64	NC 106 to Highlands Town Limits	Macon County	1.9	18	2	80	13000	5800	10200	13000	2E	60	Maj	Sta	BP	
MACO0010-H	US 64	Jackson County Line to Highlands Town Limits	Macon County	3.8	18	2	80	11100	6400	11900	11100	2B	60	Maj	Sta		

Concurrent with US 23 from the Jackson County Line to the Georgia State Line

US 441

MACO0003-H	US 441 BUS	US 23-441 to Womak St (SR 1156)	Franklin	0.3	24	4	100	29300	16500	19900	19900	ADQ	100	Maj	Reg	P
MACO0003-H	US 441 BUS	Womak St (SR 1156) to Porter St	Franklin	0.4	22	2	60	14100	12000	17500	14100	2E	60	Maj	Reg	P
MACO0023-H	US 441 BUS (Porter St)	Wayah St (SR1667) to Palmer St (SR 1442)	Franklin	0.4	22	2	60	12800	7300	8900	12800	2E	60	Maj	Reg	P
MACO0020-H	US 441 BUS (Palmer St)	Palmer St (SR 1442) to Iotia St (SR 1323)	Franklin	0.2	22	2	40	9500	6700	9400	9400	2G	85	Maj	Reg	P
MACO0020-H	US 441 BUS (Palmer St)	Iotia St (SR 1323) to Riverview St (SR 1462)	Franklin	0.3	22	2	0	9500	10000	9400	9500	2G	85	Maj	Reg	BP
MACO0020-H	US 441 BUS (Palmer St)	Riverview St (SR 1462) to Depot St (SR 1729)	Franklin	0.2	22	2	0	15800	14000	22000	15800	ADQ	0	Maj	Reg	P
MACO0020-H	US 441 BUS (Palmer St)	Depot St (SR 1729) to NC 28	Franklin	0.8	60	5	100	27200	14000	22200	27200	ADQ	100	Maj	Reg	P
MACO0020-H	US 441 BUS (Main St)	Windy Gap Rd (SR1321) to Palmer St (SR 1442)	Franklin	0.1	22	2	60	8700	9700	13800	8700	ADQ	60	Maj	Reg	P
MACO0020-H	US 441 BUS (Main St)	Windy Gap Rd (SR1321) to Riverview St (SR 1462)	Franklin	0.4	22	2	60	9500	8000	9400	9500	2G	85	Maj	Reg	BP
MACO0020-H	US 441 BUS (Main St)	Riverview St (SR 1462) to Depot St (SR 1729)	Franklin	0.1	36	3	60	23500	14000	22000	23500	ADQ	60	Maj	Reg	P
US 441 BUS (Main St)		Big Bear Ln (SR 1724) to Depot St (SR 1729)	Franklin	0.2	36	3	60	23500	14000	17000	23500	ADQ	60	Maj	Reg	P
US 441 BUS (Main St)		Lakeside Dr (SR 1324) to Big Bear Ln (SR 1724)	Franklin	0.1	36	3	60	23500	14000	17000	23500	ADQ	60	Maj	Reg	

NC 28		Swain County Line to Sanderstown Rd (SR 1335)	Macon County	9.3	20	2	60	11700	5000	8200	11700	ADQ	60	Maj	Reg	B
R-2408 B	NC 28	Airport Rd (SR 1434) to Sanderstown Rd (SR 1335)	Macon County	1.7	20	2	60	11700	7200	11700	11700	2A	60	Maj	Reg	B

HIGHWAY

ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	2010 Existing System					2035 Proposed System					CTP Classification	Tier	Other Modes
					Cross-Section (ft) lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2035 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)				
														2035 AADT E+C			
R-2408 B	NC 28	Section (From - To) Airport Rd (SR 1434) to Windy Gap Rd (SR 1321)	Macon County	1.1	20	2	60	55	11700	8600	13600	13600	2A	60	Maj	Reg	B
	NC 28	Windy Gap Rd (SR 1321) to Iotla St (SR 1323)	Franklin	0.8	20	2	100	35	13600	8700	12800	13600	ADQ	100	Maj	Sub	B
	NC 28	US 441 Bus to Iotla St (SR 1323)	Franklin	0.7	20	2	60	35	13600	4500	7200	13600	ADQ	60	Min	Sub	BP
MACO0004-H	NC 28	US 441 BUS to US 64	Franklin	1.3	33	3	100	45	16100	12300	17000	16100	4C	110	B	Reg	BP
	NC 28	US 64 to Highlands Town Limits	Franklin	2.1	20	2	100	45	14800	4400	7400	14800	ADQ	100	Maj	Reg	P
	NC 28	Georgia State Line to Highlands Town Limits	Macon County	4.1	20	2	100	55	11700	900	1300	11700	ADQ	100	Maj	Reg	
MACO0011-H	NC 106	Georgia State Line to Highlands Town Limits	Macon County	10.9	18	2	60	45	11700	5800	10100	11700	2B	60	Maj	Reg	B
MACO0011-H	NC 106	Highlands Town Limits to US 64	Macon County	1.4	18	2	0	45	11700	7700	13500	11700	2E	60	Maj	Reg	BP
	Addington Brg (SR 1122)	Skeenah (SR 1128) to US 441 at Riverside	Macon County	1.3	18	2	60	45	9100	2500	2500	9100	ADQ	60	Min	Sub	
	Addington Brg (SR 1122)	US 441 at Green Vale Ln to Skeenah Rd (SR 1128)	Macon County	1.7	18	2	0	45	9100	3100	4900	9100	ADQ	0	Min	Sub	
	Airport Rd (SR 1434)	NC 28 to Olive Hill Rd (SR 1387)	Macon County	2.3	18	2	0	55	9100	2900	4500	9100	ADQ	0	Min	Sub	
MACO0025-H	Belleview Park Road Extension	Belleview Park Road (SR 1703) to Wells Grove Road (SR 1667)	Macon County	0.5	--	--	--	--	--	--	3600	9100	2C	50	Min	Sub	
R-3623	Buck Creek Rd (SR 1538)	US 64 / NC 28 to a point one mile east	Macon County	1.0	18	2	60	55	11700	800	2600	11700	2A	60	Maj	Sub	
MACO0005-H	Buck Creek Rd (SR 1538)	R-3623 to US 64 (Highlands)	Macon County	10.9	18	2	60	55	11700	2600	5000	11700	2A	60	Maj	Sub	
	Burningtown Rd (SR 1372)	Iotla Church Rd (SR 1372) to Tellico Rd (SR 1370)	Macon County	7.3	20	2	0	55	9400	1200	1700	9400	ADQ	0	Min	Sub	
MACO0012-H	Cat Creek Rd (SR 1513)	US 23-441 to Franklin Town Limits	Franklin	0.3	18	2	0	35	8700	400	5900	8700	2C	50	Min	Sub	B

HIGHWAY

ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	2010 Existing System					2035 Proposed System					Other Modes			
					Cross-Section (ft) lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2035 AADT E+C	2035 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)		CTP Classification		
																	Tier	
	Cat Creek Rd (SR 1513)	Franklin Town Limits to Saunders Rd (SR 1516)	Macon County	0.9	18	2	0	35	8700	400	5900	5900	8700	ADQ	0	Min	Sub	B
MACO0029-H	Church St Extension	Iotla St (SR 1323) to Main St-US 441 Bus	Franklin	0.2	--	--	--	--	--	--	--	--	9100	2C	50	Maj	Sub	
	Clarks Chapel (SR 1653)	Hickory Knoll (SR 1653) - Wells Grove Rd (SR 1667)	Macon County	5.8	18	2	0	35	9100	2400	3900	3900	9100	ADQ	0	Min	Sub	B
	Cowee Creek Rd (SR 1340)	NC 28 to Ruby Mine Rd (SR 1343)	Macon County	1.4	20	2	60	55	9400	2000	5600	5600	9400	ADQ	60	Min	Sub	
MACO0006-H	Depot St (SR 1729)	Wayah St (SR 1667) to US 441 BUS	Franklin	0.6	20	2	60	35	13600	13700	16900	16900	13600	3B	80	Maj	Sub	P
	Depot St (SR 1729)	Extension to Riverview	Franklin	0.6	24	2	150	45	15900	**	13000	13000	15900	ADQ	150	Maj	Sub	
	Depot St (SR 1729)	US 441 BUS to US 441 BUS	Franklin	0.1	20	2	60	35	15400	13700	16900	16900	15400	ADQ	60	Maj	Sub	
MACO0024-H	Depot St Extension	Depot St (SR 1729) to US 23-441	Franklin	0.7	--	--	--	--	--	--	--	3000	9100	2C	50	Maj	Sub	
	Ellijay Rd (SR 1001)	US 64 to Jackson County Line	Macon County	9.9	16	2	0	55	8700	1300	4000	4000	8700	ADQ	0	Min	Sub	
	Hickory Knoll (SR 1653)	NC 28 to Clarks Chapel Rd (SR 1653)	Macon County	3.2	16	2	30	45	8700	1500	2000	2000	8700	ADQ	30	Min	Sub	B
MACO0013-H	Hicks Rd (SR 1545)	US 64 to US 64	Highlands	1.8	18	2	60	30	9300	2100	2100	2100	9300	2C	50	Min	Sub	
MACO0014-H	Iotla Church Rd (SR 1372)	NC 28 to Burningtown Rd (SR 1372)	Macon County	2.2	18	2	60	55	9100	2000	2700	2700	9100	2A	60	Min	Sub	
	Iotla St (SR 1323)	Church St to Riverview St (SR 1462)	Franklin	0.5	20	2	0	35	13600	5100	5100	5100	13600	ADQ	0	Min	Sub	P
	Iotla St (SR 1323)	US 441 Bus to Church St	Franklin	0.1	20	2	0	35	12400	5100	5100	5100	12400	ADQ	0	Min	Sub	P
	Iotla St (SR 1323)	Main St to Palmer St (SR 1442)	Franklin	0.1	20	2	60	35	8100	3500	4700	4700	8100	ADQ	60	Min	Sub	P
MACO0027-H	Iotla St Extension	NC 28 to Lakeside Rd (Sr 13224)	Franklin	1.1	--	--	--	--	--	--	--	4100	9100	2C	50	Min	Sub	

HIGHWAY

ID	Facility	Section (From - To)	Jurisdiction	2010 Existing System						2035 Proposed System					Other Modes		
				Dist. (mi)	Cross-Section (ft) lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2035 AADT E+C	2035 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)		CTP Classification	
																	2035 AADT with CTP
	Patton Rd (SR 1442)	Wayah Rd (SR1310) to US 64	Macon County	0.3	20	2	60	55	9400	2100	3100	3100	9400	ADQ	60	Min	Sub
	Prentice Bridge (SR 1649)	US 441 to Clarks Chapel Rd (SR 1653)	Macon County	1.3	16	2	0	35	8700	2000	3200	3200	8700	ADQ	0	Min	Sub
	Rabbit Creek Rd (SR 1504)	US23-441 to Cat Creek Rd (SR 1513)	Macon County	4.2	18	2	0	35	8700	800	800	800	8700	ADQ	0	Min	Sub
	Riverside Rd (SR 1644)	US 441 to Hickory Knoll Rd (SR 1653)	Franklin	0.6	18	2	0	55	9100	4000	5900	5900	9100	ADQ	0	Min	Sub
	Riverview St (SR 1462)	Windy Gap Rd (SR 1321) to Iotla St (SR 1323)	Franklin	0.8	20	2	100	35	13600	8700	12800	12800	13600	ADQ	100	Maj	Sub B
	Riverview St (SR 1462)	US 441 Bus to Iotla St (SR 1323)	Franklin	0.7	20	2	60	35	13600	4500	7200	7200	13600	ADQ	60	Min	Sub BP
	Ruby Mine Rd (SR 1343)	Cowee Creek Rd (SR 1340) to Ned Hill Rd (SR 1345)	Macon County	1.6	18	2	0	35	9100	200	300	300	9100	ADQ	0	Min	Sub
	Sanderstown Rd (SR 1335)	US 23-441 to NC 28	Macon County	3.2	20	2	40	35	9400	3000	4800	4800	9400	ADQ	40	Min	Sub
	Saunders Rd (SR 1516)	US 64 to Cat Creek Rd (SR 1513)	Macon County	1.2	20	2	60	35	8700	1500	3000	3000	8700	ADQ	60	Min	Sub
MACO0018-H	Siler Rd (SR 1660)	US 23-441 to Macon Early College	Macon County	0.7	18	2	0	55	9100	400	11800	11100	11700	2A	60	Min	Sub BP
R-4748	Siler Rd (SR 1660)	Macon Early College to Dowdle Mountain Rd (SR 1659)	Macon County	0.8	--	--	--	--	--	--	10400	10400	11700	2A	60	Min	Sub BP
	Skeenah Rd (SR 1128)	US 64 to Addington Brg (SR 1122)	Macon County	7.4	18	2	60	35	9100	1700	2700	2700	9100	ADQ	60	Min	Sub
MACO0017-H	Sloan Rd (SR 1175)	US 64 to Old Murphy Rd (SR 1442)	Macon County	0.3	20	2	0	35	9400	5000	8100	8100	9400	2E	60	Min	Sub P
	Snow Hill Rd (SR 1472)	Cowee Creek Rd (SR1340) - Leatherman Gap Rd (SR1341)	Macon County	2.2	16	2	0	55	8700	1000	3800	3800	8700	ADQ	0	Min	Sub

HIGHWAY																	
ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	2010 Existing System				2035 Proposed System					Other Modes			
					Cross-Section (ft) lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2035 AADT E+C	2035 AADT with CTP	Proposed Capacity (vpd)	Cross-Section		ROW (ft)	CTP Classification	Tier
	SR 1701	US 23-441 to Sylva Rd	Macon County	0.1	24	2	0	55	9300	3200	4800	4800	9300	ADQ	0	Min	Sub
	Sylva Rd (SR 1659)	SR 1701 to Wells Grove Rd	Macon County	0.4	24	2	60	55	9300	3200	4800	4800	9300	ADQ	60	Min	Sub
	Tellico Rd (SR 1370)	NC 28 to Burningtown Rd (SR 1372)	Macon County	1.0	18	2	60	55	9100	600	800	800	9100	ADQ	60	Min	Sub
	Walnut Creek Rd (SR 1533)	Jackson County Line to US 64	Macon County	6.0	18	2	60	55	8700	1500	2600	2600	8700	ADQ	60	Min	Sub
	Wayah Rd (SR 1310)	US 19 to Patton Rd (SR 1442)	Macon County	28.0	18	2	100	35	10600	1500	2400	2400	10600	ADQ	100	Min	Sub
MACO0018-H	Wayah St (SR 1667)	Depot St (SR 1729) to Dowdle Mountain Rd (SR 1659)	Franklin	0.7	18	2	60	35	10300	6100	7900	7900	10300	2E	60	Maj	Sub
MACO0018-H	Wayah St (SR 1667)	US 441 BUS to Depot St (SR 1729)	Franklin	0.6	18	2	0	35	10300	6100	9000	9000	10300	2E	60	Maj	Sub
MACO0026-H	Wayah St Extension	Wayah St (SR 1667) to NC 28	Franklin	0.4	--	--	--	--	--	--	--	3900	9100	2C	50	Min	Sub
MACO0007-H	Wells Grove Rd (SR 1667)	Wayah St (SR 1667) to Clarks Chapel Rd (SR 1653)	Macon County	0.5	18	2	0	45	9100	5200	9100	9100	9100	2E	60	Min	Sub
	Windy Gap Rd (SR 1321)	Franklin Town Limits to US 441 Bus	Franklin	1.0	20	2	60	35	13600	4900	7100	7100	13600	ADQ	60	Maj	Sub
	Windy Gap Rd (SR 1321)	NC 28 to Franklin Town Limits	Macon County	0.5	20	2	60	55	11700	8600	12900	12900	11700	ADQ	60	Maj	Sub
MACO0030-H	Windy Gap Rd Extension	Main St (US 441 Bus) to Palmer St (US 441 Bus)	Franklin	0.7	--	--	--	--	--	--	--	3600	9100	2C	50	Maj	Sub
MACO0019-H	Womak St (SR 1156)	Old Murphy Rd (SR 1442) to US 441 BUS	Franklin	0.7	16	2	0	35	8900	800	1100	1100	8900	2C	50	Min	Sub

PUBLIC TRANSPORTATION AND RAIL

PUBLIC TRANSPORTATION ¹									
ID	Facility/Route	Section (From - To)	Speed Limit (mph)	Distance (mi)	Existing System		Proposed System		Other Modes
					Type	Type	Type	Type	
MACO0001-T	Town of Franklin to Town of Highlands Route	US 64 - NC 28 and Buck Creek Road (SR 1536)	55	18.0	--	--	Bus	Bus	H B
MACO0002-T	Town of Franklin to Nantahala community	Wayah Rd (SR 1310)	35	24.2	--	--	Bus	Bus	--

¹Only major public transportation routes and proposals are shown here. For further documentation of the public transportation system, refer to Macon County Transit.

BICYCLE AND PEDESTRIAN ¹

PEDESTRIAN									
ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes	
				Type	Side of Street	Type	Side of Street		
MACO0001-P	US 23-441	Belden Circle (SR 1152) to Wide Horizon Rd (SR 1652)	0.4	--	--	Sidewalk	Both	H B	
MACO0002-P	Dowdle Mountain Rd (SR 1659)	Wells Grove Rd (SR 1667) to Wiley Brown Rd (SR 1662)	0.6	--	--	Sidewalk	Both	H B	
MACO0003-P	Lakeside Dr (SR 1324)	US 441 Bus to Lake Emory Rd (SR 1324)	0.2	--	--	Sidewalk	Both	H	
MACO0003-P	Lake Emory Rd (SR 1324)	Lakeside Dr (SR 1324) to US 441 Bus	2.1	--	--	Sidewalk	Both	H	
MACO0004-P	Oak Street	US 64 - NC 28 to First Street		--	--	Sidewalk	Both		
MACO0005-P	Siler Rd (SR 1660)	US 23-441 to Dowdle Mountain Rd (SR 1659)	1.4	--	--	Sidewalk	Both	H B	
MACO0006-P	Watauga Street and Dan Street	Lakeside Dr (SR 1324) to US 441 Bus	0.3	--	--	Sidewalk	Both		
MACO0007-P	Wells Grove Rd (SR 1667)	Dowdle Mountain Rd (SR 1659) to Clarks Chapel Rd (SR 1653)	0.5	--	--	Sidewalk	Both	H	
MACO0008-P	West Palmer St (SR 1442)	Palmer St (SR 1442) to Womak St (SR 1156)	0.3	--	--	Sidewalk	Both	H	
MACO0008-P	Old Murphy Rd (ST 1442)	Womak St (SR 1156) to Sloan Rd (SR 1153)	0.7	--	--	Sidewalk	Both	H	
MACO0008-P	Sloan Rd (SR 1153)	Old Murphy Rd (ST 1442) to Carolina Dr (SR 1463)	0.3	--	--	Sidewalk	Both	H	
MACO0008-P	Carolina Dr (SR 1463)	Sloan Rd (SR 1153) to Roller Mill Rd (SR 1154)	0.2	--	--	Sidewalk	Both		
MACO0008-P	Roller Mill Rd (SR 1154)	Carolina Dr (SR 1463) to Orchard View Drive	0.1	--	--	Sidewalk	Both		
MACO0008-P	Orchard View Drive	Roller Mill Rd (SR 1154) to US 23-441	0.7	--	--	Sidewalk	Both		
MACO0009-P	US 23-441	Concurrent with US 23-441 from US 441 Bus to Belden Cr (SR 1152)						H B	
MACO0010-P	US 441 Bus	NC 28 to Dan Street	0.2	Sidewalk	North	Sidewalk	Both		
MACO0011-P	US 441 Bus	Womak St (SR 1156) to US 23-441	0.3	Sidewalk	West	Sidewalk	Both	H	
MACO0012-P	Wells Grove Rd (SR 1667)	Concurrent with Wells Grove Rd (SR 1667) from Depot St (SR 1729) to Dowdle Mountain Rd (SR 1659)						H	

BICYCLE

ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Cross-Section (ft)	lanes	Type	Cross-Section	
MACO0001-B	Siler Road (SR 1660)	from Macon Early College to Dowdle Mountain Road (SR 1659). See R-4748 for details.	0.7	--	--	On Road	2A	H
MACO0002-B	US 19	from Cherokee County line to Swain County line	2.6	20	2	On Road	2C	
MACO0003-B	US 23-441	from Wide Horizon Road (SR 1652) to Siler Road (SR 1660)	0.6	68	5	On Road	4D	
MACO0004-B	US 64 – NC 28	from Buck Creek Road (SR 1538) to Hicks Road (SR 1545)	9.3	24	2	On Road	2A-2B	H
MACO0005-B	US 441 Bus	from Lakeside Drive (SR 1324) to Wayah Road (SR 1667) Both Directions	1.7	--	2	On Road	2G	
MACO0006-B	NC 28	from US 441 Bus – Main Street to Swain County	13.5	20	2	On Road	2A-2C	
MACO0007-B	NC 28	from US 441 Bus – Main Street to US 23-441	1.4	28	2	On Road	4D	
MACO0008-B	NC 106	from the Georgia State Line to US 64	9.8	18	2	On Road	2B	
MACO0009-B	Southards Road (SR 1133)	from Skeenah Road (SR 1128) to US 64, also known as Alison Creek Road.	7.1	18	2	On Road	2A	
MACO0010-B	West Dills Creek Road (SR 1303)	from Southards Road (SR 1133) to W Old Murphy Road (SR 1448).	2.0	16	2	On Road	2A	
MACO0011-B	W Old Murphy Road (SR 1448)	from Southards Road (SR 1133) to Skeenah Road (SR 1128).	1.7	18	2	On Road	2A	
MACO0012-B	Mullbery (SR 1104)	from the Georgia State Line to US 23-441	5.4	18	2	On Road	2A	
MACO0013-B	SR 1629 (Sam Corn Road - Perryman Cabe Road - River Valley Road)	from the Georgia State Line to Middle Creek Road (SR 1635)	2.0	18	2	On Road	2A	
MACO0014-B	Middle Creek Road (SR 1635)	from US 23-441 to Perryman Cabe Road (SR 1629)	2.8	18	2	On Road	2A	
MACO0015-B	Windy Ridge Road (SR 1684)	from Perryman Cabe Road (SR 1629) to Tessentee Rd (SR 1636)	1.3	18	2	On Road	2A	

BICYCLE

ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Cross-Section (ft)	lanes	Type	Cross-Section	
MACO0016-B	Joe Bradley Road (SR 1632)	from Perryman Cabe Road (SR 1629) to US 23-441	0.6	18	2	On Road	2A	
MACO0017-B	Tessentee Road (SR 1636)	from US 23-441 east to end of pavement	5.4	16	2	On Road	2A	
MACO0018-B	Brown Road (SR 1633)	from US 23-441 to Joe Bradley Road (SR 1632)	1.2	18	2	On Road	2A	
MACO0019-B	Hickory Knoll Road (SR 1653)	from Tessentee Road (SR 1636) to Clarks Chapel Road (SR 1653)	2.7	16	2	On Road	2B	
MACO0020-B	Clarks Chapel Road (SR 1653)	from Hickory Knoll Road (SR 1653) to Prentiss Bridge Road (SR 1649)	2.1	16	2	On Road	2C	
MACO0021-B	Prentiss Bridge Road (SR 1649)	from Clarks Chapel Road (SR 1653) to Wide Horizon Drive (SR 1652)	0.3	16	2	On Road	2A	
MACO0022-B	Riverside Road (SR 1644)	from Hickory Knoll Road (SR 1653) to US 23-441	0.5	18	2	On Road	2A	
MACO0023-B	Fulcher Road (SR 1655)	from Clarks Chapel Road (SR 1653) to Clarks Chapel Road (SR 1653) Loop	1.7	18	2	On Road	2A	
MACO0024-B	Frazier Road (SR 1656)	from Fulcher Road (SR 1655) to Clarks Chapel Road (SR 1653)	2.2	18	2	On Road	2A	
MACO0025-B	Pete McCoy Road (SR 1653)	from Clarks Chapel Road (SR 1653) to Clarks Chapel Road (SR 1653) Loop	1.1	18	2	On Road	2A	
MACO0026-B	Dowdle Mountain Road (SR 1659)	from Clarks Chapel Road (SR 1653) to Wells Grove Road (SR 1667)	2.3	18	2	On Road	2A	
MACO0027-B	C R Cabe Road (SR 1661)	from Dowdle Mountain Road (SR 1659) to Dowdle Mountain Road (SR 1659) Loop	1.5	18	2	On Road	2A	
MACO0028-B	Coweeta Lab Road (SR 1659)	from US 23-441 to Ball Creek Road	3.2	16	2	On Road	2A	
MACO0029-B	Coweeta Church Road (SR 1115)	from Coweeta Lab Road (SR 1659) to US 23-441	3.2	18	2	On Road	2A	
MACO0030-B	Bell Road (SR 1121)	from Coweeta Church Road (SR 1115) to Pine Road (SR 1123)	1.3	18	2	On Road	2A	
MACO0031-B	Pine Road (SR 1123)	from Bell Road (SR 1121) to Bates Branch Road	0.9	18	2	On Road	2A	

BICYCLE

ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Cross-Section (ft)	lanes	Type	Cross-Section	
MACO0032-B	Addington Branch Road (SR 1122)	from Coweeta Church Road (SR 1115) to South Skeenah Road (SR 1127)	1.8	18	2	On Road	2B	
MACO0033-B	Skeenah Road (SR 1128)	from Addington Branch Road (SR 1122) to South Skeenah Road (SR 1127)	0.8	18	2	On Road	2C	
MACO0034-B	Stamey Mountain Road (SR 1134)	from South Skeenah Road (SR 1127) to Belle Dondle Road (SR 1135)	0.7	20	2	On Road	2A	
MACO0035-B	Belle Dondle Road (SR 1135)	from Middle Skeenah Road to US 23-441	1.8	16	2	On Road	2A	
MACO0036-B	Union School Road (SR 1136)	from Middle Skeenah Road to Addington Branch Road (SR 1122)	0.8	19	2	On Road	2A	
MACO0037-B	Siler Road (SR 1660)	from US 23-441 to Macon Early College	0.8	18	2	On Road	2A	
MACO0038-B	Olive Hill Road (SR 1387)	from Airport Road (SR 1434) to Middle Burningtown Road	4.0	18	2	On Road	2A	
MACO0039-B	Salder Mountain Road (SR 1372)	from Burningtown Road (SR 1372) to Rose Creek Road (SR 1372)	1.8	18	2	On Road	2A	
MACO0040-B	Onion Mountain Road (SR 1521)	from Rabbit Creek Road (SR 1504) to Ellijay Road (SR 1001)	6.0	10	2	On Road	2A	
MACO0041-B	Little Ellijay Road (SR 1528)	from Walnut Creek Road (SR 1533) to Ellijay Road (SR 1001)	4.9	10	2	On Road	2A	
MACO0042-B	Walnut Creek Road (SR 1533)	from Little Ellijay Road (SR 1528) to US 64 – NC 28	6.0	16-18	2	On Road	2A	
MACO0043-B	Cheney Lane (SR 1543)	from Buck Creek Road (SR 1538) to Flat Mountain Road (SR 1544)	0.5	18	2	On Road	2A	
MACO0044-B	Flat Mountain Road (SR 1544)	from Cheney Lane (SR 1543) to US 64	0.7	17	2	On Road	2A	
MACO0045-B	Horse Cover Road (SR 1603)	from Fith Street to US 64	0.1	84	2	On Road	2I	
MACO0046-B	River Road (SR 1672)	from US 64 – NC 28 to US 64 – NC 28 Loop	4.0	20	2	On Road	2A	
MACO0047-B	Depot Street (SR 1729)	from US 441 Bus to Wayah Street (SR 1667)	0.6	36	3	On Road	2A	

BICYCLE

ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Cross-Section (ft)	lanes	Type	Cross-Section	
MACO0048-B	Cat Creek Road (SR 1513)	from US 23-441 to Saunders Road (SR 1516)	1.2	16	2	On Road	2C	
MACO0049-B	Ferguson Road (SR 1507)	from Rabbit Creek Road (SR 1504) to Saunders Road (SR 1516)	1.3	18	2	On Road	2A	
MACO0050-B	Cart Slagle Road	from Wayah Road (SR 1310) to US 64	2.5	18	2	On Road	2A	
MACO0051-B	John Teague Road	from Wide Horizon Drive (SR 1652) to US 64	1.1	18	2	On Road	2A	
MACO0052-B	Bates Branch Road	from Pine Road (SR 1123) to Addington Branch Road (SR 1122)	0.9	18	2	On Road	2A	
MACO0053-B	Middle Skeenah Road	from Belle Dondle Road (SR 1135) to Addington Branch Road (SR 1122)	0.7	16	2	On Road	2A	
MACO0054-B	Middle Burningtown Road	from Olive Hill Road (SR 1387) to Burningtown Road (SR 1372)	3.2	18	2	On Road	2A	
MACO0055-B	Fith Street	from Horse Cover Road (SR 1603) to Highlands School	0.3	20	2	On Road	2E	
MACO0056-B	Harrison Ave	from US 441 Bus to Wind Gap Road (SR 1321)	0.5	30	2	On Road	2C	

MULTI-USE PATH

ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Type	Side of Street	Type	Cross-Section	
MACO0001-M	Little Tennessee Greenway	Old Airport Trail to US 441 BUS	0.1	--	--	Multi-use Path	MA	
MACO0001-M	Little Tennessee Greenway (US 441 BUS)	Concurrent with US 441 BUS Palmer St from Depot St (SR 1729) to NC 28						H B P
MACO0001-M	Little Tennessee Greenway	US 441 BUS to Morris Trace	<0.1	--	--	Multi-use Path	MA	

¹ Only major routes and proposals are shown here. For further documentation of bicycle and pedestrian facilities and proposals, refer to 2008 *Franklin Main Street Program and Highlands Master Sidewalk 2008*.

Appendix D Typical Cross Sections

Cross section requirements for roadways vary according to the capacity and level of service to be provided. Universal standards in the design of roadways are not practical. Each roadway section must be individually analyzed and its cross section determined based on the volume and type of projected traffic, existing capacity, desired level of service, and available right-of-way. These cross sections are typical for facilities on new location and where right-of-way constraints are not critical. For widening projects and urban projects with limited right-of-way, special cross sections should be developed that meet the needs of the project.

The typical cross sections were updated on December 7, 2010 to support the Department's "Complete Streets" policy that was adopted in July 2009. This guidance established design elements that emphasize safety, mobility, and accessibility for multiple modes of travel. These "typical" cross sections should be used as preliminary guidelines for comprehensive transportation planning, project planning and project design activities. The specific and final cross section details and right of way limits for projects will be established through the preparation of the National Environmental Policy Act (NEPA) documentation and through final plan preparation.

On all existing and proposed roadways delineated on the CTP, adequate right-of-way should be protected or acquired for the recommended cross sections. In addition to cross section and right-of-way recommendations for improvements, Appendix C may recommend ultimate needed right-of-way for the following situations:

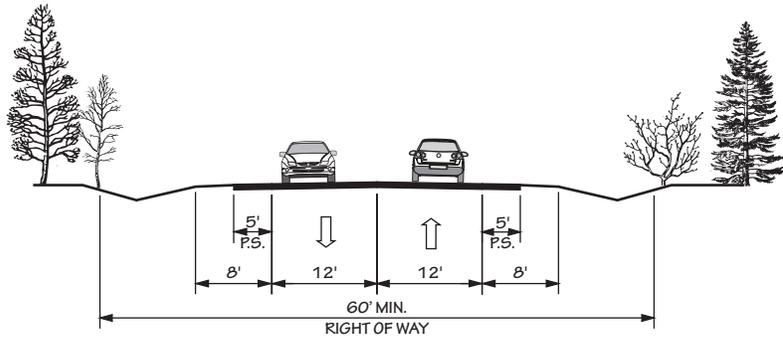
- roadways which may require widening after the current planning period,
- roadways which are borderline adequate and accelerated traffic growth could render them deficient, and
- roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment.
- roadways which may need to accommodate an additional transportation mode

FIGURE 7

TYPICAL HIGHWAY CROSS SECTIONS 2 LANES

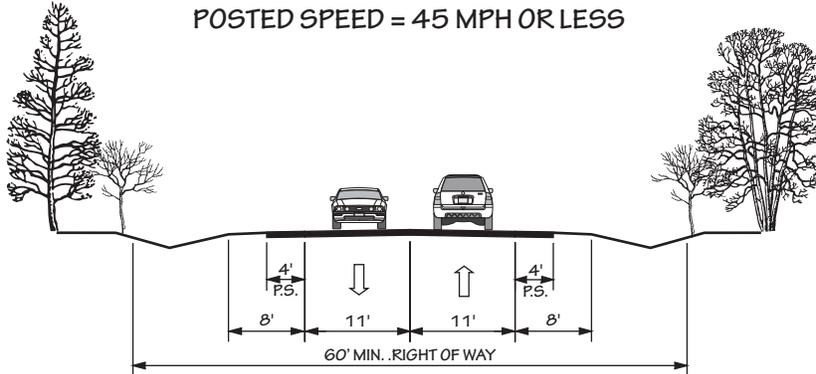
2 A

WIDE PAVED SHOULDERS
POSTED SPEED = 55 MPH



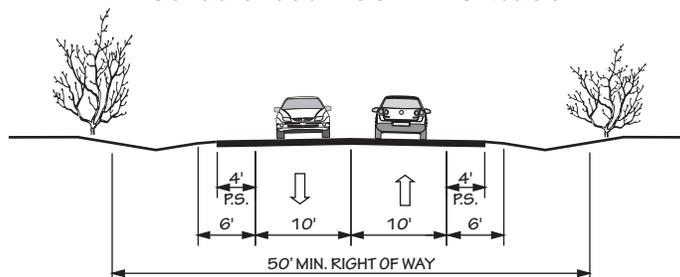
2 B

WIDE PAVED SHOULDERS
POSTED SPEED = 45 MPH OR LESS



2 C

WIDE PAVED SHOULDERS
POSTED SPEED = 35 MPH OR LESS

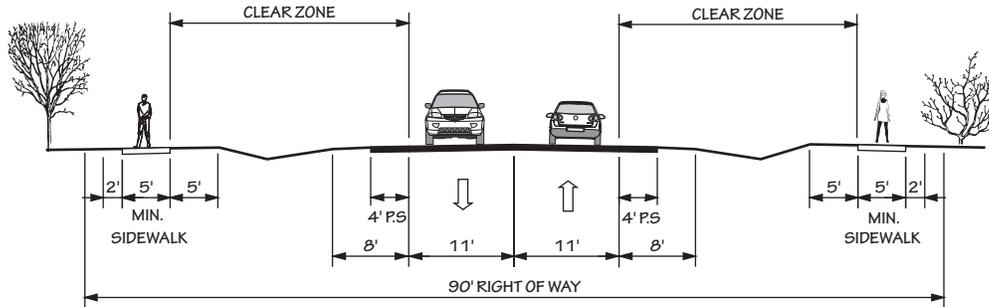


TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

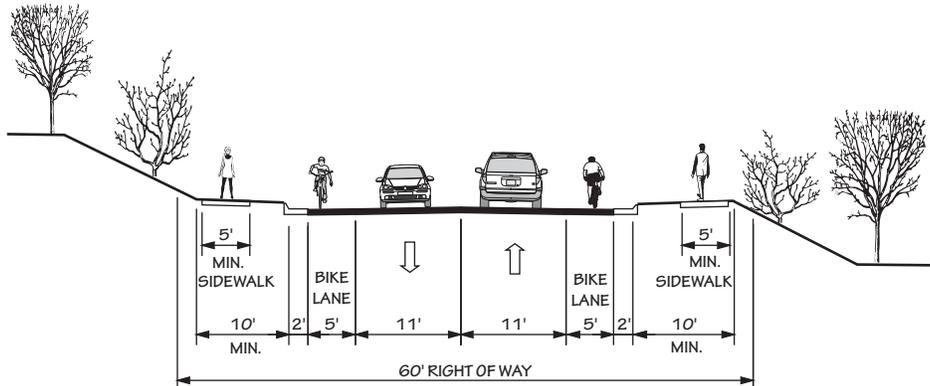
2 D

SIDEWALK PLACEMENT BEHIND A ROADWAY DITCH



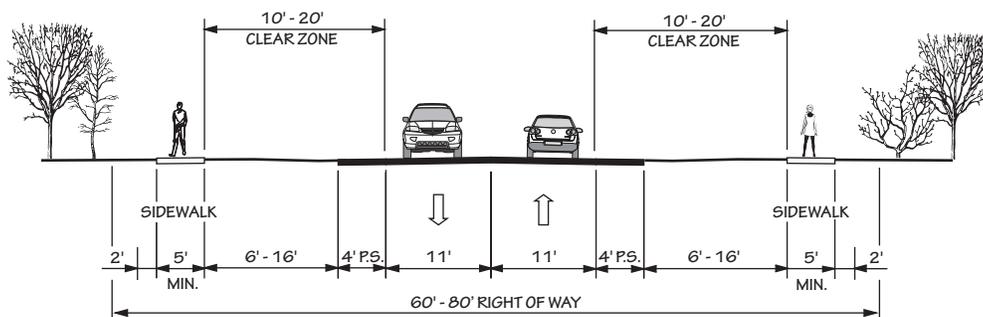
2 E

CURB AND GUTTER WITH BIKE LANES AND SIDEWALKS



2 F

BUFFERS AND SIDEWALKS WITHOUT A ROADWAY DITCH
(20 MPH TO 45 MPH)
(TYPICALLY COASTAL AREA MANAGEMENT ACT COUNTIES)

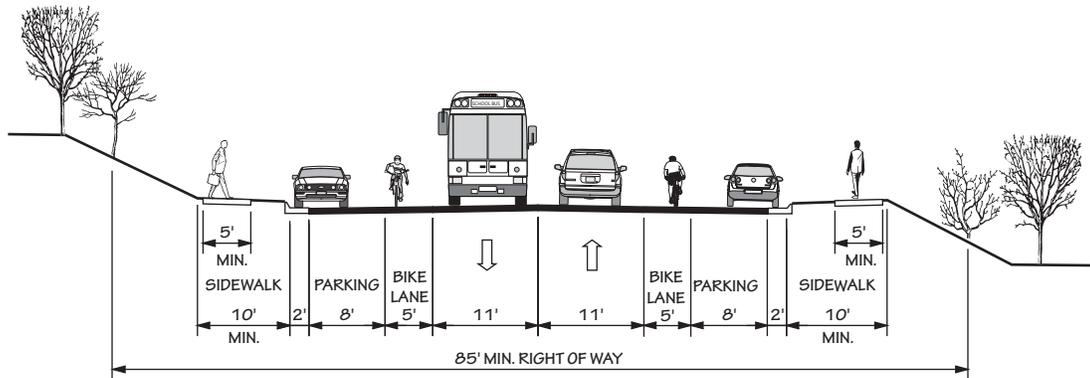


TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

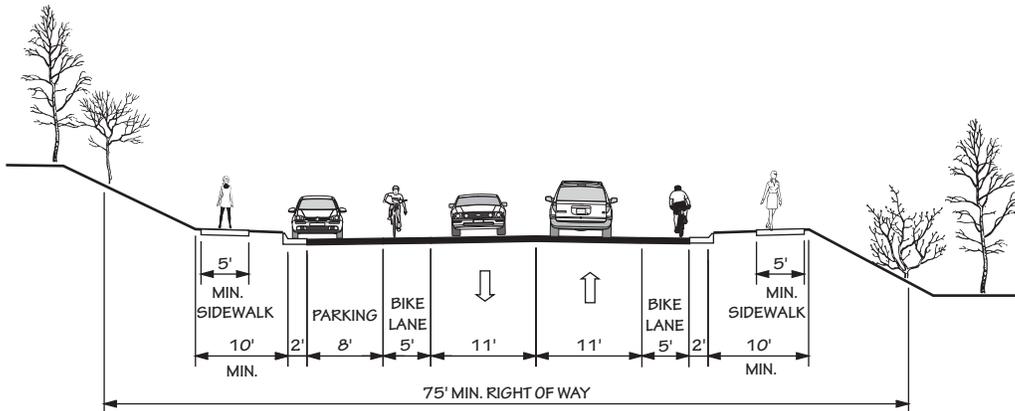
2 G

CURB & GUTTER - PARKING ON EACH SIDE



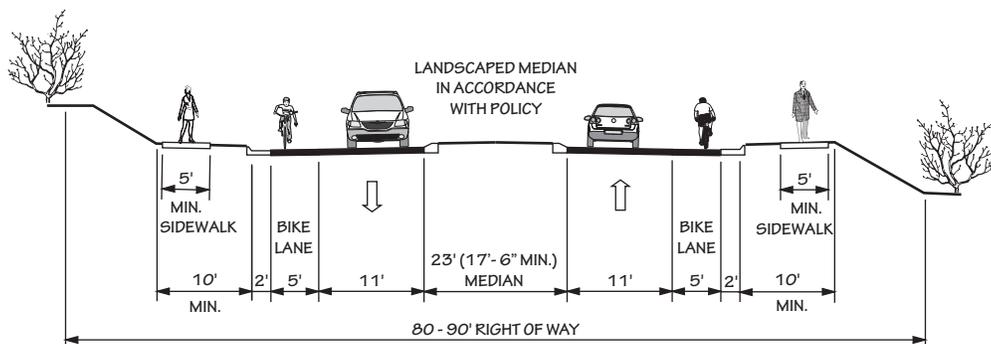
2 H

CURB & GUTTER - PARKING ON ONE SIDE



2 I

RAISED MEDIAN WITH CURB & GUTTER

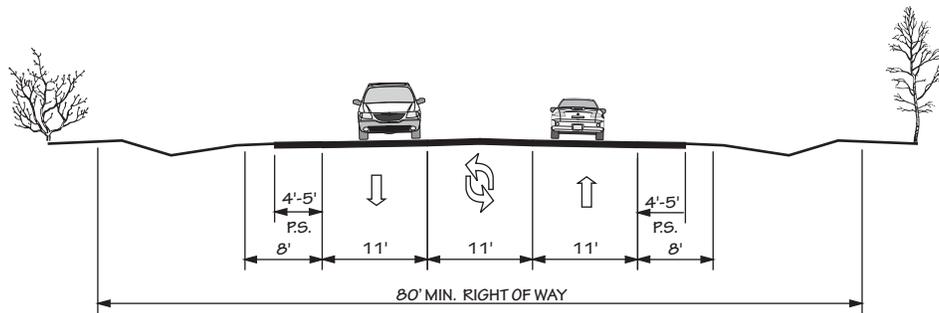


TYPICAL HIGHWAY CROSS SECTIONS

3 LANES

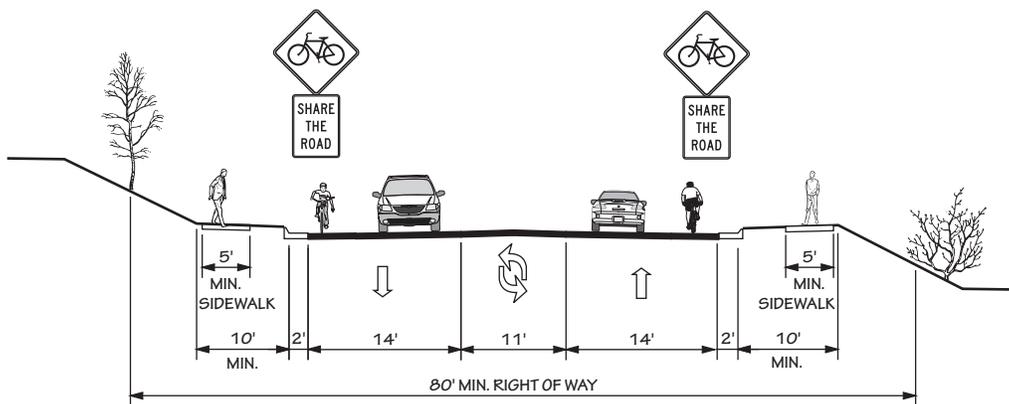
3 A

WIDE PAVED SHOULDERS



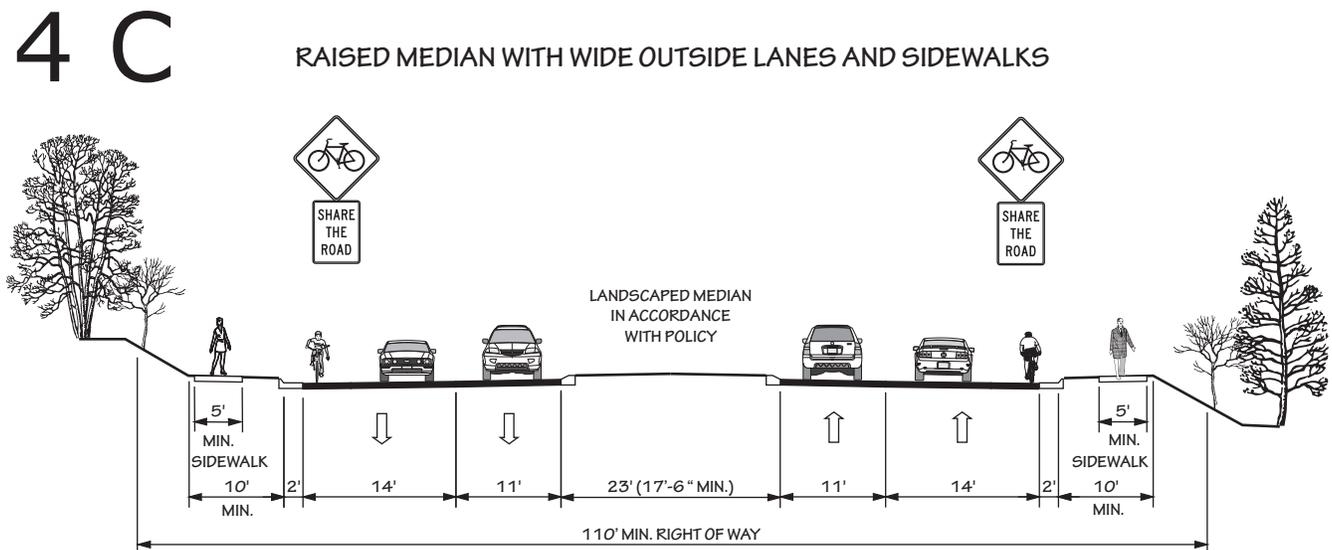
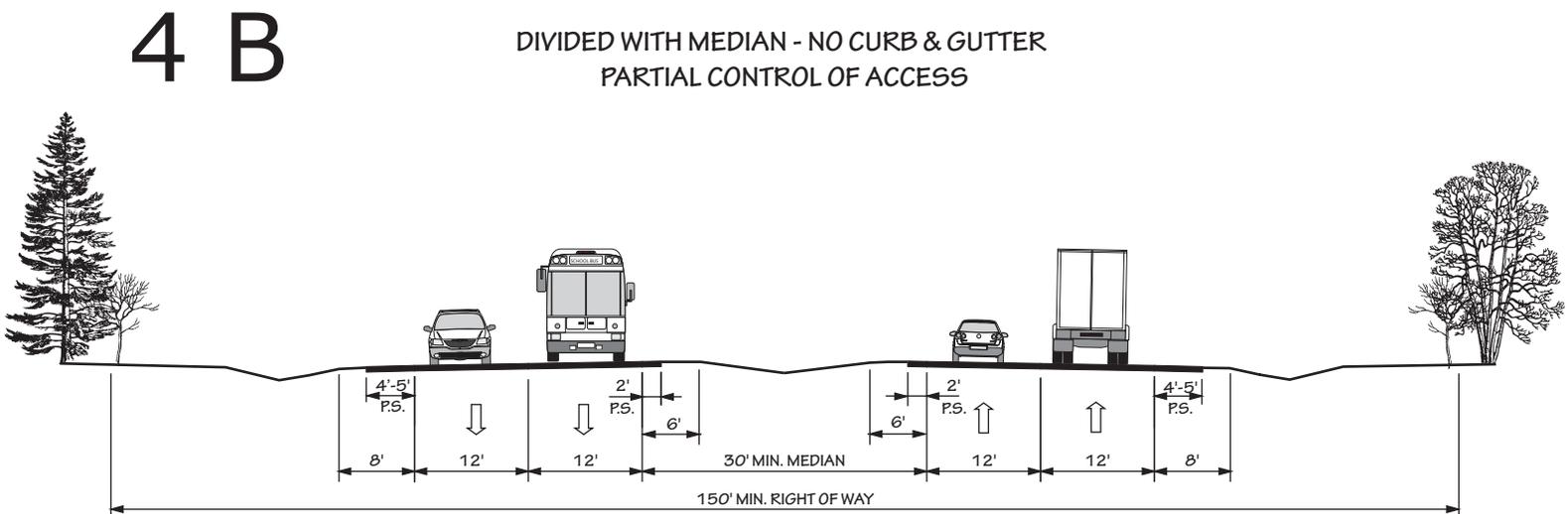
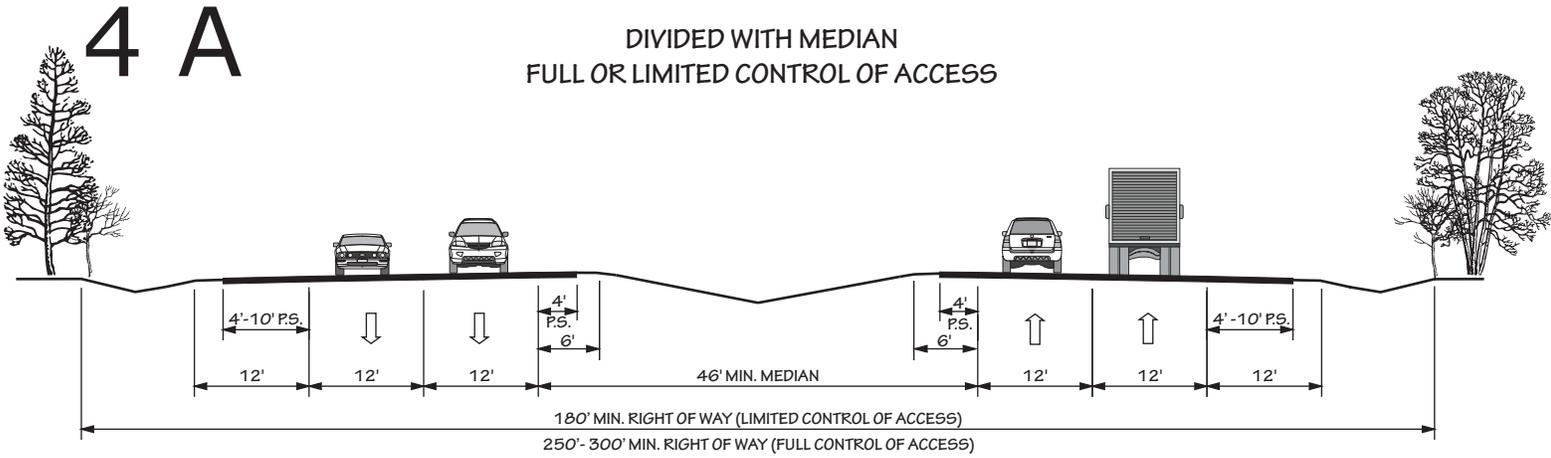
3 B

CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS



TYPICAL HIGHWAY CROSS SECTIONS

4 LANES

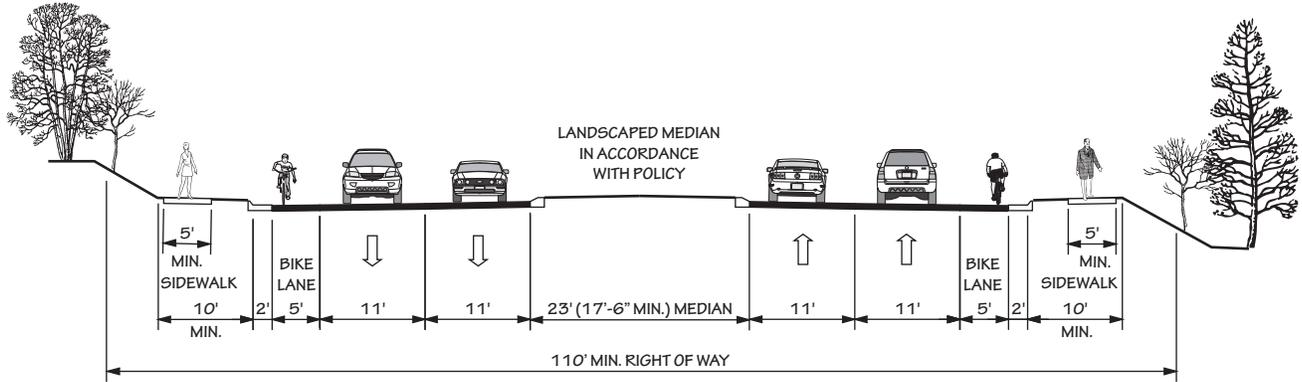


TYPICAL HIGHWAY CROSS SECTIONS

4 LANES

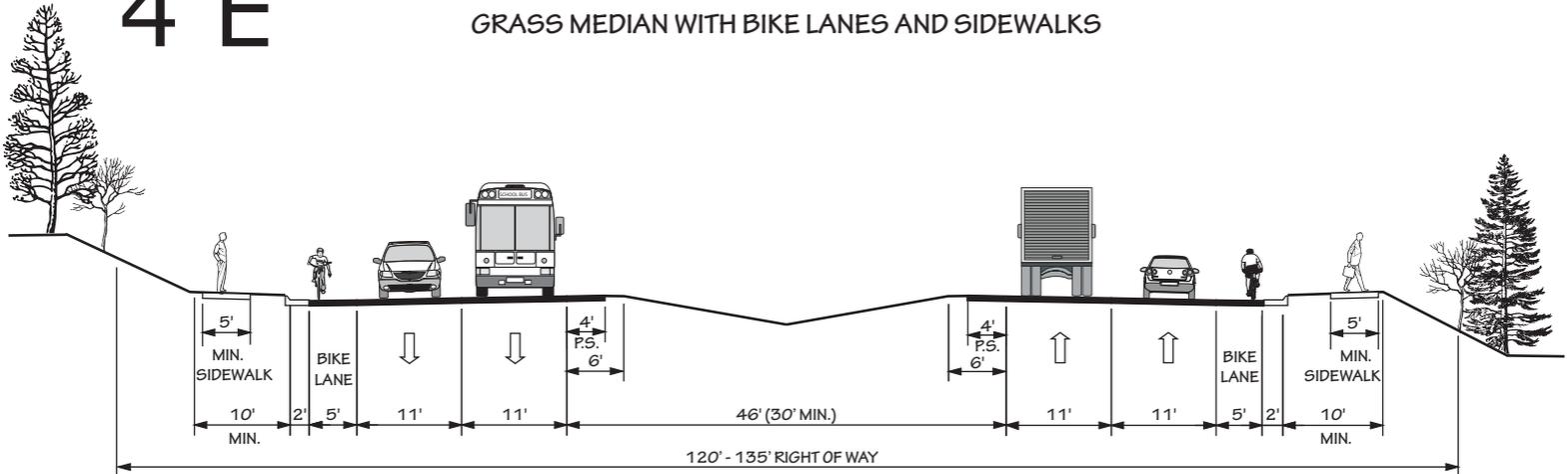
4 D

RAISED MEDIAN - CURB & GUTTER WITH BIKE LANES AND SIDEWALKS



4 E

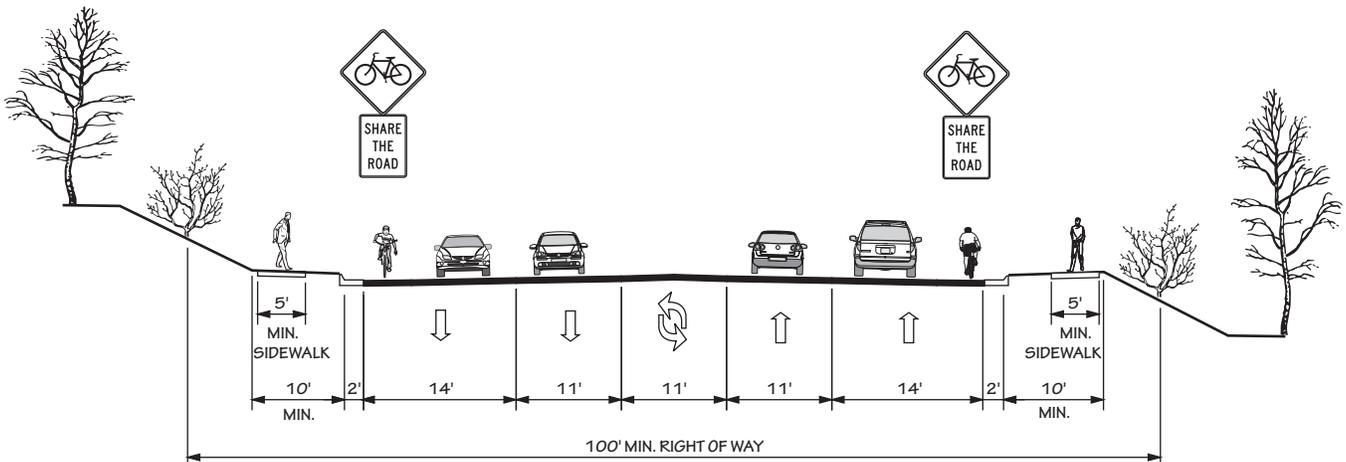
GRASS MEDIAN WITH BIKE LANES AND SIDEWALKS



5 LANES

5 A

WIDE OUTSIDE LANES

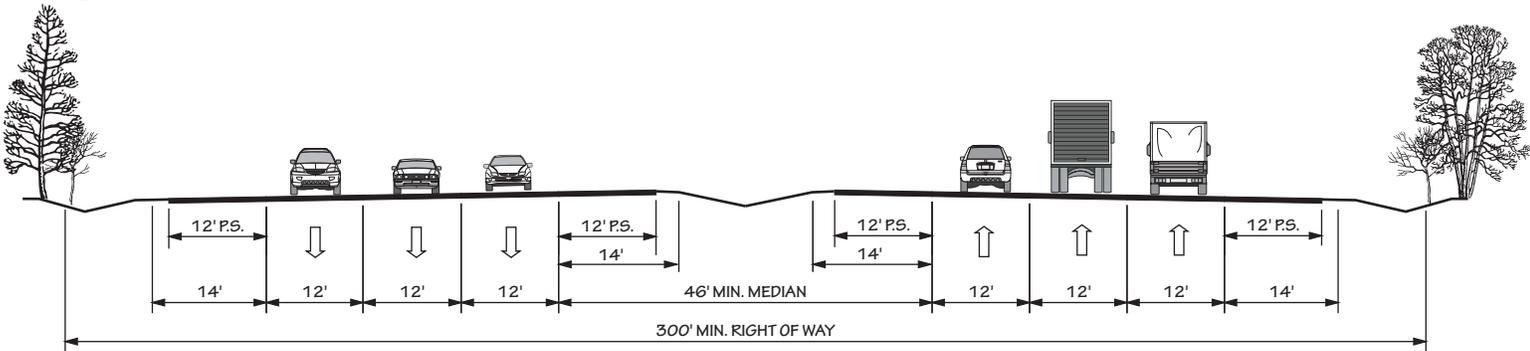


TYPICAL HIGHWAY CROSS SECTIONS

6 LANES

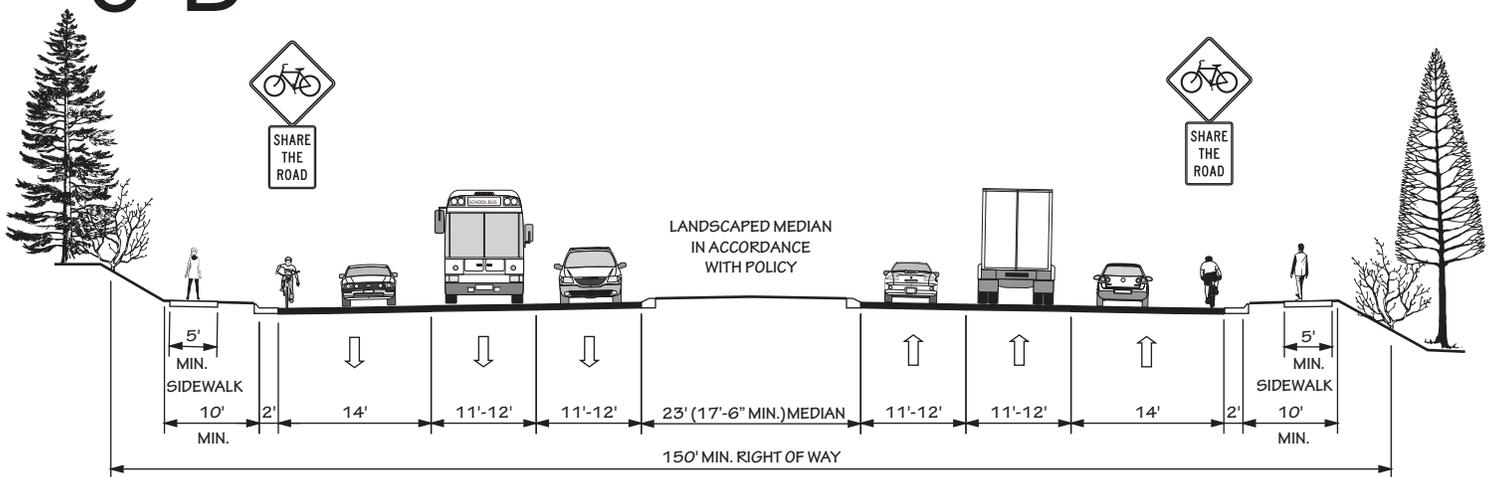
6 A

DIVIDED WITH GRASS MEDIAN



6 B

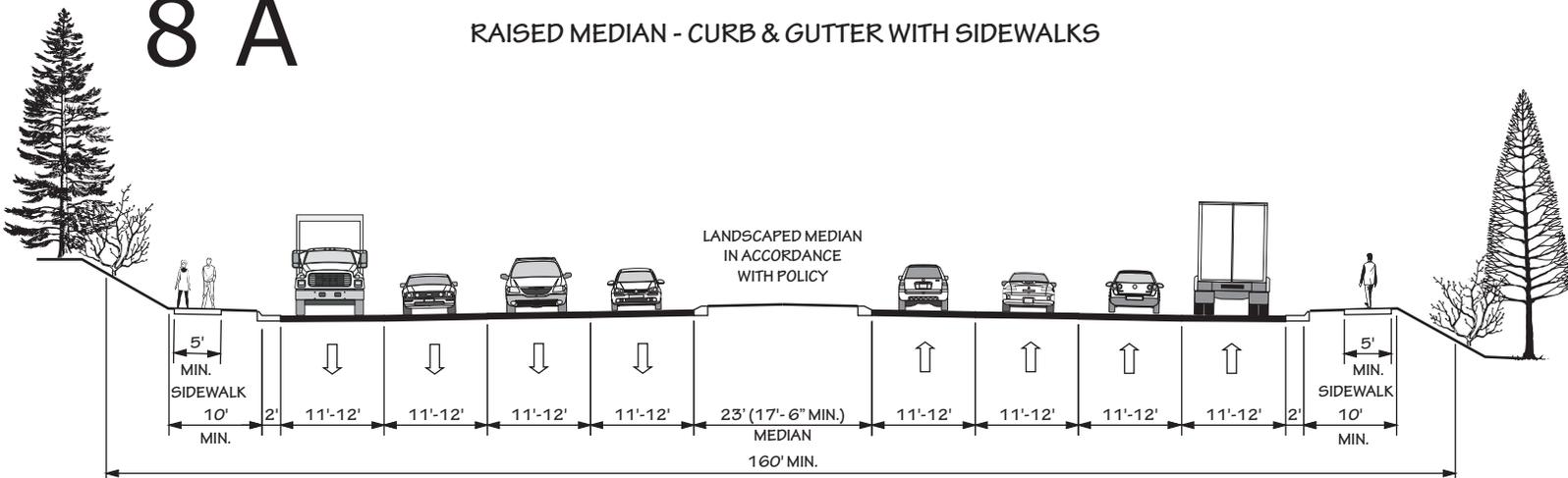
RAISED MEDIAN - CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS



8 LANES

8 A

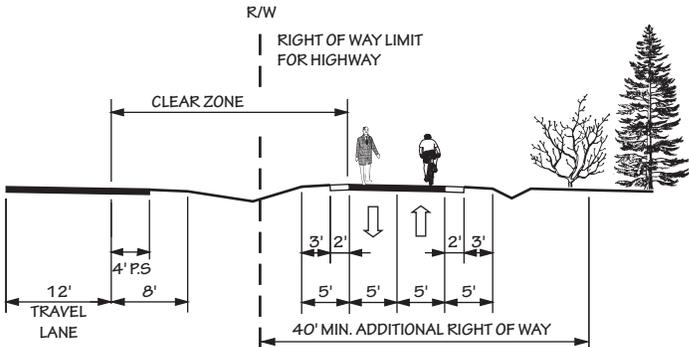
RAISED MEDIAN - CURB & GUTTER WITH SIDEWALKS



TYPICAL MULTI - USE PATH

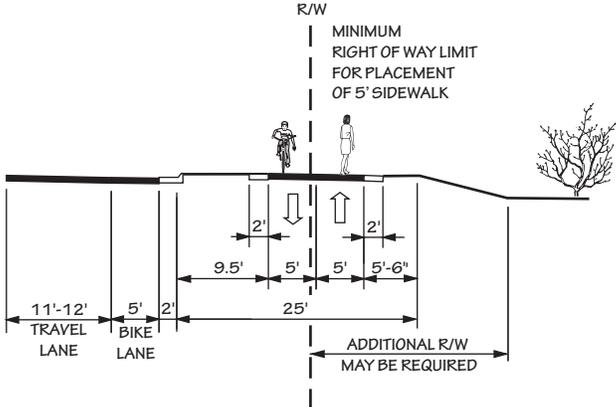
MULTI - USE PATH
ADJACENT TO RIGHT OF WAY OR SEPARATE PATHWAY

M A



MULTI - USE PATH ADJACENT TO CURB AND GUTTER

M B



Appendix E

Level of Service Definitions

The relationship of travel demand compared to the roadway capacity determines the level of service (LOS) of a roadway. Six levels of service identify the range of possible conditions. Designations range from LOS A, which represents the best operating conditions, to LOS F, which represents the worst operating conditions.

Design requirements for roadways vary according to the desired capacity and level of service. LOS D indicates “practical capacity” of a roadway, or the capacity at which the public begins to express dissatisfaction. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C on new facilities. The six levels of service are described below and illustrated in Figure 8.

- **LOS A:** Describes primarily free flow conditions. The motorist experiences a high level of physical and psychological comfort. The effects of minor incidents of breakdown are easily absorbed. Even at the maximum density, the average spacing between vehicles is about 528 ft, or 26 car lengths.
- **LOS B:** Represents reasonably free flow conditions. The ability to maneuver within the traffic stream is only slightly restricted. The lowest average spacing between vehicles is about 330 ft, or 18 car lengths.
- **LOS C:** Provides for stable operations, but flows approach the range in which small increases will cause substantial deterioration in service. Freedom to maneuver is noticeably restricted. Minor incidents may still be absorbed, but the local decline in service will be great. Queues may be expected to form behind any significant blockage. Minimum average spacing is in the range of 220 ft, or 11 car lengths.
- **LOS D:** Borders on unstable flow. Density begins to deteriorate somewhat more quickly with increasing flow. Small increases in flow can cause substantial deterioration in service. Freedom to maneuver is severely limited, and the driver experiences drastically reduced comfort levels. Minor incidents can be expected to create substantial queuing. At the limit, vehicles are spaced at about 165 ft, or 9 car lengths.
- **LOS E:** Describes operation at capacity. Operations at this level are extremely unstable, because there are virtually no usable gaps in the traffic stream. Any disruption to the traffic stream, such as a vehicle entering from a ramp, or changing lanes, requires the following vehicles to give way to admit the vehicle. This can establish a disruption wave that propagates through the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate any disruption. Any incident can be expected to produce a serious breakdown with extensive queuing. Vehicles are spaced at approximately 6 car lengths, leaving little room to maneuver.

- **LOS F:** Describes forced or breakdown flow. Such conditions generally exist within queues forming behind breakdown points.

Figure 8 - Level Of Service Illustrations

Level of Service A



Driver Comfort: High

Maximum Density:

12 passenger cars per mile per lane

Level of Service B



Driver Comfort: High

Maximum Density:

20 passenger cars per mile per lane

Level of Service C



Driver Comfort: Some Tension

Maximum Density:

30 passenger cars per mile per lane

Level of Service D



Driver Comfort: Poor

Maximum Density:

42 passenger cars per mile per lane

Level of Service E



Driver Comfort: Extremely Poor

Maximum Density:

67 passenger cars per mile per lane

Level of Service F



Driver Comfort: The lowest

Maximum Density:

More than 67 passenger cars per mile per lane

Source: 2000 Highway Capacity Manual

Appendix F Traffic Crash Analysis

A crash analysis performed for the Macon County CTP factored crash frequency, crash type, and crash severity. Crash frequency is the total number of reported collisions and contributes to the ranking of the most problematic intersections. Crash type provides a general description of the crash and allows the identification of any trends that may be correctable through roadway or intersection improvements. Crash severity is the crash rate based upon injuries and property damage incurred.

The severity of every crash is measured with a series of weighting factors developed by the NCDOT Division of Highways (DOH). These factors define a fatal or incapacitating crash as 47.7 times more severe than one involving only property damage and a crash resulting in minor injury is 11.8 times more severe than one with only property damage. In general, a higher severity index indicates more severe accidents. Listed below are levels of severity for various severity index ranges.

<u>Severity</u>	<u>Severity Index</u>
low	< 6.0
average	6.0 to 7.0
moderate	7.0 to 14.0
high	14.0 to 20.0
very high	> 20.0

Table 4 depicts a summary of the crashes occurring in the planning area between January 1, 2007 and December 31, 2009. The data represents locations with 5 or more crashes. The “Number of Crashes” column indicates the total number of crashes reported within 150-ft of the intersection during the three year study period. The severity listed is the average crash severity for that location. The “Map Index” can be used to find the intersection location on Figure 4.

Table 4 - Crash Locations

Map Index	Number of Crashes	Road A	Road B	Average Severity
1	22	DEPOT	MAIN	2.35
2	21	PALMAR	PORTER	1.35
3	20	HIGHLAND	MAIN	2.48
4	13	US 441 BUS	LAKE EMORY RD	4.79
5	12	US 64	SR 1175 / SR 1153	3.47
6	11	US 23	US 64	11.93
7	11	US 441	SILER	3.02
8	11	US 441	ALLMAN	4.36
9	10	PALMAR	PHILLIPS	4.7

10	10	PALMAR	WILKIE	3.22
11	9	US 23	SR 1504	5.11
12	8	GEORGIA	WOMACK	2.85
14	7	US 23	SR 1515	13.94
15	7	MAPLE	PALMAR	7.34
16	7	NC 28	AIRPORT	4.17
17	7	US 64	SR 1560	3.11
19	7	PALMAR ST	PALMAR DR	2.06
20	6	US 64	SR 1148	7.17
21	6	US 441	LOWES	5.93
22	6	US 23	SR 1335	4.7
23	6	US 64	SR 1517	4.7
24	6	US 64	SR 1668	4.7
26	6	DEPOT	WAYAH	2.23
27	5	SR 1372	SR1378	5.44
31	5	MAIN	MAPLE	2.48
32	5	DERBY	PALMAR	2.48
33	5	IOTLA	MAIN	1
34	5	US 441	US 441	1
35	5	NC 28	SR 1335	1

The NCDOT is actively involved with investigating and improving many of these locations. To request a more detailed analysis for any of the locations listed in Table 4, or other intersections of concern, contact the Division Traffic Engineer. Contact information for the Division Traffic Engineer is included in Appendix A.

Appendix G

Bridge Deficiency Assessment

The Transportation Improvement Program (TIP) development process for bridge projects involves consideration of several evaluation methods in order to prioritize needed improvements. A sufficiency index is used to determine whether a bridge is sufficient to remain in service, or to what extent it is deficient. The index is a percentage in which 100 percent represents an entirely sufficient bridge and zero represents an entirely insufficient or deficient bridge. Factors evaluated in calculating the index are listed below.

- structural adequacy and safety
- serviceability and functional obsolescence
- essentiality for public use
- type of structure
- traffic safety features

The NCDOT Structures Management Unit inspects all bridges in North Carolina at least once every two years. A sufficiency rating for each bridge is calculated and establishes the eligibility and priority for replacement. Bridges having the highest priority are replaced as Federal and State funds become available.

A bridge is considered deficient if it is either structurally deficient or functionally obsolete. Structurally deficient means there are elements of the bridge that need to be monitored and/or repaired. The fact that a bridge is "structurally deficient" does not imply that it is likely to collapse or that it is unsafe. It means the bridge must be monitored, inspected, and repaired/replaced at an appropriate time to maintain its structural integrity. A functionally obsolete bridge is one that was built to standards that are not used today. These bridges are not automatically rated as structurally deficient, nor are they inherently unsafe. Functionally obsolete bridges are those that do not have adequate lane widths, shoulder widths, or vertical clearances to serve current traffic demand or to meet the current geometric standards, or those that may be occasionally flooded.

A bridge must be classified as deficient in order to qualify for Federal replacement funds. Additionally, the sufficiency rating must be less than 50% to qualify for replacement or less than 80% to qualify for rehabilitation under federal funding.

Deficient bridges located on roads in the CTP are shown in Table 5. For more information on deficient bridges within the planning area, contact the Structures Management Unit using the information in Appendix A.

Table 5 - Deficient Bridges

Bridge ID	Facility	Feature	Condition	CTP Project
4	SR1001	ELLIJAY CREEK	Functionally Obsolete	
8	SR1001	BERRY PRONG ELLIJAY CRK.	Structurally Deficient	
22	US441BUS	LITTLE TENNESSEE RIVER	Structurally Deficient	B-5125
26	NC106	MIDDLE CREEK	Functionally Obsolete	MACO00011-H
46	SR1644	LITTLE TENNESSEE	Functionally Obsolete	
49	SR1636	TESSENETEE CREEK	Structurally Deficient	
58	SR1551	CULLASAJA RIVER	Structurally Deficient	MACO00013-H B-4574
65	SR1513	RABBIT CREEK	Structurally Deficient	
66	SR1513	RABBIT CREEK	Functionally Obsolete	
67	SR1513	RABBIT CREEK	Structurally Deficient	B-5406
69	SR1513	RABBIT CREEK	Functionally Obsolete	
76	SR1370	BURNINGTOWN CREEK	Structurally Deficient	
77	SR1372	BURNINGTOWN CREEK	Structurally Deficient	
88	SR1472	COWEE CREEK	Structurally Deficient	
95	US64	SR1440	Functionally Obsolete	
99	SR1128	JONES CREEK	Structurally Deficient	
105	US64,NC28	CULLASAJA RIVER	Functionally Obsolete	MACO0002-H
200	SR1533	WALNUT CREEK	Functionally Obsolete	
205	SR1434	IOTLA CREEK	Functionally Obsolete	
226	SR1310	NANTAHALA RIVER	Functionally Obsolete	
227	SR1310	NANTAHALA RIVER	Functionally Obsolete	
228	SR1310	NANTAHALA RIVER	Functionally Obsolete	
229	SR1310	NANTAHALA RIVER	Functionally Obsolete	
230	SR1310	NANTAHALA RIVER	Functionally Obsolete	
241	SR1636	LITTLE TENN.RIVER OV'RFL	Structurally Deficient	
302	SR1001	BATTLE BRANCH	Structurally Deficient	
312	SR1122	BATES CREEK	Functionally Obsolete	
313	SR1122	SHEENAH CREEK	Functionally Obsolete	

Appendix H Public Involvement

This appendix includes a listing of committee members; vision statements; G/O survey with summation of results; and a summary of each public involvement opportunity including the types of information presented, number of attendees, and any major/potentially controversial issues.

CTP Coordinating Committee

The Macon County Commissioners appointed a CTP Coordinating Committee to guide development of the plan. The Committee had members from various interest groups and met as needed to guide the study process. Below are listed the members of Coordinating Committee at any time during the CTP process, and on the next page the vision statement they adopted to guide the CTP process.

Kevin Corbin	Macon County Commissioner
Verlin Curtis	Town of Franklin Alderman
Cissy Pattillo	Town of Franklin Alderwoman
Josh Ward	Highlands Planning Officer
Dennis DeWolf	Town of Highlands Commissioner
Marvin Grant	Nantahala representative
Pam Forshee	Local business representative
Sharon Taylor	Land Trust for the Little Tennessee
Mark West	Macon County Economic Development
Ed Shatley	Macon County EDC Chairman
Derek Roland	Macon County Planner
Jack Morgan	Macon County Code/Planning/Enforcement
Karl Gillespie	Macon County Planning Board
Mike Grubermann	Franklin Town Planner
Kim Angel	Macon County Transit
Brian Burch	NCDOT Division 14

Macon County CTP Vision/Objectives

March 24th, 2010

Produce and maintain a Comprehensive Transportation Plan to preserve the integrity of our mountain heritage, the beauty and tranquility of our communities, as well as our natural environment for the benefit of current populations as well as future generations while sustaining economic vitality and the social welfare of our citizens.

This will be accomplished by creating a multi-modal transportation system that satisfies the needs of the individual communities and towns within Macon County, by providing a safe, accessible, and environmentally responsible long range comprehensive transportation plan.

Objectives:

- 1. Ensure the comprehensive transportation plan aligns with the broad goals of the Macon County Comprehensive Land Use Plan**
- 2. Improve economic development countywide to ensure future generations can remain in a prosperous Macon County with their families**
- 3. Improve the overall safety of the transportation system for motorists, bikers, pedestrians and transit riders**
- 4. Ensure Georgia Road remains attractive for future business growth while maintaining mobility**
- 5. Ensure NC 28 north of Sanderstown maintains and enhances its historic and rural character**
- 6. Ensure a regional seamless transportation system with our neighboring counties and Georgia**
- 7. Promote “connectivity” as new development occurs**

Macon County Comprehensive Transportation Plan Survey



Macon County, the Southwestern RPO, and NCDOT's Transportation Planning Branch are seeking public input as part of Macon County's Comprehensive Transportation Planning process.

Please complete this short survey to let us know your area's transportation issues and needs.

Your answers will help guide the development of the Macon County's Comprehensive Transportation Plan (CTP). During the CTP process, the county's future transportation needs will be determined and solutions will be recommended. Alternative modes of transportation will also be studied. The process will involve local government officials and the public. Public workshops will be held in the future to receive additional input on the transportation issues in Macon County.

Please complete by **TBD ~ October 1st, 2009**

This survey is available online at
www.surveymonkey.com/MaconCountyCTP
and paper copies can be returned to:

Cooper Sellers
North Carolina Dept of Transportation
1554 Mail Service Center
Raleigh, NC 27699
dcsellers1@ncdot.gov

1. Name (Optional)

2. Do you or a member in your household own a motor vehicle?

- Yes
 No

3. Which of the following currently describes your work or study?

- Work fulltime in Macon County Study in Macon County Currently unemployed
 Work fulltime out of Macon County Study out of Macon County Retired

Macon County CTP 2009

4. Please select the community you live closest to.

- | | | |
|---------------------------------|--------------------------------------------------|----------------------------------------------------|
| <input type="radio"/> Franklin | <input type="radio"/> Nantahala | <input type="radio"/> US Hwy 441 North of Franklin |
| <input type="radio"/> Highlands | <input type="radio"/> Cowee | <input type="radio"/> NC Hwy 28 North of Franklin |
| <input type="radio"/> Otto | <input type="radio"/> US Hwy 64 West of Franklin | |

5. On average, how much time do you live in Macon County each year?

- I am a fulltime resident
- 1 to 3 months per year
- 3 to 6 months per year
- 6 to 9 months per year
- 9 to 12 months per year

6. Please select the community or county you work closest to.

- | | |
|----------------------------------------------------|---------------------------------------|
| <input type="radio"/> Franklin | <input type="radio"/> Jackson County |
| <input type="radio"/> Highlands | <input type="radio"/> Clay County |
| <input type="radio"/> Otto | <input type="radio"/> Cherokee County |
| <input type="radio"/> Nantahala | <input type="radio"/> Swain County |
| <input type="radio"/> Cowee | <input type="radio"/> Graham County |
| <input type="radio"/> US Hwy 64 West of Franklin | <input type="radio"/> Haywood County |
| <input type="radio"/> US Hwy 441 North of Franklin | <input type="radio"/> South Carolina |
| <input type="radio"/> NC Hwy 28 North of Franklin | <input type="radio"/> Georgia |

Macon County CTP 2009

7. Please rate each of the transportation system goals from 1-Not Important to 5-Very Important.

	1-Not Important	2-Less Important	3-Neutral	4-Important	5-Very Important
Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service of Special Needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consistent Travel Times	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faster Automobile Travel Times	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation Mode Choice (Walking, Biking, and Transit)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Economic Growth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental Protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community and Cultural Preservation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integration with Regional Community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Of the choices in the previous questions, which is the single Most Important to you?

Most Important

Choose One

9. Of the choices in the previous questions, which is the single Least Important to you?

Least Important

Choose One

10. In deciding where to live, which of the following best meets your lifestyle needs?

- | | | |
|----------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------|
| <input type="radio"/> Rural/Country living | <input type="radio"/> New residential area | <input type="radio"/> Newer area with mix of uses (commercial, office and residential) |
| <input type="radio"/> Downtown or town center area | <input type="radio"/> Older residential area | <input type="radio"/> Older area with mix of uses (commercial, office and residential) |

11. Where do you perceive traffic being a problem in Macon County?

12. To address the traffic problems in the area, which improvements should be considered?

- Widen existing roads
- Add turn lanes at specific intersections
- Improve pavement and bridges
- Provide or Increase bus service
- Build new roadways
- Provide better information to drivers
- Add on-road bike lanes
- Increase the amount of sidewalks and improve existing sidewalks
- Greenways and off-road paths
- Park-and-Ride lots
- Access controls including, limited driveways and cross streets, and right-in right-out only facilities
- Improving intersection design, better traffic signal timing, and creating roundabouts

Other ideas / Comments

13. If additional money is needed to fund transportation projects, which of the following would you be willing to support?

- A gasoline tax increase
- Charging transportation fees to develop properties
- A local bond referendum

Other (please specify)

Macon County CTP 2009

14. When traveling in your area, do you find that you often have to go out of your way to get to your destination because the most direct route is too congested? If yes, please list specific locations of problems and alternate routes taken.

- No
- Yes (describe)

15. Should we be spending more or less money on the following?

	1-Much Less	2-Less	3-Same	4-More	5-Much More
Maintaining existing residential streets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building new major roads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining major streets and highways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building new freeways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating or expanding bus service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expanding carpooling or vanpooling programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building new sidewalks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Building new greenways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. How did you find out about the survey?

- | | |
|------------------------------------|----------------------------------------------|
| <input type="checkbox"/> Newspaper | <input type="checkbox"/> Town Hall |
| <input type="checkbox"/> Radio | <input type="checkbox"/> Planning Department |
| <input type="checkbox"/> Library | <input type="checkbox"/> Word of Mouth |

Other (please specify)

17. Any other comments or suggestions you would like to share with us?

The Macon County Goals and Objectives (G&O) Survey was composed by the Macon County CTP Coordinating Committee, the Southwestern RPO, and NCDOT. The survey included questions that involved ranking the importance of transportation improvements and goals, and several questions requiring a short answer that dealt with specific transportation topics. The survey was distributed in two formats, paper and electronic. Various means were used to make the public aware of the survey and direct them to a means of completing the survey. These methods included radio and e-mail announcements, news releases in the paper, and physical copies in the library, government, and RPO offices. Below is a summation of the results from the Macon County G&O Survey. A total of 390 responses were received between August and November of 2009. Of these, 28 were paper copies and the rest were completed online. Full details of free response questions are available by request due to their length.

QUESTION 1: 182 people out of 390 (or 47%) provided their names along with their survey.

QUESTION 2: Only 1.8% of respondents indicated they do not own a motor vehicle. This was expected based on the rural nature of the county and low density land use.

QUESTION 3: The majority of people taking the survey work in Macon County (59.4%). Another 30% are retired, and 7.2% work outside of the county. No one responded that they are students in Macon County.

QUESTION 4: Franklin was the residence location of choice with 36.5%. Other significant responses were Highlands (17.1%), Otto (10.9%), and "NC Hwy 28 North of Franklin" (9.3%).

QUESTION 5: 78.2% of respondents are full time residents with over half of the remainder (11.7%) indicating they live in Macon 9+ months a year.

QUESTION 6: Two communities served as centers of employment with 63.3% saying they work in or near Franklin and 17.6% in or near Highlands.

QUESTION 7: A total of 50% "important" or "very important" was considered supporting, with 50% "not important" or "less important" indicating the opposite. If the 50% fell in "neutral" then the question is considered a tossup. Based on this criterion, people indicated each of the following:

Supported: "Safety" (92.45%); "Service of Special Needs" (62.02%); "Consistent Travel Times" (63.31%); "Transportation Mode Choice" (68.48%); "Economic Growth" (69%); "Environmental Protection" (83.98%); "Community and Cultural Preservation" (82.43%); "Integration with regional Community" (64.08%)

The only neutral was "Faster Automobile Travel Times" (30.49% "not important" and 27.91% "important").

QUESTION 8: “Safety” was the single most important issue with 35% of the vote. Others with over 10% were “Economic Growth” (13%), “Community and Cultural Preservation” (11%), “Environmental Protection” (13%), and “Mode Choice” (14%).

QUESTION 9: “Faster Automobile Travel Time” was strongly the least important choice with 47%, more than four times the nearest competitor (10%). Safety was the only choice to receive zero votes as least important.

QUESTION 10: Rural and Country living was the most supported lifestyle need (61.2%) with all others below 10%.

QUESTION 11: 340 people gave responses to the open ended question for traffic problems. US 441 South from Franklin to Georgia, seems to be the primary concern, along with US 64 East to Clay County. People also mention various individual locations (Bi-Lo, Wal-mart, and the High School) which may show some specific needs.

QUESTION 12: When asked which methods should be used to improve the transportation network, not a single choice broke the 50% mark. Those above 40% were “Turn lanes at specific intersections”, “Add on-road bike lanes”, “Increase and expand Sidewalks”, “Improve intersection design.” Also 125 free responses were given. Many included better signage, police presence and citations, speed limits, signal timing, and more traffic signals.

QUESTION 13: If new funds were needed only “Charging Development” fees broke the 50% mark (53%), the others ranked in at 43% for bonding, and 33% for gas tax.

QUESTION 14: 73% of respondents do not have to go out of their way. Of the 27% who do, US 441 S and downtown Franklin were mentioned repeatedly.

QUESTION 15: Using the same criteria as for Question 7.
Spend Less: Building new roads (49.74%), Building new Freeways (60.73%)

Spend More: Maintaining Major Roads (52.35%), Expanding Bus Service (51.31%), New Sidewalks (55.49%), and Building New Greenways (50.78%).

Spend Same: Maintaining Residential Streets, and Expanding Carpooling/Vanpooling.

QUESTION 16: 66.9% indicated they heard about the survey through word of mouth. And 104 people (36%) replied other. The primary response of “other” was via E-mail.

Question 17: Many people indicated they want NCDOT to do less / spend money wisely or improve the roads regardless.

Public Involvement Opportunities

In addition to the G&O Survey, two public workshops were held during the CTP process. The first was on August 26, 2010 at the Franklin town hall from 5pm to 7pm. At that workshop, transportation deficiency maps were presented to the public and their feedback on the location and severity of the deficiencies, as well as possible solutions were received. Three written responses were received and presented to the CTP Committee after a 30 day comment period. The major concerns were focused around the following:

- Downtown Franklin,
- Franklin High School,
- Macon Middle School,
- Mountain View Intermediate School,
- and the surrounding roads and sidewalks.

The second workshop was held on March 24, 2011 also at the Franklin town hall from 5pm to 7pm. The draft plan and proposals by the CTP committee were presented. There was one deficiency the CTP committee was still undecided on, and six alternatives were available to the public for comment. Over fifty members of the public attended this event, and thirty-four written comments were received at the meeting and during the 30 day comment period. Below are any issues that received more than one response.

- “Minor Widening List” – For this list of 22 non-capacity deficient projects, opposition was expressed eleven times while one supported it. The CTP Committee eventually removed all the projects from this list except for those within Franklin’s or Highlands’s Extraterritorial Jurisdiction. They are listed in Chapter 2 of this report under the “Other Improvements” heading.
- NC 28 North of Sanderstown Rd (SR 1335) – This project was opposed by 13 citizens without any supporting it. One commenter put out an idea to use pull outs along the road for trucks and scenic view sheds. The CTP Committee, in keeping with the Vision Statement, decided to remove this project.
- Snow Hill Road (SR 1472) – Eight comments were received in opposition to any improvement on Snow Hill Road while one couple expressed their support for a project on the road they live on. This project was part of the “Minor Widening List” and was removed.
- Needmore Road (SR 1364) – Seven people opposed any paving alternative. One mentioned the unpaved improvement as an alternative. The CTP Committee decided to remove this facility from the study completely, because of the ongoing R-4440 TIP project.
- Walking and Biking – Six comments were in support of walking and biking improvements. Two of the six mentioned specific areas. One was Whistle Stop

Mall, the area around it, and the trouble crossing to the recreation park. The other was in support of bicycle improvements to Middle Creek Rd, Tessentee Rd, Coweeta Lab Rd, and pedestrian improvements to Wells Grove Road between the new Wal-Mart, Mountain View Intermediate, and the greenway.

- McCoy Bridge (B-3868) – There were three unopposed oppositions to the McCoy Bridge Replacement. This project is not a part of the CTP.
- Public Transportation – Three comments were received in support of public transportation. These along with other comments had an undertone of concern about oil cost.
- US 441 S (Georgia Rd MACO0001-H) – This project received two comments in support.

A public hearing was held on September 13, 2011 during the Macon County Commissioners meeting. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting.

Appendix I

Socio-Economic Data Forecasting Methodology

In the development of the Macon County CTP, existing and anticipated deficiencies were determined through an analysis of the transportation system looking at both current and future travel patterns. Two analysis methods were used: one for the non-modeled/rural areas and another for the more urbanized area around Franklin.

For the non-modeled/rural portion of Macon County, including Highlands, travel demand was projected from 2010 to 2035 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1990 to 2008. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns.

It is more difficult to predict future travel patterns in urban areas where there are more alternative route options. Therefore, for Franklin and the surrounding area, travel demand was projected from 2010 to 2035 using a non-computerized travel demand model. Travel demand models are developed to replicate travel patterns on the existing transportation system as well as to estimate travel patterns for 2035. Additionally, travel demand models require a broad range of socio-economic input data such as population and employment. These inputs are available from sources like the U.S. Census Bureau for the year 2008, but data for 2035 is also required.

The Macon County CTP Committee worked with NCDOT to estimate population growth, economic development potential, and land use trends to determine the potential impacts on the future transportation system in 2035. This data was endorsed by the CTP Committee on March 24, 2010.

Below is a description of the methodology used in the analysis.

Population

Population trends were estimated using available data from the Office of State Budget and Management (OSBM) and simple exponential growth. Table 6 list population counts and projections through the year 2030 which were taken from the OSBM website. The 2035 population was projected by applying the same growth rate as 2025 to 2030. For those years, an annual growth rate of 1.1% was used in Macon County.

The CTP steering committee identified areas in Macon County that would experience growth rates higher and lower than the county average. The urbanized area was divided into Traffic Analysis Zones (TAZs) as shown in Figure 9. The CTP Committee identified TAZs as high, medium, or low growth potential. TAZs identified as high growth potential were numbers 3, 7, 8, and 10. Those identified as low growth potential were 1, 4, 5, and 9. TAZs 2 and 6 were considered to have medium growth potential. Accordingly, those with high growth potential attracted more trip than those identified as low growth areas.

Table 6 – Population Data

Year	Population – Macon County
1990	23,504
1995	26,663
2000	29,806
2005	32,294
2010	35,208
2015	37,989
2020	40,521
2025	43,211
2030	45,630
2035*	48,184

* Extrapolated by NCDOT

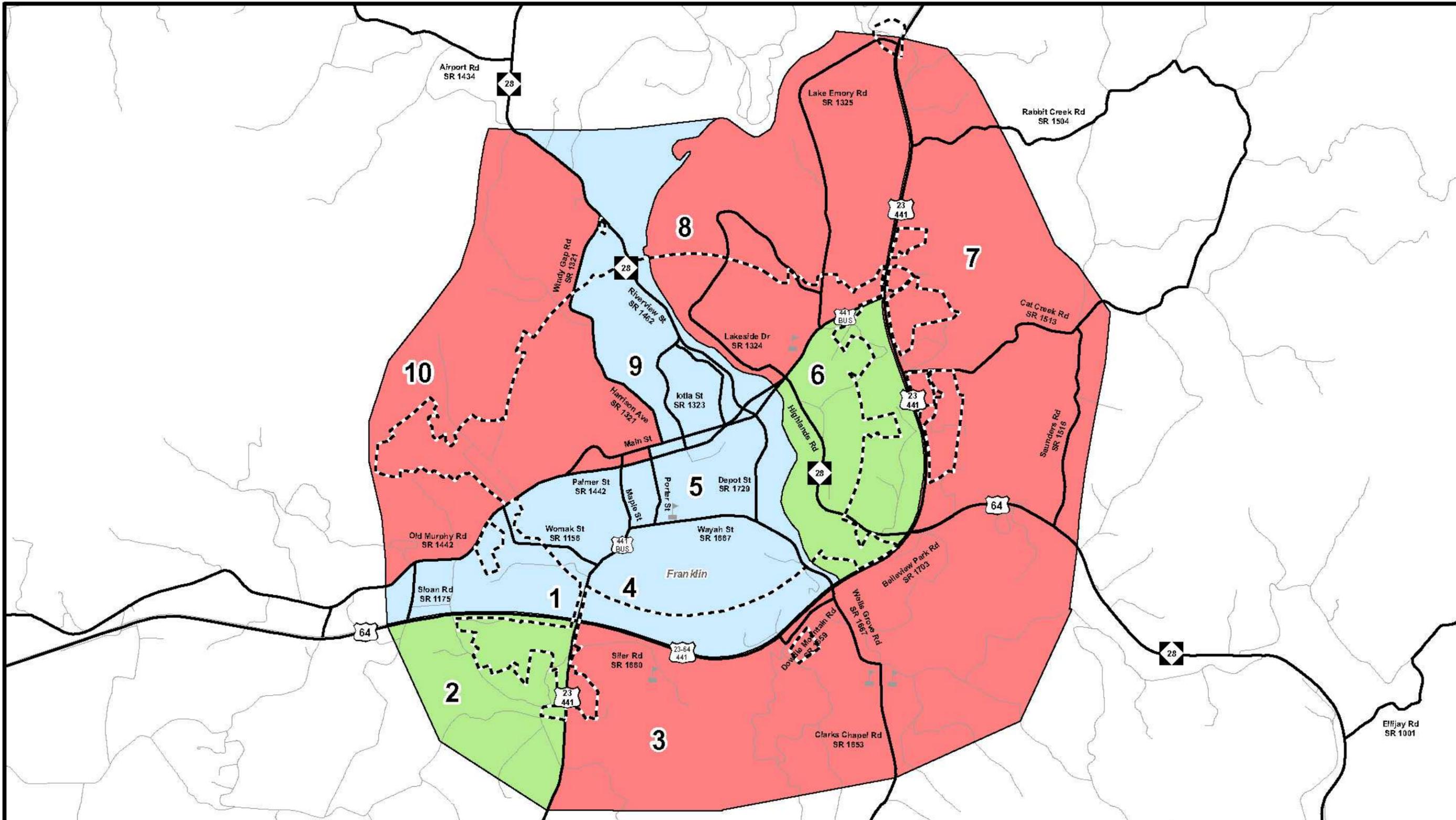
Employment

Future employment conditions within Macon County were approved by the CTP steering committee. This included approximate locations and intensity for proposed employment centers. Any anticipated heavy demand on the future transportation system as a result of these proposals is accounted for in projected traffic volumes. Employment totals were based on US Census Bureau “Quick Facts,” and growth rates came from the Federal Deposit Insurance Corporation (FDIC). Initial distribution for the modeled area was achieved with the help of GIS data provided by Macon County Department of Planning. Countywide 2035 employment totals were based on maintaining the same population-employment ratio as present in 2008.

Table 7 – Employment Data

Year	2005	2006	2007	2008	2009		2035*
Employment - Macon County	9766	10079	10412	10006	9805		14086

* Estimated by NCDOT



Legend

- | | | |
|---------------|-------------------------------|--------------------|
| Network Roads | Municipal Boundary | High Growth Rate |
| Other Roads | County Boundary | Medium Growth Rate |
| Schools | Traffic Analysis Zones (TAZs) | Low Growth Rate |

0 0.25 0.5 1 Miles



Base map date: November 30, 2009

**Growth / TAZ Map
Figure 9**

**Macon County
Comprehensive
Transportation Plan**