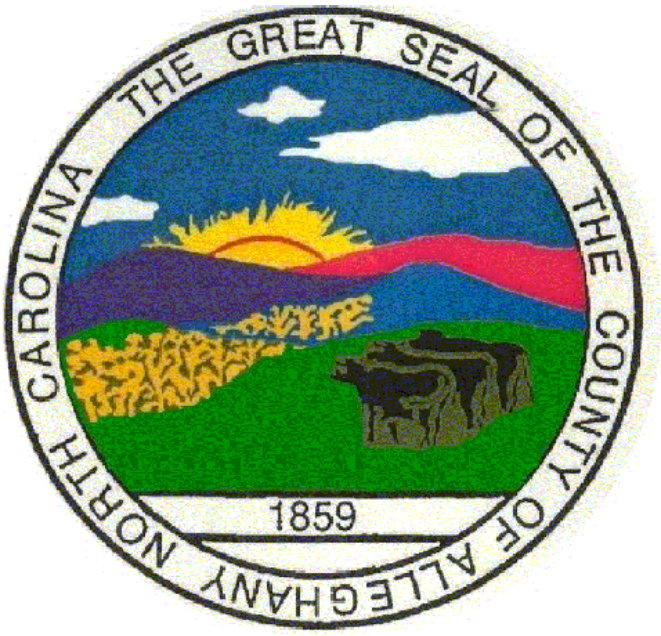
# 2012 Alleghany County
# Comprehensive Transportation Plan



# 2012 Alleghany County
# Comprehensive Transportation Plan

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Transportation Planning Branch
N.C. Department of Transportation

**In Cooperation with:** Alleghany County
Town of Sparta
High Country Rural Planning Organization

*Published:* March 2013


David Keilson, PE
Transportation Engineer

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# Executive Summary

In September of 2010, the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT) and Alleghany County initiated a study to cooperatively develop the Alleghany County Comprehensive Transportation Plan (CTP), which includes Sparta. This is a long range multi-modal transportation plan that covers transportation needs through 2040. 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 operational issues. Refer to Appendix A for contact information on these issues.

Findings of this CTP study were based on an analysis of the transportation system, environmental screening and public input, which are detailed in Chapter 1. Figure 1 shows the CTP maps, which were mutually adopted by NCDOT in 2012. Descriptive information and definitions for designations depicted on the CTP maps can be found in Appendix B. Implementation of the plan is the responsibility of Alleghany County, Sparta and NCDOT. Refer to Chapter 2 for information on the implementation process.

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

- **US 21, FS-0611A:** It is recommended that US 21 be improved to a three lane facility with 12 foot lanes and paved shoulders from Wilkes County to Oklahoma Road (SR 1100) in Roaring Gap. This will provide passing lanes in alternate directions or turning lanes based on the needs of the specific area.

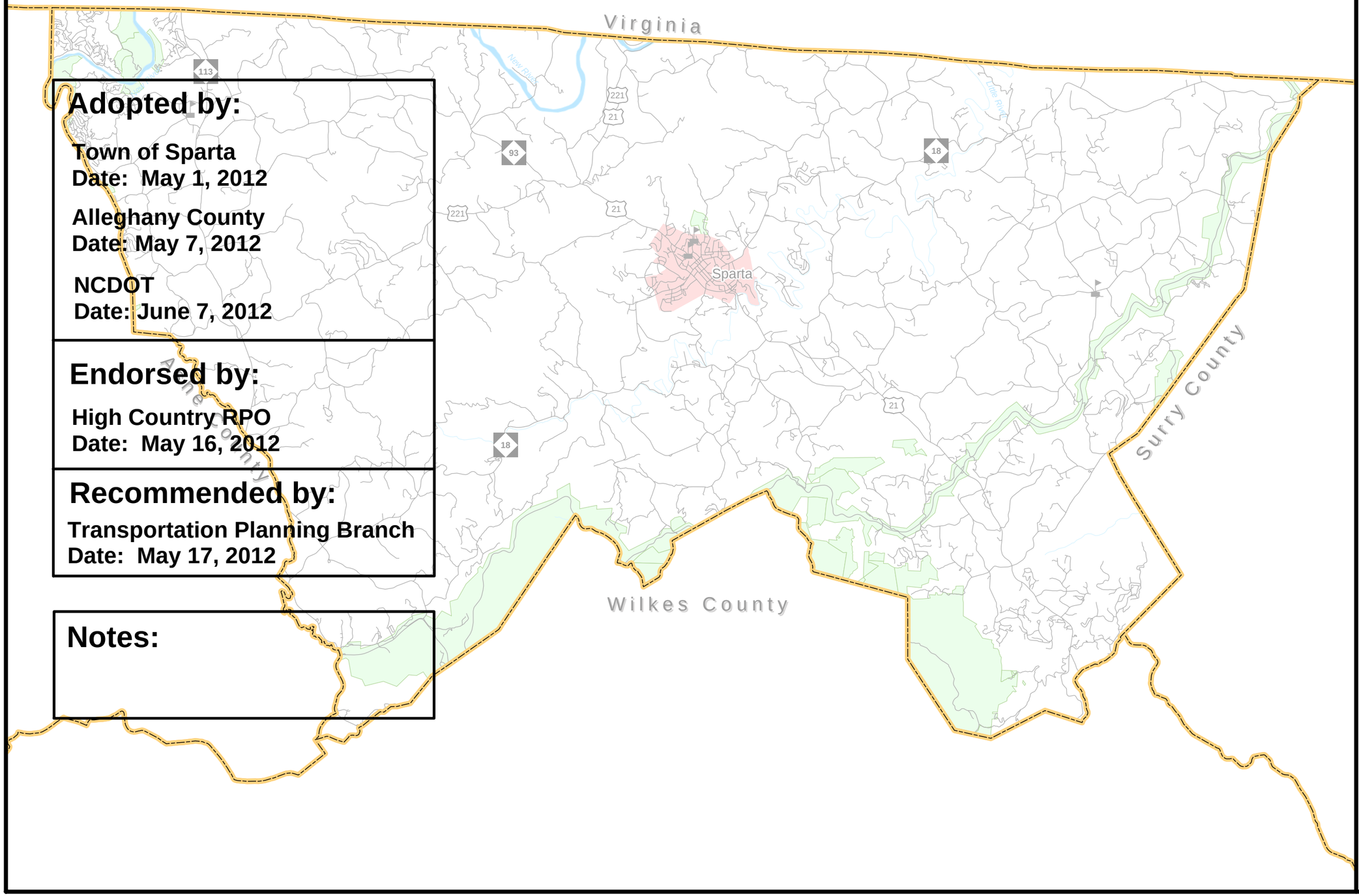
- **US 21, Local ID: ALLE0001-H** – Widen US 21 to a 3 lane facility with 12 foot lanes:
  - from Andrews Ridge Road (SR 1429) to Pine Swamp Road (SR 1121);
  - from Rivers Edge Road (SR 1421) to Blue Ridge Street; and
  - from Sparta Parkway to Bledsoe Creek Road (SR 1135).

  All bridges within the project limits, including bridge #30 over Little River, should be designed for three lanes with accommodations for bicycles and pedestrians as needed.

- **Sparta Parkway Extension, TIP No. R-4060:** The 2012 – 2018 TIP includes project R-4060 for the construction of a 2 lane minor thoroughfare on new location from Grandview Drive (SR 1172) to US 21 near the eastern town limits.

- **Sparta Parkway Northeast Extension, Local ID: ALLE0002-H** – It is recommended that Sparta Parkway be extended north of US 21 to connect with NC

18. The proposed extension is recommended to be constructed on new location as a 2 lane minor thoroughfare with 12 foot lanes.




## Adopted by:

**Town of Sparta**
**Date: May 1, 2012**

**Alleghany County**
**Date: May 7, 2012**

**NCDOT**
**Date: June 7, 2012**

## Endorsed by:

**High Country RPO**
**Date: May 16, 2012**

## Recommended by:

**Transportation Planning Branch**
**Date: May 17, 2012**

## Notes:

# Alleghany County

## Comprehensive Transportation Plan

Plan date: March 28, 2012



Legend

- Roads
- Rivers and Streams
- Schools
- County Boundary
- Municipal Boundaries
- Public Lands

N
W E
S

0 0.5 1 2 3 Miles

**Figure 1**
Sheet 1 of 5

*Base map date: December 2, 2010*

Refer to CTP document for more details

# Highway Map

# Alleghany County
## Comprehensive Transportation Plan

Plan date: March 28, 2012

Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

- Existing Interchange
- Proposed Interchange
- Existing Grade Separation
- Proposed Grade Separation

N W E S

0 0.5 1 2 3 Miles

**Figure 1**

Sheet 2 of 5

*Base map date: December 2, 2010*

Refer to CTP document for more details

# Highway Map (Inset A)

# Alleghany County

## Comprehensive Transportation Plan

Plan date: March 28, 2012

Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

- Existing Interchange
- Proposed Interchange
- Existing Grade Separation
- Proposed Grade Separation

N W E S

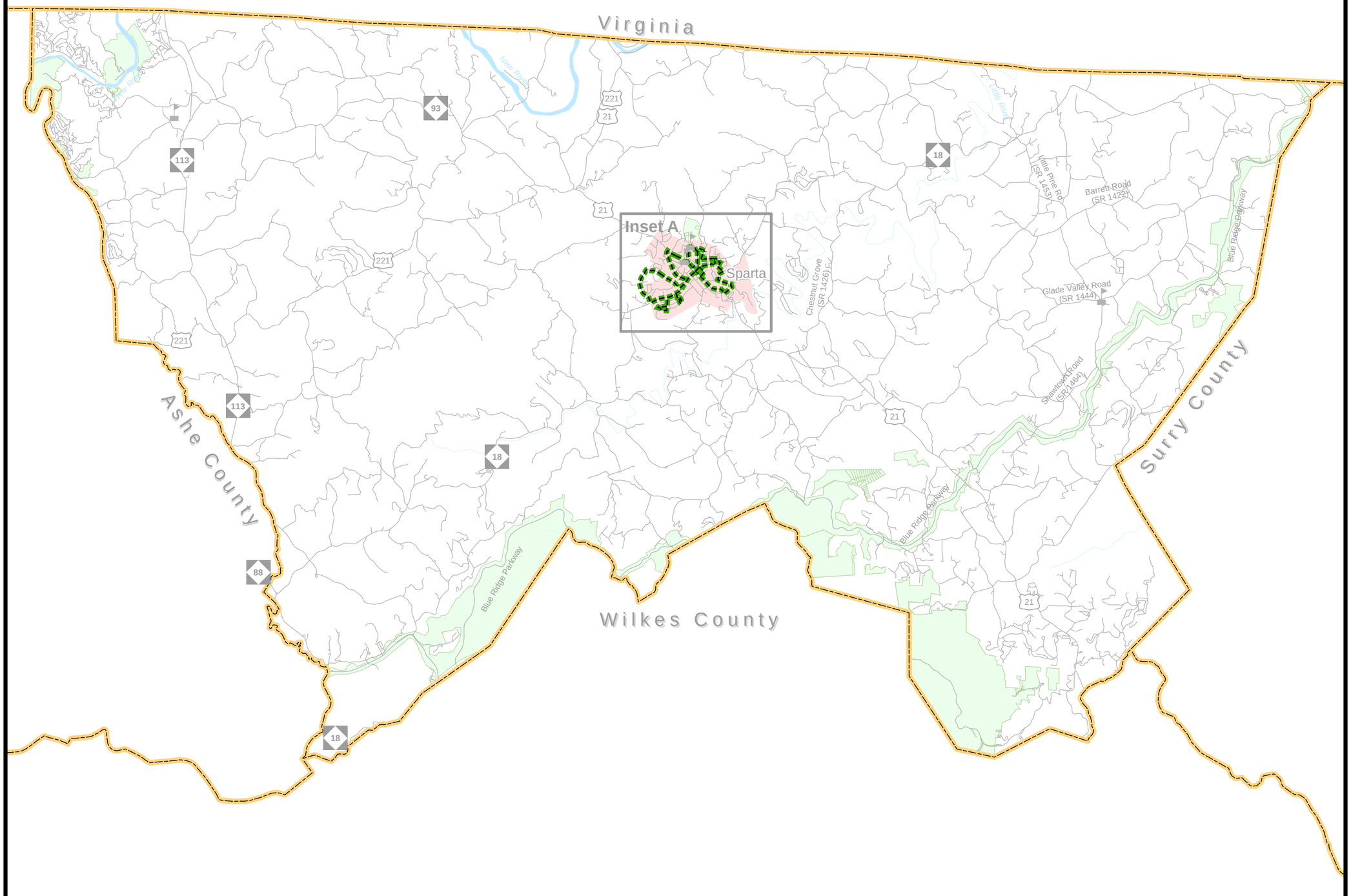
0 0.1 0.2 0.4 0.6 Miles

## Figure 1

Sheet 2A of 5

*Base map date: December 2, 2010*

Refer to CTP document for more details




# Public Transportation and Rail Map

## Alleghany County

## Comprehensive Transportation Plan

Plan date: March 28, 2012

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

0 0.5 1 2 3 Miles

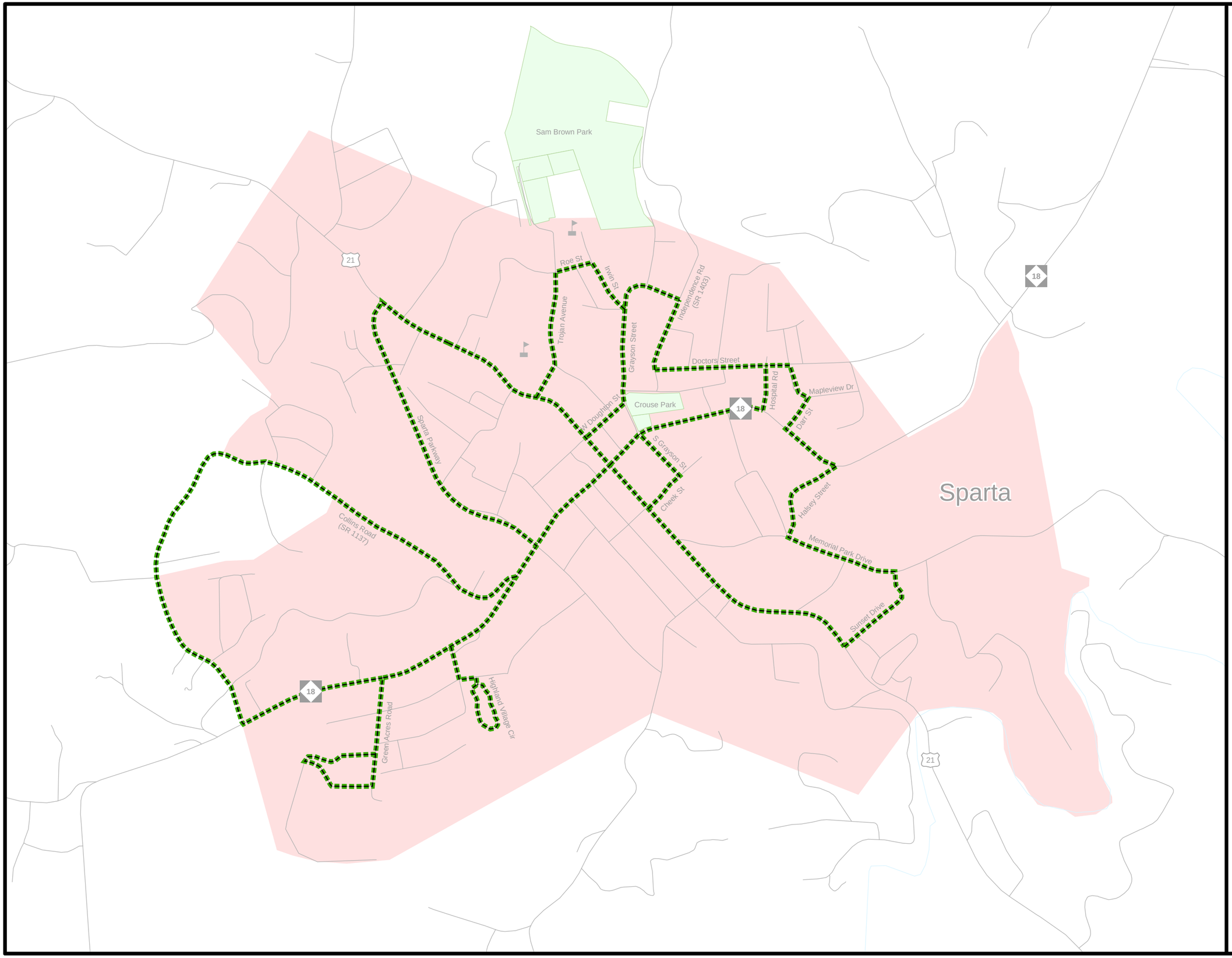
N W E S

**Figure 1**

Sheet 3 of 5

*Base map date: December 2, 2010*

Refer to CTP document for more details




# Public Transportation and Rail Map (Inset A)

## Alleghany County

## Comprehensive Transportation Plan

Plan date: March 28, 2012

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

0 0.05 0.1 0.2 0.3 Miles

N W E S

**Figure 1**

Sheet 3A of 5

*Base map date: December 2, 2010*

Refer to CTP document for more details

# Bicycle Map

# Alleghany County

## Comprehensive Transportation Plan

Plan date: March 28, 2012

On-road
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

N W E S

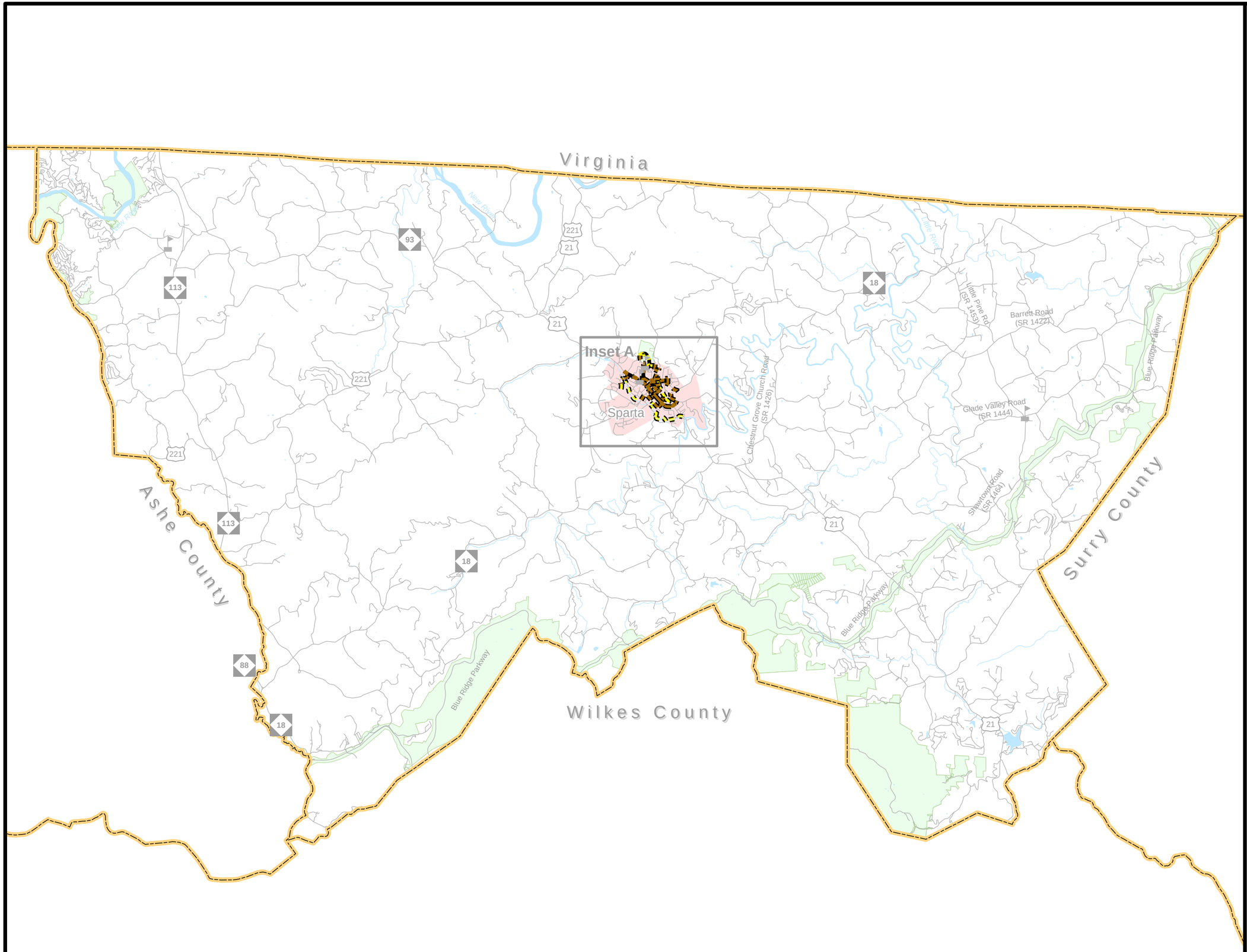
0 0.5 1 2 3 Miles

## Figure 1

Sheet 4 of 5

*Base map date: December 2, 2010*

Refer to CTP document for more details




# Pedestrian Map

# Alleghany County

## Comprehensive Transportation Plan

Plan date: March 28, 2012

Sidewalks
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

N W E S

0 0.5 1 2 3 Miles

**Figure 1**

Sheet 5 of 5

*Base map date: December 2, 2010*

Refer to CTP document for more details

# Pedestrian Map (Inset A)

# Alleghany County

## Comprehensive Transportation Plan

Plan date: March 28, 2012

Sidewalks
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

N W E S

0 0.05 0.1 0.2 0.3 Miles

## Figure 1

Sheet 5A of 5

*Base map date: December 2, 2010*

Refer to CTP document for more details

# 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 in pavement widths, intersection geometry, or intersection controls. System deficiencies may result from missing travel links, bypass routes, loop facilities, radial routes or improvements to meet statewide initiatives.

One of those statewide initiatives is the Strategic Highway Corridor (SHC) Vision Plan[1] adopted by the Board of Transportation on September 2, 2004. The SHC Vision Plan is

[1] *For more information on the SHC Vision Plan, go to: http://www.ncdot.gov/doh/preconstruct/tpb/SHC/.*

an 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 CTPs shall incorporate the long-term vision of each corridor. Refer to Appendix A for contact information for the SHC Vision Plan.

In the development of this plan, travel demand was projected from 2010 to 2040 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1991 to 2009. For US 21, 2010 AADT data was also used. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns.

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;
- 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 determined based on the 2000 Highway Capacity Manual using the NCDOT Transportation Planning Branch Level of Service D Standards for Systems Level Planning (10/14/2011). 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 Alleghany County CTP for crashes occurring in the planning area between January 1, 2009 and December 31, 2011. During this period, a total of 34 intersections were identified as having a high number of crashes as illustrated in Figure 4. 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. Eight deficient bridges were identified on roads evaluated as part of the CTP and are illustrated in Figure 5. Of these, three are scheduled for replacement in the 2012 – 2018 State Transportation Improvement Program (STIP/TIP). Additionally, one other occurs along a roadway recommended for improvement in the CTP. As deficient bridges are replaced, every consideration should be given to proposed CTP recommendation and cross section associated with the recommendation. Table 5 in Appendix G gives a listing of the deficient bridges identified in the CTP and the ID number associated with CTP project proposal. Refer to Appendix G for more detailed bridge deficiency information.

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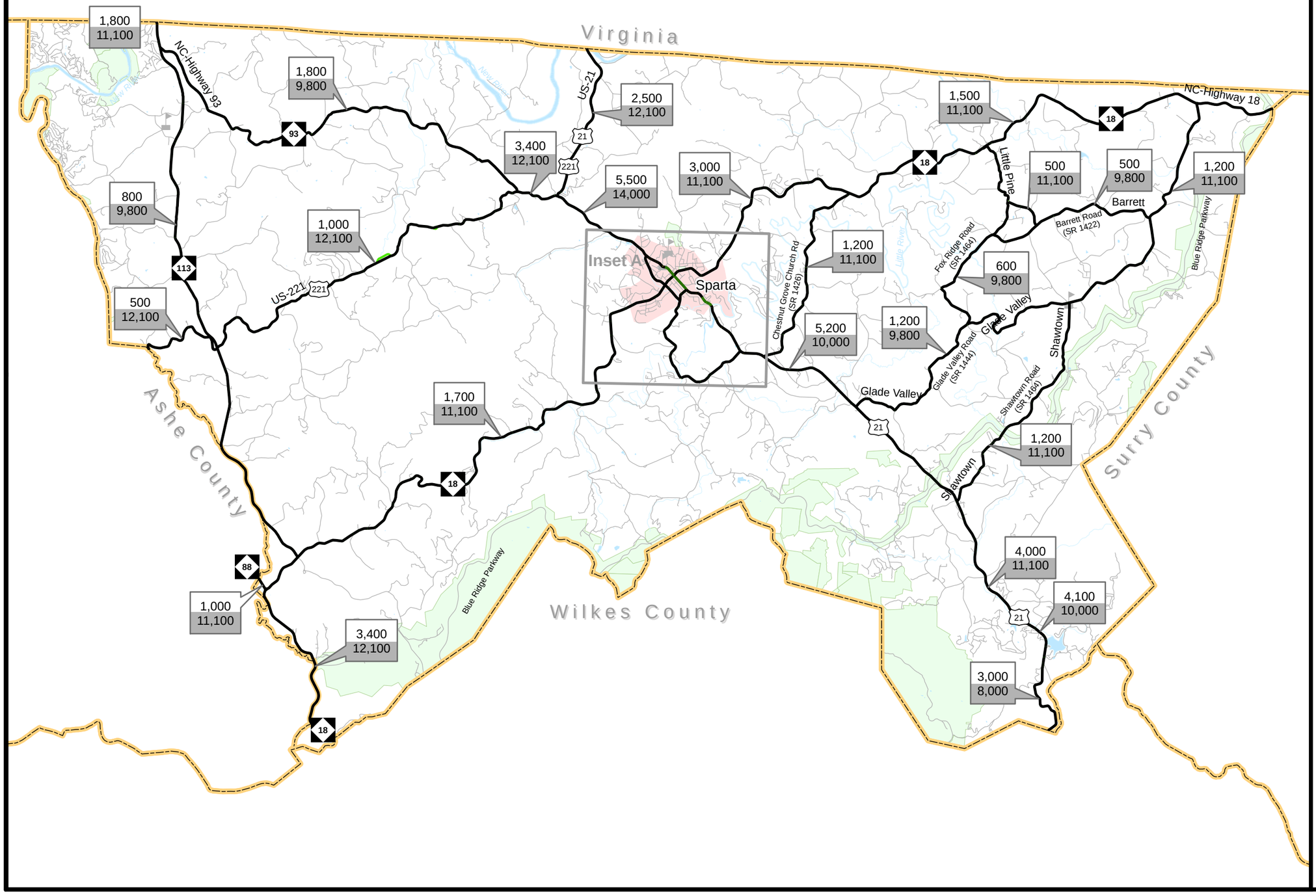
# Figure 2
# 2010
# Volumes and Capacity Deficiencies

## Alleghany County Comprehensive Transportation Plan




## Legend

- Study Roads
- Near Capacity
- Over Capacity
- Roads
- Rivers and Streams
- Schools
- Public Lands
- Municipal Boundary
- County Boundary
- 2010 Volumes (AADT)
- 2010 Capacity

Sheet 1 of 2

N W E S

0 0.5 1 2 3 4

Miles

*Base map date: December 2, 2010*

# Figure 2
# 2010
# Volumes and Capacity Deficiencies (Inset A)

**Alleghany County Comprehensive Transportation Plan**

## Legend

- Study Roads
- Near Capacity
- Over Capacity
- Roads
- Rivers and Streams
- Schools
- Public Lands
- Municipal Boundary
- 2010 Volumes (AADT)
- 2010 Capacity

Sheet 2 of 2

N W E S

0 0.1 0.2 0.4 0.6 Miles

*Base map date: December 2, 2010*

Sparta

Bledsoe Creek Rd (SR 1135)

21

18

6,000
12,100

6,500
11,100

9,900
12,700

Sam Brown Park

Grayson Street

Crouse Park

Hospital Rd

3,000
11,900

Sparta Parkway

11,800
12,700

Main Street

2,000
12,200

Memorial Park Drive

9,500
11,900

Blue Ridge Street

8,600
10,500

8,000
11,000

1,500
9,800

Little River

3,500
11,100

Grandview Dr (SR 1472)

7,800
13,800

6,800
10,000

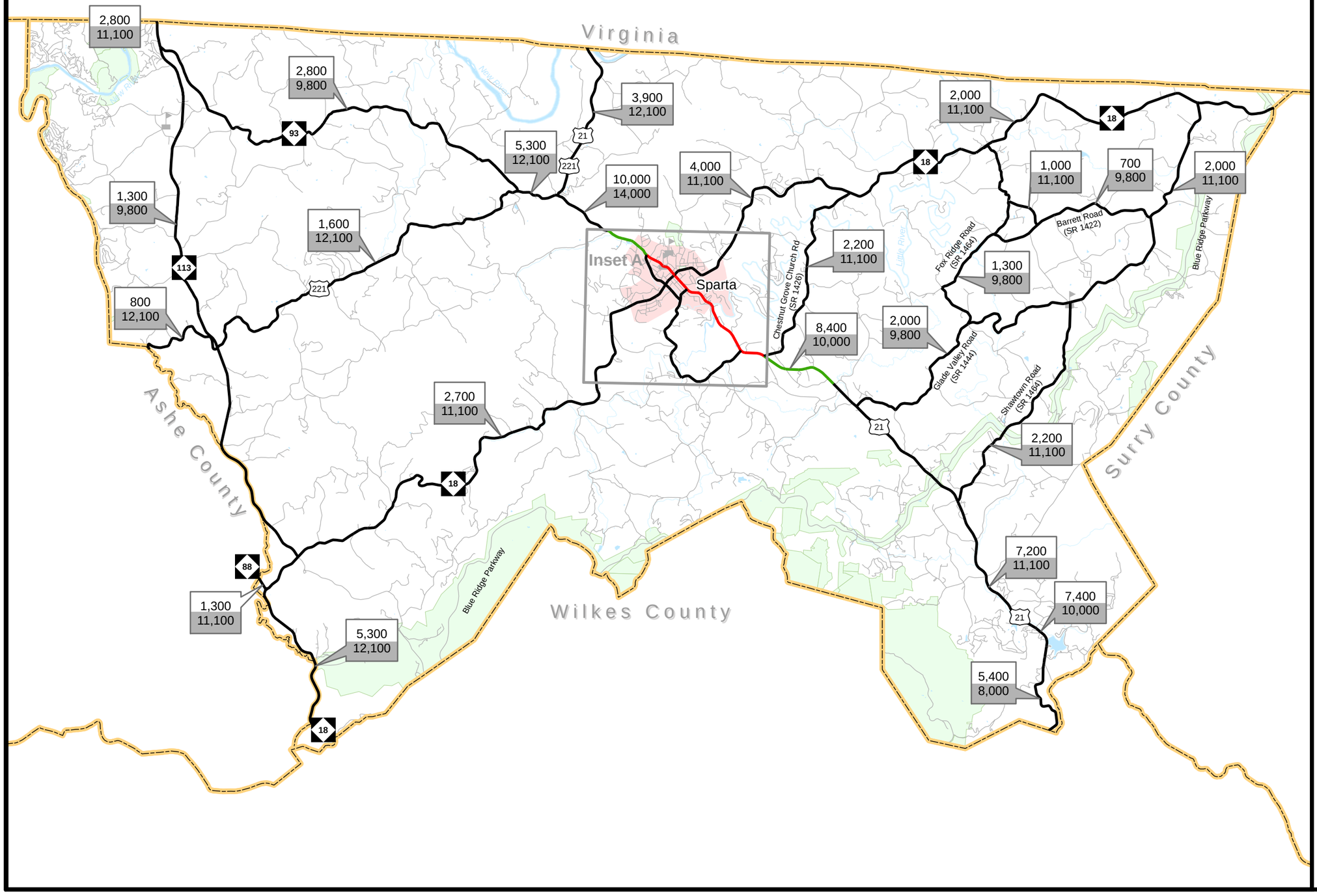
Chestnut Grove Church Rd (SR 1501)

2,200
12,100

Pine Swamp Rd (SR 1121)

# Figure 3
# 2040
# Volumes and Capacity Deficiencies

## Alleghany County Comprehensive Transportation Plan




## Legend

- Study Roads
- Near Capacity
- Over Capacity
- Roads
- Rivers and Streams
- Schools
- Public Lands
- Municipal Boundary
- County Boundary
- 2040 Volumes (AADT)
  2010 Capacity

Sheet 1 of 2

N
W E
S

0 0.5 1 2 3 4
Miles

*Base map date: December 2, 2010*

# Figure 3
# 2040 Volumes and Capacity Deficiencies (Inset A)

## Alleghany County Comprehensive Transportation Plan

### Legend

- Study Roads
- Near Capacity
- Over Capacity
- Roads
- Schools
- Rivers and Streams
- Public Lands
- Municipal Boundary
- 2040 Volumes (AADT)
- 2010 Capacity

Sheet 2 of 2

N
W E
S

0 0.1 0.2 0.4 0.6 Miles

*Base map date: December 2, 2010*

Sparta

Sam Brown Park

Crouse Park

Main Street

Sparta Parkway

Bledsoe Creek Rd (SR 1135)

Grandview Dr (SR 1472)

Pine Swamp Rd (SR 1121)

Chestnut Grove Church Rd (SR 1501)

Little River

10,900
12,100

13,300
12,700

4,000
11,900

15,900
12,700

3,100
12,200

12,800
11,900

11,600
10,500

14,500
11,000

2,700
9,800

6,300
11,100

14,100
13,800

12,300
10,000

4,600
12,100

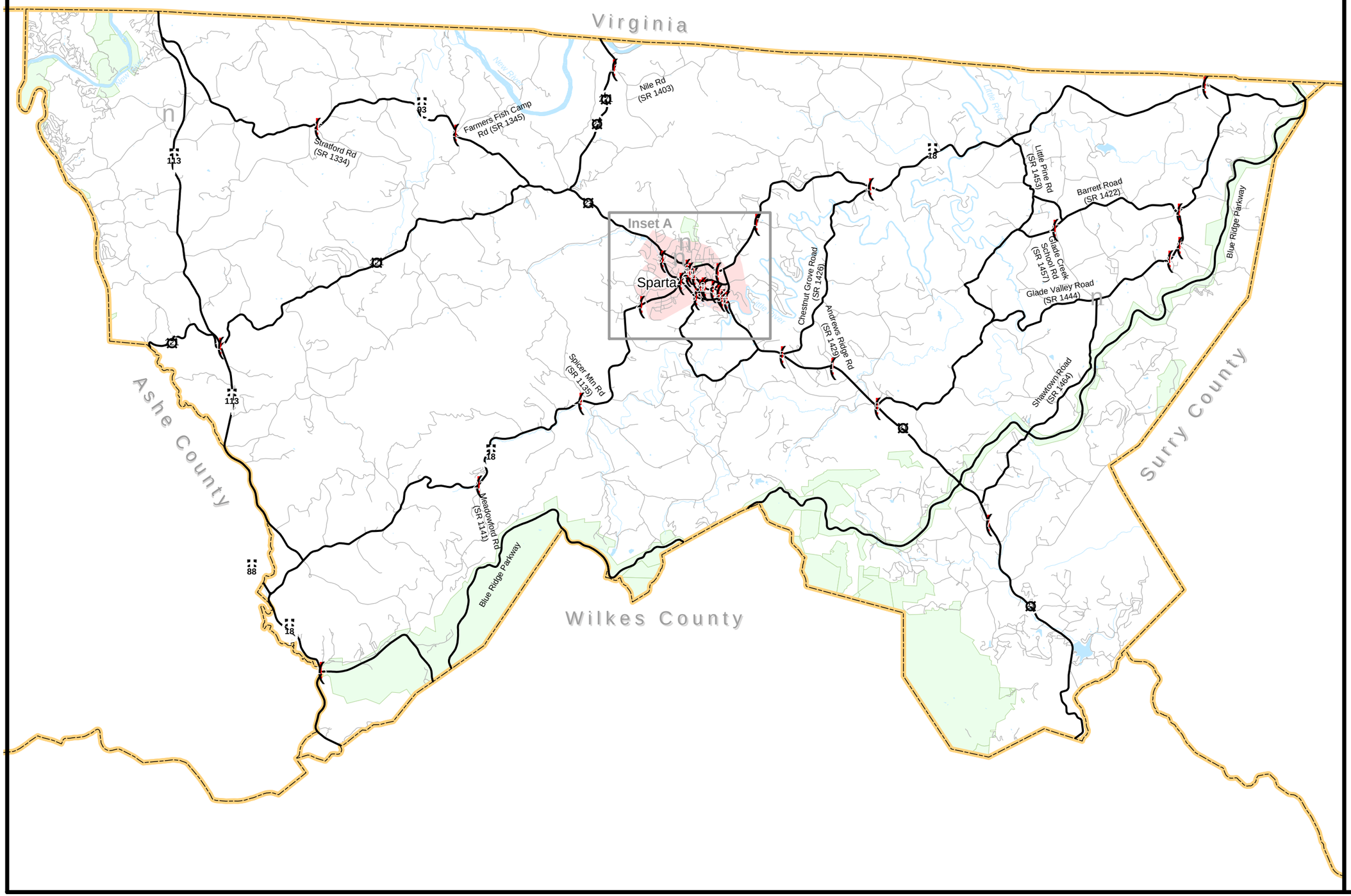
# Figure 4

# Crash Locations

**January 1, 2009 to December 31, 2011**

# Alleghany County

## Comprehensive Transportation Plan




## Legend

- Crash Locations
- Schools
- Study Roads
- Roads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- County Boundary

0 0.5 1 2 3 Miles

*Base map date: December 2, 2010*

Refer to Appendix F for more details

# Figure 4
# (Inset A)
# Crash Locations

**January 1, 2009 to December 31, 2011**

## Alleghany County
## Comprehensive Transportation Plan

### Legend

- Crash Locations
- Schools
- Study Roads
- Roads
- Rivers and Streams
- Water Bodies
- Public Lands
- Municipal Boundary

Miles
0 0.05 0.1 0.2 0.3

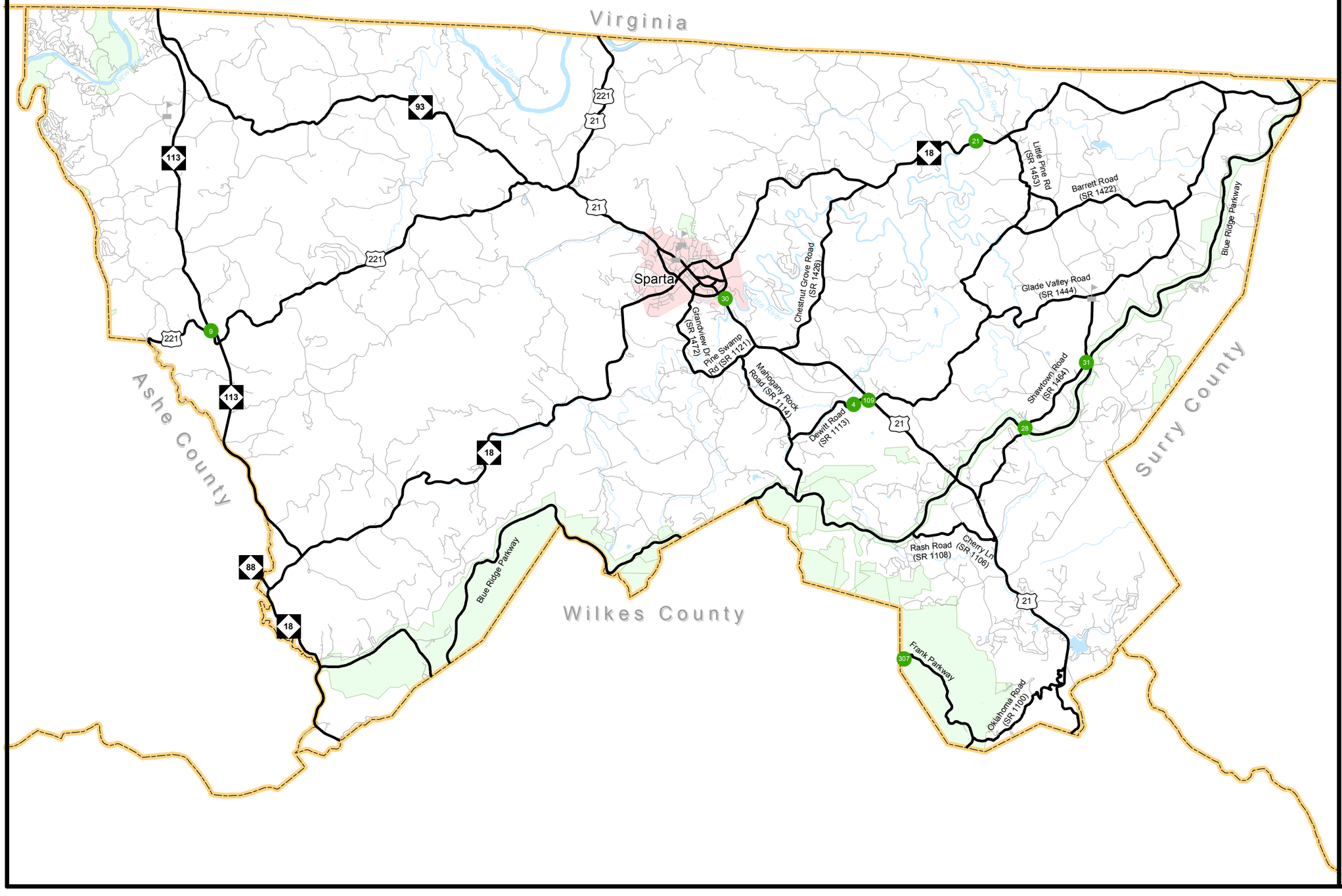
*Base map date: December 2, 2010*
Refer to Appendix F for more details

Sparta
Sam Brown Park
Crouse Park
Choate Dairy Rd (SR 1424)
Cranford Rd
W Doughton St
E Cheek St
Halsey St
Sparta Parkway
Jones St
Ballpark Rd
Blue Ridge St
Sunset Dr
Riverview Dr
Blevins St
Little River
Reynolds Rd (SR 1136)
Grandview Dr (SR 1472)
18
21

# Figure 5

# Deficient Bridges

## Alleghany County
## Comprehensive Transportation Plan




## Legend

- Deficient Bridges (# Bridge Number)
- Schools
- Study Roads
- Rivers and Streams
- Water Bodies
- Public Lands
- Municipal Boundary
- County Boundary
- Surrounding Counties

N
W E
S

0 0.5 1 2 3 Miles

*Base map date: December 2, 2010*

Refer to Appendix G for more details

### *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. Alleghany in Motion is Alleghany County's community transportation provider and currently operates para-transit ("Dial-a-Ride") service, but does not provide fixed route service. The County desires to provide fixed route transit service in the future. Alleghany in Motion, in cooperation with the CTP steering committee, has identified potential fixed route(s) which are shown on the Public Transportation and Rail map.

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 for the Public Transportation Division.

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.

Intercity passenger service is provided by a partnership between NCDOT and Amtrak. Amtrak currently operates six passenger services daily in or through North Carolina serving 16 cities across the state. Five of the services are interstate (Crescent, Palmetto, Silver Meteor, Silver Star, and Carolinian passenger trains) and one service (Piedmont passenger train) operates exclusively within North Carolina. In addition to the six passenger services mentioned, Amtrak also operates its Auto Train service which passes through North Carolina but does not make any stops. Amtrak ridership demand has been on a rise in the state. In 2010 ridership was 840,000 and increased to 893,000 passengers in 2011.

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.

There is no rail service in Alleghany County.

### *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 2006 Town of Sparta Pedestrian Transportation Plan and the 2012 Crouse Park / Sparta Greenway Comprehensive Master Plan were utilized in the development of these elements of the CTP. North Carolina Bicycle Route 4 (North Line Trace) runs southeast-northwest through Alleghany County and follows US 21, Cherry Lane Road (SR 1106), Rash Road (SR 1108), the Blue Ridge Parkway, Mahogany Rock Road (SR 1114, SR 1115), Pine Swamp Road (SR 1121), US 221, and NC 93. 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 for the Division of Bicycle and Pedestrian Transportation.

### *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 2000 Alleghany County and Town of Sparta Land Development Plan (Reaffirmed in 2010) was used to meet this requirement and is illustrated in Figures 6 and 7, respectively.

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.

Alleghany County is primarily rural and growth is slow. Sparta is the only municipality in the county, and provides the only water and sewer service. Most of the anticipated growth is in or near Sparta. In particular, growth is expected primarily along US 21 between Andrews Ridge Road (SR 1429) and Bledsoe Creek Road (SR 1135), where water and sewer are available. Some growth has also occurred in the recreational areas of Roaring Gap and near the New River.

Figure 6
Sheet 1 of 2

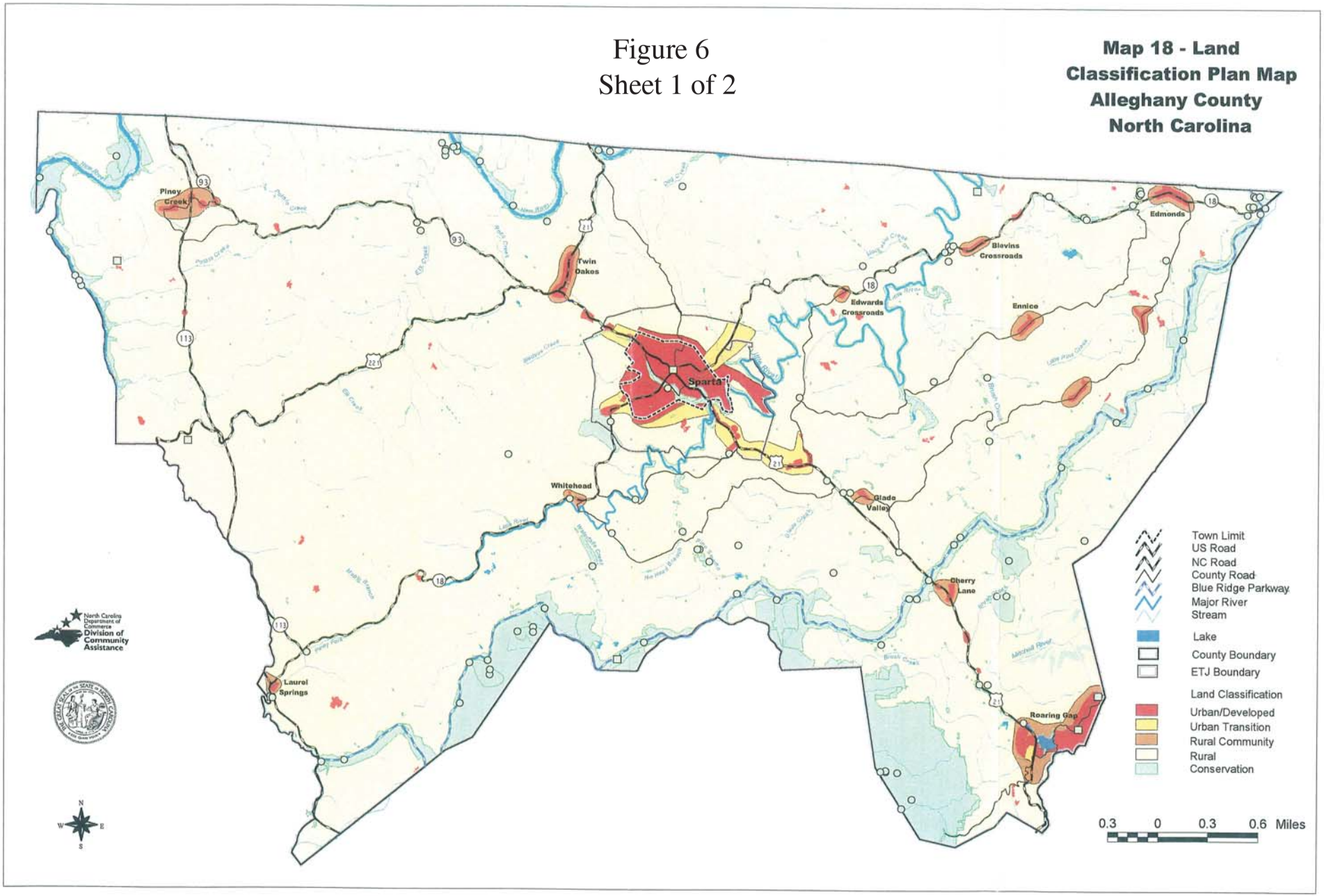


Figure 6
Sheet 2 of 2

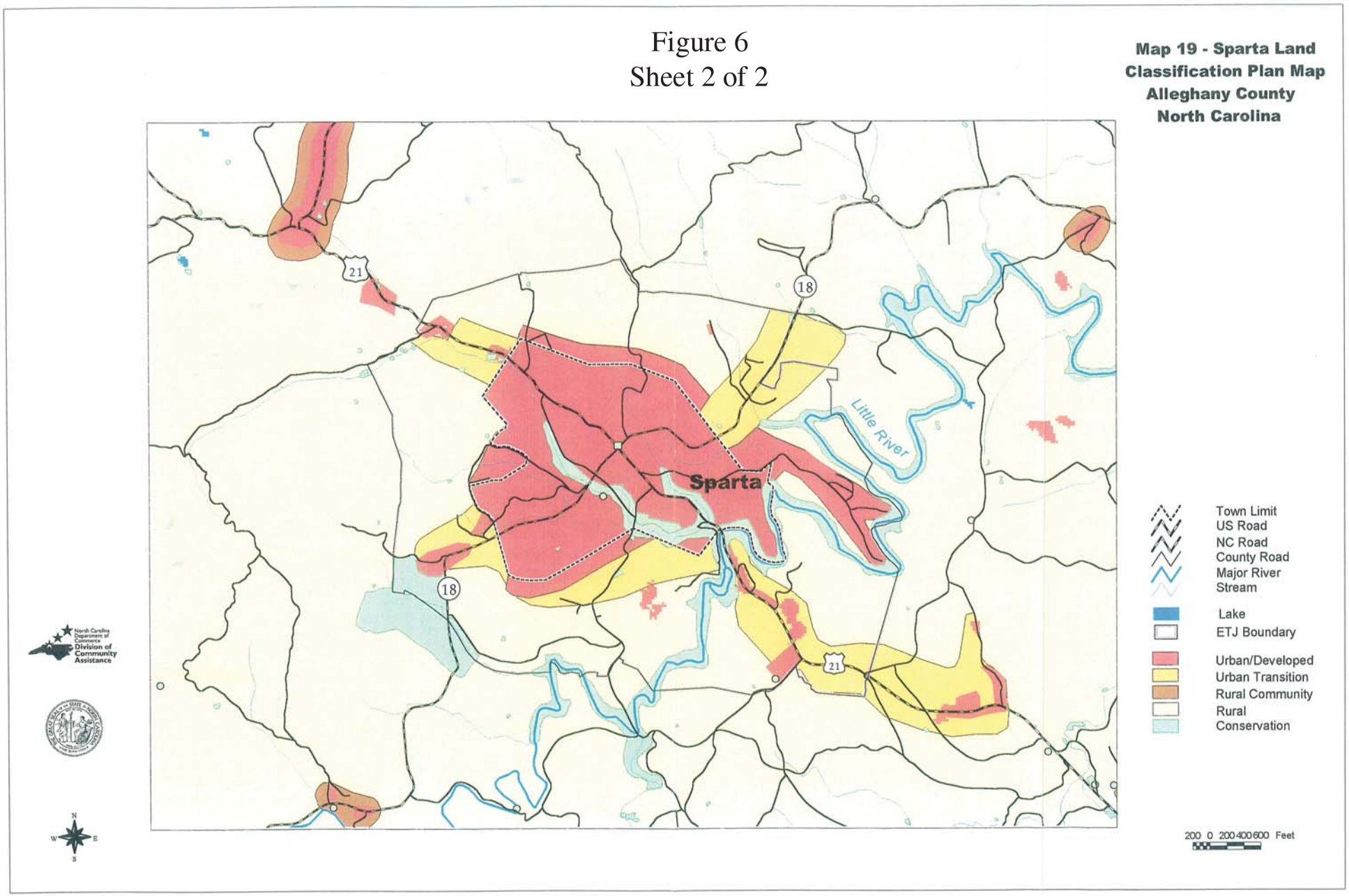


Figure 7
Sheet 1 of 2

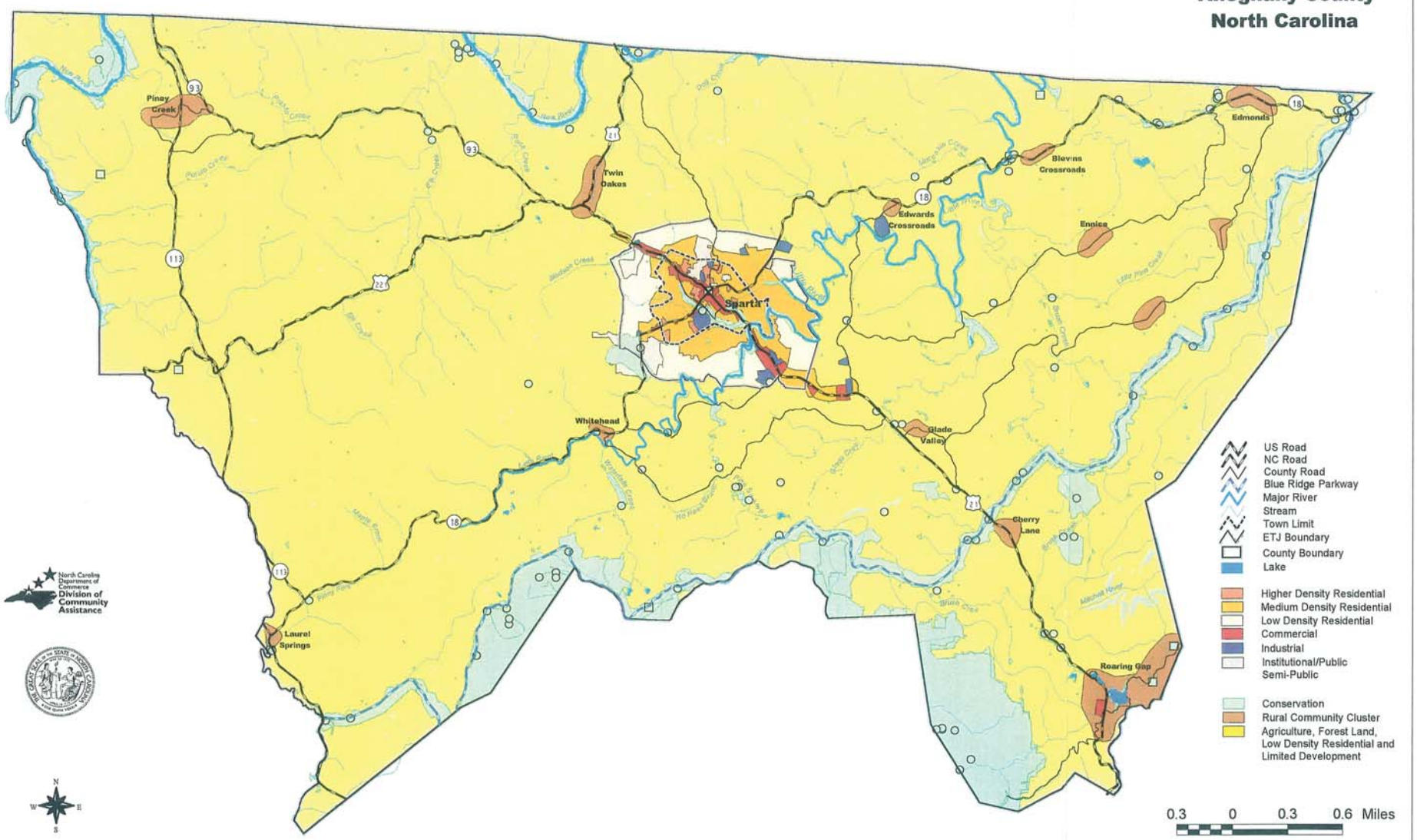
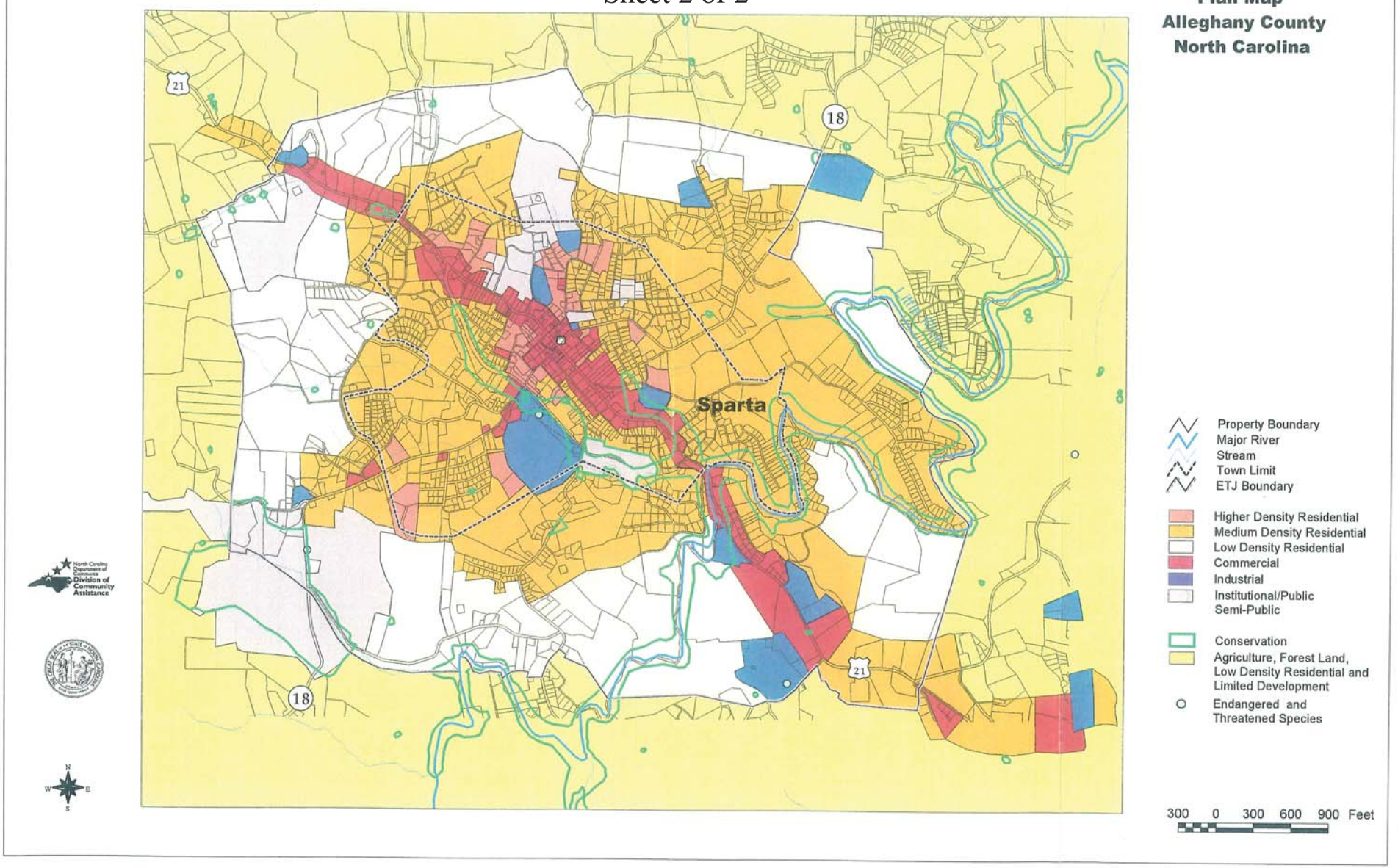


Figure 7
Sheet 2 of 2



## *Consideration of Natural and Human Environment*

Environmental features are a key consideration in the transportation planning process. Section 102 of the National Environmental Policy Act[2] (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 2 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 Alleghany County are shown in Figure 8 (except for restricted features) and are listed in bold type in Tables 1 and 2.

**Table 1 – Environmental Features**

- Airport Boundaries
- Anadromous Fish Spawning Areas
- Beach Access Sites
- **Bike Routes (NCDOT)**
- **Blue Ridge Conservation Easements**
- Coastal Marinas
- **Colleges and Universities**
- **Conservation Tax Credit Properties**
- **Emergency Operation Centers**
- **Federal Land Ownership**
- Fisheries Nursery Areas
- **Geology Faults**
- Geology Dikes
- **Hazardous Substance Disposal Sites**
- Hazardous Waste Facilities
- **Hazardous Waste Sites**
- **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**
- 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**, **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**

[2] *For more information on NEPA, go to: http://ceq.hss.doe.gov/.*

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 Alleghany County CTP steering committee in October 2010 to formally initiate the study, provide an overview of the transportation planning process, and to gather input on area transportation needs.

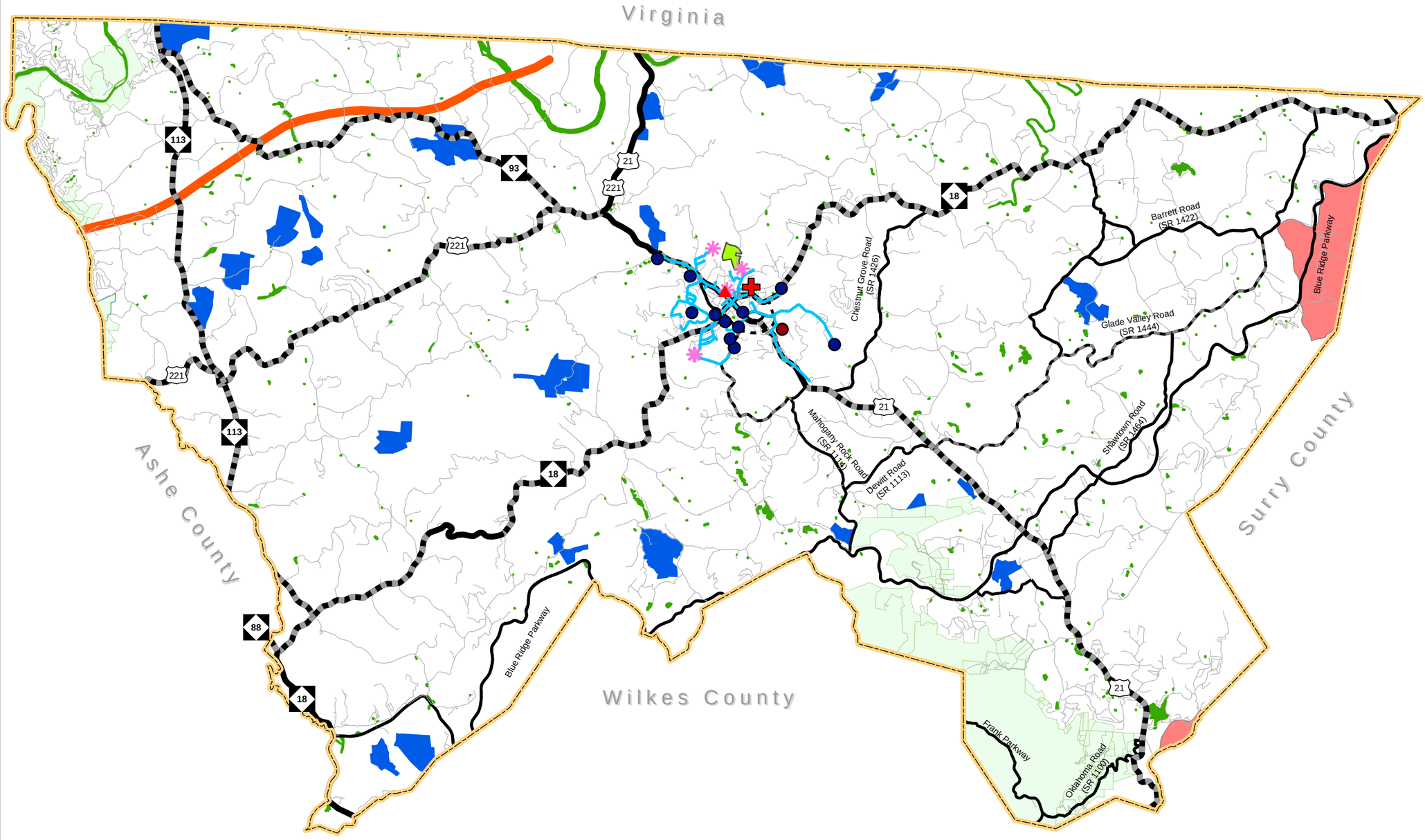
Throughout the course of the study, the Transportation Planning Branch cooperatively worked with the Alleghany County CTP steering committee, which included a representative from Sparta (the only municipality in the county), county staff, the RPO and others. The committee provided information on current local plans, developed transportation vision and goals, discussed population and employment projections, and developed 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 one public drop-in session in Alleghany County to present the proposed CTP to the public and solicit comments. The meeting was held on September 26, 2011 at the Senior Center at 85 E. Whitehead Street in Sparta. The session was publicized in the local newspaper and was held from 4 PM to 6 PM. Seven comments were submitted during the session.

A public hearing was held on April 30, 2012 during the joint meeting of the Alleghany County Commissioners and the Sparta Commissioners. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted by Sparta on May 1, 2012 and by Alleghany County on May 7, 2012.

The High Country RPO endorsed the CTP on May 16, 2012. The North Carolina Board of Transportation mutually adopted the Alleghany County CTP on June 7, 2012.

# Figure 8
## Environmental Features
# Alleghany County
## Comprehensive Transportation Plan




## Legend

- Hospitals
- Emergency Ops Center
- Water Wells
- Water Tanks
- Sewer Discharges
- Water Pipes
- Geology Faults
- Water Supply Watersheds
- State Parks
- Blue Ridge Conservation
- Wetlands
- County Boundary

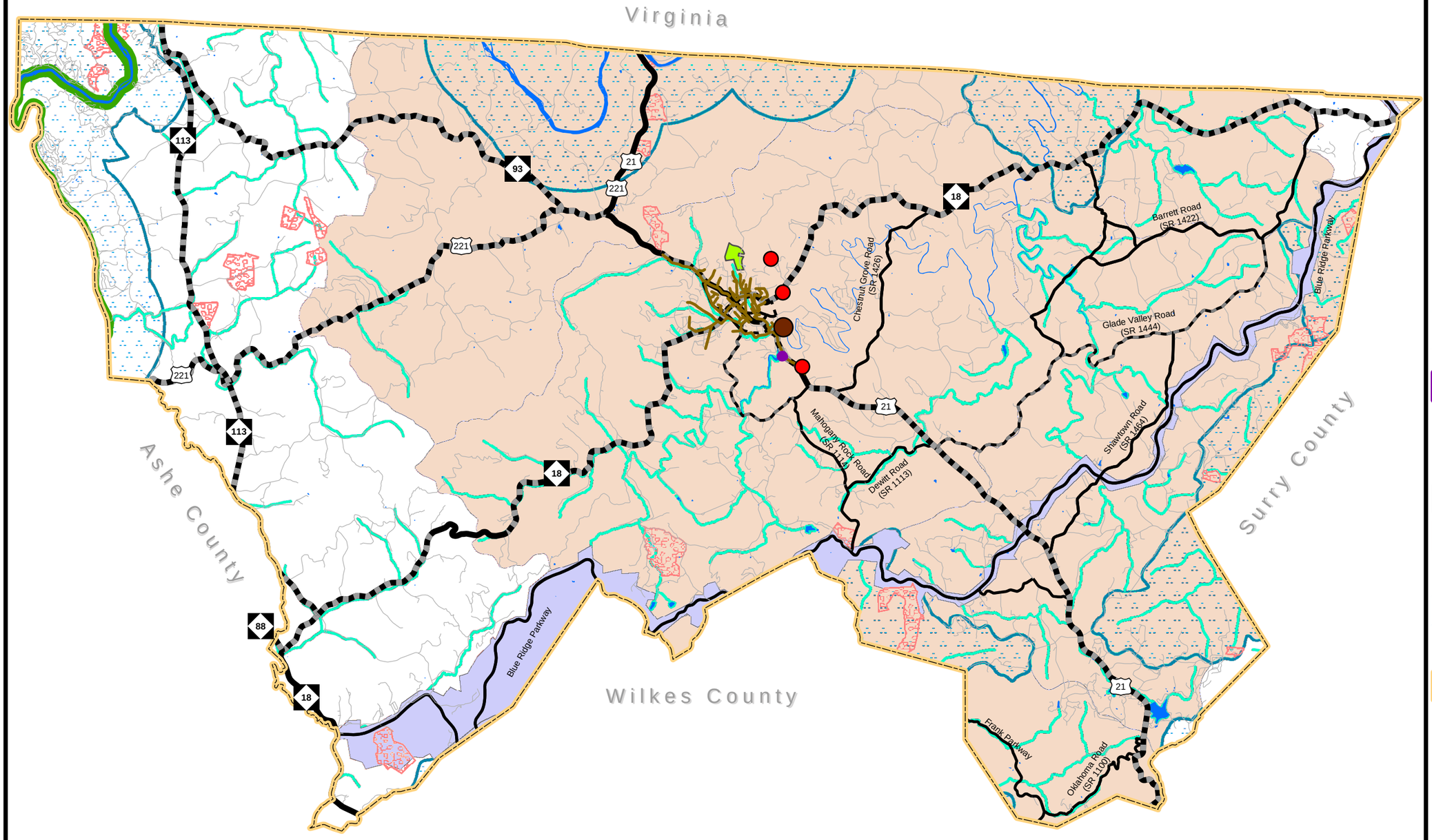
0 0.4 0.8 1.6 2.4 Miles

N W E S

Sheet 1 of 3

*Base map date: December 2, 2010*

# Figure 8
## Environmental Features
# Alleghany County
## Comprehensive Transportation Plan




## Legend

- Hazardous Waste Sites
- Sewer Pumps
- Trout Streams (DWQ)
- Sewer Pipes
- Haz Substance Disp Sites
- Hydrography (1:24,000)
- Land Trust Priority Areas
- Rec Proj Land & Water
- Conservation Tax Cr Prop
- Federal Land Ownership
- HQ Water/ORWM Zones
- Target Local Watersheds
- County Boundary

N
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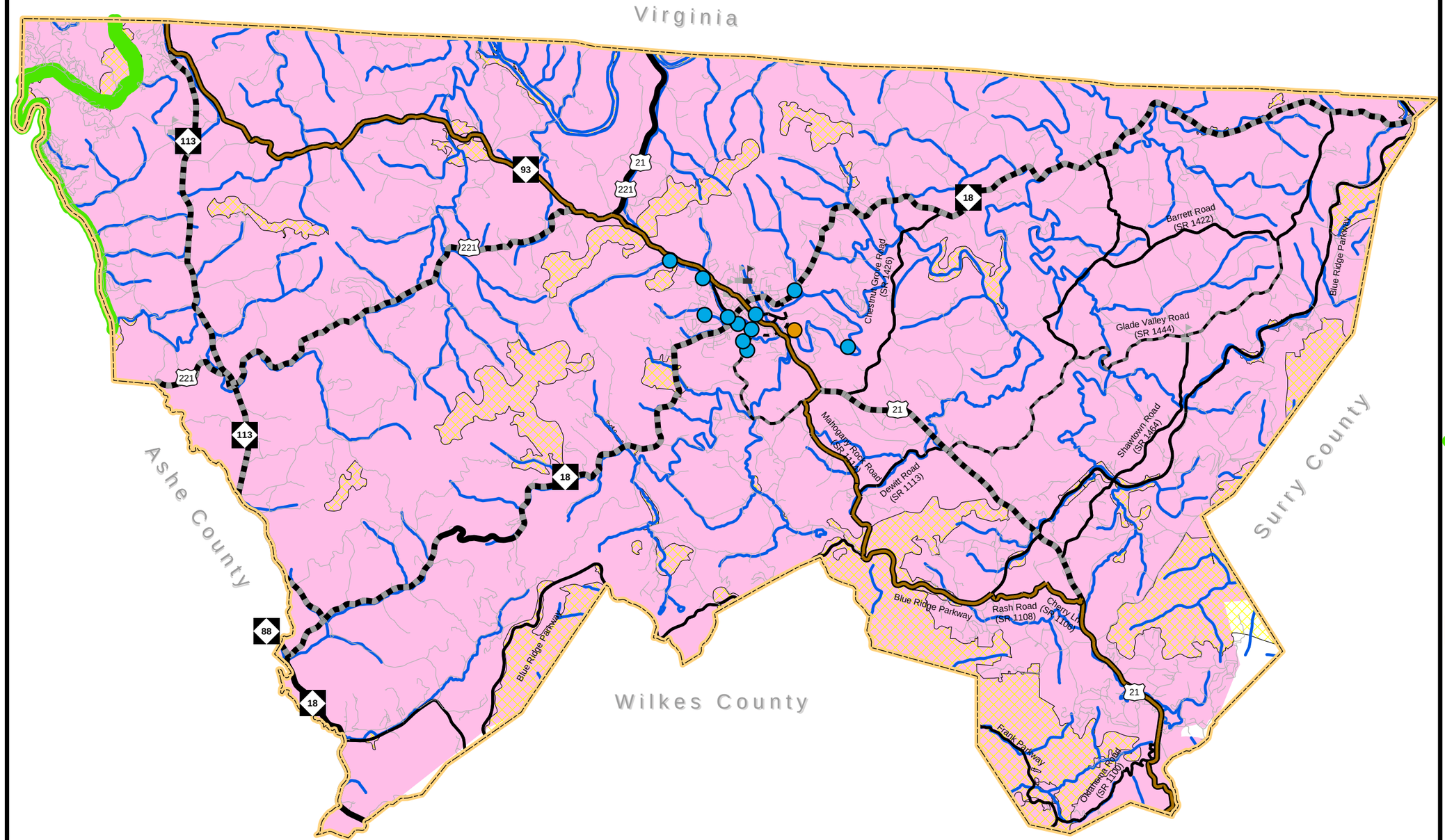
0 0.5 1 2 3 Miles

Sheet 2 of 3

*Base map date: December 2, 2010*

# Figure 8
## Environmental Features
# Alleghany County
## Comprehensive Transportation Plan




## Legend

- Water Treatment Plants
- Sewer Treatment Plants
- Colleges & Universities
- Schools - Public
- Wild and Scenic Rivers
- Trout Waters (WRC)
- Bike Routes (NCDOT)
- Natural Heritage Areas
- Natural Heritage Element
- County Boundary

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0 0.5 1 2 3 Miles

Sheet 3 of 3

*Base map date: December 2, 2010*

# II. Recommendations

This chapter presents recommendations for each mode of transportation in the 2012 Alleghany County CTP as shown in Figure 1. More detailed information on each recommendation is tabulated in Appendix C.

The N.C. Department of Transportation adopted a "Complete Streets[1]" policy in July 2009. The policy directs the Department to consider and incorporate several modes of transportation when building new projects or making improvements to existing infrastructure. Under this policy, the Department will collaborate with cities, towns and communities during the planning and design phases of projects. Together, they will decide how to provide the transportation options needed to serve the community and complement the context of the area. The benefits of this approach include:

- making it easier for travelers to get where they need to go;
- encouraging the use of alternative forms of transportation;
- building more sustainable communities;
- increasing connectivity between neighborhoods, streets, and transit systems;
- improving safety for pedestrians, cyclists, and motorists.

Complete streets are streets designed to be safe and comfortable for all users, including pedestrians, bicyclists, transit riders, motorists and individuals of all ages and capabilities. These streets generally include sidewalks, appropriate bicycle facilities, transit stops, right-sized street widths, context-based traffic speeds, and are well-integrated with surrounding land uses. The complete street policy and concepts were utilized in the development of the CTP. The CTP proposes projects that include multi-modal project recommendations as documented in the problem statements within this chapter. Refer to Appendix C for recommended cross sections for all project proposals and Appendix D for more detailed information on the typical cross sections.

## *Unaddressed Deficiencies*

The following deficiency was identified during the development of the CTP, but remains unaddressed. US 21 south of Sparta, from Pine Swamp Road (SR 1121) to the southern town limits, is projected to be slightly over capacity in 2040 even with the recommended CTP improvements. However, the projections for this section of US 21 are only 300 to 800 vehicles per day (vpd) over capacity, so no additional improvements are recommended at this time.

## *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

[1] *For more information on Complete Streets, go to: http://www.nccompletestreets.org/*

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 Alleghany County and Sparta. 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 High Country RPO for regional prioritization and submittal to NCDOT. Refer to Appendix A for contact information on regional prioritization and 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 NCDOT 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 Act (NEPA) or the North Carolina (or State) Environmental Policy Act[2] (SEPA). This CTP may be used to provide information in the NEPA/SEPA process.

## *Problem Statements*

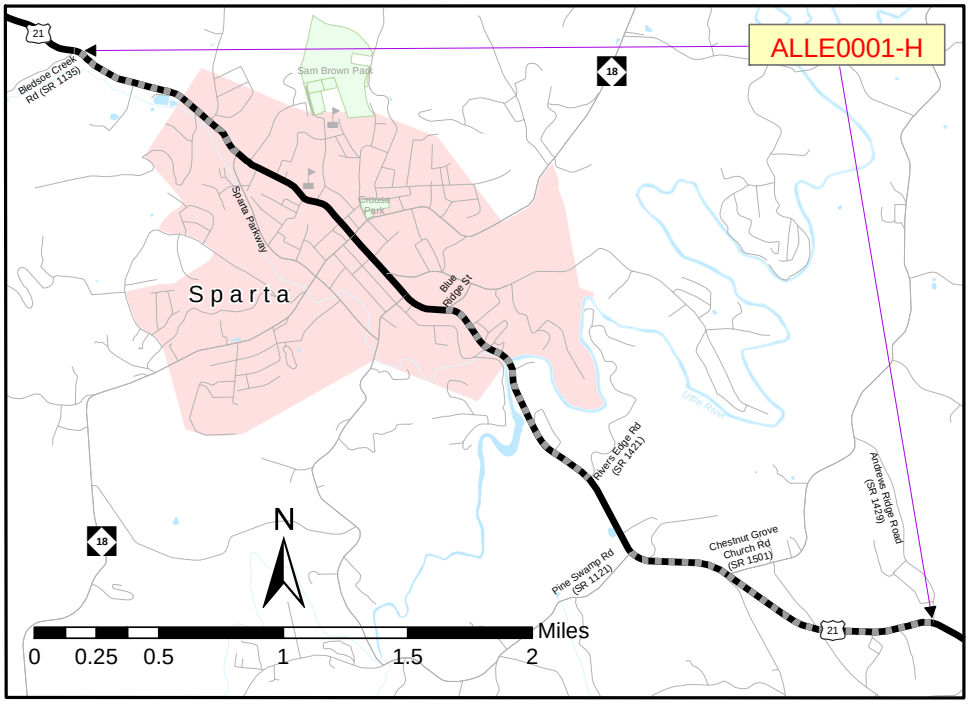
The following pages contain problem statements for each recommendation, organized by CTP modal element. The information provided in the problem statement is intended to help support decisions made in the NEPA/SEPA process. A full, minimum or reference problem statement is presented for each recommendation, with full problem statements occurring first in each section. Full problem statements are denoted by a gray shaded box containing project information. Minimum problem statements are more concise and less detailed than full problem statements, but include all known or readily available information. Reference problem statements are developed for TIP projects where the purpose and need for the project has already been established.

[2] *For more information on SEPA, go to: http://www.doa.nc.gov/clearing/faq.aspx.*

# HIGHWAY

| US 21 Proposed Improvements from Andrews Ridge Road (SR 1429) to Bledsoe Creek Road (SR 1135) | Local ID: ALLE0001-H<br>Last Updated: 3/28/12 |
|---|---|

## Identified Problem




Most of US 21 in Alleghany County is a 2 lane road, but includes 3 lane sections from Pine Swamp Road (SR 1121) to Rivers Edge Road (SR 1421) and from Blue Ridge Street to Sparta Parkway (SR 1206). Even with the planned completion of the Sparta Parkway Ext. (R-4060) and the widening of US 21 to 12 foot lanes (R-3101), some sections of US 21 between Andrews Ridge Road (SR 1429) and Bledsoe Creek Road (SR 1135) are projected to be near or over capacity in 2040. Improvements are needed to accommodate projected traffic volumes in order to maintain a LOS D on the facility.

### Justification of Need

US 21 is a major north-south route through central Alleghany County, connecting residents in rural areas of the county to Sparta, the only incorporated municipality in the county. Many of Alleghany County's businesses and government buildings are located along US 21.

US 21 is on the regional tier of the North Carolina Multimodal Investment Network (NCMIN) and is federally classified as a minor arterial. Facilities on the regional tier of NCMIN typically connect major population centers and have a mix of functions. Some of the regional tier facilities, including US 21, can be viewed as serving statewide transportation needs, but provide a localized function which includes land access.

US 21 is currently:

- a 2 lane major thoroughfare with 10.5 foot lanes from Andrews Ridge Road (SR 1429) to Pine Swamp Road (SR 1121);

- a 3 lane major thoroughfare with 11 foot lanes from Pine Swamp Road (SR 1121) to Rivers Edge Road (SR 1421);
- a 2 lane major thoroughfare with 10.5 foot lanes from Rivers Edge Road (SR 1421) to Blue Ridge Street;
- a 3 lane major thoroughfare with 10 to 12 foot lanes from Blue Ridge Street to the Sparta Parkway (SR 1206); and
- a 2 lane major thoroughfare with 12 foot lanes from the Sparta Parkway (SR 1206) to Bledsoe Creek Road (SR 1135).

By 2040, the 2 lane segments along this facility are projected to be near or over capacity.

- The 2010 Average Annual Daily Traffic (AADT) from Andrews Ridge Road (SR 1429) to Pine Swamp Road (SR 1121) ranges from 5,200 to 6,800 vehicles per day (vpd). The 2040 AADT is projected to range from 9,400 to 12,300 vpd, compared to an existing capacity of 10,000 vpd for Level of Service (LOS) D.
- The 2010 AADT from Rivers Edge Road (SR 1421) to Blue Ridge Street ranges from 8,000 to 8,600 vpd. The 2040 AADT is projected to range from 11,600 to 14,500 vpd, compared to an existing capacity of 10,500 to 12,100 vpd for LOS D.
- The 2010 AADT from the Sparta Parkway (SR 1206) to Bledsoe Creek Road (SR 1135) ranges from 6,000 to 6,500 vpd. The 2040 AADT is projected to range from 10,200 to 10,900 vpd, compared to an existing capacity of 11,100 to 12,100 vpd for LOS D.

### Community Vision and Problem History

Alleghany County expects development to occur in the areas served by public water and sewer. Water and sewer currently extend as far east as Andrews Ridge Road (SR 1429) and as far west as Bledsoe Creek Road (SR 1135). As such, there is strong local support for a continuous 3 lane section from Andrews Ridge Road (SR 1429) to Bledsoe Creek Road (SR 1135).

The 1992 Sparta Thoroughfare Plan identified deficiencies on US 21 from the southern town limit to the northern town limit.

## CTP Project Proposal

### Project Description and Overview

In order to accommodate projected volumes and the anticipated development along this facility, US 21 is recommended to be widened to a 3 lane facility with 12 foot lanes and accommodations for bicycles:

- from Andrews Ridge Road (SR 1429) to Pine Swamp Road (SR 1121);
- from Rivers Edge Road (SR 1421) to Blue Ridge Street; and
- from the Sparta Parkway (SR 1206) to Bledsoe Creek Road (SR 1135).

Additionally, from 2009 through 2011, four intersections along this corridor were identified as having 10 or more crashes. Refer to Appendix F for more detailed information on these locations.

### Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, portions of the proposed project have water and sewer lines. There is a hazardous waste disposal site and a hazardous substance disposal site adjacent to the proposed project, just south of the Little River. The proposed project crosses the Little River which is also identified as trout waters. Additionally, NCDOT's Structures Management Unit identified bridge #30 over the Little River as structurally deficient and functionally obsolete. The proposed project is within the target local watershed and a natural heritage element occurrence area.

### Relationship to Land Use Plans

Existing land use along US 21 includes a mixture of commercial and residential. The Alleghany County and Town of Sparta Land Development Plans, August 2000, identifies US 21 from Sparta north to Bledsoe Creek Road (SR 1135) and US 21 from Sparta south to a point near Andrews Ridge Road (SR 1429) as major growth corridors and urban transition areas.

### Linkages to Other Plans and Proposed Project History

The previous transportation plan covering Alleghany County, the 1993 Region D Thoroughfare Plan, recommended widening US 21 to 11 foot lanes or 12 foot lanes with minimum 2 foot paved shoulders from Wilkes County to Memorial Park Drive (SR 1420). TIP project R-3101, planned for construction in 2013, will widen US 21 to 12 foot lanes with 2 foot paved shoulders from Roaring Gap to Sparta.

The 1992 Sparta Thoroughfare Plan recommended a continuous 3 lane cross section on US 21 from the southern town limits to the northern town limits.

The CTP is consistent with the thoroughfare plan recommendations and the TIP project, but recommends additional improvements to US 21 by recommending that a 3 lane section go beyond the town limits and extend from Andrews Ridge Road (SR 1429) to Bledsoe Creek Road (SR 1135).

### Multi-modal Considerations

Bicycle accommodations are recommended on US 21 from Andrews Ridge Road (SR 1429) to Bledsoe Creek Road (SR 1135), including on bridge #30 over Little River. A multi-use trail is recommended along US 21 from south of the Little River to Ballpark Road, including crossing the river. New or improved sidewalks are recommended on US 21 from Blue Ridge Street to Sparta Parkway (SR 1206). A recommended bus route will also use US 21 between Sunset Drive and Sparta Parkway (SR 1206).

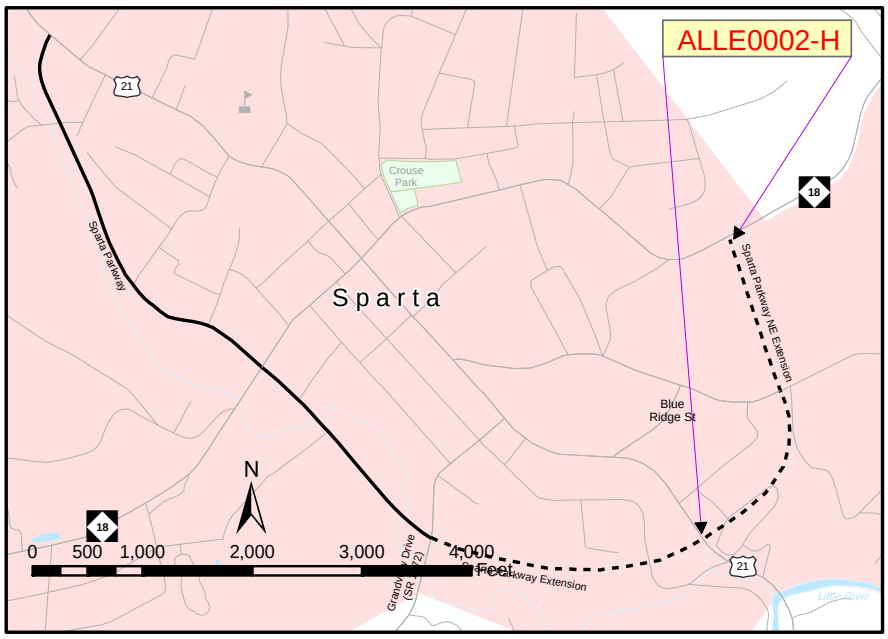
**Public/ Stakeholder Involvement**

During a public workshop held on September 26, 2011 in Sparta, public input included suggestions for wider lanes on US 21 and for 4 foot bicycle lanes on US 21 between Wilkes County and Sparta.

| Proposed Sparta Parkway Northeast Extension from US 21 to NC 18 | Local ID: ALLE0002-H<br>Last Updated: 03/28/12 |
|---|---|

## Identified Problem

US 21 is projected to be over capacity by 2040 from the Sparta Parkway to the Sparta Parkway Extension (R-4060). Improvements are needed to accommodate projected traffic volumes and to improve mobility along the facility.




## Justification of Need

Currently, motorists traveling between US 21 south of Sparta and NC 18 north of Sparta travel through the center of Sparta and turn at the intersection of US 21 and NC 18. The intersection is difficult for truck turns due to the following:

- NC 18 is narrow, with 10 foot lanes, and there is minimal room for widening due to buildings which are only a few feet from the edge of the road.
- Three of the four approaches to the intersection have steep grades, ranging from 3% on the northern leg of the intersection to 9% on the southern leg.
- Sight distance is limited.

In addition to the difficult truck turns, US 21 in the center of Sparta is projected to be over capacity in 2040. This stretch of US 21 is currently a 3 lane facility with 10 to 11 foot lanes. The 2010 Average Annual Daily Traffic (AADT) ranges from 9,500 to 11,800 vehicles per day (vpd). The 2040 AADT is projected to range from 12,800 to 15,900 vpd, compared to an existing LOS D capacity of 11,900 to 12,700 vpd.

Sparta Parkway currently extends from US 21 west of the center of Sparta to Grandview Drive (SR 1172). TIP project R-4060, Sparta Parkway Extension, will extend Sparta Parkway from Grandview Drive (SR 1172) to US 21 near the eastern limits of Sparta. Even with the completion of the Sparta Parkway Extension (R-4060), trucks traveling between NC 18 north of Sparta and US 21 east of Sparta will still have to either make the difficult turn at the intersection of US 21 and NC 18, or take the Sparta Parkway Extension (R-4060) between NC 18 north of Sparta and US 21 east of Sparta, which is

longer. Further, even with the completion of the Sparta Parkway Extension (R-4060), US 21 in the center of Sparta is projected to be near capacity in 2040.

## Community Vision and Problem History

The Alleghany County transportation survey, conducted at the start of the CTP, indicated a strong desire to preserve the character of the community. Seventy-nine percent of survey respondents rated "Community and Cultural Preservation" as either "Very Important" or "Important". Therefore, impacting existing businesses to make the intersection of US 21 and NC 18 more suitable for truck turns would not be consistent with local goals.

This deficiency was previously identified in the 1992 Sparta Thoroughfare Plan.

## CTP Project Proposal

### Project Description and Overview

In order to improve mobility on the east side of Sparta, to avoid difficult truck turns at the intersection of US 21 and NC 18, and to further reduce congestion on US 21 in the center of Sparta by providing an alternative route, it is recommended that Sparta Parkway be extended north of US 21 to connect with NC 18. The proposed extension is recommended to be constructed as a 2 lane minor thoroughfare on new location.

This alternative is expected to be more effective than extending Blue Ridge Street which was recommended in the previous thoroughfare plan. By providing a three-quarter loop around Sparta, this alternative will be more effective in reducing congestion, improving mobility, reducing turns, and avoiding turns which are difficult for trucks.

### Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, the proposed project crosses water and sewer lines. It is also within the target local watershed and a natural heritage element occurrence area.

### Relationship to Land Use Plans

Current land use in the vicinity of the proposed Sparta Parkway Northeast Extension is as follows: residential between US 21 and Memorial Park Drive, and undeveloped between Memorial Park Drive and NC 18. The Land Design Plan Map (future land use map) from the Alleghany County and Town of Sparta Land Development Plans, August 2000, shows most of the area in the vicinity of the proposed road as "Medium Density Residential".

### Linkages to Other Plans and Proposed Project History

US 21 and NC 18 are both on the regional tier of the North Carolina Multimodal Investment Network (NCMIN). US 21 is federally classified as a minor arterial. NC 18 is federally classified as a major collector. Facilities on the regional tier of NCMIN

typically connect major population centers and have a mix of functions. Some of the regional tier facilities, including US 21, can be viewed as serving statewide transportation needs, but provide a localized function which includes land access.

The 1992 Sparta Thoroughfare Plan recommended a “US 21 Alternate” which became the Sparta Parkway Extension (TIP project R-4060). The Sparta Parkway Extension (R-4060) will extend the existing Sparta Parkway east from its current terminus at Grandview Drive (SR 1172) to connect with US 21, and is scheduled for construction in fiscal year 2015.

The 1992 Sparta Thoroughfare Plan also recommended extending Blue Ridge Street north to connect to NC 18. The Sparta Parkway Northeast Extension (ALLE0002-H) proposes extending Sparta Parkway north to NC 18 instead of extending Blue Ridge Street.

**Multi-modal Considerations**

There are no recommendations for sidewalks or on-road bicycle facilities for the existing Sparta Parkway, for the Sparta Parkway Extension (R-4060), or for the proposed Sparta Parkway Northeast Extension. However, the 2012 Crouse Park / Sparta Greenway Comprehensive Master Plan includes a multi-use trail that is proposed to parallel the existing Sparta Parkway and the Sparta Parkway Extension (R-4060).

**Public / Stakeholder Involvement**

The Sparta Parkway Northeast Extension was discussed with the CTP steering committee, at a public workshop, and with city and county commissioners. Most of the input received favored this alternative over extending Blue Ridge Street to NC 18, as was recommended in the 1992 Sparta Thoroughfare Plan.

## US 21, FS-0611A

The section of US 21 from Wilkes County to Roaring Gap is a 2 lane major thoroughfare with 10.5 foot lanes and includes a section with an 8% grade. Passing lanes are currently provided only in the uphill (northern) direction, and passing can be difficult due to the limited length of the passing lanes. Due to the steep grade, limited passing lanes, and slow-moving trucks, travel speeds are reduced. Improvements are needed to accommodate passing in the downhill (southern) direction, to improve passing in the uphill direction, and to accommodate turning as needed.

It is recommended that the facility be improved to three 12 foot lanes with paved shoulders from Wilkes County to Oklahoma Road (SR 1100) in Roaring Gap. This will provide passing lanes in alternate directions or turning lanes based on the needs of the specific area. Additional information on this recommendation can be found in Feasibility Study FS-0611A which was completed by NCDOT in November of 2008. The feasibility study did not include bicycle accommodations; however, they are recommended as part of the CTP (see ALLE0001-B).

Based on a planning level environmental assessment using available GIS data, the proposed project is within the target local watershed and a natural heritage element occurrence area.

## US 21, TIP No. R-3101

US 21 is the most heavily travelled route in Alleghany County. From Roaring Gap to Sparta, US 21 is currently a 2 to 3 lane major thoroughfare with 10.5 foot lanes and unpaved shoulders. TIP project R-3101 is included in the 2012 – 2018 TIP and includes widening US 21 to 12 foot lanes with 2 foot paved shoulders from Roaring Gap to Sparta. For additional information about this project, including the Purpose and Need, contact the NCDOT Division 11 Office.

## US 221, Local ID ALLE0003-H

US 221 from Ashe County to US 21 does not meet the future mobility and connectivity needs in western North Carolina and into Virginia.

This facility is intended to provide mobility in Alleghany County and, ultimately, connectivity between Boone and Wytheville, VA. US 221 is part of the Strategic Highway Corridor Vision (SHC) plan adopted by NCDOT on September 2, 2004. The existing facility is a 2 lane major thoroughfare with 11 foot lanes and is recommended to be upgraded to 12 foot lanes with improvements to the alignment as needed. Bicycle accommodations should be provided from US 21 to NC 93; this section of US 221 is part of North Carolina Bicycle Route 4 (North Line Trace).

Based on a planning level environmental assessment using available GIS data, the proposed project is within the target local watershed and a natural heritage element occurrence area. It also crosses several trout streams. Additionally, NCDOT's Structures Management Unit identified bridge #9 over an unnamed creek as structurally

deficient and functionally obsolete. The 2012 – 2018 TIP includes project B-4406 that will replace this bridge.

**Sparta Parkway Extension, TIP No. R-4060**

US 21 (Main Street) in Sparta is currently near capacity and is projected to be over capacity by 2040. The 2012 – 2018 TIP includes project R-4060 that is intended to address this problem. This project includes constructing a 2 lane minor thoroughfare on new location from Grandview Drive (SR 1172) to US 21 near the eastern town limits. For additional information about this TIP project, including the Purpose and Need, contact the NCDOT Project Development and Environmental Analysis Branch.

**Minor Widening Improvements**

The following facilities do not have capacity deficiencies, but are recommended to be upgraded to improve mobility and safety along the facility and/or to accommodate bicycles.

- **R-2516:** NC 18 – Widen from 10 to 12 foot lanes. The current project limits for R-2516 are from the Blue Ridge Parkway south of Citron to Sparta. However, the section of NC 18 from the Blue Ridge Parkway south of Citron to NC 88 currently has 11 foot lanes and is not recommended for widening. Additionally, TIP project SF-4911G was recently completed and included widening NC 18 to 12 foot lanes from Dixon Road (SR 1150) to south of Meadowfork Road (SR 1141). Therefore, the CTP recommends revising the project limits to: from NC 88 in southern Alleghany County to Dixon Road (SR 1150) and from south of Meadowfork Road (SR 1141) to US 21 in Sparta. In addition, the CTP recommends bicycle accommodations along this facility from the Blue Ridge Parkway in southern Alleghany County to NC 113 (see ALLE0004-B).

- **ALLE0004-H:** NC 18 – Widen from 10 to 12 foot lanes from Grayson Street in Sparta to Surry County. Bicycle accommodations are recommended from Glade Valley Road (SR 1444) to Surry County.

- **ALLE0005-H:** NC 88 – Widen from 10 to 12 foot lanes and provide bicycle accommodations from NC 18 to Ashe County.

- **R-4756:** NC 93 – Widen from 9 to 10 foot lanes to 12 foot lanes from US 221 to Virginia. This section of NC 93 is part of NC Bicycle Route 4 (North Line Trace). The current project limits for R-4756 are from US 221 to NC 113. The CTP recommends expanding the project limits to Virginia. The CTP also recommends bicycle accommodations along this facility from US 221 to Virginia (see ALLE0005-B).

- **ALLE0006-H:** NC 113 currently has 9 foot lanes and is a popular route for bicyclists. NC 113 is recommended to be widened to 12 foot lanes with bicycle accommodations from NC 18 to NC 93.

- **ALLE0007-H:** Glade Valley Road (SR 1444) – Widen from 9 foot lanes to 12 foot lanes with accommodations for bicycles from US 21 to Barrett Road (SR 1422).

- **ALLE0008-H:** Grandview Drive (SR 1172/SR 1121) – Widen from 9 foot lanes to 12 foot lanes from US 21 to Pine Swamp Road (SR 1121).

- **ALLE0009-H:** Pine Swamp Road (SR 1121) – Widen from 9 foot lanes to 12 foot lanes from Grandview Drive (SR 1172) to Mahogany Rock Road (SR 1114).

## PUBLIC TRANSPORTATION & RAIL

Alleghany in Motion is Alleghany County's community transportation provider and currently operates para-transit ("Dial-a-Ride") service, but does not provide fixed route service. The county desires to provide fixed route transit service in the future. Alleghany in Motion, in cooperation with the CTP steering committee, identified potential fixed route(s) which are shown on the Public Transportation and Rail map. The proposed bus route(s) utilize the following facilities:

- **ALLE0001-T:** US 21 – from Sparta Parkway to Sunset Drive
- **ALLE0002-T:** NC 18 – from Darr Street to Halsey Street
- **ALLE0003-T:** NC 18 – from Hospital Road to Collins Road (SR 1137)
- **ALLE0004-T:** Cheek Street – from US 21 to S Grayson Street
- **ALLE0005-T:** Collins Road (SR 1137) – from NC 18 to NC 18
- **ALLE0006-T:** Darr Street – from Mapleview Drive to NC 18
- **ALLE0007-T:** Doctors Street – from Independence Road (SR 1403) to Mapleview Drive
- **ALLE0008-T:** Doughton Street – from Grayson Street to US 21
- **ALLE0009-T:** Grayson Street – from Doughton Street to Independence Road (SR 1403)
- **ALLE0010-T:** S Grayson Street – from Cheek Street to NC 18
- **ALLE0011-T:** Green Acres Road – from NC 18 to Lake Street
- **ALLE0012-T:** Halsey Street – from Memorial Park Drive to NC 18
- **ALLE0013-T:** Highland Village Circle – from Industrial Park Drive to Industrial Park Drive
- **ALLE0014-T:** Hill Street – from Lake Street to Green Acres Road
- **ALLE0015-T:** Hospital Road – from NC 18 to Doctors Street
- **ALLE0016-T:** Independence Road (SR 1403) – from Grayson Street to Doctors Street
- **ALLE0017-T:** Industrial Park Drive – from Moxley Road to Highland Village Circle
- **ALLE0018-T:** Irwin Street – from Roe Street to Grayson Street
- **ALLE0019-T:** Lake Street – from Green Acres Road to Hill Street
- **ALLE0020-T:** Mapleview Drive – from Doctors Street to Darr Street

- **ALLE0021-T:** Memorial Park Drive – from Sunset Drive to Halsey Street
- **ALLE0022-T:** Moxley Road – from NC 18 to Industrial Park Drive
- **ALLE0023-T:** Roe Street – from Trojan Avenue to Irwin Street
- **ALLE0024-T:** Sparta Parkway – from US 21 to NC 18
- **ALLE0025-T:** Sunset Drive – from US 21 to Memorial Park Drive
- **ALLE0026-T:** Trojan Avenue – from US 21 to Roe Street

There is no rail service in Alleghany County.

## BICYCLE

North Carolina Bicycle Route 4 (North Line Trace) runs southeast-northwest through Alleghany County and follows US 21, Cherry Lane Road (SR 1106), Rash Road (SR 1108), the Blue Ridge Parkway, Mahogany Rock Road (SR 1114, SR 1115), Pine Swamp Road (SR 1121), US 221, and NC 93. Bicycle accommodations are recommended for roads that North Carolina Bicycle Route 4 follows and for other popular bicycling routes in Alleghany County, which include:

- **ALLE0001-B:** US 21 – from Wilkes County to Oklahoma Road (SR 1100)
- **ALLE0002-B:** US 21 – from Oklahoma Road (SR 1100) to Andrews Ridge Road (SR 1429)
- **ALLE0001-H:** US 21 – from Andrews Ridge Road (SR 1429) to Bledsoe Creek Road (SR 1135)
- **ALLE0003-B:** US 21 – from Bledsoe Creek Road (SR 1135) to US 221
- **ALLE0003-H:** US 221 – from US 21 to NC 93
- **ALLE0004-B:** NC 18 –from the Blue Ridge Parkway in southern Alleghany County to NC 113
- **ALLE0004-H:** NC 18 – from Glade Valley Road (SR 1444) to Surry County
- **ALLE0005-H:** NC 88 – from NC 18 to Ashe County
- **ALLE0005-B:** NC 93 – from US 221 to Virginia
- **ALLE0006-H:** NC 113 – from NC 18 to NC 93
- **ALLE0006-B:** Cherry Lane Road (SR 1106) – from US 21 to Rash Road (SR 1108)
- **ALLE0007-B:** Dewitt Road (SR 1113) – from Mahogany Rock Road (SR 1114) to US 21
- **ALLE0008-B:** Frank Parkway – from Wilkes County south of Oklahoma Road (SR 1100) to Wilkes County north of Oklahoma Road (SR 1100)
- **ALLE0007-H:** Glade Valley Road (SR 1444) – from US 21 to Barrett Road (SR 1422)
- **ALLE0009-B:** Glade Valley Road (SR 1444) – from Barrett Road (SR 1422) to NC 18
- **ALLE0010-B:** Mahogany Rock Road (SR 1114, SR 1115) – from the Blue Ridge Parkway to Pine Swamp Road (SR 1121)

- **ALLE0011-B:** Oklahoma Road (SR 1100) – from Frank Parkway to US 21
- **ALLE0012-B:** Pine Swamp Road (SR 1121) – from Mahogany Rock Road (SR 1114) to US 21
- **ALLE0013-B:** Rash Road (SR 1108) – from Cherry Lane Road (SR 1106) to the Blue Ridge Parkway

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 inch railings.

Please note that no recommendations were made for bicycle accommodations on the Blue Ridge Parkway because it is controlled by the National Park Service rather than by NCDOT.

## PEDESTRIAN

Sparta is the only community in Alleghany County with existing or recommended sidewalks. Pedestrian recommendations (sidewalks and multi-use trails) shown on the CTP pedestrian map are from the Town of Sparta Pedestrian Transportation Plan (2006) and the Crouse Park / Sparta Greenway Comprehensive Master Plan (2012).

# 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*

801 Statesville Road North Wilkesboro, NC 28659 (336) 667-9111
http://www.ncdot.gov/doh/operations/division11/

*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.

  P.O. Box 558 Elkin, NC 28621 (336) 835-4241

*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/

*High Country Rural Planning Organization (RPO)*

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

468 New Market Blvd. Boone, NC 28607 828-265-5434
http://www.regiond.org/

*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/

*Transportation Mobility and Safety Division*

Contact the Traffic Safety Unit for information regarding crash data throughout the state.

1561 Mail Service Center Raleigh, NC 27699-1561 (919) 773-2800
https://connect.ncdot.gov/resources/safety/Pages/default.aspx

## *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

This appendix contains descriptive information and definitions for the designations depicted on the CTP maps shown in Figure 1.

## *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, operations, or system continuity. The improvement to the facility may be widening, increasing the level of access control along the facility, operational strategies (including but not limited to traffic control and enforcement, incident and emergency management, and deployment of Intelligent Transportation Systems (ITS) technologies), or a combination of improvements and strategies. *"Needs improvement" does not refer to the maintenance needs of existing facilities or the replacement or rehab of structures.*
- **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 the NCDOT Road Characteristics shapefile. 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 based on the 2000 Highway Capacity Manual using the Transportation Planning Branch's LOS D Standards for Systems Level Planning, as documented in Chapter 1.
- **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 '2040 AADT E+C' is an estimate of the volume in 2040 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 '2040 AADT with CTP' is an estimate of the volume in 2040 with all proposed CTP improvements assumed to be in place. The '2040 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 1.
- **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 Mulitmodal 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 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2010 Existing System | | | | | | 2040 Proposed System | | | | | | | |
| Local ID | Facility | Section (From - To) | Jurisdiction | Dist. (mi) | Cross-Section (ft) | Cross-Section lanes | ROW (ft) | Speed Limit (mph) | Existing Capacity (vpd) | 2,010 AADT | 2040 AADT E+C | 2040 AADT with CTP | Proposed Capacity (vpd) | Cross-Section | ROW (ft) | CTP Classification | Tier | Other Modes |
| FS-0611A | US 21 | Wilkes Co to Okalahoma Rd (SR 1100) | Alleghany Co | 1.7 | 21 | 2 | 60 | 55 | 8,000 | 3,000 | 5,400 | 5,400 | 12,000 | 3A | 80 | Maj | Reg | B |
| R-3101 | US 21 | Okalahoma Rd (SR 1100) to Hollynoll Rd (SR 1512) | Alleghany Co | 1.7 | 21 | 2 | 60 | 45 | 10,000 | 4,100 | 7,400 | 7,400 | 11,000 | 2A | ADQ | Maj | Reg | B |
| R-3101 | US 21 | Hollynoll Rd (SR 1512) to Andrew's Ridge Rd (SR 1429) | Alleghany Co | 6.2 | 21 | 2 | 60 | 55 | 11,100 | 4,200 | 7,000 | 7,000 | 12,100 | 2A | ADQ | Maj | Reg | B |
| R-3101, ALLE0001-H | US 21 | Andrew's Ridge Rd (SR 1429) to Pine Swamp Rd (SR 1121) | Alleghany Co | 1.6 | 21 | 2 | 60 | 55 | 10,000 | 6,000 | 9,300 | 9,300 | 14,000 | 3A | 80 | Maj | Reg | B |
| R-3101 | US 21 | Pine Swamp Rd (SR1121) to Rivers Edge Rd (SR 1421) | Alleghany Co | 0.4 | 34 | 3 | 80 | 45 | 13,800 | 7,800 | 14,100 | 14,100 | **13,800** | ADQ | ADQ | Maj | Reg | B |
| R-3101, ALLE0001-H | US 21 | Rivers Edge Rd (SR 1421) to SCL Sparta | Alleghany Co | 0.7 | 21 | 2 | 60 | 35 | 11,000 | 8,000 | 14,500 | 14,500 | **13,700** | 3A | 80 | Maj | Reg | B |
| ALLE0001-H | US 21 | SCL Sparta to Sparta Pky Extn | Sparta | 0.2 | 21 | 2 | 60 | 35 | 10,500 | 8,600 | 11,600 | 11,600 | 12,900 | 3A | 80 | Maj | Reg | B |
| ALLE0001-H | US 21 | Sparta Pky Extn to Blue Ridge St | Sparta | 0.2 | 21 | 2 | 60 | 35 | 10,500 | 9,500 | 9,500 | 8,500 | 12,900 | 3B | 80 | Maj | Reg | B,P,T |
| | US 21 | Blue Ridge St to Grandview Dr (SR 1172) | Sparta | 0.2 | 30 | 3 | 60 | 35 | 11,900 | 9,500 | 9,500 | 8,500 | 11,900 | ADQ | ADQ | Maj | Reg | B,P,T |
| | US 21 | Grandview Dr (SR 1172) to Memorial Park Dr (SR 1420) | Sparta | 0.1 | 33 | 3 | 60 | 35 | 12,300 | 10,500 | 10,500 | 9,500 | 12,300 | ADQ | ADQ | Maj | Reg | B,P,T |
| | US 21 | Memorial Park Dr (SR 1420) to NC 18 | Sparta | 0.2 | 48 | 3 | 70 | 20 | 12,700 | 11,800 | 11,800 | 10,800 | 12,700 | ADQ | ADQ | Maj | Reg | B,P,T |
| | US 21 | NC 18 to Trojan St | Sparta | 0.2 | 48 | 3 | 70 | 20 | 12,700 | 11,800 | 11,800 | 11,800 | 12,700 | ADQ | ADQ | Maj | Reg | B,P,T |
| | US 21 | Trojan St to Charles St | Sparta | 0.2 | 44 | 3 | 60 | 35 | 12,700 | 9,900 | 9,900 | 9,900 | 12,700 | ADQ | ADQ | Maj | Reg | B,P,T |
| | US 21 | Charles St to Sparta Pky | Sparta | 0.2 | 44 | 3 | 80 | 35 | 12,700 | 9,900 | 9,900 | 9,900 | 12,700 | ADQ | ADQ | Maj | Reg | B,P,T |
| ALLE0001-H | US 21 | Sparta Pky to NCL Sparta | Sparta | 0.4 | 24 | 2 | 60 | 35 | 11,100 | 6,500 | 10,200 | 10,200 | 12,900 | 3A | 80 | Maj | Reg | B |
| ALLE0001-H | US 21 | NCL Sparta to Bledsoe Creek Rd (SR 1135) | Alleghany Co | 0.6 | 26 | 2 | 80 | 55 | 12,100 | 6,000 | 10,900 | 10,900 | 14,000 | 3A | ADQ | Maj | Reg | B |
| | US 21 | Bledsoe Creek (SR 1135) to Pavement Change | Alleghany Co | 0.3 | 24 | 2 | 80 | 55 | 14,000 | 5,500 | 10,000 | 10,000 | 14,000 | ADQ | ADQ | Maj | Reg | B |
| | US 21 | Pavement Change to US 21 / 221 | Alleghany Co | 0.9 | 36 | 3 | 100 | 55 | 14,000 | 5,500 | 10,000 | 10,000 | 14,000 | ADQ | ADQ | Maj | Reg | B |
| | US 21-221 | US 21 to Kilby Rd (SR 1348) | Alleghany Co | 0.9 | 24 | 2 | 100 | 35 | 11,600 | 2,500 | 3,400 | 3,400 | 11,600 | ADQ | ADQ | Maj | Sta | |
| | US 21-221 | Kilby Rd (SR 1348) to Virginia | Alleghany Co | 2.5 | 24 | 2 | 100 | 55 | 12,100 | 2,500 | 3,900 | 3,900 | 12,100 | ADQ | ADQ | Maj | Sta | |
| ALLE0003-H | US 221 | Ashe County to Antioch Rd (SR 1167) | Alleghany Co | 7.1 | 22 | 2 | 60 | 55 | 12,100 | 1,000 | 1,600 | 1,600 | 12,100 | 2A | ADQ | Maj | Sta | |
| ALLE0003-H | US 221 | Antioch Rd (SR 1167) to NC 93 | Alleghany Co | 2.9 | 22 | 2 | 60 | 55 | 12,100 | 1,400 | 2,200 | 2,200 | 12,100 | 2A | ADQ | Maj | Sta | |

| HIGHWAY | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2010 Existing System | | | | | | 2040 Proposed System | | | | | | | | |
| Local ID | Facility | Section (From - To) | Jurisdiction | Dist. (mi) | Cross-Section (ft) | Cross-Section lanes | ROW (ft) | Speed Limit (mph) | Existing Capacity (vpd) | 2,010 AADT | 2040 AADT E+C | 2040 AADT with CTP | Proposed Capacity (vpd) | Cross-Section | ROW (ft) | CTP Classification | Tier | Other Modes |
| ALLE0003-H | US 221 | NC 93 to US 21 | Alleghany Co | 0.8 | 22 | 2 | 60 | 55 | 12,100 | 3,400 | 5,300 | 5,300 | 12,100 | 2A | ADQ | Maj | Sta | B |
| | NC 18 | Wilkes County to Blue Ridge Pky | Alleghany Co | 1.8 | 22 | 2 | 60-100 | 55 | 12,100 | 3,400 | 5,300 | 5,300 | 12,100 | ADQ | ADQ | Maj | Reg | |
| R-2516 | NC 18 | Blue Ridge Pky to NC 88 | Alleghany Co | 1.9 | 22 | 2 | 100 | 55 | 12,100 | 3,400 | 5,300 | 5,300 | 12,100 | 2A | ADQ | Maj | Reg | B |
| R-2516 | NC 18 | NC 88 to NC 113 | Alleghany Co | 0.9 | 20 | 2 | 60 | 55 | 11,100 | 1,800 | 2,400 | 2,400 | 12,100 | 2A | ADQ | Maj | Reg | B |
| R-2516 | NC 18 | NC 113 to Dixon Rd (SR 1150) | Alleghany Co | 2.7 | 20 | 2 | 60 | 55 | 11,100 | 1,600 | 2,200 | 2,200 | 12,100 | 2A | ADQ | Maj | Reg | |
| R-2516 | NC 18 | Dixon Rd (SR 1150) to Meadowfork Rd (SR 1141) | Alleghany Co | 1.7 | 20 | 2 | 60 | 55 | 11,100 | 1,600 | 2,200 | 2,200 | 12,100 | 2A | ADQ | Maj | Reg | |
| R-2516 | NC 18 | Meadowfork Rd (SR 1141) to Tayson Rd (SR 1173) | Alleghany Co | 5.2 | 20 | 2 | 60-100 | 55 | 11,100 | 1,900 | 3,000 | 3,000 | 12,100 | 2A | ADQ | Maj | Reg | |
| R-2516 | NC 18 | Tayson Rd (SR 1173) to SCL Sparta | Alleghany Co | 0.8 | 20 | 2 | 100 | 55 | 11,100 | 3,500 | 6,300 | 6,300 | 12,100 | 2A | ADQ | Maj | Reg | |
| R-2516 | NC 18 | SCL Sparta to Sparta Pky | Sparta | 0.9 | 20 | 2 | 100 | 45 | 11,900 | 4,000 | 5,400 | 5,400 | 12,700 | 2A | ADQ | Maj | Reg | T |
| R-2516 | NC 18 | Sparta Pky to Womble St | Sparta | <0.1 | 20 | 2 | 100 | 35 | 10,800 | 4,000 | 5,400 | 5,000 | 11,600 | 2E | ADQ | Maj | Reg | P, T |
| R-2516 | NC 18 | Womble St to US 21 | Sparta | 0.2 | 20 | 2 | 40-100 | 20 | 9,300 | 4,000 | 5,400 | 5,000 | 9,300 | 2E | ADQ | Maj | Reg | P, T |
| | NC 18 | US 21 to Grayson St (SR 1403) | Sparta | 0.1 | 36 | 3 | 50-100 | 20 | 12,700 | 4,000 | 5,400 | 5,000 | 12,700 | ADQ | ADQ | Maj | Reg | P, T |
| ALLE0004-H | NC 18 | Grayson St (SR 1403) to Hospital Rd | Sparta | 0.3 | 22 | 2 | 100 | 35 | 11,200 | 4,000 | 5,400 | 5,000 | 11,600 | 2D | 90 | Maj | Reg | P, T |
| ALLE0004-H | NC 18 | Hospital Rd to Halsey St | Sparta | 0.2 | 20 | 2 | 100 | 35 | 10,000 | 4,000 | 5,400 | 5,000 | 11,600 | 2D | 90 | Maj | Reg | P, T |
| ALLE0004-H | NC 18 | Halsey St to NCL Sparta | Sparta | 0.2 | 20 | 2 | 100 | 35 | 10,000 | 4,000 | 5,400 | 5,000 | 11,600 | 2A | ADQ | Maj | Reg | |
| ALLE0004-H | NC 18 | NCL Sparta to Walnut Ridge Rd (SR 1507) | Alleghany Co | 0.4 | 20 | 2 | 100 | 45 | 11,900 | 3,000 | 4,000 | 4,000 | 12,700 | 2A | ADQ | Maj | Reg | |
| ALLE0004-H | NC 18 | Walnut Ridge Rd (SR 1507) to Hilltop Rd (SR 1495) | Alleghany Co | 2.4 | 20 | 2 | 100 | 55 | 11,100 | 3,000 | 4,000 | 4,000 | 12,100 | 2A | ADQ | Maj | Reg | |
| ALLE0004-H | NC 18 | Hilltop Rd (SR 1495) to Glade Valley Rd (SR 1444) | Alleghany Co | 12.0 | 20 | 2 | 100 | 55 | 11,100 | 1,800 | 2,400 | 2,400 | 12,100 | 2A | ADQ | Maj | Reg | |
| ALLE0004-H | NC 18 | Glade Valley Rd (SR 1444) to Surry Co | Alleghany Co | 1.6 | 20 | 2 | 100 | 55 | 11,100 | 1,800 | 2,400 | 2,400 | 12,100 | 2A | ADQ | Maj | Reg | B |
| | NC 88 | Ashe Co to NC 18 | Alleghany Co | 0.3 | 20 | 2 | 60 | 55 | 11,100 | 1,000 | 1,300 | 1,300 | 12,100 | 2A | ADQ | Maj | Reg | B |
| R-4756 | NC 93 | US 221 to Pugh Rd (SR 1316) | Alleghany Co | 7.9 | 18 | 2 | 60 | 55 | 9,800 | 1,500 | 2,300 | 2,300 | 12,100 | 2A | ADQ | Maj | Reg | B |
| R-4756 | NC 93 | Pugh Rd (SR 1316) to NC 113 | Alleghany Co | 1.6 | 20 | 2 | 60 | 55 | 11,100 | 500 | 800 | 800 | 12,100 | 2A | ADQ | Maj | Reg | B |
| | NC 93 | NC 113 to VA Line | Alleghany Co | 0.5 | 20 | 2 | 60 | 55 | 11,100 | 1,800 | 2,800 | 2,800 | 12,100 | 2A | ADQ | Maj | Reg | B |
| ALLE0006-H | NC 113 | NC 18 to S Fork Church Rd (SR 1316) | Alleghany Co | 9.2 | 18 | 2 | 60 | 55 | 9,800 | 800 | 1,300 | 1,300 | 12,100 | 2A | ADQ | Maj | Reg | B |
| ALLE0006-H | NC 113 | S Fork Church Rd (SR 1316) to NC 93 | Alleghany Co | 2.0 | 20 | 2 | 60 | 55 | 11,100 | 600 | 1,000 | 1,000 | 12,100 | 2A | ADQ | Maj | Reg | B |
| | Barrett Rd (SR 1422) | Glade Valley Rd (SR 1444) to Fox Ridge Rd (SR 1422) | Alleghany Co | 3.5 | 18 | 2 | 60 | 55 | 9,800 | 500 | 700 | 700 | 9,800 | ADQ | ADQ | Min | Sub | |

| HIGHWAY | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2010 Existing System | | | | | | 2040 Proposed System | | | | | | | |
| Local ID | Facility | Section (From - To) | Jurisdiction | Dist. (mi) | Cross-Section (ft) | Cross-Section lanes | ROW (ft) | Speed Limit (mph) | Existing Capacity (vpd) | 2,010 AADT | 2040 AADT E+C | 2040 AADT with CTP | Proposed Capacity (vpd) | Cross-Section | ROW (ft) | CTP Classifi-cation | Tier | Other Modes |
| | Blue Ridge St | US 21 to Memorial Park Dr (SR 1420) | Sparta | 0.2 | 18* | 2 | 60 | 35 | 9,800 | 1000* | 1,400 | 1,700 | 9,800 | ADQ | ADQ | Min | Sub | P |
| | Cherry Lane Rd (SR 1106) | Rash Rd (SR 1108) to US 21 | Alleghany Co | 0.8 | 18 | 2 | 60 | 55 | 9,800 | 100 | 200 | 200 | 9,800 | ADQ | ADQ | Min | Sub | B |
| | Chestnut Grove Ch Rd (SR 1426) | US 21 to NC 18 | Alleghany Co | 4.3 | 20 | 2 | 60 | 55 | 11,100 | 1,200 | 2,200 | 2,200 | 11,100 | ADQ | ADQ | Min | Sub | |
| | Dewitt Rd (SR 1113) | Mahogany Rock Rd (SR 1114) to US 21 | Alleghany Co | 2.0 | 20 | 2 | 60 | 55 | 11,100 | 200 | 300 | 300 | 11,100 | ADQ | ADQ | Min | Sub | B |
| | Fox Ridge Rd (SR 1422) | Barrett Rd (SR 1422) to Little Pine Rd (SR 1448) | Alleghany Co | 0.8 | 18 | 2 | 60 | 55 | 9,800 | 300 | 500 | 400 | 9,800 | ADQ | ADQ | Min | Sub | |
| | Fox Ridge Rd (SR 1453) | Ridgeglen Rd (SR 1433) to Barrett Rd (SR 1422) | Alleghany Co | 1.5 | 18 | 2 | 60 | 55 | 9,800 | 600 | 1,300 | 1,300 | 9,800 | ADQ | ADQ | Min | Sub | |
| | Frank Pky | Wilkes Co to Wilkes Co | Alleghany Co | 2.4 | 18* | 2 | 60 | 55 | 6,200 | 200* | 400 | 400 | 5,000 | ADQ | ADQ | Min | Sub | B |
| ALLE0007-H | Glade Valley Rd (SR 1444) | US 21 to Barrett Rd (SR 1422) | Alleghany Co | 9.0 | 18 | 2 | 60 | 55 | 9,800 | 1,200 | 2,000 | 2,000 | 12,100 | 2A | ADQ | Min | Sub | B |
| ALLE0007-H | Glade Valley Rd (SR 1444) | Barrett Rd (SR 1422) to NC 18 | Alleghany Co | 2.7 | 20 | 2 | 60 | 55 | 11,100 | 1,200 | 2,000 | 2,000 | 11,100 | ADQ | ADQ | Min | Sub | B |
| ALLE0008-H | Grandview Dr (SR 1121) | Pine Swamp Rd (SR 1121) to Fraser Rd (SR 1128) | Alleghany Co | 0.6 | 18 | 2 | 60 | 55 | 9,800 | 500 | 1,000 | 1,000 | 12,100 | 2A | ADQ | Min | Sub | |
| ALLE0008-H | Grandview Dr (SR 1172) | Fraser Rd (SR 1128) to Tayson Rd (SR 1173) | Alleghany Co | 0.8 | 18 | 2 | 60 | 55 | 9,800 | 900 | 1,400 | 1,400 | 12,100 | 2A | ADQ | Min | Sub | |
| ALLE0008-H | Grandview Dr (SR 1172) | Tayson Rd (SR 1173) to SCL Sparta | Alleghany Co | 1.0 | 18 | 2 | 60 | 55 | 9,800 | 1,500 | 2,700 | 2,700 | 12,100 | 2A | ADQ | Min | Sub | |
| ALLE0008-H | Grandview Dr (SR 1172) | SCL Sparta to Duncan St | Sparta | 0.2 | 18 | 2 | 60 | 35 | 9,200 | 2,700 | 4,200 | 4,200 | 10,200 | 2A | ADQ | Min | Sub | |
| ALLE0008-H | Grandview Dr (SR 1172) | Duncan St to US 21 | Sparta | 0.1 | 18 | 2 | 60 | 35 | 9,200 | 2,700 | 4,200 | 4,200 | 10,200 | 2E | ADQ | Min | Sub | P |
| | Little Pine Rd (SR 1448) | Barrett Rd (SR 1422) to Fox Ridge Rd (SR 1453) | Alleghany Co | 0.8 | 20 | 2 | 60 | 55 | 11,100 | 500 | 1,000 | 1,000 | 11,100 | ADQ | ADQ | Min | Sub | |
| | Little Pine Rd (SR 1453) | Fox Ridge Rd (SR 1453) to NC 18 | Alleghany Co | 1.4 | 20 | 2 | 60 | 55 | 11,100 | 600 | 1,200 | 1,200 | 11,100 | ADQ | ADQ | Min | Sub | |
| | Mahogany Rock Rd (SR 1115) | Blue Ridge Pky to Hudson Rd (SR 1114) | Alleghany Co | 1.3 | 18 | 2 | 60 | 55 | 9,800 | 100 | 200 | 200 | 9,800 | ADQ | ADQ | Min | Sub | B |
| | Mahogany Rock Rd (SR 1114) | Hudson Rd (SR 1114) to Pine Swamp Rd (SR 1121) | Alleghany Co | 2.1 | 18 | 2 | 60 | 55 | 9,800 | 500 | 700 | 700 | 9,800 | ADQ | ADQ | Min | Sub | B |
| | Memorial Park Dr (SR 1420) | US 21 to Sparta Pky NE Extn | Sparta | 0.6 | 18 | 2 | 60 | 35 | 9,800 | 800 | 1,100 | 1,600 | 9,800 | ADQ | ADQ | Min | Sub | P, T |
| | Oklahoma Rd (SR 1100) | Frank Pky to US 21 | Alleghany Co | 3.2 | 18 | 2 | 60 | 55 | 6,200 | 300 | 500 | 500 | 6,200 | ADQ | ADQ | Min | Sub | B |

| HIGHWAY | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2010 Existing System | | | | | | 2040 Proposed System | | | | | | | | |
| Local ID | Facility | Section (From - To) | Jurisdiction | Dist. (mi) | Cross-Section (ft) | Cross-Section lanes | ROW (ft) | Speed Limit (mph) | Existing Capacity (vpd) | 2,010 AADT | 2040 AADT E+C | 2040 AADT with CTP | Proposed Capacity (vpd) | Cross-Section | ROW (ft) | CTP Classifi-cation | Tier | Other Modes |
| ALLE0009-H | Pine Swamp Rd (SR 1121) | Pine Swamp Rd (SR 1122) to Mahogany Rock Rd (SR 1114) | Alleghany Co | 0.5 | 20 | 2 | 60 | 55 | 11,100 | 1,500 | 3,000 | 3,000 | 12,100 | 2A | ADQ | Min | Sub | |
| | Pine Swamp Rd (SR 1121) | Mahogany Rock Rd (SR 1114) to US 21 | Alleghany Co | 0.4 | 24 | 2 | 60 | 55 | 12,100 | 2,200 | 4,600 | 4,600 | 12,100 | ADQ | ADQ | Min | Sub | |
| | Rash Rd (SR 1108) | Blue Ridge Pky to Cherry Ln (SR 1106) | Alleghany Co | 1.2 | 20 | 2 | 60 | 55 | 11,100 | 200* | 400 | 400 | 11,100 | ADQ | ADQ | Min | Sub | B |
| | Ridge Glen Rd (SR 1433) | Glade Valley Rd (SR 1444) to Fox Ridge Rd (SR 1422) | Alleghany Co | 1.0 | 18 | 2 | 60 | 55 | 9,800 | 500 | 1,000 | 1,000 | 9,800 | ADQ | ADQ | Min | Sub | |
| | Shawtown Rd (SR 1464) | US 21 to Glade Valley Rd (SR 1444) | Alleghany Co | 5.0 | 20 | 2 | 60 | 55 | 11,100 | 1,200 | 2,200 | 2,200 | 11,100 | ADQ | ADQ | Min | Sub | |
| | Sparta Pkwy (SR 1206) | US 21 to NC 18 | Sparta | 0.8 | 28 | 2 | 100 | 45 | 12,200 | 1,500 | 5,400 | 5,400 | 12,200 | ADQ | ADQ | Min | Sub | T |
| | Sparta Pkwy (SR 1206) | NC 18 to Grandview Dr (SR 1172) | Sparta | 0.4 | 28 | 2 | 100 | 45 | 12,200 | 2,000 | 6,100 | 6,500 | 12,200 | ADQ | ADQ | Min | Sub | |
| R-4060 | Sparta Pkwy Extension | Grandview Dr (SR 1172) to US 21 | Sparta | 1.2 | - | - | - | - | - | - | 6,100 | 6,500 | 12,200 | 2A | 60 | Min | Sub | |
| ALLE0002-H | Sparta Pky NE Extension | US 21 to NC 18 | Sparta | 0.6 | - | - | - | - | - | - | - | 2,000 | 12,200 | 2A | 60 | Min | Sub | |

* Estimated values.

# PUBLIC TRANSPORTATION AND RAIL

| PUBLIC TRANSPORTATION | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | Speed | | Existing System | Proposed System | |
| Local ID | Facility/ Route | Section (From - To) | Limit (mph) | Distance (mi) | Type | Type | Other Modes |
| ALLE0001-T | US 21 | Sparta Pky to Sunset Dr | 20-35 | 1.4 | - | Bus | H, B, P |
| ALLE0002-T | NC 18 | Darr St to Halsey St | 35 | 0.2 | - | Bus | H, P |
| ALLE0003-T | NC 18 | Hospital Rd to Collins Rd (SR 1137) | 20-45 | 1.6 | - | Bus | H, P |
| ALLE0004-T | Cheek St | US 21 to S Grayson St | 35 | 0.1 | - | Bus | P |
| ALLE0005-T | Collins Rd (SR 1137) | NC 18 to NC 18 | 45 | 1.7 | - | Bus | |
| ALLE0006-T | Darr St | Mapleview Dr to NC 18 | 35 | 0.1 | - | Bus | |
| ALLE0007-T | Doctors St | Independence Rd (SR 1403) to Mapleview Dr | 35 | 0.3 | - | Bus | P |
| ALLE0008-T | Doughton St | Grayson St to US 21 | 35 | 0.1 | - | Bus | P |
| ALLE0009-T | Grayson St | Doughton St to Independence Rd (SR 1403) | 35 | 0.4 | - | Bus | P |
| ALLE00010-T | S Grayson St | Cheek St to NC 18 | 35 | 0.1 | - | Bus | P |
| ALLE00011-T | Green Acres Rd | NC 18 to Lake St | 35 | 0.3 | - | Bus | |
| ALLE00012-T | Halsey St | Memorial Park Dr to NC 18 | 35 | 0.2 | - | Bus | P |
| ALLE00013-T | Highland Village Cir | Industrial Park Dr to Industrial Park Dr | 35 | 0.3 | - | Bus | |
| ALLE00014-T | Hill St | Lake St to Green Acres Rd | 35 | 0.2 | - | Bus | |
| ALLE00015-T | Hospital Rd | NC 18 to Doctors St | 35 | 0.1 | - | Bus | P |
| ALLE00016-T | Independence Rd (SR 1403) | Grayson St to Doctors St | 35 | 0.2 | - | Bus | P |
| ALLE00017-T | Industrial Park Dr | Moxley Rd to Highland Village Cir | 35 | < 0.1 | - | Bus | |
| ALLE00018-T | Irwin St | Roe St to Grayson St | 35 | 0.1 | - | Bus | |
| ALLE00019-T | Lake St | Green Acres Rd to Hill St | 35 | 0.2 | - | Bus | |
| ALLE00020-T | Mapleview Dr | Doctors St to Darr St | 35 | 0.1 | - | Bus | |
| ALLE00021-T | Memorial Park Dr | Sunset Dr to Halsey St | 35 | 0.3 | - | Bus | P |
| ALLE00022-T | Moxley Rd | NC 18 to Industrial Park Dr | 35 | < 0.1 | - | Bus | |
| ALLE00023-T | Roe St | Trojan Ave to Irwin St | 35 | 0.1 | - | Bus | P |
| ALLE00024-T | Sparta Pky | US 21 to NC 18 | 45 | 0.8 | - | Bus | M |
| ALLE00025-T | Sunset Dr | US 21 to Memorial Park Dr | 35 | 0.2 | - | Bus | |
| ALLE00026-T | Trojan Ave | US 21 to Roe St | 35 | 0.3 | - | Bus | P |

# BICYCLE AND PEDESTRIAN [1]

| BICYCLE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Existing System | | Proposed System | | |
| | | | Distance | Cross-Section | | | | Other |
| Local ID | Facility/ Route | Section (From - To) | (mi) | (ft) | lanes | Type | Cross-Section | Modes |
| ALLE0001-B | US 21 | Wilkes Co to Oklahoma Rd (SR 1100) | 1.7 | Concurrent with US 21 - see Highway Table | | | | H |
| ALLE0002-B | US 21 | Oklahoma Rd (SR 1100) to Andrews Ridge Rd (SR 1429) | 7.9 | Concurrent with US 21 - see Highway Table | | | | H |
| ALLE0001-H | US 21 | Andrews Ridge Rd (SR 1429) to Bledsoe Creek Rd (SR 1135) | 5.3 | Concurrent with US 21 - see Highway Table | | | | H, T, P |
| ALLE0003-B | US 21 | Bledsoe Creek Rd (SR 1135) to US 221 | 1.2 | 24 | 2 | On Road | See Note 2 | |
| ALLE0003-H | US 221 | US 21 to NC 93 | 0.8 | Concurrent with US 221 - see Highway Table | | | | H |
| ALLE0004-B | NC 18 | Blue Ridge Parkway in southern Alleghany Co to NC 113 | 2.8 | Concurrent with NC 18 - see Highway Table | | | | H |
| ALLE0004-H | NC 18 | Glade Valley Rd (SR 1444) to Surry Co | 1.6 | Concurrent with NC 18 - see Highway Table | | | | H |
| ALLE0005-H | NC 88 | NC 18 to Ashe Co | 0.3 | Concurrent with NC 18 - see Highway Table | | | | H |
| ALLE0005-B | NC 93 | US 221 to Virginia | 10.0 | Concurrent with NC 93 - see Highway Table | | | | H |
| ALLE0006-H | NC 113 | NC 18 to NC 93 | 11.2 | Concurrent with NC 113 - see Highway Table | | | | H |
| ALLE0006-B | Cherry Lane Rd (SR 1106) | US 21 to Rash Rd (SR 1108) | 0.8 | 18 | 2 | On Road | See Note 3 | |
| ALLE0007-B | Dewitt Rd (SR 1113) | Mahogany Rock Rd (SR 1114) to US 21 | 2.0 | 20 | 2 | On Road | See Note 3 | |
| ALLE0008-B | Frank Pky | Wilkes Co S of Oklahoma Rd (SR 1100) to Wilkes Co N of Oklahoma Rd (SR 1100) | 2.4 | 18 | 2 | On Road | See Note 3 | |
| ALLE0007-H | Glade Valley Rd (SR 1444) | US 21 to Barrett Rd (SR 1422) | 9.0 | Concurrent with Glade Valley Rd (SR 1444) - see Highway Table | | | | H |
| ALLE0009-B | Glade Valley Rd (SR 1444) | Barrett Rd (SR 1422) to NC 18 | 2.7 | 20 | 2 | On Road | See Note 3 | |
| ALLE0010-B | Mahogany Rock Road (SR 1114, SR 1115) | Blue Ridge Parkway to Pine Swamp Road (SR 1121) | 3.4 | 18 | 2 | On Road | See Note 3 | |
| ALLE0011-B | Oklahoma Road (SR 1100) | Frank Parkway to US 21 | 3.2 | 18 | 2 | On Road | See Note 3 | |
| ALLE0012-B | Pine Swamp Road (SR 1121) | Mahogany Rock Road (SR 1114) to US 21 | 0.4 | 24 | 2 | On Road | See Note 4 | |
| ALLE0013-B | Rash Road (SR 1108) | Cherry Lane Road (SR 1106) to the Blue Ridge Parkway | 1.2 | 20 | 2 | On Road | See Note 3 | |

[1.] Only major routes and proposals are shown here. For further documentation of bicycle and pedestrian facilities and proposals, refer to the Town of Sparta Pedestrian Transportation Plan (2006) and the Crouse Park / Sparta Greenway Comprehensive Master Plan (2012).

[2.] This section of US 21 currently has 12' lanes with a paved shoulder. Improved shoulders are recommended to provide a minimum 5' paved shoulder to accommodate bicycles.

[3.] There is no typical cross section (i.e. a cross section shown in Appendix D) for these recommendations. To accommodate bicycles, it is recommended that paved shoulders be added to the existing 9 to 10 foot lanes.

[4.] This section of Pine Swamp Road (SR 1121) currently has 12' lanes with an unpaved shoulder. Paved shoulders are recommended to accommodate bicycles.

# 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[1]" 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:

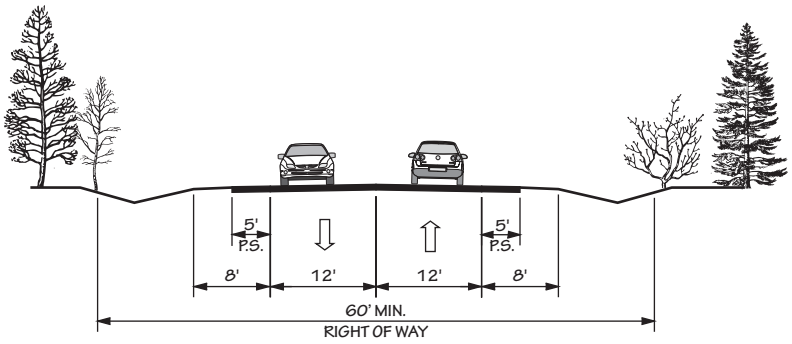
- roadways which may require widening after the current planning period,
- roadways which are borderline adequate and accelerated traffic growth could render them deficient,
- roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment,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

[1] *For more information on Complete Streets, go to: http://www.nccompletestreets.org/index.asp.*

# FIGURE 9
# TYPICAL HIGHWAY CROSS SECTIONS
## 2 LANES

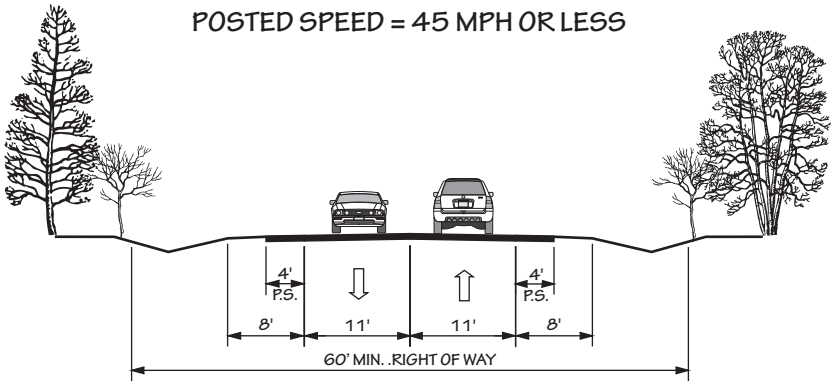
## 2 A

WIDE PAVED SHOULDERS
POSTED SPEED = 55 MPH



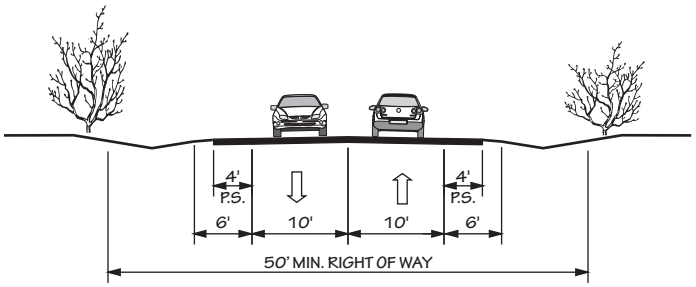

## 2 B

WIDE PAVED SHOULDERS
POSTED SPEED = 45 MPH OR LESS




## 2 C

WIDE PAVED SHOULDERS
POSTED SPEED = 35 MPH OR LESS





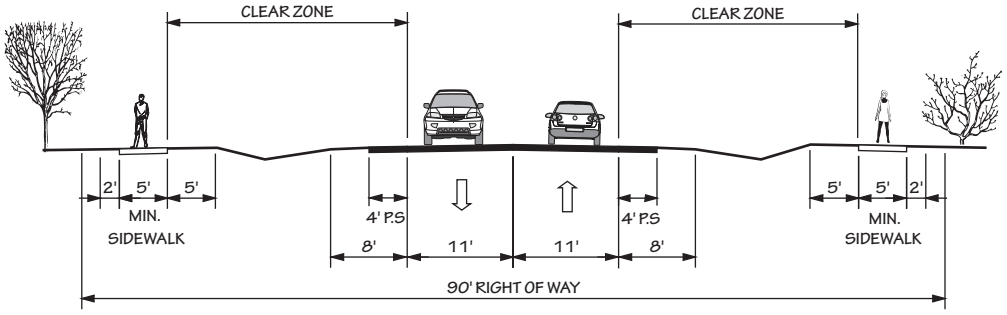

**Revised 12/07/2010**

# TYPICAL HIGHWAY CROSS SECTIONS

## 2 LANES

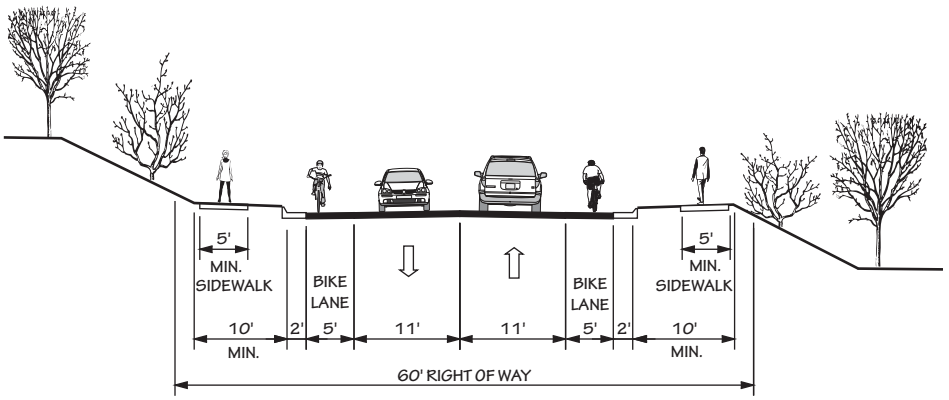
## 2 D

SIDEWALK PLACEMENT BEHIND A ROADWAY DITCH



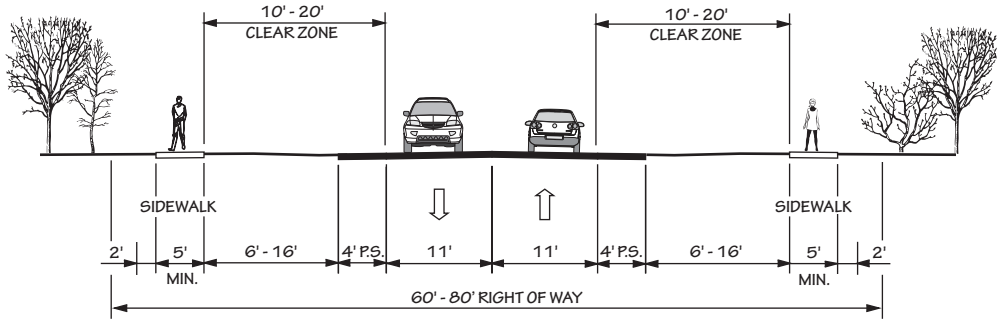

## 2 E

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)





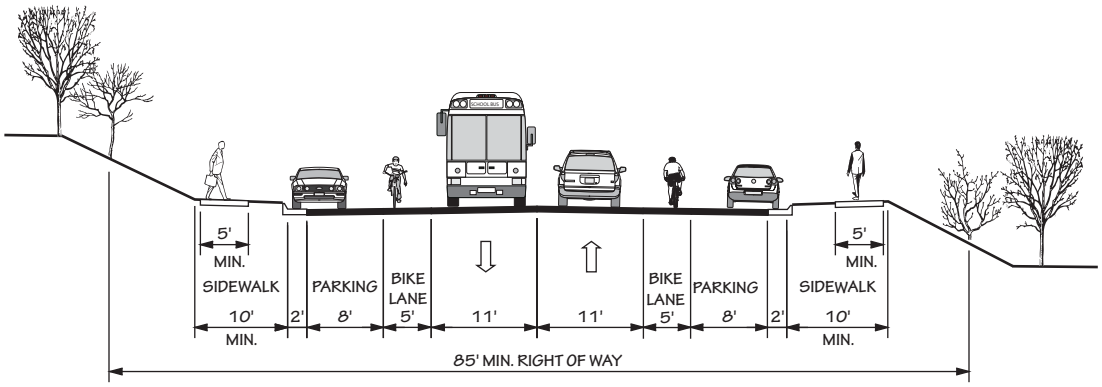

**Revised 12/07/2010**

# TYPICAL HIGHWAY CROSS SECTIONS

## 2 LANES

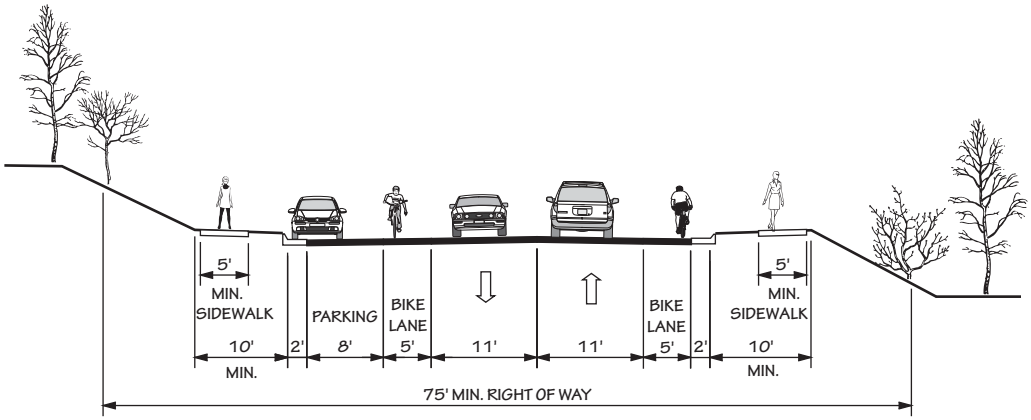
## 2 G

CURB & GUTTER - PARKING ON EACH SIDE



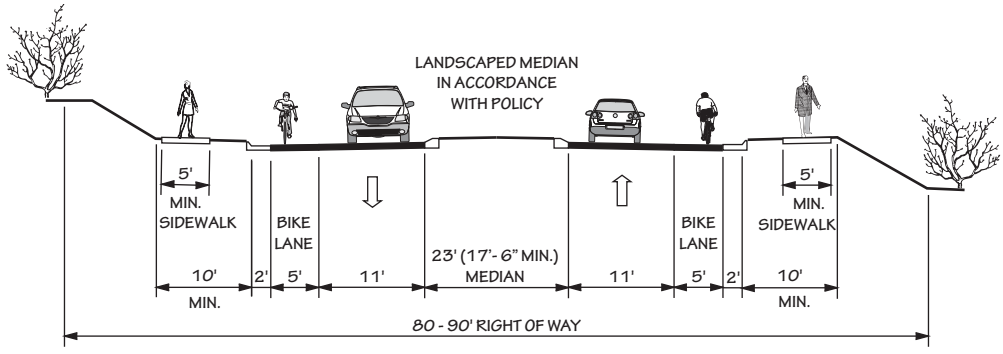

## 2 H

CURB & GUTTER - PARKING ON ONE SIDE




## 2 I

RAISED MEDIAN WITH CURB & GUTTER





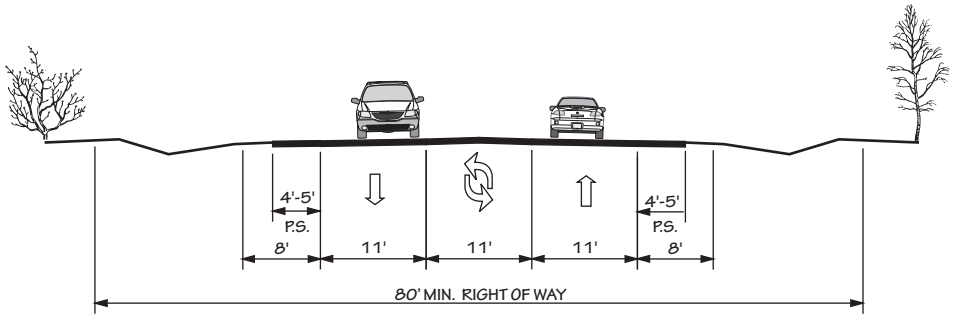

**Revised 12/07/2010**

# TYPICAL HIGHWAY CROSS SECTIONS

## 3 LANES

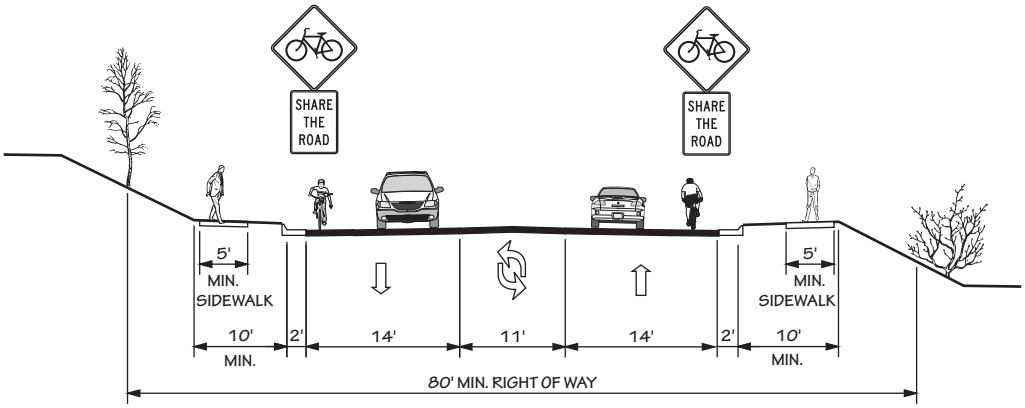
## 3 A

WIDE PAVED SHOULDERS




## 3 B

CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS





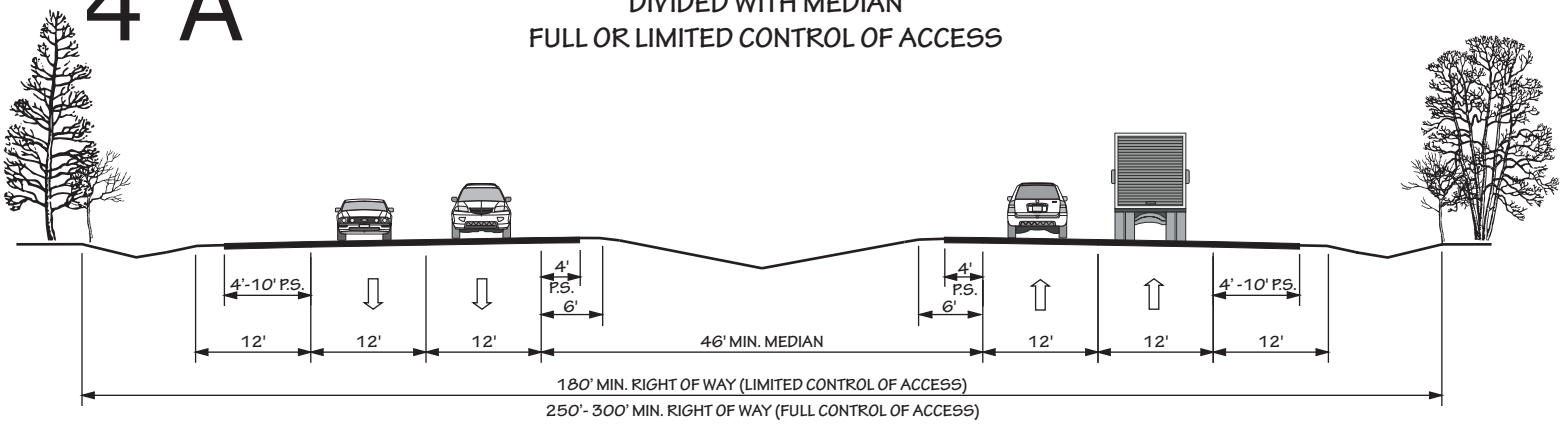

**Revised 12/07/2010**

# TYPICAL HIGHWAY CROSS SECTIONS

## 4 LANES

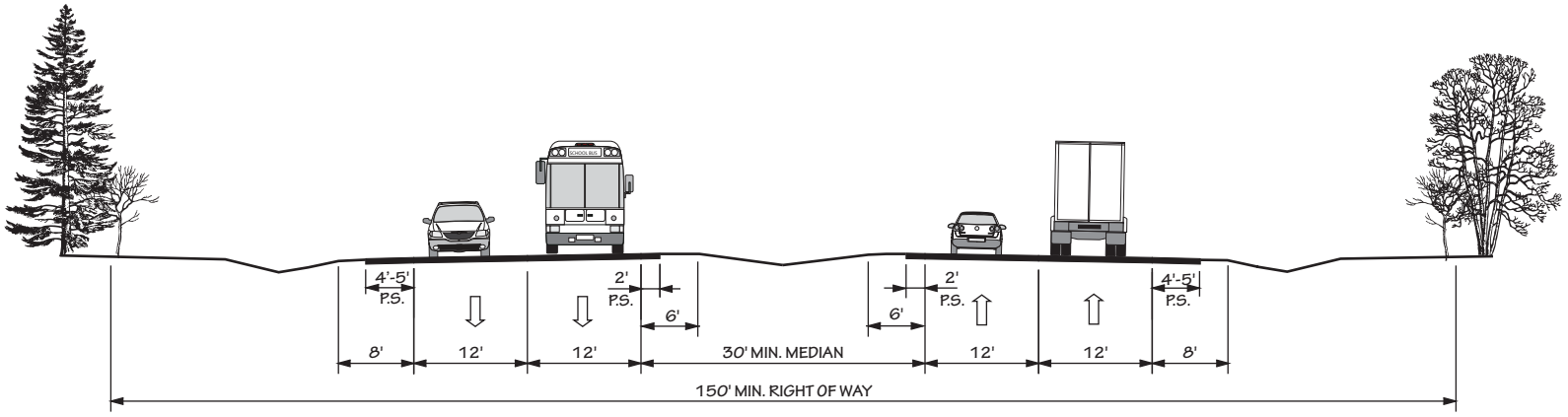
### 4 A

DIVIDED WITH MEDIAN
FULL OR LIMITED CONTROL OF ACCESS



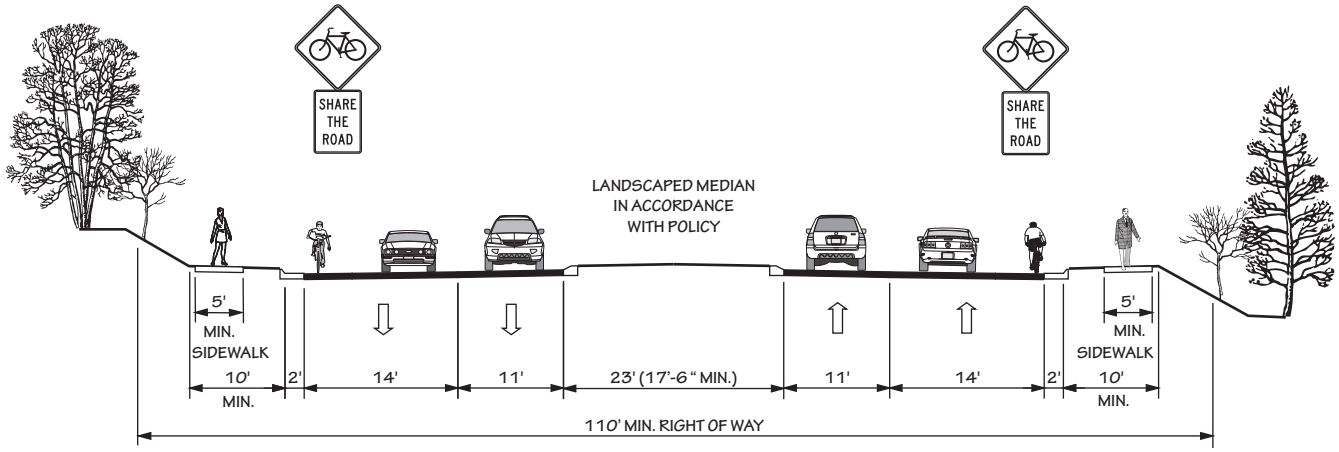

### 4 B

DIVIDED WITH MEDIAN - NO CURB & GUTTER
PARTIAL CONTROL OF ACCESS




### 4 C

RAISED MEDIAN WITH WIDE OUTSIDE LANES AND SIDEWALKS





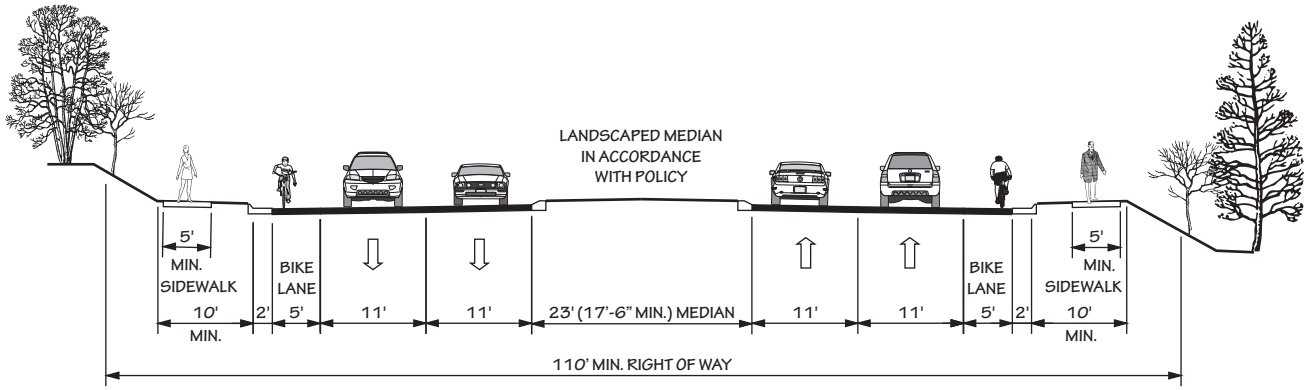

**Revised 12/07/2010**

# TYPICAL HIGHWAY CROSS SECTIONS

## 4 LANES

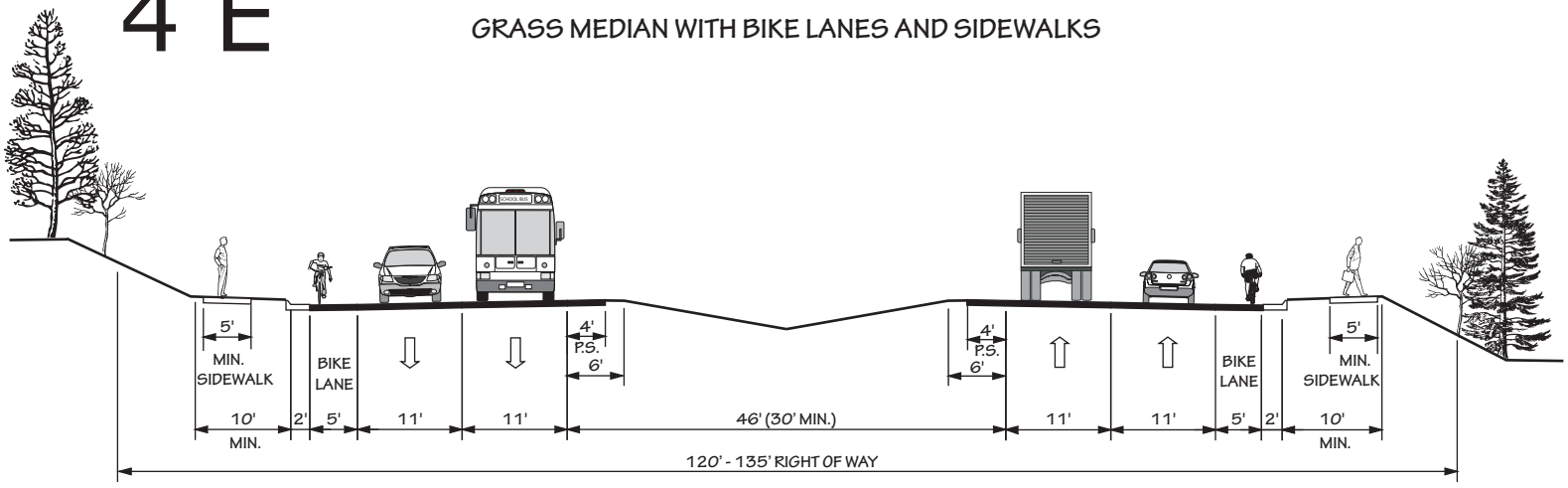
### 4 D

RAISED MEDIAN - CURB & GUTTER WITH BIKE LANES AND SIDEWALKS




### 4 E

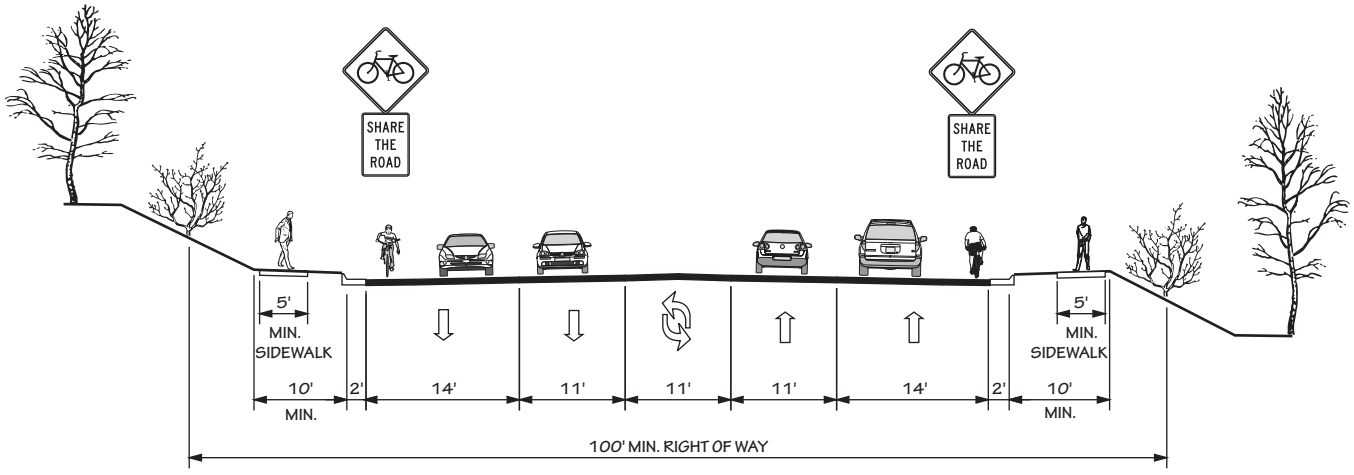
GRASS MEDIAN WITH BIKE LANES AND SIDEWALKS




## 5 LANES

### 5 A

WIDE OUTSIDE LANES





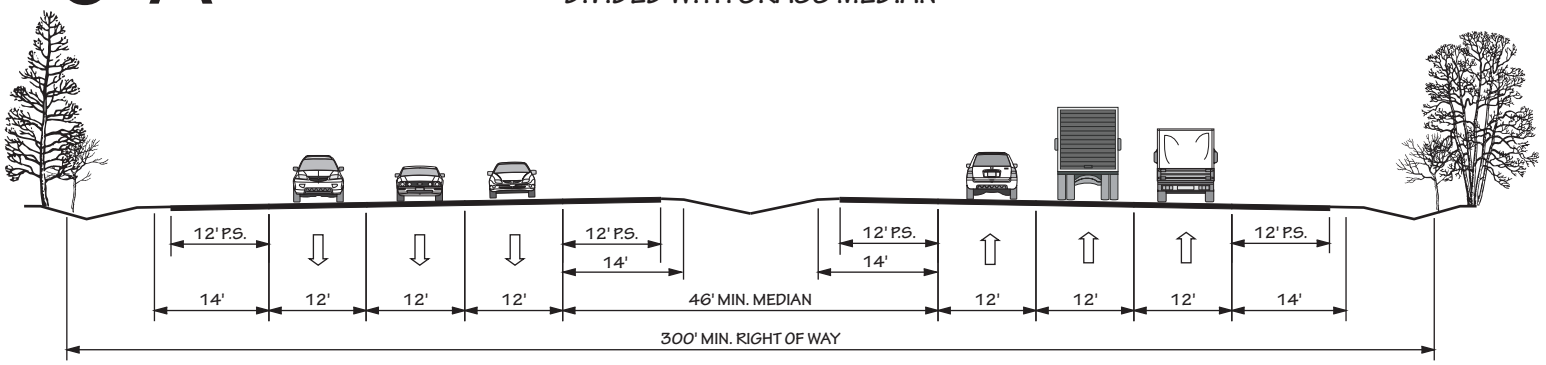

**Revised 12/07/2010**

# TYPICAL HIGHWAY CROSS SECTIONS

## 6 LANES

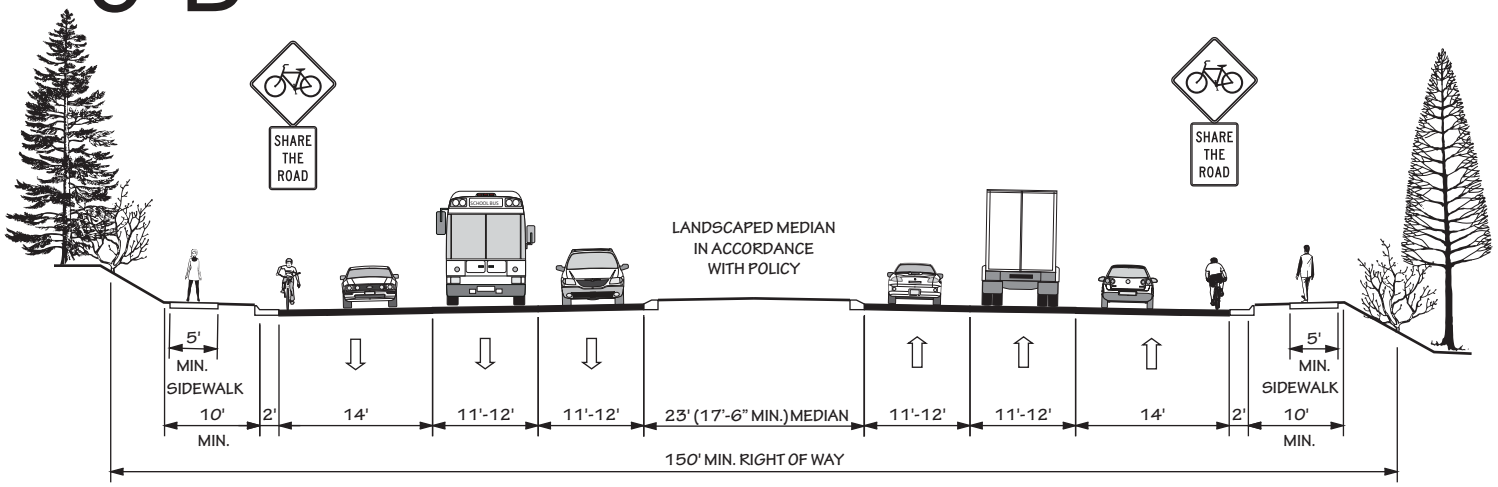
### 6 A

DIVIDED WITH GRASS MEDIAN




### 6 B

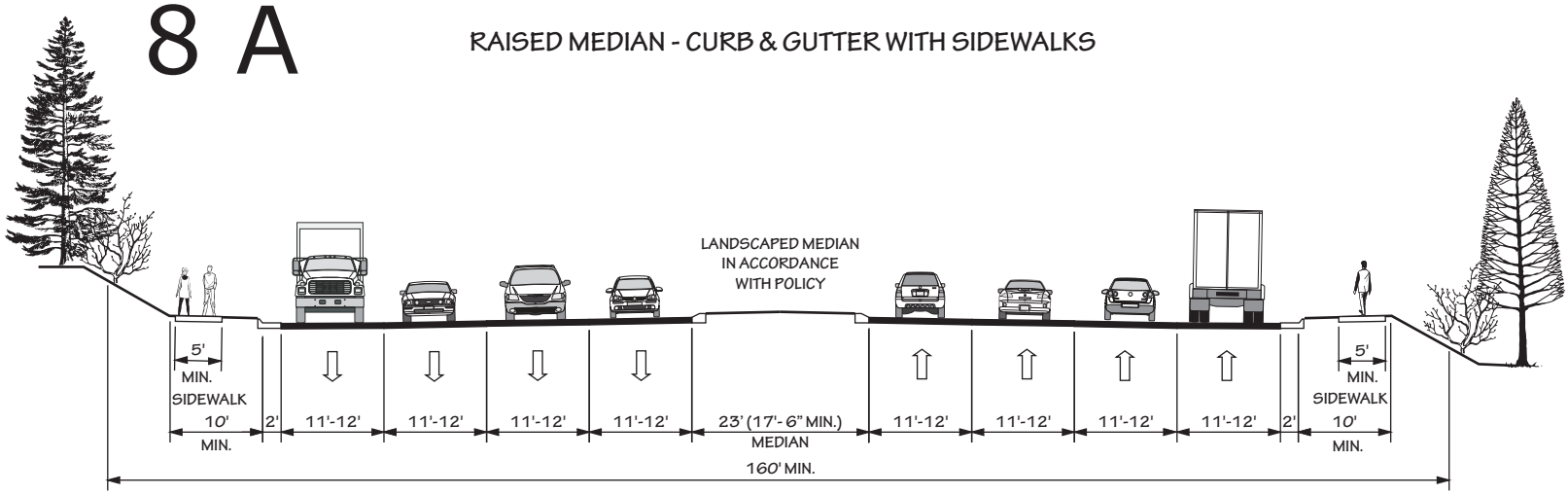
RAISED MEDIAN - CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS




## 8 LANES

### 8 A

RAISED MEDIAN - CURB & GUTTER WITH SIDEWALKS



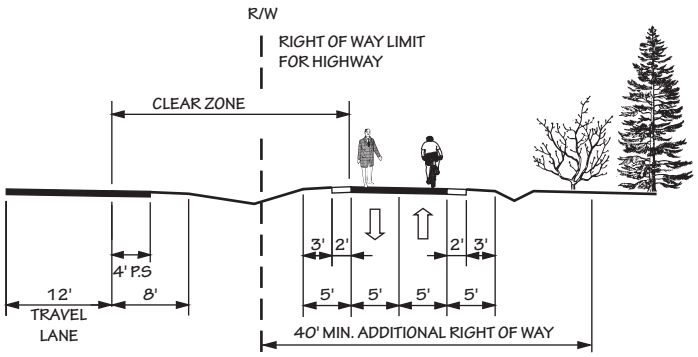



**Revised 12/07/2010**

# TYPICAL MULTI - USE PATH

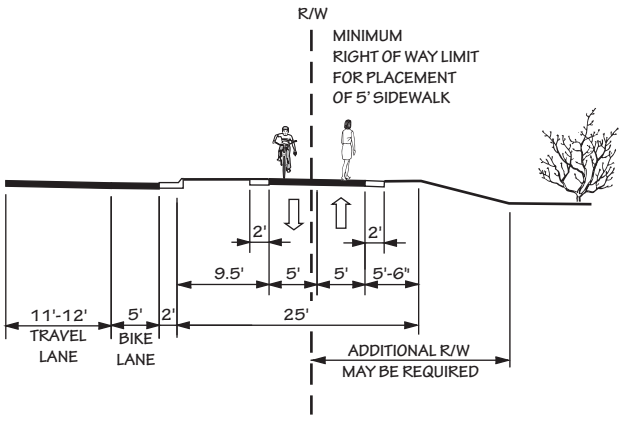
MULTI - USE PATH
ADJACENT TO RIGHT OF WAY OR SEPARATE PATHWAY

M A




MULTI - USE PATH ADJACENT TO CURB AND GUTTER

M B






**Revised 12/07/2010**

# 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 10.

- **LOS A**: Describes free-flow operations. Free Flow Speed (FFS) prevails and vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effects of incidents or point breakdowns are easily absorbed.
- **LOS B**: Represents reasonably free-flow operations, and FFS is maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and point breakdowns are still easily absorbed.
- **LOS C**: Provides for flow with speeds near the FFS. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service quality will be significant. Queues may be expected to form behind any significant blockages.
- **LOS D**: The level at which speeds begin to decline with increasing flows, with density increasing more quickly. Freedom to maneuver within the traffic stream is seriously limited and drivers experience reduced physical and psychological comfort levels. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.
- **LOS E**: Describes operation at capacity. Operations at this level are highly volatile because there are virtually no usable gaps within the traffic stream, leaving little room to maneuver within the traffic stream. Any disruption to the traffic stream, such as vehicles entering from a ramp or a vehicle changing lanes, can establish a disruption wave that propagates throughout the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown and substantial queuing. The physical and psychological comfort afforded to drivers is poor.
- **LOS F**: Describes breakdown, or unstable flow. Such conditions exist within queues forming behind bottlenecks.

Figure 10 - Level of Service Illustrations


Source: 2010 Highway Capacity Manual, Exhibit 11-4

# Appendix F
# Traffic Crash Analysis

A crash analysis performed for the Alleghany County CTP considered crash frequency, crash type, and crash severity. Crash frequency is the total number of reported crashes 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 76.8 times more severe than one involving only property damage and a crash resulting in minor injury is 8.4 times more severe than one with only property damage. In general, a higher severity index indicates more severe crashes. Listed below are levels of severity for various severity index ranges.

| Severity | Severity Index |
|---|---|
| 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 on the following page depicts a summary of the crashes occurring in the planning area between January 1, 2009 and December 31, 2011. The data represents locations with 3 or more crashes and/or a severity index greater than the state's average crash severity index of 4.23. The "Total Crashes" column indicates the total number of crashes reported within 150-ft of the intersection during the study period. The severity listed is the average crash severity for that location.

## Table 4 - Crash Locations[1]

| Map Index | Intersection | Average Severity | Total Crashes |
|---|---|---|---|
| 1 | US 21 & Andrews Ridge Rd (SR 1429) | 4.7 | 2 |
| 2 | US 21 & Blevins St | 8.4 | 1 |
| 3 | US 21 & Blue Ridge St | 6.92 | 5 |
| 4 | US 21 & Cheek St | 2.48 | 5 |
| 5 | US 21 & Chestnut Grove Church Rd (SR 1426) | 8.4 | 2 |
| 6 | US 21 & Doughton St | 3.47 | 3 |
| 7 | US 21 & Foxfire Rd (SR 1107) | 4.7 | 2 |
| 8 | US 21 & Glade Valley Rd (SR 1444) | 8.4 | 2 |
| 9 | US 21 & Grandview Dr (SR 1172) | 4.7 | 6 |
| 10 | US 21 & NC 18 | 4.7 | 12 |
| 11 | US 21 & Nile Rd (SR 1403) | 8.4 | 1 |
| 34 | US 21 & Riverview Dr | 1.0 | 3 |
| 12 | US 21 & Sunset Dr | 4.7 | 2 |
| 13 | US 21 & Thompson St | 8.4 | 1 |
| 14 | US 221 & NC 113 | 6.55 | 4 |
| 15* | NC 18 & Blue Ridge Pky | 8.4 | 1 |
| 16 | NC 18 & Chestnut Grove Church Rd (SR 1426) | 8.4 | 2 |
| 17 | NC 18 & Choate Dairy Rd (SR 1424) | 8.4 | 2 |
| 18 | NC 18 & Edmonds Rd (SR 1442) | 8.4 | 1 |
| 19 | NC 18 & Halsey St | 8.4 | 1 |
| 20 | NC 18 & Jones St | 8.4 | 1 |
| 21 | NC 18 & Meadowfork Rd (SR 1141) | 4.7 | 2 |
| 22 | NC 18 & Reynolds Rd (SR 1136) | 8.4 | 1 |
| 23 | NC 18 & Sparta Pky (SR 1206) | 2.85 | 4 |
| 24 | NC 18 & Spicer Mtn Rd (SR 1135) | 4.7 | 2 |
| 25 | NC 93 & Farmers Fish Camp Rd (SR 1345) | 76.8 | 1 |
| 26 | NC 93 & Stratford Rd (SR 1334) | 8.4 | 1 |
| 27 | Barrett Rd (SR 1422) & Glade Creek School Rd (SR 1457) | 8.4 | 1 |
| 28 | Barrett Rd (SR 1422) & Glade Valley Rd (SR 1444) | 5.93 | 3 |
| 29 | Glade Valley Rd (SR 1444) & Saddle Mtn Church Rd (SR 1461) | 8.4 | 1 |
| 30 | Glade Valley Rd (SR 1444) & Saddle View Rd (SR 1494) | 8.4 | 1 |
| 31 | Grandview Dr (SR 1172) & Ball Park Rd / Jones St | 5.44 | 5 |
| 32 | Sparta Pky (SR 1206) & Cranford Rd | 4.7 | 2 |
| 33 | Sparta Pky (SR 1206) & Grandview Dr (SR 1172) | 8.4 | 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.

[1] Due to the limitations of crash data (which is based on accident reports), the completeness and/or accuracy of the crash location summary and map are not guaranteed. For example, one crash with severity index of 76.8 on Glade Valley Road (SR 1444) was not included because the location could not be determined. Where crash data listed roads which intersect at two different locations (e.g. “NC 18 & Blue Ridge Pky”), one of the two intersection locations was selected to display on the crash map.

# Appendix G
# Bridge Deficiency Assessment

The State Transportation Improvement Program (STIP) 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 (SD) or functionally obsolete (FO). 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 quality 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 evaluated as a part of the CTP are listed in Table 5. For more details on deficient bridges within the planning area, contact the Structures Management Unit using the information in Appendix A.

## Table 5 - Deficient Bridges

| Bridge Number | Facility | Feature | Condition | Local ID |
|---|---|---|---|---|
| 4 | Dewitt Road (SR 1113) | Glade Creek | SD | |
| 9 | US 221 | Creek | SD & FO | ALLE0003-H, B-4406 |
| 21 | NC 18 | Little River | SD | ALLE0004-H, B-5388 |
| 28 | ? (SR 1464) | Brush Creek | FO | - |
| 30 | US 21 | Little River | SD & FO | ALLE0001-H |
| 31 | ? (SR 1464) | Big Pine Creek | SD & FO | - |
| 109 | Dewitt Road (SR 1113) | Creek | SD | B-5538 |
| 307 | Frank Parkway | Stone Mtn Creek | SD | - |

# Appendix H
# Public Involvement

This appendix documents the public involvement process and includes a listing of steering committee members, the goals and objectives survey results, and public meetings held throughout the development of the CTP.

## List of CTP Steering Committee Members

At the start of a CTP study, a committee is formed that is comprised of individuals who represent the various needs, issues and populations of the community. These representatives are responsible for capturing the transportation needs of the community relative to all modes of transportation and for guiding the development of the CTP. A listing of steering committee members for the Alleghany County CTP is given below.

- Don Adams, Alleghany County Manager
- Bryan Edwards, Sparta Town Manager
- Steve Roten, Alleghany County Commissioner
- Jeff Cox, Alleghany Schools Superintendent
- April Hamm, Alleghany in Motion (Public Transportation) Director
- John Brady, Sparta Town Council
- Bob Bamberg, Chamber of Commerce
- Clark Hunter, Blue Ridge Development Center
- Kevin Dowell, Town of Sparta
- Craig Hughes, High Country RPO
- Dean Ledbetter, NCDOT Division 11

## CTP Vision, Goals, Objectives and MOEs

The CTP vision, goals and objectives are developed as part of the public involvement process and help identify how the people within an area would like to develop the transportation system (all modes). The CTP committee develops the draft vision, goals, objectives, and MOEs which are further refined with input from citizens via the CTP Goals & Objectives (G&O) survey. These products become the official guide for the CTP being developed.

The vision statement, goals and objectives reflect what is important for the area and defines any local preferences concerning the transportation system and community assets. The vision statement is the framework for the area's strategic planning. Goals and objectives document how the area plans to fulfill its vision. The goals break down the vision statement into themes, while the objectives document how the area plans to make progress towards achieving each goal. MOEs are established to enable the area to track the progress of each objective.

**Alleghany County Transportation Vision, 12/21/10**

**Vision Statement: Improve the safety of the transportation system for all modes and users.**

Objectives:

- Enhance pedestrian safety in the Sparta area
- Upgrade sidewalks to ADA standards
- Create a safe and inviting environment for pedestrian travel
- Improve sidewalk connectivity
- Provide pedestrian signals and crosswalks
- Provide off-road trails
- Correct intersection sight distance problems, including those which are related to vegetation growth
- Provide bicycle accommodations on routes with high bicycle traffic
- Pave roads which are travelled by large trucks
- Widen shoulders on steep/narrow roads to prevent mirror breakage on trucks/buses
- Ensure speed limits reflect road design

**Vision Statement: Ensure and improve connectivity for all transportation modes and users within the county and region.**

Objectives:

- Improve access to the interstate and to the triad area
- Improve access to 4 lane highways
- Connect to other transit systems for longer distance bus travel
- Provide access to affordable transportation for those without cars

**Vision Statement: Plan transportation improvements to minimize impacts to the human and natural environments.**

Objectives:

- Minimize impact of the transportation system to homes and businesses
- Retain character of downtown area

**Vision Statement: Enhance the economic viability of the region.**

Objectives:

- Facilitate the movement of freight into and out of the county
- Upgrade major routes to current design standards and multi-lane as needed

## Goals and Objectives Survey

A G&O survey is a public involvement technique used to help identify an area's perception of transportation-related issues, identify concerns that should be addressed during the development of a CTP, and to help develop a vision for the community. The G&O survey is most appropriately implemented at the beginning of the transportation planning study. In addition to determining up front what is important to the citizens of

the planning area, initiating the G&O survey early in the planning process allows the survey to serve as an introduction to the transportation planning process. The survey usually includes a brief introduction explaining what a transportation plan is and how the area can benefit from having one. The survey also includes a wide variety of questions that is tailored to each area as appropriate. A summary of the Alleghany County G & O survey is given below.

### Information about Survey Respondents

1. Please provide the zip code of your local residence.

| Zip Code | # Surveys | Approximate Location |
|---|---|---|
| 28675 | 88 | Sparta |
| 28663 | 20 | Piney Creek |
| 28627 | 10 | Glade Valley |
| 28644 | 9 | Laurel Springs |
| 28623 | 8 | Ennice |
| 28668 | 4 | Roaring Gap |
| 24333 | 2 | Galax, VA |
| 28672 | 2 | Scottville (Ashe Co.) |
| 24326 | 1 | Elk Creek, VA |
| 27020 | 1 | Hamptonville (Yadkin Co.) |
| 28626 | 1 | Fleetwood (Ashe Co.) |
| 28673 | 1 | Sherrills Ford (Catawba Co.) |
| 28677 | 1 | Statesville (Iredell Co.) |
| No Response | 2 | |
| Total | 150 | |

2. Are you a full-time resident of Alleghany County, or its surrounding area?

| Full-Time Resident? | # Responses |
|---|---|
| Yes (Full-Time Resident) | 141 |
| No (Part-Time Resident) | 6 |
| No Response | 3 |
| Total | 150 |

3. Please select the county where you work.

| County | # Responses |
|---|---|
| Alleghany | 110 |
| Ashe | 6 |
| Wilkes | 4 |
| Surry | 4 |
| Grayson (VA) | 4 |
| Carroll (VA) | 0 |
| Other | 15 |
| No Response | 7 |
| Total | 150 |

4. Approximately how far is your work from your home?

| Distance/Time | Average | Median |
|---|---|---|
| Distance | 14.9 miles | 10 miles |
| Time | 22.3 minutes | 15 minutes |

5. On a normal day, does the majority of your travel take place within Alleghany County?

| Response | # Responses |
|---|---|
| Yes | 124 |
| No | 24 |
| No Response | 2 |
| Total | 150 |

## Transportation Planning Goals

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

| Goal | 1 - Not Important | 2 - Less Important | 3 - Neutral | 4 - Important | 5 - Very Important | Average Rating |
|---|---|---|---|---|---|---|
| Safety | 0 | 0 | 0 | 12 | 135 | 4.92 |
| Transportation for Elderly and Disabled | 0 | 0 | 12 | 50 | 82 | 4.49 |
| Consistent Travel Times | 3 | 8 | 26 | 53 | 53 | 4.01 |
| Faster Travel Times | 3 | 20 | 43 | 52 | 25 | 3.53 |
| Transportation Mode Choice (Walking and Biking) | 19 | 16 | 52 | 33 | 23 | 3.17 |
| Public Transit Options | 10 | 11 | 32 | 51 | 38 | 3.68 |

7. How important are each of the following when considering transportation improvements? 1-Not Important to 5-Very Important.

| Answer Options | 1 - Not Important | 2 - Less Important | 3-Neutral | 4 - Important | 5 - Very Important | Average Rating |
|---|---|---|---|---|---|---|
| Economic Growth | 1 | 3 | 13 | 46 | 83 | 4.42 |
| Environmental Protection | 2 | 4 | 18 | 55 | 66 | 4.23 |
| Community and Cultural Preservation | 1 | 4 | 25 | 62 | 53 | 4.12 |
| Integration with Regional Community | 2 | 7 | 40 | 51 | 45 | 3.90 |

8. What roads in Alleghany County do you most commonly use? Select from the list below and/or list others.

| Answer Options | # Responses |
|---|---|
| US 21 | 122 |
| US 221 | 69 |
| NC 18 | 107 |
| NC 88 | 21 |
| NC 93 | 55 |
| NC 113 | 47 |
| Chestnut Grove Church Road | 22 |
| Glade Valley Road | 27 |
| Grandview Drive | 33 |
| Pine Swamp Road (from Grandview to US 21) | 25 |
| Sparta Parkway | 50 |
| Other(s) | 24 |

9. To address the traffic problems in the area, which improvements should be considered important? 1-Most Important to 12-Least Important (Please use each number only once)

| Improvement | Average Ranking |
|---|---|
| Widen existing roads | 4.4 |
| Add turn lanes at specific intersections | 5.1 |
| Improve pavement and bridges | 4.2 |
| Provide or increase bus service | 6.8 |
| Build new roadways | 5.8 |
| Provide better information to drivers | 6.7 |
| Add on-road bike lanes | 7.9 |
| Expand sidewalks | 6.6 |
| Greenways and off-road paths | 7.4 |
| Park-and-Ride lots | 8.5 |
| Access controls including limited driveways & cross streets, and right-in right-out only facilities | 7.0 |
| Improving intersection design, better traffic signal timing, and creating roundabouts | 5.4 |

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

| Improvement | 1-Much Less | 2-Less | 3-Same | 4-More | 5-Much More | Average Rating |
|---|---|---|---|---|---|---|
| Maintaining existing residential streets | 1 | 6 | 57 | 57 | 21 | 3.64 |
| Building new major roads | 8 | 31 | 50 | 31 | 20 | 3.17 |
| Maintaining major streets and highways | 2 | 1 | 25 | 73 | 41 | 4.06 |
| Creating or expanding bus service | 15 | 17 | 53 | 40 | 15 | 3.16 |
| Expanding carpooling or vanpooling programs | 22 | 26 | 50 | 34 | 7 | 2.84 |
| Building new sidewalks | 16 | 32 | 43 | 34 | 17 | 3.03 |
| Building new greenways | 21 | 29 | 50 | 30 | 11 | 2.87 |

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

| Answer Options | # Responses |
|---|---|
| A gasoline tax increase | 32 |
| Charging transportation fees to develop properties | 46 |
| A local bond referendum | 57 |
| Other | 18 |
| No response | 38 |

12. 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.

| Response | # Responses |
|---|---|
| Yes | 11 |
| No | 131 |
| No response | 8 |
| Total | 150 |

13. Where in Alleghany County do you see potential for new housing developments?

| Response | # Responses |
|---|---|
| None or Not Needed | 24 |
| Piney Creek | 11 |
| Glade Creek/Valley | 8 |
| Sparta & Surrounding Areas | 6 |
| NC 18 and/or US 21 | 5 |
| Don't Know | 5 |
| Ennice | 3 |
| Twin Oaks | 3 |
| Pine Swamp/Grandview/Whitehead | 3 |
| US 221 | 2 |
| Laurel Springs | 2 |
| Roaring Gap | 2 |
| Shawtown or Areas Along Parkway | 2 |

14. What are the key transportation challenges you face in Alleghany County?

The concerns most often mentioned were:

- Narrow roads;
- Clearing roads in the winter;
- Condition of roads and bridges;
- Need for more public transportation.

15. How did you find out about this survey?

| Answer Options | # Responses |
|---|---|
| On Alleghany in Motion van | 7 |
| Information was sent home with my school-aged child | 76 |
| Chamber of Commerce | 19 |
| Found a copy in a public building | 7 |
| Saw it on a website | 1 |
| Heard about it from a friend | 13 |
| Other | 24 |

## Public Meetings

Brief summaries of public meetings held within the planning area are given below.

CTP Steering Committee Meetings

All CTP steering committee meetings were advertised and were open to the public. Meetings were held in the Alleghany County Administration Building, Board Meeting Room, 348 South Main Street, Sparta, from 2:00 – 4:00 PM. Meeting dates were as follows:

October 11, 2010
November 8, 2010
February 14, 2011
April 11, 2011

June 13, 2011
August 8, 2011
November 14, 2011

CTP Workshop

September 26, 2011; Sparta Senior Center at 85 E. Whitehead; 4:00 – 6:00 PM

Ten people attended the workshop. Early draft recommendations were presented. Seven comments were submitted. The only potentially controversial issue was the draft proposal for a Sparta Parkway Northeast Extension on new location.

Presentations to joint meetings of town and county councils

August 29, 2011, 7:00 PM
January 30, 2011, 7:00 PM

The CTP process was presented along with early draft recommendations.

Public Hearing Prior to Adoption

April 30, 2012 (joint hearing for Sparta and Alleghany County)