



2013 Lake Lure & Chimney Rock Village Comprehensive Transportation Plan

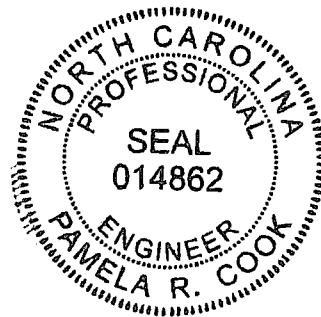


2013 Lake Lure & Chimney Rock Village Comprehensive Transportation Plan

Prepared by: Nazia Sarder, Project Engineer
Pam Cook, PE, Mountains Planning Group Supervisor
Transportation Planning Branch
N.C. Department of Transportation

In Cooperation with: Rutherford County
Town of Lake Lure
Chimney Rock Village
Isothermal Rural Planning Organization

Published: April 2014



Pam Cook

Pam Cook, PE
Mountains Planning Group Supervisor

Table of Contents

Executive Summaryi

Chapter 1: Analysis of the Existing and Future Transportation System

1.1 Analysis Methodology and Data Requirements1-1

 a) Roadway System Analysis1-1

 i. Traffic Crash Assessment1-3

 ii. Bridge Deficiency Assessment1-4

 b) Public Transportation and Rail1-13

 i. Public Transportation1-13

 ii. Rail1-14

 c) Bicycles and Pedestrians1-14

 d) Land Use1-15

1.2 Consideration of the Natural and Human Environment1-23

1.3 Public Involvement1-24

Chapter 2: Recommendations

2.1 Implementation2-1

2.2 Problem Statements2-2

 a) Highway2-3

 b) Public Transportation and Rail2-7

 c) Bicycle2-9

 d) Pedestrian2-10

Appendices

Appendix A: Resources and ContactsA-1

Appendix B: Comprehensive Transportation Plan DefinitionsB-1

Appendix C: CTP Inventory and RecommendationsC-1

Appendix D: Typical Cross-SectionsD-1

Appendix E: Level of Service DefinitionsE-1

Appendix F: Bridge Deficiency AssessmentF-1

Appendix G: Public InvolvementG-1

Appendix H: Alternatives & Scenarios Studied.....H-1

List of Figures

Figure 1: Comprehensive Transportation Planiii

Figure 2: 2012 Volumes and Capacity Deficiencies1-5

Figure 3: 2040 Volumes and Capacity Deficiencies	1-7
Figure 4: High Frequency Crash Locations	1-9
Figure 5: Deficient Bridges	1-11
Figure 6: Existing Land Development Plan	1-19
Figure 7: Future Land Development Plan	1-21
Figure 8: Environmental Features	1-25
Figure 9: Typical Cross Sections	D-2
Figure 10: Level of Service Illustrations	E-2

List of Tables

Table 1: Environmental Features	I-23
Table 2: Restricted Environmental Features	I-24
Table 3: CTP Inventory and Recommendations	C-3
Table 4: Deficient Bridges	F-2

Executive Summary

In February of 2012, the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT) initiated a study to cooperatively develop the Lake Lure and Chimney Rock Village Comprehensive Transportation Plan (CTP). 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 operations issues. Refer to Appendix A for contact information on these types of issues.

Findings of this CTP study were based on an analysis of the transportation system, environmental screening and public input, which are detailed in Chapter 1. Figure 1 shows the CTP maps, which were mutually adopted in 2013. 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 Rutherford County, Lake Lure, Chimney Rock Village and NCDOT. Refer to Chapter 2 for information on the implementation process.

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

- **Lake Lure Parkway (US 64/74A Relocation):** The proposed project is to construct a new two lane major thoroughfare with 11 foot lanes and paved shoulders from the intersection of US 64/74A and Arcade (A) Street south around Lake Lure to merge into US 64/74A. The roads that would connect to the proposed Lake Lure Parkway from the town center are C Avenue (Proctor Road) and Arcade (A) Street. Roundabouts are recommended at the 2 intersections of Lake Lure Parkway and US 64/74A for improved traffic flow.

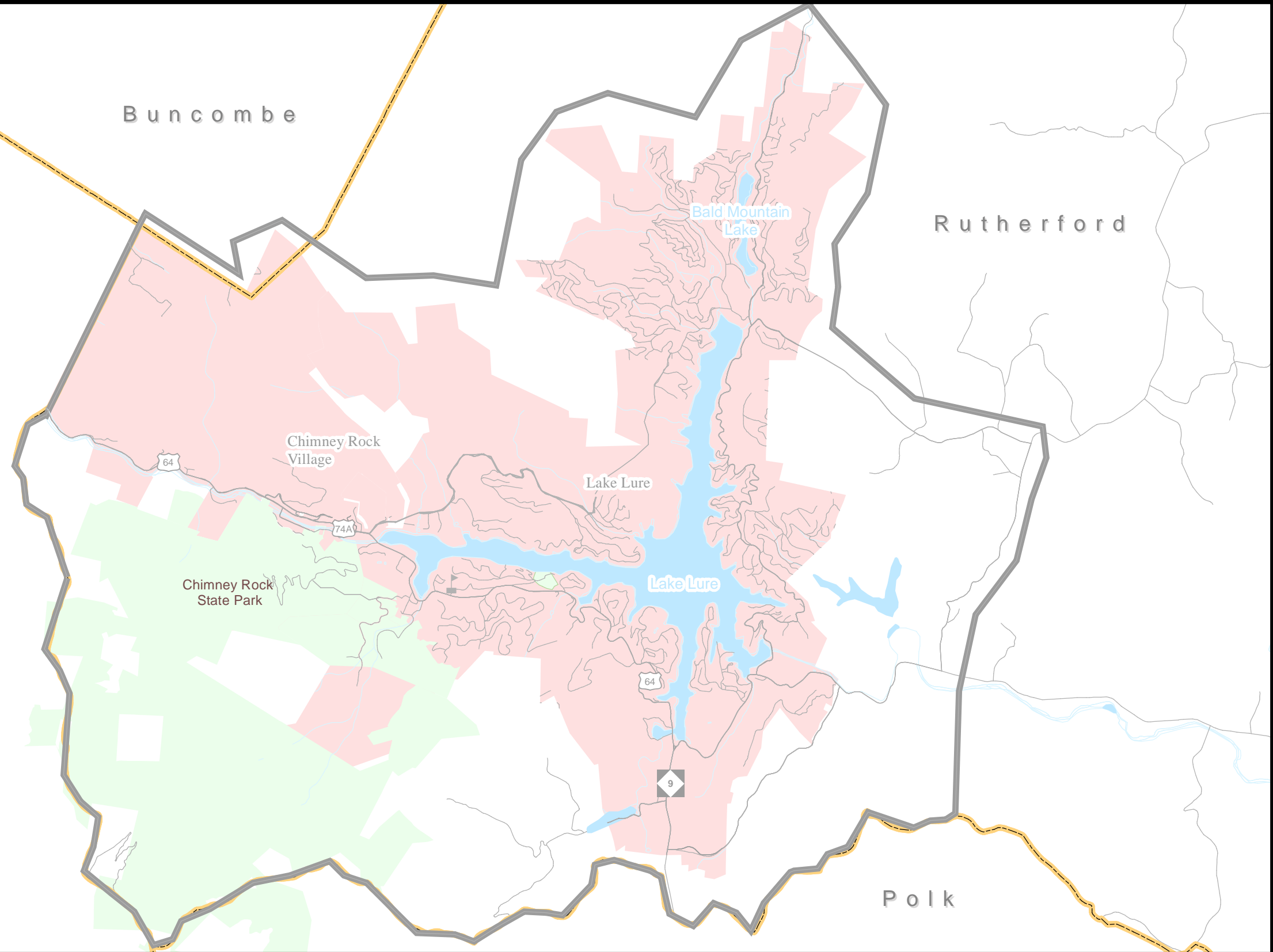
Adopted by:
Town of Lake Lure
Date: May 21, 2013
Chimney Rock Village
Date: June 18, 2013
Rutherford County
Date: July 1, 2013

NCDOT
Date: September 5, 2013

Endorsed by:
Isothermal RPO
Date: May 22, 2013

Recommended by:
Transportation Planning Branch
Date: August 15, 2013

NOTES:



- Sheet 1 Adoption Sheet
- Sheet 2 Highway Map
- Sheet 3 Public Transportation and Rail Map
- Sheet 4 Bicycle Map
- Sheet 5 Pedestrian Map

Legend

- Schools
- Water Bodies
- Parks and Game Land
- Municipal Boundary
- Planning Boundary
- Roads
- Rivers and Streams

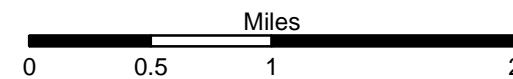


Figure 1

Sheet 1 of 5

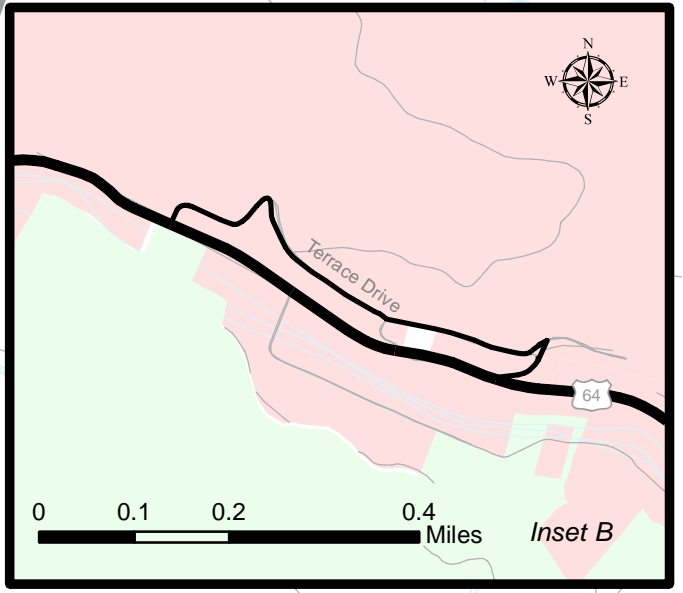
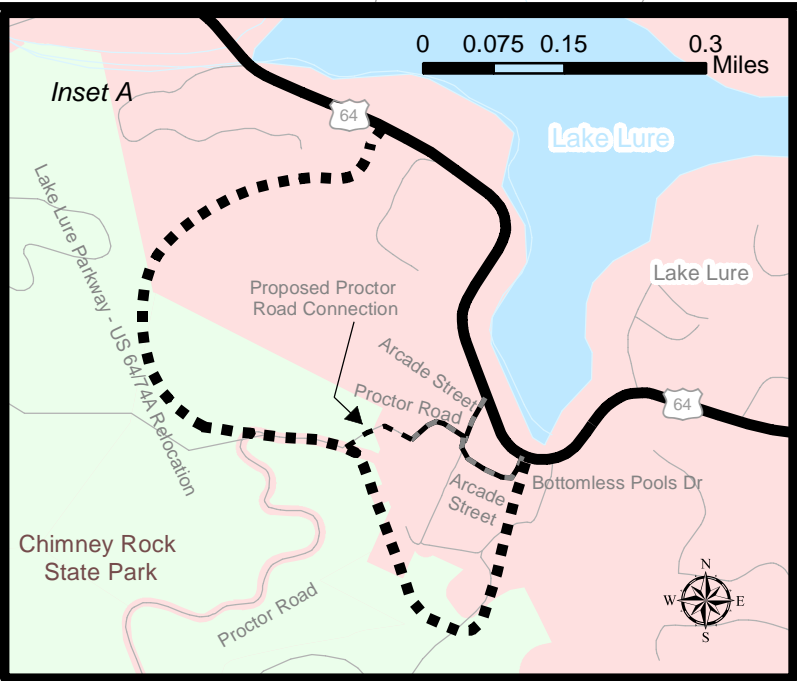
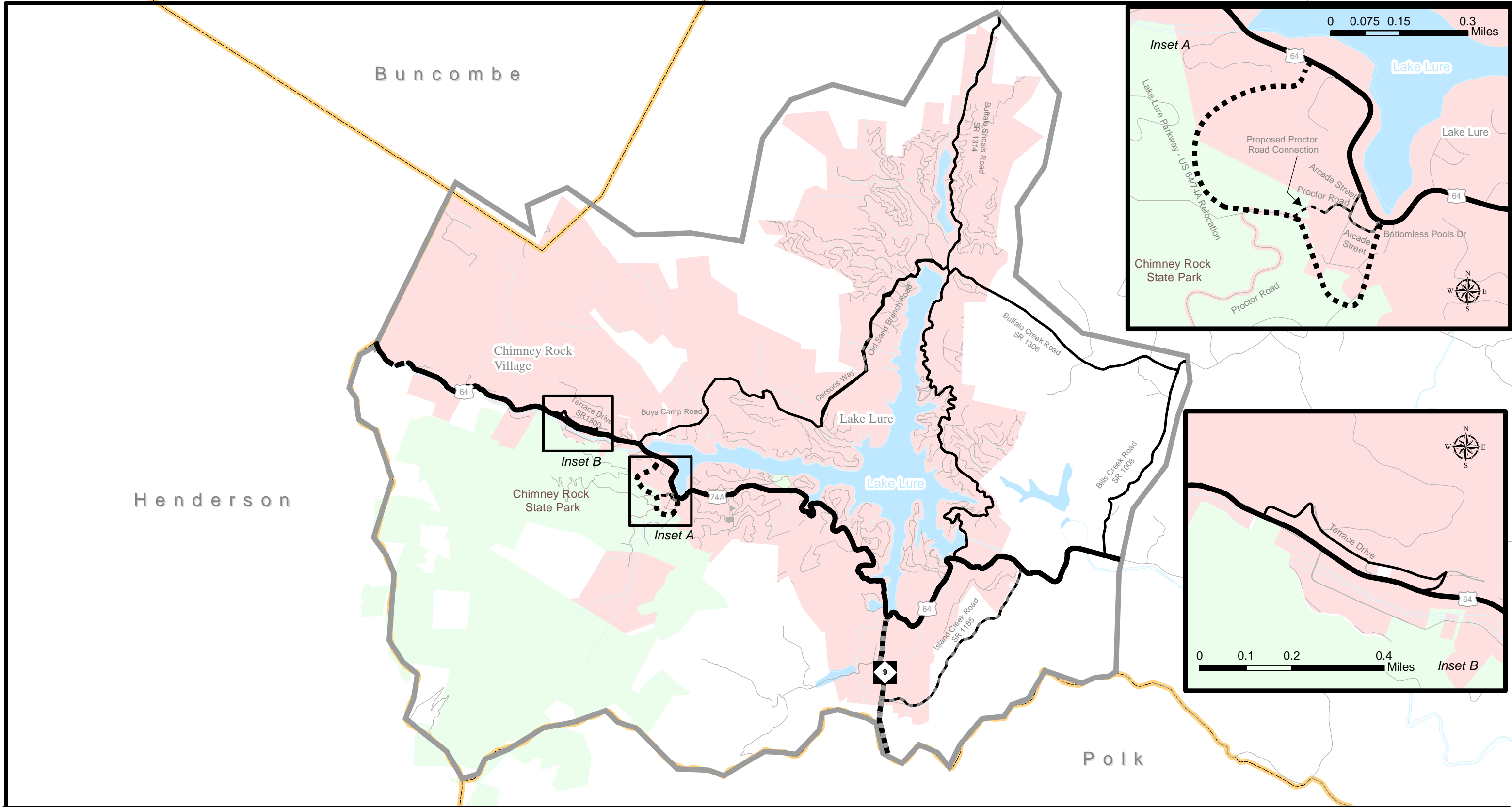


Base map date: February 9, 2012

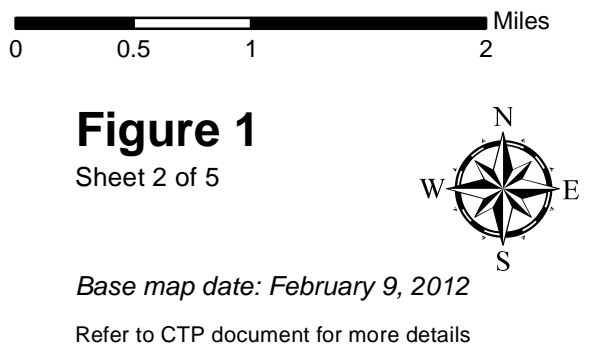
Refer to CTP document for more details

Lake Lure & Chimney Rock Village
Rutherford County, North Carolina

Comprehensive Transportation Plan
Plan date: May 7, 2013

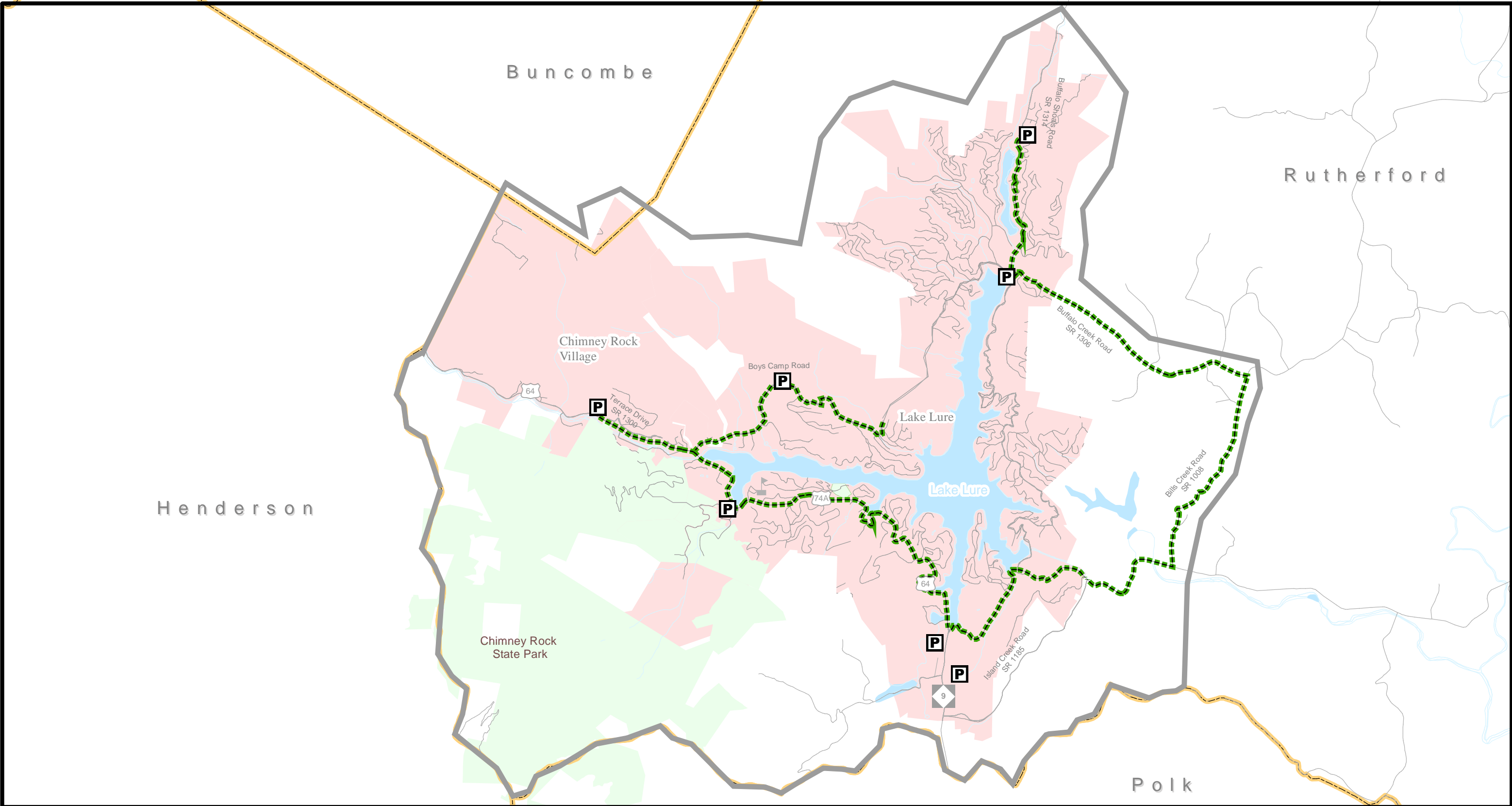


Freeways Existing Needs Improvement Recommended	Boulevards Existing Needs Improvement Recommended	Minor Thoroughfares Existing Needs Improvement Recommended
Expressways Existing Needs Improvement Recommended	Other Major Thoroughfares Existing Needs Improvement Recommended	Existing Interchange Proposed Interchange Existing Grade Separation Proposed Grade Separation



**Highway Map
 Lake Lure &
 Chimney Rock Village**

**Comprehensive
 Transportation Plan**
 Plan date: May 7, 2013



Bus Routes

- Existing
- Needs Improvement
- Recommended

Fixed Guideway

- Existing
- Needs Improvement
- Recommended

Operational Strategies

- Existing
- Needs Improvement
- Recommended

Rail Corridor

- Active
- Inactive
- Recommended

High Speed Rail Corridor

- Existing
- Recommended

Rail Stops

- Existing
- Recommended

Intermodal Connector

- Existing
- Recommended

Park and Ride Lot

- Existing
- Recommended

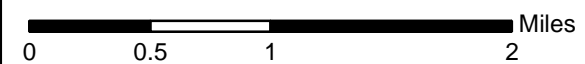
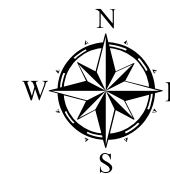


Figure 1

Sheet 3 of 5



Base map date: February 9, 2012

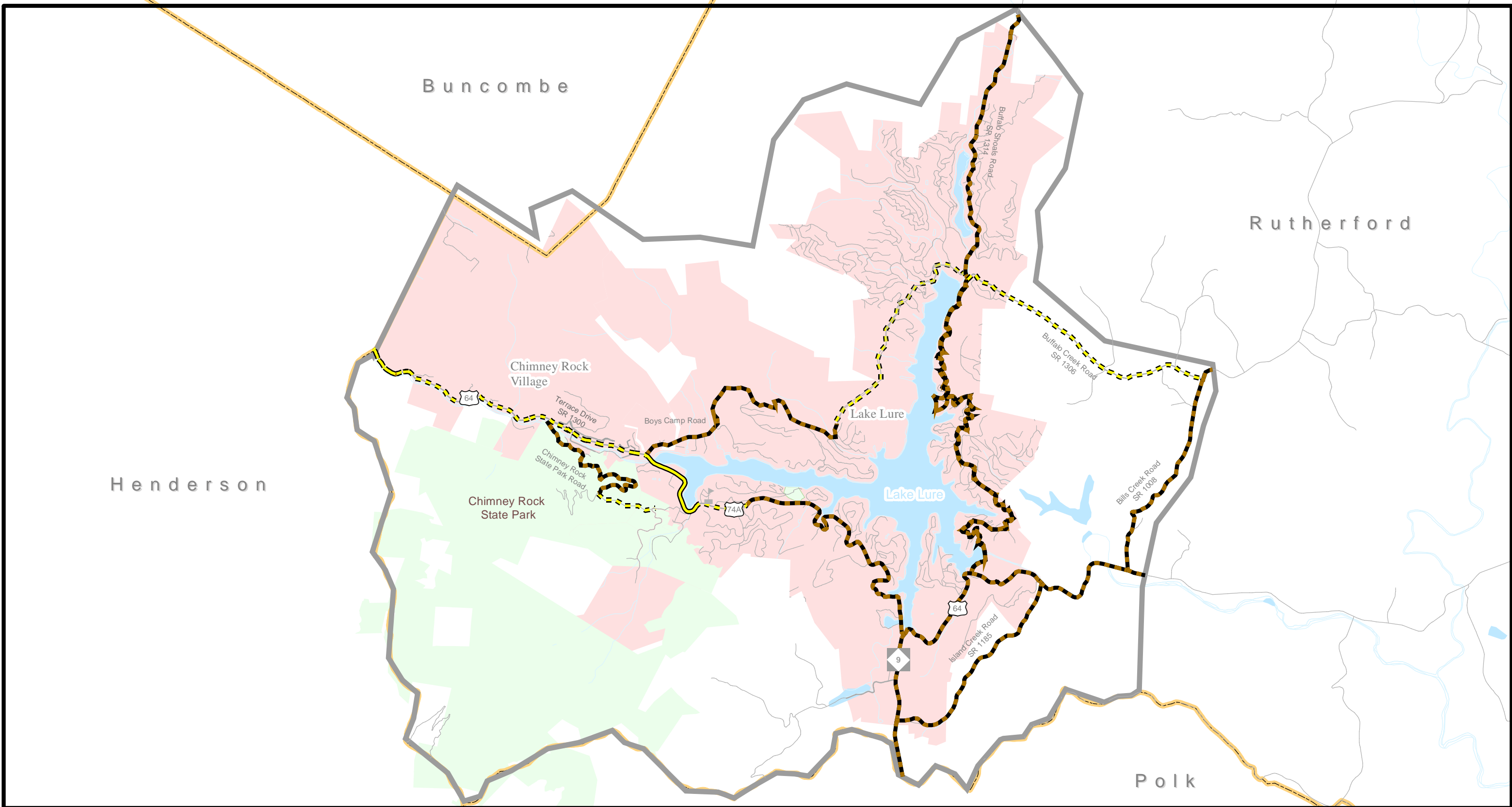
Refer to CTP document for more details

Public Transportation and Rail Map

Lake Lure & Chimney Rock Village

Comprehensive Transportation Plan

Plan date: May 7, 2013



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

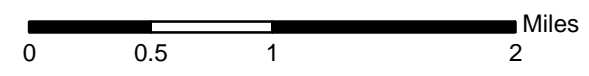
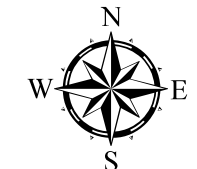


Figure 1

Sheet 4 of 5

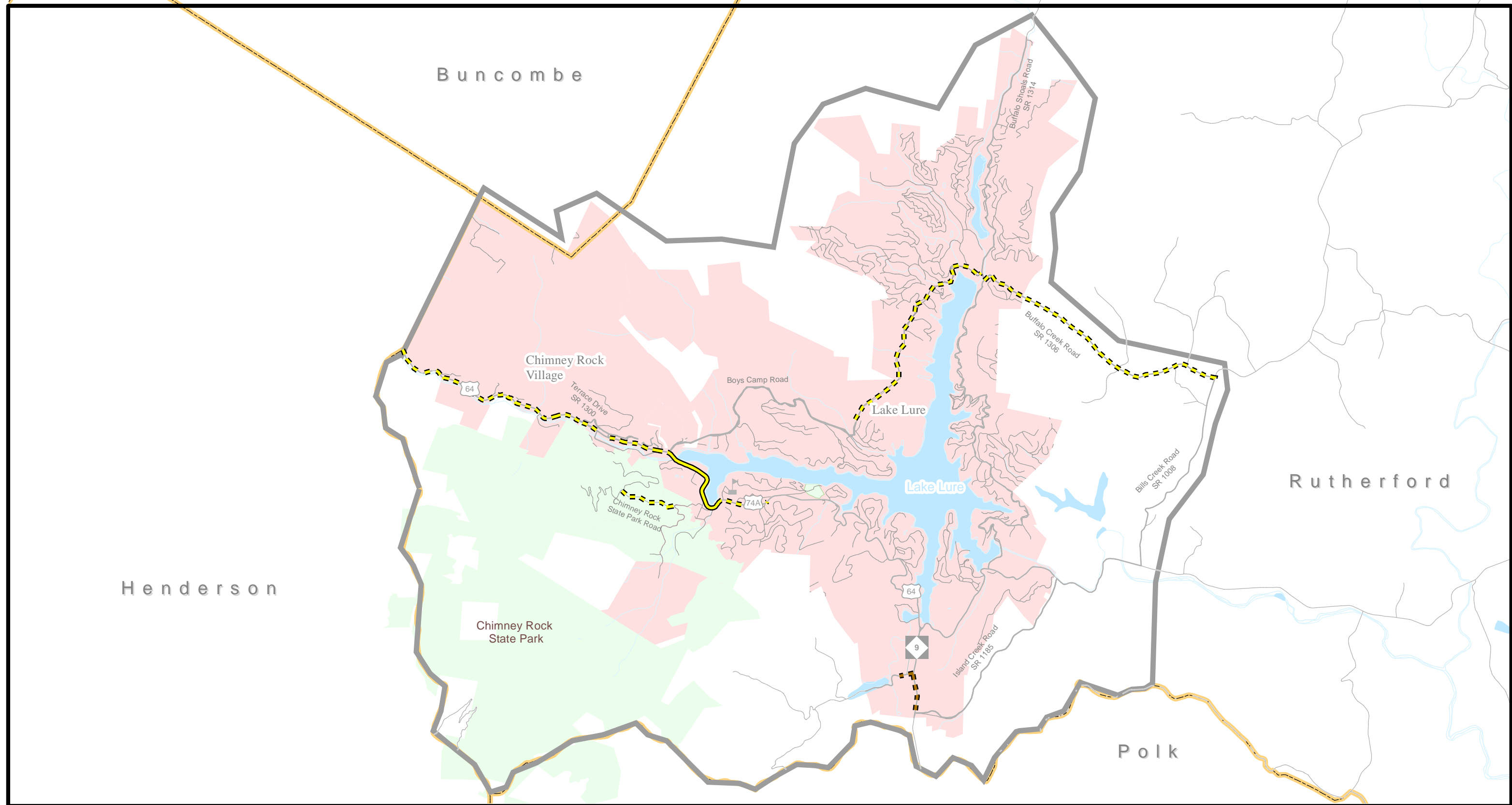


Base map date: February 9, 2012

Refer to CTP document for more details

**Bicycle Map
Lake Lure &
Chimney Rock Village**

**Comprehensive
Transportation Plan**
Plan date: May 7, 2013



Legend

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

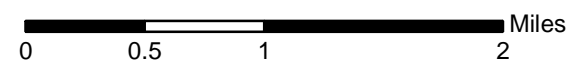


Figure 1

Sheet 5 of 5



Base map date: February 9, 2012

Refer to CTP document for more details

**Pedestrian Map
Lake Lure &
Chimney Rock Village**

**Comprehensive
Transportation Plan**
Plan date: May 7, 2013

1. Analysis of the Existing and Future Transportation System

A Comprehensive Transportation Plan (CTP) is developed to ensure that the 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;

1.1 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 demand. 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, or radial routes; or improvements needed to meet statewide initiatives.

One of those statewide initiatives is the Strategic Highway Corridor (SHC) Vision Plan¹ adopted by the Board of Transportation on September 2, 2004. The SHC Vision Plan is an initiative to protect and maximize the mobility and connectivity on a core set of transportation 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. There are currently no facilities in the municipal boundaries of Lake Lure or Chimney Rock Village that are part of the SHC Vision Plan. Refer to Appendix A for contact information for the SHC Vision Plan.

In the development of this plan, travel demand was projected from 2012 to 2040 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1991 to 2010. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns. The established future growth rates were reviewed and accepted on May 15, 2012 by the Lake Lure, Chimney Rock Village, and Chimney Rock State Park.

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. The 2040 traffic volume in Figure 3 is an estimate of the traffic 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 Program² (TIP).

Lake Lure and Chimney Rock Village are unique in the sense that they are a tourist area and have a major state park, Chimney Rock State Park. Lake Lure and Chimney Rock Village are tourist areas, have many permanent residents who are senior citizens, and has many seasonal businesses. For these reasons, traffic volumes during the summer months are much higher than the rest of the year. However, for the majority of the year the traffic volume is minimal.

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

¹ For more information on the SHC Vision Plan, go to:

<https://connect.ncdot.gov/projects/planning/Pages/StrategicHighwayCorridors.aspx>.

² For more information on the TIP, go to: <https://connect.ncdot.gov/projects/planning/Pages/default.aspx>

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 experience delay. The practical capacity for each roadway was developed based on the 2000 Highway Capacity Manual using the NC Level of Service (NCLOS) program. 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.

When looking at the average annual traffic volumes on the roads in this area, they are well under capacity.

Traffic Crash Assessment

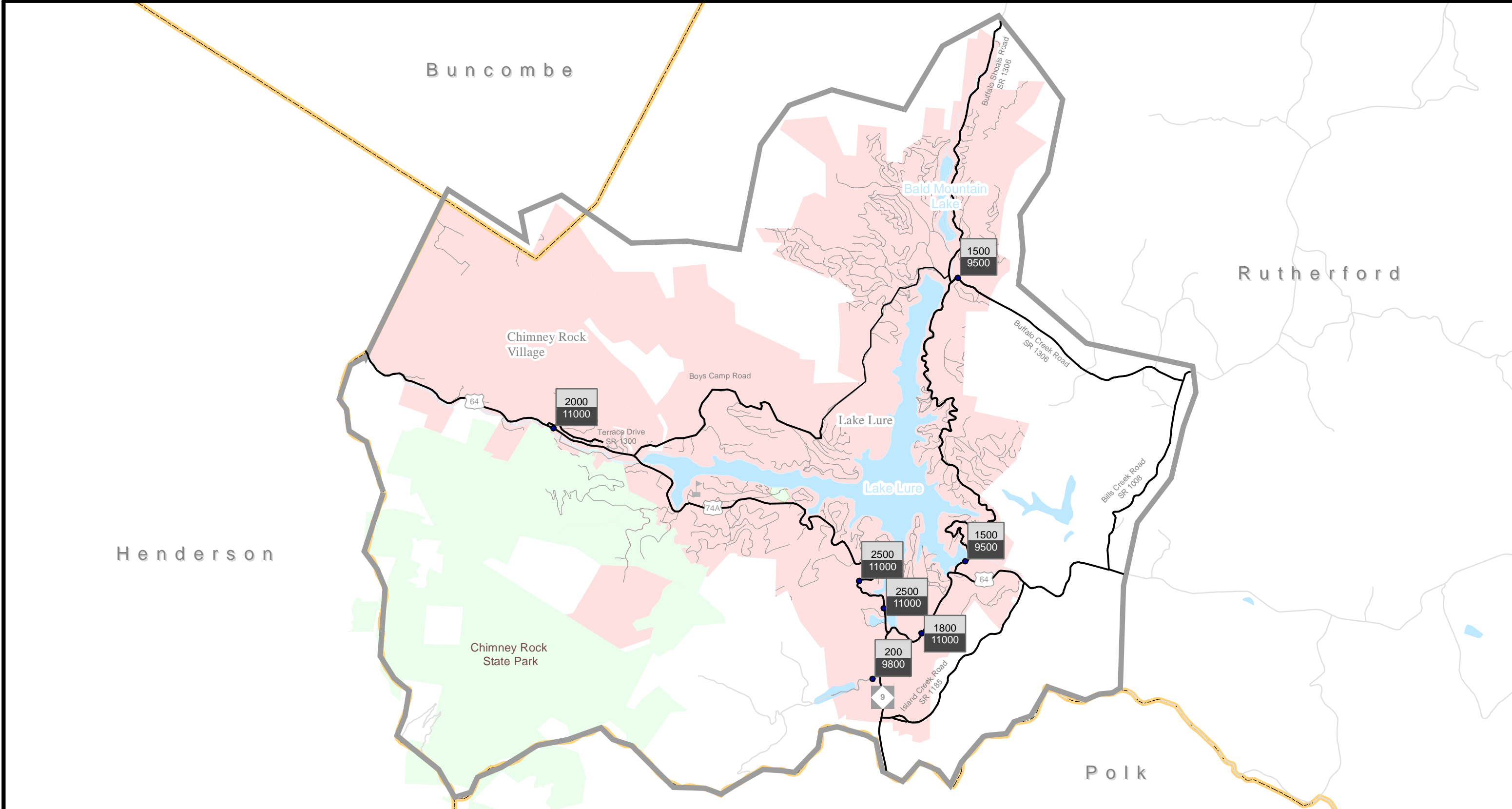
Traffic crashes are often used as an indicator for locating congestion and roadway problems. Crash patterns obtained from an analysis of crash data can lead to the identification of improvements that will reduce the number of crashes. The Traffic Safety Unit of NCDOT’s Transportation Mobility and Safety Division identifies high frequency crashes at intersections and along roadway sections during a five year period. The high frequency crash locations examined during the development of the Lake Lure and Chimney Rock Village CTP occurred between January 1, 2007 and December 31, 2011. During this period, five roadway sections and no intersections were identified as

having a high frequency of crashes as illustrated in Figure 4. Contact information for the Transportation Mobility and Safety Division can be found in Appendix A.

Bridge Deficiency Assessment

Bridges are a vital 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. Five deficient bridges were identified on roads evaluated as part of the CTP and are illustrated in Figure 5. Of these, none are scheduled for replacement in the 2012 – 2018 TIP. As deficient bridges are replaced, every consideration should be given to proposed CTP recommendation and cross section associated with the recommendation. Table 4 in Appendix F gives a listing of the deficient bridges identified in the CTP and the ID number associated with CTP project proposal. Refer to Appendix F for more detailed bridge deficiency information.



Legend

2012 AADT
2012 Capacity

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

- Schools
- Rivers and Streams
- Water Bodies
- County Boundary
- Municipal Boundary
- Parks and Game Land

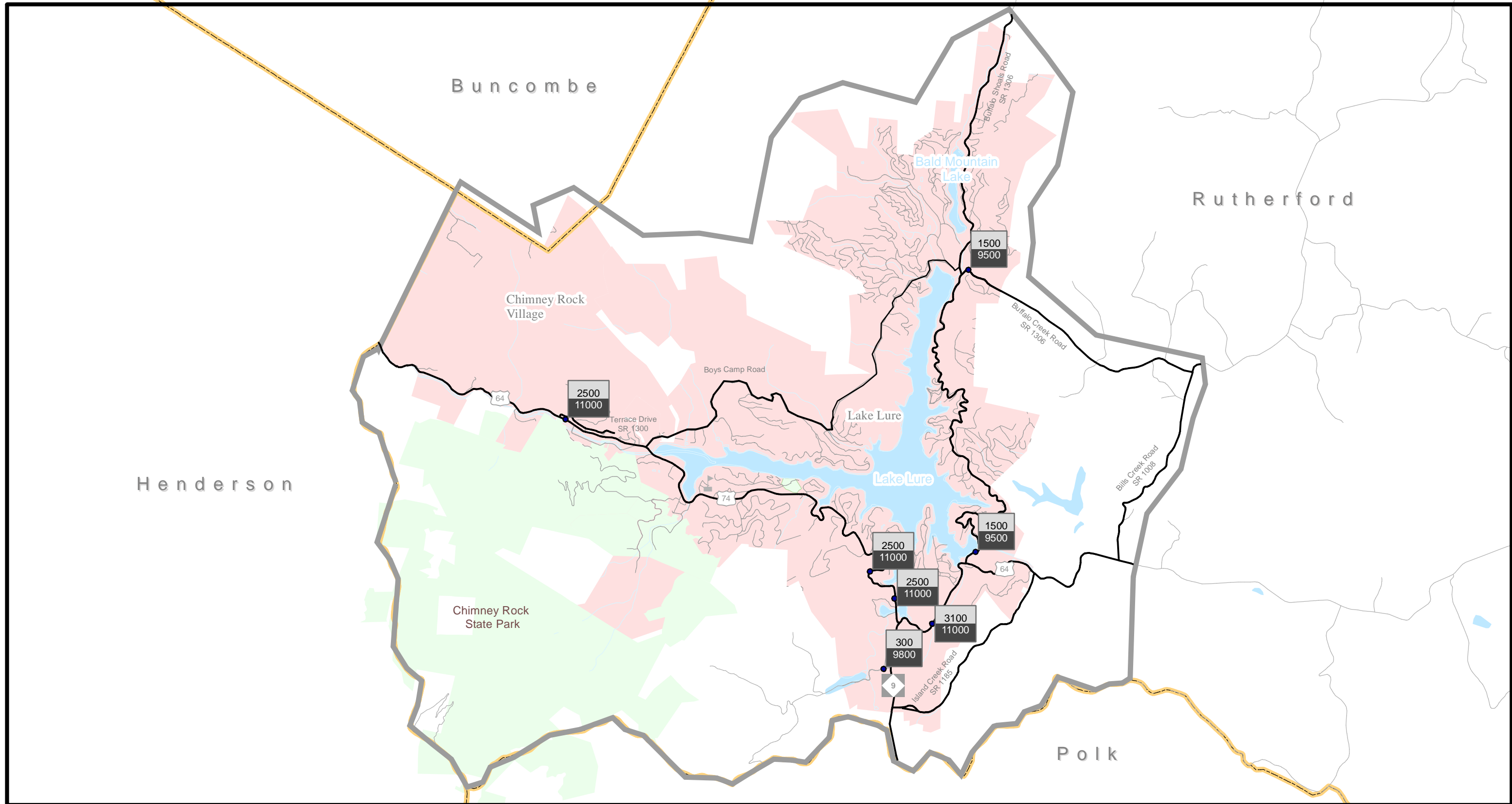
0 0.5 1 2 Miles

Figure 2

Base map date: February 9, 2012



**2012 Volumes and Capacity Deficiencies
Lake Lure & Chimney Rock Village
Comprehensive
Transportation Plan**



Legend

2040 AADT
2012 Capacity

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

- Schools
- Rivers and Streams
- Water Bodies
- County Boundary
- Municipal Boundary
- Parks and Game Land

0 0.5 1 2 Miles

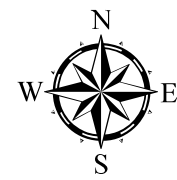


Figure 3

Base map date: February 9, 2012

**2040 Volumes and Capacity Deficiencies
Lake Lure & Chimney Rock Village
Comprehensive Transportation Plan**

FIGURE 4
Lake Lure & Chimney Rock Village
Comprehensive
Transportation Plan
HIGH FREQUENCY
CRASH LOCATIONS

January 1, 2007 to
 December 31, 2011

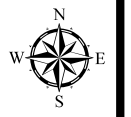
Crash Intersections

- ◆ 50 and above
- ▲ 40 to 49
- 30 to 39
- 20 to 29
- 10 to 19
- 4 to 9

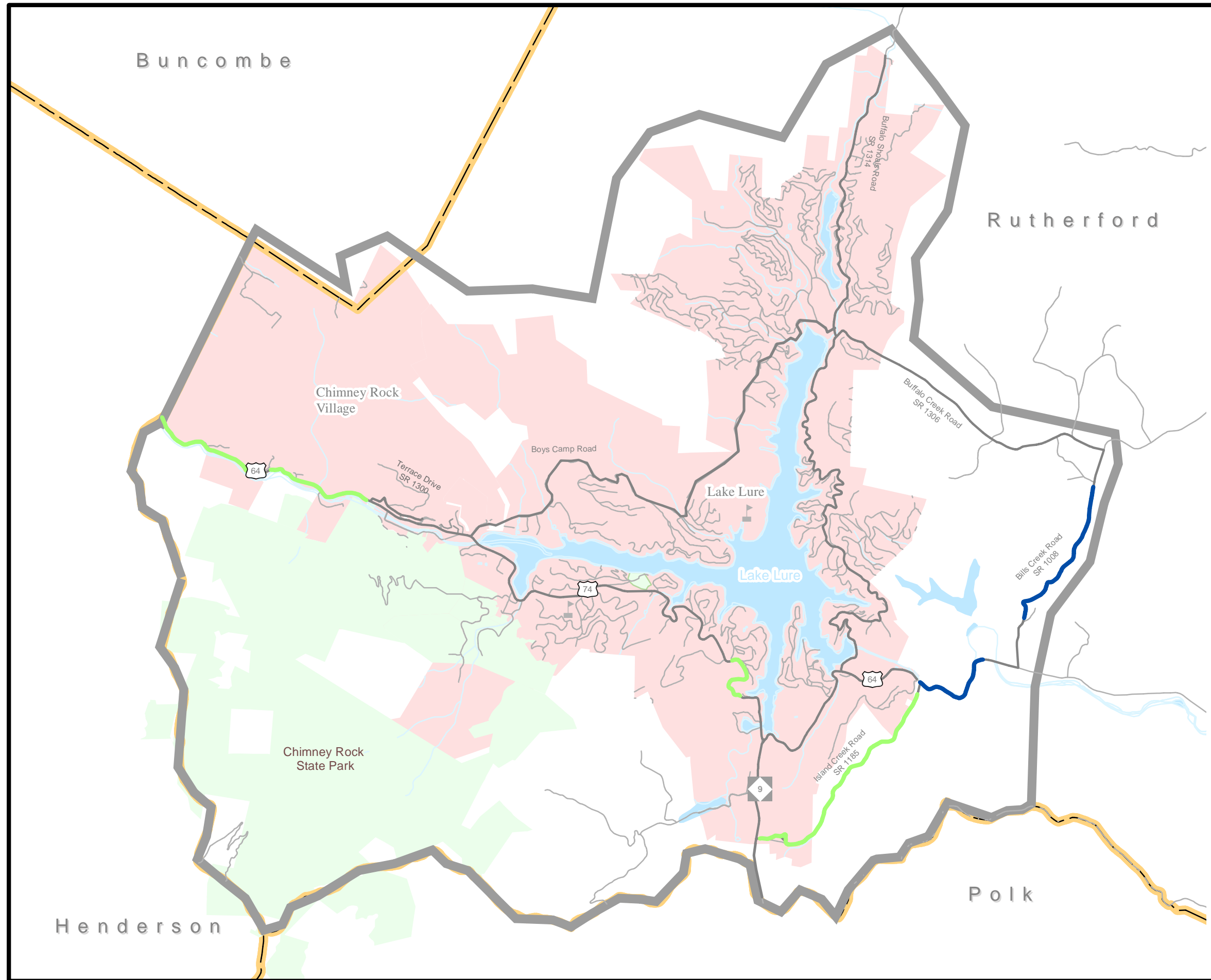
Crash Sections

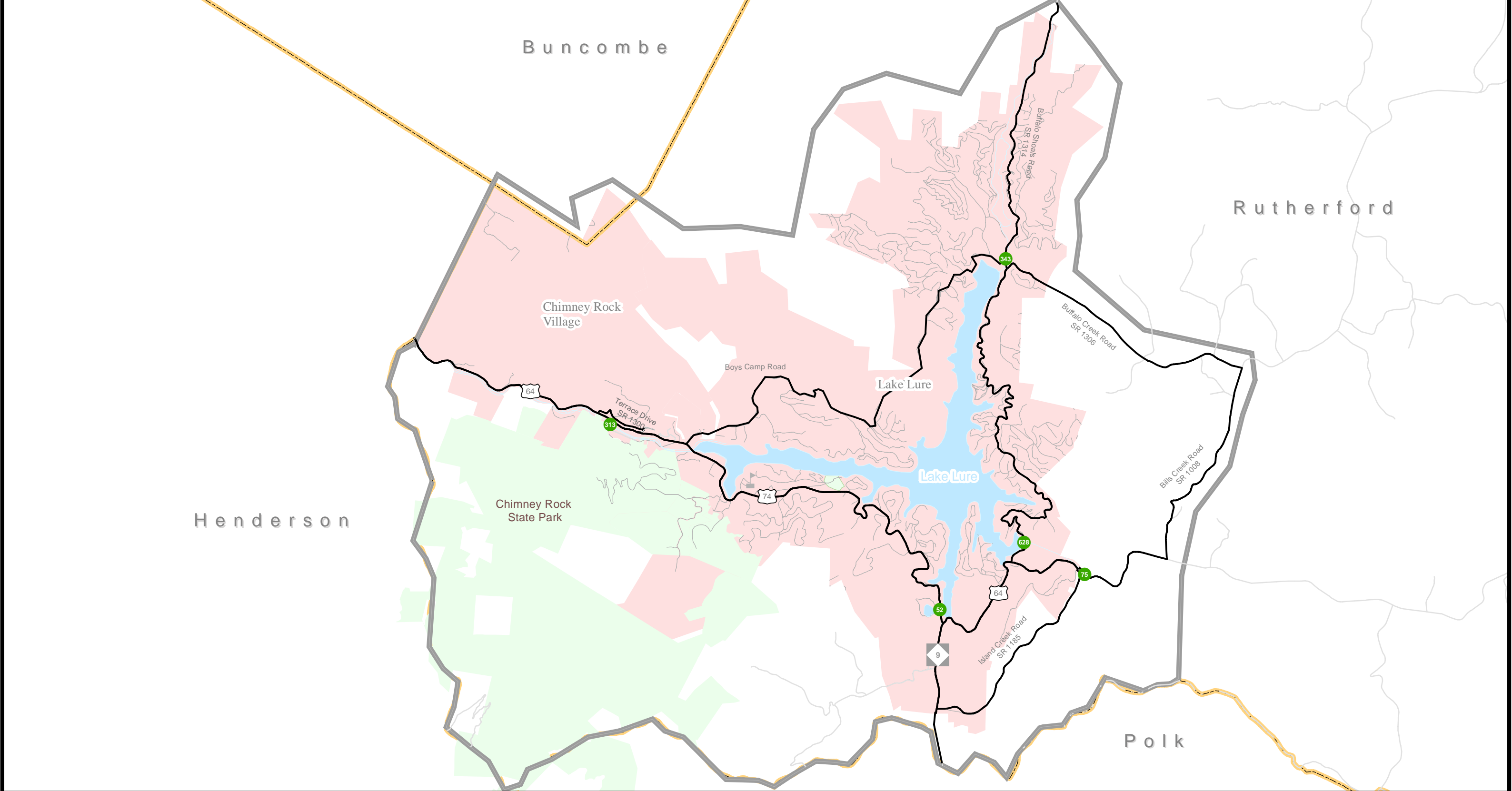
- 50 and above
- 40 to 49
- 30 to 39
- 20 to 29
- 10 to 19
- 4 to 9

- Study Roads
- Roads
- ▣ Schools
- Rivers and Streams
- Water Bodies
- Municipal Boundaries
- ▣ County Boundary
- Parks and Game Land



Base map date: February 9, 2012





Legend

- # Deficient Bridges (Bridge Number)
- Schools
- Rivers and Streams
- Parks and Game Land
- Water Bodies
- Network Roads
- Municipal Boundary
- Other Roads
- County Boundary

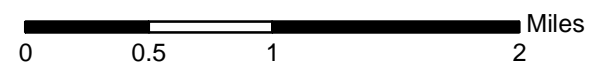
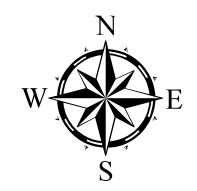


Figure 5



Base map date: February 9, 2012
 Refer to Table 4 in Appendix F

Deficient Bridges

**Lake Lure
 Chimney Rock Village
 Comprehensive
 Transportation Plan**

Public Transportation and Rail

Public transportation and rail are vital modes of transportation that give alternatives 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, single-county systems are encouraged 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 provide service 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. There are no existing public transportation services in either Lake Lure or Chimney Rock Village. 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 every day. 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.

An inventory of existing and planned rail facilities for the planning area is presented on Sheet 3 of Figure 1. There currently is no rail service that serves the area. Refer to Appendix A for contact information for the NCDOT Rail Division.

Bicycles & Pedestrians

Bicyclists and pedestrians are a growing part of the transportation system 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 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 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. 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 2007-2027 Lake Lure Comprehensive Plan³ and the 2011 Chimney Rock Village Comprehensive Plan⁴ (no maps included in plan) were used to meet this requirement. Existing and future land use maps are illustrated in Figures 6 and 7, respectively. The CTP also referenced the 2011 Chimney Rock State Park Master Plan⁵ in the development of the CTP.

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.

³ To view this plan, go to: <http://www.townoflakelure.com/2007-2027-comprehensive-plan.php>.

⁴ To view this plan, go to: http://www.chimneyrockvillage.com/ordinances-details.php?ord_id=319.

⁵ To view this plan, go to: <http://www.ncparks.gov/About/plans/master/main.php>.

- Agricultural: Land devoted to the use of buildings or structures for the raising of non-domestic animals and/or growing of plants for food and other production.
- Mixed Use: Land devoted to a combination of any of the categories above.

Anticipated future land development is, in general, a logical extension of the present spatial land use distribution. Locations and types of expected growth within the planning area help to determine the location and type of proposed transportation improvements.

The population of Rutherford County is projected to grow at a very low rate. The growth rate from 2010 to 2011 was only 0.7% according to Office of State Budget and Management (OSBM).

Lake Lure is a resort community and vacation destination with a 2010 estimated population of 1,192 that grows to around 10,000 during the summer months. The total population of the town is projected to grow 3.25% by 2030. While Lake Lure is developed primarily for residential uses, commercial and civic uses are also significant components of the land-use mix. Most of the commercial development in Lake Lure is concentrated in the town center, where a variety of restaurants, stores and an inn can be found. Most of the recent commercial development has occurred along segments of US-64/74A and NC-9. The area also provides many recreational opportunities from walking and bike trails, like the Flowering Bridge, to many water sports activities on the lake and river.

The population of Chimney Rock Village is 113 according to 2010 estimates. The total population is projected to grow by 1.97% in 2030. Chimney Rock Village consists of a group of shops loosely clustered along both sides of US 64/74A and residential property located along side streets and driveways. The village is located in the Hickory Nut Gorge area with property having a mountainous contour preventing the ability to establish a formal street structure. The commercial area has largely been dependent on Chimney Rock Park but is continuing to evolve to more of a destination by offering a number of other attractions such as the Rocky Broad River Riverwalk, restaurants, overnight accommodations and recreation activities that include camping, hiking and fishing. Nevertheless, most businesses are still primarily supported by a tourist economy.

A unique characteristic of this area is that there is a major state park (Chimney Rock State Park) that attracts visitors primarily from spring to fall. Since 2007, the Division of Parks and Recreation has obtained 4,531 acres along both sides of US 64/74A in the Hickory Nut George area and includes Chimney Rock Park. These properties have become integrated into the state parks system and are now known as Chimney Rock State Park. The state park system is in the process of implementing its master plan designed to offer readily available public access, development of facilities, and recreation options as well as resource protection. The master plan identifies the necessity to provide an additional driveway for emergency access and future

transportation needs to serve the Chimney Rock parking lot facility. The location of this driveway is proposed to access US 64/74A in the vicinity of Lake Lure. This new driveway will serve as the park's main entrance and the existing park access at Chimney Rock Village will become the exit. The park is expected to have approximately 350,000 visitors a year. By 2030, growth at the park is expected to increase by 2.08%.

This page intentionally left blank.

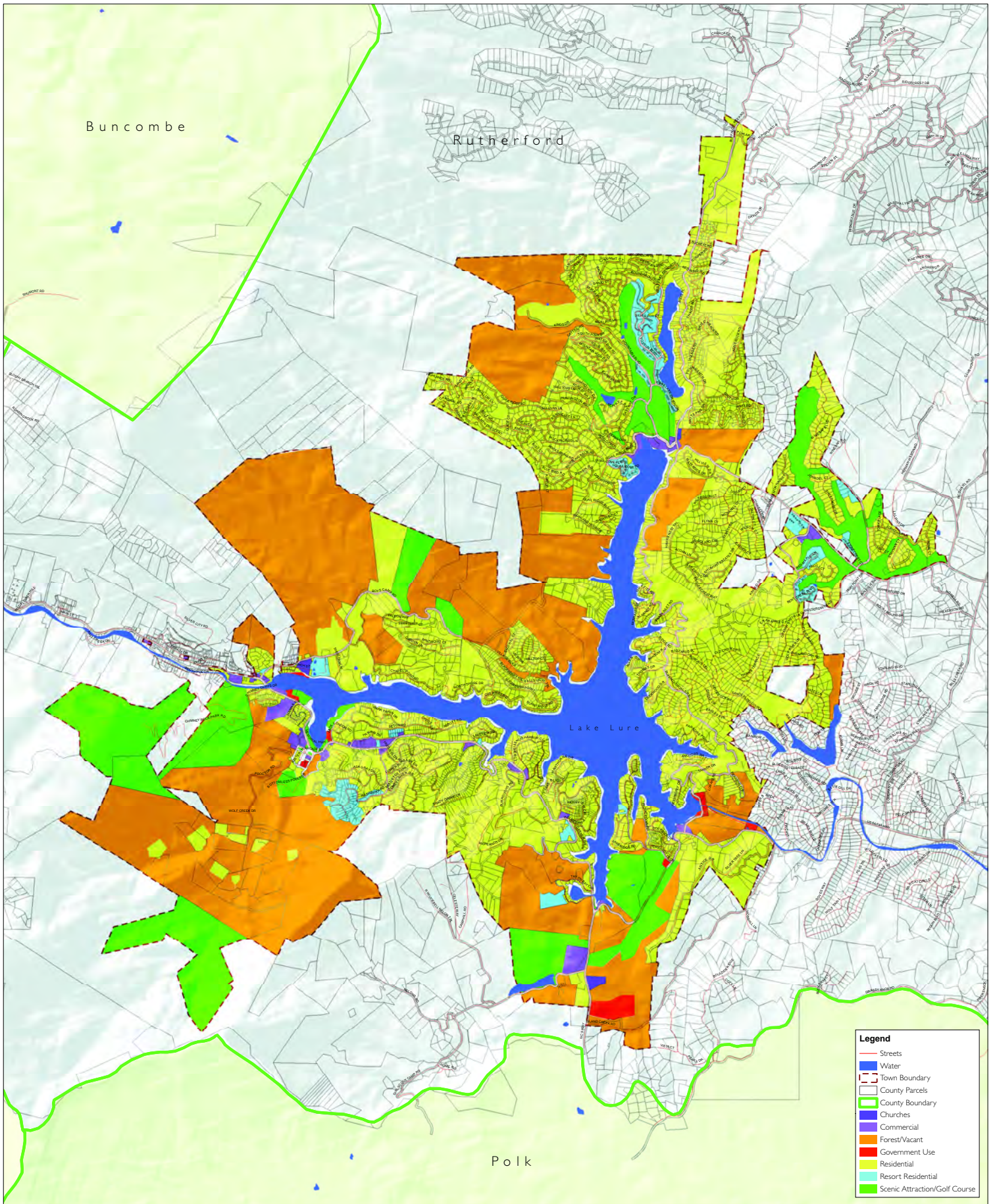


Figure 6

Existing Land Use Map

Comprehensive Plan

Town of Lake Lure, North Carolina



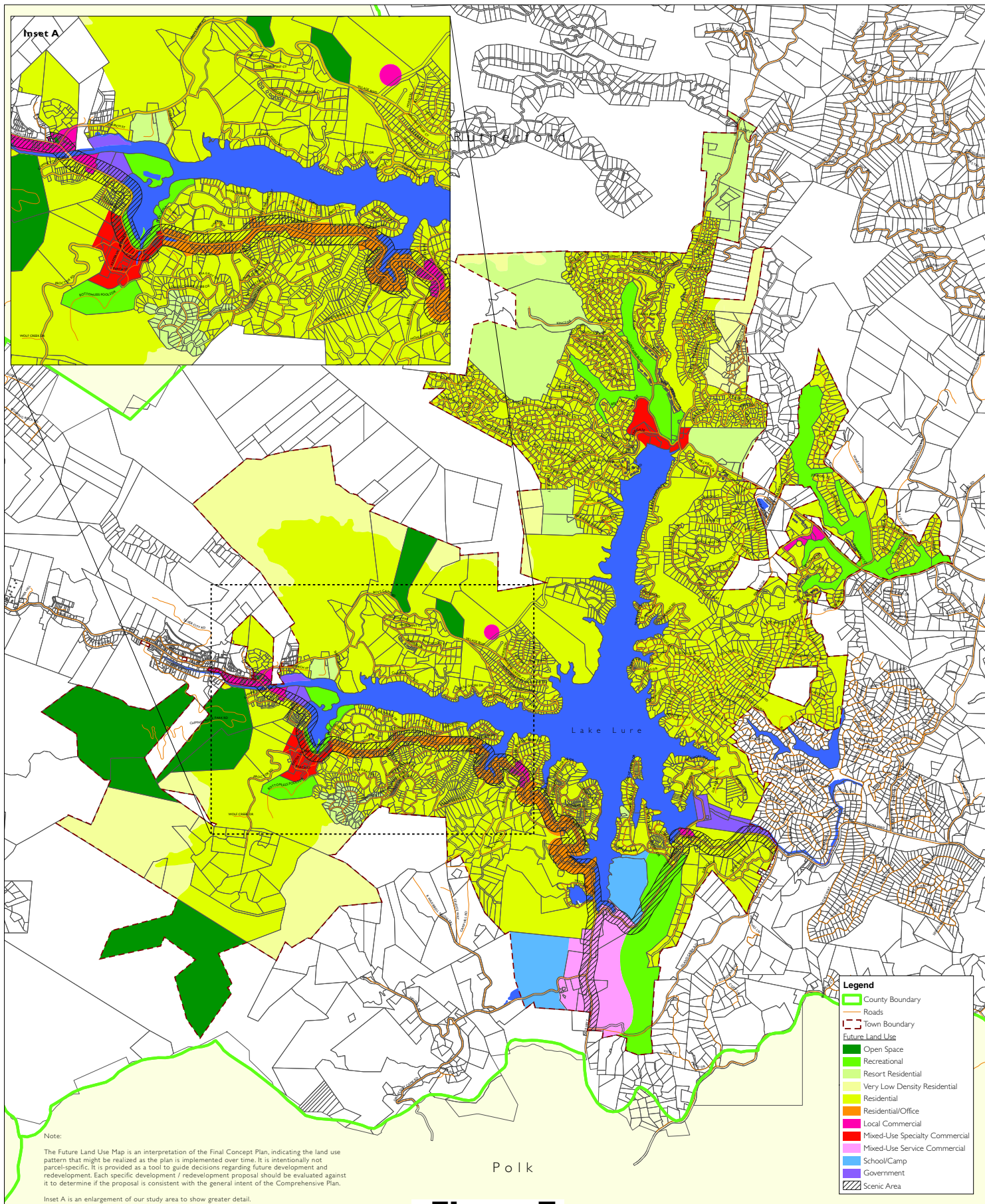


Figure 7

F u t u r e L a n d U s e M a p

C o m p r e h e n s i v e P l a n

T o w n o f L a k e L u r e , N o r t h C a r o l i n a



223 North Graham St | Phone: 704.332.0225
Charlotte, NC - 28202 | Fax: 704.376.8235

Disclaimer:
This GIS Data is deemed reliable but provided "as is" without warranty of any representation of accuracy, timeliness, reliability or completeness. This map document does not represent a legal survey of the land and is for graphical purposes only. Use of this Data for any purpose should be with acknowledgment of the limitations of the Data, including the fact that the Data is dynamic and is in a constant state of maintenance, correction, and update.

May 29, 2007 | LDI # 1005977



Source (base data only): Rutherford County, NC, (Tax Department)

1.2 Consideration of Natural and Human Environment

Environmental features are a key consideration in the transportation planning process. Section 102 of the National Environmental Policy Act⁶ (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, every effort was made to minimize potential impacts to these features utilizing the best available data. Any 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 is shown in the following tables. Environmental features occurring within the Lake Lure and Chimney Rock Village planning area are shown in Figure 8 and highlighted by bold text in Tables 1 and 2.

Table 1 – Environmental Features

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

⁶ 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

1.3 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 at the Lake Lure Town Hall in January 2012 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 NCDOT Transportation Planning Branch cooperatively worked with Lake Lure and Chimney Rock Village CTP Committee, which included a representative from each municipality, Rutherford County, Chimney Rock State Park, 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 two public drop-in sessions to present the proposed CTP to the public and solicit comments. The first meeting was held on January 15, 2013 and the second meeting was held on February 19, 2013, both at the Lake Lure town hall. Each session was publicized in the local newspaper and on local websites (both municipalities and the Isothermal RPO) and was held from 5:00-7:30pm. Approximately 200 individuals attended the January 15th meeting. Two comment forms were submitted during the session held on January 15, 2013. More detailed information regarding these comments and the public drop session can be found in Appendix H.

Public hearings were held on May 21, 2013 during the Lake Lure Town Council meeting; on June 19, 2013 during the Chimney Rock Village Council meeting; and on July 1, 2013 during the Rutherford County Board of Commissioners meeting. The purpose of these meetings was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during these meetings.

The Isothermal RPO endorsed the CTP on May 22, 2013. The North Carolina Department of Transportation mutually adopted the Lake Lure and Chimney Rock Village CTP on September 5, 2013.

Buncombe

Rutherford

Henderson

Polk

Chimney Rock Village

Lake Lure

Chimney Rock State Park

Boys Camp

Buffalo Creek Road
SR 1306

Bills Creek Road
SR 1008

Island Creek Road
SR 1185









64

Terrace Drive
74A

64

9

Legend

-  County Boundary
-  Hydrology
-  Roads
-  Municipal Boundary
-  Land and Water Conservation Fund
-  Conservation Tax Credit Properties
-  Significant Natural Heritage Areas
-  Schools

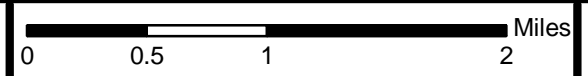


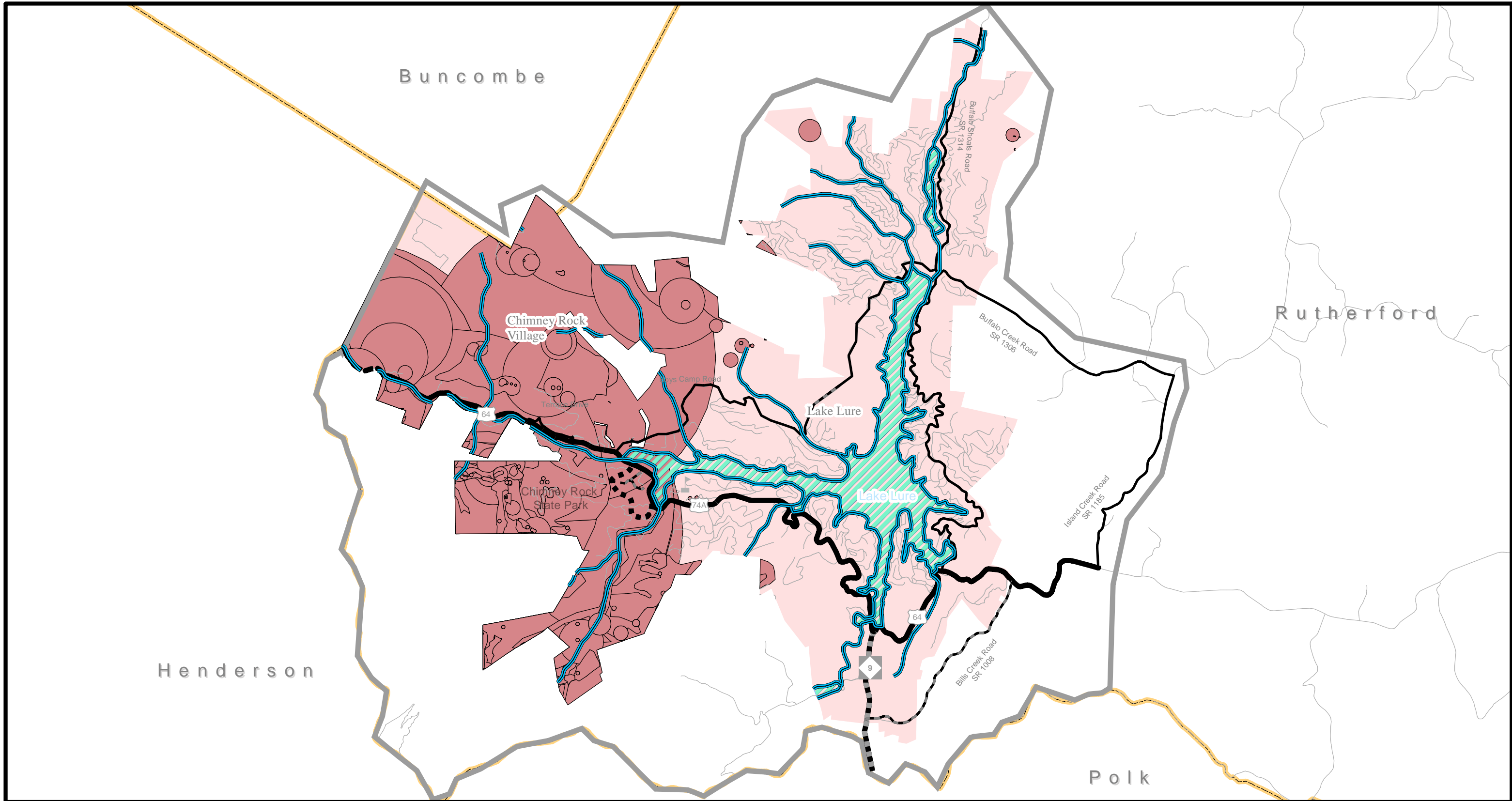
Figure 8

Sheet 1 of 2
Base map date: February 9, 2012









Environmental Features

**Lake Lure &
Chimney Rock Village
Comprehensive
Transportation Plan**



Legend

-  County Boundary
-  Trout Steams
-  Municipal Boundary
-  Roads
-  Trout Waters
-  National Heritage Element Occurrences

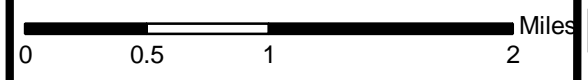


Figure 8

Sheet 2 of 2

Base map date: February 9, 2012

Environmental Features

**Lake Lure & Chimney Rock Village
Comprehensive
Transportation Plan**

2. Recommendations

This chapter presents recommendations for each mode of transportation in the 2013 Lake Lure and Chimney Rock Village CTP as shown in Figure 1. More detailed information on each recommendation is tabulated in Appendix C. Because many of the issues in this area are due to operational issues and seasonal tourism, the NCDOT Municipal and School Transportation Assistance Group (MSTA) within the Traffic Management Unit worked with the Transportation Planning Branch (TPB) and the municipalities in the development of the CTP. MSTA previously completed a Lake Lure and Chimney Rock Traffic Operations Plan in 1994 which was well received in the area. Refer to Appendix H for summary of the traffic operations study¹ completed by the (MSTA) Group in conjunction with this CTP.

The N.C. Department of Transportation adopted a "Complete Streets²" 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.

2.1 Implementation

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

¹ To view the Lake Lure and Chimney Rock Traffic Study online, go to:

http://www.townoflakelure.com/mydocuments/lake_lure_and_chimney_rock_traffic_study_4_29_2013.pdf.

² For more information on Complete Streets, go to: <http://www.nccompletestreets.org/>.

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 Lake Lure and Chimney Rock Village. 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 Isothermal 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 Act³ (SEPA). This CTP may be used to provide information in the NEPA/SEPA process.

2.2 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.

³ For more information on SEPA, go to: <http://www.doa.nc.gov/clearing/faq.aspx>.

HIGHWAY

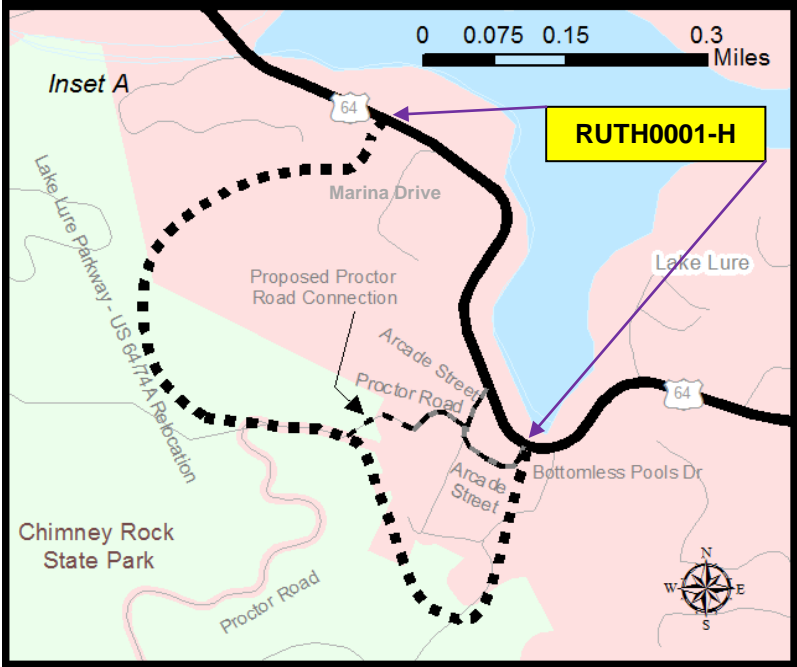
Lake Lure Parkway (US 64/74A Relocation) - From US 64/74A west of Marina Drive to US 64/74A at Arcade (A) Street	Local ID: RUTH0001-H Last Updated: 10/18/13
---	--

Identified Problem

The purpose of this project is to improve the mobility along US 64/74A through Lake Lure and to improve access to Chimney Rock State Park.

Justification of Need

Chimney Rock Village and Lake Lure are not merely municipalities in western North Carolina but are also key tourist destinations. US 64/74A is the only through route serving this area, connecting to Asheville in the west and Rutherfordton in the east. Lake Lure is an



approximately 720 acre lake with about twenty-one miles of shoreline and a beach that is accessed from US 64/74. In addition, the towns are in the heart of the Hickory Nut Gorge with Chimney Rock State Park as a growing major attraction in the gorge.

US 64/74A is a two lane facility with 12 foot lanes and a speed limit of 35 miles per hour (mph) through the municipalities with parking spaces directly off the road between store fronts and the edge of pavement in Chimney Rock Village and along the beach front in Lake Lure. Left turns into the Chimney Rock State Park entrance located in the heart of Chimney Rock Village and vehicles turning into and out of parking spaces back up traffic along US 64/74A. Also, there is a significant amount of pedestrian traffic crossing US 64/74 in Lake Lure to access the beach and in Chimney Rock Village to access the shops.

Currently, the Average Annual Daily Traffic (AADT) volume on US 64/74A is 2,000 vehicles per day (vpd) and is expected to increase to 2,500 vpd in 2040. However, in the warmer months (spring-fall) the traffic increases heavily due to visitors. For example, in January of 2012 the park had 2,049 visitors and in July the park had 35,348 visitors. During these times, US 64/74A becomes extremely congested. From 2011 to 2020 Chimney Rock State Park expects to grow 5.23%, and from 2020 to 2030 the Park expects to grow at 2.08%.

Community Vision and Problem History

The community vision developed for the CTP states: *The town of Lake Lure and Chimney Rock Village have a safe, aesthetically pleasing, user friendly, integrated, and environmentally sensitive multi-modal transportation system for its community with regional connectivity that makes it easy for visitors to access the area and its attractions, and aids the economic progress of the area.*

Goals and objectives developed for the CTP that directly relates to the proposed Lake Lure Parkway are:

- Goal: Have a safe transportation system by directing traffic away from US 64/74A where currently angle parking exists on both sides of the streets and may cause accidents when backing out.
- Goal: A transportation network that meets the needs of the community and supports proposed land use patterns.
- Objective: Create linkage between Lake Lure, Chimney Rock Village, & Chimney Rock State Park.

Chimney Rock State Park developed a master plan in 2011 that includes a 5-year action plan, 25-year master plan and 100-year vision plan. This plan includes a new access and circulation strategy whose primary goal is to help alleviate automobile congestion on US 64/74A through Chimney Rock Village and Lake Lure. Chimney Rock State Park has plans for a new state park entry road with bicycle lanes from Lake Lure that connects to the lower portion of Proctor Road (C Avenue).

The current entrance/exit to the park in Chimney Rock Village will serve as an outbound (exit) roadway from the Meadows to Chimney Rock Village as stated in the 2011 Chimney Rock State Park Master Plan⁴. As indicated in this plan, peak visitation in the park occurs in the early morning and mid-day hours, before Chimney Rock Village merchants are open for business. Transforming the current entrance/exit road into a one-way exit road will deliver state park visitors to Chimney Rock Village where they can shop and dine during later morning, afternoon and evening hours. The Meadows will be designed to direct existing traffic flow into the Village of Chimney Rock.

CTP Project Proposal

Project Description and Overview

Lake Lure Parkway is proposed to be a two lane major thoroughfare with 11 foot lanes, paved shoulders and a speed limit of 45 mph that begins at the intersection of US 64/74A and Arcade (A) Street. From US 64/74A west of Marina Drive, the proposed parkway would continue south around the Lake Lure town center and to merge into US 64/74A at Arcade (A) Street. The roads that would connect to the proposed Lake Lure Parkway from the town center are Proctor Road (C Avenue – RUTH0006-H) and Arcade (A) Street. Roundabouts are recommended at these two locations for improved traffic flow.

⁴ To view this plan, go to: <http://www.ncparks.gov/About/plans/master/main.php>.

Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, the proposed project is in the vicinity of two wells and is within a natural heritage element area. There are also trout streams located east of the proposed project. The Chimney Rock State Park is located southwest of the proposed project.

Relationship to Land Use Plans

Lake Lure is a resort community and vacation destination. It is developed primarily for residential uses, commercial and civic uses are also significant components of the land-use mix. Most of the commercial development in Lake Lure is concentrated in the town center, where a variety of restaurants, stores and an inn can be found. Most of the recent commercial development has occurred along segments of US-64/74A and NC-9. In the 2007-2027 Lake Lure Comprehensive Plan⁵, the future land use plan indicates increases in residential and commercial development.

Linkages to Other Plans and Proposed Project History

This CTP was developed in coordination with the 2011 Chimney Rock State Park Master Plan, the 2012 Lake Lure Town Center Master Plan⁶ (Phase I), and the 2013 Lake Lure and Chimney Rock Traffic Study⁷ which was developed by NCDOT's Municipal and School Transportation Assistance Group (MSTA) within the Traffic Management Unit. All of the aforementioned plans include the proposed project. Appendix I contains a brief summary of the NCDOT traffic study.

The proposed project was not identified in the 1993 Lake Lure/Chimney Rock Thoroughfare Plan (not adopted).

Multi-modal Considerations

There are no other modes of transportation associated with the proposed project.

Public/ Stakeholder Involvement

There were two public involvement sessions held for the CTP, during which no written comments regarding the Lake Lure Parkway were submitted. Many individuals verbally agreed with this concept and the connection with Chimney Rock State Park's vision for the new entrance and how it would reduce traffic on US 64/74A.

⁵ To view this plan, go to: <http://www.townoflakelure.com/2007-2027-comprehensive-plan.php>.

⁶ To view this plan, go to: <http://www.egovlink.com/lakelure/docs/menu/home.asp>.

⁷ To view the Lake Lure and Chimney Rock Traffic Study online, go to: http://www.townoflakelure.com/mydocuments/lake_lure_and_chimney_rock_traffic_study_4_29_2013.pdf.

Old Sand Branch Road, Local ID: RUTH0005-H

Currently there is only one north-south facility within the planning area. Improvements are needed to enhance north-south connectivity.

Buffalo Shoals Road (SR 1314) is a two lane minor thoroughfare from US 67/74A to the northern planning boundary and is the only north-south route that serves the planning area. It also serves Rumbling Bald Resort which is located in northern Lake Lure. There is currently no direct connection between the northern and western sections of the planning area, which is also divided by the lake. Improvements are also needed to provide additional access for first responders and other emergency personnel. Currently, emergency responders must use Buffalo Shoals Road (SR 1306), Buffalo Creek Road (SR 1306), and Bills Creek Road (SR 1008) to access the Rumbling Bald Resort area.

Old Sand Branch Road is recommended to be improved from a dirt road to a two lane facility with 10 foot lanes and 4 foot paved shoulders from the end of Carsons Way Lane northward approximately 1700 feet (0.32 miles) to the existing paved section of Old Sand Branch Road. This improvement would connect Boys Camp Road in the western planning area to Rumbling Bald Resort and would shorten the time and distance for emergency responders to access the area.

A long range vision that Lake Lure and Chimney Rock Village both share is to facilitate transportation connectivity for the community as a whole. The proposed improvement would provide a loop system around the lake for highway, transit, pedestrian and bicycle routes. Although both are in support of the proposed connection, Rumbling Bald Resort is a private, gated resort area that does not wish to open its community to all traffic. Therefore, this connection would only be used by emergency responders unless Rumbling Bald Resort consents to other uses.

The proposed project was previously identified in the 1993 Lake Lure/Chimney Rock Thoroughfare Plan, which was never adopted. The need to facilitate connectivity was identified in the Transportation/Circulation Section of the 2007-2027 Lake Lure Comprehensive Plan⁸.

Other Improvements

The following facilities within Lake Lure and Chimney Rock Village do not have capacity issues, but are recommended for improvement to improve mobility, safety and/or to accommodate bicycles. Some of the recommended improvements are on local roads and are included in the CTP in an effort to integrate improvements from the 2012 Lake Lure Town Center Master Plan (Phase I) and the MSTA report recommendations with the CTP. Implementation of the proposed projects should be coordinated through NCDOT's Highway Division 13 office.

⁸ To view this plan, go to: <http://www.townoflakelure.com/2007-2027-comprehensive-plan.php>.

NC 9, Local ID: RUTH0002-H

NC 9 from US 64/74A to Polk County currently has two 10 foot lanes. There is currently an Ingle located off of NC 9 which is vital to the community. This area continues to grow with the new private school and public library, along with a new medical complex, being constructed off NC 9. The CTP recommendation is to widen the road to 11 foot lanes with 4 foot paved shoulders to accommodate bicyclists. Sidewalks are recommended from Girl Scout Camp Road to Island Creek Road (SR 1185).

Arcade Street, Local ID: RUTH0003-H

Arcade Street currently has one lane and is a local road within the town center. This facility is envisioned to serve internal multi-modal traffic circulation. To encourage more biking and walking, it is recommended to widen this facility to two 11 foot lanes with 4 foot paved shoulders, a grassy buffer and sidewalks. A speed limit of 25 mph is recommended.

Island Creek Road (SR 1185), Local ID: RUTH0004-H

Island Creek Road (SR 1185) is a two lane minor thoroughfare with 10 foot lanes from NC 9 to US 64/74A. The recommendation is to widen the road from 10 foot lanes to 11 foot lanes with 4 foot paved shoulders.

Proctor Road (C Avenue), Local ID: RUTH0006-H

Proctor Road (C Avenue) currently has one lane and is a local road. It is recommended to widen and extend the existing facility to a two lane minor thoroughfare with 11 foot lanes and 4 foot paved shoulders from Arcade Street to the proposed Lake Lure Parkway (RUTH0001-H).

PUBLIC TRANSPORTATION & RAIL

The Public Transportation and Rail elements of the CTP are shown in Figure 1, Sheet 3. The following recommendations were identified during the development of the CTP and will help achieve the CTP goals of creating a choice of transportation modes and coordinating multi-modal routes. There is currently no public transportation in Lake Lure or Chimney Rock Village; however, a private transit system is desired. Chimney Rock State Park has a desire to have a transit circulatory route for their visitors as well, which is included in the 2011 Chimney Rock State Park Master Plan⁹ as the Hickory Nut Gorge Transit Circulator. Additionally, it is recommended to use existing and future parking lots as park-and-ride lots throughout both towns for transit. Project proposals are listed below:

Proposed Transit Route, Local ID: RUTH0001-T

The proposed transit route will utilize the following facilities:

- US 64/74A from Terrace Drive (SR 1304) to Bills Creek Road (SR 1008)

⁹ To view this plan, go to: <http://www.ncparks.gov/About/plans/master/main.php>.

- Bills Creek Road (SR 1300) from US 64/74A to Buffalo Creek Road (SR 1306)
- Boys Camp Road from US 64/74A to Bald Hill Court
- Buffalo Creek Road (SR 1306) from Bills Creek Road (SR 1008) to Buffalo Shoals Road (SR 1314)
- Buffalo Shoals Road (SR 1314) from Buffalo Creek Road (SR 1306) to Chilly Creek Lane

The following park-and-ride lots are recommended to serve locals and tourists along the proposed transit route. Additionally, the intersection of US 64/74A and Bills Creek Road (SR 1008) is recommended as a pick-up/transit stop location.

- **RUTH0002-T:** Existing parking lot at the intersection of Terrace Drive and US 64/74A
- **RUTH0003-T:** Existing unpaved parking lot on Boys Camp Road
- **RUTH0004-T:** Existing municipal building center parking lot on US 64/74A near Marina Drive
- **RUTH0005-T:** Existing Ingles parking lot at the intersection of NC 9 and Girls Scout Camp Road
- **RUTH0006-T:** Future parking lot east of NC 9, across from Girls Scout Camp Road
- **RUTH0007-T:** Existing parking lot at the intersection of Buffalo Creek Road (SR 1306) and Buffalo Shoals Road (SR 1314)
- **RUTH0008-T:** A new park-and-ride lot is recommended at the intersection of Buffalo Creek Road (SR 1306) and Redwing Road to serve the locals and tourists.

The proposed transit recommendations meet several goals and objectives from the CTP Core Committee:

- ❖ *Goal: Develop a user friendly, multi-modal transportation system that is efficient and seamless.*
 - *Objective: Provide limited transit/tram/shuttle service during peak season and special events*
 - *Objective: Multi-modal connection (including transit) between key destinations: Lake Lure Town Center, Chimney Rock Village, Chimney Rock State Park entrances (Boys Camp Road and US 64/74A).*
 - *Objective: Shuttles from established parking areas to town centers.*
- ❖ *Goal: Improve mobility within the area by providing alternative transportation services.*
 - *Objective: Minimize car trips within Lake Lure and Chimney Rock Village.*

BICYCLE

The Bicycle element of the CTP is shown in Figure 1, Sheet 4. The following routes identified by the CTP committee will help achieve the CTP goals of creating a choice of transportation modes and developing and maintaining a transportation system that runs smoothly and timely. Some areas include bicycle and pedestrian facilities and are recommended as multi-use paths.

US 64/74A, Local ID: RUTH0001-B

A bicycle route is recommended along US 64/74A from Jack London Road to the eastern planning boundary just east of Bills Creek Road (SR 1008). This section of US 64/74A has two 12 foot lanes and a speed limit of 35 mph. Five foot paved shoulders are recommended to accommodate bicyclists.

NC 9, Local ID: RUTH0002-H

A bicycle route is recommended along NC 9 from US 64/74A to Polk County. The existing cross section is two 10 foot lanes with a speed limit of 30 mph. The CTP proposes widening the road to a 22 foot cross section (11 feet per lane) with 4 foot paved shoulders to accommodate bicyclists. A new school and a public library will be located in this area.

Boys Camp Road, Local ID: RUTH0002-B

A bicycle route is recommended along Boys Camp Road from US 64/74A to Bald Hill Court. This is an unpaved local/town road with one 8 foot lane. The town would like to add bicycle accommodations along this facility. NCDOT recommends the town upgrade the facility to a two lane cross section with paved shoulders to accommodate bicyclists.

Bills Creek Road (SR 1008), Local ID: RUTH0003-B

A bicycle route is recommended along Bills Creek Road (SR 1008) from US 64/74A to the eastern planning boundary just east of Buffalo Creek Road (SR 1306). The existing facility has a cross section of two 10 foot lanes with a speed limit of 25 mph. Four foot paved shoulders are recommended to accommodate bicyclists.

Buffalo Shoals Road (SR 1314), Local ID: RUTH0004-B

A bicycle route is recommended along Buffalo Shoals Road (SR 1314) from the northern planning boundary to US 64/74A. The existing facility has a cross section of two 10 foot lanes with a speed limit of 25 mph. Four foot paved shoulders are recommended to accommodate bicyclists.

Chimney Rock Park Road, Local ID: RUTH0005-B

A bicycle route is recommended along Chimney Rock Park Road from US 64/74A for approximately one mile to the existing parking area for Chimney Rock State Park. Currently, this facility is used as the entrance and exit to the park. According to the 2011 Chimney Rock State Park Master Plan¹⁰, the current entrance/exit to the park in

¹⁰ To view this plan, go to: <http://www.ncparks.gov/About/plans/master/main.php>.

Chimney Rock Village will serve as an outbound (exit) roadway from the Meadows to Chimney Rock Village.

Island Creek (SR 1185) Road, Local ID: RUTH0004-H

A bicycle route is recommended along Island Creek Road (SR 1185) from NC 9 to US 64/74A. The existing facility has a cross section of two 10 foot lanes with a speed limit of 30 mph. The CTP proposes widening this road to a 22 foot cross section (11 feet per lane) with a minimum of 4 foot paved shoulders to accommodate bicyclists.

The proposed bicycle recommendations meet several goals and objectives developed for this CTP, which include:

- ❖ *Goal: Have a safe transportation system*
 - *Separate bicycles from motor vehicles whenever possible.*
- ❖ *Goal: Develop a user friendly, multi-modal transportation system that is efficient and seamless.*
 - *Objective: Multi-modal connection (including bicycle) between key destinations: Lake Lure Town Center, Chimney Rock Village, Chimney Rock State Park entrances (Boys Camp Road and US 64/74A).*

PEDESTRIAN

The Pedestrian element of the CTP is shown in Figure 1, Sheet 5. Lake Lure and Chimney Rock Village have a vision to provide sidewalks everywhere possible to encourage walking, especially constructing sidewalks along US 64/74 to connect both towns. The following routes identified by the CTP committee will help achieve the CTP goals of creating a choice of transportation modes and developing and maintaining a transportation system that runs smoothly and timely. Some areas include bicycle and pedestrian facilities and are recommended as multi-use paths.

NC 9, Local ID: RUTH0002-H

There are plans to relocate the existing charter school to a location east of NC 9 and the Ingles Grocery Store, at the intersection of NC 9 and Island Creek Road (SR 1185). For this reason, sidewalks are recommended along NC 9 from Girl Scout Camp Road to Island Creek Road (SR 1185).

Girls Scout Camp Road, Local ID: RUTH0001-P

Sidewalks are recommended along Girls Scout Camp Road from NC 9 to 0.1 miles west of NC 9 at the proposed off road pedestrian path.

The recommended pedestrian improvements meet several goals and objectives from the CTP committee, which include:

- ❖ *Goal: Have a safe transportation system*
 - *Separate pedestrians from motor vehicles whenever possible.*

- ❖ *Goal: Develop a user friendly, multi-modal transportation system that is efficient and seamless.*
 - *Objective: Multi-modal connection (including pedestrian) between key destinations: Lake Lure Town Center, Chimney Rock Village, Chimney Rock State Park entrances (Boys Camp Road and US 64/74A).*
 - *Objective: Sidewalks from established parking areas to town centers.*
- ❖ *Goal: A transportation network that meets the needs of the community and supports proposed land use patterns:*
 - *Provide sidewalks along US 64/74 in the vicinity of the town centers.*
 - *Provide sidewalks within 1.5 miles of schools.*

MULTI-USE PATH

The CTP recommends multi-use paths in the following locations:

US 64/74A, Local ID: RUTH0001-M

A multiuse path is recommended along US 64/74A from Henderson County to Boys Camp Road and from Jack London Road to Washburn Road. There are currently sidewalks and shoulders on US 64/74A from Boys Camp Road to Jack London Road that accommodate bicyclists and pedestrians. Additionally, the portion on US 64/74A from Southside Drive to the eastern edge of the Flowering Bridge (approximate length of 3200 feet) is in the planning and design stage by the local governments.

Buffalo Creek Road (SR 1306), Local ID: RUTH0002-M

A multi-use path is recommended along Buffalo Creek Road (SR 1306) from Bills Creek Road (SR 1008) to Buffalo Shoals Road (SR 1314).

Local ID: RUTH0003-M

A multi-use path is recommended south of US 64/74A from Chimney Rock Park Road to C Avenue (Proctor Road). The total distance for this path would be 0.5 miles.

Local ID: RUTH0004-M

A multi-use path is recommended from Boys Camp Road to Quail Ridge Boulevard at Buffalo Shoals Road (SR 1314). The total distance for this multi-purpose path is 1.3 miles.

APPENDICES

Appendix A Resources and Contacts

Local Planning Organization

Isothermal Rural Planning Organization (<http://www.regionc.org/IPDC/>)

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

P.O. Box 841

Rutherford, NC 28139

(828) 351-2331

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)

<http://www.ncdot.gov/contact/>

Secretary of Transportation (<http://www.ncdot.org/about/leadership/secretary.html>)

1501 Mail Service Center

Raleigh, NC 27699-1501

(919) 707-2800

Board of Transportation (<http://www.ncdot.gov/about/board/>)

1501 Mail Service Center

Raleigh, NC 27699-1501

(919) 707-2820

Highway Division 13 (<https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx>)

55 Orange Street

Asheville, NC 28801

(828) 251-6171

Contact the:

- Division Engineer with general questions concerning NCDOT activities within each Division and for information on Small Urban Funds.
- Division Planning Engineer with questions on long range and local planning initiatives.
- 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.

Contact following NCDOT divisions and units¹ for:

<i>Transportation Planning Branch (TPB)</i>	<i>Information on long-range multi-modal planning services. 1554 Mail Service Center Raleigh, NC 27699 (919) 707-0900</i>
<i>Strategic Prioritization Office</i>	<i>Information concerning prioritization of transportation projects. 1501 Mail Service Center Raleigh, NC 27699 (919) 707-4740</i>
<i>Project Development & Environmental Analysis (PDEA)</i>	<i>Information on environmental studies for projects that are included in the TIP. 1548 Mail Service Center Raleigh, NC 27699 (919) 707-6000</i>
<i>State Asset Management Unit</i>	<i>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 (919) 707-2500</i>
<i>Program Development Branch</i>	<i>Information concerning Roadway Official Corridor Maps, Feasibility Studies and the Transportation Improvement Program (TIP). 1542 Mail Service Center Raleigh, NC 27699 (919) 707-4610</i>
<i>Public Transportation Division</i>	<i>Information on public transit systems. 1550 Mail Service Center Raleigh, NC 27699 (919) 707-4670</i>
<i>Rail Division</i>	<i>Rail information throughout the state. 1553 Mail Service Center Raleigh, NC 27699 (919) 707-4700</i>
<i>Division of Bicycle and Pedestrian Transportation</i>	<i>Bicycle and pedestrian transportation information throughout the state. 1552 Mail Service Center Raleigh, NC 27699 (919) 707-2600</i>
<i>Structures Management Unit</i>	<i>Information on bridge management throughout the state. 1581 Mail Service Center Raleigh, NC 27699 (919) 707-6400</i>
<i>Roadway Design Unit</i>	<i>Information regarding design plans and proposals for road and bridge projects throughout the state. 1582 Mail Service Center Raleigh, NC 27699 (919) 707-6200</i>
<i>Transportation Mobility and Safety Division</i>	<i>Information regarding crash data throughout the state. 1561 Mail Service Center Raleigh, NC 27699 (919) 773-2800</i>

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/cd>

¹ Unit websites are hyperlinked above and can also be accessed at <https://connect.ncdot.gov/Pages/default.aspx>.

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 the following NCDOT Facility Types used for CTP classifications, visit: <https://connect.ncdot.gov/projects/planning/Pages/StrategicHighwayCorridors.aspx>

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

Revised: October 4, 2012

❖ **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

Revised: October 4, 2012

improvements. Improvements do not include re-paving or other maintenance activities but may include: filling in gaps, widening sidewalks, or meeting ADA (Americans with Disabilities Act) requirements.

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

Appendix C

CTP Inventory and Recommendations

Assumptions/ Notes:

- **Local ID:** This Local ID is the same as the one used for the Prioritization Project Submittal Tool. If a TIP project number exists it is listed as the ID. Otherwise, the following system is used to create a code for each recommended improvement: the first 4 letters of the county name is combined with a 4 digit unique numerical code followed by '-H' for highway, '-T' for public transportation, '-R' for rail, '-B' for bicycle, '-M' for multi-use paths, or '-P' for pedestrian modes. If a different code is used along a route it indicates separate projects will probably be requested. Also, upper case alphabetic characters (i.e. 'A', 'B', or 'C') are included after the numeric portion of the code if it is anticipated that project segmentation or phasing will be recommended.
- **Jurisdiction:** Jurisdictions listed are based on municipal limits, county boundaries, and MPO Metropolitan Planning Area Boundaries (MAB), as applicable.
- **Existing Cross-Section:** Listed under '(ft)' is the approximate width of the roadway from edge of pavement to edge of pavement. Listed under 'lanes' is the total number of lanes, with the letter 'D' if the facility is divided.
- **Existing ROW:** The estimated existing right-of-way is based on NCDOT's road characteristics shapefile and field surveys. 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 NCLOS program, as documented in Chapter 1.
- **Existing and Proposed Volume,** given in vehicles per day (vpd), are estimates only based on a systems-level analysis. The '2040 Volume E+C' is an estimate of the volume in 2012 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 Volume with CTP' is an estimate of the volume in 2040 with all proposed CTP improvements assumed to be in place. The '2040 Volume 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 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 Multimodal Investment Network (NCMIN). Abbreviations are Sta= statewide tier, Reg= regional tier, Sub= subregional tier.
- **Proposals for 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, P= pedestrian and M= multi-use path).

Table 3 - CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																			
Local ID	Facility	Section		Jurisdiction	Dist. (mi)	2012 Existing System					2040 Proposed System					CTP Classification	Tier	Proposals for Other Modes	
		From	To			Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2012 Volume	2040 Volume E+C	2040 Volume with CTP	Proposed Capacity (vpd)	Cross-Section				ROW (ft)
	US 64/US 74A/NC 9	Henderson County	0.2 mile west of Terrace Dr (SR 1300)	Chimney Rock	1.7	24	2	60	35	11000	2200	2200	2200	ADQ	ADQ	ADQ	Maj	Reg	M
	US 64/US 74A/NC 9	0.2 mile west of Terrace Dr (SR 1300)	Southside Drive (SR 1190)	Chimney Rock	0.4	24	2	24	20	6800	2000	2500	2500	ADQ	ADQ	60	Maj	Reg	M, T
	US 64/US 74A/NC 9	0.14 mile east of Southside Dr (SR 1190)	Chimney Rock Town Limits	Chimney Rock	0.6	24	2	60	35	11000	2000	2500	2500	ADQ	ADQ	ADQ	Maj	Reg	M, T
	US 64/US 74A/NC 9	Chimney Rock Town Limits	0.49 mile south of Boys Camp Road	Lake Lure	0.5	24	2	60	35	11000	2000	2500	2500	ADQ	ADQ	ADQ	Maj	Reg	M, T
	US 64/US 74A/NC 9	0.49 mile south of Boys Camp Road	0.79 mile south of Boys Camp Road	Lake Lure	0.3	24	2	92	25	11000	2000	2500	2500	ADQ	ADQ	ADQ	Maj	Reg	M, T
	US 64/US 74A/NC 9	0.79 mile south of Boys Camp Road	NC 9	Lake Lure	4.0	24	2	60	35	11000	2500	2500	2500	ADQ	ADQ	ADQ	Maj	Reg	B, M, T
	US 64/US 74A	NC 9	Justice Dr (Lake Lure Town Limits)	Lake Lure	1.7	24	2	50	35	11000	1800	3100	3100	ADQ	ADQ	60	Maj	Reg	B, T
	US 64/US 74A	Justice Dr (Lake Lure Town Limits)	Planning Area Boundary	Rutherford County	1.2	24	2	50	45	11000	1800	3100	3100	ADQ	ADQ	60	Maj	Reg	B, T
RUTH0002-H	NC 9	US 64/US 74A	Girl Scout Camp Road	Lake Lure	0.4	20	2	60	35	11000	1800	4500	4500	ADQ	2B	ADQ	Maj	Reg	B
RUTH0002-H	NC 9	Girl Scout Camp Road	Island Creek Road	Lake Lure	0.4	20	2	60	35	11000	2200	2200	2200	ADQ	2B	ADQ	Maj	Reg	B, P
RUTH0002-H	NC 9	Island Creek Road	Polk County	Rutherford County	1.7	20	2	60	35	11000	2200	2200	2200	ADQ	2B	ADQ	Maj	Reg	B
RUTH0003-H	Arcade Street	US 64	Bottomless Pools Drive/US 64/74A	Lake Lure	0.1	12	1	40	15	-	-	-	-	9200	2F	60	Min	-	-
	Bills Creek Rd (SR 1008)	US 64/US 74A	Planning Area Boundary	Rutherford County	2.9	20	2	30	35	9400	-	-	-	ADQ	ADQ	50	Min	Sub	B, T
	Boys Camp Road	US 64/US 74A/NC 9	Bald Hill Ct	Lake Lure	0.7	16	2	-	25	9800	2000	2500	2500	9800	ADQ	ADQ	Min	-	B, T
	Buffalo Creek Rd (SR 1306)	Bills Creek Rd (SR 1008)	Buffalo Shoals Rd (SR 1314)	Lake Lure	2.4	18	2	30	35	9500	1500	1500	1500	ADQ	ADQ	60	Min	Sub	M, T
	Buffalo Shoals Road (SR 1314)	US 64	Lake Lure Town Limits	Lake Lure	5.8	18	2	60	35	9500	1500	1500	1500	9500	ADQ	ADQ	Min	Sub	B, T
	Buffalo Shoals Road (SR 1314)	Lake Lure Town Limits	Planning Area Boundary	Rutherford County	0.5	18	2	60	35	9500	1500	1500	1500	9500	ADQ	ADQ	Min	Sub	B
	Carsons Way	Boys Camp Rd	Old Sand Branch Drive	Lake Lure	1.9	18	2	30	25	-	-	-	-	ADQ	ADQ	ADQ	Min	-	B
RUTH0004-H	Island Creek Road (SR 1185)	NC 9	East Chimney Rock Town Limit	Lake Lure	0.6	20	2	40	30	9800	200	300	300	ADQ	2B	50	Min	Sub	B

HIGHWAY

Local ID	Facility	Section		Jurisdiction	Dist. (mi)	2012 Existing System						2040 Proposed System					CTP Classification	Tier	Proposals for Other Modes
		From	To			Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2012 Volume	2040 Volume E+C	2040 Volume with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)			
RUTH0004-H	Island Creek Road (SR 1185)	East Chimney Rock Town Limit	US 64/US 74A	Rutherford County	1.3	20	2	40	35	9800	200	300	300	ADQ	2B	50	Min	Sub	B
RUTH0001-H	Lake Lure Parkway	Aracade (A) St	US 64/74A	Lake Lure	0.9	-	-	-	-	-	-	2400	2400	11000	2B	50	Maj	Reg	-
RUTH0005-H	Old Sand Branch Road	Carsons Road	1700' North on Old Sand Branch	Lake Lure	0.3	20	2	30	25	-	-	-	-	-	2C	50	Min	-	M
RUTH0006-H	Proctor Road	Arcade Street	Proposed Proctor Road Connection	Lake Lure	0.1	12	1	40	15	-	-	-	-	-	2F	60	Min	-	-
RUTH0006-H	Proctor Road Extentsion	Proctor Road	Lake Lure Parkway	Lake Lure	0.1	-	-	-	-	-	-	-	-	-	2F	60	Min	-	-
	Terrace Drive (SR 1300)	US 64/US 74A/NC 9	US 64/US 74A/NC 9	Chimney Rock	0.2	8	1 to 2	-	35	9300	2000	2500	2500	ADQ	ADQ	ADQ	Min	Sub	-

PUBLIC TRANSPORTATION AND RAIL

PUBLIC TRANSPORTATION								
Local ID	Facility/ Route	Section (From - To)	Speed Limit (mph)	Distance (mi)	Existing System		Proposed System	
					Type		Type	
RUTH0001-T	US 64 /US 74	Terrace Drive - Bills Creek Road	20-35	5.82	-	-	Shuttle	-
RUTH0001-T	Boys Camp Road	US 64 - Bald Hill Ct	25	2.4	-	-	Shuttle	-
RUTH0001-T	Bills Creek Rd	US 64 - Buffalo Creek Rd	35	2.9	-	-	Shuttle	-
RUTH0001-T	Buffalo Creek Rd	Bills Creek Rd - Buffalo Shoals Rd	35	2.4	-	-	Shuttle	-
RUTH0001-T	Buffalo Shoals Rd	Buffalo Creek Rd - Chilly Creek Ln	35	1.4	-	-	Shuttle	-
Park-and-Ride Lots								
LocalID	Lot Name/Description		Existing Lot		Proposed Lot		Other Modes	
RUTH0002-T	Parking Lot on Terrace Drive (SR 1300)		YES		-		-	
RUTH0003-T	Unpaved Parking Lot on Boys Camp Road		YES		-		-	
RUTH0004-T	Municipal Building Center Parking Lot		YES		-		-	
RUTH0005-T	Ingles Parking Lot		YES		-		-	
RUTH0006-T	Future Parking Lot East of NC 9		-		YES		-	
RUTH0007-T	Parking Lot at Intersection of SR 1306 and SR 1314		YES		-		-	
RUTH0008-T	Future Park-and-Ride Lot at Intersection of SR 1306 and Redwing Road		-		YES		-	

BICYCLE AND PEDESTRIAN

BICYCLE								
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Cross-Section		Type	Cross-Section	
				(ft)	lanes			
RUTH0001-B	US 64	Jack London Rd - Eastern Planning Boundary	5	24'	2	On Road	2A	T
RUTH0002-H	NC 9	US 64 - Polk County	2.5	20'	2	On Road	2B	H
RUTH0002-B	Boys Camp Rd	US 64 - Bald Hill Ct	0.7	8'-16'	1 & 2	On Road	2C	T
RUTH0003-B	Bills Creek Rd	US 64 - Eastern Planning Boundary	2.9	20'	2	On Road	2C	T
RUTH0004-B	Buffalo Shoals Rd	Northern Planning Boundary - US 64	6.3	18'	2	On Road	2C	T
RUTH0005-B	Chimney Rock Park Rd	US 64 - Existing Parking Area	1.0	-	-	On Road	2C	-
RUTH0004-H	Island Creek Rd	NC 9 - US 64	1.9	20'	2	On Road	2B	H

PEDESTRIAN								
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Type	Side of Street	Type	Side of Street	
RUTH0002-H	NC 9	NC 9 - Girl Scout Camp Road	0.2	-	-	On Road	Both	H
RUTH0001-P	Girl's Scout Camp Road	NC 9 - Girl Scout Camp Road	0.06	-	-	On Road	Both	-

MULTI-USE PATH								
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Side of Street	Cross-Section	Side of Street	Cross-Section	
RUTH0001-M	US 64	Henderson County - Boys Camp Road	2.5	-	-	north, south	MB	T
RUTH0001-M	US 64	Jack London Rd - Washburn Road	0.4	-	-	north, south	MB	T
RUTH0002-M	Buffalo Creek Rd	Bills Creek Rd - Buffalo Shoals Rd	2.4	-	-	north, south	MB	T
RUTH0003-M	Proposed Multi-use Path	Chimney Rock Park Rd - Proctor Rd	0.5	-	-	-	MB	-
RUTH0004-M	Proposed Multi-use Path	Boys Camp Rd - Quail Ridge Blvd	1.3	-	-	-	MB	-

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:

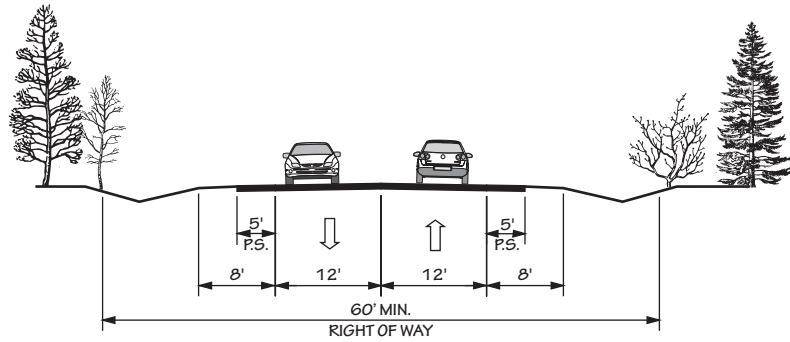
- ❖ roadways which may require widening after the current planning period,
- ❖ roadways which are borderline adequate and accelerated traffic growth could render them deficient,
- ❖ roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment,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

¹ For more information on Complete Streets, go to: <http://www.completestreetsnc.org/>.

FIGURE 9 TYPICAL HIGHWAY CROSS SECTIONS 2 LANES

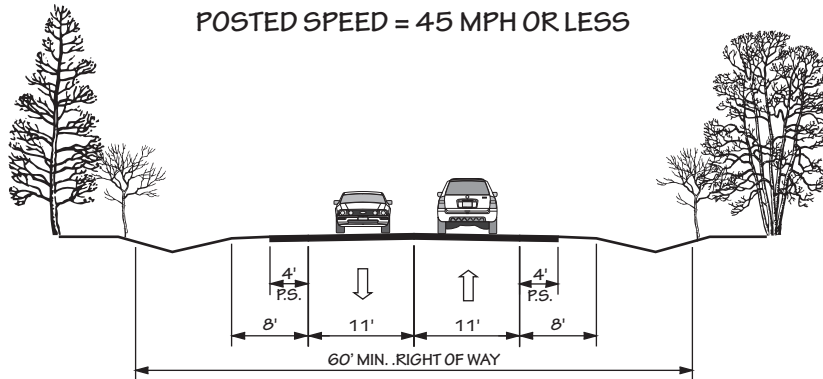
2 A

WIDE PAVED SHOULDERS
POSTED SPEED = 55 MPH



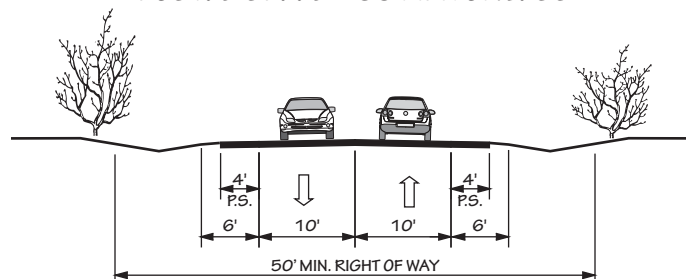
2 B

WIDE PAVED SHOULDERS
POSTED SPEED = 45 MPH OR LESS



2 C

WIDE PAVED SHOULDERS
POSTED SPEED = 35 MPH OR LESS

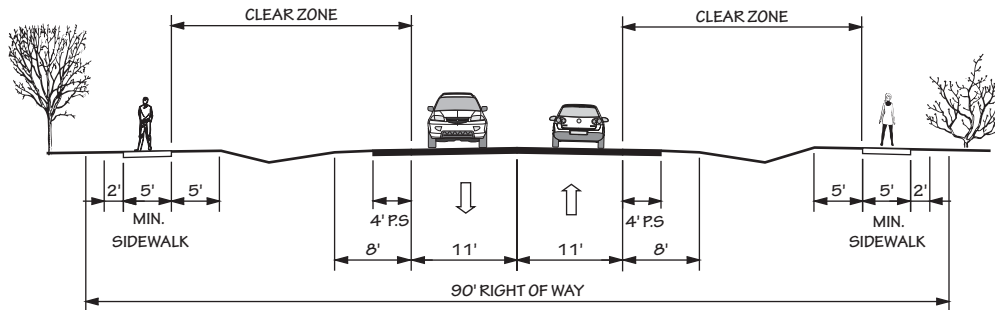


TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

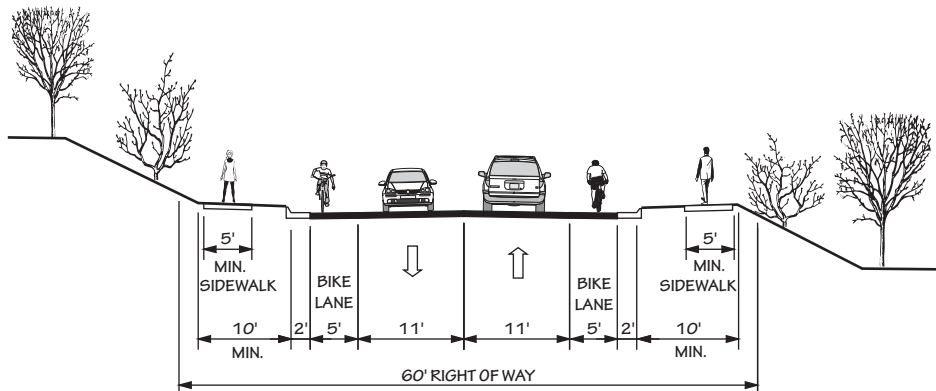
2 D

SIDEWALK PLACEMENT BEHIND A ROADWAY DITCH



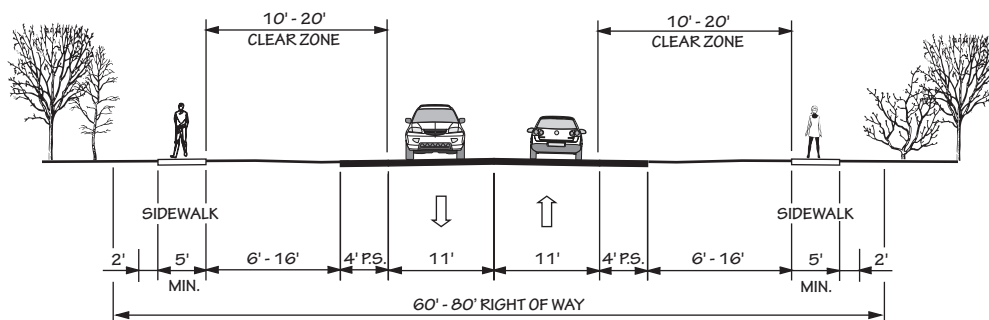
2 E

CURB AND GUTTER WITH BIKE LANES AND SIDEWALKS



2 F

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

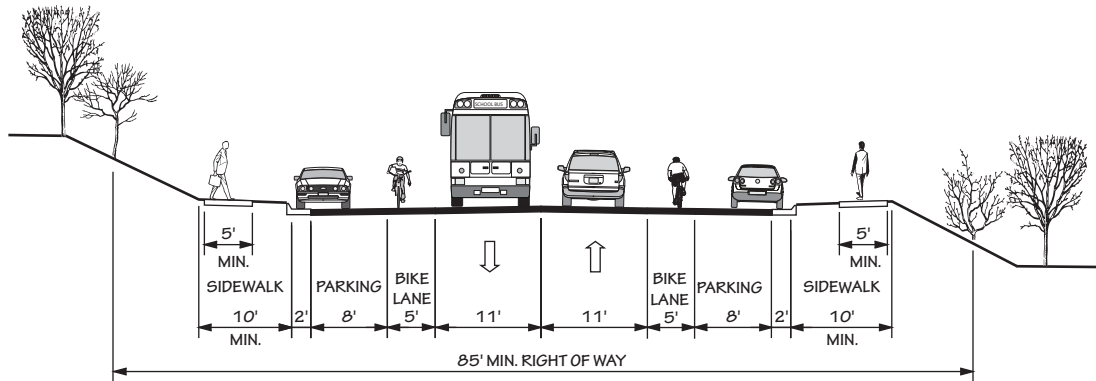


TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

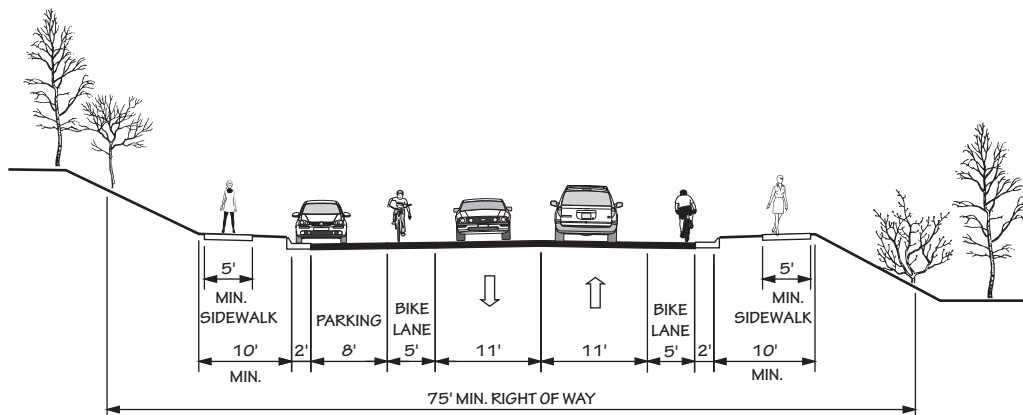
2 G

CURB & GUTTER - PARKING ON EACH SIDE



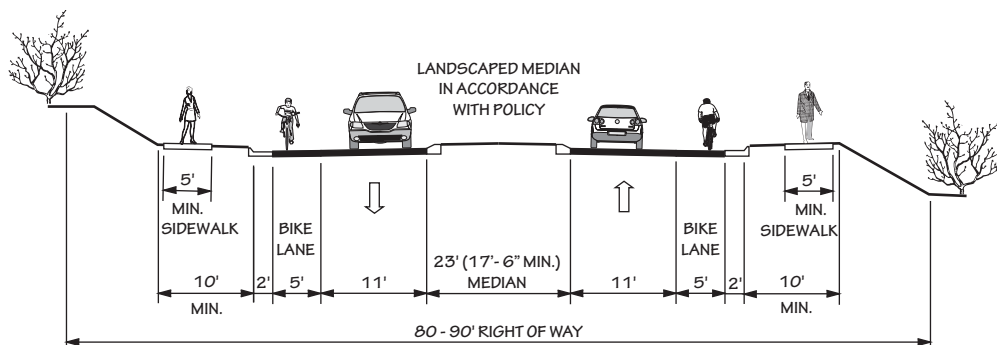
2 H

CURB & GUTTER - PARKING ON ONE SIDE



2 I

RAISED MEDIAN WITH CURB & GUTTER

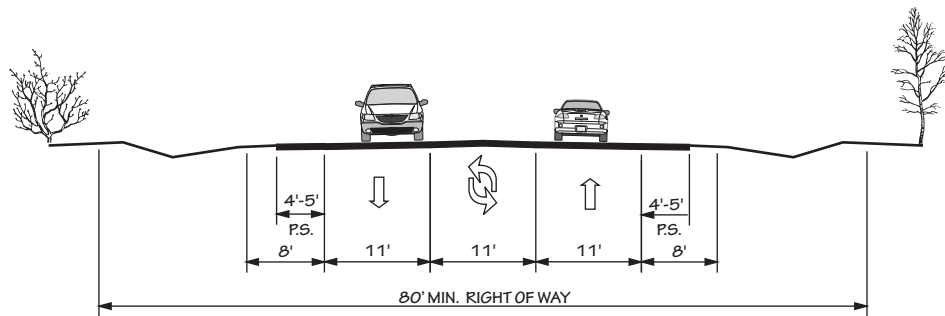


TYPICAL HIGHWAY CROSS SECTIONS

3 LANES

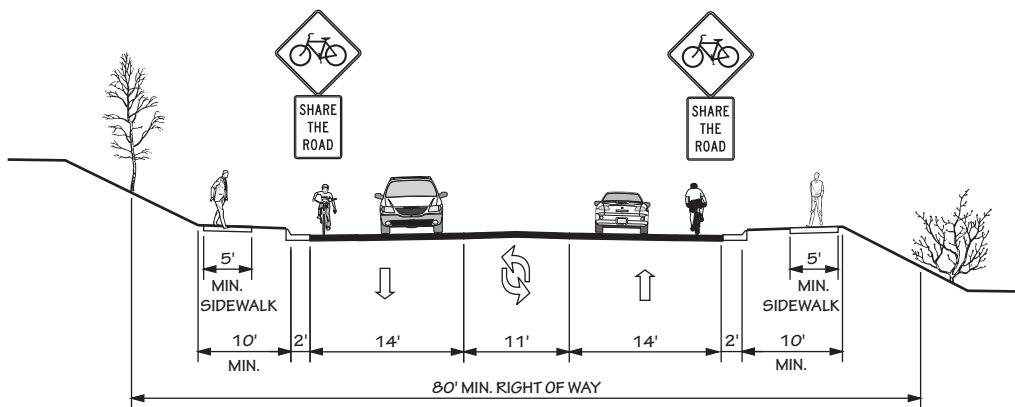
3 A

WIDE PAVED SHOULDERS



3 B

CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS

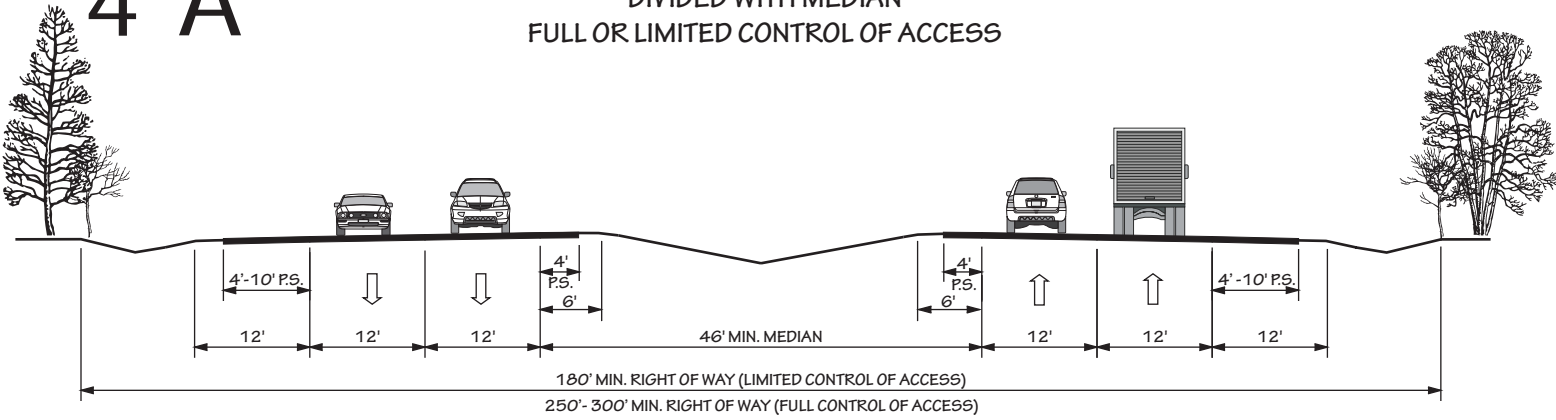


TYPICAL HIGHWAY CROSS SECTIONS

4 LANES

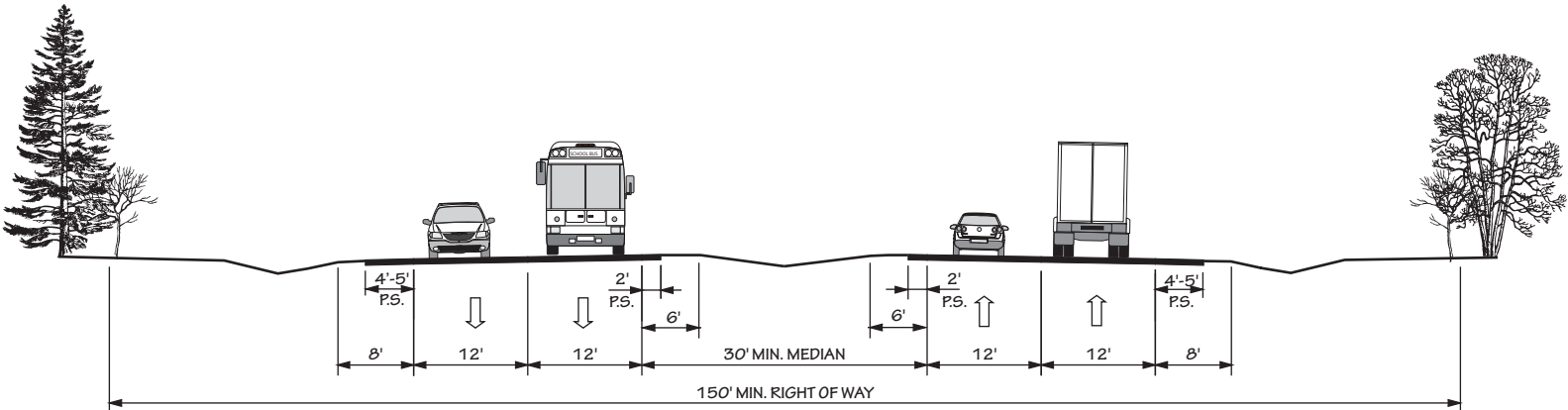
4 A

DIVIDED WITH MEDIAN
FULL OR LIMITED CONTROL OF ACCESS



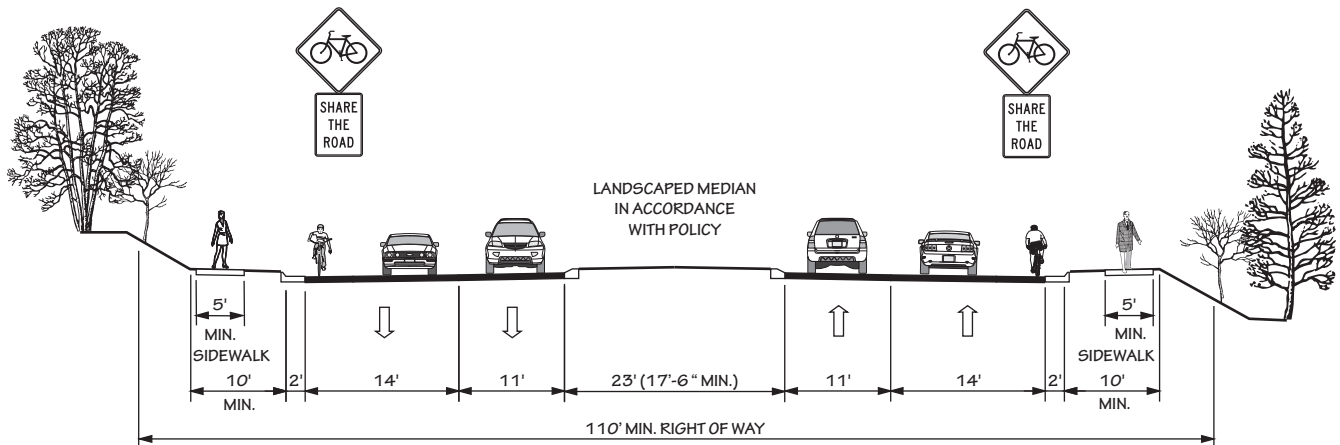
4 B

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



4 C

RAISED MEDIAN WITH WIDE OUTSIDE LANES AND SIDEWALKS

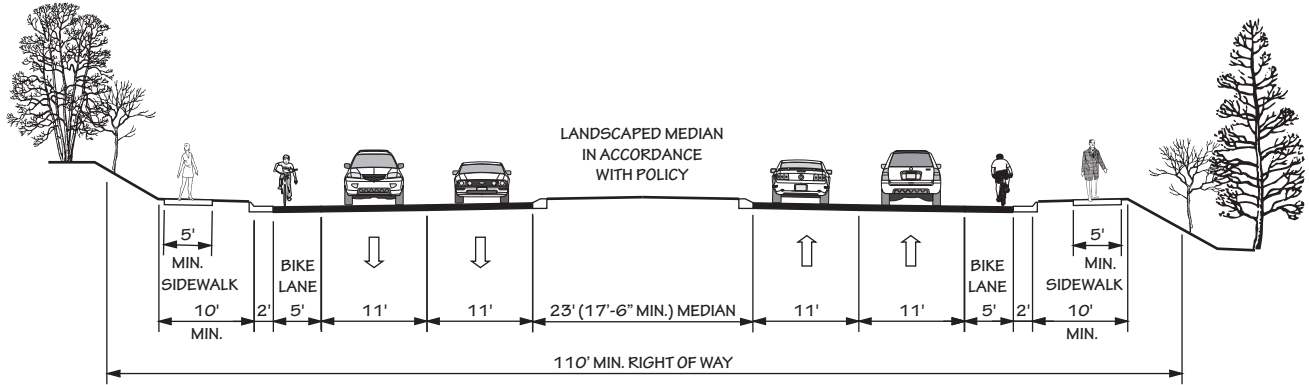


TYPICAL HIGHWAY CROSS SECTIONS

4 LANES

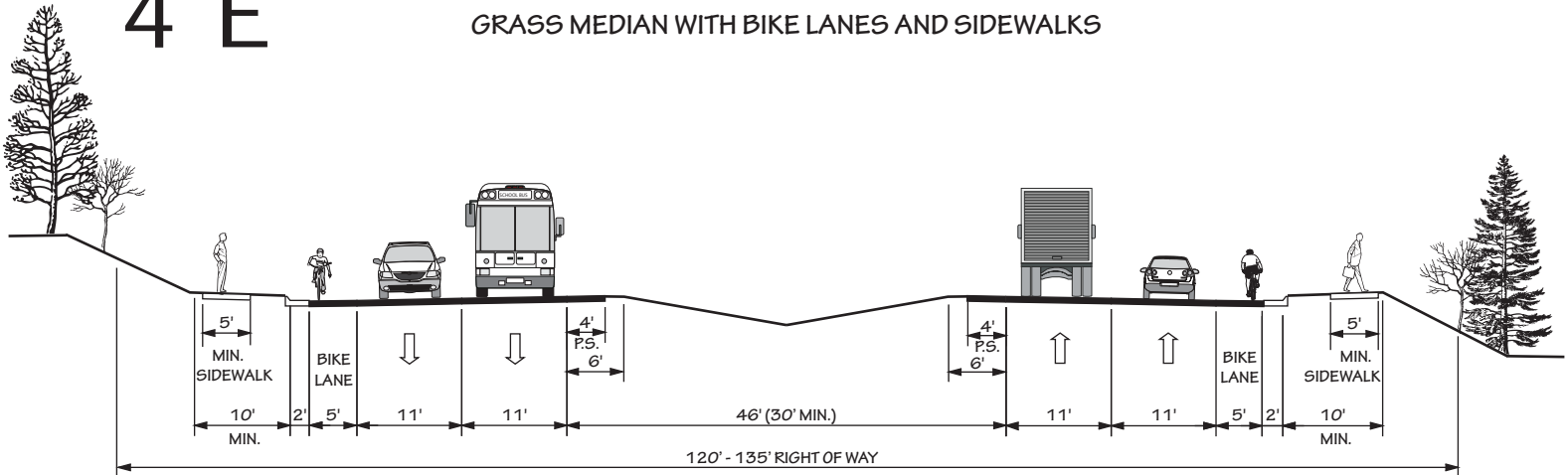
4 D

RAISED MEDIAN - CURB & GUTTER WITH BIKE LANES AND SIDEWALKS



4 E

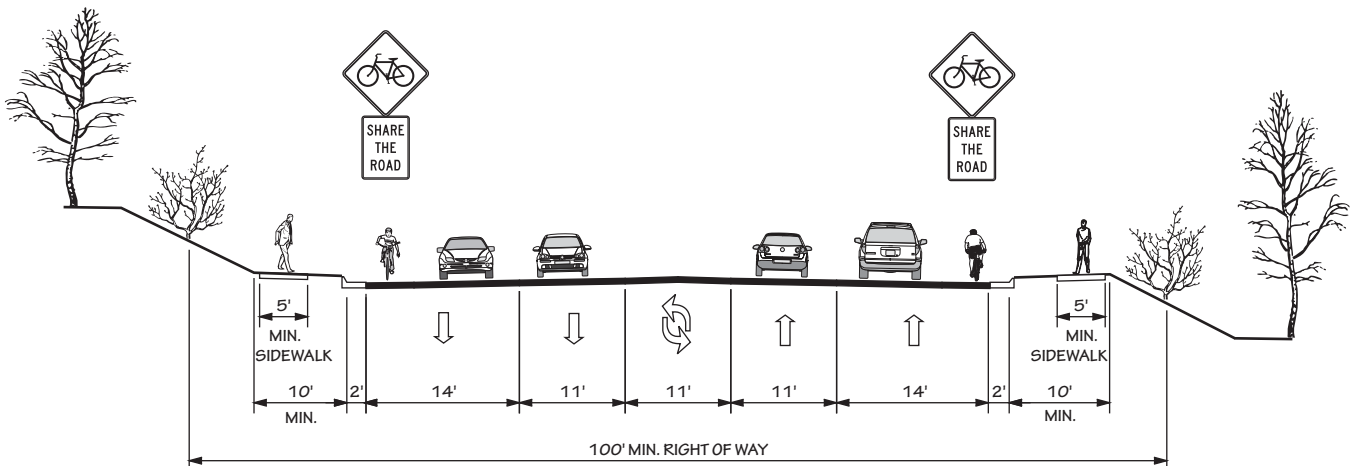
GRASS MEDIAN WITH BIKE LANES AND SIDEWALKS



5 LANES

5 A

WIDE OUTSIDE LANES

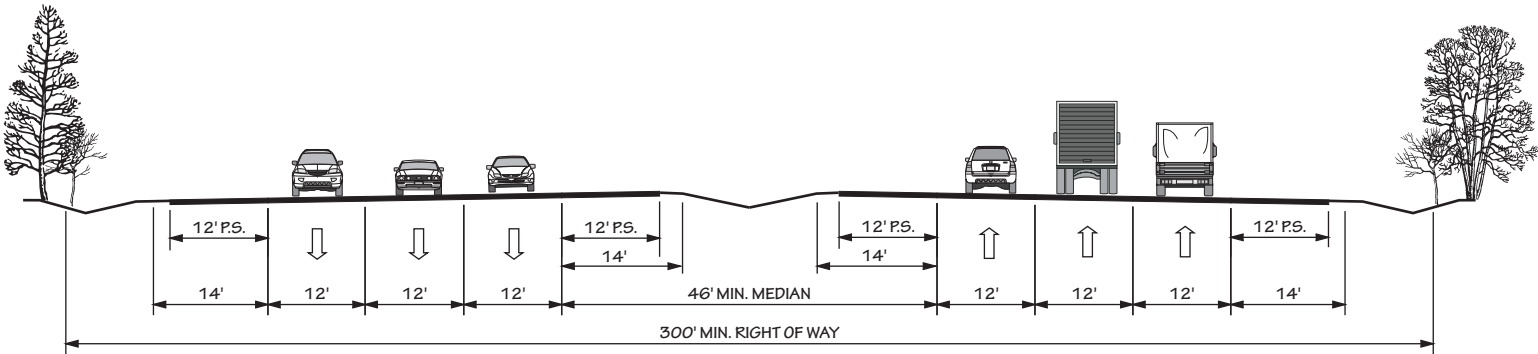


TYPICAL HIGHWAY CROSS SECTIONS

6 LANES

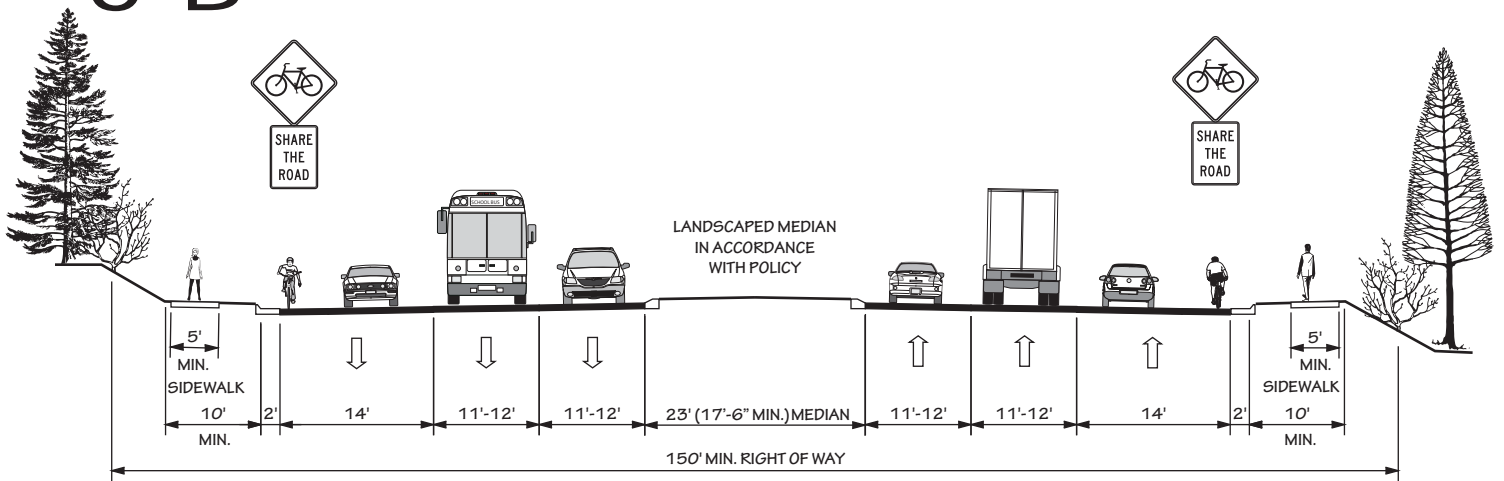
6 A

DIVIDED WITH GRASS MEDIAN



6 B

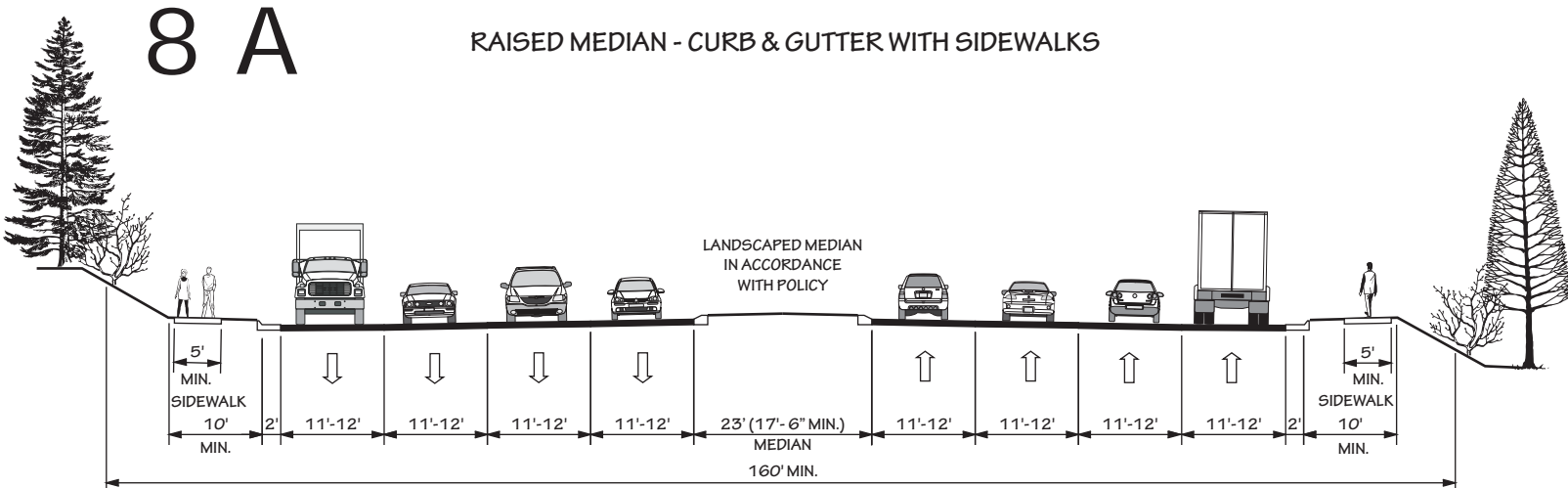
RAISED MEDIAN - CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS



8 LANES

8 A

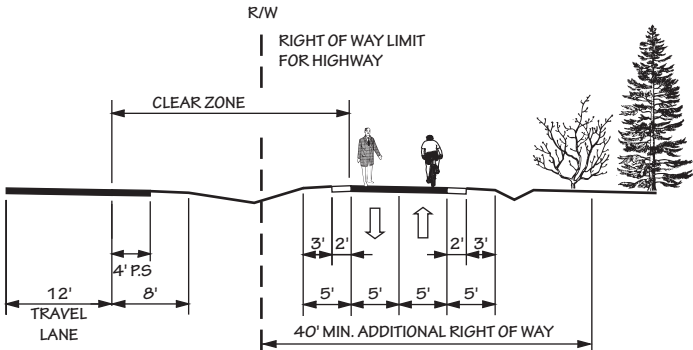
RAISED MEDIAN - CURB & GUTTER WITH SIDEWALKS



TYPICAL MULTI - USE PATH

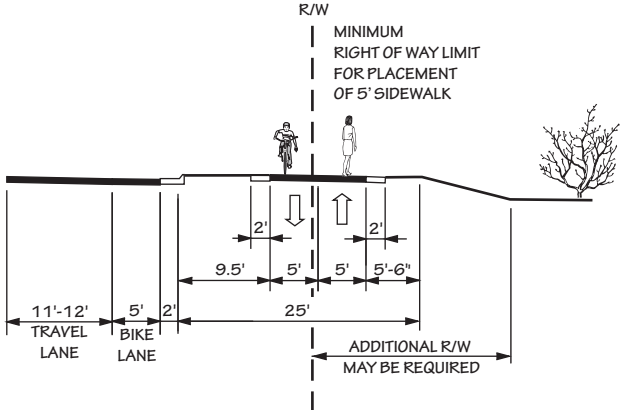
MULTI - USE PATH
ADJACENT TO RIGHT OF WAY OR SEPARATE PATHWAY

M A



MULTI - USE PATH ADJACENT TO CURB AND GUTTER

M B



Appendix E

Level of Service Definitions

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

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



LOS A



LOS B



LOS C



LOS D



LOS E



LOS F

Source: 2010 Highway Capacity Manual, Exhibit 11-4

Appendix F

Bridge Deficiency Assessment

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

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

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

A bridge is considered deficient if it is either structurally deficient (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 qualify for federal replacement funds. Additionally, the sufficiency rating must be less than 50% to qualify for replacement or less than 80% to qualify for rehabilitation under federal funding. Deficient bridges located on roads evaluated as a part of the CTP are listed in Table 4. For more details on deficient bridges within the planning area, contact the Structures Management Unit using the information in Appendix A.

Table 4 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	Local ID
52	US 64	Cane Creek	FO	
75	US 64/74	Island Creek	FO	
313	Southside Dr. (SR 1190)	Rocky Broad River	FO	
343	Buffalo Shoals Rd (SR 1314)	Buffalo Creek	FO	
628	Buffalo Shoals Rd (SR1306)	Lake Lure Dam and BPR River	FO & SD	

Appendix G

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 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 Generic Area CTP is given below.

- ❖ Bob Keith, Lake Lure Mayor
- ❖ Bob Cameron, Lake Lure Town Council
- ❖ Paula Jordan, Lake Lure Planning and Zoning (former chairperson)
- ❖ Shannon Baldwin, Lake Lure Community Development Director
- ❖ Chris Braund, Lake Lure Town Manager
- ❖ Barbara Meliski, Chimney Rock Village Mayor
- ❖ Bob Wald, Chimney Rock Village Mayor Pro Tem
- ❖ Amy Wald, Chimney Rock Village Community Development Association
- ❖ Bill Whitman, Chimney Rock Village Administrator
- ❖ Adrienne Wallace, Chimney Rock State Park Former Superintendent
- ❖ Mary Jaeger-Gale, Chimney Rock State Park General Manager
- ❖ James Ledgerwood, Rock State Park Superintendent
- ❖ Jerry Stensland, Rutherford County Recreational Planner
- ❖ Michelle Whitaker, Rutherford County Tourism Development Authority Executive Director
- ❖ Doug McNeal, PE, NCDOT Division 13 District Engineer

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.

Lake Lure and Chimney Rock Village CTP Vision Statement

Vision: Lake Lure and Chimney Rock Village have a safe, aesthetically pleasing, user friendly, integrated, and environmentally sensitive multi-modal transportation system for its community with regional connectivity that makes it easy for visitors to access the area and its attractions, and aids the economic progress of the area.

Goal: Have a safe transportation system.

Objective:

- *Separate bicycles and pedestrians from motor vehicles whenever possible.*
- *A second connection of Rambling Bald Resort area to the Village of Chimney Rock and Lake Lure Town Center for improved emergency service accessibility.*

Goal: Sustain an aesthetically pleasing, environmentally sensitive transportation system.

Objectives:

- *Preserve the natural environment of the area as much as possible during the implementation of projects.*
- *Aesthetically pleasing retaining/barrier walls, bridges, transportation projects that take into account the natural beauty of the area since much of the economy is based on tourism centered around the natural environment.*

Goal: Develop a user friendly, multi-modal transportation system that is efficient and seamless.

Objectives:

- *Provide limited transit/tram/shuttle service during peak season and special events by December 2020.*
- *Multi-modal connection (sidewalk, multi-use paths, transit) between key destinations: Lake Lure Town Center, Chimney Rock Village, Chimney Rock State Park entrances (Boys Camp Road and US 64/74A). Initial starting date is December 2017 and completion date is December 2030.*
- *Sidewalks / multi-use paths and shuttles from established parking areas to town centers.*

- *Provide sidewalks, multi-purpose paths or transit to the town centers in order to improve mobility along US 64/74A. A level of service E is acceptable during the highest summer peak while a level of service D is desired during moderate tourism periods and off-peak periods.*

Goal: A transportation network that meets the needs of the community and supports proposed land use patterns.

Objectives:

- *Provide sidewalks along US 64/74 in the vicinity of the town centers.*
- *Provide sidewalks within 1.5 miles of schools.*
- *Establishment of parking areas outside of the town center and not along the major roads (US 64/74A) by December 2015.*
- *Create linkage between/amongst these places: Rumbling Bald Resort to the lake; Boys Camp Rd to Rumbling Bald Resort; NC 9 to Lake Lure Town Center; Regional Center to Lake Lure Town Center; climbing entrance from Boys Camp Road to Town Center; Buffalo Creek Park to Lake Lure Town Center; and easy linkage from Lake Lure to Chimney Rock Village to Chimney Rock State Park. Initial starting date is to be December 2017 and completion date is to be December 2030.*
- *NC 9 South functions at a level of service D in 2040 (school, Ingles, possibly the public library, commercial park are to be located off NC 9).*
- *Improvements on safety and accessibility for Bills Creek and US 74 intersection to provide better access to Lake Lure and Rumbling Bald Resort.*

Goal: Improve mobility within the area by providing alternative transportation services.

Objectives:

- *Minimize car trips within Lake Lure and Chimney Rock Village.*
- *Provide limited transit/tram/shuttle service during peak season and special event by December 2020.*
- *Sidewalks/multi-use paths and shuttles from established parking areas to town centers.*

Goal: A transportation system that is regionally connected that makes it easy for visitors to access the area.

Objectives:

- *Improve access into Polk County on US 64/74.*

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 Lake Lure and Chimney Rock Village G & O survey is given below.

The Lake Lure and Chimney Rock Village CTP survey was composed by staff from Rutherford County, the Isothermal RPO, Lake Lure, Chimney Rock Village and NCDOT's Transportation Planning Branch. The purpose of the survey was to determine what transportation modes needed improvement within the county. The survey consisted of 28 questions that included multiple choice, ranking and short answer. The survey was distributed in two ways: electronically and paper. A total of 369 people started the survey; however, only 333 people completed the survey. Each question is summarized below.

1. Are you a permanent residence of Lake Lure or Chimney Rock Village?

Response	Response Count
Yes	200
No	162

If no, what is your zip code?

The total number of responses was 172. The top three responses are given below.

Response	Response Count
28746 (Lake Lure, NC)	14
28139 (Rutherfordton, NC)	8
28756 (Mill Springs, NC)	7

2. If not a full time residence of Lake Lure or Chimney Rock Village, how many months are you in the area in a given year?

The total number of responses was 161. The top three responses are given below.

Response	Response Count
3 months	24
6 to 12 months	23
2 months	17

3. If not a full time residence of Lake Lure and Chimney Rock Village, what months are you usually here (Jan-Dec)?

The top three answers were: Year Round, April-Sept, and varies.

4. Where in the following areas do you live?

Response	Response Count
Town of Lake Lure	209
Chimney Rock Village	42
Hickory Nut Gorge (HNG) Communities (Bat Cave, Gerton, etc.)	7
Bills Creek Community	26
Sunny View Community (Polk County)	7
Other, specify (city, county, state): <i>Top Two Responses:</i> Rumbling Bald Resort (27 responses) Riverbend (8 responses)	95

5. Do you work in the Town of Lake Lure or Chimney Rock Village?

Response	Response Count
Yes	77
No	279

If yes, what is your residential zip code?

The total number of responses was 64. The top two responses are given below.

Response	Response Count
28746 (Lake Lure, NC)	31
28720 (Chimney Rock, NC)	11

6. If your answer to question 5 is a no, what is your workplace zip code?

The top two responses are given below.

Response	Response Count
N/A or Retired	77
28746 (Lake Lure, NC)	9

7. Do you have any environmental concerns for the area? If so, what are they?

There were a total of 325 responses. The most common responses were:

- clean water
- development around lake
- kudzu issues
- maintain the natural environment
- trash

8. Please indicate your agreement or disagreement with the following statements regarding Lake Lure? (rank 1-7, with 1 being least agree and 7 being most agree).

Response Options	1-Least Agree	2	3	4	5	6	7-Most Agree	Response Total
Lake Lure should remain as unchanged as possible over the next twenty years	67	31	40	63	53	34	66	354
Lake Lure should be a place of managed growth and development	35	12	17	26	39	66	161	356
Lake Lure should remain a place of natural beauty	6	2	1	6	14	37	289	355
Lake Lure should be a place of many cultural opportunities and amenities	19	27	36	68	48	39	116	352
Lake Lure should maintain its "mountain lake town" character	6	4	5	20	26	62	234	357
Lake Lure should remain mostly residential over the next 20 years	15	17	32	61	74	56	98	353
Lake Lure and Chimney Rock State Park should complement each other	11	7	13	19	23	48	233	354

9. Please indicate your agreement or disagreement with the following statements regarding Chimney Rock Village? (rank 1-7, with 1 being least agree and 7 being most agree).

Response Options	1-Least Agree	2	3	4	5	6	7-Most Agree	Response Total
Chimney Rock Village should remain as unchanged as possible over the next twenty years.	59	33	41	64	60	30	60	347
Chimney Rock Village should be a place of managed growth and development.	25	11	15	48	37	60	153	349

Chimney Rock Village should remain a place of natural beauty.	7	0	2	15	27	51	249	351
Chimney Rock Village should be a place of many cultural opportunities and amenities.	23	21	42	61	50	38	112	347
Chimney Rock Village should maintain its "mountain" character.	4	4	6	21	25	66	223	349
Chimney Rock Village should remain mostly residential over the next 20 years.	22	28	43	60	66	43	77	339
Chimney Rock Village and Chimney Rock State Park should complement each other.	6	3	12	18	14	45	250	348

10. If transit service were available, would you use it (i.e. bus shuttle, van pool or car pool)?

Response	Response Count
Yes	109
No	226

If no, why or why not?

There were a total of 333 responses. The most common responses were:

- Don't need it
- Have my own car
- Inconvenient
- Not practical development around lake

11. If transit service is put in place, what days and times would be of interest to you?

Response Options	6am-9am	9am-12pm	12pm-3pm	3pm-6pm	6pm-9pm	Response Total
Monday	16	43	33	34	24	73
Tuesday	14	41	32	34	23	71
Wednesday	14	44	35	34	23	74
Thursday	13	43	32	37	26	74
Friday	15	48	38	46	42	91

Saturday	19	51	48	54	56	97
Sunday	14	43	38	47	34	78
Others	none, N/A, don't know, & not needed					

12. If transit service is put in place, what destinations would be of most interest to you?

A total of 180 people answered this question. The top responses included:

- Asheville
- Chimney Rock Village
- Chimney Rock State Park
- Lake Lure
- Hendersonville
- Ingles
- Rumbling Bald Resort
- Rutherfordton

13. How do you feel about a park-and-ride system in the Town of Lake Lure and Chimney Rock Village? (Having a parking lot away from traffic and providing a bus system for tourists during peak season.)

A total of 275 people answered this question. The top responses were:

- Excellent
- Good idea
- No/Not a good idea/Don't turn into a city – keep it a town.

However, majority of individuals who took the survey like this concept.

14. How would you feel about providing the following transportation options: (Mark Y [Yes] if you would consider it as an option, and N [No] if you would not consider it as an option).

Response Options	Yes	No	Total Responses
Water taxi (commuter boat)	60.3%	39.7%	317
Rental Bikes	69.4%	30.6%	317
Rickshaws	23.4%	76.6%	295
Street Cars/Trams	59.6%	40.4%	307
Segway	27.2%	72.8%	279
Golf Carts	45.8%	54.2%	301
Private Airstrip	25.3%	74.7%	269

Other (please specify)	<ul style="list-style-type: none"> • bike lanes • minivan/shuttle/taxis • walkways 	333
------------------------	---	-----

15. What roadway related improvements would you like to see in the next 25-30 years?

A total of 237 people answered this question. The top responses were:

- Bicycle lanes
- Guardrails
- Sidewalks
- Widen roads.

16. Are you concerned with safety or crash problems at specific locations?

Response	Response Count
Yes	153 (51%)
No	147 (49%)

If so, which locations?

The most common responses were:

- Boys Camp Road
- Chimney Rock Village Downtown
- Curved/sharp roads
- Intersection of 64/74/9

17. What is your major concern regarding roadway in the area currently?

There were a total of 221 responses to the question. Top responses were:

- Congestion
- Motorcycles
- Narrow/blind/curvy roads
- None
- Parking in Chimney Rock
- Safety
- Traffic issues

Do you find it difficult to navigate around the Lake Lure and Chimney Rock Village area?

Response	Response Count
Yes	117 (36.2%)
No	207 (64.1%)

If yes, where?

The most common responses were:

- Chimney Rock Village
- Beach areas

18. Are you able to find alternative routes (A road supplementing a main road) to travel on other than the US 64/US 74/NC 9?

Response	Response Count
Yes	102 (32.2%)
No	216 (68.1%)

19. Are there times of the year when traffic is worse than other times?

Response	Response Count
Yes	302 (94.4%)
No	18 (5.6%)

If so, what times of the year is traffic worse?

The most common responses were:

- Summer
- April – October
- Tourist Season

20. Please rank which of the transportation needs are the greatest in the area. (rank 1-11, 1 being the least important and 11 being the most important).

Response Options	1-Least Important	2	3	4	5	6	7	8	9	10	11- Most Important	Response Total
Bicycle Needs	44	11	19	8	16	13	16	31	29	38	63	288
Sidewalks	32	4	10	9	19	11	17	25	37	54	84	302
Improved Access to Shopping Areas	38	19	21	13	19	22	21	28	31	26	45	283
Greater Access to Residential Areas	63	39	30	21	36	24	12	15	11	6	16	273
Park-and-Ride	53	16	23	17	31	23	16	32	19	23	29	282

Short Term Boat Docking	39	16	19	16	34	21	11	29	26	20	47	278
Access to Recreation	30	5	16	23	32	21	20	28	30	29	37	271
Multi-use Path	30	7	10	11	22	17	21	25	33	37	71	284
Importance on Linkage	43	13	15	11	25	22	14	12	13	19	53	240
Shared Use Path (non-motorized)	25	8	4	8	24	25	16	14	20	29	74	247
Golf Cart Paths	66	20	23	13	22	17	16	10	18	15	21	241

21. Do you think the area should develop more sidewalks and bike paths?

Response	Response Count
Yes	269 (84%)
No	53 (16%)

22. Would you, as a citizen of Lake Lure or Chimney Rock Village, be willing to help raise money to build sidewalks and bike paths?

Response	Response Count
Yes	154 (52%)
No	142 (48%)

23. How would you classify your race? (Please check all that apply).

Response Options	Response Count
Asian	3 (1%)
Black	1 (0.3%)
Hispanic	4 (1.3%)
Native American	4 (1.3%)
White	303 (96.8%)
Other	0 (0%)

24. How many people live in your household, including yourself?

Response Options	Response Count
1	30 (9.3%)
2	228 (71%)
3	28 (8.7%)
4	25 (7.8%)

5	9 (2.8%)
6	1 (0.3%)
7+	0 (0%)

25. What was your household income last year?

Response Options	Response Count
Below \$30,000	16 (5.1%)
\$30,000 - \$49,999	24 (7.6%)
\$50,000 - \$69,999	31 (9.8%)
\$70,000 - \$89,999	46 (14.6%)
\$90,000 or above	104 (33%)
I choose not to answer	94 (29.8%)

26. What is your age group?

Response Options	Response Count
20 or under	0 (0%)
21 – 40	18 (5.6%)
41 – 60	111 (34.7%)
61 or over	191 (59.7%)

27. How did you hear about this survey?

A total of 298 answered this question. The top responses were:

- Email
- Mail
- Newsletter
- Rumbling Bald Resort
- Friend
- Facebook

Public Meetings

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

Public Workshop # 1

The first public workshop was held on January 15, 2013 from 5:00pm-7:30pm at the Lake Lure Town Hall. The purpose of this workshop was to present the proposed CTP to the public and solicit comments. This public workshop was publicized in the local newspaper and flyers were placed in various locations around Lake Lure and Chimney Rock Village. Approximately 200 citizens attended the workshop. Only 2 comment

forms were submitted, both anonymously. However, many citizens expressed concerns during the workshop by citizens.

The two primary concerns were:

1. Rumbling Bald Resort access: Two citizens from Rumbling Bald Resort were concerned about the highway connection from Boys Camp Road to the resort through Old Sand Branch Road. They did not want the connection for privacy reasons. Refer to Chapter 2, Local ID: RUTH0005-H, for additional information on the CTP project proposal. However, the majority of attendees supported the connection from Boys Camp Road to Rumbling Bald Resort.
2. Chimney Rock Village in relation to the State Park: Citizens of Chimney Rock Village were concerned that the new entrance into and out of Chimney Rock State Park from Lake Lure would impact their businesses in downtown Chimney Rock Village. However, the 2011 Chimney Rock State Park Master Plan² states that the current entrance/exit will serve as an outbound (exit) road through the Chimney Rock Village.

NCDOT's Municipal and School Transportation Assistance Group (MSTA) within the Traffic Management Unit worked with the Transportation Planning Branch (TPB) and the municipalities to update the 1994 Lake Lure and Chimney Rock Traffic Operations Plan which was completed for the area. MSTA presented their updated traffic study³ during this public workshop and received feedback for their report. Refer to Appendix H for summary of the updated traffic operations study.

In conjunction with the CTP and the MSTA study, there were several other plans/projects available for review during the workshop. They included the Town Center Plan, the new public library, the Flowering Bridge project and others.

Public Workshop # 2

The second public workshop was on February 19, 2013 at 4:30pm at the Lake Lure Town Hall. Lake Lure hosted a second public workshop which focused solely on citizens with questions/concerns about the CTP. Approximately 34 citizens attended the workshop. There were limited concerns and questions in regard to the CTP. Primary concerns/questions were related to the MSTA traffic study.

Public Hearings

Public hearings were held on May 21, 2013 during the Lake Lure Town Council meeting; on June 19, 2013 during the Chimney Rock Village Council meeting; and on July 1, 2013 during the Rutherford County Board of Commissioners meeting. The purpose of these meetings was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during these meetings.

² To view this plan, go to: <http://www.ncparks.gov/About/plans/master/main.php>.

³ To view the Lake Lure and Chimney Rock Traffic Study online, go to: http://www.townoflakelure.com/mydocuments/lake_lure_and_chimney_rock_traffic_study_4_29_2013.pdf.

Appendix H

Additional Transportation Alternatives & Scenarios Studied

During the early stages of the CTP study, a number of transportation related issues were identified that are not normally covered in a CTP. Several of these issues were previously identified in the 1994 Lake Lure and Chimney Rock Transportation Study conducted by NCDOT's Municipal and School Transportation Assistance (MSTA) Group within the Traffic Management Unit. MSTA was contacted and invited to work with the CTP committee to update the 1994 study based on improvements planned by Chimney Rock State Park and the municipalities.

This study is not a mandate for action or a commitment by NCDOT to fund and/or construct any of the recommendations. This study was conducted to compliment the recommendations of the CTP (2013) and Chimney Rock State Park Master Plan² (2011). Though not required, the *Lake Lure and Chimney Rock Traffic Study* (April 29, 2013) was adopted by Lake Lure on May 21, 2013 and Chimney Rock Village on June 18, 2013. A brief summary of the study is given below. The full study report can be viewed online at:

http://www.townoflakelure.com/mydocuments/lake_lure_and_chimney_rock_traffic_study_4_29_2013.pdf.

The following issues/needs were identified during the early stages of the CTP:

- critical shortage of parking
- way finding for parking
- complementary shuttle (transit) service between parking and destinations
- multi-modal options to encourage more parking outside of the core areas of town, and
- blueways (water taxis, paddle trails, etc.)

Many of these issues were previously addressed in the 1994 Lake Lure and Chimney Rock Transportation Study performed by MSTA. In this study, MSTA discovered that a major cause for these issues was the limited roadway right of way width of US 64/74A at the town center. Lake Lure and Chimney Rock Village are communities that would like their town centers to thrive, have multi-modal alternatives, provide safe options for parking, and reduce congestion on US 64/74A. MSTA took all of this into consideration when updating the traffic study.

For Lake Lure's downtown area, MSTA recommended a complete streets policy for the future. Chimney Rock State Park also developed a Master Plan that includes a large amount of walking and bicycling trails and a proposed one-way traffic pattern for the park entrance. MSTA incorporated Chimney Rock State Park's Master Plan into the traffic study.

To help Lake Lure address their concerns on safe options for parking and reducing congestion on US 64/74A with the limited roadway right-of-way, MSTA proposed the Lake Lure Parkway concept. This would be a new roadway that would alleviate traffic on US 64/74A and allow US 64/74A to maintain parking while reducing accidents. The Lake Lure Parkway would start at the intersection of US 64/74A and Arcade Street in Lake Lure, continue south of Lake Lure's

² To view this plan, go to: <http://www.ncparks.gov/About/plans/master/main.php>.

town center (with a connection to Proctor Road), and connect back to US 64/74A/Marina Drive in Chimney Rock Village.

MSTA also ran a complete traffic study in Chimney Rock Village addressing issues with current pedestrian sidewalks and crosswalks, on-street and off-street vehicle parking, and transit service. These deficiencies were addressed, along with potential solutions recommended for Chimney Rock Village.