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3**3.1 INTRODUCTION**

Access to and circulation within Lake Lure is a challenge given the limited road network and the lack of alternative forms of transportation. The task of maintaining or improving transportation with the town will become more complex as development continues, the community grows, and more visitors discover the area. The terrain and the lake are among the features that present unique constraints that are not easily addressed by traditional transportation solutions. In order to achieve an efficient and safe transportation system for future generations, a strategy has to be developed to provide a range of choices that improve mobility over the long term while maintaining the character of the town.

3.2 Inventory and Existing Conditions

Lake Lure's transportation system is comprised mostly of state and local roads. The quality of the winding, two-lane roads contribute to Lake Lure's mountain character and has helped to secure a scenic byway designation for the major thoroughfare, US 64/74A and NC 9 (see Figure #2, Infrastructure Map), which traverses through the heart of Lake Lure along the lake's southerly edge. However, the widths, alignments, and grades of the roads, all influenced by topography, have raised additional concerns regarding safety and the town's ability to address issues associated with increasing traffic. A minimal amount of pedestrian and boating facilities encourage walking and boating as alternative means of travel, therefore are considered components of the existing transportation system.

Additionally, Lake Lure is a member of the North Carolina's Isothermal Rural Planning Organization (RPO). According to the Isothermal RPO, its mission is "to develop a long-range transportation plan that improves the quality of daily travel for our citizens and visitors and to promote the development of safe and effective travel modes throughout [the] region." Rutherford County, which encompasses Lake Lure, is second after Polk County on the Isothermal RPO priority list for a Comprehensive Transportation Plan to be executed by the North Carolina Department of Transportation. The plan is to be initiated by January 2007 and tentatively completed by June 2008.

Road Network

Lake Lure's road network is a combination of state, town, and privately maintained roads. As a component of the network, private roads are of concern only from the standpoint of access for emergency vehicles and maintenance by the town if such roads are dedicated to the town in the future. Mobility in the town depends on the connectivity and quality of all three types.



Meandering roadways are common throughout Lake Lure. Constantly changing and captivating, views from these roads are an asset to the town.

The topography of the area limits the possibilities of adding new routes to the network to enhance connectivity. However, circulation can be improved simply by extending roads to create a complete loop around the lake. Without a loop, access between the northern and western parts of Lake Lure is poor. Driving from the municipal buildings to points along the north side of the lake, for instance, takes approximately 25 minutes. This is an issue in terms of emergency vehicle response time from the Lake Lure Police Department and the Chimney Rock Volunteer Fire Department. In addition, the lack of a loop prevents traffic from being diverted onto an alternate route in the event US 64/74A is temporarily closed due to an unforeseen circumstance that blocks both lanes (e.g., accident, fallen tree, flooding, etc.). While the road extension will likely occur through private development, there may be opposition to the connection, as this would enable travel into and through the gated portion of Rumbling Bald Resort that currently has a single, secure entrance. To date, Rumbling Bald Resort has resisted connections for security reasons.

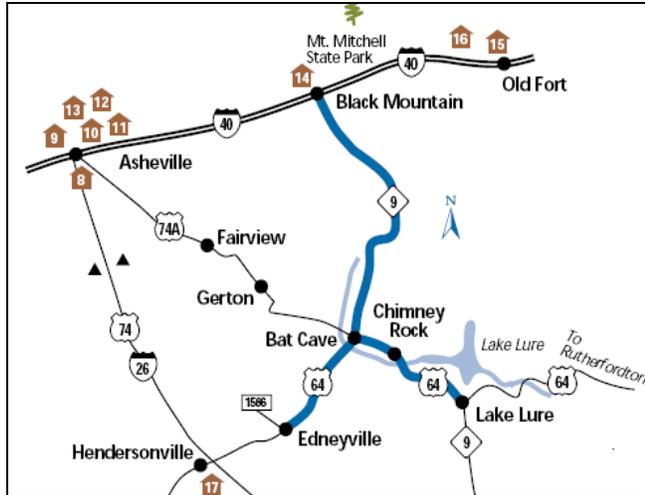
Major Roadways

Most of the major roads in the town are maintained by the North Carolina Department of Transportation (NCDOT). These roads, though narrow and winding, provide the most direct access to the developed areas of town and are used as through routes by visitors traveling to area destinations.

US Highway 64/74A is the major east-west thoroughfare through the town and connects Lake Lure to Asheville in the west and Rutherfordton in the east. It is the town's "Main Street," named Memorial Highway, and passes through the town center. This two-lane road is also part of the "Black Mountain Rag Scenic Byway" designated by the State of North Carolina.



Visitors to Lake Lure arrive on narrow and winding roads but are greeted to spectacular views of the lake.



*Source: North Carolina Scenic Byways
 This map displays the Black Mountain Rag Scenic Byway.

NC Highway 9 serves as the southern entrance into town from US 74, as well as Columbus, NC and Spartanburg, SC. This segment of NC 9, which provides convenient access to the new commercial development just inside the town limits, merges with US 64/74A along the southern shore of Lake Lure. This intersection offers a stunning view of the lake as travelers approach from the south. NC 9 follows the alignment of US64/74A into Bat Cave where it continues north to Black Mountain.

Buffalo Shoals Road (SR 1306) is the only state road within the town limits that provides north-south access along the east side of the lake. This winding road connects the Rumbling Bald Resort to US 64/74A. In addition, Buffalo Shoals Road provides a connection along Buffalo Creek Road, which provides access to the east side of Lake Lure. It also connects to Bill’s Creek Road, another north-south route serving the town, though it lies entirely in Rutherford County.

Buffalo Creek Road (SR 1008) is the east-west road connecting Buffalo Shoals Road to the Bill’s Creek community in Rutherford County. From Bill’s Creek Road, which connects to US 64/74A, this roadway provides the easiest access into the northern part of the town, particularly Rumbling Bald Resort.

Boys Camp Road provides access along the northwest side of the lake. The road begins at US 64/74A near the Rocky Broad River and roughly parallels the lakeshore in an easterly direction. This



This is an example of a minor roadway under construction. This particular road will lead to a future residential subdivision development.

two-lane winding road was taken over from the state for maintenance by the town in 1989. Holmstead Road, an old jeep trail, and Boys Camp Road may be extended to complete the loop around the lake. This has been discussed as the alignment for the potential road connection to formally connect Boys Camp Road to the Rumbling Bald Resort community along the west side of the lake.

Minor Roadways

The town currently maintains approximately 27 miles of local roadways. Like the state-maintained roads, these roads are narrow and winding. They carry less traffic than the major roads but are an important component of the system. The town eventually assumed responsibility to maintain road constructed over several decades by private developers and the NCDOT.

Many of the roads within the residential areas are private roads. Created as part of the subdivision process, these roads comprise a significant portion of the road network, and new private roads are currently being built within new subdivisions. Residents depend largely on these roads for local trips.

Design

The topography and other constraints of the area make construction, maintenance, and use of the roads challenging. Whether constructed by the state or a private developer, the approaches to road construction have been varied in response to such constraints. Many roads can be described as steep, narrow, and winding with many sharp turns. Such conditions make travel on these roads difficult, especially for emergency vehicles.

Other issues pertain to the impacts to the environment. For example, extensive clearing to accommodate roads leads to the loss of vegetation, which has the following related impacts: (1) development is more visible, diminishing the quality of the scenic views, and (2) slopes are less stable and, in an exposed condition, are more susceptible to erosion which can negatively affect water quality.

The town has developed a set of standards for roads that have been incorporated into the town's subdivision regulations. In addition to standardizing design and construction techniques, these standards aim to maximize consistency in the design and construction of future roads in the town. These standards apply only to town roads. State roads will continue to be constructed according to state standards. In either case, improvements must be made to



A lack of streetscape guidelines has resulted in roadways that give priority to vehicular traffic; this image depicts an area that is not conducive to pedestrian travel.

specific standards, such as maximum grades and minimum curve radii, to better address the direct and indirect environmental impacts of new roads.

While all private roads are maintained by a property owners association or other private entity, the newer private roads are being constructed to recently developed standards set forth in the town's subdivision regulations to ensure consistent design that facilitates maintenance activities and maneuvering of emergency vehicles. This is especially important when and if such roads are dedicated to the town.

Traffic

According to the NCDOT, traffic volumes are low on most roads in Lake Lure, including the heavily traveled US 64/74A. The following table highlights the Average Annual Daily Traffic (AADT) for Lake Lure during the past 15 years. AADT is the number of vehicles passing a single point on a road over the course of a year divided by the 365 days in a year. For example, if 500,000 vehicles pass a single point in a year, the AADT is 1,369 vehicles per day. These volumes assume peak and non-peak traffic numbers to generate the average number. The AADT counts have not increased dramatically over the past 15 years and have, historically, remained at a consistent level.

Table 3.1: Average Annual Daily Traffic Counts

Location	1990	1995	1999	2000	2001	2002	2003	2004	2005
	*	*							
US 64/74A towards Rutherfordton from the intersection of NC 9	2700	3000	3000	2200	2200	2200	1600	2500	2100
US 64/74A/ NC-9 towards Lake Lure from the intersection of NC 9	2900	3000	2600	2800	2900	2700	2600	3300	2200
Along NC 9	1300	1600	1300	1400	1300	1100	1100	1500	1400
US 64/74A/ NC-9 in Chimney Rock	n/a	n/a	4000	3100	2700	2700	2200	3200	2500
Buffalo Shoals Road	n/a	n/a	240	270	270	310	n/a	420	n/a
Bill's Creek Road	n/a	n/a	n/a	n/a	n/a	n/a	1500	n/a	1500

Source: <http://www.ncdot.org/it/gis/DataDistribution/TrafficSurveyMaps/>

*Denotes annual traffic counts cited from the 1997 Land Use Plan

This is only a snapshot of averages. Like many western North Carolina towns, there is a seasonal variation in traffic volumes, which can substantially increase during peak season weekends and special events. With seasonal residents in town for the summer months and tourists traveling into and through the town on their way to the lake, Chimney Rock Park and other destinations, traffic volumes build on US-64/74A, especially along the designated NC Scenic Byway portion of the highway. Throughout the peak season in Lake Lure, traffic volumes likely exceed the counts recorded by NCDOT and the roadways become relatively congested. Though further study is needed to confirm these peak periods, the town needs creative transportation solutions that will work most effectively with the existing transportation network.

As development continues, however, AADT volumes will increase. Buffalo Shoals Road is one route used by residents east and north of the lake. Traffic volumes are expected to increase on the segment north of the lake and Buffalo Creek Road as new development occurs within and north of Rumbling Bald Resort. Specifically, Grey Rock, a new development with 900 homes planned (which has two main entrances), and the proposed expansion of Rumbling Bald Resort, which calls for new commercial space and additional (up to) 540 residential units, will utilize these two roads as major entry routes. Since the average single-family household generates 10 one-way trips per day, Lake Lure can anticipate at least 5,400 additional trips on these roads from Rumbling Bald Resort alone over the next decade or two, if these developments are built out as proposed.

NC 9 is a critical segment entering into Lake Lure as it is the only major thoroughfare access to the town from the south and a likely location of future commercial development in the town. As additional commercial development occurs, traffic volumes along NC 9 will also increase.

The typical response to an increase in traffic is the addition of roadway capacity achieved with the construction of new roads and/or the widening of existing roads. Though the increases anticipated will not warrant a road widening according to NCDOT, the desire to address traffic is strong, as indicated by the community's input. With topographic constraints and the lack of support from the community for widening any of the existing two-lane roads, other solutions are needed to maintain or enhance mobility.



The walkway around a portion of the lake encourages pedestrian activity and connects key destinations such as the beach and town center area to Morse Park.

Alternative Modes of Transportation

Alternative modes of transportation should complement the road network by expanding the range of travel options. If such alternatives are chosen, traffic volumes may increase at a slower rate. Typical alternatives include walking and bicycling, and facilities that accommodate one or both are often incorporated into the road network. In some areas, transit service is provided an additional option.

The topography affects the feasibility of providing and using pedestrian and bicycle facilities. Therefore, such facilities have been provided in limited amounts in low-lying, flatter areas of town, and where development is compact enough that walking from one point to another is just as easy as or easier than driving. Specifically, in accordance with the recommendations of the Town Center Walkway Master Plan, walking conditions have been improved with the addition of a boardwalk and other pathways in the town center, allowing for safe travel between the beach, Morse Park and the Lake Lure Inn.

Currently, the town is working on an expansion of this existing path system. Future expansion of the walkway includes extending the path along Memorial Highway (US 64/74A) to connect to the Lake Lure Post Office. Most of the additional pathway will be constructed on town owned property. In the absence of town property or dedicated right-of-way along US 64/74A (according to the District Engineer for NCDOT District 1, Division 13), the project will rely on a combination of easements and NCDOT encroachment agreements to extend the 6-foot wide paved greenway. Phase Two of the project will connect the Town Center to the center of Chimney Rock via a proposed 6-foot paved path.

Residents have expressed a desire for improvements for walking and bicycling in other areas of town. There is potential for the development of a pedestrian path along Buffalo Creek Road to connect residential neighborhoods to commercial services via a combination of paved walking trails and sidewalks.

Lake Lure has a unique opportunity to include boating as a means of travel within the town. In addition to recreation, the lake could also support some amount of boating that enhances mobility in the town. During the community input process, participants indicated the need to explore the potential for boat transportation around the lake and opportunities for temporary or hourly boat parking in the town center near the beach to encourage travel by boat.

3.3 Summary of Issues and Opportunities

- The road network is not as connected as it could be. As a result, the road network does not allow for optimal emergency response time or diversion of traffic in the event of a major road closure (e.g., US 64/74A).
- Current state and local roadway standards are addressing past issues of inconsistency in the design and construction, but the standards do not adequately minimize direct and indirect environmental impacts of roadway construction.
- Though NCDOT data indicates that traffic volumes are not alarming and do not warrant improvements to the current roadway infrastructure, residents are concerned about higher traffic volumes during peak periods that create an undesirable level of congestion on the roads.
- There is a lack of alternative means of transportation within the town to truly provide a reasonable set of options. Mobility today depends a great deal on the road network.
- In regard to transportation improvements, the preservation of scenic views is a priority.

3.4 Goals, Objectives and Policies

TC Goal 1: An efficient, multi-modal transportation system that enhances mobility

Objective TC – 1-1: Improve mobility within the Town by providing facilities that encourage use of alternative means of transportation

Policy TC-1-1.1:

Develop a detailed town-wide bikeway and pedestrian master plan, and construct facilities in accordance with the plan recommendations. *This plan shall address a variety of ways to realize bicycle and pedestrian improvements. At a minimum, the following should be examined during the development of the plan: 1) Possible improvements to major roadways to accommodate non-motorized travel where appropriate (e.g., on-street bicycle lanes, paved shoulders, wide outside lanes, and pedestrian walkways). 2) Guidelines to ensure connectivity and consistent design and construction of bicycle and pedestrian facilities by both public and private entities.*

(1) Apply for planning grant from the NCDOT.

Policy TC – 1-1.2:

Evaluate the feasibility of providing temporary/hourly boat parking in the town center. *This may require the construction of a separate dock with several boat slips in a convenient location (e.g., near the beach).*

Policy TC – 1-1.3:

If warranted, provide an adequate amount of temporary/hourly boat parking. *To be successful, boat owners in the community must be made aware of this facility (and encouraged to use their boats as a transportation option).*

Objective TC – 1-2: Improve mobility within the town by providing alternative transportation services.

Policy TC-1-2.1:

Provide limited transit service during peak season and special events. *This may be in the form of a “park-and-ride” system that allows visitors to park at Lake Lure’s gateways and ride a small bus or trolley into the town center. The park-and-ride system could be achieved through a combination of private and public funding. Circulators in many cities and towns are often funded in part by local businesses.*

Policy TC-1-2.2:

Seek assistance from private transportation providers to provide alternative transportation solutions.

Policy TC-1-2.3:

Support alternative transportation improvements by private development as long as each is consistent with the town’s adopted plans, regulations and guidelines.

Policy TC-1-2.4:

Identify areas on or along roadways, such as NC-9, where pedestrian and bicycle traffic can be safely accommodated. *Connection between commercial areas and other development concentrations may be appropriate for facilities that provide such linkages.*



A trolley program throughout peak months could be utilized to shuttle visitors to satellite parking lots, key destinations, and reduce traffic.

Topography and other physical restraints must be taken into consideration in planning for and constructing such facilities.

TC Goal 2: A transportation network that is managed and improved to meet the needs of the community and supports proposed land use patterns

Objective TC – 2-1: Ensure the transportation network is continually improved to adequately serve existing and anticipated development.

Policy TC-2-1.1:

Identify specific areas where roadway improvements are needed, including roads determined to be substandard.

- (1) Enhance the Capital Improvement Program (CIP) by developing a section dedicated to roadway projects for local roads
- (2) Work with the RPO to update the comprehensive transportation plan to reflect improvements to be made by NCDOT.

Policy TC-2-1.2:

Continue effective communication with organizations, municipalities, and the NCDOT to ensure an efficient and balanced transportation system.

- (1) Continue to coordinate long-range transportation planning projects with adjacent localities, NCDOT, Isothermal RPO and other regional initiatives.

Policy TC-2-1.3:

Require developers to submit a traffic impact analysis, prepared by a licensed professional (traffic engineer), to determine if traffic volumes generated surpass the capacity of the road system and/or a reduction in service level. Require this analysis to be submitted with development plans at the appropriate point in the development approval process. *Developers shall be required to make roadway or*

other transportation improvements to mitigate the impacts of the proposed development.

Policy TC-2-1.4:

Establish design guidelines for roadway improvements that minimize impacts to adjacent properties, such as disturbance or clearing of vegetation.

Policy TC-2-1.5:

Develop a peak season parking management plan for special events and peak season periods, and execute it. *The process to develop the plan shall include the following:*

- *Evaluate existing parking inventory in the town center.*
- *Identification/prioritization of future parking improvements (e.g., reconfiguration of existing parking, provision of new parking areas, and provision of parking areas at the gateways to support a park-and-ride system).*

TC Goal 3: Consistency in roadway design and construction standards

Objective TC – 3-1: Ensure all new roads within the town are constructed in accordance with a set of standards that result in better, more uniform design and sensitivity to the environment, taking into consideration variations in road size.

Policy TC-3-1.1:

Continue to require private roads being constructed within new developments in the town to meet the standards set forth in the subdivision regulations.

Policy TC-3-1.2:

Modify standards in the subdivision regulations to achieve a more sensitive approach to roadway construction.

- (1) Examine issues with and revise maximum grade, tangent length, and vertical and horizontal curve

radii of roadways in order to reduce environmental impacts.

- (2) Encourage and explore one-way loops to limit environmental disturbance.

TC Goal 4: A connected roadway network

Objective: TC – 4-1: Require new roads to connect to the existing road network as much as possible to maximize circulation, especially for emergency vehicles, throughout the town.

Policy TC-4-1.1:

Provide for emergency vehicle access on all sides of Lake Lure.

- (1) In the short term, locate emergency vehicles in key locations to ensure response times are minimized.

- (2) Continue conversations/ negotiations with the Rumbling Bald Resort POA and its representatives regarding emergency vehicle access via a controlled gate on the west side of town in the area shown on the Comprehensive Plan. *Technologies such as Siren Operated Sensors (SOS) automatically open security gates as the vehicle approaches when the siren is in use.*

- (3) Identify areas that need roadway improvements and identify sources. *For example, the Holmstead Road (jeep trail that extends from Boys Camp Road to Rumbling Bald Resort) could be improved/upgraded to accommodate emergency vehicles between the Rumbling Bald Resort area and the Boys Camp area, provided the owner of the right-of-way agrees to such improvements and Rumbling Bald Resort agrees to an emergency access gate where such a road meets the boundary of the resort.*

- (4) Improve Boys Camp Road to improve safety.
- (5) Traffic and geometry improvements at US-64/74A and NC-9.
- (6) US-64 in front of beach to improve parking and roadway interface.
- (7) Maintain pedestrian-ways to the Town Center and Buffalo Creek Road.
- (8) Identify substandard roads and bring them up to town standards.