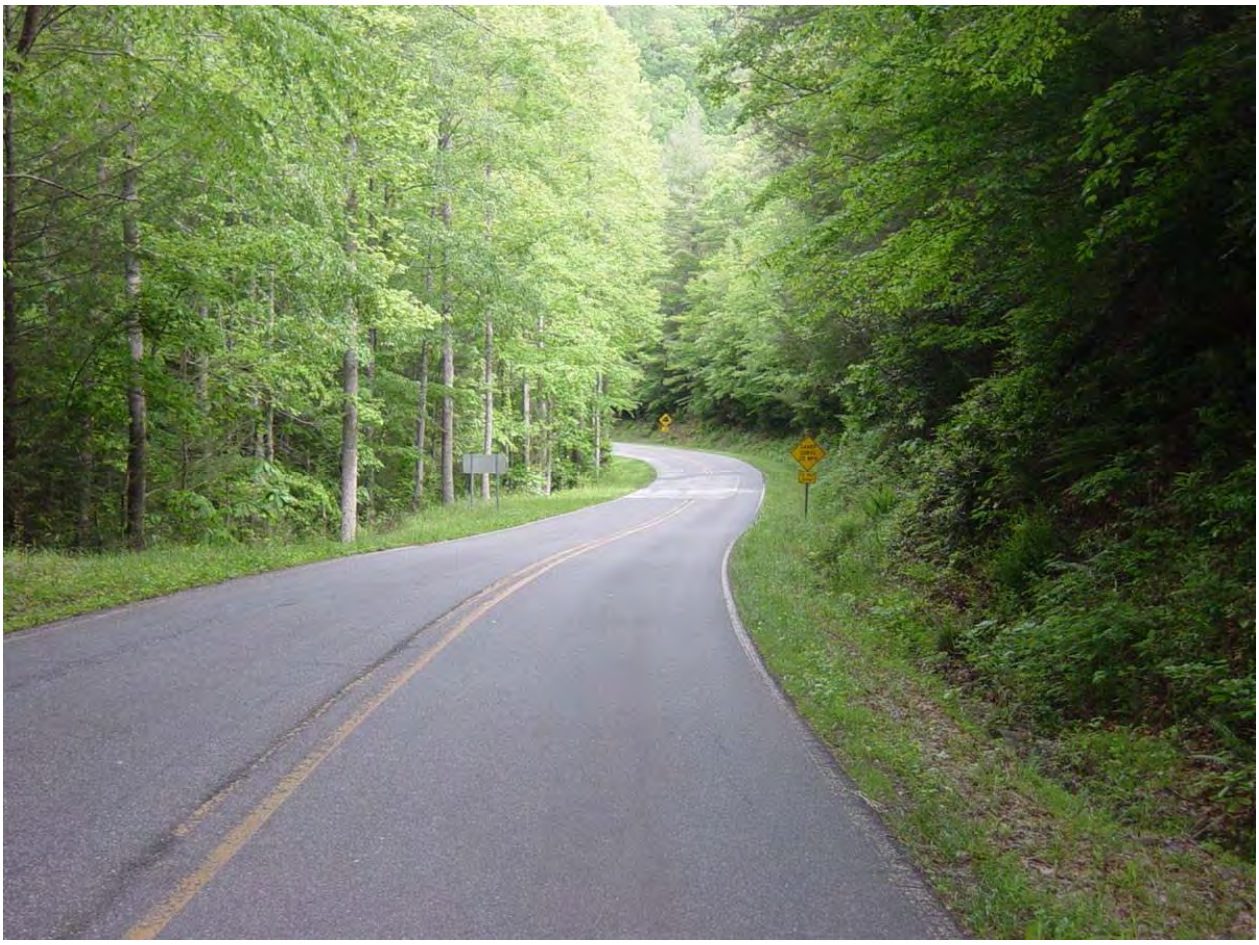
2015 Graham County
Comprehensive Transportation Plan



2015 Graham County
Comprehensive Transportation Plan

Technical Analysis by: ARCADIS

Developed in Cooperation with:
Graham County
Town of Fontana Dam
Town of Lake Santeetlah
Town of Robbinsville
Southwestern Rural Planning Organization
North Carolina Department of Transportation

Published: August 6, 2015

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Executive Summary

Graham County is located in the Appalachian Mountains, and the terrain is some of the most rugged in North Carolina. Within the county, elevations range from approximately 1,100 feet to 5,500 feet. Mountain ridge lines form the Graham County boundary on three sides, with the Unicoi Mountains to the west, Snowbird Mountains to the south, and Nantahala Mountains to the east. Lake Fontana is the northern border of the county.

The mountainous nature of the county creates unique transportation challenges and contributes to its isolation. Roads in Graham County have numerous tight curves and steep grades as they wind up and down the sides of mountains and pass through gaps. Mobility is impaired because vehicles, especially heavy trucks, must slow down to negotiate the turns and slopes. During the winter, snow and ice can exacerbate mobility problems by slowing traffic further and decreasing safety. Roads built on the sides of mountains are subject to landslides. During times when landslides have closed roads, Graham County has been exceptionally isolated because of the additional travel time required to navigate around the closure. Only four paved roads provide access to Graham County, which is the primary reason for the county's isolation.

In February of 2012, the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT) and Graham County initiated a study to cooperatively develop the Graham County Comprehensive Transportation Plan (CTP), which includes the towns of Robbinsville, Lake Santeetlah, and Fontana Dam. In May 2012 the Southwestern North Carolina Planning and Economic Development Commission (Southwestern Commission) submitted a request for proposals from qualified consultant firms to complete three products: 1) a vision for Region A (the Opt-in SWNC Vision[2]); 2) Comprehensive plans for Cherokee and Graham counties (the *Graham County Gateway to Tomorrow Plan*[3]; and 3) a comprehensive transportation plan (CTP) for Graham County. The firm TSW was selected with Arcadis as the firm on their team who would develop the Graham County CTP. The CTP 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 by NCDOT in 2015. Descriptive information and definitions for designations depicted on the CTP maps can be found in

[2] *For more information on the Opt-in SWNC Vision plan, go to: http://www.optinswnc.org/.*
[3] *For more information on the Graham County Gateway to Tomorrow Plan, go to: http://www.optinswnc.org/graham-county/.*

Appendix B. Implementation of the plan is the responsibility of the county, its municipalities, and NCDOT. Refer to Chapter 2 for information on the implementation process.

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

HIGHWAY

- **Future US 74 Proposed Improvements:** Four lane boulevard from the Cherokee County to the existing four lane divided section of NC 28.

- **New Connection to Downtown Robbinsville from US 129 (Rodney Orr Bypass) to Ford Street**: New location two lane road between Ford Street and US 129 (Rodney Orr Bypass).

- **Industrial Park Access Road, eastern access**: new location two lane road providing access between US 129 and the industrial park area off Snowbird Road.

- **Industrial Park Access Road, northwest access**: new location two lane road from US 129 (Tapoco Road) west of Knight Street to Snowbird Road near Junaluska Drive.

PUBLIC TRANSPORTATION & RAIL

- **Park and Ride:** The CTP proposes five new park and ride lots at strategic locations throughout the county identified through the public involvement process.

BICYCLE/PEDESTRIAN

- **NC 143 (Santeetlah Road/Snowbird Road) and NC 143 Business (Junaluska Drive) on road bicycle facility**: Add paved shoulders from recreational trails west of IU Gap Road to South Main Street in Robbinsville to accommodate bicycle travel.

- **US 129 (Tallulah Road) Multi-use Path:** new facility from Ford Street in Robbinsville to the Tallulah Bog Recreation area east of Bear Creek Drive.

- **5 Point Road and Robbinsville High School Access Road Pedestrian Enhancements**: new pedestrian facility along 5 Point Road from US 129 (Tallulah Road) to NC 143 (Sweetwater Road) and then along the RHS Access Road from NC 143 (Sweetwater Road) to the existing multi-use trail.

Adopted by:

Graham County
Date: May 5, 2015

Town of Fontana Dam
Date: May 21, 2015

Town of Lake Santeetlah
Date: May 19, 2015

Town of Robbinsville
Date: April 22, 2015

NCDOT
Date: June 4, 2015

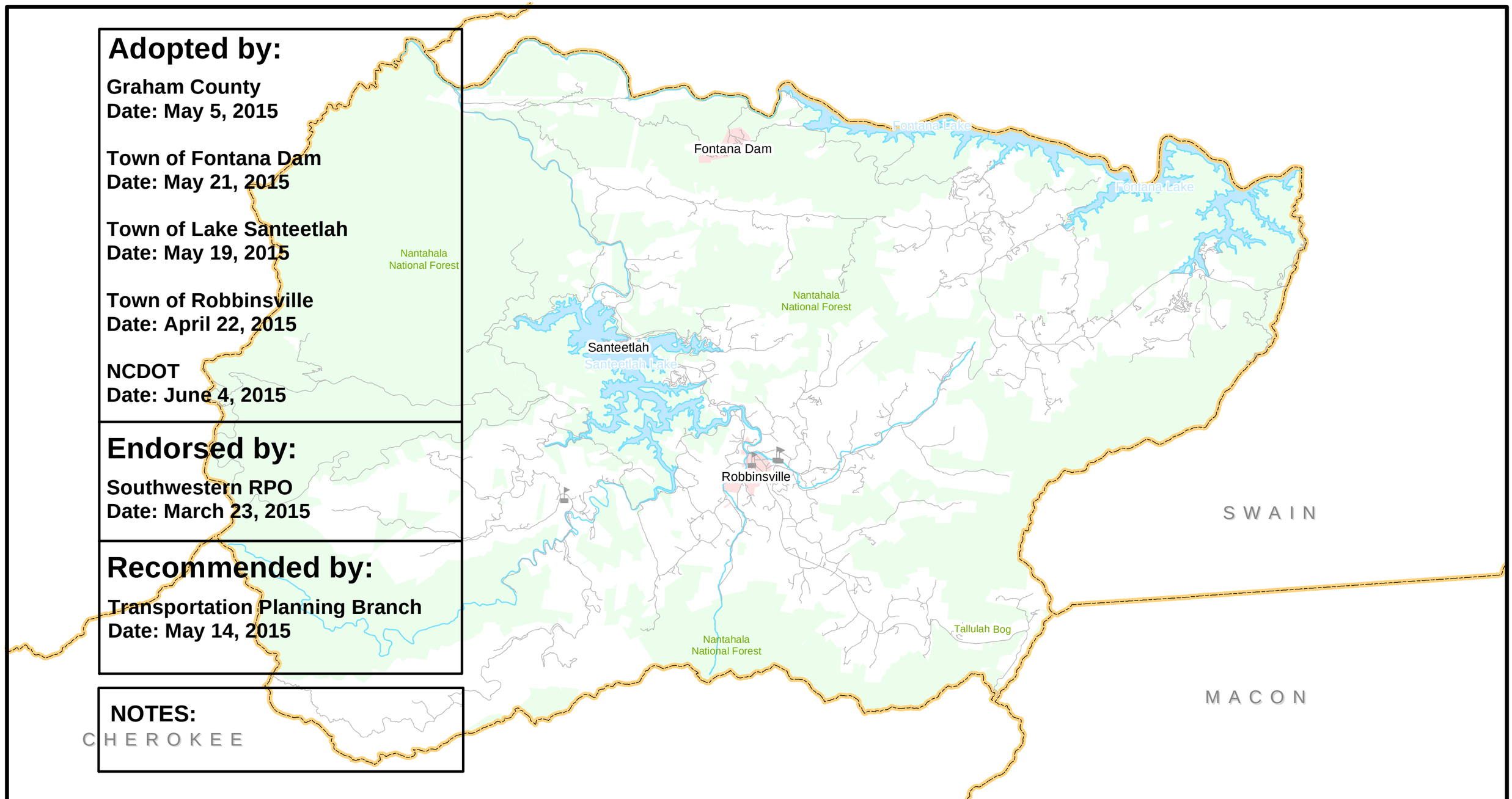
Endorsed by:

Southwestern RPO
Date: March 23, 2015

Recommended by:

Transportation Planning Branch
Date: May 14, 2015

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
- Roads
- Major Hydrography
- Rivers and Streams
- County Boundary
- Municipal Boundary
- Water Bodies
- National Forest

0 0.5 1 2 3 Miles

Sheet 1 of 5

N W E S

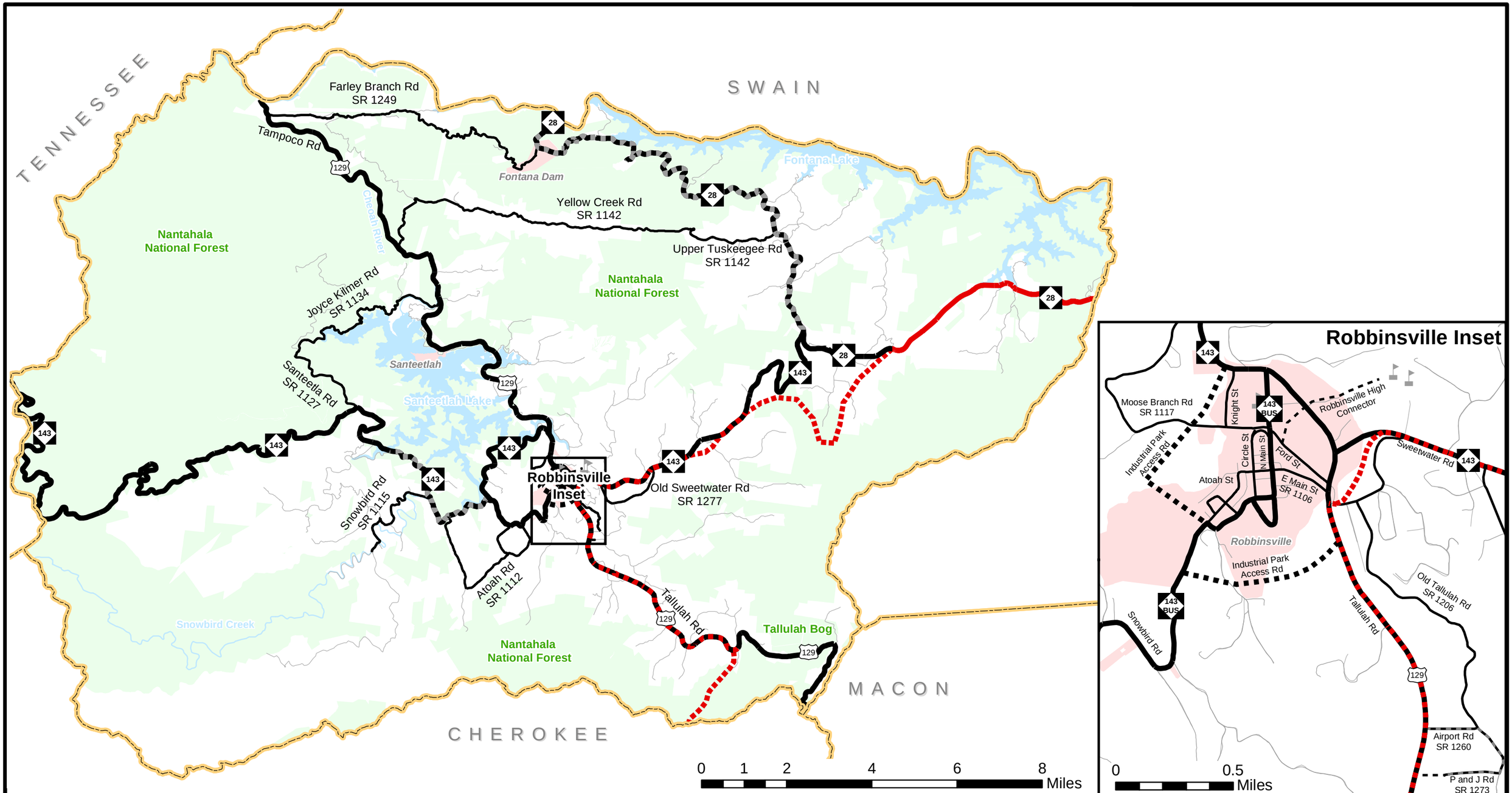
Base map date: 05/22/2014

Refer to CTP document for more details

Adoption Sheet
Graham County

Comprehensive Transportation Plan

Plan date: March 23, 2015



Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

- Existing Interchange
- Proposed Interchange
- Interchange Needs Improvement
- Existing Grade Separation
- Proposed Grade Separation

Figure 1

Sheet 2 of 5

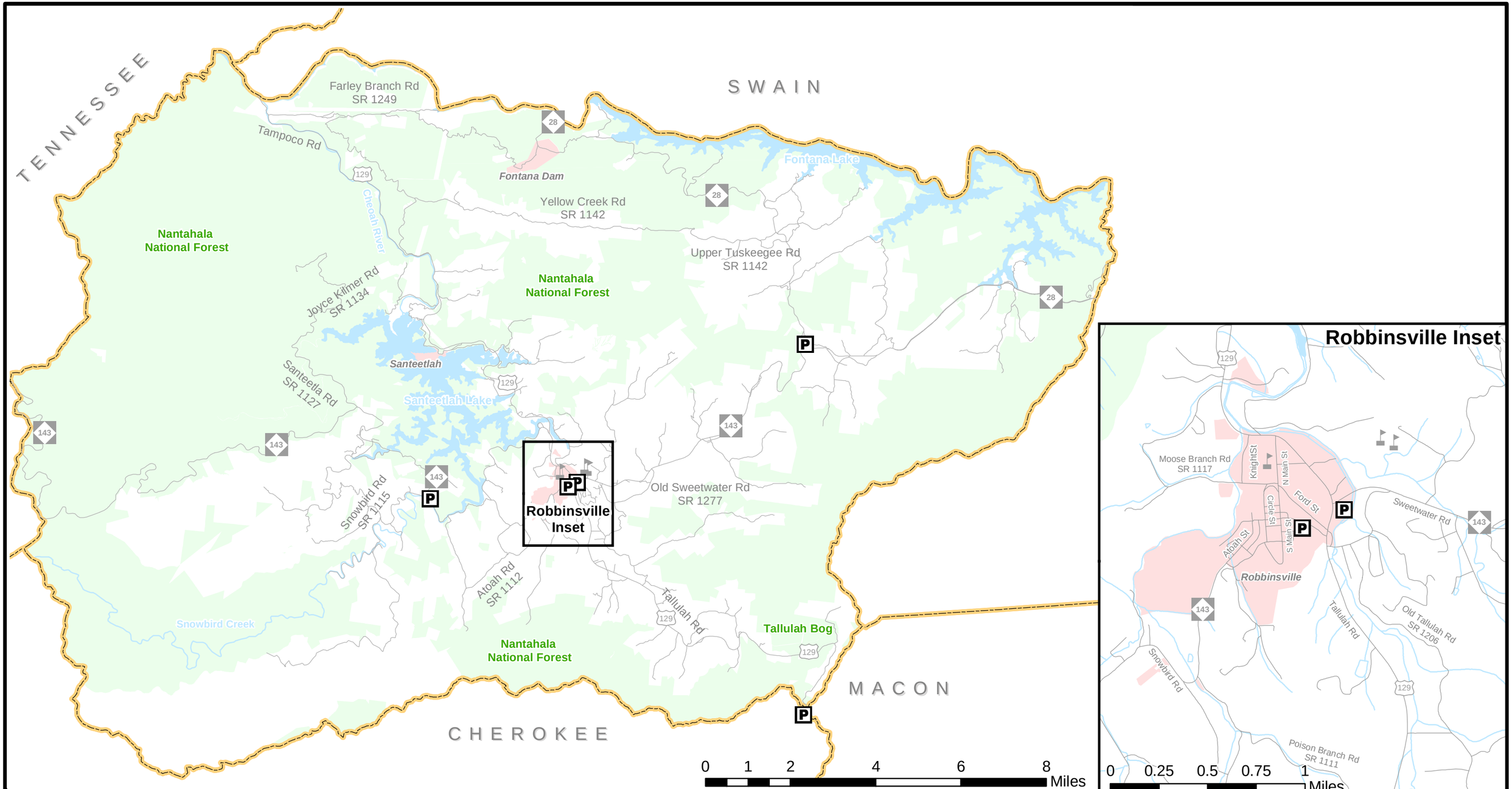
Base map date:

Refer to CTP document for more details

Highway Map
Graham County

Comprehensive Transportation Plan

Plan date: 3/23/15



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

Multimodal Connector
- Existing
- Recommended

Existing Grade Separation

Proposed Grade Separation

Park and Ride Lot
- Existing
- Recommended

Figure 1

Sheet 3 of 5

Base map date:

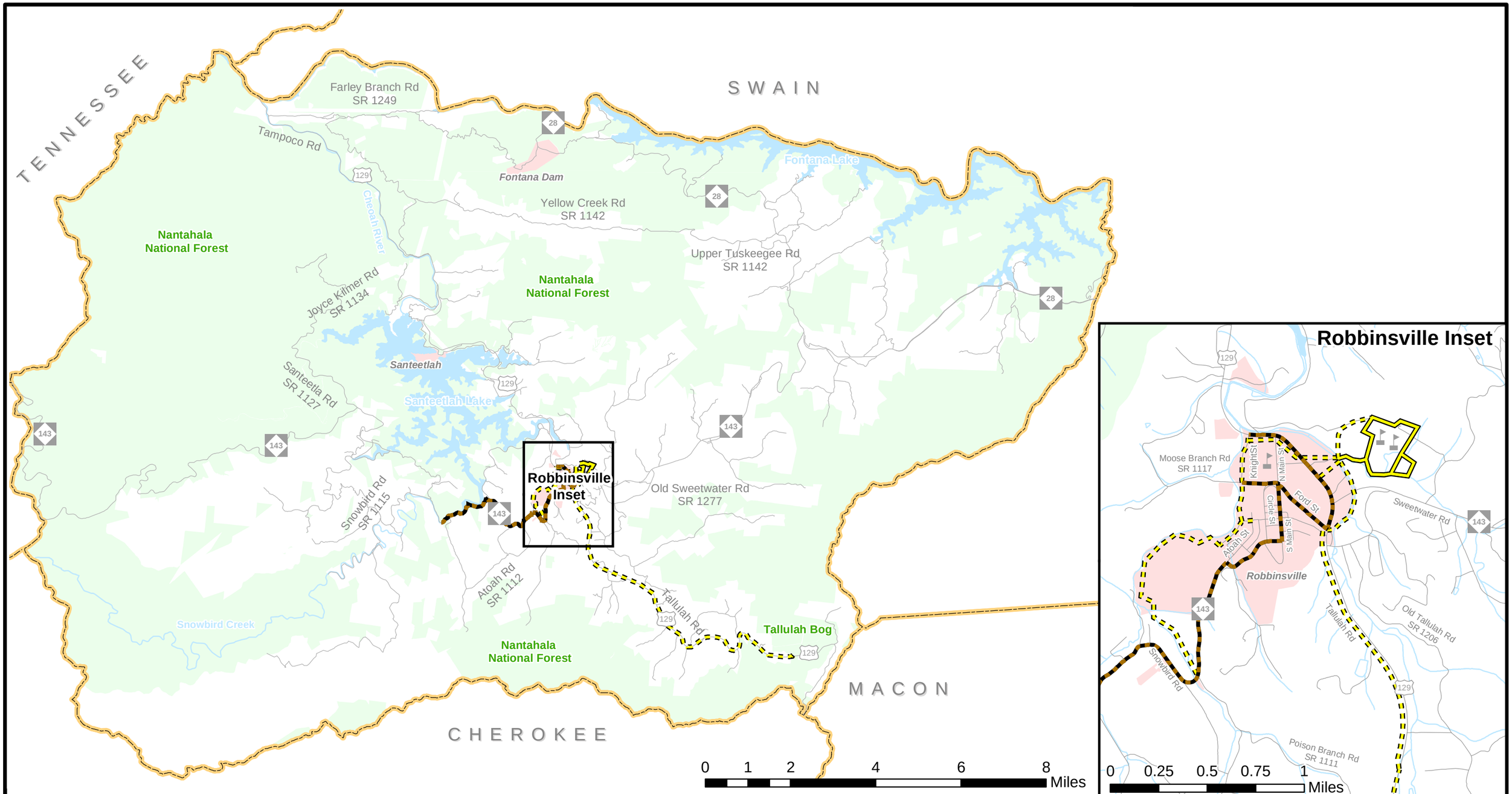
Refer to CTP document for more details

Transit Map

Graham County

Comprehensive Transportation Plan

Plan date: 3/23/15



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:

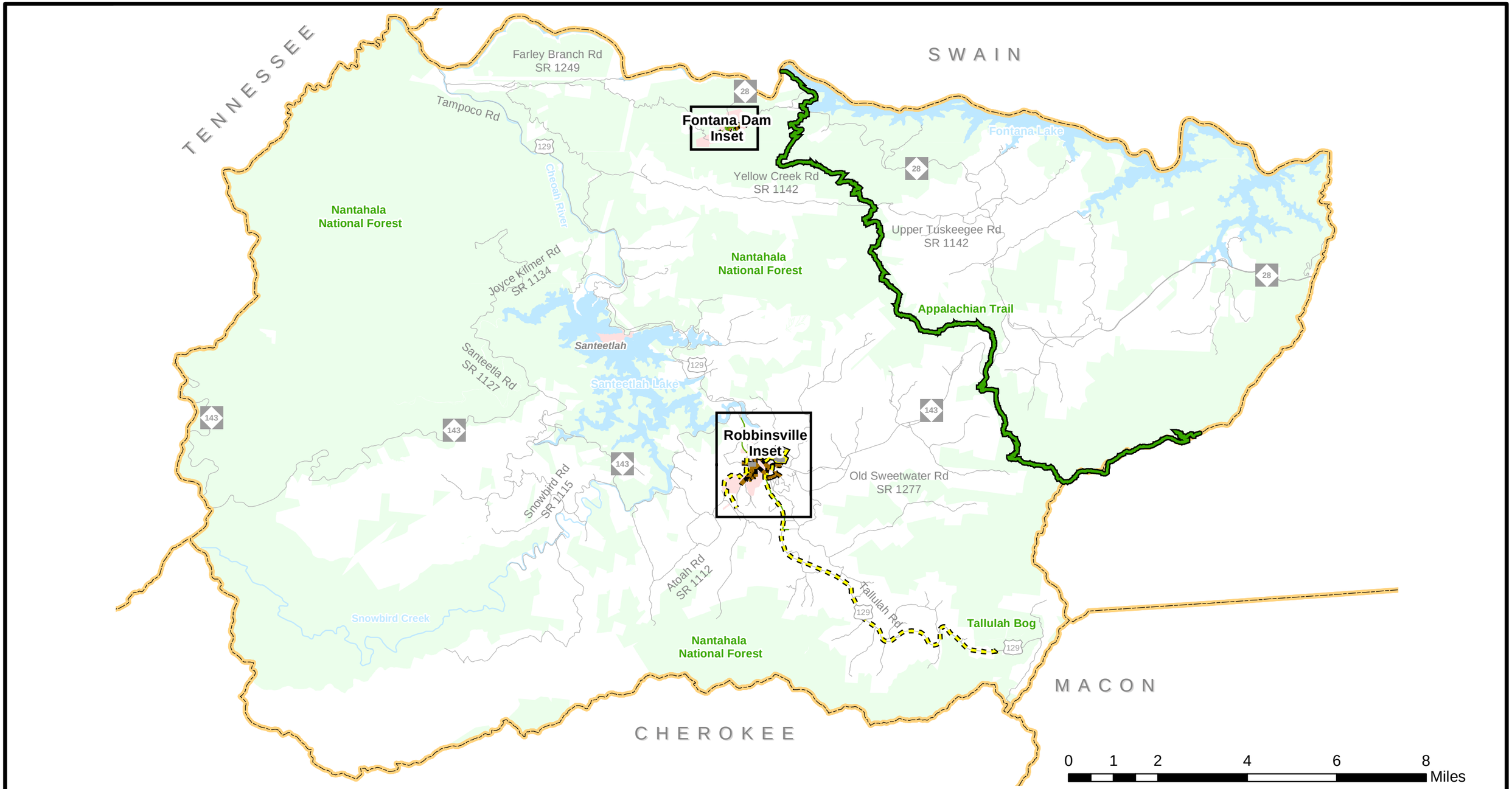
Refer to CTP document for more details

Bicycle Map

Graham County

Comprehensive Transportation Plan

Plan date: 3/23/15



Sidewalks
- 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 5 of 5

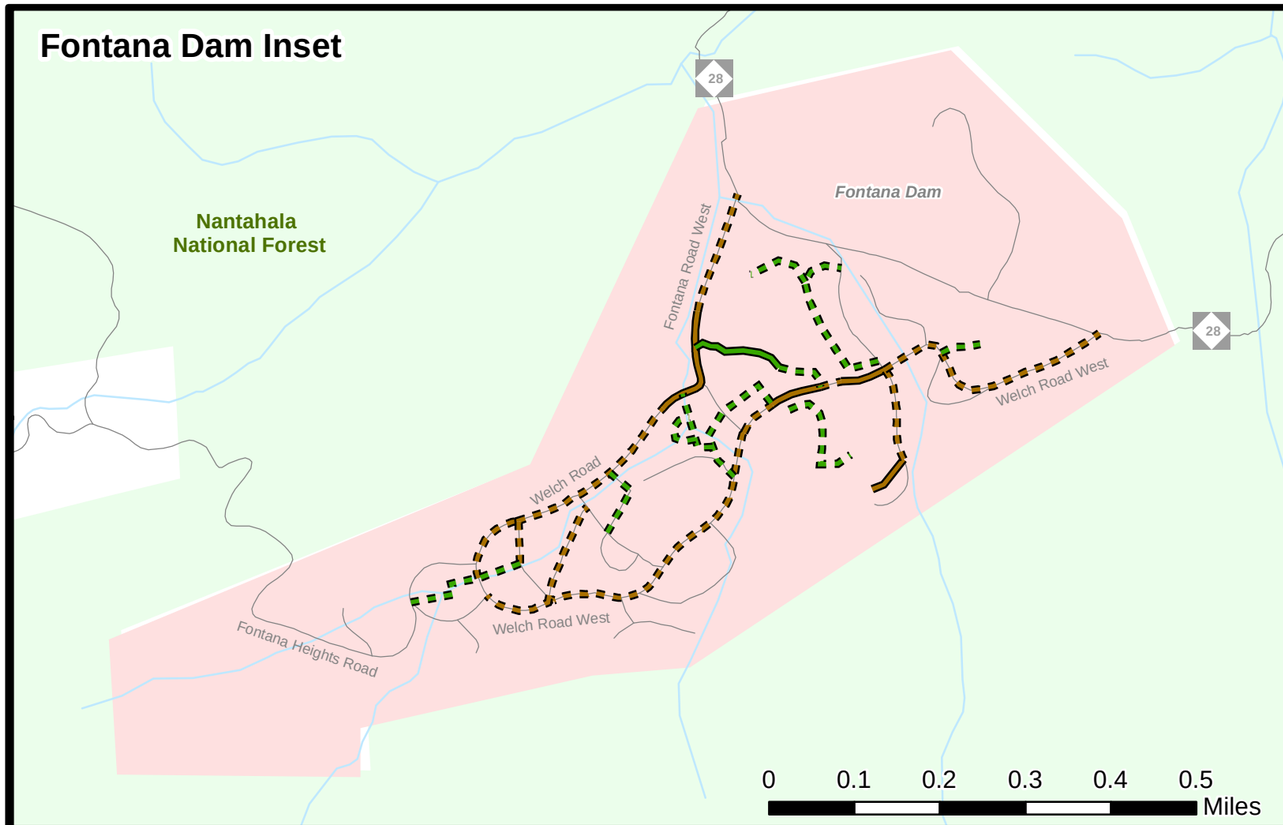
Base map date:

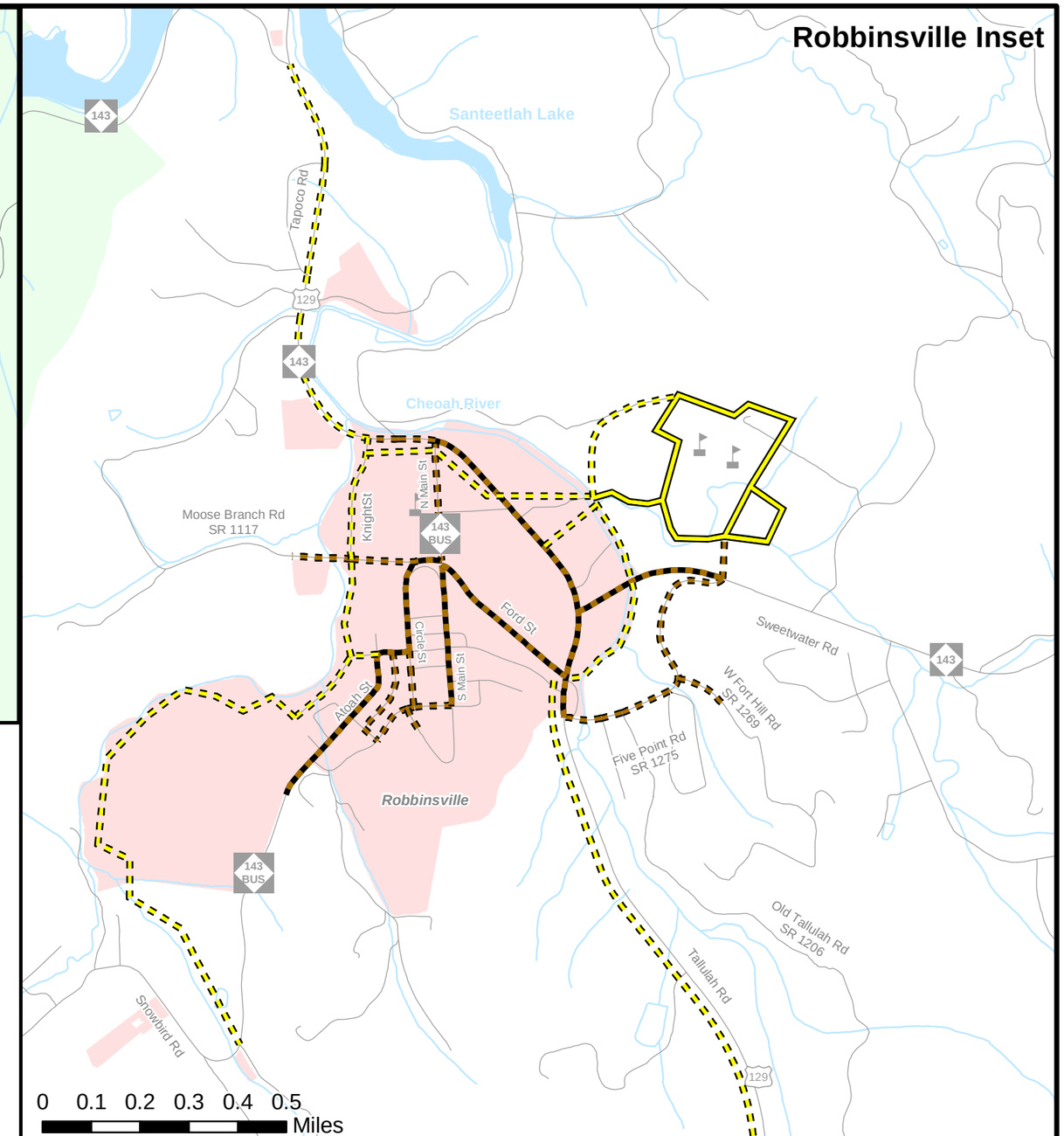
Refer to CTP document for more details

Pedestrian Map
Graham County

Comprehensive Transportation Plan

Plan date: 3/23/15





Sidewalks
- 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 5A of 5

Base map date:

Refer to CTP document for more details

Pedestrian Map
Graham County

Comprehensive Transportation Plan

Plan date: 3/23/15

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 county 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 county. 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 developed 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 development 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 development 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 North Carolina Strategic Transportation Corridor (STC) Policy[3] adopted by the Department of Transportation on March 4, 2015. The

[3] *For more information on the STC Policy, go to: https://connect.ncdot.gov/projects/planning/Pages/NCTransportationNetwork.aspx.*

STC is an initiative to protect and maximize the mobility and connectivity on a critical 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 STC is to provide a network of core multimodal transportation corridors that move most of North Carolina's freight and people, link critical centers of economic activity to international air and sea ports, and support interstate commerce. The primary goal to support this purpose is to create a greater consensus towards the development of a genuine vision for each corridor. Individual CTPs shall establish a vision for each corridor that preserves the inter-regional, long-distance travel needs into and through the study region. Strategic Transportation Corridors in Graham County include US 74. Refer to Appendix A for contact information for the STC.

In the development of this Graham County CTP, travel demand was projected from 2012 to 2040 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1993 to 2012. In addition, the Investment Guide Map from the *Graham County Gateway to Tomorrow Plan*[4] and local growth expectations were used to further refine future growth rates and patterns. The established future growth rates were endorsed by the Graham County Commission on February 4, 2014, Robbinsville Board of Aldermen on March 19, 2014, Lake Santeetlah Town Council on February 25, 2014, and Fontana Dam Town Council on February 20, 2014. Refer to Appendix G for more detailed information on growth expectations and the socio-economic data forecasting methodology.

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. Road segments that are near capacity in 2012 include:

- US 129 (Rodney Orr Bypass) from NC 143 (Sweetwater Road) to Woodland Height Road (SR 1155)

No road segments in the county are over capacity in 2012. Road segments that are forecasted to be over capacity in 2040 include:

- US 129 (Rodney Orr Bypass) from NC 143 (Sweetwater Road) to Woodland Height Road (SR 1155)
- US 129 (Tallulah Road) from Berts Creek Circle (SR 1204) to Lower Mill Creek Drive (SR 1105)

[4] *For more information on the Graham County Gateway to Tomorrow Plan, go to: http://www.optinswnc.org/graham-county/.*

- NC 143 (Sweetwater Road) from the end of the three lane section at 5 Point Road (SR 1275) / Robbinsville High School Entrance to Old Sweetwater Road (SR 1277)

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 Draft 2014–2020 State Transportation Improvement Program[5] (STIP).

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

- Geometry of the road (including number of lanes), horizontal and vertical alignment, and proximity of perceived obstructions to safe travel along the road;
- Typical users of the road, such as commuters, recreational travelers, and truck traffic;
- Access control, including streets and driveways, or lack thereof, along the roadway;
- Development along the road, including residential, commercial, agricultural, and industrial developments;
- Number of traffic signals along the route;
- Peaking characteristics of the traffic on the road (e.g. when rush hour occurs and how long it lasts);
- 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 (e.g. are all travelers going the same way at the same time, or are they equally split).

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 Transportation Planning Branch's *LOS D Standards for Systems Level Planning*. Recommended improvements

[5] *For more information on the TIP, go to: https://connect.ncdot.gov/projects/planning/Pages/default.aspx.*

and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C for new facilities. Refer to Appendix E for detailed information on LOS.

Traffic Crash 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 identify 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 Graham County CTP occurred between January 1, 2007 and December 31, 2011 During this period, a total of twenty-one intersections and twenty-five roadway sections were identified as having a high frequency of crashes as illustrated in Figure 4. High frequency crash locations are defined as intersections or roadway segments with 4 or more crashes during the five year time period reviewed. Contact information for the Transportation Mobility and Safety Division can be found in Appendix A.

Roadway segments with the highest number of crashes in Graham County between January 1, 2007 and December 31, 2011 include the following:

Facility	Roadway Section (From – To)	# of Crashes
NC 143 (Cherohala Skyway)	Tennessee - Forest Road (SR 1159)	50 or more
NC 143 (Snowbird Road)	Snowbird Road (SR 1115) - IU Gap Road (SR 1118)	20 to 29
NC 28 (Fontana Road)	Tennessee - Welch Road (SR 1246)	20 to 29
NC 28 (Fontana Road)	Goldbranch Court - Cable Cove Road (SR 1287)	20 to 29
US 129 (Tallulah Road)	Ledbetter Road (SR 1200) - Cherokee County	20 to 29

The NCDOT is actively involved with investigating and improving many of these locations. To request a more detailed analysis for any of these locations, or other intersections of concern, contact the Division Traffic Engineer (see 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. They include the following:

- NC 28 (Fontana Road): Bridge over Cheoah Lake
- NC 143 Business (Snowbird Road): Bridge over Long Creek
- NC 143 Business (Snowbird Road): Bridge over Atoah Creek
- Joyce Kilmer Road (SR 1134): Bridge over Cheoah River
- Moose Branch Road (SR 1117): Bridge over Long Creek (under construction)

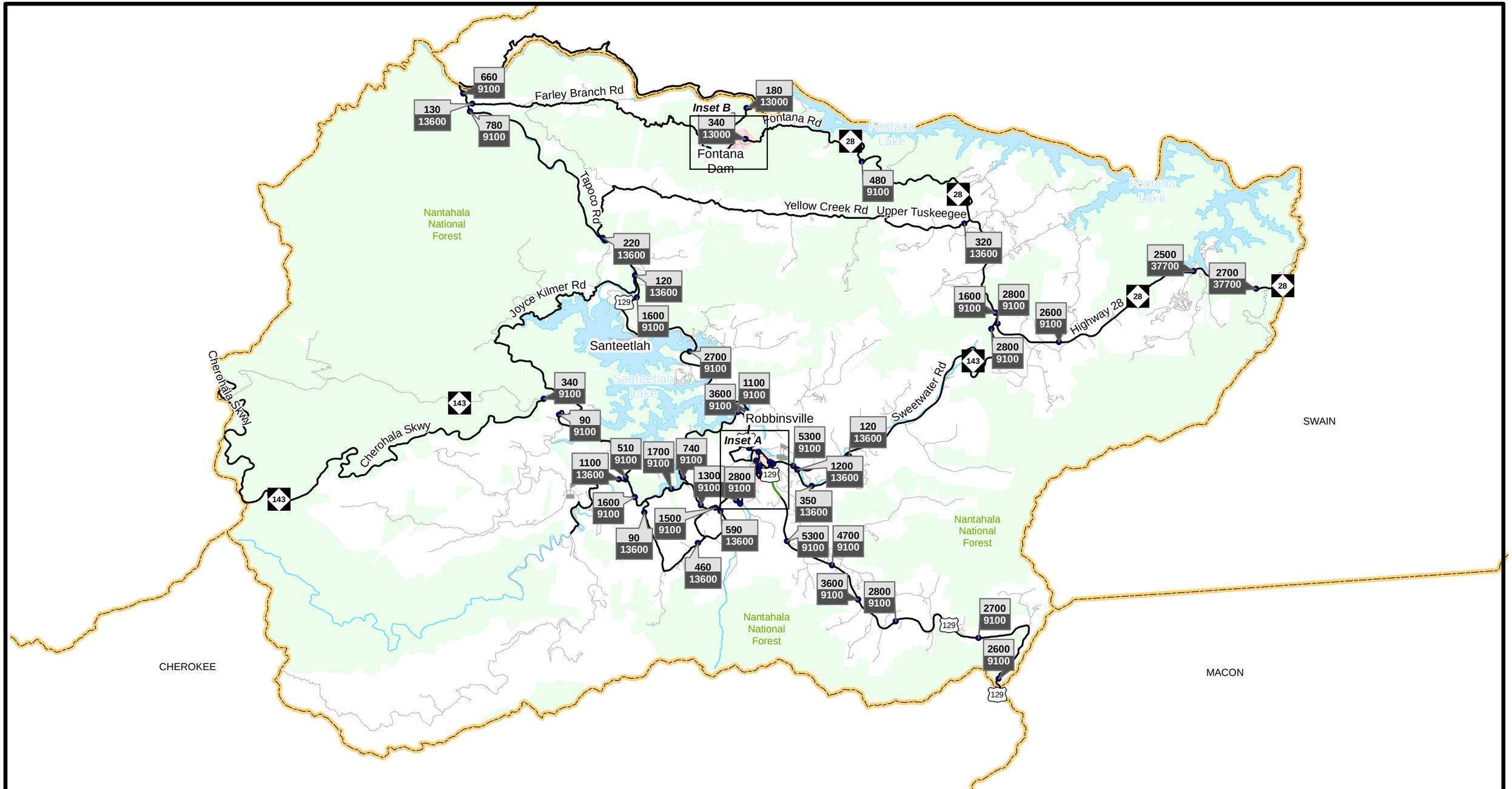
Of these, one is currently under construction and one other is along a roadway recommended for improvement in the CTP. As deficient bridges are replaced, every consideration should be given to proposed CTP recommendation and cross section associated with the recommendation. Table 4 in Appendix F gives 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.

Truck Traffic

Freight and delivery services are important to the economy of Graham County and a number of businesses depend on heavy trucks to ship their products out of the county and to bring in raw materials and goods for sale to consumers. At the same time, truck traffic on existing routes often hinder local traffic as truck speeds along the mountain routes are usually slower than the posted speed limit. While the Nantahala Gorge is not in Graham County, the region is affected by travel through the gorge. During the CTP process, it was noted that removal of trucks from routes heavily traveled by tourist, i.e. US 74 through the Nantahala Gorge would eliminate existing conflicts between the two.

Truck counts were available for nine locations within Graham County and provided by NCDOT. The following table summarizes the total number of trucks and the percentage of trucks of the average annual daily traffic count (AADT) in 2011:

Location	# of Trucks	% of Trucks
NC 28 west of Tobacco Branch	131	4.7%
NC 143 (Sweetwater Road) west of Denton Farm Road (SR ?)	110	2.8%
NC 143 (Massey Branch Road) east of Rock Quarry Road (SR ?)	38	2.7%
NC 143 (Cherohala Skyway) west of Joyce Kilmer Road (SR ?)	1	2.1%
Snowbird Road (SR ?) east of Long Creek Road (SR ?)	24	0.6%
US 129 (Tapoco Road) west of Thunderbird Mountain Road (SR ?)	29	2.0%
US 129 (Tapoco Road) north of Moose Branch Road (SR ?)	60	1.3%
US 129 (Rodney Orr Bypass) north of Laura Street	86	1.2%
US 129 (Tallulah Road) north of Cynthia Lane	78	1.5%
US 19/74 through the Nantahala Gorge	380	8.8%



Legend

- Over Capacity
- Near Capacity
- Roads
- Rivers and Streams
- Schools
- County Boundary
- Municipal Boundary
- National Forest

2012 Volumes
2012 Capacity

0 0.5 1 2 3 Miles

Figure 2
Sheet 1 of 2

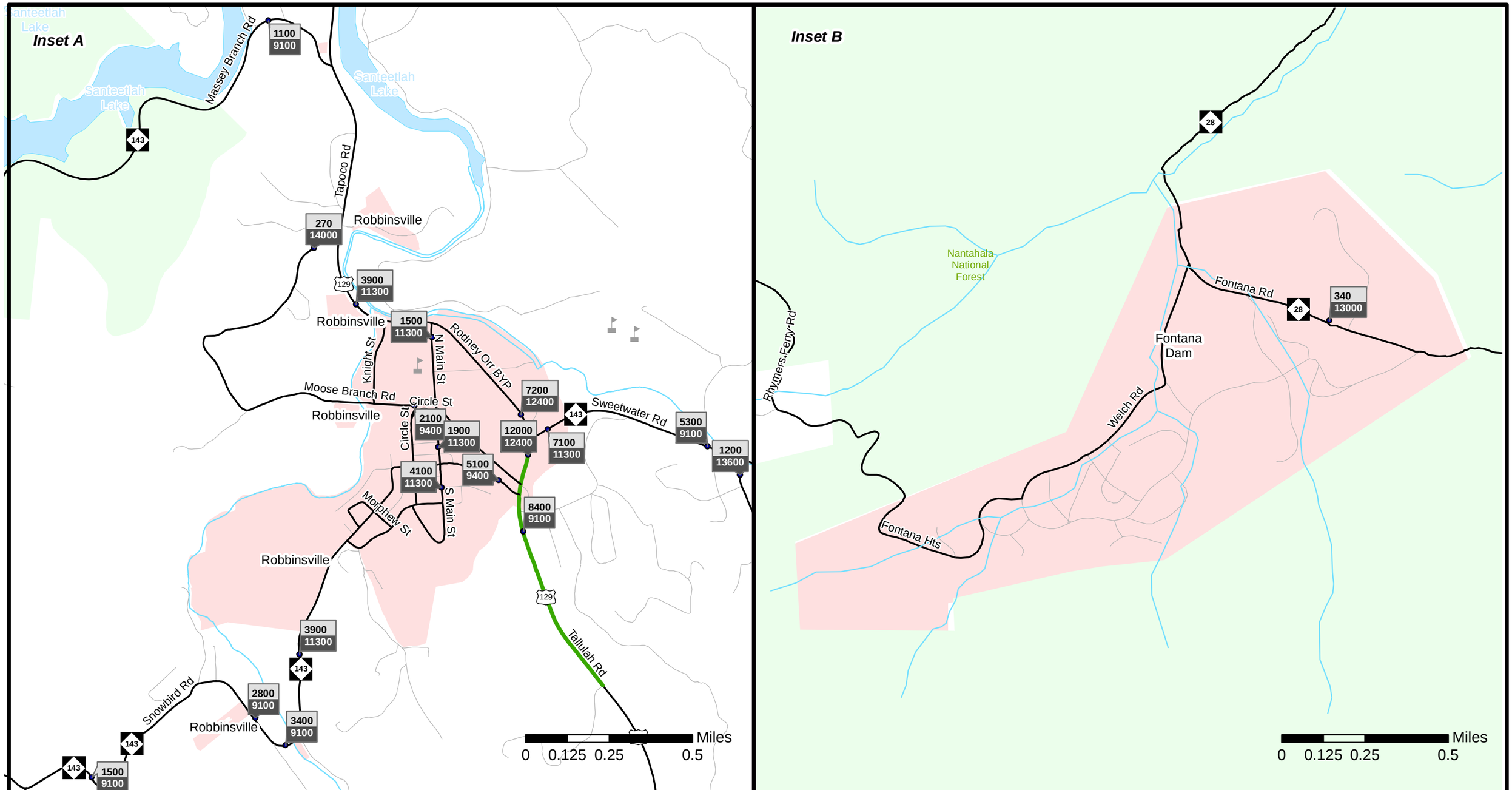
N W E S

Base map date: 09/18/2014

2012 Volumes and Capacity Deficiencies

Graham County

Comprehensive Transportation Plan



Legend

- Roads
- Rivers and Streams
- Schools
- County Boundary
- Municipal Boundary
- National Forest
- 2012 Volumes / 2012 Capacity

Figure 2
Sheet 2 of 2

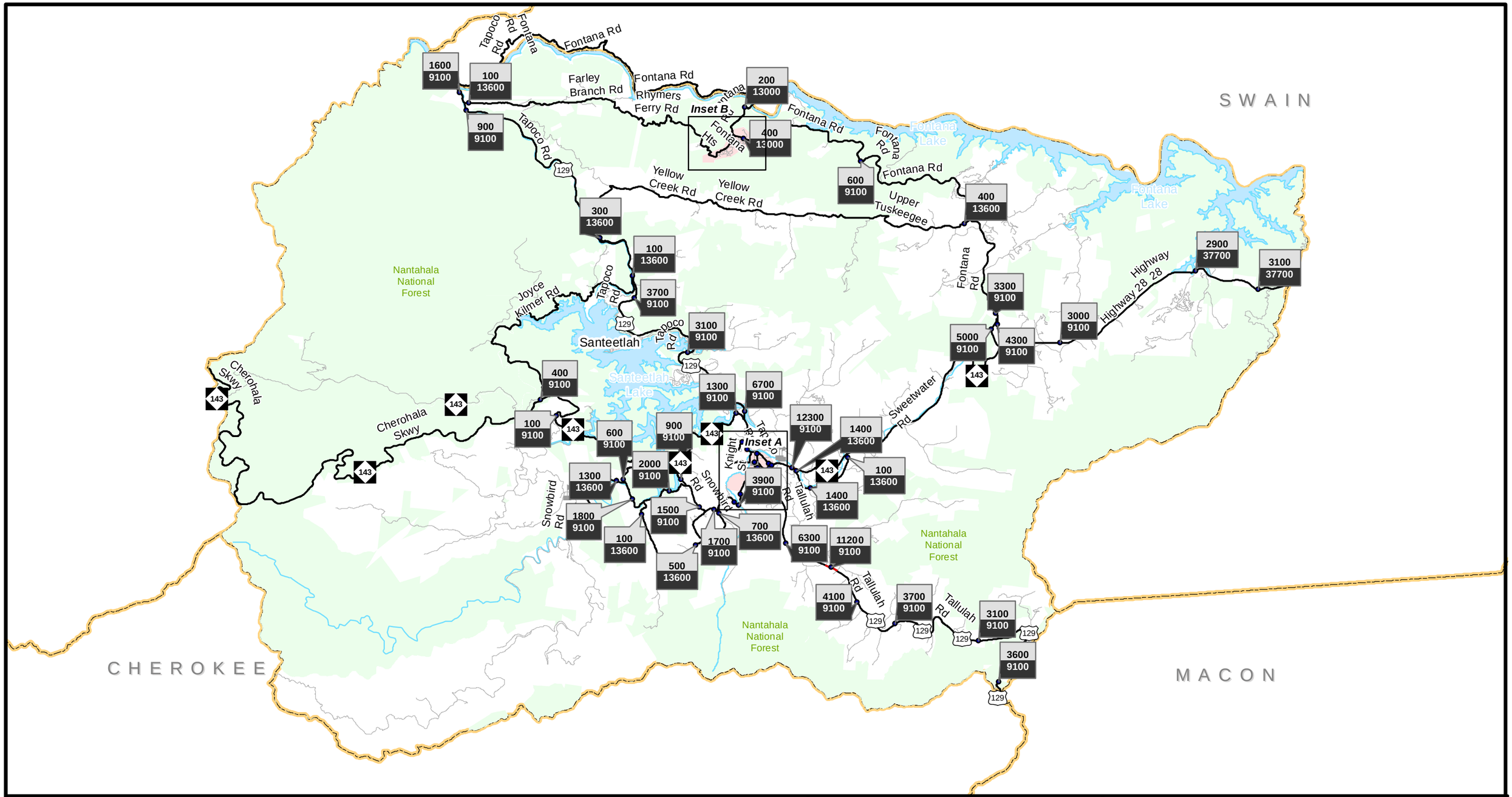
N W E S

Base map date: 09/18/2014

2012 Volumes and Capacity Deficiencies

Graham County

Comprehensive Transportation Plan



Legend

Over Capacity

Near Capacity

2040 Volumes
2012 Capacity

Miles
0 0.5 1 2 3

Figure 3
Sheet 1 of 2

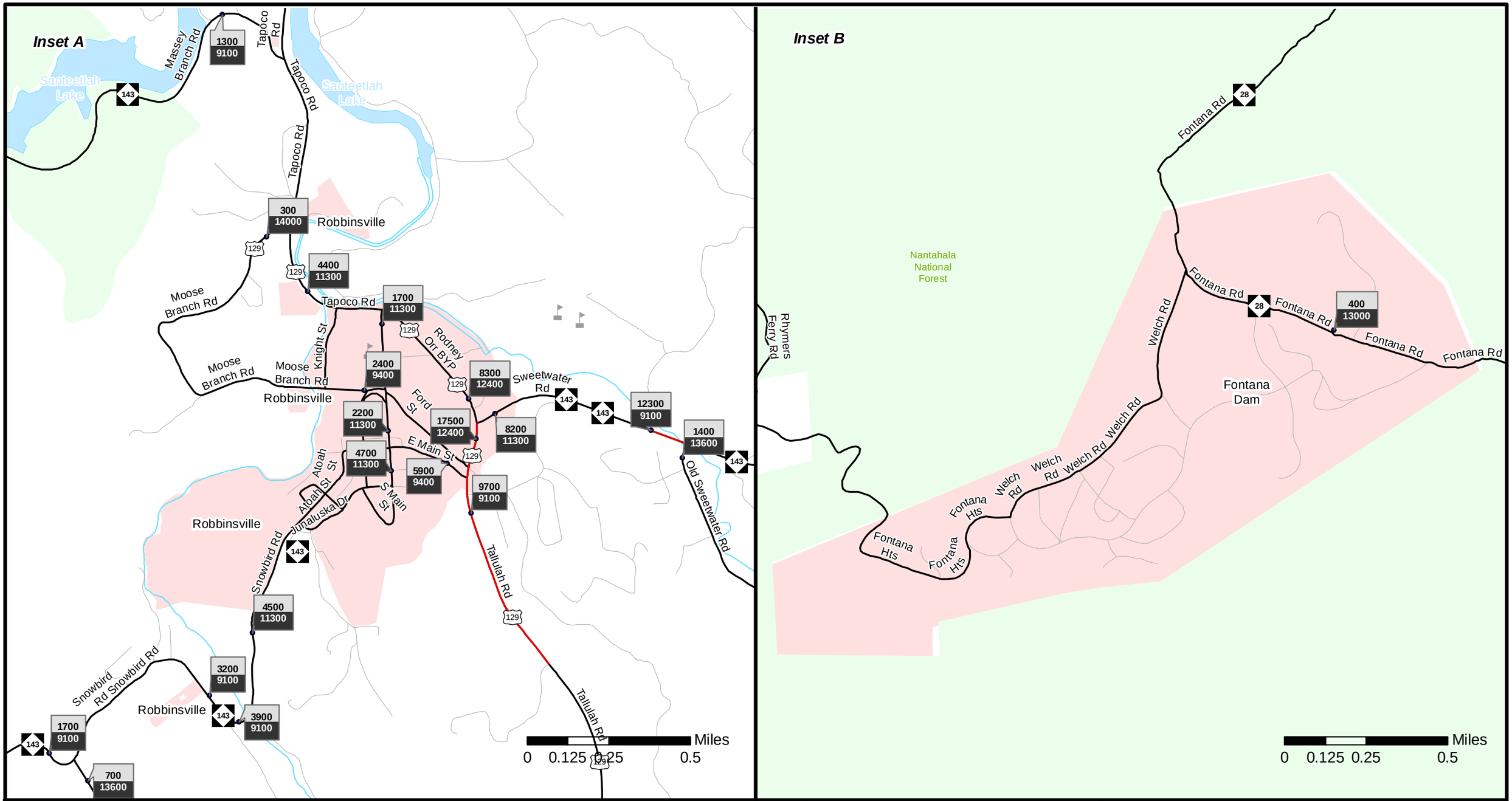
N W E S

Base map date: 09/18/2014

2040 Volumes and Capacity Deficiencies

Graham County

Comprehensive Transportation Plan



Legend

- Over Capacity
- Near Capacity

2040 Volumes
2012 Capacity

Figure 3
Sheet 2 of 2

N W E S

Base map date: 09/18/2014

2040 Volumes and Capacity Deficiencies

Graham County

Comprehensive Transportation Plan

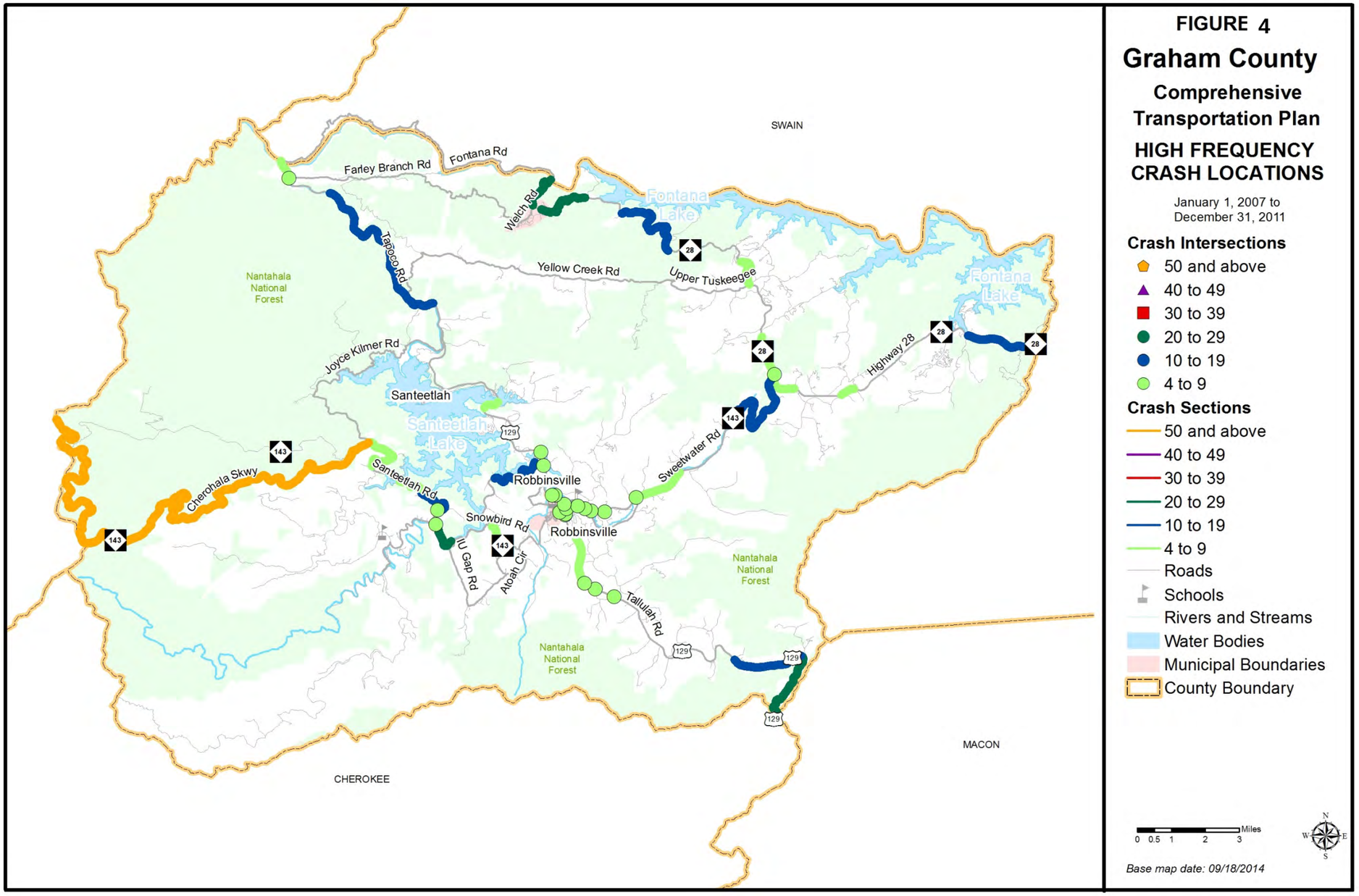
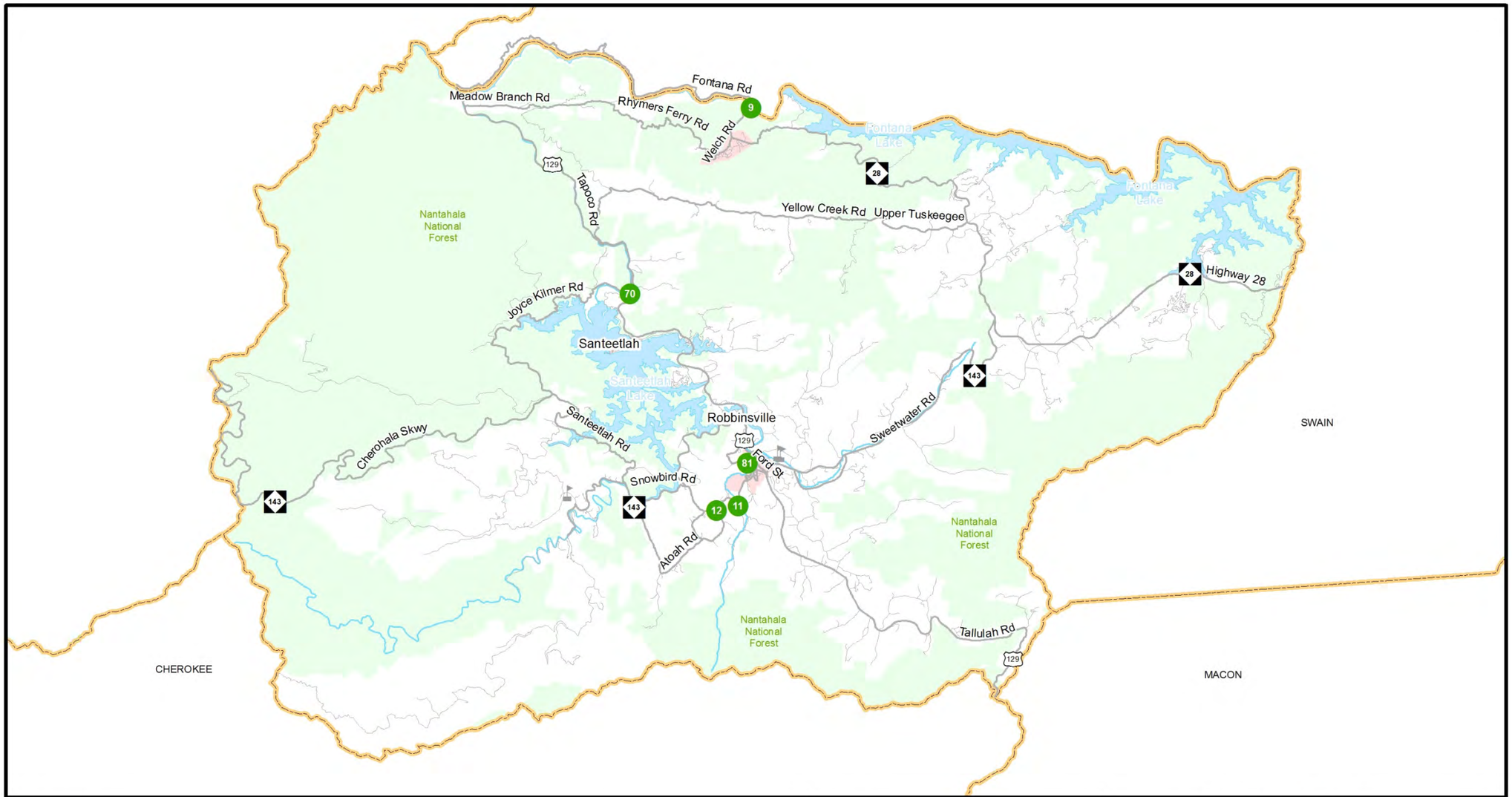


FIGURE 4
Graham County
Comprehensive Transportation Plan
HIGH FREQUENCY CRASH LOCATIONS
January 1, 2007 to December 31, 2011
Crash Intersections
50 and above
40 to 49
30 to 39
20 to 29
10 to 19
4 to 9
Crash Sections
50 and above
40 to 49
30 to 39
20 to 29
10 to 19
4 to 9
Roads
Schools
Rivers and Streams
Water Bodies
Municipal Boundaries
County Boundary
Miles
0 0.5 1 2 3
N
W
E
S
Base map date: 09/18/2014
SWAIN
MACON
CHEROKEE
Farley Branch Rd
Fontana Rd
Welch Rd
Fontana Lake
Tapoco Rd
Yellow Creek Rd
Upper Tuskeegee
Nantahala National Forest
Joyce Kilmer Rd
Santeetlah
Santeetlah Lake
Highway 28
Sweetwater Rd
Cherohala Skwy
Santeetlah Rd
Robbinsville
Snowbird Rd
IU Gap Rd
Atoah Cir
Tallulah Rd
28
143
129



Legend

Deficient Bridge

(#Bridge Number)

Schools

Roads

Rivers and Streams

Water Bodies

Municipal Boundary

County Boundary

National Forest

Miles
0 0.45 0.9 1.8 2.7

Figure 5

N W E S

Base map date: 09/18/2014

Refer to Appendix F for more details

Deficient Bridges

Graham County

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 is currently provided in Graham County; however there is no rail service or existing rail infrastructure in the county.

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 and Amtrak Thruway service operate 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. Currently, there are no existing or planned fixed route transit service in Graham County. Graham County Transit (GCT) is the primary provider of human service and general public transportation in Graham County. Anyone requiring non-emergency transportation is eligible to ride Graham County Transit through their demand response and subscription service, which requires scheduling in advance. Daily scheduled GCT service includes routes to Andrews,

Marble, and Cherokee. The GCT also provides out of county scheduled trips to Asheville, Bryson City, Sylva, Waynesville, Murphy and Hayesville. Services include transportation to non-emergency medical appointments, shopping centers, the Senior Center, and employment locations.

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 975,645 passengers in 2013.

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 487,000 passengers each year.

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

According to Rail Division of NCDOT there are no active or planned rail lines in Graham County. The Great Smoky Mountain Railroad passes close to the eastern border of the county. In the past, Graham County was served by the Graham County Railroad Company that operated a line from Robbinsville to Topton, where it intersected with the Southern mainline. The Graham County Railroad ceased operations in the early 1970s, and the right of way has since reverted back to the original property owners. Refer to Appendix A for contact information for the 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 2009, 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. In December 2013, NCDOT adopted *WalkBikeNC*[6], a statewide pedestrian and bicycle plan. No pedestrian or bicycle facilities are proposed for Graham County in the plan.

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

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

Inventories of existing and planned bicycle and pedestrian facilities for the planning area are presented on Sheets 4 and 5 of Figure 1. The 2012 *Reimagining Robbinsville*[7], 2013 *Robbinsville Pedestrian Connectivity Plan*[8], *Lighting the Way to a Walking Community,* and the 2013 NCDOT *WalkBikeNC*[9] plans were utilized in the development of these elements of the CTP. There are currently no state bicycle or pedestrian facilities located in Graham County. However, the existing Appalachian Trail goes through Graham County.

Graham County has a limited number of sidewalk and pedestrian facilities. The town of Robbinsville has the majority of sidewalks compared to the towns of Fontana Dam and Lake Santeetlah. Sidewalks exist along some streets throughout Robbinsville, but the conditions of the sidewalks vary. Most sidewalks exist only on one side of the roadway.

The Town of Robbinsville has several projects underway through the *Robbinsville Pedestrian Connectivity Plan* and *Lighting the Way to a Walking Community*. These plans are the blueprint for a more pedestrian and bicycle friendly town.

The *Robbinsville Pedestrian Connectivity Plan* is a 10-15 year plan that sets guidelines for creating trails, greenways and multipurpose paths adjacent or parallel to roadways and along stream corridors. The plan also includes modifications to existing roadways that will include sidewalks, crosswalks and other pedestrian infrastructure, along with

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[6] *For more information on WalkBikeNC, go to: http://www.ncdot.gov/bikeped/planning/walkbikenc/.*
[7] http://datalibrary.nemac.org/swnc/sites/default/files/Reimagining%20Robbinsville.pdf
[8] http://www.pewtrusts.org/en/~/media/Assets/External-Sites/Health-Impact-Project/RobbinsvillePedestrianConnectivityPlan.pdf
[9] http://www.ncdot.gov/bikeped/planning/walkbikenc/

bikeways that provide connections to major destinations within town. The plan focuses on developing pedestrian paths, bike trails, and greenways along three existing streams located within the town limits. The paths would connect popular areas within the town including the fitness trail located on Robbinsville High School campus, the basketball court, the swimming pool and playground area, the Junaluska Museum, shopping areas, historical buildings and Industrial Park that housed Stanley Furniture until 2014.

Graham County is also participating in another project, *Lighting the Way to a Walking Community*. The project will focus on the short term goal of improving existing walking and bicycle trails. The long range plan of the project is to build and connect greenways and trails to existing trails throughout the Robbinsville area. There are four phases to the project: Phase I includes upgrading, repairing, and lighting of the one mile fitness trail on the Robbinsville High School and Middle School campus; Phase II includes upgrading, repairing, and paving of the one-third mile long garden trail at the Stecoah Valley Center; Phase III includes enhancing the pedestrian walking paths in the town limits of Robbinsville; and Phase IV includes greenway and walking trail extensions and existing trail and walkway linkages in the town of Robbinsville.

All recommendations for bicycle and pedestrian facilities were coordinated with the local governments through the CTP Steering Committee 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 *Graham County Gateway to Tomorrow Plan* of 2014 (refer to Appendix G) was used to meet this requirement. This plan was completed by TSW for Graham County concurrently with the CTP, and coordination between the two plans was ongoing and included joint meetings of the CTP Steering Committee and Comprehensive Plan Committee. Additionally, the Opt-In Regional Vision was underway at the same time and the CTP process was coordinated with this plan through joint workshops and charettes that took place in Graham County and were open to the public.

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 or location 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 density of development. Additionally, traffic volumes have different peaks based on the time of day and the day of the week. For transportation planning purposes, land use is divided into the following categories:

- Residential: Land devoted to the housing of people, with the exception of hotels and motels which are considered commercial.

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

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

Existing commercial land uses in Graham County are mainly along US 129 (Rodney Orr Bypass) and US 129 (Tallulah Road) south of Robbinsville. Industrial areas are located east of Robbinsville in the Industrial Park that housed Stanley Furniture until 2014. There are several tracts of government owned institutional and open space land uses throughout the county. Additionally, a substantial portion of Graham County is national forest or otherwise protected land. The majority of the county that is not national forest or protected land is low density residential.

The highest projected population growth rates in Graham County are in areas in and around Robbinsville. For employment, the highest projected increases are to the south of Robbinsville along US 129 (Tallulah Road).

For detailed information on how land use and growth projections were developed for and applied in the CTP, refer to Appendix G.

Economic Development

Throughout the public involvement process and during CTP Steering Committee meetings, economic development was brought up as a high priority for Graham County. Members of the public and CTP Steering Committee stated that better transportation infrastructure would be beneficial to economic development, and the existing infrastructure has prevented companies with an interest in relocating to Graham County from doing so in the past. While the primary intent of the CTP is not to be an economic development tool since transportation infrastructure investments alone will not lead to economic development, access and mobility are necessary conditions for economic

activity. The following paragraphs provide a brief overview of Graham County's economic condition.

Graham County is located within the boundaries of the Appalachian Regional Commission (ARC), which is a federal and state partnership with a mission to advocate for sustainable community and economic development in Appalachia. The ARC economic status designation for Graham County in 2014 is distressed, which means it is one of the most economically depressed counties in the region. This designation also means Graham County is eligible for additional grant funding from ARC.

The North Carolina Department of Commerce ranked Graham County as a Tier 1 county in 2014. Tier 1 counties are the most economically distressed in the state. This tier system is intended to encourage economic activity in less prosperous counties through various state programs.

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 Act[10] (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.

Graham County, North Carolina is located in the rugged terrain of the Appalachian Mountains in western North Carolina. The location of the county provides the area with a natural landscape and environmental features that have influenced the planning and development of the region. A full listing of environmental features that are typically examined as a part of a CTP study is shown in Tables 1 and 2. Environmental features occurring within Graham County are shown in Figure 6 (Sheets 1 – 4) and highlighted in bold text in Tables 1 and 2. Environmental features that are not in bold were considered, but are not known to be present in Graham County.

Historic Resources

Graham County contains non-contiguous sections of the Eastern Band of Cherokee Indian land known as the Qualla Boundary. The Qualla Boundary is a land trust supervised by the Bureau of Indian Affairs.

The Appalachian Trail also goes through the eastern part of the county starting from the southeastern border with Swain County and ending at Fontana Dam in the northeastern portion of the county.

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

Several buildings and developments located in Graham County are listed in the National Historic Register of Places, the official list of the nation's historic places to preserve. The National Register listings include: The Historic Tapoco Lodge, the Snowbird Mountain Lodge, the Charles Noden George House, the Graham County Courthouse, the Santeetlah Hydroelectric Development, and the Cheoah Hydroelectric Development. Additionally, several eligible sites exist in the county and are considered with fairly equal weight in the NEPA process. The "Trail of Tears" road built by the U.S. Army to remove the Cherokee Indians in 1938 ran through Graham County through Tatham Gap connecting military forts at Robbinsville and Andrews.

Natural Resources

Graham County's natural resources include forests, trout streams, rivers, and lakes. Two thirds of Graham County is national forest. This includes the Joyce Kilmer Memorial Forest and the Nantahala National Forest. The county also borders the Great Smoky Mountains National Park.

Two rivers are located in the county, the Little Tennessee River runs along the northern border of the county and the Cheoah River runs down the middle of the county. Two lakes are also on the northern border of the county. Cheoah Reservoir and Lake Fontana were both created by dams on the Little Tennessee River. Lake Santeetlah, which was created from a dam on the Cheoah River, lies in the center of the county approximately six miles north of Robbinsville.

Table 1 – Environmental Features

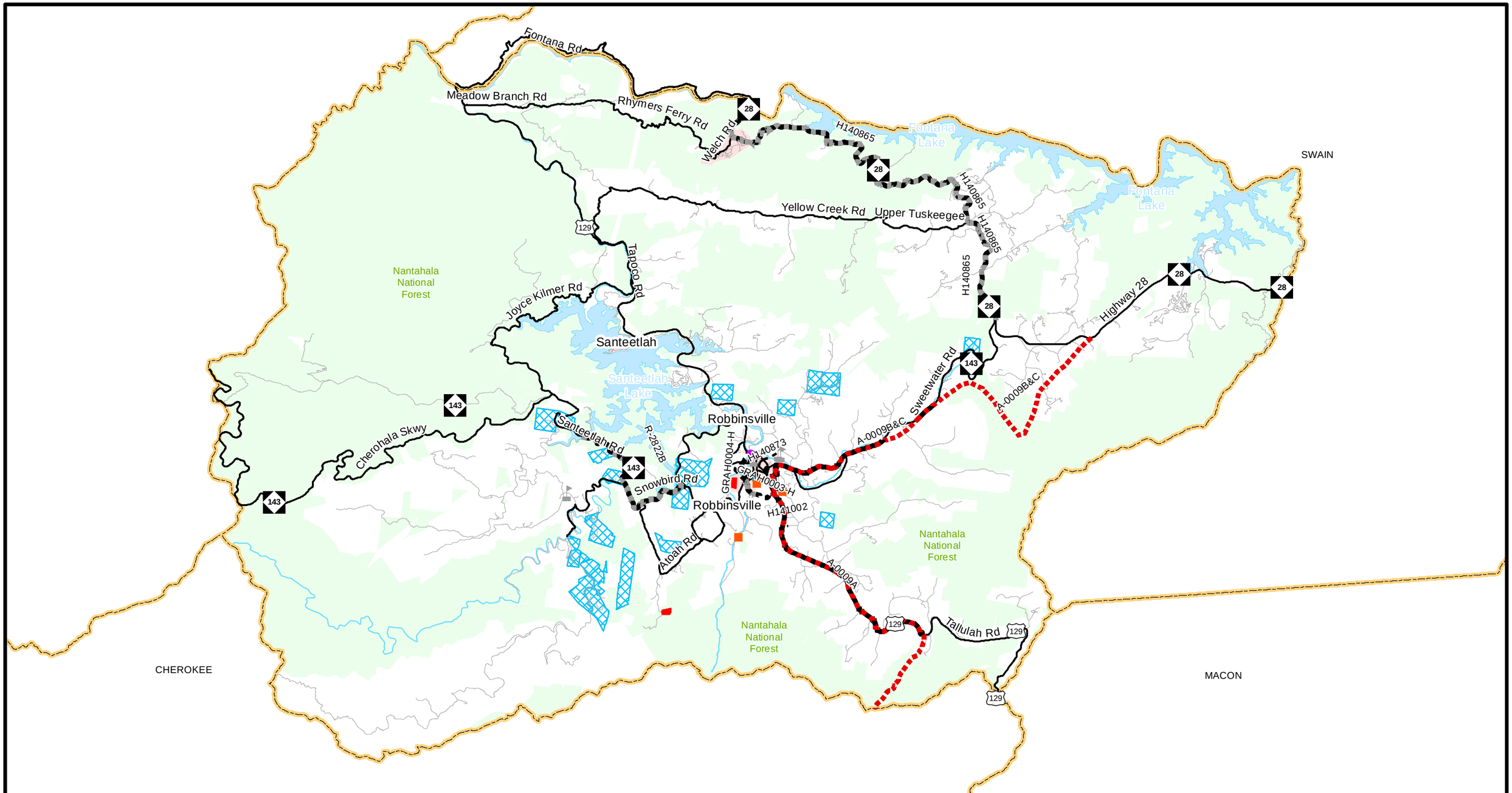
- Airport Boundaries
- Anadromous Fish Spawning Areas
- Beach Access Sites
- Bike Routes (NCDOT)
- Coastal Marinas
- Colleges and Universities
- **Conservation Tax Credit Properties**
- **Emergency Operation Centers**
- **Federal Land Ownership**
- Fisheries Nursery Areas
- Geology (including Dikes and Faults)
- **Hazardous Substance Disposal Sites**
- Hazardous Waste Facilities
- **High Quality Water and Outstanding Resource Water Management Zones**
- Hospital Locations
- **Hydrography (1:24,000 scale)**
- **Natural Heritage Element Occurrences**
- State Parks
- Submersed Rooted Vasculars
- Target Local Watersheds - EEP
- **Trout Streams (DWQ)**
- **Trout Waters (WRC)**
- **National Wetlands Inventory** North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS)
- Paddle Trails – Coastal Plain
- **Potential Acidic Rock Formations**
- Railroads (1:24,000 scale)
- **Recreation Projects – Land and Water Conservation Fund**
- **Sanitary Sewer Systems – Discharges, Land Application Areas, Pipes, Pumps and Treatment Plants**
- **Schools – Public and Non-Public**
- Shellfish Strata
- **Significant Natural Heritage Areas**[11]
- **Water Distribution Systems – Pipes, Pumps, Tanks, Treatment Plants, and Wells**
- **Water Supply Watersheds**
- Wild and Scenic Rivers

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

Table 2 – Restricted Environmental Features

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

[11] Areas containing ecologically significant natural communities or rare species. Due to its dynamic nature, this data becomes outdated very quickly.



Legend

- Water Distribution System - Tank
- Sanitary Sewer System - Treatment Plant
- Hazardous Substance Disposal Sites
- Eastern Band of Cherokee Indian Land
- Schools
- Study Roads
- Roads
- Rivers and Streams
- Water Bodies
- County Boundary
- Municipal Boundary
- National Forest

0 0.5 1 2 3 Miles

Figure 6
Sheet 1 of 4

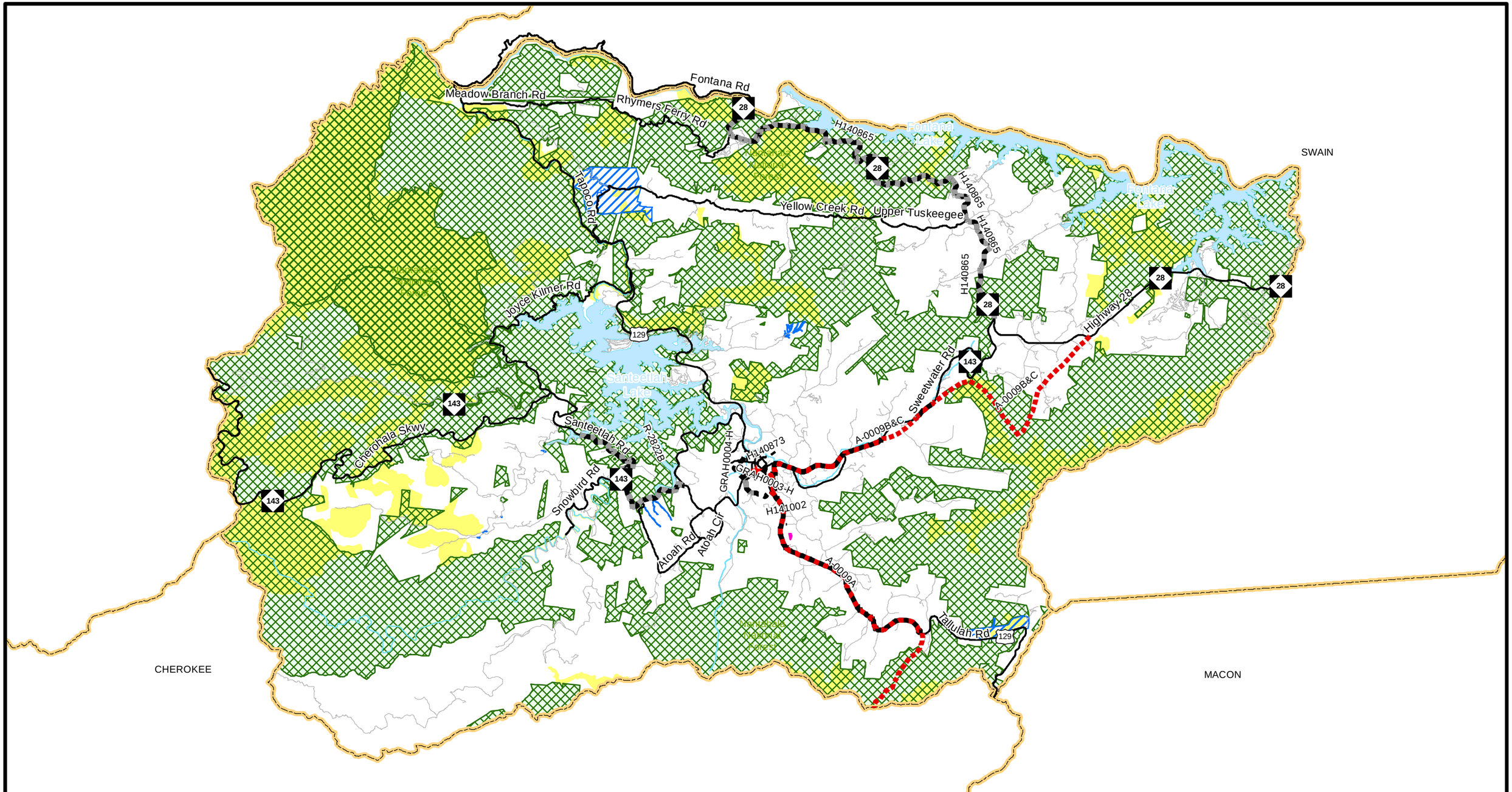
N W E S

Base map date: 03/18/2014

Environmental Features Map

Graham County

Comprehensive Transportation Plan



Legend

- ★ Emergency Operations Centers
- Recreation Projects - Land and Water Conservation Fund
- Federal Land Ownership
- Significant Natural Heritage Area
- Conservation Tax Credit Properties
- Roads
- Rivers and Streams
- Water Bodies
- County Boundary
- National Forest

0 0.5 1 2 3 Miles

Figure 6
Sheet 2 of 4

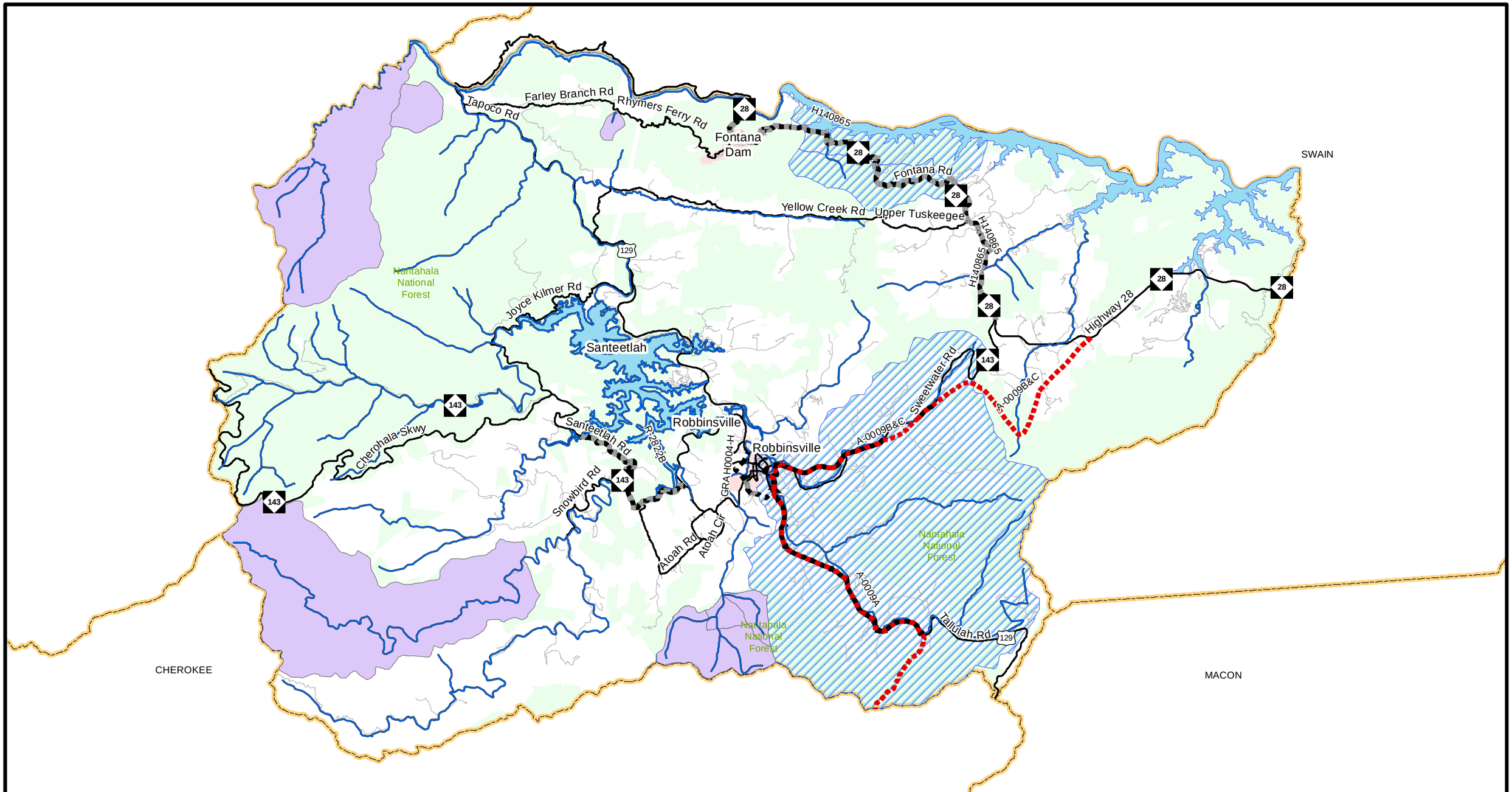
N W E S

Base map date: 09/18/2014

Environmental Features Map

Graham County

Comprehensive Transportation Plan



Legend

- **Trout Streams (DWQ)**
- Trout Waters (WRC)
- **Trout Waters (WRC)**
- **High Quality Water and Outstanding Resource Water Management Zone**
- **Water Supply Watersheds**
- County Boundary
- **Municipal Boundary**
- National Forest

0 0.5 1 2 3 Miles

Figure 6
Sheet 3 of 4

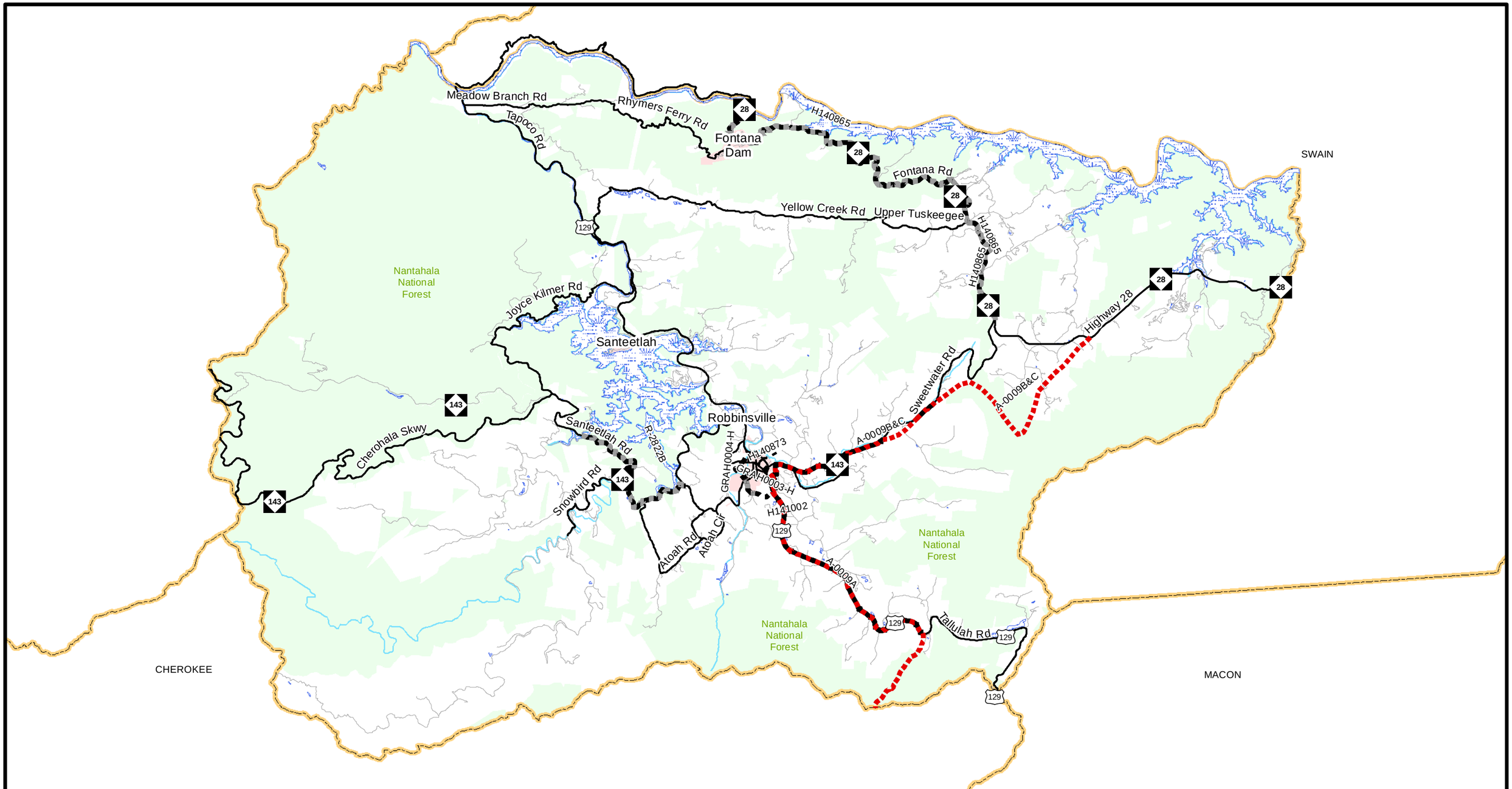
N W E S

Base map date: 09/18/2014

Environmental Features Map

Graham County

Comprehensive Transportation Plan



Legend

- **National Wetlands Inventory**
- Rivers and Streams
- County Boundary
- **Municipal Boundary**

0 0.5 1 2 3 Miles

Figure 6
Sheet 4 of 4

N W E S

Base map date: 09/18/2014

Environmental Features Map

Graham County

Comprehensive Transportation Plan

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 with the Graham County Board of Commissioners in February 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 the Graham County Comprehensive Transportation Plan Committee, which included a representative from each municipality, county staff, the Southwestern RPO and others. The committee provided information on current local plans, developed the 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.

Prior to presentation of the Draft CTP to the public, two public drop-in sessions were held: one on September 24, 2013 from 5:30pm to 7:30pm with 41 people in attendance and a community workshop that ran from February 3rd through the 7th, 2014 with 87 unique sign-ins during the course of the week. Both public drop-in sessions were publicized in the local media.
The CTP Goals and Objectives survey was provided on-line and in paper format at six locations in Graham County. Additionally, approximately 4,000 surveys were mailed out to households in the county.

The public involvement process also included holding one public open house session in Graham County to present the Draft CTP to the public and solicit comments. The meeting was held on April 22, 2014 at the Graham County Community Center located at 196 Knight Street in Robbinsville. The session was publicized in the local newspaper and was held from 4:30pm to 6:30pm. The session was attended by 66 people and 43 comment forms were submitted during the session. Additionally, 89 sticky notes with comments were attached to the CTP maps displayed during the session.

A public hearing was held on April 21, 2015 during the Graham County Commissioners meeting. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting by vote and adopted on May 5, 2015 by resolution.

The Southwestern RPO endorsed the CTP on March 23, 2015. The North Carolina Department of Transportation mutually adopted the Graham County CTP on June 4, 2015.

2. Recommendations

This chapter presents recommendations for each mode of transportation in the 2014 Graham County CTP as shown in Figure 1 in the Executive Summary. More detailed information on each recommendation is tabulated in Appendix C. Refer to Appendix I for documentation of project alternatives and scenarios that were studied but are not included in the adopted CTP, including alternatives for US 74 Relocation (A-0009/Corridor K),

NCDOT adopted a "Complete Streets[12]" 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 Unaddressed Deficiency

The following deficiency was identified during the development of the CTP, but remains unaddressed. During the public and stakeholder involvement process, long travel times and mobility on US 129 (Tapoco Road) from Robbinsville, North Carolina to Knoxville, Tennessee, were identified as problems. This was supported by the goals and objectives survey, where 36.5 percent of respondents indicated they regularly travel to Knoxville, TN from Graham County. Currently, due to the winding nature of the existing facility, this is a difficult drive with a high travel time. This deficiency was not addressed in this CTP because the tourism value of the portion of the facility commonly referred to as the “Tail of the Dragon” was brought up several times during the CTP process, and straightening the road may potentially have negative economic impacts on Graham County. This problem has not been identified in any previous plan.

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

2.2 Implementation

The CTP is based on the projected growth for the planning area. It is possible that actual growth patterns will differ from those logically anticipated. As a result, it may be necessary to accelerate or delay the implementation of some recommendations found within this plan. Some portions of the plan may require revisions in order to accommodate unexpected changes in development. Therefore, any changes made to one element of the CTP should be consistent with the other elements.

Initiative for implementing the CTP rests predominately with the governing bodies and citizens of Graham County and its municipalities. As transportation needs throughout the state exceed available funding, it is imperative that the local planning area aggressively pursue funding for priority projects. Projects should be prioritized locally and submitted to the Southwestern RPO for regional prioritization and submittal to NCDOT. Refer to Appendix A for contact information on 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 governments 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.

Additionally, the US 74 improvements recommended by this CTP are part of a regional project known as Corridor K (TIP project A-0009) that will require coordination between the Appalachian Regional Commission, Cherokee County, Graham County, affected municipalities, the Southwestern RPO, NCDOT, and the Federal Highway Administration (FHWA). There is currently $275,000,000 in Appalachian Development Highway System (ADHS) funds designated for Corridor K in North Carolina.

It should be noted that recommended improvements shown on the CTP map (Figure 1) represent agreement on identified deficiencies and potential solutions to address the deficiencies. While the CTP does propose recommended solutions, it may not represent the final location or cross section associated with the improvement. All CTP recommendations are based on high level systems analyses that seek to minimize impacts to the natural and human environment. Prior to implementing projects from the CTP, additional analysis will be necessary to meet the National Environmental Policy Act (NEPA) or the North Carolina (or State) Environmental Policy Act[13] (SEPA). During the NEPA/SEPA process, the specific project location and cross section will be determined based on environmental analysis and public input. This CTP may be used to support transportation decision making and provide transportation planning data in the NEPA/SEPA process.

2.3 Problem Statements

Problem statements describe the transportation system deficiencies identified during the CTP process and recommend improvements to alleviate the deficiencies. 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

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

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 STIP projects where the purpose and need for the project has already been established.

HIGHWAY

Future US 74 Proposed Improvements from Cherokee County to US 129 (Tallulah Road)	Local ID: A-0009A Last Updated: 2/5/2015

Identified Problem

Long and unreliable travel times to destinations within Graham County and regionally are currently impeding mobility and access to health care, jobs, and services. The Appalachian Regional Development Act of 1965 documented the lack of access, mobility, and economic development in the region in part due to the lack of infrastructure necessary for economic and human resource development. Also, US 129 is projected to be over capacity by 2040 from Berts Creek Circle (SR 1204) to Lower Mill Creek Drive (SR 1105). The purpose of this project is to improve travel reliability within Graham County and between neighboring jurisdictions; and to accommodate projected traffic volumes on the existing facility in order to maintain a Level of Service (LOS) D on the facility.

Justification of Need

Mountainous terrain and the current roadways serving Graham County create unique mobility challenges. These are particularly problematic for corridors connecting Robbinsville to Andrews and Murphy (US 129 and US 74) to the west and to the east toward Bryson City (NC 143 and NC 28). Steep grades result in slow moving vehicles, and a lack of passing lanes causes delays to all other vehicles. According to 2010 NCDOT AADT count data, 78 semi-trucks with trailers (1.5 percent of all vehicles) travel along US 129 (Tallulah Road) between Robbinsville and Cherokee County per day. Existing steep grades also add to the hazard of travel in frequent wintery conditions. In addition, the existing two lane roadways are prone to frequent disruption or closure due to fallen trees, landslides or other incidents. Finally, there are only four main roads that link Graham County to neighboring counties and Tennessee (one to the east, one to the north, one to the west, and one to the south) so any incident or road closure situation results in a significant impact to mobility in and out of the county. These issues impact overall mobility, safety and travel reliability as further described below. Figure 10, the Appalachian Highway Development System, and Figure 11 in Appendix I show the limitations to the current regional connectivity of Graham County.

Washouts and landslides due to Graham County's mountainous terrain cause road closures that decrease the reliability of the system. In May 2003, all four roads in and out of Graham County were closed by landslides at the same time. Additional landslides on US 129 (Tallulah Road) that cut off access to Graham County to the south occurred in 1994. As all roads into

and out of Graham County are currently two lane roadways. Even fallen trees can present a significant impediment to mobility, restricting access to and from the county.

US 129 is a two lane facility from Airport Road (SR 1260) to the Cherokee County with a LOS D capacity of 9,100 vehicles per day (vpd). Traffic volumes between Berts Creek Circle (SR 1204) and Lower Mill Creek Drive (SR 1105) are projected to be 11,240 vpd in 2040.

Results of the goals and objectives survey indicate that Graham County residents are regularly traveling to destinations throughout the region to obtain health care, with Asheville, Sylva, Bryson City, Murphy, and Andrews among the most common. Speed limits along US 129 vary from 35 mph to 55 mph. Vehicles behind heavy trucks on steep grades experience even slower speeds. In February of 2015, NCDOT INRIX real–time travel data showed the average speed between Robbinsville and Andrews ranged from 45mph to 55mph. Currently, if a vehicle were to get behind a vehicle traveling below the speed limit, it could be up to 19 miles before there is the opportunity to pass the slower vehicle which diminishes the reliability of travel time (see Figure 11 in Appendix I).

According to the U.S. Census Bureau Center for Economic Studies data, 67 percent of Graham County residents that are employed commute to jobs outside of the county. Specifically, 7.2 percent of Graham County residents that are employed are commuting to jobs in Swain County, 7.1 percent to Buncombe County, 6.6 percent to Jackson County, and 5.5 percent to Cherokee County. Additionally, 1,000 jobs in Graham County are filled by workers that commute in from other counties. Cherokee County accounts for the majority of commuters traveling in to Graham County for work, with 10.1 percent of all jobs in Graham County filled by Cherokee County residents. Jackson County is second, with 4.1 percent of Graham County jobs being filled by Jackson County residents. Swain County residents fill 4.0 percent of Graham County jobs. Also, a new Casino is being built in Cherokee County which will serve as a large employer in the region.

While not part of Graham County, it should be noted that through traffic along US 74 in the region must currently travel through the Nantahala River Gorge in Swain County. Currently US 19/74 is a two lane facility from NC 28 through the Nantahala Gorge until Worm Creek Drive in Cherokee County. The facility runs parallel to the Nantahala River through the gorge. The impact of a vehicle carrying hazardous material having an accident in the gorge has the potential to affect the Nantahala River. In addition, there is a significant amount of pedestrians along the facility in the vicinity of the Nantahala Outdoor Center (NOC) where parking is limited. *"An Economic Impact Study of the Nantahala Outdoor Center on the Economy of Western North Carolina"* completed by Western Carolina University in 2009 estimated the Nantahala River Gorge has approximately 220,000 visitors each year. Based on a survey conducted for the report, it was estimated that an additional 47,490 visitors would come to the Nantahala River Gorge with the addition of a River Park.[14] The River Park was completed in 2013 to accommodate the 2013 Freestyle Kayaking World Championships. In addition to the steady whitewater rafting tourism throughout the season, numerous whitewater rafting events are hosted in the area each year, i.e. the NRC Whitewater US Open.

[14] http://datalibrary.nemac.org/swnc/sites/default/files/2009%20Nantahala%20Gorge%20Economic%20Impact%20Study.pdf

In a 2010 traffic study of the traffic through the gorge, average daily traffic (ADT) on US 74 between NC 28 and Andrews ranged from 3,600 vpd near US 129 to 7,000 vpd near Andrews, with approximately 15 percent heavy vehicle traffic. The ADT on NC 28 between US 74 and NC 143 ranged from 4,000 vpd near US 74 to 2,700 vpd near NC 143 with approximately 10 percent truck traffic. Similarly, the ADT on NC 143 ranged from 3,300 near NC 28 to 7,500 vpd near US 129 in Robbinsville, with approximately 10 percent truck traffic.[15]

The potential of positive economic impacts in the region due to a more reliable facility is important. For more than a decade, manufacturing companies have declined in the western region of North Carolina. Stanley Furniture was a major employer for Graham County, and it closed down during this CTP study.[16] The county feels it is important to develop a road system that would support new industries moving to the area. Transportation accessibility to local and regional markets influences development. The 2008 *Corridor K Economic Development and Transportation Study FINAL REPORT*[17] conducted by Wilbur Smith Associates for the Southeast Tennessee Development District states there is a clear economic development need for an improved east-west transportation corridor to serve this region. As of March 2015, a new company plans on starting a lumber processing business in the old Stanley Furniture building. If the company plans to grow, it will need a road system that supports significant truck traffic that may result from that growth. The Appalachian Regional Commission (ARC) FY 2015 Budget Summary & Highlights[18] states that the ARC continues to support the completion of the Appalachian Highway Development System) and sees its completion as an essential step toward fostering economic growth and enabling Appalachia to become a successful contributor to the national economy.

Transit operations are also limited by travel times. Longer travel times result in reduced efficiency because more vehicles and drivers are required to maintain a given level of service. In contrast, shorter travel times between destinations allow more efficient transit operations, so more service can be provided for the same cost. Graham County Transit (GCT) is the primary provider of human service and general public transportation in Graham County. Anyone requiring non-emergency transportation is eligible to ride Graham County Transit through their demand response and subscription service, which requires scheduling in advance. Daily scheduled GCT service includes routes to Andrews, Marble, and Cherokee. The GCT also provides out of county scheduled trips to Asheville, Bryson City, Sylva, Waynesville, Murphy and Hayesville. Services include transportation to non-emergency medical appointments, shopping centers, the Senior Center, and employment locations. Currently, there are no plans for fixed route transit service in Graham County. There are no hospitals in Graham County so this on demand service is critical to residents without access to a personal vehicle.

[15]Travel Time Study for the US 74 Relocation, Graham County, TIP Project No. A-9 B & C prepared by Stantec for NCDOT Congestion Management Unit; September 7, 2010

[16] http://www.citizen-times.com/story/news/local/2014/04/02/graham-county-lose-last-major-manufacturer/7208557/

[17] http://www.developmentdistrict.com/downloads/FinalReport.pdf

[18] http://www.arc.gov/images/newsroom/publications/fy2015budget/FY2015PerformanceBudgetMar2014.pdf

Community Vision and Problem History

The vision, goals, and objectives developed as part of the Graham County CTP includes goals to improve mobility and safety throughout Graham County for all users and to increase multi-modal connectivity to neighboring cities and counties. An objective was identified to provide sufficient roadway capacity to maintain level of service (LOS) C in average conditions and LOS D in peak season conditions by 2040. Another objective identified is to improve access to medical facilities in the region by reducing travel time to the nearest hospitals, such as Murphy Medical Center in Murphy, by 15 percent by 2040. Finally, an objective to improve reliability of connections in and out of Graham County was identified.

This problem was identified on the following previous transportation plans:

- Appalachian Development Act of 1965 (as part of the Appalachian Development Highway System)
- *US 19 From the Andrews Bypass to 0.3 Miles West of the Little Tennessee River Final Environmental Impact Statement* (FEIS) dated 1984 (STIP Nos. A-8 and A-9)
- *Thoroughfare Plan Technical Report for Graham County and Robbinsville*[19], dated November, 1998.

The problems of mobility and capacity were identified in the *Thoroughfare Plan Technical Report for Graham County and Robbinsville* as well as the EIS completed in 1984. The Appalachian Development Act identified mobility and economic development as problems.

<u>CTP Project Proposal</u>

Project Description and Overview

The CTP project A-0009A consists of a four lane median divided boulevard (cross section 4A) on new location from US 19/74/129 east of Andrews in Cherokee County to US 129 (Tallulah Road) west of Bear Creek Drive. From there, upgrade US 129 (Tallulah Road) to a four lane median divided boulevard (cross section 4A) to 5 Points Road (SR 1275). The Graham County CTP Steering Committee selected an alternative that would allow trips on the US 74 Relocation to come as close to Robbinsville as possible.

The proposed project will improve the travel time and reliability of travel time between Robbinsville and Andrews and points west of there. The proposed project would also increase the capacity on US 129 to a level that would accommodate projected traffic volumes at an acceptable level of service. A new connection between Graham and Cherokee Counties could function as an alternate route in the event of road closures on US 129 (Tallulah Road) south of the proposed new location portion of this project. Refer to Appendix ? for more detailed information on other alternatives evaluated for this project as a part of the CTP.

Natural & Human Environmental Context

Based on a planning level environmental analysis using available GIS data, the proposed project will pass nearby or through national forest lands, significant natural heritage areas, trout streams, high quality water and outstanding resource water management zones, water

[19] http://digital.ncdcr.gov/cdm/ref/collection/p249901coll22/id/274721

supply watersheds, areas with potential for acidic rock formations, and wetlands. With the selection of an alternative that comes closer to Robbinsville, the human environment impacts increase to some businesses along US 129.

Relationship to Investment Guide Map

Currently, development along the southern portion of US 129 (Tallulah Road) is low density rural with a mix of single family residential, industrial, and commercial. The commercial development increases within the town limits of Robbinsville. The Investment Guide Map included in the *Graham County Gateway to Tomorrow* plan shows a mixture of protected areas (mainly adjacent to the proposed new alignment near Jutt's Creek), land stewardship areas, areas most suitable for development (mostly in and near Robbinsville), primary investment areas, and secondary investment areas along the proposed project.

Linkages to Other Plans and Proposed Project History

On March 9, 1965 the Appalachian Regional Development Act (ARDA) was passed and signed into law (PL 89-4). The law established the Appalachian Regional Commission (ARC)." The Appalachian Regional Development Act of 1965 describes the condition of the Appalachian region as follows: "…while abundant in natural resources and rich in potential, [the region] lags behind the rest of the Nation in its economic growth and that its people have not shared properly in the Nation's prosperity. The region's uneven past development, with its historical reliance on a few basic industries and a marginal agriculture, has failed to provide the economic base that is a vital prerequisite for vigorous, self-sustaining growth." (40 APP USC 403)[20]

The Appalachian Regional Commission goals[21] are as follows:

- Increase job opportunities and per capita income in Appalachia to reach parity with the nation;
- Strengthen the capacity of the people of Appalachia to compete in the global economy;
- Develop and improve Appalachia's infrastructure and make the Region economically competitive; and
- Build the Appalachian Development Highway System (ADHS) to reduce Appalachia's isolation.

A long term performance measure for ARC is to complete the ADHS by 2023. Over 86 percent (2,667.5 miles) of the total 3,090 miles are open to traffic, 91.1 miles are under construction and 331.5 miles are remaining to be constructed.[22]

The most notable aspect of the Graham County CTP is the question of Corridor K which A-0009 is a part (see Figure 10 in Appendix I). This longstanding and controversial issue has been central to the county's discussions about transportation improvements for decades. In 2010 the North Carolina Division of the Federal Highway Administration (FHWA) requested an assessment[23] of possible measures that could increase the likelihood of moving the project

[20] http://www.arc.gov/about/USCodeTitle40SubtitleIV.asp
[21] http://www.arc.gov/about/
[22] http://www.arc.gov/images/newsroom/publications/fy2015budget/FY2015PerformanceBudgetMar2014.pdf, p. 19
[23] *A report entitled "North Carolina Transportation Corridor K, A-9 Project – Assessment of the Potential for Interagency Collaboration" was published in 2011 by the U.S. Institute for Environmental Conflict Resolution.*

forward as interagency concerns about portions of the Corridor K "A-0009" project passing through Graham and Cherokee Counties were noted. This assessment recommended that a "collaborative process" take place at a regional level and include a reassessment of regional purpose and need for the road as mandated by Appalachian Developmental Highway System (ADHS) funding requirements.

The N. C. Interagency Leadership Team (NCILT) is an interagency team of leaders from multiple state and federal agencies with missions that impact transportation in some way. The ILT's mission is to "balance successfully mobility, natural and cultural resource protection, community values, and economic vitality." The resulting year-long "Opt-In" process was conceived by the NCILT to develop a regional vision for the seven westernmost "Region A" counties of North Carolina. Concurrently, this process also included preparation of comprehensive plans for Graham and Cherokee Counties, and a Comprehensive Transportation Plan (CTP) for Graham County. An important goal of the Opt-In process was to seek consensus at both county and regional levels on an approach for prioritizing transportation investments, including completion of Corridor K. What emerged from regional public discourse was a clear expression of need and purpose for completion of a road satisfying Corridor K's objective: to provide an improved and continuous east-west transportation route from Asheville to Chattanooga.

"*The North Carolina Appalachian Regional Commission Program 2014 Annual Strategy Statement*"[24] discusses the completion of the four Appalachian Development Highway System corridors that traverse North Carolina's mountains. A desire to focus the region's efforts at completing Corridor K, which includes the proposed A-0009 project that is sensitive to the natural and scenic beauty of the region while meeting performance, efficiency, and safety standards was documented in *Opt-In: The Regional Vision*, dated November 2014. This project is included in the 1998 Graham County and Robbinsville Thoroughfare Plans, and is on the Appalachian Development Highway System.

The Swain County CTP had an objective to provide bicycle accommodations to connect town centers (Bryson City and Cherokee) and the Nantahala Outdoor Center (NOC) by 2035, but the current facility is unable to meet this objective due to the type and amount of traffic traveling along the two lane facility. Much of this traffic would be removed with a relocation of US 74 and signed truck routes along US 74. On June 16, 2014 Cherokee County Commissioners gave their approval for considering alternatives to A-0009A that connected to the east of Andrews in addition to the west of Andrews.

Multi-modal Considerations

Travel times and connectivity for Graham County Transit vehicles will be improved by the proposed project. Graham County Transit currently operates daily routes to Andrews and Marble, with scheduled trips provided to Murphy.

Public/ Stakeholder Involvement

Through numerous public involvement open houses and workshops as well as meetings with the CTP Steering Committee, common comments received from the public indicated a need

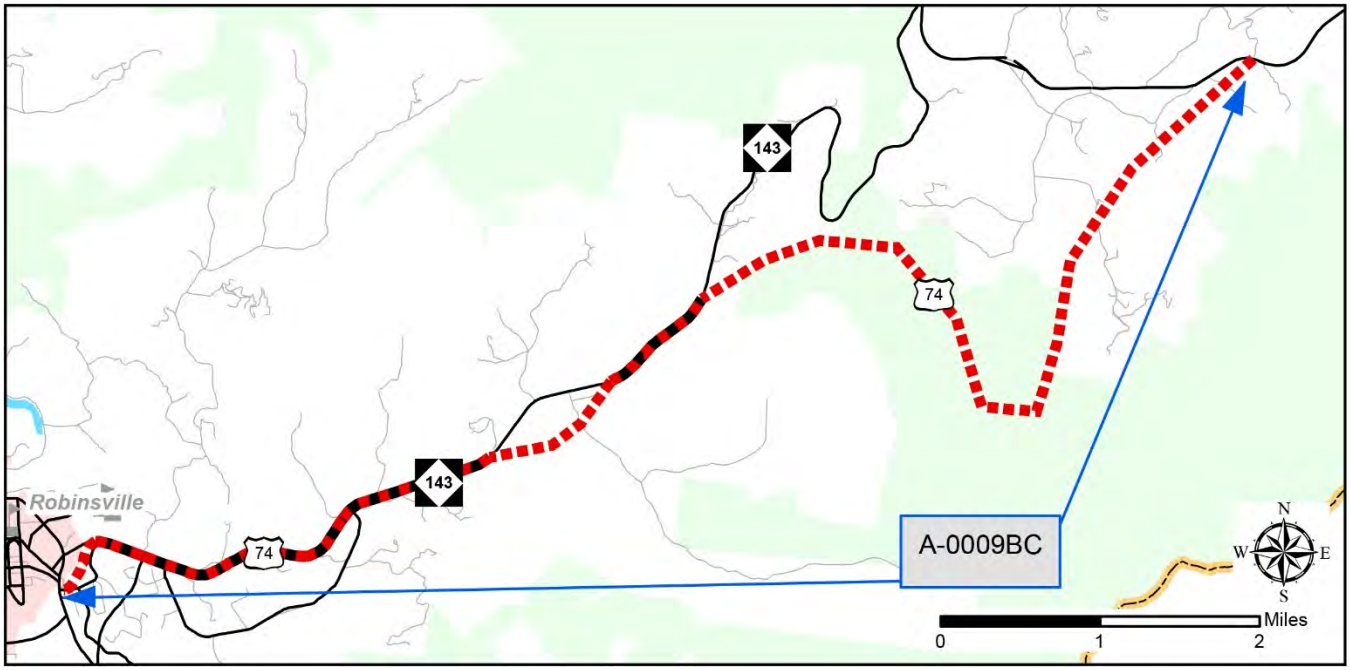
[24] http://www.nccommerce.com/Portals/2/ARC/ARC2014StrategyStatementFinalDraft.pdf#search="corridor K"

for better access and connectivity within Graham County and to neighboring jurisdictions for a multitude of trip purposes. Another common comment was that a better connection between Robbinsville and Stecoah was needed. The CTP map represents the desired corridor for the facility. It is the desire of locals to minimize the footprint of the project while meeting the intent of the project.
Several respondents to the Goals and Objectives survey stated that completion of A-0009 from Stecoah to Andrews was a top transportation priority in Graham County. Additionally, survey respondents reported traveling regularly to cities in Cherokee and Swain Counties for healthcare, employment, and shopping as well as other services not available in Graham County. Some survey respondents were opposed to a four lane cross section and suggested improving existing facilities such as NC 28, NC 143, and US 129.

At the public community workshops held in Graham County from February 3rd – 7th, 2014, citizens identified a need for better transportation between Graham County and neighboring jurisdictions. During this series of workshops, a hybrid approach of building a new location roadway where practicable and improving existing facilities to meet the need was proposed. It was expressed that this alternative configuration, while not as desirable as a continuous four lane facility on new location, would nevertheless address the identified problems and be a significant improvement to mobility and safety.

Appendix I contains comments received at the Draft CTP Open House specific to Corridor K. While there are citizens who do not support the project, the majority of comments support the project.

Future US 74 Proposed Improvements from US 129 to the Existing Four Lane Section of NC 28 in Stecoah	Local ID: A-0009B&C Last Updated: 2/5/2015



Identified Problem

Long and unreliable travels times to destinations within Graham County and regionally are currently impeding mobility and access to health care, jobs, and services. The Appalachian Regional Development Act of 1965 documented the lack of access, mobility, and economic development in the region. Also, US 129 between NC 143 and Woodland Height Road (SR 1155) is projected to be over capacity by 2040, thereby further reducing mobility. Additionally, NC 143 between 5 Point Road (SR 1275) and Old Sweetwater Road (SR 1277) is projected to be over capacity by 2040. The purpose of this project is to improve mobility and travel reliability within Graham County and within the region while maintaining a Level of Service (LOS) D on NC 143 and US 129.

Justification of Need

Terrain and the current mountainous roadways serving Graham County create unique mobility challenges. These are particularly problematic for corridors connecting Robbinsville west to Murphy (US 129 and US 74) (A-0009A) and east toward Bryson City, Waynesville, and Asheville (NC 143, NC 28, and US 74) (A-0009B&C). Steep grades, the 8.5 to 9 percent gradient located on NC 143 near the Stecoah Gap, result in slow moving vehicles and a lack of passing lanes causes delays to all other vehicles. Figure 10, the Appalachian Highway Development System, and Figure 11 in Appendix I show the limitations to the current regional connectivity of Graham County.

According to 2010 NCDOT AADT count data, 78 semi-trucks with trailers (1.5 percent of all vehicles) travel along US 129 (Tallulah Road) between Robbinsville and the Cherokee County per day. Existing steep grades also add to the hazard of travel in frequent wintery conditions.

In addition, the existing two lane roadways are prone to frequent disruption or closure due to fallen trees, landslides or other incidents. Finally, there are only four alternate roadways entering or leaving Graham County so any incident or road closure situation results in a significant impact to mobility in and out of the county. These issues impact overall mobility, safety and travel reliability as further described below. In May 2003, all four roads in and out of Graham County were closed by landslides at the same time. Additional landslides on US 129 (Tallulah Road) that cut off access to Graham County to the south occurred in 1994. As all roads into and out of Graham County are currently two lane roadways, even fallen trees can present a significant impediment to mobility, restricting access to and from the county.

In 2010 a travel time study for the US 74 Relocation, A-0009B&C, was completed by consulting firm Stantec. Travel time data along the study corridor was collected during the week of May 5, 2010 while area schools were in session. Travel time data was obtained by the floating car method. The corridor was driven four times, at least one time while following a heavy vehicle (truck or recreational vehicle). Worst case scenario had the trip along NC 143 and NC 28 from Robbinsville to US 74 taking approximately 25 minutes. There is not a guaranteed opportunity to pass a slow moving vehicle for almost 15 miles of the trip between Robbinsville and Swain County. Based on NCDOT AADT counts, 110 semi-trucks with trailers (2.8 percent of total traffic) travel along NC 143 (Sweetwater Road) per day.

US 129 is currently a three lane facility with a LOS D capacity of 12,400 from NC 143 to Airport Road (SR 1260) and projected traffic volumes of 17,500 vehicles per day (vpd) by 2040. NC 143 is a two lane facility from NC 28 to 5 Point Road and the entrance to Robbinsville High School. It has a capacity of 9,100 vpd and volumes between 5 Point Road (SR 1275) and Old Sweetwater Road (SR 1277) are projected to be 12,300 vpd by 2040.

Results of the goals and objectives survey indicate that Graham County residents are regularly traveling to destinations throughout the region to obtain health care, with Asheville, Sylva, Bryson City, Murphy, and Andrews among the most common. There is not a hospital in Graham County so residents depend on access to hospitals in the region i.e. Haywood Regional Medical Center in Clyde (Haywood Co.); Swain County Hospital in Bryson City; Harris Regional Hospital in Sylva; Angel Medical Center in Franklin (Macon County); Murphy Medical Center in Murphy (Cherokee County), and medical facilities in Asheville which includes a Veterans Administration (VA) hospital. 19.7% of the population of Graham County is over the age of 65, compared to 12.9% statewide. Diabetes among adults in the county increased 14.8% from 2005 to 2009 with 10.1% of adults diagnosed with diabetes in 2009.

In a 2010 traffic study[25] of the traffic through the gorge, average daily traffic (ADT) on US 74 between NC 28 and Andrews ranged from 3,600 vpd near US 129 to 7,000 vpd near Andrews, with approximately 15 percent heavy vehicle traffic. The ADT on NC 28 between US 74 and NC 143 range from 4,000 vpd near US 74 to 2,700 vpd near NC 143 with approximately 10 percent truck traffic. Similarly, the ADT on NC 143 range from 3,300 near NC 28 to 7,500 vpd near US 129 in Robbinsville, with approximately 10 percent truck traffic.

[25]Travel Time Study for the US 74 Relocation, Graham County, TIP Project No. A-9 B & C prepared by Stantec for NCDOT Congestion Management Unit; September 7, 2010

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The potential of positive economic impacts in the region due to a more reliable facility is important. For more than a decade, manufacturing companies have declined in the western region of North Carolina. Stanley Furniture was a major employer for Graham County, and it closed down during this CTP study.[26] The county feels it is important to develop a road system that would support new industries moving to the area. Transportation accessibility to local and regional markets influences development. The 2008 *Corridor K Economic Development and Transportation Study FINAL REPORT*[27] conducted by Wilbur Smith Associates for the Southeast Tennessee Development District states there is a clear economic development need for an improved east-west transportation corridor to serve this region. As of March 2015, a new company plans on starting a lumber processing business in the old Stanley Furniture building. It will need a road system that can support the amount of truck traffic it has the potential to generate. The Appalachian Regional Commission (ARC) FY 2015 Budget Summary & Highlights[28] states that the ARC continues to support the completion of the Appalachian Highway Development System) and sees its completion as an essential step toward fostering economic growth and enabling Appalachia to become a successful contributor to the national economy.

While not part of Graham County, it should be noted that through traffic along US 74 in the region must currently travel through the Nantahala River Gorge in Swain County. Currently US 19/74 is a two lane facility from NC 28 through the Nantahala Gorge until Worm Creek Drive in Cherokee County. The facility runs parallel to the Nantahala River through the gorge. The impact of a vehicle carrying hazardous material having an accident in the gorge has the potential to affect the Nantahala River. In addition, there is a significant amount of pedestrians along the facility in the vicinity of the Nantahala Outdoor Center and limited parking in the area. *"An Economic Impact Study of the Nantahala Outdoor Center on the Economy of Western North Carolina"* completed by Western Carolina University in 2009 estimated the Nantahala River Gorge has approximately 220,000 visitors each year. Based on a survey conducted for the report, it was estimated that an additional 47,490 visitors would come to the Nantahala River Gorge with the addition of a River Park.[29] The River Park was completed in 2013 to accommodate the 2013 Freestyle Kayaking World Championships. In addition to the steady whitewater rafting tourism throughout the season, numerous whitewater rafting events are hosted in the area each year, i.e. the NRC Whitewater US Open.

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[26] http://www.citizen-times.com/story/news/local/2014/04/02/graham-county-lose-last-major-manufacturer/7208557/
[27] http://www.developmentdistrict.com/downloads/FinalReport.pdf
[28] http://www.arc.gov/images/newsroom/publications/fy2015budget/FY2015PerformanceBudgetMar2014.pdf
[29] http://datalibrary.nemac.org/swnc/sites/default/files/2009%20Nantahala%20Gorge%20Economic%20Impact%20Study.pdf

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Transit operations are limited by travel times. Longer travel times result in reduced efficiency because more vehicles and drivers are required to maintain a given level of service. In contrast, shorter travel times between destinations allow more efficient transit operations, so more service can be provided for the same cost. Graham County Transit (GCT) is the primary provider of human service and general public transportation in Graham County. Anyone requiring non-emergency transportation is eligible to ride Graham County Transit through their demand response and subscription service, which requires scheduling in advance. Daily scheduled GCT service includes routes to Andrews, Marble, and Cherokee. The GCT also provides out of county scheduled trips to Asheville, Bryson City, Sylva, Waynesville, Murphy and Hayesville. Services include transportation to non-emergency medical appointments, shopping centers, the Senior Center, and employment locations. Currently, there are no plans for fixed route transit service in Graham County. There are no hospitals in Graham County so this on demand service is critical to residents without access to a personal vehicle.

Community Vision and Problem History

The vision, goals, and objectives developed as part of the Graham County CTP includes goals to improve mobility and safety throughout Graham County for all users and to increase multi-modal connectivity to neighboring cities and counties. An objective was identified to provide sufficient roadway capacity to maintain level of service (LOS) C in average conditions and LOS D in peak season conditions by 2040. Another objective identified is to improve access to medical facilities in the region by reducing travel time to the nearest hospitals, such as Murphy Medical Center in Murphy, by 15 percent by 2040. Finally, an objective to improve reliability of connections in and out of Graham County was identified.

This problem was identified on the following previous transportation plans:

- Appalachian Development Act of 1965 (as part of the Appalachian Development Highway System)
- *US 19 From the Andrews Bypass to 0.3 Miles West of the Little Tennessee River Final Environmental Impact Statement* (FEIS) dated 1984 (STIP Nos. A-8 and A-9)
- *Thoroughfare Plan Technical Report for Graham County and Robbinsville*, dated November, 1998.

The problems of mobility and capacity were identified in the *Thoroughfare Plan Technical Report for Graham County and Robbinsville* as well as the EIS completed in 1984. The Appalachian Development Act identified mobility and economic development as problems.

[30]Travel Time Study for the US 74 Relocation, Graham County, TIP Project No. A-9 B & C prepared by Stantec for NCDOT Congestion Management Unit; September 7, 2010

CTP Project Proposal

Project Description and Overview

The CTP project A-0009B is recommended to be a four lane median divided boulevard (cross section 4A) from US 129 near 5 Point Road (SR 1275) to NC 143 (Sweetwater Road) east of 5 Point Road (SR 1275); and A-0009C is recommended to be a combination of improvements of existing NC 143 to a four lane divided boulevard and a four lane divided boulevard on new location from east of 5 Point Road (SR 1275) to the existing four lane divided section of NC 143.

Existing roadway capacity along NC 143 (Sweetwater Road) and NC 28 is 9,100 vpd. The new roadway capacity will be 37,700 vpd. The local desire for the relocation of US 74 around Robbinsville is to keep it as close to Robbinsville that is possible so that their business district would be able to be seen from the facility. A-0009B will offer relief to the section of US 143 that is projected to be over capacity. A-0009C will offer relief to the section of NC 129 projected to be over capacity by 2040. Refer to Appendix ? for more detailed information on other alternatives evaluated for this project as a part of the CTP.

Page 42 of the Indirect Land Use Screening Report/Scenario Assessment (A-0009 BC) and Culmulative Effect Summary (A-0009 A/B/C/D) by NCDOT PDEA Branch dated November 5, 2010 states that a one-hour trip can reach into Jackson and Transylvania counties to the east, which is currently not possible for a one-hour trip without the proposed roadway. This accessibility is especially important to an aging population wanting to be connected to health care.

Natural & Human Environmental Context

Based on a planning level environmental analysis using available GIS data, the proposed project will pass nearby or through national forest lands, significant natural heritage areas, trout streams, high quality water and outstanding resource water management zones, water supply watersheds, areas with potential for acidic rock formations, and wetlands. With the selection of an alternative that comes closer to Robbinsville, the human environment impacts increase for some businesses along NC 143 (Sweetwater Road) and homes in the 5 Points Road (SR 1275) area.

Relationship to Investment Guide Map

Currently, development along NC 143 (Sweetwater Road) is low density rural with a mix of single family residential, industrial, and commercial. The Investment Guide Map included in the *Graham County Gateway to Tomorrow* plan shows a mixture of land stewardship areas and secondary investment areas along the proposed project, with some protected areas in the vicinity of Stecoah Gap (defined in the plan as land that is not developable and not appropriate for major infrastructure investment, such as state and federally managed land and land with permanent easements). Existing development along NC 28 is also low density rural with a mix of single family residential and commercial. Along NC 28, the Investment Guide Map identifies a mixture of land stewardship areas and secondary investment areas.

Linkages to Other Plans and Proposed Project History

On March 9, 1965 the Appalachian Regional Development Act (ARDA) was passed and signed into law (PL 89-4). The law established the Appalachian Regional Commission (ARC)." The Appalachian Regional Development Act of 1965 describes the condition of the Appalachian region as follows: "…while abundant in natural resources and rich in potential, [the region] lags behind the rest of the Nation in its economic growth and that its people have not shared properly in the Nation's prosperity. The region's uneven past development, with its historical reliance on a few basic industries and a marginal agriculture, has failed to provide the economic base that is a vital prerequisite for vigorous, self-sustaining growth." (40 APP USC 403)[31]

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A long term performance measure for ARC is to complete the ADHS by 2023. Over 86 percent (2,667.5 miles) of the total 3,090 miles are open to traffic, 91.1 miles are under construction and 331.5 miles are remaining to be constructed.[33]

The most notable aspect of the Graham County CTP is the question of Corridor K which A-0009 is a part (see Figure 10 in Appendix I). This longstanding and controversial issue has been central to the county's discussions about transportation improvements for decades. In 2010 the North Carolina Division of the Federal Highway Administration (FHWA) requested an assessment[34] of possible measures that could increase the likelihood of moving the project forward as interagency concerns about portions of the Corridor K "A-9" project passing through Graham and Cherokee Counties were noted. This assessment recommended that a "collaborative process" take place at a regional level and include a reassessment of regional purpose and need for the road as mandated by Appalachian Developmental Highway System (ADHS) funding requirements.

The N. C. Interagency Leadership Team (NCILT) is an interagency team of leaders from multiple state and federal agencies with missions that impact transportation in some way. The ILT's mission is to "balance successfully mobility, natural and cultural resource protection, community values, and economic vitality." The resulting year-long "Opt-In" process was conceived by the NCILT to develop a regional vision for the seven westernmost "Region A" counties of North Carolina. Concurrently, this process also included preparation of comprehensive plans for Graham and Cherokee Counties, and a Comprehensive Transportation Plan (CTP) for Graham County. An important goal of the Opt-In process was to

[31] http://www.arc.gov/about/USCodeTitle40SubtitleIV.asp
[32] http://www.arc.gov/about/
[33] http://www.arc.gov/images/newsroom/publications/fy2015budget/FY2015PerformanceBudgetMar2014.pdf, p. 19
[34] *A report entitled "North Carolina Transportation Corridor K, A-9 Project – Assessment of the Potential for Interagency Collaboration" was published in 2011 by the U.S. Institute for Environmental Conflict Resolution.*

seek consensus at both county and regional levels on an approach for prioritizing transportation investments, including completion of Corridor K. What emerged from regional public discourse was a clear expression of need and purpose for completion of a road satisfying Corridor K's objective: to provide an improved and continuous east-west transportation route from Asheville to Chattanooga.

In "The North Carolina Appalachian Regional Commission Program 2014 Annual Strategy Statement"[35] the desired completion of the four Appalachian Development Highway System corridors that traverse North Carolina's mountains is documented. A desire to focus the region's efforts at completing Corridor K, which includes the proposed A-0009 project that is sensitive to the natural and scenic beauty of the region while meeting performance, efficiency, and safety standards was documented in *Opt-In: The Regional Vision*, dated November 2014. This project is included in the 1998 Graham County and Robbinsville Thoroughfare Plans, and is on the Appalachian Development Highway System.

The Swain County CTP had an objective to provide bicycle accommodations to connect town centers (Bryson City and Cherokee) and the Nantahala Outdoor Center (NOC) by 2035, but the current facility is unable to meet this objective due to the type and amount of traffic traveling along the two lane facility. An alternative truck route would allow bicycles to more safely use US 19/74 to the NOC.

Multi-modal Considerations

Travel times and connectivity for Graham County Transit vehicles will be improved by the proposed project. Graham County Transit currently offers scheduled trips to Bryson City, Sylva, Waynesville and Asheville.

Public/Stakeholder Involvement

Through numerous public involvement open houses and workshops as well as meetings with the CTP Steering Committee, common comments received from the public indicated a need for better access and connectivity within Graham County and to neighboring jurisdictions for a multitude of trip purposes. Another common comment was that a better connection between Robbinsville and Stecoah was needed.

Several respondents to the Goals and Objectives survey stated that completion of A-0009 from Stecoah to Andrews was a top transportation priority in Graham County. Additionally, survey respondents reported traveling regularly to cities in Cherokee and Swain Counties for healthcare, employment, and shopping as well as other services not available in Graham County. Some survey respondents were opposed to a four lane cross section and suggested improving existing facilities such as NC 28, NC 143, and US 129.

At the public community workshops held in Graham County from February 3rd – 7th, 2014, citizens identified a need for better transportation between Graham County and neighboring jurisdictions. During this series of workshops, a hybrid approach of building a new location roadway where practicable and improving existing facilities to meet the need was proposed. It

[35] http://www.nccommerce.com/Portals/2/ARC/ARC2014StrategyStatementFinalDraft.pdf#search="corridor K"

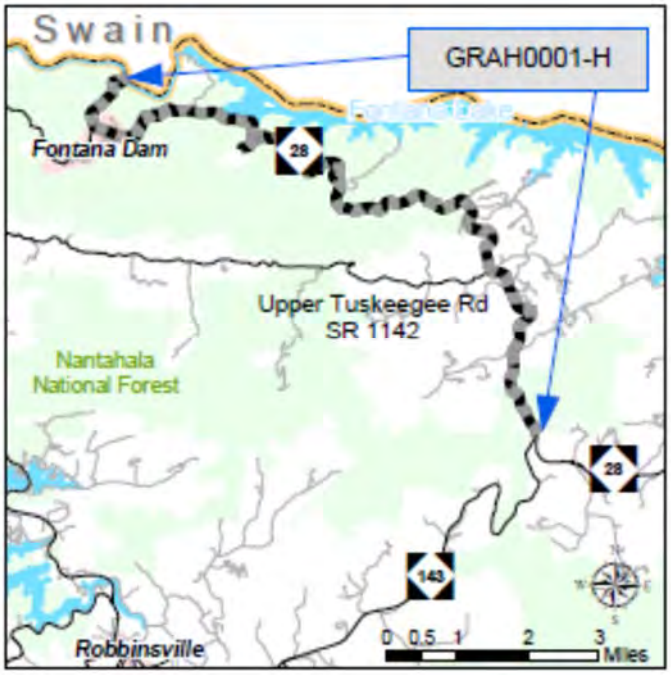
was expressed that this alternative configuration, while not as desirable as a continuous four lane facility on new location, would nevertheless address the identified problems and be a significant improvement to mobility and safety. The CTP map represents the desired corridor for the facility. It is the desire of locals to minimize the footprint of the project while meeting the intent of the project. The local desire is that the US 74 Relocation around Robbinsville be as close to the town's business district as possible.

Appendix I contains comments received at the Draft CTP Open House specific to Corridor K. While there are citizens who do not support the project, the majority of comments support the project.

NC 28 (Fontana Road) from NC 143 (Sweetwater Road) to Swain County	Local ID: GRAH0001-H Last Updated: 5/23/14

Identified Problem

NC 28 (Fontana Road) is a winding two lane road with tight curves, narrow pavement, and several segments with a high number of crashes. The purpose of this project is to improve mobility on NC 28 (Fontana Road). A secondary purpose is to improve safety on this facility.



Justification of Need

This section of NC 24 (Fontana Road) is a two lane facility with ? foot lanes. The narrow pavement width with sharp curves makes travel to destinations outside of Graham County difficult and contributes to safety problems. Additionally, NCDOT's Transportation Mobility and Safety Division identified five segments of this facility as high frequency crash locations from January 1, 2007 to December 31, 2011. Two segments had 4 to 9 crashes, one segment had 10 to 19 crashes, and the remaining two segments had 20 to 29 crashes.

Community Vision and Problem History

As part of the vision, goals, and objectives developed through the Graham County CTP process, goals were identified that included providing safe and adequate transportation access for all users, improving mobility throughout Graham County for all users, and investing in transportation improvements that will promote quality growth. This project will improve mobility and safety within Graham County and into Swain County.

This problem was also identified previously in the *Thoroughfare Plan Technical Report for Graham County and Robbinsville*, dated November 1998.

CTP Project Proposal

Project Description and Overview

Modernize NC 28 (Fontana Road) from NC 143 (Sweetwater Road) to Swain County. Widen pavement to modern design standards (12 foot lanes) and implement safety improvements including additional paved pull-offs at critical locations.

Natural & Human Environmental Context

Based on a planning level environmental analysis using available GIS data, this project will pass by or through national forest, water supply watersheds, significant natural heritage areas, and areas with moderate and high potential for acidic rock.

Relationship to Investment Guide Map

Most land adjacent to the proposed project is vacant, although some pockets of development do exist. Existing development is primarily low density rural single family residential, with occasional commercial development. The *Graham County Gateway to Tomorrow* Investment Guide Map shows mostly protected area along the proposed project, with primary investment area near Fontana Village and secondary investment area from Lower Sawyers Creek Road to Upper Tuskeegee Road.

Linkages to Other Plans and Proposed Project History

This project is not included in any previous transportation plan. This project has been submitted to NCDOT by Graham County and the Southwestern RPO for prioritization.

Multi-modal Considerations

Improvements to this facility would decrease travel times for Graham County Transit vehicles when using this facility, which would improve operations and increase efficiency.

Public/ Stakeholder Involvement

Based on comments received throughout the public involvement process, a common theme was the need for improving safety along NC 28 (Fontana Road).

Proposed Connection to Downtown Robbinsville from US 129 (Rodney Orr Bypass) to Ford Street	Local ID: GRAH0002-H Last Updated: 5/22/14

Identified Problem

There is a need to improve connectivity for local trips between downtown Robbinsville, which includes Main Street and the courthouse, to the new commercial area along US 129 (Rodney Orr Bypass). The primary purpose of this project is to improve mobility and connectivity in the downtown Robbinsville area.

Additionally, a segment of US 129 (Rodney Orr Bypass) between NC 143 (Sweetwater Road) and Ford Street is projected to be over capacity by 2040. A secondary purpose of this project is to accommodate projected traffic volumes in order to obtain a Level of Service (LOS) D or better on the Rodney Orr Bypass.

Justification of Need

Traffic volumes on US 129 (Rodney Orr Bypass) immediately to the north of NC 143 (Sweetwater Road) and south of Ford Street drop substantially, indicating travel demand for local trips between NC 143 (Sweetwater Road) and downtown Robbinsville. These local trips are currently being served by the section of US 129 (Rodney Orr Bypass) between NC 143 (Sweetwater Road) and Ford Street.

In the base year, 2012, the annual average daily traffic (AADT) on US 129 (Rodney Orr Bypass) between Ford Street and NC 143 (Sweetwater Road) is 12,000 vehicles per day (vpd), which is near the capacity of 12,400 vpd. By the future year, 2040, traffic is projected to be 17,500 vpd, which is over capacity.

Community Vision and Problem History

As part of the vision, goals, and objectives developed through the Graham County CTP process, goals were identified that included providing safe and adequate transportation access for all users, improving mobility throughout Graham County for all users, improving multi-modal connectivity within Graham County, and investing in transportation improvements that will promote quality growth. Additionally, an objective to reduce gaps in the sidewalk network between destinations by 2040 was identified.

This problem has not been identified on any previous transportation plan.

CTP Project Proposal

Project Description and Overview

Construct a two lane minor thoroughfare with 11 foot lanes on new location with sidewalks on each side between US 129 (Rodney Orr Bypass) and Ford Street.

This proposed project is forecast to carry 4,100 vpd in 2040 and will have a capacity of 9,200 vpd. It will also provide a more direct connection between residential areas in Robbinsville and commercial destinations on US 129 (Rodney Orr Bypass), diverting traffic from the segment of US 129 (Rodney Orr Bypass) that is forecast to be over capacity by 2040. In conjunction with the proposed new facility to Robbinsville High School, an alternative route to the school will be provided. The proposed facility will provide a new connection for both automobiles and pedestrians and connect to pedestrian facilities along US 129 (Rodney Orr Bypass) and Ford Street.

Natural & Human Environmental Context

Based on a planning level environmental analysis using available GIS data, the proposed project lies in an area with a low potential for acidic rock formations.

Existing properties impacted by the proposed project include: a restaurant, El Pacifico, a car wash adjacent to US 129 (Rodney Orr Bypass) and an industrial use adjacent to Laura Street that is also behind the previously mentioned businesses.

Relationship to Investment Guide Map

Existing development near the proposed project is low density commercial. The *Graham County Gateway to Tomorrow* Investment Guide Map classifies the area around the proposed project as most suitable for development.

Linkages to Other Plans and Proposed Project History

This project is not included in any previous transportation plan.

Multi-modal Considerations

Sidewalks are recommended along both sides of the facility. These sidewalks would connect with other sidewalks recommended in the *Robbinsville Pedestrian Connectivity Plan*, dated 2013, as well as bicycle projects GRAH0001-B and GRAH0002-B that are recommended as part of this CTP.

Public/ Stakeholder Involvement

Based on comments received throughout the public involvement process, common themes included the lack of infrastructure for walking safely and the need to improve the connections between old downtown Robbinsville the Rodney Orr Bypass.

Proposed Industrial Park Access Road East from US 129 (Tallulah Road) to Snowbird Road	Local ID: GRAH0003-H Last Updated: 5/22/14

Identified Problem

Heavy trucks with destinations primarily to the Industrial Park west of US 129 (Tallulah Road/Rodney Orr Bypass) are currently impeding traffic flow in downtown Robbinsville due to tight turn radii. The primary purpose of this project is to improve mobility in downtown Robbinsville and improve connectivity to Graham County's only industrial park.

Justification of Need

Graham County residents and members of the CTP Steering Committee repeatedly commented that heavy trucks serving Robbinsville's (former Stanley Furniture) Industrial Park have difficulty negotiating the street network in downtown Robbinsville and back up traffic as a result. Residents and committee members also commented that better freight access would improve economic conditions by providing better infrastructure that would allow existing industries to expand and increase the attractiveness of Graham County to new businesses.

In the base year, 2012, the annual average daily traffic (AADT) on US 129 (Tallulah Road) between 5 Point Road and Woodland Heights is 8,400 vehicles per day (vpd), which is near the capacity of 9,100 vpd. By the future year, 2040, traffic is projected to be 9,700 vpd, which is over capacity. To the north of this segment, in the base year, 2012, the AADT on US 129 (Rodney Orr Bypass) between Ford Street and NC 143 (Sweetwater Road) is 12,000 vpd, which is near the capacity of 12,400 vpd. By the future year, 2040, traffic is projected to be 17,500 vpd, which is over capacity.

Community Vision and Problem History

The Graham County CTP vision is for a balanced, long-term, and realistic transportation plan that provides better multi-modal access to and through the county, improved access for emergency services, and economic growth opportunities while protecting the area's natural, cultural, aesthetic, and recreational resources. A supporting goal is to provide a transportation network that improves freight movement. Promoting economic vitality is one of the goals identified through the Graham County CTP vision, goals, and objectives process. In addition, objectives were identified to improve freight mobility from Graham County to the south by providing a new connection and improving curves with tight radii and widening lanes to accommodate trucks with 53 foot trailers on an existing facility. This project addresses the vision, goals, and objectives.

This problem has not been identified on any previous transportation plan.

CTP Project Proposal

Project Description and Overview

Construct a two lane major thoroughfare with 12 foot lanes on new location and sufficient grades, lane widths and turn radii to accommodate trucks with 53 foot trailers from US 129 south of 5 Point Road (SR 1275) to the entrance of the Industrial Park off Snowbird Road. The proposed facility would have a capacity of 9,200 vpd.

Natural & Human Environmental Context

Based on a planning level analysis of available GIS data, the proposed improvement will impact a water supply watershed. The proposed improvement is also in an area with a low potential for acidic rock formations.

Relationship to Investment Guide Map

Existing development near the proposed project is a mixture of low density residential with some commercial and industrial at the northern terminus of the project. The *Graham County Gateway to Tomorrow* Investment Guide Map classifies the area around the proposed project as most suitable for development.

Linkages to Other Plans and Proposed Project History

This project is not included in any previous plans.

Multi-modal Considerations

Graham County Transit vehicles may benefit from this project as it improves access to the Industrial Park, which is a major employment destination in Graham County. As Graham County Transit is currently a demand response service and does not run vehicles on fixed routes, their benefits from this project are uncertain.

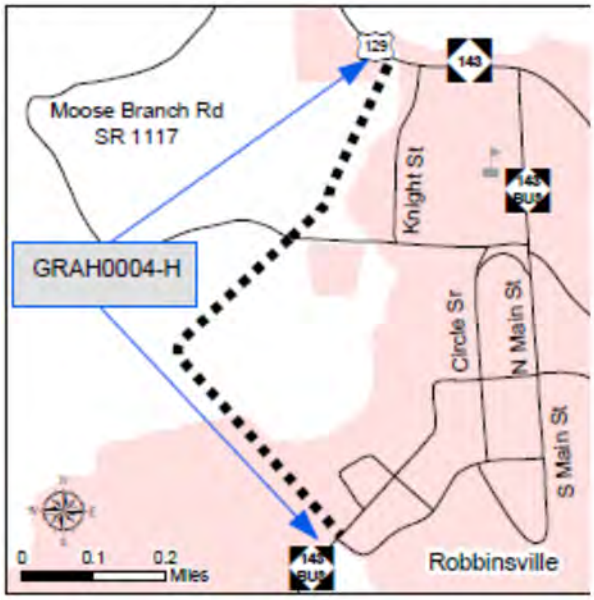
Public/ Stakeholder Involvement

Throughout the public involvement process, a common comment was Graham County needs better freight access to improve economic conditions and serve existing businesses in the county. Several comments were also received noting that heavy truck traffic in downtown Robbinsville currently causes traffic delays.

Proposed Industrial Park Access Road North from US 129 (Tapoco Road) to Snowbird Road	Local ID: GRAH0004-H Last Updated: 5/23/14

Identified Problem

Trucks serving the Industrial Park from US 129 or NC 143 are currently traveling through downtown Robbinsville and are required to negotiate three 90 degree turns along narrow streets. The purpose of this project is to improve mobility and connectivity to Graham County's only industrial park.



Justification of Need

The CTP Steering Committee and public involvement process identified a need for better connectivity between the Industrial Park, US 129 and NC 143 to meet future mobility needs. Graham County residents and members of the CTP Steering Committee repeatedly commented that heavy trucks serving Robbinsville's (former Stanley Furniture) Industrial Park have difficulty negotiating the street network in downtown Robbinsville and back up traffic as a result. Residents and committee members also commented that better freight access would improve economic conditions by providing better infrastructure that would allow existing industries to expand and increase the attractiveness of Graham County to new businesses.

Community Vision and Problem History

The Graham County CTP vision is for a balanced, long-term, and realistic transportation plan that provides better multi-modal access to and through the county, improved access for emergency services, and economic growth opportunities while protecting the area's natural, cultural, aesthetic, and recreational resources. A goal supporting this vision is to provide a transportation network that improves freight movement and promotes economic vitality. In addition, objectives were identified to improve freight mobility from US 129 to the Industrial Park. This project addresses the vision, goals, and objectives.

This problem was also identified previously in the *Thoroughfare Plan Technical Report for Graham County and Robbinsville*, dated November, 1998.

CTP Project Proposal

Project Description and Overview

Construct a two lane major thoroughfare with 12 foot lanes on new location with sufficient grades, lane widths and turn radii to accommodate trucks with 53 foot trailers from US 129 (Tapoco Road) to Snowbird Road.

Natural & Human Environmental Context

Based on a planning level analysis of available GIS data, the proposed improvement will impact trout streams. The proposed improvement is also in an area with a low potential for acidic rock formations.

Relationship to Investment Guide Map

Existing development near the proposed project is a mixture of low density residential with some commercial and industrial at the southern terminus of the project. The *Graham County Gateway to Tomorrow* Investment Guide Map classifies the area around the proposed project as most suitable for development.

Linkages to Other Plans and Proposed Project History

The project proposed in the *Thoroughfare Plan Technical Report for Graham County and Robbinsville*, dated November, 1998 was to extend Atoah Street to Moose Branch Road (SR 1117) and route the trucks along Atoah Street. That solution was no longer deemed feasible by the CTP Steering Committee because it still routes trucks through the downtown area.

Multi-modal Considerations

Graham County Transit vehicles may benefit from this project as it improves access to the Industrial Park, which is a major employment destination in Graham County. As Graham County Transit is currently a demand response service and does not run vehicles on fixed routes, their benefits from this project are uncertain.

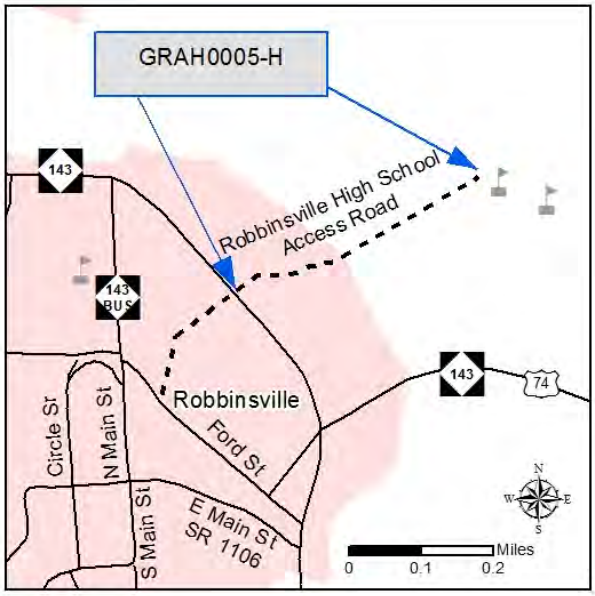
Public/ Stakeholder Involvement

Throughout the public involvement process, comments have been received noting that the routing of freight traffic through downtown Robbinsville to Stanley Industrial Park results in congestion issues, especially at the intersection of East Main and Main Streets.

Proposed Robbinsville HS Access Road from US 129 (Rodney Orr Bypass) to Robbinsville High School	Local ID: GRAH0005-H Last Updated: 5/23/14

Identified Problem

The primary purpose of this project is to improve mobility and connectivity between US 129 (Rodney Orr Bypass) and Robbinsville High School.



Additionally, US 129 (Rodney Orr Bypass) is projected to be over capacity by 2040. A secondary purpose of this project is to accommodate projected traffic volumes in order to obtain a Level of Service (LOS) D on the Rodney Orr Bypass.

Justification of Need

Robbinsville High School currently has only one entrance, which is located off NC 143 (Sweetwater Road). This forces travelers going to Robbinsville High School from anywhere in Graham County, except the east, onto US 129 (Rodney Orr Bypass) and through the intersection of US 129 (Rodney Orr Bypass) and NC 143 (Sweetwater Road).

In the base year, 2012, the annual average daily traffic (AADT) on US 129 (Rodney Orr Bypass) between Ford Street and NC 143 (Sweetwater Road) is 12,000 vehicles per day (vpd), which is near the capacity of 12,400 vpd. By the future year, 2040, traffic is projected to be 17,500 vpd, which is over capacity.

Community Vision and Problem History

The CTP Steering Committee, Graham County, and the Town of Robbinsville have identified a need for additional access to Robbinsville High School. As part of the vision, goals, and objectives developed through the Graham County CTP process, goals were identified that included providing safe and adequate transportation access for all users, improving mobility throughout Graham County for all users, improving multi-modal connectivity within Graham County, and investing in transportation improvements that will promote quality growth. Additionally, an objective to reduce gaps in the sidewalk network between destinations by 2040 was identified.

A capacity problem on US 129 (Rodney Orr Bypass) was previously identified in the *Thoroughfare Plan Technical Report for Graham County and Robbinsville*, dated November 1998.

Project Description and Overview

Construct a two lane minor thoroughfare with 11 foot lanes on a new location with sidewalks along both sides from US 129 (Rodney Orr Bypass) to the existing Robbinsville High School internal road. This project will have a capacity of 9,200 vpd and will divert southbound traffic on

US 129 (Rodney Orr Bypass) that currently goes through the intersection at NC 143 (Sweetwater Road) to the existing Robbinsville High School driveway.

Natural & Human Environmental Context

Based on a planning level environmental analysis using available GIS data, the proposed project lies in an area with a low potential for acidic rock formations. This project will cross Tululah Creek, which is a trout stream. This project will also impact the floodplain and floodway.

Relationship to Investment Guide Map

Robbinsville High School is near the proposed project. The *Graham County Gateway to Tomorrow* Investment Guide Map classifies the land near the proposed project as most suitable for development. This proposed CTP project supports the Rodney Orr Bypass Concept Plan in the *Graham County Gateway to Tomorrow* plan.

Linkages to Other Plans and Proposed Project History

This project has been submitted to NCDOT by Graham County and the Southwestern RPO for prioritization. In conjunction with the proposed new facility between US 129 (Rodney Orr Bypass) and Ford Street (GRAH0002-H) would provide an alternative route to the school.

The *Thoroughfare Plan Technical Report for Graham County and Robbinsville*, dated November 1998 recommended widening US 129 (Rodney Orr Bypass). Businesses along both sides of US 129 (Rodney Orr Bypass) form Robbinsville's primary commercial district and widening the roadway to a five lane cross section would negatively impact these properties.

Multi-modal Considerations

Sidewalks are recommended along both sides of this project and will connect the existing multi-use trail at Robbinsville High School to pedestrian facilities on US 129 (Rodney Orr Bypass).

Public/ Stakeholder Involvement

Based on comments received throughout the public involvement process, a common theme was the need for an additional connection to Robbinsville High School to improve mobility and relieve traffic congestion on US 129 (Rodney Orr Bypass) and NC 143 (Sweetwater Road).

Proposed Park Access Road from US 129 (Tallulah Road) to Ball Fields/Airport Road/Old Tallulah Road/P and J Road	Local ID: GRAH0006-H Last Updated: 5/23/14

Identified Problem

Airport Road, Old Tallulah Road, and P and J Road currently provide access from US 129 (Tallulah Road) to ball fields owned by Graham County. These facilities are narrow and crowded with vehicles traveling to the ball fields. Improvements are needed to modernize the existing roadways and improve mobility.

Justification of Need

The current lane widths range from 8 feet to 9 feet. The ball fields are accessed from P and J Road which is currently a dead end road requiring vehicles to access the area via US 129, Airport Road and Old Tallulah Road.

Community Vision and Problem History

As part of the vision, goals, and objectives developed through the Graham County CTP process, goals were identified that included providing safe and adequate transportation access for all users, improving mobility throughout Graham County for all users, improving multi-modal connectivity within Graham County, and investing in transportation improvements that will promote quality growth.

This problem has not been identified on any previous transportation plan.

CTP Project Proposal

Project Description and Overview

The CTP project proposal includes:

- Constructing a new two lane minor thoroughfare from US 129 (Rodney Orr Bypass) to the terminus of the existing P and J Road with 11 foot lanes.
- Widening Airport Road from US 129 (Rodney Orr Bypass) to Old Tallulah Road to 11 foot lanes
- Widening Old Tallulah Road from Airport Road to P and J Road to 11 foot lanes
- Widening P and J Road from Airport Road to its current terminus to 11 foot lanes

to bring them up to modern design standards.

Natural & Human Environmental Context

Based on a planning level environmental analysis using available GIS data, the proposed project lies in an area with a low potential for acidic rock formations. This project will require a new bridge across Tallulah Creek, which is a trout stream.

Relationship to Investment Guide Map

Development near the proposed project is a mix of single family residential and commercial development. The *Graham County Gateway to Tomorrow* Investment Guide Map classifies land near the proposed project as a land stewardship area. Land stewardship areas are defined in the *Graham County Gateway to Tomorrow* plan as "land that is privately owned but that presents challenges to development or other significant investment. It includes floodplains, wetlands, and slopes steeper than 40%." This proposed CTP project supports the existing county recreational facility.

Linkages to Other Plans and Proposed Project History

This project has been submitted to NCDOT by Graham County and the Southwestern RPO for prioritization. It has not been included in any previous transportation plan.

Multi-modal Considerations

Graham County Transit vehicles could use this new connection to reduce travel time when accessing the ball fields, which would improve operations.

Public/ Stakeholder Involvement

Based on comments received throughout the public involvement process, a common theme was the need for improved access to the ball fields located off of P and J Road.

NC 143 (Santeetlah Road/Snowbird Road), R-2822B

NC 143 (Santeetlah Road/Snowbird Road) is currently a winding two lane road that provides access to the Cherohala Skyway from Robbinsville. It is the primary east-west corridor for Graham County. NC 143 (Santeetlah Road/Snowbird Road) currently has nine foot lanes and does not meet current design standards for curves, pavement width, or shoulder width. Between 2007 and 2011 there were 20 to 29 crashes along this portion of NC 143. The 2012-2018 Transportation Improvement Plan (TIP) includes project R-2822B that is intended to address these problems.

TIP Project R-2822B includes widening this facility to 11 foot lanes with bicycle accommodations to Snowbird Road (SR 1115). Additionally, through the development of the CTP, paved shoulders are recommended along NC 143 from recreational trails west of IU Gap Road to South Main Street. For additional information about this project, contact NCDOT's Project Development and Environmental Analysis Branch (PDEA) or visit the project website.[36]

Based on comments received throughout the public involvement process, a common theme was the need for improving safety along NC 143 (Santeetlah Road/Snowbird Road).

PUBLIC TRANSPORTATION & RAIL

A public transportation and rail assessment was completed during the development of the CTP. Graham County currently has no existing rail lines and no rail improvements are recommended in this CTP. The public transportation element of the Graham County CTP is shown on Figure 1, Sheet 3. There are no recommendations associated with the Graham County Transit agency's current service. The following locations are recommended for new park and ride lots:

- NC 143 (Sweetwater Road) and NC 28, Local ID: GRAH0001-T
- Downtown Robbinsville at Main Street and East Main Street, Local ID: GRAH0002-T
- US 129 (Rodney Orr Bypass) and NC 143 (Sweetwater Road) near the Ingles, Local ID: GRAH0003-T
- US 129 (Tallulah Road) just north of Cherokee County, Local ID: GRAH0004-T
- NC 143 (Santeetlah Road) and Snowbird Road, Local ID: GRAH0005-T

The above park and ride lot locations were suggested by several respondents to the goals and objectives survey and members of the CTP Steering Committee. Common destinations stated on the goals and objectives survey include Asheville, Sylva, Bryson City, Murphy, and Andrews. Additionally, U.S. Census Bureau Center for Economic Studies data indicate that 7.2 percent of employed Graham County residents are commuting to jobs in Swain County, 7.1 percent to jobs in Buncombe County, 6.6 percent to jobs in Jackson County, and 5.5 percent to jobs in Cherokee County.

[36] http://www.ncdot.gov/projects/nc143/

BICYCLE

Figure 1 Sheet 4 shows the bicycle element of the Graham County CTP. The following bicycle recommendations will help achieve the CTP goals of improving travel safety for all modes of transportation, improving mobility throughout Graham County for all users, and increasing multi-modal connectivity within Graham County.

In accordance with American Association of State Highway and Transportation Officials (AASHTO), roadways identified as bicycle routes should incorporate the following standards as roadway improvements are made and funding is available:

- Curb & gutter sections require at minimum 5 foot bike lanes or 14 foot wide shoulder lanes.
- Shoulder sections require a minimum of 4 foot paved shoulder.
- All bridges along the roadways where bike facilities are recommended shall be equipped with 54 inch railings.

The following on road bicycle facilities are recommended as part of the CTP:

- **Godfrey Street/Ford Street/Moose Branch, Local ID: GRAH0001-B** - from the proposed multi-use path at Long Creek (GRAH0002-M) to the proposed multi-use path at Tulula Creek (GRAH0001-M)
- **US 129 (Rodney Orr Bypass), Local ID: GRAH0002-B** - from the proposed multi-use path at Long Creek (GRAH0002-M) to Ford Street
- **S**. **Main Street, Local ID GRAH0003-B** - from Snowbird Road to Front Street
- **NC 143 (Santeetlah Road/Snowbird Road) and NC 143 (Junaluska Drive): Local ID R-2822B** – paved shoulders along NC 143 from recreational trails west of IU Gap Road to NC 143 Business.

Multi-use paths are facilities physically separated from motor vehicle traffic and can be within the highway right-of-way or on an independent right-of way. Multi-use paths include bicycle paths, rail-trails, or other facilities built for bicycle and pedestrian traffic. The following multi-use paths are recommended as part of the CTP:

- **Cheoah River/Tulula Creek Multi-use Path, Local ID GRAH0001-M** – from Godfrey Street to Santeetlah Lake
- **Long Creek Multi-use Path, Local ID GRAH0002-M** – from Cheoah River to the proposed Young America Park
- **US 129 (Tallulah Road) Multi-use Path, Local ID GRAH0003-M** - from Ford Street to Tallulah Bog recreation area east of Bear Creek Drive

Additional multi-use paths were recommended in the 2013 *Robbinsville Pedestrian Connectivity Plan*[37] and the CTP recommends implementation of these projects.

[37] To view the plan, go to: http://www.kostelecplanning.com/wp-content/uploads/2013/09/2013_RobbinsvillePedestrianConnectivityPlan-FINAL-LowResolutionFull.pdf

PEDESTRIAN

The pedestrian element of the Graham County CTP is shown on Figure 1 Sheet 5. The 2013 *Robbinsville Pedestrian Connectivity Plan* recommended sidewalks and greenways for bicycles and pedestrians throughout Robbinsville. The sidewalks and multi-use paths from the above plan and the following CTP recommendations for pedestrian facilities will help achieve the CTP goals of improving travel safety for all modes of transportation, improving mobility throughout Graham County for all users, and increasing multi-modal connectivity within Graham County:

- **West Fort Hill Road, Local ID: GRAH0001-P** - add pedestrian facility along West Fort Hill Road from 5 Point Road to Graham County Services driveway.
- **5 Point Road and Robbinsville High School Access Road, Local ID: GRAH0002-P** - add pedestrian facility along 5 Point Road from US 129 (Tallulah Road) to NC 143 (Sweetwater Road) and then along the RHS Access Road from NC 143 (Sweetwater Road) to the existing multi-use trail. Destinations served include the Robbinsville Middle and High schools as well as the Graham County offices on Fort Hill Road via GRAH0003-P.
- **NC 143 (Sweetwater Road), Local ID: GRAH0003-P** – add pedestrian facility from Robbinsville High School Entrance Road / 5 Point Road to US 129.

APPENDICES

Appendix A
Resources and Contacts

Local Planning Organization

*Southwestern Rural Planning Organization (*http://www.regiona.org/*)*
Contact the RPO for information on long-range multi-modal planning services.

125 Bonnie Lane Sylva, NC 28779 (828) 586-1962

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 14 (https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx)
253 Webster Road Sylva, NC 28779 (828) 586-2141

Contact the Highway Division with questions concerning NCDOT activities within each Division.

Contact the following NCDOT divisions and units[38] for:

Transportation Planning Branch (TPB)	*Information on long-range multi-modal planning services.* 1554 Mail Service Center Raleigh, NC 27699 (919) 707-0900
Strategic Planning Office	*Information concerning prioritization of transportation projects.* 1501 Mail Service Center Raleigh, NC 27699 (919) 707-4740
Project Development & Environmental Analysis (PDEA)	*Information on environmental studies for projects that are included in the TIP.* 1548 Mail Service Center Raleigh, NC 27699 (919) 707-6000
State Asset Management Unit	*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.*

[38] Unit websites are hyperlinked and can also be accessed at *https://connect.ncdot.gov/Pages/default.aspx*.

	1535 Mail Service Center Raleigh, NC 27699 (919) 707-2500
Program Development Branch	*Information concerning Roadway Official Corridor Maps, Feasibility Studies and the Transportation Improvement Program (TIP).* 1542 Mail Service Center Raleigh, NC 27699 (919) 707-4610
Public Transportation Division	*Information on public transit systems.* 1550 Mail Service Center Raleigh, NC 27699 (919) 707-4670
Rail Division	*Rail information throughout the state.* 1553 Mail Service Center Raleigh, NC 27699 (919) 707-4700
Division of Bicycle and Pedestrian Transportation	*Bicycle and pedestrian transportation information throughout the state.* 1552 Mail Service Center Raleigh, NC 27699 (919) 707-2600
Structures Management Unit	*Information on bridge management throughout the state.* 1581 Mail Service Center Raleigh, NC 27699 (919) 707-6400
Roadway Design Unit	*Information regarding design plans and proposals for road and bridge projects throughout the state.* 1582 Mail Service Center Raleigh, NC 27699 (919) 707-6200
Transportation Mobility and Safety Division	*Information regarding crash data throughout the state.* 1561 Mail Service Center Raleigh, NC 27699 (919) 773-2800

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

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

The "NCDOT Facility Type –Control of Access Definitions" document provides a visual depiction of facility types for the following CTP classification.

Facility Type Definitions

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

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

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

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

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

- ROW – no control of access
- Access management – continuous left turn lanes; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
- Intersecting facilities – intersections and driveways
- Driveways – full movement on two lane with center turn lane as permitted by the current NCDOT *Driveway Manual*

Other Highway Map Definitions

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

Public Transportation and Rail Map

- **Bus Routes** – The primary fixed route bus system for the area. Does not include demand response systems.

- **Fixed Guideway** – Any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The term includes heavy rail, commuter rail, light rail, monorail, trolleybus, aerial tramway, included plane, cable car, automated guideway transit, and ferryboats.
- **Operational Strategies** – Plans geared toward the non-single occupant vehicle. This includes but is not limited to HOV lanes or express bus service.
- **Rail Corridor** – Locations of railroad tracks that are either active or inactive tracks. These tracks were used for either freight or passenger service.
  - Active – rail service is currently provided in the corridor; may include freight and/or passenger service
  - Inactive – right of way exists; however, there is no service currently provided; tracks may or may not exist
  - Recommended – It is desirable for future rail to be considered to serve an area.
- **High Speed Rail Corridor** – Corridor designated by the U.S. Department of Transportation as a potential high speed rail corridor.
  - Existing – Corridor where higher-speed rail service (over 79 mph) is provided or a corridor that is officially designated by FRA to run higher speed trains in the future. There is currently one federally designated high-speed rail corridor in North Carolina - The Southeast High Speed Rail Corridor.
  - Recommended – Proposed corridor for higher speed rail service.
- **Rail Stop** – A railroad station or stop along the railroad tracks.
- **Multimodal 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. (NOTE- intermodal refers to two or more modes that transfer the same cargo unit-like 40' shipping container from ship to train or truck); multimodal is the transfer of people/cargo between two or more modes and in NC is used in public transit settings i.e. Charlotte Multimodal Station)
- **Park and Ride Lot** – A strategically located parking lot that provides commuters connections to transit or carpools.
- **Existing Grade Separation** – Locations where existing rail facilities are physically separated from existing highways or other transportation facilities. These may be bridges, culverts, or other structures.
- **Proposed Grade Separation** – Locations where rail facilities are recommended to be physically separated from existing or recommended highways or other transportation facilities. These may be bridges, culverts, or other structures.

Bicycle Map

- **On Road-Existing** – Conditions for bicycling on the highway facility are adequate to safely accommodate cyclists.

- **On Road-Needs Improvement** – At the systems level, it is desirable for **an existing** highway facility to accommodate bicycle transportation; however, highway improvements are necessary to create safe travel conditions for the cyclists.

- **On Road-Recommended** – At the systems level, it is desirable for **a recommended** highway facility to accommodate bicycle transportation. The highway should be designed and built to safely accommodate cyclists.

- **Off Road-Existing** – A facility that accommodates only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way.

- **Off Road-Needs Improvement** – A facility that accommodates only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way that will not adequately serve future bicycle needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment.

- **Off Road-Recommended** – A facility needed to accommodate only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way.

- **Multi-use Path-Existing** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.

- **Multi-use Path-Needs Improvement** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic that will not adequately serve future needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment. Sidewalks should not be designated as a multi-use path.

- **Multi-use Path-Recommended** – A facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that is needed to serve bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.

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

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

Pedestrian Map

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

- **Sidewalk-Needs Improvement** – Improvements are needed to provide paved paths on both sides of a highway facility. The highway facility may or may not need improvements. Improvements do not include re-paving or other maintenance activities but may include: filling in gaps, widening sidewalks, or meeting ADA (Americans with Disabilities Act) requirements.

- **Sidewalk-Recommended** – At the systems level, it is desirable for a recommended highway facility to accommodate pedestrian transportation **or** to add sidewalks on an existing facility where no sidewalks currently exist. The highway should be designed and built to safely accommodate pedestrian traffic.

- **Off Road-Existing** – A facility that accommodates only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way.

- **Off Road-Needs Improvement** – A facility that accommodates only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way that will not adequately serve future pedestrian needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), improved horizontal or vertical alignment, and meeting ADA requirements.

- **Off Road-Recommended** – A facility needed to accommodate only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way.

- **Multi-use Path-Existing** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.

- **Multi-use Path-Needs Improvement** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic that will not adequately serve future needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment. Sidewalks should not be designated as a multi-use path.

- **Multi-use Path-Recommended** – A facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that is needed to serve bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.

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

Appendix C
CTP Inventory and Recommendations

Assumptions/ Notes:

- **Local ID:** This Local ID is the same as the one used for the Prioritization Project Submittal Tool. If a STIP 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 'Total Width (ft)' is the approximate width of the roadway from edge of pavement to edge of pavement and under 'Lane Width (ft)' is the approximate width of a single lane based on centerline/ edge line markings. Listed under 'Lanes' is the total number of lanes, with 'D' if the facility is divided, and 'OW' if it is a one-way facility.
- **Existing ROW:** The estimated existing right-of-way is based on NCDOT's Roadway Characteristics database. These right-of-way amounts are approximate and may vary.
- **Existing and Proposed Capacity:** The estimated capacities are given in vehicles per day (vpd) based on LOS D for existing facilities and LOS C for new facilities. These capacity estimates were developed based on the 2000 Highway Capacity Manual using the Transportation Planning Branch's LOS D Standards for Systems Level Planning, as documented in Chapter 1.
- **Existing and Proposed Volumes**, 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 2040 with only existing plus committed projects assumed to be in place, where committed is defined as projects programmed for construction in the NCDOT Draft State Transportation Improvement Program (STIP) years 2014 to 2020, dated March 2014. 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 for the given mode 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).

CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																				
		Section				2012 Existing System							2040 Proposed System							
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
A-0009A	US 74 Relocation	Cherokee County Line	NC 143 (Sweetwater Road)	Graham County	9.3	-	-	-	-	-	-	-	-	11000	37700	4B	150	Maj	Sta	T
A-0009BC	US 74 Relocation	US 129 (Rodney Orr Bypass)	NC 143 (Sweetwater Road) at Sweeten Creek	Graham County	3.0	-	-	-	-	-	-	-	-	10400	37700	4A	150	Maj	Sta	T
A-0009BC	US 74 Relocation	NC 143 (Sweetwater Road) at Sweeten Creek	NC 143 (Sweetwater Road) 0.4 Miles southeast of Sam's Hill Road	Graham County	1.5	-	-	-	-	-	-	-	-	8300	37700	4A	150	Maj	Sta	T
A-0009BC	US 74 Relocation	NC 143 (Sweetwater Road) 0.4 Miles southeast of Sam's Hill Road	Western terminus of existing 4 lane section of NC 28	Graham County	5.7	-	-	-	-	-	-	-	-	8000	37700	4A	150	Maj	Sta	T
	US 129 (Tapoco Rd)	Swain County Line	0.08 miles south of Swain County Line	Graham County	0.1	22	2	11	60	55	9100	500	600	600	9100	ADQ	60	Maj	Reg	
	US 129 (Tapoco Rd)	0.08 miles south of Swain County Line	Meadow Branch Road	Graham County	0.5	22	2	11	60	55	9100	700	1600	1600	9100	ADQ	60	Maj	Reg	
	US 129 (Tapoco Rd)	Meadow Branch Road	Yellow Creek Road	Graham County	6.1	22	2	11	60	55	9100	800	900	900	9100	ADQ	60	Maj	Reg	
	US 129 (Tapoco Rd)	Yellow Creek Road	Cochrans Creek	Graham County	0.5	20	2	10	60	55	9100	200	300	300	9100	ADQ	60	Maj	Reg	
	US 129 (Tapoco Rd)	Cochrans Creek	Santeetlah Cemetary	Graham County	0.2	22	2	11	60	55	9100	200	300	300	9100	ADQ	60	Maj	Reg	
	US 129 (Tapoco Rd)	Santeetlah Cemetary	Joyce Kilmer Road	Graham County	0.1	22	2	11	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	US 129 (Tapoco Rd)	Joyce Kilmer Road	Gladdens Creek Road	Graham County	0.3	20	2	10	80	55	9100	100	100	100	9100	ADQ	80	Maj	Reg	
	US 129 (Tapoco Rd)	Gladdens Creek Road	Thunderbird Mountain Road (North)	Graham County	0.8	24	2	12	50	55	9100	1600	3700	3700	9100	ADQ	50	Maj	Reg	
	US 129 (Tapoco Rd)	Thunderbird Mountain Road (North)	Thunderbird Mountain Road	Graham County	1.4	22	2	11	67	55	9100	1600	3700	3700	9100	ADQ	67	Maj	Reg	
	US 129 (Tapoco Rd)	Thunderbird Mountain Road	Pine Ridge Road	Graham County	0.9	22	2	11	100	55	14000	1600	3700	3700	14000	ADQ	100	Maj	Reg	
	US 129 (Tapoco Rd)	East Buffalo Circle	Pine Ridge Road	Graham County	0.1	22	2	11	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	US 129 (Tapoco Rd)	Pine Ridge Road	Santeetlah Shores Road	Graham County	0.1	16	2	8	60	55	9100	-	-	-	9100	ADQ	60	Maj	Reg	

HIGHWAY																					
		Section				2012 Existing System							2040 Proposed System								
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
	US 129 (Tapoco Rd)	Santeetlah Shores Road	East Buffalo Road	Graham County	0.2	19	2	10	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	US 129 (Tapoco Rd)	East Buffalo Road	Cross Creek Road	Graham County	0.8	19	2	10	80	55	9100	2700	3100	3100	9100	ADQ	80	Maj	Reg	
	US 129 (Tapoco Rd)	Cross Creek Road	Graham Estate	Graham County	0.4	18	2	9	60	55	9100	2700	3100	3100	9100	ADQ	60	Maj	Reg	
	US 129 (Tapoco Rd)	Graham Estate	Golf Course Circle	Graham County	0.1	18	2	9	60	55	9100	2700	3100	3100	9100	ADQ	60	Maj	Reg	
	US 129 (Tapoco Rd)	Cross Creek Road	Golf Course Circle	Graham County	0.5	18	2	9	60	55	9100	2700	3100	3100	9100	ADQ	60	Maj	Reg	
	US 129 (Tapoco Rd)	Golf Course Circle	Cross Creek Road	Graham County	0.2	18	2	9	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	US 129 (Tapoco Rd)	Ground Sqirrel Road	Cross Creek Road	Graham County	0.1	18	2	9	60	55	9100	-	-	-	9100	ADQ	60	Maj	Reg	
	US 129 (Tapoco Rd)	Cross Creek Road	Cat Eye Road	Graham County	0.4	19	2	9	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	US 129 (Tapoco Rd)	Cat Eye Road	Grace Tabernacle Road	Graham County	0.3	16	2	8	60	55	9100	-	-	-	9100	ADQ	60	Maj	Reg	
	US 129 (Tapoco Rd)	Grace Tabernacle Road	Highlands Gap Road	Graham County	0.1	22	2	11	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	US 129 (Tapoco Rd)	Highlands Gap Road	Castlewood	Graham County	0.2	22	2	11	100	55	9100	-	-	-	9100	ADQ	100	Maj	Reg	
	US 129 (Tapoco Rd)	Castlewood	Hodges Drive	Graham County	0.1	22	2	11	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	US 129 (Tapoco Rd)	Hodges Drive	Old US 129	Graham County	0.5	22	2	11	100	55	9100	-	-	-	9100	ADQ	100	Maj	Reg	
	US 129 (Tapoco Rd)	Old US 129	Massey Branch Road	Graham County	0.4	22	2	11	100	55	9100	3600	7000	7000	9100	ADQ	100	Maj	Reg	
	US 129 (Tapoco Rd)	Massey Branch Road	Willie Colvin Road (South)	Graham County	0.5	20	2	10	80	55	9100	3600	7000	7000	9100	ADQ	80	Maj	Reg	
	US 129 (Tapoco Rd)	Willie Colvin Road (South)	Johns Drive	Graham County	0.1	22	2	11	100	55	9100	-	-	-	9100	ADQ	100	Maj	Reg	
	US 129 (Tapoco Rd)	Johns Drive	Sandhole Road	Graham County	0.1	22	2	11	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	US 129 (Tapoco Rd)	Sandhole Road	Moose Branch Road	Graham County	0.1	22	2	11	-	55	13000	-	-	-	13000	ADQ	-	Maj	Reg	
	US 129 (Tapoco Rd)	Moose Branch Road	Knight Street	Robbinsville	0.3	22	2	11	100	45	10800	3900	4400	4400	10800	ADQ	100	Maj	Reg	
	US 129 (Tapoco Rd)	Knight Street	North Main Street	Robbinsville	0.1	22	2	11	100	45	11300	3900	4400	4400	11300	ADQ	100	Maj	Reg	
	US 129 (Rodney Orr BYP)	North Main Street	Laura Street	Robbinsville	0.2	36	3	12	80	45	12400	1500	1700	1700	12400	ADQ	80	Maj	Reg	
	US 129 (Rodney Orr BYP)	Laura Street	Sweetwater Road	Robbinsville	0.3	36	3	12	50	45	12400	7200	8300	8300	12400	ADQ	50	Maj	Reg	

HIGHWAY																				
		Section				2012 Existing System							2040 Proposed System							
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
	US 129 (Rodney Orr BYP)	Sweetwater Road	East Main Street	Robbinsville	0.2	36	3	12	50	45	12400	12000	17500	17500	12400	ADQ	50	Maj	Reg	T
	US 129 (Rodney Orr BYP)	East Main Street	5 Point Road	Robbinsville	0.1	46	3	12	50	45	12400	5100	5900	5900	12400	ADQ	50	Maj	Reg	
	US 129 (Tallulah Rd)	5 Point Road	Woodland Heights	Graham County	0.6	36	3	12	50	55	15300	8400	9700	9700	15300	ADQ	50	Maj	Reg	
	US 129 (Tallulah Rd)	Woodland Heights	Airport Road	Graham County	0.5	22	2	11	50	55	9100	8400	9700	9700	9100	ADQ	50	Maj	Reg	
	US 129 (Tallulah Rd)	Airport Road	Lower Mill Creek Road (South)	Graham County	1.1	18	2	9	50	55	9100	5300	6300	6300	9100	ADQ	50	Maj	Reg	
	US 129 (Tallulah Rd)	Lower Mill Creek Road (South)	Mill Creek Circle	Graham County	0.5	16	2	8	60	55	9100	-	-	-	9100	ADQ	60	Maj	Reg	
	US 129 (Tallulah Rd)	Mill Creek Circle	Apple Orchard Road	Graham County	0.1	16	2	8	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	US 129 (Tallulah Rd)	Apple Orchard Road	Carpenter Hollow Road	Graham County	0.6	16	2	8	-	55	9100	4700	11200	11200	9100	ADQ	-	Maj	Reg	
	US 129 (Tallulah Rd)	Carpenter Hollow Road	Berts Creek Circle	Graham County	0.3	22	2	11	100	55	9100	4700	11200	11200	9100	ADQ	100	Maj	Reg	
	US 129 (Tallulah Rd)	Berts Creek Circle	Hares Creek Road	Graham County	0.9	22	2	11	100	55	9100	3600	4100	4100	9100	ADQ	100	Maj	Reg	
	US 129 (Tallulah Rd)	Hares Creek Road	Campbell Creek Road	Graham County	0.4	16	2	8	30	55	9100	3600	4100	4100	9100	ADQ	30	Maj	Reg	
	US 129 (Tallulah Rd)	Campbell Creek Road	Will Sherrill Circle (West)	Graham County	0.2	16	2	8	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	US 129 (Tallulah Rd)	Will Sherrill Circle (West)	Will Sherrill Circle (East)	Graham County	0.2	16	2	8	50	55	9100	2800	3700	3700	9100	ADQ	50	Maj	Reg	
	US 129 (Tallulah Rd)	Will Sherrill Circle (East)	Jutts Creek Circle (West)	Graham County	0.9	19	2	10	75	55	9100	2800	3700	3700	9100	ADQ	75	Maj	Reg	
	US 129 (Tallulah Rd)	Jutts Creek Circle (West)	Jutts Creek Circle (East)	Graham County	0.1	22	2	11	100	55	9100	2800	3700	3700	9100	ADQ	100	Maj	Reg	
	US 129 (Tallulah Rd)	Jutts Creek Circle (East)	Jack Branch Road	Graham County	0.4	22	2	11	100	55	9100	-	-	-	9100	ADQ	100	Maj	Reg	
	US 129 (Tallulah Rd)	Jack Branch Road	Bear Creek Drive	Graham County	0.6	20	2	10	50	55	9100	-	-	-	9100	ADQ	50	Maj	Reg	
	US 129 (Tallulah Rd)	Bear Creek Drive	Ledbetter Road	Graham County	1.9	21	2	11	100	55	9100	2700	3100	3100	9100	ADQ	100	Maj	Reg	
	US 129 (Tallulah Rd)	Ledbetter Road	Cherokee County Line	Graham County	2.0	20	2	10	100	55	9100	2600	3600	3600	9100	ADQ	100	Maj	Reg	T
	NC 28 (Highway 28)	Swain County Line	Tsali Road	Graham County	0.4	30	4	8	75	55	37700	2600	3600	3600	37700	ADQ	75	Maj	Reg	
	NC 28 (Highway 28)	Tsali Road	0.12 miles west of Tsali Road	Graham County	0.1	30	4	8	75	45	33500	-	-	-	33500	ADQ	75	Maj	Reg	

HIGHWAY																					
		Section				2012 Existing System							2040 Proposed System								
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
	NC 28 (Highway 28)	0.12 miles west of Tsali Road	Red Barn Hollow	Graham County	0.1	24	4	6	75	55	37700	-	-	-	37700	ADQ	75	Maj	Reg	
	NC 28 (Highway 28)	Red Barn Hollow	Lower Panther Creek	Graham County	1.6	36	4	9	72	55	37700	2700	3100	3100	37700	ADQ	72	Maj	Reg	
	NC 28 (Highway 28)	Lower Panther Creek	Fontana Forest Road	Graham County	0.4	28	4	7	73	55	37700	2700	3100	3100	37700	ADQ	73	Maj	Reg	
	NC 28 (Highway 28)	Fontana Forest Road	Tobacco Branch	Graham County	0.1	32	4	8	148	55	37700	2500	2900	2900	37700	ADQ	148	Maj	Reg	
	NC 28 (Highway 28)	Tobacco Branch	Honeysuckle Ridge	Graham County	2.2	40	4	10	89	55	37700	2500	2900	2900	37700	ADQ	89	Maj	Reg	
	NC 28 (Highway 28)	Honeysuckle Ridge	Wolf Creek Heights	Graham County	0.1	40	4	10	-	55	37700	-	-	-	37700	ADQ	-	Maj	Reg	
	NC 28 (Highway 28)	Wolf Creek Heights	Gunter Hollow	Graham County	0.1	40	4	10	-	55	37700	-	-	-	37700	ADQ	-	Maj	Reg	
	NC 28 (Highway 28)	Gunter Hollow	Red Barn Hollow	Graham County	0.7	29	2	12	79	55	9100	-	-	-	9100	ADQ	79	Maj	Reg	
	NC 28 (Highway 28)	Red Barn Hollow	Gunter Gap Road	Graham County	0.1	22	2	11	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	NC 28 (Highway 28)	Gunter Gap Road	Popular Hill Road	Graham County	0.3	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
	NC 28 (Highway 28)	Popular Hill Road	Hyde Town Road	Graham County	0.1	22	2	11	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	NC 28 (Highway 28)	Hyde Town Road	Lower Stecoah Road	Graham County	0.3	18	2	9	-	55	9100	2600	3000	3000	9100	ADQ	-	Maj	Reg	
	NC 28 (Highway 28)	Lower Stecoah Road	Bill Crisp Road	Graham County	0.3	18	2	9	-	55	9100	2600	3000	3000	9100	ADQ	-	Maj	Reg	
	NC 28 (Highway 28)	Bill Crisp Road	Stecoah Road (East)	Graham County	0.1	18	2	9	-	55	9100	2600	3000	3000	9100	ADQ	-	Maj	Reg	
	NC 28 (Highway 28)	Stecoah Road (East)	Stecoah Road (West)	Graham County	0.5	18	2	9	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	NC 28 (Highway 28)	Stecoah Road (West)	Stecoah Heights	Graham County	0.1	16	2	8	60	55	9100	-	-	-	9100	ADQ	60	Maj	Reg	
	NC 28 (Highway 28)	Stecoah Heights	Fontana Road/ Sweetwater Rd	Graham County	0.8	18	2	9	-	55	9100	2800	4300	4300	9100	ADQ	-	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Sweetwater Rd	Lower Sawyers Crk	Graham County	1.3	20	2	10	83	55	9100	2800	5000	5000	9100	ADQ	83	Maj	Reg	T
GRAH0001-H	NC 28 (Fontana Rd)	Lower Sawyers Crk	Upper Sawyers Crk	Graham County	0.1	18	2	9	83	55	9100	1600	3300	3300	9100	ADQ	-	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Upper Sawyers Crk	Tuskegee Acres (south)	Graham County	0.9	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Tuskegee Acres (south)	Tuskegee Acres (north)	Graham County	0.0	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Tuskegee Acres (north)	Pine Lake Rdg	Graham County	0.2	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Pine Lake Rdg	Tuskeegee Circle	Graham County	0.1	18	2	9	105	55	9100	-	-	-	9100	ADQ	105	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Tuskeegee Cir	Pink Sawyer Rd	Graham County	0.1	18	2	9	105	55	9100	-	-	-	9100	ADQ	105	Maj	Reg	

HIGHWAY																					
		Section				2012 Existing System							2040 Proposed System								
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
GRAH0001-H	NC 28 (Fontana Rd)	Pink Sawyer Road	Lower Tuskeegee	Graham County	0.3	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Lower Tuskeegee	Upper Tuskeegee	Graham County	0.1	20	2	10	105	55	9100	-	-	-	9100	ADQ	105	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Upper Tuskeegee	Yellow Br	Graham County	0.9	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Yellow Br	Lake View Cir (south)	Graham County	0.1	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Lake View Cir (south)	Lake View Cir (north)	Graham County	0.3	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Lake View Cir (north)	Eagles Nest Rd	Graham County	0.1	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Eagles Nest Rd	Cable Cove Rd	Graham County	2.0	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Cable Cove Rd	Bee Cv	Graham County	2.6	22	2	11	150	55	9100	-	-	-	9100	ADQ	150	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Bee Cv	Fontana Dam Rd	Graham County	1.2	22	2	11	100	55	9100	500	600	600	9100	ADQ	100	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Fontana Dam Rd	Welch Rd	Graham County	1.3	20	2	10	100	55	13000	-	-	-	13000	ADQ	100	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Welch Rd	Goldbranch Ct	Graham County	0.1	20	2	10	100	55	13000	-	-	-	13000	ADQ	100	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Goldbranch Ct	Woods Rd	Graham County	0.2	20	2	10	100	55	13000	-	-	-	13000	ADQ	100	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Woods Rd	Fontana Rd	Graham County	0.1	20	2	10	100	55	13000	300	400	400	13000	ADQ	100	Maj	Reg	
GRAH0001-H	NC 28 (Fontana Rd)	Fontana Rd	Swain County Line	Graham County	1.0	22	2	11	87	55	13000	-	-	-	13000	ADQ	87	Maj	Reg	
	NC 143 (Sweetwater Rd)	NC 28 (Fontana Road)	Knoll Road	Graham County	0.8	24	2	12	100	55	9100	200	200	200	9100	ADQ	100	Maj	Reg	T
	NC 143 (Sweetwater Rd)	Knoll Road	Green Gap Road	Graham County	2.0	24	2	12	100	55	9100	2800	5000	5000	9100	ADQ	100	Maj	Reg	
	NC 143 (Sweetwater Rd)	Green Gap Road	Orr Branch Road	Graham County	0.9	24	2	12	100	55	9100	-	-	-	9100	ADQ	100	Maj	Reg	
	NC 143 (Sweetwater Rd)	Orr Branch Road	Sams Hill Road	Graham County	0.2	18	2	9	100	55	9100	-	-	-	9100	ADQ	100	Maj	Reg	
	NC 143 (Sweetwater Rd)	Sams Hill Road	Beech Creek	Graham County	0.8	24	2	12	100	55	9100	-	-	-	9100	ADQ	100	Maj	Reg	
	NC 143 (Sweetwater Rd)	Beech Creek	Pin Hook	Graham County	0.2	20	2	10	50	55	9100	-	-	-	9100	ADQ	50	Maj	Reg	
	NC 143 (Sweetwater Rd)	Pin Hook	Unknown Road	Graham County	0.7	24	2	12	100	55	9100	-	-	-	9100	ADQ	100	Maj	Reg	
	NC 143 (Sweetwater Rd)	Unknown Road	Tatham Road	Graham County	0.2	20	2	10	50	55	9100	-	-	-	9100	ADQ	50	Maj	Reg	
	NC 143 (Sweetwater Rd)	Tatham Road	Old Sweetwater Road	Graham County	0.4	24	2	12	100	55	9100	-	-	-	9100	ADQ	100	Maj	Reg	
	NC 143 (Sweetwater Rd)	Old Sweetwater Road	Mountain Creek Road	Graham County	0.2	24	2	12	100	55	14000	1200	1400	1400	14000	ADQ	100	Maj	Reg	
	NC 143 (Sweetwater Rd)	Mountain Creek Road	5 Point Road	Graham County	0.2	22	2	11	83	55	9100	1200	1400	1400	9100	ADQ	83	Maj	Reg	
	NC 143 (Sweetwater Rd)	5 Point Road	Rodney Orr Bypass	Robbinsville	0.3	22	2	11	-	45	12400	5300	12300	12300	12400	ADQ	-	Maj	Reg	

HIGHWAY																				
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Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
	NC 143 (Massey Branch Rd)	US 129 (Tapoco Road)	Dayton Camp Road	Graham County	0.2	21	2	11	80	55	9100	12000	17500	17500	9100	ADQ	80	Maj	Reg	
	NC 143 (Massey Branch Rd)	Dayton Camp Road	Dayton Camp Road (West)	Graham County	0.1	14	2	7	-	55	9100	1100	7000	7000	9100	ADQ	-	Maj	Reg	
	NC 143 (Massey Branch Rd)	Dayton Camp Road (West)	Rock Quarry Road	Graham County	1.5	20	2	10	70	55	9100	1100	1300	1300	9100	ADQ	70	Maj	Reg	
	NC 143 (Massey Branch Rd)	Rock Quarry Road	Jimmy Davis Road	Graham County	0.5	20	2	10	-	55	9100	-	-	-	9100	ADQ	-	Maj	Reg	
	NC 143 (Massey Branch Rd)	Jimmy Davis Road	Jackson Branch Road	Graham County	0.6	18	2	9	35	55	9100	-	-	-	9100	ADQ	35	Maj	Reg	
	NC 143 (Massey Branch Rd)	Jackson Branch Road	Snowbird Road	Graham County	0.6	20	2	10	35	55	9100	700	900	900	9100	ADQ	35	Maj	Reg	
R-2822B	NC 143 (Santeetlah Road/Snowbird Road)	West Buffalo Creek	NC 143 Business west of Robbinsville	Graham County	4.5	24	2	9	60	55	9100	500	600	600	9100	2E	60	Maj	Sub	B, T
	NC 143 (Santeetlah Rd)	Blue Boar Road	Maggie Wachacha Road	Graham County	0.7	18	2	9	-	55	9100	1700	2000	2000	9100	ADQ	-	Maj	Reg	
	NC 143 (Santeetlah Rd)	Maggie Wachacha Road	Joyce Kilmer Road	Graham County	1.6	22	2	11	-	55	9100	90	100	100	9100	ADQ	-	Maj	Reg	
	NC 143 (Cherohala Skwy)	Joyce Kilmer Road	Tennessee State Line	Graham County	17.8	22	2	11	-	55	9100	300	400	400	9100	ADQ	-	Maj	Reg	
	NC 143 Business (N Main St)	East Main Street	Court Street	Robbinsville	0.1	49	2	12	60	45	10800	300	400	400	10800	ADQ	60	Maj	Reg	
	NC 143 Business (N Main St)	Court Street	Ford Street	Robbinsville	0.1	49	2	12	-	45	11300	1900	2200	2200	11300	ADQ	-	Maj	Reg	
	NC 143 Business (N Main St)	Ford Street	Moose Branch Road	Robbinsville	0.1	49	2	12	-	35	10100	-	-	-	10100	ADQ	-	Maj	Sub	
	NC 143 Business (N Main St)	Moose Branch Road	Laura Street	Robbinsville	0.1	18	2	9	40	45	11300	2100	-	-	11300	ADQ	40	Maj	Reg	
	NC 143 Business (N Main St)	Laura Street	US 129 (Rodney Orr Bypass)	Robbinsville	0.2	20	2	10	-	45	11300	2100	1700	1700	11300	ADQ	-	Maj	Reg	
	NC 143 Business (S Main St)	Junaluska Drive (West)	Ghormley Street	Robbinsville	0.3	20	2	10	-	35	10100	1500	1700	1700	10100	ADQ	-	Maj	Reg	
	NC 143 Business (S Main St)	Ghormley Street	Junaluska Drive	Robbinsville	0.1	20	2	10	-	45	10800	-	-	-	10800	ADQ	-	Maj	Reg	
	NC 143 Business (S Main St)	Junaluska Drive	East Main Street	Robbinsville	0.1	20	2	10	-	45	11300	4100	4700	4700	11300	ADQ	-	Maj	Reg	
	NC 143 Business (Junaluska Dr)	Snowbird Road	Morphew Street	Robbinsville	0.2	18	2	9	-	45	11300	3900	4500	4500	11300	ADQ	-	Maj	Reg	
	NC 143 Business (Junaluska Dr)	Morphew Street	Circle Street	Robbinsville	0.1	18	2	9	-	45	11300	-	-	-	11300	ADQ	-	Maj	Reg	
	NC 143 Business (Junaluska Dr)	Circle Street	South Main Street	Robbinsville	0.1	20	2	10	-	45	11300	-	-	-	11300	ADQ	-	Maj	Reg	

HIGHWAY																					
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Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
	NC 143 Business (Snowbird Rd)	Junaluska Drive	Long Creek Road	Robbinsville	0.6	18	2	9	30	45	13600	4100	4700	4700	13600	ADQ	30	Maj	Reg	
	NC 143 Business (Snowbird Rd)	Long Creek Road	Milltown Road	Graham County	0.1	18	2	9	30	45	13600	3400	3900	3900	13600	ADQ	30	Maj	Reg	
	NC 143 Business (Snowbird Rd)	Milltown Road	Claude Rogers Road	Graham County	0.3	18	2	9	-	55	9100	3400	3900	3900	9100	ADQ	-	Maj	Reg	
	NC 143 Business (Snowbird Rd)	Claude Rogers Road	Fletcher Hooper Road	Graham County	0.1	18	2	9	60	55	9100	2800	3200	3200	9100	ADQ	60	Maj	Reg	
	NC 143 Business (Snowbird Rd)	Fletcher Hooper Road	Atoah Circle	Graham County	0.3	18	2	9	60	55	14000	-	-	-	14000	ADQ	60	Maj	Reg	
	NC 143 Business (Snowbird Rd)	Atoah Circle	Wiggins Road	Graham County	1.1	18	2	9	60	55	14000	600	700	700	14000	ADQ	60	Maj	Reg	
	NC 143 Business (Snowbird Rd)	Wiggins Road	Snowbird Road	Graham County	0.1	18	2	9	60	55	9100	1300	1500	1500	9100	ADQ	60	Maj	Reg	
GRAH0006-H	Airport Road (SR 1260)	US 129	Old Tallulah	Graham County	0.2	18	2	9	-	35	9400	1400	2500	2500	9900	2E	60	Min	Sub	
	Atoah Cir	Atoah Road	Adams Road	Graham County	0.3	18	2	9	30	45	13600	1700	2000	2000	13600	ADQ	30	Min	Sub	
	Atoah Cir	Adams Road	Hoot Owl Hollow	Graham County	0.5	18	2	9	60	45	13600	500	500	500	13600	ADQ	60	Min	Sub	
	Atoah Cir	Hoot Owl Hollow	Snowbird Road	Graham County	0.3	18	2	9	60	45	13600	600	700	700	13600	ADQ	60	Min	Sub	
	Atoah Rd	Hall Jenkins Road	William Corbin Road	Graham County	0.2	16	2	8	-	45	13600	600	700	700	13600	ADQ	-	Min	Sub	
	Atoah Rd	William Corbin Road	IU Gap Road	Graham County	0.2	16	2	8	-	45	13600	-	-	-	13600	ADQ	-	Min	Sub	
	Atoah Rd	Snowbird Road	Jim Eller Road	Graham County	0.1	16	2	8	-	45	13600	90	100	100	13600	ADQ	-	Min	Sub	
	Atoah Rd	Jim Eller Road	Tahquette Branch	Graham County	0.1	16	2	8	-	45	13600	1500	1700	1700	13600	ADQ	-	Min	Sub	
	Atoah Rd	Tahquette Branch	Atoah Circle	Graham County	0.7	16	2	8	-	45	13600	-	-	-	13600	ADQ	-	Min	Sub	
	Atoah Rd	Atoah Circle	Hall Jenkins Road	Graham County	0.9	16	2	8	-	45	13600	500	500	500	13600	ADQ	-	Min	Sub	
	Atoah St	Circle Street	Laughter Street	Robbinsville	0.3	16	2	8	-	35	9400	-	-	-	9400	ADQ	-	Min	Sub	
	Atoah St	Laughter Street	Junaluska Drive	Robbinsville	0.1	16	2	8	-	35	10100	-	-	-	10100	ADQ	-	Maj	Reg	
	Circle St	Moose Branch Road	Circle Street	Robbinsville	0.1	16	2	8	-	35	9400	3900	4500	4500	9400	ADQ	-	Min	Sub	
	Circle St	North Main Street	Circle Street	Robbinsville	0.1	16	2	8	-	35	10100	2100	2400	2400	10100	ADQ	-	Min	Sub	
	Circle St	Circle Street	Millsaps Street	Robbinsville	0.1	16	2	8	-	35	9400	2100	-	-	9400	ADQ	-	Min	Sub	
	Circle St	Millsaps Street	Hosanna Street	Robbinsville	0.1	16	2	8	-	35	9400	-	-	-	9400	ADQ	-	Min	Sub	
	Circle St	Hosanna Street	Junaluska Drive	Robbinsville	0.1	16	2	8	-	35	10100	-	-	-	10100	ADQ	-	Min	Sub	
	E Main St	North Main Street	Court Street	Robbinsville	0.1	49	2	12	60	35	9400	-	-	-	9400	ADQ	60	Min	Sub	
	E Main St	Court Street	Rodney Orr Bypass	Robbinsville	0.2	46	3	12	-	35	11700	5100	5900	5900	11700	ADQ	-	Min	Sub	

HIGHWAY																					
		Section				2012 Existing System							2040 Proposed System								
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
	Farley Branch Rd	Old Field Gap Road	Farley Cemetary Road	Graham County	0.5	16	2	8	-	45	13600	5100	5900	5900	13600	ADQ	-	Min	Sub	
	Farley Branch Rd	Farley Cemetary Road	Mount View School Road	Graham County	0.4	16	2	8	-	45	13600	-	-	-	13600	ADQ	-	Min	Sub	
	Farley Branch Rd	Mount View School Road	Rhymers Ferry Road	Graham County	0.9	18	2	9	-	45	13600	-	-	-	13600	ADQ	-	Min	Sub	
	Fontana Hts	Rhymers Ferry Road	Circle Road	Fontana Dam	0.7	16	2	8	60	45	10800	-	-	-	10800	ADQ	60	Min	Sub	
	Fontana Hts	Circle Road	Welch Road	Fontana Dam	0.1	20	2	10	60	45	10800	-	-	-	10800	ADQ	60	Min	Sub	
	Ford St	Rodney Orr Bypass	North Main Street	Robbinsville	0.3	46	3	12	60	35	11700	-	-	-	11700	ADQ	60	Min	Sub	
GRAH0003-H	Industrial Access Road East	US 129 (Tallulah Road)	Snowbird Road	Graham County	0.6	24	2	12	60	40	9400	-	-	4100	9400	2A	60	Maj	Sub	
	IU Gap Rd	Atoah Road	Snowbird Road	Graham County	1.9	18	2	9	36	45	13600	12000	17500	17500	13600	ADQ	36	Min	Sub	
	Joyce Kilmer Rd	Tapoco Road	Santeetlah Dam Road	Graham County	0.6	16	2	8	60	45	13600	90	100	100	13600	ADQ	60	Min	Sub	
	Joyce Kilmer Rd	Santeetlah Dam Road	Gold Mine Road	Graham County	1.0	22	2	11	30	45	13600	100	100	100	13600	ADQ	30	Min	Sub	
	Joyce Kilmer Rd	Gold Mine Road	Santeetlah Cove	Graham County	0.8	18	2	9	-	45	13600	100	100	100	13600	ADQ	-	Min	Sub	
	Joyce Kilmer Rd	Santeetlah Cove	Maple Springs Overlook	Graham County	3.5	22	2	11	-	35	9400	-	-	-	9400	ADQ	-	Min	Sub	
	Joyce Kilmer Rd	Maple Springs Overlook	Santeetlah Road	Graham County	2.3	22	2	11	-	45	13600	-	-	-	13600	ADQ	-	Min	Sub	
	Knight St	Tapoco Road	Moose Branch Road	Robbinsville	0.3	20	2	10	50	35	9400	300	400	400	9400	ADQ	50	Min	Sub	
	Meadow Branch Rd	Tapoco Road	New Road	Graham County	1.3	19	2	10	30	45	13600	2100	2400	2400	13600	ADQ	30	Min	Sub	
	Meadow Branch Rd	New Road	Old Field Gap Road	Graham County	0.7	17	2	9	-	45	13600	800	900	900	13600	ADQ	-	Min	Sub	
	Moose Branch Rd	Tapoco Road	Woody Road	Graham County	0.2	20	2	10	73	55	14000	100	100	100	14000	ADQ	73	Min	Sub	
	Moose Branch Rd	Woody Road	Mauney Branch Road	Graham County	0.6	18	2	9	30	45	10800	3900	4400	4400	10800	ADQ	30	Min	Sub	
	Moose Branch Rd	Mauney Branch Road	0.15 miles west of Knight Street	Graham County	0.3	18	2	9	-	35	9400	300	300	300	9400	ADQ	-	Min	Sub	
	Moose Branch Rd	0.15 miles west of Knight Street	Knight Street	Robbinsville	0.2	18	2	9	-	35	9400	-	-	-	9400	ADQ	-	Min	Sub	
	Moose Branch Rd	Knight Street	North Main Street	Robbinsville	0.2	18	2	9	40	35	9400	2100	2400	2400	9400	ADQ	40	Min	Sub	

HIGHWAY																				
		Section				2012 Existing System							2040 Proposed System							
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
	Morphew St	Junaluska Drive	Ward Street	Robbinsville	0.1	18	2	9	-	35	10100	2100	2400	2400	10100	ADQ	-	Min	Reg	
	Morphew St	Ward Street	Atoah Street	Robbinsville	0.1	18	2	9	-	35	9400	-	-	-	9400	ADQ	-	Min	Sub	
GRAH0002-H	New Connection to Downtown Robbinsville	US 129 (Rodney Orr Bypass)	Ford Street	Robbinsville	0.1	-	-	-	-	-	-	-	-	6200	9200	2E	60	Min	Sub	B, P
GRAH0004-H	New Location Industrial Park Access Road North	US 129 (Tapoco Road)	Snowbird Road	Graham County, Robbinsville	1.0	24	2	12	60	40	9400	600	600	600	9400	2A	60	Maj	Sub	
GRAH0006-H	New Location Park Access Road	US129 (Tallulah Road)	P and J Road	Graham County	0.1	-	-	-	-	-	-	-	-	2500	9400	2E	60	Min	Sub	
GRAH0005-H	New Location Robbinsville HS Access Road	US 129 (Rodney Orr Bypass)	Robbinsville High School	Graham County, Robbinsville	0.4	-	-	-	-	-	-	-	-	600	9200	2E	60	Min	Sub	P
	Old Sweetwater Rd	High Splendor Road	T.J. Wilson Road	Graham County	0.1	20	2	10	33	45	13600	-	-	-	13600	ADQ	33	Min	Sub	
	Old Sweetwater Rd	T.J. Wilson Road	Sweetwater Road	Graham County	0.4	22	2	11	33	45	13600	100	100	100	13600	ADQ	33	Min	Sub	
	Old Sweetwater Rd	Sweetwater Road	East Fort Hill Road	Graham County	0.1	22	2	11	50	45	13600	100	100	100	13600	ADQ	50	Min	Sub	
	Old Sweetwater Rd	East Fort Hill Road	High Splendor Road	Graham County	1.5	20	2	10	50	45	13600	400	1400	1400	13600	ADQ	50	Min	Sub	
GRAH0006-H	Old Tallulah Rd	Airport Rd	P and J Road	Graham County	0.2	17	2	8		35	9400	1200	2500	2500	9900	2E	60	Min	Sub	
	Rhymers Ferry Rd	Farley Branch Road	Fontana Heights	Graham County	3.6	18	2	9	-	45	10800	400	1400	1400	10800	ADQ	-	Min	Sub	
GRAH0006-H	P and J Rd	Old Tallulah Rd	Proposed Extension	Graham County	0.2	20	2	9		25	9000	600	2500	2500	9900	2E	60	Min	Sub	
	Snider Cir	Atoah Street (North)	Atoah Street (South)	Robbinsville	0.2	18	2	9	-	35	9400	-	-	-	9400	ADQ	-	Min	Sub	
	Snider Hl	South Main Street	Circle Street	Robbinsville	0.1	18	2	9	-	35	9400	-	-	-	9400	ADQ	-	Min	Sub	
	Snowbird Rd	Nowhere Place	Don't Know Road	Graham County	0.1	18	2	9	60	45	-	-	-	-	-	ADQ	60	Min	Sub	
	Snowbird Rd	Don't Know Road	Nelms Road	Graham County	1.3	16	2	8	60	45	-	-	-	-	-	ADQ	60	Min	Sub	
	Snowbird Rd	Ed Chekelelee Road	Sleepy Hollow Road	Graham County	0.1	18	2	9	30	45	13600	-	-	-	13600	ADQ	30	Min	Sub	

HIGHWAY																				
		Section				2012 Existing System							2040 Proposed System							
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
	Snowbird Rd	Sleepy Hollow Road	Hendrick Mountain Road	Graham County	1.1	16	2	8	60	45	13600	1100	1300	1300	13600	ADQ	60	Min	Sub	
	Snowbird Rd	Hendrick Mountain Road	Boyd Chekelelee Road	Graham County	0.4	16	2	8	60	45	13600	-	-	-	13600	ADQ	60	Min	Sub	
	Snowbird Rd	Boyd Chekelelee Road	Ed Chekelelee Road	Graham County	0.2	16	2	8	60	45	13600	1100	600	600	13600	ADQ	60	Min	Sub	

HIGHWAY																				
		Section				2012 Existing System							2040 Proposed System							
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	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)	CTP Classifi-cation	Tier	Proposals for Other Modes
	Upper Tuskeegee	S South Fork	Cindy Cove Road	Graham County	0.1	18	2	9	60	45	13600	1100	1300	1300	13600	ADQ	60	Min	Sub	
	Upper Tuskeegee	Cindy Cove Road	Tuskeegee Circle	Graham County	0.5	18	2	9	60	45	13600	-	-	-	13600	ADQ	60	Min	Sub	
	Upper Tuskeegee	Tuskeegee Circle	S South Fork	Graham County	2.4	18	2	9	60	45	13600	300	400	400	13600	ADQ	60	Min	Sub	
	Welch Rd	Welch Road	Church Road	Fontana Dam	0.2	18	2	9	60	45	10800	-	-	-	10800	ADQ	60	Min	Sub	
	Welch Rd	Church Road	Fontana Drive	Fontana Dam	0.2	20	2	10	60	45	10800	-	-	-	10800	ADQ	60	Min	Sub	
	Welch Rd	Fontana Drive	Fontana Road	Fontana Dam	0.2	24	2	12	60	45	10800	-	-	-	10800	ADQ	60	Min	Sub	
	Yellow Creek Rd	Renegade Drive	George Turpin Road	Graham County	8.9	18	2	9	60	45	13600	200	300	300	13600	ADQ	60	Min	Sub	

Footnotes:
(1) Undivided 4-lane with shoulder
(2) Raised median 2 lane with 8 ft on-street parking both sides

BICYCLE AND PEDESTRIAN

BICYCLE								
				Existing System		Proposed System		
				Cross-Section				
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	(ft)	lanes	Type	Cross-Section	Other Modes
GRAH0001-B	Ford Street/Moose Branch Road	Long Creek - Sweetwater Creek	0.6	24	2	On Road	2E	-
GRAH0002-B	US 129 (Rodney Orr Bypass/Tapoco Road)	Ford Street - Long Creek	0.8	24	2	On Road	2E	-
GRAH0003-B	NC 143 (Santeetlah Road/Snowbird Road) and NC 143 Business (Junaluska Drive)	Recreational trails west of IU Gap Road - South Main Street	4.5	24	2	On Road	2E	-

PEDESTRIAN								
				Existing System		Proposed System		Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Type	Side of Street	Type	Side of Street	Modes
GRAH0001-P	US 129 (Rodney Orr Bypass)	5 Point Road - North Main Street	0.7	Sidewalk	Both	Sidewalk & Refuge Islands	Both	-
GRAH0002-P	US 129 (Tapoco Road) Pedestrian Enhancements	Knight Street - Willie Colvin Road	0.6	Sidewalk	Both	Sidewalk	Both	-
GRAH0003-P	West Fort Hill Pedestrian Enhancements	5 Point Road - Graham County Services driveway	0.1	Sidewalk	Both	Sidewalk	Both	-
GRAH0004-P	5 Point Road and Robbinsville High School Access Road Pedestrian Enhancements	US 129 (Tallulah Road) - existing multi-use trail	0.6	Sidewalk	Both	Sidewalk	Both	-
GRAH0005-P	US 129 (Tallulah Road) Pedestrian Enhancements	South of 5 Point Road - south of Airport Road	1.2	Sidewalk	Both	Sidewalk	Both	-
GRAH0006-P	New Pedestrian Facility as part of H141992	US 129 (Tallulah Road) - ball fields on P and J Road	0.1	Sidewalk	Both	Sidewalk	Both	-

MULTI-USE PATH								
				Existing System		Proposed System		Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Side of Street	Cross-Section	Side of Street	Cross-Section	Modes
GRAH0001-M	Sweetwater Creek Multi-use Path	Santeetlah Lake - Ford Street	1.8	-	-	Multi-Use Path	MA	-
GRAH0002-M	Long Creek Multi-use Path	Sweetwater Creek - Proposed Young America Park	0.9	-	-	Multi-Use Path	MA	-
GRAH0003-M	US 129 (Tallulah Road) Multi-use Path	Ford Street - Tallulah Bog recreation area	8.7	-	-	Multi-Use Path	MA	-

PUBLIC TRANSPORTATION AND RAIL

PUBLIC TRANSPORTATION							
			Speed Limit (mph)	Distance (mi)	Existing System	Proposed System	Other Modes
Local ID	Facility/ Route	Section (From - To)			Type	Type	
GRAH0001-T	Park and Ride Lot	NC 143 (Sweetwater Road) and NC 28	n/a	n/a	- -	Park and Ride Lot	-
GRAH0002-T	Park and Ride Lot	Downtown Robbinsville	n/a	n/a	- -	Park and Ride Lot	-
GRAH0003-T	Park and Ride Lot	US 129 (Rodney Orr Bypass) and NC 143 (Sweetwater Road) near Ingles Market	n/a	n/a	- -	Park and Ride Lot	-
GRAH0004-T	Park and Ride Lot	US 129 (Tallulah Road) just north of Cherokee County Line	n/a	n/a	- -	Park and Ride Lot	-
GRAH0005-T	Park and Ride Lot	NC 143 (Santeetlah Road) at Snowbird Road	n/a	n/a	- -	Park and Ride Lot	-

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 comprehensive planning and design "typical" highway cross sections, as depicted on the following pages, were updated on May 5, 2014 in response to the Strategic Transportation Investments[1] (STI) law (House Bill 817) and are also consistent with SPOTOn!ine (used for project prioritization[2]), NCDOT's GIS-based web application for providing automated, near real-time prioritization scores and project costs. This guidance establishes design elements that emphasize safety, mobility, complete streets[3], and accessibility for multiple modes of travel. These "typical" highway cross sections should be used as 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[4] (NEPA) documentation and through final design preparation.

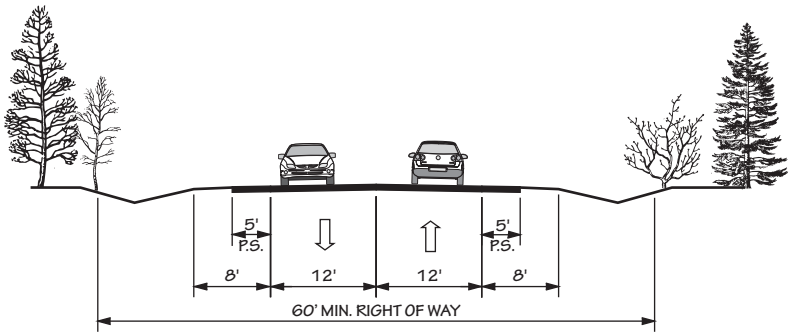
On all existing and proposed roadways delineated on the CTP, adequate right-of-way should be protected or acquired for the recommended cross sections. In addition to cross section and right-of-way recommendations for improvements, Appendix C may recommend ultimate needed right-of-way for the following 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 STI, go to:* http://www.ncdot.gov/strategictransportationinvestments/.
[2] *For more information on prioritization, go to:* https://connect.ncdot.gov/projects/planning/Pages/StrategicPrioritization.aspx.
[3] *For more information on Complete Streets, go to:* http://www.completestreetsnc.org/.
[4] *For more information on NEPA, go to:* http://ceq.hss.doe.gov/.

FIGURE 7
"TYPICAL" HIGHWAY CROSS SECTIONS

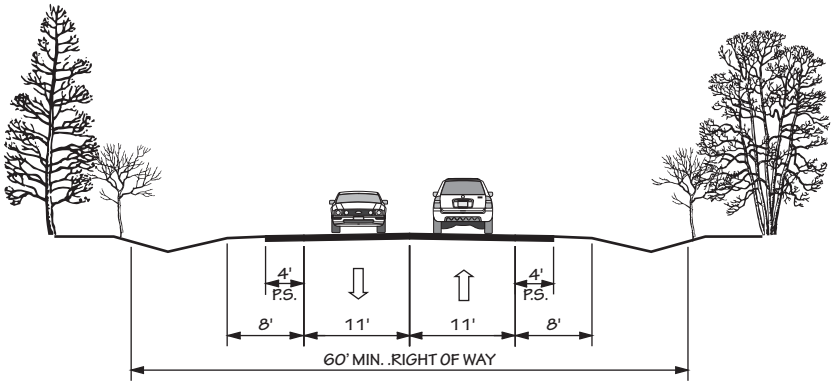
2A



2 LANE UNDIVIDED WITH PAVED SHOULDERS

POSTED SPEED 55 MPH

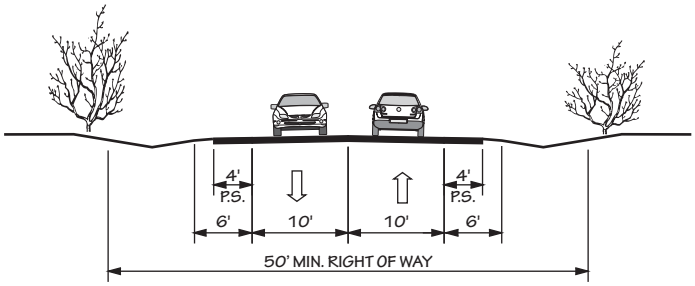
2B



2 LANES UNDIVIDED

POSTED SPEED 45 MPH OR LESS

2C



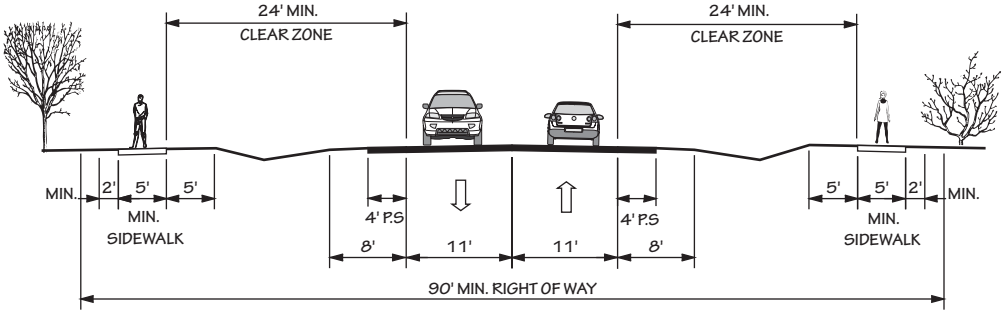
2 LANE UNDIVIDED WITH PAVED SHOULDERS

POSTED SPEED 25 - 35 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

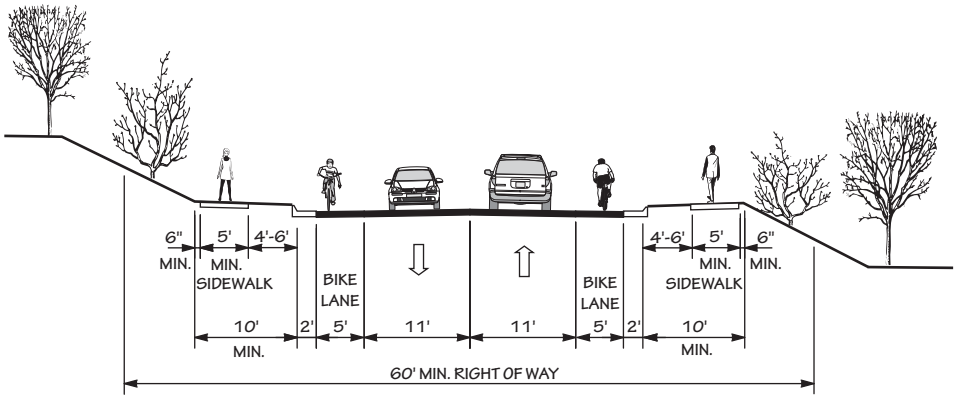
2D



2 LANE UNDIVIDED WITH PAVED SHOULDERS AND SIDEWALKS

POSTED SPEED 25-45 MPH

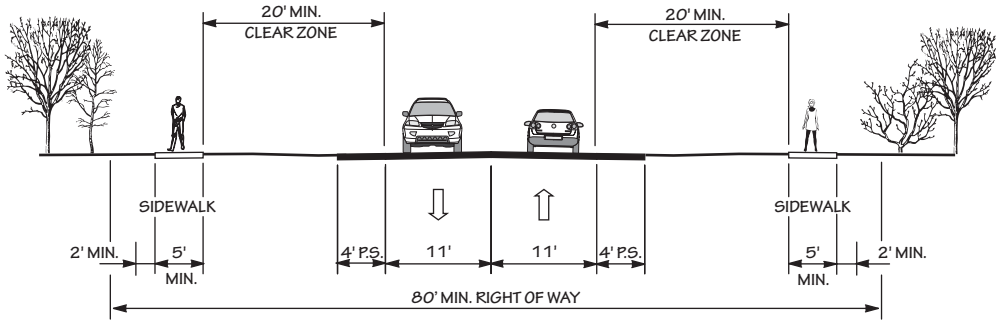
2E



2 LANE UNDIVIDED WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

2F



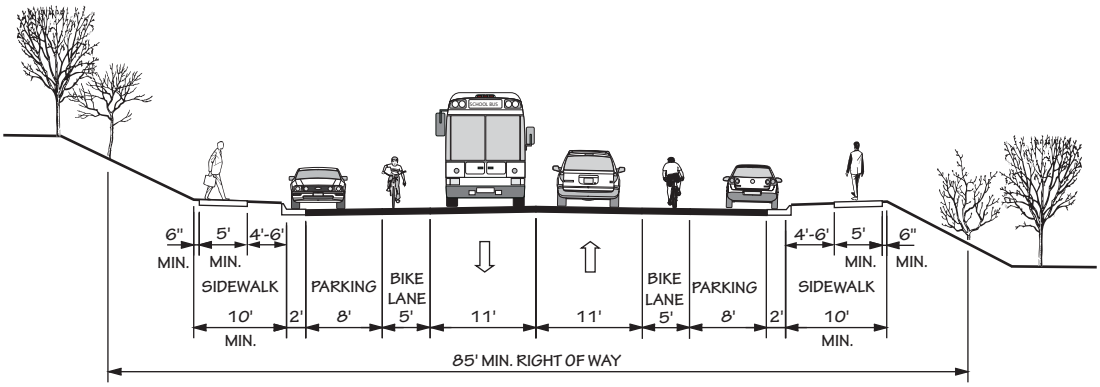
2 LANE UNDIVIDED WITH PAVED SHOULDERS AND SIDEWALKS
IN CAMA COUNTIES

POSTED SPEED 25-45 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

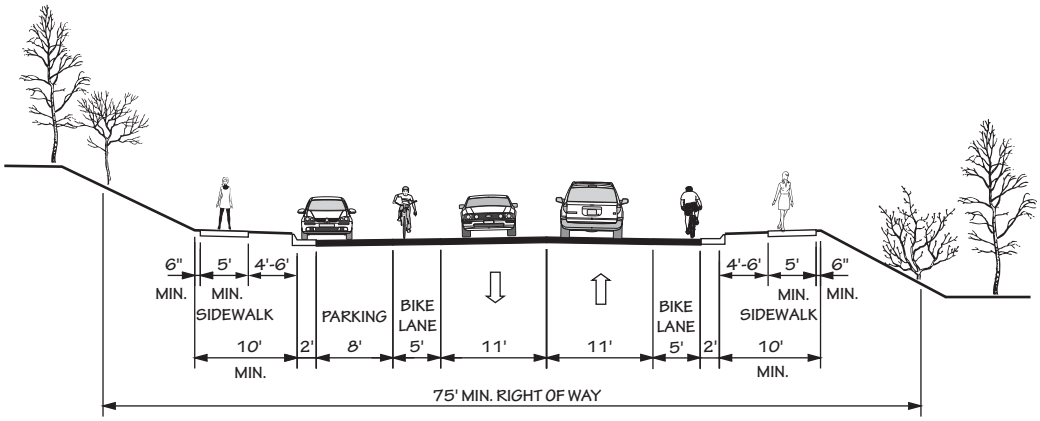
2G



2 LANE UNDIVIDED WITH CURB & GUTTER, PARKING BOTH SIDES, BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

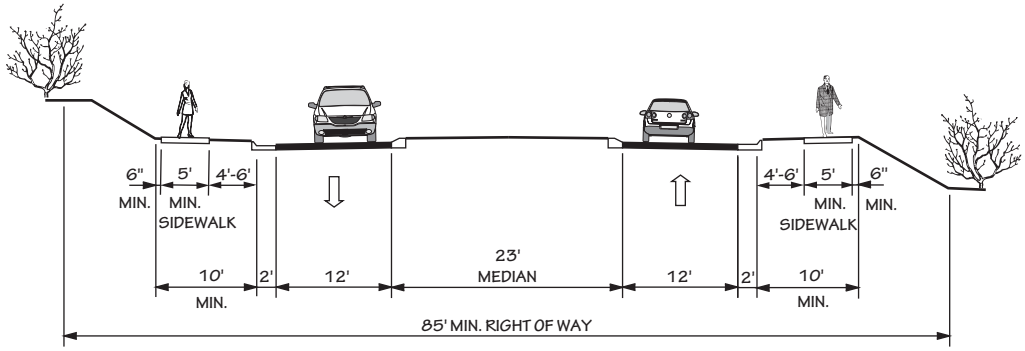
2H



2 LANE UNDIVIDED WITH CURB & GUTTER, PARKING ONE SIDE, BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

2I



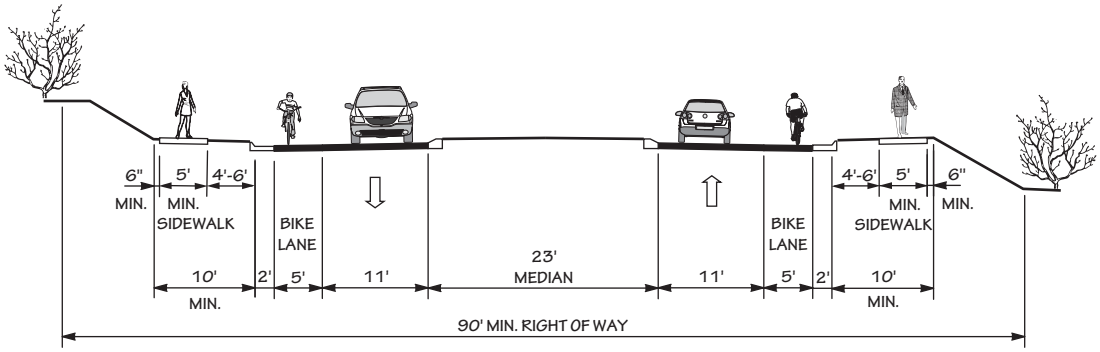
2 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER AND SIDEWALKS

POSTED SPEED 25-45 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

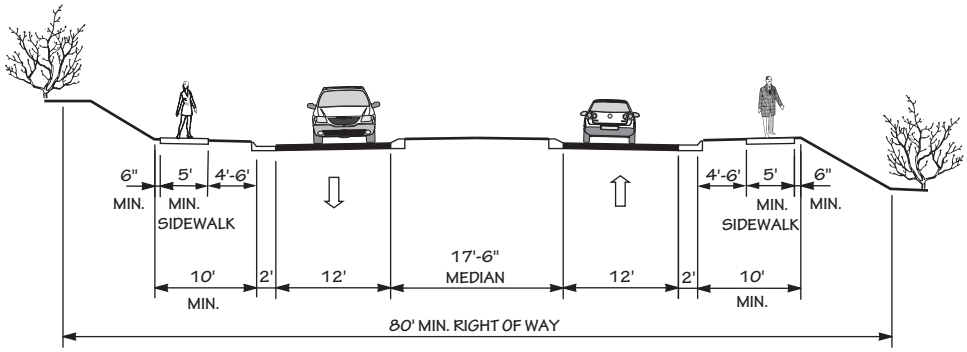
2J



2 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

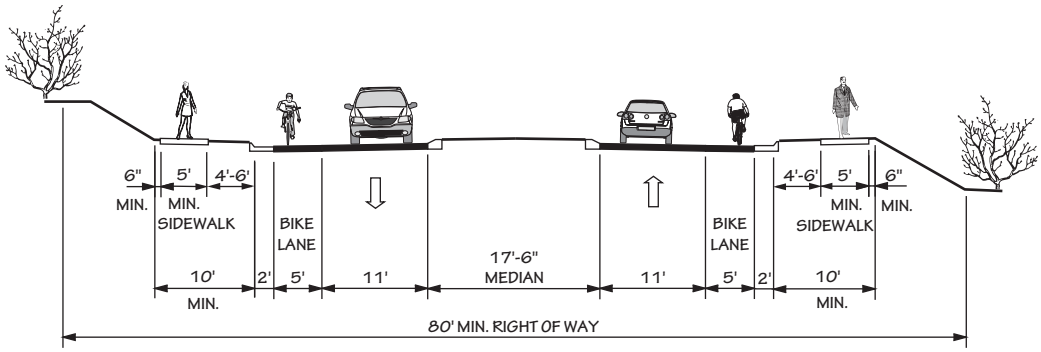
2K



2 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER AND SIDEWALKS

POSTED SPEED 25-45 MPH

2L



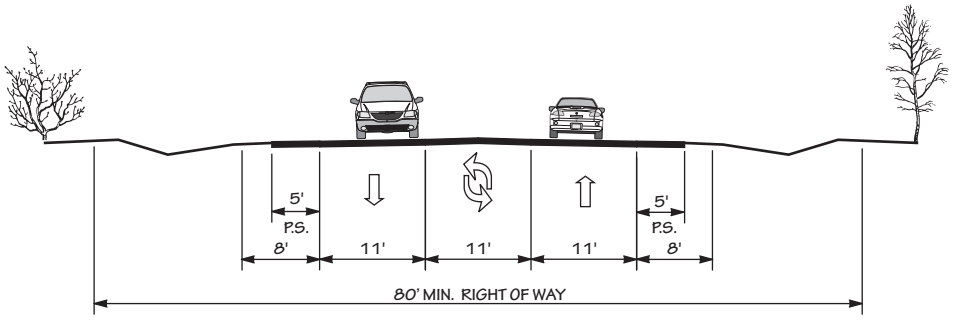
2 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

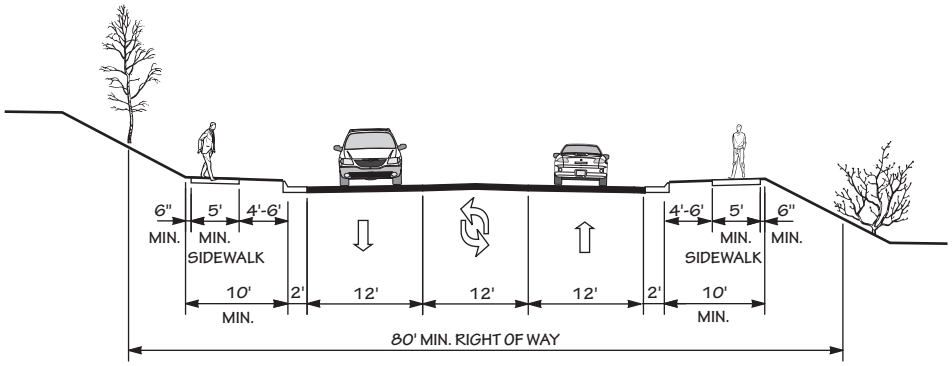
3A



2 LANE WITH TWO WAY LEFT TURN LANE, AND PAVED SHOULDERS

POSTED SPEED 25-55 MPH

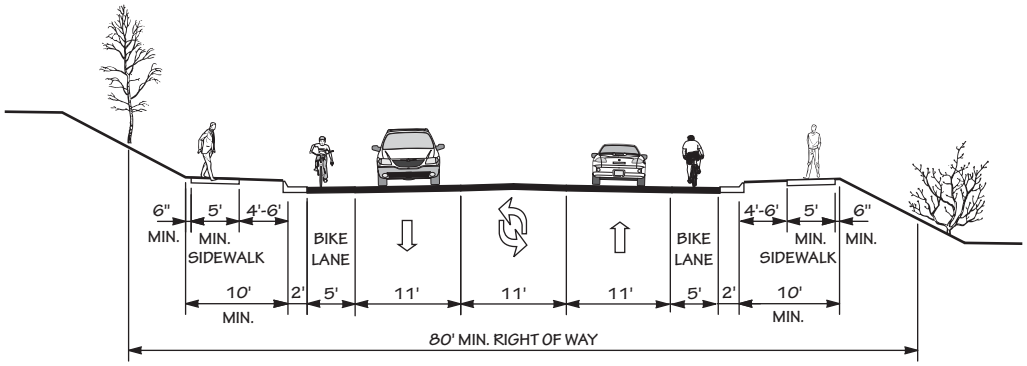
3B



2 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER, AND SIDEWALKS

POSTED SPEED 25-45 MPH

3C

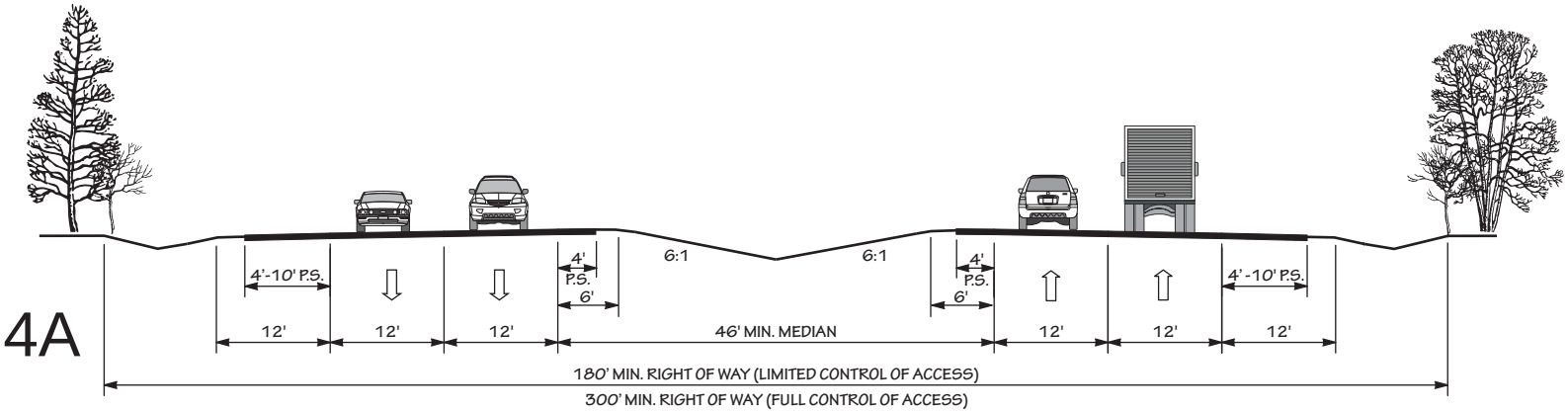


2 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER, BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

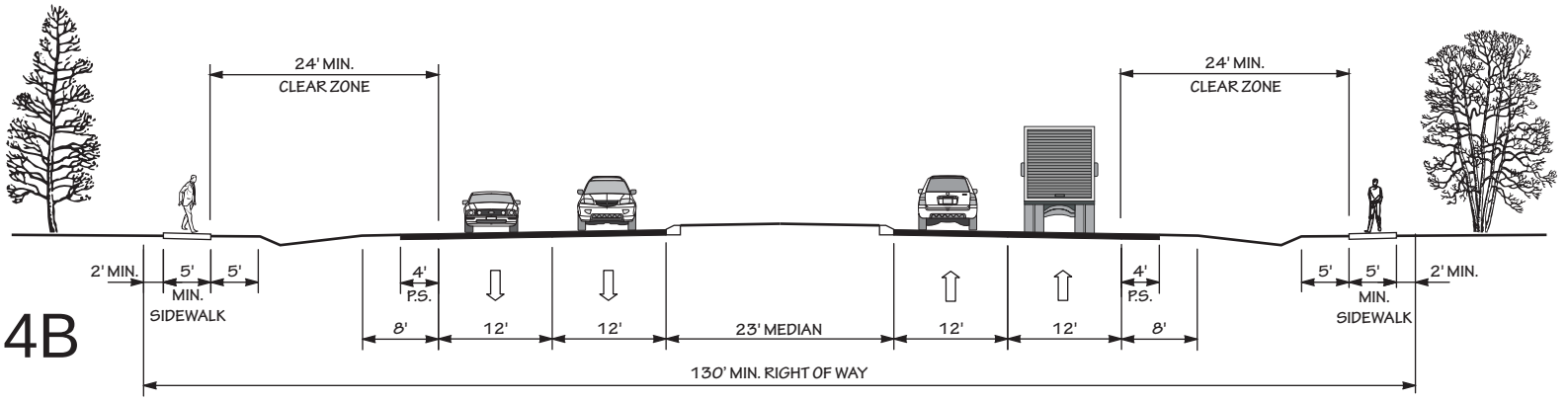
Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS



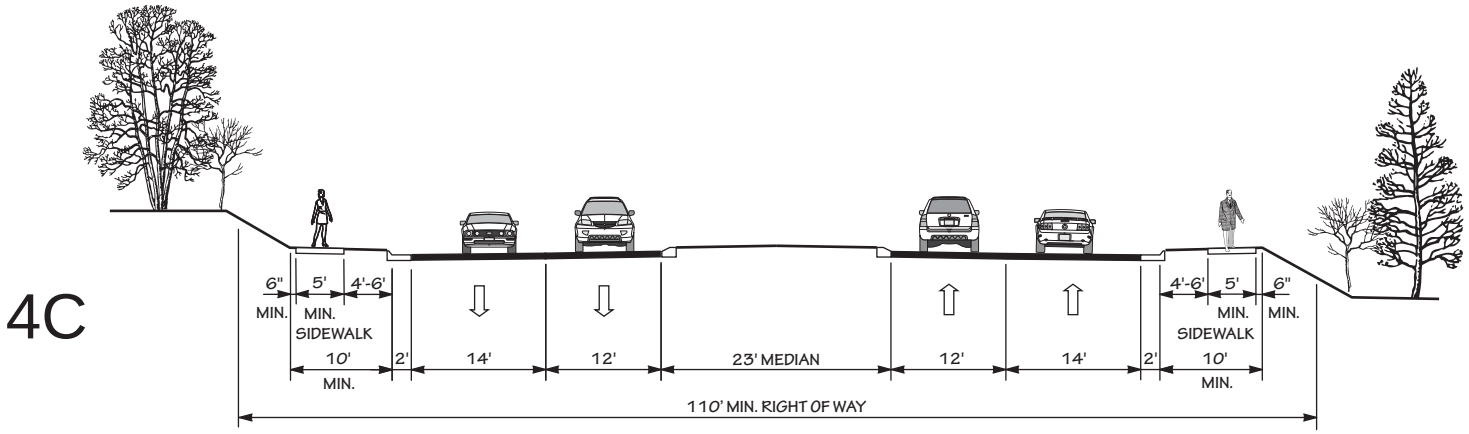
4 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS

POSTED SPEED 45-70 MPH



4 LANE DIVIDED (23' RAISED MEDIAN) WITH PAVED SHOULDERS AND SIDEWALKS

POSTED SPEED 35-55 MPH



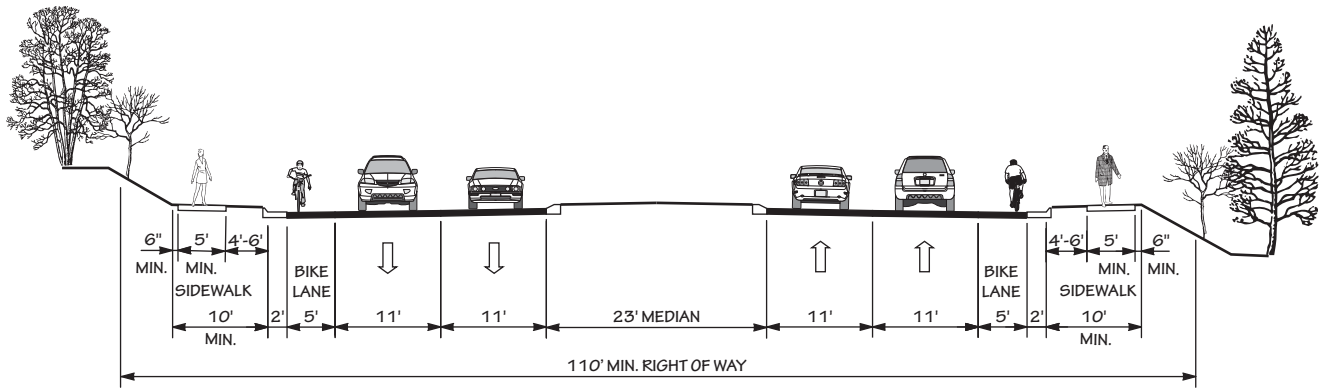
4 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES, AND SIDEWALKS

POSTED SPEED 35-45 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

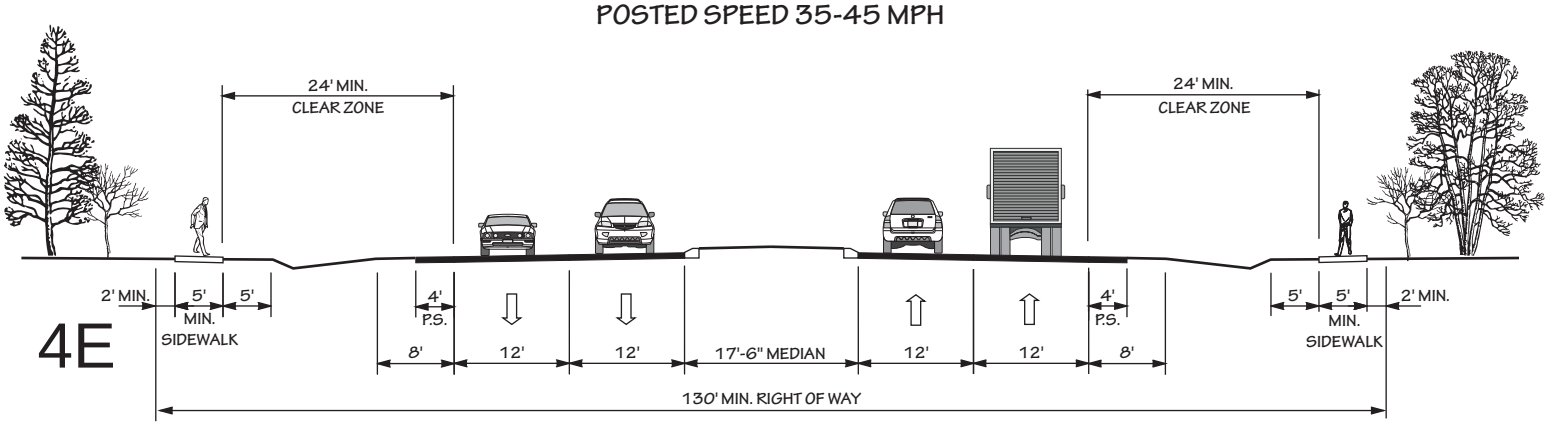
4D



4 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER, BIKE LANES AND SIDEWALKS

POSTED SPEED 35-45 MPH

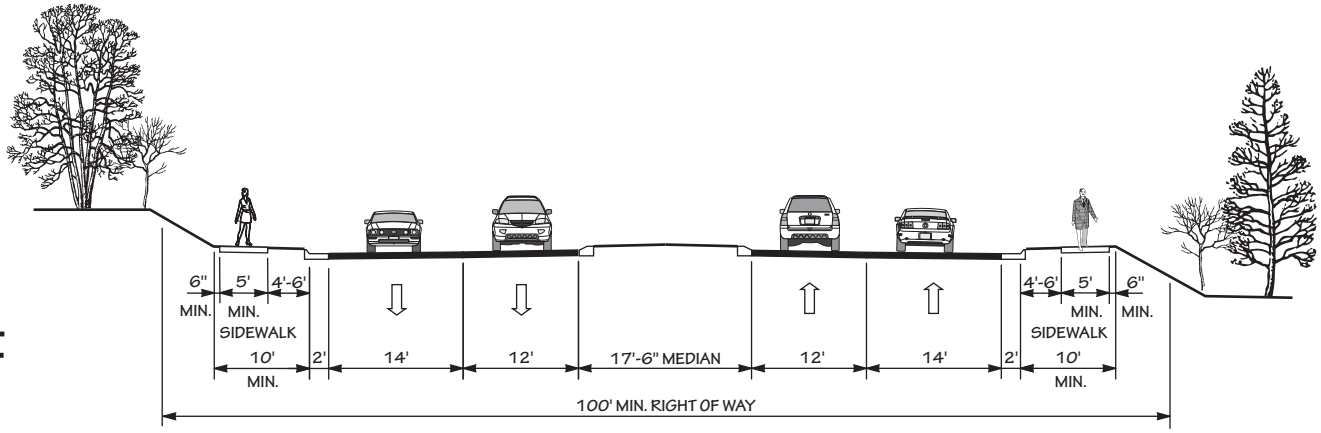
4E



4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH PAVED SHOULDERS AND SIDEWALKS

POSTED SPEED 35-55 MPH

4F



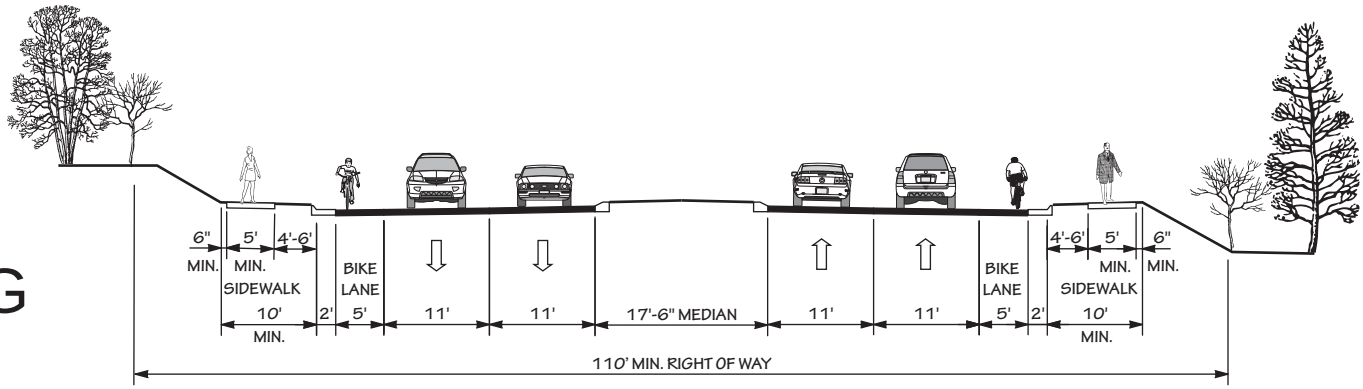
4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES AND SIDEWALKS

POSTED SPEED 35-45 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

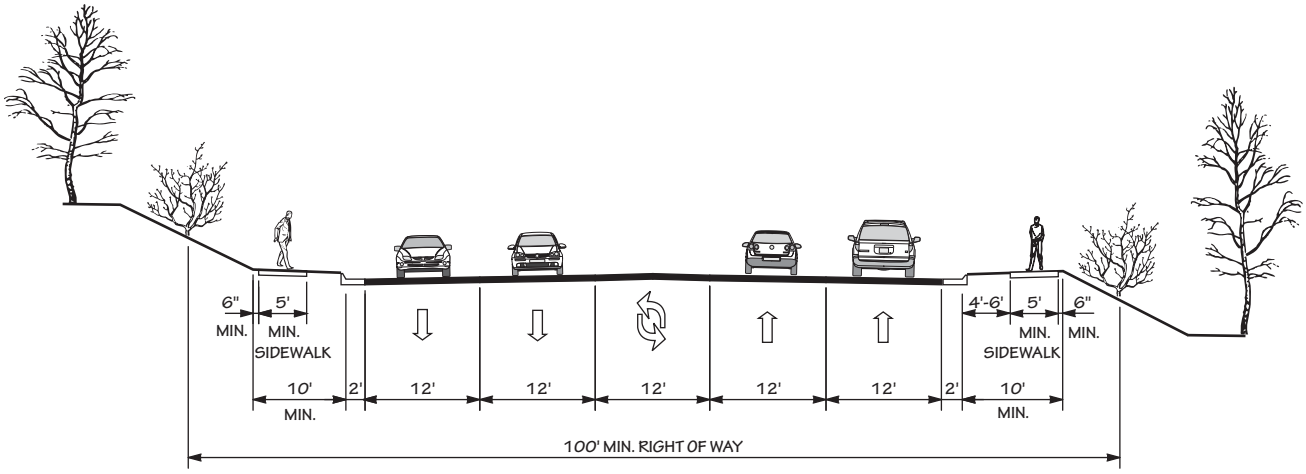
4G



4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS

POSTED SPEED 35-45 MPH

5A

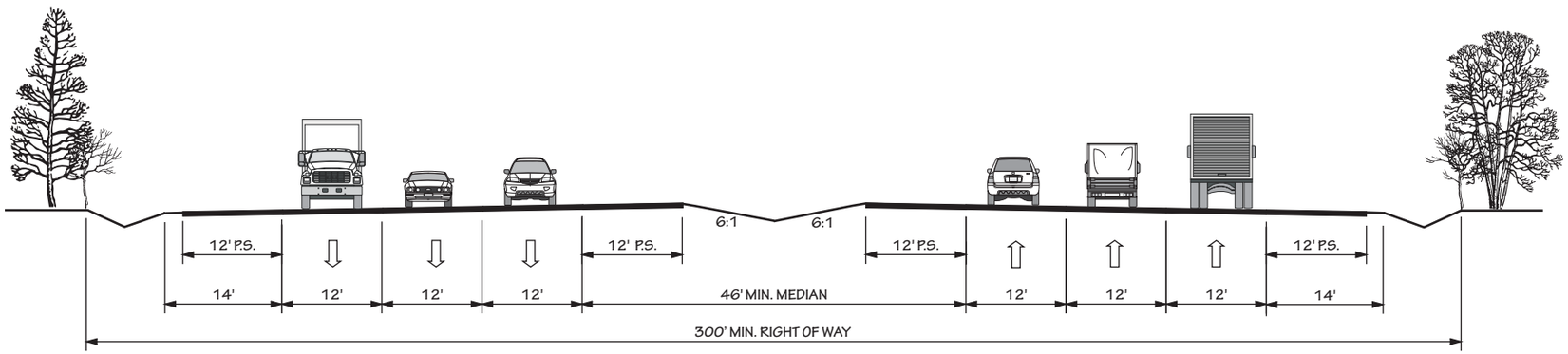


4 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER, AND SIDEWALKS

POSTED SPEED 35-45 MPH

Revised 05/05/2014

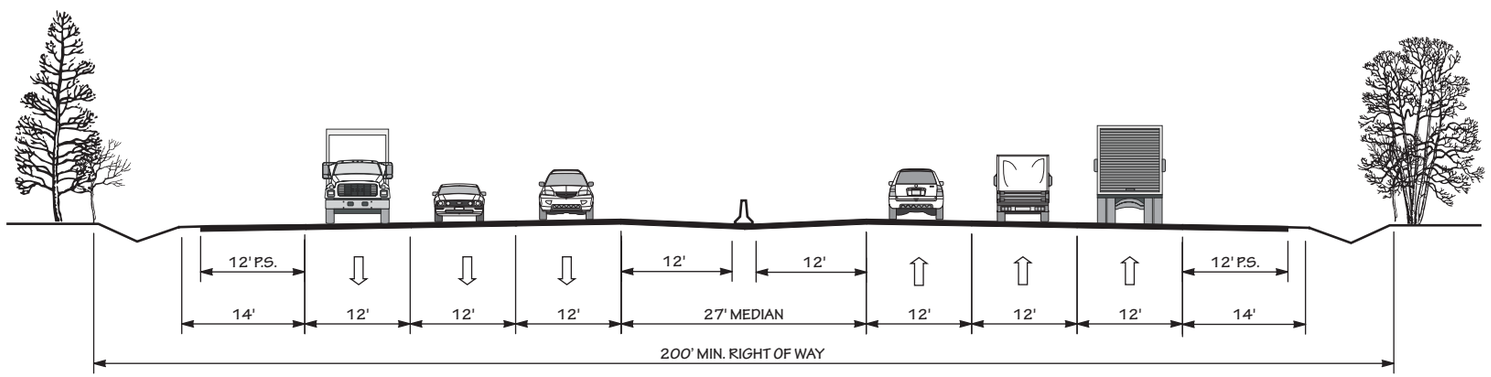
"TYPICAL" HIGHWAY CROSS SECTIONS



6A

6 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS

POSTED SPEED 45-70 MPH

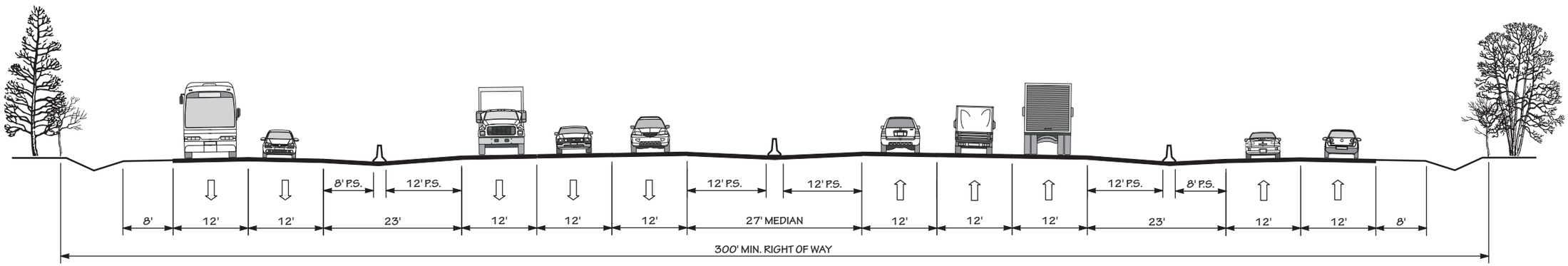


6B

6 LANE DIVIDED (27' MEDIAN WITH JERSEY BARRIER)
WITH PAVED SHOULDERS

POSTED SPEED 55-70 MPH

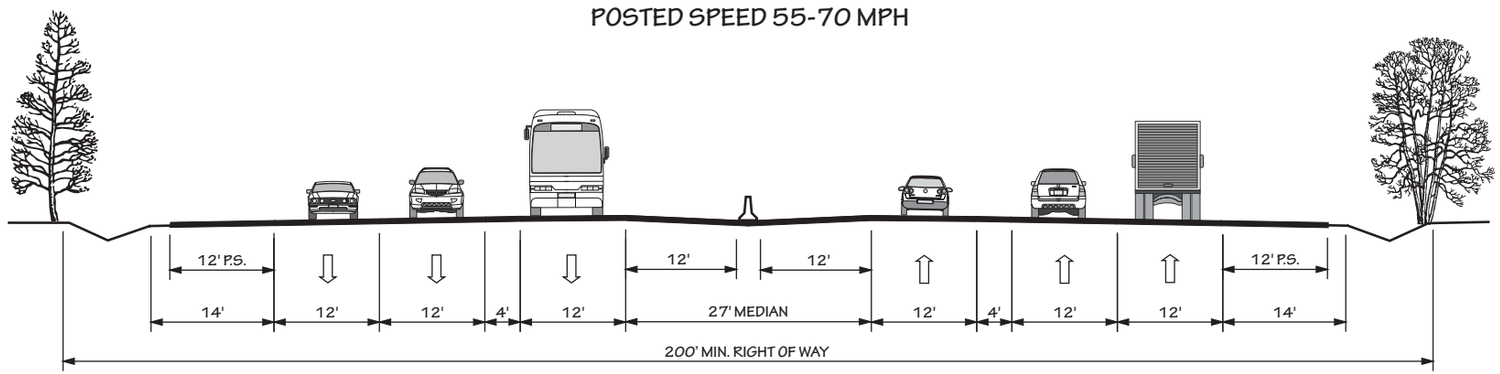
"TYPICAL" HIGHWAY CROSS SECTIONS



6C

6 LANE FREEWAY (27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS AND 2 LANE ONE-WAY SERVICE ROADS EACH SIDE

POSTED SPEED 55-70 MPH



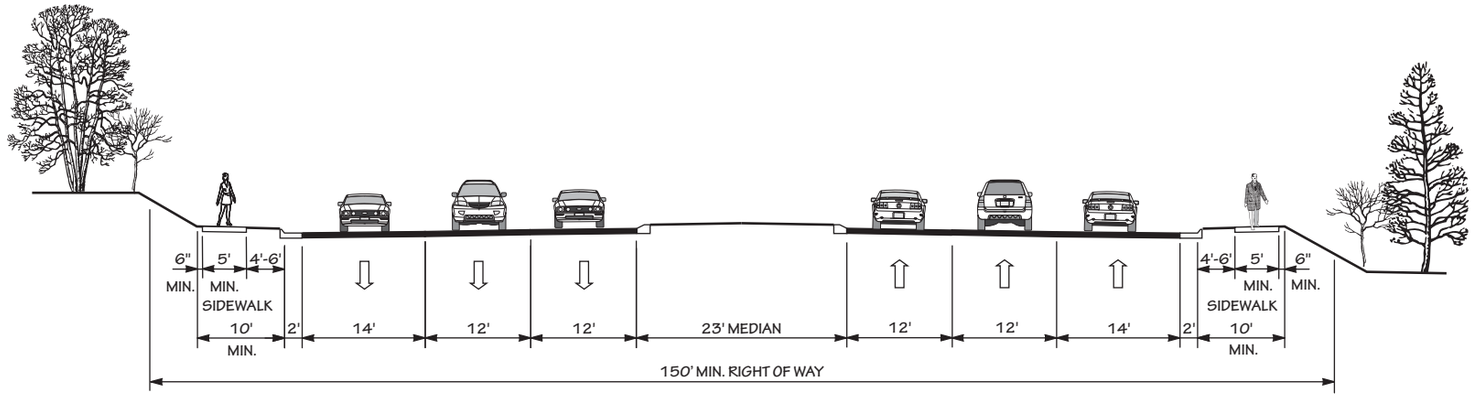
6 LANE FREEWAY (4 GENERAL PURPOSE LANES, 2 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS

6D

POSTED SPEED 55-70 MPH

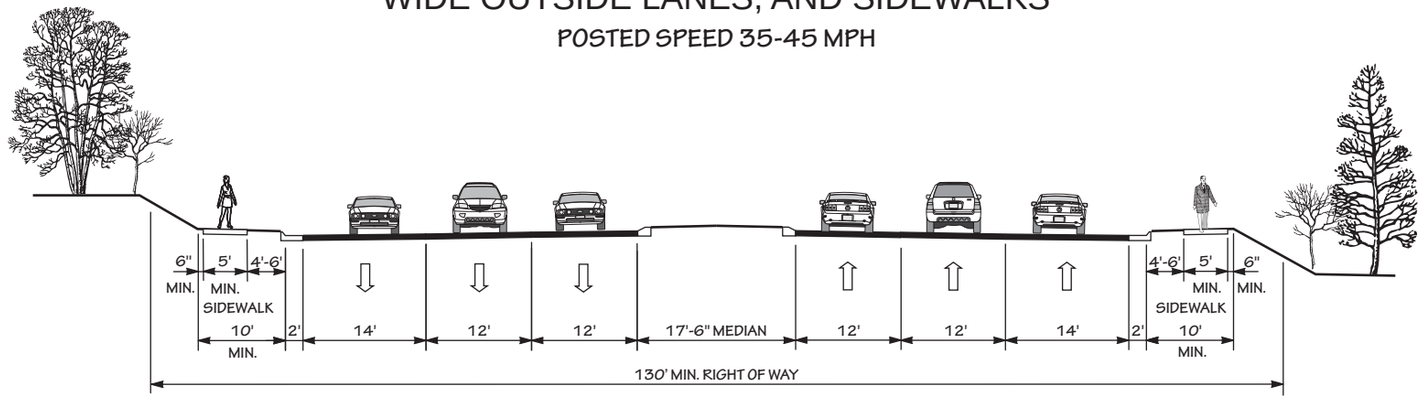
Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS



6E 6 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES, AND SIDEWALKS

POSTED SPEED 35-45 MPH

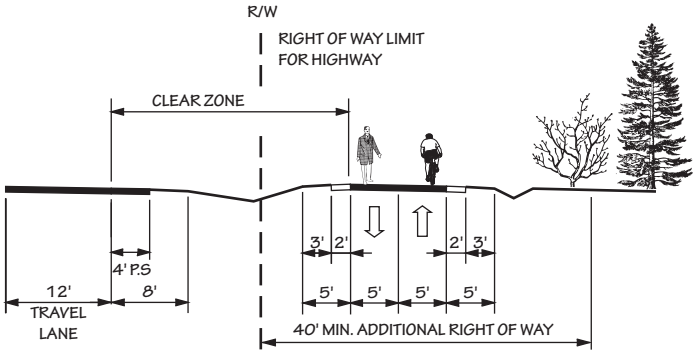


6F 6 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES, AND SIDEWALKS

POSTED SPEED 35-45 MPH

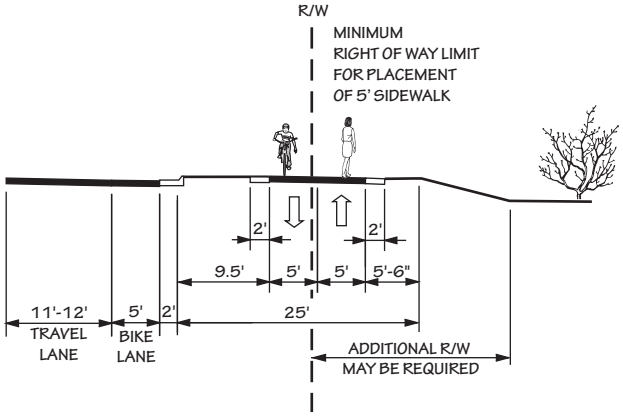
"TYPICAL" HIGHWAY CROSS SECTIONS

M A



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

M B



MULTI - USE PATH ADJACENT TO CURB AND GUTTER

Appendix E
Level of Service Definitions

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

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

- **LOS A**: Describes 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 8 - Level of Service Illustrations

Source: 2010 Highway Capacity Manual, Exhibit 11-4

Appendix F
Bridge Deficiency Assessment

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

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

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

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

A bridge must be classified as deficient in order to 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
9	NC 28	Cheoah Lake	SD & FO	GRAH0001-H
11	NC 143 Business	Long Creek	SD & FO	
12	NC 143 Business	Atoah Creek	SD & FO	
70	Joyce Kilmer Road (SR 1134)	Cheoah River	SD & FO	
81	Moose Branch Road (SR 1117)	Long Creek	SD & FO	B-4122

Appendix G
Socio-Economic Data Forecasting Methodology

In February of 2012, a study to develop the Graham County CTP, which includes the town of Robbinsville, Fontana Dam, and Lake Santeetlah, was initiated as a part of the regional vision plan, entitled Opportunity Initiative (Opt-In) Southwestern North Carolina[39], and Graham County Comprehensive Plan being led by TSW consulting. Existing and anticipated deficiencies were determined through an analysis of the transportation system looking at both current and future travel patterns.

The first step in determining future transportation deficiencies is to forecast future population and employment growth for Graham County. As part of the Opt-In process, population growth for the seven counties of southwestern North Carolina was forecasted at 15 percent from 2010 to 2035. The Graham County CTP Steering Committee worked with ARCADIS to estimate economic development potential and land use trends to determine the potential impacts on the future transportation system.

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

Population

Consistent with the North Carolina Office of State Budget and Management population projections for the seven southwestern North Carolina counties included in Opt-In, a growth rate of 15 percent from 2010 to 2035 was projected by the Opt-In consultant team. To extend the population forecast to 2040, the horizon year of the CTP, the compound annual growth rate (CAGR) from 2010 to 2035 was calculated at 0.56 percent and applied from 2035 to 2040 to extend the growth in a straight line projection. This resulted in a growth rate of 17.6 percent from 2010 to 2040. The 2040 population was projected by applying the 17.6 percent growth rate to the 2010 U.S. Census count of Graham County population. The 2010 Graham County population is 8,861 persons and is forecasted to increase to 10,421 persons in 2040.

Employment

Future employment conditions within Graham County were obtained using the 17.6 percent growth rate based on the Opt-In forecast as described in the above section. Based on CTP Steering Committee input and discussions, as well as constraints such as publically owned lands, the expected growth was then spatially distributed in the county. This included approximate locations and number of jobs for anticipated employment centers. Any anticipated heavy demand on the future transportation system as a result of these proposals was accounted for in projected traffic volumes. Areas of expected higher employment growth and traffic growth are US 129 south of Robbinsville

[39] Opt-In is a process that includes the seven westernmost counties in North Carolina, the 16 municipalities within them, and the Sovereign Nation of the Eastern Band of Cherokee Indians. The purpose of Opt-In is to provide citizens, businesses, and elected officials in the region information to make decisions about how and where they invest in public infrastructure for the future.

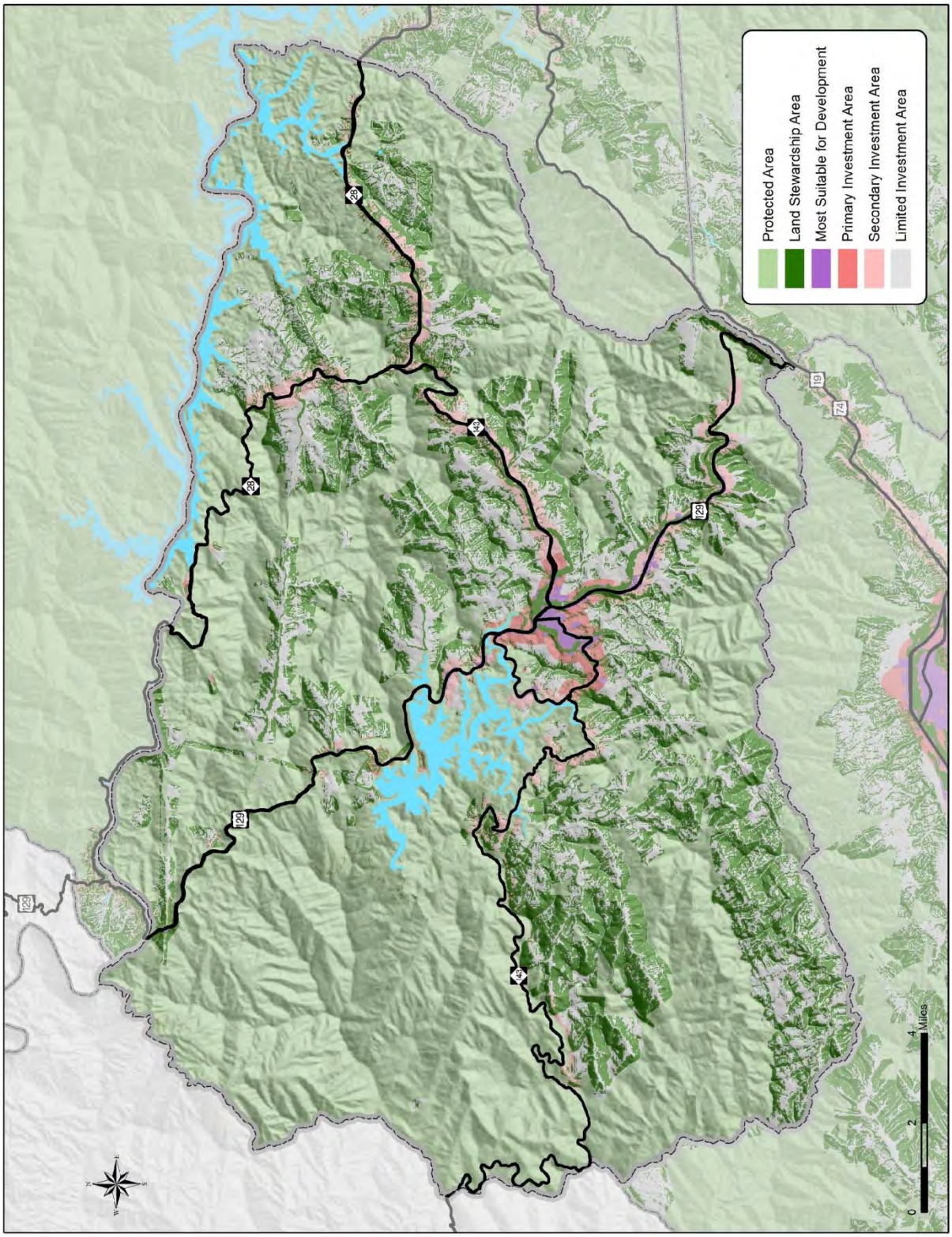
and Stanley Industrial Park based on current trends and anticipated future development activity.

Future Traffic

Traffic volumes across the county from 1991 to 2009 were gathered. Growth rates for entire time period, 1991-2009, and for recent years, 2000-2009 were analyzed to note any effects the economy has had on local growth. Growth rates were used to linearly project 2040 traffic volumes. When calculated growth rates were 0% or negative, a conservative rate of 0.5% was applied. Traffic growth rates were between 0.5% and 1.5%, similar to the population growth rate for Graham County[40]. While the overall growth in traffic is forecasted at 17.6 percent, the same as the rate of population and employment growth, the rate of traffic growth on specific roadways varies based on where population and employment growth is anticipated to occur in Graham County, so some roads may have forecasted traffic volumes above or below the forecasted increase in population.

[40] Current national trends indicate that traffic volumes are not growing as fast as populations are increasing. However, as Graham County is quite rural, it is anticipated that the county will not follow the national trend and the vast majority of the forecasted new residents will choose to drive private automobiles.

Figure 9: Investment Guide Map



Source: Graham County Gateway To Tomorrow Plan

The Investment Guide Map shows where growth and development is anticipated to occur in Graham County in the future. The Investment Guide Map is from the *Graham County Gateway to Tomorrow Plan* of 2014. This plan was completed by Graham County concurrently with the CTP and coordination between the two plans was ongoing and included joint meetings of the CTP Steering Committee and comprehensive plan committee.

Appendix H
Public Involvement

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

List of CTP Steering Committee Members

At the start of a CTP study, a committee is formed that is comprised of individuals who represent the various needs, issues and populations of the community. These representatives are responsible for capturing the transportation needs of the community relative to all modes of transportation and for guiding the development of the CTP. This committee met numerous times to develop the CTP vision statement, goals, identified transportation needs, discuss potential solutions and develop the resulting recommended projects. A listing of steering committee members for the Graham County CTP is given below.

- Brenda Artiss, GREAT
- Jacky Ayers, Town of Robbinsville
- Claudie Burchfield, Graham County
- Andy Cable, Graham County Economic Development
- Greg Cable, Graham County Manager
- Yvette Carringer, GREAT
- Juanita Colvard, Graham County Transit
- Rick Davis, GREAT
- David Dodson, Stecoah Valley Center
- Melissa Duckworth, Graham County Schools
- Beth Fields, Stecoah Valley Center
- Ronnie Hedrick, Town of Lake Santeetlah
- Arleen Higgins, GREAT
- Alicia Parham, Graham County
- Ed Satterfield, Corridor K Coalition
- Jeannie Stewart, Town of Fontana Dam
- Tim Gamble, Fontana Village
- Pam Cook, NCDOT
- Shane Edwards, NCDOT
- Joel Setzer, NCDOT

CTP Vision and Goals

The CTP vision and goals 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 Steering Committee develops the draft vision and goals

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 and goals 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.

Vision

A balanced, long-term, and realistic transportation plan that provides better multi-modal access to and through the county, improved access for emergency services, and economic growth opportunities while protecting the area's natural, cultural, aesthetic, and recreational resources.

CTP Goals

A. Improve travel safety for all modes of transportation (including automobiles, bicyclists, pedestrians, and public transportation)
B. Provide safe and adequate transportation access for all users including children, the elderly, and those without automobiles
C. Improve mobility throughout Graham County for all users including pedestrians, bicyclists, and those without automobiles
D. Increase multi-modal (automobile, bicycle, pedestrian, transit and rail access (both passenger and freight)) connectivity within Graham County and to neighboring cities and counties
E. Provide a transportation network that improves freight movement and promotes economic vitality
F. Invest in transportation improvements that will promote quality growth (eg. vibrant towns and villages, a variety of housing choices, increased transportation choices, and less traffic) without negatively affecting the environmental quality of Graham County.

CTP Objectives

Goal A – Safety

- Reduce the number of accidents by 50 percent on roadway locations with high occurrence of crashes by 2040
- Decrease fatalities on roadway locations with a high number of fatal crashes by 50 percent by 2040
- Reduce crashes with drivers under the influence of drugs or alcohol by 50 percent by 2040
- Decrease vehicular and pedestrian or bicyclist crashes within ¼ mile of schools by 50 percent by 2040

Goal B – Access

- Provide crosswalks at all intersections that serve communities and locations with significant potential for walking, such as downtown areas, schools, and key tourist destinations by 2025
- Reduce gaps in the sidewalk network between schools, community facilities, major places of employment and in-town residences by building or repairing sidewalks to complete the network by 2040
- Increase ridesharing by promoting it and providing services and infrastructure to facilitate it including two park and ride lots in Graham County by 2025 and three by 2040

Goal C – Mobility

- Provide areas for safe vehicle passing on long stretches of 2-lane roads or areas with long or steep uphill grades by 2040
- Provide sufficient roadway capacity to maintain level of service (LOS) C in AADT conditions and LOS D in peak season conditions by 2040

Goal D – Connectivity

- Improve access to medical facilities by reducing travel time to the nearest hospitals by 15 percent by 2040
- Improve reliability of connections in/out of Graham County
- Improve connectivity from US 129 to the Cherohala Skyway
- Reduce congestion due to unnecessary travel by providing clear directional signs for visitors to major destinations (such as communities and major parks) by 2025

Goal E – Freight

- Improve freight mobility from Graham County to the east (US 74) and eliminate truck restrictions by 2025
- Reduce steep grades
- Improve curves with tight radii to accommodate trucks with 53 foot trailers
- Widen lanes to accommodate trucks with 53 foot trailers
- Improve freight mobility from Graham County to the west (US 74) and eliminate truck restrictions by 2040
- Reduce steep grades
- Improve curves with tight radii to accommodate trucks with 53 foot trailers

- Improve connections for freight movements to major users of truck freight to commercial uses along US 129 between US 129 (Rodney Orr Bypass) and Stanley Industrial Park

Goal F – Quality Growth

- Promote environmentally sensitive design and construction standards
- Provide transportation infrastructure which fits or compliments its surroundings and to the greatest extent practicable doesn't distract from its surroundings.

Goals and Objectives Survey

A Goals and Objectives (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.

The Graham County CTP G&O survey was developed by the CTP Steering Committee and administered by the project technical team. The CTP Goals and Objectives survey was provided online and in paper format at six locations in Graham County. Additionally, approximately 4,000 surveys were mailed out to households in the county. Over 240 completed surveys were received. A summary of the responses to each survey question is provided below.

Question 1:

Name (Optional):	
Answer Options	Response Count
	62
answered question	62
skipped question	216

Question 2:

Please indicate how important each of the following transportation goals is to you on a scale of 1 to 5, with 1 being the least important and 5 being the most important (please note that the same rank can apply to more than one item):							
Answer Options	**1**	**2**	**3**	**4**	**5**	**Rating Average**	**Response Count**
A: Improve travel safety for all modes of transportation (including automobiles, bicyclists, pedestrians, and public transportation)	15	19	31	45	164	4.18	274
B: Provide adequate transportation access for all users including children, the elderly, and those without automobiles	16	17	27	55	159	4.18	274
C: Improve mobility throughout Graham County for all users including pedestrians, bicyclists, and those without automobiles	18	22	44	54	136	3.98	274
D: Increase multi-modal (automobile, bicycle, pedestrian, transit, and rail access (both passenger and freight)) connectivity within Graham County and to neighboring cities and counties	28	23	39	46	135	3.87	271
E: Provide a transportation network that improves freight movement and promote economic vitality	26	23	40	57	127	3.86	273
F: Invest in transportation improvements that will promote quality growth (eg. vibrant towns and villages, a variety of housing choices, increased transportation choices and less traffic) without negatively affecting the environmental quality of Graham County	24	16	25	38	164	4.13	267
						answered question	276
						skipped question	2

Question 3:

Which roads in Graham County do you use most often?	
Answer Options	**Response Count**
US 129	178
NC 28	100
NC 143	129
Atoah	8
Beech Creek	2
East Buffalo	3
Knight Street	2
Long Branch	2
Long Creek	3
Lower Stecoah	3
Main	18
Massey Branch	6
Mountain Creek	3
Rodney Orr	14
Snowbird	33
Stecoah	8
Sweetwater	29
Tallulah	24
Tapoco	4
Upper Sawyers Creek	2
West Buffalo	3
Yellow Creek	4
answered question	**266**
skipped question	**12**

Question 4:

Which roads in Graham County do you think are the most congested?	
Answer Options	**Response Count**
US 129	127
NC 28	11
NC 143	59
Atoah	2
Main	13
Rodney Orr	30
Snowbird	12
Stecoah	2
Sweetwater	14
Tallulah	10
answered question	**253**
skipped question	**25**

Question 5:

Which roads and intersections in Graham County do you think are the most dangerous?	
Answer Options	**Response Count**
US 129	99
NC 28	42
NC 143	62
Cherohala Skyway	5
Main	11
Massey Branch	6
Mountain Creek	2
Rodney Orr	9
Santeetlah Road	2
Snowbird	14
Stecoah	5
Sweetwater	8
Tallulah	9
West Buffalo	2
answered question	**238**
skipped question	**40**

Question 6:

On a typical day, does the majority of your travel take place within Graham County?		
Answer Options	**Response Percent**	**Response Count**
Yes	82.9%	223
No	17.1%	46
answered question		**269**
skipped question		**9**

Question 7:

Do you walk or bicycle?		
Answer Options	**Response Percent**	**Response Count**
Yes	32.3%	87
No	67.7%	182
If so, what roads do you use most often?		90
answered question		**269**
skipped question		**9**

Open responses to "Roads most often used":

Off road trails, private roads, Anthony Branch Road, Atoah Road, Big Snowbird, Circle Street, Dry Creek Road, East Buffalo Circle, Eller Branch Road, Five Point Road, Fontana Village Roads, Ford Street, Gladdens Creek Road, Guntergap Road, Knight

Open responses to "Roads most often used" (continued):
Street, Long Creek, Lower Mill Creek, Moose Branch, NC 143, North Main, Old Sweetwater Road, Old Tallulah Road,, Old Yellow Branch, Rodney Orr Bypass, the Road to Santeetlah Dam, Snowbird, South Fork, Sweetwater, Tallulah, Tatum Creek Road, Thunderbird Mountain, Upper Sawyers Creek Road, Upper Tuskeegee, US 28 near Tsali, US 129, US 129 Cheoah 28 between Deal's Gap and Fontana-Yellow Creek, US 143, West Buffalo Road, Willy Colvin Road, Yellow Branch

Question 8:

In the event of road closings, do you have an alternate route?		
Answer Options	Response Percent	Response Count
Yes	61.4%	159
No	38.6%	100
If so, how much longer does it take than your normal route?		141
answered question		259
skipped question		19

How much longer does it take than your normal route answers:
Some only specified that it would increase their normal time significantly or would depend on where they were trying to go. Other answers are below:

Number of persons giving response	Time (minutes)
2	3
16	5
1	8
12	10
8	15
8	20
29	30
1	35
8	45
17	60
2	90
2	120
1	180

Question 9:

Are you a resident of Graham County (check one):		
Answer Options	**Response Percent**	**Response Count**
The entire year	90.4%	246
Part of the year	4.4%	12
Not at all	5.1%	14
	answered question	**272**
	skipped question	**6**

Question 10:

Which area/community do you consider your residence to be in or near (check one)?		
Answer Options	**Response Percent**	**Response Count**
Fontana Dam	4.6%	11
Robbinsville	60.4%	145
Santeetlah	6.3%	15
Snowbird	7.5%	18
Stecoah	15.8%	38
Tapoco	5.4%	13
Other (please specify)		37
	answered question	**240**
	skipped question	**38**

Other: Almond, Andrews, Atoah, Blairsville, Cheoah, Cross Creek, Hot Springs, Marble, Murphy, West Buffalo area, Panther Creek, Shellstand, Southern Graham County, Sweet Gum, Sweetwater, Tallulah, Topton, Tuskeegee, Upper Mountain Creek, Upper Sawyer's Creek, Upper Tallulah, Virginia, West Buffalo

Question 11:

Which community do you work, go to school in, or commute to most often (check one)?		
Answer Options	**Response Percent**	**Response Count**
Fontana Dam	4.0%	10
Robbinsville	85.9%	213
Santeetlah	1.6%	4
Snowbird	1.6%	4
Stecoah	4.0%	10
Tapoco	2.8%	7
Other (please specify)		27
	answered question	**248**
	skipped question	**30**

Other: Atlanta, Andrews, Atoah, Blue Ridge-Georgia, Bryson City, Cherokee, Swain County, Knoxville-TN, Murphy, Sylva

Question 12:

In addition to work or school, which of the following cities do you regularly travel to and why (for example: shopping, entertainment, medical services, etc.)? Please check all that apply.		
Answer Options	**Response Percent**	**Response Count**
Andrews	52.7%	144
Asheville	69.2%	189
Atlanta	19.0%	52
Bryson City	61.5%	168
Chattanooga	7.7%	21
Franklin	24.2%	66
Gatlinburg/Pigeon Forge	26.0%	71
Knoxville	34.8%	95
Murphy	75.1%	205
Sylva	67.4%	184
Waynesville	47.3%	129
I don't regularly travel outside of Graham County	1.5%	4
Other (Please specify below)	7.3%	20
Please describe how often and for what purposes you visit the cities checked above:		227
	answered question	**273**
	skipped question	**5**

Open responses as to purpose of trip: doctor, shopping, doctor, dinner, entertainment, work, vacation, meetings, church, visit family and friends

Question 13:

Rank the importance of improving or adding each of the following on a scale of 1 to 5, with 1 being the least important and 5 being the most important (please note that the same rank can apply to more than one item):							
Answer Options	**1**	**2**	**3**	**4**	**5**	**Rating Average**	**Response Count**
Bicycle Lanes	84	36	49	32	52	2.73	253
Multi-use Paths	56	40	54	41	60	3.04	251
Park and Ride Lots	54	35	65	43	50	3.00	247
Roads	18	14	16	45	174	4.28	267
Sidewalks	27	25	41	51	111	3.76	255
Transit	26	14	57	49	112	3.80	258
						answered question	**274**
						skipped question	**4**

Question 14:

In your opinion, what are the top transportation issues in Graham County (rank in order, starting with the most important)?	
Answer Options	**Response Count**
Access	27
Bicycle facilities	22
Corridor K	37
Four lane highway	26
Mobility	1
Motorcycles	15
NC 143	7
None	5
Park and ride lots	5
Passing lanes	5
Public transit	27
Remove planters on Rodney Orr Bypass	4
Road improvements	1
Safety	10
Sidewalks	11
US 129	12
answered question	**208**
skipped question	**70**

Question 15:

Would a park and ride lot be useful to you?		
Answer Options	**Response Percent**	**Response Count**
Yes	22.3%	59
No	77.7%	206
If so, what is a convenient location for a lot?		59
Ingles		7
Johnson Gap (NC 28 at NC 143)		19
Robbinsville		15
School		2
Stecoah		6
Sweetwater Road		3
Topton		4
answered question		**265**
skipped question		**13**

Some specific locations listed: Almond, around school, at Graham County line, at post office, behind Stanley Furniture building, between Andrews and Murphy, bottom of Stecoah Gap, close to town, East Main Street near town, near high school

Question 16:

Which routes in Graham County, if any, are used by your business or employer to move freight?	
Answer Options	**Response Count**
US 129	76
NC 28	40
NC 143	61
Junaluska	1
Main	3
Snowbird	3
Sweetwater	6
answered question	**139**
skipped question	**139**

Question 17:

What is your total annual household income?		
Answer Options	**Response Percent**	**Response Count**
Less than $10,000	4.7%	11
$10,000 - $14,999	3.9%	9
$15,000 - $24,999	13.3%	31
$25,000 - $34,999	12.9%	30
$35,000 - $49,999	15.0%	35
$50,000 - $74,999	26.2%	61
$75,000 - $99,999	12.9%	30
$100,000 - $149,999	7.7%	18
$150,000 - $199,999	0.4%	1
$200,000 or more	3.0%	7
answered question		**233**
skipped question		**45**

Question 18:

What is your race/ethnicity (please check all that apply)?		
Answer Options	**Response Percent**	**Response Count**
White	98.1%	253
Black/African American	0.4%	1
Asian	0.0%	0
Native American	3.9%	10
Hispanic/Latino	0.4%	1
Other (please specify)		1
answered question		**258**
skipped question		**20**

Question 19:

What is your gender?		
Answer Options	**Response Percent**	**Response Count**
Male	46.9%	121
Female	53.1%	137
	answered question	**258**
	skipped question	**20**

Question 20:

What is your age range?		
Answer Options	**Response Percent**	**Response Count**
19 or under	0.4%	1
20 - 39	15.4%	41
40 - 64	51.1%	136
65 or over	33.1%	88
	answered question	**266**
	skipped question	**12**

Question 21:

Do you have a disability?		
Answer Options	**Response Percent**	**Response Count**
Yes	17.5%	43
No	82.5%	203
	answered question	**246**
	skipped question	**32**

Public and Committee Meetings

Numerous public and CTP Steering Committee meetings were conducted to help guide and develop the Graham County CTP. These events are listed in chronological order in the following table, along with a brief statement of the primary topics discussed at each activity. Detailed meeting reports of each meeting are available in the project files, which will be held by Graham County.

Activity	Date	Primary Topics
CTP Steering Committee meeting #1	May 22, 2013	Project introduction; purpose and schedule for CTP; roles and responsibilities
CTP Steering Committee Brainstorming Session	July 25, 2013	Brainstorming
First Community Workshop	Sept. 24, 2013	Transportation conditions, CTP draft vision statement and potential goal statements
CTP Steering Committee meeting #2	Sept. 24, 2013	Relationship between CTP and Opt-In; results of July brainstorming; CTP vision, goals and objectives; development of goals and objectives survey
CTP Steering Committee meeting #3	Oct. 7, 2013	CTP vision, goals and objectives; development of goals and objectives survey; CTP analysis of roadway network
CTP Steering Committee meeting #4	Nov. 12, 2013	Finalize draft goals and objectives; finalize goals and objectives survey; discuss existing conditions and deficiencies
CTP Steering Committee meeting #5	Jan. 14, 2014	Existing conditions and deficiencies; identify problems
Public Survey (online and paper surveys)	Feb. 2014	Travel patterns, travel needs, CTP goals and objectives
CTP Steering Committee meeting #6	Feb. 3, 2014	Existing conditions and problems; potential solutions
Weeklong Community Workshop (public and stakeholders)	Feb. 3-7, 2014	Transportation conditions and problems; potential solutions (highways, walking, biking, and transit)
CTP Steering Committee meeting #7	Mar. 11, 2014	Goals and objectives survey results; potential transportation solutions; preliminary project recommendations
CTP Steering Committee meeting #8	Apr. 15, 2014	Draft CTP – problem statements, projects, mapping
Draft Plan Open House	Apr. 22, 2014	Draft CTP – problems, projects (pedestrian, bicycle, roadway, transit and rail)
CTP Steering Committee meeting #9	May 12, 2014	Final review of draft CTP recommendations, highways, pedestrian, bicycle, transit and rail
Opt-In input	various	Interviews and outreach from the coordinated Opt-In effort provided input to transportation and growth issues and opportunities. Documentation of Opt-In input is available at the following web address: http://www.optinswnc.org/documents/

Summary of Comments from the April 22, 2014 Draft CTP Open House:

1. Highway Map (Sheet 2 of 5 of Draft CTP did not show a selected Corridor K route because there were separate sheets showing the alternatives being considered)
   - Where is corridor K?
   - Much safer route

2. Public Transportation Map (Sheet 3 of 5 of Draft CTP)
   - Add Fontana

3. Bicycle Map (Sheet 4 of 5 of Draft CTP)
   - (Out near Skyway) – Buffalo Bridge Connection for bicycles
   - Please contact Don Kostelec about bike lanes
   - Need mountain bike trails to go along with greenways
   - More MTM, bike trails

4. Pedestrian Map (Sheet 5 of 5 of CTP)
   - Build the interstate and this will follow

5. Graham County Comprehensive Transportation Plan Draft Proposed Projects (Bicycle, Pedestrian)
   - Town of Fontana Dam needs to be included
   - Buffalo Bridge bike connection – mentioned at last CTP meeting

6. Graham County Comprehensive Transportation Plan Draft Proposed Projects (Highway, Public Transit, Bicycle)
   - Need diversification of employment – Now that Stanley is closing we cannot survive on
   - tourism alone – 268 skilled county residents will be out of work and possibly leave the county – Need the highway improved
   - Build road from west Buffalo Bridge to Buchanan Branch. Give a service route from I-75
   - south of Knoxville to Washington D.C. Pass through two towns, Robbinsville and Cherokee.
   - Agree
   - Keep bicycle off the roads, keep them on trails

7. See Appendix I for comments received concerning Corridor K / A-0009 alternatives at the April 22, 2014 meeting.

Summary of Comments from the April 21, 2015 County Commissioner's Meeting:

On April 21, 2015, the County Commissioners considered adoption of the CTP. About 25-30 people attended the meeting that took place during the regularly scheduled Board of Commissioner's meeting.

Thirteen people shared their positions on the CTP proposed plan. All of those who spoke addressed the issue of Corridor K and the recommended route through the Jutts Creek Community and also on widening parts of Tallulah Road heading towards Topton. There was no discussion of any of the other CTP recommendations. Of the thirteen speakers, nine asked the Board to not support the CTP as it was submitted, three were for "the road" and the CTP as it was and one person was for the road, but not if it meant taking so many homes; he was for where it was planned to go originally. Three of those that were opposed to the CTP were not residents of Graham County, but rather representatives from organizations that are against Corridor K in general.

The following summary was posted on April 25, 2015 by Lisa Russo on The GrahamEditorial.com site (http://grahameditorial.com/video-ctp-wins-approval-of-board-of-commissioners/)

ELIJAH LORRAIN – Recently purchased property with a house on Jutts Creek, Mr. Lorrain comes from Georgia. "It's always been a dream of ours to have a second home in the mountains," shared Lorrain, and in December, after years of saving, he and his family bought a restored log cabin in the Jutts Creek community. He bought it with the intention of keeping it and passing it down to his kids and now he is extremely upset at having found out just a couple weeks ago of the proposed plans to consider Jutts Creek as an option for Corridor K. "I feel a bit of a fool for not having done the research on it," lamented Lorrain. He does not feel there is a compelling reason to take anyone's homes to build this road; "there's just no traffic." Rather, he feels that if we want the county to do well, "the first thing is that you have to respect the property rights of the land owners." Mr. Lorrain told me he may not be a resident here for long and exclaimed that "you cannot trust those people," pointing to the Board.

SAM EVANS – Mr. Evans is from Asheville and works for the *Southern Environmental Law Center* but has lived around the Appalachian Mountains all his life; "I love these mountains and roads." Evans came to the hearing to stress the importance of reading the whole document. He stated that the plan they are voting on tonight declares that the county does want the big 4-lane and does want it to run through Jutts Creek. Evans maintains that "the plan doesn't just say a 4-lane and it doesn't just say we want a 4-lane through Jutts Creek; it says it's not even worth studying or looking at other alternatives." He also talked about how expensive this corridor system is and that DOT does not have the money to cover this proposed project, not to mention it would most likely not pass NEPA again (environmental testing). "Use the money to make good improvements to the roads that you have," concluded Mr. Evans.

HUGH IRWIN – As a conservation planner with the *Wilderness Society* out of Asheville Mr. Irwin says he has been following Corridor K for almost a decade and is very concerned about the impacts this proposed route would have to the community as well as national forest lands. He feels the route through Jutts Creek "holds the worst potential for negative impacts" and would like the Commissioners to look at other options that address the real problem better than this proposal.

ROGER CARLTON – Councilman for the Town of Lake Santeetlah, Mr. Carlton also sits on the Southwestern RPO (Regional Planning Organization). He said he has "attended about every meeting on this process over the last 2 years" and understands what a tough verdict this is to make. "It's not a decision for a year or two," avowed Carlton, "it's a decision that will set the stage for the next 50 years for this community." He continued that the decision they make on this plan will determine whether other officials, both state and national will get behind the completion of the road or not. "If it isn't supported here it won't be completed," he said. Mr. Carlton also conveyed the position of the Town Council of Lake Santeetlah, which is waiting for tonight's outcome, but was "overall supportive of the plan." In regards to the residents of Jutts Creek, Carlton expressed that he has great sympathy for those folks with all the possible impacts, but he believes all this will be analyzed in detail once the process begins.

DEBBIE SHOOK – Ms. Shook is a resident of Jutts Creek and has been very instrumental in the opposition of this route as well as the widening of Hwy. 129. She has notified many residents of the proposed plan and has received more opposing signatures than not. She does not believe most people are for this CTP; rather that they do not realize what is being talked about. "They are shocked to find out homes may be taken and roads widened," declared Shook. Emotionally shaken, Ms. Shook emphatically told the crowd that she will fight and "if you don't stand up for your rights you're gonna lose your home!"

LOUISE STEWART – Raised in Graham County and graduated from RHS in 1947, Ms. Louise Stewart wants the Commissioners "to leave 129 alone!" She told the Board that there are "family homes along 129 which have been passed down several generations and families would have to move which would be very upsetting." Ms. Stewart believes people love the curvy road from Robbinsville to Topton. "Don't mess up a good thing that people love," avowed Stewart, "let people enjoy the slow paced lifestyle."

MARSHALL MATHIS – Mr. Mathis has been a resident of Stecoah for 14 years and was an active participant in the local Opt-In Regional Visioning process. Mr. Mathis is concerned of the effects of a 4-lane that by-passes Robbinsville. "Why would you come to Graham County with a 4-lane road?" he asks. He thinks this [the plan for the road] will be economically devastating to the county and asks the Board to revise it and look at alternatives. "Look back at the alternatives," requests Mathis, "this money could be well spent somewhere else."

MELANIE MAYES – Chair of *WaySouth*, out of Oak Ridge, TN, Mayes and others from her organization have been active in opposing Corridor K and attend many meetings held around the region. "WaySouth stands for responsible transportation in Appalachia," explained Ms. Mayes. They have fought other Corridors and have been following Corridor K. "We speak for the mountains, the wildlife, the water," claims WaySouth. "We are not against you guys," assured Mayes, "we understand you guys have better transportation needs; we are supportive of that but where we disagree is how to do

that." She feels that Graham County has a fabulous potential for tourism economy, and that the more or less $275 million could make a lot of improvements to our existing roads. Not only does Mayes believe this route will be a water quality and engineering problem, she also feels "it is not consistent with Opt-In because 73% of people said, with regards to Corridor K, they wanted solutions with available funding or minimizing environmental impacts even if that meant foregoing a 4-lane." Mayes ran out of time and was asked to allow the next person the floor.

BILLY MCMAHAN – As a resident of Jutts Creek, Mr. McMahan is concerned of how many people this will affect. "You don't see it til it's already done,' objected McMahan, "by that time it's too late." He does not support a 4-lane on Jutts Creek or anywhere and is concerned of hearing about a possible tunnel; "this would be devastating." Mr. McMahon thinks we need to promote tourism instead.

BOBBY SMITH – Smith shared that he has been an Alderman for the Town of Robbinsville for 12 years and in those years he knows of two plants that were looking to relocate in Robbinsville but says "the biggest factor for them not coming here was the grade, the pull in and out." Smith said the Town will support what the Commissioners decide but they support Corridor K.

ROGER SHULER –Shuler said he is a lifelong resident of Graham County and a retired contractor. "These are my people," he stated while sweeping his hand towards the BOC, "these are my people; if you are anti-Corridor K, you're not for my people." His concern lies with the fear that if the road does not get built now that the funds will be diverted in another direction to where it'll never be built. "If you're against this road," he preached, "you're against MY people. My people are born and raised here." He linked the leaving of Stanley Furniture with no road access. He claimed the company was being "supplemented yearly to get in and out of here with their product."

JENNIFER SADLER – Ms. Sadler gave a rebuttal on the idea that Stanley closed due to poor transportation issues. Not only does Sadler live on Jutts Creek, but also worked at Stanley. "Stanley furniture is alive and well in China and it's not because of the roads," exclaimed Sadler, "they hauled millions of dollars out of here on the 2-lane and if it wasn't for China they would still be doing that." She is troubled that the valley echoes and everyone will hear the traffic and feels it is totally out of line for what this county needs. She also wanted to express that she does not appreciate someone telling her what she needs to do with her house and yard. "My family grew up there, this has been there for 100 years, and somebody's always lived on it," pronounced Sadler, "I don't care who you are, where you live in this county, you need to get up and say No, we don't want this road."

CARL GREEN – Mr. Green stated that he was "born in Graham County and will die in Graham County." Although Green was a bit confused of which route they were discussing, he is "100% against widening Hwy. 129 and using Jutts Creek as a route," and will "fight to the bitter end" on that. He says he is not against Corridor K, but thinks it ought to go where it was planned to go in the first place. He concluded that he hoped

“you all are my people too.” He said it was real important for folks to “stick together and don’t cause any ill will” because you have to go to church and sit with your neighbor. “Let’s get along.”

During Mr. Green’s comment, County Mgr. Cable had to clarify some important points: “We’re discussing a whole transportation plan, there’s items in this plan that are more than A-9/Corridor K. That is the hot item, the most debated item. What is of concern to many in here is the route, the idea that’s presented in the plan that still has to be vetted and studied and sorted through by NC DOT where it was shown a line on the map through an area along Jutts Creek. We don’t know at this point if it’s going to be a feasible area or if DOT is going to approve that. We have no idea, it’s just a concept that Graham County put on paper. There’s no right-of-way happening at this point.”

Appendix I
Alternatives & Scenarios Studied

This appendix includes documentation for alternatives and scenarios that were considered, including ones not shown on the adopted CTP. This appendix details why the proposed alternative shown on the CTP was selected, why other reasonable alternatives studied were not selected, and why some alternatives were considered unreasonable and recommended for elimination from further study. If an alternative was not selected but considered reasonable, then it could be considered further in future studies.

US 74 Relocation (A-0009 A,B&C) New Location and improve existing from Cherokee County to existing four lane section of US 74 / NC 28

The most complex project that also required extensive alternative analysis during development of the Graham County CTP was the A-0009 project. It is part of Corridor K, which was initially identified as part of the Appalachian Development Highway System (ADHS) in 1965. Corridor K is intended to connect Asheville, North Carolina, to Chattanooga, Tennessee. Figure 10 shows the entire Appalachian Development Highway System, which sections have been built, and which sections remain to be built. Figure 11 shows the connectivity of Graham County to other regional centers where health care, jobs and services are located. It is obvious that travel to or from Robbinsville from any direction can be greatly hindered if a driver were to get behind a slow moving vehicle i.e. a school bus, recreational vehicles that frequent the area, or trucks. The amount of two lane roads prevents reliable travel times to destinations outside of Robbinsville.

Several alternatives were considered for the completion of Corridor K through Graham County, including alternative cross sections. This project is in the State Transportation Improvement Program (TIP) as A-0009. The CTP Highway Map (Figure 1, Sheet 2) shows the alternative selected during the CTP process.

Currently the A-0009 corridor is broken into three sections:

- A-0009A – connects US 19/74/129 in Cherokee County with US 129 in Robbinsville
- A-0009B – US 129 in the vicinity of 5 Point Road (SR 1275) to NC 143 east of 5 Point Road (SR 1275)
- A-0009C – NC 143 at SR 1223 (Beech Creek Rd) to NC 28 at Stecoah (to existing four lane section)

The *US 74 Draft Supplemental Final Environmental Impact Statement (FEIS)*, dated 2008 (STIP Nos. A-9B and C), the *Thoroughfare Plan Technical Report for Graham County and Robbinsville*, dated November 1998, and the *US 19 From the Andrews Bypass to 0.3 Miles West of the Little Tennessee River FEIS*, dated 1984 (STIP Nos. A-

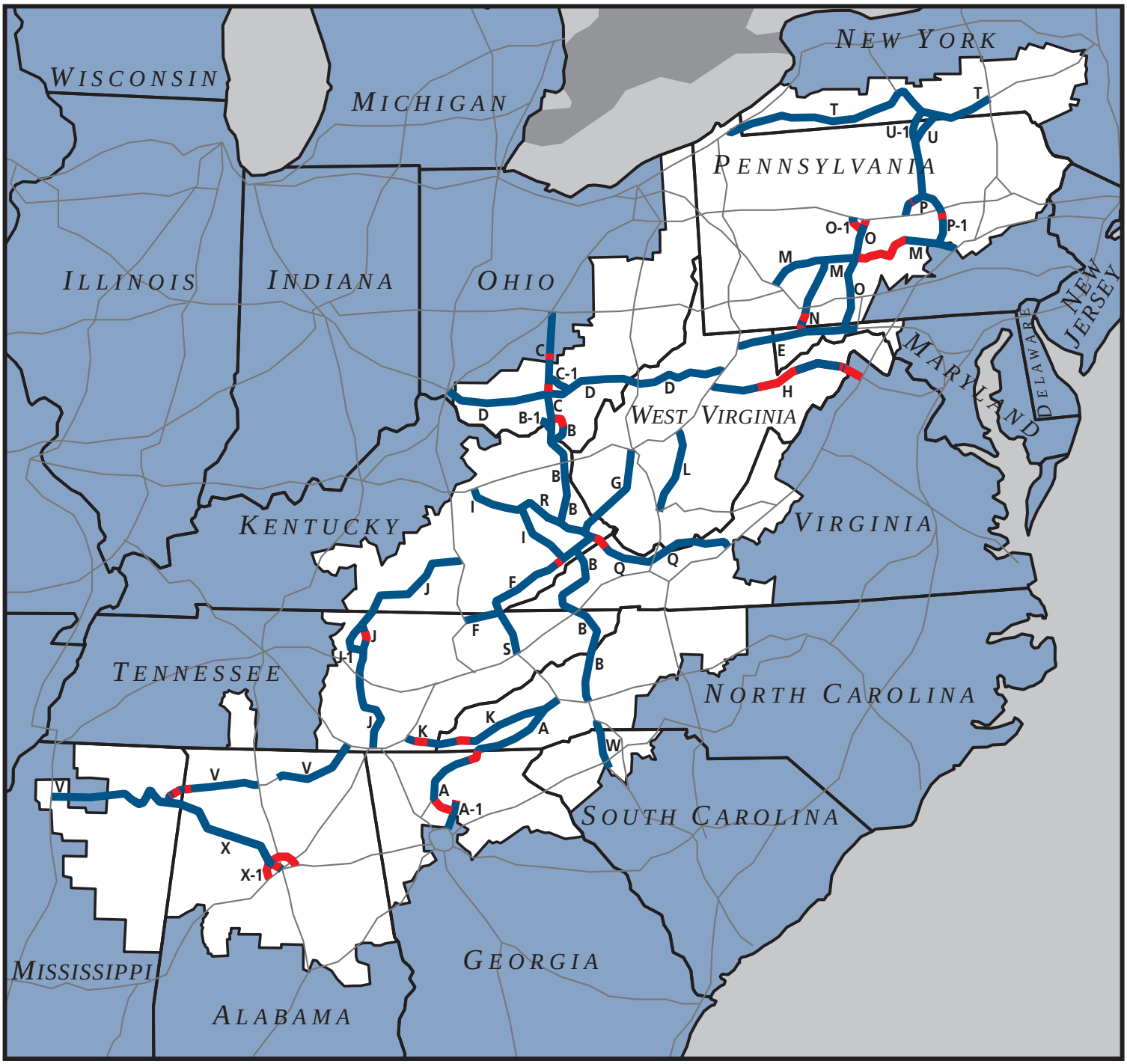
8 and A-9) considered several alternatives for Corridor K in Graham County. The alternatives from these studies were carried forward and considered during this CTP. Additional alternatives were generated during the public involvement process, which included input from members of the CTP Steering Committee.

Additionally, on June 16, 2014 Cherokee County Commissioners gave their approval for considering alternatives to A-0009A that connected to the east of Andrews in addition to the west of Andrews. The A-0009B&C alternatives run from Robbinsville to Stecoah and terminate at the existing four lane section of NC 28 on the Stecoah end of the corridor.

Figures 12, 13, and 14 show the alternatives for Corridor K presented to the public at the April 22, 2014 Draft CTP Open House.

APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM

September 30, 2014



ADHS Miles Open to Traffic

ADHS Miles Not Open to Traffic

Interstate Highway System

Marryville

Marryville, TN
57 Miles Via
US 129

Athens, TN
76 Miles Via
US 441
NC 143
TN 30, 39, 68, 166, 310

Athens

Madisonville

Sylva, NC
45.5 Miles Via
US 74
NC 143

Sylva

Robbinsville

12.4 Miles

11.4 Miles

14.3 Miles

6.7 Miles

Cleveland

Murphy, NC
36.5 Miles Via
US 129

Murphy

Franklin

Franklin, NC
44.5 Miles Via
NC 28, 143

Legend

Number of Lanes:
Select Highway

- 2 Lanes
- 3 Lanes
- 4+ Lanes
- Other Highways
- Municipalities
- Conservation Land
- Rivers and Streams
- Lakes

0 1 2 3 6 9 12 15 Miles

Figure 11

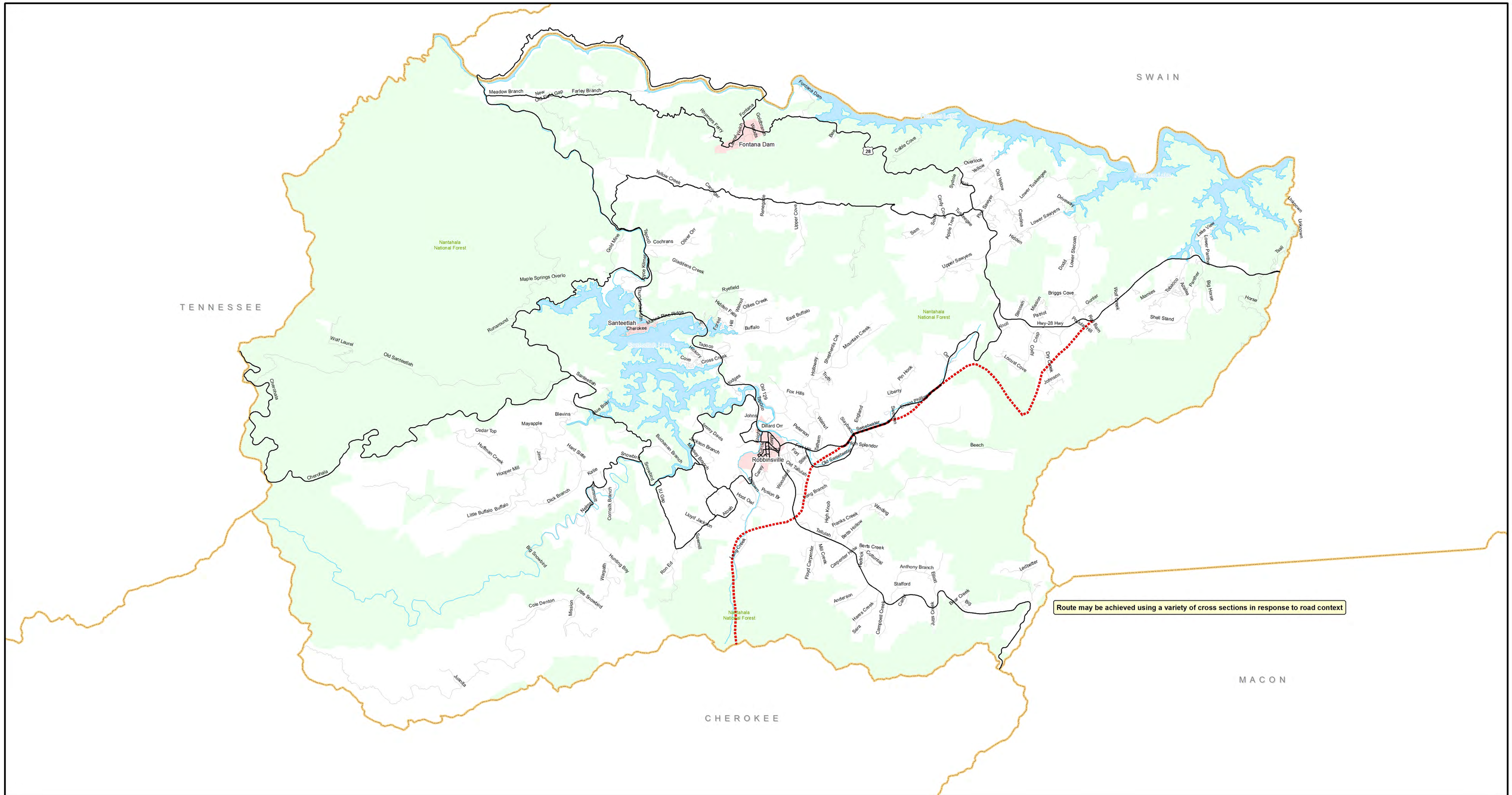
Base map date: 03/16/2015:

N W E S

Appalachian Regional Commission Corridors

Graham County

Comprehensive Transportation Plan



Recommended Highway Improvements

- Boulevard, Needs Improvement
- Boulevard, Recommended
- Other Major Thoroughfares, Needs Improvement
- Other Major Thoroughfares, Recommended
- Minor Thoroughfares, Recommended

- Study Roads
- Roads
- Rivers and Streams

- Water Bodies
- National Forest
- Municipal Boundary
- County Boundary

0 0.5 1 2 3 Miles

Figure 12

N W E S

Base map date: 04/11/2014

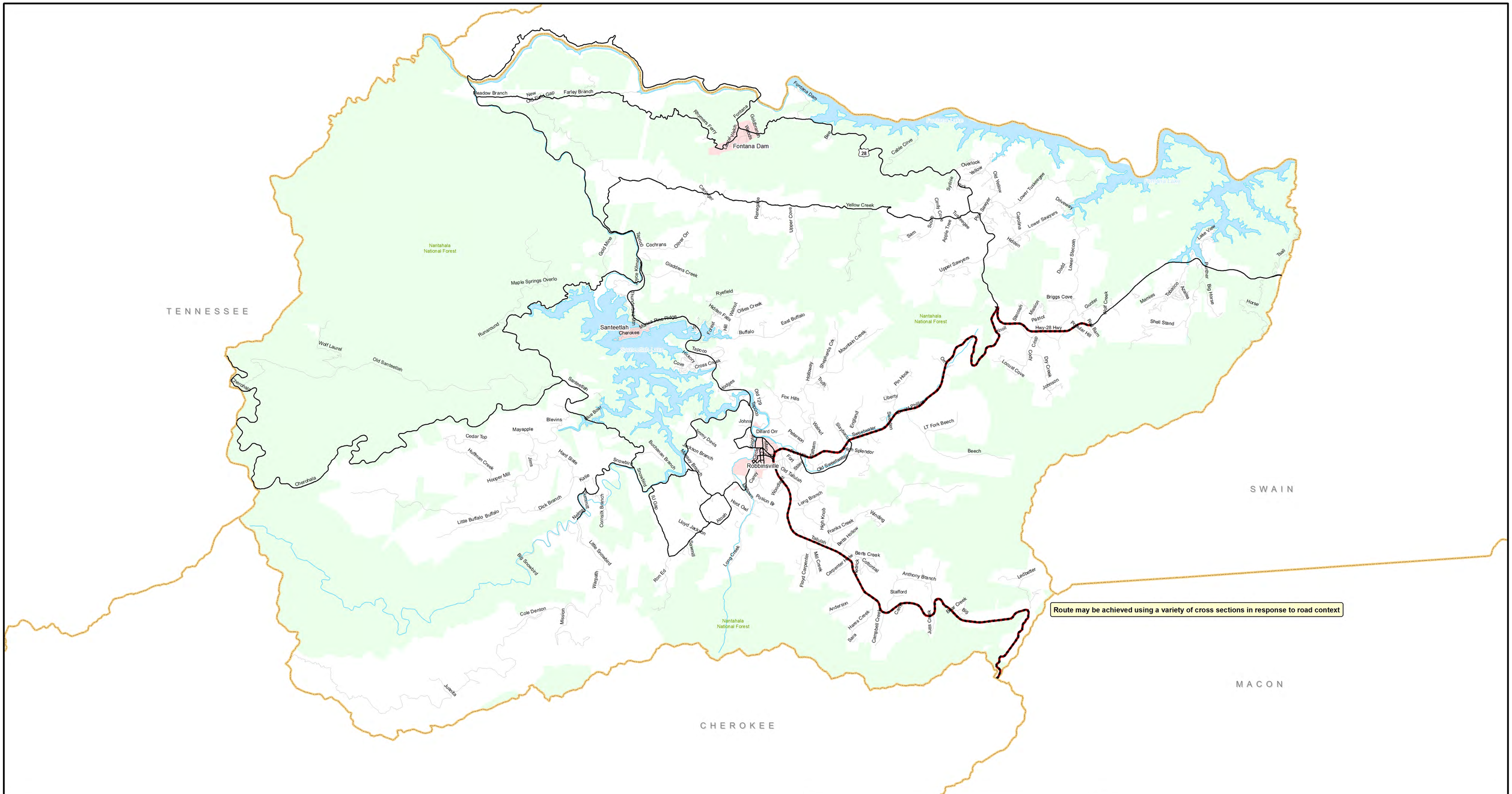
Refer to CTP document for more details

Alternative 1

Graham County

Comprehensive Transportation Plan

Plan date: To Be Determined



Recommended Highway Improvements

- Boulevard, Needs Improvement
- Boulevard, Recommended
- Other Major Thoroughfares, Needs Improvement
- Other Major Thoroughfares, Recommended
- Minor Thoroughfares, Recommended

- Study Roads
- Roads
- Rivers and Streams
- Water Bodies
- National Forest
- Municipal Boundary
- County Boundary

0 0.5 1 2 3 Miles

Figure 13

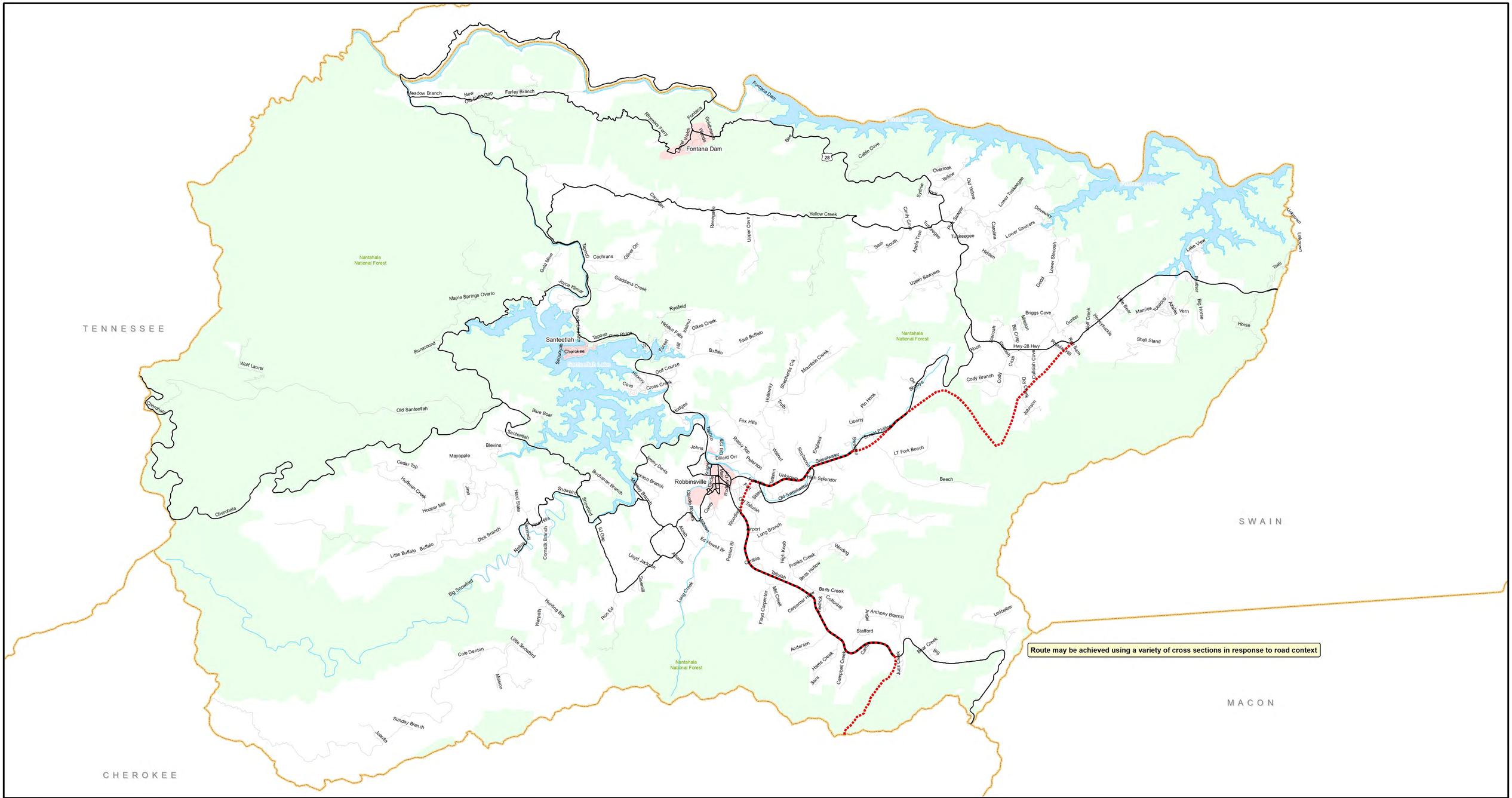
N W E S

Base map date: 04/11/2014

Refer to CTP document for more details

Alternative 2
Graham County
Comprehensive Transportation Plan

Plan date: To Be Determined



Recommended Highway Improvements

- Boulevard, Needs Improvement
- Boulevard, Recommended
- Other Major Thoroughfares, Needs Improvement
- Other Major Thoroughfares, Recommended
- Minor Thoroughfares, Recommended

- Study Roads
- Roads
- Rivers and Streams
- Water Bodies
- National Forest
- Municipal Boundary
- County Boundary

0 0.4750.95 1.9 2.85 Miles

Figure 14

N W E S

Base map date: 04/11/2014

Refer to CTP document for more details

Alternative 3

Graham County

Comprehensive Transportation Plan

Plan date: To Be Determined

Alternative 1

The A-0009A portion of Alternative 1 consists of a four lane median divided cross section on new location from US 19/74/129 west of Andrews to US 129 north of Cynthia Lane (SR 1285) outside of Robbinsville. This alternative met the community's vision for a transportation plan that provides better multi-modal access to and through the county, improved access for emergency services and it best addressed the mobility issues and transportation deficiencies identified in the problem statement. While this alternative decreased the travel time the most between Robbinsville and Andrews, the financial cost of the new location portion in addition to the impacts to the natural environment were a concern to the CTP Steering Committee, and they felt these issues may impact the ability of this project to move forward. The CTP Steering Committee felt that choosing an alternative that used more of the existing US 19/74/129 shows a local willingness to consider ways to reduce the footprint and minimize environmental impacts so that this much wanted project can move through the Section 404 NEPA (National Environmental Policy Act) Merger Process.

The A-0009B&C portion of Alternative 1 consists of a four lane median divided cross section on new location from US 129 north of Cynthia Lane (SR 1285) on US 129 to NC 143 west of TJ Wilson Road (SR 1212) and improvements to existing NC 143 to a four lane divided facility with some new location to existing four lane section of NC 143. The CTP Steering Committee felt the A-0009B section around Robbinsville was too far from the town, serving more as a bypass than a relocation of US 74.

There were no issues identified with Alternative 1 that made it an unreasonable solution. This alternative should be considered in future studies. Figure 12 shows Alternative 1 for A-0009.

Alternative 2

Alternative 2 consisted of improving US 129 in Graham County and NC 143 from US 129 to the existing four lane section of NC 143. This alternative was determined to be an unreasonable solution during the CTP process due to failure to meet the community vision and constructability issues for the southernmost segment of the alignment due to extremely mountainous terrain. Additionally, Alternative 2 performed the worst at meeting the needs identified in the problem statement since it did not improve travel times.

Alternative 3 (Selected as the CTP Project Proposal)

The A-0009A portion of Alternative 3 consists of a new location four lane median divided cross section from US 19/74/129 east of Andrews to US 129 north of SR 1155. This alternative met the community's vision for a transportation plan that provides better multi-modal access to and through the county, improved access for emergency services and it best addressed the mobility issues and transportation deficiencies identified in the problem statement. This alternative for A-0009A was selected for the CTP even though Alternative 1 decreased the travel time the most between Robbinsville and Andrews. The CTP Steering Committee felt the environmental impacts and costs would be greater

for Alternative 1. The committee felt that choosing an alternative that used more of the existing US 19/74/129 shows a local willingness to consider ways to reduce the footprint and minimize environmental impacts so that this much wanted project can move through the Section 404 NEPA (National Environmental Policy Act) Merger Process. Either alternative, or something in between, is acceptable by the community for further study.

The A-0009B&C portion of Alternative 3 consists of a four lane median divided cross section on new location from US 129 north of SR 1155 to NC 143 west of Old Sweetwater Road (SR 1277) and improvements to existing NC 143 to a four lane divided facility with some new location to the existing four lane section of NC 143. The CTP Steering Committee prefers a US 74 relocation closer to Robbinsville than what was in Alternative 1 so this is the option that was carried forward.

There were no issues identified with Alternative 3 that made it an unreasonable solution. This alternative should be considered in future studies. Figure 12 shows Alternative 1 for A-0009.

Considerations for Cross-Section of the Proposed Facility

In a relocation scenario, there is local consensus that alternatives to minimize footprint and costs should be considered. At one meeting of the CTP Steering Committee alternative cross sections to the recommended four lane, median divided cross section were also considered: a combination of upgrades to the existing two lane cross section with the addition of passing lanes to NC 143 (Sweetwater Road) and NC 28 as well as new location four lane median divided cross section (4A) where practical. These alternatives were not found unreasonable and should be considered in future studies. The CTP reflects the local desire to first consider the feasibility of a four lane divided facility as they feel that best addresses the transportation needs of the area but are agreeable to other cross sections being studied that may address the transportation needs while minimizing environmental impacts.

Comments received at the April 22, 2014 Draft CTP Open House concerning Corridor K Alternatives:

Alternative 1

- I support this route. An absolute must for Graham County.
- Build this one promised.
- Build the Robbinsville to Andrews sections. Use Alt 2 for Stecoah area.
- This road would increase travel tourism, and economic development substantially!
- Strongly agree with this plan!
- Alternate 1 should be first choice for egress and ingress Graham County with alternate 3 hybrid also.
- Build the road Stecoah to Andrews. We need it.
- Build the road from Stecoah to Andrews. It would help the whole western N.C. and the mountain roads.

- Build the road from Robbinsville to Andrews. No progress without it! This is my preferred plan.
- No bypass of Robbinsville. Would definitely become a ghost town.
- I support alt. 1 or alt. 3.
- I like this.
- I support Alternative 1 – shorter travel distance to medical facilities, shopping, colleges, etc.
- Best possible route Alternative 1 A9.
- Alternate 1
  - Help our kids get education
  - Healthcare
- Our people have to travel to work.
- I support this route. An absolute must for Graham County.
- I support this route. We should NOT be left behind.
- I support this route.
- Best possible route!
- We need it.
- We need the road. This route would be acceptable.
- Will not delete Stecoah Valley Road will go in behind the mountain.
- #1 remember us in far west – we're NC too.
- First choice.
- We need this road. Start with what we have been working with and we can look at other decisions later.
- This is a must for the future of our county!
- Ditto!
- 1) At intersection of NC 143 and US 28 widen access in both directions – see below (illustration). Eliminates NC 143 poor turn. 2) Construct elevated bridge access 143 at Stecoah Gap to allow Appalachian Trail hikers to cross above 143. Cut (lower grade) below bridge to eliminate icing in winter and to eliminate slow moving trucks because grade is less steep. This could eliminate need for tunnel. 3) Taking route off Tallulah
- Road is acceptable but please examine Campbells Creek, Carpenter Hollow and Jutts Creek as access to Cherokee County
- This route would destroy Stecoah Valley.
- Ditto!
- How will it destroy Stecoah Valley? Stecoah Valley will be a gateway to somewhere.
- Build this route. You drove roads to get here.
- Environmental impact will have impact on wildlife, water etc.
- This route would work for Graham County.
- I also like #3 – less impact.
- Would settle for this route.
- I prefer this route.
- Build the road – Alt 1 or 2.

Alternative 2 (Improve Existing Roads)

- Use Alt 3 for Robbinsville to Andrews
- This road will not work and would be a waste of money and would be too hard to maintain from slides and other road problems.
- Need new road not improving old roads.
- This route does nothing.
- More practical.
- How are you going to get road on a rock bar?
- This will not work!!
- Shame to even consider this alternative.
- Section of road at Topton is dangerous enough. This plan is not effective. –
- This one is a waste.
- Doesn't help!
- Would cost way more to build on that cliff.
- This will not help Graham County economically or any other way.

Alternative 3

- 2nd choice if determined to be more cost effective.
- Better than alternative 2.
- Like this one if it uses Alt 2 for Stecoah area.
- I appreciate the "Less impact" footprint, lessening time travel for ambulances, helping trucking routes, etc… This is the best plan…
- Alternate 3 with hybrid should be identified as an option. Better road to Cherokee County is a priority!
- Stop wasting tax dollars – it is obvious this county needs revenue that has been appropriated for this road.
- Any type of road improvements that are done will improve highway safety on 129 S. It is a dangerous road way.
- Interesting idea a scenic drive.
- From I-75 to Cherohala to Blue Ridge Parkway to skyline drive – longest drive in USA.
- Good possible alternative.
- Bypass of Robbinsville would destroy what is left.
- This route bypasses Topton.
- 2nd choice.
- This plan would be better than what Robbinsville has now but a whole new alignment would be more beneficial.
- Possibility.
- Still hurts Stecoah Valley.
- Let's worry about the rest of the world what it will help and who, not just Stecoah.
- People need to get to Cherokee County to work. Need wider safer road to Topton.
- This would help county should Alt 1 not be approved! Would be ok.

- I am a healthcare worker and am concerned about quicker access to hospitals and faster emergency care. This would do that.
- We need adequate transportation routes for industrial growth. This would do that.
- Any plan selected needs to be carefully considered in regard to impact on tourism.
- Do not want a bypass to town.
- This one won't work.
- Use Appalachian money to 4 lane from Topton to Andrews. Lots of traffic and dangerous road.

Emails received by TSW April 19-22, 2014 concerning Corridor K :

- I am native of Graham County, and we are in desperate need of the road to be completed. We need better access to hospitals and health care. We also need jobs, and businesses will not come in, for it is so hard to transport goods in and out of Graham County. We will never have economic growth until we have better access.

- "Complete Corridor K with New Alignment"

- I think Graham County must have better roads to and from larger cities. Tourism will not support our county residents. We need a NEW road to bring prosperity to our community. Companies are leaving, medical care is minimal, because of this.

- What will my children and grandchildren have to keep them here? I do not want to lose our way of life here in Graham County. Progress is in permanent jobs coming in, not seasonal work. Thank you!

- Build the road with new alignment.

- The county is in desperate need due the aging population and economy of the county (factories want come due to access in and out of the county).

- WE DON'T NEED BICYCLE TRAILS. THERE ARE ENOUGH FOREST SERVICE ROADS AND TRAILS.

- I live in Graham County NC and have to travel out of town to work, mainly in Georgia. I travel through towns all over the South. I see towns that are dead due this same issue -- no access. Plants shut down due to no good roads.

- Graham County isn't a farming community. Tourism doesn't pay the bills.

- I have lived my entire life in Graham County. I drove to WCU for 4 years, drove to teach in Swain County for 3 years. In my 7 years of commuting in and out of the County I saw many accidents and had many days that slow traffic and trucks

made it difficult to get to work on time, not including slick roads with steep grades.

- It's time that the special interests groups and minority stop the propaganda. How is it that special interests groups and environmental groups from outside the area tell us what we can have? I have been to the opt-in workshops open to the public and saw very few local people at the tables. I saw many "implants" serving on the committee that have not really contributed to our community and only get involved with self interests that serve themselves or the little clique they run with. Makes you wander who appointed these people to make decisions for the majority of our County when they have no clue what the county needs.

- I like bike trails, streetscapes, greenways and high speed Internet as much as anyone, but folks are misinformed if they think that is going to save Graham County. These same folks think they know how a road should be laid out and designed, better than the engineers and designers that have laid out Corridor K.

- The Environmental Lawyers run to Graham County and threaten a lawsuit anytime we think of progress, trying to convince us they are helping. Where are these Lawyers that are so interested in our wellbeing when our only plant is closing and taking 400 jobs? I think the answer is pretty obvious; they want us to starve to death while they live in a big city drawing a nice salary making jokes about the dumb hillbillies that don't have a clue.

- I started to take the online survey provided on the Opt-IN web page. I got almost through the end and stopped because it made me sick. Who came up with those questions? What has being liberal or conservative and education got to do with it. The rest of the questions had zoning, anti-logging, wilderness and environmental extremism written all over them. I think it's pretty obvious what this whole Opt-In WNC thing is all about. It's an effort to tag the people of Graham County as uneducated, extreme conservatives that don't have enough sense to know what they need.

- It's time to stop the smoke and mirrors game and build Corridor K along the new routes as designed by NCDOT.

- I was born and raised in Graham County, and have lived here most of my life. I have witnessed a lot of changes here. I have witnessed the closing of several industries here and was employed at three of them. One of the main reasons for their closing facilities at Robbinsville is because of transportation in and out of Graham County.

- Graham County continues to struggle with lack of industry, especially now that Stanley Furniture is closing. I have travelled the crooked, two lane roads to work in Andrews when there was no work in our county due to industry closure, risking my life when the road slid off, or the snow was too deep to travel.

- We have to travel approximately 35 miles across the same crooked two-lane highways to the nearest hospital. How many people have died because we could not get them to the hospital in time?

- We desperately need Corridor K completed now in my lifetime!! Environmentalists (few of which live in our beautiful county) do not want the road built through Graham County. They want it preserved to be an area to come and play in the summertime. Let them have a medical emergency here, 40 minutes from the nearest hospital, and lose the life of a loved one for that reason, and see if they change their mind.

- We have enough land set aside in Graham County for play-time (approximately 72% of our county). Let's build a future for our young people and families, so they can continue to live and work in Graham County. If not, young people have no choice but to leave, and we lose our brightest and best people because they move to where they can get a job. All that will be left will be a very few people that struggle daily to survive.

- Please build Corridor K!

- Corridor K must be completed as a new alignment road so we can gain better access for our working people, our patients and our children.

- I was born in Macon County NC but a full time resident of Graham County for 43 years. Graham County must have better access to the surrounding region for quicker safer travel, for commercial traffic, access to jobs and health care. The environment is important but when they lose any common sense about development and the needs of people then I am not on their side.

- The residents who live here year round should be the people who decide the future of Graham County not the visitors who come here to spend the summer and return to their real homes somewhere else.

- The liberals who gather to promote their own agenda of immorality and tolerance but refuse to honor the Living God who protected this nation by his own Power and Presence are simply fools by God's Holy Standard.

- We have needed the four-lane for years for several reasons. We do not have enough industry here to employ the people here. Most people have to leave Robbinsville to find a job elsewhere.

- Another reason is getting someone to a hospital in time. A four-lane would be a blessing for this cause.

- A four-lane road would bring more people to this area. We are a very deprived area. It would bring more money to a poor county.

- I have lived in this county my whole life, and I don't want to see it perish in the 21st century. I believe that it would be unwise for our leaders to deny our county EVERY opportunity to prosper in these hard economic times.

- I know that Graham County has its own special qualities that people worry will be lost if we allow changes for growth and development. But the fact of the matter remains that we are a poor county. Most of our acreage is forest service land and we have one of the highest unemployment rates and lowest tax base anywhere. If we don't take every chance to improve our economic status, this county won't prosper.

- I appreciate all the work members of GREAT has done to increase travel and tourism in our county. But, it is unwise to put "all the eggs in one basket."

- To conclude, I support all things good for the survival of our county including the completion of Corridor K with new alignment.

- We must complete Corridor K with new alignment. I have lived in Graham County all my life and know the struggles our families have. How is it that outside influences dictate our needs.

- FINSH THE ROAD.

- I wholeheartedly support the completion of Corridor K.

- As a member of the Advantage West Board of Directors, I've seen 100's of corporations looking to relocate to our area. Their first requirement for a site is access to a four-lane highway.

- I see individuals traveling back and forth to Sylva, Waynesville or Asheville for medical appointments and treatment(s), sometimes on a daily basis.

- Students traveling on a daily basis to the Tri-County campus in southeast Cherokee County or Western Carolina University and/or Southwestern Community College in Jackson County need an interstate highway to shorten their commute and lesson the cost of travel to get an education.

- The cost for moving goods and equipment in and out of Graham County is much higher than other areas in our region because of the steep grades and poorly designed roadways that have long since outlived their usefulness. Maintenance cost for trucking companies like ours are estimated at as much as 50% higher than other areas in our region and the life expectancy on an engine is decreased drastically.

- With the future of our county and its economic future hanging in the balance, I strongly recommend the completion of the corridor.

GRAH0003-H, Industrial Access Road East:

There is a need to remove truck traffic from downtown Robbinsville while providing more direct access for trucks to the Industrial Park west of US 129 (Tallulah Road/Rodney Orr Bypass). The location of the access road is also contingent on the location of the US 74 Relocation, A-0009 A & B portions. As different locations for the US 74 Relocation around Robbinsville were considered, alternatives to provide access to the Industrial Park from US 129 were also considered. Since the alternative for US 74 Relocation (A-0009B) closest to the business district of Robbinsville was selected, a new location access road between US 129 and Snowbird Road was also selected. If the connection of A-0009B moves further south, then the other alternatives should be considered as neither were deemed unfeasible.

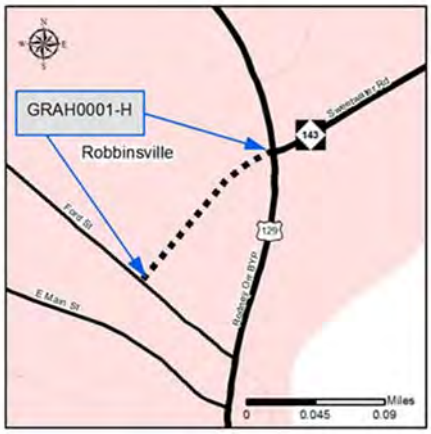
- **Upgrade Eller Branch Road (SR1108)** to Snowbird Road and construct new location major thoroughfare with a two lane cross section and sufficient grades, lane widths and turn radii to accommodate trucks with 53 foot trailers from Eller Branch Road (SR 1108) to US 129 close to the proposed Corridor K (A-0009B). The proposed new location roadway and improvements to Eller Branch Road would have a capacity of 9,200 vpd and divert traffic from the over capacity segments of US 129 (Tallulah Road/Rodney Orr Bypass).

  There were no issues identified with this alternative that made it an unreasonable solution. This alternative should be considered in future studies if Corridor K (A-0009B) between US 129 and NC 143 is located further south in the vicinity of Eller Branch Road (SR 1108).

- **Upgrade Poison Branch Road (SR1111) and Long Creek Road (SR 1110)** to Snowbird Road and construct new location major thoroughfare with a two lane cross section and sufficient grades, lane widths and turn radii to accommodate trucks with 53 foot trailers from Poison Branch Road to US 129 close to the proposed Corridor K (A-0009B). The proposed new location roadway and improvements to Poison Branch Road and Long Creek Road would have a capacity of 9,200 vpd and divert traffic from the over capacity segments of US 129 (Tallulah Road/Rodney Orr Bypass).

  There were no issues identified with this alternative that made it an unreasonable solution. This alternative should be considered in future studies if Corridor K (A-0009B) between US 129 and NC 143 is located further south in the vicinity of Poison Branch Road (SR 1108).

Ford Street Connector from US 129 (Rodney Orr Bypass) at NC 143 (Sweetwater Road) to Ford Street:



A need to improve connectivity for local trips between downtown Robbinsville, which includes Main Street and the courthouse, to the new commercial area along US 129 (Rodney Orr Bypass) exists. The primary purpose of this project was to improve mobility by providing a new connection between US 129 (Rodney Orr Bypass) and Ford Street. This need is also met with GRAH0002-H with the connector between Ford Street and US 129 (Rodney Orr Bypass). GRAH0003-H also connects with GRAH0005-H which provides an alternative route to Robbinsville High School. It was felt the human environmental impacts to this project were substantial at this time due to potential impacts to businesses (i.e. Walgreens) and homes in the corridor. The *Graham County Gateway to Tomorrow* Investment Guide Map classifies the area around the proposed project as most suitable for development. Sidewalks are recommended along both sides of the proposed new street. Based on comments received throughout the public involvement process, common themes included the lack of infrastructure for walking safely and the need to improve the connections between old downtown Robbinsville the Rodney Orr Bypass.

If the area of land between US 129 and Ford Street is sold and new development occurs, it is recommended that the new development provide a connection beween US 129 and Ford Street.