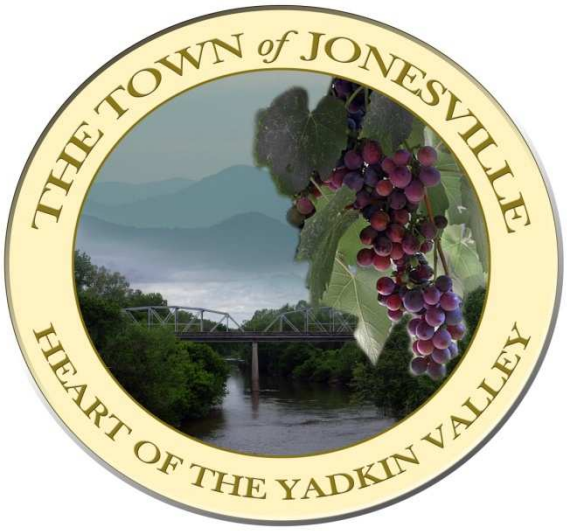
Comprehensive Transportation Plan



Towns of Elkin and Jonesville

July 2012

Comprehensive Transportation Plan

Towns of Elkin and Jonesville

Prepared by: Vernia Wilson, Project Engineer
Wayne C. Davis, Ph.D., P.E., Triad Planning Group Supervisor
Transportation Planning Branch
N.C. Department of Transportation

In Cooperation with: Surry County
Yadkin County
Town of Elkin
Town of Jonesville
Northwest Piedmont Rural Planning Organization

July 2012

Wayne C. Davis, Ph.D., P.E.
Triad Planning Group Supervisor

Executive Summary

In July of 2010, the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT) and the towns of Elkin and Jonesville initiated a study to cooperatively develop the Elkin/Jonesville Comprehensive Transportation Plan (CTP). This is a long range multi-modal transportation plan that covers transportation needs through 2040. Modes of transportation evaluated as part of this plan include: highway, public transportation and rail, bicycle, and pedestrian. This plan does not cover routine maintenance or minor operations issues. Refer to Appendix A for contact information on these types of issues.

Findings of this CTP study were based on an analysis of the transportation system, environmental screening, and public input which are detailed in Chapter 1. Refer to Figure 1 for the CTP maps, which were mutually adopted in 2012. Implementation of the plan is the responsibility of Elkin, Jonesville, and NCDOT. Refer to Chapter 2 for information on the implementation process.

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

HIGHWAY

NC 268 Bypass (CC Camp Road): Convert NC 268 Bypass (CC Camp Road), from I-77 to 0.6 miles west of US 21 Business, to a boulevard by converting the existing five lane facility into a four lane, median divided facility.

NC 67: Upgrade NC 67, from I-77 to 0.3 east of Deer Run Road, to a boulevard by widening the existing three lane facility into a four lane, median divided facility.

PUBLIC TRANSPORTATION AND RAIL

The Piedmont Authority for Regional Transportation (PART) 2010 Regional Transit Development Plan[1] recommends that three fixed-route bus service routes be established within the planning area. The proposed routes include:

- **Dobson-Elkin Circulator Route** – The proposed fixed-route bus service would extend west from Dobson to Exit 93 on I-77 and continue south along I-77 to Elkin. This route would be a circulator to a proposed Elkin park and ride facility

[1] The Piedmont Authority of Regional Transportation (PART) 2010 Regional Transit Development Plan can be viewed at: http://www.partnc.org/documents/RTDPHDR%20Summary_Report_9-7-10_DRAFT.pdf

on Johnson Ridge Road (SR 1144) serviced by an extension of Route 13, Yadkin County Express, and the proposed Yadkin County NC 67 Express.

- **NC-67 Express –** It is recommended that a commuter bus service be developed to the core counties of the Piedmont Triad.

- **Yadkin County Express (Route 13) -** It is recommended that an existing fixed-route bus service (US 421 Express) be extended using I-77 to Elkin.

There are no rail improvements recommended in the CTP. Public transportation and rail features are shown on the Sheet 3 of Figure 1.

BICYCLE

The 2007 Elkin Greenway Master Plan[2] and the 2010 Jonesville Land Use Plan identified recommended bicycle facilities throughout the planning area. Additionally, the Northwest Piedmont Rural Planning Organization and local stakeholders identified facilities that need improvement to accommodate bicycles. These features are shown on the Bicycle Map, Sheet 4 of Figure 1, as recommended multi-use paths or on-road bicycle facilities that need improving.

PEDESTRIAN

The 2007 Elkin Greenway Master Plan and the 2010 Jonesville Land Use Plan were used to identify existing and recommended pedestrian facilities throughout the planning area. Additional pedestrian recommendations were identified during development of the CTP. These features are shown on the Pedestrian Map, Sheet 5 of Figure 1.

[2] The 2007 Elkin Greenway Master Plan can be viewed at:
http://www.elkinnc.org/Elkin/Portals/0/Documents/rec_park/Town%20of%20Elkin%20Master%20Plan%201007%20FINAL.pdf

Adopted by:

Town of Elkin
Date: January 9, 2012

Town of Jonesville
Date: February 13, 2012

Surry County
Date: January 17, 2012

Yadkin County
Date: March 6, 2012

NCDOT
Date: April 5, 2012

Endorsed by:

Northwest Piedmont RPO
Date: February 15, 2012

Recommended by:

Transportation Planning Branch
Date: March 12, 2012

NOTES:
Prior to adopting the plan, Jonesville requested the addition of sidewalks within its town limits on NC 67 from Falls Creek Church Road (SR 1352) to 0.2 miles east of PVH Way. The Pedestrian Map was revised on January 9, 2012 to reflect this change.

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
- Airports
- Roads
- Railroads
- Rivers and Streams
- Municipal Boundary
- National Forest
- Planning Boundary
- County Boundary

0 0.2 0.4 0.8 1.2 Miles

N W E S

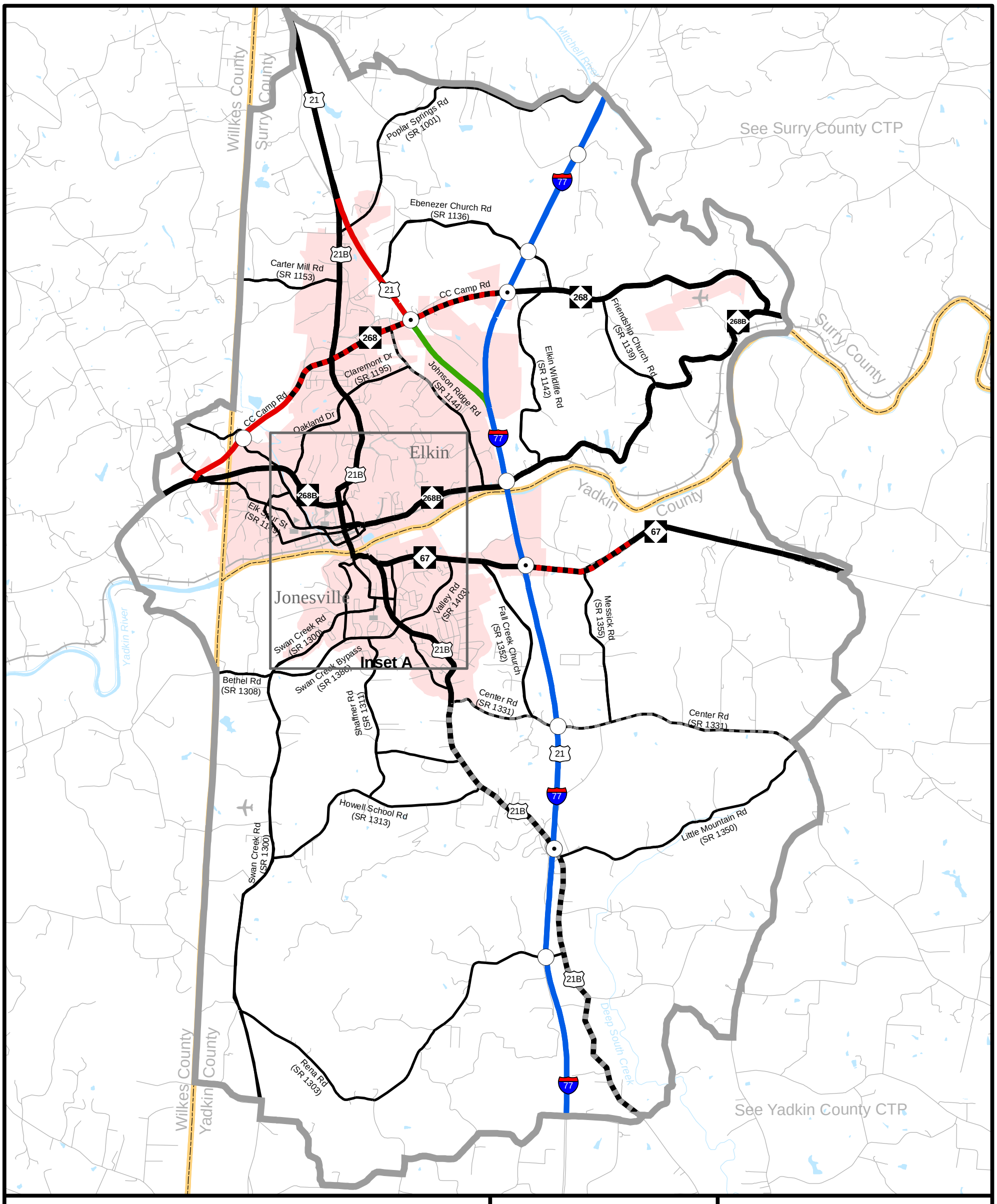
Figure 1

Sheet 1 of 5

Base map date: August 2011
Refer to CTP document for more details

Elkin/Jonesville

Surry/Yadkin County
North Carolina
Comprehensive Transportation Plan
Plan date: December 12, 2011
Revised: January 9, 2012



Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

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

Miles
0 0.2 0.4 0.8 1.2

N W E S

Figure 1

Sheet 2 of 5

Base map date: August 2011

Refer to CTP document for more details

Highway Map

Elkin/Jonesville

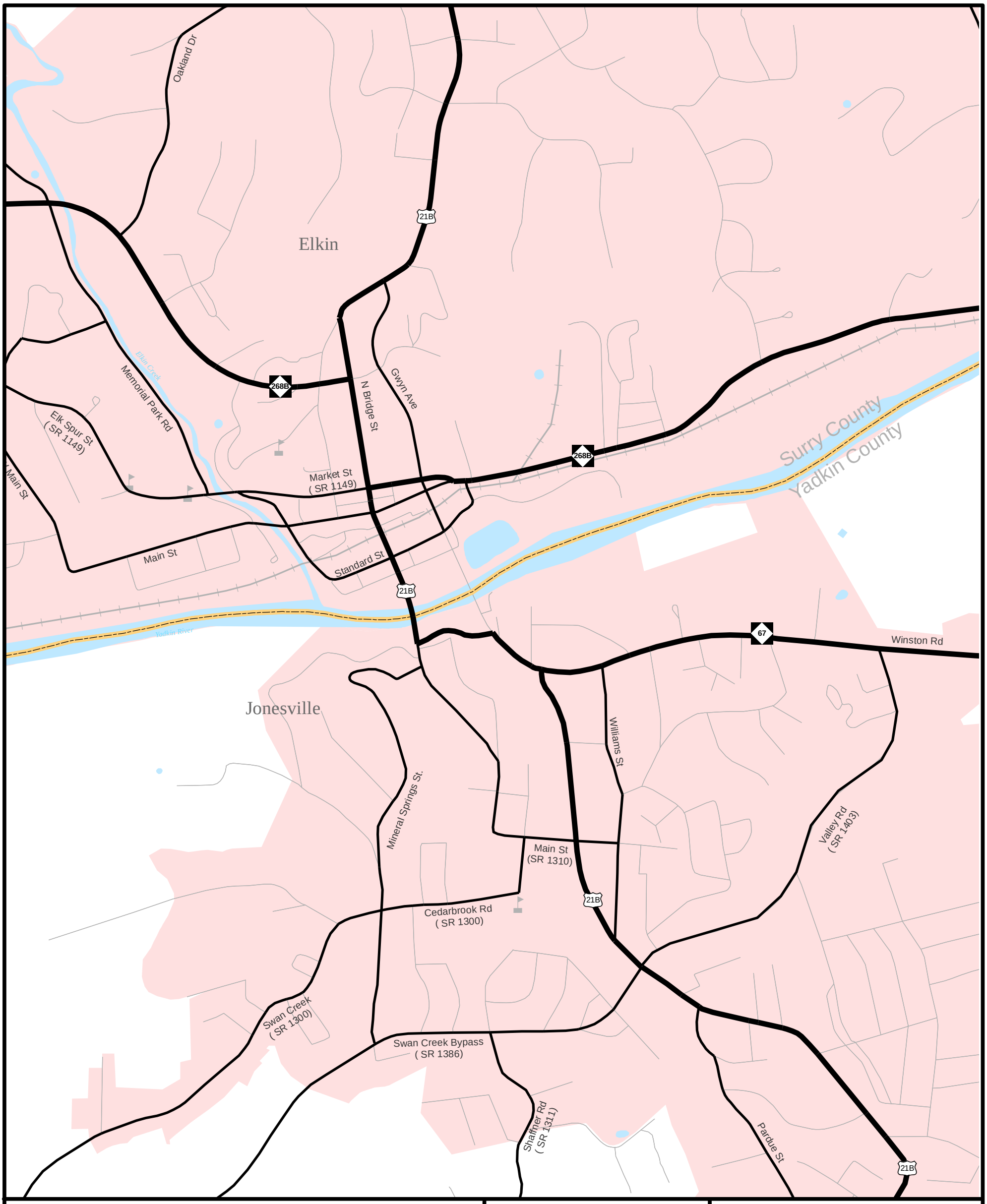
Surry/Yadkin County

North Carolina

Comprehensive Transportation Plan

Plan date: December 12, 2011

Revised: January 9, 2012



Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

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

0 0.05 0.1 0.2 0.3 Miles

N W E S

Figure 1

Sheet 2A of 5

Base map date: August 2011

Refer to CTP document for more details

Highway Map (INSET A)

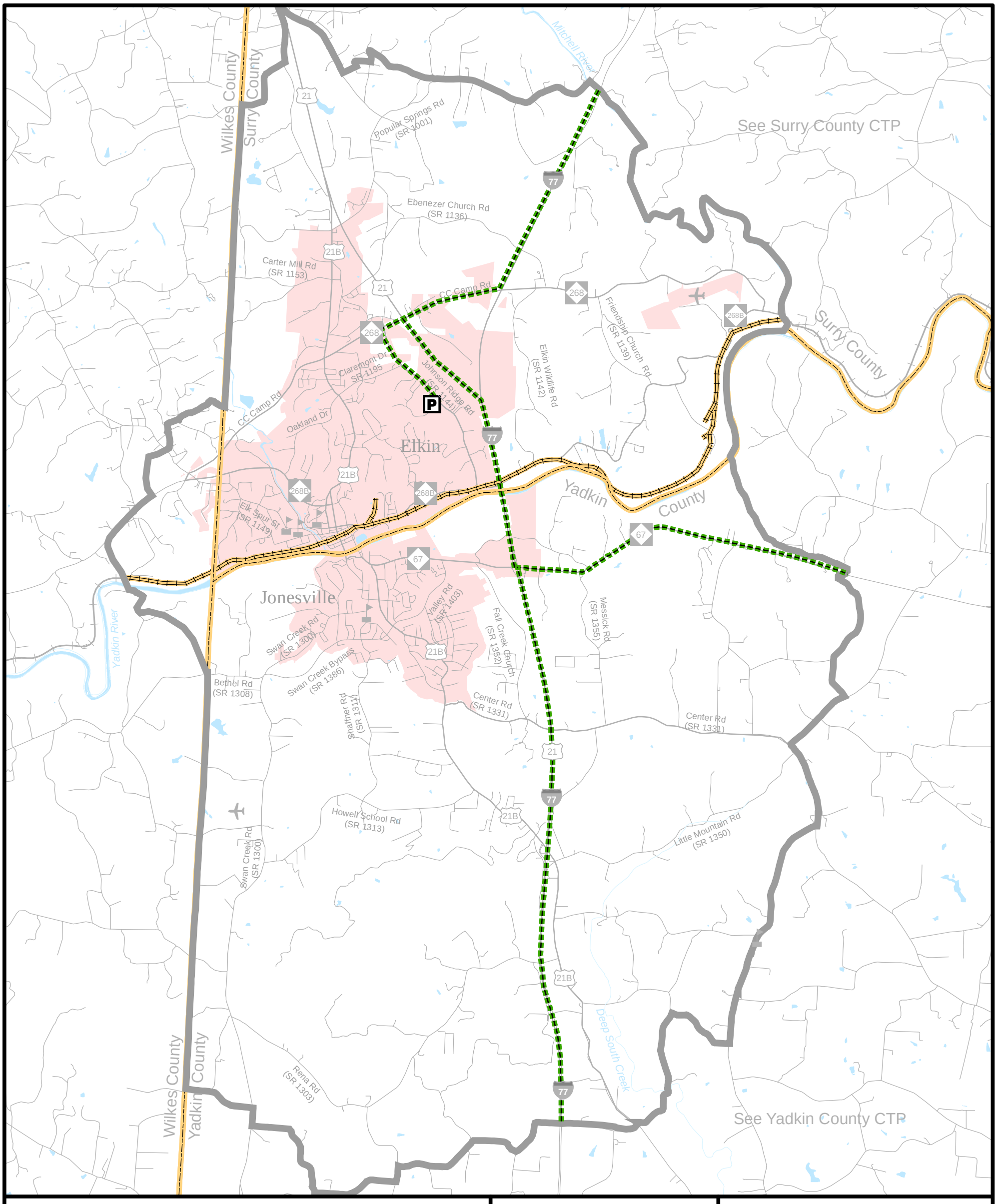
Elkin/Jonesville

Surry/Yadkin County

North Carolina Comprehensive Transportation Plan

Plan date: December 12, 2011

Revised: January 9, 2012



Bus Routes
- Existing
- Needs Improvement
- Recommended

Rail Corridor
- Active
- Inactive
- Recommended

Intermodal Connector
- Existing
- Recommended

Fixed Guideway
- Existing
- Needs Improvement
- Recommended

High Speed Rail Corridor
- Existing
- Recommended

Rail Stops
- Existing
- Recommended

Operational Strategies
- Existing
- Needs Improvement
- Recommended

Park and Ride Lot
- Existing
- Recommended

0 0.2 0.4 0.8 1.2 Miles

N W E S

Figure 1

Sheet 3 of 5

Base map date: August 2011

Refer to CTP document for more details

Public Transportation

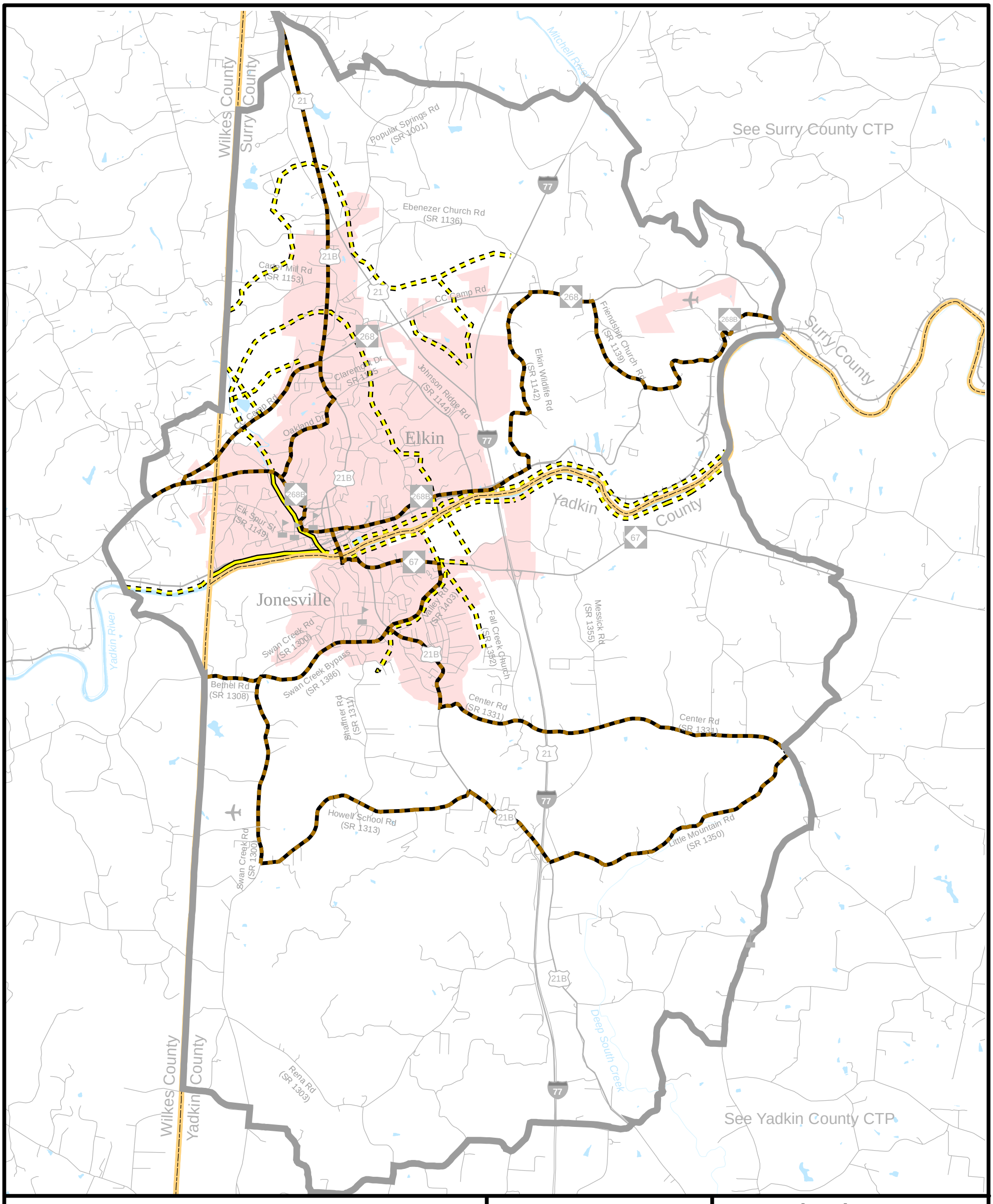
Elkin/Jonesville

Surry/Yadkin County

North Carolina Comprehensive Transportation Plan

Plan date: December 12, 2011

Revised: January 9, 2012



On-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

0 0.2 0.4 0.8 1.2 Miles

N W E S

Figure 1

Sheet 4 of 5

Base map date: August 2011

Refer to CTP document for more details

Bicycle Map

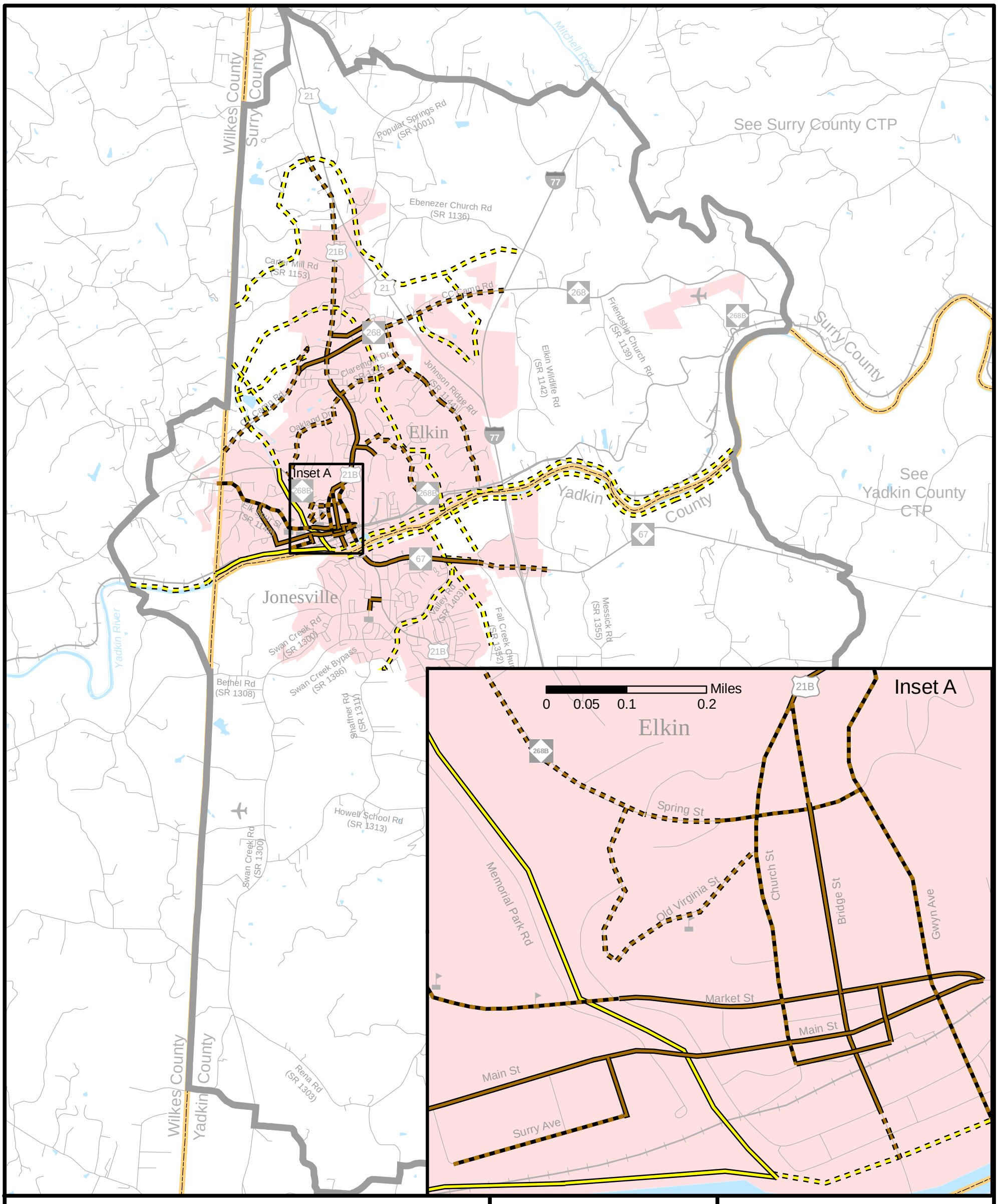
Elkin/Jonesville

Surry/Yadkin County

North Carolina Comprehensive Transportation Plan

Plan date: December 12, 2011

Revised: January 9, 2012



Sidewalks
- Existing
- Needs Improvement
- Recommended

Off-Road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

Miles
0 0.2 0.4 0.8 1.2

N W E S

Figure 1

Sheet 5 of 5

Base map date: August 2011

Refer to CTP document for more details

Pedestrian Map

Elkin/Jonesville

Surry/Yadkin County

North Carolina Comprehensive Transportation Plan

Plan date: December 12, 2011

Revised: January 9, 2012

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I. Analysis of the Existing and Future Transportation System

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

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

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

Analysis Methodology and Data Requirements

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

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

Roadway System Analysis

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

One of those statewide initiatives is the Strategic Highway Corridor (SHC) Vision Plan[1] adopted by the Board of Transportation on September 2, 2004. The SHC Vision Plan is an initiative to protect and maximize the mobility and connectivity on a core set of highway corridors throughout North Carolina, while promoting environmental stewardship through maximizing the use of existing facilities to the extent possible, and fostering economic prosperity through the quick and efficient movement of people and goods.

The primary purpose of the SHC Vision Plan is to provide a network of high-speed, safe, reliable highways throughout North Carolina. The primary goal to support this purpose is to create a greater consensus towards the development of a genuine vision for each corridor – specifically towards the identification of a desired facility type (Freeway, Expressway, Boulevard, or Thoroughfare) for each corridor. Individual CTPs shall incorporate the long-term vision of each corridor. Refer to Appendix I for contact information for the SHC Vision Plan.

In the development of this plan, travel demand was projected from 2010 to 2040 using a travel demand model. Travel demand models are developed to replicate travel patterns on the existing transportation system as well as to estimate travel patterns for 2040. In addition, local land use plans and growth expectations were used to develop future growth rates and patterns.

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

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

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

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

- Peaking characteristics of the traffic on the road;
- Characteristics of side-roads feeding into the road; and
- Directional split of traffic or the percentages of vehicles traveling in each direction along a road at any given time.

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

LOS D indicates "practical capacity" of a roadway, or the capacity at which the public begins to experience delay. The practical capacity for each roadway was developed based on the 2000 Highway Capacity Manual using NCDOT's NCLOS program. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C for new facilities. Refer to Appendix E for detailed information on LOS.

Traffic Crash Analysis

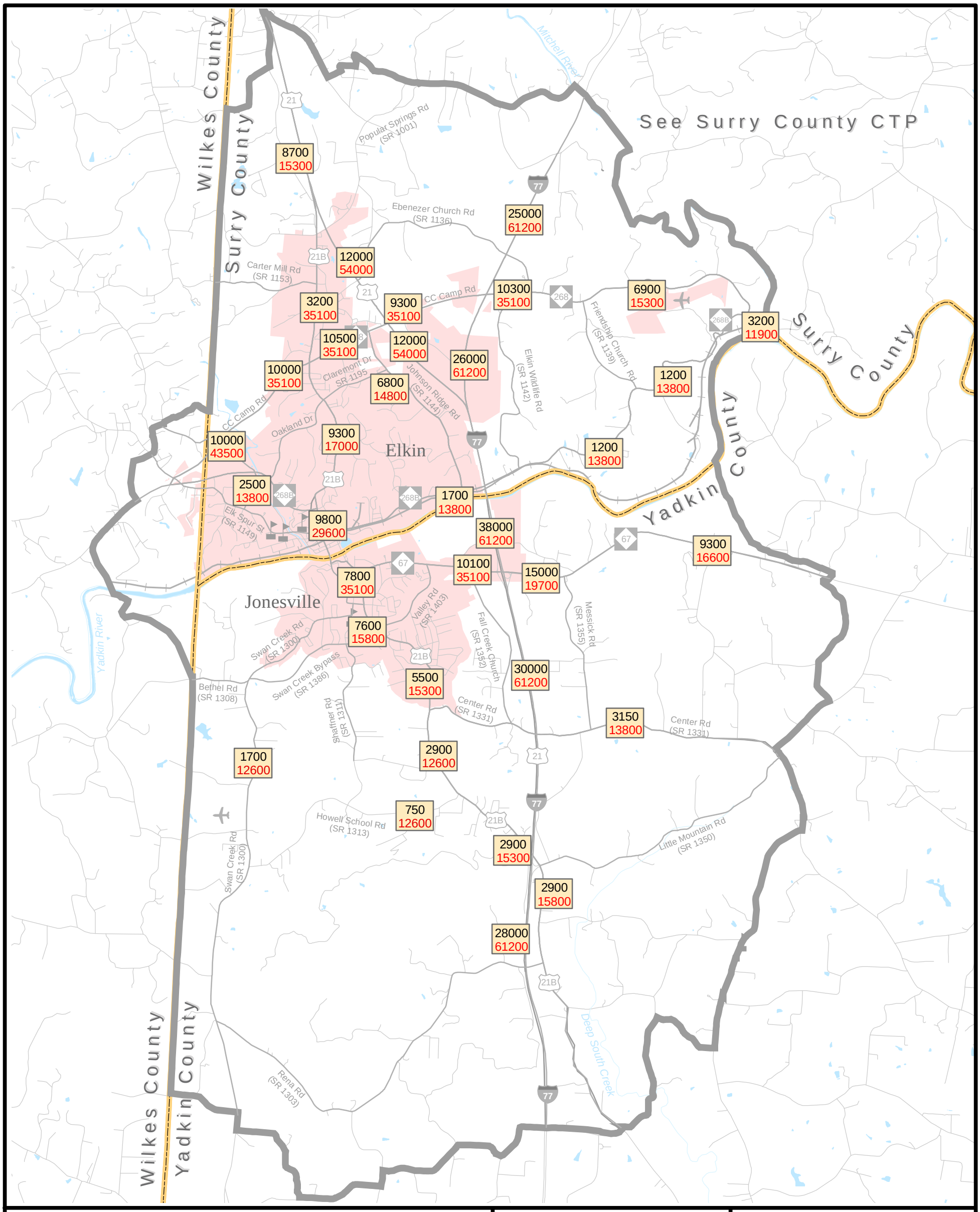
Traffic crashes are often used as an indicator for locating congestion and roadway problems. Crash patterns obtained from an analysis of crash data can lead to the identification of improvements that will reduce the number of crashes. A crash analysis was performed for the Elkin/Jonesville CTP for crashes occurring in the planning area between January 1, 2007 and December 31, 2009. During this period, a total of five intersections were identified as having a high number of crashes as illustrated in Figure 4. Refer to Appendix F for a detailed crash analysis.

Bridge Deficiency Assessment

Bridges are a vital 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. Ten deficient bridges were identified on roads evaluated as part of the CTP and are illustrated in Figure 5. Of these, two are scheduled for replacement in the 2012 – 2018 State Transportation Improvement Program[2] (TIP). Additionally, two others occur along roadways recommended for improvement in the CTP. As deficient bridges are replaced, every consideration should be given to proposed CTP recommendation and cross section associated with the recommendation. Table 5 in Appendix G gives a listing of the deficient bridges identified in the CTP and the ID number associated with CTP project proposal. Refer to Appendix G for more detailed information.

[2] *For more information on the STIP, go to: http://www.ncdot.gov/performance/reform/.*



Legend

- Near Capacity
- Over Capacity
- 000 / 000 — 2010 Volumes (AADT) / 2010 Capacity
- Schools
- Airports
- Study Roads
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- Planning Boundary
- County Boundary

0 0.25 0.5 1 1.5 Miles

N W E S

Base map date: August 2011

Figure 2

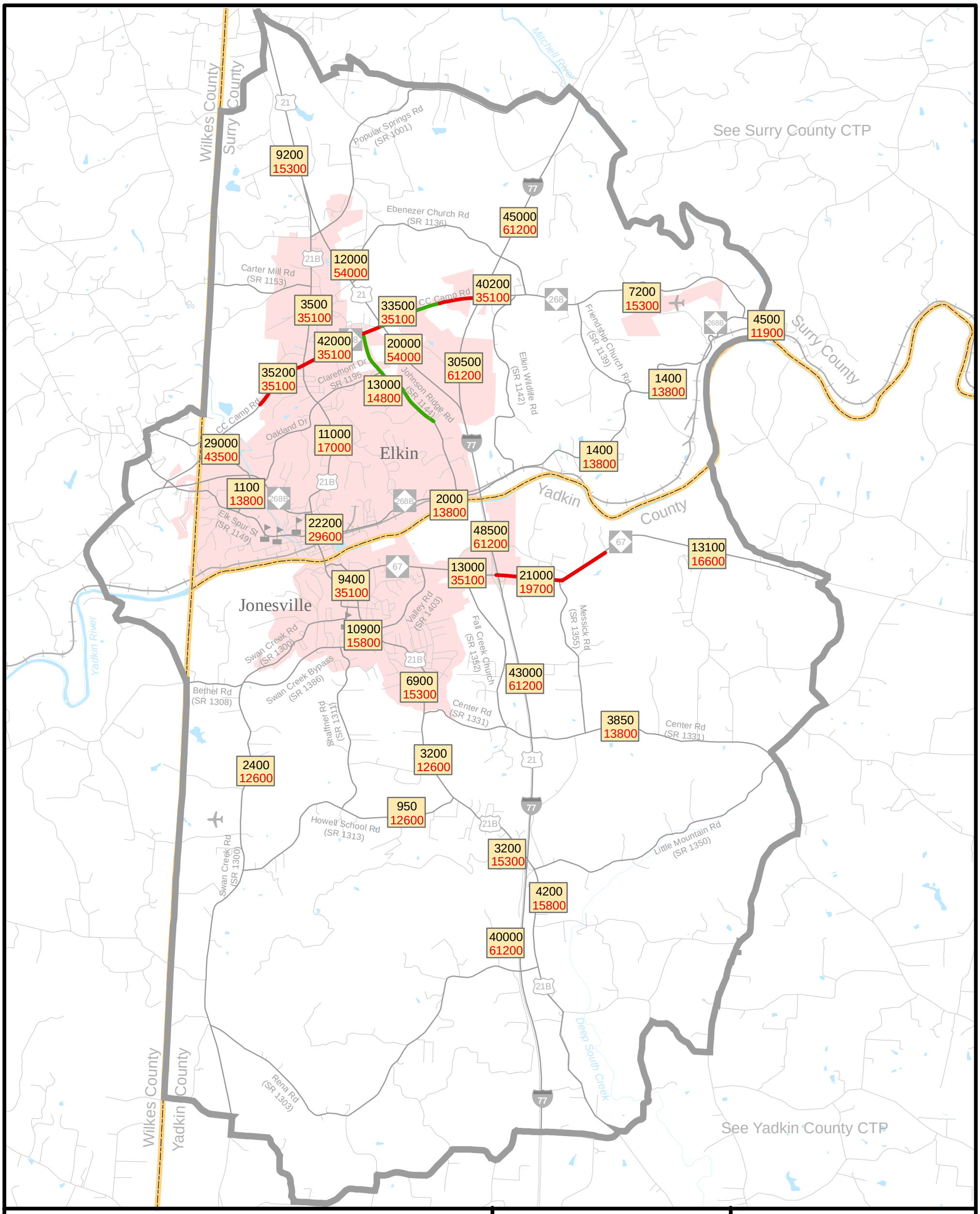
2010 VOLUMES AND CAPACITY DEFICIENCIES

Elkin/Jonesville

Surry/Yadkin County

North Carolina

Comprehensive Transportation Plan



Legend

- Near Capacity
- Over Capacity
- 000 / 000 — 2040 Volumes (AADT) / 2010 Capacity
- Schools
- Airports
- Study Roads
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- Planning Boundary
- County Boundary

0 0.25 0.5 1 1.5 Miles

N W E S

Base map date: August 2011

Figure 3

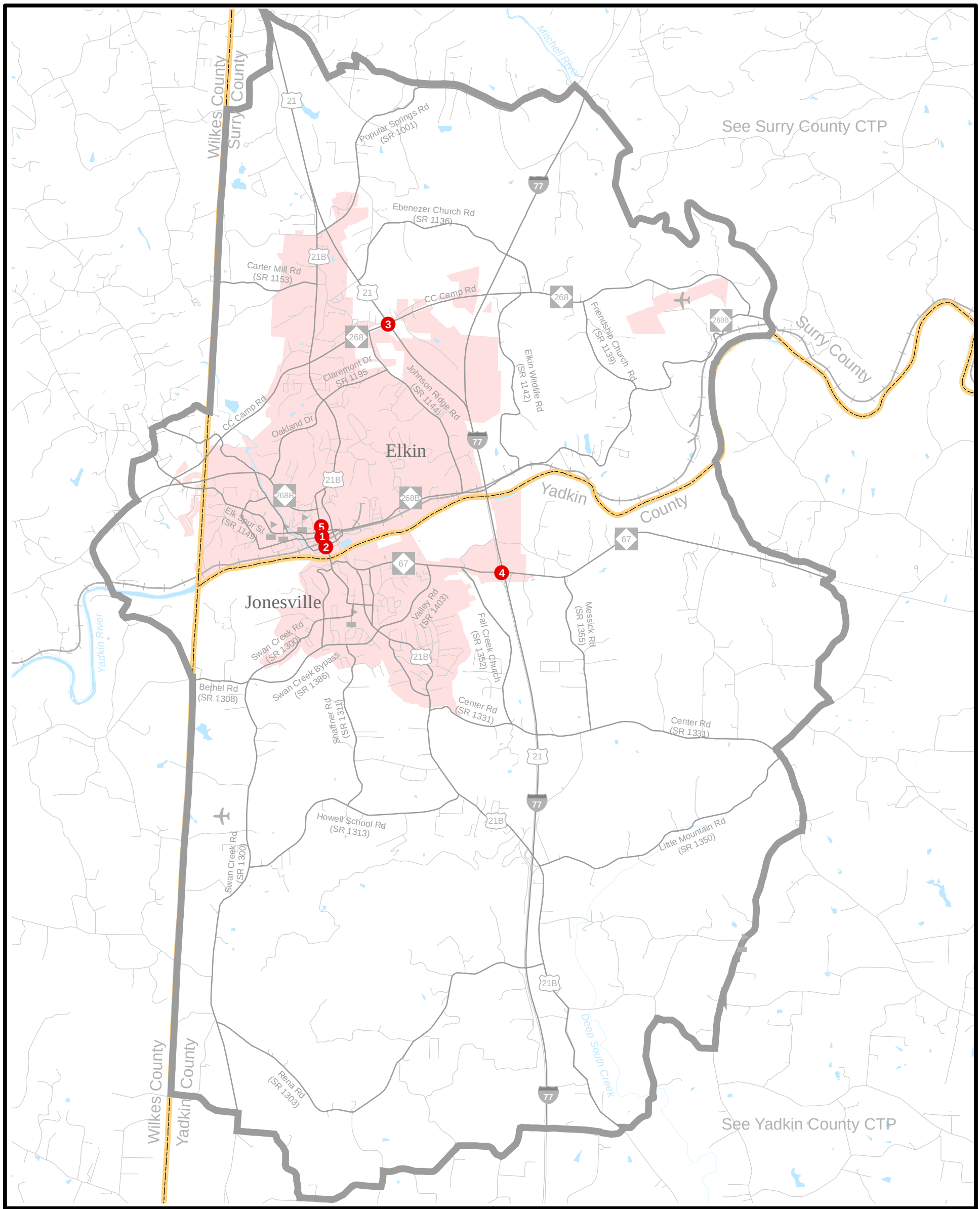
2040 VOLUMES AND CAPACITY DEFICIENCIES

Elkin/Jonesville

Surry/Yadkin County

North Carolina

Comprehensive Transportation Plan



Legend

- Crash Location (# Map Index)
- Schools
- Airports
- Study Roads
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- Planning Boundary
- County Boundary

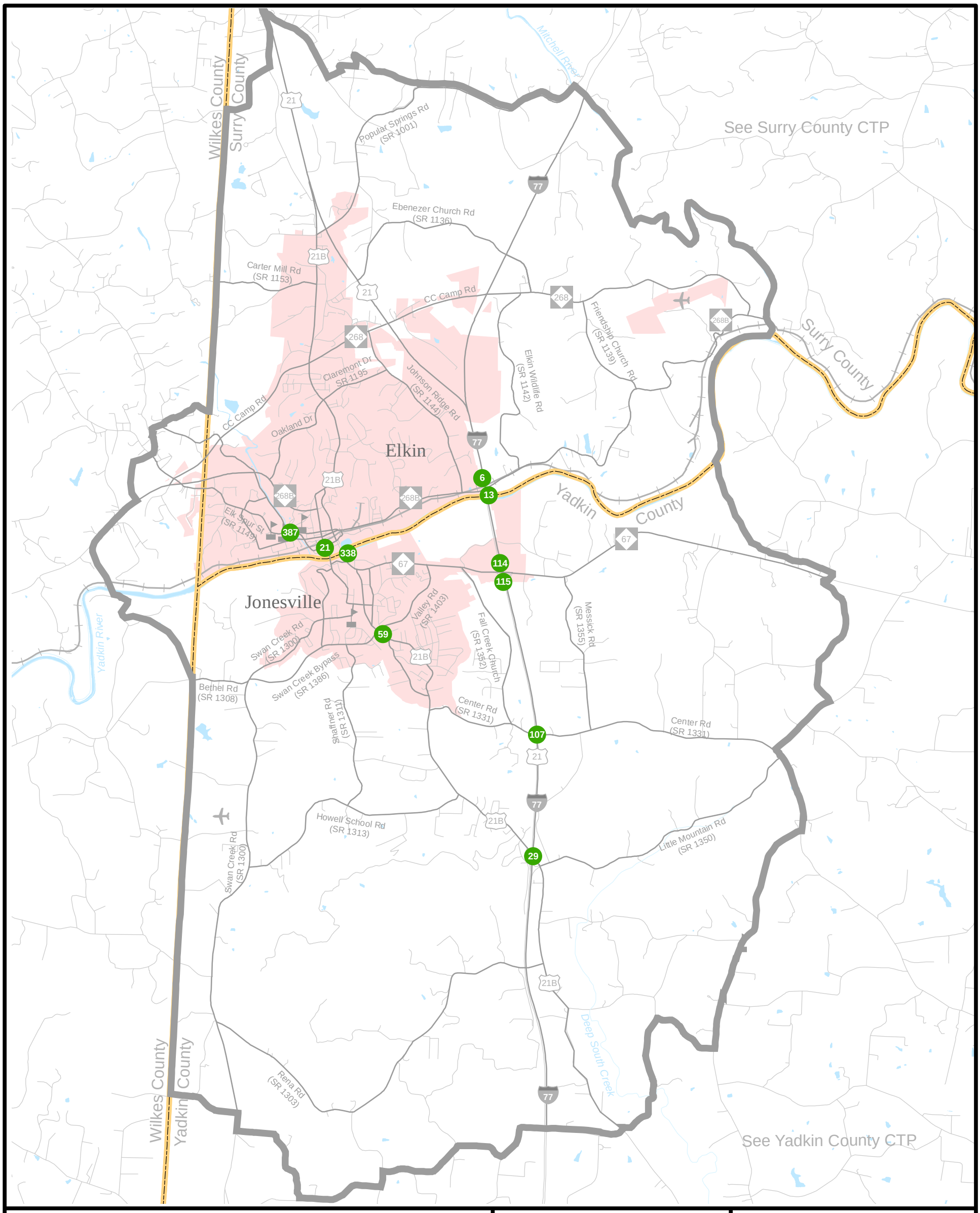
0 0.25 0.5 1 1.5 Miles

N W E S

Base map date: August 2011

Figure 4
Crash Locations
January 1, 2007 - December 31, 2009

Elkin/Jonesville
Surry/Yadkin County
North Carolina
Comprehensive Transportation Plan



Legend

- Deficient Bridges (# Bridge Number)
- Schools
- Airports
- Study Roads
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- Planning Boundary
- County Boundary

0 0.25 0.5 1 1.5 Miles

N W E S

Base map date: August 2011

FIGURE 5

Deficient Bridges

Elkin/Jonesville

Surry/Yadkin County

North Carolina

Comprehensive Transportation Plan

Public Transportation and Rail

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

Public Transportation

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

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

An inventory of existing and planned fixed public transportation routes for the planning area is presented on Sheet 3 of Figure 1. Currently, there are no fixed public transportation routes serving the area. Yadkin Valley Public Transportation is a regional transportation system operated by Yadkin Valley Economic Development District Inc. and the NCDOT Public Transportation Division. It provides community and public transportation services in Davie, Stokes, Surry and Yadkin counties. 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.

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

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

An inventory of existing and planned rail facilities for the planning area is presented on Sheet 3 of Figure 1. Yadkin Valley Railroad, which leases from Norfolk Southern Corporation, is the only railroad operating within the study area and only offers freight service. It follows the Yadkin River throughout the study area. All recommendations for rail are coordinated with the local governments and the Rail Division of NCDOT. 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 1991, clarifies responsibilities regarding the provision of bicycle facilities along the 77,000-mile state-maintained highway system. The policy details guidelines for planning, design, construction, maintenance, and operations pertaining to bicycle facilities and accommodations. All bicycle improvements undertaken by NCDOT are based upon this policy.

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

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

Inventories of existing and planned bicycle and pedestrian facilities for the planning area are presented on Sheets 4 and 5 of Figure 1. The 2007 Elkin Greenway Master Plan[3] and the 2010 Jonesville Land Use Plan were utilized in the development of these elements of the CTP. All recommendations for bicycle and pedestrian facilities were coordinated with the local governments and the NCDOT Division of Bicycle and Pedestrian Transportation. Refer to Appendix A for contact information for the Division of Bicycle and Pedestrian Transportation.

Land Use

G.S. §136-66.2 requires that local areas have a current (less than five years old) land development plan prior to adoption of the CTP. For this CTP, the 2000 Elkin Land Use Plan (readopted August 2010) and the 2010 Jonesville Land Use Plan were used to meet this requirement and are illustrated in Figures 6 through 9.

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

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

[3] The 2007 Elkin Greenway Master Plan can be viewed at:
http://www.elkinnc.org/Elkin/Portals/0/Documents/rec_park/Town%20of%20Elkin%20Master%20Plan%201007%20FINAL.pdf

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.

Elkin primarily anticipates growth in areas designated as commercial and industrial. These areas tend to be along the US 21, US 21 Business, NC 268 (CC Camp Road) and NC 268 Business. Most of the commercial growth is expected along NC 268 (CC Camp Road). Significant industrial growth is anticipated east of the US 21 corridor. Residential growth is expected to continue, especially between I-77 and US 21 Business. This area is located north of town and along the NC 268 (CC Camp Road) corridor.

Jonesville primarily anticipates growth in areas designated as residential and commercial. Commercial development is anticipated along the US 21 and NC 67 corridors. Substantial rural residential development is anticipated outside of the corporate limits. Intense subdivision development is not anticipated in these areas due to water supply concerns and lack of infrastructure to support growth. In addition, two large tracts are designated for industrial development. One is located in the southeast quadrant of the I-77 and NC 67 interchange and the other is located adjacent to US 21, just south of Center Road (SR 1331).

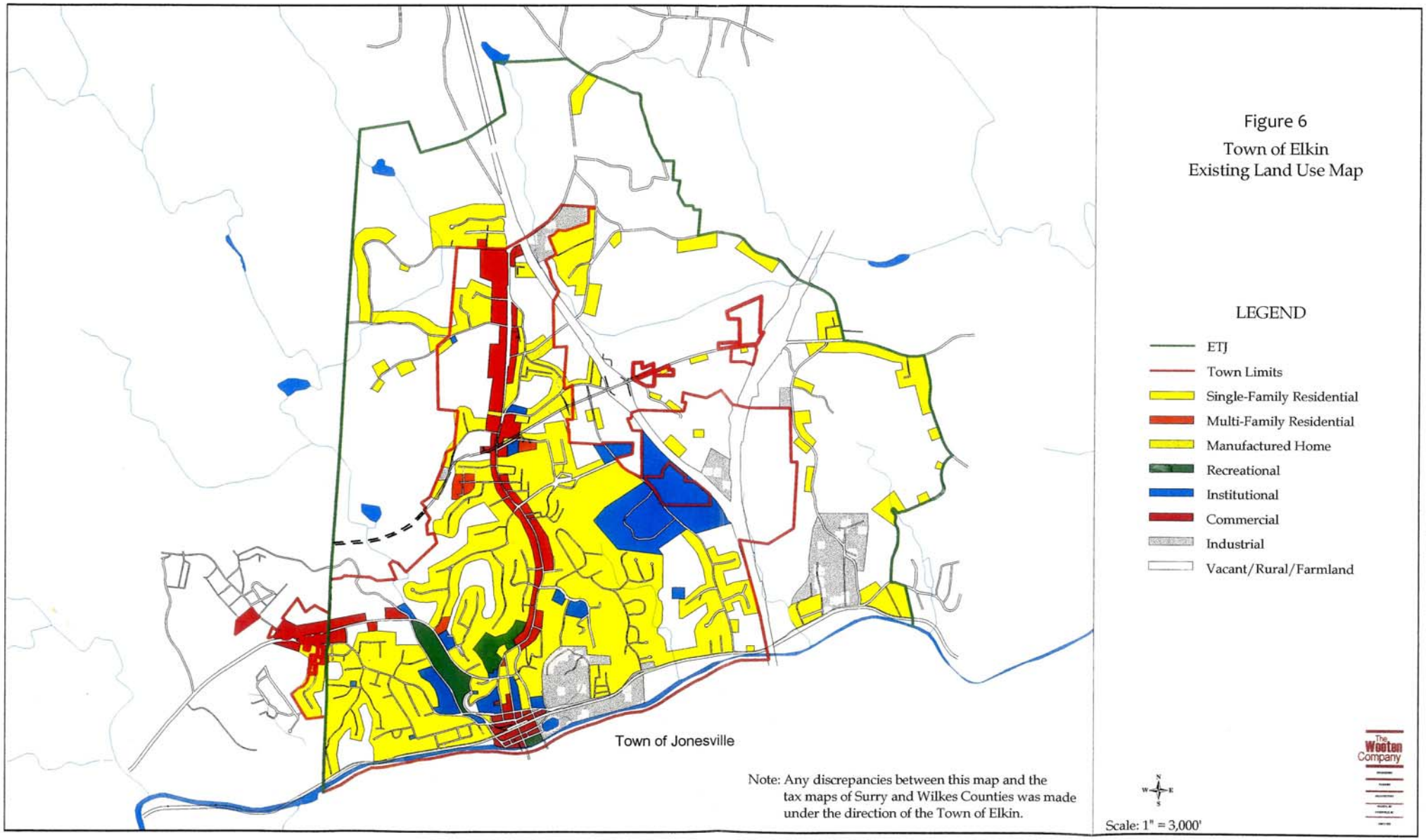
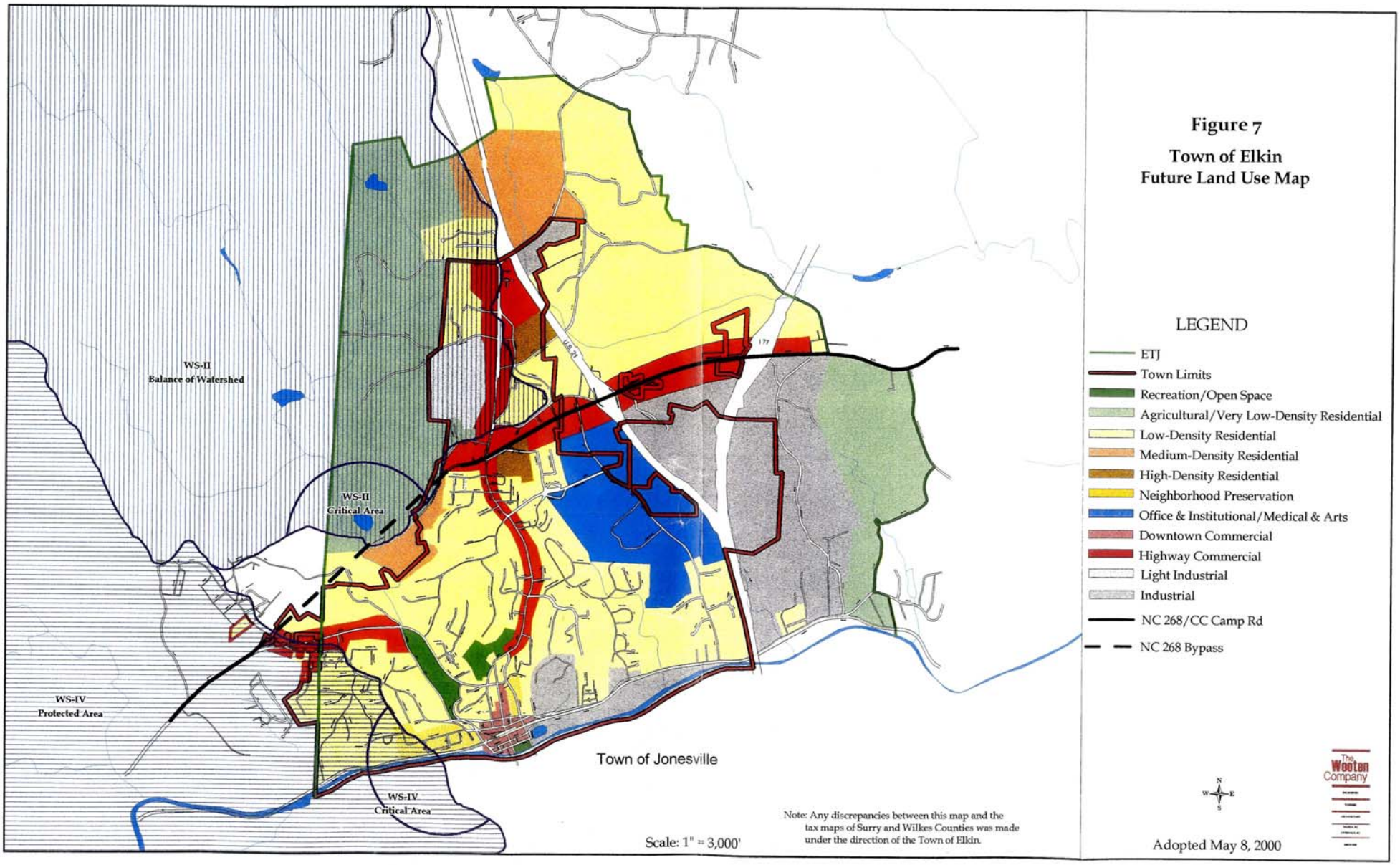


Figure 6
Town of Elkin
Existing Land Use Map
LEGEND
ETJ
Town Limits
Single-Family Residential
Multi-Family Residential
Manufactured Home
Recreational
Institutional
Commercial
Industrial
Vacant/Rural/Farmland
Town of Jonesville
Note: Any discrepancies between this map and the tax maps of Surry and Wilkes Counties was made under the direction of the Town of Elkin.
Scale: 1" = 3,000'
The Wooten Company

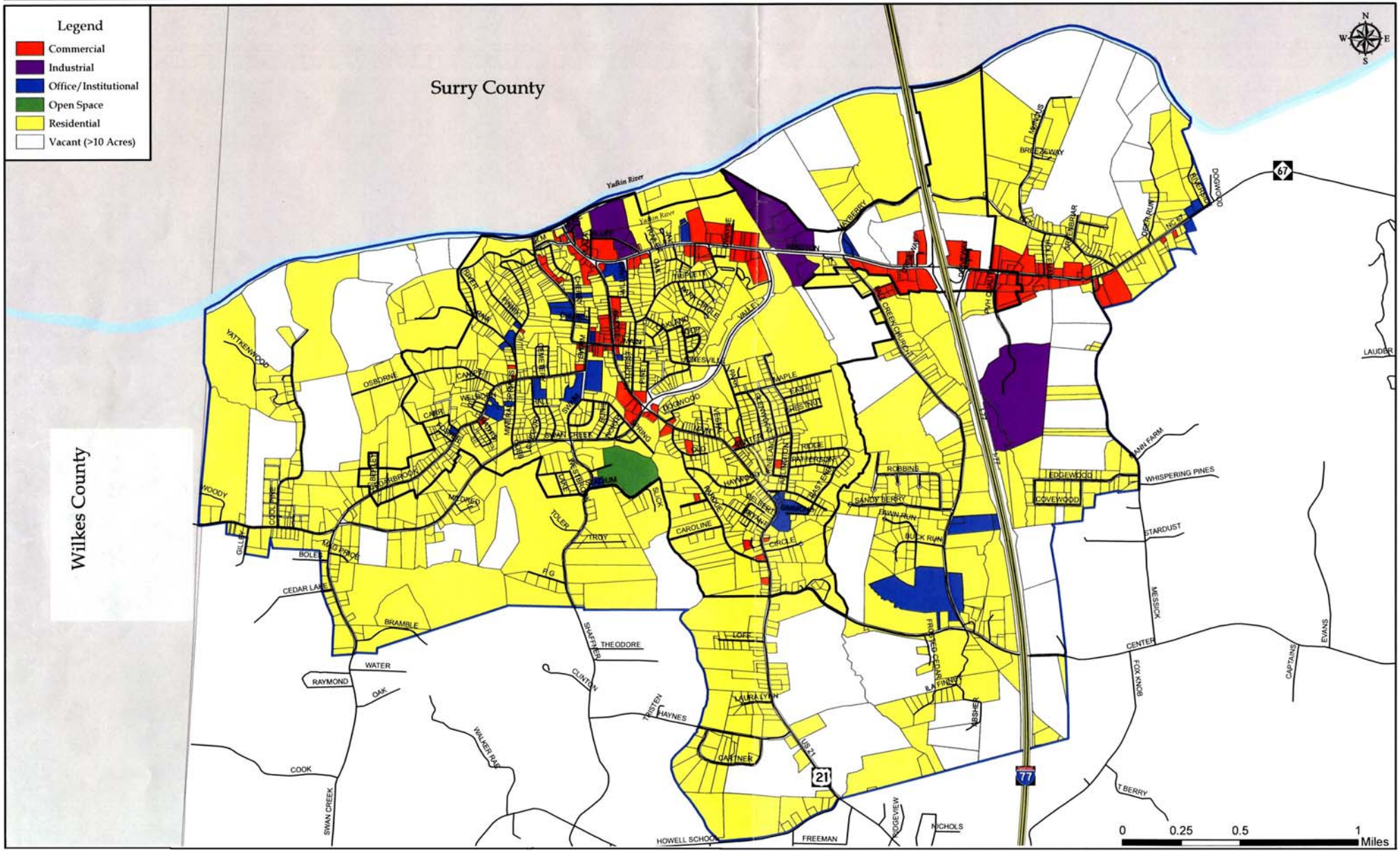
Back


WS-II
Balance of Watershed
WS-II
Critical Area
WS-IV
Protected Area
WS-IV
Critical Area
Town of Jonesville
Scale: 1" = 3,000'
Note: Any discrepancies between this map and the tax maps of Surry and Wilkes Counties was made under the direction of the Town of Elkin.
Figure 7
Town of Elkin
Future Land Use Map
LEGEND
ETJ
Town Limits
Recreation/Open Space
Agricultural/Very Low-Density Residential
Low-Density Residential
Medium-Density Residential
High-Density Residential
Neighborhood Preservation
Office & Institutional/Medical & Arts
Downtown Commercial
Highway Commercial
Light Industrial
Industrial
NC 268/CC Camp Rd
NC 268 Bypass
N
W
E
S
The Wooten Company
Adopted May 8, 2000

BACK

Figure 8

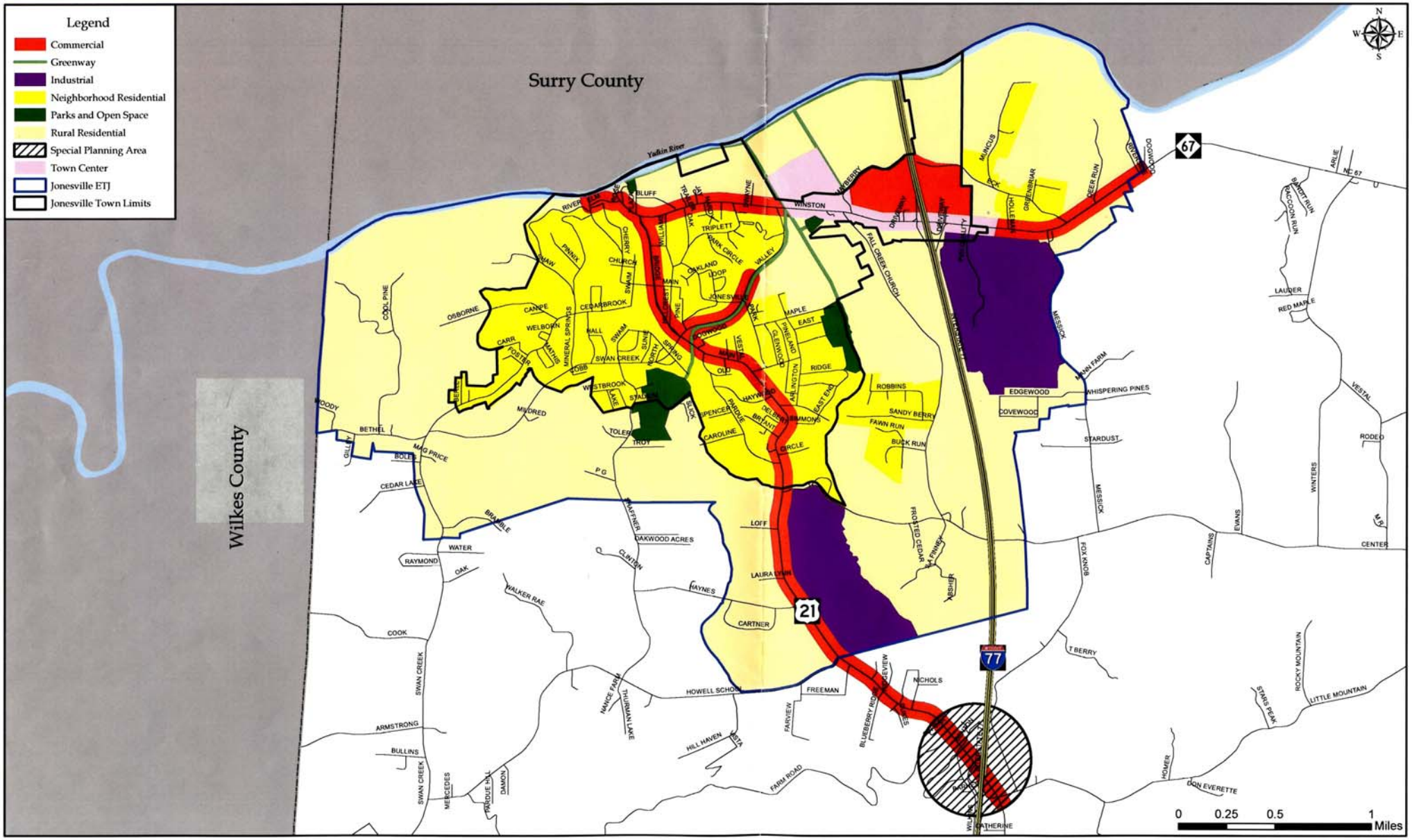
Existing Land Use Map



Back of Figure

Figure 9

Future Land Use Map



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[4] (NEPA) requires consideration of impacts on wetlands, wildlife, water quality, historic properties, and public lands. While a full NEPA evaluation was not conducted as part of the CTP, every effort was made to minimize potential impacts to these features utilizing the best available data. Any potential impacts to these resources were identified as a part of the project recommendations in Chapter 2 of this report. Prior to implementing transportation recommendations of the CTP, a more detailed environmental study would need to be completed in cooperation with the appropriate environmental resource agencies.

A full listing of environmental features that are typically examined as a part of a CTP study is shown in the following tables. Environmental features occurring within Elkin/Jonesville are shown in Figure 10 and highlighted in the Tables 1 and 2.

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)**
- Land Trust Priority Areas
- **Natural Heritage Element Occurrences**
- National Wetlands Inventory
- North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS)
- Paddle Trails – Coastal Plain
- **Railroads (1:24,000 scale)**
- **Recreation Projects – Land and Water Conservation Fund**
- **Sanitary Sewer Systems – Discharges, Land Application Areas, Pipes, Pumps and Treatment Plants**
- **Schools – Public and Non-Public**
- Shellfish Strata
- Significant Natural Heritage Areas
- State Parks
- Submersed Rooted Vasculars
- **Target Local Watersheds - EEP**
- Trout Streams (DWQ)
- Trout Waters (WRC)
- **Water Distribution Systems – Pipes, Pumps, Tanks, Treatment Plants, and Wells**
- **Water Supply Watersheds**
- **Wild and Scenic Rivers**

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

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

Table 2 – Restricted Environmental Features

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

Public Involvement

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

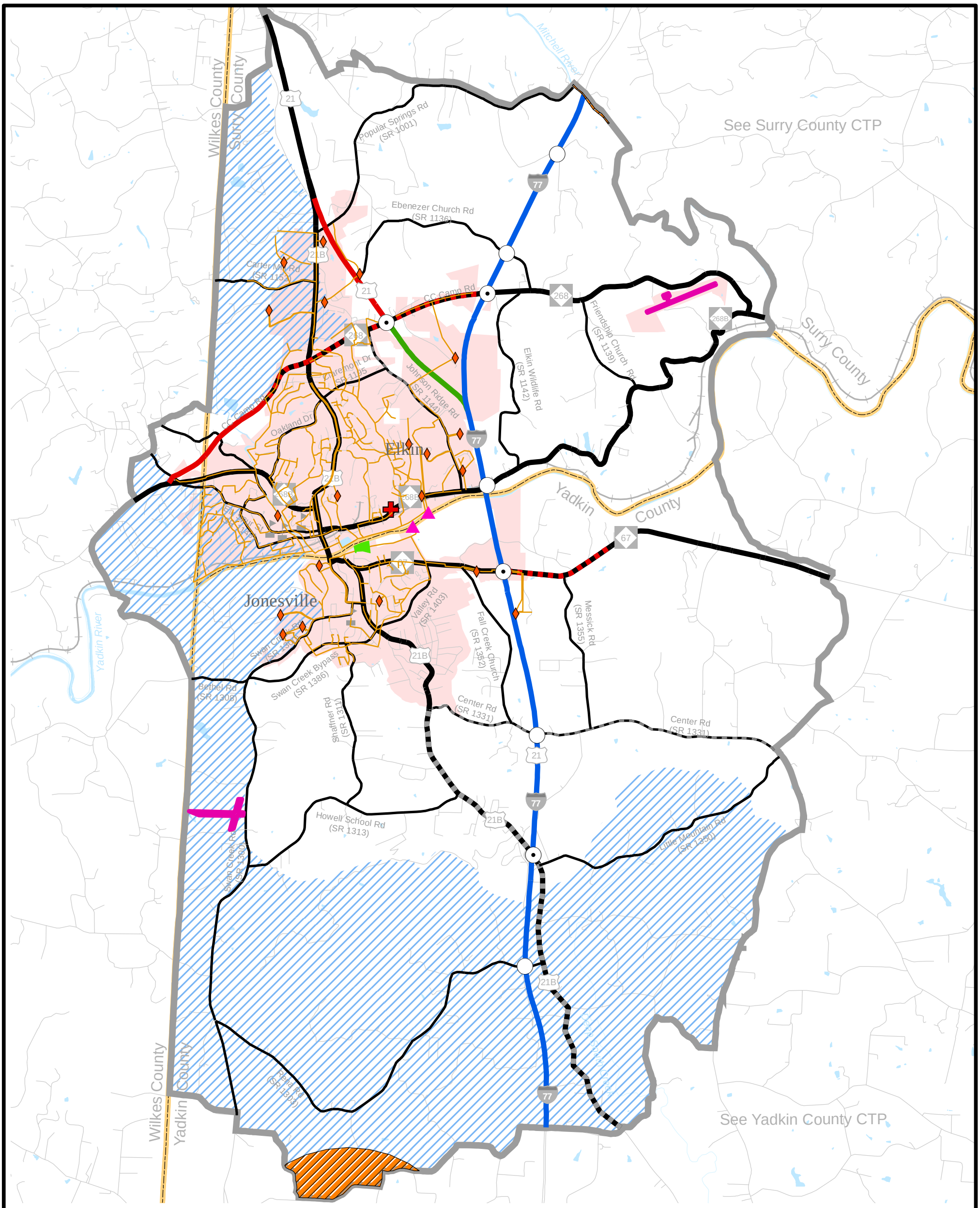
A meeting was held with the Surry County Board of Commissioners in July 2010 to formally initiate the study, provide an overview of the transportation planning process and to gather input on area transportation needs.

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

The public involvement process included holding three public workshops, two in Elkin and one in Jonesville, to present the proposed CTP to the public and solicit comments. The first and second meetings were held at the Elkin Town Hall on February 14, 2011 from 5:00-7:00 pm and April 21, 2011 from 4:00-6:00 pm, respectively. The third meeting was held at the Jonesville Town Hall on November 14, 2011 from 4:30-6:30 pm. Each session was publicized in the local newspaper. No comment forms were submitted during these sessions.

Public hearings were held on January 9, 2012 during the Elkin Board of Commissioners meeting and the Jonesville Town Council meeting. The purpose of the meetings was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted by Elkin during the meeting. Jonesville adopted the CTP during its meeting on February 13, 2012.

The Northwest Piedmont RPO endorsed the CTP on February 15, 2012. The North Carolina Department of Transportation mutually adopted the Elkin/Jonesville CTP on April 5, 2012.



Legend

- Hazardous Substance Disposal Site
- Sanitary Sewer - Discharges
- Hospital Locations
- Schools
- Conservation Tax Credit Property
- Natural Heritage Element Occurrences
- Airport Boundaries
- Water Supply Watersheds
- Sanitary Sewer - Pipes
- Sanitary Sewer - Pumps
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- Planning Boundary
- County Boundary

0 0.25 0.5 1 1.5 Miles

N W E S

Sheet 1 of 2

Base map date: August 2011

FIGURE 10

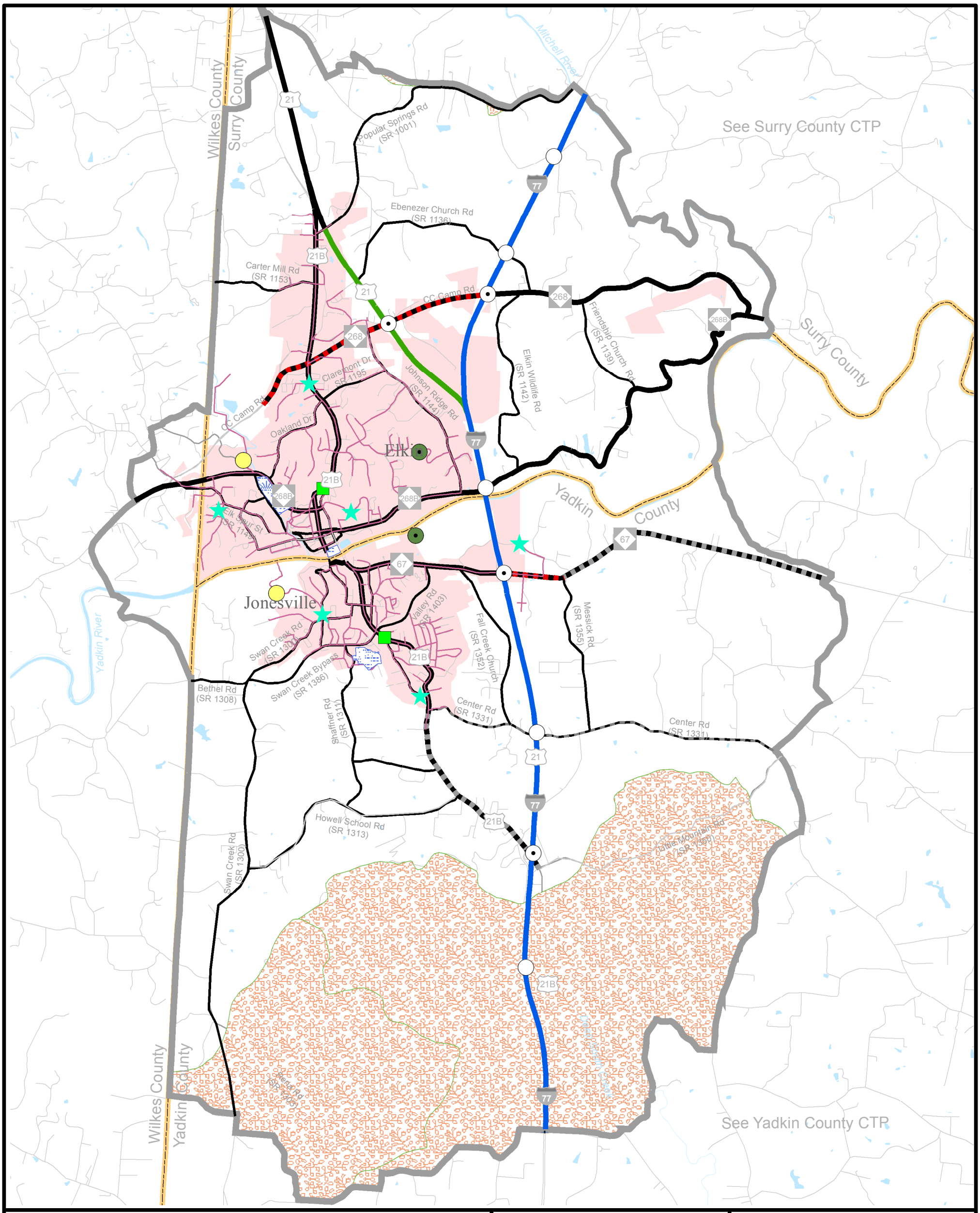
Environmental Features

Elkin/Jonesville

Surry/Yadkin County

North Carolina

Comprehensive Transportation Plan



Legend

- Water Distirbution Systems - Treatment Plants
- Water Distribution Systems - Tanks
- Water Distribution Systems - Pumps
- Sanitary Sewer Sys - Treatment Plant
- Target Local Watershed - EEP
- Recreation Projects
- Water Distribution Sys - Pipes
- Rivers and Streams
- Roads
- Water Bodies
- Municipal Boundary
- Planning Boundary
- County Boundary

0 0.25 0.5 1 1.5 Miles

N W E S

Sheet 2 of 2

Base map date: August 2011

FIGURE 10

Environmental Features

Elkin/Jonesville

Surry/Yadkin County

North Carolina

Comprehensive Transportation Plan

II. Recommendations

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

Implementation

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

Initiative for implementing the CTP rests predominately with the policy boards and citizens of Elkin and Jonesville. 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 Northwest Piedmont RPO for regional prioritization and submittal to NCDOT. Refer to Appendix A for contact information for regional prioritization and funding. Local governments may use the CTP to guide development and protect corridors for the recommended projects. It is critical that NCDOT and local government coordinate on relevant land development reviews and all transportation projects to ensure proper implementation of the CTP. Local governments and the North Carolina Department of Transportation share the responsibility for access management and the planning, design and construction of the recommended projects.

Prior to implementing projects from the CTP, additional analysis will be necessary to meet the National Environmental Policy Act (NEPA) or the North Carolina (or State) Environmental Policy Act[1] (SEPA). This CTP may be used to provide information in the NEPA/SEPA process.

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

Problem Statements

The following pages contain problem statements for each recommendation, organized by CTP modal element. The information provided in the problem statement is intended to help support decisions made in the NEPA/SEPA process. A full, minimum or reference problem statement is presented for each recommendation, with full problem statements occurring first in each section. Full problem statements are denoted by a

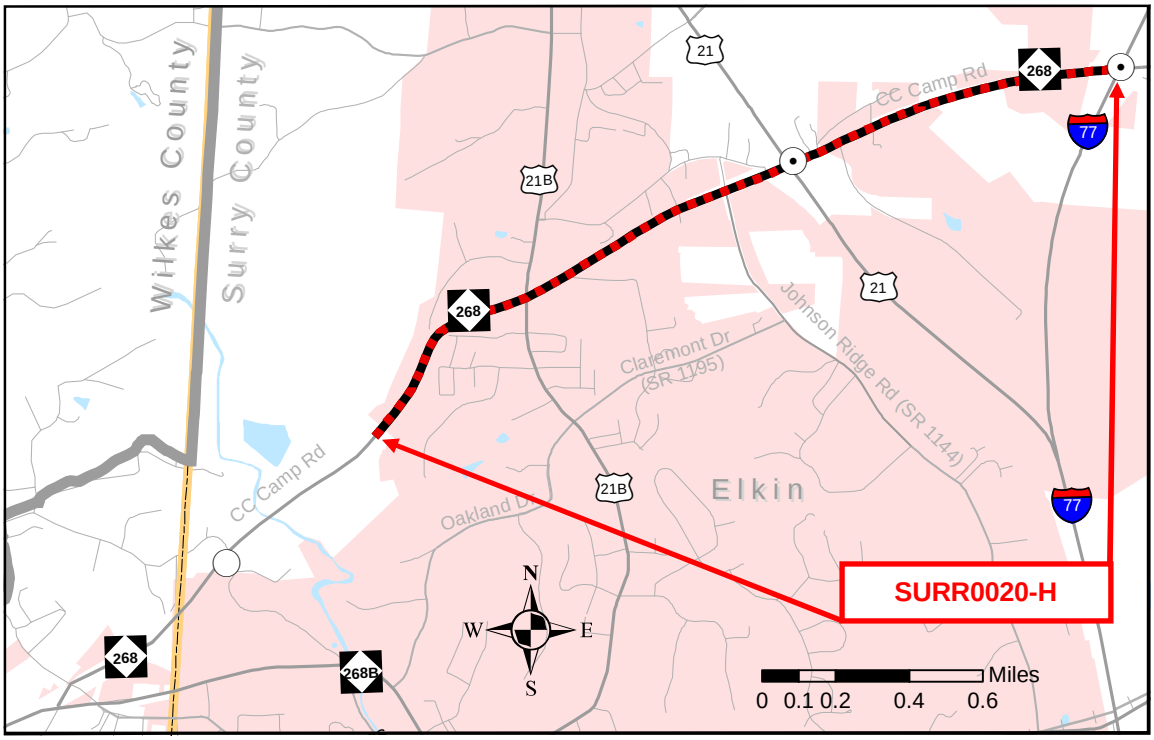
[1] *For more information on SEPA, go to: http://www.doa.nc.gov/clearing/faq.aspx.*

gray shaded box containing project information. Minimum problem statements are more concise and less detailed than full problem statements, but include all known or readily available information. Reference problem statements are developed for TIP projects underway where the purpose and need for the project has already been established.

HIGHWAY

NC 268 (CC Camp Road) – Proposed improvements from I-77 to 0.6 miles west of US 21 Business

Local ID: SURR0020-H
Last updated: 6/19/12



Identified Problem

NC 268 (CC Camp Road) is projected to be near or over capacity by 2040 from I-77 to 0.6 miles west of US 21 Business. The primary purpose of this project is to relieve congestion on the existing facility such that a minimum of Level of Service (LOS) D can be achieved.

Justification of Need

NC 268 is a major east-west corridor through Surry County. This facility is a vital artery in connecting major cities and moving people and goods throughout Surry County and northern North Carolina. It is part of the regional tier of the NC Multimodal Investment Network (NCMIN), connecting major population centers and serving local land uses.

NC 268 is currently a five lane undivided major thoroughfare with 12 foot lanes from I-77 to 0.6 miles west of US 21 Business. By 2040, NC 268 is projected to be near or over capacity from I-77 to 0.6 miles west of US 21 Business. Annual Average Daily Traffic

(AADT) along this portion of NC 268 is projected to increase in range from 9,300 to 10,500 vehicles per day (vpd) in 2010 to 33,500 to 42,000 vpd in 2040, compared to a LOS D capacity of 35,100 vpd.

Community Vision and Problem History

NC 268 is the primary east-west route between Elkin and Pilot Mountain. The facility serves as an efficient connector within Elkin by providing mobility between NC 268 Business, west of Elkin, US 21 Business, US 21, and I-77. NC 268 collects traffic in the surrounding areas and provides direct access to I-77 and US 21. This facility also provides access to the Elkin Municipal Airport located east of I-77.

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

CTP Project Proposal

Project Description

The CTP project proposal (Local ID: SURR0020-H) is to upgrade NC 268 (CC Camp Road), from I-77 to 0.6 miles west of US 21 Business, by converting the existing five lane facility into a four lane, median divided boulevard. Sidewalks are recommended along this facility from I-77 to Johnson Ridge Road (SR 1144) and from Collins Road to 0.6 miles west of US 21 Business.

Additionally, during the most recent three year period, the interchange at NC 268 (CC Camp Road) and US 21 experienced 11 crashes with an average severity index of 2.35, which was below the state's 4.56 average for the same period. The proposed improvements will help reduce congestion on the facility and improve access to US 21.

Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, the portion of this project from west of US 21 Business to 0.6 miles west of US 21 Business is within the targeted local watershed. Water and sewer system pipes are also located along portions of the proposed project.

Relationship to Land Use Plans

Current land use along this section of NC 268 consists of several major commercial developments including the Food Lion/Big Lots Shopping Center, Lowe's Home Improvement and the Wal-Mart Supercenter. Town officials continue to plan for new developments in the near future. The 2000 Elkin Land Use Plan (readopted August 2010) indicates primarily commercial development is planned to continue along NC 268 to the county line.

Linkages to Other Plans and Proposed Project History

The NC 268 Bypass was originally proposed to be constructed as part of the 1992 Elkin-Jonesville-Arlington Thoroughfare Plan. The plan recommended constructing a new two lane road on a four lane right-of-way from NC 268 in Wilkes County to the US 21 Bypass in Surry County.

Multi-modal Considerations

The CTP includes recommendations for bicycle, pedestrian and public transportation facilities throughout the study area. The Piedmont Authority for Regional Transportation (PART) has service enhancements that are being considered, which are directly connected to this project. Three recommended bus routes are proposed along this corridor from I-77 to Johnson Ridge Road (SR 1144): Dobson-Elkin Circular Route, NC 67 Express, and US 421 (Route 13) expansion. Sidewalks are also recommended along this project from Collins Road to 0.6 miles west of US 21 Business and from I-77 to Johnson Ridge Road (SR 1144).

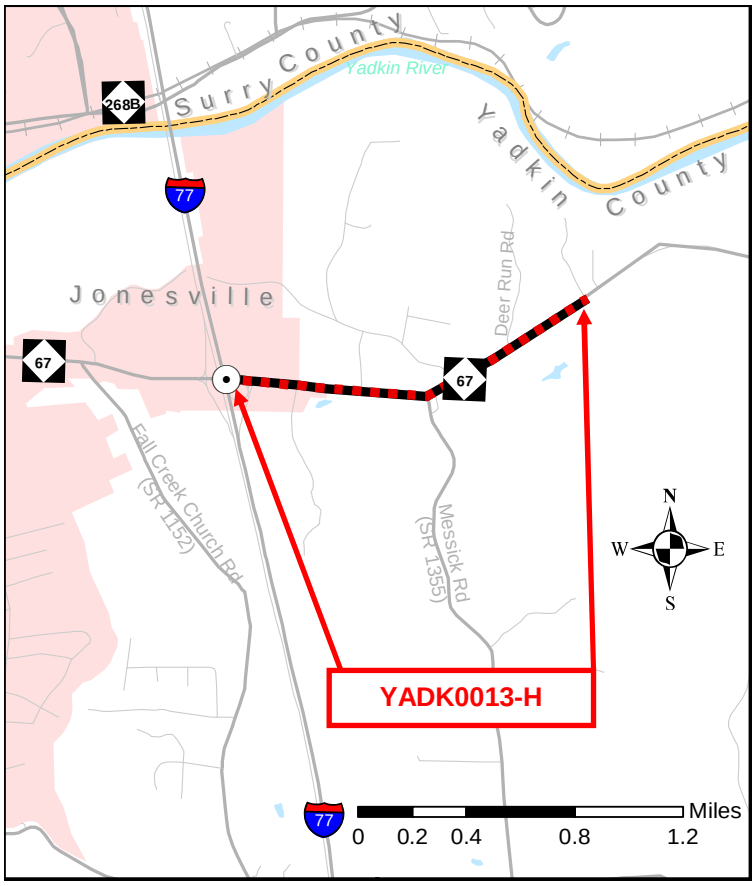
Public/ Stakeholder Involvement

No significant issues associated with this project were identified during the public/stakeholder involvement process.

NC 67 – Proposed improvements from I-77 to 0.3 miles east of Deer Run Road	Local ID: YADK0013-H Last updated: 6/19/12

Identified Problem

NC 67 (Winston Road) is projected to be over capacity by 2040 from I-77 to 0.3 miles east of Deer Run Road. The primary purpose of this project is to accommodate projected traffic volumes on the existing facility such that a minimum of Level of Service (LOS) D can be achieved.



Justification of Need

NC 67 is a major east-west corridor through Yadkin County. This facility is on the regional tier on the NC Multimodal Investment Network (NCMIN), connecting major population centers and serving local land uses. Within Yadkin County, it connects the towns of Jonesville, Booneville and East Bend to NC 601 and I-77.

NC 67 is a three lane major thoroughfare with 12 foot lanes from I-77 to 0.3 miles east of Deer Run Road. By 2040, the facility is projected to be over capacity from I-77 to 0.3 miles east of Deer Run Road. Annual Average Daily Traffic (AADT) is projected to increase from 15,000 vehicles per day (vpd) in 2010 to 21,000 vpd in 2040, compared to a LOS D capacity of 19,700 vpd.

Community Vision and Problem History

Currently NC 67 is the primary east-west route between Jonesville and Booneville. The facility is used for inter-county travel, collecting traffic from surrounding areas and providing direct access to I-77 and US 21. Improvements along the corridor will preserve and enhance the communities' economic vitality.

This facility was identified in the 1992 Elkin-Jonesville-Arlington Thoroughfare Plan as one of the primary traffic arteries in the study area. This facility was not identified as deficient in the 1992 plan. However, the plan recognized that this roadway would need to be upgraded in the future to keep up with area growth.

CTP Project Proposal

Project Description

The CTP project proposal (Local ID: YADK0013-H) is to upgrade NC 67 (Winston Road), from I-77 to 0.3 miles east of Deer Run Road, by widening the existing three lane facility to a four lane, median divided boulevard.

Additionally, during the most recent three year period, the interchange at NC 67 (Winston Road) and I-77 experienced 16 crashes with an average severity index of 6.20, which was above the state's 4.56 average for the same period. The proposed improvements will help reduce congestion on the facility and improve access to I-77.

Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, water and sewer system pipes are located along portions of the proposed project.

Relationship to Land Use Plans

Existing land use along this corridor is a mixture of commercial and residential land use. The commercial land use is primarily clustered near the I-77 interchange. The 2010 Jonesville Land Use Plan indicates that future land use in areas near the corridor will be more commercial with industrial moving in to replace the residential land uses.

Linkages to Other Plans and Proposed Project History

The 1992 Elkin-Jonesville-Arlington Thoroughfare Plan did not include any recommendations for this facility.

Multi-modal Considerations

The Piedmont Authority for Regional Transportation (PART) has service enhancements that are being considered, which are directly connected to this project. The NC 67 Express, a proposed commuter bus route is recommended along this corridor from I-77 continuing east into the Winston-Salem and Forsyth County area.

Public/ Stakeholder Involvement

No significant issues associated with this project were identified during the public/stakeholder involvement process.

Johnson Ridge Road (SR 1144), Local ID: SURR0021-H

Johnson Ridge Road (SR 1144) from NC 268 (CC Camp Road) to Parkwood Drive is projected to be near capacity by the year 2040. Improvements are needed to accommodate projected traffic volumes in order to maintain a LOS D on the existing facility.

Johnson Ridge Road (SR 1144) is a two lane minor thoroughfare with 12 foot lanes. The Average Annual Daily Traffic (AADT) on this facility is projected to increase from 6,800 vpd in 2010 to 13,000 vpd in 2040, compared to a LOS D capacity of 14,800 vpd.

The CTP project proposal (Local ID: SURR0021-H) is to widen the existing two lane minor thoroughfare to a three lane minor thoroughfare with a center turn lane from NC 268 (CC Camp Road) to Parkwood Drive. Sidewalks are also recommended along the entire project. Additionally, a bus route is recommended along this facility from the NC 268 Bypass to Hugh Chatham Memorial Hospital. The recommended improvements would to help reduce congestion and improve mobility to the Hugh Chatham Memorial Hospital.

Based on a planning level environmental assessment using available GIS data, water and sewer system distribution pipes are located along the proposed project.

The 1992 Elkin-Jonesville-Arlington Thoroughfare Plan did not include any recommendations for this facility.

Minor Widening Improvements

The following routes are not expected to exceed capacity, but are recommended to be upgraded to 12 foot lanes with paved shoulders in order to improve mobility, safety and/or to accommodate bicycles.

- **YADK0014-H:** US 21 Business – from Center Road (SR 1331) to Marler Road (SR 1103).
- **YADK0015-H:** Center Road (SR 1331) – from US 21 Business to Little Mountain Road (SR 1350).

PUBLIC TRANSPORTATION AND RAIL

The Piedmont Authority for Regional Transportation (PART) 2010 Regional Transit Development Plan[2] recommends that three fixed-route bus service routes be established within the planning area. The proposed routes include:

[2] The Piedmont Authority of Regional Transportation (PART) 2010 Regional Transit Development Plan can be viewed at: http://www.partnc.org/documents/RTDPHDR%20Summary_Report_9-7-10_DRAFT.pdf

- **Dobson-Elkin Circulator Route** - It is recommended that a fixed-route bus service be developed. The route would serve as a circulator to PART's existing park-and-ride lots, and connect to Route 13, Yadkin County Express. This new route would extend west from Dobson to Exit 93 on I-77 and continue south along I-77 to Elkin. This route would be a circulator to a proposed Elkin park and ride facility on Johnson Ridge Road (SR 1144) serviced by an extension of Route 13, Yadkin County Express and the proposed Yadkin County NC 67 Express.

- **NC-67 Express –** It is recommended that a commuter bus service be developed to the core counties of the Piedmont Triad. This service would help with the unmet transit need most often identified in Yadkin County. Of special concern is the northern tier of the county just south of the Surry County border, where a number of smaller but growing communities are located.

- **Yadkin County Express (Route 13) -** It is recommended that an existing fixed-route bus service (US 421 Express) be extended using I-77 to Elkin. This new route would include services to medical centers in the Winston-Salem area and also to the Winston-Salem Transportation Center.

There are no rail improvements recommended in this CTP. Public transportation and rail features are shown on the Sheet 3 of Figure 1.

BICYCLE

The 2007 Elkin Greenway Master Plan[3] and the 2010 Jonesville Land Use Plan identified recommended bicycle facilities throughout the study area. Additionally, the Northwest Piedmont Rural Planning Organization and local stakeholders identified facilities that need improvement to accommodate bicycles. These features are shown on the Bicycle Map, Sheet 4 of Figure 1, as recommended multi-use paths or on-road bicycle facilities that need improving.

- **YADK0001-B:** US 21 Business from Swan Creek Bypass (SR 1386) to Center Road (SR 1331).
- **YADK0014-H:** US 21 Business from Howell School Road (SR 1313) to Little Mountain Road (SR 1350).
- **SURR0020-H:** NC 268 Bypass (CC Camp Road) from US 21 Business to 0.6 miles west of US 21 Business.
- **SURR0001-B:** NC 268 Bypass (CC Camp Road) from 0.6 miles west of US 21 Business to NC 268 Business (Wilkes County).
- **SURR0002-B:** NC 268 Business from 0.4 miles west of NC 268 Bypass (CC Camp Road) to Oakland Drive.

[3] The 2007 Elkin Greenway Master Plan can be viewed at:
http://www.elkinnc.org/Elkin/Portals/0/Documents/rec_park/Town%20of%20Elkin%20Master%20Plan%201007%20FINAL.pdf

- **YADK0002-B:** NC 67 from US 21 Business to Valley Road (SR 1403).
- **YADK0003-B:** Bethel Road (SR 1308) from Wilkes County to Swan Creek Road (SR 1300).
- **YADK0015-H:** Center Road (SR 1331) from US 21 Business to Little Mountain Road (SR 1350).
- **YADK0004-B:** Howell School Road (SR 1313) from Swan Creek Road (SR 1300) to US 21 Business.
- **YADK0005-B:** Little Mountain Road (SR 1350) from US 21 Business to Center Road (SR 1331).
- **YADK0006-B:** Swan Creek Bypass (SR 1386) from Swan Creek Road (SR 1300) to US 21 Business.
- **YADK0007-B:** Swan Creek Road (SR 1300) from Bethel Road (SR 1308) to Howell School Road (SR 1313).
- **YADK0008-B:** Valley Road (SR 1403) from US 21 Business to NC 67.

PEDESTRIAN

The 2007 Elkin Greenway Master Plan and the 2010 Jonesville Land Use Plan were used to identify existing and recommended pedestrian facilities throughout the planning area. Additionally, the following pedestrian recommendation was identified during development of the CTP. These features are shown on the Pedestrian Map, Sheet 5 of Figure 1.

- **YADK0001-P:** NC 67 from Falls Creek Church Road (SR 1352) to .02 miles east of PVH Way.

APPENDICES

Appendix A
Resources and Contacts

North Carolina Department of Transportation

Customer Service Office

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

1-877-DOT-4YOU (1-877-368-4968)
https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx

Secretary of Transportation

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

Board of Transportation

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

Highway Division

801 Statesville Rd North Wilkesboro, NC 28659 (336) 903-9101
http://www.ncdot.gov/doh/operations/division11/

Contact the:

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

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

Transportation Planning Branch (TPB)

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

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

Northwest Piedmont Rural Planning Organization (RPO)

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

400 W. Fourth St., Suite 400 Winston-Salem, NC 27101 (336) 761-2111
http://www.nwpcog.dst.nc.us/planning/web.cfm?CID=95

Strategic Planning Office

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

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

Project Development & Environmental Analysis (PDEA)

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

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

Secondary Roads Unit

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

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

Program Development Branch

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

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

Public Transportation Division

Contact the Public Transportation Division for information public transit systems.

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

Rail Division

Contact the Rail Division for rail information throughout the state.

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

Division of Bicycle and Pedestrian Transportation

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

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

Structures Management Unit

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

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

Roadway Design Unit

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

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

Other State Government Offices

Department of Commerce – Division of Community Assistance

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

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

Appendix B
Comprehensive Transportation Plan Definitions

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

Highway Map

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

Facility Type Definitions

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

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

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

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

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

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

Other Highway Map Definitions

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

Public Transportation and Rail Map

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

- **Fixed Guideway** – Any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The term includes heavy rail, commuter rail, light rail, monorail, trolleybus, aerial tramway, included plane, cable car, automated guideway transit, and ferryboats.

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

Bicycle Map

- **On Road-Existing** – Conditions for bicycling on the highway facility are adequate to safely accommodate cyclists.
- **On Road-Needs Improvement** – At the systems level, it is desirable for **an existing** highway facility to accommodate bicycle transportation; however, highway improvements are necessary to create safe travel conditions for the cyclists.
- **On Road-Recommended** – At the systems level, it is desirable for **a recommended** highway facility to accommodate bicycle transportation. The highway should be designed and built to safely accommodate cyclists.
- **Off Road-Existing** – A facility that accommodates only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way.

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

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

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

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

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

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

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

Pedestrian Map

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

- **Sidewalk-Needs Improvement** – Improvements are needed to provide paved paths on both sides of a highway facility. The highway facility may or may not need improvements. Improvements do not include re-paving or other maintenance

activities but may include: filling in gaps, widening sidewalks, or meeting ADA (Americans with Disabilities Act) requirements.

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

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

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

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

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

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

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

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

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

Appendix C
CTP Inventory and Recommendations

Assumptions/ Notes:

- **Local ID:** This Local ID is the same as the one used for the Prioritization Project Submittal Tool. If a TIP project number exists it is listed as the ID. Otherwise, the following system is used to create a code for each recommended improvement: the first 4 letters of the county name is combined with a 4 digit unique numerical code followed by '-H' for highway, '-T' for public transportation, '-R' for rail, '-B' for bicycle, '-M' for multi-use paths, or '-P' for pedestrian modes. If a different code is used along a route it indicates separate projects will probably be requested. Also, upper case alphabetic characters (i.e. 'A', 'B', or 'C') are included after the numeric portion of the code if it is anticipated that project segmentation or phasing will be recommended.
- **Jurisdiction:** Jurisdictions listed are based on municipal limits, county boundaries, and MPO Metropolitan Planning Area Boundaries (MAB), as applicable.
- **Existing Cross-Section:** Listed under '(ft)' is the approximate width of the roadway from edge of pavement to edge of pavement. Listed under 'lanes' is the total number of lanes, with the letter 'D' if the facility is divided.
- **Existing ROW:** The estimated existing right-of-way is based on the NCDOT Roadway Characteristics Shapefile and NCDOT Division 11 information. These right-of-way amounts are approximate and may vary.
- **Existing and Proposed Capacity:** The estimated capacities are given in vehicles per day (vpd) based on LOS D for existing facilities and LOS C for new facilities. These capacity estimates were developed using the NCLOS Program, as documented in Chapter I.
- **Existing and Proposed AADT** (Annual Average Daily Traffic) volumes, given in vehicles per day (vpd), are estimates only based on a systems-level analysis. The '2040 AADT E+C' is an estimate of the volume in 2040 with only existing plus committed projects assumed to be in place, where committed is defined as projects programmed for construction in the 2012 – 2018 Transportation Improvement Program (TIP). The '2040 AADT with CTP' is an estimate of the volume in 2040 with all proposed CTP improvements assumed to be in place. The '2040 AADT with CTP' is shown in bold if it exceeds the proposed capacity, indicating an unmet need. For additional information about the assumptions and techniques used to develop the AADT volume estimates, refer to Chapter I.
- **Proposed Cross-section:** The CTP recommended cross-sections are listed by code; for depiction of the cross-section, refer to Appendix D. An entry of 'ADQ' indicates the existing facility is adequate and there are no improvements recommended as part of the CTP.
- **CTP Classification:** The CTP classification is listed, as shown on the adopted CTP Maps (see Figure 1). Abbreviations are F= freeway, E= expressway, B= boulevard, Maj= other major thoroughfare, Min= minor thoroughfare.

- **Tier:** Tiers are defined as part of the North Carolina Mulitmodal Investment Network (NCMIN). Abbreviations are Sta= statewide tier, Reg= regional tier, Sub= subregional tier.
- **Other Modes:** If there is an improvement recommended for another mode of transportation that relates to the given recommendation, it is indicated by an alphabetic code (H=highway, T= public transportation, R= rail, B= bicycle, and P= pedestrian).

Table 3 - ELKIN/JONESVILLE CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																			
					2010 Existing System						2040 Proposed System								
Local ID	**Facility**	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
	I-77	PAB (North) - Ebenezer Church Rd. (SR 1136)	Surry Co.	1.8	48	4D	360	65	91800	21000	29600	29600	91800	ADQ	ADQ	F	Sta	T
	I-77	Ebenezer Church Rd. (SR 1136) - CC Camp Rd. (SR 1138)	Surry Co.	0.5	48	4D	360	65	91800	21000	29600	29600	91800	ADQ	ADQ	F	Sta	T
	I-77	CC Camp Rd. (SR 1138) - US 21	Elkin	1.2	48	4D	360	65	61200	21000	29600	29600	61200	ADQ	ADQ	F	Sta	
	I-77 / US 21	US 21 - NC 268 Bus.	Elkin	0.8	48	4D	290	65	61200	32000	47100	47100	61200	ADQ	ADQ	F	Sta	T
	I-77 / US 21	NC 268 Bus. - Yadkin Co.	Elkin	0.1	48	4D	290	65	61200	32000	47100	47100	61200	ADQ	ADQ	F	Sta	T
	I-77 / US 21	Yadkin Co. - NC 67	Jonesville	0.8	48	4D	260	65	61200	32000	47100	47100	61200	ADQ	ADQ	F	Sta	T
	I-77 / US 21	NC 67 - Center Rd. (SR 1331)	Yadkin Co.	1.7	48	4D	260	65	61200	28000	43300	43300	61200	ADQ	ADQ	F	Sta	T
	I-77 / US 21	Center Rd. (SR 1331) - US 21	Yadkin Co.	1.2	48	4D	260	70	61200	28000	43300	43300	61200	ADQ	ADQ	F	Sta	T
	I-77 / US 21	US 21 Bus. - PAB (South)	Yadkin Co.	2.8	48	4D	310	70	61200	27000	40700	40700	61200	ADQ	ADQ	F	Sta	T
	US 21	PAB (North) - US 21 Bus.	Surry Co.	1.9	44	2	150	55	15300	8900	11900	11900	15300	ADQ	ADQ	Maj	Reg	B
	US 21	US 21 Bus. - Ebenezer Church Rd. (SR 1136)	Elkin	0.9	48	4	250	55	54000	10000	13800	13800	54000	ADQ	ADQ	B	Reg	
	US 21	Ebenezer Church Rd. (SR 1136) - CC Camp Rd. (SR 1138)	Elkin	0.5	48	4	250	55	54000	10000	13800	13800	54000	ADQ	ADQ	B	Reg	
	US 21	CC Camp Rd. (SR 1138) - I-77	Elkin	1.2	48	4	250	55	54000	10000	13800	13800	54000	ADQ	ADQ	E	Reg	T
	US 21 Bus. / Bridge St.	US 21 - Carter Mill Rd. (SR 1153)	Elkin	0.8	20-76	4	150	45	15300	6400	3900	3900	15300	ADQ	ADQ	Maj	Reg	B, P
	US 21 Bus. / Bridge St.	Carter Mill Rd. (SR 1153) - CC Camp Rd.. (SR 1138)	Elkin	0.8	22-64	4	60-150	45	35100	9100	10700	10700	35100	ADQ	ADQ	Maj	Reg	B, P
	US 21 Bus. / Bridge St.	CC Camp Rd. (SR 1138) - Claremont Dr. (SR 1195)	Elkin	0.4	23-40	2	60-150	35	35100	9800	10700	10700	35100	ADQ	ADQ	Maj	Reg	B, P
	US 21 Bus. / Bridge St.	Claremont Dr. (SR 1195) - NC 268 Bus.	Elkin	1.2	27-40	2,4	60	20,35	15800	9300	6100	6100	15800	ADQ	ADQ	Maj	Reg	P
	US 21 Bus. / Bridge St.	NC 268 Bus. - Elk Spur St (SR 1149)	Elkin	0.2	40	4	60	20	15800	6400	22200	22200	15800	ADQ	ADQ	Maj	Reg	
	US 21 Bus. / Bridge St.	Elk Spur St (SR 1149) - Yadkin Co.	Elkin	0.3	40-48	4	60	20	15800	11000	51000	51000	15800	ADQ	ADQ	Maj	Reg	B, P
	US 21 Bus. / N. Bridge/Main St.	Yadkin Co. - NC 67	Jonesville	0.3	44-64	2	60	25	35100	11000	51000	51000	35100	ADQ	ADQ	Maj	Reg	B
	US 21 Bus. / Bridge St.	NC 67 - Swan Creek Bypass (SR 1386)	Jonesville	0.7	20-64	2,4	60	20-35	15800	3600	1400	1400	15800	ADQ	ADQ	Min	Reg	

HIGHWAY																			
					2010 Existing System						2040 Proposed System								
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
	US 21 Bus. / Bridge St.	Swan Creek Bypass (SR 1386) - Center Rd. (SR 1331)	Jonesville	1.1	20	2	60	35	15300	3700	2600	2600	15300	ADQ	ADQ	Maj	Reg	B
	US 21 Bus. / Main St.	US 21 Bus. (Bridge/Main St.) - S. Swaim St. (SR 1300)	Jonesville	0.6	44-64	2	60	25	10600	11000	3400	3800	3800	ADQ	ADQ	Min	Reg	B
	US 21 Bus. / Main St.	S. Swaim St. (SR 1300) - US 21 Bus.	Jonesville	0.1	44-64	2	60	25	10600	11000	51000	51000	35100	ADQ	ADQ	Min	Reg	B
YADK0014-H	**US 21 Bus.**	Center Rd. (SR 1331) - Haynes Rd. (SR 1312)	Yadkin Co.	0.6	20	2	60	45	12300	3000	2200	2200	15300	2A	100	Maj	Reg	
YADK0014-H	**US 21 Bus.**	Haynes Rd. (SR 1312) - I-77/US	Yadkin Co.	1.4	20	2	60	45	15300	2800	3100	3100	15300	2A	100	Maj	Reg	B
YADK0014-H	**US 21 Bus.**	I-77/US 21 - PAB (South)	Yadkin Co.	3.1	20	2	100	55	15800	2800	3100	3100	15800	2A	100	Maj	Reg	
	NC 67	US 21 Bus. - Valley Dr. (SR	Jonesville	0.7	64	4	80	35	35100	7300	7700	7700	35100	ADQ	ADQ	Maj	Reg	B
	NC 67	Valley Dr. (SR 1403) - Fall Creek Church (SR 1352)	Jonesville	0.4	64	4	80	35	35100	10100	13000	13000	35100	ADQ	ADQ	Maj	Reg	
	NC 67	Fall Creek Church (SR 1352) - I-77/US 21	Jonesville	0.4	64	4	80	35	35100	10100	13000	13000	35100	ADQ	ADQ	Maj	Reg	P
YADK0013-H	**NC 67**	I-77/US 21 - Messick Rd. (SR	Jonesville	0.6	24-64	2,4	80	35,55	19700	15000	21000	21000	44800	150	4D	Maj	Reg	T, P
YADK0013-H	**NC 67**	Messick Rd. (SR 1355) - Deer Run Rd.	Jonesville	0.3	20-36	2	60-80	55	16600	10100	21000	21000	44800	150	4D	Maj	Reg	T, P
	NC 67	Deer Run Rd. - PAB (East)	Jonesville	2.9	20-36	2	60-80	55	16600	9300	13100	13100	44800	150	4D	Maj	Reg	T, P
	NC 268 / CC Camp Rd. (SR 1138)	NC 268 BUS (Wilkes Co.) - .6 miles west of US 21 Bus.	Elkin	0.9	24-48	2,4D	100-200	55	35100	6800	29000	29000	43500	ADQ	ADQ	Maj	Reg	B, P
SURR0020-H	**NC 268 / CC Camp Rd. (SR 1138)**	.6 miles west of US 21 Bus. - Johnson Ridge Rd. (SR 1144)	Elkin	1.3	48	5	200	55	35100	6800	42000	42000	49900	4A	200	Maj	Reg	
SURR0020-H	**NC 268 / CC Camp Rd. (SR 1138)**	Johnson Ridge Rd. (SR 1144) - US 21	Elkin	0.2	48	4	200	55	35100	6800	12700	12700	49900	4A	2000	Maj	Reg	P
SURR0020-H	**NC 268 / CC Camp Rd. (SR 1138)**	US 21 - I-77	Elkin	1.1	20-60	2,4	60-200	45,55	35100	13000	40200	40200	49900	4A	200	Maj	Reg	P
	NC 268 / CC Camp Rd. (SR 1138)	I-77 - Elkin Wildlife Rd. (SR 1142)	Elkin	0.4	24-60	2,4	100-120	45,55	35100	8100	17000	17000	35100	ADQ	ADQ	Maj	Reg	
	NC 268 / CC Camp Rd. (SR 1138)	Elkin Wildlife Rd. (SR 1142) - Ebenezer Church Rd. (SR 1136)	Elkin	0.1	22-24	2	100	55	35100	5300	3000	3000	35100	ADQ	ADQ	Maj	Reg	B

HIGHWAY																		
					2010 Existing System						2040 Proposed System							
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
	NC 268 / CC Camp Rd. (SR 1138)	Ebenezer Church Rd. (SR 1136) - Friendship Church Rd. (SR 1139)	Elkin	0.5	22	2	100	55	35100	4200	6300	6300	35100	ADQ	ADQ	Maj	Reg	B
	NC 268 / CC Camp Rd. (SR 1138)	Friendship Church Rd. (SR 1139) - NC 268 Bus.	Elkin	2.1	18-22	2	60-100	55	15300	2100	3600	3600	15300	ADQ	ADQ	Maj	Reg	
	NC 268 Bus.	PAB (west) - Memorial Park Dr.	Elkin	0.5	22	2	100	45	13800	2500	2500	2500	13800	ADQ	ADQ	Maj	Reg	B
	NC 268 Bus.	Memorial Park Dr. - Oakland Dr.	Elkin	0.2	22	2	100	45	13800	2500	2500	2500	13800	ADQ	ADQ	Maj	Reg	B
	NC 268 Bus.	Oakland Dr. - US 21 Bus.	Elkin	0.6	22-36	2	100	45	13800	1800	1800	1800	13800	ADQ	ADQ	Maj	Reg	B, P
	NC 268 Bus. / US 21 Bus.	US 21 Bus. - Elk Spur St (SR 1149)	Elkin	0.2	40	4	60	20	13800	800	800	800	13800	ADQ	ADQ	Maj	Reg	B, P
	NC 268 Bus.	Elk Spur St (SR 1149) - Johnson Ridge Rd. (SR 1144)	Elkin	1.5	20-40	2	60-120	20-45	13800	3200	3200	3200	13800	ADQ	ADQ	Maj	Reg	
	NC 268 Bus.	Johnson Ridge Rd. (SR 1144) - I-77/US 21	Elkin	0.2	18	2	60	35,45	13800	1200	1200	1200	13800	ADQ	ADQ	Maj	Reg	
	NC 268 Bus.	I-77/US 21 - Elkin Wildlife Rd. (SR 1142)	Elkin	0.4	18	2	60	45	13800	1200	1200	1200	13800	ADQ	ADQ	Maj	Reg	
	NC 268 Bus.	Elkin Wildlife Rd. (SR 1142) - Friendship Church Rd. (SR 1139)	Elkin	1.9	18	2	60	45	13800	660	660	660	13800	ADQ	ADQ	Maj	Reg	
	NC 268 Bus.	Friendship Church Rd. (SR 1139) - CC Camp Rd. (SR 1138)	Elkin	1.8	20-24	2	60	45	13800	1600	1600	1600	13800	ADQ	ADQ	Maj	Reg	B
	NC 268 Bus.	CC Camp Rd. (SR 1138) - PAB (East)	Elkin	0.2	18	2	60	55	16600	1600	1600	1600	16600	ADQ	ADQ	Maj	Reg	B
	Bethel Rd. (SR 1308)	Wilkes Co. - Swan Creek Rd. (SR 1300)	Jonesville	0.6	16	2	60	45	13800	1300	1600	1600	13800	ADQ	ADQ	Min	Sub	B
	Carter Mill Rd. (SR 1153)	Wilkes Co. - US 21 Bus.	Elkin	1.1	22-24	2	60	35,55	13800	1400	1000	1000	13800	ADQ	ADQ	Min	Sub	
	Cedar Brook Rd. (SR 1300)	Swan Creek Rd. (SR 1300) - Main St. (SR 1310)	Jonesville	0.5	24	2	120	35	10600	1200	1400	1400	10600	ADQ	ADQ	Min	Sub	
YADK0015-H	**Center Rd. (SR 1331)**	US 21 Bus. - Fall Creek Church Rd. (SR 1352)	Jonesville	0.9	18	2	60	55	13800	2900	3500	3500	15800	2A	100	Min	Sub	B
YADK0015-H	**Center Rd. (SR 1331)**	Fall Creek Church Rd. (SR 1352) - I-77/US 21	Jonesville	0.3	18	2	60	55	13800	2900	3500	3500	15800	2A	100	Min	Sub	B

HIGHWAY																			
					2010 Existing System						2040 Proposed System								
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
YADK0015-H	**Center Rd. (SR 1331)**	I-77/US 21 - Messick Rd. (SR 1355)	Jonesville	0.6	18	2	60	55	13800	2900	3500	3500	15800	2A	100	Min	Sub	B
YADK0015-H	**Center Rd. (SR 1331)**	Messick Rd. (SR 1355) - PAB (East)	Jonesville	2.0	18	2	60	55	13800	2900	3500	3500	15800	2A	100	Min	Sub	B
	Claremont Dr. (SR 1195)	US 21 Bus. - Johnson Ridge Rd. (SR 1144)	Elkin	0.7	24	2	60	35,45	13800	3000	2300	2300	13800	ADQ	ADQ	Min	Sub	P
	Ebenezer Church Rd. (SR 1136)	US 21 - I-77	Elkin	2.0	20	2	100	55	13800	140	50	50	13800	ADQ	ADQ	Min	Sub	
	Ebenezer Church Rd. (SR 1136)	I-77 - CC Camp Rd. (SR 1138)	Elkin	0.5	20	2	100	55	13800	340	500	500	13800	ADQ	ADQ	Min	Sub	
	Elk Spur St. (SR 1149)	NC 268 BUS (Wilkes Co.) - Masonic Dr.	Elkin	0.5	30-34	2	60	35	13800	1400	1800	1800	13800	ADQ	ADQ	Min	Sub	P
	Elk Spur St. (SR 1149)	Masonic Dr. - US 21 Bus.	Elkin	0.9	26-40	2,4	60	35	13800	1400	1800	1800	13800	ADQ	ADQ	Min	Sub	P
	Elkin Wildlife Rd. (SR 1142)	CC Camp Rd. (SR 1138) - NC 268 Bus.	Elkin	2.2	18-22	2	60	55	13800	1100	1500	1500	13800	ADQ	ADQ	Min	Sub	B
	Fall Creek Church Rd. (SR 1352)	NC 67 - Center Rd. (SR 1331)	Jonesville	1.8	18	2	60	35,55	13800	1100	1500	1500	13800	ADQ	ADQ	Min	Sub	
	Friendship Church Rd. (SR 1139)	CC Camp Rd. (SR 1138) - NC 268 Bus.	Elkin	1.1	22	2	60	55	13800	1000	1500	1500	13800	ADQ	ADQ	Min	Sub	B
	Front St.	W. Main St. - Standard St.	Elkin	0.2	36	2	100	35	10600	1000	1300	1300	10600	ADQ	ADQ	Min	Sub	
	N. Front St.	Market St. (SR 1149) - Standard St.	Elkin	0.1	24	2	120	35	10600	1000	1300	1300	10600	ADQ	ADQ	Min	Sub	
	Gwynn Ave.	US 21 Bus.North - Standard St.	Elkin	0.6	20	2	60	35	10600	1000	1800	1800	10600	ADQ	ADQ	Min	Sub	P
	Haynes Rd. (SR 1312)	Shaffner Rd. (SR 1311) - US 21 Bus.	Jonesville	0.9	20	2	60	55	13800	250	300	300	13800	ADQ	ADQ	Min	Sub	
	Hillcrest St.	E. Main St. - US 21 Bus.	Jonesville	0.4	18	2	60	20	9900	500	700	700	900	ADQ	ADQ	Min	Sub	

HIGHWAY																			
					2010 Existing System						2040 Proposed System								
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
	Howell School Rd. (SR 1313)	Swan Creek Rd. (SR 1300) - Shaffner Rd. (SR 1311)	Jonesville	1.4	20	2	60	55	14100	800	1000	1000	14100	ADQ	ADQ	Min	Sub	B
	Howell School Rd. (SR 1313)	Shaffner Rd. (SR 1311) - US 21 Bus.	Jonesville	1.2	20	2	60	55	14100	750	800	800	14100	ADQ	ADQ	Min	Sub	B
SURR0021-H	**Johnson Ridge Rd. (SR 1144)**	CC Camp Rd. (SR 1138) - Claremont Dr. (SR 1195)	Elkin	0.4	24	2	60	55	13800	8100	14100	14100	13800	3A	80	Min	Sub	T, P
SURR0021-H	**Johnson Ridge Rd. (SR 1144)**	Claremont Dr. (SR 1195) - Parkwood Dr.	Elkin	0.6	24	2	60	35	13800	1900	2600	2600	13800	3A	80	Min	Sub	T, P
	Johnson Ridge Rd. (SR 1144)	Parkwood Dr. - NC 268 Bus.	Elkin	1.1	24	2	60	35	13800	1900	2600	2600	13800	ADQ	ADQ	Min	Sub	P
	Little Mountain Rd. (SR 1350)	Center Rd. (SR 1331) - US 21 BUS	Jonesville	2.9	20	2	50	55	14100	1000	1200	1200	14100	ADQ	ADQ	Min	Sub	B
	E. Main St.	US 21 Bus. - Williams St.	Jonesville	0.1	18	2	60	20	9900	500	700	700	9900	ADQ	ADQ	Min	Sub	
	W. Main St.	N. Bridge St - Elk Spur St. (SR 1149)	Elkin	1.1	20	2	60	25	9900	900	1200	1200	9900	ADQ	ADQ	Min	Sub	
	Memorial Park Rd.	Market St. (SR 1146) -US 268 Bus.	Elkin	0.7	20	2	60	35	10600	900	1200	1200	10600	ADQ	ADQ	Min	Sub	
	Messick Rd. (SR 1355)	NC 67 - Center Rd. (SR 1331)	Jonesville	1.7	20	2	60	55	13800	1400	2400	2400	13800	ADQ	ADQ	Min	Sub	
	Mineral Springs Rd.	Pinnex St. - Cedarbrook Rd. (SR 1300)	Jonesville	0.8	20	2	60	25	9900	800	1000	1000	9900	ADQ	ADQ	Min	Sub	
	Mineral Springs Rd.	Cedarbrook Rd. (SR 1300) - Swan Creek Bypass (SR 1386)	Jonesville	0.3	20	2	60	25	9900	800	1000	1000	9900	ADQ	ADQ	Min	Sub	
	Oakland Dr.	US 21 Bus. - NC 268 Bus.	Elkin	1.1	20	2	60	35	10600	1000	1500	1500	10600	ADQ	ADQ	Min	Sub	B, P
	Pardue St.	US 21 Bus.North - US 21 Bus. South	Jonesville	0.8	18	2	50	20	9900	500	700	700	9900	ADQ	ADQ	Min	Sub	
	Pinnex St.	Mineral Springs St. - Mineral Springs St.	Jonesville	0.2	20	2	50	25	9900	800	900	900	9900	ADQ	ADQ	Min	Sub	

HIGHWAY																			
					2010 Existing System						2040 Proposed System								
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
	Poplar Springs Rd. (SR 1001)	US 21 Bus. - US 21	Elkin	0.2	22	2	60	55	14600	1000	1300	1300	14600	ADQ	ADQ	Min	Sub	
	Poplar Springs Rd. (SR 1001)	US 21 - PAB (North)	Elkin	3.6	22	2	60	55	14600	1000	1300	1300	14600	ADQ	ADQ	Min	Sub	
	Rena Rd. (SR 1303)	Swan Creek Rd. (SR 1300) - I-77	Jonesville	4.3	20	2	60	55	14100	270	400	400	14100	ADQ	ADQ	Min	Sub	
	Shaffner Rd. (SR 1311)	Swan Creek Rd. (SR 1300) - Haynes Rd. (SR 1312)	Jonesville	1.3	18-24	2	60	35,55	13800	530	700	700	13800	ADQ	ADQ	Min	Sub	
	S. Swaim St. (SR 1300)	Main St. (SR 1310) - Ceadar Brook St. (SR 1300)	Jonesville	0.1	20	2	120	25	10600	1200	1400	1400	10600	ADQ	ADQ	Min	Sub	
	Swan Creek Bypass (SR 1386)	Swan Creek Rd. (SR 1300) - Shaffner Rd. (SR 1311)	Jonesville	1.1	20	2	60	35,55	13800	2600	3400	3400	13800	ADQ	ADQ	Min	Sub	B
	Swan Creek Bypass (SR 1386)	Shaffner Rd. (SR 1311) - US 21 Bus.	Jonesville	0.4	20	2	60	35	10600	3300	3900	3900	10600	ADQ	ADQ	Min	Sub	B
	Swan Creek Rd. (SR 1300)	Main St - Bethel Rd. (SR 1308)	Jonesville	1.5	18-36	2	60	35-55	13800	2000	1700	1700	13800	ADQ	ADQ	Min	Sub	
	Swan Creek Rd. (SR 1300)	Bethel Rd. (SR 1308) - PAB (South)	Jonesville	4.6	18	2	60	45,55	13800	2100	2400	2400	13800	ADQ	ADQ	Min	Sub	B
	Standard St.	Main St. - Standard St.	Elkin	0.6	20	2	60	25	9900	1500	1700	1700	9900	ADQ	ADQ	Min	Sub	
	Williams St.	US 67 - E. Main St.	Jonesville	0.6	18	2	60	20	9900	500	700	700	900	ADQ	ADQ	Min	Sub	
	Valley Rd. (SR 1403)	US 21 Bus. - NC 67	Jonesville	1.0	24	2	120	35	10600	3700	5500	5500	10600	ADQ	ADQ	Min	Sub	B, M

PUBLIC TRANSPORTATION AND RAIL

PUBLIC TRANSPORTATION							
			Speed		Existing System	Proposed System	
Local ID	Facility/ Route	Section (From - To)	Limit (mph)	Distance (mi)	Type	Type	Other Modes
	Dobson-Elkin Circulator	Surry County PAB - Park and Ride Lot on Johnson Ridge Rd. (SR 1144)	Varies	4.53	---	Bus	H, P
	US 421 Express (Route 13)	CC Camp Rd. (SR 1138) / NC 268 - Elkin / Jonesville PAB (South)	Varies	8.64	---	Bus	H
	NC 67 Express	CC Camp Rd. (SR 1138) / NC 268 - Elkin / Jonesville PAB (East)	Varies	6.40	---	Bus	H, P

[1] *Only major public transportation routes and proposals are shown here. For further documentation of the public transportation system, refer to the Piedmont Authority for Regional Transportation (PART) 2010 Regional Transit Development Plan.*

RAIL												
				Speed		Existing System			Proposed System			
Local ID	Facility/ Route	Section (From - To)	Class	Limit (mph)	Distance (mi)	Type	ROW (ft)	Trains per day	Type	ROW (ft)	Trains per day	Other Modes
	Yadkin Valley Railroad	Elkin / Jonesville PAB (West) - Elkin / Jonesville PAB (East)	III	-	93	Freight	-	-	-	-	-	-

BICYCLE AND PEDESTRIAN [1]

BICYCLE								
				Existing System		Proposed System		
				Cross-Section				Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	(ft)	lanes	Type	Cross-Section	Modes
YADK0001-B	**US 21 Business**	Swan Creek Bypass (SR 1386) to Center Road (SR 1331)	1.15	-	-	Bicycle	2E	H
YADK0014-H	**US 21 Business**	Howell School Road (SR 1313) to Little Mountain Road (SR 1350)	1.13	-	-	Bicycle	2E	H
				-	-			
SURR0020-H	**NC 268 Bypass (CC Camp Road)**	US 21 Business to 0.6 miles west of US 21 Business	0.6	-	-	Bicycle	4E	H, P
SURR0001-B	**NC 268 Bypass (CC Camp Road)**	0.6 miles west of US 21 Business to NC 268 Business (Wilkes County)	1.3	-	-	Bicycle	5A	H, P
				-	-			
SURR0002-B	**NC 268 Business**	0.4 miles west of NC 268 Bypass (CC Camp Road) to Oakland Drive	1.4	-	-	Bicycle	2E	H
				-	-			
YADK0002-B	**NC 67**	US 21 Business to Valley Road (SR 1403)	1.05	-	-	Bicycle	5A	H, P
				-	-			
YADK0003-B	**Bethel Road (SR 1308)**	Wilkes County to Swan Creek Road (SR 1300)	0.6	-	-	Bicycle	2E	H
				-	-			
YADK0015-H	**Center Road (SR 1331)**	US 21 Business to Little Mountain Road (SR 1350)	3.75	-	-	Bicycle	2E	H
				-	-			
YADK0004-B	**Howell School Road (SR 1313)**	Swan Creek Road (SR 1300) to US 21 Business	2.6	-	-	Bicycle	2E	H
				-	-			
YADK0005-B	**Little Mountain Road (SR 1350)**	US 21 Business to Center Road (SR 1331)	2.9	-	-	Bicycle	2E	H
				-	-			
YADK0006-B	**Swan Creek Bypass (SR 1386)**	Swan Creek Road (SR 1300) to US 21 Business	1.5	-	-	Bicycle	2E	H
				-	-			
YADK0007-B	**Swan Creek Road (SR 1300)**	Bethel Road (SR 1308) to Howell School Road (SR 1313)	2	-	-	Bicycle	2E	H
				-	-			
YADK0008-B	**Valley Road (SR 1403)**	US 21 Business to NC 67	0.95	-	-	Bicycle	2E	H, P

PEDESTRIAN								
				Existing System		Proposed System		Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Type	Side of Street	Type	Side of Street	Modes
YADK0001-P	**NC 67**	Falls Creek Church Road (SR 1352) to .02 miles east of PVH Way	-	-	-	Sidewalk	Both	

[1] *Only major routes and proposals are shown here. For further documentation of bicycle and pedestrian facilities and proposals, refer to the 2007 Elkin Greenway Master Plan and the 2010 Jonesville Land Use Plan .*

Appendix D
Typical Cross Sections

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

The typical cross sections were updated on December 7, 2010 to support the Department's "Complete Streets[1]" policy that was adopted in July 2009. This guidance established design elements that emphasize safety, mobility, and accessibility for multiple modes of travel. These "typical" cross sections should be used as preliminary guidelines for comprehensive transportation planning, project planning and project design activities. The specific and final cross section details and right of way limits for projects will be established through the preparation of the National Environmental Policy Act[2] (NEPA) documentation and through final plan preparation.

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

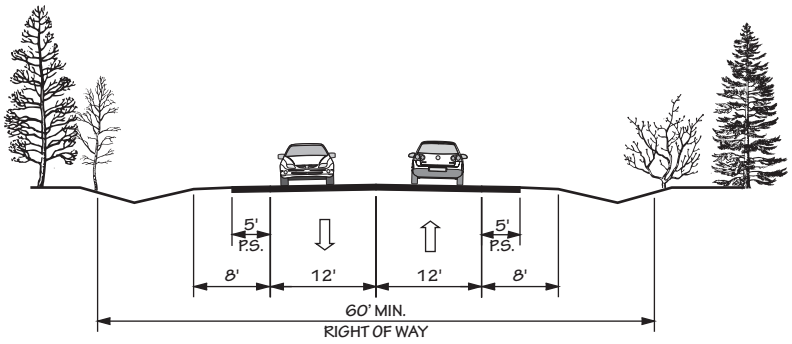
- roadways which may require widening after the current planning period,
- roadways which are borderline adequate and accelerated traffic growth could render them deficient,
- roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment,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

[1] *For more information on Complete Streets, go to: http://www.nccompletestreets.org/index.asp.*
[2] *For more information on NEPA, go to: http://ceq.hss.doe.gov/.*

FIGURE 11
TYPICAL HIGHWAY CROSS SECTIONS
2 LANES

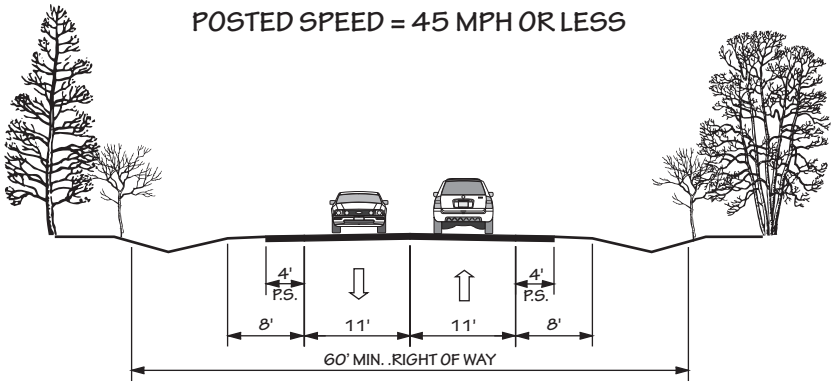
2 A

WIDE PAVED SHOULDERS
POSTED SPEED = 55 MPH



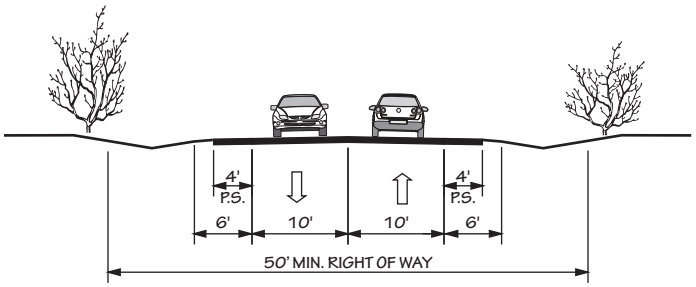
2 B

WIDE PAVED SHOULDERS
POSTED SPEED = 45 MPH OR LESS



2 C

WIDE PAVED SHOULDERS
POSTED SPEED = 35 MPH OR LESS



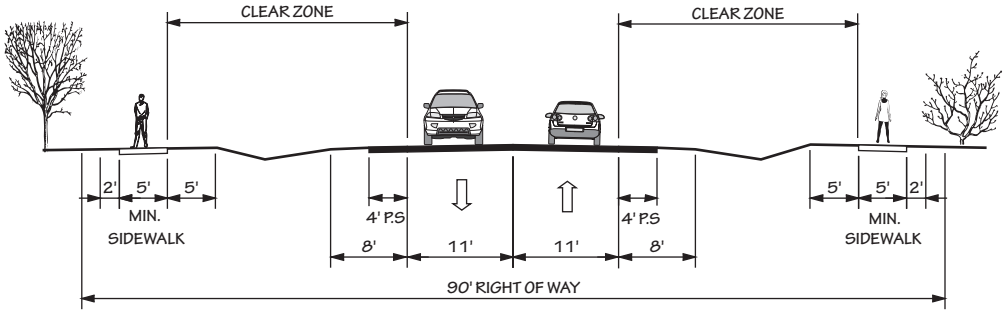
Revised 12/07/2010

TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

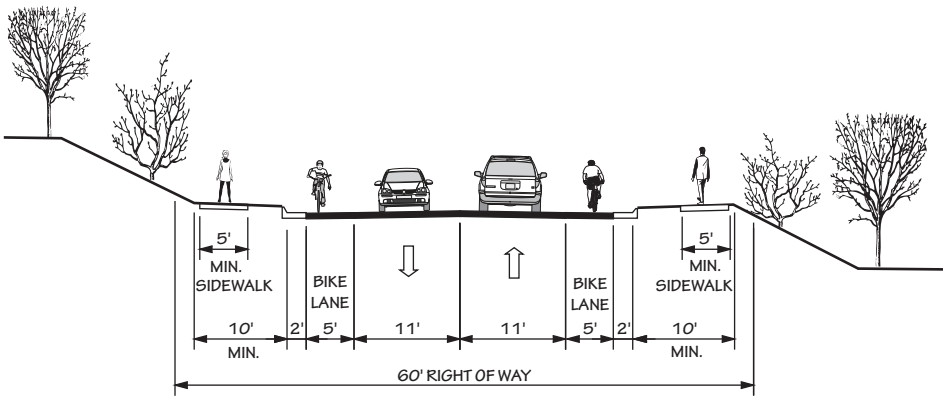
2 D

SIDEWALK PLACEMENT BEHIND A ROADWAY DITCH



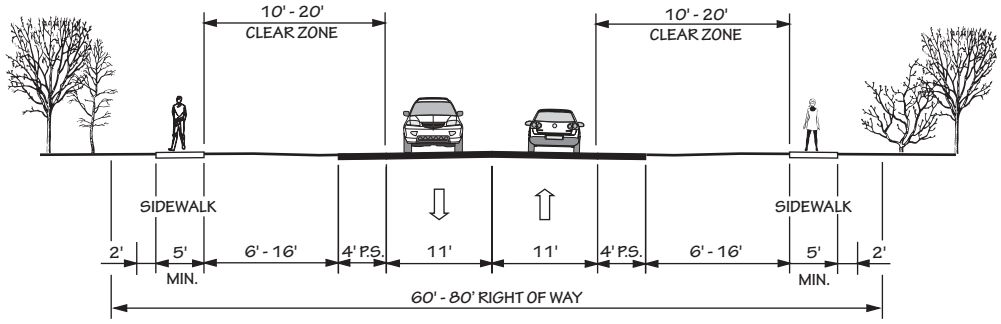
2 E

CURB AND GUTTER
WITH BIKE LANES AND SIDEWALKS



2 F

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



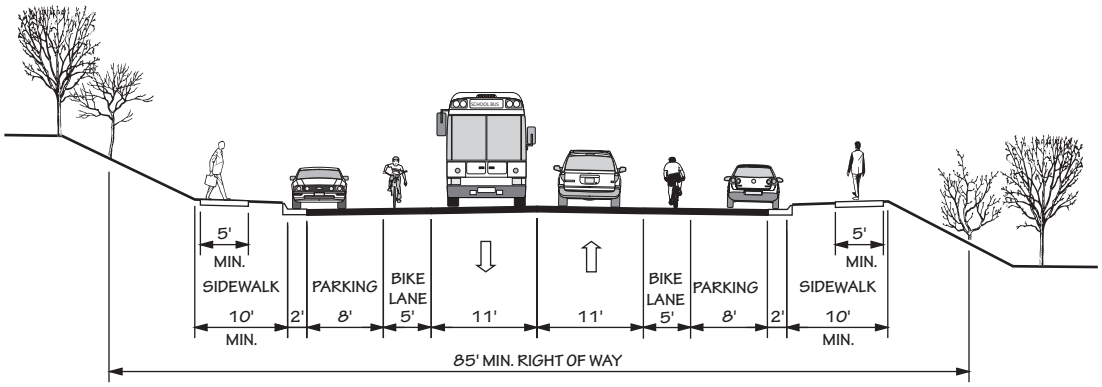
Revised 12/07/2010

TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

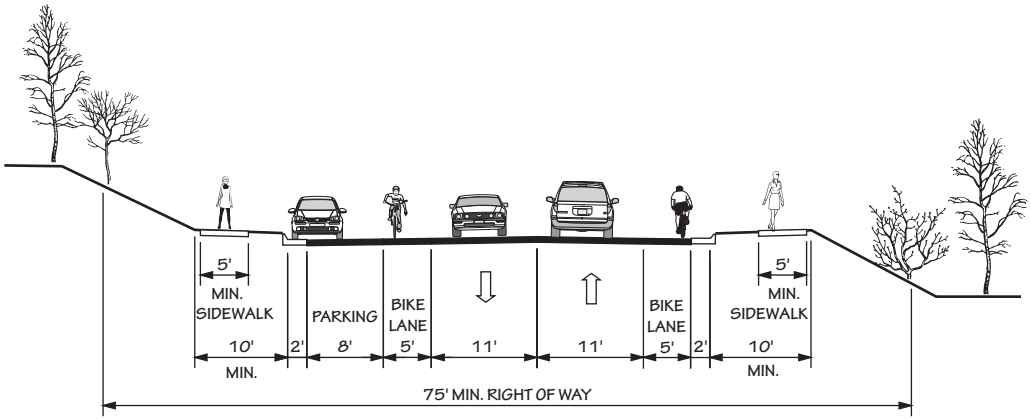
2 G

CURB & GUTTER - PARKING ON EACH SIDE



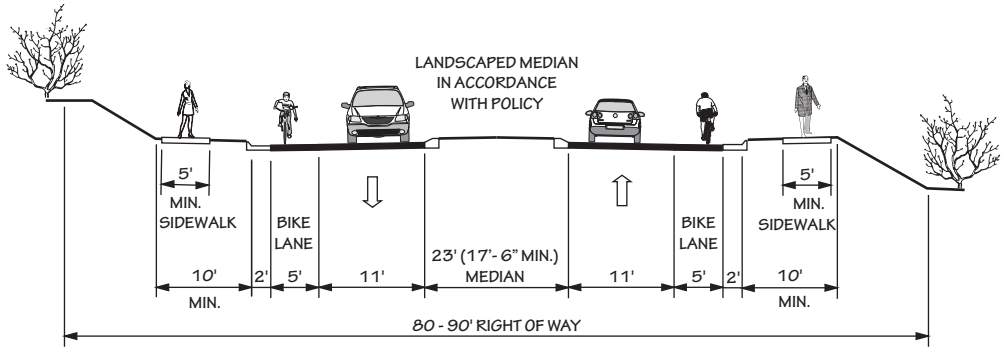
2 H

CURB & GUTTER - PARKING ON ONE SIDE



2 I

RAISED MEDIAN WITH CURB & GUTTER



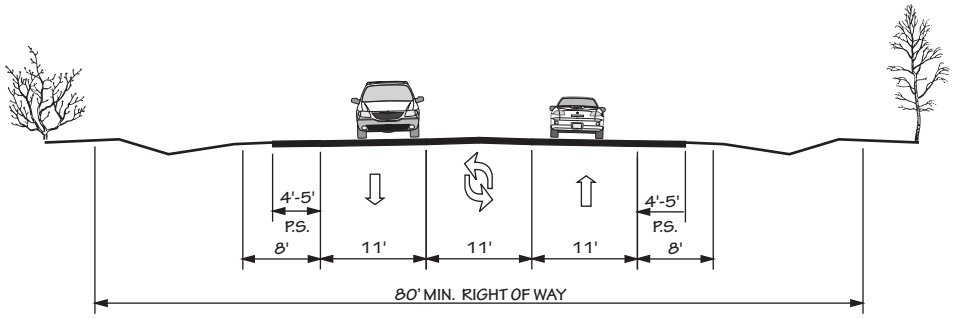
Revised 12/07/2010

TYPICAL HIGHWAY CROSS SECTIONS

3 LANES

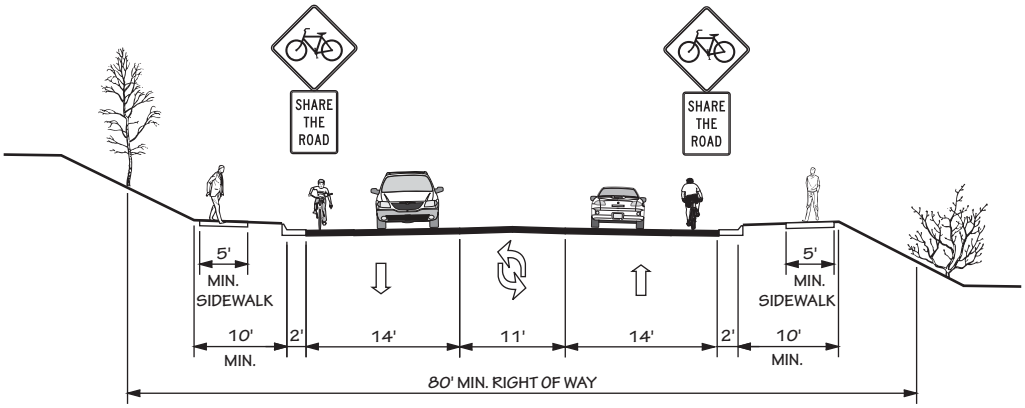
3 A

WIDE PAVED SHOULDERS



3 B

CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS



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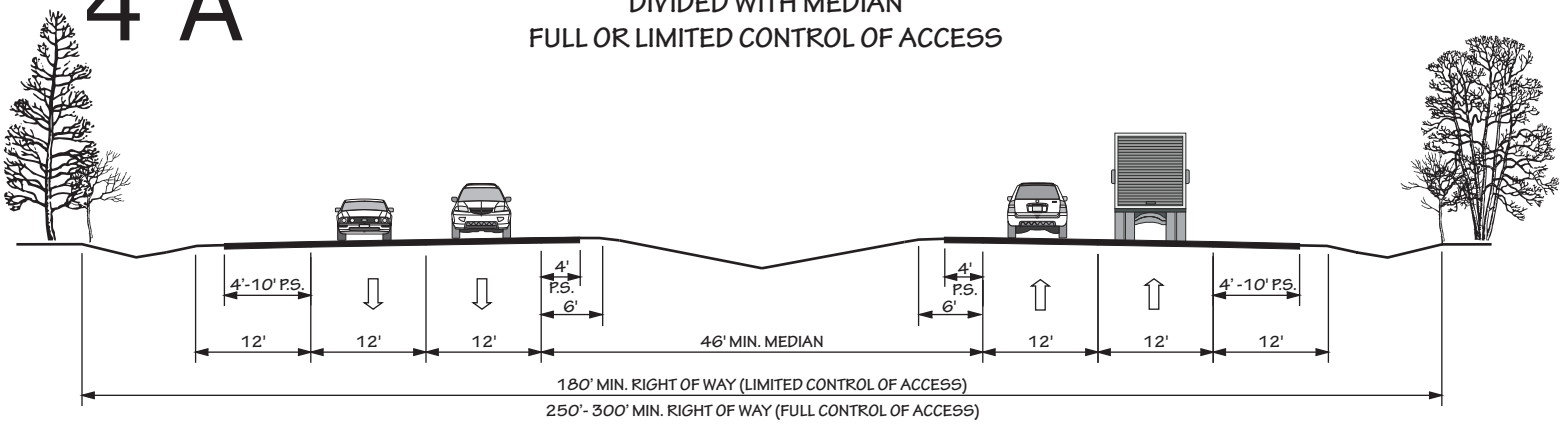
TYPICAL HIGHWAY CROSS SECTIONS

4 LANES

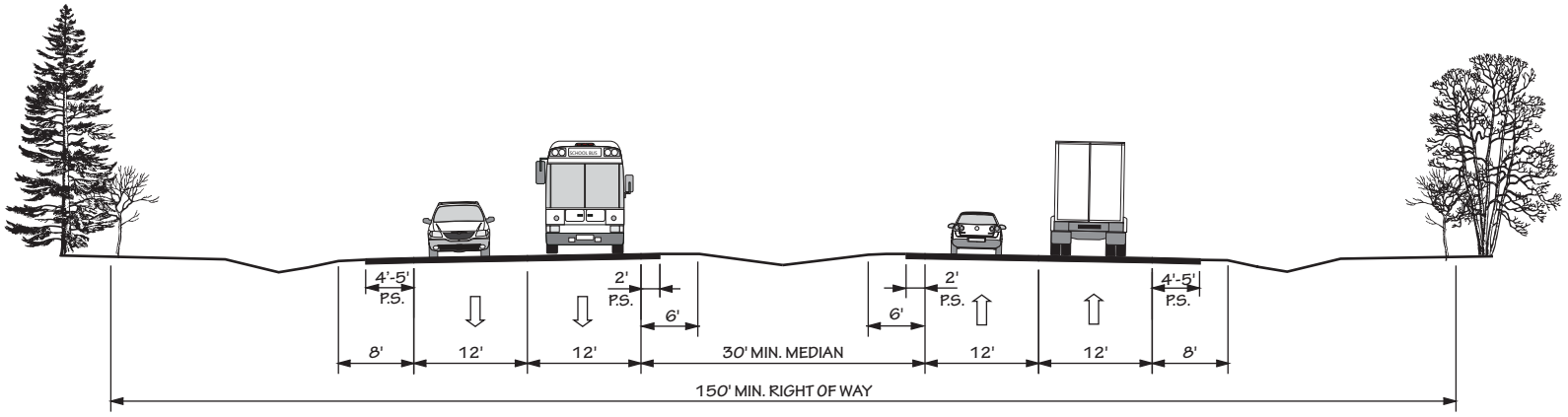
4 A

DIVIDED WITH MEDIAN
FULL OR LIMITED CONTROL OF ACCESS



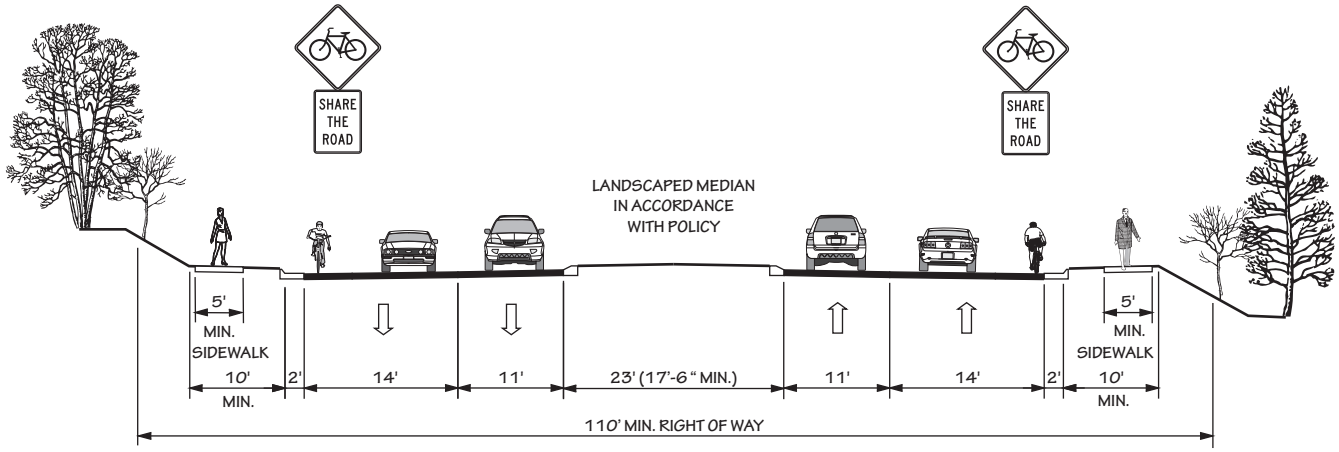
4 B

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



4 C

RAISED MEDIAN WITH WIDE OUTSIDE LANES AND SIDEWALKS



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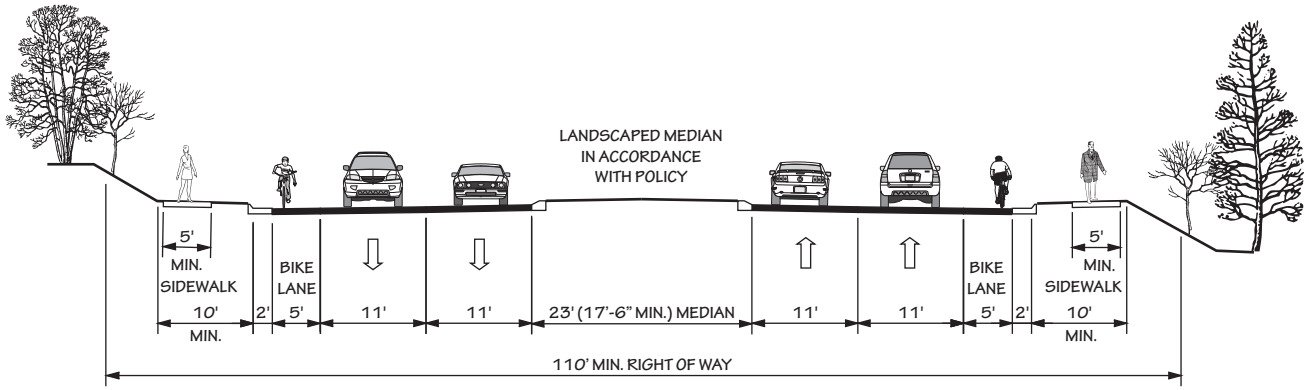
TYPICAL HIGHWAY CROSS SECTIONS

4 LANES

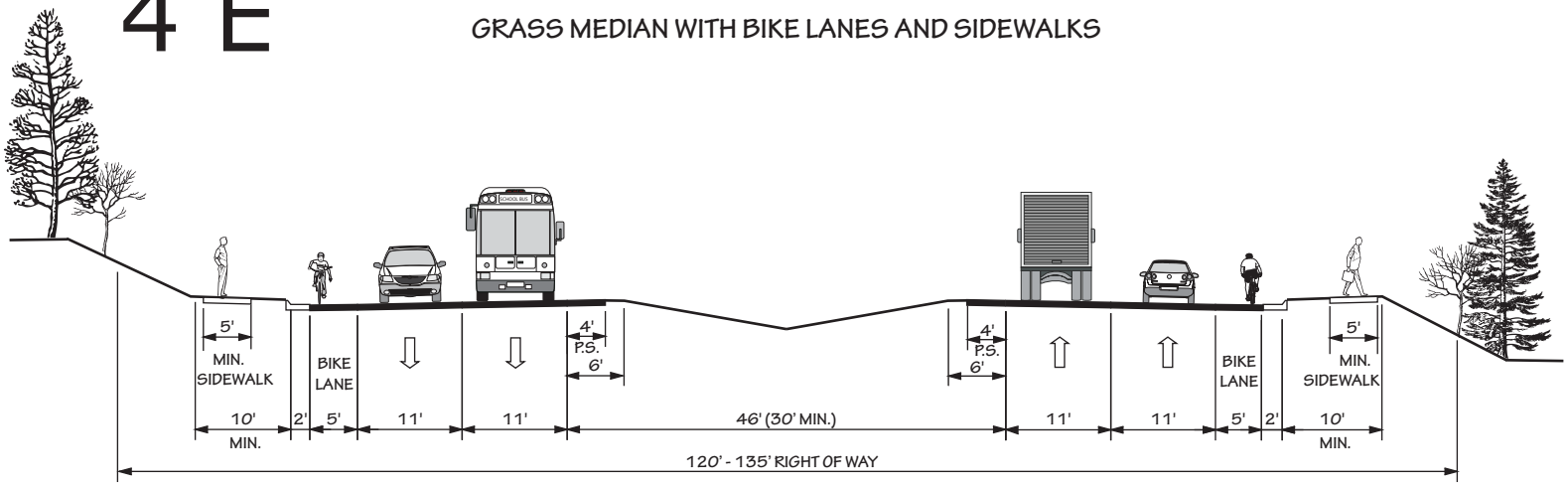
4 D

RAISED MEDIAN - CURB & GUTTER WITH BIKE LANES AND SIDEWALKS



4 E

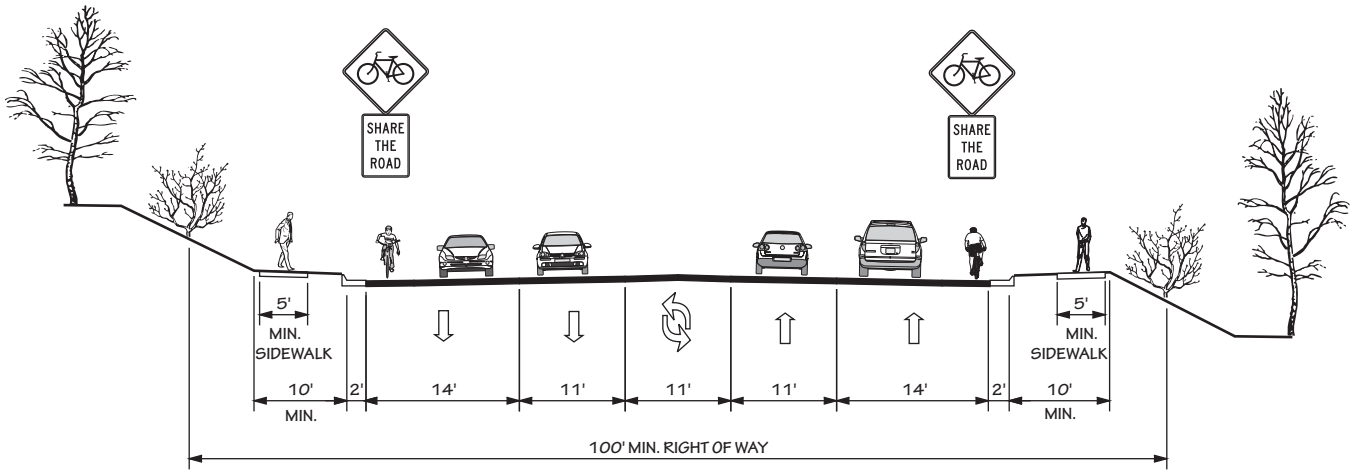
GRASS MEDIAN WITH BIKE LANES AND SIDEWALKS



5 LANES

5 A

WIDE OUTSIDE LANES



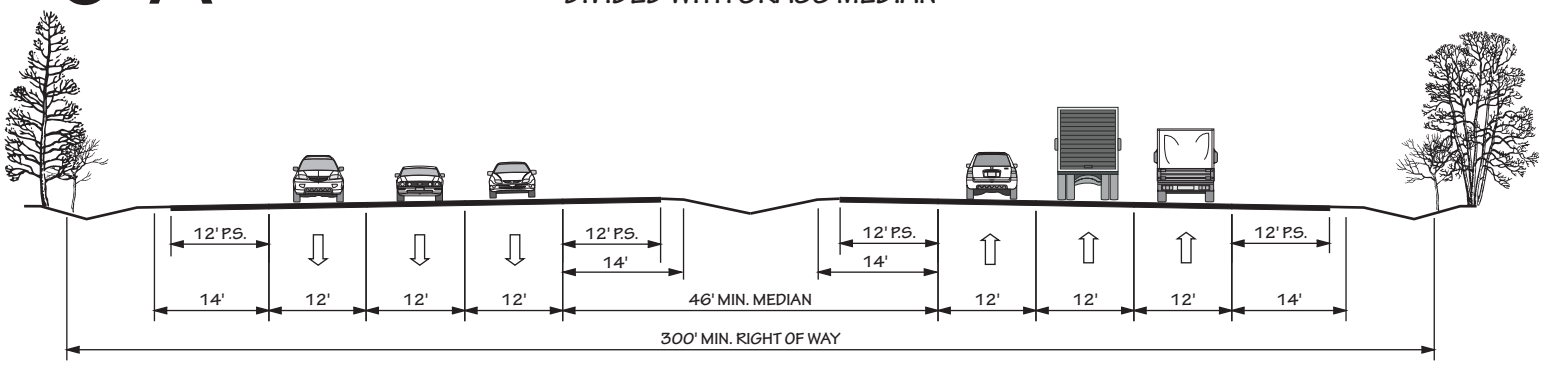
Revised 12/07/2010

TYPICAL HIGHWAY CROSS SECTIONS

6 LANES

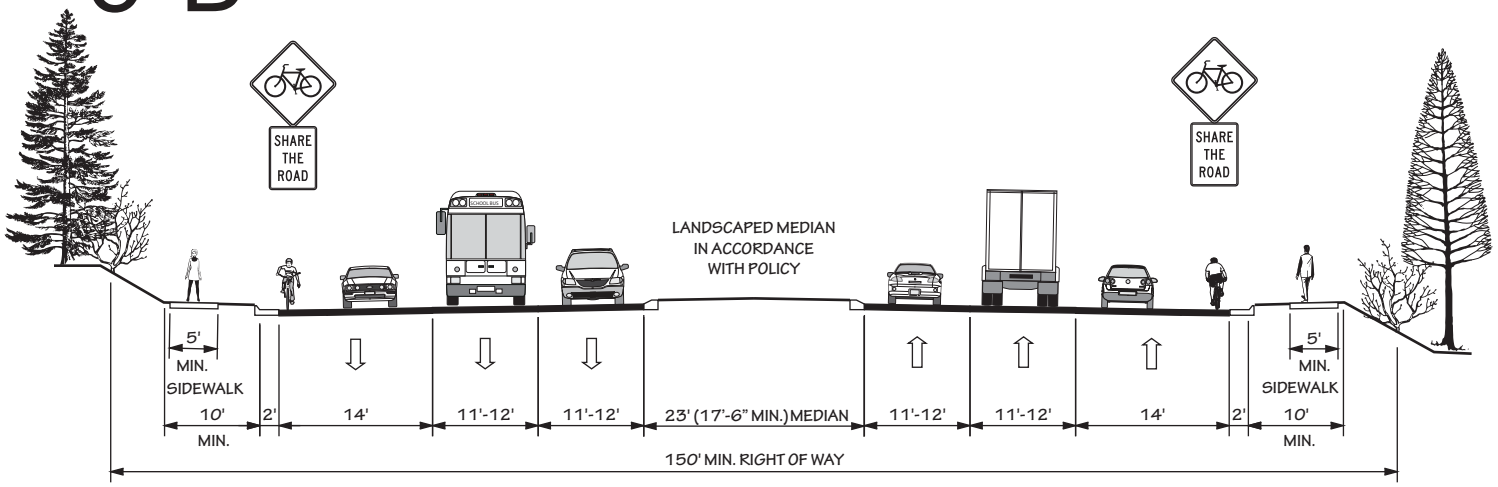
6 A

DIVIDED WITH GRASS MEDIAN



6 B

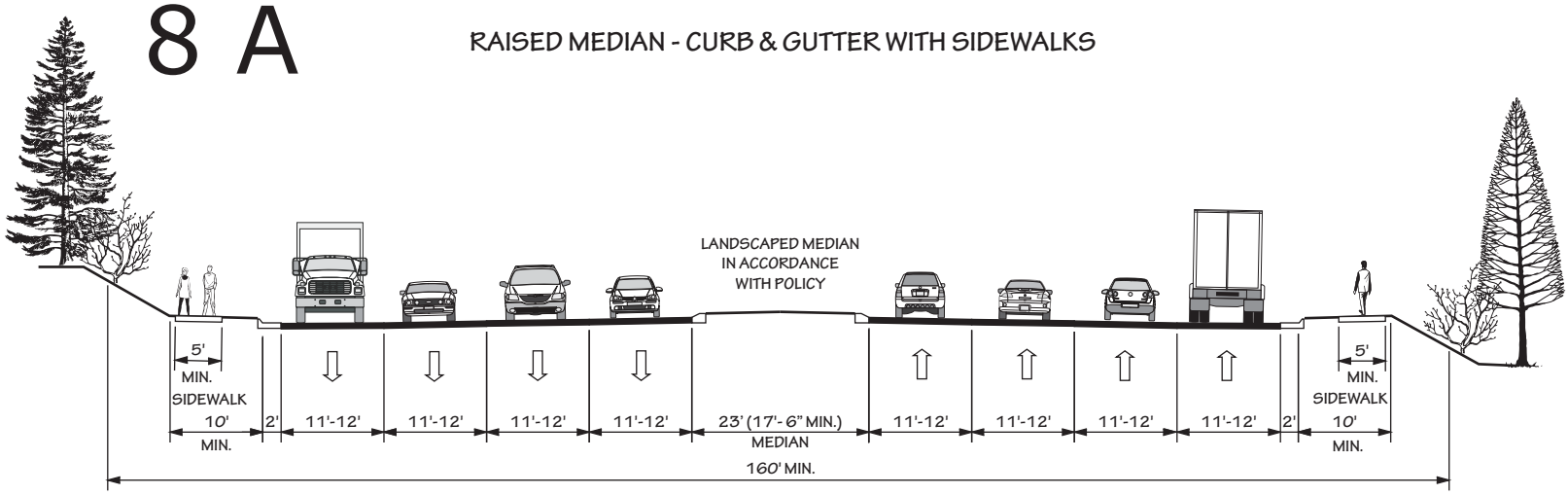
RAISED MEDIAN - CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS



8 LANES

8 A

RAISED MEDIAN - CURB & GUTTER WITH SIDEWALKS

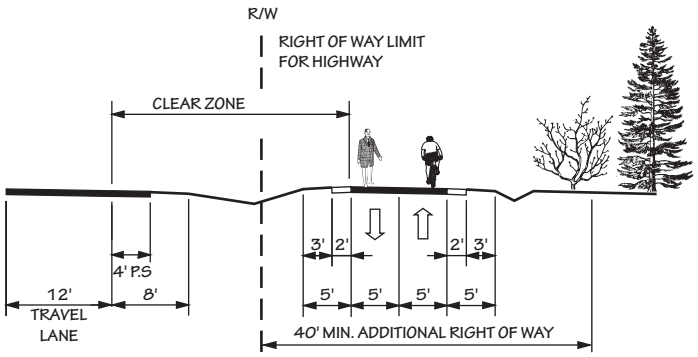


Revised 12/07/2010

TYPICAL MULTI - USE PATH

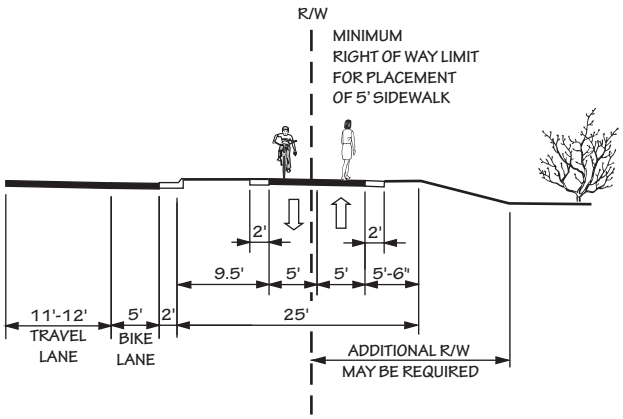
MULTI - USE PATH
ADJACENT TO RIGHT OF WAY OR SEPARATE PATHWAY

M A



MULTI - USE PATH ADJACENT TO CURB AND GUTTER

M B



Revised 12/07/2010

Appendix E
Level of Service Definitions

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

Design requirements for roadways vary according to the desired capacity and level of service. LOS D indicates "practical capacity" of a roadway, or the capacity at which the public begins to express dissatisfaction. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C on new facilities. The six levels of service are described below and illustrated in Figure 12.

- **LOS A**: Describes primarily free flow conditions. The motorist experiences a high level of physical and psychological comfort. The effects of minor incidents of breakdown are easily absorbed. Even at the maximum density, the average spacing between vehicles is about 528 ft, or 26 car lengths.

- **LOS B**: Represents reasonably free flow conditions. The ability to maneuver within the traffic stream is only slightly restricted. The lowest average spacing between vehicles is about 330 ft, or 18 car lengths.

- **LOS C**: Provides for stable operations, but flows approach the range in which small increases will cause substantial deterioration in service. Freedom to maneuver is noticeably restricted. Minor incidents may still be absorbed, but the local decline in service will be great. Queues may be expected to form behind any significant blockage. Minimum average spacing is in the range of 220 ft, or 11 car lengths.

- **LOS D**: Borders on unstable flow. Density begins to deteriorate somewhat more quickly with increasing flow. Small increases in flow can cause substantial deterioration in service. Freedom to maneuver is severely limited, and the driver experiences drastically reduced comfort levels. Minor incidents can be expected to create substantial queuing. At the limit, vehicles are spaced at about 165 ft, or 9 car lengths.

- **LOS E**: Describes operation at capacity. Operations at this level are extremely unstable, because there are virtually no usable gaps in the traffic stream. Any disruption to the traffic stream, such as a vehicle entering from a ramp, or changing lanes, requires the following vehicles to give way to admit the vehicle. This can establish a disruption wave that propagates through the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate any disruption. Any incident can be expected to produce a serious breakdown with extensive queuing. Vehicles are spaced at approximately 6 car lengths, leaving little room to maneuver.

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

Figure 12 - Level of Service Illustrations

Level of Service A

Driver Comfort: High

Maximum Density:

12 passenger cars per mile per lane

Level of Service B

Driver Comfort: High

Maximum Density:

20 passenger cars per mile per lane

Level of Service C

Driver Comfort: Some Tension

Maximum Density:

30 passenger cars per mile per lane

Level of Service D

Driver Comfort: Poor

Maximum Density:

42 passenger cars per mile per lane

Level of Service E

Driver Comfort: Extremely Poor

Maximum Density:

67 passenger cars per mile per lane

Level of Service F

Driver Comfort: The lowest

Maximum Density:

More than 67 passenger cars per mile per lane

Source: 2000 Highway Capacity Manual

Appendix F
Traffic Crash Analysis

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

The severity of every crash is measured with a series of weighting factors developed by the NCDOT Division of Highways (DOH). These factors define a fatal or incapacitating crash as 76.8 times more severe than one involving only property damage and a crash resulting in minor injury is 8.4 times more severe than one with only property damage. In general, a higher severity index indicates more severe accidents. Listed below are levels of severity for various severity index ranges.

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

Table 4 depicts a summary of the crashes occurring in the planning area between January 1, 2007 and December 31, 2009. The data represents locations with 10 or more crashes and/or a severity average greater than that of the state's 4.56 index. The "Total" column indicates the total number of crashes reported within 150-ft of the intersection during the study period. The severity listed is the average crash severity for that location.

Table 4 - Crash Locations

Map Index	Intersection	Average Severity	Total Collisions
1	Bridge St and Main St	2.48	10
2	Bridge St and Standard Dr	1.74	10
3	US 21 and NC 268 (CC Camp Rd)	2.35	11
4	I-77 and NC 67	6.2	16
5	NC 268 Business and Bridge St	4.03	22

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

Appendix G
Bridge Deficiency Assessment

The 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 5. For more details on deficient bridges within the planning area, contact the Structures Management Unit using the information in Appendix A.

Table 5 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	Local ID
6	I-77 North	Yadkin River	SD	
13	I-77 South	Yadkin River	FO	
21	US 21Business	Yadkin River	FO	
29	US 21Business	I-77	SD	YADK0014-H
59	US 21Business	Jonesville Creek	FO	B-4979
107	SR 1331	I-77	FO	YADK0015-H
114	I-77 North	NC 67	FO	
115	I-77 South	NC 67	FO	
338	SR 1190	Yadkin River (closed)	SD	B-4820
387	SR 1149	Elkin Creek	SO	

Appendix H
Public Involvement

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

List of CTP Steering Committee Members

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

- George Crater – Elkin Planning Director
- Lloyd William Payne, Jr. – Elkin Town Manager
- Scott Buffkin – Jonesville Town Manager
- Marc Allred – Northwest Piedmont Rural Planning Organization Coordinator

CTP Vision, Goals, Objectives and MOEs

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

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

Vision:
To provide an efficient transportation system throughout Elkin/Jonesville without regards to jurisdictional boundaries to ensure continued and enhanced quality of life through safe and sufficient transportation.

Goals:
1. Insure the integrity of the existing transportation system by encouraging planned and strategic development.

2. Encourage right of way preservation to ensure expansion of the existing system and future roadway projects.
3. Coordinate transportation and improvement needs between multiple jurisdictions.
4. Provide means to identifying and prioritizing transportation system needs on a local and regional scale.
5. Enhance and expand services for alternative modes of transportation including but not limited to transit, walking and bicycling through increased funding and cooperative regional planning.
6. Acknowledge ways to improve safety and congestion as well as programs to educate the public on traffic safety.
7. Recognize a sustainable transportation infrastructure linking the planning area with surrounding metropolitan areas including Greensboro, Winston Salem, and other areas.
8. Educate the public on general transportation issues as well as alternative forms of transportation.

Goals and Objectives Survey

A G&O survey is a public involvement technique used to help identify an area's perception of transportation-related issues, identify concerns that should be addressed during the development of a CTP, and to help develop a vision for the community. The G&O survey is most appropriately implemented at the beginning of the transportation planning study. In addition to determining up front what is important to the citizens of the planning area, initiating the G&O survey early in the planning process allows the survey to serve as an introduction to the transportation planning process. The survey usually includes a brief introduction explaining what a transportation plan is and how the area can benefit from having one. The survey also includes a wide variety of questions that is tailored to each area as appropriate. A summary of the Elkin/Jonesville G & O survey is given below.

Transportation Goals and Objectives

1. How important are the following transportation goals?

	Not Important	*Important*	Very Important	Response Count
Increase Public Transportation Options	31.5% (46)	34.2% (50)	34.2% (50)	146
Congested Areas	32.9% (48)	42.5% (62)	24.7% (36)	146
Preserve Community and Rural Character	8.2% (12)	45.9% (67)	45.9% (67)	146
Protect the Environment	4.9% (7)	38.9% (56)	56.3% (81)	144
Support Economic Growth	0.7% (1)	36.6% (53)	62.8% (91)	145
Improve Services for Special Needs	6.2% (9)	55.9% (81)	37.9% (55)	145
Increased Transportation Mode Choices. *(More and/or safer opportunities to bike or walk to destinations instead of driving)*	12.9% (19)	40.8% (60)	46.3% (68)	147

2. Please select which of the following methods you agree with, for increasing a road's efficiency:

	Agree	Disagree	Response Count
Building additional travel lanes	62.0% (88)	38.0% (54)	142
Making improvements to intersection such as better traffic signal timing, adding guard rails, creating roundabouts	89.7% (130)	10.3% (15)	145
Controlling the frequency and locations of driveways and cross streets that access the road	69.1% (96)	30.9% (43)	139

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

Yes	55.0% (82)
No	45.0% (67)

4. Is truck traffic a problem in the area?

Yes	24.5% (37)
No	75.5% (114)

5. When traveling in your area, do you find that you often have to go out of your way to get to your destination because: A direct route does not exist?

Yes	26.2% (39)
No	73.8% (1)

6. When traveling in your area, do you find that you often have to go out of your way to get to your destination because: The most direct route is too congested?

Yes	27.7% (39)
No	72.3% (102)

7. Would you use off-road trails or greenways for walking or bicycling?

Yes	76.0% (111)
No	34.0% (35)

8. The Town of Elkin already has designated bike routes that are along roads. Do you think any of these routes need bike lanes?

Yes	65.6% (86)
No	34.4% (45)

9. Does the Town of Jonesville need designated bike lanes? If yes, where?

Yes	60.2% (71)
No	39.8% (47)

10. Would you use park-and-ride lots*? (A park-and-ride lot is a parking area where you can leave your car and take public transportation or carpool to your destination.)*

Yes	70.1% (89)
No	29.9% (38)

11. *Please answer 'yes' or 'no' if you would use each service listed below*

	Yes	No
Bus Service to the Triangle (Raleigh)	30.0% (39)	70.0% (91)
Bus Service to the Winston-Salem	55.3% (78)	44.7% (63)
Bus Service to the Greensboro	38.3% (49)	61.7% (79)
Bus Service to the Charlotte	42.5% (57)	57.5% (77)

12. Would you use Bus Service to another location?

Yes	11.2% (11)
No	88.8% (87)

13. What is your Zip Code?

	Response
28621	66.0% (95)
28642	27.1% (39)
28646	3.5% (5)
Other	% (5)

Public Meetings

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

Public Workshop #1 at the Elkin Town Hall:

The first public workshop took place at the Elkin Town Hall on February 14, 2011 from 5:00-7:00 pm. This workshop introduced the CTP process to the town board and the public, as well as what could be expected of the final plan. The Draft CTP highway map and deficiency maps were presented. Seven town board members and an additional fifteen citizens were in attendance. They were given the opportunity to look through the recommendations and give additional feedback if anything needed to be added, removed, or changed. There were no comments submitted during this workshop.

Public Workshop #2 at the Elkin Town Hall:

The second public workshop took place at the Elkin Town Hall on April 21, 2011 from 4:00-6:00 pm. This workshop introduced the CTP process as well as what could be expected of the final plan. The Draft CTP maps and deficiency maps were presented. Twelve citizens were in attendance. They were given the opportunity to look through the recommendations and give additional feedback if anything needed to be added, removed, or changed. There were several comments received during the workshop

that were all centered on the Hugh Chatham Bridge. The Hugh Chatham Bridge replacement project is an active TIP project (B-4820). All questions concerning this project should be directed to NCDOT's Project Development and Environmental Analysis Branch. Refer to Appendix A for contact information.

Public Workshop #3 at the Jonesville Town Hall:

The third public workshop took place at the Jonesville Town Hall on November 14, 2011 from 4:30-6:30 pm. This workshop introduced the CTP process as well as what could be expected of the final plan. The Draft CTP maps and deficiency maps were presented. Approximately twenty citizens were in attendance. They were given the opportunity to look through the recommendations and give additional feedback if anything needed to be added, removed, or changed. There were several comments received during the workshop that were all centered on the Hugh Chatham Bridge. The Hugh Chatham Bridge replacement project is an active TIP project (B-4820). All questions concerning this project should be directed to NCDOT's Project Development and Environmental Analysis Branch. Refer to Appendix A for contact information.

Public Hearings:

Public hearings were held on January 9, 2012 during the Elkin Board of Commissioners meeting and the Jonesville Town Council meeting. The purpose of the meetings was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted by Elkin during the meeting. Jonesville adopted the CTP during its meeting on February 13, 2012.

The Northwest Piedmont RPO endorsed the CTP on February 15, 2012. The North Carolina Department of Transportation mutually adopted the Elkin/Jonesville CTP on April 5, 2012.