



Comprehensive Transportation Plan



Ashe County
November 2010

Comprehensive Transportation Plan

Ashe County

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In Cooperation with:

Ashe County
Town of Jefferson
Town of West Jefferson
Town of Lansing
High Country Rural Planning Organization

November 2010

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Executive Summary

In December of 2008, the Transportation Planning Branch of the North Carolina Department of Transportation, the High Country Rural Planning Organization, and Ashe County initiated a study to cooperatively develop the Ashe County Comprehensive Transportation Plan (CTP), which includes the Town of Jefferson, the Town of West Jefferson, and the Town of Lansing. This is a long range multi-modal transportation plan that covers transportation needs through 2035. Modes of transportation evaluated as part of this plan include: highway, public transportation and rail, bicycle, and pedestrian. This plan does not cover standard bridge replacements, 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. Refer to Figure 1 for the CTP maps, which were mutually adopted in 2010. Implementation of the plan is the responsibility of Ashe County, Town of Jefferson, Town of West Jefferson, Town of Lansing, and NCDOT. Refer to Chapter 1 for information on the implementation process.

This report documents the recommendations for improvements that are included in the Ashe County CTP. The major recommendations for improvements are listed below. More detailed information about these and other recommendations can be found in Chapter 1.

- **US 221 (R-2915):** Widen to four lanes from the Watauga County line to US 221 Bus in Jefferson.
- **US 221 (ASHE0001-H):** Widen to include a median and turn lanes from US 221 Bus in Jefferson to NC 16-88. Access management measures and the signalization of the intersection with NC 16-88 are also recommended.
- **NC 16 Connector (ASHE0003-H):** This is a proposed two-lane facility north of US 221 connecting NC 16 with NC 88 west of Jefferson. It is recommended to tie into NC 88 across from the proposed NC 194 Bypass.
- **NC 194 Bypass (FS-0111B):** This is a proposed new facility extending Mount Jefferson Road (SR-1149) from US 221 Bus to NC 88. It is recommended as a four-lane, partial control access facility and will connect with the proposed NC 16 Connector at NC 88.

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I. Recommendations

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

This report documents the development of the Ashe County CTP as shown in Figure 1. This chapter presents recommendations for each mode of transportation. Refer to Appendix I for documentation of project alternatives and scenarios that were studied, but are not included in the adopted CTP.

Following are problems statements for each recommendation, organized by CTP modal element.

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 Comprehensive Transportation Plan should be consistent with the other elements.

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

Adopted by:
Ashe County
 Date: February 15, 2010

Town of Jefferson
 Date: February 22, 2010

Town of West Jefferson
 Date: March 1, 2010

Town of Lansing
 Date: March 8, 2010

NCDOT
 Date: May 6, 2010

Endorsed by:
High Country RPO
 Date: March 17, 2010

Recommended by:
Transportation Planning Branch
 Date: April 5, 2010

NOTES:

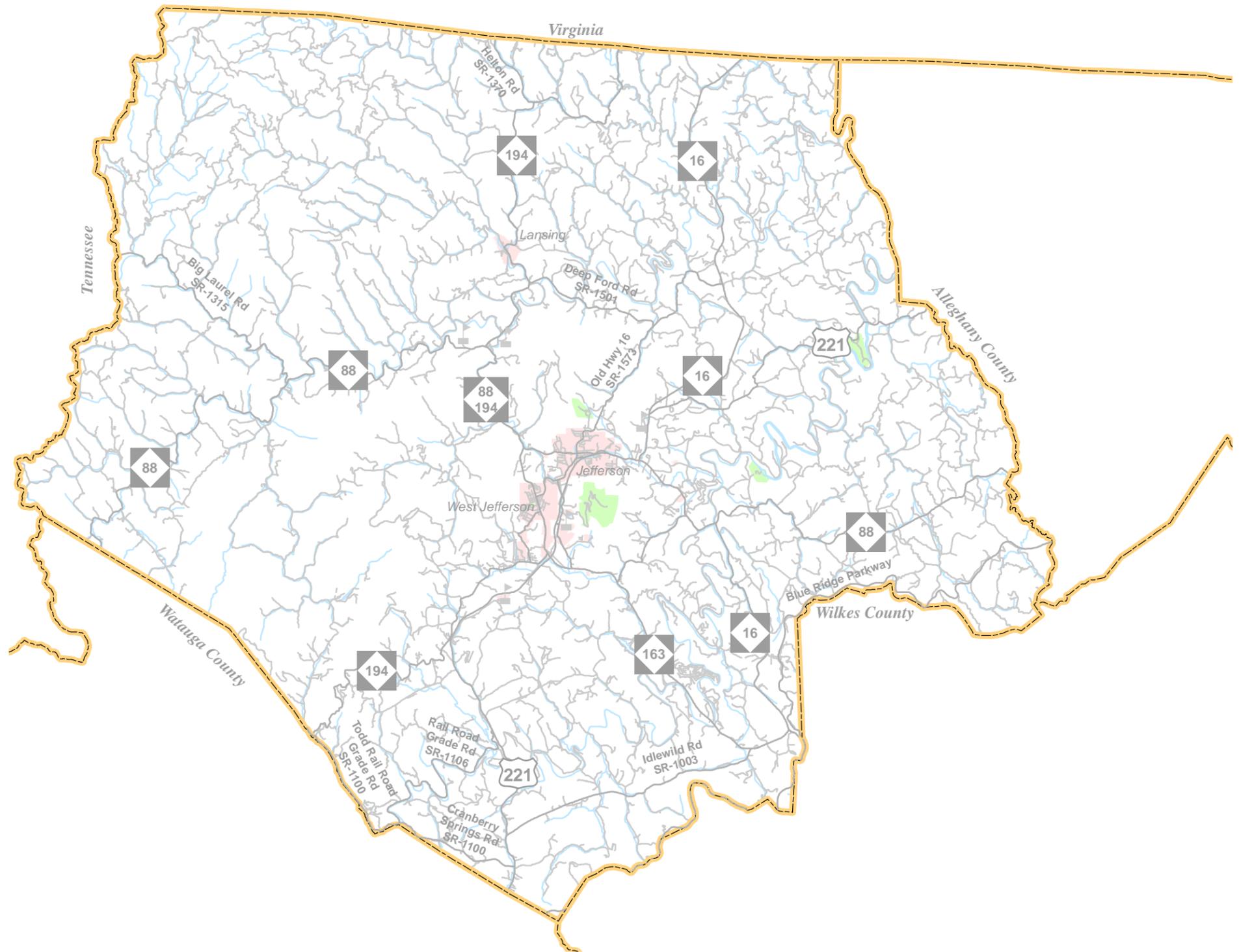


Figure 1 Sheet 1 of 5

Base map date: January 20, 2009

Refer to CTP document for more details

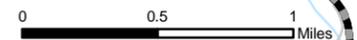
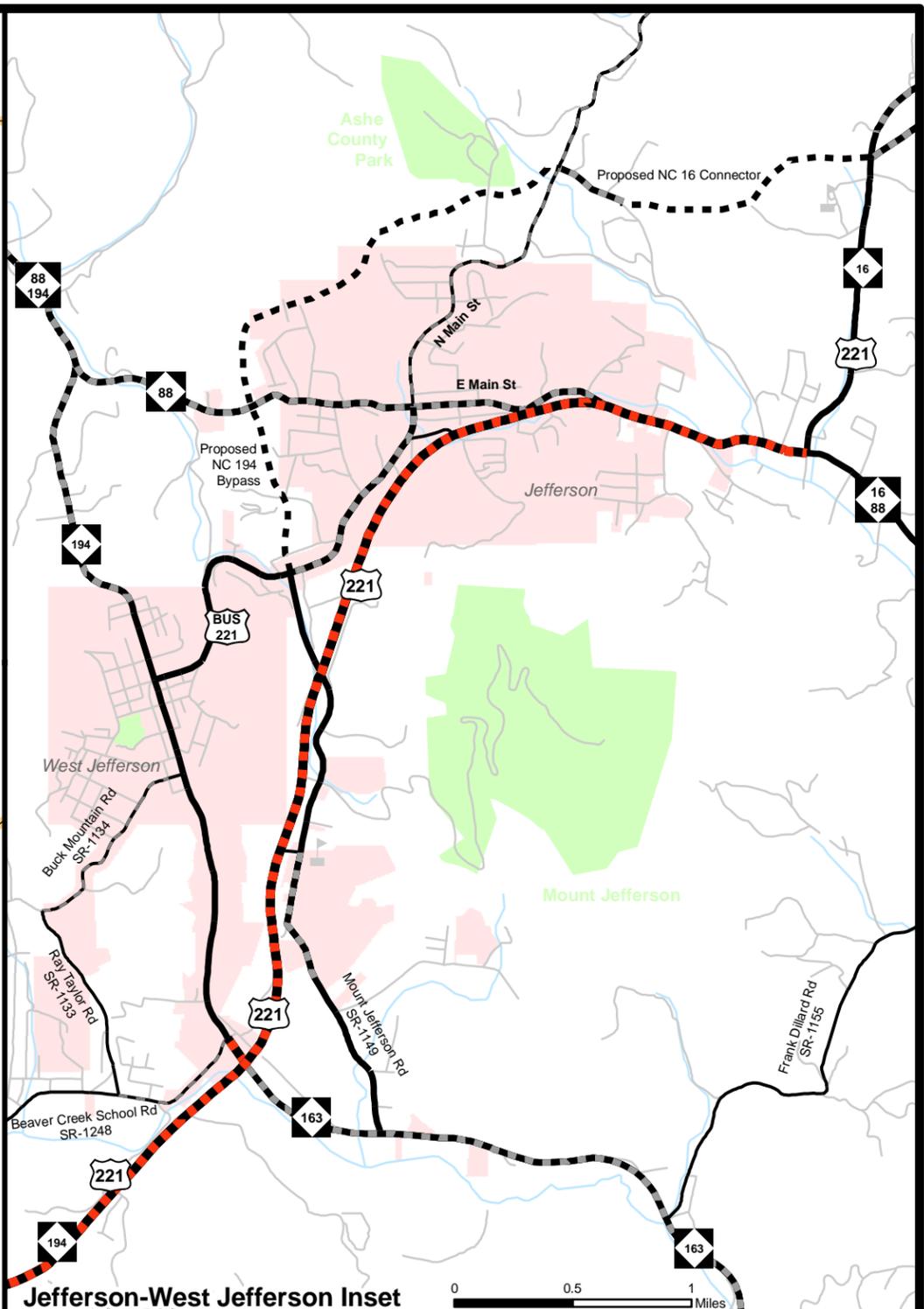
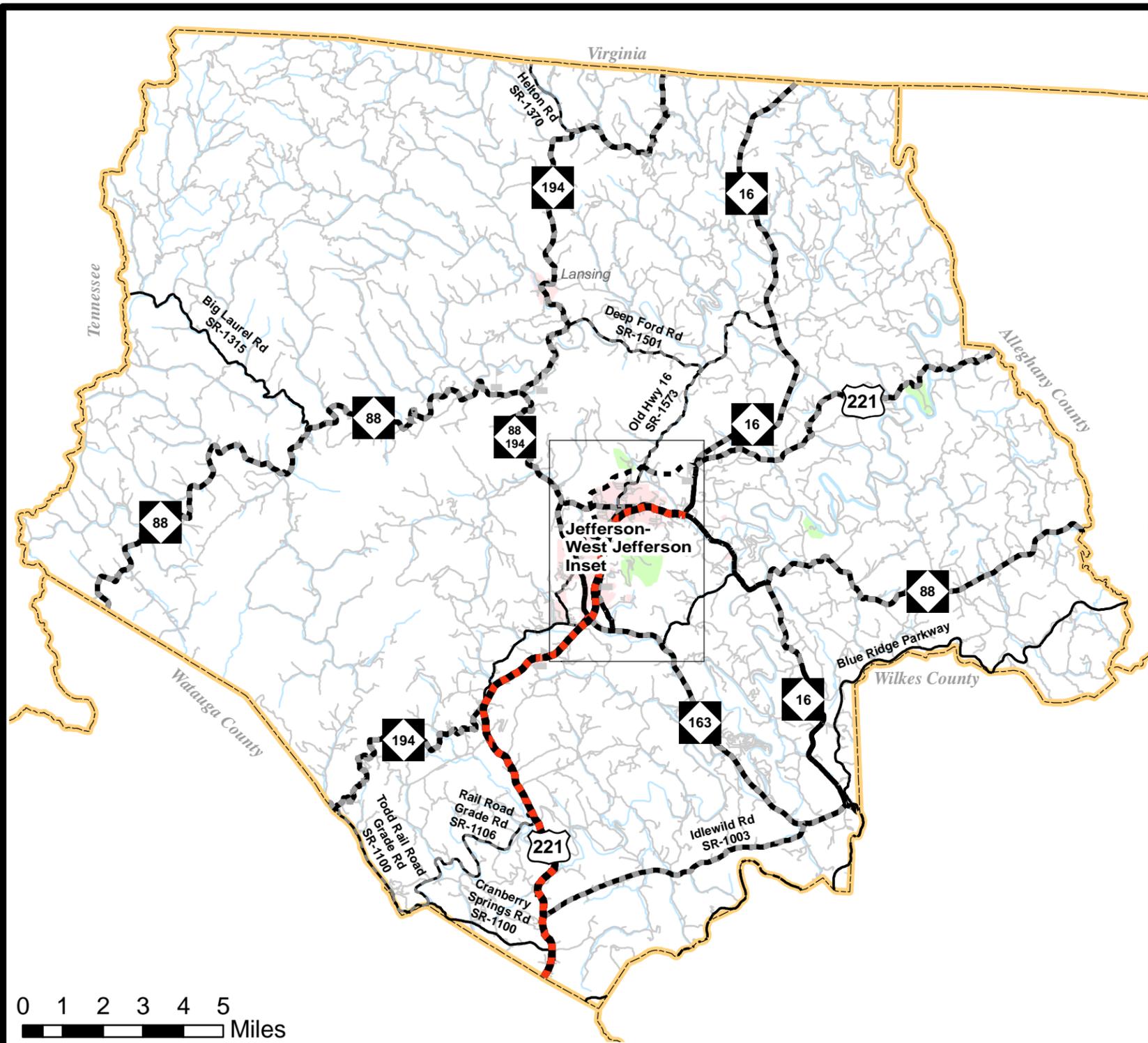
Legend

- Roads
- +— Railroads
- Rivers and Streams

- Schools
- County Boundary
- Municipal Boundary
- Park Land

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

Adoption Sheet
Ashe County
Comprehensive Transportation Plan
 Plan Date: January 19, 2010



Sheet 2 of 5
 Base map date: 01-20-2009
 Refer to CTP document for more details

<p>Freeways</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended <p>Expressways</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended 	<p>Boulevards</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended <p>Other Major Thoroughfares</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended 	<p>Minor Thoroughfares</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended <p>Interchanges</p> <ul style="list-style-type: none"> Existing Interchange Proposed Interchange Existing Grade Separation Proposed Grade Separation
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Highway Map
Ashe County
Comprehensive
Transportation Plan
 Plan Date: January 19, 2010

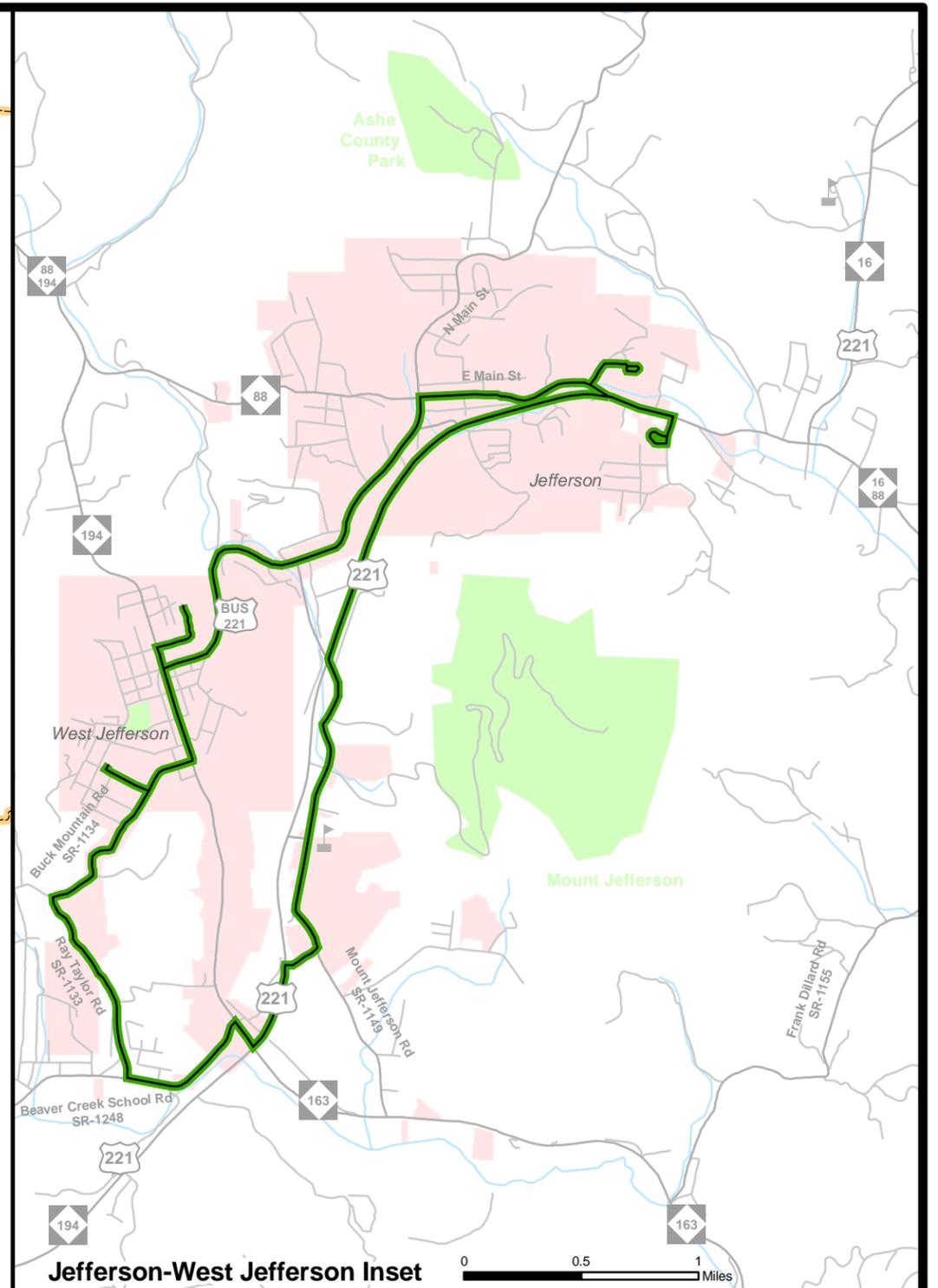
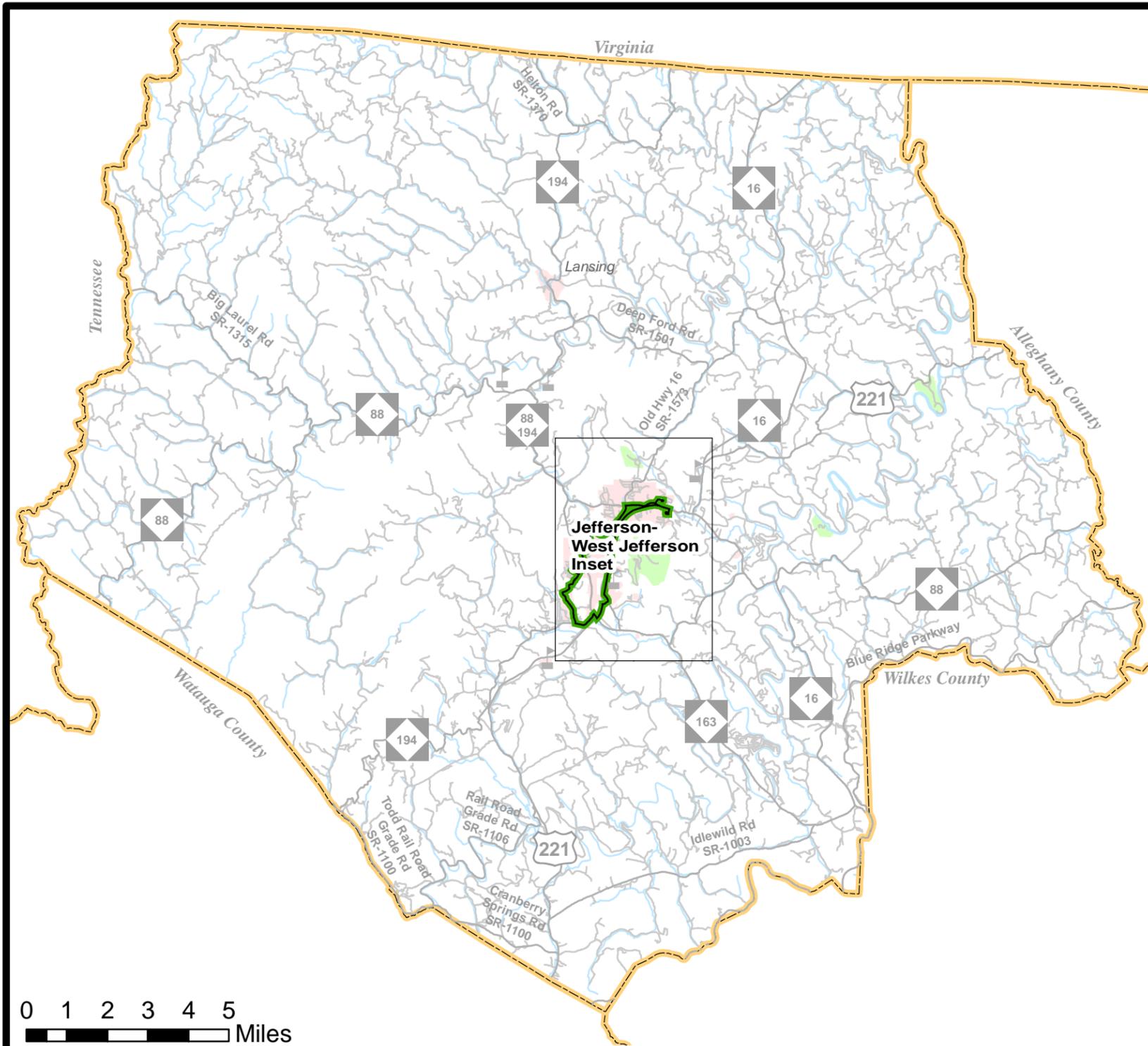


Figure 1 Sheet 3 of 5
 Base map date: January 20, 2009
 Refer to CTP document for more details

Bus Routes

- Existing
- Needs Improvement
- Recommended

Fixed Guideway

- Existing
- Needs Improvement
- Recommended

Operational Strategies

- Existing
- Needs Improvement
- Recommended

Rail Corridor

- Active
- Inactive
- Recommended

High Speed Rail Corridor

- Existing
- Recommended

Rail Stops

- Existing
- Recommended

Intermodal Connector

- Existing
- Recommended

Park and Ride Lot

- Existing
- Recommended

Public Transportation and Rail Map

Ashe County Comprehensive Transportation Plan

Plan Date: January 19, 2010

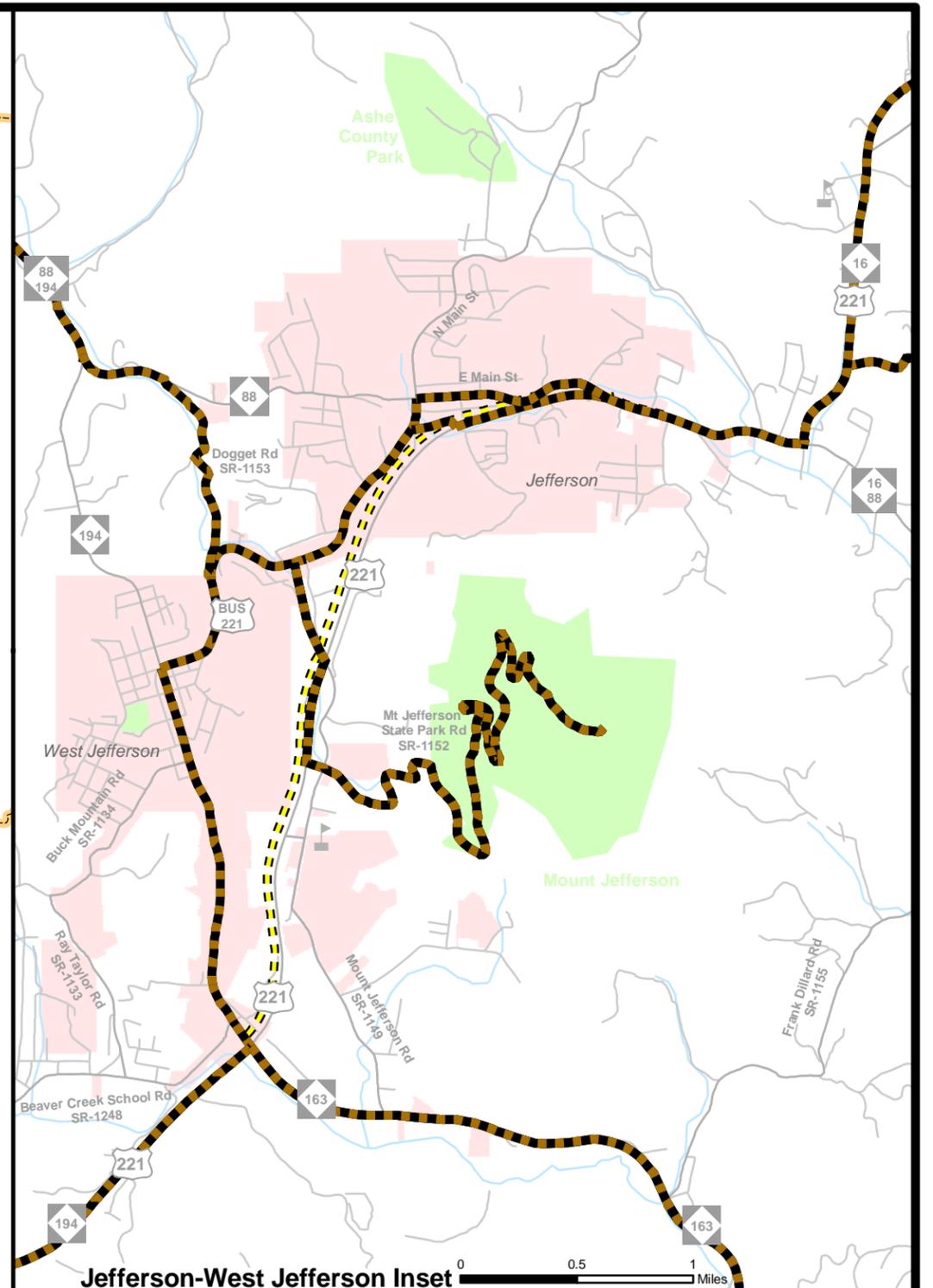
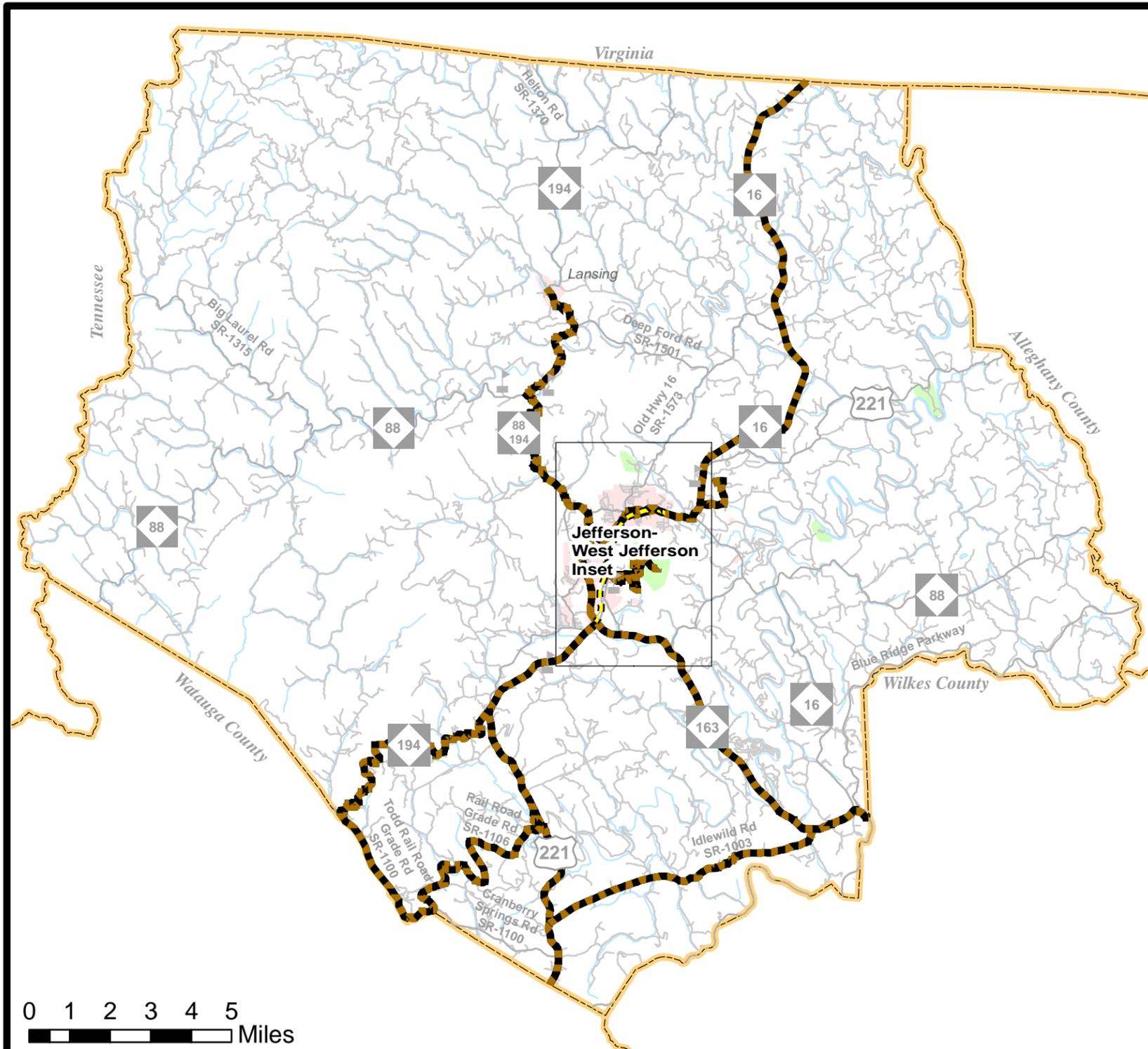


Figure 1 Sheet 4 of 5
 Base map date: January 20, 2009
 Refer to CTP document for more details

- | | | |
|---|--|---|
| <p>On Road</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended | <p>Off Road</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended | <p>Multi-Use Paths</p> <ul style="list-style-type: none"> Existing Needs Improvement Recommended |
| <ul style="list-style-type: none"> Existing Grade Separation Proposed Grade Separation | | |

Bicycle Map
Ashe County
Comprehensive
Transportation Plan
 Plan Date: January 19, 2010

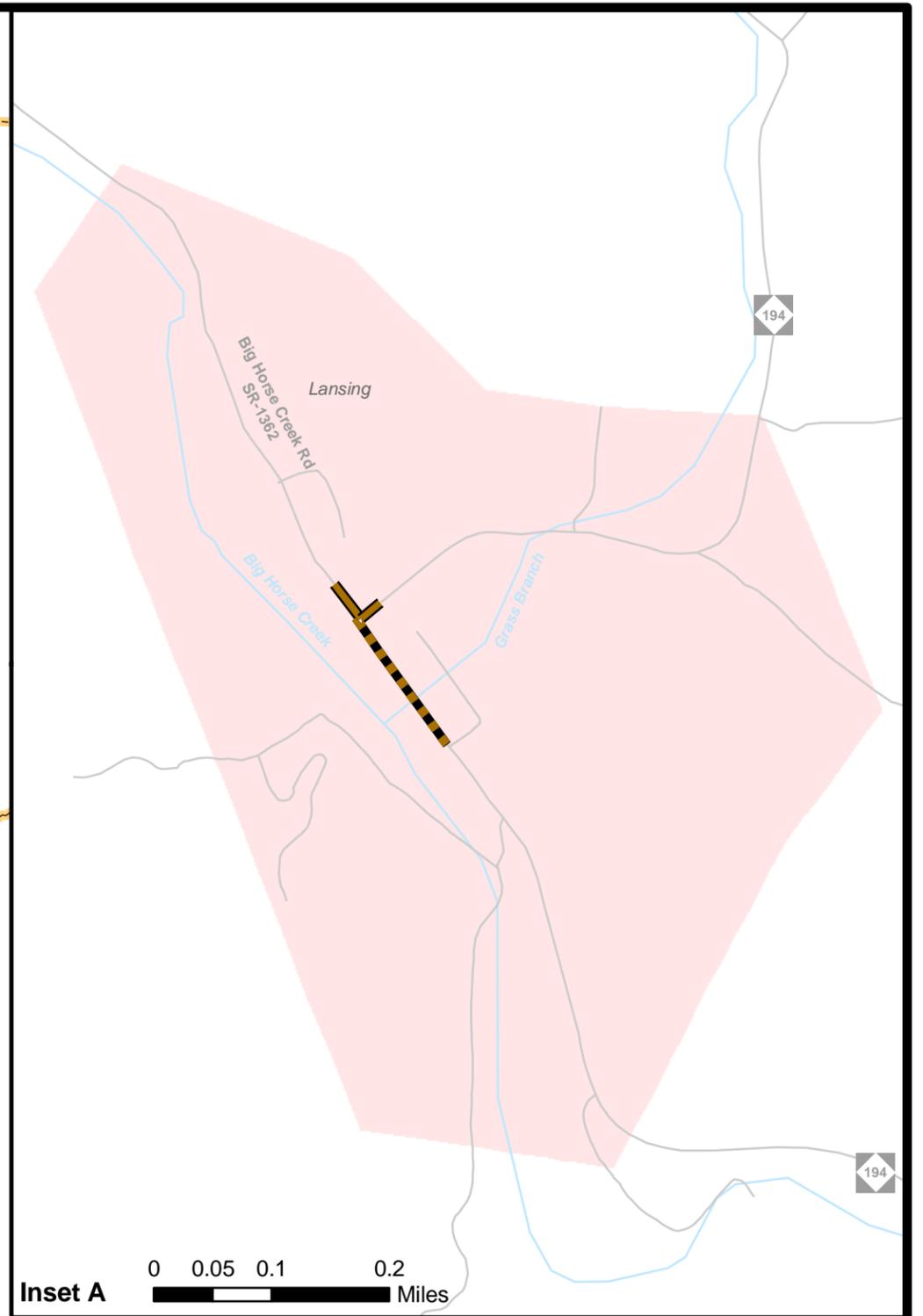
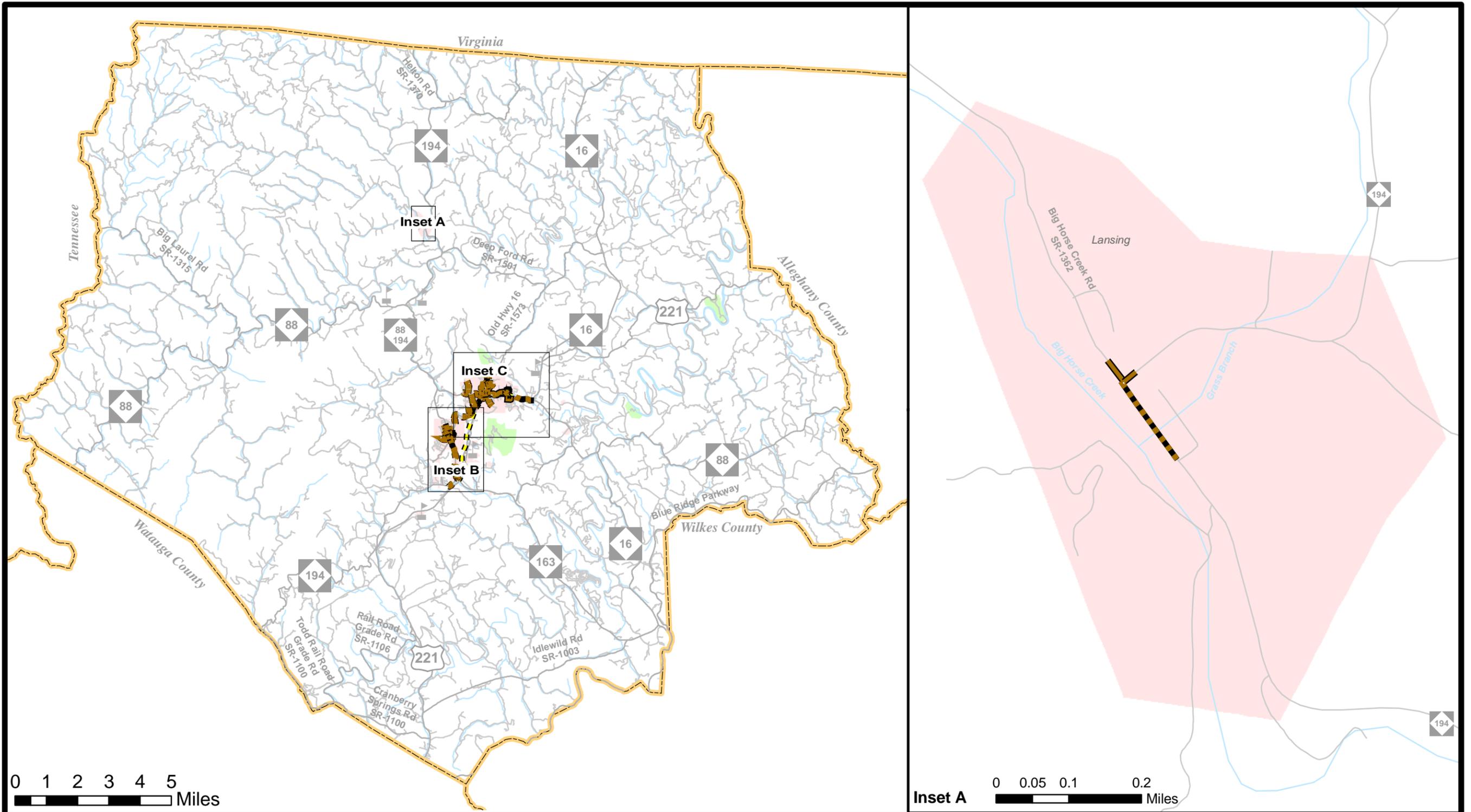
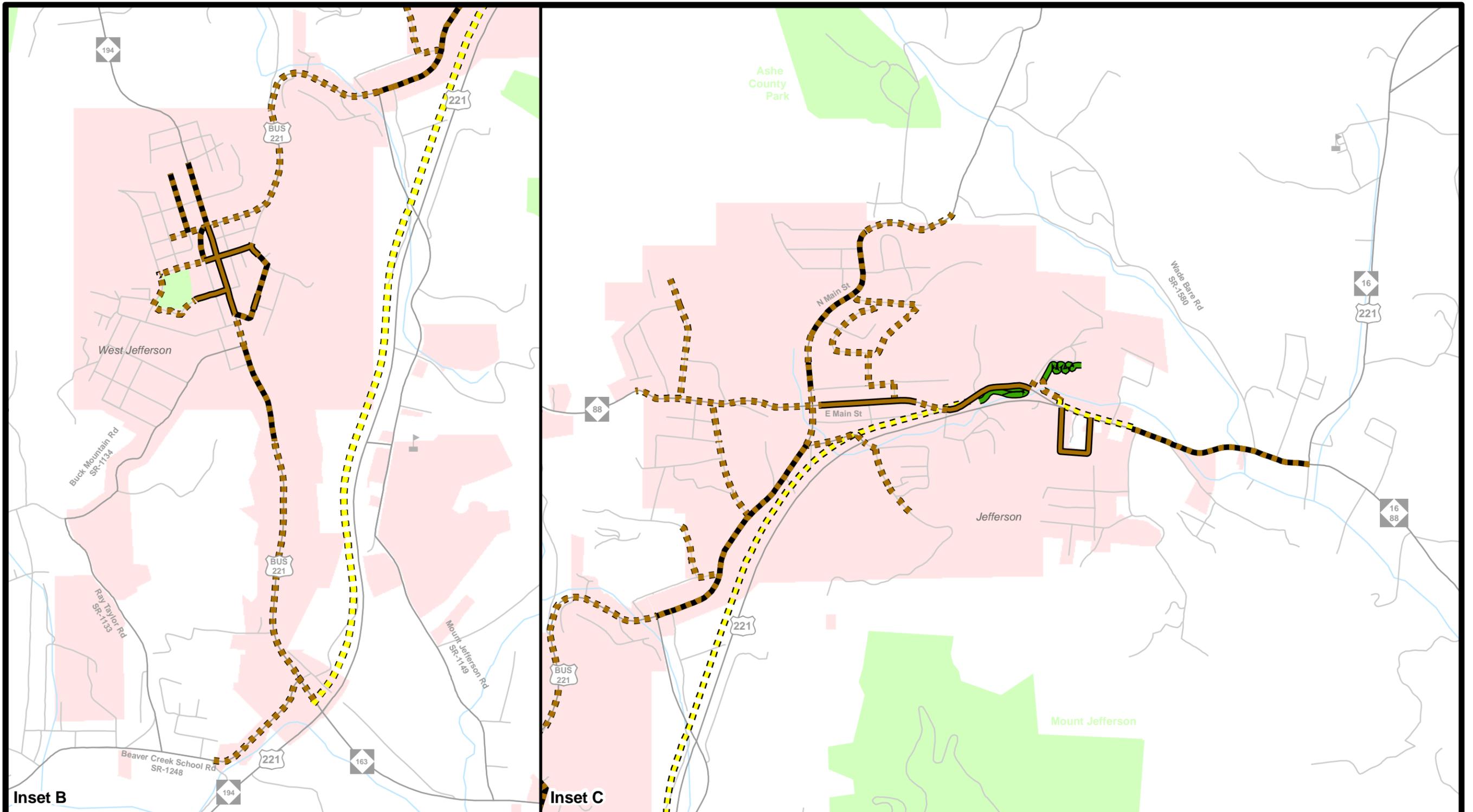




Figure 1 Sheet 5 of 5
 Base map date: January 20, 2009
 Refer to CTP document for more details

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

Pedestrian Map
Ashe County
Comprehensive Transportation Plan
 Plan Date: January 19, 2010



0 0.25 0.5
 Miles
Figure 1 Sheet 5A of 5
Base map date: January 20, 2009
 Refer to CTP document for more details

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

**Pedestrian Map
 Insets B & C**

**Ashe County
 Comprehensive
 Transportation Plan**
 Plan Date: January 19, 2010

Problem Statements

The following problem statements summarize the concept and purpose of each project in the CTP. Each statement includes a primary goal and the corresponding data supporting the need. Also included is the CTP proposal and relevant project information that can be used in future project development.

HIGHWAY ELEMENT

The following highway projects address capacity, mobility, connectivity, and safety deficiencies in Ashe County.

US 221

Proposed improvements from Watauga County Line To US 221 Bus in Jefferson

ID No. R-2915

Last updated on:
3/29/2010

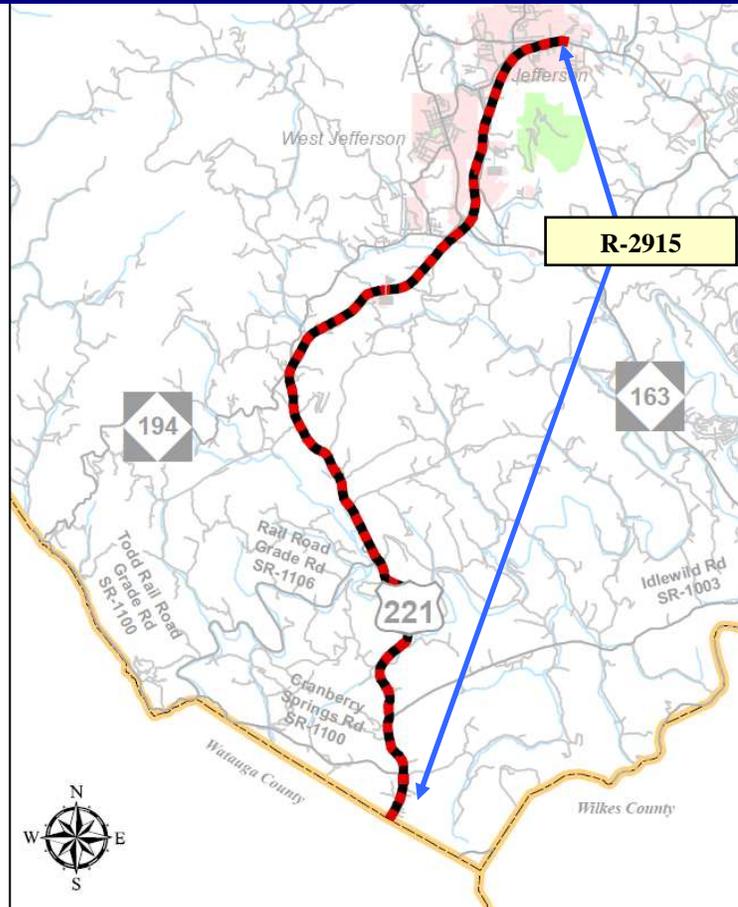
IDENTIFIED PROBLEM

Existing US 221 is projected to be over capacity by 2035. The primary purpose of improving US 221 is to maintain a Level of Service (LOS) D.

Justification of Need

US 221 is the primary route for access to Ashe County. It is forecast to carry approximately 24,000 vehicles per day (vpd) in 2035, which will exceed the existing capacity of 15,800 vpd.

The 2009-2015 TIP project R-2915 is currently in the project development process to address the deficiencies. For additional information about the Purpose and Need for TIP R-2915, please contact NCDOT's Project Development and Environmental Analysis Branch (PDEA).





IDENTIFIED PROBLEM

Existing US 221 is projected to be over capacity by 2035. The primary purpose of this project is to maintain a Level of Service (LOS) D. The secondary purpose is to improve safety by reducing the crash rate on US 221 without adversely affecting other nearby intersections.

Justification of Need

Currently, this segment of US 221 is a four lane undivided facility with 11' lanes. It provides access to the commercial strip and the government complex for the county. This facility is projected to carry 24,100 vpd by 2035, compared to a capacity of 21,100 vpd. Left turns from travel lanes also degrade the LOS.

Additionally, four of the top crash locations in the county are along this one mile stretch. A crash study of the three most recent years (2006-2008) was analyzed for the Ashe County CTP. Ten locations were identified as high crash locations. Below are the locations related to this stretch of US 221.

- US 221 and US 221 Bus, the western termini, experienced 15 crashes with an average severity of 4.95
- US 221 and NC 16, the eastern termini, had 13 crashes and a severity of 3.05
- US 221 and Government Circle had 10 crashes and a severity of 3.96
- US 221 Bus and Hospital Road, approximately 200 feet west of the project, had 14 crashes and a severity of 3.11

Community Vision and Problem History

This stretch of US 221 was identified previously in the 2002 Jefferson-West Jefferson Thoroughfare Plan as being over capacity in 2001 and continuing into 2035.

CTP PROJECT PROPOSAL

Project Description and Overview

It is proposed to widen US 221, from US 221 Bus in Jefferson to NC 16-88, from 11' to 12' lanes, add a median with turn bays, and add traffic signals where needed. The widening of US 221 would reduce congestion and provide better efficiency for through traffic. With 2035 projected volumes at 24,100 vpd, the proposed widening will improve capacity from the current 21,100 vpd to 31,900 vpd. The inclusion of a median will also serve to reduce traffic crashes stemming from the high volume of left turns into and out of the Food Lion and the Government Center.

Natural & Human Environmental Context

Based on available GIS data, none of the natural and human environmental features examined as a part of this study were identified in the immediate vicinity of the project.

Relationship to Land Use Plans

US 221 serves primarily commercial land uses. The north side of the road has strip development anchored by the Food Lion. Further north is Ashe Memorial Hospital which is accessible by Hospital Road (SR 1664) and Waugh Street. The south side of US 221 is home to the Ashe County Government Center including offices, courthouse, and a planned detention facility.

Linkages to Other Plans and Proposed Project History

US 221 is a Minor Arterial on the Federal Functional Classification System and is identified as a Boulevard on the North Carolina Strategic Highway Corridor Vision Plan. US 221 is on the statewide tier of the North Carolina Multimodal Investment Network (NCMIN). This roadway is an important connector between the towns of Jefferson and West Jefferson and the eastern portion of the county. The 2002 Jefferson-West Jefferson Thoroughfare Plan also identified the need to add a median with turn bays.

Multi-modal Considerations

The Ashe County Transportation Authority operates a fixed route Bus service circulator in West Jefferson and Jefferson. The service travels the western half of the project to provide service to the Ashe County Government Center and Food Lion. The 2009 Jefferson Pedestrian Plan proposes a multi-use path along US 221, and improvements to the sidewalk network in front of the commercial strip and from the town limits to NC 16. This area is also identified in the Ashe County CTP as needing improvements to the bicycle facilities.

Public/ Stakeholder Involvement

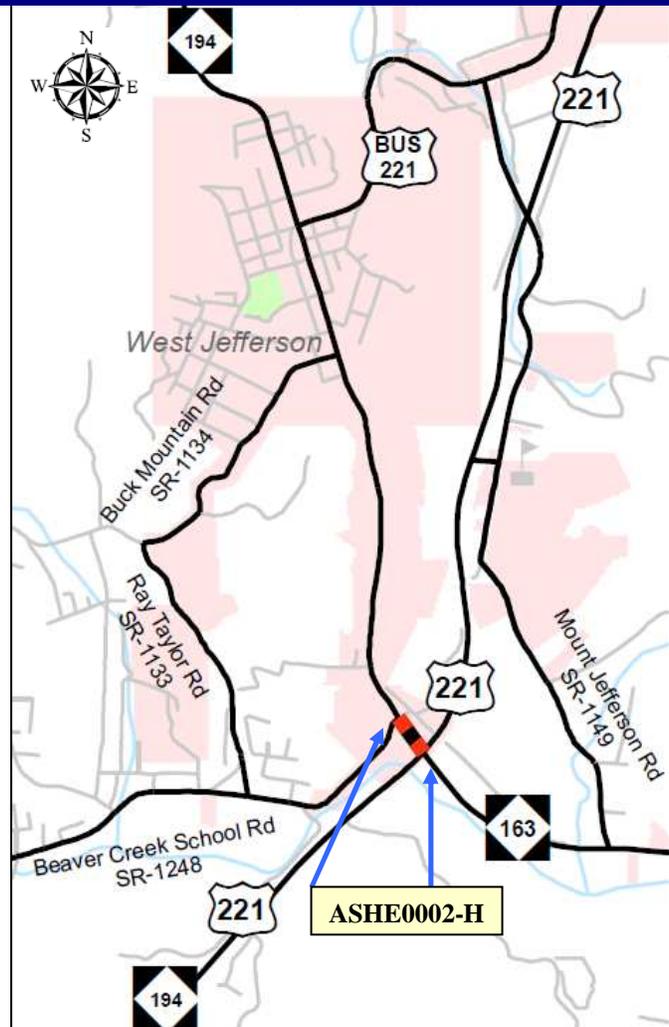
During a Goals & Objectives (G&O) survey carried out for the Ashe County CTP, US 221 was the most identified road when asked for often used routes. While 72.3% of responses did not travel out of their way to avoid certain roads, those who did, mentioned US 221 half of the time. The Food Lion was one of the three locations described as "hard to access."

IDENTIFIED PROBLEM

The purpose of this project is to study the best methods to safely accommodate traffic at the intersections of US 221 Bus and US 221, and US 221 Bus and Beaver Creek School Road (SR-1248) and to improve mobility through the corridor.

Justification of Need

Currently US 221 Bus within the project area is a 4 lane divided arterial with turn bays at the intersection. The two turn bays are divided from the opposing traffic and each other by a small mountable barrier. Both ends of this 0.13 mile stretch were identified during the CTP as high crash locations. The northern end had 17 crashes with an average severity of 2.30 between 2006 and 2008. A Division 11 project was completed in 2004 to try to address the southern location. The Division's follow-up evaluation of Spot Safety Project #11-03-205 showed that, during the same time period of the CTP analysis, 36 crashes occurred at this location.



Other mobility concerns include the high volumes of left turns at the northern intersection with Beaver Creek School Road (SR-1248) which provides access to residential locations west of West Jefferson, and the employment centers on Ray Taylor Road (SR-1133). The short distance between the two intersections makes it difficult for people to queue in the proper lane.

Community Vision and Problem History

The 2002 Jefferson-West Jefferson Thoroughfare Plan identified this short segment as over capacity in both the base year of 2001 and the forecast year of 2035. At the time, it was recommended that US 221 Bus be widened to 6 lanes from Beaver Creek School Road (SR-1248) to US 221.

CTP PROJECT PROPOSAL

Project Description and Overview

It is proposed that a feasibility study be conducted to address safety and mobility issues on US 221 Bus. Alternatives already considered are described in Appendix I.

Natural & Human Environmental Context

Based on available GIS data, none of the natural and human environmental features examined as a part of this study were identified in the immediate vicinity.

Relationship to Land Use Plans

US 221 is categorized as commercial in the 2008 West Jefferson Land Use Plan. No driveways are within the limits of this project, however, they do exist immediately north, along US 221 Bus. Strip development along the north side of Beaver Creek School Road (SR-1248) features an Ingles Market and a McDonalds. This shopping center has multiple accesses to US 221 Bus north of the project termini. The south side of Beaver Creek School Road does not have access to US 221 Bus, but is host to a variety of Businesses including a Dollar General, KFC, a gas station and a Nation's Inn.

Linkages to Other Plans and Proposed Project History

US 221 is a Minor Arterial on the Federal Functional Classification System and is identified as a Boulevard on the North Carolina Strategic Highway Corridor Vision Plan. US 221 Bus is a Major Collector on the Federal Functional Classification System and is not on the North Carolina Strategic Highway Corridor Vision Plan. US 221 Bus is on the regional tier of the NCMIN. TIP project R-2915 is currently underway and includes the intersection of US 221 Bus and US 221. R-2915 is scheduled in the 2009-20015 STIP to begin Right-of-Way acquisition in 2012 and the first construction phase is in 2013.

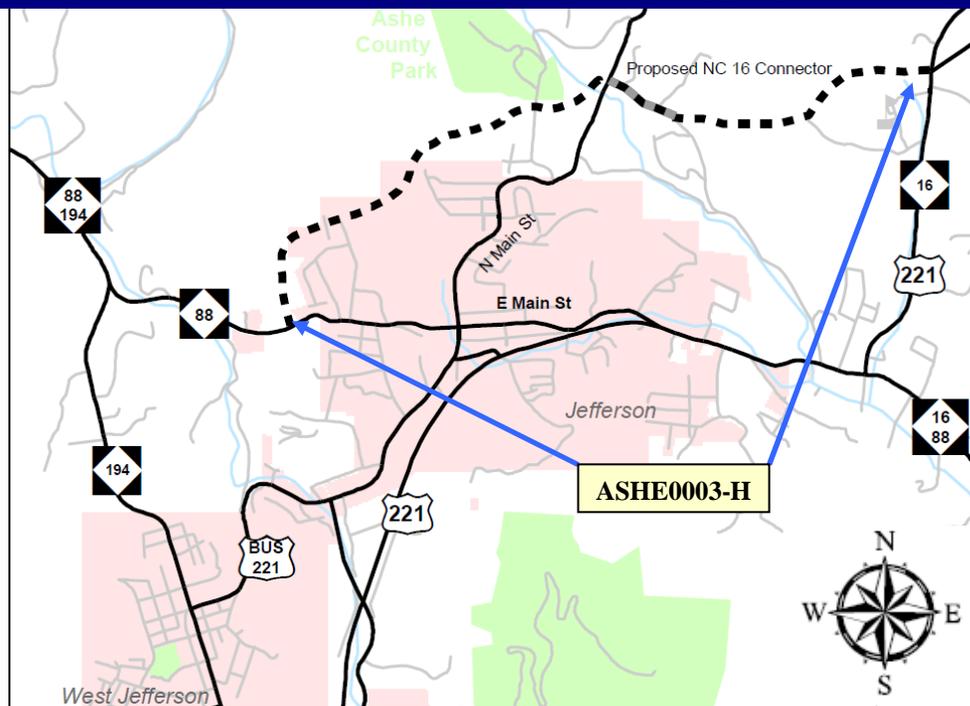
The existing proposal from the 2002 Thoroughfare Plan is to widen to a six-lane section. This was not considered acceptable by the CTP oversight committee because of land use in the area, nor would it address the issue of drivers having to merge across several lanes in such a short distance to make left turns onto US 221 and onto Beaver Creek School Road. Other alternatives that were studied can be found in Appendix I of the CTP report.

Multi-modal Considerations

This facility is identified elsewhere in the Ashe County CTP as needing both bicycle and pedestrian improvements. US 221 Bus serves as the southern gateway to West Jefferson but does not include any sidewalks or bike accommodations. The Ashe County CTP recommends extending the West Jefferson sidewalk network along US 221 to the Ingles. The 2009 Jefferson Pedestrian Plan includes a recommended multi-use path paralleling US 221 from Jefferson to US 221 Bus – NC 163. These recommendations are illustrated in Figure 1-Sheet 5A, Inset B.

Public/ Stakeholder Involvement

The southern intersection of US 221, US 221 Bus, and NC 163 was identified repeatedly in the G&O Survey as "hard to access," while the McDonald's and the Ingles on Beaver Creek School Road (SR-1248) were identified once.



IDENTIFIED PROBLEM

US 221 – NC 88 is the only east-west route through the Town of Jefferson. The primary purpose of this project is to provide an alternative transportation route that will enhance the east-west connectivity around the Town of Jefferson.

Justification of Need

The proposed facility would provide an alternative east-west route for US 221-US 221 Bus following NC 88. Many of the high crash locations in the county are along this stretch of US 221. They are the following:

- US 221 and US 221 Bus had 15 crashes and a severity of 4.95
- US 221 and NC 16 had 13 crashes and a severity of 3.05
- US 221 and Government Circle had 10 crashes and a severity of 3.96
- US 221 and Hospital Road had 14 crashes and a severity of 3.11
- US 221 Bus and NC 88 and N Main Street had 18 crashes and a severity of 6.02

US 221 currently provides both access to the development in eastern Jefferson and serves as the primary connection with eastern Ashe County. Currently there are no feasible existing alternatives for east-west mobility. The nearest detours travel north to Old Highway 16 (SR-1573) or south to Frank Dillard Road (SR -1155). US 221 is also projected to be experiencing congestion problems in 2035. Traffic projections for US 221 in 2035 are as high as 24,100 vpd, while current capacity is 21,100 vpd. This new location connector would provide some, but not complete relief to this section. See ASHE0001-H for more details.

Community Vision and Problem History

The 2002 Jefferson-West Jefferson Thoroughfare Plan identified the section of US 221 from US 221 Bus – NC 88 to NC 16-88 as over capacity in both the base year (2001) and the future year (2030). Additionally the plan identifies US 221 Bus as approaching capacity and NC 88 as over capacity in the same years.

CTP PROJECT PROPOSAL

Project Description and Overview

The CTP proposal is to build a new 2 lane facility connecting the US 221 – NC 16 intersection north of Mountain View Elementary to NC 88 west of Jefferson. A segment of Wade Bare Road (SR-1580) would be used as part of the new facility, near the intersection with North Main Street (SR-1573). The “Proposed NC 16 Connector” would tie into NC 88 across from the “Proposed NC 194 Bypass.” See Figure 1 Sheet 2 for a map with both facilities and FS-0111B below for details on the proposed NC 194 Bypass.

The proposed facility would carry about 8,000 vehicles in the design year of 2035, and therefore is recommended to be a 2 lane Major Thoroughfare.

Both the four lane portion, from US 221 Bus to NC 16, and the two lane portion, from NC 88 to NC 16, of US 221 are projected to be over capacity in 2035. The capacity of the two lane portion is 15,800 vpd while the projected volume will be over 16,000 vpd in the design year. The four lane portion, as described above, will see volumes of 24,100 vpd on a roadway with a capacity of 21,100 vpd.

Currently, traffic traveling north-east from Jefferson must use US 221 and pass through the four lane section of US 221 which includes four of the highest crash locations in the county. The nearest alternative route is a nine mile detour from the US 221 and NC 16-88 intersection.

Natural & Human Environmental Context

Based on available GIS data, the Little Phoenix Forests and Glade, a Significant Natural Heritage Area, is in the immediate vicinity. This glade includes 1997 observances of a Chestnut Oak forest (*Quercus prinus* G5/S5 - Demonstrably secure), and a Low Evaluation Rocky Summit Ecosystem (G2/S2 - Imperiled because of rarity).

There is also a 1994 record of Bog Turtle (*Glyptemys muhlenbergii* S2/G3- Imperiled/Vulnerable) a quarter mile north of the existing Wade Bare Road (SR-1580).

Based on Ashe County building data, development in the corridor is limited to those locations on or near the existing crossroads. They are, from east to west, US 221, Wade Bare Road (SR-1580), North Main Street (SR-1573), and NC 88. The western termini will serve as another access to the Gates Corporation plant. Otherwise the terrain between crossroads is undeveloped or used for agriculture.

A Section 4(f) Resource, the historic Joseph Benjamin Neal property was identified during the study for TIP project U-3812. This changed the location of the western termini from its location in the 2002 Jefferson-West Jefferson Thoroughfare Plan to the new location opposite the proposed NC 194 Bypass location. Further consideration of alternatives can be found in Appendix I of this document.

Relationship to Land Use Plans

US 221 is primarily commercial and the new location is expected to pass through primarily residential areas. The proposed location would pass through low density development along the crossroads and the undeveloped land between them. Major exceptions to the residential nature are the Gates Corporation, the Ashe County Park, a National Guard Armory, and Mountain View Elementary School.

Linkages to Other Plans and Proposed Project History

This facility would tie into NC 88 west of Jefferson opposite the proposed NC 194 bypass. These two proposals would provide a complete alternative to using the commercial portion of US 221 for through traffic.

New location facilities serving this same purpose were proposed in both the 1992 and 2002 Jefferson-West Jefferson Thoroughfare Plans. The only significant update from the 2002 Thoroughfare Plan is the location of the western termini which was moved for consideration of historic properties discovered during the studies for TIP project U-3812. See Appendix I for more details.

Public/ Stakeholder Involvement

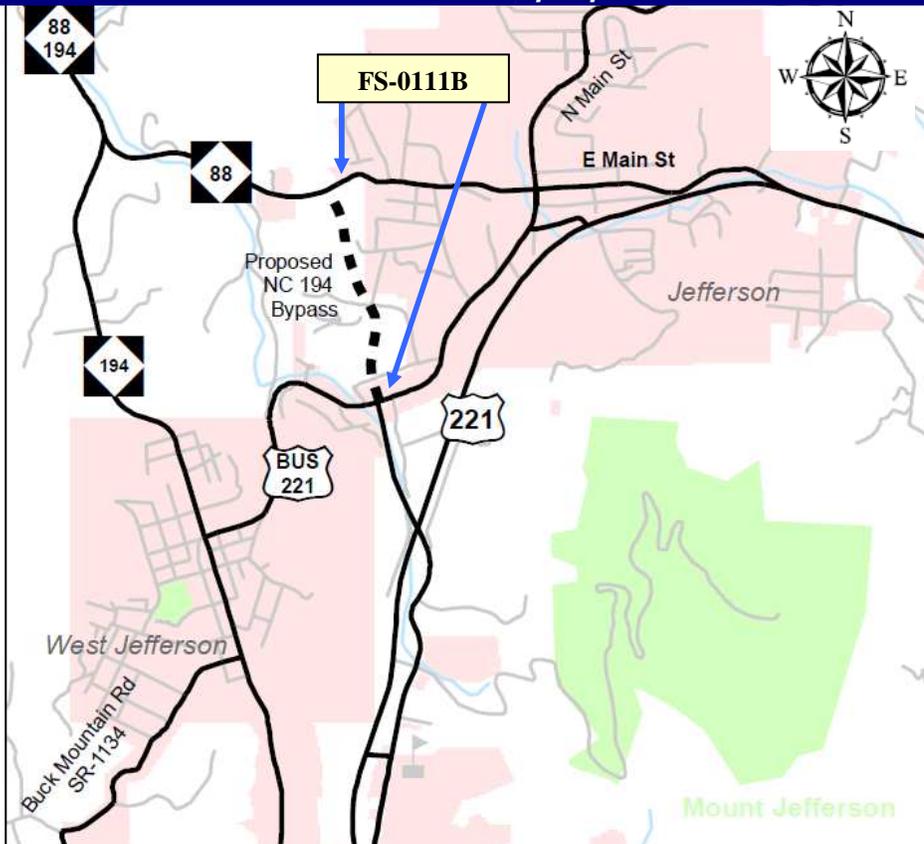
The US 221 bottleneck east of Jefferson was identified numerous times in the Goals & Objectives Survey conducted for the Ashe County CTP. Of the locations respondents identified as "Difficult to Access," twenty-seven percent are areas that this new facility would bypass.

**IDENTIFIED
PROBLEM**

NC 194 through the Town of West Jefferson is projected to be over capacity by 2035. The primary purpose of the project is to relieve congestion on existing NC 194 such that a minimum LOS D can be achieved.

**Justification of
Need**

As US 221 Bus approaches West Jefferson from the south side, it runs concurrently with NC 194. When they reach Second Street in downtown West Jefferson, US 221 Bus turns east towards Jefferson, and NC 194 continues north towards NC 88. At the intersection with Short Street the posted speed limit changes from 45 mph to 35 mph, and another speed change happens at Market Street this time from 35mph to 20 mph. These two speed changes, along with a change from four lanes to two lanes with on street parking at Market Street, severely reduce road capacity. US 221 Bus has a roadway capacity of 30,300 vpd from US 221 to Short Street; 25,200 from Short Street to Market Street; and 8,600 from Market Street to Second Street. The 2035 traffic projection is 12,000 vpd on the segment from Market Street to Second Street. Both ends of NC 194, from US 221 to NC 88, are high crash locations in Ashe County for 2006-2008. Through trucks are also of particular concern because of the pedestrian nature of the downtown.



Community Vision and Problem History

The 2002 Jefferson-West Jefferson Thoroughfare Plan identified US 221 Bus through downtown West Jefferson as over capacity in both the base year of 2001 and the forecast year of 2030.

In addition, West Jefferson has expressed interest in routing through trucks to an alternate facility. West Jefferson sees this as an important step towards making its downtown more pedestrian and business friendly.

CTP PROJECT PROPOSAL

Project Description and Overview

The proposed NC 194 Bypass is designed to reroute vehicles currently passing through downtown West Jefferson onto a new facility. This new location bypass would connect from the US 221 Bus – Mount Jefferson Road intersection to NC 88. The 2035 traffic forecast estimates the proposed new facility would carry 3,000 vehicles a day which would otherwise use NC 194 through West Jefferson. This number does not reflect the additional truck traffic that would use this route if the Town of West Jefferson were to pursue a truck ordinance. The CTP proposal is for a two-lane major thoroughfare to be constructed.

Natural & Human Environmental Context

Based on available GIS data, none of the natural and human environmental features examined as a part of this study were identified in the immediate vicinity of the project.

Relationship to Land Use Plans

US 221 Bus and NC 88 are primarily commercial. Land use is residential. Blevins Express Road and Badger Street form a neighborhood in the southern half of the project area. The proposed location is east of the most developed areas but can not avoid impacts entirely.

Linkages to Other Plans and Proposed Project History

Both US 221 Bus and NC 88 have Federally Functional Classification as Major Collectors. A traffic forecast for feasibility study FS-0111B was conducted in 2001 to evaluate a proposed new location between US 221 Bus and NC 88. The results of that study were used in the CTP to generate the traffic volumes for this proposal.

Proposed facilities serving this same purpose were proposed in both the 1992 and 2002 Jefferson-West Jefferson Thoroughfare Plans. The location shifted east from 1992 to 2002 and the 2010 CTP moves the location further east to avoid the residential development. Conceptually, the bypass has remained the same, a connection between US 221 Bus and NC 88. The CTP goes further to connect this project with the NC 16 Connector which has also been in previous plans. See ASHE0003-H for further details on the NC 16 Connector.

Public/ Stakeholder Involvement

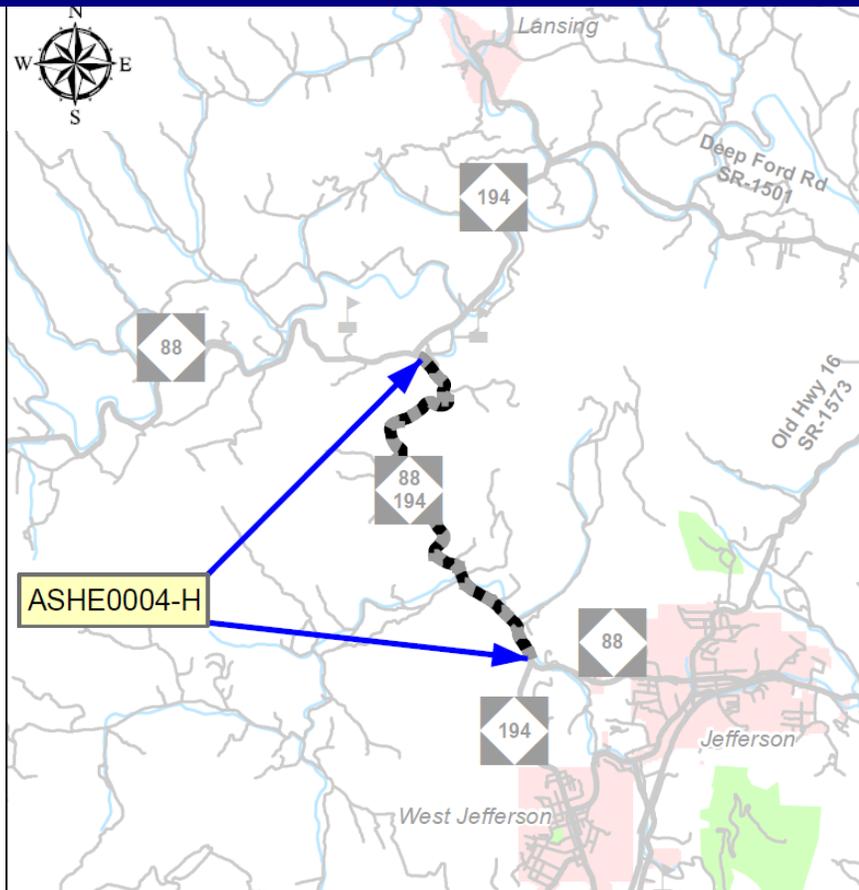
There were no significant stakeholder issues identified with this project during the development of the CTP.

IDENTIFIED PROBLEM

NC 88-194 from the Jefferson-West Jefferson incorporated area to the Warrentsville community is projected to be approaching capacity in 2035. The purpose of this project is to accommodate projected traffic (2035 Design Year) at a LOS D on NC 88-194.

Justification of Need

NC 88-194 is a two lane, 55 mph facility connecting Jefferson-West Jefferson to Warrentsville. This route serves as the primary means of access for the north-western portion of Ashe County. The current 11 ft pavement presents capacity and safety concerns. NC 88-194 is forecast to carry 13,300 vpd at its northern end and at its southern end over 15,200 vpd in 2035. Current capacity is 15,800 vpd.



The section from Buffalo Road (SR-1131) north is identified by the locals as having tight curves and high truck volumes which bring the traffic speed and capacity down. According to the traffic forecast conducted for B-4704, approximately 7% of the traffic on NC 88-194 is trucks.

The southern intersection of NC 88, NC 194, and NC 88-194 is the seventh highest crash location in the county for 2006-2008 with 12 crashes. TIP Project U-3812, the NC 88 widening from NC 194 to US 221 Bus, is expected to realign this intersection.

The northern intersection, where NC 88 and NC 194 split in Warrentsville, is of local concern. It serves two nearby schools Blue Ridge Elementary to the west and Ashe County Middle School to the north. Truck traffic from the United Chemi-Con plant must also pass through this intersection by making a left turn to go to Jefferson-West Jefferson.

Community Vision and Problem History

The 2002 Jefferson-West Jefferson Thoroughfare Plan's was identified NC 88-194 to Hunter Road as over capacity in both the base year (2001) and the forecast year (2030).

CTP PROJECT PROPOSAL

Project Description and Overview

Widening NC 88-194 to full 12 ft lanes would maximize capacity and improve safety. Of particular concern is truck and school bus traffic. Any project to widen this facility would also need to look at opportunities to straighten the roadway and improve turning sight distances. The southern intersection of NC 88 and NC 194 is already planned for realignment as part of the NC 88 widening in Jefferson, TIP Project U-3812. The northern one in Warrentonville is still a local concern.

Natural & Human Environmental Context

Based on available GIS data, the existing roadway is approximately 1000 ft east of the Tree Top Mountain natural heritage site. Also near the north end of the project there were reported occurrences of Lindberg's Maple-moss (*Lindbergia brachyptera*) and Blunt Bristle-moss (*Orthotrichum obtusifolium*). Both are considered S1-Critically Imperiled Species.

Relationship to Land Use Plans

NC 88-194 has light commercial development along the road, but serves as a commuting route to northwest Ashe County including Lansing, Warrentonville, Creston, and the United Chemi-Con plant.

Linkages to Other Plans and Proposed Project History

NC 88-194 is a Major Collector on the Federal Functional Classification System

Multi-modal Considerations

NC 88-194 is identified elsewhere in the Ashe County CTP as needing bicycle improvements. The narrow and mountainous terrain makes transversing this segment of roadway difficult for bicyclists. They are forced to share the road with vehicular traffic because this stretch only has 4 ft unpaved shoulders.

Public/ Stakeholder Involvement

The following concerns were identified in the G&O Survey.

- NC 194 was mentioned by over 25% of respondents as an often used route.
- The Warrentonville intersection is particularly troublesome during the school time rush, because of the location of Blue Ridge Elementary and Ashe County Middle School.
- Alignment of both termini intersections was identified repeatedly.
- NC 88-194 is narrow and has tight curves along with truck traffic.

IDENTIFIED PROBLEM

The purpose of this project is to accommodate projected traffic (2035 Design Year) at a LOS D on NC 194.

Justification of Need

Starting at Seventh Street, NC 194 becomes much more rural as one travels north. This segment has a 35 mph speed limit and 10 foot lanes. In 2035, between 9,500 and 11,500 vehicles will use this stretch every day. This is approaching the roads capacity range of 12,400 to 13,600 vpd. The 10 foot lanes also present a safety issue.



The northern intersection of NC 194 with NC 88 was the seventh highest crash location in the county for 2006-2008. TIP Project U-3812, the NC 88 widening from NC 194 to US 221 Bus, is expected to realign this intersection.

The intersection of NC 88 and NC 194 had 12 crashes with an average severity of 2.85 during the years 2006 to 2008.

Community Vision and Problem History

The 2002 Jefferson-West Jefferson Thoroughfare Plan identified NC 194 north of US 221 Bus as “Near Capacity” but no recommendation was made at that time.

CTP PROJECT PROPOSAL

Project Description and Overview

The most direct way to address both the capacity and the safety concerns would be to widen the 10 foot lanes from Seventh Street to the Skyline-Skybest driveway to 12-foot lanes. For mobility and safety reasons, the widening should continue to the NC 88 intersection. The upgraded facility would be able to carry 14,600 vpd, and safety would be improved.

IDENTIFIED PROBLEM

Currently portions of Beaver Creek School Road are over capacity. The primary purpose of this project is to maintain a LOS D on Beaver Creek School Road from US 221 Bus to Ray Taylor Road.

Justification of Need

Beaver Creek School Road is currently below its capacity of 10,900 vpd at the intersection with US 221 Bus. From this intersection westbound, it is a three lane facility serving the shopping center and other retail stores. Afterwards it is a two, 11-foot lane facility serving Ray Taylor Road, a major location of industrial employment. This second segment can only serve a volume of 10,500 and is over capacity. Traffic is forecasted to grow from 7,000 vpd in 2009 to 10,900 vpd in 2035.



The eastern intersection is one of the highest crash locations in Ashe County. The intersection of Beaver Creek School Road and US 221 Bus was found to have 17 crashes with an average severity of 2.30 during the years 2006 to 2008.

Community Vision and Problem History

The 2002 Jefferson-West Jefferson Thoroughfare Plan identified the western end of the segment as near capacity and the eastern end as over capacity in the forecast year of 2030, but no recommendation was made at that time.

CTP PROJECT PROPOSAL

Project Description and Overview

Widening this stretch of Beaver Creek School Road to 12-foot lanes can increase capacity to 14,600vpd on the three-lane section at the US 221 Bus end and to 11,600vpd on the two-lane section at the Ray Taylor Road termini.

Relationship to Land Use Plans

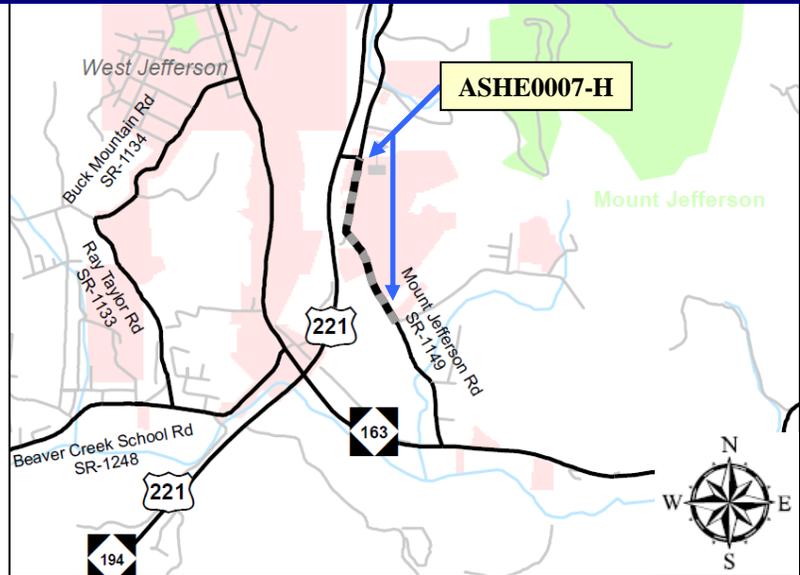
US 221 Bus is categorized as commercial in the 2008 West Jefferson Land Use Plan. Strip development along the north side of Beaver Creek School Road (SR-1248) features an Ingles Market and a McDonalds. This shopping center has multiple accesses to US 221 Bus north of the project termini. The south side of Beaver Creek School Road is host to a variety of businesses including a Dollar General, KFC, a gas station and a Nation's Inn.

IDENTIFIED PROBLEM

The purpose of this project is to safely accommodate projected traffic (2035 Design Year) by maintaining a LOS D on Mount Jefferson Road from Ashe County High School to Lowe's Home Improvement.

Justification of Need

This stretch of Mount Jefferson Road is a 36-foot three lane facility and has a capacity of 10,900. It serves the Wal-Mart and Lowe's shopping centers. This area has grown rapidly over the past few years and 15,000 vpd are currently using this portion of Mount Jefferson Road. Based on surrounding growth patterns this number is expected to climb toward 22,500 vpd in 2035.



Community Vision and Problem History

The 2002 Jefferson-West Jefferson Thoroughfare Plan identified Mount Jefferson Road as over capacity for 2035.

CTP PROJECT PROPOSAL

Project Description and Overview

Widen the roadway to a four lane divided major thoroughfare. The improved facility would be able to handle volumes up to 31,900 vpd.

Natural & Human Environmental Context

Based on available GIS data, none of the natural environmental features examined as a part of this study were identified in the immediate vicinity of the project. Human environment features are limited to commercial development, parking lots, and Midway Baptist Church.

Relationship to Land Use Plans

Mount Jefferson Road is primarily zoned commercial in the 2008 West Jefferson Land Use Plan. The northern terminus is at the driveway to Ashe County High School. Stretching south from there is strip development anchored by a Wal-Mart and a Lowe's Hardware.

Linkages to Other Plans and Proposed Project History

Mount Jefferson Road is not federally classified, but is included in the NCMIN as a sub-regional facility.

Multi-modal considerations

The Ashe County Transportation Authority operates a fixed route bus service circulator that covers Mount Jefferson Road.

Public/ Stakeholder Involvement

During the G&O Survey conducted for the Ashe County CTP, citizens identified three locations along this facility as hard to access: Lowe's, Wal-Mart, and Ashe County High School.

OTHER HIGHWAY PROJECTS

NC 88; ID No. U-3812

Existing NC 88 from US 221 Bus to NC 194 has two 10 foot wide lanes and a speed limit of 35 mph. Currently the facility is under capacity but has narrow lanes and tight curves. A TIP project, U-3812, is already underway to address these deficiencies. The project includes plans to three-lane a portion of NC 88 within the Jefferson Town Limits and to widen and straighten the remaining roadway to NC 194. Also included is a realigning of the NC 88 – NC 194 intersection. For additional information about the Purpose and Need for TIP U-3812, please contact NCDOT's Project Development and Environmental Analysis Branch (PDEA).

OTHER MINOR WIDENINGS

The following routes do not have capacity issues but are recommended to be upgraded to 12 foot lanes with paved shoulders to improve safety.

- **R-2100:** NC 16 from SR 1158 (River Front Road) to NC 88
- **R-2310:** US 221 from NC 16 North to the Alleghany County Line
- **R-2563:** NC 88 from the Watauga County Line to NC 194
- **R-4058:** NC 16 from US 221 to the Virginia State Line
- **ASHE008-H:** US 221 Bus from SR 1149 (Mt. Jefferson Road) to US 221
- **ASHE009-H:** NC 88 from NC 16 to the Alleghany County Line
- **ASHE0010-H:** NC 163 from US 221 to NC 16
- **ASHE0011-H:** NC 194 from the Watauga County Line to US 221
- **ASHE0012-H:** NC 194 from NC 88 to the Virginia State Line
- **ASHE0013-H:** SR 1003 (Idlewild Road) from US 221 to NC 163
- **ASHE0014-H:** SR 1100 (Cranberry Springs Road/Todd Rail Road Grade Road) from SR 1106 (Rail Road Grade Road) to NC 194
- **ASHE0015-H:** SR 1106 (Rail Road Grade Road) from SR 1100 (Cranberry Springs Road/Todd Rail Road Grade Road) to US 221
- **ASHE0016-H:** SR 1134 (Buck Mountain Road) from SR 1133 (Ray Taylor Road) to US 221 Bus
- **ASHE0017-H:** SR 1370 (Helton Road) from NC 194 to the Virginia State Line
- **ASHE0018-H:** SR 1501 (Deep Ford Road) from SR 1514 (Deep Ford Road) to SR 1573 (Old Hwy 16)
- **ASHE0019-H:** SR 1514 (Deep Ford Road) from NC 194 to SR 1501 (Deep Ford Road)
- **ASHE0020-H:** SR 1573 (Old Hwy 16) from NC 88 to NC 16

BICYCLE ELEMENT

The Bicycle Element of the Ashe County Comprehensive Transportation Plan is shown in Figure 1, Sheet 4. In accordance with American Association of State Highway and Transportation officials (AASHTO), roadways identified as bicycle routes should incorporate the following standards as roadway improvements are made and funding is available:

- Curb and gutter sections require at minimum 4-ft bike lanes or 14-ft outside lanes.
- Shoulder sections require a minimum 4-ft paved shoulder.
- All bridges along roadways where bike facilities are recommended shall be equipped with 54' railings.

- **ASHE0001-B:** US 221 from Watauga County line to NC 163
- **ASHE0002-B:** US 221 from SR 1254 (Long Street) to NC 16
- **ASHE0003-B:** US 221 Bus from NC 163 to US 221 in Jefferson
- **ASHE0004-B:** NC 16 from NC 88 to Virginia state line.
- **ASHE0005-B:** NC 88 from SR 1153 (Dogget Road) to NC 194
- **ASHE0006-B:** NC 194 from NC 88 to SR 1353 in Lansing
- **ASHE0007-B:** NC 163 from US 221 to the Blue Ridge Parkway
- **ASHE0008-B:** NC 194 from SR 1100 (Todd Rail Road Grade Road) to US 221
- **ASHE0009-B:** SR 1003 (Idlewild Road) from US 221 to NC 163
- **ASHE0010-B:** SR 1006 (Rail Road Grade Road) from US 221 to SR 1100 (Todd Rail Road Grade Road)
- **ASHE0011-B:** SR 1100 (Todd Rail Road Grade Road) from 1006 (Rail Road Grade Road) to NC 194
- **ASHE0012-B:** SR 1152 (Mount Jefferson State Park Road) from Mount Jefferson State Park to US 221 Bus via US 221 and SR 1149 (Mount Jefferson Road)
- **ASHE0013-B:** SR 1153 (Dogget Road) from US 221 Bus to NC 88
- **ASHE0014-B:** SR 1582 (Friendship Baptist Church Road) from NC 16 to Ashe Family Central.

PEDESTRIAN ELEMENT

During the course of this study the Town of Jefferson finished its Comprehensive Pedestrian Plan. This plan was conducted by McGill Associates and was confined to the town limits of Jefferson. The information from the pedestrian plan was adopted into the CTP then built upon to connect Jefferson with its surrounding communities. Other improvements were necessary to bring connectivity and consistency between the towns. They are listed below.

- **ASHE0001-P:** US 221 Bus from Hice Ave to Buck Mountain Road (SR-1134)
- **ASHE0002-P:** US 221 Bus from NC 194 (Jefferson Ave) to SR 1149 (Mount Jefferson Road)
- **ASHE0003-P:** US 221 Bus from Buck Mountain Road (SR-1134) to US 221
- **ASHE0004-P:** SR 1248 (Beaver Creek School Road) from NC 194 (Jefferson Ave) to West Jefferson Town Limits
- **ASHE0005-P:** US 221 from Jefferson Town Limits to NC 16
- **ASHE0006-P:** NC 194 from Big Horse Creek Road (SR-1362) to A Street in Lansing

During the course of this study the Town of West Jefferson began the pedestrian planning process. An initial network was developed with the expectation that the CTP will be updated once the study is completed.

- **ASHE0007-P:** Hice Ave from US 221 to School Ave
- **ASHE0008-P:** School Ave from Hice Ave to Main Street
- **ASHE0009-P:** 2nd Ave from 2nd Street to Main Street
- **ASHE0010-P:** NC 194 (Jefferson Ave) from 2nd Street to 5th Street
- **ASHE0011-P:** Wilton Ave from 2nd Street north to end
- **ASHE0012-P:** 2nd Street from NC 194 (Jefferson Ave) to College Street
- **ASHE0013-P:** Main Street from NC 194 (Jefferson Ave) to S Church Ave
- **ASHE0014-P:** S Church Ave from Main Street to Park Ave
- **ASHE0015-P:** Park Ave from S Church Ave to W Ashe Street

- **ASHE0001-M:** A multi-use path was proposed in the Jefferson pedestrian plan. It runs along side US 221 from the existing recreation paths near the junction of US 221 and US 221 Bus in Jefferson to US 221 Bus - NC 194 in West Jefferson

II. Analysis of the Existing and Future Transportation System

In order to develop a Comprehensive Transportation Plan (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 such as pavement widths, intersection geometry, and intersection controls; or system problems, such as the need to construct missing travel links, bypass routes, loop facilities, or additional radial routes.

In the development of this plan, travel demand was projected from 2009 to 2035 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1985 to 2007. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns. The established future growth rates were endorsed by the Ashe County CTP Committee on March 24, 2009 (Socio-Economic) and on May 19, 2009 (Traffic Volumes).

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

eighty percent of the capacity. Refer to Figures 2 and 3 for existing and future capacity deficiencies.

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

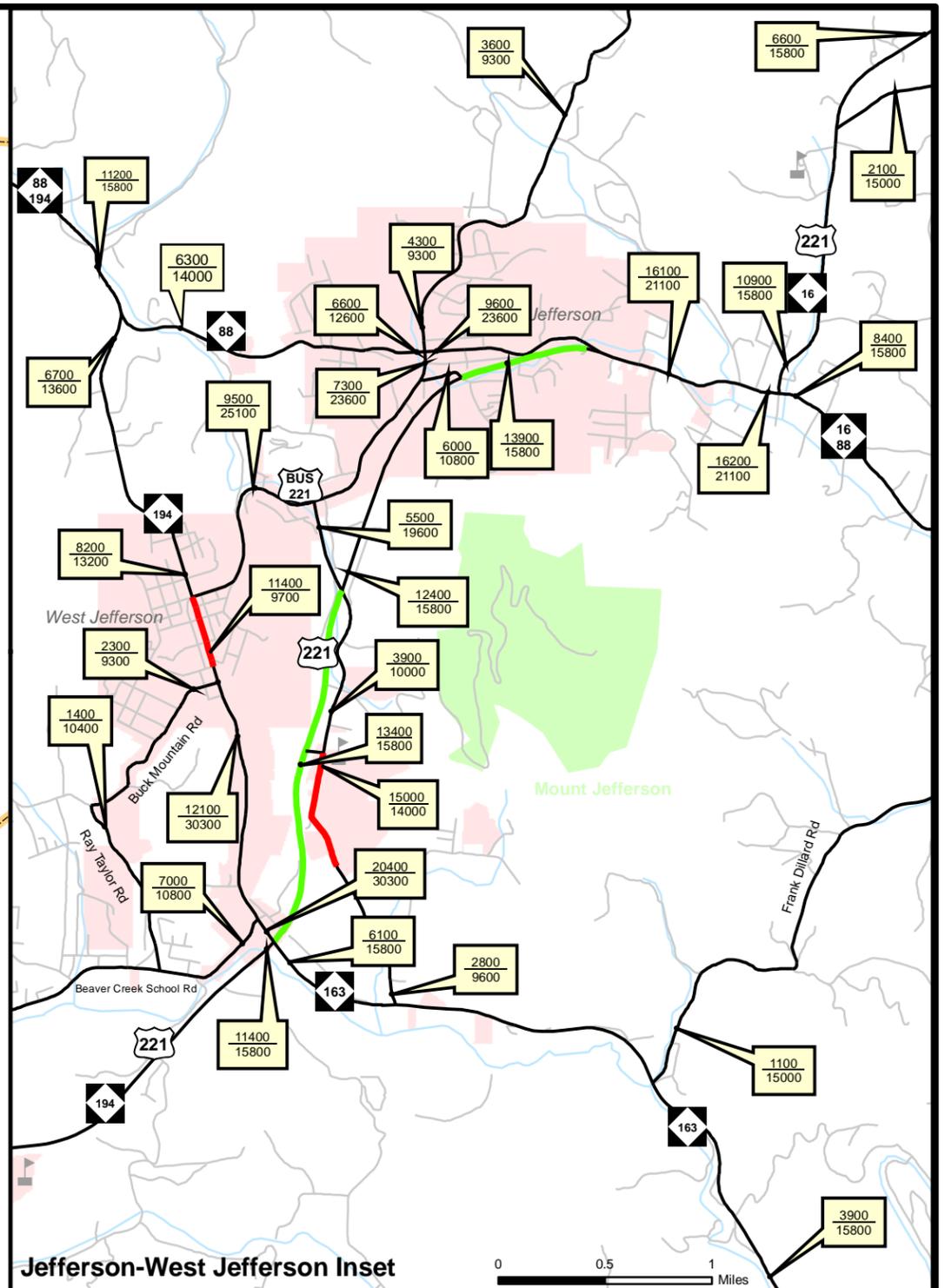
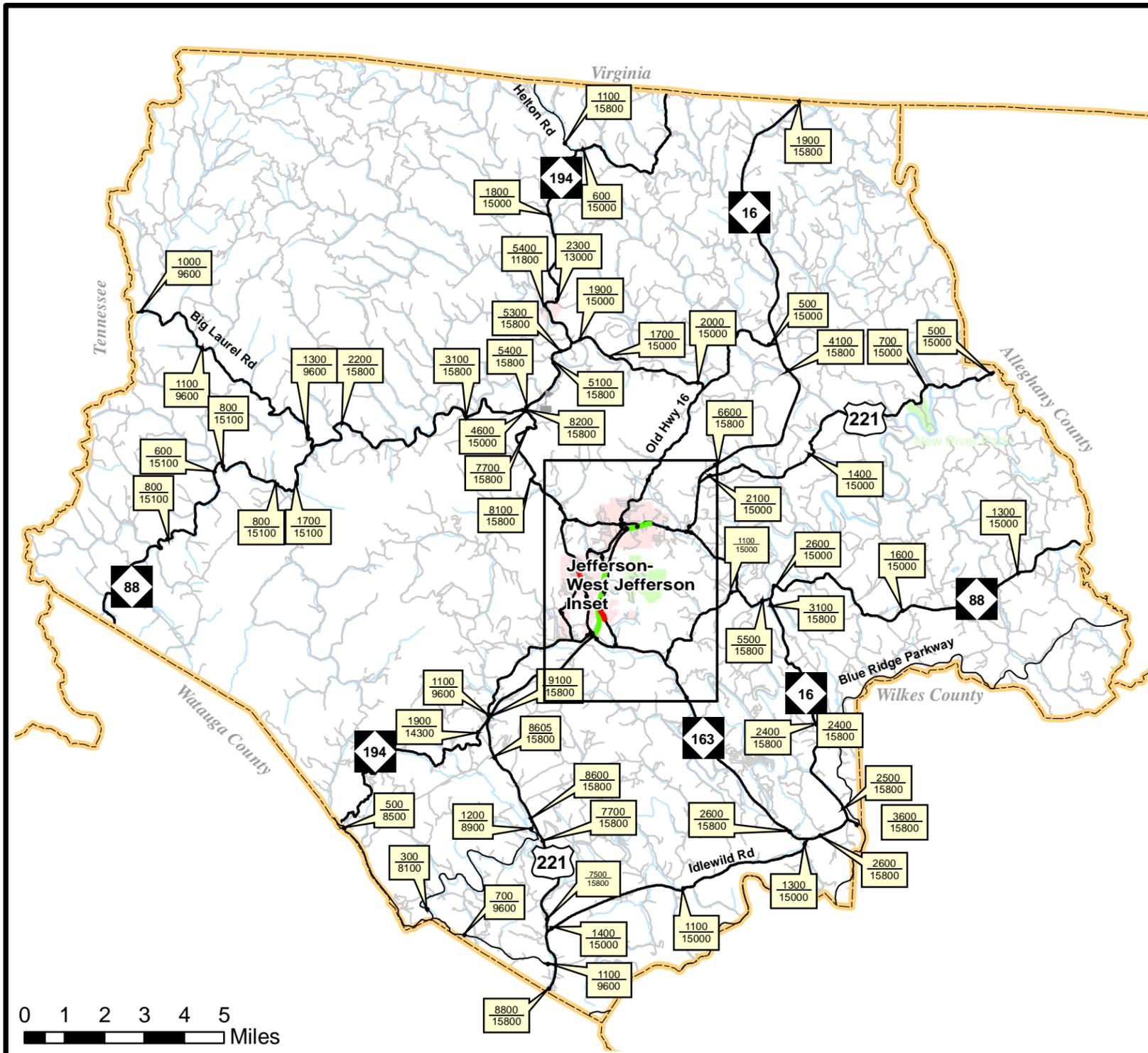
- Geometry of the road (including number of lanes), horizontal and vertical alignment, and proximity of perceived obstructions to safe travel along the road;
- Typical users of the road, such as commuters, recreational travelers, and truck traffic;
- Access control, including streets and driveways, or lack thereof, along the roadway;
- Development along the road, including residential, commercial, agricultural, and industrial developments;
- Number of traffic signals along the route;
- Peaking characteristics of the traffic on the road;
- Characteristics of side-roads feeding into the road; and
- Directional split of traffic or the percentages of vehicles traveling in each direction along a road at any given time.

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

LOS D indicates “practical capacity” of a roadway, or the capacity at which the public begins to express dissatisfaction. The practical capacity for each roadway was developed based on the *2000 Highway Capacity Manual* using the *Mountains Methodology Handbook*. 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 Ashe County CTP for crashes occurring in the planning area between January 1, 2006 and December 31, 2008. During this period, a total of 10 intersections were identified as high crash locations as illustrated in Figure 4. Refer to Appendix F for a detailed crash analysis.



Base map date: January 20, 2009

Legend

2009 Volumes
2009 Capacity

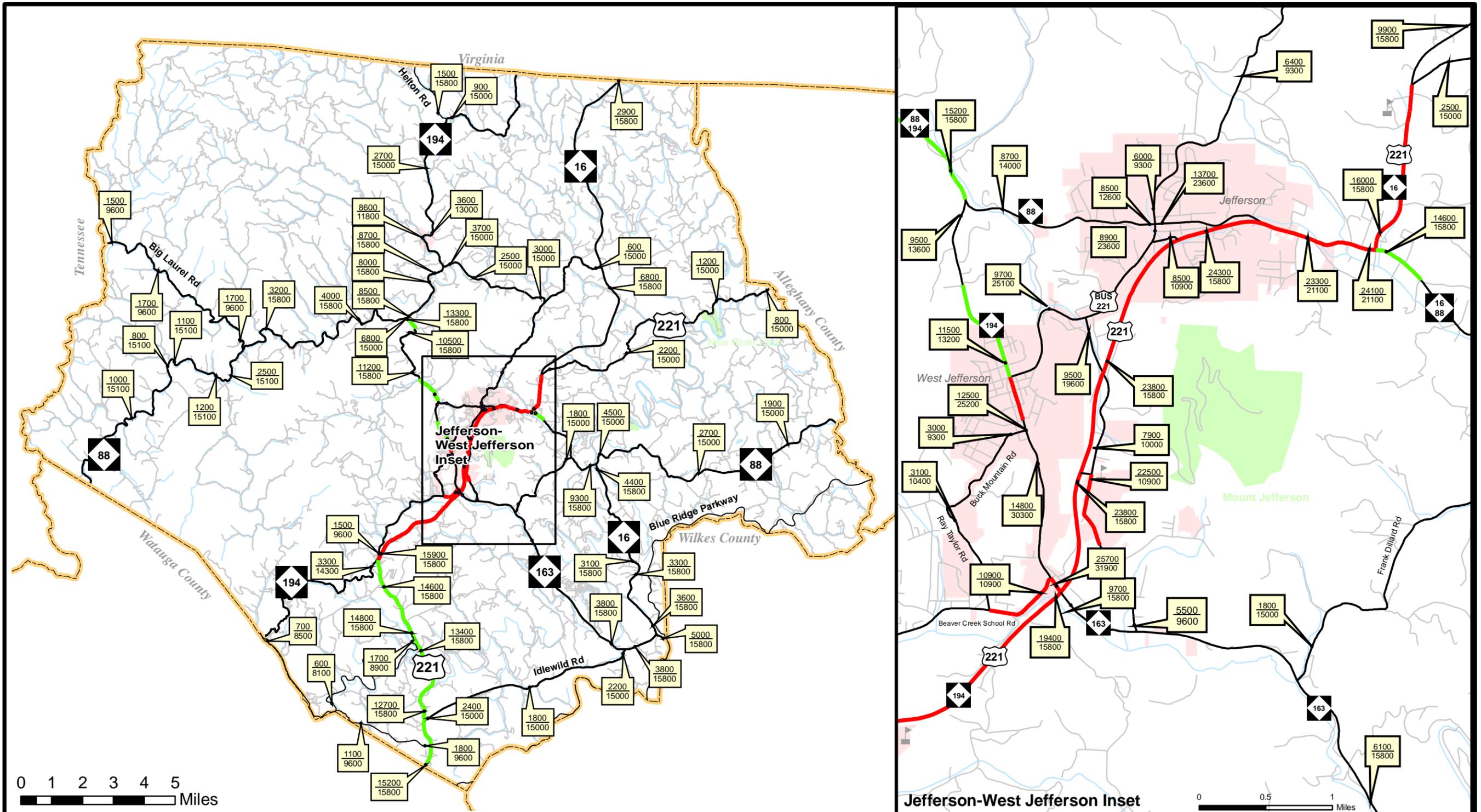
— Near Capacity
— Over Capacity

— Roads
— Railroads
— Rivers and Streams

Schools
 County Boundary
 Municipal Boundary
 Park Land

2009 Volumes and Capacity Deficiencies

**Ashe County
Comprehensive
Transportation Plan
Figure 2**



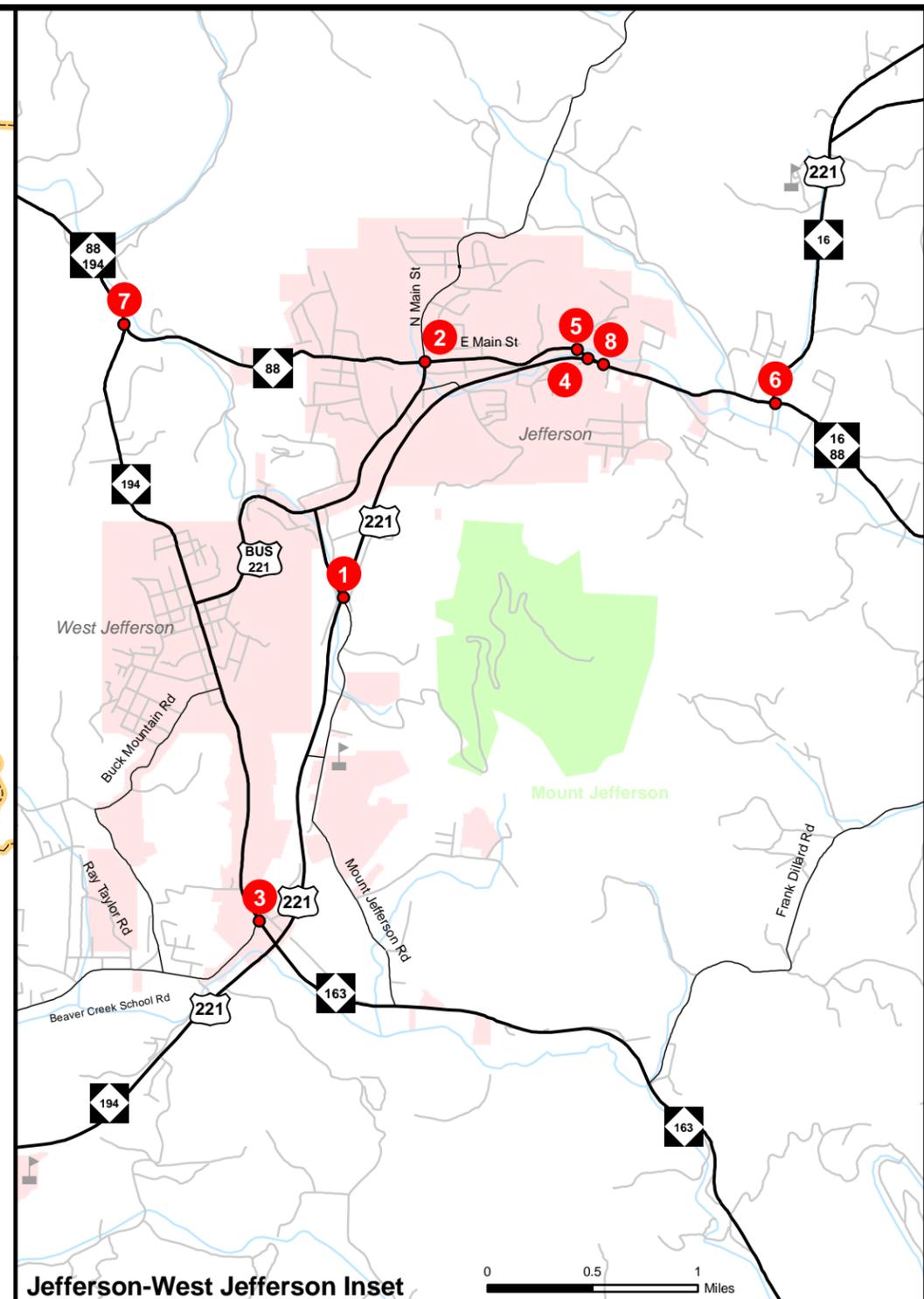
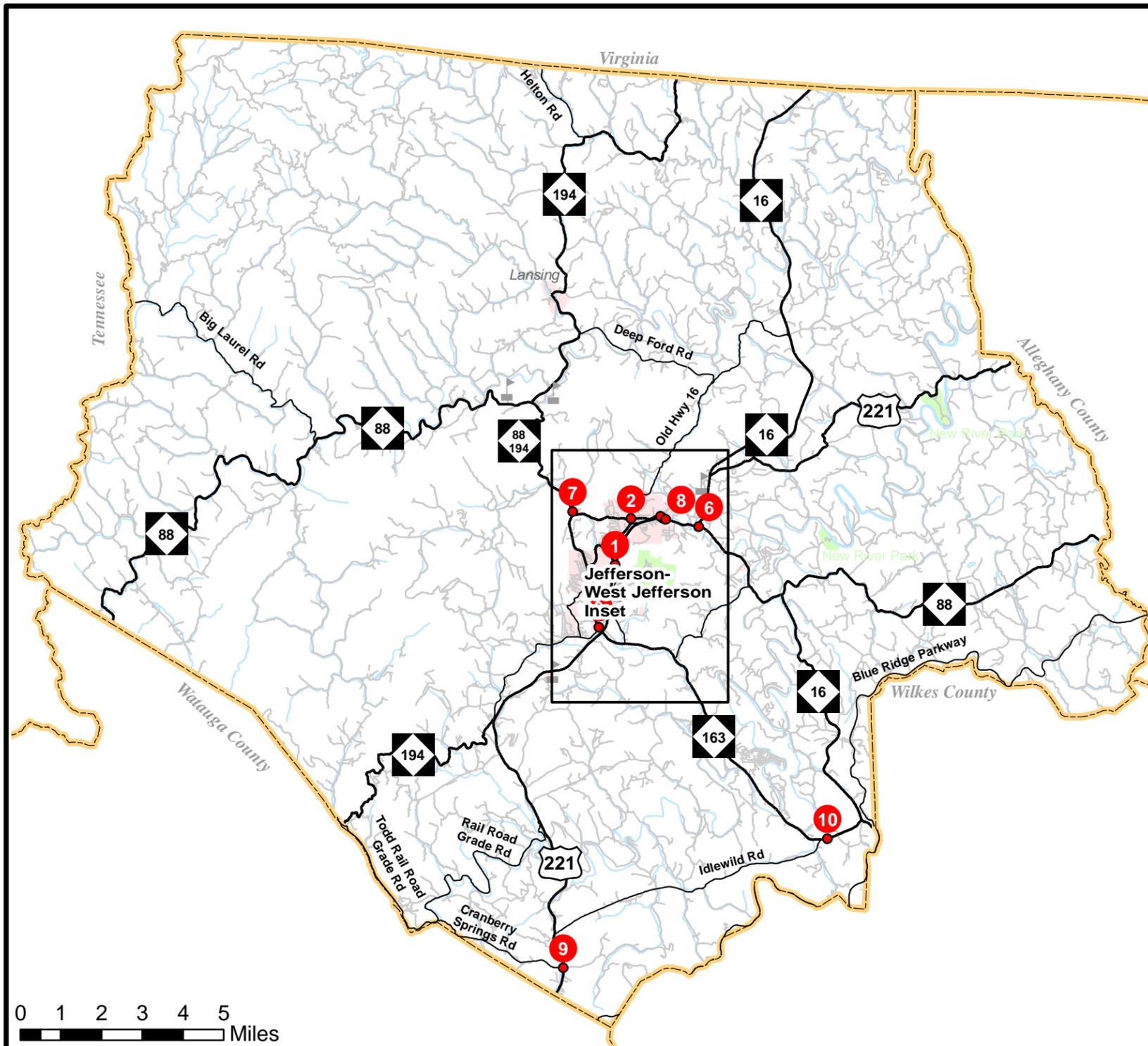
Base map date: January 20, 2009

Legend

- | | | |
|---|----------------------|--------------------|
| 2035 Volumes
2009 Capacity | — Roads | Schools |
| Near Capacity | — Railroads | County Boundary |
| Over Capacity | — Rivers and Streams | Municipal Boundary |
| | | Park Land |

2035 Volumes and Capacity Deficiencies

**Ashe County
Comprehensive
Transportation Plan
Figure 3**



Base map date: January 20, 2009
Refer to Appendix F for more details

Legend

- # High Crash Location (# Map Index)
- Roads
- Railroads
- Rivers and Streams
- 🚓 Schools
- ▭ County Boundary
- ▭ Municipal Boundary
- ▭ Park Land

Crash Locations 2006-2008

Ashe County Comprehensive Transportation Plan Figure 4

Bridge Deficiency Assessment

Bridges are a vital and unique element of a highway system. First, they represent the highest unit investment of all elements of the system. Second, any inadequacy or deficiency in a bridge reduces the value of the total investment. Third, a bridge presents the greatest opportunity of all potential highway failures for disruption of community welfare. Finally, and most importantly, a bridge represents the greatest opportunity of all highway failures for loss of life. For these reasons, it is imperative that bridges be constructed to the same design standards as the system of which they are a part.

The NCDOT Bridge Maintenance 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. Ninety-one (91) deficient bridges were identified within the planning area and are illustrated in Figure 5. Refer to Appendix G for more detailed information.

Public Transportation and Rail

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

Public Transportation

North Carolina's public transportation systems serve more than 50 million passengers each year. Five categories define North Carolina's public transportation: 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. Ashe County Transportation operates both a fixed route circulator and on demand services to the rest of the county. The circulator operates in Jefferson and West Jefferson connecting points of interest including shopping, industry, the high school, government offices, and town centers. 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.

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 everyday. Combined, the Carolinian and Piedmont carry more than 200,000 passengers each year.

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

According to the Rail Division of NCDOT there are no active or planned rail lines in Ashe County. Refer to Appendix A for contact information.

Bicycles & Pedestrians

Bicyclists and pedestrians are a growing part of the transportation equation in North Carolina. Many communities are working to improve mobility for both cyclists and pedestrians.

NCDOT's Bicycle Policy, updated in 1991, clarifies responsibilities regarding the provision of bicycle facilities upon and along the 77,000-mile state-maintained highway system. The policy details guidelines for planning, design, construction, maintenance, and operations pertaining to bicycle facilities and accommodations. All bicycle improvements undertaken by the NCDOT are based upon this policy.

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

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

Inventories of existing and planned bicycle and pedestrian facilities for the planning area are presented on Sheets 4, 5, and 5A of Figure 1. The 2009 Jefferson Pedestrian Plan was utilized in the development of these elements of the CTP. The Blue Ridge Parkway is a federally operated scenic two-lane facility that follows the mountains north and south. It is used by both recreationalist and travelers to access adjacent counties. Recommendations for better bike access for travel northbound from NC 16 and southbound from US 221 are made. 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.

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 2008 *West Jefferson Land Use Plan* and the *Ashe County 2020: A Comprehensive Plan for Growth and Change* were used to meet this requirement and are illustrated in Figures 6 and 7, respectively.

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

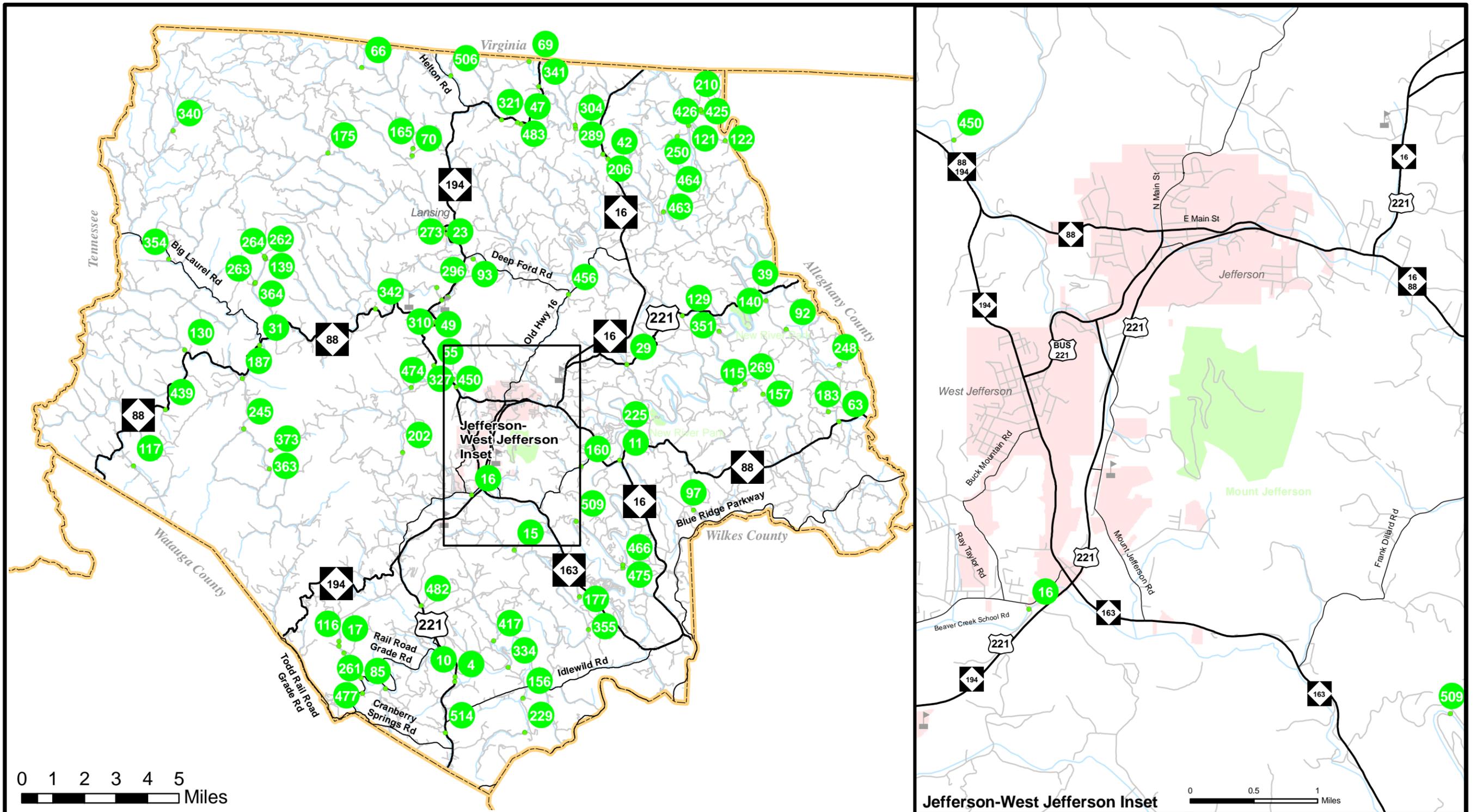
- **Residential**: Land devoted to the housing of people, with the exception of hotels and motels which are considered commercial.
- **Commercial**: Land devoted to retail trade including consumer and business services and their offices; this may be further stratified into retail and special retail classifications. Special retail would include high-traffic establishments,

such as fast food restaurants and service stations; all other commercial establishments would be considered retail.

- Industrial: Land devoted to the manufacturing, storage, warehousing, and transportation of products.
- Public: Land devoted to social, religious, educational, cultural, and political activities; this would include the office and service employment establishments.
- Agricultural: Land devoted to the use of buildings or structures for the raising of non-domestic animals and/or growing of plants for food and other production.
- Mixed Use: Land devoted to a combination of any of the categories above.

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

Ashe County primarily anticipates growth in areas designated as “Primary Growth Areas,” those in the southern and eastern portions of the county, and as “Secondary Growth Areas,” those north and west. Though not exact, this bisection is approximately 2 miles north or west of a path roughly following parallel to NC 194 from the Watauga County line to West Jefferson, then from the towns along US 221 to the Alleghany County line. The majority of new residential communities that have begun the planning process are on Old Highway 16 (SR-1573) with others scatter either along NC 88 west of NC 194 or NC 16 North of US 221. Most potential industrial locations are in or near the towns of Jefferson or West Jefferson. The only identified potential location outside that area is along NC 163, north of Idlewild Rd (SR 1003).



Base map date: January 29, 2009
 Refer to Appendix G for more details

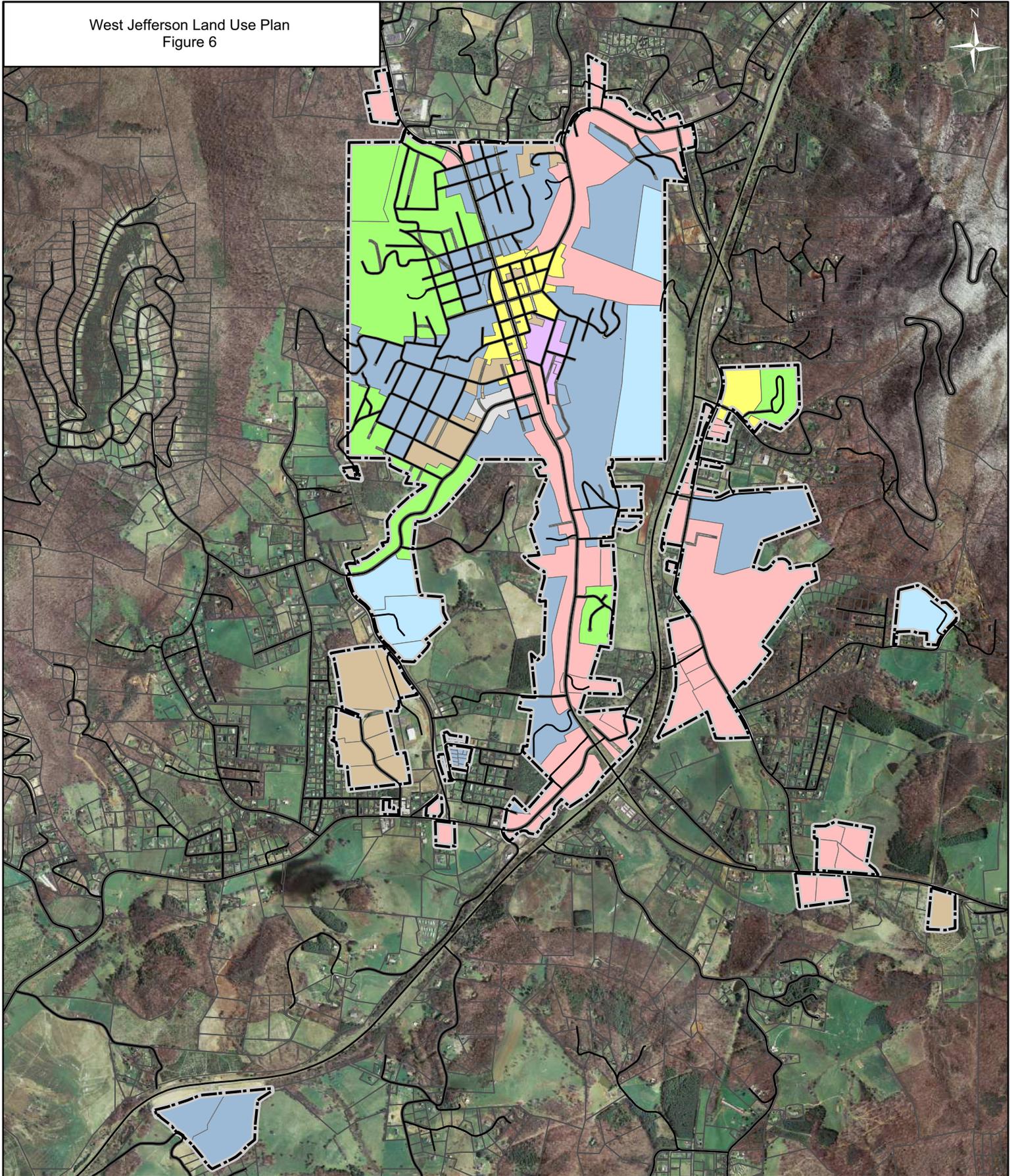
Legend

- # Deficient Bridge (# Map Index)
- Roads
- Railroads
- Rivers and Streams

- Schools
- County Boundary
- Municipal Boundary
- Park Land

Deficient Bridges

**Ashe County
 Comprehensive
 Transportation Plan
 Figure 5**



Zoning (05 / 07 / 08)

- | | |
|---|---|
|  CS - Comm. Shopping |  R15 - Residential |
|  HC - Hwy, Commercial |  R7 - Residential |
|  M1 - Industrial |  RA - Res. Agriculture |
|  CU - Conditional Use |  NS - Neighbrhd. Serv. |

-  Parcels (07/2008)
-  West Jefferson Town Limits (05/2008)
-  Roads (01/2008)



Future Land Use Plan

Legend

-  Primary Growth Area
-  Secondary Growth Area
-  Special Economic Development Area
-  Incorporated Area
-  Strategic Recreation Node
-  Small Area Plan
-  US 221 Corridor Plan
-  VA Creeper Trail System
-  New River Trail System
-  Bicycle Corridor



Figure 7

Consideration of Natural and Human Environment

In recent years, the environmental considerations have come to the forefront of the transportation planning process. Section 102 of the National Environmental Policy Act (NEPA) requires consideration of impacts on wetlands, wildlife, water quality, historic properties, and public lands. While a full NEPA evaluation was not conducted as part of the CTP, potential impacts to these resources were identified as a part of the project recommendations in Chapter 1 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 were examined as a part of this study is shown in the following table utilizing the best available data. Environmental features occurring within Ashe County are shown in Figure 8.

Table 1 – Environmental Features

<ul style="list-style-type: none"> • Ambient Water Quality Monitoring Sites • Animal Operations permits • Artificial Marine Reefs • Beach Access Sites • Benthic Monitoring Results • Bottom Sediment Sampling Sites • Citizen Water Quality Monitoring Sites • Closed Shellfish Harvesting Areas • Coastal Reserves • Conditionally Approved Shellfish Harvesting Areas • Conservation Easements, US Fish & Wildlife Service • Conservation Tax Credit Properties • Discharger Coalitions' Monitoring Sites • Ecosystem Enhancement Program (EEP) Local Watershed Plans, 2004 • Ecosystem Enhancement Program (EEP) Targeted Local Watersheds, 2004 • Federal Land Ownership • Fish Community Sampling Sites 	<ul style="list-style-type: none"> • Fisheries Nursery Areas • Game Lands – Wildlife Resources Commission • Groundwater Incidents, unverified • Groundwater Recharge/Discharge • Hazardous Substance Disposal Sites • Hazardous Waste Facilities • Heavy Metal & Organic-Rich Mud Pollutant Sample Sites • High Quality Water and Outstanding Resource Water Management Zones • Hurricane Storm Surge Inundation Areas • Land Trust Conservation Properties • Land Trust Priority Areas • Lands Managed for Conservation & Open Space • Macrosite Boundaries • Megasite Boundaries • National Pollutant Discharge Elimination System Sites (NPDES) – Major and Minor • National Wetlands Inventory • North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS)
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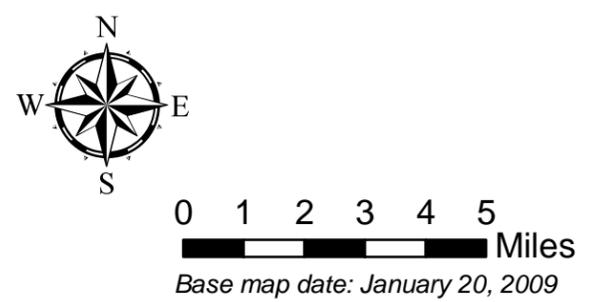
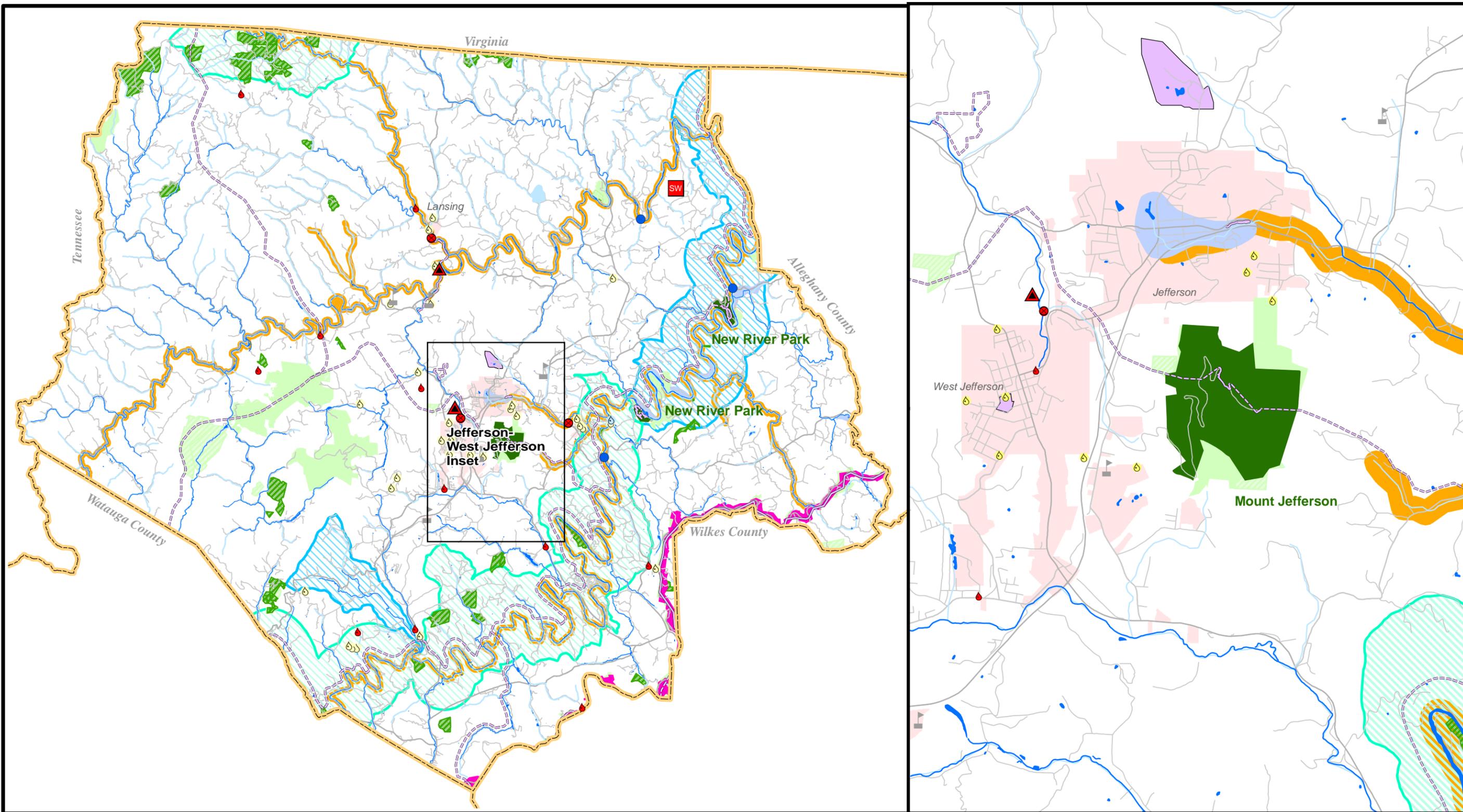
Table 1 – Environmental Features (cont.)

- Public Water Supply Water Sources
- Recreation Projects – Land and Water Conservation Fund
- Shellfish Strata
- Significant Aquatic Endangered Species Habitats
- Solid Waste Facilities
- State Parks
- Submersed Rooted Vasculars
- Surface Water Intakes
- Trout Streams (DWQ)
- Water Distribution Systems – Water Treatment Plants
- Water Supply Watersheds
- Well Ground Water Intakes

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
- Dedicated Nature Preserves and Registered Heritage Areas
- Historic National Register Districts
- Historic National Register Structures
- Historic Study List Districts
- Historic Study List Structures
- Managed Areas National Heritage Element Occurrences
- Significant Natural Heritage Areas



- Legend**
- Municipal Boundary
 - County Boundary
 - Roads
 - Rivers and Lakes
 - Existing Regional Trails
 - Proposed Regional Trails
 - Recreation Land Conservation Fund
 - National Wetland Inventory
 - Federal Land
 - Public Schools
 - SW Solid Waste Facilities
 - Hazardous Substance Disposal Sites
 - Sewer Systems Treatment Plants
 - Groundwater Incidents Unverified
 - Surface Water Intakes
 - Public Water Supply Water Sources
 - Ambient Water Quality Monitoring Sites
 - Land Trust Priority Areas
 - State Parks
 - Land Trust Conservation Properties
 - Lands Managed For Conservation And Open Space
 - Conservation Tax Credit Properties
 - Groundwater Recharge-Discharge
 - High Quality Waters
 - Outstanding Resource Waters

Environmental Features

**Ashe County
Comprehensive
Transportation Plan
Figure 8**

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.

The High County RPO requested the development of a comprehensive transportation plan for Ashe County through a prioritized list of regional needs. A meeting was held with the Ashe County Board of Commissioners in December 2008 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 Ashe County Economic Development Committee, which included a representative from each municipality, county staff, and others, 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 a public drop-in session in Ashe County to present the proposed Comprehensive Transportation Plan to the public and solicit comments. This meeting was held from 5:00 – 7:00 PM on December 15, 2009 at the Ashe County High School. The event was advertised in the local newspaper and on the radio. One written comment was received.

A public hearing was held on February 15, 2010 during the Ashe County Commissioners meeting. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting.

A public hearing was held on February 22, 2010 during the Jefferson Aldermen meeting. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting.

A public hearing was held on March 1, 2010 during the West Jefferson Aldermen meeting. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting.

A public hearing was held on March 11, 2010 during the Lansing Aldermen meeting. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting.

The High Country RPO endorsed the CTP on March 17, 2010.

The North Carolina Department of Transportation mutually adopted the Ashe County CTP on May 6, 2010.

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 homepage:

1-877-DOT-4YOU

(1-877-368-4968)

<https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx>

Secretary of Transportation

Eugene A. Conti, Jr., Ph.D. 1501 Mail Service Center
(919) 733-2520 Raleigh, NC 27699-1501

<http://www.ncdot.org/about/leadership/secretary.html>

Board of Transportation Member

Mr Samuel L. Halsey
(336) 246-5500
slhalsey@ncdot.gov

307 Don Walters Rd
Jefferson, NC 28604
<http://www.ncdot.gov/about/board/default.html>

Highway Division Engineer

Contact the Division Engineer with general questions concerning NCDOT activities within each Division and for information on Small Urban Funds.

Michael A. Pettyjohn, PE
(336) 667-9111
mpettyjohn@ncdot.gov

801 Statesville Rd
North Wilkesboro, 28659
<http://www.ncdot.gov/doh/operations/division11/>

Division Project Manager

Contact the Division Project Manager with questions concerning transportation projects within each Division.

Joe L. Laws, PE
(336) 667-9111
jlaws@ncdot.gov

801 Statesville Rd
North Wilkesboro, 28659

Division Construction Engineer

Contact the Division Construction Engineer for information concerning major roadway improvements under construction.

Trent Beaver, PE
(336) 667-9111
tbeaver@ncdot.gov

801 Statesville Rd
North Wilkesboro, 28659

Strategic Planning Office

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

Mr. Don Voelker

(919) 715-0951

djvoeker@ncdot.gov

1501 Mail Service Center

Raleigh, NC 27699-1501

<https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=11054>

Project Development & Environmental Branch (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) 733-3141

<http://www.ncdot.gov/doh/preconstruct/pe/>

Secondary Roads Office

Contact the Secondary Roads Office 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) 733-3250

<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) 733-2039

<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) 733-4713

<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) 733-7245
<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) 807-0777
<http://www.ncdot.gov/transit/bicycle/>

Bridge Maintenance Unit

Contact the Bridge Maintenance Unit for information on bridge management throughout the state.

1565 Mail Service Center
Raleigh, NC 27699-1565
(919) 733-4362
http://www.ncdot.gov/doh/operations/dp_chief_eng/maintenance/bridge/

Highway Design Branch

The Highway Design Branch consists of the Roadway Design, Structure Design, Photogrammetry, Location & Surveys, Geotechnical, and Hydraulics Units. Contact the Highway Design Branch for information regarding design plans and proposals for road and bridge projects throughout the state.

1584 Mail Service Center
Raleigh, NC 27699-1584
(919) 250-4001
<http://www.ncdot.gov/doh/preconstruct/highway/>

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

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.

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, 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.
- **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.
- **ROW:** The estimated existing right-of-way is based on the Roadway Pavement Conditions Database. These right-of-way amounts are approximate and may vary.
- **Existing and Proposed Capacity:** The estimated capacities are given in vehicles per day (vpd) based on LOS D for existing facilities and LOS C for new facilities. These capacity estimates were developed using the Mountains Methodology, as documented in Chapter II. The Proposed Capacity is shown in bold if it does not meet or exceed the 2035 AADT with CTP.
- **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 '2035 No Build AADT' is an estimate of the volume in 2035 with no additional facilities/ improvements assumed to be in place that were not open to traffic in the base year (2009). The '2035 AADT with CTP' is an estimate of the volume in 2035 with all proposed CTP improvements assumed to be in place. For additional information about the assumptions and techniques used to develop the AADT volume estimates, refer to Chapter II.
- **Rec. (Recommended) 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, Major= other major thoroughfare, Minor= minor thoroughfare.
- **Tier:** Tiers are defined as part of the North Carolina Multimodal Investment Network (NCMIN). Abbreviations are Sta= statewide tier, Reg= regional tier, Sub= subregional tier.
- **Other Modes:** If there is an improvement recommended for another mode of transportation that relates to the given recommendation, it is indicated by an alphabetic code (H=highway, T= public transportation, R= rail, B= bicycle, and P= pedestrian).

Table 3 - CTP INVENTORY AND RECOMMENDATIONS

ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	2009 Existing System				2035 Proposed System				Other Modes				
					Cross-Section (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2009 AADT	2035 AADT No Build	2035 AADT with CTP	Proposed Capacity (vpd)		Rec. Cross-Section	ROW (ft)	CTP Classification	
																	Tier
R-2915	US 221	WATAUGA CO LINE - NC 194	Ashe County	7.69	24	2	100	55	15800	8800	15900	15900	43000	F	120	B	B
R-2915	US 221	NC 194 - US 221 BUS	Ashe County	3.59	24	2	350	55	15800	13900	23800	23800	43000	F	120	B	Sta T B
ASHE0001-H	US 221	US 221 BUS - NC 88	Ashe County	3.49	44	4	60	35	26700	16200	24100	16100	31900	E	110	B	Sta T B
US 221		NC 88 - NC 16	Jefferson	0.87	24	2	100	55	15800	8400	16000	8000	15800	ADQ	100	Major	Sta B P
R-2310	US 221	NC 16 - ALLEGNY CO LINE	Ashe County	1.1	18	2	60	55	15800	2100	2500	2500	15800	K	70	Major	Sta -
ASHE0002-H	US 221 BUS	US 221 - Beaver Creek School Rd	West Jefferson	0.13	48	4	250	45	30300	20400	25700	22700	30300	ADQ	250	B	Reg T B P
	US 221 BUS	Beaver Creek School Rd - Hamilton St	West Jefferson	1.09	48	4	70	45	26500	12100	14800	11800	26500	ADQ	70	Major	Reg B P
	US 221 BUS	Hamilton St - Second St	West Jefferson	0.31	64	2	80	20	8600	11400	12500	9500	8600	ADQ	80	Major	Reg T B P
	US 221 BUS	Second St - Width Change	West Jefferson	0.19	32	3	60	30	13500	9500	9700	9700	13500	ADQ	60	Major	Reg T B P
	US 221 BUS	Width Change - Mount Jefferson Rd	West Jefferson	0.8	48	4	60	35	25100	9500	9700	9700	25100	ADQ	60	Major	Reg T B P
ASHE0008-H	US 221 BUS	Mount Jefferson - NC 88	Jefferson	0.89	40	4	60	35	23600	7300	8900	8900	25100	G	90	Major	Reg T B P
ASHE0008-H	US 221 BUS	NC 88 - Cherry St	Jefferson	0.86	40	4	60	35	23600	9600	13700	5700	25100	G	90	Major	Reg T B P
	NC 16	WILKES CO LINE - Claude Mash Rd	Ashe County	4.19	24	2	60	55	15800	2500	3600	3600	15800	ADQ	60	Major	Reg -
R-2100	NC 16	Claude Mash Rd - NC 88	Ashe County	2.32	20	2	60	55	15800	3100	4400	4400	15800	K	70	Major	Reg -
	NC 16	NC 88 - US 221	Ashe County	3.08	24	2	60	45	15800	8400	14600	14600	15800	ADQ	60	Major	Reg -
R-4058	NC 16	US 221 - VIRGINIA ST LINE	Ashe County	12.1	22	2	100	55	15800	6600	9900	9900	15800	K	70	Major	Reg B
ASHE0003-H	NC 16 Connector	US 221 - NC 88	Jefferson	0.7	-	-	-	-	-	-	-	8000	15800	K	70	Major	Reg
R-2563	NC 88	WATAUGA CO LINE - Dr. Robinson Rd	Ashe County	17.4	18	2	60	55	15000	3100	2500	2500	15800	K	70	Major	Reg -
R-2563	NC 88	Dr. Robinson Rd - NC 194	Ashe County	1.47	20	2	100	55	15800	4600	6800	6800	15800	K	100	Major	Reg -
ASHE0004-H	NC 88	NC 194 - NC 194	Ashe County	3.74	22	2	60	55	15800	11200	15200	15200	15800	K	70	Major	Reg B
U-3812	NC 88	NC 194 - US 221 BUS	Jefferson	1.52	22	2	60	35	12800	6600	8700	8700	13900	K	70	Major	Reg B P
ASHE0009-H	NC 88	NC 16 - ALLEGNY CO LINE	Ashe County	9.86	18	2	60	55	15000	2600	4500	4500	15800	K	70	Major	Reg -
ASHE0010-H	NC 163	US 221 - NC 16	Ashe County	7.98	20	2	100	55	15800	6100	9700	9700	15800	K	100	Major	Reg B
ASHE0011-H	NC 194	WATAUGA CO LINE - US 221	Ashe County	7.23	18	2	60	55	13500	1900	3300	3300	15800	K	70	Major	Reg B
ASHE0005-H	NC 194	US 221 BUS - NC 88	West Jefferson	1.49	20	2	60	35	13600	8200	11500	8500	15800	K	70	Major	Reg P
ASHE0012-H	NC 194	NC 88 - LANSING CITY LIMIT	Ashe County	3.14	20	2	100	55	15800	5400	8700	8700	15800	K	100	Major	Reg B
ASHE0012-H	NC 194	LANSING rd LIMIT	Lansing	0.9	20	2	40	20	11000	4400	8600	8600	15800	K	70	Major	Reg B P
ASHE0012-H	NC 194	LANSING CITY LIMIT - VIRGINIA ST LINE	Ashe County	9	18	2	60	55	15000	2300	3600	3600	15800	K	70	Major	Reg -
FS-0111B	NC 194 Bypass	US 221 - NC 88	Jefferson	3.3	-	-	-	-	-	-	-	3000	15800	K	70	Major	Reg -
ASHE0013-H	SR 1003 (Idlewild Rd)	NC 163 - US 221	Ashe County	7.29	20	2	100	55	15000	1400	2400	2400	15800	K	70	Major	Sub B
	SR 1100 (Cranberry Springs Rd)	US 221 - Rail Road Grade Rd	Ashe County	3.39	20	2	60	55	9600	700	1800	1800	15800	ADQ	60	Minor	Sub -
ASHE0014-H	SR 1100 (Todd Rail Road Grade Rd)	Rail Road Grade Rd - NC 194	Ashe County	4.01	14	2	60	55	8500	500	700	700	15800	K	70	Minor	Sub B

Table 3 - CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																		
ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	2009 Existing System				2035 Proposed System					Other Modes				
					Cross-Section (ft) lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2009 AADT	2035 AADT No Build	2035 AADT with CTP	Proposed Capacity (vpd)	Rec. Cross-Section		ROW (ft)	CTP Classification		
ASHE0015-H	SR 1106 (Rail Road Grade Rd)	SR 1100 - US 221	Ashe County	7.02	12	2	60	55	8100	1200	1700	1700	15800	K	70	Minor	Sub	B
	SR 1133 (Ray Taylor Rd)	Beaver Creek School Rd - Buck Mountain Rd	West Jefferson	0.87	24	2	80	35	10400	1400	3100	3100	10400	ADQ	80	Minor	Sub	T
ASHE0016-H	SR 1134 (Buck Mountain Rd)	Ray Taylor Rd - US 221 BUS	West Jefferson	0.9	18	2	60	35	9300	2300	3000	3000	9300	K	70	Minor	Sub	T
	SR 1149 (Mount Jefferson Rd)	NC 163 - Jefferson CITY LIMIT	Ashe County	0.92	20	2	60	35	9600	2800	5500	5500	9600	ADQ	60	Major	Sub	-
ASHE0007-H	SR 1149 (Mount Jefferson Rd)	Jefferson CITY LIMIT - Ashe County High School	Jefferson	0.57	36	2	60	35	10900	15000	22500	22500	29300	E	110	Major	Sub	T
	SR 1149 (Mount Jefferson Rd)	Ashe County High School - US 221	Ashe County	0.93	22	2	60	35	10000	3900	7900	7900	10000	ADQ	60	Major	Sub	T
	SR 1149 (Mount Jefferson Rd)	US 221 - US 221 BUS	Ashe County	0.38	48	4	70	35	19600	5500	9500	9500	19600	ADQ	70	Major	Sub	B
	SR 1155 (Frank Dillard Rd)	US 221 - NC 16/88	Ashe County	2.73	20	2	60	55	15000	1100	1800	1800	15000	ADQ	60	Minor	Sub	-
	SR 1248 (Beaver Creek School Rd)	NC 194 - Ray Taylor Rd	Ashe County	3.53	20	2	60	55	9600	1100	1500	1500	9600	ADQ	60	Minor	Sub	P
ASHE0006-H	SR 1248 (Beaver Creek School Rd)	Ray Taylor Rd - US 221 BUS	West Jefferson	0.59	36	3	60	35	10800	7000	10900	10900	14600	H	80	Minor	Sub	-
	SR 1254 (Long St)	US 221 - US 221 BUS	Jefferson	0.2	36	3	150	35	10800	6000	8500	8500	10800	ADQ	150	Minor	Sub	B P
	SR 1315 (Big Laurel Rd)	NC 88 - TENNESSEE ST LINE	Ashe County	7.19	20	2	40	55	9600	1300	1700	1700	9600	ADQ	40	Minor	Sub	-
ASHE0017-H	SR 1370 (Helton Rd)	NC 194 - VIRGINA ST LINE	Ashe County	2.3	18	2	50	55	15800	1100	1500	1500	15800	K	70	Minor	Sub	-
ASHE0018-H	SR 1501 (Deep Ford Rd)	Old Hwy 16 - SR 1514	Ashe County	2.44	20	2	60	55	15000	2000	3000	3000	15800	K	70	Minor	Sub	-
ASHE0019-H	SR 1514 (Deep Ford Rd)	SR 1501 - NC 194	Ashe County	1.49	20	2	60	55	15000	1900	3700	3700	15800	K	70	Minor	Sub	-
ASHE0020-H	SR 1576 (Old Hwy 16)	US 221 BUS - NC 16	Ashe County	7.41	18	2	60	55	15000	4300	6400	6400	15800	K	70	Minor	Sub	P

BICYCLE AND PEDESTRIAN ¹

BICYCLE								
ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Cross-Section (ft)	lanes	Type	Cross-Section	
ASEH0001-B	US 221	Watauga Co Line - NC 163	11.3	Concurrent with US 221	-	see Highway Table		H
ASHE0002-B	US 221	SR 1254 (Long Street) to NC 16	0.2	Concurrent with US 221	BUS-	see Highway Table		H
ASHE0003-B	US 221 BUS	NC 163 to US 221 in Jefferson	0.5	Concurrent with NC 16-	see Highway Table			H P
ASHE0004-B	NC 16	US 221 to Virginia ST Line	13.4	Concurrent with US 221-	see Highway Table			H
ASHE0005-B	NC 88	SR 1153 (Dogget Rd) to NC 194	0.4	Concurrent with NC 88-	see Highway Table			H
ASHE0006-B	NC 194	NC 88 to SR 1353 in Lansing	7.6	Concurrent with NC 194-	see Highway Table			H
ASHE0007-B	NC 163	US 221 to the Blue Ridge Parkway	9.5	Concurrent with NC 163-	see Highway Table			H
ASHE0008-B	NC 194	1100 (Todd Rail Road Grade Rd) to US 221	7.1	Concurrent with NC 194-	see Highway Table			H
ASHE0009-B	SR 1003 (Idlewild Rd)	US 221 to NC 163	7.3	Concurrent with SR 1003 (Idlewild Rd) -	see Highway Table			H
ASHE0010-B	SR 1006 (Rail Road Grade Rd)	US 221 to SR 1100 (Todd Rail Road Grade Rd)	6.4	Concurrent with SR 1006 (Rail Road Grade Rd) -	see Highway Table			H
ASHE0011-B	SR 1100 (Todd Rail Road Grade Rd)	1006 (Rail Road Grade Rd) to NC 194	3.8	Concurrent with SR 1100 (Todd Rail Road Grade Rd) -	see Highway Table			H
ASHE0012-B	SR 1152 (Mount Jefferson State Park Rd)	Mount Jefferson State Park to US 221 BUS	4.7	18	2	On Road	B-1, B-4	-
ASHE0013-B	SR 1153 (Dogget Rd)	US 221 BUS to NC 88	1	18	2	On Road	B-4	-
ASHE0014-B	SR 1582 (Friendship Baptist Church Rd)	NC 16 to Employment Security Commission	1.4	18	2	On Road	B-4	-

PEDESTRIAN								
ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Type	Side of Street	Type	Side of Street	
ASHE0002-P	US 221 BUS	NC 194 (Jefferson Ave) - SR 1149 (Mount Jefferson Rd)	1.0	-	-	Sidewalks	Both	H T B
ASEH0003-P	US 221 BUS	Long St to US 221	1.3	-	-	Sidewalks	Both	H T B
ASHE0004-P	SR 1248 (Beaver Creek School Rd)	NC 194 (Jefferson Ave) - West Jefferson City Limits	0.4	-	-	Sidewalks	Both	H
ASHE0005-P	US 221	Jefferson City Limits - NC 16	0.3	Sidewalk	North	Sidewalks	Both	H

¹Only major routes and proposals are shown here. For further documentation of bicycle and pedestrian facilities and proposals, refer to the 2009 *Town of Jefferson Pedestrian Plan*.

MULTI-USE PATH								
ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Type	Side of Street	Type	Cross-Section	
ASHE0001-M	US 221	NC 163 - US 221 BUS	3.3	--	--	Multi-use Path	B-5	-

PUBLIC TRANSPORTATION AND RAIL

PUBLIC TRANSPORTATION ¹								
ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Type	Speed Limit	Type	Speed Limit	
ASHE0001-T	Downtown Circulator	US 221, US 221 BUS, NC 88, Buck Mountain Rd, Ray Taylor Rd, Beaver Creek School Rd	10.9	Bus	20 to 55 (MPH)	Bus	20 to 55 (MPH)	H B P

¹Only major public transportation routes and proposals are shown here.

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.

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, and
- roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment.

Typical Cross Sections

A: Four Lanes Divided with Median - Freeway

Cross section "A" is typical for four-lane divided highways in rural areas that may have only partial or no control of access. The minimum median width for this cross section is 46 feet, but a wider median is desirable.

B: Seven Lanes - Curb & Gutter

Cross section "B" is typically not recommended for new projects. When the conditions warrant six lanes, cross section "D" should be recommended. Cross section "B" should be used only in special situations such as when widening from a five-lane section where right-of-way is limited. Even in these situations, consideration should be given to converting the center turn lane to a median so that cross section "D" is the final cross section.

C: Five Lanes - Curb & Gutter

Typical for major thoroughfares, cross section "C" is desirable where frequent left turns are anticipated as a result of abutting development or frequent street intersections.

D: Six Lanes Divided with Raised Median - Curb & Gutter**E: Four Lanes Divided with Raised Median - Curb and Gutter**

Cross sections "D" and "E" are typically used on major thoroughfares where left turns and intersection streets are not as frequent. Left turns would be restricted to a few selected intersections. The 16-ft median is the minimum recommended for an urban boulevard-type cross section. In most instances, monolithic construction should be utilized due to greater cost effectiveness, ease and speed of placement, and reduced future maintenance requirements. In certain cases, grass or landscaped medians result in greatly increased maintenance costs and an increase danger to maintenance personnel. Non-monolithic medians should only be recommended when the above concerns are addressed.

F: Four Lanes Divided - Boulevard, Grass Median

Cross section "F" is typically recommended for urban boulevards or parkways to enhance the urban environment and to improve the compatibility of major thoroughfares with residential areas. A minimum median width of 24 ft is recommended, with 30 ft being desirable.

G: Four Lanes - Curb and Gutter

Cross section "G" is recommended for major thoroughfares where projected travel indicates a need for four travel lanes but traffic is not excessively high, left turning movements are light, and right-of-way is restricted. An additional left turn lane would likely be required at major intersections. This cross section should be used only if the above criteria are met. If right-of-way is not restricted, future strip development could take place and the inner lanes could become de facto left turn lanes.

H: Three Lanes - Curb and Gutter

In urban environments, thoroughfares that are proposed to function as one-way traffic carriers would typically require cross section "H".

I: Two Lanes – Curb and Gutter, Parking both sides**J: Two Lanes – Curb and Gutter, Parking one side**

Cross section "I" and "J" are usually recommended for urban minor thoroughfares since these facilities usually serve both land service and traffic service functions. Cross-section "I" would be used on those minor thoroughfares where parking on both sides is needed as a result of more intense development.

K: Two Lanes - Paved Shoulder

Cross section "K" is used in rural areas or for staged construction of a wider multilane cross section. On some thoroughfares, projected traffic volumes may indicate that two travel lanes will adequately serve travel for a considerable period of time. For areas that are growing and future widening will be necessary, the full right-of-way of 100 ft should be required. In some instances, local ordinances may not allow the full 100-ft. In those cases, 70 ft should be preserved with the understanding that the full 70-ft will be preserved by use of building setbacks and future street line ordinances.

L: Six Lanes Divided with Grass Median - Freeway

Cross section “L” is typical for controlled access freeways. The 46-ft grass median is the minimum desirable width, but variation from this may be permissible depending upon design considerations. Right-of-way requirements are typically 228 ft or greater, depending upon cut and fill requirements.

M: Eight Lanes Divided with Raised Median - Curb and Gutter

Also used for controlled access freeways, cross section "M" may be recommended for freeways going through major urban areas or for routes projected to carry very high volumes of traffic.

N: Five Lanes with Curb & Gutter, Widened Curb Lanes

O: Two Lanes/Shoulder Section

P: Four Lanes Divided with Raised Median – Curb & Gutter, Widened Curb Lanes

If there is sufficient bicycle travel along the thoroughfare to justify a bicycle lane or bikeway, additional right-of-way may be required to contain the bicycle facilities. The North Carolina Bicycle Facilities Planning and Design Guidelines should be consulted for design standards for bicycle facilities. Cross sections “N”, “O” and “P” are typically used to accommodate bicycle travel.

General

The urban curb and gutter cross sections all illustrate the sidewalk adjacent to the curb with a buffer or utility strip between the sidewalk and the minimum right-of-way line. This permits adequate setback for utility poles. If it is desired to move the sidewalk farther away from the street to provide additional separation for pedestrians or for aesthetic reasons, additional right-of-way must be provided to insure adequate setback for utility poles.

The right-of-way shown for each typical cross section is the minimum amount required encompassing the street, sidewalks, utilities, and drainage facilities. Cut and fill requirements may require either additional right-of-way or construction easements. Obtaining construction easements is becoming the more common practice for urban roadway construction.

Bicycle Cross Sections

Cross sections B-1, B-2, B-3, B-4, and B-5 are typical bicycle cross sections. Contact the NCDOT Division of Bicycle and Pedestrian Transportation for more information regarding these cross-sections.

B-1: Four Lanes Divided with Wide Outside Lanes

B-2: Five Lanes with Wide Outside Lanes

A widened outside lane is an effective way to accommodate bicyclists riding in the same lane with motor vehicles. With a wide outside lane, motorists do not have to change lanes to pass a bicyclist. The additional width in the outside lane also improves sight distance and provides more room for vehicles to turn onto the roadway. Therefore, on

roadways with bicycle traffic, widening the outside lane can improve the capacity of that roadway. Also, by widening the outside lane by a few extra feet both motorists and bicyclists have more space in which to maneuver. This facility type is generally considered for use in urban, suburban, and occasionally rural conditions on roadways where there is a curb and gutter. Wide outside lanes can be applied to several different roadway cross sections.

B-3: Bicycle Lanes on Collector Streets

Bicycle lanes may be considered when it is desirable to delineate road space for preferential use by cyclists. Streets striped with bicycle lanes should be part of a connected bikeway system rather than being an isolated feature. Bicycle lanes function most effectively in mid-block situations by separating bicyclists from overtaking motor vehicles. Integrating bicyclists into complicated intersection traffic patterns can sometimes be problematic. Strip development areas, or roadways with a high number of commercial driveways, tend to be less suitable for bicycle lanes due to frequent and unpredictable motorist turning movements across the path of straight-through cyclists. Striped bike lanes can be effective as a safety treatment, especially for less experienced bicyclists. Two-lane residential/collector streets with lower traffic volume, low-posted speed limit, adequate roadway width for both bike lanes and motor vehicle travel lanes, and an absence of complicated intersections. A median-divided multi-lane roadway with lower traffic volumes and a low volume of right and left turning traffic would be a more appropriate location for bicycle lanes than a high traffic volume undivided multi-lane roadway with a continuous center turn lane. Most bicyclists will choose a route that combines direct access with lower traffic volumes. An origin and destination of less than 4 miles is desirable to generate usage on a facility.

B-4: Wide Paved Shoulders

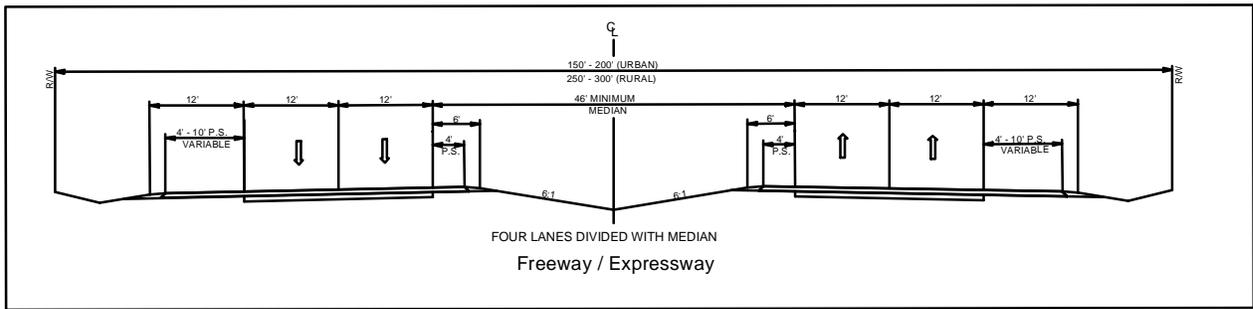
On urban streets with curb and gutter, wide outside lanes and bicycle lanes are usually the preferred facilities. Shoulders for bicycle use are not typically provided on roadways with curb and gutter. On rural roadways where bicycle travel is common, such as roads in coastal resort areas, wide paved shoulders are highly desirable. On secondary roadways without curb and gutter where there are few commercial driveways and intersections with other roadways, many bicyclists prefer riding on wide, smoothly paved shoulders.

B-5: Multi-use Pathway

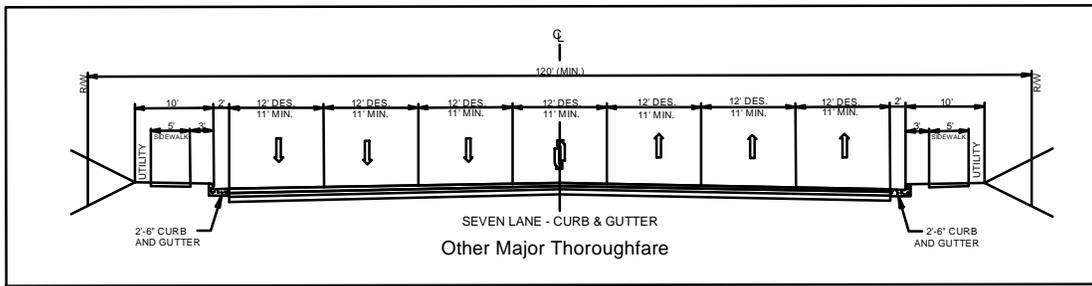
When properly located, multi-use pathway can be a safer type of facility for novice and child bicyclists because they do not have to share the path with motor vehicles. The design standards used for this cross section provides adequate width for two-directional use by both cyclists and pedestrians, provisions of good sight distance, avoidance of steep grades and tight curves, and minimal cross-flow by motor vehicles. A multi-use pathway can serve a variety of purposes, including recreation and transportation. This pathway should not be located immediately adjacent to a roadway because of safety considerations at intersections with driveways and roads. Sidewalks should never be used as a multi-use pathway.

TYPICAL HIGHWAY CROSS SECTIONS

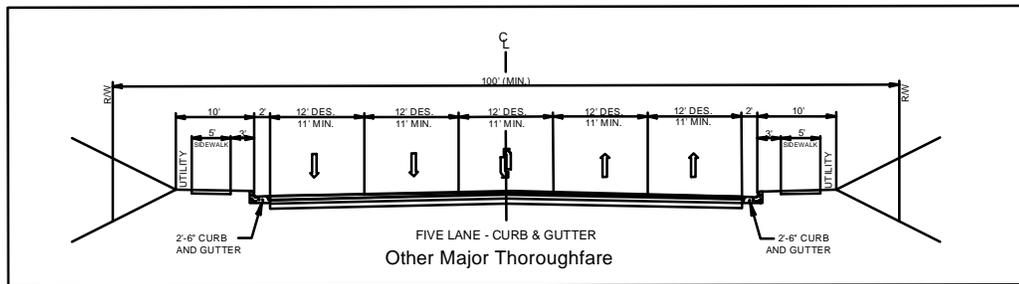
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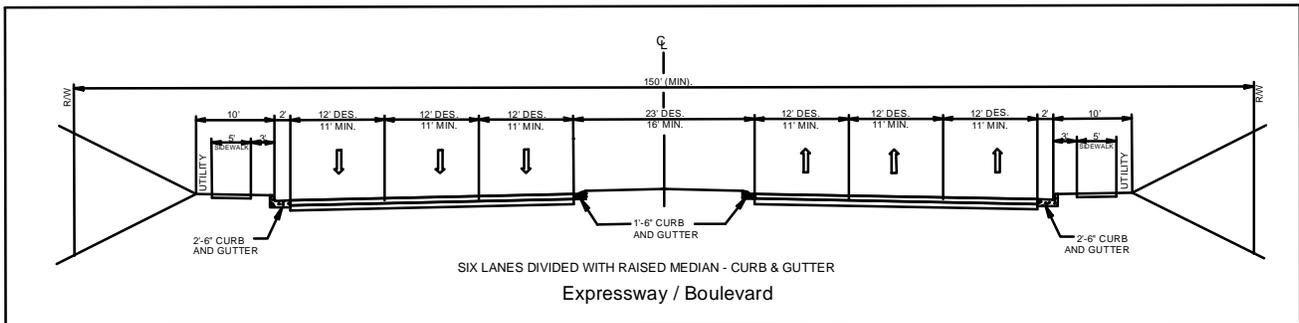
B



C



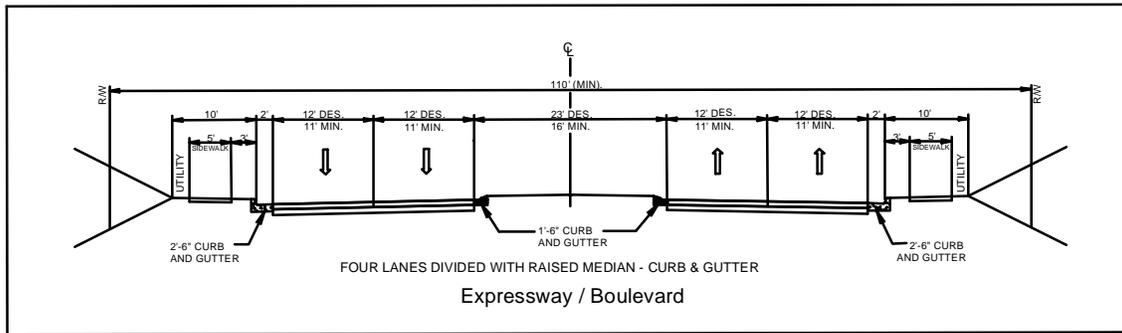
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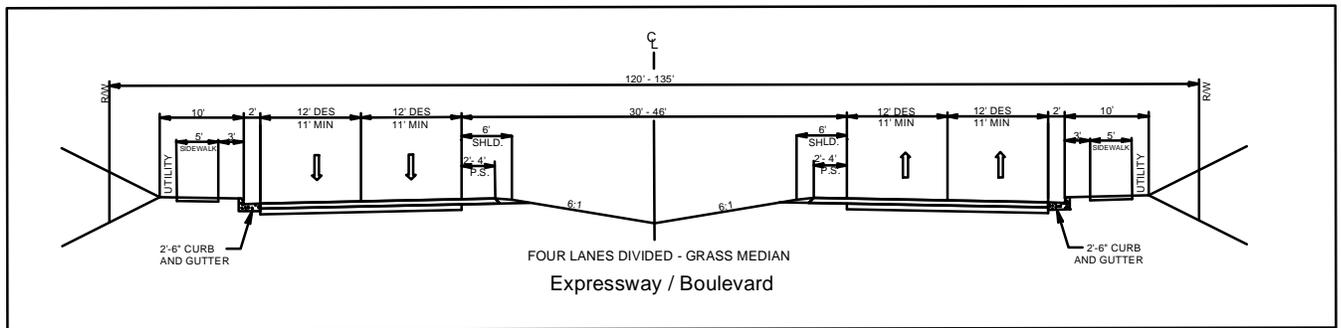
revised 04-01-05

TYPICAL HIGHWAY CROSS SECTIONS

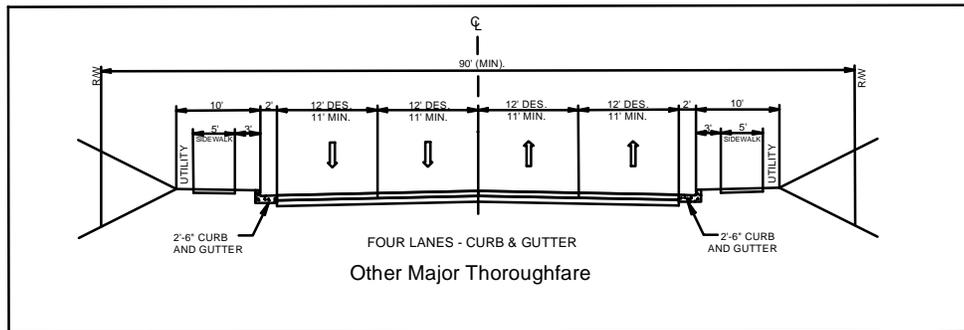
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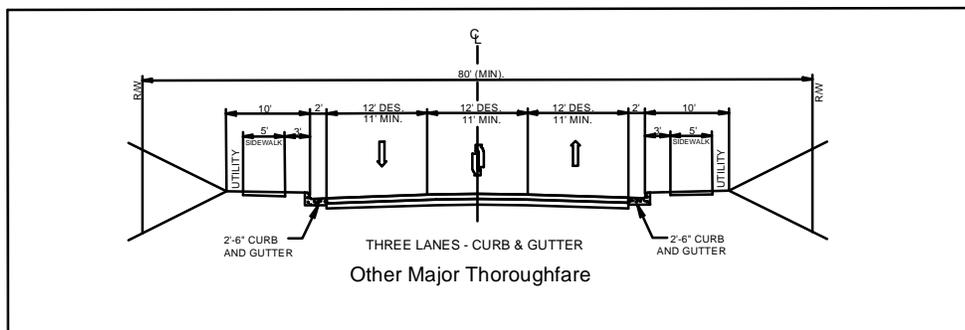
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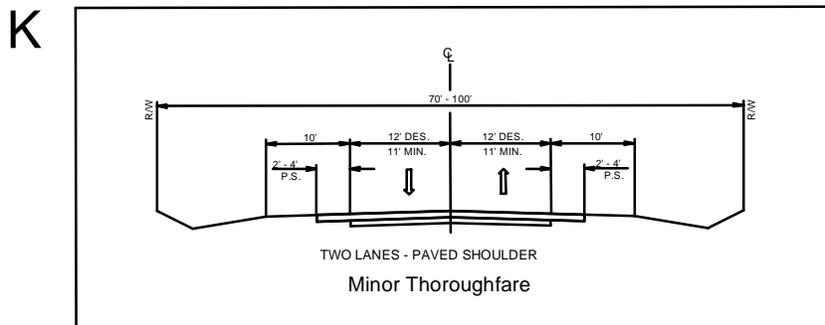
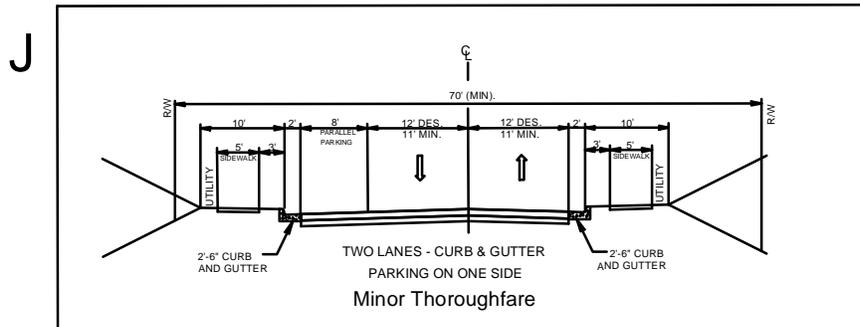
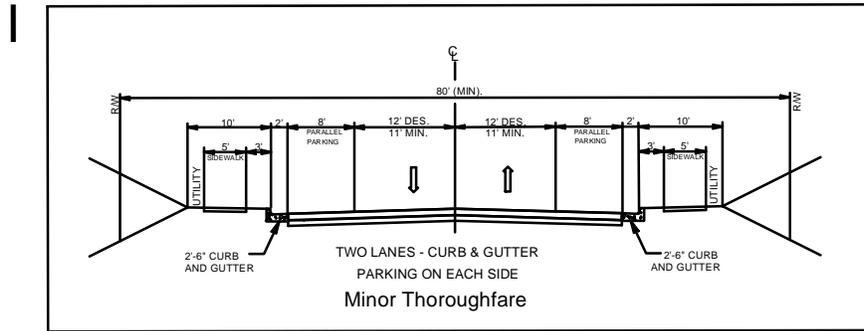
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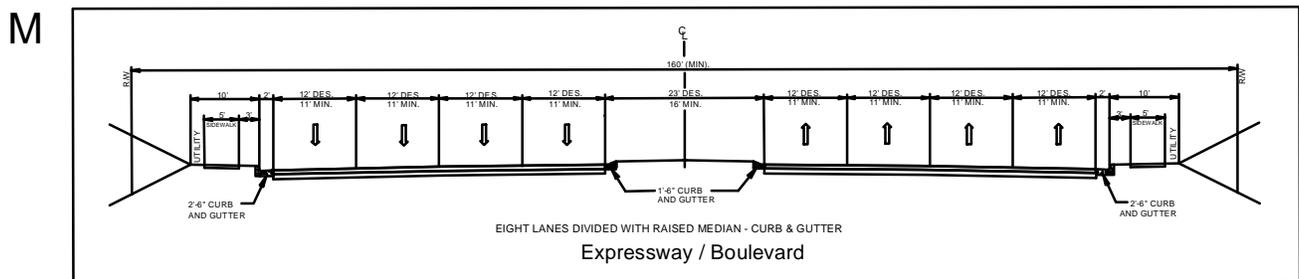
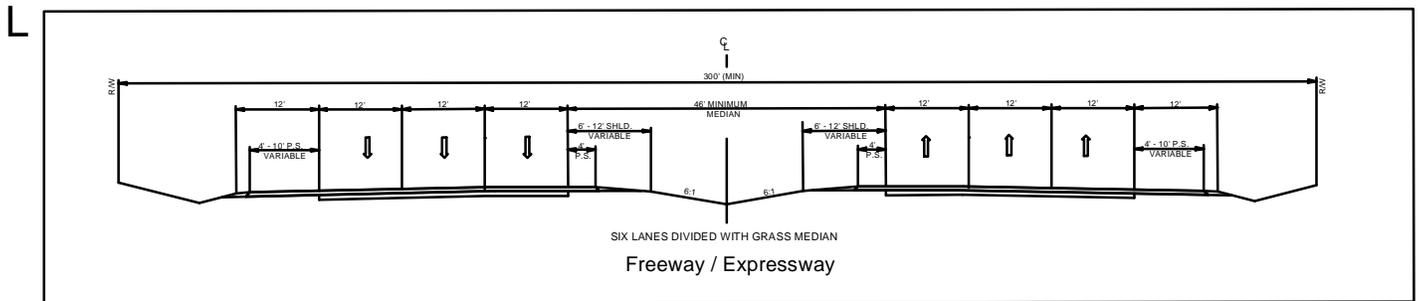
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TYPICAL HIGHWAY CROSS SECTIONS



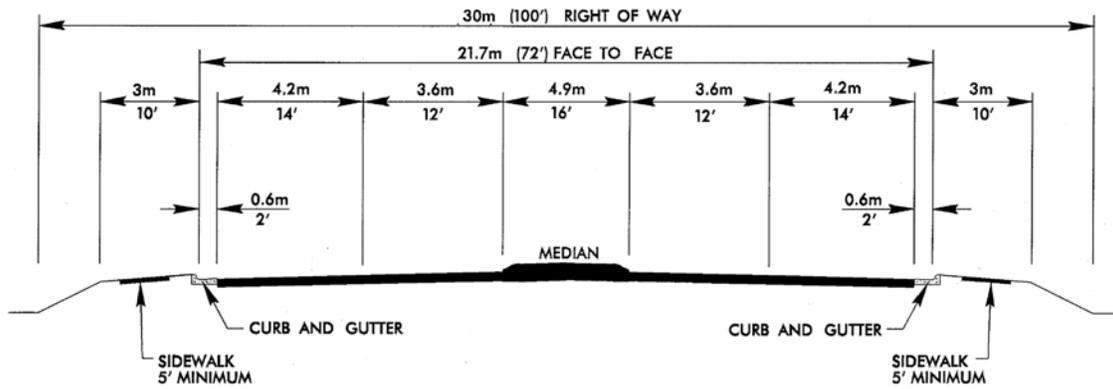
TYPICAL HIGHWAY CROSS SECTIONS



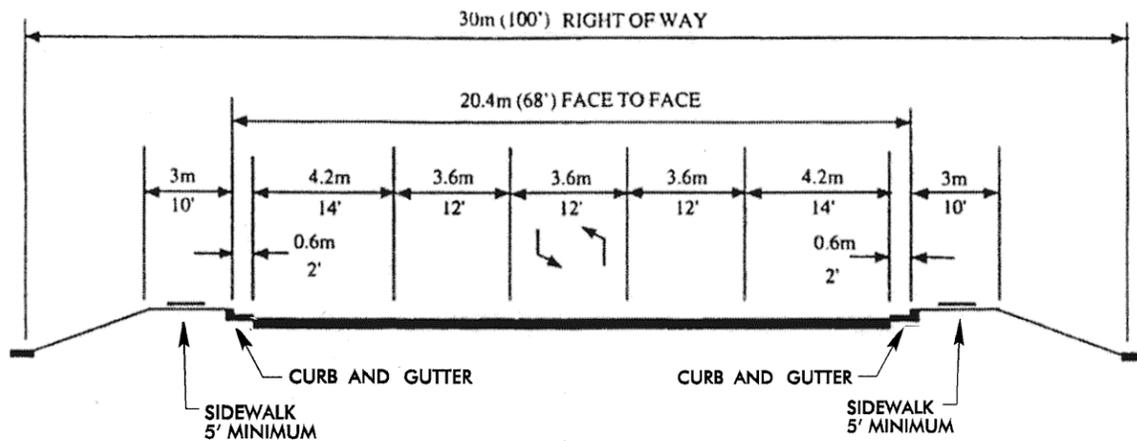
Typical Bicycle Cross Sections

WIDE CURB LANES

B-1 4-LANE MEDIAN DIVIDED TYPICAL SECTION With Wide Outside Lanes



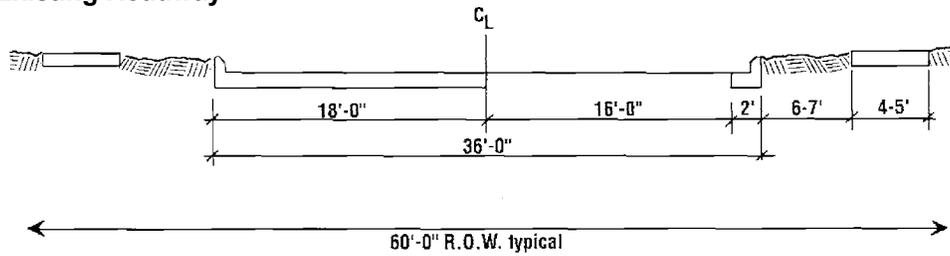
B-2 5-LANE TYPICAL SECTION With Wide Outside Lanes



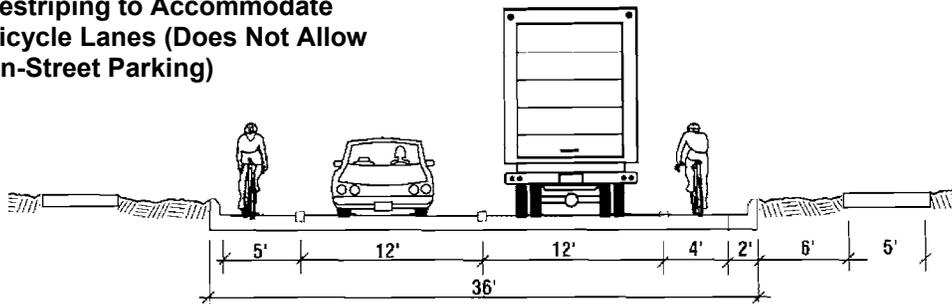
Typical Bicycle Cross Sections

B-3 BICYCLE LANES ON COLLECTOR STREETS

Existing Roadway



**Restriping to Accommodate
Bicycle Lanes (Does Not Allow
On-Street Parking)**

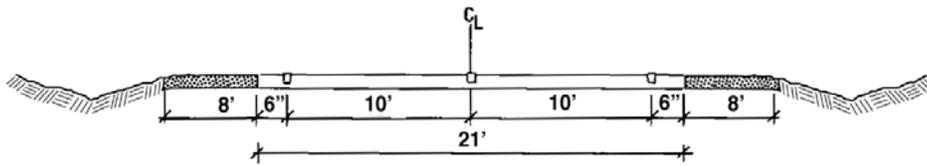


Typical Bicycle Cross Sections

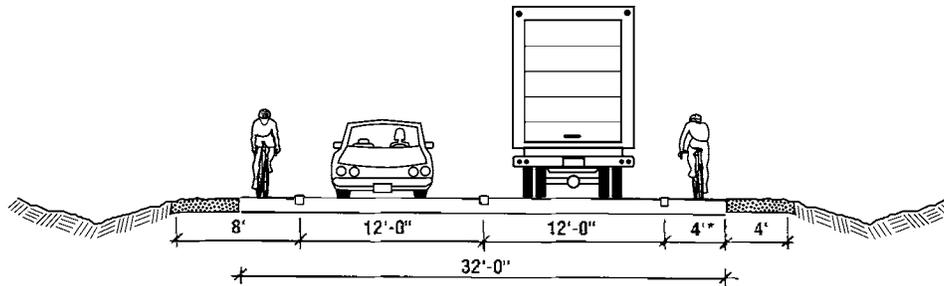
B-4

WIDE PAVED SHOULDERS

Existing Roadway



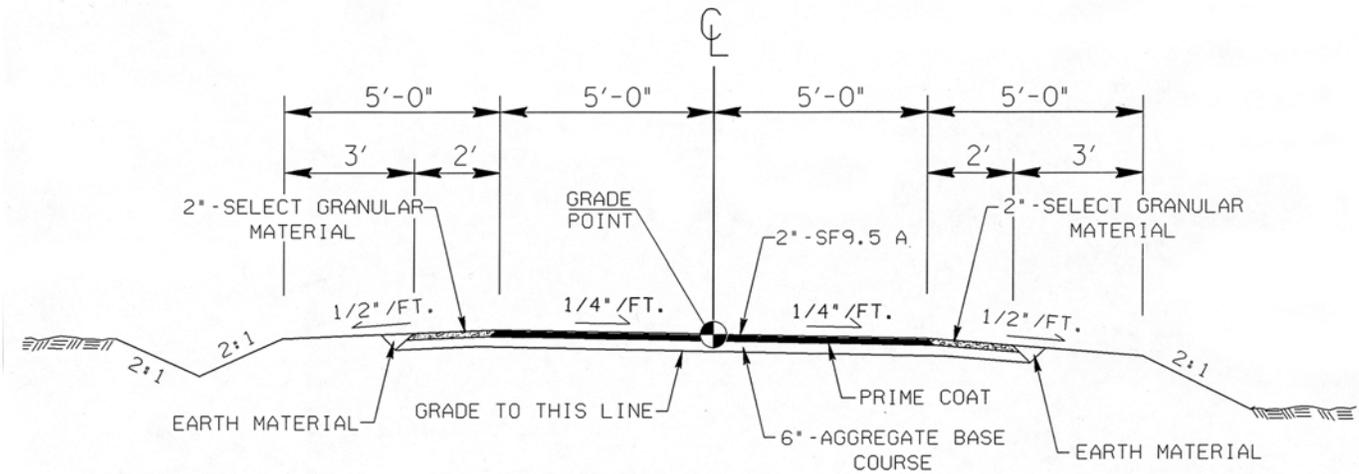
Roadway Retrofitted with
4-Ft Paved Shoulders



* If speeds are higher than 40 mph,
shoulder widths greater than 4' are
recommended.

Typical Bicycle Cross Sections

B-5 RECOMMENDED TYPICAL SECTION OF 10-FT ASPHALT PATHWAY With 2-Ft Select Material Shoulder



Appendix E

Level of Service Definitions

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

Design requirements for roadways vary according to the desired capacity and level of service. LOS D indicates “practical capacity” of a roadway, or the capacity at which the public begins to express dissatisfaction. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C on new facilities. The six levels of service are described below and illustrated in Figure 10.

- **LOS A**: Describes 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 10 - 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 Ashe County CTP factored crash frequency, crash type, and crash severity. Crash frequency is the total number of reported collisions 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 47.7 times more severe than one involving only property damage and a crash resulting in minor injury is 11.8 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.

<u>Severity</u>	<u>Severity Index</u>
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, 2006 and December 31, 2008. The data represents locations with 10 or more crashes or 5 crashes and a severity average greater than that of the state's index. The state index for the most recent three year span (2005-2007) was 5.82 for primary routes and 6.20 for secondary routes. The "Number of crashes" column indicates the total number of accidents reported within 150-ft of the intersection during the three year study period. The severity listed is the average crash severity for that location. The "Location ID" can be used to find the intersection on the related figure.

Table 4 - Crash Locations

Location ID	Number of crashes	Road A	Road B	Severity
1	21	US 221	SR 1149	6.02
2	18	US 221 Bus	US 221 Bus (NC88)	7.40
3	17	Beaver Creek School	US 221 Bus	2.30
4	15	US 221 Bus	US 221	4.95
5	14	US 221 Bus	SR 1664 - Hospital Rd	3.11
6	13	US 221	NC 16	3.05
7	12	NC 88	NC 194	2.85
8	10	US 221	Government	3.96
9	9	US 221	SR 1100	11.89
10	5	NC 163	SR 1241	16.16

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

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

The NCDOT Bridge Maintenance 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 or functionally obsolete. 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 within the planning area are listed in Table 5.

Table 5 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	CTP Project
4	US221	S.FORK NEW RVR.OVERFLOW	Functionally Obsolete	R-2915 ASHE0001-B
8	NC194	N. FORK NEW RIVER	Functionally Obsolete	ASHE0019-H ASHE0006-B
10	US221	SOUTH FORK NEW RIVER	Structurally Deficient	R-2915 ASHE0001-B
11	NC16,88	SR1588,S.FORK NEW	Functionally Obsolete	
15	SR1147	CREEK	Structurally Deficient	
16	SR1195	BEAVER CREEK	Functionally Obsolete	
17	SR1109	CREEK	Structurally Deficient	
23	NC194	OLD FIELD CREEK	Functionally Obsolete	ASHE0012-H ASHE0006-B
29	US221	DOG CREEK	Functionally Obsolete	R-2310
31	NC88	BIG LAUREL CREEK	Structurally Deficient	R-2563
39	US221	S. FORK NEW RIVER	Structurally Deficient	R-2310
42	NC16	SR1536, HELTONS CREEK	Structurally Deficient	R-4058 ASHE0004-B
47	SR1523	BIG HELTON CREEK	Functionally Obsolete	
49	NC88	BUFFALO CREEK	Structurally Deficient	R-2563 ASHE0006-B
55	NC88,194	BUFFALO CREEK	Structurally Deficient	ASHE0004-H ASHE0006-B
63	NC88	CRANBERRY CREEK	Functionally Obsolete	ASHE0009-H
66	SR1362	BIG HORSE CREEK	Functionally Obsolete	
69	SR1376	SHIPPEYS BRANCH	Structurally Deficient	
70	SR1366	HORSE CREEK	Structurally Deficient	
85	SR1106	CREEK	Structurally Deficient	ASHE0015-H ASHE0010-B
92	SR1603	CRANBERRY CREEK	Functionally Obsolete	
93	SR1644	N.FORK NEW RIVER	Functionally Obsolete	
97	SR1628	ROAN CREEK	Functionally Obsolete	
115	SR1595	PEAK CREEK	Structurally Deficient	
116	SR1110	CREEK	Structurally Deficient	
117	SR1118	HOSKIN FORK CREEK	Structurally Deficient	
121	SR1552	N.FORK NEW RIVER	Functionally Obsolete	
122	SR1549	NORTH FORK NEW RIVER	Structurally Deficient	
129	SR1595	CREEK	Functionally Obsolete	
130	SR1308	CREEK	Structurally Deficient	
139	SR1317	RICH HILL CREEK	Functionally Obsolete	
140	SR1600	CRANBERRY CREEK	Functionally Obsolete	
156	SR1169	PINE SWAMP CREEK	Structurally Deficient	
157	SR1599	PEAK CREEK	Structurally Deficient	

Bridge Number	Facility	Feature	Condition	CTP Project
160	SR1155	NAKED CREEK	Structurally Deficient	
165	SR1362	BIG HORSE CREEK	Functionally Obsolete	
175	SR1324	LITTLE HORSE CREEK	Functionally Obsolete	
177	SR1181	BEAVER CREEK	Structurally Deficient	
183	SR1609	CRANBERRY CREEK	Functionally Obsolete	
187	SR1100	THREE TOP CREEK	Functionally Obsolete	
202	SR1138	CREEK	Functionally Obsolete	
206	SR1536	HELTON CREEK	Functionally Obsolete	
210	SR1547	GRASSY CREEK	Structurally Deficient	
220	SR1625	ROAN CREEK	Structurally Deficient	
225	SR1588	ROAN CREEK	Structurally Deficient	
226	SR1105	S.FORK NEW RIVER	Functionally Obsolete	
229	SR1169	PINE SWAMP CREEK	Structurally Deficient	
245	SR1100	LONG HOPE CREEK	Structurally Deficient	
248	SR1608	CREEK	Structurally Deficient	
250	SR1553	CREEK	Structurally Deficient	
261	SR1108	MILL CREEK	Functionally Obsolete	
262	SR1317	RICH HILL CREEK	Functionally Obsolete	
263	SR1317	RICH HILL CREEK	Functionally Obsolete	
264	SR1317	RICH HILL CREEK	Functionally Obsolete	
269	SR1599	PEAK CREEK	Structurally Deficient	
273	SR1347	BIG HORSE CREEK	Structurally Deficient	
289	SR1536	HELTON CREEK	Functionally Obsolete	
296	SR1351	N.FORK NEW RIVER	Functionally Obsolete	
304	SR1528	HELTON CREEK	Functionally Obsolete	
310	SR1507	BUFFALO CREEK	Structurally Deficient	
321	SR1526	HELTON CREEK	Functionally Obsolete	
327	SR1509	CREEK	Structurally Deficient	
334	SR1169	SOUTH FORK NEW RIVER	Functionally Obsolete	
337	SR1503	N.FORK NEW RIVER	Structurally Deficient	
340	SR1322	CREEK	Functionally Obsolete	
341	SR1379	CREEK	Functionally Obsolete	
342	SR1343	N.FORK NEW RIVER	Functionally Obsolete	
351	SR1602	SOUTH FORK NEW RIVER	Functionally Obsolete	
354	SR1313	BIG LAUREL CREEK	Functionally Obsolete	
355	SR1181	S.FORK NEW RIVER	Structurally Deficient	
363	SR1124	THREE TOP CREEK	Functionally Obsolete	
364	SR1318	RICH HILL CREEK	Functionally Obsolete	
373	SR1125	BEN BOLEN CREEK	Structurally Deficient	
417	SR1176	CREEK	Functionally Obsolete	
425	SR1548	GRASSY CREEK	Functionally Obsolete	
426	SR1548	GRASSY CREEK	Functionally Obsolete	
439	SR1120	N.FORK NEW RIVER	Functionally Obsolete	

Bridge Number	Facility	Feature	Condition	CTP Project
450	SR1637	CREEK	Structurally Deficient	
456	SR1573	CREEK	Structurally Deficient	ASHE0020-H
463	SR1563	N.FORK NEW RIVER	Functionally Obsolete	
464	SR1557	CREEK	Structurally Deficient	
466	SR1159	SOUTH FORK NEW RIVER	Functionally Obsolete	
474	SR1193	BUFFALO CREEK	Structurally Deficient	
475	SR1192	OBIDS CREEK	Structurally Deficient	
477	SR1104	S.FORK NEW RIVER	Functionally Obsolete	
480	SR1126	NORTH FORK NEW RIVER	Functionally Obsolete	
482	SR1210	FIELD CREEK	Structurally Deficient	
483	SR1525	HELTON CREEK	Functionally Obsolete	
506	SR1372	BIG HELTON CREEK	Functionally Obsolete	
509	SR1222	S.FORK NEW RIVER	Functionally Obsolete	
514	SR1265	GAP CREEK	Functionally Obsolete	

Appendix H Public Involvement

Included in this appendix are the following:

- Listing of committee members; pg. H-2
- G/O survey with summation of results; pg. H-3
- Vision statement; and pg. H-11
- Summary of each public involvement opportunity including the types of information presented, number of attendees, and any major/potentially controversial issues. pg. H-12

The Ashe County Economic Development Commission (EDC) served as the CTP Coordinating Committee to guide development of the plan. The Committee was lead by Dr. Pat Mitchell and met bi-monthly. Below are listed the members of EDC at any time during the CTP process.

Dr. Patricia Mitchell
Director of Economic Development
Ashe County Government

Lou Burge
Employment Security Commission

Dr. Travis Reeves
Ashe County Board of Education

Dan McMillan
Ashe County

Cabot Hamilton
Ashe County Chamber of Commerce

Joe Holbrook
NC Dept. of Commerce

Greg McGinnis
Town Manager West Jefferson

Dana Tugman
Mayor / Town of Jefferson

Ed Rodgers
Jefferson Landing

Karen Powell
SkyLine Membership Corp

Jason Ring
Mayor / Town of Lansing

Chris Robinson
Wilkes Community College

Brian Crutchfield
Blue Ridge Electric

R.D. Williams II
Ashe Memorial Hospital

Millie Barbee
High Country Host Executive Director

Julie Landry
Ashe Partnership for Children

Richard Blackburn
County Commissioner

Carolyn Shepherd
County Cooperative Extension Director

Ashe County Comprehensive Transportation Plan Survey



Ashe County, the High Country RPO, and NCDOT's Transportation Planning Branch are seeking public input as part of Ashe County's Comprehensive Transportation Planning process.

Please complete this short survey to let us know your area's transportation issues and needs.

Your answers will help guide the development of the Ashe County's Comprehensive Transportation Plan (CTP). During the CTP process, the county's future transportation needs will be determined and solutions will be recommended. Alternative modes of transportation will also be studied. The process will involve local government officials and the public. Public workshops will be held in the future to receive additional input on the transportation issues in Ashe County.

Please complete by **June 1st, 2009**

This survey is available online at
www.surveymonkey.com/AsheCountyCTP
and paper copies can be returned to:

Cooper Sellers
North Carolina Dept of Transportation
1554 Mail Service Center
Raleigh, NC 27699
dcsellers1@ncdot.gov

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

Zip Code:

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

Yes (Full-Time Resident)

No (Part-Time Resident)

3. Please select the county where you work.

Ashe

Alleghany

Wilkes

Watauga

Grayson (VA)

Johnson (TN)

Other

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

Miles

Minutes

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

Yes

No

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

	1-Not Important	2-Less Important	3-Neutral	4-Important	5-Very Important
Safety	<input type="radio"/>				
Service of Special Needs	<input type="radio"/>				
Consistent Travel Times	<input type="radio"/>				
Faster Travel Times	<input type="radio"/>				
Transportation Mode Choice (Walking and Biking)	<input type="radio"/>				
Public Transit Options	<input type="radio"/>				

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

	1-Not Important	2-Less Important	3-Neutral	4-Important	5-Very Important
Economic Growth	<input type="radio"/>				
Environmental Protection	<input type="radio"/>				
Community and Cultural Preservation	<input type="radio"/>				
Integration with Regional Community	<input type="radio"/>				

8. Of the choices in the previous questions, which is the single Most Important to you, and Least Important to you?

Most Important

Least Important

Choose One of each

9. In deciding where to live, which of the following best meets your lifestyle needs?

- | | | |
|--|---|--|
| <input type="radio"/> Rural/Country living | <input type="radio"/> New residential areas | <input type="radio"/> New areas with mix of uses |
| <input type="radio"/> Urban living | <input type="radio"/> Older/established residential areas | <input type="radio"/> Older/established areas with mix of uses |

10. What routes in Ashe County do you most commonly use? Examples: Old 16, NC-88, and US-221 from Jefferson to US-421

Ashe County CTP 2009

11. To address the traffic problems in the area, which improvements should be considered?

- Widen existing roads
- Add turn lanes at specific intersections
- Improve pavement and bridges
- Provide or Increase bus service
- Build new roadways
- Provide better information to drivers
- Add on-road bike lanes
- Expand sidewalks
- Greenways and off-road paths
- Park-and-Ride lots
- Access controls including, limited driveways and cross streets, and right-in right-out only facilities
- Improving intersection design, better traffic signal timing, and creating roundabouts

Other ideas / Comments

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

- A gasoline tax increase
- Charging transportation fees to develop properties
- A local bond referendum

Other (please specify)

13. When traveling in your area, do you find that you often have to go out of your way to get to your destination because the most direct route is too congested? If yes, please list specific locations of problems and alternate routes taken.

- No
- Yes (describe)

14. What destinations in Ashe County are difficult to access?

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15. What are the key transportation challenges you face in Ashe County?

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

	1-Much Less	2-Less	3-Same	4-More	5-Much More
Maintaining existing residential streets	<input type="radio"/>				
Building new major roads	<input type="radio"/>				
Maintaining major streets and highways	<input type="radio"/>				
Creating or expanding bus service	<input type="radio"/>				
Expanding carpooling or vanpooling programs	<input type="radio"/>				
Building new sidewalks	<input type="radio"/>				
Building new greenways	<input type="radio"/>				

Other (please specify)

17. How did you find out about the survey?

The Ashe County Goals and Objectives Survey was composed by the Ashe County CTP Steering Committee, the High Country RPO, and NCDOT. The survey included questions that involved ranking the importance of transportation improvements and goals, and several questions requiring a short answer that dealt with specific transportation topics. The Survey was distributed in two formats, paper and electronic. Various means were used to make the public aware of the survey and direct them to a means of completing the survey. These methods included radio and e-mail announcements, news releases in the paper, and physical copies in the library, government and RPO offices.

This report contains the results from the Ashe County G&O Survey. A total of 99 responses were received during June of 2009. Of these, 39 were paper copies and 60 were filled out online.

Question 1: There were five zip codes that stood out from the rest, all were in Ashe County and are as follows:

Zip Code	Number of Responses
28694	18
28643	22
28640	18
28617	11
28615	11

Question 2: All of the responses were full time residents of Ashe County or its surrounding area.

Question 3: 86.7% of the responses indicated they work in Ashe County. Of the 10.2% responding “Other,” 4 were retired and 2 were self-employed.

Question 4: The average distance to work was equal to 21.83 minutes and 14.91 miles. That is equivalent to a 38.5mph average speed.

Question 5: Only 7.1% of respondents travel predominantly outside of Ashe County on a daily basis.

Question 6: Four categories showed responses with “Important” and “Very important” totaling over 50%. Zero categories had “Not Important” and “Less Important” totaling over 50%.

Safety	97.9%
Service of Special Needs	70.9%
Consistent Travel Times	79.2%
Faster Travel Times	60%

Question 7: All four categories for this question had “Important” and “Very important” totaling over 50%.

Economic Growth	80.4%
Environmental Protection	88.7%
Community and Cultural Preservation	76.3%
Integration with Regional Community	61.5%

Question 8: The two responses with the greatest number of “Most Important” responses were “Safety” with 40 and “Economic Growth” with 23.

There were three responses with significant “Least Important” votes. They were “Public Transit” with 20, “Mode Choice” also with 20, and “Integration with Regional Community” with 17.

Question 9: This question asked what type of lifestyle the person preferred. Respondents favored “Rural/Country Living” by 81%. Second was “Older/Established areas with mix of uses” with 7% and the other choices make up the balance

Question 10: When inquired as to the most commonly used routes in Ashe County, people responded with local roads, but many major routes were mentioned repeatedly. The most mentioned routes mentioned in this question were as follows:

Route Name	Number of responses
US 221	61
NC 88	45
NC 16	23
NC 194	25
Old 16	17
NC 163	13
US 221 BUS	3
Deep Ford Rd	2
All others	<2

Question 11: The next question asked if the proposed improvement should be considered. Choices that people favored by 50% or more were as follows:

Improvement to Consider	Percent Favoring Option
Widen Existing Roads	75.6%
Add turn lanes at specific intersections	56.7%
Improve pavement and bridges	60.0%
Improve intersection design	51.1%

In comments people mentioned specific projects (US 221 widening and intersections) that fall into the available categories, but there were also five references to paving or improving secondary roads which was not an available answer.

Question 12: The three initiatives proposed for revenue were not supported overall.

Revenue method	Percent Supported
Gas Tax	31.6%
Transportation Development Fees	50.6%
Local Bond Referendum	43%

In addition, these two topics appeared repeatedly in the free response. Increasing vehicle fees, tax, tag, and overall cost of ownership appeared three times; and cutting cost and NCDOT “waste” appeared 4 times.

Question 13: While 72.3% of responses did not travel out of their way to avoid certain roads, those who did, mentioned US 221 half of the time.

Question 14: Most mentioned locations that are hard to access were Wal-Mart, Lowe’s, Food Lion, and all schools.

Question 15: The repeatedly mentioned transportation problems are narrow roads, gravel roads, and getting around without a car.

Question 16: The public was asked if more, same, or less money should be spent on a variety of initiatives. The only category to have a combined “More” and “Much More” on the recommendation was “Maintaining Major Streets.”

Two categories had higher percent “Less” and “Much Less” than the equivalent “More” and “Much More.” These were “Expanding Carpooling” with 42.2% for less, and 22.2% for more; and “Building New Sidewalks” with 33.3% for less, and 32.3% for more.

In addition, only two categories did not get “Same” as the highest order response. Those were “Building New Major Roads” and “Maintaining Major Streets and Highways.” Both received the most votes for “More” with 31.9% and 51.1% respectfully.

“Building new greenways” narrowly got more votes for increased spending (34.9% then decreased spending (31.4%). The “Other” section did see 5 comments about paving or improving secondary roads, which was not an available category.

Question 17: The survey was distributed through various means. Here are the results:

Distribution Method	Number of Responses
E-mail / through work	34
Radio	18
Family / Friends / Word of Mouth	14
County Offices	10
Library	4
Newspaper	4
Local Media	1
Mail	1

Many of the paper surveys did not have responses for this final question, so it is assumed that the missing 17 responses fall into that category.

Ashe County CTP Vision/Objectives

July 21, 2009

Develop and maintain a Comprehensive Transportation Plan that promotes and preserves the quality of life and economic vitality of Ashe County and all its municipalities. This will be accomplished through a safe, environmentally responsible, accessible, and efficient multi-modal transportation system.

Objectives:

1. Maintain and improve the safety, connectivity, and mobility of the transportation system for people and commerce and for all modes of transportation in Ashe County and throughout the region.
2. Preserve, protect, and enhance the natural and human environment.
3. Maintain and enhance the quality and performance of the transportation system in Ashe County through efficient congestion management and operations techniques.
4. Promote and enhance connectivity between Ashe County and the surrounding region.



Ashe County, the High Country Council of Governments, and NCDOT's Transportation Planning Branch are seeking public input as part of Ashe County's Comprehensive Transportation Planning process. After reviewing public surveys and studying the transportation network, recommendations were cooperatively developed to be included in the Ashe County Comprehensive Transportation Plan to address current and future transportation needs. A public workshop has been scheduled for December 15, 2009 from 5:00 PM until 7:00 PM at the Ashe County High School Library. The draft recommendations will also be available online at www.regiond.org/rpo_Ashe.html.

Copies of the draft recommendations are available at the Ashe County Governmental Center, Jefferson Town Hall, West Jefferson Town Hall, and the Ashe County Public Library.

Please submit any comments prior to January 15, 2010 to:

Craig Hughes
High Country Council of Governments

468 New Market Blvd
Boone, NC 28607
chughes@regiond.org

Cooper Sellers
NCDOT-Transportation Planning Branch

1554 Mail Service Center
Raleigh, NC 27699-1554
dcsellers1@ncdot.gov

At the Public Information Session on December 15, 2010, one written comment was received and is reproduced below.

“Would like HWY 16 straightened near approach to New River and Rough pavement conditions there analyzed to prevent this from recurring. Would like reports to be included in these exercises that identify most dangerous intersections and most dangerous road sections.”

In response to the first statement, NC 16 from NC 88 south was identified as not meeting NCDOT’s current design standards and improvements are recommended. They are included in TIP project R-2100. The CTP process does not handle pavement conditions but they are a standard part of project development and should be addressed during the design phase.

For the second statement, in Appendix F of this report is a table and map describing all intersections in the county that experienced ten crashes or more during the period from January 1, 2006 to December 31, 2008. The highest are documented in the problem statements in Chapter 1. In addition to intersections, details for individual road segments were collected anecdotally through the Goals and Objectives Survey conducted in 2009. The most often referenced area was US 221 from US 221 BUS to NC 16-88. This area is addressed in Chapter 1 as needing to be upgraded to a divided boulevard facility with turn bays. This removed left turns, major causes of crashes, from the flow of traffic. Also recommended in the alternative was signaling the intersection of US 221 and NC 16-88.

Appendix I

Additional Transportation Alternatives & Scenarios Studied

This appendix includes documentation for alternatives and scenarios that were studied but not included in the CTP.

NC 16 Connector, western tie-ins:

The option to tie in on Main St North, as originally proposed in the 2002 Thoroughfare Plan, was rejected because of concerns of overloading the intersection at NC 88 and US 221 BUS. The 1992 Thoroughfare Plan location on NC 88 was considered, but historical Joseph Benjamin Neal Property identified during TIP project U-3812 forcing a move farther west. The ability to tie into the proposed NC 194 Bypass was then identified and selected for its ability to produce better circulation. This alternative however, requires construction along steep elevation; therefore all the alternatives listed should be reconsidered at a later date.

For US 221 BUS from US 221 to Beaver Creek School Rd:

A new location option was considered connecting US 221 to Beaver Creek School Rd. Both alternatives, including the extension of Nettleknob Rd to Beaver Creek School Rd and extending Ray Taylor Rd to US 221, were sent to the Roadway Design Branch of NCDOT. They were both returned as infeasible because of the steep terrain west of US 221 at this location. Without further options, the deficiency was identified and proposed for further study.

The existing proposal from the 2002 Thoroughfare Plan is to widen to a six-lane section. This was not considered acceptable by the committee because of land use in the area, nor would it address the issue of drivers having to merge across several lanes in such a short distance to make left turns onto US 221 and onto Beaver Creek School Rd (SR-1248).

