



DRAFT

Comprehensive Transportation Plan



Pender County

July 2012

Comprehensive Transportation Plan

Pender County

Prepared by: Shane D. York, PE Project Engineer
James Upchurch, Southeast Planning Group Supervisor
Travis Marshall, PE, Eastern Unit Manager
Transportation Planning Branch
N.C. Department of Transportation

In Cooperation with: Pender County Planning Department
Atkinson
Burgaw
St. Helena
Surf City
Topsail Island
Watha
Cape Fear Rural Planning Organization

Date

Professional Seal Here

Name
Title

Table of Contents

Executive Summary	i
I. Analysis of the Existing and Future Transportation System	I-1
Analysis Methodology and Data Requirements	I-1
Roadway System Analysis	I-1
Traffic Crash Analysis	I-3
Bridge Deficiency Assessment	I-3
Public Transportation and Rail	I-17
Public Transportation	I-17
Rail	I-18
Bicycles and Pedestrians	I-18
Land Use	I-19
Consideration of the Natural and Human Environment	I-25
Public Involvement	I-35
II. Recommendations	II-1
Unaddressed Deficiencies	II-1
Implementation	II-5
Problem Statements	II-6
Highway	II-6
Public Transportation and Rail	II-18
Bicycle	II-18
Pedestrian	II-18

Appendices

Appendix A: Resources and Contacts	A-1
Appendix B: Comprehensive Transportation Plan Definitions	B-1
Appendix C: CTP Inventory and Recommendations	C-1
Appendix D: Typical Cross-Sections	D-1
Appendix E: Level of Service Definitions.....	E-1
Appendix F: Traffic Crash Analysis	F-1
Appendix G: Bridge Deficiency Assessment	G-1
Appendix H: Public Involvement	H-1
Appendix I: Existing Transportation Plans.....	I-1
Appendix J: Land Use Scenarios Evaluated	J-1
Appendix K: Additional Transportation Alternatives & Scenarios Studied	K-1

List of Figures

Figure 1	Comprehensive Transportation Plan	ii
Figure 2	Existing Roadway Deficiency	I-5
Figure 3	Future Roadway Deficiency	I-9
Figure 4	Crash Locations Map	I-13
Figure 5	Deficient Bridges	I-15
Figure 6	Existing Land Development Plan	I-21
Figure 7	Future Land Development Plan	I-23
Figure 8	Environmental Features	I-27
Figure 9	Typical Cross Sections	D-2
Figure 10	Level of Service Illustrations	E-2

List of Tables

Table 1	Environmental Features	I-25
Table 2	Restricted Environmental Features	I-26
Table 3	CTP Inventory and Recommendations	C-2
Table 4	Crash Locations	F-1
Table 5	Deficient Bridges	G-2

Executive Summary

In January of 2011, the Transportation Planning Branch of the North Carolina Department of Transportation, Pender County, and the Cape Fear Rural Planning Organization initiated a study to cooperatively develop the Pender County Comprehensive Transportation Plan (CTP), which includes the towns of Atkinson, Burgaw, St. Helena, and Watha. This is a long range multi-modal transportation plan that covers transportation needs through the year 2040. Modes of transportation evaluated as part of this plan include: highway, public transportation and rail, bicycle, and pedestrian. This plan does not cover routine maintenance or minor operations issues. Refer to Appendix A for contact information on these types of issues.

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

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

- **US 117:** Widen the existing 2-3 lane facility from New Hanover County to US 117 Business to a four-lane divided major thoroughfare with 12-foot lanes. This project also includes a multi-use path along the east side of the facility.
- **US 117 Bypass:** Widen the existing 3-lane facility from US 117 Business (South Walker Street) to NC 53 to a four-lane divided major thoroughfare with 12-foot lanes. This project also includes sidewalks on both sides of the facility.
- **NC 53:** Widen the existing facility from US 117 Bypass to Stag Park Road (SR 1509) to a four-lane divided major thoroughfare with 12-foot lanes. This project also includes a sidewalk on one side of the facility.
- **NC 53 Bypass (Burgaw) TIP No. R-3302:** Construct a two-lane roadway on multi-lane right of way from New Savannah Road (SR 1340) to NC 53 with 12-foot lanes and four-foot paved shoulders.
- **NC 210:** convert the existing facility from US 117 to I-40 to a four-lane divided major thoroughfare with 12-foot lanes. This project also includes a multi-use path on the north side of the facility.

Duplin County

DRAFT

Adoption



Pender County

North Carolina

**Comprehensive
Transportation Plan**

Plan date:

Sheet 1 **Adoption Sheet**

Sheet 2 **Highway Map**

Sheet 3 **Public Transportation
and Rail Map**

Sheet 4 **Bicycle Map**

Sheet 5 **Pedestrian Map**

Legend

-  Municipalities
-  Water Bodies
-  Rivers and Streams
-  Planning Boundary
-  County Boundary



Figure 1, Sheet 1 of 5

Base map date: March 19, 2012

Refer to CTP document for more details



Adopted by:

Planning Area Name

Date:

NCDOT

Date:

Endorsed by:

RPO Name

Date:

Recommended by:

Transportation Planning Branch

Date:

NOTES:

Bladen County

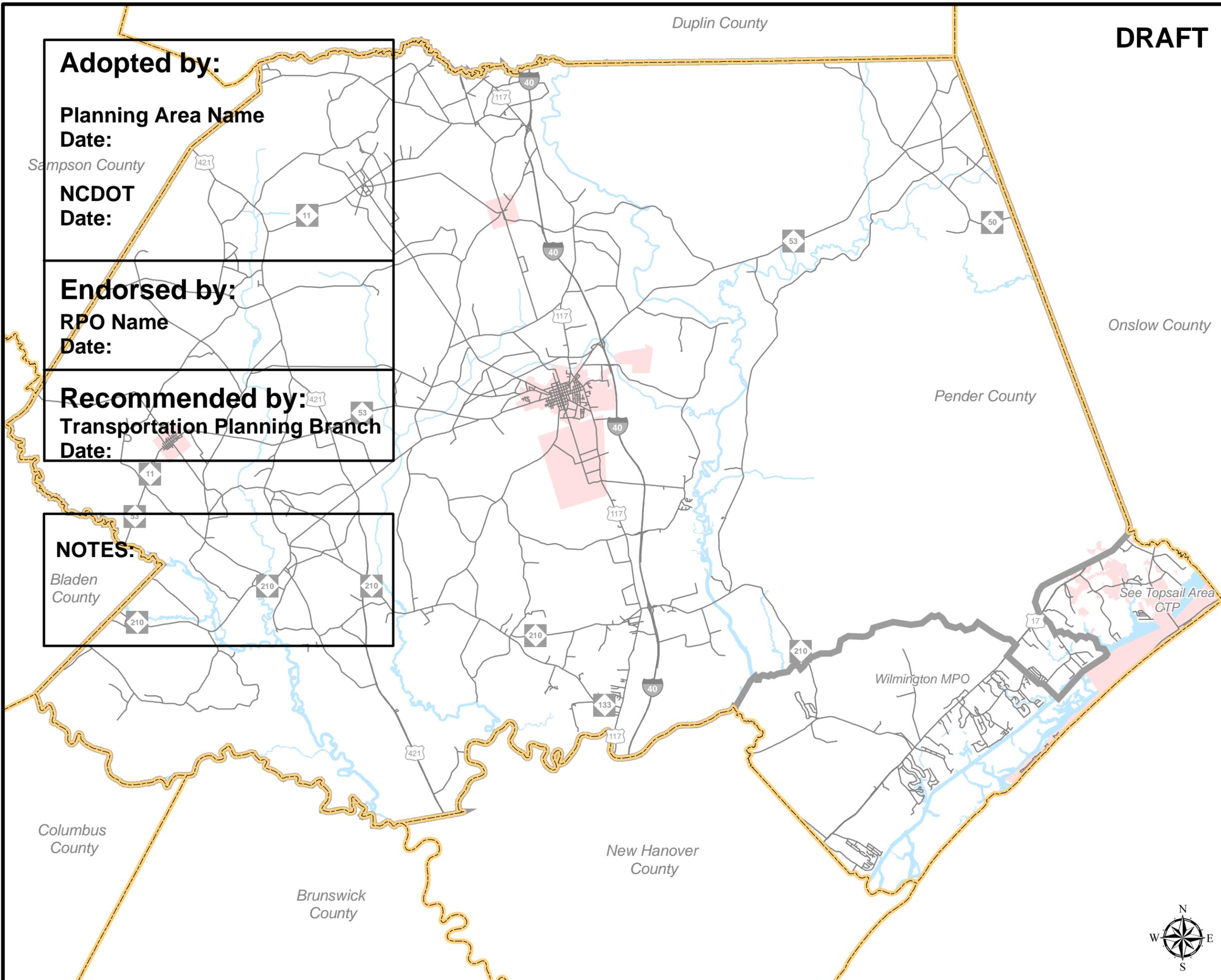
Columbus County

Brunswick County

New Hanover County

Wilmington MPO

See Topsail Area
GTP





Pender County Comprehensive Transportation Plan

Plan date:

- Freeways**
- Existing
 - Needs Improvement
 - Recommended

- Expressways**
- Existing
 - Needs Improvement
 - Recommended

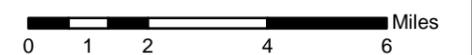
- Boulevards**
- Existing
 - Needs Improvement
 - Recommended

- Other Major Thoroughfares**
- Existing
 - Needs Improvement
 - Recommended

- Minor Thoroughfares**
- Existing
 - Needs Improvement
 - Recommended

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

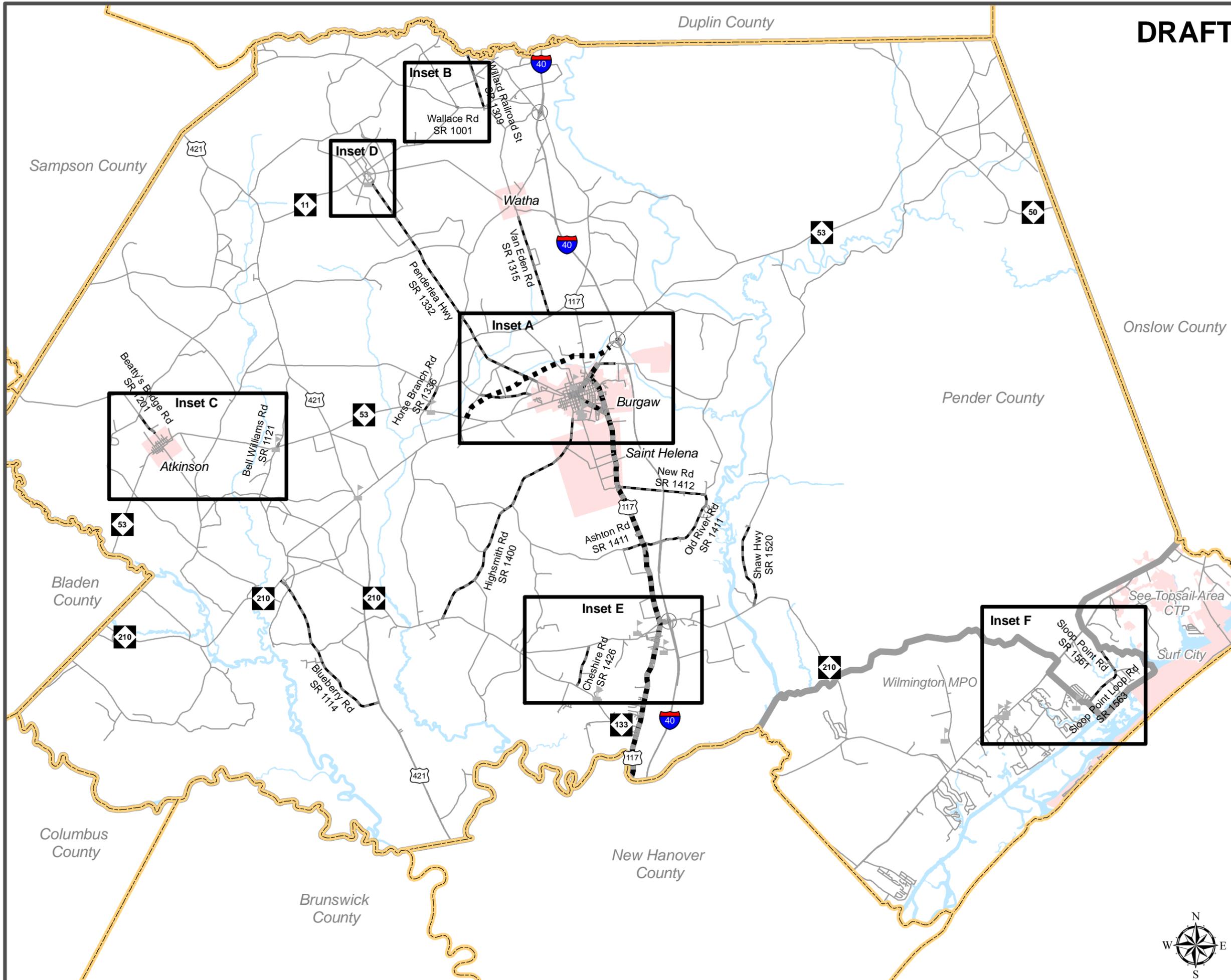
Figure 1, Sheet 2 of 5



Base map date: 5/18/12

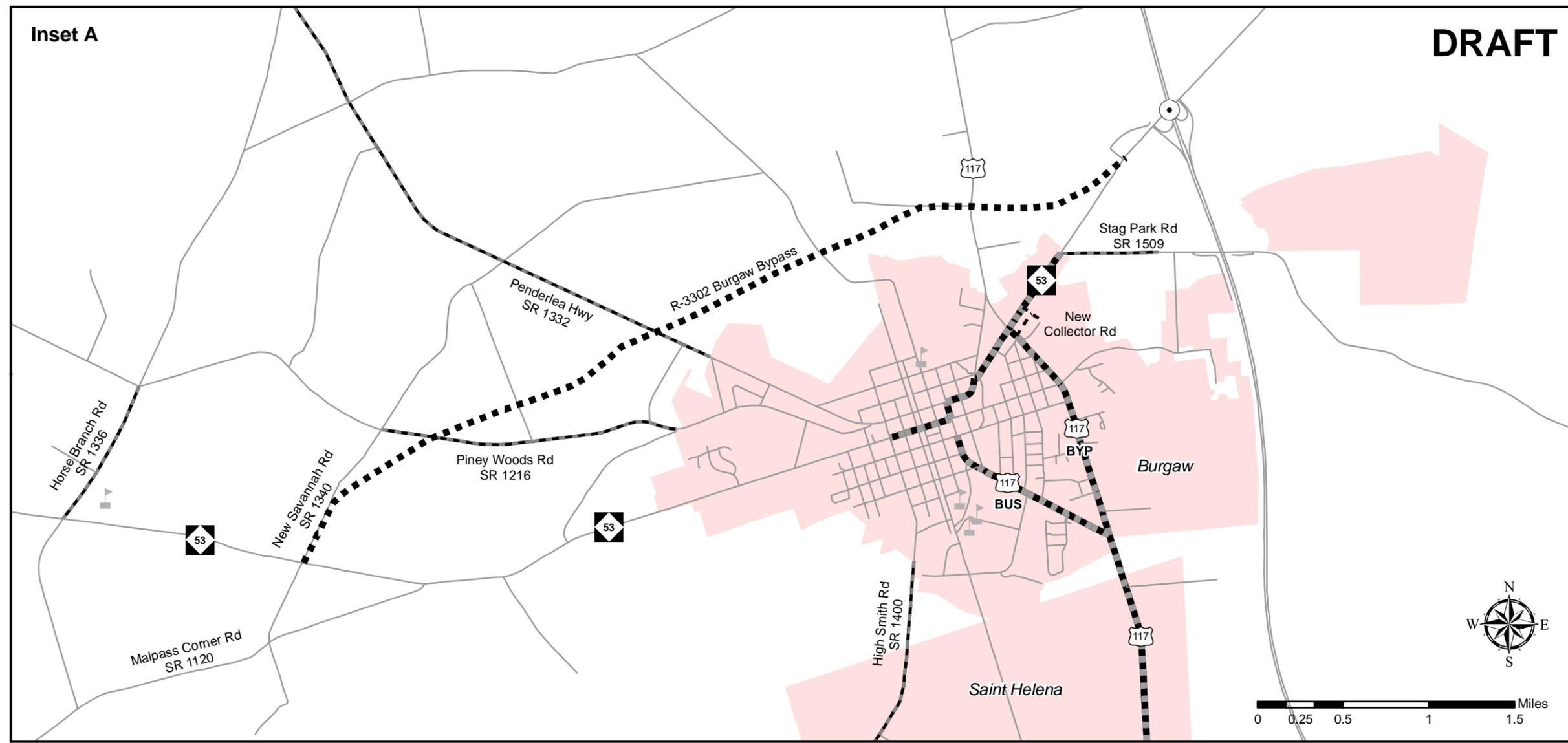
Refer to CTP document for more details

DRAFT



Inset A

DRAFT



Highway Map
Inset A, B, C



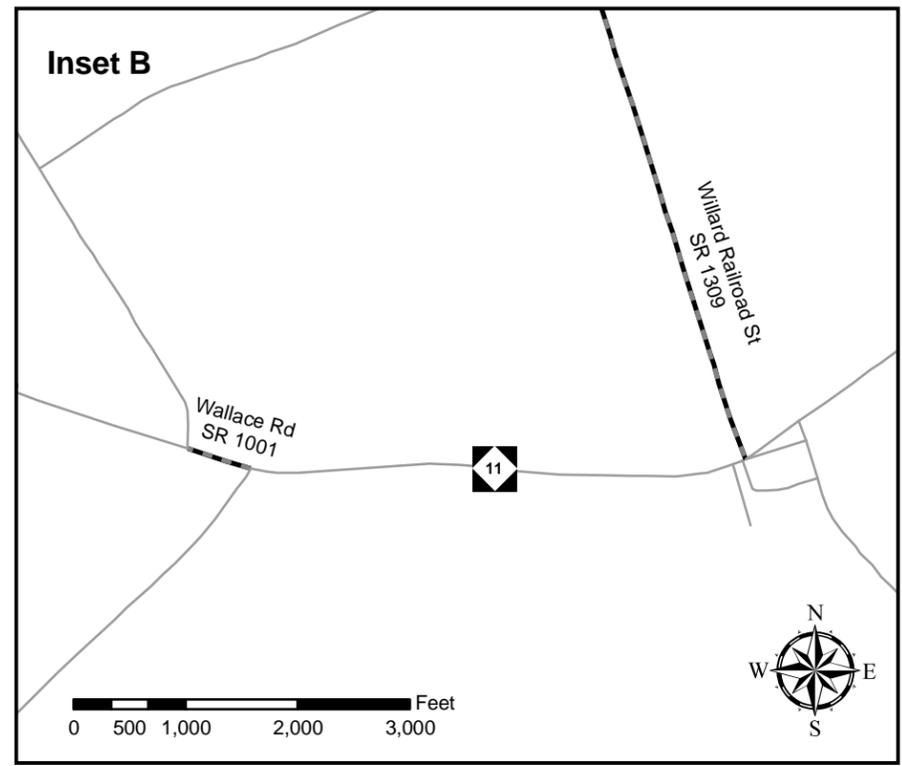
Pender County
Comprehensive
Transportation Plan

Plan date:

- Freeways**
 - Existing
 - Needs Improvement
 - Recommended
- Expressways**
 - Existing
 - Needs Improvement
 - Recommended
- Boulevards**
 - Existing
 - Needs Improvement
 - Recommended
- Other Major Thoroughfares**
 - Existing
 - Needs Improvement
 - Recommended
- Minor Thoroughfares**
 - Existing
 - Needs Improvement
 - Recommended

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

Inset B



Inset C

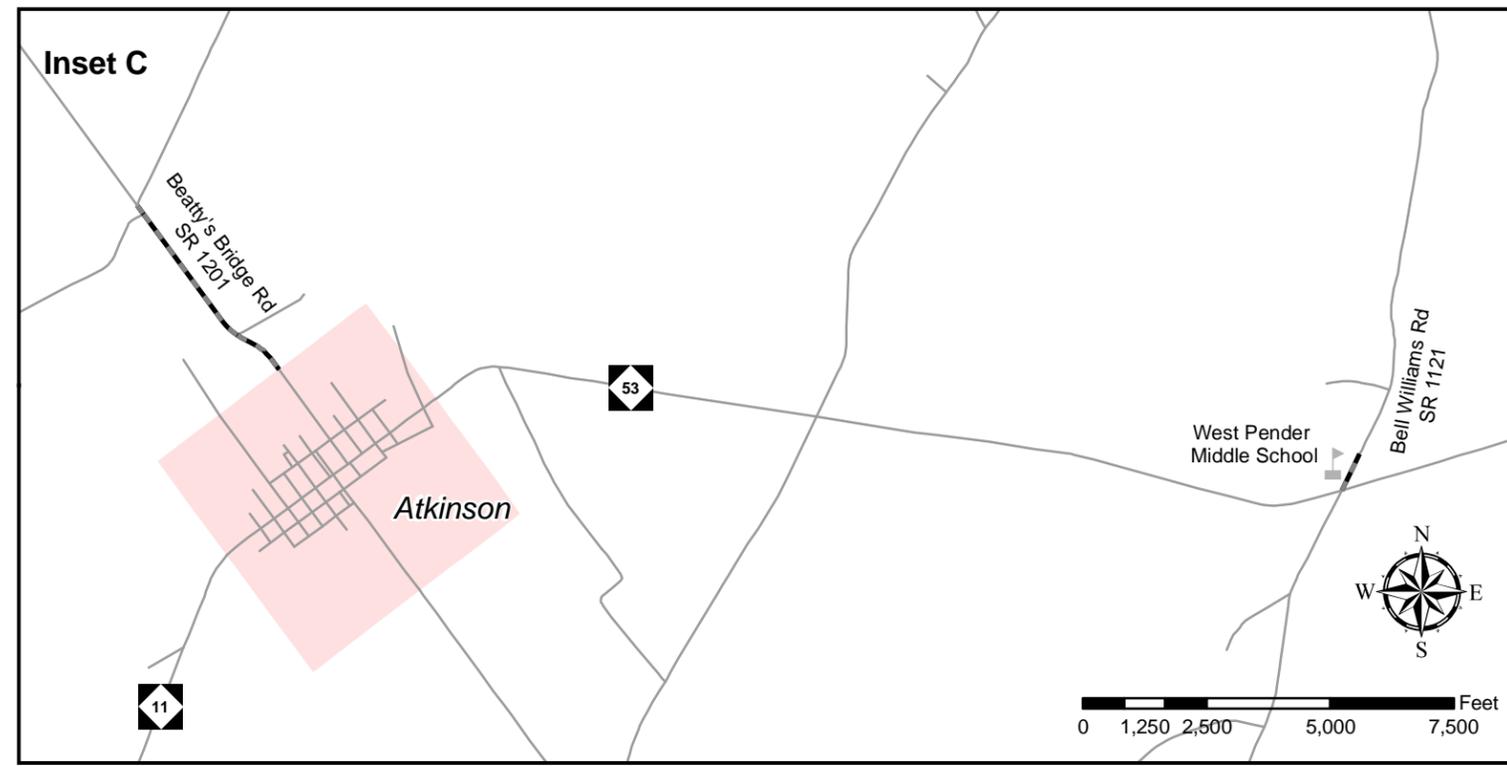
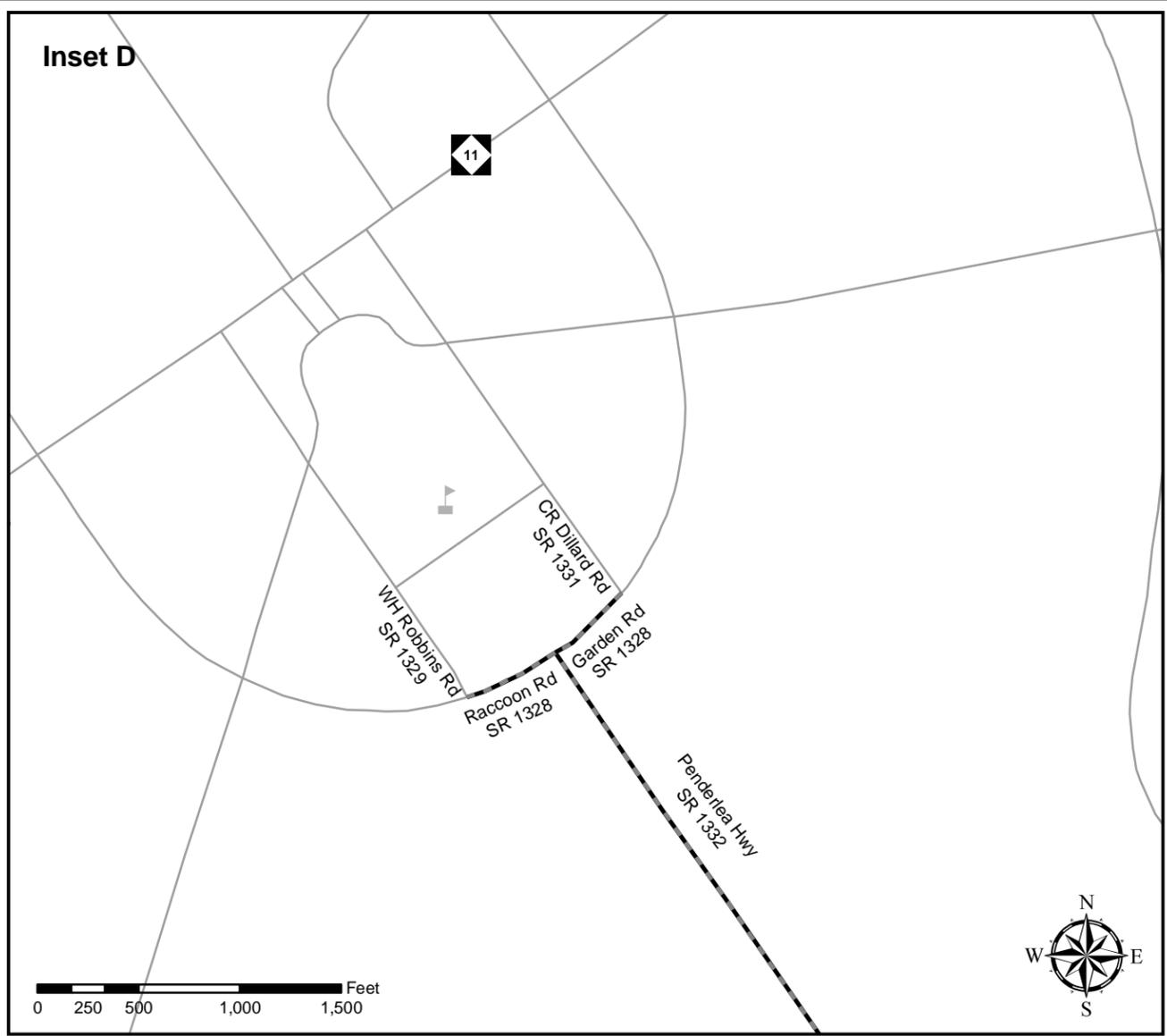


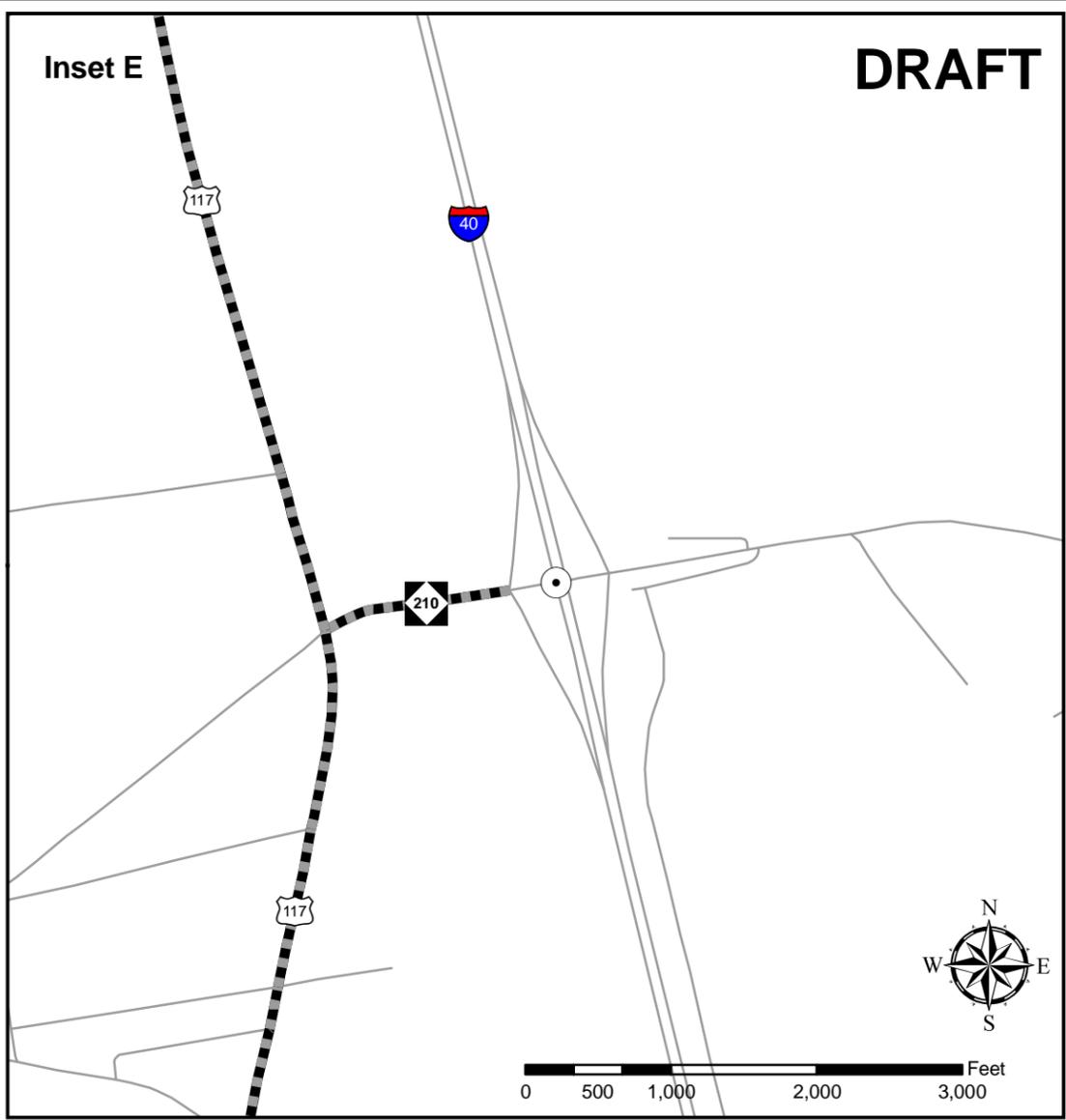
Figure 1, Sheet 2A of 5

Base map date: 5/18/12
Refer to CTP document for more details

Inset D



Inset E



DRAFT

Highway Map Inset D, E, F



Pender County Comprehensive Transportation Plan

Plan date:

- Freeways**
 - Existing
 - Needs Improvement
 - Recommended
- Expressways**
 - Existing
 - Needs Improvement
 - Recommended
- Boulevards**
 - Existing
 - Needs Improvement
 - Recommended
- Other Major Thoroughfares**
 - Existing
 - Needs Improvement
 - Recommended
- Minor Thoroughfares**
 - Existing
 - Needs Improvement
 - Recommended

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

Inset F

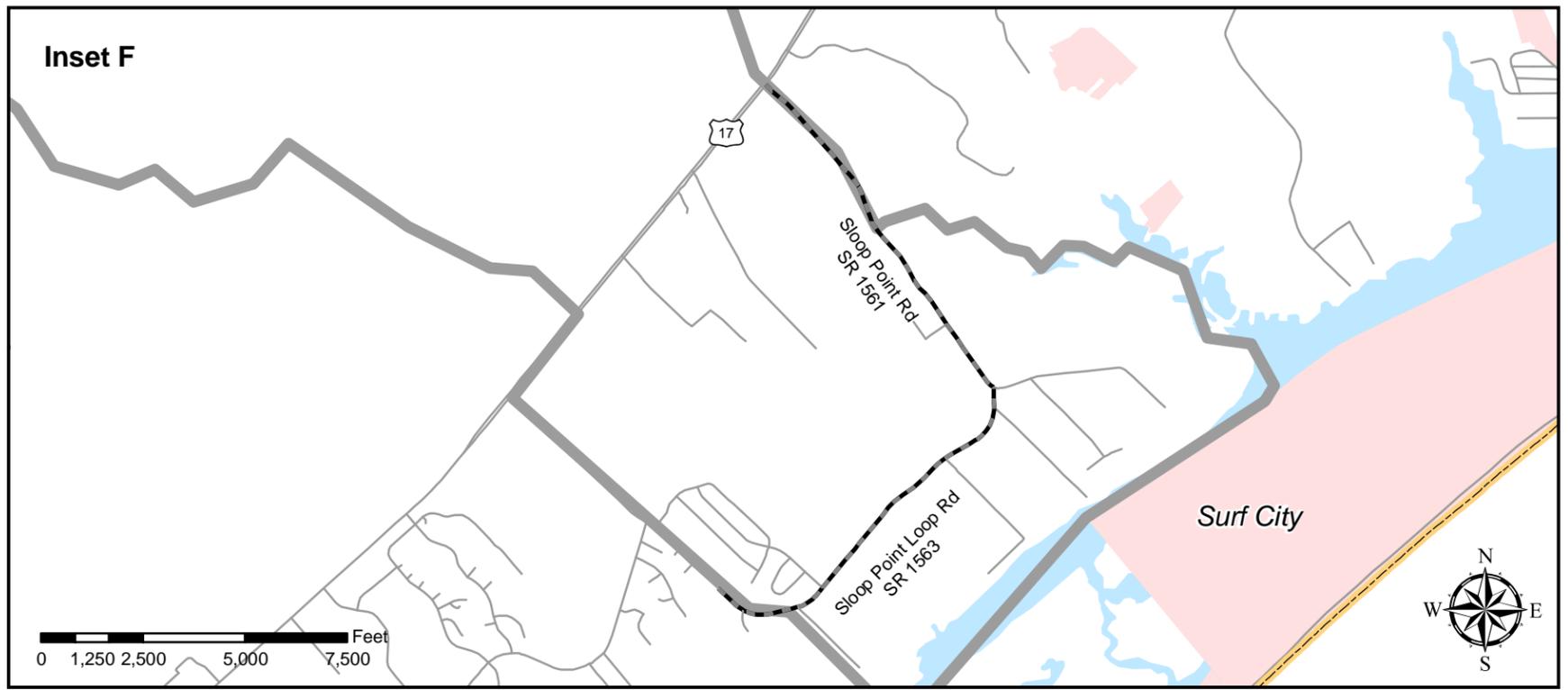


Figure 1, Sheet 2B of 5
 Base map date: 5/18/12
 Refer to CTP document for more details

DRAFT

**Public Transportation
and Rail Map**



**Pender County
Comprehensive
Transportation Plan**

Plan date:

- Bus Routes**
- Existing
 - Needs Improvement
 - Recommended

- Fixed Guideway**
- Existing
 - Needs Improvement
 - Recommended

- Operational Strategies**
- Existing
 - Needs Improvement
 - Recommended

- Rail Corridor**
- Active
 - Inactive
 - Recommended

- High Speed Rail Corridor**
- Existing
 - Recommended

- Rail Stops**
- Existing
 - Recommended

- Intermodal Connector**
- Existing
 - Recommended

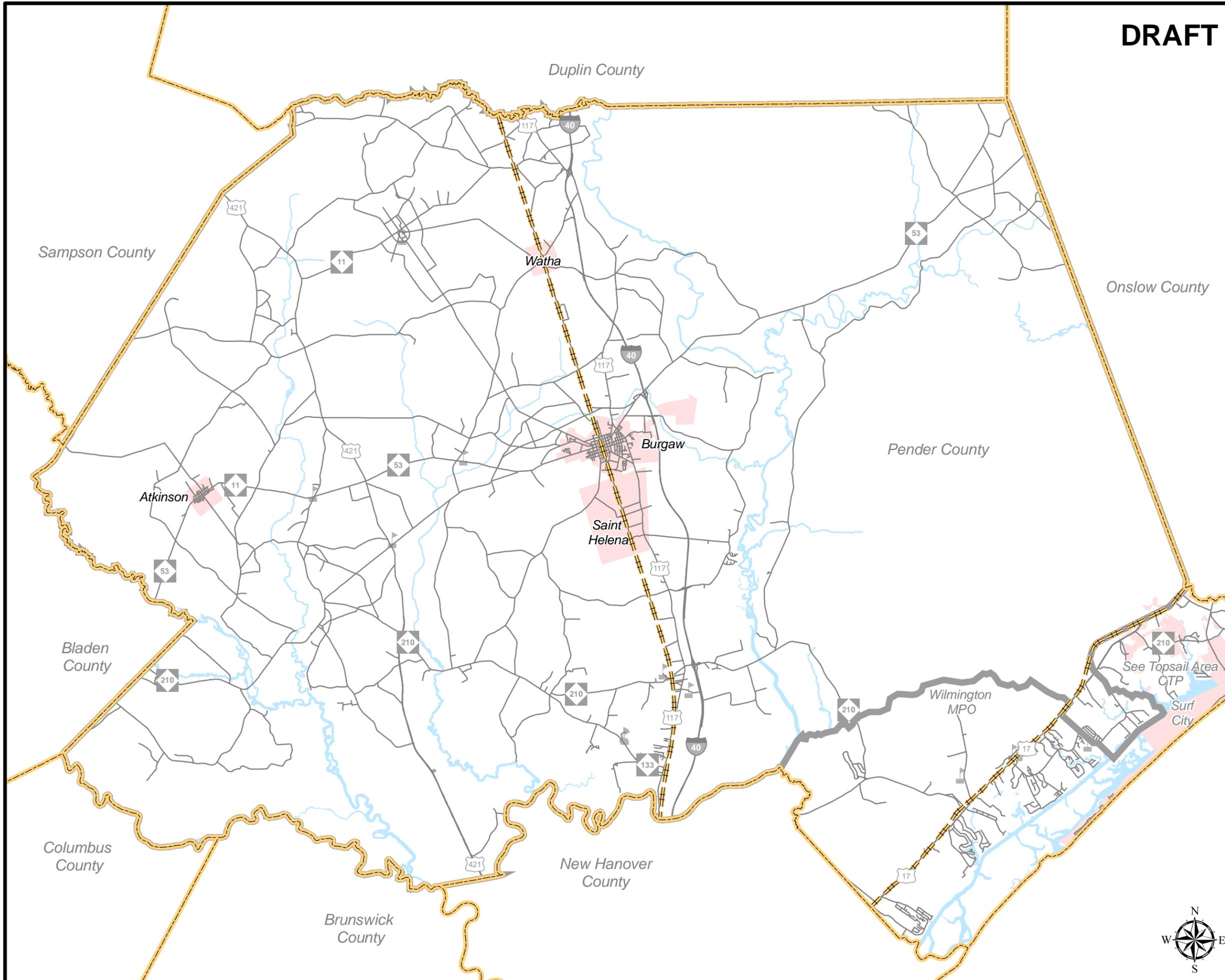
- Park and Ride Lot**
- Existing
 - Recommended



Figure 1, Sheet 3 of 5

Base map date: 5/18/12

Refer to CTP document for more details



DRAFT

Bicycle Map



Pender County Comprehensive Transportation Plan

Plan date: 6/21/12

- On-road**
 - Existing
 - Needs Improvement
 - Recommended
- Off-road**
 - Existing
 - Needs Improvement
 - Recommended
- Multi-Use Paths**
 - Existing
 - Needs Improvement
 - Recommended
- Existing Grade Separation
- Proposed Grade Separation

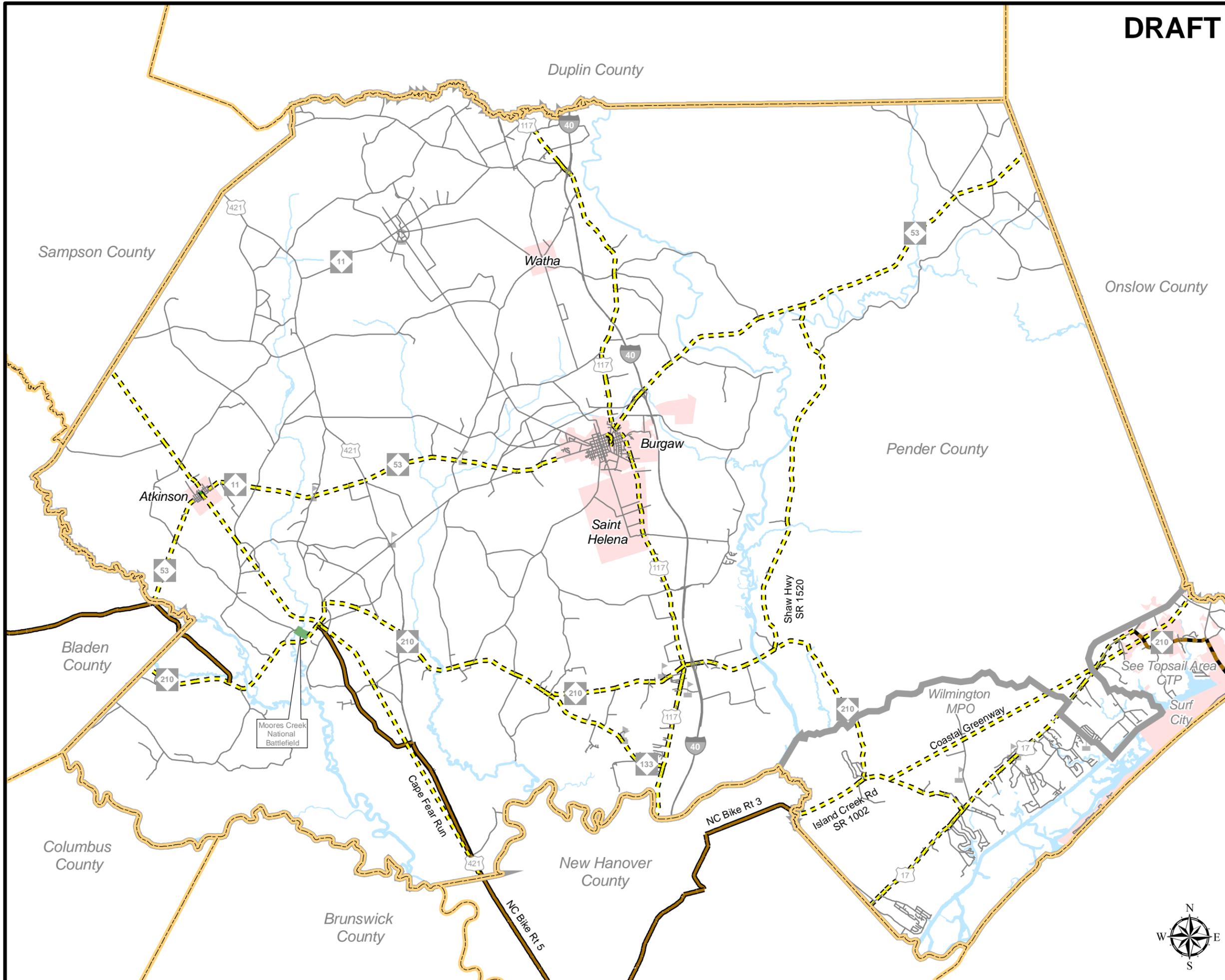


Figure 1, Sheet 4 of 5

0 0.5 1 2 3 Miles

Base map date: 5/18/12

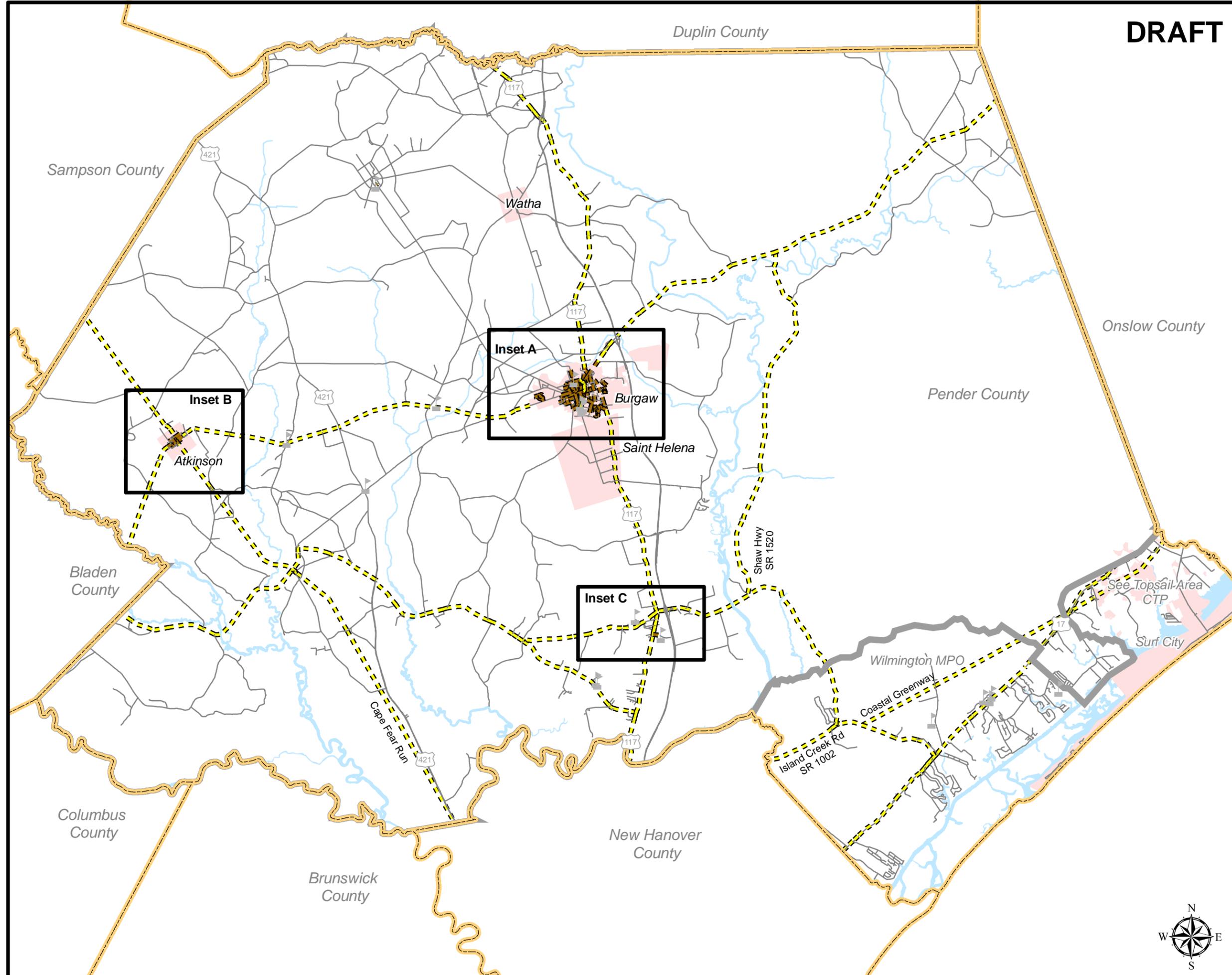
Refer to CTP document for more details



Pender County Comprehensive Transportation Plan

Plan date:

DRAFT



- Sidewalks**
 - Existing (Solid brown line)
 - Needs Improvement (Dashed brown line)
 - Recommended (Dotted brown line)
- Off-road**
 - Existing (Solid green line)
 - Needs Improvement (Dashed green line)
 - Recommended (Dotted green line)
- Multi-Use Paths**
 - Existing (Solid yellow line)
 - Needs Improvement (Dashed yellow line)
 - Recommended (Dotted yellow line)
- Existing Grade Separation (White circle)
- Proposed Grade Separation (Grey circle)

Figure 1, Sheet 5 of 5



Base map date: 5/18/12

Refer to CTP document for more details



DRAFT

**Pedestrian Map
Inset A**



**Town of Burgaw
Pender County
Comprehensive
Transportation Plan**

Plan date:

Sidewalks

- Existing
- Needs Improvement
- Recommended

Off-road

- Existing
- Needs Improvement
- Recommended

Multi-Use Paths

- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

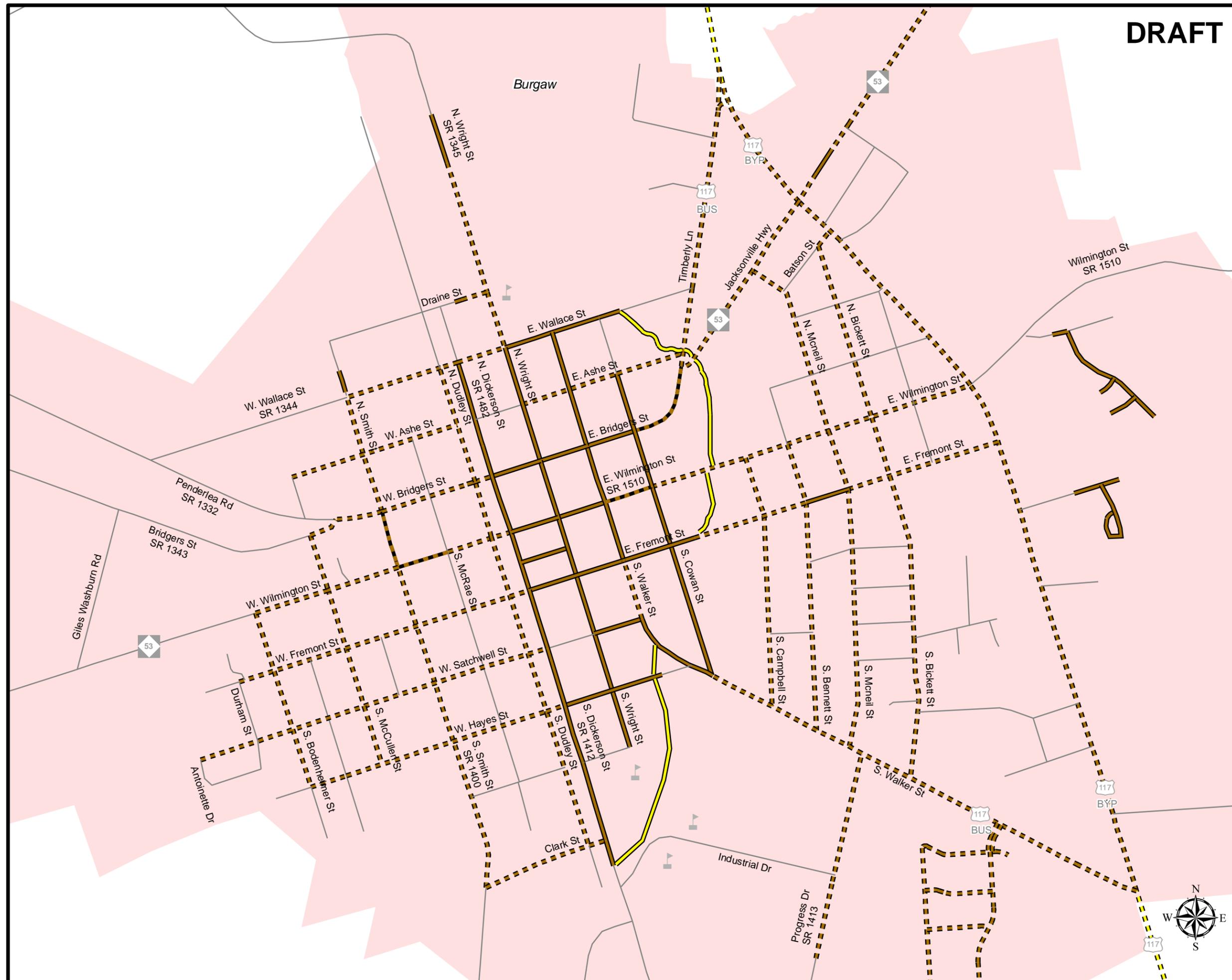


Figure 1, Sheet 5A of 5

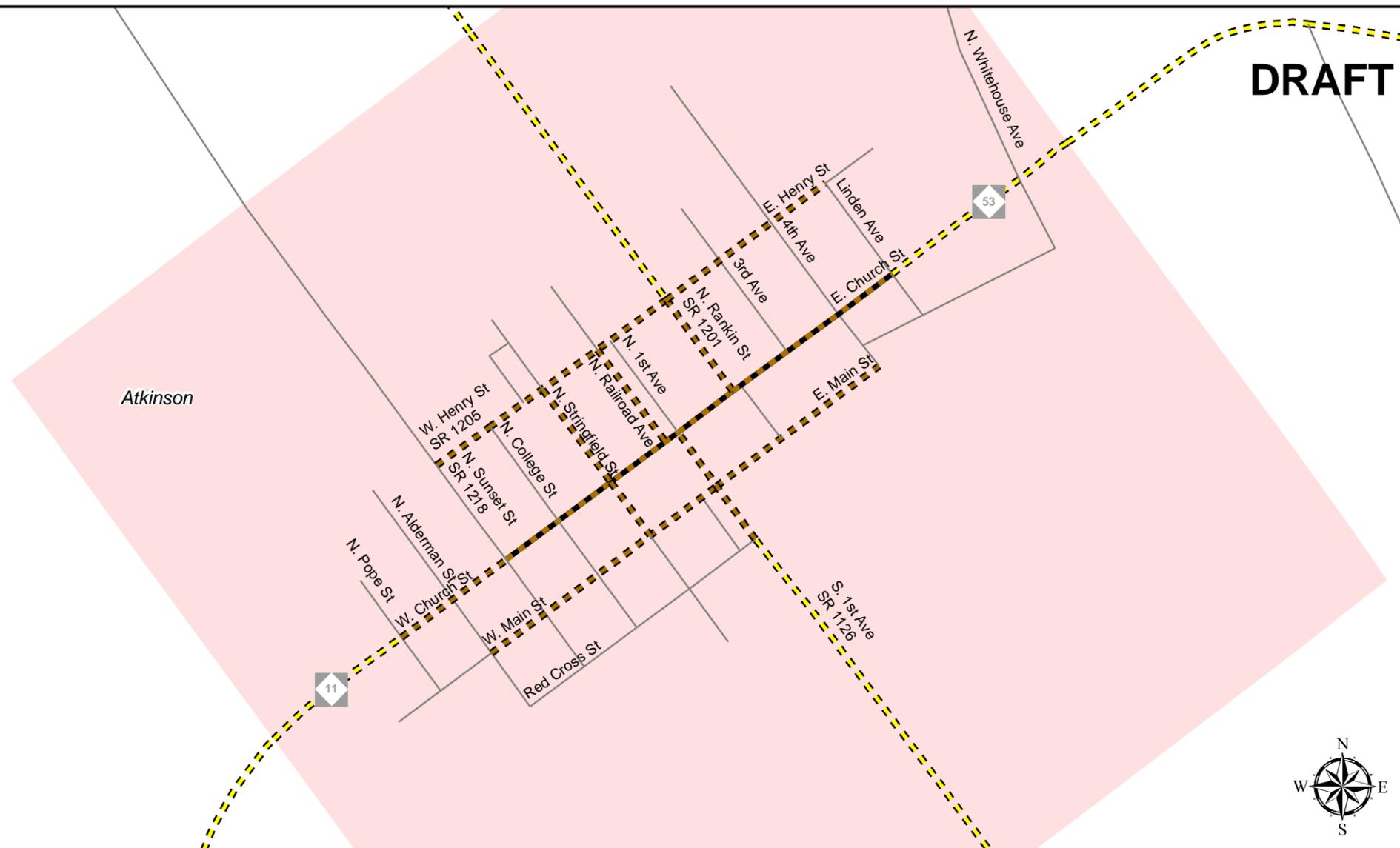


Base map date: 5/18/12

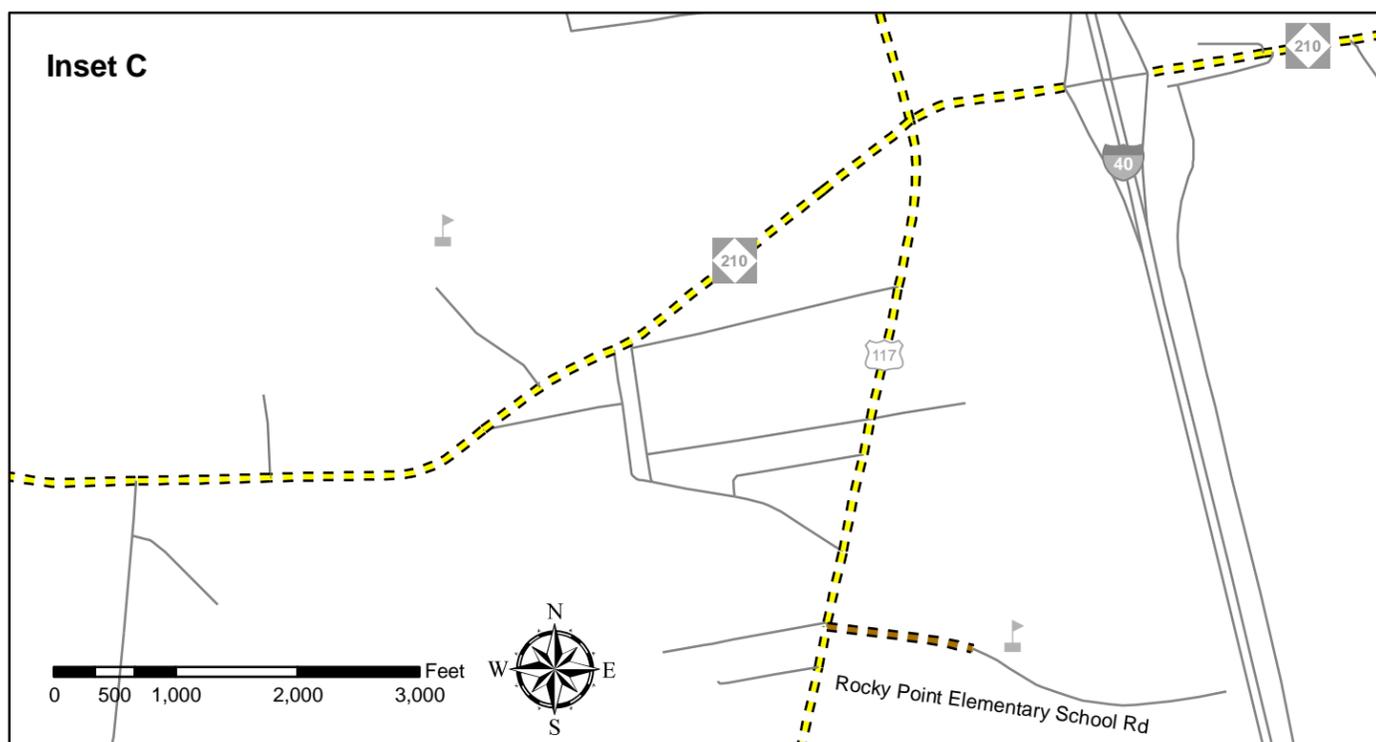
Refer to CTP document for more details

Inset B

DRAFT



Inset C



Pedestrian Map Inset B, C



Pender County Comprehensive Transportation Plan

Plan date:

Sidewalks

- Existing
- Needs Improvement
- Recommended

Off-road

- Existing
- Needs Improvement
- Recommended

Multi-Use Paths

- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

Figure 1, Sheet 5B of 5

Base map date: 5/18/12

Refer to CTP document for more details

I. Analysis of the Existing and Future Transportation System

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 environmental resources.

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

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

Analysis Methodology and Data Requirements

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

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

Roadway System Analysis

An important stage in the development of a CTP is the analysis of the existing transportation system and its ability to serve the area's travel desires. Emphasis is placed not only on detecting the existing deficiencies, but also on understanding the causes of these deficiencies. Roadway deficiencies may result from inadequacies 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, additional radial routes or infrastructure improvements to meet statewide initiatives.

One of those statewide initiatives is the Strategic Highway Corridor (SHC) Vision Plan adopted by the Board of Transportation on September 2, 2004 and last revised on July 10, 2008. The SHC Vision Plan represents a timely initiative to protect and maximize the mobility and connectivity on a core set of highway corridors throughout North Carolina, while promoting environmental stewardship through maximizing the use of existing facilities to the extent possible, and fostering economic prosperity through the quick and efficient movement of people and goods.

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

In the development of this plan, travel demand was projected from 2010 to 2040 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1990 to 2010. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns.

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

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

- Geometry of the road (including number of lanes), horizontal and vertical alignment, and proximity of perceived obstructions to safe travel along the road;
- Typical users of the road, such as commuters, recreational travelers, and truck traffic;
- Access control, including streets and driveways, or lack thereof, along the roadway;
- Development along the road, including residential, commercial, agricultural, and industrial developments;
- Number of traffic signals along the route;
- 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 Level of Service D Standards for Systems Level Planning (10/14/2011). 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 Pender County CTP for crashes occurring in the planning area between March 1, 2008 and March 1, 2011. During this period, a total of 14 intersections were identified as having a high number of crashes as illustrated in Figure 4. Refer to Appendix F for a detailed crash analysis.

Bridge Deficiency Assessment

Bridges are a vital 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. 15 deficient bridges were identified within the planning area and are illustrated in Figure 5. Refer to Appendix G for more detailed information.

Figure 2b
**2010 Volumes
 and Capacity
 Deficiencies**



**Town of Burgaw
 Pender County
 Comprehensive
 Transportation Plan**

Plan date: 5/21/12

Legend

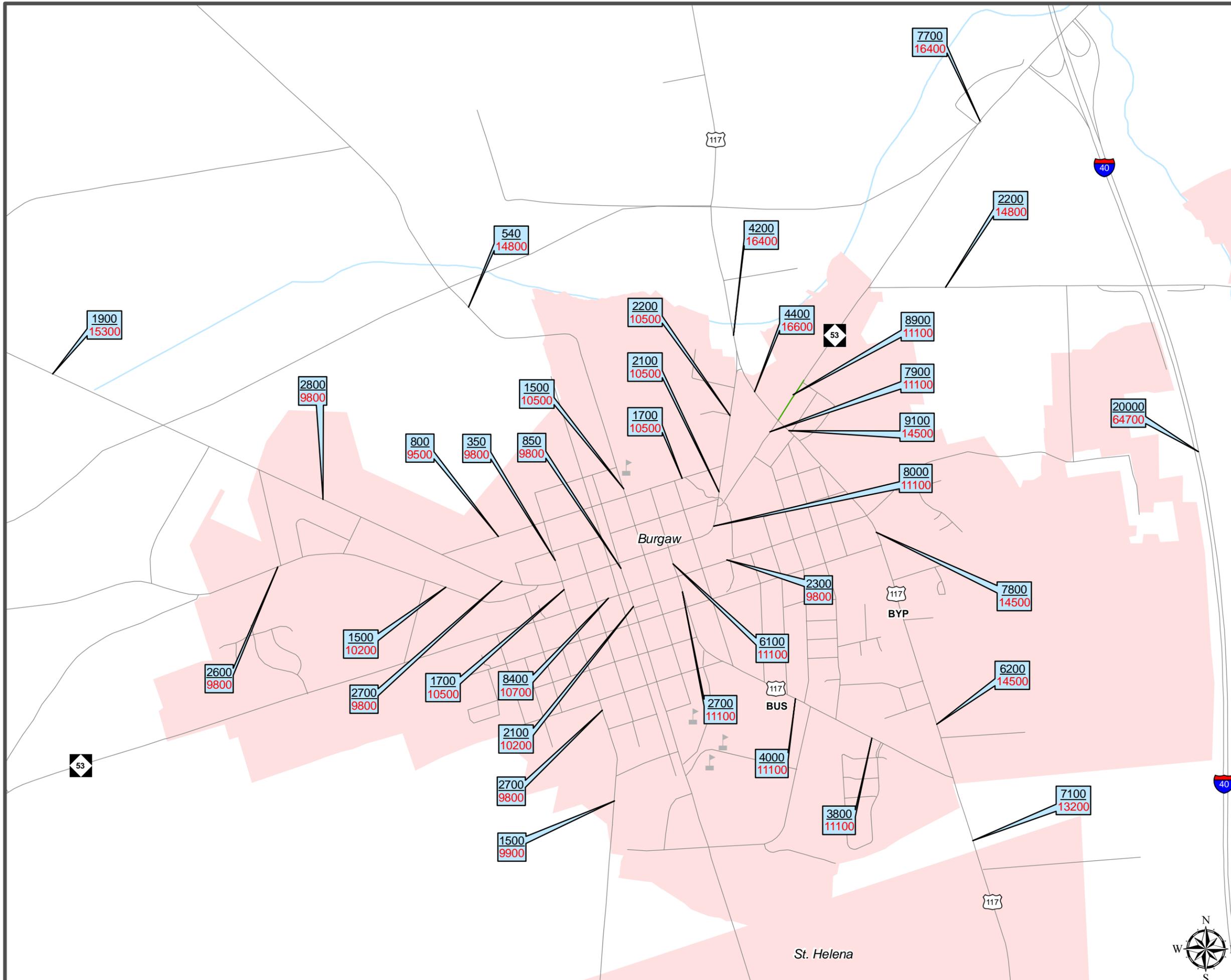
- Near Capacity
- Over Capacity
- Municipal Boundary
- Water Bodies
- Rivers and Streams
- Planning Boundary
- County Boundary

8800	2010 AADT
11100	2010 Capacity

0 750 1,500 3,000 Feet

Base map date: 12/12/11

Refer to CTP document for more details



St. Helena

Burgaw

117
BYP

117
BUS

117

40

117

53

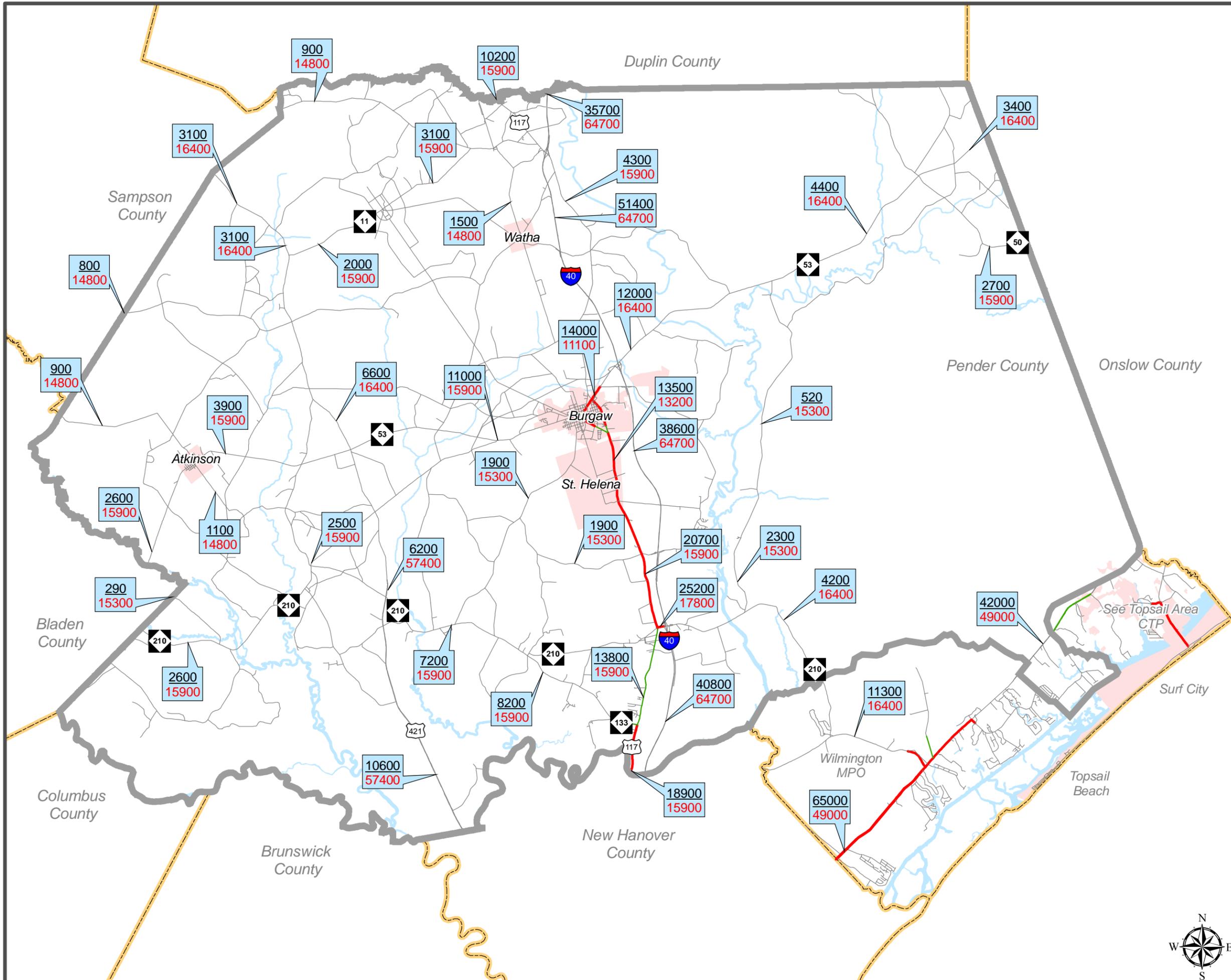
53

Figure 3
**2040 Volumes
 and Capacity
 Deficiencies**



**Pender County
 Comprehensive
 Transportation Plan**

Plan date: 5/21/12



Legend

- Near Capacity
- Over Capacity
- Municipal Boundary
- Water Bodies
- Rivers and Streams
- Planning Boundary
- County Boundary

14000 2040 AADT
15900 2010 Capacity



Base map date: 12/12/11

Refer to CTP document for more details

Figure 3b
**2040 Volumes
 and Capacity
 Deficiencies**



**Town of Burgaw
 Pender County
 Comprehensive
 Transportation Plan**

Plan date: 5/21/12

Legend

- Near Capacity
- Over Capacity
- Municipal Boundary
- Water Bodies
- Rivers and Streams
- Planning Boundary
- County Boundary

8800	2040 AADT
11100	2010 Capacity

0 750 1,500 3,000 Feet

Base map date: 12/12/11

Refer to CTP document for more details

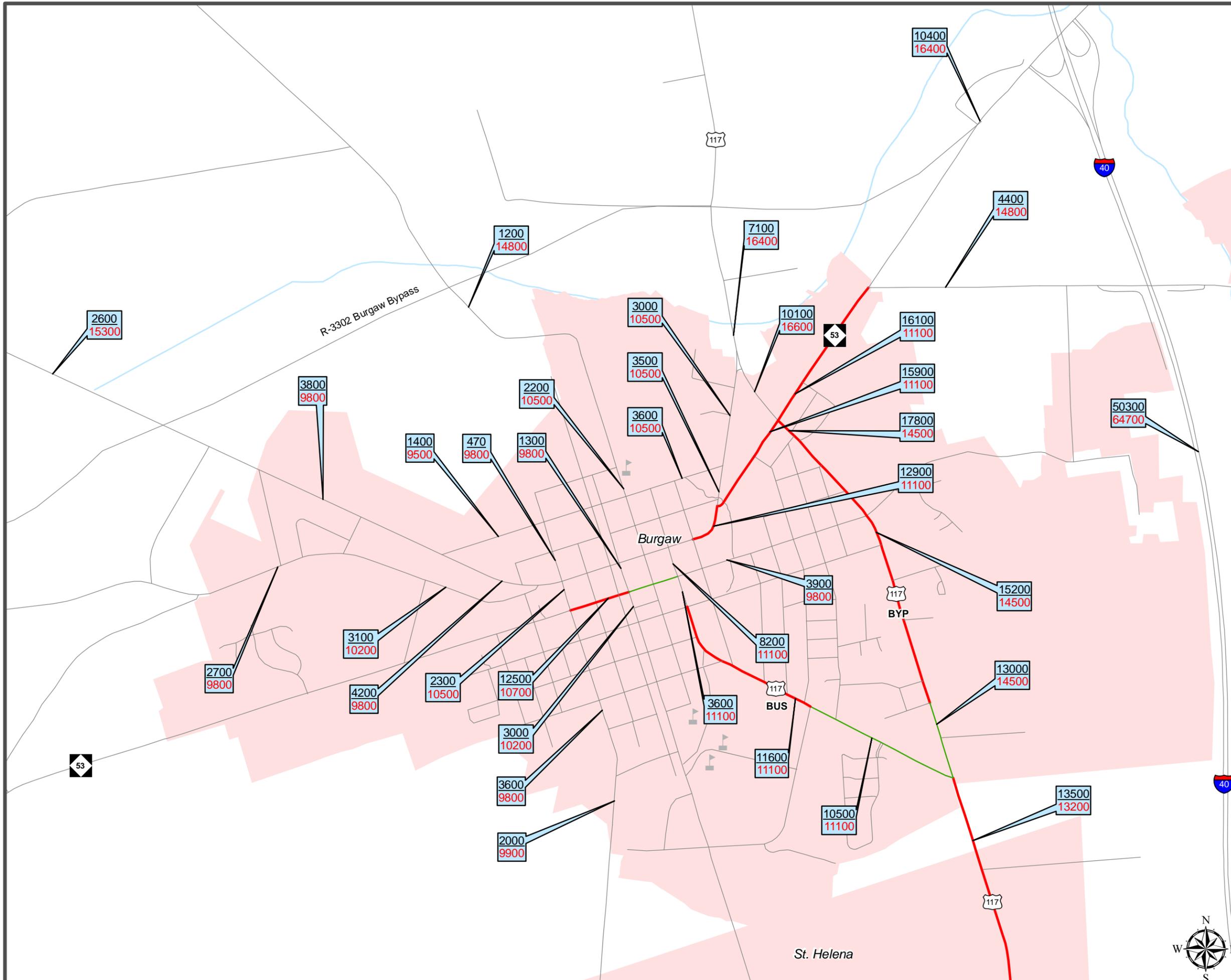


Figure 4

Crash Locations

March 1, 2008 to March 1, 2011



Pender County

Comprehensive Transportation Plan

Plan date: 5/21/12

Legend

- Schools
- Crash Locations
- Roads
- Municipal Boundary
- Water Bodies
- Rivers and Streams
- Planning Boundary
- County Boundary



Base map date: 5/16/11

Refer to CTP document for more details

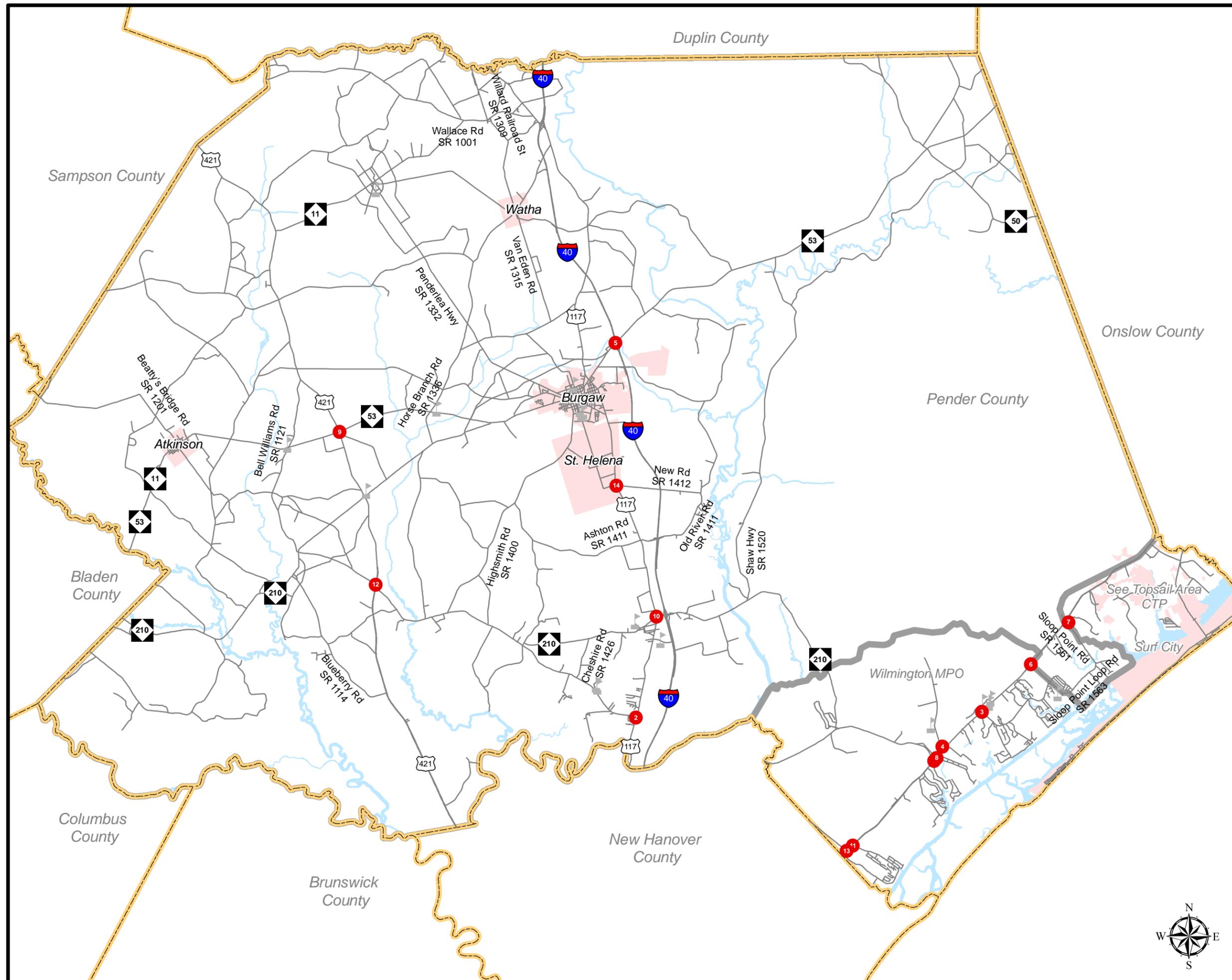


Figure 5
Deficient Bridges



Pender County Comprehensive Transportation Plan

Plan date: 5/21/12

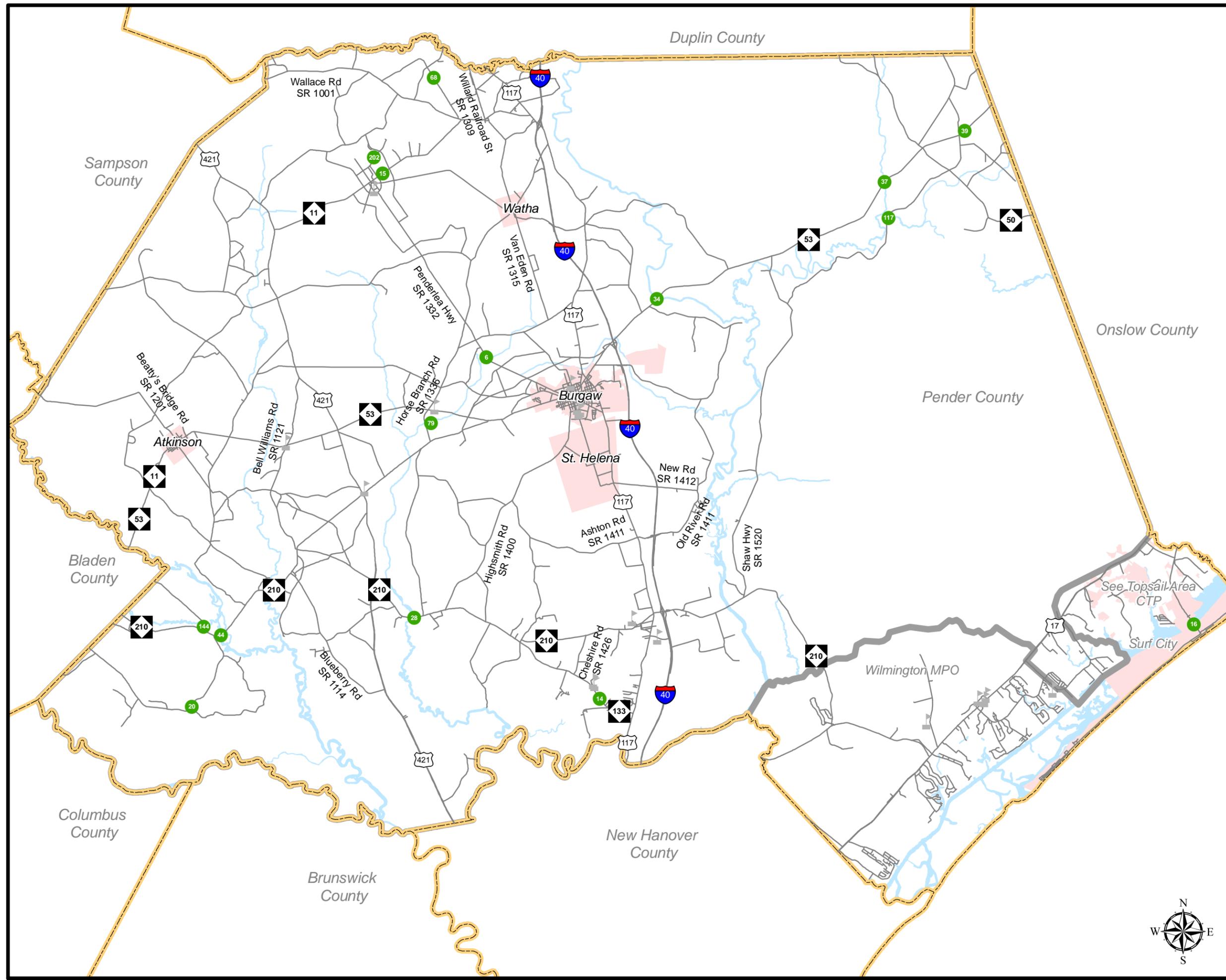
Legend

- Schools
- Deficient Bridge
- Roads
- Municipal Boundary
- Water Bodies
- Rivers and Streams
- Planning Boundary
- County Boundary



Base map date: 4/02/12

Refer to CTP document for more details



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 system: community, regional community, urban, regional urban and intercity.

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

An inventory of existing and planned fixed public transportation routes for the planning area is presented on Sheet 3 of Figure 1. Pender County doesn't have an existing fixed Transit network. However, Pender Adult Services has a van service that provides transportation for the elderly by way of appointments made with Pender Senior Center. 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.

An inventory of existing and planned rail facilities for the planning area is presented on Sheet 3 of Figure 1. Existing railroad tracks between Wallace and Castle Hayne, and Wilmington and Jacksonville were removed over 30 years ago. Now there is an interest in restoring both those routes. The exact location of the routes and crossings will need to be determined with a future feasibility study. All recommendations for rail were coordinated with the local governments and the Rail Division of NCDOT. 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 and 5 of Figure 1. The town of Burgaw Bike and Pedestrian System Plan was utilized in the development of these elements of the CTP.

There are two state bike routes that go through Pender County. NC Bike Route 5 is a signed route that enters Pender County from Bladen County and runs along NC 210 and US 421 into New Hanover County. NC Bike Route is a signed route that enters Pender County from New Hanover County and runs along NC 210 and US 17 into Onslow County. 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 2010 Pender County Comprehensive Land Use Plan was used to meet this requirement and is 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.

Pender County primarily anticipates growth in the areas of Coastal Pender along US 17 in the Hampstead area, the Rocky Point area, and along the US 421 corridor. They expect more suburban growth in the areas surrounding the municipalities, as well as the Penderlea Middle School area, the Shiloh Road area east of US 421, the US 421 at NC 11/53 area, the Currie area, the Whitestocking Road area, the Willard area, and the NC 53 at NC 50 area in the north east corner of the county. See Figure 7 for details.

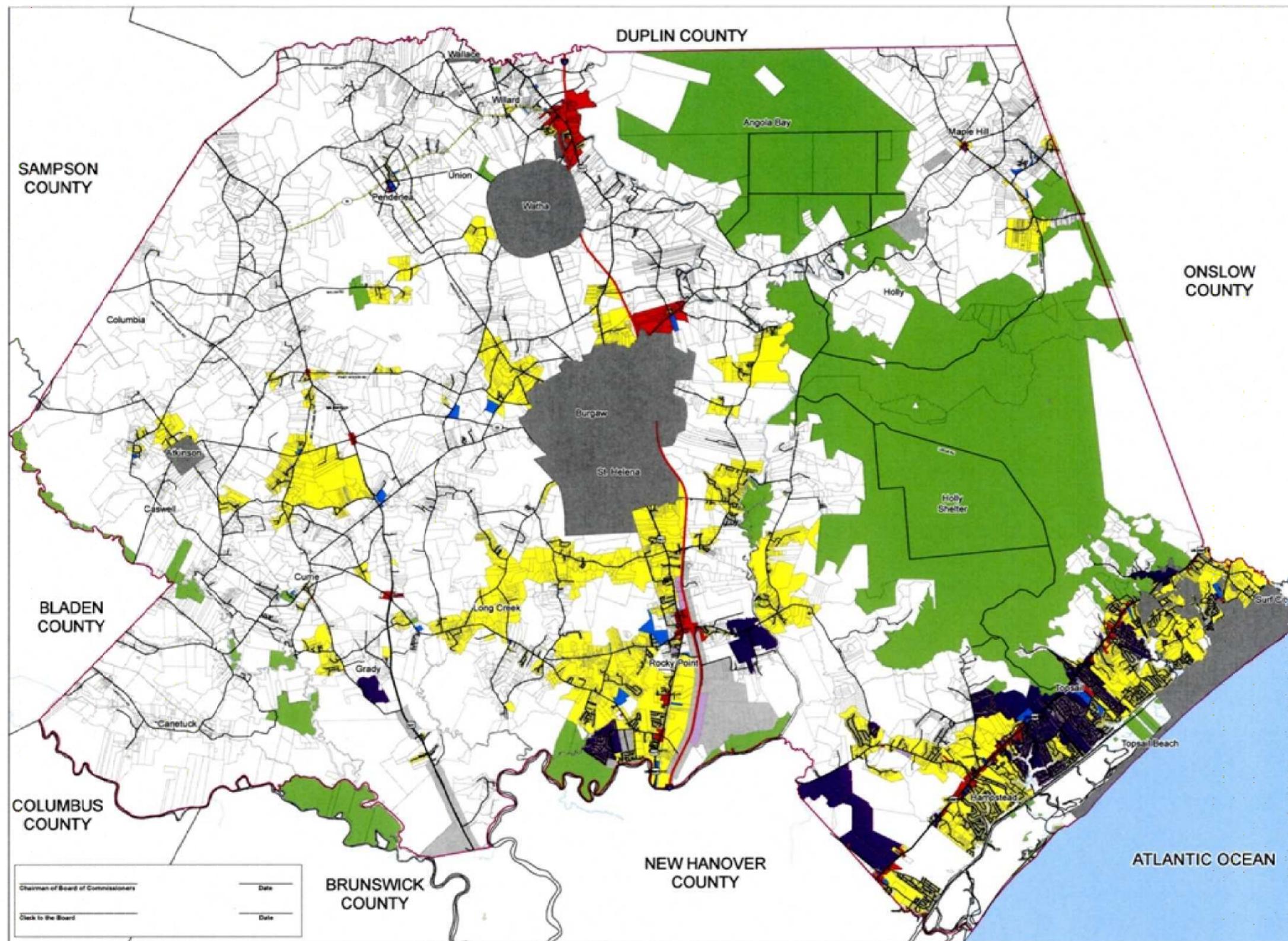
Substantial residential and commercial growth is expected in the southern part of the County, particularly around the US 17 corridor.

Figure 6
Existing Land Use



Pender County
Comprehensive
Transportation Plan

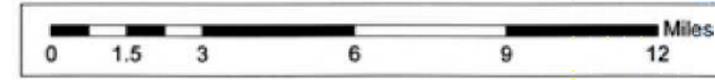
Plan date: 6/09/12



Chairman of Board of Commissioners _____ Date _____
 Clerk to the Board _____ Date _____

Legend

Municipal Jurisdiction	Environmental Conservation	Manufactured Housing Community
Zoning Classification	Office & Institutional	Planned Development
General Business	Rural Agricultural	Residential Mixed
General Industrial	Residential Performance	
INCORPORATED		
Industrial Transition		



ZONING MAP OF:
PENDER COUNTY, NORTH CAROLINA
OFFICIAL ZONING MAP
 August 10, 2011



Base map date: 4/02/12
 Refer to CTP document for more details

Figure 7
Future Land Use



Pender County
Comprehensive
Transportation Plan

Plan date: 6/09/12

11-10-09

Pender County, North Carolina

PRELIMINARY
 FOR PLANNING
 PURPOSES ONLY



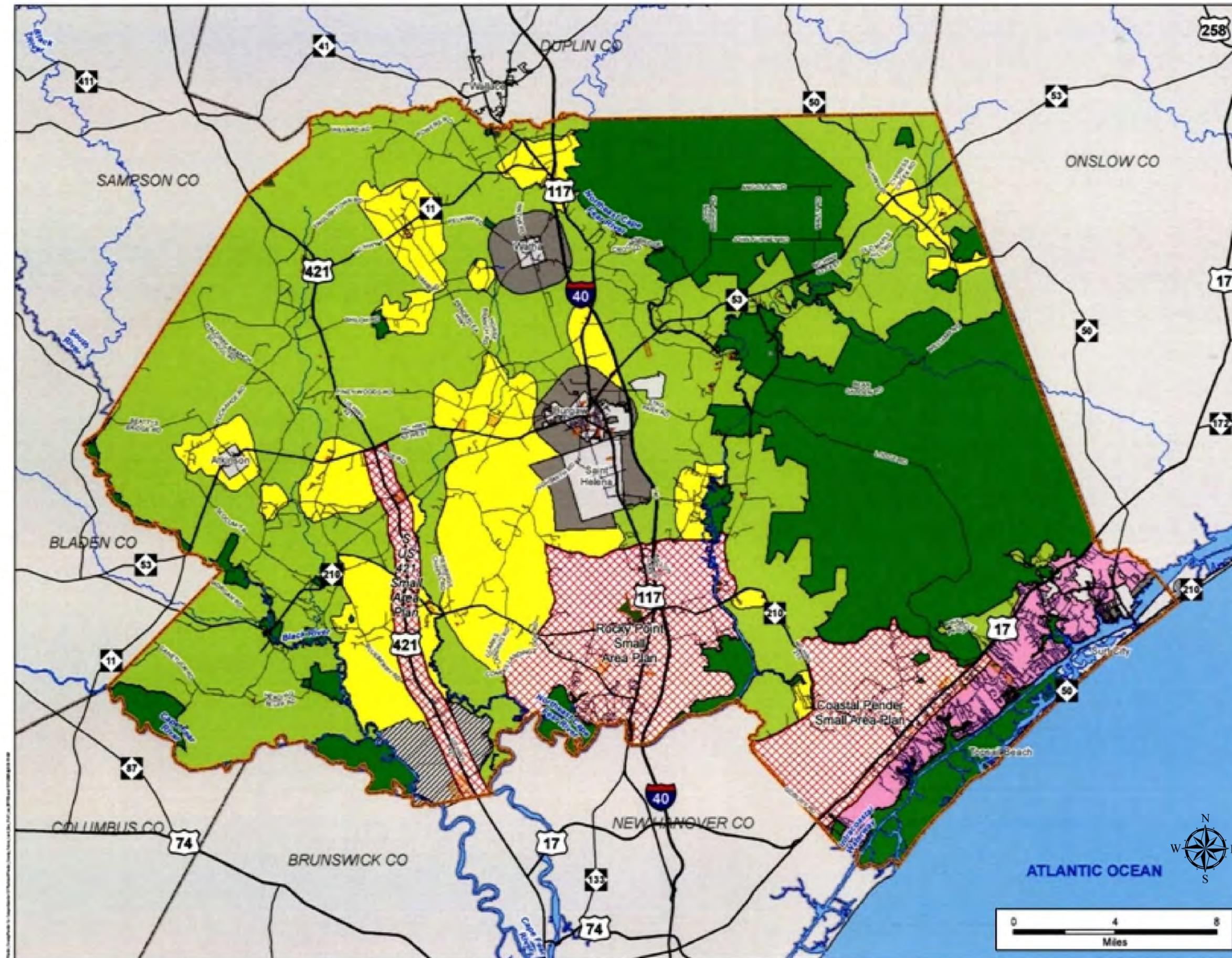
Legend

Future Land Use Classification

- Conservation
- Industrial
- Mixed Use
- Rural Growth
- Suburban Growth

Other Features

- Small Area Plan
- County Owned Property
- Water Body
- Major Stream
- Interstate
- US Route
- NC Route
- Road Centerline
- County Boundary



Base map date: 4/02/12
 Refer to CTP document for more details



Consideration of Natural and Human Environment

Environmental features are a key consideration in the transportation planning process. Section 102 of the National Environmental Policy Act (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 2 of this report. Prior to implementing transportation recommendations of the CTP, a more detailed environmental study would need to be completed in cooperation with the appropriate environmental resource agencies.

A full listing of environmental features that were examined as a part of this study is shown in the following tables utilizing the best available data. Environmental features occurring within Pender County are shown in Figure 8.

Table 1 – Environmental Features

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

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

Table 2 – Restricted Environmental Features

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

DRAFT

Figure 8
**Environmental
Features Map**

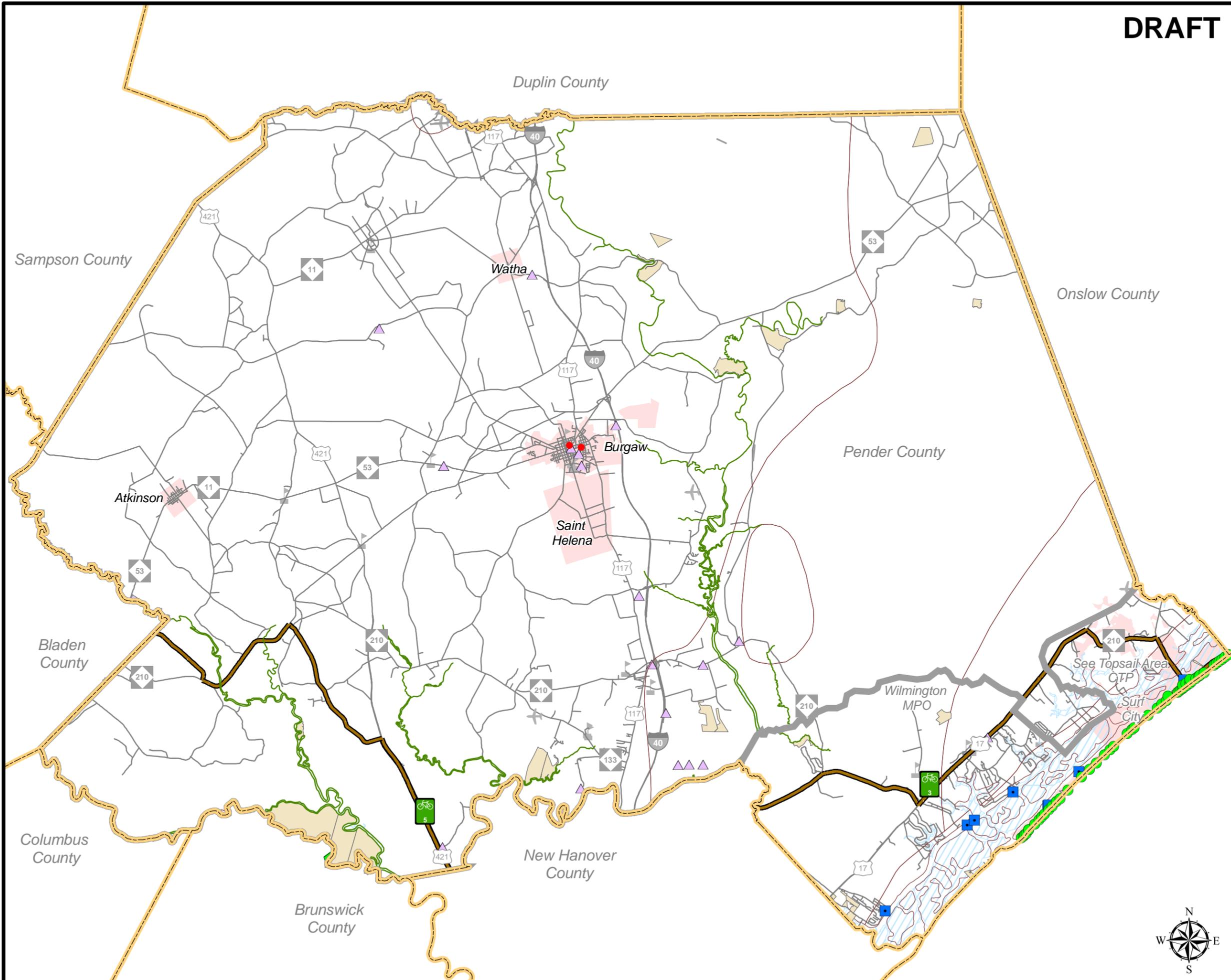


**Pender County
Comprehensive
Transportation Plan**

Plan date: 6/21/12

Legend

- Schools Public and Non-Public
- Airports
- Anadromous Fish Spawning Areas
- Beach Access
- Coastal Marinas
- Conservation Tax Credit Properties
- Emergency Operation Centers
- Geology
- Hazardous Substance Disposal Sites
- Bike Routes (NCDOT)
- Roads
- Paddle Trails - Coastal Plain
- Fisheries Nursery Areas
- Natural Heritage Element Occurrences
- Municipal Boundary
- Planning Boundary
- County Boundary



Base map date: 5/18/12

Refer to CTP document for more details

DRAFT

Figure 8b
Environmental
Features Map

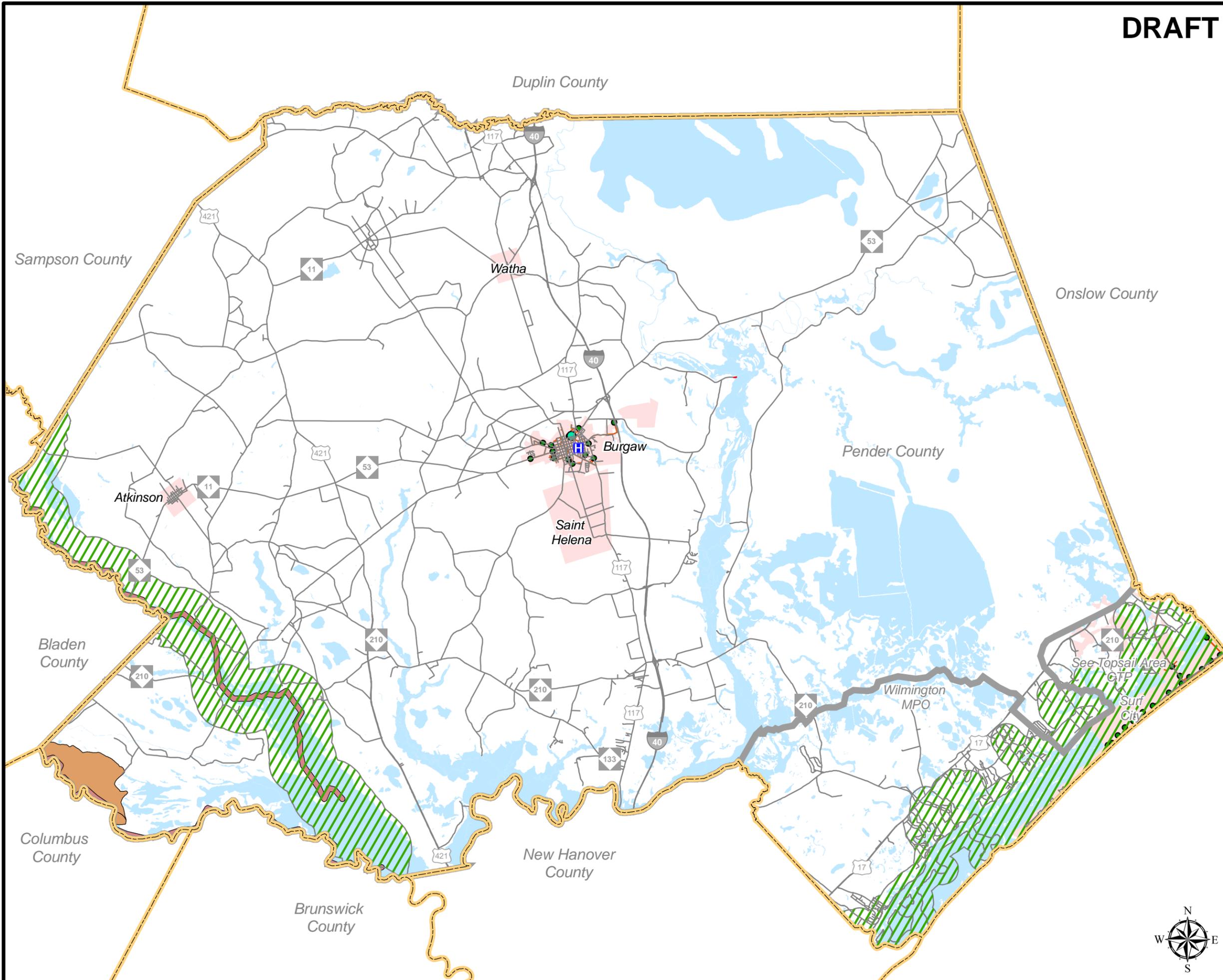


**Pender County
Comprehensive
Transportation Plan**

Plan date: 6/21/12

Legend

- Hospitals
- Roads
- High Quality Water and Outstanding Resource Water Management
- Land Trust Priority Areas
- Recreation Projects - Land and Water Conservation Fund
- Sanitary Sewer Systems - Pumps
- Sanitary Sewer Systems - Treatment Plants
- Sanitary Sewer Systems - Discharges
- Sanitary Sewer Systems - Pipes
- Water Supply Watersheds
- Municipal Boundary
- Hydrography (1:24,000 scale)
- Planning Boundary
- County Boundary



Base map date: 5/18/12

Refer to CTP document for more details

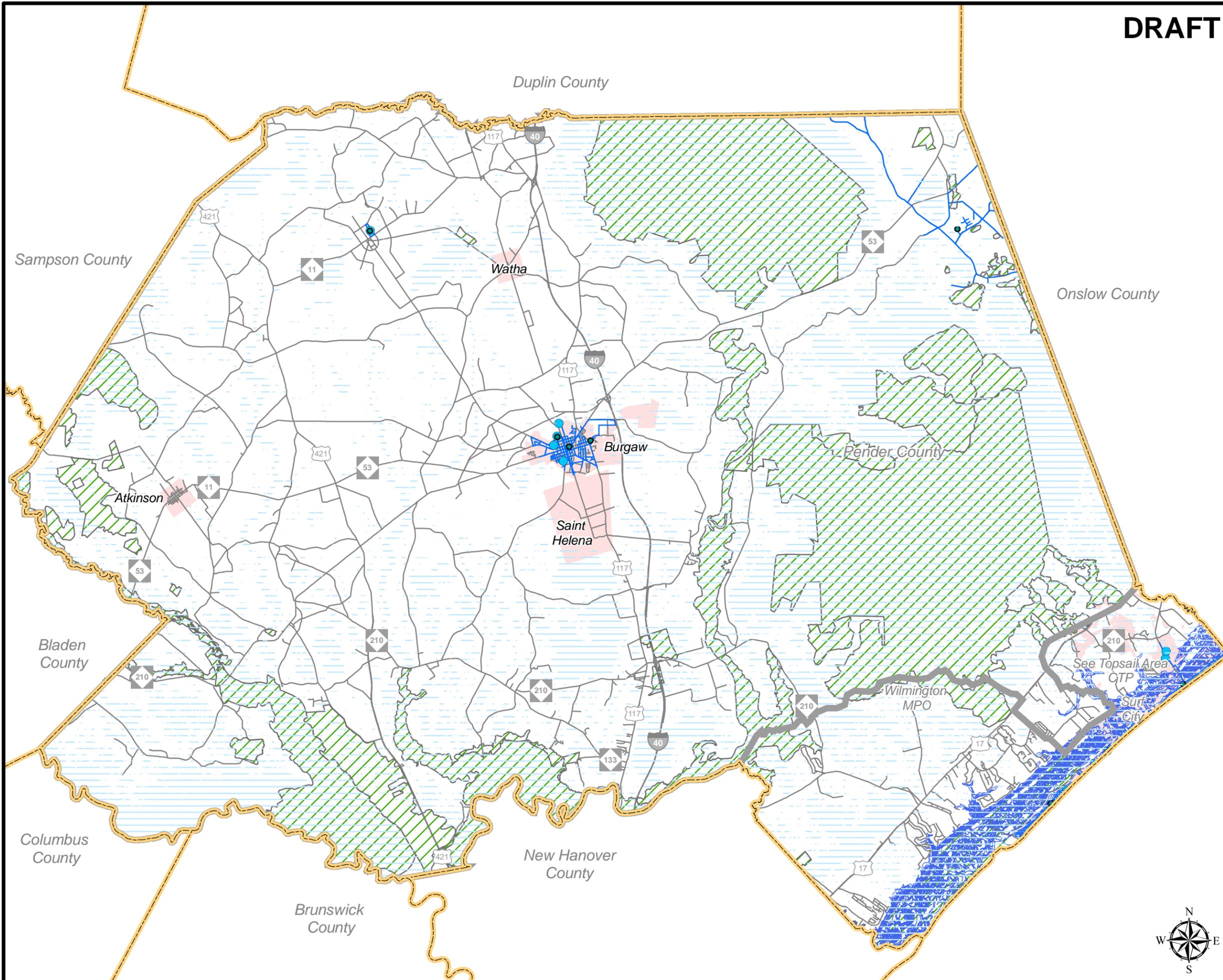
DRAFT

Figure 8c
**Environmental
Features Map**



**Pender County
Comprehensive
Transportation Plan**

Plan date: 6/21/12



Legend

- National Wetlands Inventory
- Shellfish Strata
- Significant Natural Heritage Areas
- Water Distribution Systems - Tanks
- Water Distribution Systems - Treatment Plants
- Water Distribution Systems - Wells
- Water Distribution Systems - Pipes
- Roads
- Municipal Boundary
- Planning Boundary
- County Boundary



Base map date: 5/18/12

Refer to CTP document for more details

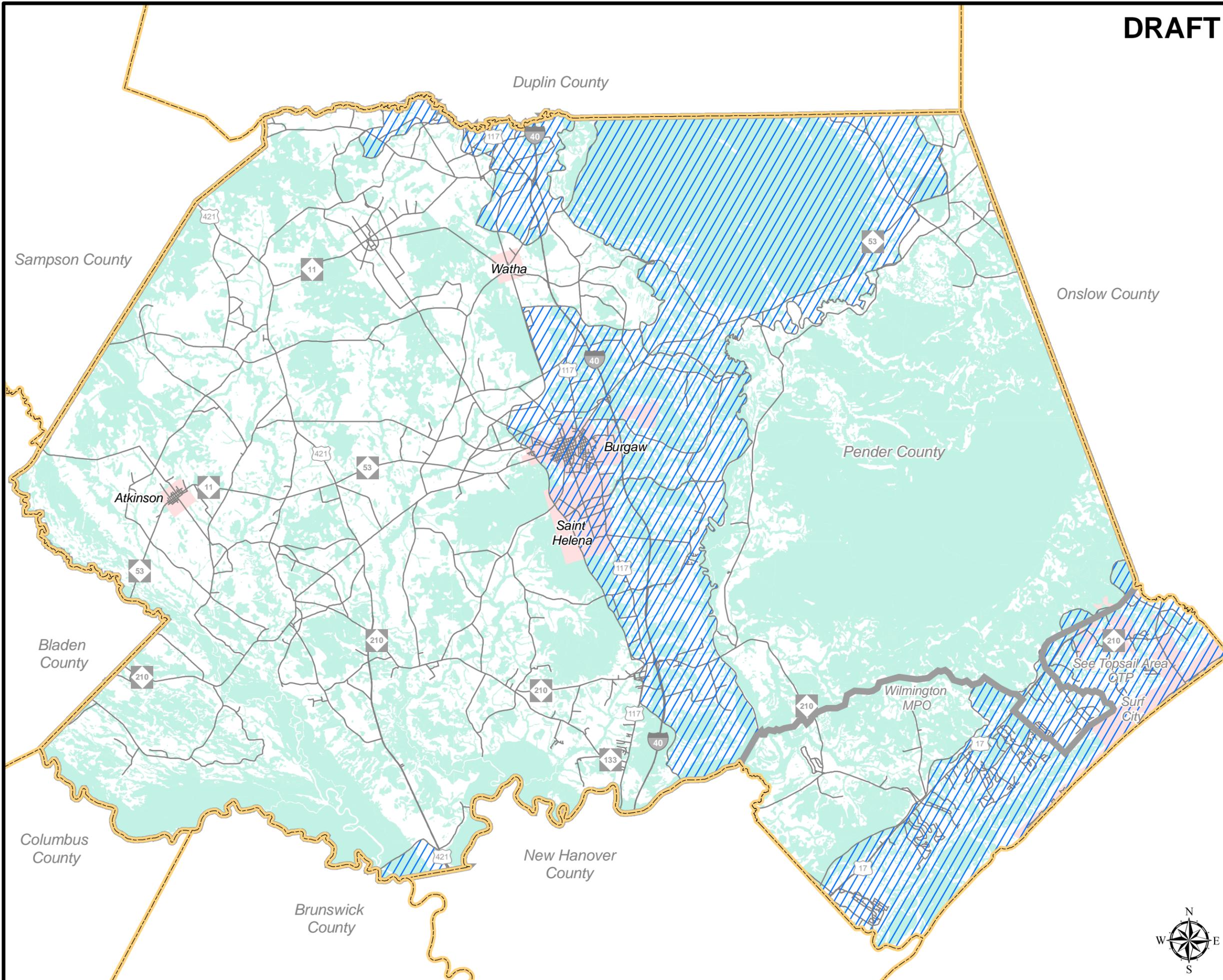
DRAFT

Figure 8d
**Environmental
Features Map**



**Pender County
Comprehensive
Transportation Plan**

Plan date: 6/21/12



Legend

-  Target Local Watersheds - EEP
-  NC Coastal Region Evaluation of Wetland Significance (NC-CREWS)
-  Roads
-  Municipal Boundary
-  Planning Boundary
-  County Boundary



Base map date: 5/18/12

Refer to CTP document for more details

Public Involvement

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

A meeting occurred with the Pender County Planning Department in January of 2011 to formally initiate the study, provide an overview of the transportation planning process, and to gather input on area transportation needs. The first steering committee meeting occurred in February 2011. A presentation was given with the Pender County Board of Commissioners in March 2011.

Throughout the course of the study, the Transportation Planning Branch cooperatively worked with the Pender County Steering Committee, which included a representative from each municipality, county staff, the RPO and others, to provide information on current local plans, to develop transportation vision and goals, to discuss population, 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 one public drop-in session in Pender County to present the proposed CTP to the public and solicit comments. The meeting was held on June 21, 2012 at the Pender County Public Meeting Room at 805 S. Walker Street, Burgaw, NC. The session was publicized in the local newspaper and was held from 4:00 to 7:00 pm. No comment forms were submitted during the session held on June 21, 2012.

A public hearing was held on **DATE** during the Pender 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.**

The Cape Fear RPO endorsed the CTP on **DATE**. The North Carolina Board of Transportation voted to mutually adopt the Pender County CTP on **DATE**.

II. Recommendations

This report documents the development of the 2012 Pender County CTP as shown in Figure 1. This chapter presents recommendations for each mode of transportation in the County. Refer to Appendix K for documentation of project alternatives and scenarios that were studied, but are not included in the adopted CTP.

Unaddressed Deficiencies

The following deficiencies were identified during the development of the CTP, but remain unaddressed.

To increase capacity, for driver convenience, ease of operation, and safety, it would be desirable to widen the following existing roads to provide at least a minimum lane width of 11 feet:

- **Anderson Road (SR 1315):** from US 117 to a point approximately 0.30 miles west of US 117.
- **Anderson Road (SR 1315):** from Lila Hall Road (SR 1361) to the Watha City Limits
- **Ashton Road (SR 1411):** from Little Kelly Road (SR 1409) to McCrary Rd (SR 1433)
- **Back Road (SR 1117):** from Brinson Rd (SR 1119) to Blueberry Rd (SR 1114)
- **Battleground Road (SR-1671):** from Slocum Trail (SR 1100) to a point approximately 0.22 miles north of NC 210
- **Bay Road (SR 1301):** from Willard Road (SR 1001) to Englishtown Road (SR 1300)
- **Beattys Bridge Road (SR 1201):** from Bladen County Line to Tuckahoe Road (SR 1206)
- **Bell Williams Road (SR 1121):** from US 421 to the entrance of West Pender Middle School
- **Bell Williams Road (SR 1121):** from the entrance of West Pender Middle School to Malpass Corner Road (SR 1120)
- **Bolick Road (SR 1341):** from New Savannah Rd (SR 1340) to Piney Woods Road (SR 1216)
- **Borough Road (SR 1115):** from NC 210 to Blueberry Road (SR 1114)
- **Brinson Road (SR 1119):** from US 421 to NC 210
- **Bulltail Road (SR 1212):** from US 421 to Indian Hill Road (SR 1211)
- **Camp Kirkwood Road (SR 1318):** from S Charlotte St (SR 1315) to a point approximately 0.09 miles west of I-40
- **Camp Kirkwood Road (SR 1318):** from a point approximately 0.29 miles east of I-40 to US 117

- **Canetuck Road (SR 1104):** from the Bladen County Line to NC 210
- **Church Street (SR 1312):** from US 117 to NC 11
- **Coras Grove Road (SR 1345):** from Horse Branch Road (SR 1336) to Old Savannah Road (SR 1345)
- **Cottle Acres Road (SR 1365):** from Penderlea Highway (SR 1332) to Piney Woods Rd (SR 1216)
- **CR Dillard Road (SR 1331):** from NC 11 to Garden Road (SR 1328)
- **Crooked Run Road (SR 1324):** from Englishtown Road (SR 1300) to Penderleah Highway (SR 1332)
- **Croomsbridge Road (SR 1318):** from US 117 to NC 53
- **Cypress Creek Road (SR 1526):** from the Duplin County Line to NC 50
- **Doctors Creek Road (SR 1305):** from the Duplin County Line to Willard Road (SR 1001)
- **E Main Street (SR 1414):** from Highsmith Road (SR 1400) to US 117
- **E Wilmington Street (SR 1510):** from US 117 Bypass to McKoy Road (SR 1701)
- **Ella Henry Road (SR 1303):** from the Sampson County Line to Willard Road (SR 1001)
- **Englishtown Road (SR 1300):** from Willard Road (SR 1001) to US 421
- **Fennell Town Road (SR 1402):** from Herrings Chapel Rd (SR 1404) to Highsmith Rd (SR 1400)
- **Gail Road (SR 1358):** from Sills Creek Road (SR 1325) to NC 11
- **Garden Road (SR 1328):** from Sills Creek Road (SR 1325) to CR Dillard Road (SR 1331)
- **Giddeons Pond Road (SR 1326):** from Sills Creek Road (SR 1325) to NC 11
- **Halfway Branch School Road (SR 1207):** from Shiloh Road (SR 1209) to Point Caswell Road (SR 1128)
- **Henry Brown Road (SR 1343):** from NC 53 to Piney Woods Road (SR 1216)
- **Herrings Chapel Road (SR 1404):** from Malpass Corner Road (SR 1120) to NC 210
- **Horse Branch Road (SR 1336):** from the western edge of the Town of Watha City Limits to Piney Woods Road (SR 1216)
- **Horse Branch Road (SR 1336):** from NC 53 to Malpass Corner Road (SR 1120).
- **Indian Hill Road (SR 1211):** from US 421 to Shiloh Road (SR 1209)
- **Jesse Moore Road (SR 1215):** from Indian Hill Road (SR 1211) to Lessie Wells Road (SR 1214)
- **Jesse Moore Road (SR 1214):** from Lessie Wells Road (SR 1214) to Tedder Road (SR 1217)
- **John Henry Store Road (SR 1125):** from Point Caswell Road (SR 1128) to Bell Williams Road (SR 1121)
- **Johnson Avenue (SR 1349):** from US 117 to NC 11
- **Johnson Nursery Road (SR 1314):** from US 117 to Watha Road (SR 1313)
- **Jonestown Road (SR 1357):** from US 117 to Willard Railroad Street (SR 1309)
- **Lamb Road (SR 1333):** from NC 11 to Penderlea Highway (SR 1332)

- **Little Kelly Road (SR 1409):** from Highsmith Road (SR 1400) to NC 210
- **Maple Hill School Road (SR 1580):** from Webbtown Road (SR 1529) to NC 50
- **Mary Slocum Road SE (SR 1315):** from Watha Road (SR 1313) to the eastern town of Watha municipal boundary.
- **Mary Slocum Road SW (SR 1336 and SR 1319):** from Watha Road (SR 1313) to the western town of Watha municipal boundary.
- **Montague Road (SR 1113):** from Blueberry Road (SR 1114) to NC 210
- **Morgan Road (SR 1102):** from Bladen County Line to NC 210
- **Murray Town Road (SR 1504):** from Croomsbridge Rd (SR 1318) to NC 53
- **New Road (SR 1412):** from US 117 to a point approximately 0.07 miles west of I-40.
- **New Road (SR 1412):** from a point approximately 0.34 miles east of I-40 to Old River Rd (SR 1411)
- **New Savannah Road (SR 1340):** from Pineys Woods Dr (SR 1216) to Old Savannah Rd (SR 1345)
- **Northwest Avenue (SR 1414):** from Highsmith Rd (SR 1400) to W Main St (SR 1414)
- **Old Maple Hill Road (SR 1520):** from NC 53 to Shaw Hwy (SR 1520)
- **Old Mill Road (SR 1306):** from Wallace Airport Rd (SR 1307) to Willard Rd (SR 1001)
- **Old River Road (SR 1411):** from New Road (SR 1412) to Calico Bay Rd (SR 1514)
- **Old Savannah Road (SR 1347):** from Coras Grove Rd (SR 1345) to US 117
- **Old Savannah Road S (SR 1345):** from Coras Grove Rd (SR 1345) to a point approximately 0.41 miles north of Drane St (local)
- **Page Road (SR 1403):** from US 421 to Malpass Corner Rd (SR 1120)
- **Pelham Road (SR 1319):** from WH Robbins Rd (SR 1329) to Lamb Rd (SR 1333)
- **Pelham Road (SR 1319):** from CR Dillard Rd (SR 1331) to a point approximately 0.58 miles east of Crooked Run Rd (SR 1324)
- **Penderlea School Road (SR 1330):** from WH Robbins Rd (SR 1329) to CR Dillard Rd (SR 1331)
- **Piney Woods Road (SR 1216):** from Point Caswell Rd (SR 1128) to New Savannah Rd (SR 1340)
- **Point Caswell Road (SR 1128):** from US 421 to Slocum Trl (SR 1100)
- **Point Caswell Road (SR 1101):** from Slocum Trl (SR 1100) to NC 210
- **Pope Road (SR 1339):** from Penderlea Hwy (SR 1332) to Piney Woods Rd (SR 1216)
- **Porter Road (SR 1118):** from Rivenbark Rd (SR 1125) to Malpass Corner Rd (SR 1120)
- **Porter Road (SR 1118):** from Brinson Rd (SR 1119) to NC 210
- **Powers Road (SR 1306):** from Willard Rd (SR 1001) to Wallace Airport Rd (SR 1307)
- **Raccoon Road (SR 1328):** from Englishtown Rd (SR 1300) to WH Robbins (SR 1329)

- **Richard Switch Road (SR 1112):** from Montague Rd (SR 1113) to US 421
- **Rivenbark Road (SR 1125):** from Bell Williams Rd (SR 1121) N of Bowers Lane to Bell Williams Rd (SR 1121) S of Bowers Lane
- **Rooks Road (SR 1126):** from the Town of Atkinson southeast municipal boundary to John Henry Store Rd (SR 1126)
- **South Charlotte Street (SR 1315):** from Mary Slocum Rd SE (SR 1315) to Camp Kirkwood Rd (SR 1318)
- **South First Avenue (SR 1126):** from E Church St (NC 11-53) to the Town of Atkinson southeast municipal boundary
- **Scott Road (SR 1407):** from Highsmith Rd (SR 1400) to NC 210
- **Shaw Highway (SR 1520):** from Old Maple Hill Rd (SR 1520) to Daniel Rd (SR 1752)
- **Shaw Highway (SR 1522):** from Old Blakes Bridge Rd (SR 1522) to Old Maple Hill Rd (SR 1520)
- **Shaw Highway (SR 1523):** from NC 53 to Old Blakes Bridge Rd (SR 1522)
- **Shiloh Road (SR 1209):** from the Sampson County Line to Horse Branch Rd (SR 1336)
- **Sholar Mill Road (SR 1525):** from the Duplin County Line to NC 50
- **Sills Creek Road (SR 1325):** from Raccoon Rd (SR 1328) to Crooked Run Rd (SR 1324)
- **Slocum Trail (SR 1100):** from Beattys Bridge Rd (SR 1201) to Battleground Rd (SR 1671)
- **Spencer Road (SR 1124):** from Union Chapel Rd (SR 1123) to Porter Rd (SR 1118)
- **Stag Park Road (SR 1509):** from W Stag Park Service Rd (SR 1623) to Whitestocking Rd (SR 1411)
- **Stag Park Road (SR 1411):** from Whitestocking Rd (SR 1411) to Old River Rd (SR 1411)
- **Sycamore Springs Road (SR 1520):** from Cypress Creek Rd (SR 1526) to NC 53
- **Sykes Town Road (SR 1105):** from the Bladen County Line to Canetuck Rd (SR 1104)
- **Tedder Road (SR 1217):** from US 421 to Shiloh Rd (SR 1209)
- **Test Farm Road (SR 1308):** from Old Mill Rd (SR 1306) to Willard Railroad St (SR 1309)
- **Tuckahoe Road (SR-1206):** from Shiloh Rd (SR 1209) to Beattys Bridge Rd (SR 1201)
- **Union Chapel Road (SR 1123):** from Rivenbark Rd (SR 1125) to US 421
- **West Main Street (SR 1414):** from Northwest Ave (SR 1414) to Front St (SR 1412)
- **Wallace Airport Road (SR-1307):** from Old Mill Rd (SR 1306) to Willard Rd (SR 1001)
- **Watha Road (SR-1313):** from NC 11 to Mary Slocum Rd SW (SR 1319)
- **Webbtown Road (SR-1529):** from Old Maple Hill Rd (SR 1520) to Wooten Rd (SR 1530)

- **Whitestocking Road (SR-1411):** from Whitestocking Rd Ext (SR 1512) to Stag Park Rd (SR 1411)
- **Whitestocking Road (SR-1512):** from NC 53 to Whitestocking Rd Ext (SR 1512)
- **Willard Road (SR-1001):** from the Sampson County Line to Old Mill Rd (SR 1306)
- **Wooten Road (SR-1530):** from Webbtown Rd (SR 1529) to the Onslow County Line

Implementation

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

Initiative for implementing the CTP rests predominately with the policy boards and citizens of Pender 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 Cape Fear 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.

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

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

Problem Statements

HIGHWAY

US 117 Proposed improvements from New Hanover County to US 117 Business

**Local ID: PEND0001-H
Last Updated: 7/16/12**

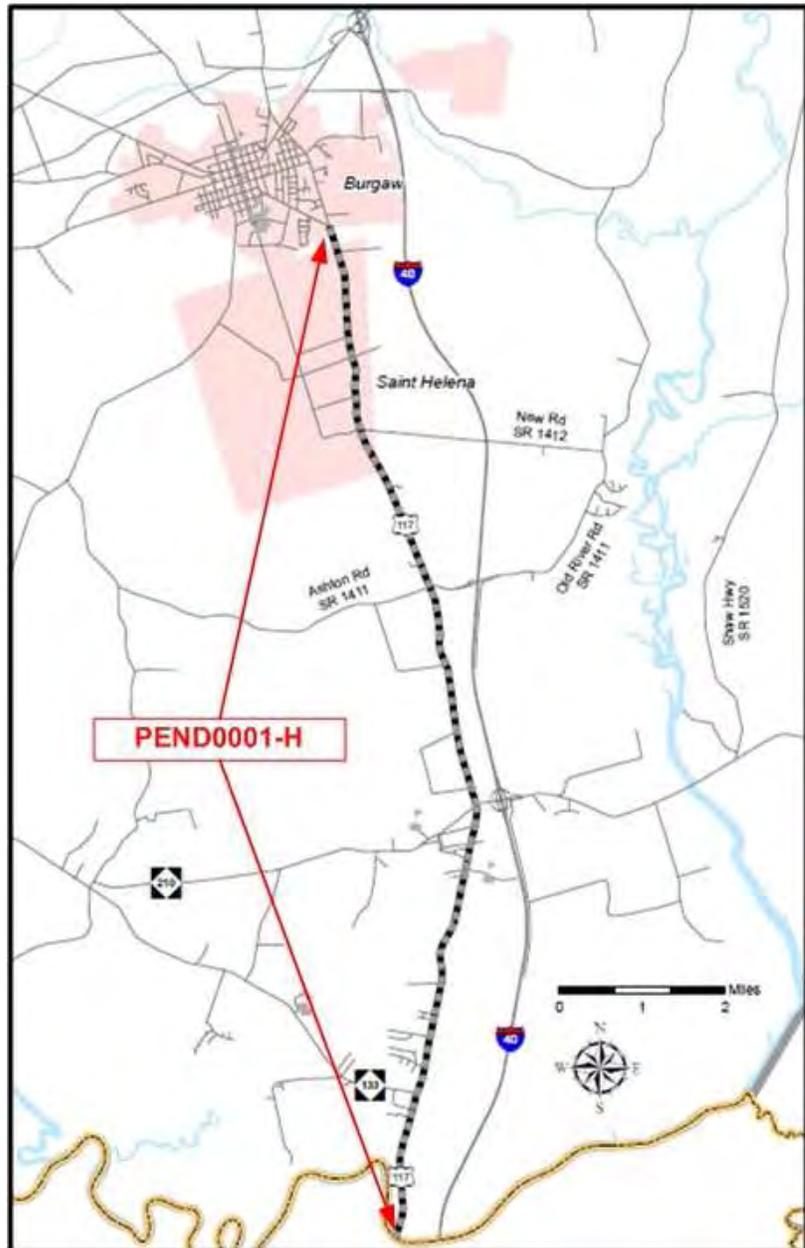
Identified Problem

Existing US 117 is projected to be over capacity by 2040 from New Hanover County to US 117 Business (South Walker Street) in the town of Burgaw. The primary purpose of this project is to relieve congestion on the existing facility such that a minimum of LOS D can be achieved.

Justification of Need

US 117 is a major north-south corridor in Pender County, connecting New Hanover County to Rocky Point, St. Helena, Burgaw, and other rural parts of the county. The facility is a vital artery in moving people and goods through southeast North Carolina, connecting Wilmington, Wallace, Mt. Olive, Goldsboro, and Wilson.

US 117 is currently a 2-lane facility with 11-foot lanes and a 55 mph speed limit. US 117 has a center left turn lane from a point 0.1 miles south of Rocky Point Elementary School Road to a point 0.05 miles north of Lucas Avenue



(SR 1420). In the area near the intersection of US 117 and NC 210 the facility has 12-foot lanes as well as a center left turn lane from a point 0.15 miles south of NC 210 to a point 0.23 miles north of NC 210. US 117 is part of the regional tier of the NC Multimodal Investment Network (NCMIN). US 117 is not part of the Strategic Highway Network (STRAHNET). NC 133 runs concurrently with US 117 from New Hanover County to NC 133.

By 2040 the facility is projected to be over capacity from New Hanover County to US 117 Business based on providing a Level of Service (LOS) D. Traffic on US 117 from New Road (SR 1412) to US 117 Business is projected to increase from 7,100 vehicles per day (vpd) in 2010 to 13,500 vpd in 2040, compared to a LOS D capacity of 13,200 vpd.

Traffic on US 117 from Porters Lane Road (SR 1416) to Ashton Road (SR 1411) is projected to increase from 9,200 vehicles per day (vpd) in 2010 to 20,700 vpd in 2040, compared to a LOS D capacity of 15,900 vpd. Traffic on US 117 from New Hanover County to NC 133 is projected to increase from 14,000 in 2010 to 18,900 vpd in 2040, compared to a LOS D of 15,900 vpd.

CTP Project Proposal

The proposed project (Local ID No. Pend0001-H) is to convert the existing 2-3 lane facility from New Hanover County to US 117 Business to a four-lane divided major thoroughfare. This project also includes a multi-use path along the east side of the facility. With the proposed improvements the LOS D capacity will increase to 32,800 vpd.

The proposed improvements on US 117 will help to reduce congestion and improve mobility in this area of Pender County.

US 117 Business (South Walker Street), Local ID No. PEND0002-H

The primary purpose of project (Local ID No. Pend0002-H) is access management on the existing facility from US 117 Bypass to East Fremont Street.

Existing US 117 Business is a north-south corridor on the eastern side of the town of Burgaw. It is a 2-lane facility with 11-ft lanes and a 35 mph posted speed limit. US 117 Business connects with US 117 Bypass and NC 53. The facility provides access to a number of commercial properties, municipal buildings, and residential areas. Traffic on US 117 Business was 3,800 vehicles per day (vpd) in 2010. Level of Service D for this facility is 11,100 vpd. US 117 Business is part of the regional tier of the NC Multimodal Investment Network (NCMIN). US 117 Business is not part of the Strategic Highway Network (STRAHNET).

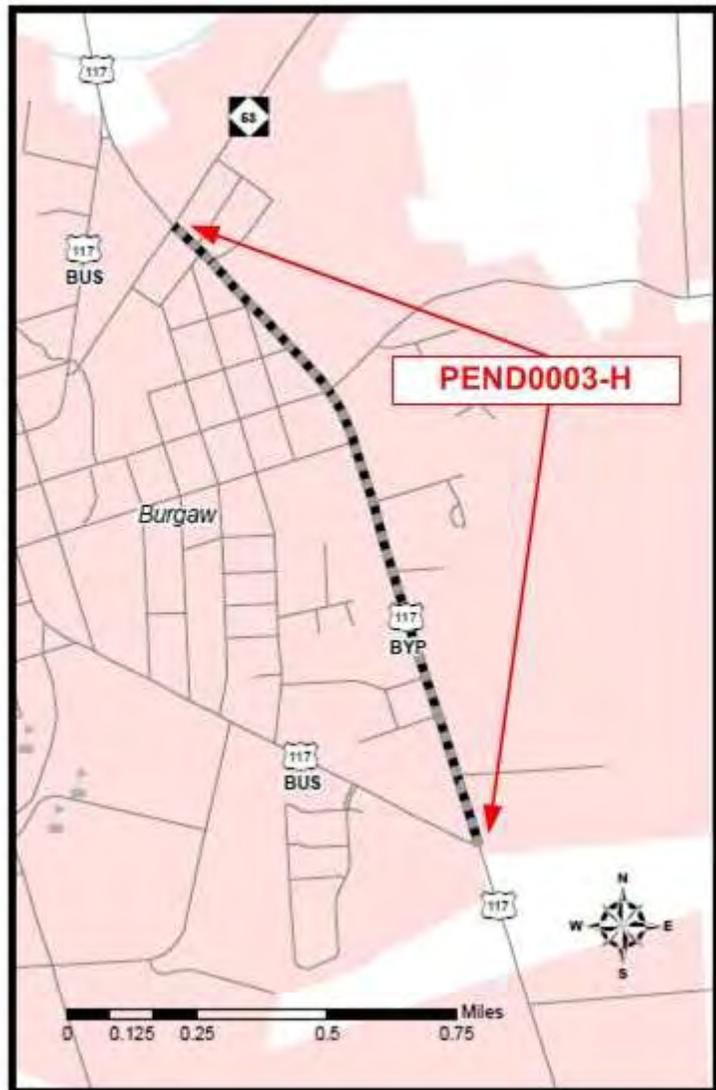
This project will improve safety and provide traffic calming to slow vehicles in the residential areas. It will also reduce the number of driveways with direct access to US 117 Business. This project also includes a sidewalk on one side of the facility.

Identified Problem

Existing US 117 Bypass is projected to be over capacity by 2040 from US 117 Business (South Walker Street) to NC 53 in the town of Burgaw. The primary purpose of this project is to relieve congestion on the existing facility such that a minimum of LOS D can be achieved.

Justification of Need

US 117 Bypass is a north-south corridor on the eastern side of the town of Burgaw that connects with US 117 Business and NC 53. US 117 Bypass is currently a 3-lane facility with 11-foot lanes and a 45 mph speed limit. US 117 Bypass has a center left turn lane from US 117 Business (South Walker Street) to NC 53. US 117 Bypass is part of the regional tier of the NC Multimodal Investment Network (NCMIN). US 117 Bypass is not part of the Strategic Highway Network (STRAHNET).



By 2040 the facility is projected to be over capacity from US 117 Business (South Walker Street) to NC 53 based on providing a Level of Service (LOS) D. Traffic on US 117 Bypass is projected to increase from 9,100 vehicles per day (vpd) in 2010 to 17,800 vpd in 2040, compared to a LOS D capacity of 14,500 vpd.

CTP Project Proposal

The proposed project (Local ID No. Pend0003-H) is to convert the existing 3-lane facility from US 117 Business (South Walker Street) to NC 53 to a four-lane divided major thoroughfare with 12 foot lanes. This project also includes sidewalks on both sides of the facility. With the proposed improvements the LOS D capacity will increase to 22,200 vpd.

The proposed improvements on US 117 Bypass will help to reduce congestion and improve mobility in this area of Pender County.

NC 53, Local ID No. PEND0004-H

The primary purpose of project (Local ID No. Pend0004-H) is access management and intersection improvements on the existing facility from US 117 Bypass to North Smith Street (SR 1400). Recommendations include streetscaping, elimination of some driveways, elimination of some on street parking, traffic calming devices, a traffic circle at the intersection of US 117 Business (South Walker Street) and NC 53, and a traffic circle at NC 53 and US 117 Business (Timberly Lane).

NC 53 is an east-west corridor that goes through the middle of the town of Burgaw. It is a 2-3 lane facility with 11-12 foot lanes and a posted speed limit of 35 mph. NC 53 has on-street parking from Smith Street to US 117 Business. It runs concurrently with US 117 Business from East Wilmington Street to NC 53 (Jacksonville Highway).

The facility provides access to a number of commercial properties and municipal buildings, including the police station, the fire station, the county courthouse, and residential areas. Traffic on NC 53 between McRae Street and Dudley Street was 8,400 vehicles per day (vpd) in 2010. The Level of Service D for this facility is 10,700 vpd. Traffic on NC 53 is projected to increase to 10,200 in 2040 with the NC 53 Bypass (TIP No. R-3302) in place. Without the NC 53 Bypass the traffic on NC 53 is projected to increase to 12,500 in 2040.

NC 53 is part of the regional tier of the NC Multimodal Investment Network (NCMIN). NC 53 is not part of the Strategic Highway Network (STRAHNET).

This project, known locally as the NC 53 Corridor Study Report, will improve safety and provide traffic calming to slow vehicles in the residential areas. This project also includes sidewalks on both sides of the facility. It is currently in the project development phase. For more information about the NC 53 Corridor Study Report contact the Pender County Planning Department.

Identified Problem

Existing NC 53 is projected to be over capacity by 2040 from US 117 Bypass to Stag Park Road (SR 1509) in the town of Burgaw. The primary purpose of this project is to relieve congestion on the existing facility such that a minimum of LOS D can be achieved.

Justification of Need

NC 53 is an east-west corridor that runs through the town of Burgaw that connects with US 117 and I-40. NC 53 is currently a 2-lane facility with 12-foot lanes and a 35 mph speed limit that widens to 3 lanes at a point 0.1 miles north of US 117 Bypass intersection. NC 53 is part of the regional tier of the NC Multimodal Investment Network (NCMIN). NC 53 is not part of the Strategic Highway Network (STRAHNET).

By 2040 the facility is projected to be over capacity from US 117 Bypass to Stag Park Road (SR 1509) based on providing a Level of Service (LOS) D. Traffic on NC 53 is projected to increase from 8,800 vehicles per day (vpd) in 2010 to 14,000 vpd in 2040, compared to a LOS D capacity of 11,100 vpd.



CTP Project Proposal

The proposed project (Local ID No. Pend0005-H) is to convert the existing facility from US 117 Bypass to Stag Park Road (SR 1509) to a four-lane divided major thoroughfare. This project also includes a sidewalk on one side of the facility. With the proposed improvements the LOS D capacity will increase to 22,000 vpd.

The proposed improvements on NC 53 will help to reduce congestion and improve mobility in this area of Pender County.

NC 53 Bypass (Burgaw), TIP No. R-3302

NC 53 is currently a two-to-three lane major thoroughfare from New Savannah Road (SR 1340) to I-40 and is projected to be over capacity by 2040. TIP Project No. R-3302 is intended to address this problem. The purpose of this project is to reduce truck traffic, improve safety and reduce congestion along existing NC 53 through the town of Burgaw. The project consists of constructing a two-lane roadway on multi-lane right of way. Partial control of access will be obtained along sections of the project to be constructed on new location. For additional information about this project, including the Purpose and Need, contact NCDOT's Project Development and Environmental Analysis Branch.

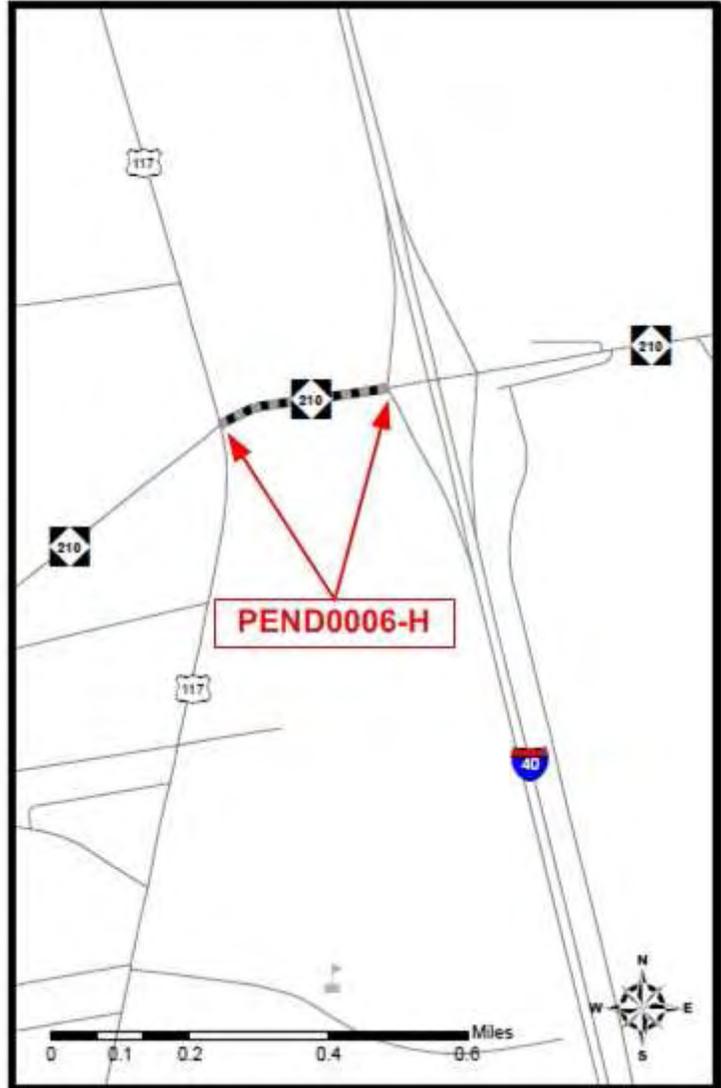
Identified Problem

Existing NC 210 is projected to be over capacity by 2040 from US 117 to I-40. The primary purpose of this project is to relieve congestion on the existing facility such that a minimum of LOS D can be achieved.

Justification of Need

NC 210 is an east-west corridor that runs from Bladen County through Pender County and connects with US 17 in the Hampstead area. NC 210 is currently a 3-lane facility with 12-foot lanes and a 55 mph speed limit between US 117 and I-40. NC 210 is part of the regional tier of the NC Multimodal Investment Network (NCMIN). NC 53 is not part of the Strategic Highway Network (STRAHNET).

By 2040 the facility is projected to be over capacity from US 117 to I-40 Road based on providing a Level of Service (LOS) D. Traffic on NC 210 is projected to increase from 12,000 vehicles per day (vpd) in 2010 to 25,200 vpd in 2040, compared to a LOS D capacity of 17,800 vpd.



CTP Project Proposal

The proposed project (Local ID No. Pend0006-H) is to convert the existing facility from US 117 to I-40 to a four-lane divided major thoroughfare. This project also includes a multi-use path on the north side of the facility. With the proposed improvements the LOS D capacity will increase to 32,800 vpd. The proposed improvements on NC 210 will help to reduce congestion and improve mobility in this area of Pender County.

Identified Problem

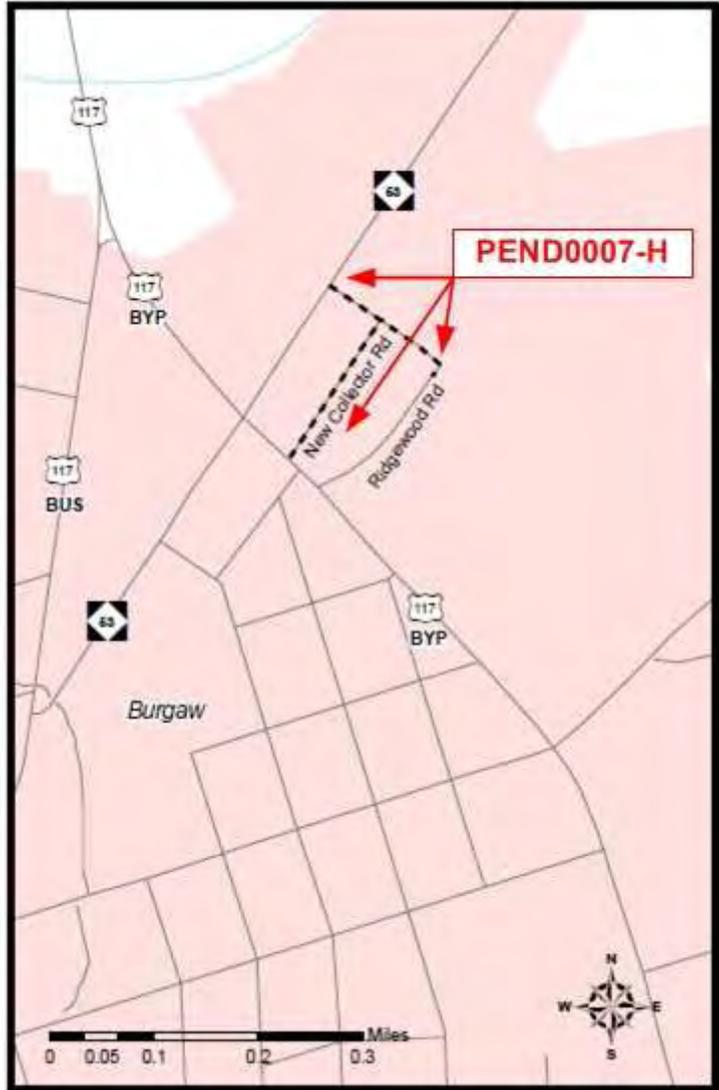
Existing NC 53 is projected to be over capacity by 2040 from US 117 Bypass to Stag Park Road (SR 1509). The primary purpose of this project is to provide circulation improvements to relieve traffic congestion at the intersection of NC 53 and US 117 Bypass. This recommendation came out of the NC 53 Corridor Study Report.

Justification of Need

With the proposed improvements to NC 53 in Local ID No. PEND0005-H including widening to four lanes with a median, access to NC 53 from the numerous restaurants, gas stations, commercial properties and a grocery store will be restricted. This will funnel more traffic to the intersection of NC 53 and US 117 Bypass. Traffic on NC 53 between US 117 Bypass and Stag Park Road (SR 1509) is projected to increase from 8,800 vehicles per day (vpd) in 2010 to 14,000 vpd in 2040.

CTP Project Proposal

The proposed project (Local ID No. Pend0007-H) is to construct a new two-lane collector road with 11 foot lanes connecting NC 53, US 117 Bypass and Ridgewood Road. The proposed improvements will help to reduce congestion and improve mobility in the vicinity of NC 53 and US 117 Bypass. It will also provide additional driveway access to the properties located on the south side of NC 53.



Minor Widening Improvements

The following routes do not have capacity issues, but are recommended to be upgraded to improve narrow lane widths.

- **PEND0007-H:** Ashton Road (SR 1411) from McCrary Road (SR 1433) to US 117, widen from two 9-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0008-H:** Beatty's Bridge Road (SR 1201) from Tuckahoe Road (SR 1206) to the Town of Atkinson City Limits from two 9-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0009-H:** Bell Williams Road (SR 1121) from NC 53 to the entrance to West Pender Middle School from two 9-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0010-H:** Blueberry Road (SR 1114) from NC 210 to US 421 from two 9 to 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0011-H:** Cheshire Road (SR 1426) from NC 210 to NC 133 from two 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0012-H:** Garden Road (SR 1328) from CR Dillard Road (SR 1331) to Penderlea Hwy (SR 1332) from two 10-foot lanes to two 11-foot lanes with four-foot paved shoulders.
- **PEND0013-H:** Highsmith Road (SR 1400) from the Town of Burgaw city limits to NC 210 from two 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0014-H:** Horse Branch Road (SR 1336) from Piney Woods Road (SR 1216) to NC 53 from two 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0015-H:** New Road (SR 1412) from the St. Helena city limit to Old River Rd (SR 1411) from two 9-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0016-H:** Old River Road (SR 1411) from US 117 to New Road (SR 1412) from two 9 to 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0017-H:** Penderlea Highway (SR 1332) from Garden Rd (SR 1328) to the Town of Burgaw City Limits from two 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0018-H:** Piney Woods Road (SR 1216) from New Savannah Rd (SR 1340) to Henry Brown Rd (SR 1343) from two 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0019-H:** Raccoon Road (SR 1328) from WH Robbins Rd (SR 1329) to Penderlea Hwy (SR 1332) from two 10-foot lanes to two 11-foot lanes with four-foot paved shoulders.

- **PEND0020-H:** Shaw Highway (SR 1520) from Daniel Road (SR 1752) to NC 210 from two 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0021-H:** Sloop Point Loop Road (SR 1563) from the entrance of North Topsail Elementary School to Sloop Point Road (SR 1561) from two 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0022-H:** Sloop Point Road (SR 1561) from US 17 to Sloop Point Loop Road (SR 1563) from two 9-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0023-H:** Stag Park Road (SR 1509) from NC 53 to a point approximately 0.58 miles east of NC 53 from two 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0024-H:** Van Eden Road (SR-1315) from the Town of Watha southern boundary to Old Savannah Rd (SR 1347) from two 9 to 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0025-H:** Willard Railroad Street (SR 1309) from the Duplin County Line to NC 11 from two 10-foot lanes to two 12-foot lanes with five-foot paved shoulders.
- **PEND0026-H:** Willard Road (SR 1001) from Old Mill Road (SR 1306) to NC 11 from two 9-foot lanes to two 12-foot lanes with five-foot paved shoulders.

PUBLIC TRANSPORTATION & RAIL

Pender County doesn't have an existing fixed Transit network. There are no recommendations to create one at this time.

Existing railroad tracks between Wallace and Castle Hayne, and Wilmington and Jacksonville were removed over 30 years ago. Now there is an interest in restoring both those routes. This would allow for the shipment of freight and possibly passengers between Jacksonville and Wilmington, as well as between Wilmington and Raleigh.

The exact location of the routes and crossings will need to be determined with a future feasibility study. The locations shown on the map are actually the old locations for the railroad. All recommendations for rail were coordinated with the local governments and the Rail Division of NCDOT.

Railroad

- **PEND0001-R:** New location running parallel to US 17 from New Hanover County to Onslow County
- **PEND0002-R:** New location running parallel to US 117 from New Hanover County to Duplin County

BICYCLE

State Bicycle Route #5 passes through the southwest corner of the county and connects Bladen County to New Hanover County by way of NC 210 and US 421. State Bicycle Route #3 passes through the southeast portion of Pender County and connects New Hanover County to Onslow County by way of NC 210 and US 17.

During the development of the Pender County CTP several routes were recommended for Multi-use paths. These paths will allow pedestrians and bicyclists to safely travel on an off-road facility without interrupting traffic flow. They will also provide connectivity across the county and provide access to several of the parks and schools. Some of these recommendations tie into and match the recommendations made in the Topsail Area CTP and the Eastern Carolina RPO Bike and Pedestrian Routes map. The Coastal Greenway makes use of a power line easement. The Cape Fear Run makes use of an old railroad corridor.

The town of Burgaw decided to postpone making recommendations for bike paths within municipal limits. They will be doing a bike plan study in the future.

Multi-use path – Recommended

- **PEND0001-M:** North side of US 17 from Sloop Point Loop Road (SR 1563) to Sloop Point Road (SR 1561)
- **PEND0002-M:** East side of US 117 from New Hanover County to South Walker Street (US 117 Bus) in Burgaw
- **PEND0003-M:** East side of US 117 from Timberly Lane (US 117 Bus) in the town of Burgaw to Duplin County
- **PEND0004-M:** North side of NC 53 from Bladen County line to North Pope Street in the town of Atkinson.
- **PEND0005-M:** North side of NC 53 from Linden Avenue in the town of Atkinson to the western municipal limits of the town of Burgaw
- **PEND0006-M:** North side of NC 53 from a point 0.11 miles north east of US 117 Bypass to the southbound I-40 onramp
- **PEND0007-M:** North side of NC 53 from the northbound I-40 onramp to the Onslow County border
- **PEND0008-M:** North side of NC 133 from NC 210 to US 117
- **PEND0009-M:** North side of NC 210 from Bladen County to the Wilmington MPO Boundary
- **PEND0010-M:** East side of Shaw Highway (SR 1520) from NC 210 to NC 53
- **PEND0011-M:** Coastal Greenway from Wilmington MPO Boundary to Topsail Area Boundary
- **PEND0012-M:** Cape Fear Run from New Hanover County to Sampson County

PEDESTRIAN

During the development of the Pender County CTP, several facilities were identified as needing new sidewalks. These needs are identified below.

Atkinson:

Sidewalks – Needs Improvement

- **PEND0001-P:** NC 11/53 from North Sunset Street (SR 1218) to Linden Avenue

Sidewalks – Recommended

- **PEND0002-P:** NC 11/53 from Pope Street to Sunset Street (SR 1218)
- **PEND0003-P:** South 1st Avenue (SR 1126) from Red Cross Street to West Church Street (NC 11/53)
- **PEND0004-P:** Henry Street (SR 1205) from Sunset Street (SR 1218) to Linden Avenue
- **PEND0005-P:** Main Street from Alderman Street to 4th Avenue
- **PEND0006-P:** North Railroad Avenue from West Church Street (NC 11/53) to West Henry Street (SR 1205)
- **PEND0007-P:** North Rankin Street from East Church Street (NC 11/53) to East Henry Street (SR 1205)
- **PEND0008-P:** Stringfield Street from West Main Street to West Henry Street (SR 1205)

Burgaw:

Sidewalks – Needs Improvement

- **PEND0004-H:** East Bridgers Street (US 117 Bus/NC 53) from North Cowan Street to Jacksonville Highway (NC 53)
- **PEND0004-H:** West Wilmington Street (NC 53) from North Smith Street (SR 1400) to North McRae Street
- **PEND0009-P:** North Smith Street (SR 1400) from West Bridgers Street (SR 1332) to West Wilmington Street (NC 53)
- **PEND0010-P:** East Wilmington Street (SR 1510) from North Walker Street (US 117 Bus/NC 53) to North Cowan Street

Sidewalks – Recommended

- **PEND0003-H:** US 117 Bypass from South Walker Street (US 117 Business) to Timberly Lane (US 117 Business)
- **PEND0002-H:** US 117 Business (South Walker Street) from US 117 Bypass to South Cowan Street
- **PEND0002-H:** US 117 Business (South Walker Street) from East Satchwell Street to East Fremont Street
- **PEND0011-P:** US 117 Business (Timberly Lane) from Jacksonville Highway (NC 53) to US 117 Bypass
- **PEND0012-P:** West Wilmington Street (NC 53) from South Bodenheimer Street to North Smith Street (SR 1400)
- **PEND0004-H:** West Wilmington Street (NC 53) from North McCrae Street to North Dickerson Street (SR 1482)
- **PEND0004-H:** NC 53 from Timberly Lane (US 117 Business) to US 117 Bypass
- **PEND0005-H:** NC 53 from US 117 Bypass to a point 0.05 miles north east of US 117 Bypass
- **PEND0013-P:** West Ashe Street from McCullen Street to North Dudley Street
- **PEND0014-P:** East Ashe Street from North Wright Street (SR 1345) to Timberly Lane (US 117 Business)
- **PEND0015-P:** Batson Street from North Bickett Street to US 117 Bypass
- **PEND0016-P:** South Bennett Street from South Walker Street (US 117 Business) to East Wilmington Street (SR 1510)
- **PEND0017-P:** Bickett Street from South Walker Street (US 117 Business) to Batson Street
- **PEND0018-P:** South Bodenheimer Street from West Hayes Street to NC 53 (West Wilmington Street)
- **PEND0019-P:** Bridgers Street (SR 1343) from North McCullen Street to Penderlea Road (SR 1332)
- **PEND0020-P:** West Bridgers Street (SR 1332) from Penderlea Road (SR 1332) to North Dickerson Street (SR 1482)
- **PEND0021-P:** South Campbell Street from South Walker Street (US 117 Business) to East Wilmington Street (SR 1510)
- **PEND0022-P:** Clark Street from South Smith Street (SR 1400) to South Dickerson Street (SR 1412)
- **PEND0023-P:** Draine Street from a point 0.04 miles west of North Wright Street (SR 1345) to North Wright Street (SR 1345)
- **PEND0024-P:** Dudley Street from Clark Street to West Wallace Street (SR 1344)
- **PEND0025-P:** West Fremont Street from Durham Street to South Dickerson Street (SR 1412)
- **PEND0026-P:** East Fremont Street from a point 0.05 miles east of South Cowan Street to South Bennett Street

- **PEND0027-P:** East Fremont Street from South Mcneil Street to US 117 Bypass
- **PEND0028-P:** West Hayes Street from South Bodenheimer Street to South Dickerson Street (SR 1412)
- **PEND0029-P:** McCullen Street from West Hayes Street to Bridgers Street (SR 1343)
- **PEND0030-P:** Mcneil Street from South Walker Street (US 117 Business) to Jacksonville Highway (NC 53)
- **PEND0031-P:** Progress Drive (SR 1413) from a point 0.15 miles south of Industrial Drive to South Walker Street (US 117 Business)
- **PEND0032-P:** West Satchwell Street from Antoinette Drive to South Dickerson Street (SR 1412)
- **PEND0033-P:** South Smith Street (SR 1400) from Clark Street to West Wilmington Street (NC 53)
- **PEND0034-P:** North Smith Street (SR 1400) from West Bridgers Street (SR 1332) to West Wallace (SR 1344)
- **PEND0035-P:** West Wallace Street (SR 1344) from North Smith Street (SR 1400) to North Wright Street (SR 1345)
- **PEND0036-P:** East Wilmington Street (SR 1510) from North Cowan Street to US 117 Bypass
- **PEND0037-P:** North Wright Street (SR 1345) from West Wallace Street (SR 1344) to a point 0.2 miles north of Draine Street

Rocky Point:

Sidewalks – Recommended

- **PEND0038-P:** Rocky Point Elementary School Road (SR 1632) from US 117 to a point 0.23 miles east of US 117

Multi-use path – Recommended

- **PEND0001-M:** North side of US 17 from Sloop Point Loop Road (SR 1563) to Sloop Point Road (SR 1561)
- **PEND0002-M:** East side of US 117 from New Hanover County to South Walker Street (US 117 Business) in Burgaw
- **PEND0003-M:** East side of US 117 from Timberly Lane (US 117 Business) in the town of Burgaw to Duplin County
- **PEND0004-M:** North side of NC 53 from Bladen County line to North Pope Street in the town of Atkinson.

- **PEND0005-M:** North side of NC 53 from Linden Avenue in the town of Atkinson to the western municipal limits of the town of Burgaw
- **PEND0006-M:** North side of NC 53 from a point 0.11 miles north east of US 117 Bypass to the southbound I-40 onramp
- **PEND0007-M:** North side of NC 53 from the northbound I-40 onramp to the Onslow County border
- **PEND0008-M:** North side of NC 133 from NC 210 to US 117
- **PEND0009-M:** North side of NC 210 from Bladen County to the Wilmington MPO Boundary
- **PEND0010-M:** East side of Shaw Highway (SR 1520) from NC 210 to NC 53
- **PEND0011-M:** Coastal Greenway from Wilmington MPO Boundary to Topsail Area Boundary
- **PEND0012-M:** Cape Fear Run from New Hanover County to Sampson County