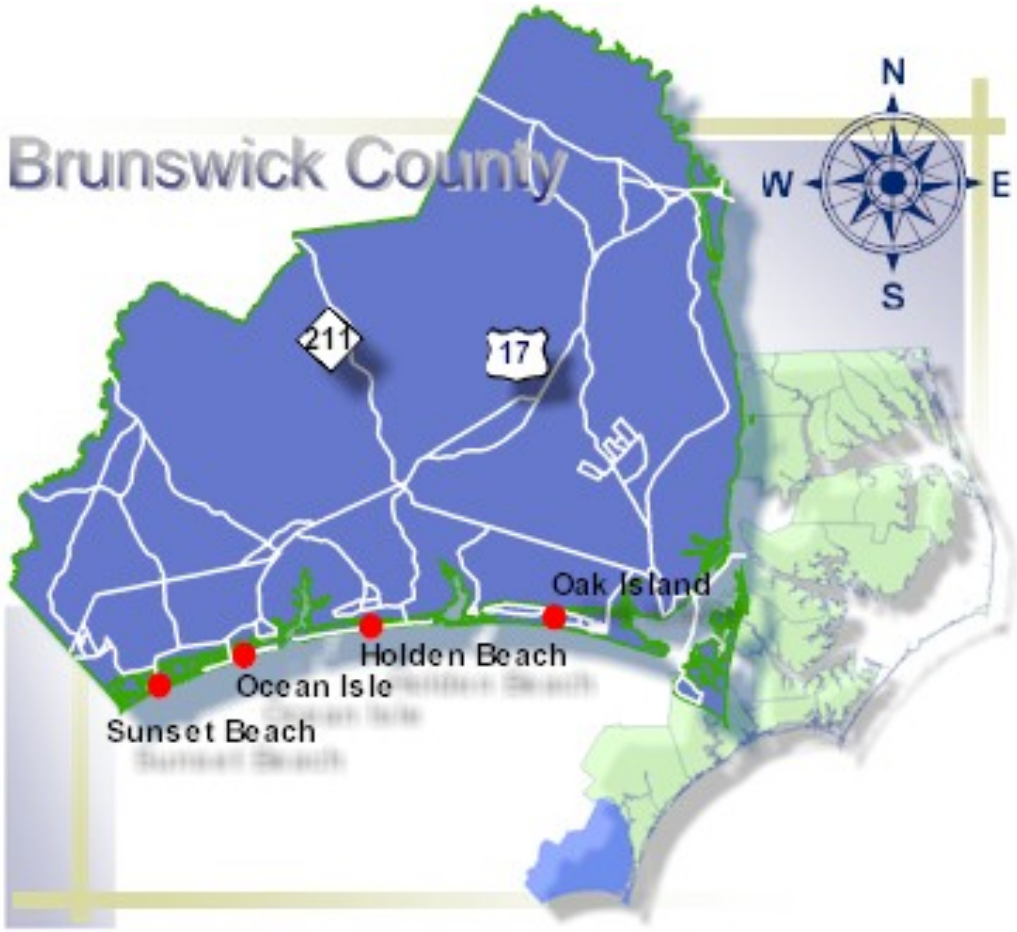
2010 Brunswick County
Comprehensive Transportation Plan

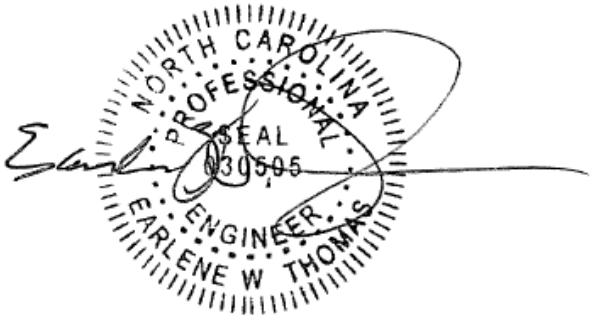


2010 Brunswick County
Comprehensive Transportation Plan

Prepared by: Earlene W. Thomas, PE, Project Engineer
Transportation Planning Branch
N.C. Department of Transportation

In Cooperation with: Brunswick County
City of Boiling Spring Lakes
City of Northwest
City of Southport
Town of Bolivia
Town of Calabash
Town of Carolina Shores
Town of Caswell Beach
Town of Holden Beach
Town of Oak Island
Town of Ocean Isle
Town of Sandy Creek
Town of Shallotte
Town of St. James
Town of Sunset Beach
Town of Varnamtown
Village of Bald Head
Cape Fear Rural Planning Organization

Published: March 2013



Earlene W. Thomas, PE
Western Unit Head

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Executive Summary

In February of 2006, the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT) and Brunswick County initiated a study to cooperatively develop the Brunswick County Comprehensive Transportation Plan (CTP), which includes the following municipalities: Boiling Spring Lakes, Bolivia, Calabash, Carolina Shores, Caswell Beach, Holden Beach, Northwest, Oak Island, Ocean Isle, Sandy Creek, Shallotte, Southport, St. James, Sunset Beach, Varnamtown and the Village of Bald Head. 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 routine maintenance or minor operations issues. Refer to Appendix A for contact information on these types of issues.

Findings of this CTP study were based on an analysis of the transportation system, environmental screening and public input, which are detailed in Chapter 1. Figure 1 shows the CTP maps, which were mutually adopted by NCDOT in 2010. Descriptive information and definitions for designations depicted on the CTP maps can be found in Appendix B. Implementation of the plan is the responsibility of the county, its municipalities, and NCDOT. Refer to Chapter 2 for information on the implementation process.

This report documents the recommendations for improvements that are included in the Brunswick County CTP. The major recommendations for improvements are listed below. More detailed information about these and other recommendations can be found in Chapter 2. Additionally, for information on recommendations from existing transportation plans that were incorporated as a part of this CTP but not documented in this report refer to Appendix I.

As of March 2013, the area west and north of, and inclusive of Varnamtown, to US 17 is in the Grand Strand Area Transportation Study (GSATS) Area. GSATS is the designated MPO for the Myrtle Beach – Socastee SC/NC urbanized area (see Figure ES-1). All future transportation planning and project prioritization will be the responsibility of the GSATS North Carolina Transportation Advisory Committee which is a subcommittee of the GSATS Policy Committee.

HIGHWAY

I-74: TIP Project R-3436: Proposed freeway from Columbus County to South Carolina.

Proposed I-74 / I-140 Connector: Proposed freeway from the proposed I-74 Corridor (TIP Project R-3436) to the Wilmington MPO planning boundary. It is recommended that the Wilmington MPO study and incorporate this new facility into its Long Range Transportation Plan by connecting it to the proposed I-140 Corridor.

US 17: Upgrade roadway to expressway standards from the Wilmington MPO planning boundary to South Carolina.

US 74/76: Upgrade roadway to freeway standards from Columbus County to the Wilmington MPO planning boundary.
US 17 Business (Bolivia): Widen to a multi-lane major thoroughfare from Midway Road (SR 1500) to US 17.

US 17 Business / Main St. (Shallotte): Widen to a multi-lane major thoroughfare from US 17 Bypass West to US 17 Bypass East.

NC 87:

- Widen to a multi-lane expressway from US 17 to Wildwood Drive at the northern Boiling Spring Lakes (BSL) town limits and from the BSL southern town limits to NC 211. NC 87 is recommended to be re-routed onto the proposed expressway just west of the existing NC 87.
- Widen to a multi-lane boulevard from Wildwood Drive at the northern Boiling Spring Lakes (BSL) town limits to the BSL southern town limits.

NC 130: Widen to a multi-lane major thoroughfare from McMilly Road (SR 1320) to the end of state maintenance.

NC 133: Widen to a multi-lane boulevard from the Wilmington MPO planning boundary to NC 87 and from NC 87 to NC 211.

NC 179: Widen to a multi-lane major thoroughfare from South Carolina to NC 904 (Seaside Road) and from Ocean Isle Beach Road (SR 1184) to US 17.

NC 179 Business: Widen to a multi-lane major thoroughfare from NC 179 to NC 904 (Seaside Road).

NC 211:

- Widen to a multi-lane boulevard from US 17 to E. Moore Street (in Southport).
- Widen to a multi-lane major thoroughfare from US 17 to the proposed I-74/I-140 Connector.

NC 904: Widen to a multi-lane major thoroughfare from Ash-Little River Road (SR 1300) to Ocean Isle Beach Road (SR 1184).

Long Beach Road / Country Club Drive / NC 133: Widen to a multi-lane major thoroughfare from Oak Island Drive to NC 211.

Long Beach Road Extension (TIP Project R-3324): Proposed 2 lane major thoroughfare from NC 87 to NC 211.

Midway Road – 2nd Bridge to Oak Island (TIP Project R-2245): Proposed multi-lane major thoroughfare from NC 211 to Oak Island Drive.

Midway Road & Galloway Road (TIP Project R-3434): Widen to a multi-lane major thoroughfare from NC 211 to US 17 Bypass.
Oak Island Drive: Widen to a multi-lane major thoroughfare from the proposed Midway Road – 2nd Bridge to Oak Island (TIP Project R-2245) to Country Club Drive (NC 133).

Ocean Isle Beach Road (SR 1184): Widen to a multi-lane major thoroughfare from US 17 to NC 179 (Beach Drive).

Note: During the development of the CTP, planning was underway for transportation improvements that would serve the NC International Terminal. This project is currently on hold. If funded, further analysis is required to determine the exact location of a connector to link the port terminal and the consolidated (BHI and Southport/Ft. Fisher) ferry landing to the larger public transportation system, and a dedicated four lane limited access transportation corridor to link the connector to the interstate highway system.

PUBLIC TRANSPORTATION & RAIL

There are no public transportation or rail improvements recommended in this CTP. Further coordination will be necessary with the NC Ports Authority if their planning effort progresses on the proposed NC International Terminal.

BICYCLE

The 2006 Brunswick County Greenways/Blueways Masterplan, the 2006 Oak Island Bicycle Transportation Plan and the 1994 Southport Bicycle Map were used to identify existing and recommended bicycle facilities throughout the planning area.

PEDESTRIAN

There was no pedestrian map developed for the Brunswick County CTP.

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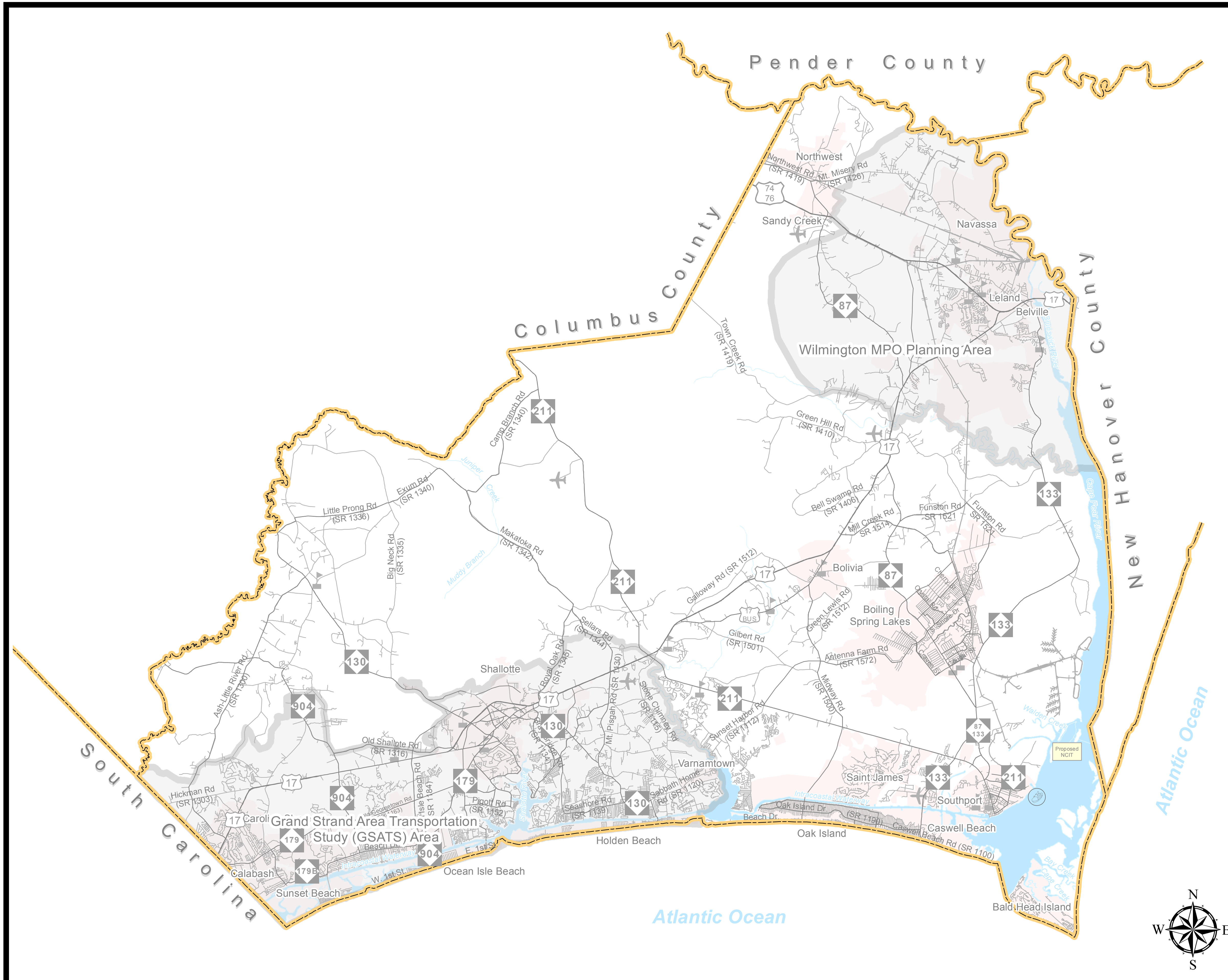
FIGURE ES-1

MPO Boundaries

Brunswick County
Comprehensive
Transportation Plan

Legend

- Schools
- Airports
- Ferry
- Study Roads
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- County Boundary
- Planning Boundary



Pender County
Columbus County
New Hanover County
South Carolina
Atlantic Ocean
Atlantic Ocean
Wilmington MPO Planning Area
Grand Strand Area Transportation Study (GSATS) Area
Northwest
Navassa
Sandy Creek
Leland
Belville
Bolivia
Boiling Spring Lakes
Shallotte
Varnamtown
Saint James
Southport
Caswell Beach
Oak Island
Holden Beach
Ocean Isle Beach
Sunset Beach
Calabash
Bald Head Island
Town Creek Rd (SR 1419)
Green Hill Rd (SR 1410)
Bell Swamp Rd (SR 1406)
Mill Creek Rd (SR 1514)
Funston Rd SR 1521
Galloway Rd (SR 1512)
Gilbert Rd (SR 1501)
Antenna Farm Rd (SR 1572)
Little Prong Rd (SR 1336)
Exum Rd (SR 1340)
Big Neck Rd (SR 1335)
Makatoka Rd (SR 1342)
Old Shallotte Rd (SR 1316)
Hickman Rd (SR 1303)
Oak Island Dr
Caswell Beach Rd (SR 1100)
Beach Dr
W. 1st St
E. 1st St
Proposed NCIT
N
S
E
W
Miles
0 1 2 4 6

Base map date: April 24, 2006

Back of Figure

Adopted by:

Brunswick County
Date: November 2, 2009

City of Boiling Spring Lakes
Date: March 3, 2009

City of Northwest
Date: December 18, 2007

City of Southport
Date: October 9, 2008

Town of Bolivia
Date: October 13, 2008

Town of Calabash
Date: December 11, 2007

Town of Carolina Shores
Date: December 4, 2007

Town of Caswell Beach
Date: January 10, 2008

Town of Holden Beach
Date: January 8, 2008

Town of Oak Island
Date: January 8, 2008

Town of Ocean Isle
Date: December 11, 2007

Town of Sandy Creek
Date: October 13, 2008

Town of Shallotte
Date: November 5, 2008

Town of St. James
Date: January 8, 2008

Town of Sunset Beach
Date: December 3, 2007

Town of Varnamtown
Date: November 10, 2008

Village of Bald Head
Date:

NCDOT
Date: March 4, 2010

Endorsed by:

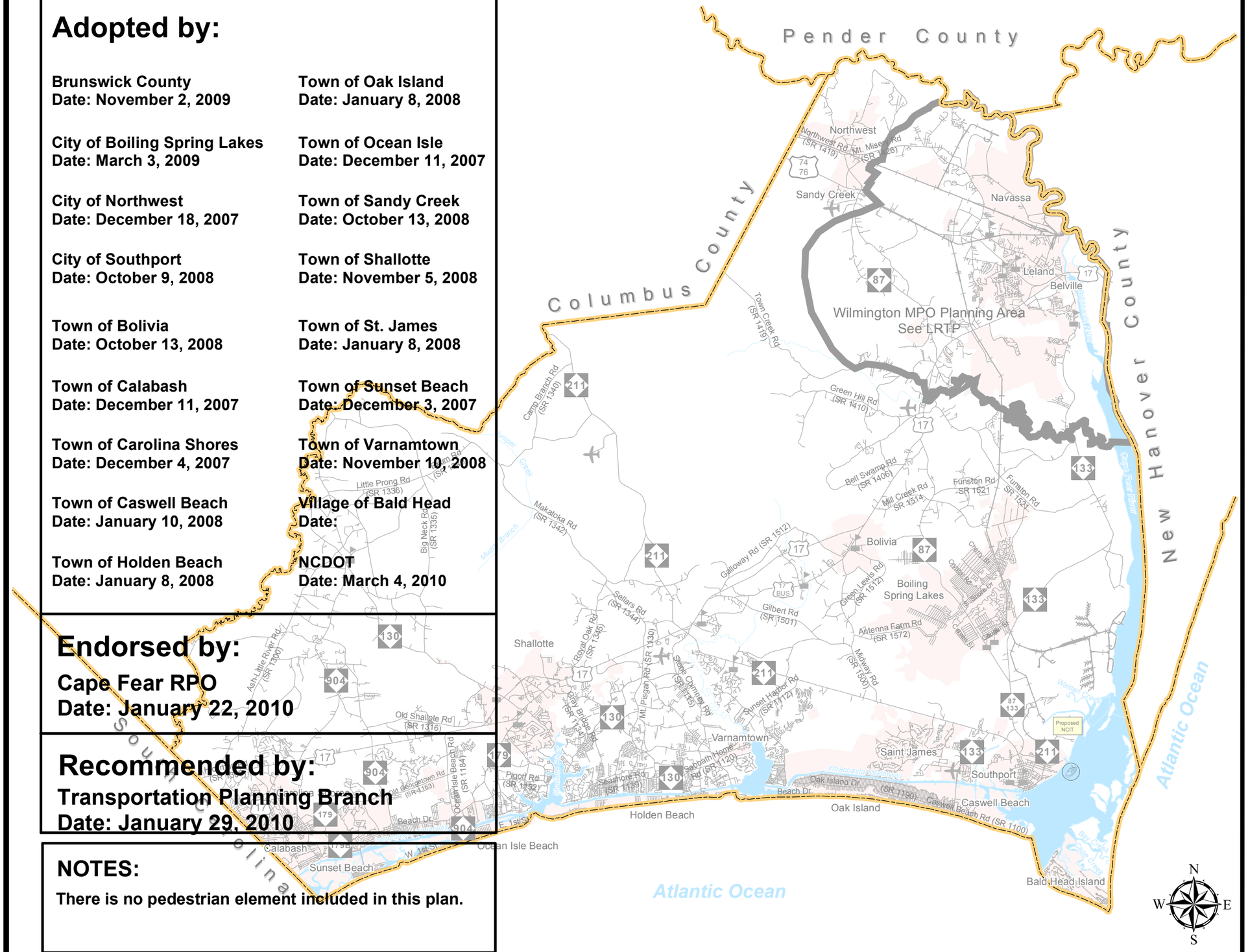
Cape Fear RPO
Date: January 22, 2010

Recommended by:

Transportation Planning Branch
Date: January 29, 2010

NOTES:

There is no pedestrian element included in this plan.



Brunswick County
Comprehensive Transportation Plan

Plan date: November 5, 2007
Revised: August 12, 2008

Legend

- Ferry
- Schools
- Airports
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- County Boundary
- Planning Boundary

0 1 2 4 6 Miles

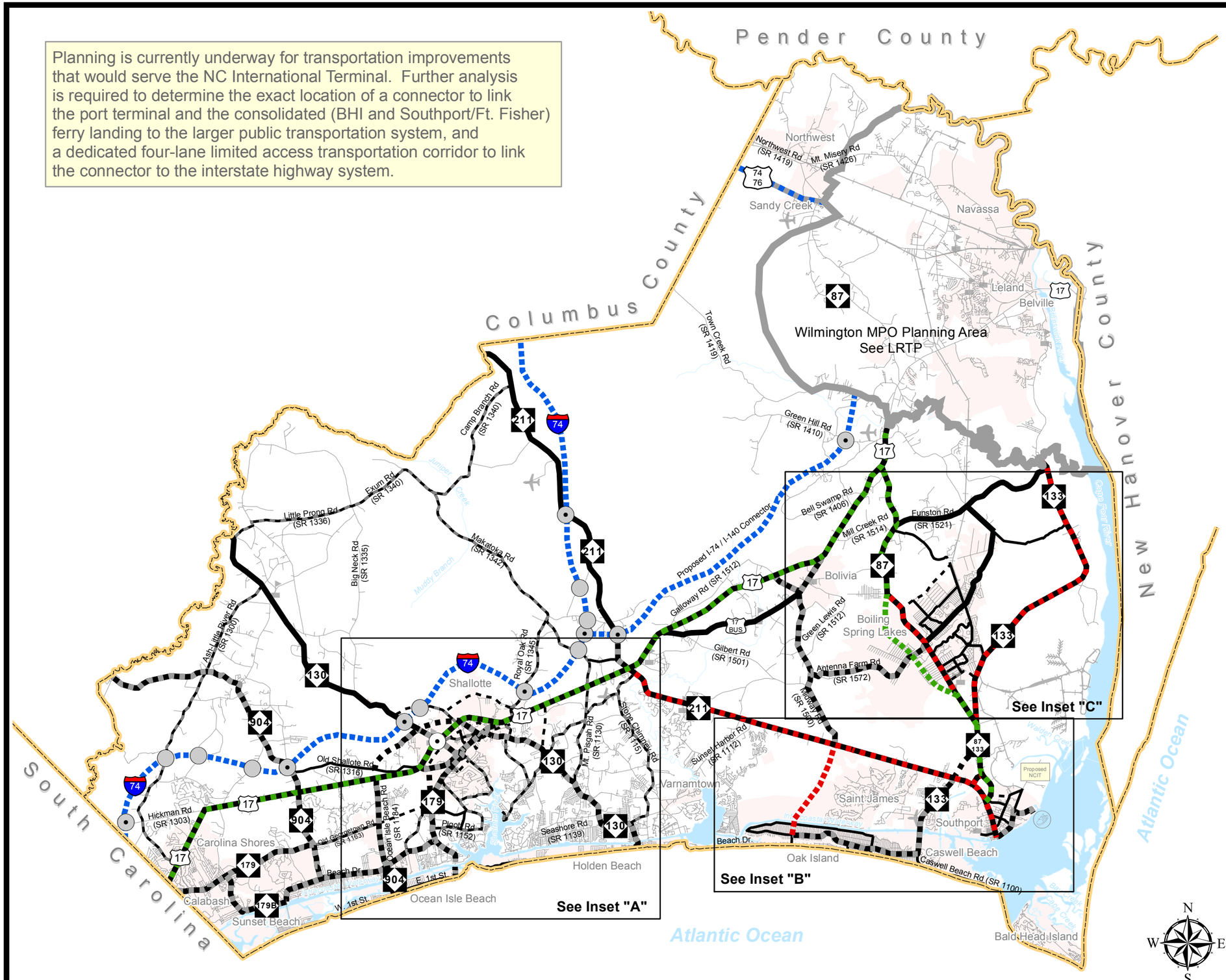
Sheet 1 of 5

Base map date: April 24, 2006

Refer to CTP document for more details

Figure 1 - Sheet 1

Planning is currently underway for transportation improvements that would serve the NC International Terminal. Further analysis is required to determine the exact location of a connector to link the port terminal and the consolidated (BHI and Southport/Ft. Fisher) ferry landing to the larger public transportation system, and a dedicated four-lane limited access transportation corridor to link the connector to the interstate highway system.



Highway Map

Brunswick County
Comprehensive Transportation Plan

Plan date: November 5, 2007
Revised: August 12, 2008

Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

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

0 1 2 4 6 Miles

Sheet 2 of 5

Base map date: April 24, 2006

Refer to CTP document for more details

Figure 1 - Sheet 2

Highway Map (Inset A)

Brunswick County
Comprehensive Transportation Plan

Plan date: November 5, 2007
Revised: August 12, 2008

Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

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

0 0.25 0.5 1 1.5 2 Miles

Sheet 2A of 5

Base map date: April 24, 2006

Refer to CTP document for more details

Figure 1 - Sheet 2A

Highway Map (Inset B)

Brunswick County
Comprehensive Transportation Plan

Plan date: November 5, 2007
Revised: August 12, 2008

Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

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

Miles
0 0.25 0.5 1 1.5

Sheet 2B of 5

Base map date: April 24, 2006

Refer to CTP document for more details

Boiling Spring Lakes
Saint James
Southport
Caswell Beach
Oak Island
Bald Head Island
Cape Fear River
Intracoastal Waterway
Atlantic Ocean

Midway Rd (SR 1500)
211
87
133
Long Beach Rd Ext
Proposed NCIT
Northern Connector
E. Moore St.
Fodale Ave.
West St.
2nd Bridge to Oak Island
Yacht Dr.
Oak Island Dr.
(SR 1190)
W. Beach Dr. (SR 1190)
E. Beach Dr. (SR 1104)
Middleton Ave (SR 1105)
John St.
58th St.
Country Club Dr.
Caswell Beach Rd (SR 1100)

Planning is currently underway for transportation improvements that would serve the NC International Terminal. Further analysis is required to determine the exact location of a connector to link the port terminal and the consolidated (BHI and Southport/Ft. Fisher) ferry landing to the larger public transportation system, and a dedicated four-lane limited access transportation corridor to link the connector to the interstate highway system.

Figure 1 - Sheet 2B

Highway Map (Inset C)

Brunswick County
Comprehensive Transportation Plan

Plan date: November 5, 2007
Revised: August 12, 2008

Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

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

0 0.25 0.5 1 1.5 Miles

Sheet 2C of 5

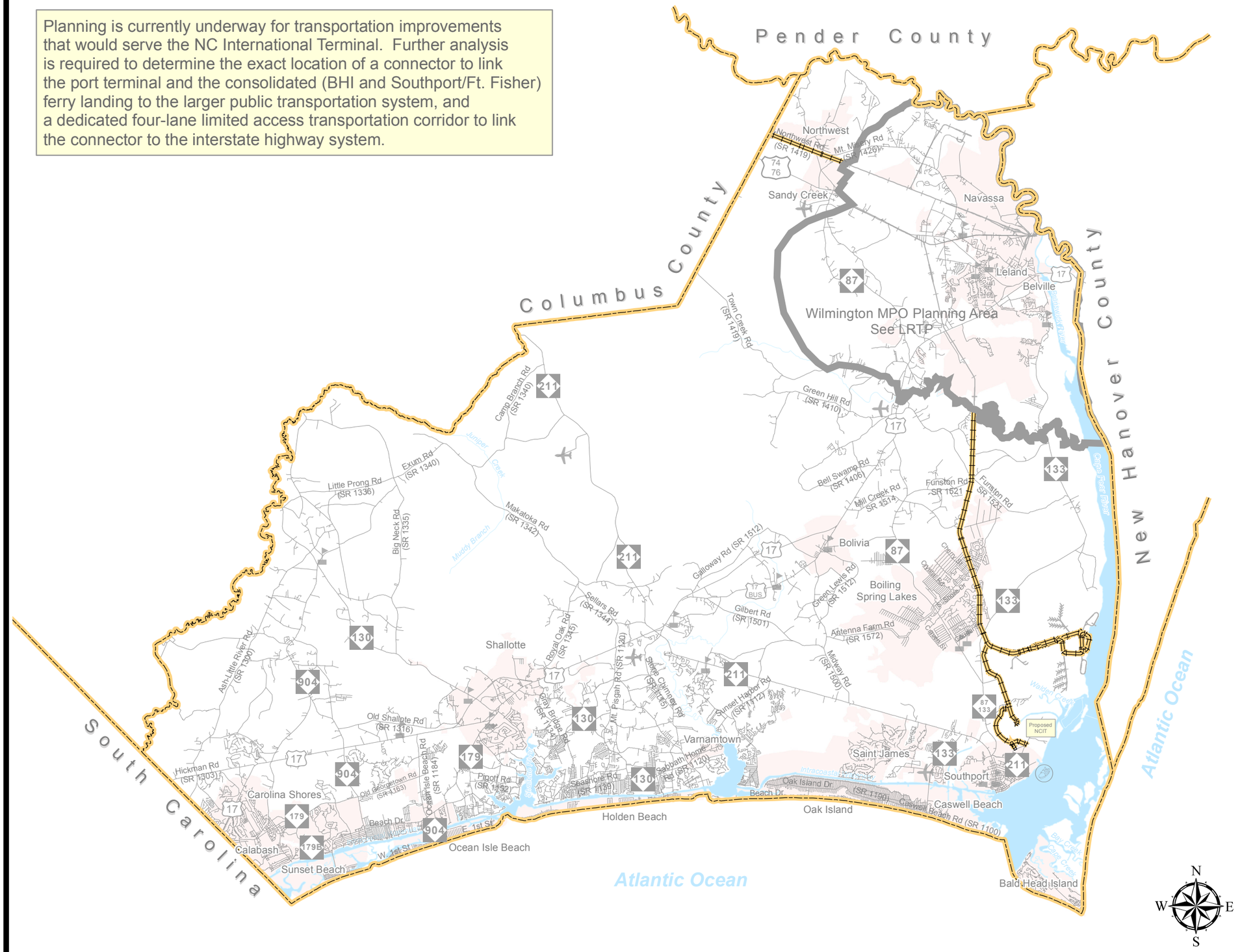
Base map date: April 24, 2006

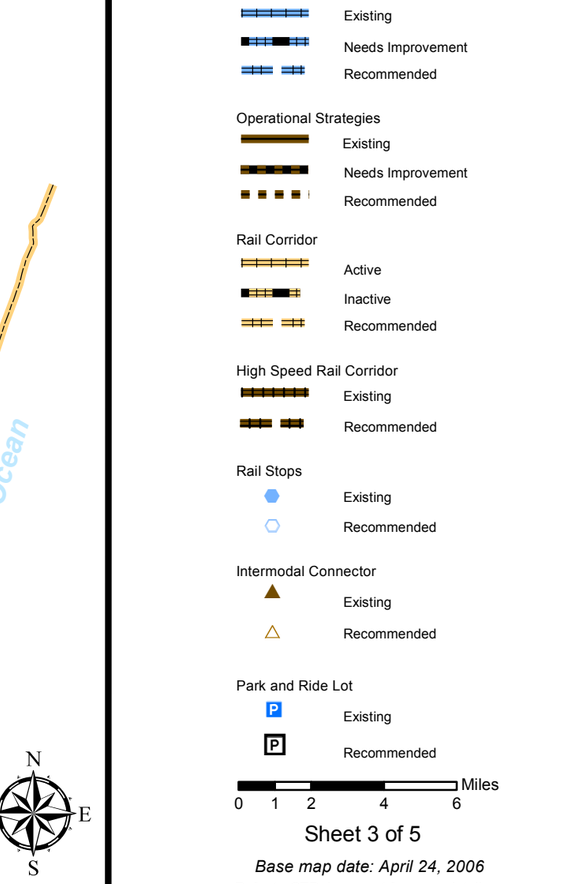
Refer to CTP document for more details

Green Hill Rd (SR 1410)
74
Bell Swamp Rd (SR 1406)
17
Mill Creek Rd (SR 1514)
Bolivia
17
17 BUS
Danford Rd (SR 1513)
Wildwood Dr
Midway Rd (SR 1500)
Green Lewis Rd (SR 1512)
Antenna Farm Rd (SR 1572)
Boiling Spring Lakes
87
NC 87 Bypass
Governors Rd (SR 1521)
Funston Rd (SR 1521)
Daws Creek Rd (SR 1518)
Funston Rd (SR 1521)
Old Mill Creek Rd (SR 1515)
Northern Connector
Cherry St
Crystal Rd
Drayton
Redwood Rd
E. Boiling Springs Rd. (SR 1539)
W. Boiling Springs Rd (SR 1539)
S. Shore Dr
50 Lakes Dr
Charlestown
Cougar St.
Wilmington MPO Planning Area
See LRTP
133
133
Cape Fear River
N
W
E
S

Figure 1 - Sheet 2C

Planning is currently underway for transportation improvements that would serve the NC International Terminal. Further analysis is required to determine the exact location of a connector to link the port terminal and the consolidated (BHI and Southport/Ft. Fisher) ferry landing to the larger public transportation system, and a dedicated four-lane limited access transportation corridor to link the connector to the interstate highway system.





Public Transportation & Rail Map

Brunswick County
Comprehensive Transportation Plan

Plan date: November 5, 2007
Revised: August 12, 2008

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

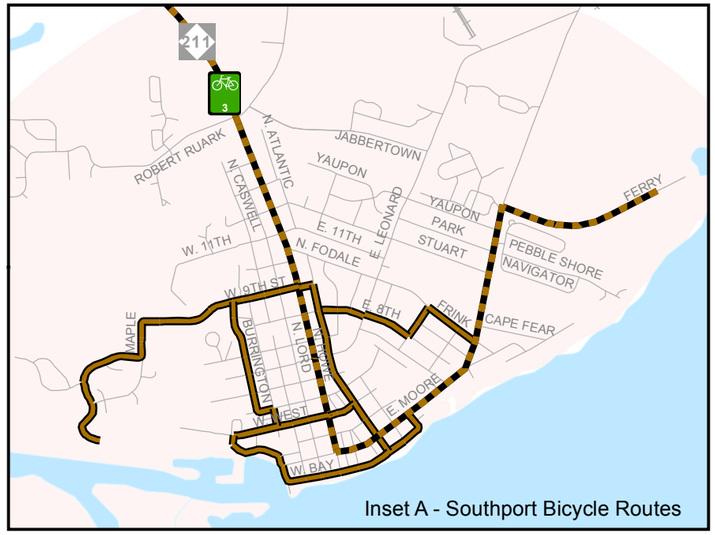
Miles
0 1 2 4 6

Sheet 3 of 5

Base map date: April 24, 2006

Refer to CTP document for more details

Figure 1 - Sheet 3



Inset A - Southport Bicycle Routes

Bicycle Map

Brunswick County
Comprehensive Transportation Plan

Plan date: November 5, 2007
Revised: August 12, 2008

On-road
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Miles
0 1 2 4 6

Sheet 4 of 5

Base map date: April 24, 2006

Refer to CTP document for more details

Figure 1 - Sheet 4

Bicycle Map (Inset B)

Brunswick County
Comprehensive Transportation Plan

Plan date: November 5, 2007
Revised: August 12, 2008

On-road
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Miles
0 0.25 0.5 1 1.5

Sheet 4A of 5

Base map date: April 24, 2006

Refer to CTP document for more details

Figure 1 - Sheet 4A

I. Analysis of the Existing and Future Transportation System

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

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

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

Analysis Methodology and Data Requirements

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

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

Roadway System Analysis

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

One of those statewide initiatives is the Strategic Highway Corridor (SHC) Vision Plan[1] adopted by the Board of Transportation on September 2, 2004. The SHC Vision Plan is

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

an initiative to protect and maximize the mobility and connectivity on a core set of transportation corridors throughout North Carolina, while promoting environmental stewardship through maximizing the use of existing facilities to the extent possible, and fostering economic prosperity through the quick and efficient movement of people and goods.

The primary purpose of the SHC Vision Plan is to provide a network of high-speed, safe, reliable highways throughout North Carolina. The primary goal to support this purpose is to create a greater consensus towards the development of a genuine vision for each corridor – specifically towards the identification of a desired facility type (Freeway, Expressway, Boulevard, or Thoroughfare) for each corridor. Individual CTPs shall incorporate the long-term vision of each corridor. Refer to Appendix A for contact information for the SHC Vision Plan. Within Brunswick County, portions of US 17, US 74/76, NC 211 and NC 87 are designated as SHCs as shown in Figure 2.

In the development of this plan, travel demand was projected from 2005 to 2035 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1980 to 2004. 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 mutually develop/endorsed during the March 8, 2007 CTP Municipal Stakeholders' meeting and endorsed by the CTP Steering Committee on March 15, 2007.

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 3 and 4 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 experience delay. The practical capacity for each roadway was developed based on the 2000 Highway Capacity Manual using the North Carolina Level of Service (NCLOS) program. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C for new facilities. Refer to Appendix E for detailed information on LOS.

Traffic Crash Analysis

Traffic crashes are often used as an indicator for locating congestion and roadway problems. Crash patterns obtained from an analysis of crash data can lead to the identification of improvements that will reduce the number of crashes. A crash analysis was performed for the Brunswick County CTP for crashes occurring in the planning area between July 1, 2003 and June 30, 2006. During this period, a total of fifteen (15) intersections were identified as having a high number of crashes as illustrated in Figure 5. Refer to Appendix F for a detailed crash analysis.

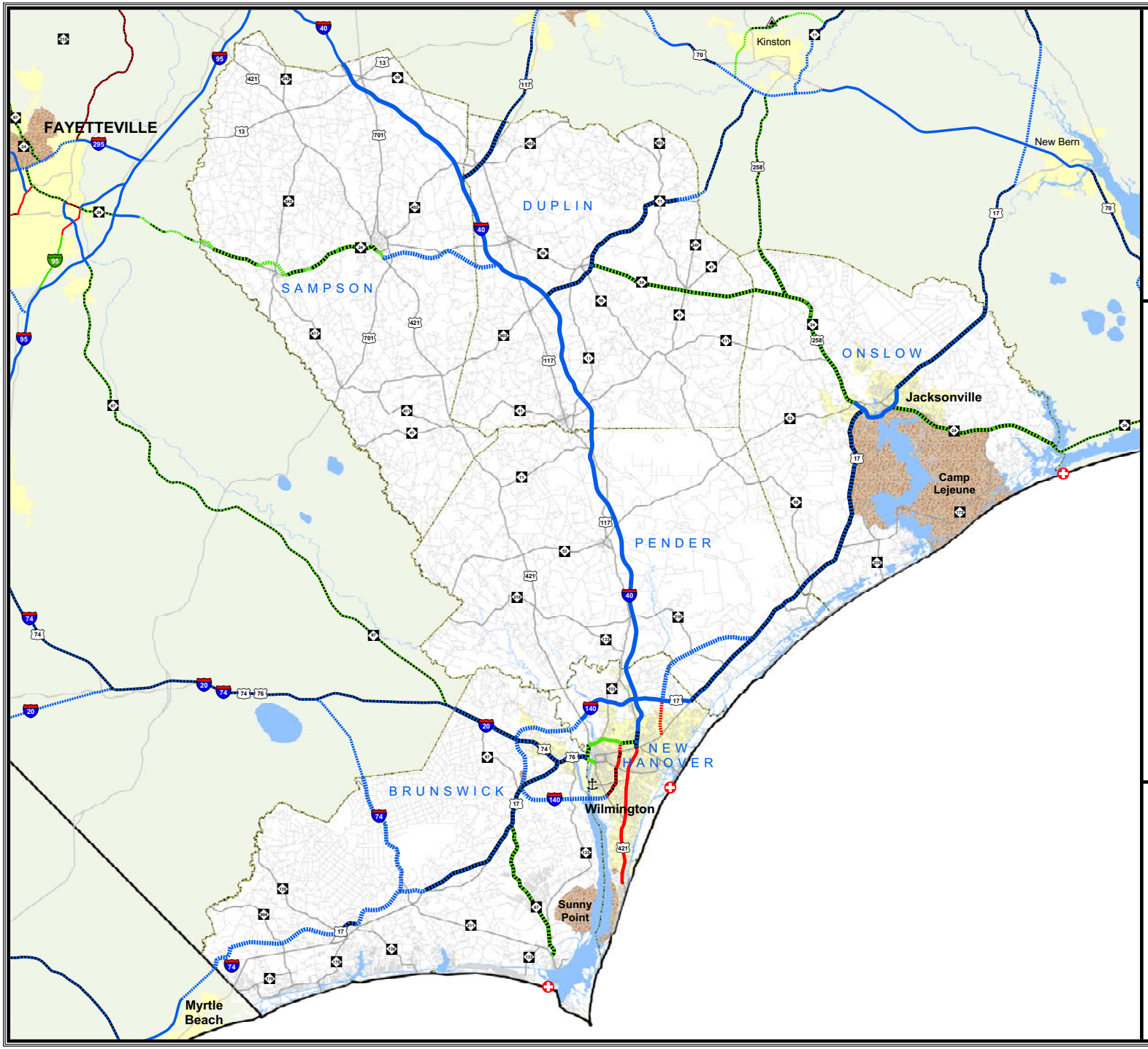
Bridge Deficiency Assessment

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

The NCDOT Structures Management Unit inspects all bridges in North Carolina at least once every two years. Bridges having the highest priority are replaced as federal and state funds become available. Thirty-five (35) deficient bridges were identified on roads evaluated as part of the CTP and are illustrated in Figure 6. Of these, six are scheduled for replacement in the 2012 – 2018 State Transportation Improvement Program[2] (STIP/TIP). Additionally, ten (10) others occur along roadways recommended for improvement in the CTP. As deficient bridges are replaced, every consideration should be given to proposed CTP recommendation and cross section associated with the

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

recommendation. Table 6 in Appendix G gives a listing of the deficient bridges identified in the CTP and the ID number associated with CTP project proposal. Refer to Appendix G for more detailed bridge deficiency information.



Strategic Highway Corridors

north carolina department of transportation

Vision Plan Division 3

Adopted by The North Carolina Board of Transportation

Plan Date: September 2, 2004

Revised: July 10, 2008

N
W E
S

LEGEND

Strategic Highway Corridors

Freeways
- Existing
- Needs Upgrade
- Recommended

Expressways
- Existing
- Needs Upgrade
- Recommended

Boulevards
- Existing
- Needs Upgrade
- Recommended

Thoroughfares
- Existing
- Needs Upgrade
- Recommended

- US/Other Major Route
- Division Primary Routes
- Division Secondary Routes
- State Port
- Intermodal Connector
- Coast Guard Station
- Major Military Base
- Urban Area
- County Boundaries
- Water Features

Miles
0 2.5 5 10 15

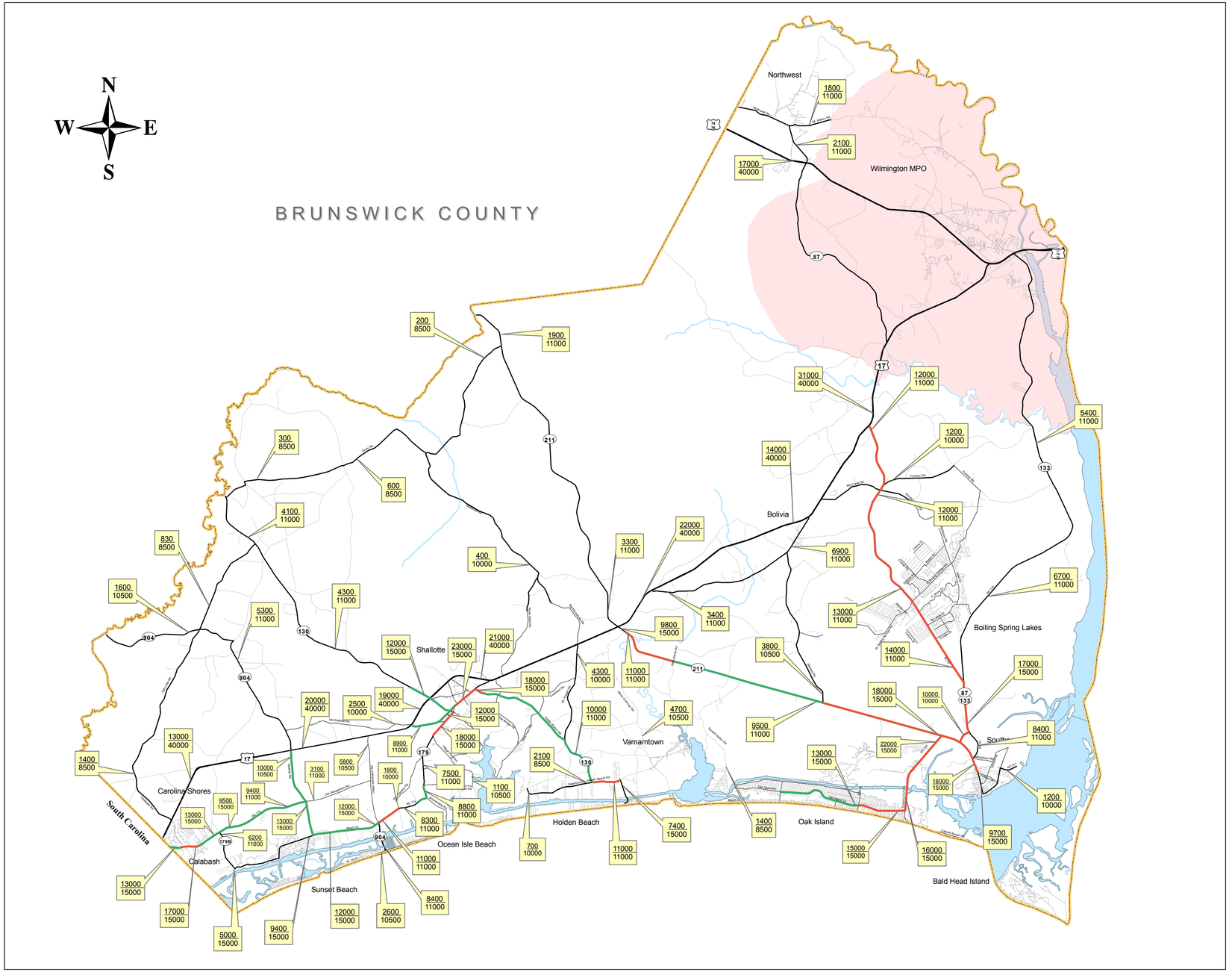
Prepared By:
The North Carolina Department of Transportation
Transportation Planning Branch

Map Date: March 29, 2004

Back of Figure

Figure 3

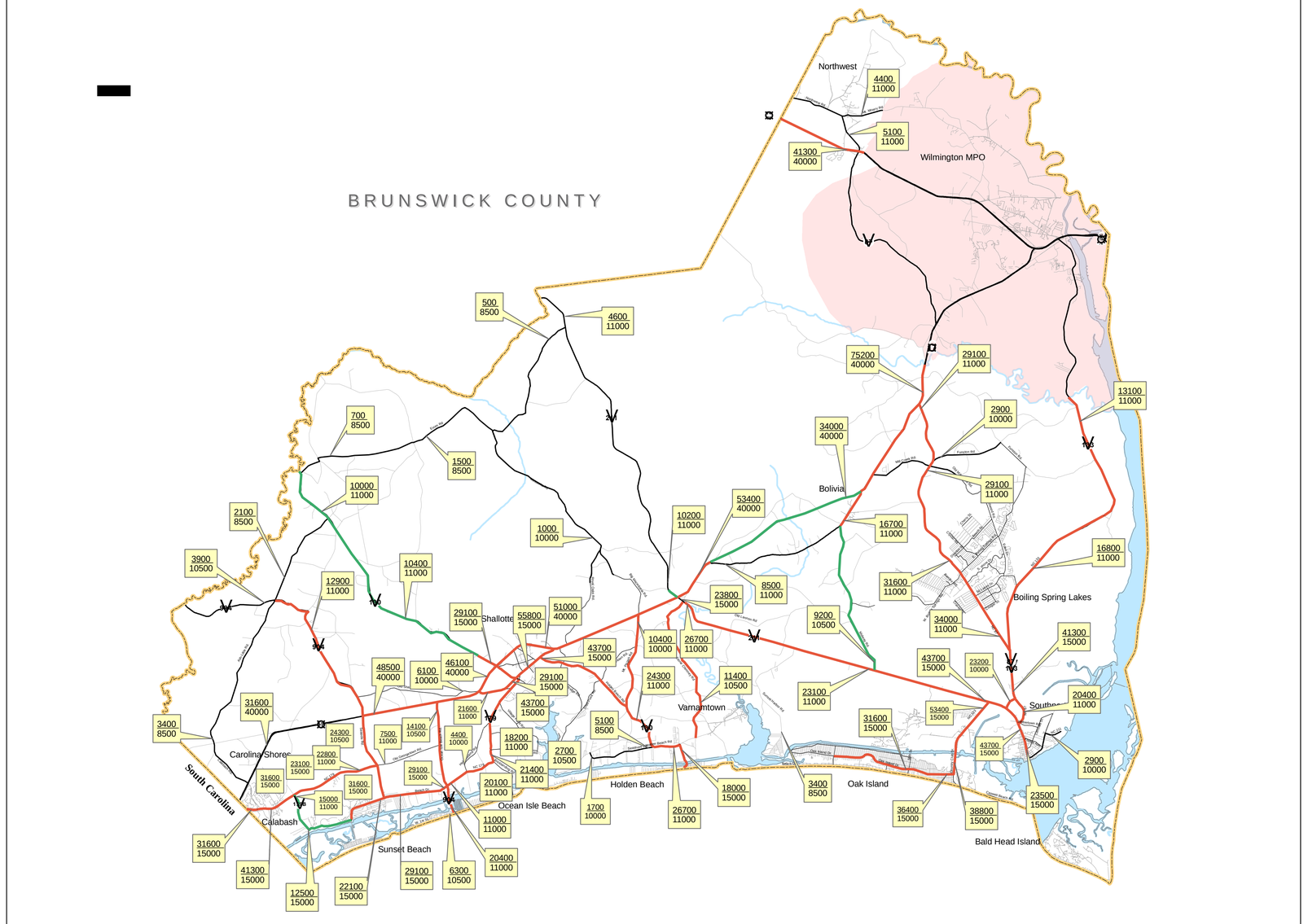
Brunswick County CTP Existing Capacity Deficiencies



Back of Figure

Figure 4

Brunswick County CTP 2035 Capacity Deficiencies



Legend

2035 AADT Capacity

Capacity

- Over
- Near
- County_Boundary
- Wilmington MPO Boundary

Back of Figure

FIGURE 5

Crash Locations

July 1, 2003 to June 30, 2006

Brunswick County
Comprehensive
Transportation Plan

Legend

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

Miles
0 1 2 4 6

Base map date: April 24, 2006
Refer to Appendix F for more details

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FIGURE 6

Deficient Bridges

Brunswick County
Comprehensive
Transportation Plan

Legend

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

0 1 2 4 6 Miles

Base map date: April 24, 2006
Refer to Appendix G for more details

Back of Figure

Public Transportation and Rail

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

Public Transportation

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

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

There are no existing or planned fixed public transportation routes for the planning area as represented on Sheet 3 of Figure 1. Brunswick Transit System, Inc. (BTS) is a non-profit community transportation system that coordinates general public and human service transportation services for the residents of Brunswick County. The transit system operates a fleet of 16 vehicles, including ADA equipped vehicles to assist persons with special needs. BTS serves all of Brunswick County, with out of county services into New Hanover County. All trips are provided by reservation. All recommendations for public transportation were coordinated with the local governments

and the Public Transportation Division of NCDOT. Refer to Appendix A for contact information for the Public Transportation Division.

Rail

Today North Carolina has 3,684 miles of railroad tracks throughout the state. There are two types of trains that operate in the state, passenger trains and freight trains.

Intercity passenger service is provided by a partnership between NCDOT and Amtrak. Amtrak currently operates six passenger services daily in or through North Carolina serving 16 cities across the state. Five of the services are interstate (Crescent, Palmetto, Silver Meteor, Silver Star, and Carolinian passenger trains) and one service (Piedmont passenger train) operates exclusively within North Carolina. In addition to the six passenger services mentioned, Amtrak also operates its Auto Train service which passes through North Carolina but does not make any stops. Amtrak ridership demand has been on a rise in the state. In 2010 ridership was 840,000 and increased to 893,000 passengers in 2011.

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. Rail lines are currently located in the northern and eastern portions of Brunswick County. CSX is the most prominent railroad company operating in Brunswick County. They have a main line that runs from Hamlet to Pembroke to Wilmington. The rail line provides access to CSX's rail yard, Davis Yard, which is located at the eastern edge of Brunswick County just west of Navassa. A CSX rail line from this rail yard eastward provides rail service into New Hanover County up to Castle Hayne and to the state port at Wilmington. Another CSX branch line runs westward from Navassa to Malmo. This branch line is a remnant of the rail line that used to run from Navassa to Malmo to Florence, SC. The status of the abandoned railroad right-of-way from Malmo to the western edge of Brunswick County is not known. Another spur line that connects with and runs northward off the CSX Hamlet to Wilmington main line provides rail service to a Progress Energy power plant.

CSX's Navassa to Malmo branch line provides a rail connection and service at Leland with a second railroad in Brunswick County. This railroad is the US Military Railroad that is owned and operated by the US Government. The US Military Railroad runs from Leland southward to Sunny Point and carries military supplies that are loaded on ships at Sunny Point.

All of the above rail lines carry freight traffic with no passenger train service currently provided over any of these tracks. The CSX track from Pembroke to Wilmington is one of two rail lines that have been considered to provide southeastern passenger train service from Raleigh to Wilmington. The other rail line considered is the CSX rail line from Goldsboro through New Hanover County by way of Castle Hayne into Wilmington over the CSX rail line mentioned above. There are currently no funds to initiate such service but property has been acquired in downtown Wilmington for a future multi-modal station.

The Rail Division has on-going studies to close grade crossings throughout the state as opportunities allow. No specific crossings, however, have been identified for closure in Brunswick County at this time.

All considerations for rail were coordinated with the local governments and the Rail Division of NCDOT. Refer to Appendix A for contact information for the Rail Division.

Bicycles & Pedestrians

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

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

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

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

There was no pedestrian element developed for the Brunswick County CTP. Inventories of existing and planned bicycle facilities for the planning area are presented on Sheet 4 of Figure 1. The 2006 Brunswick County Greenways/Blueways Masterplan, the 2006 Oak Island Bicycle Transportation Plan and the 1994 Southport Bicycle Map were utilized in the development of this element of the CTP. Additionally, NC Bicycle Route 3, Ports of Call, crosses southern Brunswick County from South Carolina to Southport utilizing NC 179, NC 179 Business and NC 211. All recommendations for bicycle facilities were coordinated with the local governments and the NCDOT Division

of Bicycle and Pedestrian Transportation. Refer to Appendix A for contact information for the Division of Bicycle and Pedestrian Transportation.

Land Use

G.S. §136-66.2 requires that local areas have a current (less than five years old) land development plan prior to adoption of the CTP. For this CTP, the following plans were used to meet this requirement. Existing and future land use maps from these plans are illustrated in Figures 7 and 8, respectively.

- 2007 Brunswick County Core Land Use Plan
- 2008 Village of Bald Head CAMA Core Land Use Plan
- 1996 Town of Bolivia Land Use Plan Update
- 2006 Town of Calabash CAMA Core Land Use Plan
- 1997 Town of Caswell Beach Land Use Plan (Adopted 1999)
- 2007 Town of Shallotte CAMA Core Land Use Plan
- 2007 City of Southport CAMA Core Land Use Plan

Additionally, the following were used in the development of the CTP; however, no maps were available for these plans.

- 2000 Oak Island CAMA Land Use Plan
- 1997 Town of Ocean Isle Beach CAMA Land Use Plan Update (Adopted 1998)]
- 1997 Town of Sunset Beach CAMA Land Use Plan Update (Adopted 1998)
- 2005 Varnamtown CAMA Workbook Land Use Plan

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.

Brunswick County is one of the fastest growing counties in North Carolina. The county is experiencing rapid growth that is compounded by the possibility of redevelopment in some areas. Brunswick County has a developing industrial base, a strong tourism economy, significant natural resources, strong construction and retail trade economies, rapidly developing municipalities, and an important transportation system with good regional connections.

Residential land use in Brunswick County is anticipated to increase in the developed areas along the US 17, NC 87, and NC 211 corridors. Land suitability deterrents will encourage residential development in these three highway corridor areas. All of the municipalities participating in the CTP are expected to continue to be primarily residential communities.

Commercial land use in the county is expected to continue to be concentrated along the US 17, NC 87, and NC 211 corridors. Because of the large volume of year-round tourism, it is expected that the county's commercial development will continue to exceed what would normally be supported by the year round permanent population. In addition, the county's 36 golf courses generate year-round support for commercial development.

It is anticipated that future industrial development will be primarily concentrated in the northern one-third of the county along the US 17 corridor, but may extend south with the development of the proposed NC International Terminal. Most industrial growth should be located in existing or future industrial parks. No significant industrial development is anticipated in any of the participating municipalities.

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Existing Land Development Plan Map – Sheet 1

Existing Land Development Plan Map – Sheet 2

Existing Land Development Plan Map – Sheet 3

Existing Land Development Plan Map – Sheet 4

Existing Land Development Plan Map – Sheet 5

Existing Land Development Plan Map – Sheet 6

Existing Land Development Plan Map – Sheet 7

Existing Land Development Plan Map – Sheet 8

Existing Land Development Plan Map – Sheet 9

Existing Land Development Plan Map – Sheet 10

Existing Land Development Plan Map – Sheet 11

Existing Land Development Plan Map – Sheet 12

Future Land Development Plan Map – Sheet 1

Future Land Development Plan Map – Sheet 2

Future Land Development Plan Map – Sheet 3

Future Land Development Plan Map – Sheet 4

Future Land Development Plan Map – Sheet 5

Future Land Development Plan Map – Sheet 6

Future Land Development Plan Map – Sheet 7

Future Land Development Plan Map – Sheet 8

Future Land Development Plan Map – Sheet 9

Future Land Development Plan Map – Sheet 10

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[3] (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, efforts were made to minimize potential impacts to these features utilizing the best available data. Any potential impacts to these resources were identified as a part of the project recommendations in Chapter 2 of this report. Prior to implementing transportation recommendations of the CTP, a more detailed environmental study would need to be completed in cooperation with the appropriate environmental resource agencies.

A full listing of environmental features examined as a part of this CTP study is shown in the following tables. Environmental features occurring within Brunswick County are shown in Figure 8, Sheets 1 – 5 and highlighted in Tables 1 and 2.

Table 1 – Environmental Features

- **Airports**
- Air Quality Pollution Discharge Points
- Ambient Water Quality Monitoring Sites
- Animal Operation 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
- **Community Colleges**
- Conditionally Approved Shellfish Harvesting Areas
- Conservation Easements, US Fish & Wildlife Service
- Conservation Tax Credit Properties
- Discharger Coalitions' Monitoring Sites
- **Ecosystem Enhancement Program (EEP) Targeted Local Watersheds, 2004**
- **Federal Land Ownership**
- Fish Community Sampling Sites
- **Game Lands – WRC**
- Groundwater Incidents, unverified
- **Groundwater Recharge/Discharge**
- Hazardous Substance Disposal Sites
- Hazardous Waste Facilities
- Heavy Metal & Organic-Rich Mud Pollutant Sample Sites
- **Historic National Register Districts**
- **Historic National Register Structures**
- Historic Study List Districts
- **Historic Study List Structures**
- **Hospitals**
- **Hydric Soils**
- **Hurricane Evacuation Routes**
- Hurricane Storm Surge Inundation Areas
- **Land Trust Conservation Properties**
- **Land Trust Priority Areas**
- **Lands Managed for Conservation & Open Space**
- Macrosite Boundaries
- **Managed Areas**
- Megasite Boundaries
- **National Wetlands Inventory**
- North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS)
- **Public Libraries**
- **Public Schools**
- Recreation Projects – Land and Water Conservation Fund
- Shellfish Strata

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

Table 1 – Environmental Features (cont.)

- Solid Waste Facilities
- **State Owned Complexes**
- **State Parks**
- Submersed Rooted Vasculars
- Surface Water Intakes
- Trout Streams (DWQ)
- Water Supply Watersheds
- Well Ground Water Intakes

Additionally, the following environmental features were considered but are not displayed (Maps D and E) due to the sensitivity of the data.

Table 2 – Restricted Environmental Features

- **Anadromous Fish Spawning Areas**
- **Archaeological Sites**
- **Dedicated Nature Preserves and Registered Heritage Areas**
- **Fisheries Nursery Areas**
- **High Quality Water and Outstanding Resource Water Management Zones**
- **Natural Heritage Element Occurrences**
- **National Pollutant Discharge Elimination System Sites (NPDES) – Major and Minor**
- **Public Water Supply Water Sources**
- **Significant Aquatic Endangered Species Habitats**
- **Significant Natural Heritage Areas**
- **Water Distribution Systems – Water Treatment Plants**

Figure 9 – **Environmental Features Map – Sheet 1**

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Figure 9 – **Environmental Features Map – Sheet 2**

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Figure 9 – **Environmental Features Map – Sheet 3**

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Figure 9 – **Environmental Features Map – Sheet 4**

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Figure 9 – **Environmental Features Map – Sheet 5**

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Public Involvement

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

A meeting was held with the Brunswick County Board of Commissioners in July 2006 to formally initiate the study, provide an overview of the transportation planning process, and to gather input on area transportation needs.

Throughout the course of the study, the Transportation Planning Branch cooperatively worked with the CTP Steering Committee and CTP Stakeholders 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 employment projections, and to develop proposed CTP recommendations. Refer to Appendix A for detailed information on the vision statement, the goals and objectives survey and a listing of committee members.

The public involvement process included holding three public drop-in sessions in county to present the proposed CTP to the public and solicit comments. Each session was publicized in the local newspaper and advertised through local media outlets. The first meeting was held on October 29, 2007 at the Brunswick County Government Center from 4 – 6pm. No comments were received during this session. The second meeting was held on November 1, 2007 at the Ocean Isle Town Hall from 4 – 6pm. During this session, comments were received from the Nature Conservancy regarding its concerns with the proposed I-74 corridor along NC 211 and the potential impacts to the Green Swamp and Juniper Creek preserves (see Appendix J for further details). The third meeting was held on July 8, 2008 at the Brunswick County Government Center from 4:30 – 6:30pm. During this session, two comments forms were submitted in addition to a petition (286 signatures) from residents of the Brunswick Plantation development concerning the proposed I-74 corridor – Carolina Bays section (see Appendix H for further details).

Public hearings were held throughout the planning area. The purpose of these meetings was to discuss the plan recommendations and to solicit further input from the public. Additional concerns raised during the course of the public hearings included the designation of US 17 as a freeway and the absence of new transportation facilities for the proposed NC International Terminal. Table 3 summarizes public hearing and adoption dates for each jurisdiction.

Table 3 – Adoption Summary

Jurisdiction	*Public Hearing Date*	*Adoption Date*
Brunswick County	December 1, 2008	November 2, 2009
Bald Head Island	November 14, 2008	Did not adopt plan
Boiling Spring Lakes	November 10, 2008	March 3, 2009

Table 3 – Adoption Summary (cont.)

Jurisdiction	*Public Hearing Date*	*Adoption Date*
Bolivia	October 13, 2008	October 13, 2008
Calabash	December 11, 2007	December 11, 2007
Carolina Shores	December 4, 2007	December 4, 2007
Caswell Beach	January 10, 2008	January 10, 2008
Holden Beach	January 8, 2008	January 8, 2008
Northwest	December 18, 2007	December 18, 2007
Oak Island	January 8, 2008	January 8, 2008
Ocean Isle Beach	December 11, 2007	December 11, 2007
Sandy Creek	October 13, 2008	October 13, 2008
Shallotte	November 5, 2008	November 5, 2008
Southport	October 9, 2008	October 9, 2008
St. James	January 8, 2008	January 8, 2008
Sunset Beach	December 3, 2007	December 3, 2007
Varnamtown	November 10, 2008	November 10, 2008

The Cape Fear RPO endorsed the CTP on January 22, 2010. The North Carolina Department of Transportation mutually adopted the Brunswick County CTP on March 4, 2010.

II. Recommendations

This chapter presents recommendations for each mode of transportation in the 2010 Brunswick County CTP as shown in Figure 1. More detailed information on each recommendation is tabulated in Appendix C. For information on recommendations from existing transportation plans that were incorporated as a part of this CTP but not documented in this report, refer to Appendix I.

NCDOT adopted a "Complete Streets[1]" policy in July 2009. The policy directs the Department to consider and incorporate several modes of transportation when building new projects or making improvements to existing infrastructure. Under this policy, the Department will collaborate with cities, towns and communities during the planning and design phases of projects. Together, they will decide how to provide the transportation options needed to serve the community and complement the context of the area. The benefits of this approach include:

- making it easier for travelers to get where they need to go;
- encouraging the use of alternative forms of transportation;
- building more sustainable communities;
- increasing connectivity between neighborhoods, streets, and transit systems;
- improving safety for pedestrians, cyclists, and motorists.

Complete streets are streets designed to be safe and comfortable for all users, including pedestrians, bicyclists, transit riders, motorists and individuals of all ages and capabilities. These streets generally include sidewalks, appropriate bicycle facilities, transit stops, right-sized street widths, context-based traffic speeds, and are well-integrated with surrounding land uses. The complete street policy and concepts were utilized in the development of the CTP. The CTP proposes projects that include multi-modal project recommendations as documented in the problem statements within this chapter. Refer to Appendix C for recommended cross sections for all project proposals and Appendix D for more detailed information on the typical cross sections.

Unaddressed Deficiencies

The following deficiency was identified during the development of the CTP, but remains unaddressed. The CTP does not include transportation improvements associated with the proposed NC International Terminal. During the development of the CTP, planning was underway for transportation improvements that would serve the proposed NC International Terminal. This project is currently on hold. If funded, further analysis is required to determine the exact location of a connector to link the port terminal and the consolidated (BHI and Southport/Ft. Fisher) ferry landing to the larger public transportation system, and a dedicated four lane limited access transportation corridor

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

to link the connector to the interstate highway system. Refer to Appendix A for contact information on the proposed NC International Terminal.

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 the 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 regional prioritization and funding. Local governments may use the CTP to guide development and protect corridors for the recommended projects. It is critical that NCDOT and local government coordinate on relevant land development reviews and all transportation projects to ensure proper implementation of the CTP. Local governments and the NCDOT share the responsibility for access management and the planning, design and construction of the recommended projects.

As of March 2013, the area west and north of, and inclusive of Varnamtown, to US 17 is in the Grand Strand Area Transportation Study (GSATS) Area. GSATS is the designated MPO for the Myrtle Beach – Socastee SC/NC urbanized area (see Figure ES-1). All future transportation planning and project prioritization will be the responsibility of the GSATS North Carolina Transportation Advisory Committee which is a subcommittee of the GSATS Policy Committee.

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[2] (SEPA). This CTP may be used to provide information in the NEPA/SEPA process.

Problem Statements

The following pages contain problem statements for each recommendation, organized by CTP modal element. The information provided in the problem statement is intended to help support decisions made in the NEPA/SEPA process. A full, minimum or reference problem statement is presented for each recommendation, with full problem statements occurring first in each section. Full problem statements are denoted by a gray shaded box containing project information. Minimum problem statements are more concise and less detailed than full problem statements, but include all known or readily

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

available information. Reference problem statements are developed for TIP projects where the purpose and need for the project has already been established.

HIGHWAY

I-74, TIP No. R-3436

I-74, along with I-73, is designated as "Congressional High Priority Corridor 5" on the National Highway System[3] (NHS). Roadways identified on the NHS are recognized as being important to the nation's economy, defense, and mobility. This corridor, also known as I-73/74 North-South Corridor, is defined by federal law as traveling from Charleston, South Carolina to Sault Ste. Marie, Michigan. Sections of this corridor have been completed in North Carolina and South Carolina, and are anticipated to be completed in Virginia.

P.L. 102-240, Section 1105 High Priority Corridors on the National Highway System (ISTEA) describes the I-74 route within North Carolina as follows: I-77 from Bluefield, WV to the junction of I-77 and the US 52 Connector in Surry County, NC; the I-77/US 52 Connector to US 52 south of Mount Airy; US 52 to US311 in Winston-Salem; US 311 to US 220 in the vicinity of Randleman; US 220 to US74 near Rockingham; US 74 to US 76 near Whiteville; US 74/76 to the South Carolina State line in Brunswick County.

Additionally, I-74 is designated as a freeway on NCDOT's Strategic Highway Corridor Vision (SHC) Plan. This facility is intended to provide mobility in Brunswick County and, ultimately, connectivity between Wytheville, VA and Myrtle Beach, SC.

The proposed project (R-3436) is to construct a four lane freeway on new location from US 74/76 in Columbus County to South Carolina. Interchanges are recommended at: NC 211, the proposed I-74/I-140 Connector, Royal Oak Road (SR 1345), NC 130, NC 904, and Hickman Road (SR 1303). Grade separations are recommended at: Old CC Road, Little Macedonia Road (SR 1343), Makatoka Road (SR 1342), the proposed New Briton Road Extension, Pea Landing Road (SR 1304), Gwynn Road and Ash-Little River Road (SR 1300).

During the development of the CTP, residents of the Brunswick Plantation development submitted a petition (286 signatures) for the re-alignment of the proposed I-74 corridor (Carolina Bays[4] section) from NC 904 to South Carolina in order to minimize impacts to the development. As a result, the alignment for this section of the corridor was adjusted northward as shown in the CTP. Refer to appendix H for more details. Additionally, the Nature Conservancy submitted a letter detailing concerns with the proposed I-74 corridor along NC 211 and the potential impacts to the Green Swamp and Juniper Creek preserves. Refer to Appendix J for more details.

The proposed project was included in the 2001 Brunswick County Thoroughfare Plan.

[3] *For additional information on High Priority Corridors, go to: http://www.fhwa.dot.gov/planning/national_highway_system/high_priority_corridors/*

[4] *For additional information on the Carolina Bays study, go to: http://www.ncdot.gov/projects/CBP/.*

I-74 / I-140 Connector, Local ID: BRUN0001-H

US 17, from US 17 BUSINESS west of Galloway Road (SR 1512) and into the Wilmington MPO planning area, does not meet the future mobility and connectivity needs in central Brunswick County.

This facility is intended to provide mobility in Brunswick County and, ultimately, connectivity between the proposed I-74 corridor (TIP project R-3436) and the proposed I-140 and US 74/76 corridors within the Wilmington MPO planning area. Additionally, this section of US 17 is designated as a freeway on NCDOT's SHC Vision Plan. During the development of the CTP, locals expressed the desire to and were in support of removing the freeway designation from US 17 and constructing the freeway on new location.

The proposed project is to construct a four lane freeway on new location north of the existing US 17 from the proposed I-74 (TIP project R-3436) to the Wilmington MPO boundary at Town Creek Road (SR 1419). It is recommended that the Wilmington MPO study and incorporate this new facility into its Long Range Transportation Plan (LRTP) by connecting this facility to the proposed I-140 (TIP R-2633) corridor within the Wilmington MPO planning area. Interchanges are recommended at the proposed I-74 corridor (TIP project R-3436), NC 211, and Green Hill Road (SR 1410).

The proposed project has not been included in any previous transportation plan.

US 17, Local ID: BRUN0002-H

US 17 is projected to be near or over capacity by 2035 from NC 904 to the Wilmington MPO boundary at Town Creek Road (SR 1419). Improvements are needed to accommodate projected traffic volumes in order achieve a LOS D on the facility.

US 17 is currently a four lane divided facility with 12 foot lanes throughout the county. The 2005 Annual Average Daily Traffic (AADT) along this facility ranges from 12,000 to 31,000 vehicles per day (vpd). By 2035, projected traffic volumes along this facility will range from 31,600 to 75,200 vpd, compared to a Level of Service (LOS) D capacity of 40,000 vpd. Additionally, between July 1, 2003 and June 30, 2006, ten intersections along this corridor were identified as having 15 or more crashes. Refer to Appendix F for more detailed information on these locations.

The proposed project is to upgrade the roadway to expressway standards from South Carolina to the Wilmington MPO boundary north of Green Hill Road (SR 1410). In conjunction with the implementation of the proposed I-74 (TIP project R-3436) and the proposed I-74 / I-140 Connector (Local ID: BRUN0001-H), the proposed improvement to US 17 will address the capacity deficiency along this facility.

The 2002 Shallotte Thoroughfare Plan recommended widening US 17 to six lanes within the Shallotte planning area. However, the plan noted that this need would diminish with the implementation of the I-74 corridor.

US 17 Business (Bolivia), Local ID: BRUN0003-H

US 17 Business (Bolivia) is projected to be over capacity by 2035 from Midway Road (SR 1500) to US 17. Improvements are needed to accommodate projected traffic volumes in order achieve a LOS D on the facility.

This section of US 17 Business (Bolivia) is currently a two lane facility with 12 foot lanes. The 2005 AADT along this section of US 17 Business is 6,900 vpd. By 2035, projected traffic volumes along will be 16,700 vpd, compared to a LOS D capacity of 11,000 vpd. Additionally, between July 1, 2003 and June 30, 2006, the intersection of US 17 and US 17 Business was identified as having 15 or more crashes. Refer to Appendix F for more detailed crash information.

The proposed project is to widen the existing major thoroughfare to multi-lanes from Midway Road (SR 1500) to US 17.

The 2001 Brunswick County Thoroughfare Plan did not include any recommendations for this facility.

US 17 Business (Shallotte), Local ID: BRUN0004-H

US 17 Business (Shallotte) is projected to be over capacity by 2035 from US 17 Bypass West to the US 17 Bypass East. Improvements are needed to accommodate projected traffic volumes in order achieve a LOS D on the facility.

US 17 Business (Shallotte) is currently a three lane major thoroughfare with 12 foot lanes. The 2005 AADT along this facility ranges from 8,900 to 23,000 vpd. By 2035, projected traffic volumes along this facility will range from 21,600 to 55,800 vpd, compared to a LOS D capacity of 15,000 vpd. Additionally, between July 1, 2003 and June 30, 2006, both intersections of US 17 Bypass and US 17 Business were identified as having 15 or more crashes. Refer to Appendix F for more detailed crash information.

The proposed project is to widen the existing major thoroughfare to multi-lanes from US 17 Bypass West to US 17 Bypass East.

The 2002 Shallotte Thoroughfare Plan recommended widening US 17 Business to five lanes from US 17 Bypass West to Cheers Street.

US 74/76, Local ID: BRUN0005-H

US 74/76 is projected to be over capacity by 2035 from Columbus County to the Wilmington MPO boundary at NC 87 (Marco Road). Improvements are needed to accommodate projected traffic volumes in order achieve a LOS D on the facility.

US 74/76 is designated as a freeway in NCDOT's SHC Vision Plan. This facility is intended to provide mobility in Brunswick County and, ultimately, connectivity between Florence, SC and Wilmington, NC. US 74/76 is currently a four lane divided facility with 12 foot lanes. The 2005 AADT along this facility is 17,000 vpd. By 2035, traffic is

projected to increase to 41,300 vpd, compared to a LOS D capacity of 40,000 vpd. Additionally, between July 1, 2003 and June 30, 2006, the intersection of US 74 and NC 87 experienced 15 crashes with an average severity of 10.0. Refer to Appendix F for more detailed crash information.

The proposed project is to upgrade the roadway to freeway standards from Columbus County to the Wilmington MPO boundary at NC 87 (Marco Road).

The proposed project has not been included in any previous transportation plan.

NC 87, Local ID: BRUN0006-H

NC 87 is currently over capacity from US 17 to NC 133. By 2035, NC 87 is projected to be over capacity from US 17 to NC 211. Improvements are needed to relieve congestion on the existing facility and to accommodate projected traffic volumes in order achieve a LOS D on the facility.

NC 87 is designated as an expressway in NCDOT's SHC Vision Plan. This facility is intended to provide mobility in Brunswick County and, ultimately, connectivity between the Military Ocean Terminal at Sunny Point and Wilmington, NC. NC 87 is currently a two to three lane facility with 12 foot lanes. The 2005 AADT along this facility ranges from 8,400 to 17,000 vpd. By 2035, projected traffic volumes along this facility will range from 20,400 to 41,300 vpd, compared to a LOS D capacity of 11,000 to 15,000 vpd. Additionally, between July 1, 2003 and June 30, 2006, the intersection of NC 87 and NC 133 experienced 36 crashes with an average severity of 8.09. Refer to Appendix F for more detailed crash information.

The proposed project is to widen the existing facility to a multi-lane expressway from US 17 to Wildwood Drive at the northern Boiling Spring Lakes town limits and from the Boiling Spring Lakes southern town limits to NC 211. This project includes constructing a shallow multi-lane bypass at expressway standards around Boing Spring Lakes just west of the existing NC 87. NC 87 is recommended to be re-routed onto the proposed bypass (referred to as the BSL Parkway in the 2002 Boiling Spring Lakes Thoroughfare Plan). NC 87 within the town limits is recommended to be widened to a multi-lane boulevard.

The 2001 Brunswick County Thoroughfare Plan recommended widening NC 87 to five lanes. The 2002 Boiling Spring Lakes Thoroughfare Plan recommended widening NC 87 to five lanes through town and included a bypass west of town, referred to as the BSL Parkway. At the request of and in consultation with Boiling Spring Lakes, the termini for the bypass were expanded in this CTP.

NC 130, Local ID: BRUN0007-H

By 2035, NC 130 is projected to be over capacity from US 17 Business to the end of state maintenance and from US 17 to McMilly Road (SR 1320). Improvements are needed to accommodate projected traffic volumes in order achieve a LOS D on the facility.

NC 130 is currently a two to three lane major thoroughfare with 12 foot lanes. The 2005 AADT along this facility ranges from 11,000 to 18,000 vpd. By 2035, projected traffic volumes along this facility will range from 18,000 to 43,700 vpd, compared to a LOS D capacity of 11,000 to 15,000 vpd. Additionally, between July 1, 2003 and June 30, 2006, the intersection of NC 130 and Mt. Pisgah Road (SR 1130) experienced 23 crashes with an average severity of 4.22. Refer to Appendix F for more detailed crash information.

The proposed project is to widen the existing facility to multi-lanes from McMilly Road (SR 1320) to the end of state maintenance.

The 2002 Shallotte Thoroughfare Plan recommended widening NC 130 to five lanes.

NC 133, Local ID: BRUN0008-H

NC 133 (River Road/Dosher Cutoff Road) is projected to be over capacity by 2035 from NC 211 to the Wilmington MPO planning boundary. Improvements are needed to accommodate projected traffic volumes in order achieve a LOS D on the facility.

NC 133 is currently a two lane major thoroughfare with 12 foot lanes. The 2005 AADT along this facility ranges from 5,400 to 10,000 vpd. By 2035, projected traffic volumes along this facility will range from 13,100 to 23,200 vpd, compared to a LOS D capacity of 10,000 to 11,000 vpd.

The proposed project is to widen the existing major thoroughfare to a multi-lane boulevard from NC 211 to the Wilmington MPO planning boundary. The portion of this facility that is concurrent with NC 87 is recommended to be widened to a multi-lane expressway as part of BRUN0006-H.

The 2001 Brunswick County Thoroughfare Plan recommended widening NC 133 to five lanes from NC 211 to Old Bridge Road (SR 1210).

NC 133, Local ID: BRUN0009-H

NC 133 (Country Club Drive/Long Beach Road) is currently over capacity from NC 211 to Oak Island Drive. Improvements are needed to relieve congestion on the existing facility in order achieve a LOS D on the facility.

NC 133 is currently a two to three lane major thoroughfare with 12 foot lanes. The 2005 AADT along this facility ranges from 16,000 to 22,000 vpd. By 2035, projected traffic volumes along this facility will range from 38,800 to 53,400 vpd, compared to a LOS D capacity of 15,000 vpd.

The proposed project is to widen the existing major thoroughfare to a multi-lane facility from NC 211 to Oak Island Drive. In conjunction with the implementation of the Midway Road (2nd Bridge to Oak Island – TIP R-2245), the proposed improvement to NC 133 will address the capacity deficiency along this facility.

The 1998 Oak Island Thoroughfare Plan recommended widening this section of NC 133 to five lanes.

NC 179, Local ID: BRUN0010-H

Portions of NC 179 are currently near or over capacity from South Carolina to NC 904 (Seaside Road) and from Ocean Isle Beach Road (SR 1184) to US 17 Business. By 2035, the entire facility will be over capacity. Improvements are needed to relieve congestion on the existing facility and accommodate projected traffic volumes in order maintain a LOS D on the facility.

NC 179 is currently a two to three lane major thoroughfare with 12 foot lanes. The 2005 AADT along this facility ranges from 7,500 to 18,000 vpd. By 2035, projected traffic volumes along this facility will range from 11,000 to 43,700 vpd, compared to a LOS D capacity of 11,000 to 15,000 vpd.

The proposed project is to widen the existing major thoroughfare to a multi-lane facility from South Carolina to US 17 Business.

The 2001 Brunswick County Thoroughfare Plan recommended widening NC 179 to five lanes from the eastern town limits for Calabash to the southern town limits of Shallotte. The plan also recommended that NC 179 be rerouted onto Georgetown Road once the final section is completed as proposed in the 2002 Shallotte Thoroughfare Plan. The Shallotte Thoroughfare Plan also identified a need to widen NC 179 to five lanes from US 17 to Village Point Road (SR 1145).

NC 179 Business, Local ID: BRUN0011-H

By 2035, NC 179 Business will be over capacity from NC 179 to NC 904 (Seaside Road). Improvements are needed to accommodate projected traffic volumes in order maintain a LOS D on the facility.

NC 179 Business is currently a two to three lane major thoroughfare with 12 foot lanes. The 2005 AADT along this facility ranges from 5,000 to 9,400 vpd. By 2035, projected traffic volumes along this facility will range from 12,500 to 22,100 vpd, compared to a LOS D capacity of 11,000 to 15,000 vpd.

The proposed project is to widen the existing major thoroughfare to a multi-lane facility from NC 179 to NC 904 (Seaside Road).

The 2001 Brunswick County Thoroughfare Plan recommended widening NC 179 Business to five lanes.

NC 211, TIP No. R-5021

NC 211 is currently over capacity from Midway Road (SR 1500) to NC 87. The 2012 – 2018 TIP includes project R-5021 that is intended to address this problem. The project includes widening the existing major thoroughfare to a multi-lane boulevard.

This project is currently in the planning and design phase. For additional information about this project, including Purpose and Need, contact the NCDOT Project Development and Environmental Analysis Branch.

NC 211, Local ID: BRUN0012-H

NC 211 is currently near or over capacity from Stone Chimney Road (SR 1115) to Fodale Avenue in Southport. By 2035, NC 211 is projected to be over capacity from Big Macedonia Road (SR 1342) to Moore Street in Southport. Improvements are needed to relieve congestion on the existing facility and to accommodate projected traffic volumes in order achieve a LOS D on the facility.

NC 211 is currently a two to three lane facility with 12 foot lanes. The 2005 AADT along this facility ranges from 3,300 to 18,000 vehicles per day (vpd). By 2035, projected traffic volumes along this facility will range from 10,200 to 43,700 vpd, compared to a LOS D capacity of 11,000 to 15,000 vpd. Additionally, between July 1, 2003 and June 30, 2006, four intersections along this corridor were identified as having 15 or more crashes. Refer to Appendix F for more detailed information on these locations.

TIP project R-5021 addresses the deficiency along this corridor from Midway Road (SR 1500) to NC 87. The proposed project is to widen the existing facility to a multi-lane major thoroughfare from the proposed I-74/I-140 Connector to US 17 and a multi-lane boulevard from US 17 to Midway Road (SR 1500) and from NC 87 to Moore Street in Southport.

The 1998 Oak Island Thoroughfare Plan recommended widening NC 211 to four lanes from Midway Road (SR 1500) to NC 133. The 2001 Brunswick County Thoroughfare Plan recommend widening NC 211 to five lanes from US 17 to NC 87.

NC 904, Local ID: BRUN0015-H

By 2035, NC 904 is projected to be over capacity from Ash-Little River Road (SR 1300) to Ocean Isle Beach Road (SR 1184). Improvements are needed to accommodate projected traffic volumes in order achieve a LOS D on the facility.

NC 904 is currently a two to three lane major thoroughfare with 12 foot lanes. The 2005 AADT along this facility ranges from 5,300 to 13,000 vpd. By 2035, projected traffic volumes along this facility will range from 12,900 to 31,600 vpd, compared to a LOS D capacity of 11,000 to 15,000 vpd.

The proposed project is to widen the existing major thoroughfare to a multi-lane facility from Ash-Little River Road (SR 1300) to Ocean Isle Beach Road (SR 1184).
The 2001 Brunswick County Thoroughfare Plan did not include any recommendations for this facility. The 2005 Ocean Isle Beach CTP recommended improvements along this facility from US 17 to Ocean Isle Beach Road (SR 1184).

Georgetown Road Extension, TIP No. R-3432

The 2012 – 2018 TIP includes project R-3432 which includes constructing a two lane minor thoroughfare on new location from Old Georgetown Road (SR 1163) to NC 179. This project is currently in the right of way phase with construction scheduled in 2013. For more information on this project, including purpose and need, contact the NCDOT Project Development and Environmental Analysis Branch.

Long Beach Road Extension, TIP No. R-3324

The 2012 – 2018 TIP includes project R-3324 which includes constructing a two lane major thoroughfare on new location from NC 211 to NC 87 at Bethel Road (SR 1525). This project is currently in the right of way phase with construction scheduled in 2013. For more information on this project, including purpose and need, contact the NCDOT Project Development and Environmental Analysis Branch.

Midway Road (2nd Bridge to Oak Island), TIP No. R-2245

TIP Project R-2245 has been completed since the adoption of the CTP. The project involved constructing a new multi-lane boulevard from NC 211 to Beach Drive (SR 1124) in Oak Island.

Midway Road/Galloway Road (SR 1500/SR 1401), TIP No. R-3434

By 2035, Midway Road (SR 1500) is projected to be near capacity from NC 211 to US 17 Bypass. The 2012 – 2018 TIP includes project R-3434 that is intended to address this problem. The project includes widening the existing major thoroughfare to multi-lanes, part on new location.

This project is currently in the planning and design phase. For additional information about this project, including Purpose and Need, contact the NCDOT Project Development and Environmental Analysis Branch.

Oak Island Drive, Local ID: BRUN0016-H

Oak Island Drive is currently near or over capacity from Middleton Avenue (SR 1105) to Country Club Drive (NC 133). By 2035, this section of Oak Island Drive is projected to be over capacity. Improvements are needed to relieve congestion on the existing facility and to accommodate projected traffic volumes in order achieve a LOS D on the facility.

Oak Island Drive is currently a three lane facility with 12 foot lanes. The 2005 AADT along this facility ranges from 13,000 to 15,000 vpd. By 2035, projected traffic volumes along this facility will range from 31,600 to 36,400 vpd, compared to a LOS D capacity of 15,000 vpd.
The proposed project is to widen the existing facility to a multi-lane major thoroughfare from Middleton Avenue (SR 1105) to Country Club Drive (NC 133).

The 1998 Oak Island Thoroughfare Plan recommended widening to three lanes from Middleton Avenue (SR 1105) to 29th Street and driveway access improvement from 48th Street to 64th Street.

Ocean Isle Beach Road (SR 1184), Local ID: BRUN0017-H

Ocean Isle Beach Road (SR 1184) is projected to be over capacity by 2035 from US 17 to NC 179 (Beach Drive). Improvements are needed to accommodate projected traffic volumes in order achieve a LOS D on the facility.

Ocean Isle Beach Road (SR 1184) is currently a two lane facility with 11 foot lanes. The 2005 AADT along this facility is 5,800 vpd and is projected to increase to 14,100 vpd by 2035, compared to a LOS D capacity of 10,500 vpd.

The proposed project is to widen the existing facility to a multi-lane major thoroughfare from US 17 to NC 179 (Beach Drive).

The 2005 Ocean Isle Beach CTP recommended improvements along this facility from US 17 to NC 179 (Beach Drive).

Minor Widening Improvements

The following facilities are recommended to be upgraded to 12 foot lanes in order to address capacity deficiencies*, improve mobility and safety along the facility and/or to accommodate bicycles.

- **BRUN0013-H:** NC 211 / E. Moore Street – From NC 211 / N. Howe Street to the end of state maintenance.
- **BRUN0014-H:** NC 904 – From Columbus County to Ash-Little River Road (SR 1300).
- **BRUN0018-H:** Ash-Little River Road (SR 1300) – From NC 130 to Hickman Road (SR 1303).
- **BRUN0019-H:** Calabash Road (SR 1300) – From Hickman Road (SR 1303) to US 17.
- **BRUN0020-H:** Camp Branch Road (SR 1340) – From Makatoka Road (SR 1342) to NC 211.
- **BRUN0021-H:** Exum Road (SR 1340) – From Big Neck Road (SR 1335) to Makatoka Road (SR 1342).
- **BRUN0022-H:** Hale Swamp Road (SR 1154) – From NC 179 (Bricklanding Road) to NC 179 (Beach Drive).
- **BRUN0023-H:** Kingtown Road (SR 1333) – From Little Prong Road (SR 1336) to Old King Road (SR 1326).
- **BRUN0024-H:** Little Prong Road (SR 1336) – From Big Neck Road (SR 1335) to Kingtown Road (SR 1333).

- **BRUN0025-H:** Makatoka Road (SR 1342) – From Exum Road (SR 1340) to Sellars Road (SR 1344).
- **BRUN0026-H:** Mt. Pisgah Road (SR 1130)* – From US 17 to NC 130.
- **BRUN0027-H:** Old Ferry Connection (SR 1115)* – From Stone Chimney Road (SR 1115) to Sabbath Home Road (SR 1120).
- **BRUN0028-H:** Old Georgetown Road (SR 1163)* – From NC 904 to Ocean Isle Beach Road (SR 1184).
- **BRUN0029-H:** Old King Road (SR 1326) – From Kingtown Road (SR 1333) to NC 130.
- **BRUN0030-H:** Royal Oak Road (SR 1345) – From Makatoka Road (SR 1342) to US 17.
- **BRUN0031-H:** Sabbath Home Road (SR 1120)* –From Old Ferry Connection (SR 1115) to NC 130.
- **BRUN0032-H:** Sellars Road (SR 1344) – From Makatoka Road (SR 1342) to US 17.
- **BRUN0033-H:** Stone Chimney Road (SR 1115)* – From NC 211 to Old Ferry Connection (SR 1115).
- **BRUN0034-H:** Turnpike Road (SR 1129) – From Mt. Pisgah Road (SR 1130) to Stone Chimney Road (SR 1115).

PUBLIC TRANSPORTATION & RAIL

A public transportation and rail assessment was completed during the development of the CTP. There are no public transportation or rail improvements recommended in this CTP. However, further coordination will be necessary with the NC Ports Authority as their planning efforts progress on the proposed NC International Terminal.

BICYCLE

The 2006 Brunswick County Greenways/Blueways Masterplan, the 2006 Oak Island Bicycle Transportation Plan and the 1994 Southport Bicycle Map were used to identify existing and recommended bicycle facilities throughout the planning area. The facilities were incorporated into the CTP and are shown on Sheet 4 of Figure 1.

In accordance with AASHTO, roadways identified as bicycle routes should incorporate the following standards as roadway improvements are made and funding is available:

- Curb & gutter sections require at minimum 5 foot bike lanes or 14 foot wide shoulder lanes.
- Shoulder sections require a minimum of 4 foot paved shoulder.

- All bridges along the roadways where bike facilities are recommended shall be equipped with 54 inch railings.

PEDESTRIAN

There was no pedestrian map developed for the Brunswick County CTP.

APPENDICES

Appendix A
Resources and Contacts

North Carolina Department of Transportation

Customer Service Office

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

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

Secretary of Transportation

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

Board of Transportation

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

Highway Division

124 Division Drive Wilmington, NC 28401 (910) 251-5724
https://connect.ncdot.gov/letting/Pages/Letting-List.aspx?let_type=3

Contact the:

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

  300 Division Dr. Wilmington, NC 28401 (910) 251-2655

Transportation Planning Branch (TPB)

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

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

Cape Fear Rural Planning Organization (RPO)

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

1480 Harbour Drive Wilmington, NC 28401 (910) 395-4553
http://www.capefearcog.org/

Strategic Planning Office

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

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

Project Development & Environmental Analysis (PDEA)

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

1548 Mail Service Center Raleigh, NC 27699-1548 (919) 707-6000
https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx

Secondary Roads Unit

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

1535 Mail Service Center Raleigh, NC 27699-1535 (919) 707-2500
https://connect.ncdot.gov/resources/stateroads/Pages/default.aspx

Program Development Branch

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

1534 Mail Service Center Raleigh, NC 27699-1534 (919) 707-4610
https://connect.ncdot.gov/projects/planning/Pages/default.aspx

Public Transportation Division

Contact the Public Transportation Division for information public transit systems.

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

Rail Division

Contact the Rail Division for rail information throughout the state.

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

Division of Bicycle and Pedestrian Transportation

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

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

Structures Management Unit

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

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

Roadway Design Unit

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

1582 Mail Service Center Raleigh, NC 27699-1582 (919) 707-6200
https://connect.ncdot.gov/projects/Roadway/Pages/default.aspx

Transportation Mobility and Safety Division

Contact the Traffic Safety Unit for information regarding crash data throughout the state.

1561 Mail Service Center Raleigh, NC 27699-1561 (919) 773-2800
https://connect.ncdot.gov/resources/safety/Pages/default.aspx

Other State Government Offices

Department of Commerce – Division of Community Assistance

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

http://www.nccommerce.com/cd

Appendix B
Comprehensive Transportation Plan Definitions

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

Highway Map

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

Facility Type Definitions

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

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

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

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

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

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

Other Highway Map Definitions

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

Public Transportation and Rail Map

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

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

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

Bicycle Map

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

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

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

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

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

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

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

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

Pedestrian Map

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

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

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

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

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

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

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

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

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

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

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

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

Appendix C
CTP Inventory and Recommendations

Assumptions/ Notes:

- **Local ID:** This Local ID is the same as the one used for the Prioritization Project Submittal Tool. If a TIP project number exists it is listed as the ID. Otherwise, the following system is used to create a code for each recommended improvement: the first 4 letters of the county name is combined with a 4 digit unique numerical code followed by '-H' for highway, '-T' for public transportation, '-R' for rail, '-B' for bicycle, '-M' for multi-use paths, or '-P' for pedestrian modes. If a different code is used along a route it indicates separate projects will probably be requested. Also, upper case alphabetic characters (i.e. 'A', 'B', or 'C') are included after the numeric portion of the code if it is anticipated that project segmentation or phasing will be recommended.

- **Jurisdiction:** Jurisdictions listed are based on municipal limits, county boundaries, and MPO Metropolitan Planning Area Boundaries (MAB), as applicable.

- **Existing Cross-Section:** Listed under '(ft)' is the approximate width of the roadway from edge of travel lane to edge of travel lane. Listed under 'lanes' is the total number of lanes, with 'D' if the facility is divided, 'PS' if there is a usable paved shoulder, and 'one-way' if it is a one-way facility.

- **Existing ROW:** The estimated existing right-of-way is based on NCDOT's road characteristics file. 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 2000 Highway Capacity Manual using the NCLOS program, as documented in Chapter 1.

- **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 '2005 No Build AADT' is an estimate of the volume in 2005 with no additional facilities/ improvements assumed to be in place that were not open to traffic in the base year (2005). For additional information about the assumptions and techniques used to develop the AADT volume estimates, refer to Chapter 1.

- **Proposed Cross-section:** The CTP recommended cross-sections are listed by code; for depiction of the cross-section, refer to Appendix D. An entry of 'ADQ' indicates the existing facility is adequate and there are no improvements recommended as part of the CTP.

- **CTP Classification:** The CTP classification is listed, as shown on the adopted CTP Maps (see Figure 1). Abbreviations are F= freeway, E= expressway, B= boulevard, Maj= other major thoroughfare, Min= minor thoroughfare.

- **Tier:** Tiers are defined as part of the North Carolina Mulitmodal Investment Network (NCMIN). Abbreviations are Sta= statewide tier, Reg= regional tier, Sub= subregional tier.

- **Other Modes:** If there is an improvement recommended for another mode of transportation that relates to the given recommendation, it is indicated by an alphabetic code (H=highway, T= public transportation, R= rail, B= bicycle, P= pedestrian, and M=multi-use path).

TABLE 4 - CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																	
					2005 Existing System						2035 Proposed System						
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2005 AADT	2035 AADT No Build	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
R-3436	I-74 (Future)	South Carolina - Hickman Rd (SR 1303)	Brunswick Co	-	-	-	-	-	-	-	-	64700	4A	300	F	Sta	
R-3436	I-74 (Future)	Hickman Rd (SR1303) - NC 904	Brunswick Co	-	-	-	-	-	-	-	-	64700	4A	300	F	Sta	
R-3436	I-74 (Future)	NC 904 - NC 130	Brunswick Co	-	-	-	-	-	-	-	-	64700	4A	300	F	Sta	
R-3436	I-74 (Future)	NC 130 - Roay Oaks Rd (SR 1345)	Brunswick Co	-	-	-	-	-	-	-	-	64700	4A	300	F	Sta	
R-3436	I-74 (Future)	Roal Oaks Rd (SR 1345) - I-74/140 Connector	Brunswick Co	-	-	-	-	-	-	-	-	64700	4A	300	F	Sta	
R-3436	I-74 (Future)	I-74/ I-140 Connector - NC 211	Brunswick Co	-	-	-	-	-	-	-	-	64700	4A	300	F	Sta	
R-3436	I-74 (Future)	NC 211 - Columbus County	Brunswick Co	-	-	-	-	-	-	-	-	64700	4A	300	F	Sta	
BRUN0001-H	I-74/140 Connector	I-74/140 Connector - NC 211	Brunswick Co	-	-	-	-	-	-	-	-	64700	4A	300	F	Sta	
BRUN0001-H	I-74/140 Connector	NC 211 - Greenhill Rd (SR 1410)	Brunswick Co	-	-	-	-	-	-	-	-	64700	4A	300	F	Sta	
BRUN0001-H	I-74/140 Connector	Greenhill Rd (SR 1410) - Wilmington MPO Boundary	Brunswick Co	-	-	-	-	-	-	-	-	64700	4A	300	F	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	South Carolina - Ash-Little River Rd (SR 1300)	Carolina Shores	0.9	48	4D	105	55	40000	13000	31600	55800	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	Ash-Little River Rd (SR 1300) - NC 904	Brunswick Co	6.1	48	4D	105	55	40000	13000	31600	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	NC 904 - Ocean Isle Beach Rd (SR 1184)	Brunswick Co	3.2	48	4D	210	55	40000	20000	48500	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	Ocean Isle Beach rd (SR 1184) - US 17 Bus	Brunswick Co	1.8	48	4D	150-210	55	40000	20000	48500	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	US 17 Bus - NC 130	Shallotte	1.3	48	4D	125	60	40000	19000	46100	55800	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	NC 130 - Briton Rd (SR 1357)	Shallotte	1.1	48	4D	125	60	40000	21000	51000	55800	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	Briton Rd (SR 1357) - Us 17 Bus	Shallotte	1.6	48	4D	125	60	40000	21000	51000	55800	4A	180	E	Sta	

HIGHWAY																	
					2005 Existing System						2035 Proposed System						
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2005 AADT	2035 AADT No Build	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
BRUN0002-H	US 17 (Ocean Hwy)	Us 17 Bus- Red Bug Rd (SR 1136)	Brunswick Co	0.2	48	4D	125	60	40000	21000	51000	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	Red Bug Rd (SR 1136) - Royal Oak Rd (SR 1145)	Brunswick Co	0.3	48	4D	125	55	40000	21000	51000	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	Royal Oak Rd (SR 1145) - Sellers Rd (SR 1344)	Brunswick Co	3.2	48	4D	125	55	40000	21000	51000	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	Sellers Rd (SR 1344) - NC 211	Brunswick Co	1.8	48	4D	90	55	40000	21000	51000	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	NC 211 - US 17 Bus	Brunswick Co	2.1	48	4D	75-135	55	40000	22000	53400	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	US 17 Bus - Galloway Rd (SR 1401)	Brunswick Co	5.0	48	4D	150	60	40000	22000	53400	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	Galloway Rd (SR 1401)- US 17 Bus	Brunswick Co	2.1	48	4D	135	60	40000	14000	34000	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	US 17 Bus - Mill Creek Rd (SR 1514)	Brunswick Co	0.7	48	4D	100	55	40000	14000	34000	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	Mill Creek Rd (SR 1514) - NC 87	Brunswick Co	3.5	48	4D	100	55	40000	31000	72500	56100	4A	180	E	Sta	
BRUN0002-H	US 17 (Ocean Hwy)	NC 87 - MPO Bdry	Brunswick Co	1.8	48	4D	140	55	40000	31000	72500	56100	4A	180	E	Sta	
	US 17 Bus (Old Ocean Hwy)	US 17- Midway Rd (SR 1500)	Brunswick Co	5.8	23-26	2	--	55	11000	3400	8500	ADQ	ADQ	ADQ	Maj	Reg	
BRUN0003-H	US 17 Bus (Old Ocean Hwy)	Midway Rd (SR 1500) - US 17	Bolivia	1.7	24	2	--	55	11000	6900	16700	17200	3B	80	Maj	Reg	
BRUN0004-H	US 17 Bus (Main St)	US 17 - Seller St (SR 1234)	Brunswick Co	1.1	24	2	150	55	11000	8900	21600	35700	5A	100	Maj	Reg	B
BRUN0004-H	US 17 Bus (Main St)	Seller St (SR 1234) - NC 130	Shallotte	0.7	24	2	150	35	15000	12000	15000	24300	5A	100	Maj	Reg	B
BRUN0004-H	US 17 Bus (Main St)	NC 130 - Village Dr (SR 1173)	Shallotte	0.3	36	2	100	35	15000	12000	15000	24300	5A	100	Maj	Reg	B
BRUN0004-H	US 17 Bus (Main St)	Village Dr (SR 1173) - Briton Rd (SR 1357)	Shallotte	0.9	36	2	100	35	15000	23000	15000	24300	5A	100	Maj	Reg	B
BRUN0004-H	US 17 Bus (Main St)	Briton Rd (SR 1357) - NC 130	Shallotte	0.3	36	2	90	35	15000	23000	15000	24300	5A	100	Maj	Reg	B

HIGHWAY																	
				2005 Existing System							2035 Proposed System						
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2005 AADT	2035 AADT No Build	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
BRUN0004-H	US 17 Bus (Main St)	NC 130 - US 17)	Shallotte	0.7	36-44	2	100	35-55	15000	11500	18000	35700	5A	100	Maj	Reg	B
BRUN0005-H	US 74, US 76	Columbus County - Wilmington MPO Boundary	Brunswick Co	3.9	48	4D	90-110	55	40000	17000	40000	64700	4A	300	F	Sta	
BRUN0006-H	NC 87 (George II Hwy)	US 17 - Funston Rd (SR 1521)	Brunswick Co	2.4	24	2	100	55	11000	12000	29100	57400	4A	180	E	Sta	
BRUN0006-H	NC 87 (George II Hwy)	Funston Rd (SR 1521) - Old Mill Creek Rd (SR 1515)	Brunswick Co	0.3	24	2	100	55	11000	12000	29100	57400	4A	180	E	Sta	
BRUN0006-H	NC 87 (George II Hwy)	Old Mill Creek Rd (SR 1515) - Wildwood Dr	Brunswick Co	2.6	24	2	100	55	11000	12000	29100	57400	4A	180	E	Sta	
BRUN0006-H	NC 87 (George II Hwy)	Wildwood Dr - Boiling Spring Rd (SR 1539)	Boiling Spring Lakes	2.4	24	2	150	35	11000	13000	31600	34300	4B	150	B	Reg	
BRUN0006-H	NC 87 (George II Hwy)	Boiling Spring Rd (SR 1539) - Boiling Spring Lakes City Limits (South)	Boiling Spring Lakes	2.5	24	2	150	35	11000	14000	34000	34300	4B	150	B	Reg	
BRUN0006-H	NC 87 (George II Hwy)	Boiling Spring Lakes City Limits (South) - Sunny Point Road	Brunswick Co	1.4	24	2	150	55	11000	14000	34000	57400	4A	180	E	Sta	
BRUN0006-H	NC 87/ NC 133 (River Rd)	Sunny Point Road - NC 133	Brunswick Co	3.0	36	2	100	55	11000	17000	41300	57400	4A	180	E	Sta	
BRUN0006-H	NC 87 (George II Hwy)	NC 133- Jabbertown Rd (SR 1526)	Brunswick Co	1.2	24	2	100	55	11000	8400	20400	57400	4A	180	E	Sta	B
BRUN0006-H	NC 87 (George II Hwy)	Jabbertown Rd (SR 1526) - NC 211	Brunswick Co	0.1	24	2	100	55	11000	8400	20400	57400	4A	180	E	Sta	B
BRUN0006-H	NC 87 Bypass	NC 87 - W Boiling Springs Rd (SR 1539)	Boiling Spring Lakes	-	-	-	-	-	-	-	-	57400	4A	180	E	Sta	
BRUN0006-H	NC 87 Bypass	W Boiling Springs Rd (SR 1539) - NC 87	Boiling Spring Lakes	-	-	-	-	-	-	-	-	57400	4A	180	E	Sta	
	NC 130 (Holden Beach Rd)	Columbus Co - Little Pond Rd (SR 1336)	Brunswick Co	0.1	28	2	100	55	11000	4100	10000	ADQ	ADQ	ADQ	ADQ	Reg	
	NC 130 (Holden Beach Rd)	Little Pond Rd (SR 1336) - Ash Little River Rd (SR 1300)	Brunswick Co	2.4	28	2	100	55	11000	4100	10000	ADQ	ADQ	ADQ	ADQ	Reg	
	NC 130 (Holden Beach Rd)	Ash Little River Rd (SR 1300) - Shallotte City Limits (North)	Brunswick Co	6.7	28	2	100	55	11000	4300	10400	ADQ	ADQ	ADQ	ADQ	Reg	B

HIGHWAY																	
				2005 Existing System							2035 Proposed System						
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2005 AADT	2035 AADT No Build	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
BRUN0007-H	NC 130 (Holden Beach Rd)	Shollotte City Limits (North) - McMilly Rd (SR 1320)	Shallotte	2.3	28	2	100	35	11000	4300	10400	24300	5A	100	Maj	Reg	B
BRUN0007-H	NC 130 (Holden Beach Rd)	McMilly Rd (SR 1320) - US 17	Shallotte	1.0	28	2	100	35	15000	12000	29100	24300	5A	100	Maj	Reg	B
BRUN0007-H	NC 130 (Holden Beach Rd)	US 17 - Bridger Rd (SR 1349)	Shallotte	0.3	44	2	100	45	15000	12000	29100	29000	5A	100	Maj	Reg	B
BRUN0007-H	NC 130 (Holden Beach Rd)	Bridger Rd (SR 1349) - US 17 Bus	Shallotte	0.7	24	2	100	35	15000	12000	29100	24300	5A	100	Maj	Reg	B
BRUN0007-H	NC 130 (Holden Beach Rd)	US 17 Bus - Smith Ave (SR 1357)	Shallotte	0.3	22	2	60	35	15000	18000	43700	24300	5A	100	Maj	Reg	B
BRUN0007-H	NC 130 (Holden Beach Rd)	Smith Ave (SR 1357) - Gray Bridge Rd (SR 1134)	Shallotte	0.7	22	2	60	55	11000	10000	24300	33300	5A	100	Maj	Reg	B
BRUN0007-H	NC 130 (Holden Beach Rd)	Gray Bridge Rd (SR 1134) - Red Bug Rd (SR 1136)	Brunswick Co	0.1	22	2	60	55	11000	10000	24300	35700	5A	100	Maj	Reg	B
BRUN0007-H	NC 130 (Holden Beach Rd)	Red Bug Rd (SR 1136) - Shell Point Rd (SR 1132)	Brunswick Co	1.6	22-24	2	60-100	55	11000	10000	24300	35700	5A	100	Maj	Reg	B
BRUN0007-H	NC 130 (Holden Beach Rd)	Shell Point Rd (SR 1132) - Erwin St (SR 1139)	Brunswick Co	2.1	24	2	60	55	11000	10000	24300	35700	5A	100	Maj	Reg	B
BRUN0007-H	NC 130 (Holden Beach Rd)	Erwin St (SR 1139) - Sabbath Home Rd (SR 1120)	Brunswick Co	1.2	24	2	60	55	11000	10000	24300	35700	5A	100	Maj	Reg	B
BRUN0007-H	NC 130 (Holden Beach Rd)	Sabbath Home Rd (SR 1120) - 6th Ave	Brunswick Co	0.4	24	2	60	45	11000	11000	26700	32000	5A	100	Maj	Reg	
BRUN0007-H	NC 130 (Holden Beach Rd)	6th Ave- Holden Beach City Limits (North)	Brunswick Co	0.4	34	2	150	45	11000	7400	18000	32000	5A	100	Maj	Reg	
BRUN0007-H	NC 130 (Holden Beach Rd)	Holden Beach City Limits (North) - Ocean Blvd (SR 1116)	Holden Beach	0.3	34	2	150	35	11000	7400	18000	24300	5A	100	Maj	Reg	
BRUN0008-H	NC 133 (River Rd)	Willmington MPO PAB - Daws Creek Rd (SR 1518)	Brunswick Co	0.6	24	2	60	55	11000	5400	13100	49000	4B	150	B	Reg	B
BRUN0008-H	NC 133 (River Rd)	Daws Creek Rd (SR 1518) - Funston Rd (SR 1521)	Brunswick Co	2.4	24	2	100	55	11000	5400	13100	49000	4B	150	B	Reg	B
BRUN0008-H	NC 133 (River Rd)	Funston Rd (SR 1521) - Fifty Lakes Dr	Brunswick Co	7.4	24	2	100	55	11000	6700	16800	49000	4B	150	B	Reg	B
BRUN0008-H	NC 133 (River Rd)	Fifty Lakes Dr - NC 87	Boiling Springs	2.9	24	2	100	55	11000	6700	16800	49000	4B	150	B	Reg	B

HIGHWAY					2005 Existing System						2035 Proposed System						
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2005 AADT	2035 AADT No Build	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
BRUN0008-H	NC 133 (Dosher Cutoff)	NC 87 - NC 211	Brunswick Co	0.6	22	2	60	45	10000	10000	23200	47200	4B	150	B	Reg	B
BRUN0009-H	NC 133 (Long Beach Rd)	NC 211 - Oak Island City Limits (North)	Brunswick Co	0.9	20	2	60	55	15000	22000	53400	34500	5A	100	Maj	Reg	B
BRUN0009-H	NC 133 (Long Beach Rd)	Oak Island City Limits (North) - Airport Rd (SR 1102)	Oak Island	0.8	32	2	60	45	15000	22000	53400	29900	5A	100	Maj	Reg	B
BRUN0009-H	NC 133 (Long Beach Rd)	Airport Rd (SR 1102) - Mesh Grove Lane (SR 1210)	Oak Island	0.7	24	2	100	45	15000	22000	53400	29900	5A	100	Maj	Reg	B
BRUN0009-H	NC 133 (Country Club Dr)	Mesh grove Lane (SR 1210) - Yaupon Way	Oak Island	0.9	32-42	2	100	45	15000	22000	53400	29900	5A	100	Maj	Reg	B
BRUN0009-H	NC 133 (Country Club Dr)	Yaupon Way - Oak Island Drive (SR 1190)	Oak Island	0.2	32	2	60	35	15000	22000	53400	28100	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Beach Dr)	South Carolina - Thomasboro Rd	Calabash	0.5	37	2	60	35	15000	13000	31600	28100	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Beach Dr)	Thomasboro Rd - Beach Dr	Calabash	0.9	37	2	60	35	15000	17000	41300	28100	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Beach Dr)	Beacg Dr - NC 179 Bus	Calabash	1.1	37	2	60	35	15000	13000	31600	28100	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Old Georgetown Rd)	NC 179 Bus - NC 904	Calabash/ Sunset Beach	3.8	20	2	60	55	15000	9500	23100	34500	5A	100	Maj	Reg	
BRUN0010-H	NC 179 / NC 904 (Seaside Rd)	NC 904 - NC 179 Bus (Sunset Blvd)	Brunswick Co	1.4	36	2	60	55	15000	13000	31600	34500	5A	100	Maj	Reg	B
BRUN0010-H	NC 179/ NC 904 (Beach Dr)	NC 179 Bus (Sunset Blvd) - Ocean Isle Beach Rd (SR 1184)	Ocean Isle Beach	2.7	37	2	60	55	15000	12000	29100	34500	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Beach Dr)	Ocean Isle Beach Dr (SR 1184) - Hale Swamp Rd (SR 1154)	Ocean Isle Beach	1.0	32	2	60	55	11000	11000	20100	34500	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Beach Dr)	Hale Swamp Rd (SR 1154) - Brick Landing Rd (SR 1143)	Ocean Isle Beach	1.2	32	2	60	55	11000	8300	20100	34500	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Bricklanding Rd)	Bricklanding Rd (SR 1143) - Pigott Rd (SR 1152)	Brunswick Co	0.5	32-40	2	60-220	55	11000	8800	21400	34500	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Bricklanding Rd)	Pigott Rd (SR 1152) - Todd Rd (SR 1147)	Brunswick Co	0.7	32	2	60	55	11000	8800	21400	34500	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Bricklanding Rd)	Todd Rd (SR 1147) - Hale Swamp Rd (SR 1154)	Brunswick Co	0.6	32	2	60	55	11000	8800	21400	34500	5A	100	Maj	Reg	B

HIGHWAY

Local ID	Facility	Section (From - To)	Jurisdiction	2005 Existing System							2035 Proposed System				CTP Classification	Tier	Other Modes
				Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2005 AADT	2035 AADT No Build	Proposed Capacity (vpd)	Cross-Section	ROW (ft)			
BRUN0010-H	NC 179 (Bricklanding Rd)	Hale Swamp Rd (SR 1154)-Village Point Rd (SR 1145)	Brunswick Co	0.9	32	2	60	55	11000	7500	18200	34500	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Bricklanding Rd)	Village Point Rd (SR 1145) - Pender Rd	Shallotte	0.6	32	2	60	55	15000	18000	43700	34500	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Village Rd)	Pender Rd - Sellers St (SR 1234)	Shallotte	0.2	32	2	60	55	15000	18000	43700	34500	5A	100	Maj	Reg	B
BRUN0010-H	NC 179 (Village Rd)	Seller St (SR 1234) - US 17 Bus (Main St)	Shallotte	0.7	43	2	60	55	15000	18000	43700	34500	5A	100	Maj	Reg	B
BRUN0011-H	NC 179 Bus (Beach Dr)	NC 179 (Beach Dr) - Schuyler Dr (SR 1934)	Calabash	1.6	32	2	60	55	11000	6200	15000	34500	5A	100	Maj	Reg	B
BRUN0011-H	NC 179 Bus Shoreline Dr)	Schuyler Dr (SR 1934) -Sunset Blvd (SR 1172)	Sunset Beach	1.8	32	2	60	35	15000	5000	12500	34500	5A	100	Maj	Reg	B
BRUN0011-H	NC 179 Bus (Senset Blvd)	Sunset Blvd (SR 1172) - NC 179 (Seaside Rd)	Sunset Beach	1.8	32	2	60	35	15000	9400	22100	34500	5A	100	Maj	Reg	B
	NC 211 (Green Swamp Rd)	Columbus Co - Camp Branch Rd (SR 1340)	Brunswick Co	1.8	24	2	150	55	11000	1900	4600	ADQ	ADQ	ADQ	Maj	Reg	B
	NC 211 (Green Swamp Rd)	Camp Branch Rd (SR 1340) - Furtue I- 74	Brunswick Co	5.6	24	2	150	55	11000	1900	4600	ADQ	ADQ	ADQ	Maj	Reg	B
	NC 211 (Green Swamp Rd)	Future I-74 - Future I-74/ I-140 Connector	Brunswick Co	4.4	24	2	150	55	11000	1900	4600	ADQ	ADQ	ADQ	Maj	Reg	B
BRUN0012-H	NC 211 (Green Swamp Rd)	Future I-74/140 Connector - Big Macedonia Rd (SR 1342)	Brunswick Co	1.0	24	2	90	55	11000	3300	10200	17200	3A	80	Maj	Reg	B
BRUN0012-H	NC 211 (Green Swamp Rd)	Big Macedonia Rd (SR 1342) - US 17	Brunswick Co	0.7	24	2	90	55	11000	3300	10200	17200	3A	80	Maj	Reg	B
BRUN0012-H	NC 211 (Southport-Supply Rd)	US 17 - Stone Chimney Rd (SR 1115)	Brunswick Co	0.3	24	2	90	55	15000	9800	23800	43900	4B	150	B	Reg	B
BRUN0012-H	NC 211 (Southport-Supply Rd)	Stone Chimney Rd (SR 1115) - 2nd Bridge to Oak Island	Brunswick Co	8.8	24	2	90	55	11000	11000	26700	43900	4B	150	B	Reg	B
R-5021	NC 211 (Southport-Supply Rd)	2nd Bridge to Oak Island - NC 133 (Long Beach Rd)	Saint James	5.0	22	2	90-150	45-55	11000	9500	23100	39700	4B	150	B	Reg	B
R-5021	NC 211 (N Howe St)	NC 133 (Long Beach Rd) - NC 133 (Dosher Cutoff)	Brunswick Co	0.8	22-61	2	150	35	15000	18000	43700	34300	4B	150	B	Reg	B
R-5021	NC 211 (N Howe St)	NC 133 (Dosher Cutoff) - NC 87 (River Rd)	Brunswick Co	0.8	22-25	2	100	35	15000	18000	43700	34300	4B	150	B	Reg	B

HIGHWAY					2005 Existing System						2035 Proposed System						
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2005 AADT	2035 AADT No Build	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
BRUN0012-H	NC 211 (N Howe St)	NC 87 (River Rd) - Fodale Ave	Southport	1.1	22-52	2	--	35	15000	18000	43700	34300	4B	150	B	Sta	B
BRUN0012-H	NC 211 (N Howe St)	Fodale Ave - E Leonard St (SR 1527)	Southport	0.4	52-74	2	--	35	15000	9700	23500	34300	4B	150	B	Sta	B
BRUN0012-H	NC 211 (N Howe St)	E Leonard St (SR 1527) - West St	Southport	0.8	52	2	--	35	15000	9700	23500	34300	4B	150	B	Sta	B
BRUN0012-H	NC 211 (N Howe St)	West St - W. Moore St (SR 1194)	Southport	0.2	60	2	--	35	15000	9700	23500	34300	4B	150	B	Sta	B
BRUN0013-H	NC 211 (W Moore St)	W. Moore St (SR 1194) - N Fodale Ave	Southport	0.8	32-60	2	--	35	15000	9700	23500	12600	2H	75	Maj	Sta	B
BRUN0013-H	NC 211 (W Moore St)	N Fodale Ave -Harbor Oaks Dr	Southport	0.6	32	2	--	35	15000	9700	23500	12600	2H	75	Maj	Sta	B
BRUN0013-H	NC 211 (Ferry Rd)	Harbor Oaks Dr - Dead End	Southport	0.8	24	2	--	35	10000	1200	2900	12600	2H		Maj	Sta	B
BRUN0014-H	NC 904 (Pireway Rd)	Columbus Co - Ash River Rd (SR 1300)	Brunswick Co	4.1	18	2	60	55	10500	1600	3900	16400	2A	60	Maj	Reg	
BRUN0015-H	NC 904 (Pireway Rd)	Ash River Rd (SR 1300) - Longwood Rd (SR 1321)	Brunswick Co	1.5	18	2	60	55	11000	5300	12900	34500	5A	100	Maj	Reg	
BRUN0015-H	NC 904 (Longwood Rd)	Longwood Rd (SR 1321) - Future I -74	Brunswick Co	3.9	28	2	60	55	11000	5300	12900	34500	5A	100	Maj	Reg	
BRUN0015-H	NC 904 (Longwood Rd)	Future I-74 -Old Shallotte Rd (SR 1163)	Brunswick Co	0.6	28	2	60	55	11000	5300	12900	34500	5A	100	Maj	Reg	
BRUN0015-H	NC 904 (Longwood Rd)	Old Shallotte Rd (SR 1163) - US 17	Brunswick Co	1.0	28	2	60	55	11000	5300	12900	34500	5A	100	Maj	Reg	
BRUN0015-H	NC 904 (Seaside Rd)	US 17 - NC 179	Brunswick Co	2.3	24	2	60	55	10500	10000	24300	34500	5A	100	Maj	Reg	
BRUN0010-H	NC 904/ NC 179	NC 179 - Ocean Isle Beach Rd (SR 1184)	Concurrent with NC 179														
	NC 904 (Causeway Dr)	Ocean Isle Beach Rd (SR 1184) - 1st St (SR 1144)	Ocean Isle Beach	1.2	36	2	60	45	11000	8400	20400	ADQ	ADQ	ADQ	Maj	Reg	
BRUN0018-H	Ash Little River Rd (SR 1300)	Hickman Rd (SR 1303) - Future I-74	Brunswick Co	3.2	18	2	--	55	8500	1400	3400	16400	2A	60	Min	Sub	
BRUN0018-H	Ash Little River Rd (SR 1300)	Future I -74 - NC 904	Brunswick Co	3.7	18	2	--	55	8500	1400	3400	16400	2A	60	Min	Sub	
BRUN0018-H	Ash Little River Rd (SR 1300)	NC 904 - NC 130	Brunswick Co	4.2	18	2	--	55	8500	830	2100	16400	2A	60	Min	Sub	

HIGHWAY																	
					2005 Existing System						2035 Proposed System						
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2005 AADT	2035 AADT No Build	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
BRUN0019-H	Calabash Rd (SR 1300)	Hickman Rd (SR 1303) - US 17	Brunswick Co	2.3	18	2	--	55	8500	1400	3400	16400	2A	60	Min	Sub	
BRUN0020-H	Camp Brach Rd (SR 1340)	Makatoka Rd (SR 1342) - NC 211	Brunswick Co	5.9	18-22	2	--	55	8500	200	500	16400	2A	60	Min	Sub	
BRUN0021-H	Exum Rd (SR 1340)	Big Neck Rd (SR 1335) - Makatoka Rd (AR 1342)	Brunswick Co	4.2	18	2	--	55	8500	600	1500	16400	2A	60	Min	Sub	
	Funston Rd (SR 1521)	NC 87 - Daws Creek Rd (SR 1518)	Brunswick Co	3.0	18	2	--	55	10000	1200	2900	ADQ	ADQ	ADQ	Min	Sub	
	Funston Rd (SR 1521)	Daws Creek Rd (SR 1518) - E Boiling Springs Rd (SR 1539)	Brunswick Co	1.3	20	2	--	55	10000	1200	2900	ADQ	ADQ	ADQ	Min	Sub	
	Funston Rd (SR 1521)	E Boiling Springs Rd (SR 1539) - NC 133	Brunswick Co	3.1	20	2	--	55	10000	1200	2900	ADQ	ADQ	ADQ	Min	Sub	
R-3432	Georgetown Rd Ext	Ocean Isle Beach Rd (SR 1184) - Hale Swamp Rd (SR 1154)	Brunswick Co	-	-	-	-	-	-	-	-	16400	2A	60	Min	Sub	
BRUN0022-H	Hale Swamp Rd (SR 1154)	NC 179 (Bricklanding Rd) - Future Georgetown Rd Ext.	Brunswick Co	0.4	20	2	60	55	10000	1800	4400	16400	2A	60	Min	Sub	B
BRUN0022-H	Hale Swamp Rd (SR 1154)	Future Georgetown Rd Ext. - NC 179 (Beach Dr)	Brunswick Co	2.2	20	2	60	55	10000	1800	4400	16400	2A	60	Min	Sub	B
BRUN0023-H	Kingtown Rd (SR 1333)	Old King Rd (SR 1326) - Little Prong Rd (SR 1336)	Brunswick Co	0.2	18	2	60	55	8500	300	700	16400	2A	60	Min	Sub	
BRUN0024-H	Little Prong Rd (SR 1336)	Kingtown Rd (SR 1333) - Big Neck Rd (SR 1335)	Brunswick Co	4.0	18	2	--	55	8500	300	700	16400	2A	60	Min	Sub	
R-3324	Long Beach Rd Ext	NC 87/133 - NC 211	Oak Island	-	-	-	-	-	-	-	-	16400	2A	60	Maj	Sub	
BRUN0025-H	Makatoka Rd (SR 1342)	Exum Rd (SR 1340) - Royal Oaks Rd (SR 1345)	Brunswick Co	7.1	20	2	60	55	10000	400	1000	16400	2A	60	Min	Sub	

HIGHWAY																	
				2005 Existing System							2035 Proposed System						
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2005 AADT	2035 AADT No Build	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
BRUN0025-H	Makatoka Rd (SR 1342)	Royal Oaks Rd (SR 1345) - Future I -74	Brunswick Co	1.7	18	2	--	55	10000	400	1000	16400	2A	60	Min	Sub	
BRUN0025-H	Makatoka Rd (SR 1342)	Future I-74 - Big Macedonia Rd (SR 1342)	Brunswick Co	0.7	18	2	--	55	10000	400	1000	16400	2A	60	Min	Sub	
R-3434	Midway Rd (SR 1500)	US 17 Bus - Lewis Loop (SR 1506)	Brunswick Co	3.4	18	2	--	55	10500	3800	9200	17800	3A	80	Maj	Sub	B
R-3434	Midway Rd (SR 1500)	Lewis Loop (SR 1506) - NC 211	Brunswick Co	3.1	18	2	--	55	10500	3800	9200	17800	3A	80	Maj	Sub	B
R-2245	2nd Bridge to Oak Island	NC 211 - Yatch Dr	Saint James	-	-	-	-	-	-	-	-	49000	4B	150	B	Sub	B
BRUN0026-H	Mt. Pisgah Rd (SR 1130)	US 17 - Turnpike Rd (SR 1129)	Brunswick Co	1.2	20	2	100	55	10000	4300	10400	16400	2A	60	Min	Sub	
BRUN0026-H	Mt. Pisgah Rd (SR 1130)	Turnpike Rd (SR 1129) - Civietown Rd (SR 1132)	Brunswick Co	0.3	20	2	100	55	10000	4300	10400	16400	2A	60	Min	Sub	
BRUN0026-H	Mt. Pisgah Rd (SR 1130)	Civietown Rd (SR 1132) - NC 130	Brunswick Co	2.7	20	2	100	55	10000	4300	10400	16400	2A	60	Min	Sub	
	Oak Island Dr (SR 1190)	Yatch Dr - Middleton Ave (SR 1105)	Oak Island	1.8	19	2	--	35	15000	13000	31600	ADQ	ADQ	ADQ	ADQ	ADQ	B
BRUN0016-H	Oak Island Dr (SR 1190)	Middleton Ave (SR 1105) - 40th St	Oak Island	3.4	36	3	--	35	15000	15000	36400	28100	5A	100	Maj	Sub	B
	Oak Island Dr (SR 1190)	40th St - 58th St	Oak Island	2.8	36	3	--	35	15000	15000	36400	28100	5A	100	Maj	Sub	B
	Oak Island Dr (SR 1190)	58th St - NC 133 (Country Club Dr.)	Oak Island	0.6	18	2	--	35	15000	15000	36400	28100	5A	100	Maj	Sub	B
	Ocean Blvd (SR 1116)	NC 130 - Dead End	Holden Beach	1.4	22	2	--	35	10500	700	1700	ADQ	ADQ	ADQ	Min	Sub	
BRUN0017-H	Ocean Isle Beach Rd (SR 1184)	US 17 - Old Geaorgetown Rd (SR 1163)	Ocean Isle Beach	1.8	18-28	2	60	55	10500	5800	14100	17800	3A	80	Maj	Sub	
	Ocean Isle Beach Rd (SR 1184)	Old Georgetown Rd (SR 1163) - NC 179	Ocean Isle Beach	1.8	18	2	60	55	10500	5800	14100	17800	3A	80	Maj	Sub	

HIGHWAY																	
					2005 Existing System						2035 Proposed System						
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2005 AADT	2035 AADT No Build	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
BRUN0027-H	Old Ferry Connection (SR 1115)	Stanely Rd (SR 1119) - Sabbath Home Rd (SR 1120)	Brunswick Co	1.1	22	2	60	55	10500	4700	11400	16400	2A	60	Min	Sub	
BRUN0028-H	Old Georgetown Rd (SR 1163)	NC 904 - Ocean Isle Beach Rd (SR 1184)	Ocean Isle Beach /Brunswick Co	2.8	24	2	60	35-55	11000	3100	7500	16400	2A	60	Min	Sub	B
BRUN0029-H	Old King Rd (SR 1326)	NC 130 - Kingtown Rd (SR 1333)	Brunswick Co	1.0	18	2	--	55	8500	300	700	16400	2A	60	Min	Sub	
	Old Shallotte Rd (SR 1316)	NC 904 -Future Shallotte Parkway	Brunswick Co	3.3	20	2	60	55	10000	2500	6100	ADQ	ADQ	ADQ	Min	Sub	
	Old Shallotte Rd (SR 1316)	Future Shallotte parkway - US 17	Brunswick Co	1.9	20	2	60	55	10000	2500	6100	ADQ	ADQ	ADQ	Min	Sub	
BRUN0030-H	Royal Oak Rd (SR 1345)	Makatoka Rd (SR 1342) - Future I-74	Brunswick Co	3.0	20	2	60	55	10000	1000	2400	16400	2A	60	Min	Sub	
BRUN0030-H	Royal Oak Rd (SR 1345)	Future I-74 - Briton Rd and Extension	Brunswick Co	0.5	20	2	60	55	10000	1000	2400	16400	2A	60	Min	Sub	
BRUN0030-H	Royal Oak Rd (SR 1345)	Briton Rd and Extensions - US 17	Shallotte	0.8	20	2	60	55	10000	1000	2400	16400	2A	60	Min	Sub	
BRUN0031-H	Sabbath Home Rd (SR 1120)	Old Ferry Rd (SR 1115) - NC 130	Brunswick Co	0.8	18	2	--	45	8500	1100	2700	16400	2A	60	Min	Sub	B
BRUN0032-H	Sellars Rd (SR 1344)	Big Macedonia Rd (SR 1342) - US 17	Brunswick Co	1.1	20	2	60	55	10000	1000	2100	16400	2A	60	Min	Sub	
BRUN0033-H	Stone Chimney Rd (SR 1115)	NC 211 - Turnpike Rd (SR 1129)	Brunswick Co	1.2	22	2	60	55	10500	4700	11400	16400	2A	60	Min	Sub	B
BRUN0033-H	Stone Chimney Rd (SR 1115)	Turnpike Rd (SR 1129) - Stanley Rd (SR 1119)	Brunswick Co	4.3	22	2	60	55	10500	4700	11400	16400	2A	60	Min	Sub	B
BRUN0034-H	Turnpike Rd (SR 1129)	Mt. Pisgah Rd (SR 1130) - Stone Chimney Rd (SR 1115)	Brunswick Co	1.6	20	2	60	55	10500	1100	2700	16400	2A	60	Min	Sub	

Appendix D
Typical Cross Sections

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

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

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

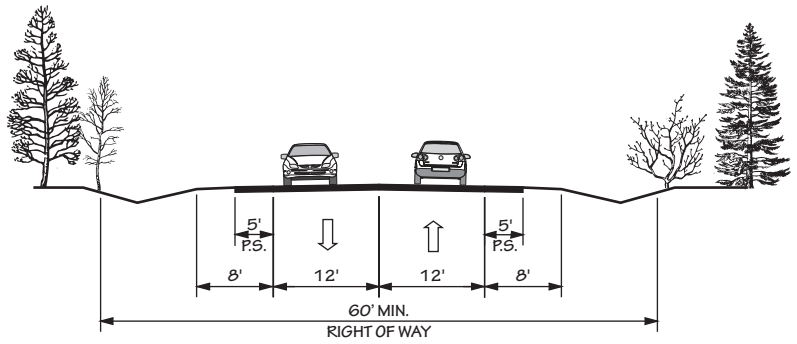
- roadways which may require widening after the current planning period,
- roadways which are borderline adequate and accelerated traffic growth could render them deficient,
- roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment,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

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

FIGURE 10
TYPICAL HIGHWAY CROSS SECTIONS
2 LANES

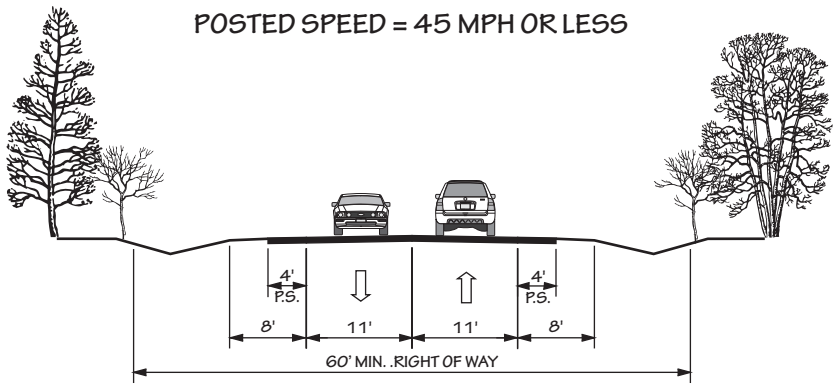
2 A

WIDE PAVED SHOULDERS
POSTED SPEED = 55 MPH



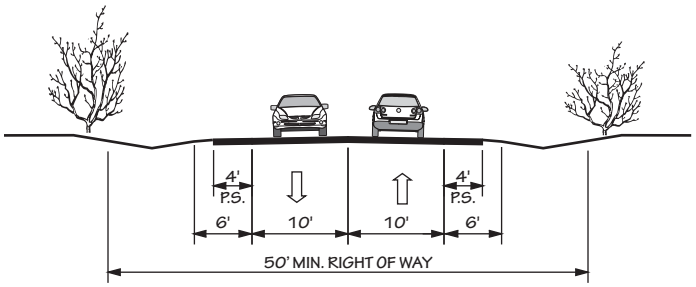
2 B

WIDE PAVED SHOULDERS
POSTED SPEED = 45 MPH OR LESS



2 C

WIDE PAVED SHOULDERS
POSTED SPEED = 35 MPH OR LESS



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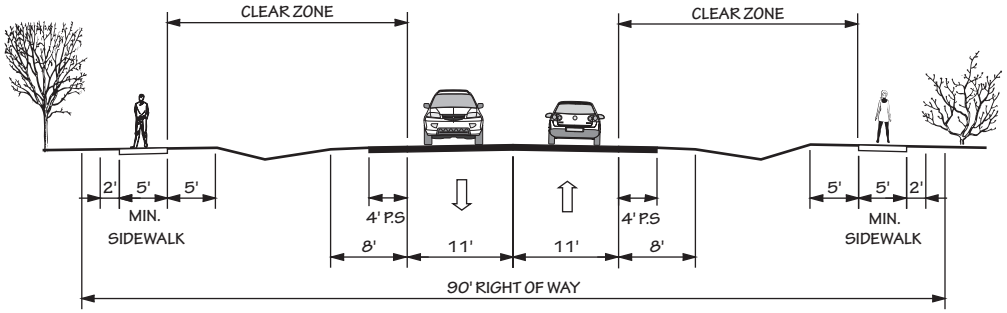
TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

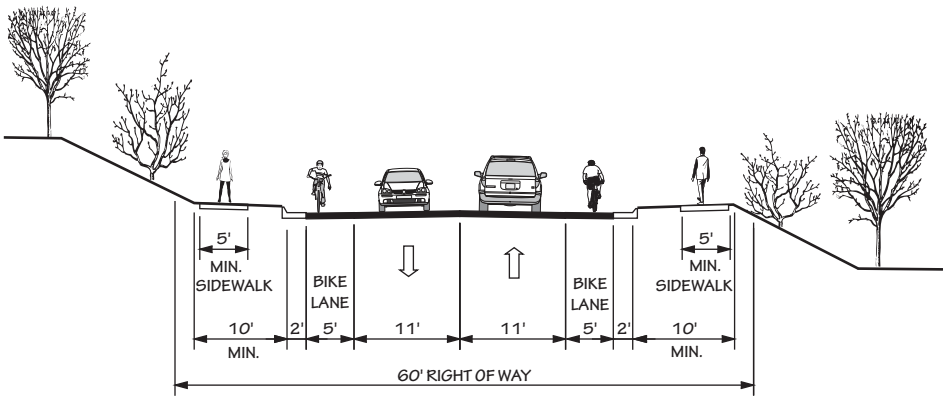
2 D

SIDEWALK PLACEMENT BEHIND A ROADWAY DITCH



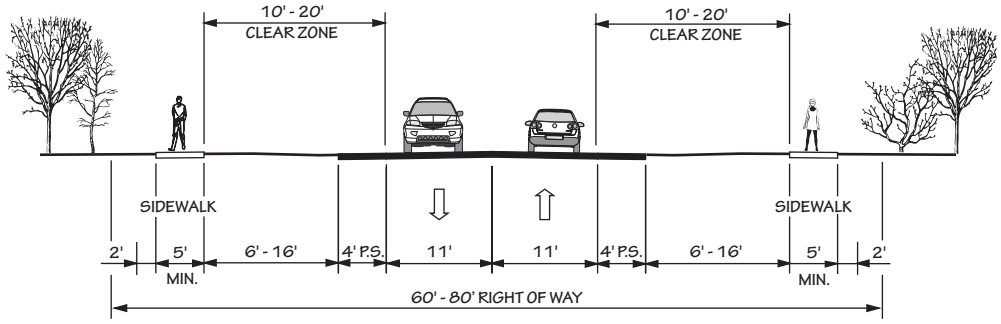
2 E

CURB AND GUTTER
WITH BIKE LANES AND SIDEWALKS



2 F

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



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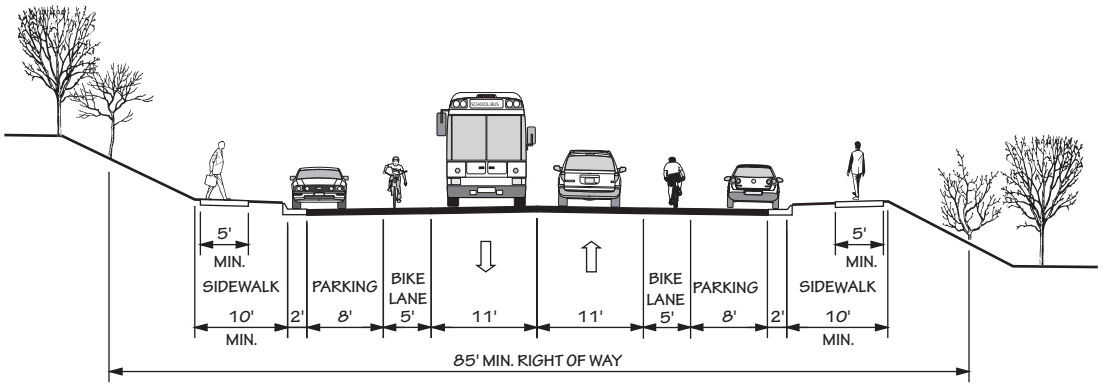
TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

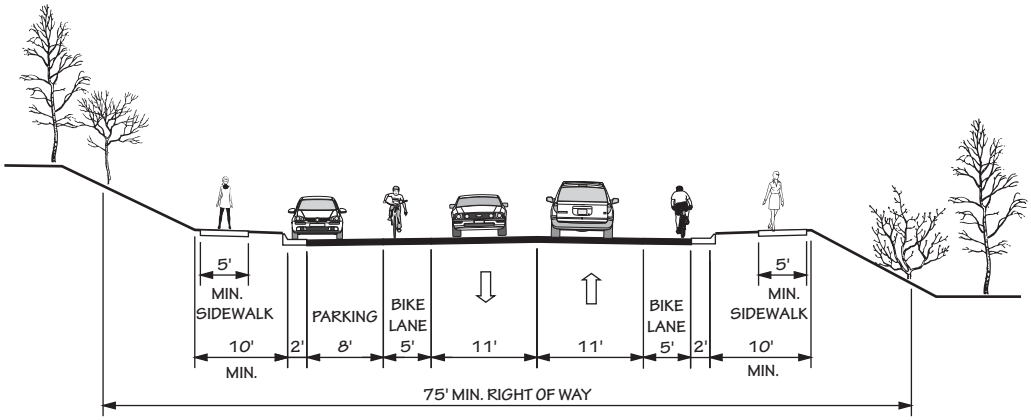
2 G

CURB & GUTTER - PARKING ON EACH SIDE



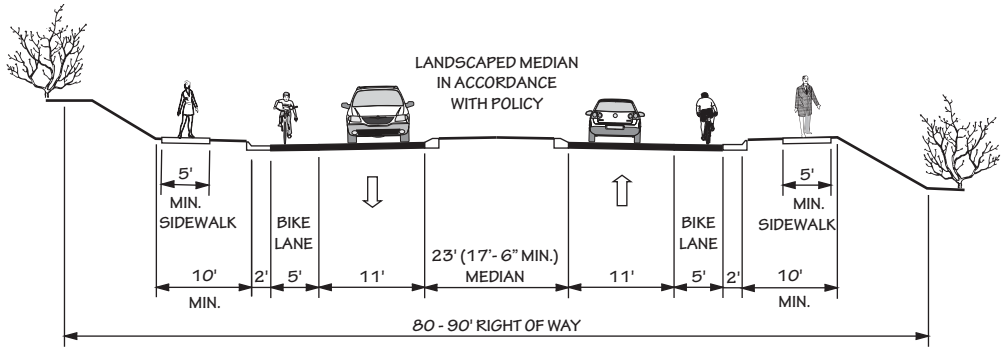
2 H

CURB & GUTTER - PARKING ON ONE SIDE



2 I

RAISED MEDIAN WITH CURB & GUTTER



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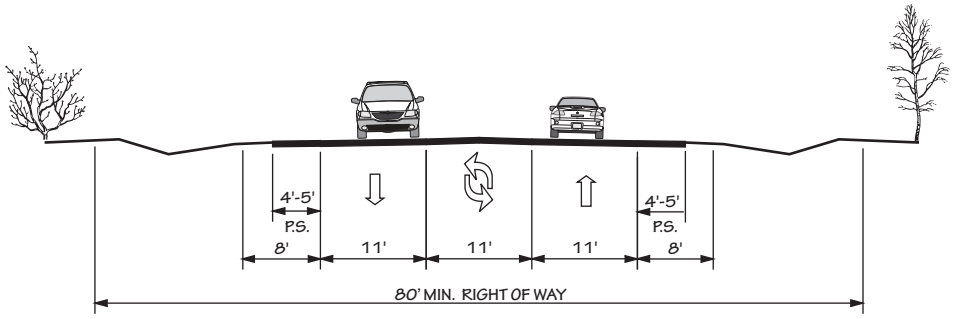
TYPICAL HIGHWAY CROSS SECTIONS

3 LANES

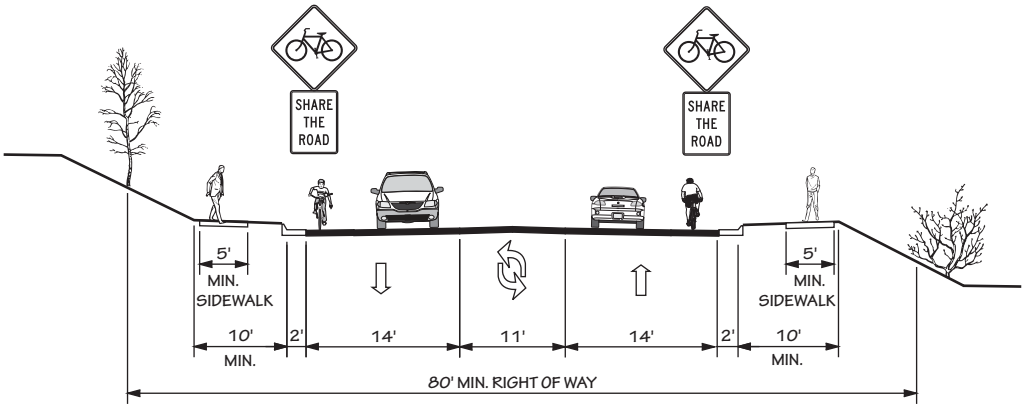
3 A

WIDE PAVED SHOULDERS



3 B

CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS



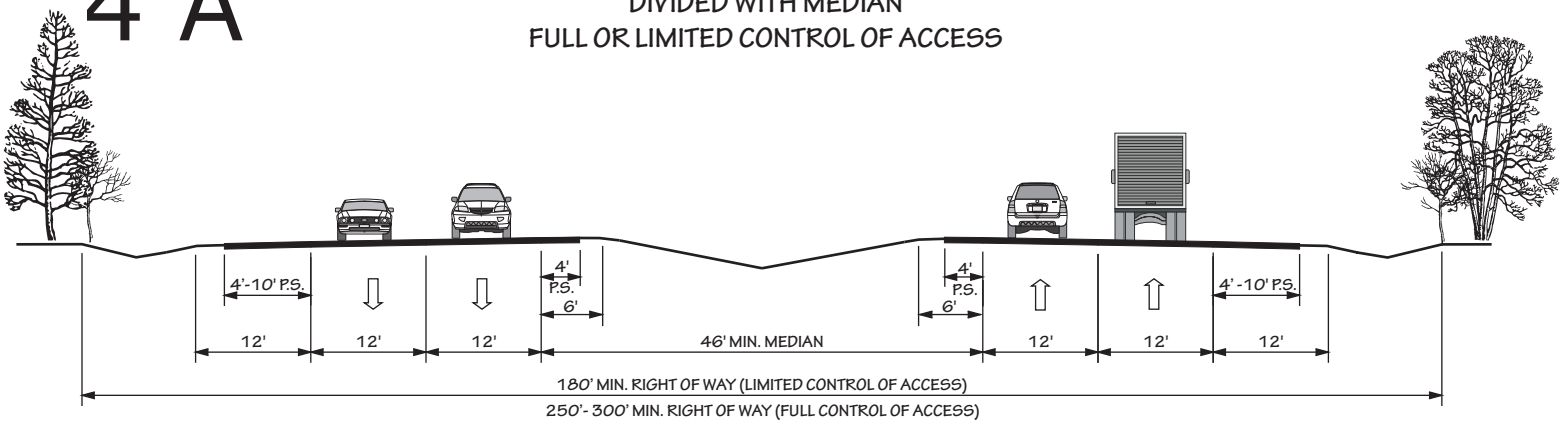
Revised 12/07/2010

TYPICAL HIGHWAY CROSS SECTIONS

4 LANES

4 A

DIVIDED WITH MEDIAN
FULL OR LIMITED CONTROL OF ACCESS



4 B

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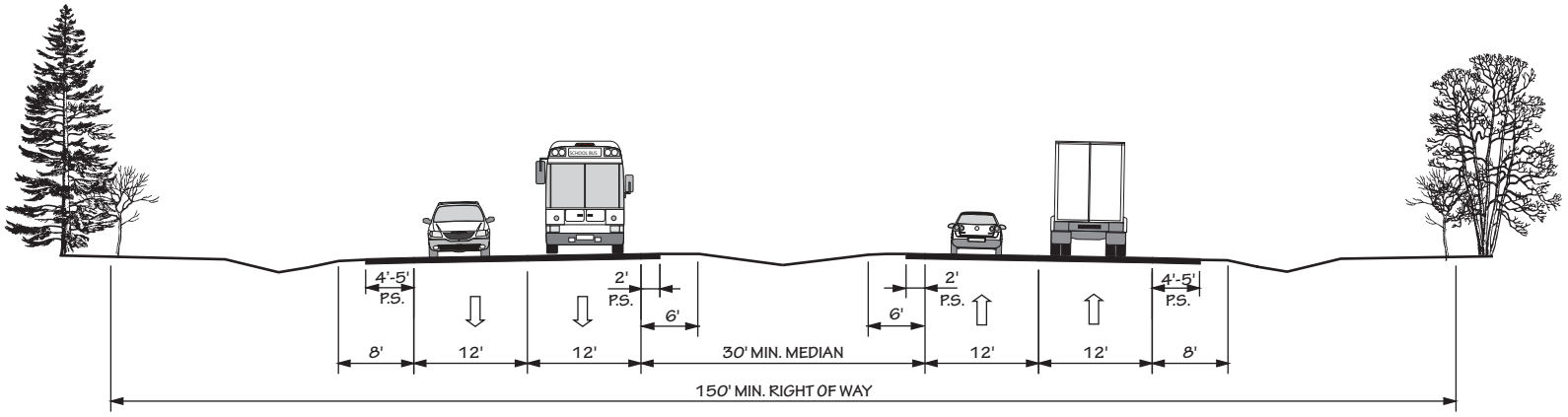
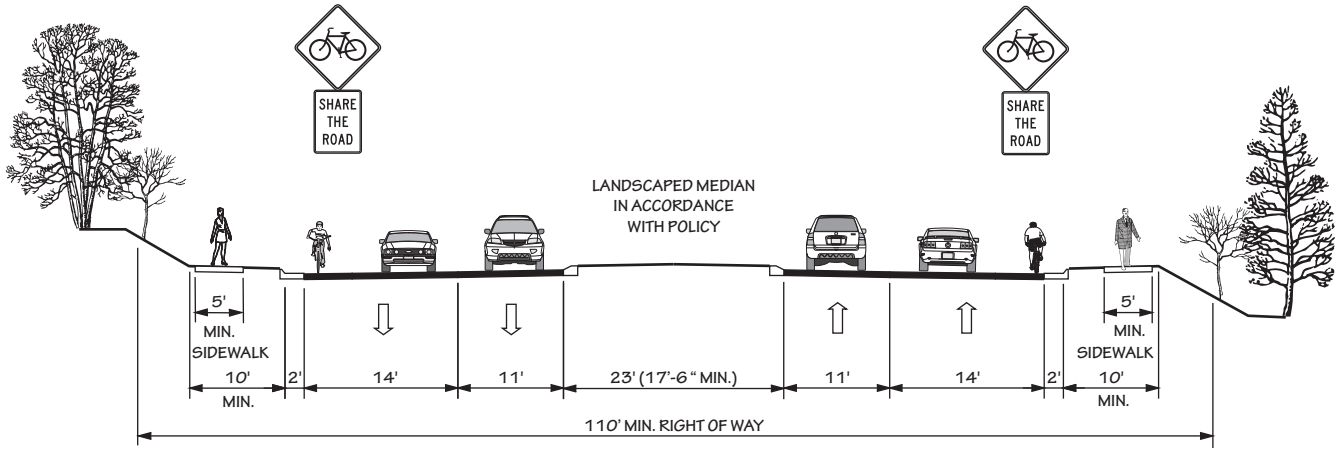
PARTIAL CONTROL OF ACCESS



4 C

RAISED MEDIAN WITH WIDE OUTSIDE LANES AND SIDEWALKS



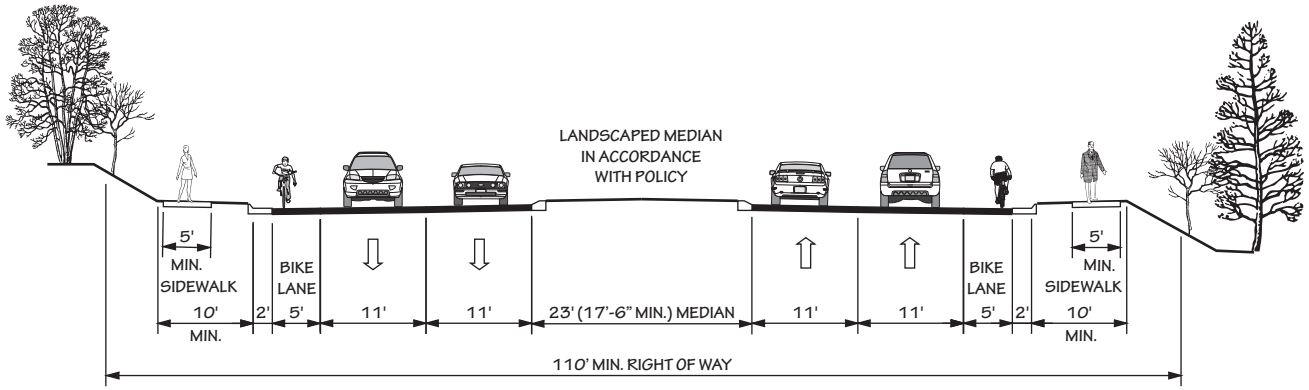
Revised 12/07/2010

TYPICAL HIGHWAY CROSS SECTIONS

4 LANES

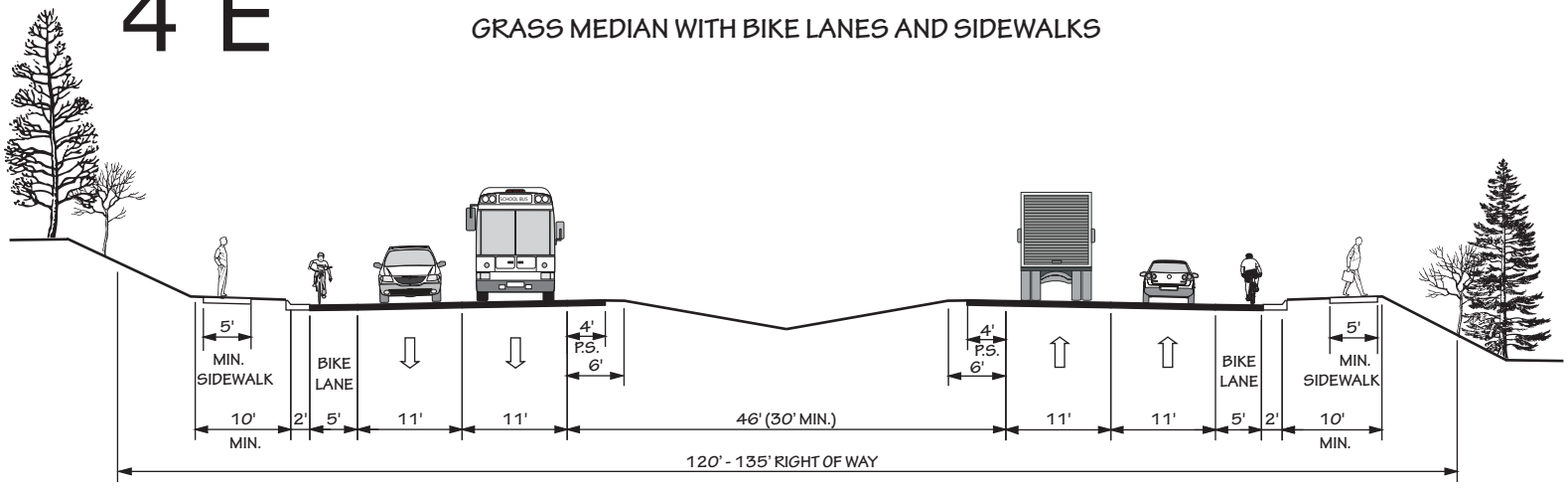
4 D

RAISED MEDIAN - CURB & GUTTER WITH BIKE LANES AND SIDEWALKS



4 E

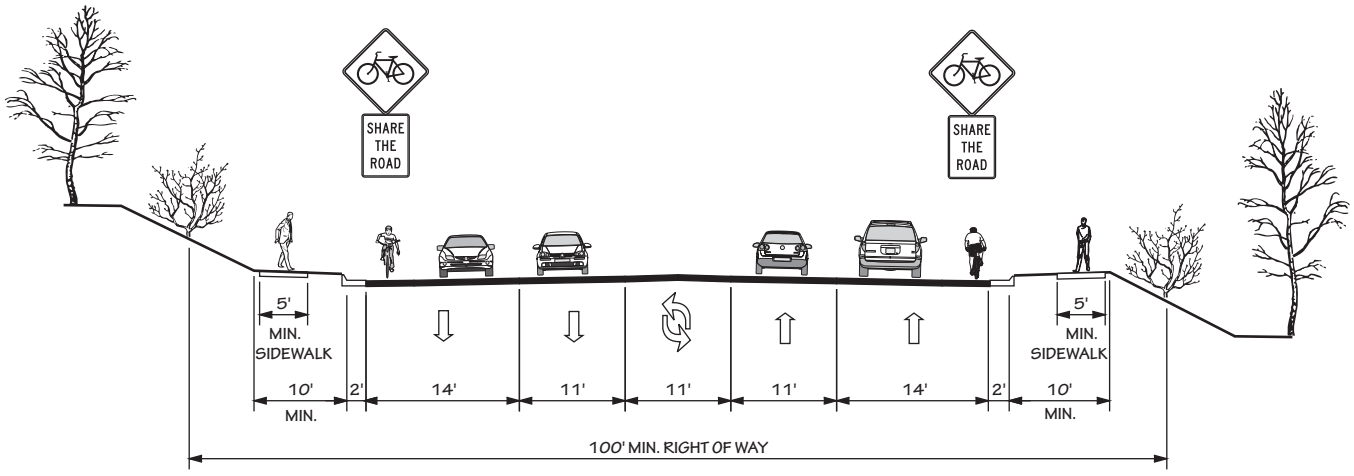
GRASS MEDIAN WITH BIKE LANES AND SIDEWALKS



5 LANES

5 A

WIDE OUTSIDE LANES



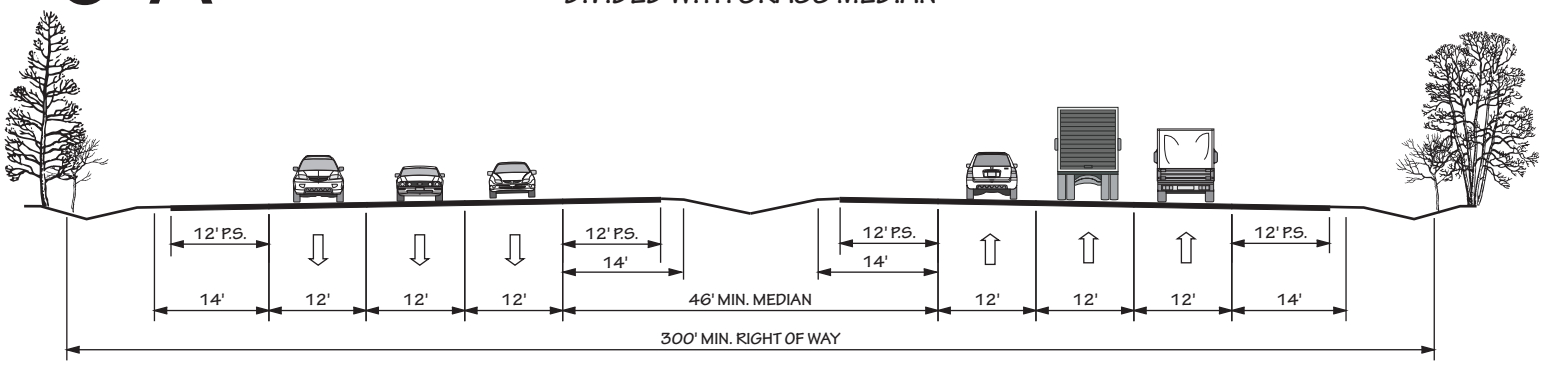
Revised 12/07/2010

TYPICAL HIGHWAY CROSS SECTIONS

6 LANES

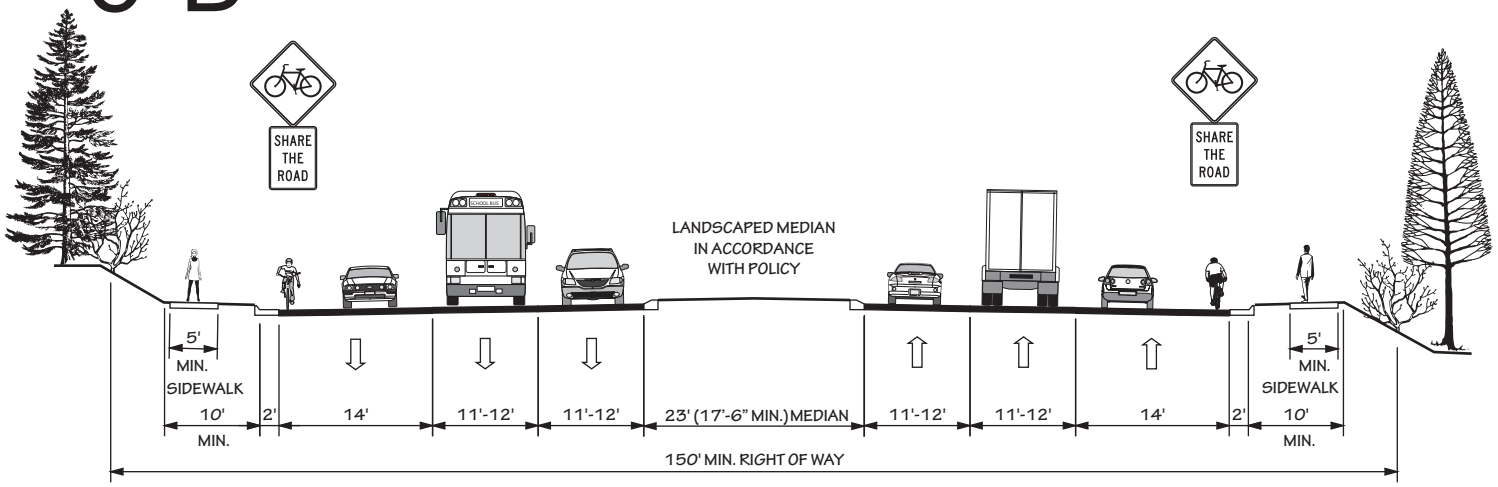
6 A

DIVIDED WITH GRASS MEDIAN



6 B

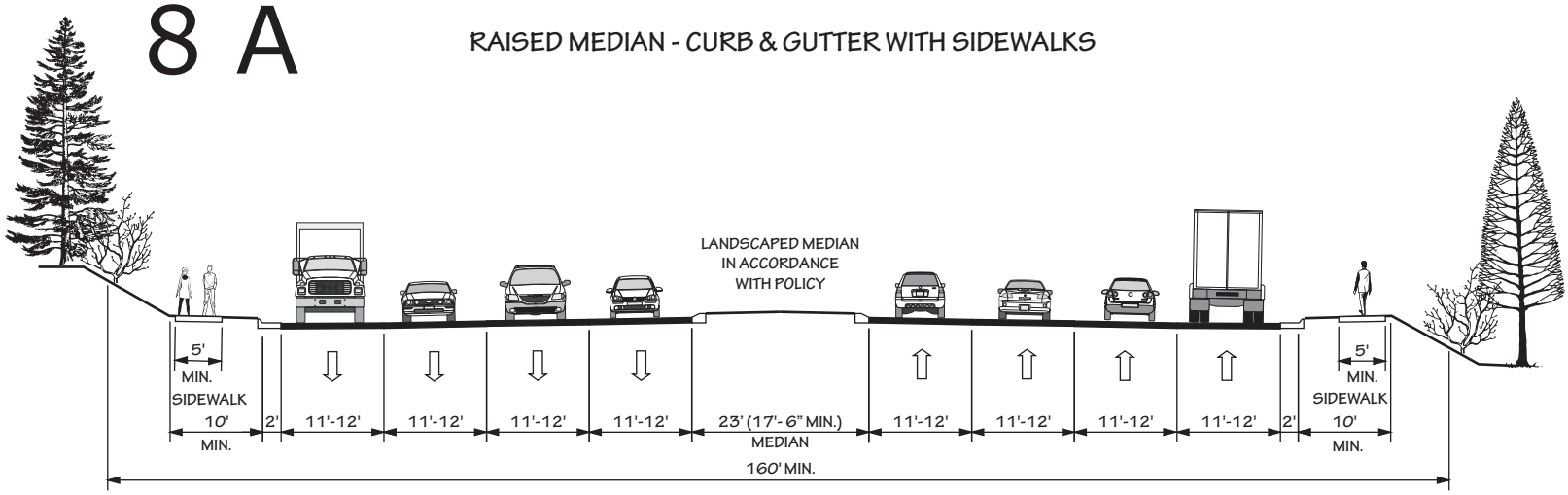
RAISED MEDIAN - CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS



8 LANES

8 A

RAISED MEDIAN - CURB & GUTTER WITH SIDEWALKS

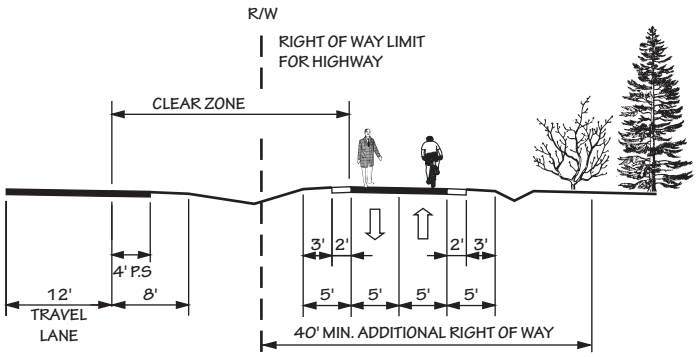


Revised 12/07/2010

TYPICAL MULTI - USE PATH

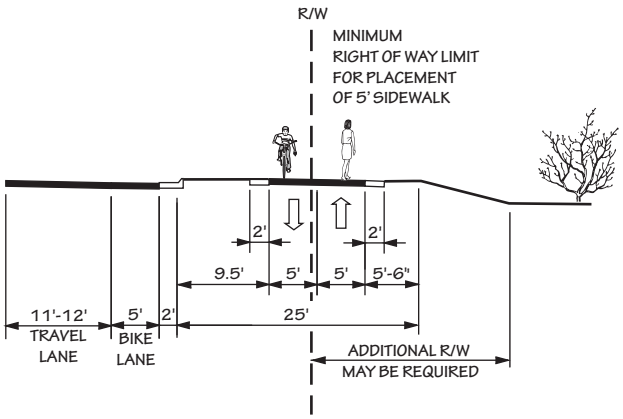
MULTI - USE PATH
ADJACENT TO RIGHT OF WAY OR SEPARATE PATHWAY

M A



MULTI - USE PATH ADJACENT TO CURB AND GUTTER

M B



Revised 12/07/2010

Appendix E
Level of Service Definitions

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

Design requirements for roadways vary according to the desired capacity and level of service. LOS D indicates "practical capacity" of a roadway, or the capacity at which the public begins to express dissatisfaction. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C on new facilities. The six levels of service are described below and illustrated in Figure 11.

- **LOS A**: Describes free-flow operations. Free Flow Speed (FFS) prevails and vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effects of incidents or point breakdowns are easily absorbed.
- **LOS B**: Represents reasonably free-flow operations, and FFS is maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and point breakdowns are still easily absorbed.
- **LOS C**: Provides for flow with speeds near the FFS. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service quality will be significant. Queues may be expected to form behind any significant blockages.
- **LOS D**: The level at which speeds begin to decline with increasing flows, with density increasing more quickly. Freedom to maneuver within the traffic stream is seriously limited and drivers experience reduced physical and psychological comfort levels. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.
- **LOS E**: Describes operation at capacity. Operations at this level are highly volatile because there are virtually no usable gaps within the traffic stream, leaving little room to maneuver within the traffic stream. Any disruption to the traffic stream, such as vehicles entering from a ramp or a vehicle changing lanes, can establish a disruption wave that propagates throughout the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown and substantial queuing. The physical and psychological comfort afforded to drivers is poor.
- **LOS F**: Describes breakdown, or unstable flow. Such conditions exist within queues forming behind bottlenecks.

Figure 11 - Level of Service Illustrations

Source: 2010 Highway Capacity Manual, Exhibit 11-4

Appendix F
Traffic Crash Analysis

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

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

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

Table 5 depicts a summary of the crashes occurring in the planning area between July 1, 2003 and June 30, 2006. The data represents locations with 15 or more crashes. The "Total" column indicates the total number of crashes reported within 150-ft of the intersection during the study period. The severity listed is the average crash severity for that location.

Table 5 - Crash Locations

Map Index	Intersection	Average Severity	Total Crashes
1	US 74 and NC 87	10.0	15
2	NC 87 and NC 133	8.09	36
3	NC 133 and NC 211	3.35	82
4	US 17 and NC 904	9.58	36
5	US 17 and NC 211	3.92	38
6	US 17 and SR 1168	8.52	15
7	NC 130 and SR 1132	8.09	18
8	US 17 and SR 1130	8.15	22
9	US 17 and SR 1184	6.55	35
10	NC 211 and SR 1115	5.37	22

Table 4 - Crash Locations (Cont.)

11	NC 130 and SR 1130	4.22	23
12	NC 179 and NC 904	2.76	21
13	NC 87 and NC 211	5.16	16
14[1]	US 17 and US 17B	8.13	62
15[2]	US 17 and NC 87	3.58	89

[1] Four intersections are represented within this data. Refer to map for locations.
[2] Two intersections are represented within this data. Refer to map for locations.

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 (see Appendix A for contact information).

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

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

A bridge must be classified as deficient in order to qualify for federal replacement funds. Additionally, the sufficiency rating must be less than 50% to qualify for replacement or less than 80% to qualify for rehabilitation under federal funding. Deficient bridges located on roads evaluated as a part of the CTP are listed in Table 6. For more details on deficient bridges within the planning area, contact the Structures Management Unit using the information in Appendix A.

Table 6 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	Local ID
9	NC 130	Bear Branch	SD	
10	SR 1521	Rice's Creek	FO	
11	NC 87	Orton Pond Creek	FO	BRUN0006-H
16	NC 211	Branch of Big Swamp	FO	
19	US 17 BUS	Shallotte River	FO	BRUN0004-H
20	NC 211	Branch of Big Swamp	FO	
22	SR 1112	Mercers Mill Pond	SD	
23	SR 1500	Branch of River Swamp	FO	R-3434
24	NC 133	Dutchman's Creek	FO	R-5021
25	SR 1500	River Swamp	FO	R-3434
26	NC 87	Allen Creek	FO	BRUN0006-H
40	SR 1515	Mills Creek	SD	
47	NC 211	Branch of Juniper Creek	SD	B-4438
48	NC 130	Shallotte River	FO	BRUN0007-H
49	SR 1115	Branch of Lockwood Folly River	SD	BRUN0029-H
53	SR 1134	Branch of Shallotte River	FO	
55	SR 1140	Branch of Little Shallotte River	FO	
57	NC 211	Juniper Creek	FO	
58	SR 1115	Branch of Lockwood Folly River	SD	BRUN0029-H
59	SR 1115	Branch of Lockwood Folly River	SD	B-5217 BRUN0029-H
60	US 17 BUS	Piney Grove Swamp	FO	
64	SR 1154	Sauce Pan Creek	SD	
76	NC 211	Beaver Dam Creek	FO	R-5021
77	SR 1300	Scippeo Swamp	SD	BRUN0018-H
100	SR 1342	Branch of Juniper Creek	SD	B-4439 BRUN0022-H
102	SR 1401	Pinch Gut Creek	FO	
104	SR 1500	Middle Swamp	SD	B-5311 R-3434
126	SR 1300	Cawcaw Swamp	SD	BRUN0018-H
142	SR 1301	Hickman Branch	FO	
163	SR 1349	Mulberry Swamp	SD	B-4440
169	SR 1115	Branch of Lockwood Folly River	FO	BRUN0024-H
182	SR 1184	Branch of Shallotte River	FO	BRUN0017-H
198	SR 1172	Intracoastal Waterway	SD	
202	SR 1357	Branch of Shallotte River	FO	B-5540
207	SR 1191	Branch of Shallotte River	SD	

Appendix H
Public Involvement

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

List of CTP Steering Committee Members

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

CTP Vision, Goals, Objectives and MOEs

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

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

Vision Statement: To follow the Comprehensive Transportation Planning process in order to ***cooperatively*** develop a long-range multi-modal transportation plan the meets the existing and anticipated deficiencies of the transportation system for the next 30 years.

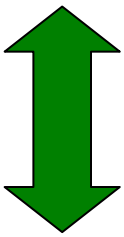
Additionally, the mission statements, goals and strategies from *Brunswick Tomorrow: Our County, Our Vision, Our Decision*[2], Brunswick County/NC Dept. of Commerce - Division of Community Assistance, February 2004 were utilized in the development of the CTP.

[2] Brunswick Tomorrow can be viewed at:
http://www.brunswickcountync.gov/Departments/LandDevelopment/Planning/BrunswickTomorrow.aspx

CTP Committee Members

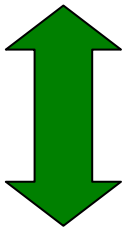
CTP Team

Earlene Thomas, Transportation Planning Branch
Leslie Bell, Brunswick County Planning Director
Don Eggert, Cape Fear RPO



Steering Committee

CTP Team
May Moore, Brunswick County Commissioner
Phil Norris, Brunswick County Commissioner
Marty Lawing, Brunswick County Manager
Stephen Greiner, Brunswick Community College Representative
Becky King Noble, Economic Development Representative
Mike Reaves, Economic Development Representative
Philip Olson, Alliance of Brunswick County Property Owners Association
J. D. Solomon /Jennifer Bell, CH2M Hill (NC Ports Consultant)
Stephanie Ayers, North Carolina Ports
Dan Ryan, The Nature Conservancy
Allen Pope, NCDOT Division 3 Engineer
Patrick Riddle, NCDOT Division 3 Project Manager

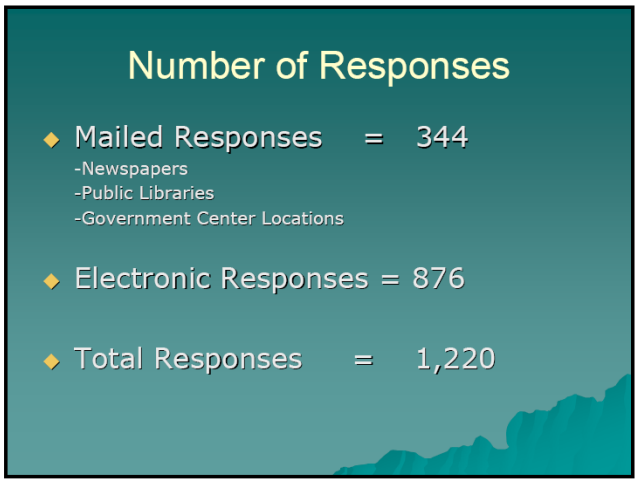


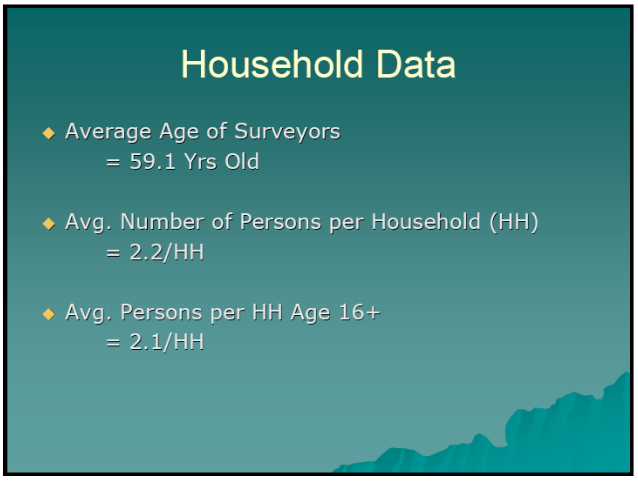
Stakeholders

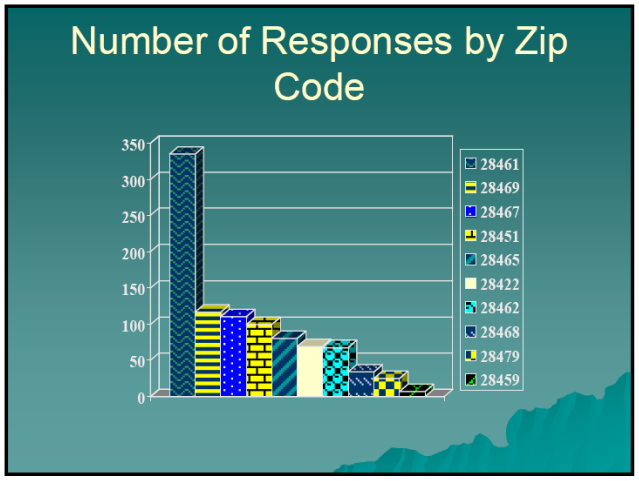
CTP Team
Wilmington MPO
NCDOT – Bicycle & Pedestrian
NCDOT – Public Transportation
Lanny Wilson, NCODT – Board Member
Brunswick County Municipalities
Environmental Agencies

Goals and Objectives Survey

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







Accessibility/Interconnectivity Issues

	Not Important	Somewhat Important	Very Important
Meeting Emergency Evacuation Demand	11	174	963
	1%	15%	84%
Reservation of Land for Future Roads	24	238	896
	2%	21%	77%
Encourage Interconnectivity	17	266	858
	1.5%	23.3%	75.2%
Meeting Beach Access Demands	80	401	673
	7%	35%	58%

Public Transportation/Alternative Modes

	Not Important	Somewhat Important	Very Important
Bike/Pedestrian Paths	191	526	400
	17%	47%	36%
Increased/ Expanded Public Transportation	368	461	330
	32%	40%	28%
Encourage Alt. Modes of Travel	227	605	314
	20%	53%	27%
Encourage Carpooling	261	661	196
	23%	59%	18%

Environmental/Aesthetic Issues

	Not Important	Somewhat Important	Very Important
Managing Sedimentation/ Stormwater	22	221	901
	2%	19%	79%
Protecting Natural Areas and Open Spaces	42	312	796
	4%	27%	69%
Reduction of air and noise pollution	61	473	599
	5%	42%	53%
Planting Trees and Shrubs Along Roads	190	504	466
	16%	44%	40%

Other Issues

	Not Important	Somewhat Important	Very Important
Improving Traffic Signal Timing	23	280	854
	2%	24%	74%
Controlling Commercial Strip Development	47	251	816
	4%	23%	73%
Decreasing Travel Times	87	580	473
	8%	51%	41%

Road Improvements

	More Emphasis	Less Emphasis
Building Connector Roads	966	130
Intersection Improvements Along Hwy 17	922	183
Widening Existing Roads	877	105
Increasing the Number of Travel Lanes	811	192
Restricting Driveway Access on Major Roads	636	300
Superstreets	631	449

Other Areas of Emphasis

	More Emphasis	Less Emphasis
Increased Transportation Services for Elderly and Disabled	899	180
Landscaping/Beautification	761	331
Limiting Growth	726	366
Expanding Public/Regional Transportation Services	608	440
Encouraging Non-Traditional Work Hours	581	483

List of Roads or Intersections That Need Improvements (In Order of Popularity)

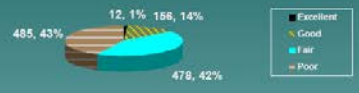
1. NC 211
2. NC 211 & NC 133 Intersection
3. NC 133 (Long Beach Rd.)
4. US Hwy 17
5. NC 130
6. NC 87
7. Midway Road
8. NC 179
9. NC 211 and Dosher Cut-Off Intersection
10. NC 904
11. NC 133 and US Hwy 17 Intersection
12. NC 130 & Main St. Intersection
13. Hickman Rd.
14. Hwy 17 and OIB Rd.
15. Lanvale Rd.

Funding Options

	Yes	No
1. Development Impact Fees	942	160
2. Real Estate Transfer Tax/Fee	652	411
3. License Tag Fee	439	568
4. Gasoline Tax Increase	310	746

Other Funding Sources:
-Increased Sales Tax
-Tobacco/Alcohol Tax
-Tolls
-Accommodations Tax
-Commercial/Large Vehicle Tax

Overall Opinion of Brunswick County's Roadways



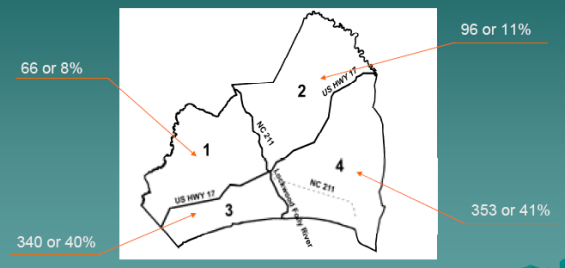
Note: Of the total responses more than 85% gave a poor or fair rating.

Improving Traffic Flow Through the County

	Not Important	Somewhat Important	Very Important
NC 211	33	164	920
	3%	15%	82%
US Hwy 17	35	197	900
	3%	17%	80%
NC 130	106	503	401
	10%	50%	40%
NC 179	147	505	346
	15%	50%	35%
NC 904	175	494	321
	18%	50%	32%

Other Roads Participants Labeled Very Important:
-NC 133/Long Beach Road
-NC 87
-Midway Rd
-Dosher Cut-Off

Most Frequently Traveled Regions



Public Meetings

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

Public Workshop #1

Date: October 29, 2007

Time: 4:00 – 6:00 p.m.

Location: Brunswick County Government Center
Building M – 2nd Floor Conference Room
69 Stamp Act Drive, NE
Bolivia, NC

Number of Attendees: 12

Information Presented: Current and future deficiencies; Draft CTP recommendations

Comments Received: None

Major/Controversial Issues: None

Public Workshop #2

Date: November 1, 2007

Time: 4:00 – 6:00 p.m.

Location: Ocean Isle Town Hall
3 W. 3rd Street

Number of Attendees: 4

Information Presented: Current and future deficiencies; Draft CTP recommendations

Comments Received: Letter from the Nature Conservancy (See Appendix J)

Major/Controversial Issues: Concerns with the proposed Interstate 74 corridor along NC 211 and potential impacts to the Green Swamp and Juniper Creek preserves (See Appendix J for comments from environmental agencies/partners).

Public Workshop #3

Date: July 8, 2008

Time: 4:30 – 6:30 p.m.

Location: Brunswick County Government Center
Building I – County Commissioners Chambers
75 Courthouse Drive, NE
Bolivia, NC

Number of Attendees: 25

Information Presented: Revised Draft CTP recommendations

Comments Received: 2 written comments; Petition with 286 signatures

Major/Controversial Issues:

- Residents of the Brunswick Plantation development submitted a petition (286 signatures) for the re-alignment of the proposed I-74 corridor (Carolina Bays

section) from NC 904 to the South Carolina State Line to minimize impacts to the development
- Concerns over of new highway facilities for the proposed NC International Terminal not being identified in the CTP
- The implementation of superstreets along US 17

Public Hearings

Jurisdiction	*Public Hearing Date*	*Adoption Date*
Brunswick County	December 1, 2008	November 2, 2009
Bald Head Island	November 14, 2008	Did not adopt plan
Boiling Spring Lakes	November 10, 2008	March 3, 2009
Bolivia	October 13, 2008	October 13, 2008
Calabash	December 11, 2007	December 11, 2007
Carolina Shores	December 4, 2007	December 4, 2007
Caswell Beach	January 10, 2008	January 10, 2008
Holden Beach	January 8, 2008	January 8, 2008
Northwest	December 18, 2007	December 18, 2007
Oak Island	January 8, 2008	January 8, 2008
Ocean Isle Beach	December 11, 2007	December 11, 2007
Sandy Creek	October 13, 2008	October 13, 2008
Shallotte	November 5, 2008	November 5, 2008
Southport	October 9, 2008	October 9, 2008
St. James	January 8, 2008	January 8, 2008
Sunset Beach	December 3, 2007	December 3, 2007
Varnamtown	November 10, 2008	November 10, 2008

Information Presented: Draft CTP for adoption

Major/Controversial Issues:
- Opposition to identifying existing US 17 as a future proposed freeway
- Concerns over of new highway facilities for the proposed NC International Terminal not being identified in the CTP

Appendix I
Existing Transportation Plans

The following CTPs or Thoroughfare Plans for areas within the county that were incorporated as a part of this plan are listed below. Refer to the technical reports of those studies for detailed descriptions of recommendations that were not documented as a part of this report.

- 1998 Oak Island Thoroughfare Plan
  http://www.ncdot.gov/doh/preconstruct/tpb/PDF/OakIsland_TP_Report.pdf

- 2000 Southport Thoroughfare Plan
  http://www.ncdot.gov/doh/preconstruct/tpb/PDF/Southport_TP_Report.pdf

- 2001 Shallotte Thoroughfare Plan
  http://ia601203.us.archive.org/5/items/technicalreportf2002nort/technicalreportf2002nort.pdf

- 2002 Boiling Spring Lakes Thoroughfare Plan
  http://ia701207.us.archive.org/19/items/technicalreportf2004nort/technicalreportf2004nort.pdf

- 2006 Ocean Isle Beach CTP (Map only – No report available)

Appendix J
Environmental Agency Comments

During the development of the Brunswick County CTP, comments were solicited and received from environmental agencies and are included in this appendix.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

Memorandum

To: Environmental Partners

From: Earlene W. Thomas, PE
Southeast Planning Group Supervisor
Transportation Planning Branch

Date: September 28, 2006

Re: Brunswick County Comprehensive Transportation Plan (CTP)

We look forward to working with each and every one of you on the development of the Brunswick County CTP. As a stakeholder in the development of this plan, the input that you provide will be invaluable to the final product that is developed. I am excited and believe that the coordinated effort of all stakeholders will not only shape the transportation needs of Brunswick County, but improve the quality of life for all NC citizens as well.

During this early stage in the process, we would like to solicit your input by providing a series of environmental features mapping that is readily available to the Transportation Planning Branch. We would like you to review these maps and provide feedback to us by pointing out areas of concern, such as those listed below. Please do not limit comments to the items below. They are only examples of the types of information we are seeking. Any information that you feel we should be aware of early in the process should be shared with us.

- Critical or sensitive areas that should be preserved or avoided.
- Information / data that we are missing and should be aware of. Please let us know where we can find the information.
- Is our information outdated? If so, where can we get the most updated information?
- Are there any critical changes expected to occur in the area?

Please feel free to mark / comment directly on the maps. Additionally, we are asking that you complete the information sheet provided so that we have contact information for future distribution purposes. Once you have completed you review, please forward all information to us in the envelope provided **no later than October 26, 2006**.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING
1554 MAIL SERVICE CENTER
RALEIGH NC 27699-1554

TELEPHONE: 919-733-4705
FAX: 919-733-2417

WEBSITE: WWW.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Environmental Protection Agency

Name: CHRISTOPHER A. MILITSCHER, REM, CHMM
Agency: U.S.E.P.A. REGION 4 NEPA Program office
Mailing Address: 310 New Bern Avenue
Raleigh, N.C. 27601
Email Address: militscher.chris@epa.gov
Telephone #: 919-856-4206

What are your concerns about the development that is occurring in Brunswick County?

SEE ATTACHED

Are there any other concerns that you would like to see addressed in the Brunswick County CTP?

SEE ATTACHED

Brunswick County Comprehensive Transportation Plan

1. Development concerns

From the various GIS databases it is very apparent that Brunswick County is 'wet'; very wet. From past environmental work in this county extending back over a decade, Brunswick County has some of the 'worst' drainage of any county in North Carolina. From Exhibit C hydric soils mapping, 99% of the county is either Hydric Soil Type A or B. From first hand experience, Brunswick County floods several times a year and not solely from hurricane events. Brunswick County is bounded on a portion of its western boundary by the Waccamaw River. A portion of its northern boundary and its eastern boundary it is bounded by the Cape Fear River. Other major drainage features include the Shallotte River, Lockwood Folly River, Orton Creek, Allen Creek, Town Creek, and the Calabash River. The areas south and east of US 17 are riddled with Carolina bays. Many of these bays have been previously impacted by silvicultural draining activities (i.e., ditching) and there are few intact bays remaining.

Soils in Brunswick County are not conducive to septic systems. Package treatment facilities are too frequently not in compliance with discharge limits due to infiltration and inadequate capacity. Receiving waters are very sensitive (high quality waters) to pollutants and can cause severe environmental problems with regards to fish spawning areas. Exhibit D shows the high quality/outstanding resource waters and fish nursery areas. From Calabash to Southport, the entire Brunswick County coastline and numerous inlets are in this category. Almost exclusively, human development is incompatible with these special uses. Moreover, human activities such as unfettered littering and trash, introduction of aggressive exotic invasive species, herbicide, pesticide and other chemical applications, chemical spills and releases, etc., typically degrade wildlife habitat. There are numerous state and Federal species of concern and threatened and endangered species in Brunswick County. Their ultimate survival will depend greatly upon the ability to control development pressures and 'environmentally unfriendly' human activities.

Nonetheless, development pressures will continue in the county. "Swamp" land is relatively cheap, including those areas previously drained by timber companies. However, infrastructure costs are comparatively higher, including those utilities and facilities that require clean fill to raise them out of flood prone areas (e.g., Roadways). Cost-effective sources of clean backfill can be very difficult to find in this area of the State (9/15/06; NCDOT's Greg Smith, PE, LG). NCDOT projects should be strictly prioritized to address current traffic problems. Future traffic models and projections based upon land use 'build-out' assumptions are not realistic based upon very severe environmental constraints. NCDOT projects should be planned as to address only current congestion and capacity issues. Proposed highway projects that have a purpose and need of 'economic development', 'hurricane evacuation' and 'system linkage of commuter routes' should be 'tabled' or placed at the bottom of the NCDOT's priority list.

The Federal Government should also not 'subsidize' development through the construction of roadways in hurricane prone areas. Hurricanes Fran, Bertha, Floyd and

others in the 1990's destroyed thousands of homes and resulted in flooding damages to numerous roads. Aiding development efforts by 'improving' capacity of roadways will greatly add to the damages from future natural disasters and the enormous costs to rebuild. While in many areas of the North Carolina coastline development pressure is not contingent upon the expansion of the roadway infrastructure, in Brunswick County they are intricately linked (e.g., Second Bridge to Oak Island). The NCDOT's new roadways provide a 'free easement' for other utilities needed by developers, such as sewers, water lines, electric, cable, etc. Looking at the major roadway network for Brunswick County, it is apparent that the historic 'lack of roadways' (US 74/76, US 17, NC 87, NC 133, NC 211, NC 130, NC 904, NC 179) has kept a great deal of the county rural. 'Improving' this network will not reduce congestion (which for the most part is seasonal) but will ultimately add development and in turn increase roadway demands.

2. Other Concerns to be Addressed in the Brunswick County CTP

NCDOT should explore the use of 'Superstreets' along the two primary US routes (SHCs). NCDOT should discourage the use of bypasses around small communities and towns. Even with full control of access type facilities, bypasses can cause indirect and cumulative impacts with severe environmental damage to sensitive ecosystems. NCDOT right of ways are a breeding ground for exotic invasive plant species. In time, spraying weed control herbicides in areas with shallow ground water can also negatively impact ground and surface water sources. NCDOT should fully access the cumulative effects of its projects on the natural ecosystem of Brunswick County, including the introduction and proliferation of exotic invasive plant species. These 'weeds' out compete native vegetation and can eliminate habitat for threatened and endangered plants and animal species. NCDOT should check with the NC Exotic Plant Pest Council, USDA and other agencies on the existence and spread of 'high risk/high threat' invasives (such as Kudzu, Chinese Privet, Japanese honeysuckle, Phragmites, Purple loosestrife, Japanese knotweed, etc.).

Army Corp of Engineers

Name: Jennifer S. Frye
Agency: USACE - Wilmington
Mailing Address: PO Box 1890
Wilmington, NC 28402
Email Address: Jennifer.S.Frye@usace.army.mil
Telephone #: 910-251-4923

What are your concerns about the development that is occurring in Brunswick County?

- Direct, secondary & cumulative impacts to waters of the U.S., including wetlands.
- Sprawl, disjointed development

Are there any other concerns that you would like to see addressed in the Brunswick County CTP?

North Carolina Division of Coastal Management

I have reviewed the information provided in your memorandum of September 28, 2006 regarding the Brunswick County Comprehensive Transportation Plan (CTP). I was pleased to see that the GIS data represented in the package included areas of specific interest to the Division of Coastal Management (DCM) and the areas of interest of the agencies that typically comment on CAMA permit applications associated with NCDOT development projects. I would like to see specific references to the Brunswick County CAMA Land Use Plan in the CTP as well as GIS data representing land use. It would not be practical (or possible) to identify CAMA Areas of Environmental Concern (AECs) in the GIS data, but it might be helpful to include in the plan a description of AECs as found on our web site. I am available for future coordination in the development of the Brunswick County CTP.
Steve

--
Steve Sollod
Transportation Project Coordinator
NC Division of Coastal Management

Name: Kathy Matthews
Agency: U.S. EPA (Wetlands Section)
Mailing Address: 109 T.W. Alexander Dr., MAIL CODE N-1760-01
Durham, NC 27711
Email Address: Matthews.Kathy@epa.gov
Telephone #: 919-541-3062

What are your concerns about the development that is occurring in Brunswick County?

- Speed of development, particularly large subdivisions
- Is there a plan for growth in the County?
- Protecting water quality and water resources, during the planning process.

Are there any other concerns that you would like to see addressed in the Brunswick County CTP?

- Protection of dwindling aquatic and ecological resources.

Some of the data appears outdated (see list below). However, I don't know where you can find more updated info.

- Water Distribution Systems (1998 or 2000)
- Shellfish Strata (1994)
- Endangered Species Habitats (1998)
- Land cover (1996)
- Fish nursery areas (1992)
- Shellfish harvesting areas (20
- CAMA permits (1991)
- Coastal Marinas (1992)
- Anadromous Fish (1995)

NAME: Travis W. Wilson

AGENCY: North Carolina Wildlife Resources Commission

MAILING ADDRESS: 1142 I-85 Service Road
Creedmoor, NC 27522

EMAIL ADDRESS: travis.wilson@ncwildlife.org

TELEPONE#: 919-528-9886

1. Concerns about the development that is occurring in Brunswick County including concerns that should be addressed in the CTP.

- Habitat Fragmentation
- Removal of existing and potential Redcockaded woodpecker habitat.
- The current rate of development in Brunswick County insures that any new location roadway will in turn open access to undeveloped portions of the county. Public utilities are often installed with roadway construction, therefore completing the infrastructure for industrial, commercial, and high density residential developments to follow
- Invasive species spread and introduction.
- Current development trends are out pacing transportation planning; therefore potential and often environmentally preferred corridors are lost due to potential human impacts and/or cost associated with relocations.

2. GIS layer comments

- The WRC game lands file shown is out dated. The most recent Game Lands file is from July 2006, and can be downloaded from the nconemap.org
- Mitigation sites (NCDOT and EEP)
- All Natural Heritage Program files should be updated
- Need to include a shape file containing the Priority Areas for Freshwater Conservation as listed in the NC Wildlife Action Plan. This can be obtained from NCWRC, contact Carol Price, NC Wildlife Action Plan Coordinator at 919-707-0227.

North Carolina Department of Cultural Resources

State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

November 17, 2006

MEMORANDUM

TO: Earlene W. Thomas
Southeast Planning Group Supervisor
NCDOT – Transportation Planning

FROM: Peter Sandbeck RES for Peter Sandbeck

SUBJECT: Brunswick County Comprehensive Transportation Plan (CTP), Brunswick County, ER 06-2561

Thank you for your Memorandum of September 28, 2006, concerning the above plan.

Brunswick County has not been surveyed to identify resources of historical or architectural interest since 1977. Therefore, any federal undertakings in Brunswick County will result in a request from us for an historic/architectural survey. This should be noted in your planning documents.

For your records, we are enclosing a list of Brunswick County historic resources that have been designated as either listed in the National Register, State Study-list, locally-landmarked or determined eligible for the National Register of Historic Places.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763 ext. 246. In all future communication concerning this project, please cite the above referenced tracking number.

Enclosure

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-4763/733-8653
RESTORATION	515 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6547/715-4801
SURVEY & PLANNING	515 N. Blount Street, Raleigh, NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6545/715-4801

December 13, 2006

Ron Sechler
National Marine Fisheries Service
Habitat Conservation Division
101 Pivers Island Road
Beaufort, North Carolina 28516
Phone: 252-728-5090
Fax: 252-728-8728
Email: ron.sechler@noaa.gov

In your letter requesting input on the preparation of the Brunswick County C (CTP), you listed "Critical or Sensitive" areas that should preserved or avoided and provided a series of maps that depicted a wide range of environmental assets in Brunswick County. One "critical" asset that is not depicted on the enclosed maps is areas designated as essential fish habitat (EFH) for species managed by the South and Mid-Atlantic Fishery Management councils (SAFMC, MAFMC) and the National Marine Fisheries Service (NMFS). We believe that the development of CTP for Brunswick County provides a unique opportunity to update the environmental maps for the county to include waters and wetlands designated as EFH. Identification of EFH by the NMFS would be accomplished cooperatively with the North Carolina Division of Marine Fisheries and when completed this information could be added as a data layer in the map products available to NCDOT. NMFS would like to discuss this opportunity further and I can be reached as noted above.

The NMFS has also responded to the questions included on page 3 of your letter:

What are your concerns about the development that is occurring in Brunswick County?

1. The NMFS understands that Brunswick County is beginning a period of rapid development including associated highway improvements. As a result, we are concerned that project specific and secondary/cumulative losses of waters and wetlands that support the fishery resources for which we are responsible will be substantial. NMFS is particularly concerned over losses of EFH described in the 1996 amendments to the Magnuson-Stevens Fisheries Conservation and Management Act. A specific concern is that rapid development, including highway development, will exacerbate losses of essential fish habitat (EFH) and degradation of water quality that is necessary for the continued production of species managed by the South and Mid Atlantic Fishery Management Councils and NMFS. NMFS shares management for many of the coastal and estuarine fishes found in Brunswick County and offshore waters with the state Division of Marine Fisheries, Wildlife Resources Commission and the Atlantic States Marine Fisheries Commission. A number of fishery resources found in Brunswick County are also identified pursuant to the Water Resources Development Act of 1996, as Aquatic Resource of National Importance.

2. To assist in addressing our EFH concern, we are providing a copy of a guidance document prepared by our Southeast Regional Office. Please note that this guidance is not comprehensive, but provides sufficient information to focus your efforts when EFH may be adversely impacted by highway projects component of the Brunswick County Comprehensive Transportation Plan (CTP). For detailed information of EFH and associated managed species, you should review relevant sections of the October 1998 Final Habitat Plan for the Southeast Region. We believe that a generic EFH assessment would be a useful planning component of the Brunswick County CTP

NMFS is also responsible (along with the state agencies identified above) for migratory diadromous fishes found in Brunswick County primarily in the Cape Fear River and tributaries of the Waccamaw River.
Forested wetlands associated with the rivers and streams in Brunswick County provide important habitat and water quality functions that are essential to the continued production of diadromous fishery resources (e.g., shad, river herring, Atlantic sturgeon, and striped bass. The Cape River also supports the endangered shortnose sturgeon for which our Protected Resources Division has management responsibility.

Are there any other concerns that you would like to see addressed in the Brunswick County Transportation Plan?

1. Anticipated growth and highway development in Brunswick County will also result in intense pressure by the housing and business communities to meet the need of present and future county residents. In our opinion, the CTP cannot ignore the relationship between population increases and highway needs. All of the fisheries concerns identified above are equally true for commercial and residential development. In our opinion, the CTP should be truly comprehensive in addressing both the highway and human infrastructure related effects of rapid development in Brunswick County.

2. Losses of surface waters and wetlands, including freshwater wetlands, are not in the best interest of fishery resources. Guidance regarding appropriate mitigation of wetland losses is provided in a variety of sources familiar to the NCDOT and developers of the Brunswick County CTP. Accordingly, we believe that the CTP must include a comprehensive evaluation of anticipated wetlands and fishery habitat related losses and include specific information on how these losses will be addressed.

3. NMFS also believes that many of these losses should be addressed in advance of the impact. Comprehensive “upfront” surface water and wetland mitigation planning should be a component of the Brunswick County CTP. We anticipate that the EEP will participate in this process; however, the rapid development related situation in Brunswick County that lead to the need for a CTP may require resources beyond what is currently available. NMFS staff is available to assist in long-range mitigation planning for wetlands losses that support our trust resources. Also, a generic EFH assessment could assist in the identification of anticipated habitat losses and thereby provide additional guidance for a determination of the need for “upfront” mitigation.

Memo

To: Earlene Thomas
NCDOT Transportation Planning Branch

From: Dan Bell
The Nature Conservancy

Re: Brunswick County Comprehensive Transportation Plan
Review of NCDOT Environmental Features Mapping

Date: October 30, 2006

At the October 27 meeting of the Cape Fear Arch Conservation Collaboration, our group reviewed the "environmental features" mapping compiled by the NCDOT Transportation Planning Branch for Brunswick County. This memo and the attached maps represent the collective comments from these participants. In addition, some organizations have chosen to respond individually.

General Comments:

- Much of the data is out-of-date and does not reflect current conservation lands or priorities.
- The source of some data is unclear. Consequently, there was little opportunity to assess the data's credibility.
- NCDOT needs to get most recent data from NC Natural Heritage Program and environmental management agencies (i.e. Division of Coastal Management, Division of Marine Fisheries, Division of Water Quality.

Brunswick County Environmental Map "A"

1. Need updated NC Wildlife Resources Commission (NCWRC) coverage for "Gamelands". [Contact: NCWRC]
2. Need to add NCWRC "Black Bear Sanctuary", which covers tens of thousands of acres in central Brunswick County. [Contact: NCWRC]
3. Depiction of Green Swamp Gamelands is inaccurate. [Contact: NCWRC or The Nature Conservancy]
4. Add state-owned Gamelands along Waccamaw River. [Contact: NCWRC]
5. Need to update state-owned conservation lands at Boiling Spring Lakes Preserve. [Contact: The Nature Conservancy or NC Dept. of Agriculture]
6. Add proposed NC International Port property.
7. The federal land depicted is a switchyard for the Sunny Point Railroad. It does not have ecological value and should not be included in environmental maps.
8. The state-owned property behind Belville Elementary school has been sold to private developers and should not be depicted.
9. This map should include state held Clean Water Management Trust Fund easements. [Contact: NC Clean Water management Trust Fund]

Brunswick County Environmental Map "B"

1. Use most recent wetlands data [Contact: Brunswick County Planning Department and NC Division of Coastal Management]

Brunswick County Environmental Map "C"

1. Unable to assess accuracy because source data for map are unclear. In addition to using most recent wetlands data, NCDOT should integrate analysis by Brunswick County on soil suitability for development. [Contact: Brunswick County Planning Department and Brunswick County Soil & Water Conservation District]

Brunswick County Environmental Map "D"

1. Use most recent data for Anadromous Spawning Areas, Fish Nursery Areas consistent with NC Coastal Habitat Protection Plan (CHPP). Map should include DMF Oyster reef restoration sites. [Contact: NCDENR Division of Marine Fisheries]
2. Use most recent data for High Quality/ Outstanding Resource Waters [Contact: NCDENR Division of Water Quality]
3. Use most recent data for dedicated/ registered properties [Contact: NCDENR Natural Heritage Program]
4. Use most recent data for known archaeological sites. [Contact: NC Division of Cultural Resources]
5. The Waccamaw River, Juniper Creek and tributaries should be recognized as significant aquatic endangered species habitats. [Contact: NCDENR Natural Heritage Program and US Fish & Wildlife Service]
6. Bird Island is dedicated. [Contact: NCDENR Natural Heritage Program]
7. The Green Swamp dedication boundaries are not correct. [Contact: NCDENR Natural Heritage Program and The Nature Conservancy]
8. It is believed that there are dedicated/ registered properties on Town Creek. [Contact: NCDENR Natural Heritage Program and NC Coastal Land Trust]
9. Large portions of the Boiling Spring Lakes Preserve are dedicated. [Contact: NCDENR Natural Heritage Program and The Nature Conservancy]
10. Confirm that this is a registered/ dedicated property on Sunny Point Military Terminal. [Contact: NCDENR Natural Heritage Program and MOTSU]
11. Fort Fisher- Smith Island complex are dedicated. [Contact: NCDENR Natural Heritage Program and NCDENR Division of Coastal Management]
12. Bald Head Woods are dedicated. [Contact: NCDENR Natural Heritage Program, NCDENR Division of Coastal Management and Bald Head Island Conservancy]

Brunswick County Environmental Map "E"

1. This map should include any federal or state endangered/ threatened species, as well as any designated critical habitat.
2. Use most recent significant natural heritage area/ element occurrence data. [Contact: NCDENR Natural Heritage Program]

3. This map should include critical aquatic habitats as identified in the NC Wildlife Action Plan. [Contact: NC Wildlife Resources Commission]

Brunswick County Environmental Map "F"

1. Use most recent significant natural heritage area/ element occurrence data. [Contact: NCDENR Natural Heritage Program]
2. Managed Areas coverage should include 18,600-acre Juniper Creek Preserve. [Contact: The Nature Conservancy]
3. The federal land depicted is a switchyard for the Sunny Point Railroad. It does not have ecological value and should not be included in environmental maps.

Brunswick County Environmental Map "G"

1. Land trust priorities. What is the source of this data? The Cape Fear Arch Conservation Collaboration is currently refining our collective conservation priorities.
2. This map should include all DOT/EEP mitigation sites.
3. This map should include Audubon Important Birding Areas and the NC Birding Trail [Contact: NC Audubon and NC Wildlife Resources Commission]
4. This map should include all county/ city parks, Brunswick County Voluntary Agriculture District and all lands protected by farmland easements. [Contact: Brunswick County Parks and Brunswick County Soil & Water Conservation District]
5. This map should include Ducks Unlimited priority areas.
6. Managed Areas coverage should include 18,600-acre Juniper Creek Preserve. [Contact: The Nature Conservancy]
7. Ownership of Green Swamp Preserve is depicted incorrectly. [Contact: The Nature Conservancy]
8. Need to use most recent conservation ownership data on Town Creek. [Contact NC Coastal Land Trust]
9. Need to use most recent ownership data for Boiling Spring Lakes Preserve. [Contact: The Nature Conservancy]
10. This map should include land protected through Forest Legacy program on Town Creek. [Contact NC Coastal Land Trust]
11. New Hanover Soil and Water Conservation District and Town of Leland are focused on Eagle Island priority area.
12. Need to include Lockwood Folly River watershed management study area [Contact: NC Coastal Federation and Brunswick County Planning Dept.]

To: Chris Militscher/R4/USEPA/US@EPA
From: Earlene Thomas <ewthomas@dot.state.nc.us>
Date: 10/18/2007 01:47PM
cc: Heinz Mueller/R4/USEPA/US@EPA, Linda Rimer/RTP/USEPA/US@EPA, Mike Bruff <mbruff@dot.state.nc.us>
Subject: Re: Brunswick CTP Draft Recommendations

Chris,

Thank you for the comments. I will ensure that they are incorporated into the CTP documentation.

Militscher.Chris@epamail.epa.gov wrote:

Earlene: As a follow-up to your presentation on the status of the Brunswick County CTP, we ask that NCDT Transportation Planning Branch consider the following for inclusion in your final plan:

1. Per Linda's remarks, the plan should discuss the potential effects of Sea Level Rise (SLR) and the increase vulnerability of infrastructure along coastal NC. There are numerous websites and links for additional information, but some good discussions on the issues can be found at:

www.ncseagrant.org
www.cop.noaa.gov/stressors/climatechange
www.ecu.edu/cs-admin/news/inthenews/archives/2005/10/charlotte-observer-nc-coast-a-concern.cfm

or searches at the NC Climate Change Commission (Julie Hunkins was the NCDOT rep. at one time & may still be), Dr. Stan Riggs, and/or Doug Rader.

Some of the freeway/expressways and other proposed roadways & improvements are at or near sea level. Future predictions with only a moderate rise in Sea level will inundate major areas along the NC coast, including substantial portions of Brunswick Co. Some of the more vulnerable roadways project could be in locations such as NC 87 and NC 133 in the Boiling Springs area, US 17 and NC 211 near Lockwood Folly River, NC 130 and US 17 near the Shallotte River, etc. LRTP should address this issue and highlight those projects that could be affected in the future from predicted SLR.

2. Bicycle Map: There should be a detailed discussion regarding designated Bicycle route #3 (NC 179/NC211) and how this existing route could be potentially expanded via some of the proposed projects. We understand the AASHTO standards, but would like to see how some of the specific roadway improvement projects could be comprehensively integrated with the existing Bike Rte. #3 and which projects may be good candidates for an expansion of the route

(notwithstanding the funding issue).

3. Public Transportation (and Rail Map): EPA would like to see a further discussion and analysis of the issues in the CTP (more than just a statement that there are no planned improvements to either). With the substantial existing (and future projected) numbers of retirees moving to Brunswick County, there is already a need for public transportation. Many retirees are getting 'too old' to drive, are on fixed incomes, and live substantial distances to markets, doctor's offices, etc. My relatives (for one) live near Shallotte and have complained that there is no way to get anyway in the County without having to drive. There aren't even localized shuttles services available in and around Shallotte. With the increases in fuel costs and other economic factors, local governments need to start planning for public transportation (not just more roads)for a 'majority' of the year-round residents. There are numerous 'senior communities' that would benefit from shuttles services and other locally-supported public transportation initiatives. Regarding the NC Port Authority project, we understand that without more details from them it is going to be difficult to incorporate their State planning efforts into your CTP.

Thank you for the opportunity to comment.

Christopher A. Militscher, REM, CHMM
USEPA Raleigh Office
919-856-4206

The Nature Conservancy
Protecting nature. Preserving life.™

The Nature Conservancy
North Carolina Chapter
4705 University Drive
Suite 290
Durham, NC 27707

tel (919) 403.8558
fax (919) 403-0379
nature.org/northcarolina

December 21, 2007

Derrick Lewis, P.E.
NCDOT Program Development Branch
1534 Mail Service Center
Raleigh, NC 27699-1534

Dear Mr. Lewis,

As the new Southeast Coastal Plain Project Director for The Nature Conservancy based in Wilmington, I am pleased to offer my comments on the Comprehensive Transportation Plan (CTP) Study for Brunswick County. I appreciate the opportunity for The Nature Conservancy to participate in the CTP process thus far, and I want to identify our concerns with the proposed Interstate 74 corridor along State Route 211. While the strains of economic growth are inevitable, every effort should be made to preserve Brunswick County's unique natural treasures, especially those of the Green Swamp and Juniper Creek preserves.

Background on the Green Swamp and Juniper Creek
As you know, southeastern North Carolina is recognized as an area of extraordinary biological diversity. Several species, including numerous carnivorous plants, have all or most of their global range in the lower coastal plain. Brunswick County claims the state's greatest number of rare plant and animal species. The Nature Conservancy's primary focus is on three conservation areas – the Green Swamp (15,550 acres), Juniper Creek (18,341 acres) and Boiling Spring Lakes (7,500 acres).

Featuring a complex of longleaf pine savannas and limesink ponds bound together by thousands of acres of pocosin (a type of evergreen shrub bog), the Green Swamp is home to more than 400 vascular plant species, such as the Venus flytrap, and provides habitat for animals such as the red-cockaded woodpecker and black bear. The life cycles of many plants and animals found in the Green Swamp are tied to fire. Longleaf pine trees, for example, need fire to maintain an open understory so that their seeds can germinate. The Nature Conservancy actively works to maintain ecosystem health by setting prescribed burns in longleaf and pocosin communities and by replanting longleaf pine trees.

Dominated by a mix of uplands and frequently flooded hardwood swamps, many of which are classified as wetlands, the Juniper Creek Preserve is home to rare fish and mussels. The healthiest populations of the Carolina pygmy sunfish (a threatened species in NC) and the broadtail madtom (a species of concern in NC) are located here. Juniper Creek is part of the National Significant Waccamaw River Aquatic Habitat State Natural Heritage Area. The 1999 Division of Water Quality Lumber River Basinwide Management Plan describes the Waccamaw watershed as "a showcase of biological

richness." The high quality waters of Juniper Creek are a recreational and natural asset which provides an important natural corridor between the 15,550-acre Green Swamp Preserve and the Waccamaw River complex.

The Cape Fear Arch Conservation Collaborative is a conservation partnership focused on the area between Cape Lookout and Cape Romaine. Since 2004, more than twenty signatories—including the US Fish and Wildlife Service, The Nature Conservancy, the NC Coastal Federation and the City of Wilmington—have joined this organization to promote regional conservation issues. Protection of the Green Swamp Preserve and the Juniper Creek Preserve are paramount in protecting the Waccamaw River watershed.

CTP Process Showed No Need to Improve State Route 211
Maps generated during the CTP process show extensive needs on the south side of US 17 and no road improvement needs along the State Route 211 corridor, which does not even near capacity by 2035. Only 4,600 cars per day are projected, less than half the current capacity of 11,000 cars per day. No concerns were raised during the CTP process to improve the State Route 211 area.

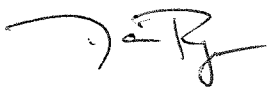
In contrast to the State Route 211 corridor, CTP data show that US74/76 and US 17 west and south of Wilmington are projected to be well over capacity. For this and other reasons discussed below, it is more preferable to upgrade the US 74/76 corridor to interstate standards and connect it to the Wilmington I-140 loop. Similarly, US 17 should be upgraded and connected with the I-140 loop. In meetings with Nature Conservancy staff, NC DOT representatives have indeed identified this as a viable alternative to the Green Swamp State Route 211 corridor.

Concern in Expanding State Route 211
Improving State Route 211, or new construction on a corridor paralleling this two lane rural highway to accommodate Interstate 74 will result in insurmountable obstacles to preserving the Green Swamp and Juniper Creek. An interstate will require extensive filling of these wetlands that The Nature Conservancy has worked to protect since 1977. An interstate will fragment the diverse wildlife habitat. Increased traffic along that corridor will pose increased dangers to both wildlife and vehicles due to unavoidable animal strikes as they move between the Green Swamp and Juniper Creek. Further, the use of prescribed fire, which is essential to the proper management of the natural systems in this area, will be severely curtailed, or even eliminated, due to smoke visibility issues that would not be compatible with increased vehicle traffic expected with an interstate. Without using fire on these preserves, the understory will be overtaken by hardwood shrubs, habitat for rare species will be curtailed and many native plant species will be shaded out. This will have impacts on endangered species such as the red-cockaded woodpecker. Finally, a new interstate in this area would encourage additional commercial and residential development in close proximity to the preserve, compounding these natural resource management conflicts.

Linking Interstate 74 to Wilmington Makes Economic Sense
The Nature Conservancy's concerns about a highway going through two of North Carolina's prime preserves are evident. An equally compelling argument is that I-74 should connect with the Wilmington I-140 loop to serve Wilmington's transportation and economic needs. The International Port needs highway connections to Charlotte. Columbus County should have a dedicated interstate to Wilmington. According to NCDOT studies, upgrading the current US 74/76 corridor as well as US 17 would cost far less than routing Interstate 74 through the Green Swamp and Juniper Creek preserves—with far fewer environmental impacts. And Brunswick County beaches will be better served by improving US 17.

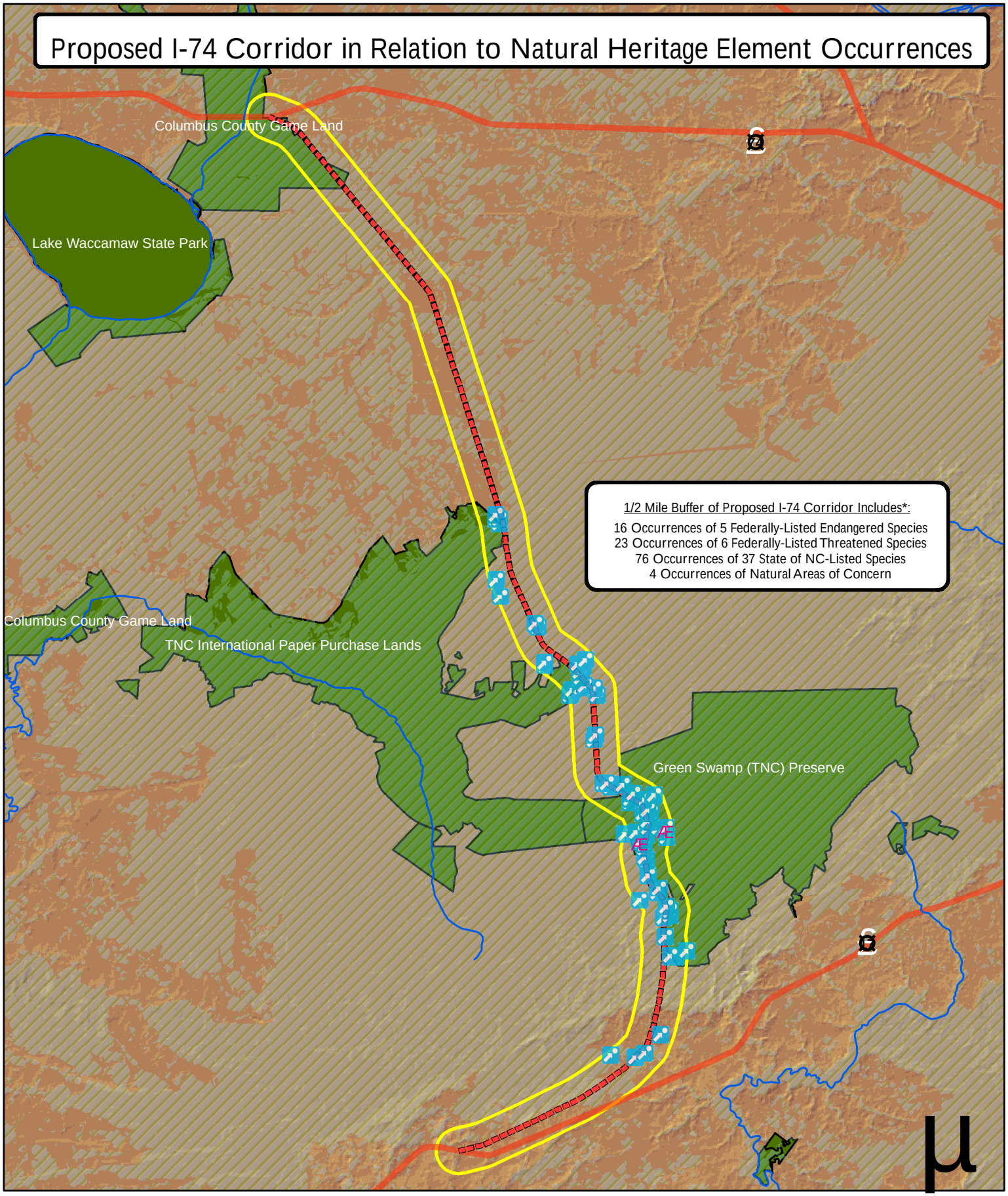
With limited transportation funds projected in the coming years, we need to prioritize projects where there is true need. The CTP process is intended to be an opportunity to provide a meaningful examination of the actual transportation needs of Brunswick County rather than merely "rubberstamping" past assessments about the appropriate location of future interstate capacity. In fact, according to the new NCDOT procedure for revisions to the Strategic Highway Plan, the Rural Planning Organization (RPO) is the appropriate entity to request modification. By avoiding the State Route 211 corridor, and instead focusing on improving US 74/76 and US 17 into the Wilmington I-140 loop, Brunswick County's natural areas will be preserved and economic development will be encouraged.

Sincerely,



Dan Ryan
Southeast Coastal Plain Project Director
The Nature Conservancy

Cc: Earlene Thomas, P.E., NC DOT Transportation Planning Branch
Don Eggert, AICP. Cape Fear RPO
Leslie Bell, AICP. Brunswick County Planning Director
David Farren, Esq. Southern Environmental Law Center



***Species Data Provided By The North Carolina Department of Environment and Natural Resources, Division of Parks and Recreation, Natural Heritage Program**

Proposed I-74 Corridor
1/2 Mile Buffer of Proposed Interstate
Red Cockaded Woodpecker Occurrences*
Other Natural Heritage Element Occurences*
Managed Lands
Major Hydrography
Wetlands
Miles
0 1 2 4