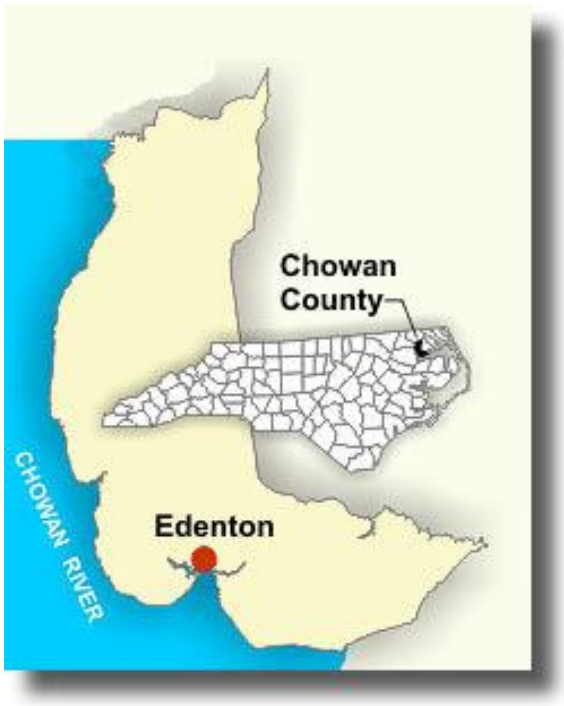
2015 Chowan County
Comprehensive Transportation Plan



2015 Chowan County
Comprehensive Transportation Plan

Prepared by: Vernia R. Wilson, Project Engineer
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Transportation Planning Branch
N.C. Department of Transportation

In Cooperation with: Chowan County
Town of Edenton
Albemarle Rural Planning Organization

Published: March 2016

Wayne Davis, PhD., PE
Triad Planning Group Supervisor

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Executive Summary

In January of 2014, the Transportation Planning Branch of the North Carolina Department of Transportation and Chowan County initiated a study to cooperatively develop the Chowan County Comprehensive Transportation Plan (CTP), which includes the town of Edenton. This is a long range multi-modal transportation plan that covers transportation needs through 2040. Modes of transportation evaluated as part of this plan include: highway, public transportation and rail, bicycle, and pedestrian. This plan does not cover routine maintenance or minor operations issues. Refer to Appendix A for contact information on these types of issues.

Findings of this CTP study were based on an analysis of the transportation system, environmental screening and public input, which are detailed in Chapter 1. Figure 1 shows the CTP maps, which were mutually adopted by NCDOT in 2016. 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 Chowan County CTP. The major recommendations for improvements are listed below. More detailed information about these and other recommendations can be found in Chapter 2.

HIGHWAY

US 17: Upgrade to interstate standards from Bertie County to Perquimans County.

NC94 Extension/Western Connector: Construct a two-lane minor thoroughfare on new location from US 17 Business/NC 32 (Virginia Road) to Dr. Martin Luther King Junior Ave (SR 1234)

Luke Street Extension/Eastern Connector: Construct a two lane minor thoroughfare with 12 foot lanes on new location, extending Hobbs Lane (SR 1103) to US 17 Business (N Broad Street).

PUBLIC TRANSPORTATION AND RAIL

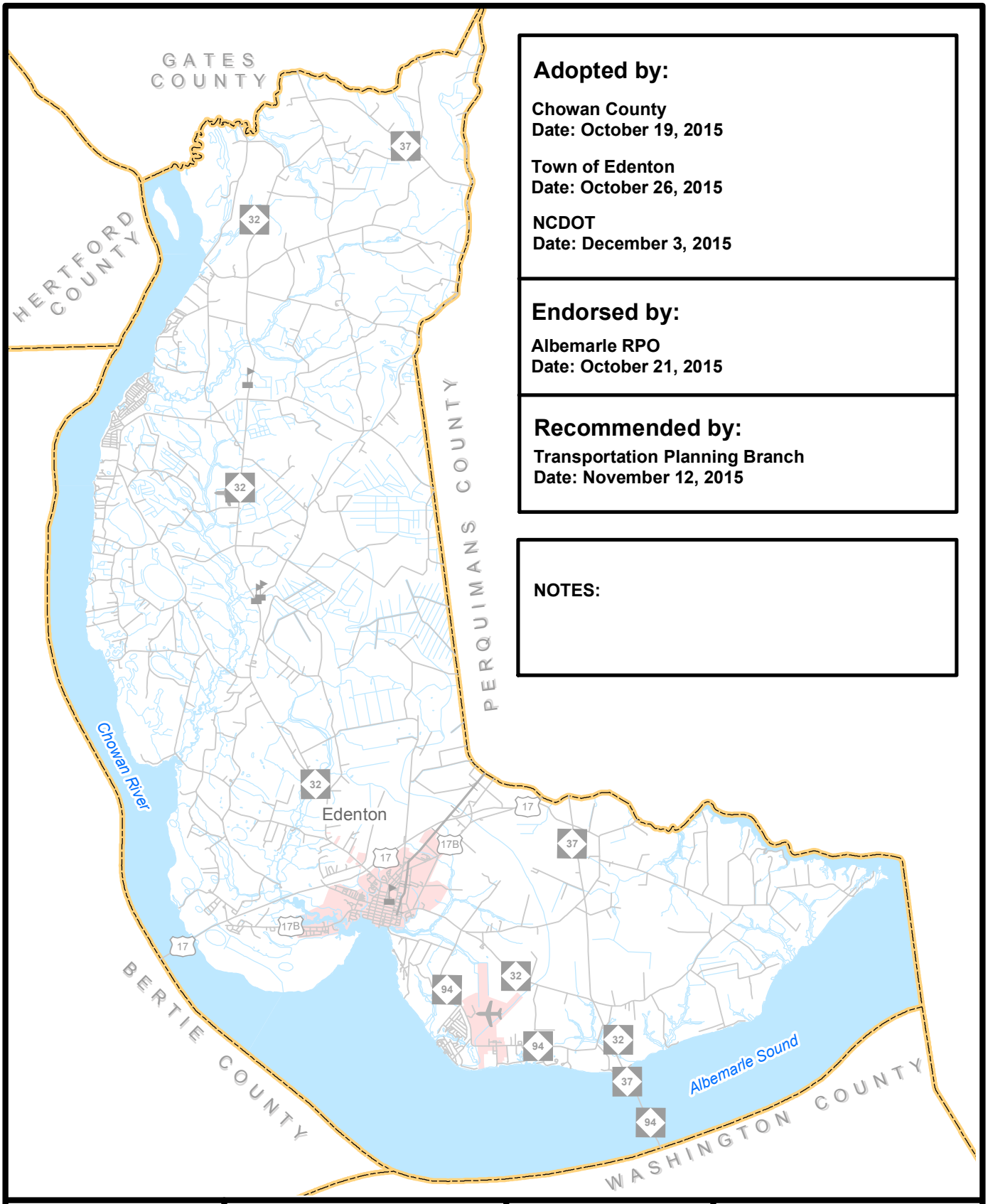
Raleigh to Norfolk, VA Intercity Bus Route (Greyhound Lines): Intercity bus route from Raleigh to Norfolk VA, via Elizabeth City along US 64, US 301, US 264, and US 17 with stops at Raleigh, Rocky Mount, Wilson, Greenville, Washington, Williamston, Edenton and Elizabeth City.

BICYCLE

There is one state designated bicycle route in the study area. Additionally, the Albemarle Rural Planning Organization and the local stakeholders identified some on-road bicycle facilities that need improving. These routes are featured on sheet 4 of Figure 1.

PEDESTRIAN

The recommendations for pedestrian facilities throughout the planning area were identified during the development of this CTP. These features are shown on the Pedestrian Map, Sheet 5 of Figure 1.



Adopted by:

Chowan County
Date: October 19, 2015

Town of Edenton
Date: October 26, 2015

NCDOT
Date: December 3, 2015

Endorsed by:

Albemarle RPO
Date: October 21, 2015

Recommended by:

Transportation Planning Branch
Date: November 12, 2015

NOTES:

Legend

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

Miles
0 0.5 1 2 3

N W E S

Figure 1

Sheet 1 of 5

Base map date: June 17, 2014

Refer to CTP document for more details

Chowan County

North Carolina

Comprehensive Transportation Plan

Plan date: August 12, 2015

GATES COUNTY

HERTFORD COUNTY

PERQUIMANS COUNTY

BERTIE COUNTY

WASHINGTON COUNTY

Chowan River

Albemarle Sound

Edenton

Inset A

Inset B

N. Broad St

Eastern Connector

Hobbs Ln (SR 1103)

Yeopim Rd (SR 1102)

Dillard's Mill Rd (SR 1226)

Happy Home Rd (SR 1303)

County Line Rd (SR 1002)

Center Hill Rd (SR 1002)

Rocky Hock Rd (SR 1222)

Center Hill Rd (SR 1312)

Macedonia Rd (SR 1200)

Paradise Rd (SR 1319)

17

17B

32

37

94

0 0.25 0.5 1 Miles

0 0.5 1 2 3 Miles

N

W E

S

Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

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

Figure 1

Sheet 2 of 5

Base map date: June 17, 2014

Refer to CTP document for more details

Highway Map

CHOWAN COUNTY 1668 N.C.

Chowan County

North Carolina

Comprehensive Transportation Plan

Plan date: August 12, 2015

Edenton

Albemarle Sound

Mexico Rd (SR 1200)

Dr Martin Luther King Jr Ave (SR 1234)

Reginald and Mary Ave

Western Connector

Luke St

N Granville St (SR 1127)

S Broad St

N Broad St

Paradise Rd (SR 1319)

Coke Ave (SR 1132)

N Oakum St (SR 1319)

E Freemason St

E Albemarle St (SR 1234)

E Church St

W Queen St (SR 1204)

Moseley St

Eden St

Water St

17

32

17B

Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

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

Miles
0 0.1 0.2 0.4

N W E S

Figure 1

Sheet 2A of 5

Base map date: June 17, 2014

Refer to CTP document for more details

Highway Map, Inset B

Chowan County

North Carolina

Comprehensive Transportation Plan

Plan date: August 12, 2015

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

- Existing Grade Separation
- Proposed Grade Separation

Multimodal Connector
- Existing
- Recommended

Park and Ride Lot
- Existing
- Recommended

Miles
0 0.5 1 2 3

N W E S

Figure 1

Sheet 3 of 5

Base map date: June 17, 2014

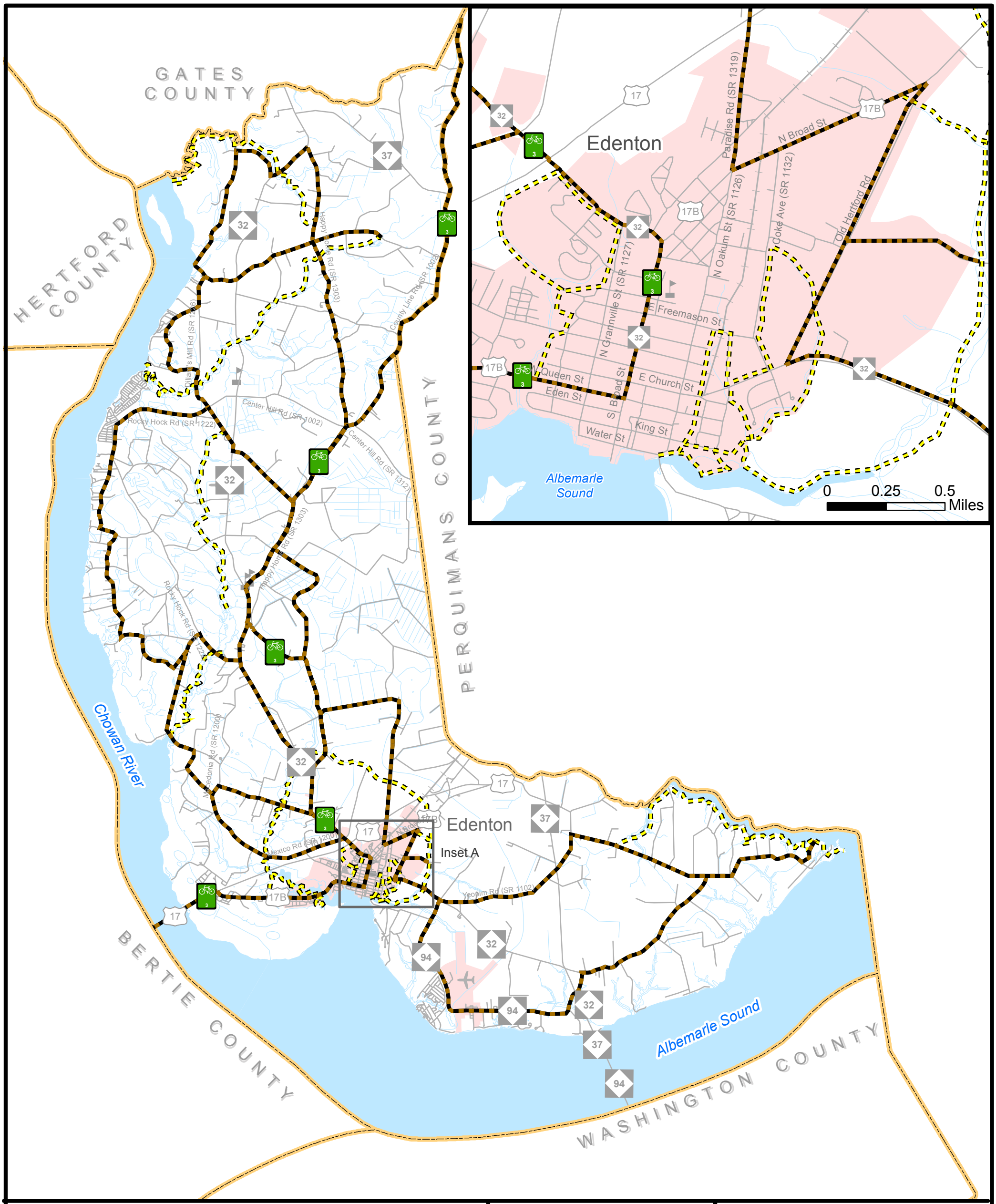
Refer to CTP document for more details

Public Transportation and Rail Map

Chowan County
North Carolina

Comprehensive Transportation Plan

Plan date: August 12, 2015



On-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

Figure 1

Sheet 4 of 5

Base map date: June 17, 2014

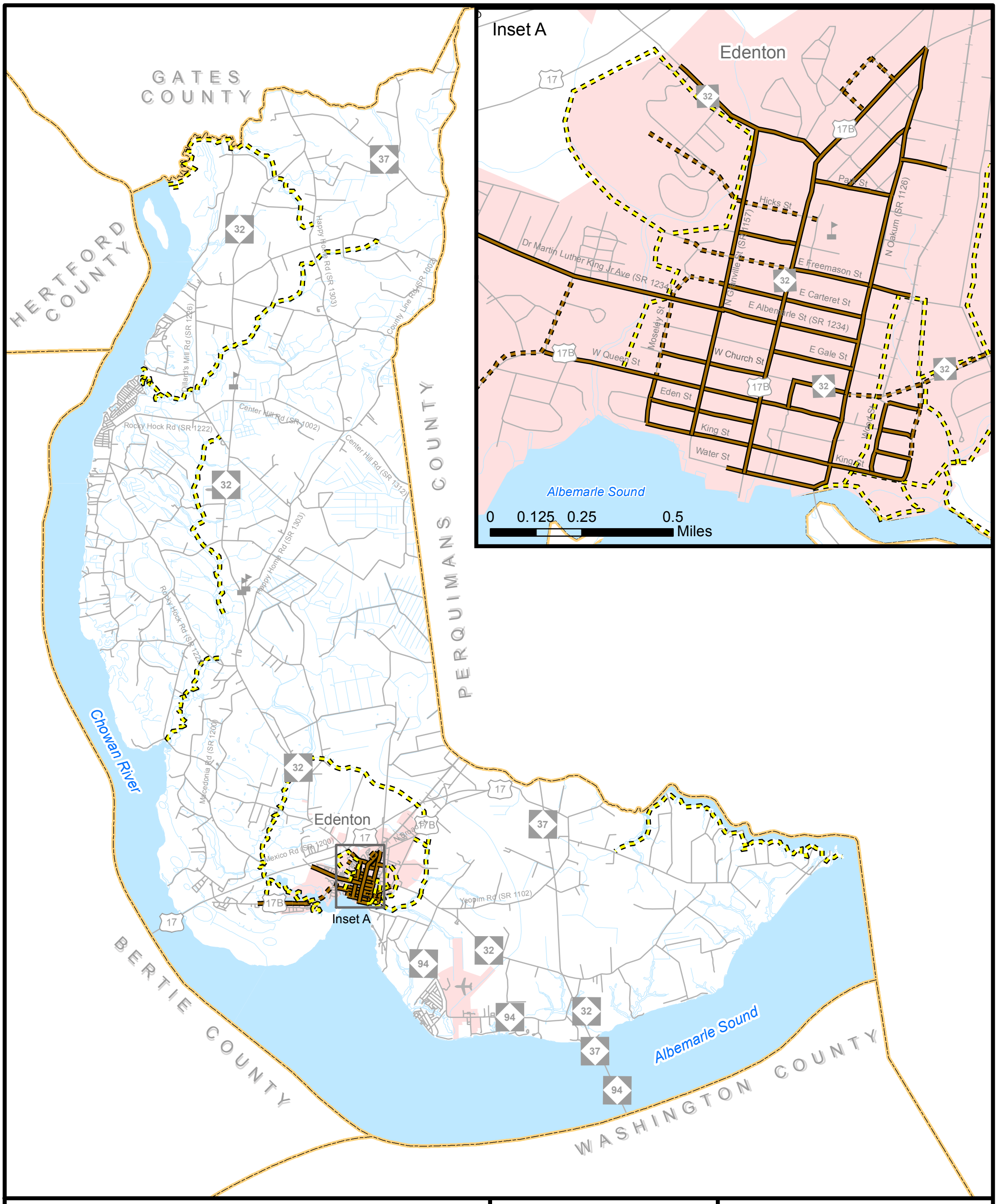
Refer to CTP document for more details

Bicycle Map

Chowan County
North Carolina

Comprehensive Transportation Plan

Plan date: August 12, 2015



Sidewalks
- Existing
- Needs Improvement
- Recommended

Off-Road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

0 0.5 1 2 3 Miles

N W E S

Figure 1

Sheet 5 of 5

Base map date: June 17, 2014

Refer to CTP document for more details

Pedestrian Map

Chowan County
North Carolina

Comprehensive Transportation Plan
Plan date: August 12, 2015

1. Analysis of the Existing and Future Transportation System

A Comprehensive Transportation Plan (CTP) is developed to ensure that the transportation system will meet the needs of the 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.

1.1 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 Transportation Corridors (STC)[1] adopted by the Board of Transportation on March 4, 2015.
The STC identify a network of critical multimodal transportation corridors considered the backbone of the state's transportation system. These 25 corridors move most of our

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

freight and people, link critical centers of economic activity to international air and sea ports, and support interstate commerce. They must operate well to help North Carolina attract new businesses, grow jobs and catalyze economic development.

The primary purpose of the STC is to provide North Carolina with a network of high-priority, multimodal transportation corridors and facilities that connect statewide and regional activity centers to enhance economic development, promote highly-reliable, efficient mobility and connectivity, and support good decision-making. The primary goal to support this purpose is to create a greater consensus towards the development of a genuine vision for each corridor that establishes the statewide or regional importance of facilities and the need for maintaining high capacity and travel speed. During the development of CTPs, the STC network should be cross-referenced to ensure plan consistency. Incorporating the statewide and regional mobility goals set forth in the STC network should be done in a manner that fits with the character and vision for the community or county. If this cannot be achieved through the use of existing facilities, an alternative solution should be sought.

Two analysis methods were used: one for the non-modeled/rural areas and another for the more urbanized area around Edenton. For the non-modeled/rural portion of Chowan County, travel demand was projected from 2012 to 2040 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1990 to 2012. For the town of Edenton and the surrounding area, travel demand was projected from 2012 to 2040 using a travel demand model. Travel demand models are developed to replicate travel patterns on the existing transportation system as well as to estimate travel patterns for 2012. In addition, local land use plans and growth expectations were used to develop future growth rates and patterns. The established future growth rates were endorsed by the Chowan County Commissioners August 18, 2014 and Edenton Town Council August 12, 2014. Refer to Appendix G for more detailed information on growth expectations and the socio-economic data forecasting methodology.

Existing and future travel demand is compared to existing roadway capacities. Capacity deficiencies occur when the traffic volume of a roadway exceeds the roadway's capacity. Roadways are considered near capacity when the traffic volume is at least eighty percent of the capacity. Refer to Figures 2 and 3 for existing and future capacity deficiencies. The 2040 traffic volume in Figure 3 is an estimate of the traffic volume in 2040 with only existing plus committed projects assumed to be in place, where committed is defined as projects programmed for construction in the 2016 – 2025 Transportation Improvement Program[2] (TIP).

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;

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

- 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 Transportation Planning Branch's *LOS D Standards for Systems Level Planning*. 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 Assessment

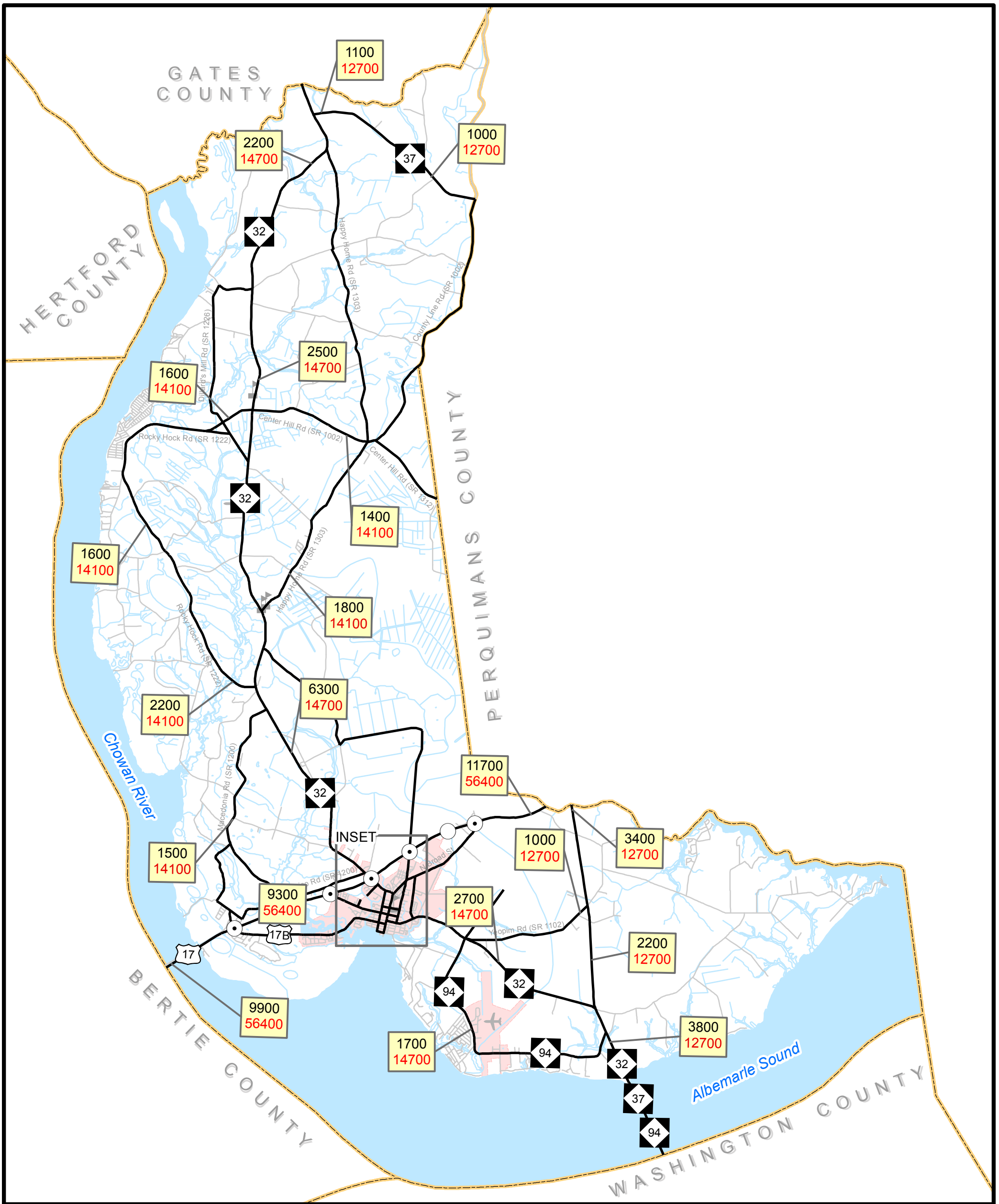
Traffic crashes are often used as an indicator for locating congestion and roadway problems. Crash patterns obtained from an analysis of crash data can lead to the identification of improvements that will reduce the number of crashes. The Traffic Safety Unit of NCDOT's Transportation Mobility and Safety Division identifies high frequency crashes at intersections and along roadway sections during a five year period. The high frequency crash locations examined during the development of the Chowan County CTP occurred between January 1, 2007 and December 31, 2011. During this period, a total of thirty- one intersections and thirty-seven roadway sections were identified as having a high frequency of crashes as illustrated in Figure 4. Contact information for the Transportation Mobility and Safety Division can be found in Appendix A.

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

Bridge Deficiency Assessment

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

The NCDOT Structures Management Unit inspects all bridges in North Carolina at least once every two years. Bridges having the highest priority are replaced as federal and state funds become available. Eight deficient bridges were identified on roads evaluated as part of the CTP and are illustrated in Figure 5. Of these, three are scheduled for replacement in the 2016 – 2025 TIP. Additionally, two others occur along roadways recommended for improvement in the CTP. As deficient bridges are replaced, every consideration should be given to proposed CTP recommendation and cross section associated with the recommendation. Table 3 in Appendix F gives a listing of the deficient bridges identified in the CTP and the ID number associated with CTP project proposal. Refer to Appendix F for more detailed bridge deficiency information.



Legend

- Study Roads
- Schools
- Aiports
- Roads
- County Boundary
- Water Bodies
- Rivers and Streams
- Municipal Boundary
- Near Capacity
- Over Capacity
- #### / #### 2014 Volumes (AADT) / 2014 Capacity

Miles
0 0.5 1 2 3

N W E S

Sheet 1 of 2

Base map date: June 17, 2014

Figure 2
2014 VOLUMES AND CAPACITY DEFICIENCIES

Chowan County
North Carolina
Comprehensive Transportation Plan

1300
12700

9600
16000

17

1500
12700

9900
56400

9500
29000

32

7800
12700

17

Paradise Rd (SR 1319)

2400
14100

8400
12700

N Broad St

14600
24300

Mexico Rd (SR 1200)

9000
56400

17

Luke St

17B

3900
12700

32

3600
12700

N Granville St (SR 1127)

S Broad St

7500
12700

3000
12700

Reginald and Mary Ave

Coke Ave (SR 1132)

17B

Dr Martin Luther King Jr Ave (SR 1234)

2000
14100

E Freemason St

N Oakum St (SR 1319)

Moseley St

E Albemarle St
(SR 1234)

32

W Queen St (SR 1204)

17B

2700
13300

E Church St

E Church St

32

Eden St

17B

2000
12700

4600
12700

Water St

1000
12700

Albemarle Sound

Legend

- Study Roads
- Schools
- Aiports
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- Near Capacity
- Over Capacity
- ####
  ####
  2014 Volumes (AADT)
  2014 Capacity

0 0.05 0.1 0.2 0.3 Miles

N
W E
S

Sheet 2 of 2

Base map date: June 17, 2014

Figure 2 - Inset

2014 VOLUMES AND CAPACITY DEFICIENCIES

CHOWAN COUNTY 1668 N.C.

Chowan County

North Carolina

Comprehensive Transportation Plan

GATES COUNTY

HERTFORD COUNTY

PERQUIMANS COUNTY

BERTIE COUNTY

WASHINGTON COUNTY

1300
12700

2700
14700

500
12700

37

32

Happy Home Rd (SR 1303)

County Line Rd (SR 1002)

Hillard's Mill Rd (SR 1226)

3000
14700

2300
14100

Rocky Hock Rd (SR 1222)

Center Hill Rd (SR 1002)

Center Hill Rd (SR 1312)

1600
14100

1700
14100

2100
14100

3100
14100

7200
14700

Chowan River

Macedonia Rd (SR 1200)

18100
56400

INSET

1000
14100

14000
56400

3800
14700

2000
12700

3400
12700

Yeopim Rd (SR 1102)

3000
12700

17B

17

94

13900
56400

2200
14700

3700
12700

Albemarle Sound

Legend

- Study Roads
- Roads
- Schools
- Aiports
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- County Boundary
- Near Capacity
- Over Capacity
- #### / #### 2040 Volumes (AADT) / 2014 Capacity

0 0.5 1 2 3 Miles

N W E S

Sheet 1 of 2

Base map date: June 17, 2014

Figure 3
2040 VOLUMES AND CAPACITY DEFICIENCIES

Chowan County
North Carolina
Comprehensive Transportation Plan

2200
12700

11000
16000

17

1800
12700

13900
56400

10100
29000

32

17

Paradise Rd (SR 1319)

5600
12700

3400
14100

9400
12700

N Broad St

17400
24300

Mexico Rd (SR 1200)

14100
56400

17

Luke St

17B

32

5000
12700

4500
12700

Reginald and Mary Ave

N Granville St (SR 1127)

S Broad St

4000
12700

3700
12700

Coke Ave (SR 1132)

Dr Martin Luther King Jr Ave (SR 1234)

3600
14100

17B

E Freemason St

N Oakum St (SR 1319)

E Albemarle St
(SR 1234)

Moseley St

32

W Queen St (SR 1204)

17B

E Church St

E Church St

32

3300
13300

Eden St

17B

1800
12700

5000
12700

Water St

1500
12700

Albemarle Sound

Legend

- Study Roads
- Roads
- Schools
- Aiports
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- Near Capacity
- Over Capacity
- #### / #### 2040 Volumes (AADT) / 2014 Capacity

0 0.05 0.1 0.2 0.3 Miles

N W E S

Sheet 2 of 2

Base map date: June 17, 2014

Figure 3 - Inset

2040 VOLUMES AND CAPACITY DEFICIENCIES

CHOWAN COUNTY 1668 N.C.

Chowan County

North Carolina

Comprehensive Transportation Plan

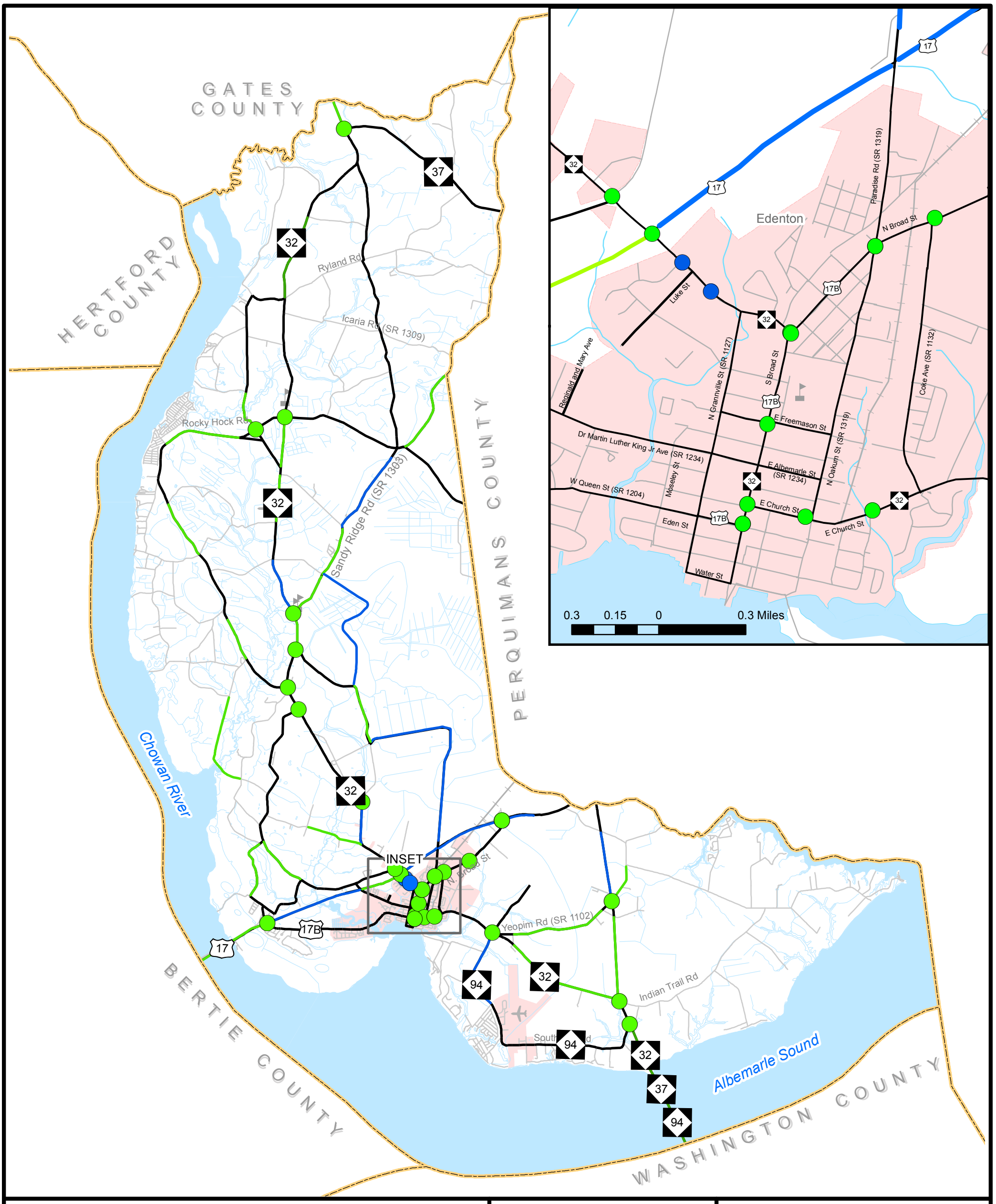


Figure 4

HIGH FREQUENCY CRASH LOCATIONS

January 1, 2007 to December 31, 2011

Chowan County
North Carolina
Comprehensive Transportation Plan

GATES COUNTY
HERTFORD COUNTY
PERQUIMANS COUNTY
BERTIE COUNTY
WASHINGTON COUNTY
Chowan River
Albemarle Sound
Dillard's Mill Rd (SR 1226)
Happy Home Rd (SR 1303)
County Line Rd (SR 1002)
Center Hill Rd (SR 1002)
Rocky Hock Rd (SR 1222)
Center Hill Rd (SR 1312)
Macedonia Rd (SR 1200)
Mexico Rd (SR 1200)
Yeopim Rd (SR 1102)
24
21
20
32
37
38
27
26
28
12
17
17B
94

Legend

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

Miles
0 0.5 1 2 3

N W E S

Base map date: June 17, 2014

Figure 5
Deficient Bridges

CHOWAN COUNTY 1668 N.C.

Chowan County
North Carolina
Comprehensive Transportation Plan

Public Transportation and Rail

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

Public Transportation

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

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

Currently there are no existing fixed public transportation routes for the planning area. However, the Inter-County Public Transport Authority (ICPTA), a division of Albemarle Regional Health Services, provides on demand transportation service within a five county service area that includes Chowan County. ICPTA services are intended to transport the general public to nutrition sites, medical appointments and other locations in order to access services or attend activities related to daily living, while promoting improved quality of life.

An inventory of planned fixed public transportation routes for the planning area is presented on Sheet 3 of Figure 1. 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 3,245 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 Amtrak which currently operates six passenger services daily in or through North Carolina serving 16 cities across the state. Five of the services are interstate (Crescent, Palmetto, Silver Meteor, Silver Star, and Carolinian passenger trains) and one service (Piedmont passenger train) operates exclusively within North Carolina. In addition to the six passenger services mentioned, Amtrak also operates its Auto Train service which passes through North Carolina but does not make any stops. Amtrak ridership demand has been on a rise in the state. In 2010 ridership was 840,000 and increased to 975,645 passengers in 2013.

The North Carolina Department of Transportation sponsors two passenger trains; the Carolinian and Piedmont. The Carolinian runs between Charlotte and New York City, while the Piedmont train carries passengers from Raleigh to Charlotte and back every day. However, no passenger trains operate over the rail line from High Point that dead ends at Asheboro or over the rail line that runs from Gulf, NC to Greensboro. Combined, the Carolinian and Piedmont carry more than 300,000 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 17 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. The Chesapeake & Albemarle Railroad (CA) is a short-line railroad operated by the North Carolina and Virginia Railroad (NCVA.) The CA offers interchanges with Chessie and Seaboard System Transportation (CSXT), Norfolk Southern (NS) and Norfolk and Portsmouth Belt Line Railroad (NPBL). The more than 6,000 cars per year moving over the CA's network reflects the importance of this railroad to the metropolitan area between Chesapeake, VA, and Edenton, NC.

All recommendations 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.

Waterways

Water transportation is an integral part of the transportation system in the United States. The U.S. waterway system is comprised of approximately 12,000 miles of navigable waterway, containing 230 lock sites that manage 275 lock stations. Waterways transport more than 60% of the nation’s grain exports, about 22% of domestic petroleum and petroleum products, and 20% of the coal used in electricity generation. Barges are ideal for hauling bulk commodities and moving over-size equipment.

With a mid-Atlantic location approximately halfway between Boston and Miami, Chowan County is well positioned for manufacturing and distribution enterprises serving Eastern U.S. markets. Three deep-water ports, in Wilmington and Morehead City, North Carolina and Norfolk, Virginia, serve the Chowan County area. These ports are capable of accommodating large ocean container vessels. One of the main transportation services, in Northeastern North Carolina, involves moving freight along the Albemarle Sound. The Albemarle Sound can accommodate cargo barge traffic and transport services and is protected from the Atlantic Ocean by barrier islands known as the Outer Banks. It is a vital link in the Intercostal waterway as it connects with the Chesapeake Bay via a canal system. Barge traffic can travel this route to the Atlantic Ocean.

Chowan County is located between three waterways; the Perquimans River to the east, the Chowan River to the west, and Edenton Bay to the south. These waterways provide transportation routes, economic development, and scenic views for both citizens and visitors.

Bicycles & Pedestrians

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

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

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

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

Inventories of existing and planned bicycle and pedestrian facilities for the planning area are presented on Sheets 4 and 5 of Figure 1. The 2008 Chowan County/Town of Edenton North Carolina Core Land Use Plan, the 2003 Chowan County and Edenton Greenways and Open Space Plan and the 2013 North Carolina Statewide Pedestrian and Bicycle Plan (WalkBikeNC)[3] were utilized in the development of these elements of the CTP. NC Bicycle Route 3, Ports of Call, runs through central Chowan County and Edenton from

[3] *For more information on WalkBikeNC, go to: http://www.ncdot.gov/bikeped/planning/walkbikenc/.*

Bertie County to Gates County. All recommendations for bicycle and pedestrian facilities were coordinated with the local governments and the NCDOT Division of Bicycle and Pedestrian Transportation. Refer to Appendix A for contact information 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 2008 Chowan County/Town of Edenton North Carolina Core Land Use Plan[4] (refer to Appendix G) was used to meet this requirement.

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.

The Future Land Use Map for the county encompasses all of Chowan County outside of the town of Edenton corporate limits and extraterritorial planning jurisdiction, which is

[4] *To view this plan, go to*: http://www.chowancounty-nc.gov.

about 91.6 percent of the total county land area. Areas classified as Residential Agriculture and Conservation/Open Space are not projected to accommodate significant growth and development. Growth and development is expected to occur in the areas classified as follows:

- *Medium/High Density Residential:* Areas are located on the periphery of the Edenton urban area, the subdivisions located east of town near the airport, Cape Colony and Country Club, the Arrowhead Beach area located along the Chowan River in the northwest portion of the county and the New Urban Waterfront Area.
- *Commercial:* Areas are generally within the Edenton's planning jurisdiction including a small commercial area located southeast of the airport.
- *Industrial:* Properties are concentrated east of the town of Edenton near the airport.

Edenton's Future Land Use Map encompasses the town's corporate limits and extraterritorial planning and zoning jurisdiction. Growth and land development is anticipated to occur in all future land use categories except for the Conservation/Open Space classification. Areas with anticipated growth and development include:

- Residential
  - *Low Density Residential:* Located primarily on the fringe of the core Edenton area, particularly northeast, northwest and southwest of the town's center.
  - *Medium/High Density Residential:* Located immediately surrounding the Edenton downtown area. Additional areas are along the US 17 Business and NC 32 corridors as they pass through the town.
- Commercial
  - *General Commercial:* Located primarily at the intersection of US 17 and NC 32 West and at the northern intersection of Broad Street and NC 32.
  - *Downtown Mixed Use:* Located in and immediately surrounding the Edenton Central Business District and the downtown waterfront area.
- *Public and Institutional:* Scattered throughout the town's planning jurisdiction with the largest individual properties located near the hospital.
- *Industrial:* Primarily concentrated north of town between Broad Street and US 17 and in the airport area on Soundside Road.

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

1.2 Consideration of Natural and Human Environment

Environmental features are a key consideration in the transportation planning process. Section 102 of the National Environmental Policy Act[5] (NEPA) requires consideration of impacts on wetlands, wildlife, water quality, historic properties, and public lands. While a full NEPA evaluation was not conducted as part of the CTP, every effort was made to

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

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

A full listing of environmental features that are typically examined as a part of a CTP study is shown in the following tables. Environmental features occurring within Chowan County are shown in Figure 6 and are shown in bold text in Table 1.

Table 1 – Environmental Features

- **24k Hydro Lines**
- **303D Streams**
- **Airport Boundaries**
- **Anadromous Fish Spawning Areas**
- **APNEP - Submerged Aquatic Vegetation**
- **Beach and Waterfront Access**
- **Benthic Habitat**
- **Bicycle Routes**
- **Boating Access**
- **Churches and Cemeteries**
- Colleges and Universities (Points)
- **Conservation Tax Credit Properties**
- Critical Habitat for Threatened and Endangered Species
- **Emergency Operation Centers**
- Fish Nursery Areas
- **Hazard Substance Disposal Sites (points & polygons)**
- **Hazardous Waste Facilities**
- High Quality Waters and Outstanding Resource Water Management
- **Historic Resources – National Register and Determined Eligible (points and polygons)**
- **Hospitals**
- **Hydrography - 1:24,000-scale (polygons)**
- **Landscape Habitat Indicator Guilds (LHIGs)**
- **Managed Areas**
- **National Wetlands Inventory (polygons)**
- **Natural Heritage Element Occurrences**
- **NC-CREWS: N.C. Coastal Region Evaluation of Wetland Significance**
- **NCDOT Maintained Mitigation Sites**
- **Railroads (1:24,000)**
- **Recreation Projects - Land and Water Conservation Fund**
- Regional Trails
- **Sanitary Sewer Systems - Treatment Plants**
- **Schools (Public & Non-Public)**
- Significant Natural Heritage Areas

Table 1 – Environmental Features (Cont.)

- State Natural and Scenic Rivers
- State Parks
- Target Local Watersheds - EEP
- Trout Waters WRC (arcs & polygons)
- Unique Wetlands

- Trout Streams (DWQ)
- **Water Distribution Systems – Tanks & Treatment Plants**
- Water Supply Watersheds

Archaeological sites were also considered but are not mapped due to restrictions associated with the sensitivity of the data.

1.3 Public Involvement

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

A meeting was held with the Chowan County Board of Commissioners in January 2014 to formally initiate the study, provide an overview of the transportation planning process, and to gather input on area transportation needs.

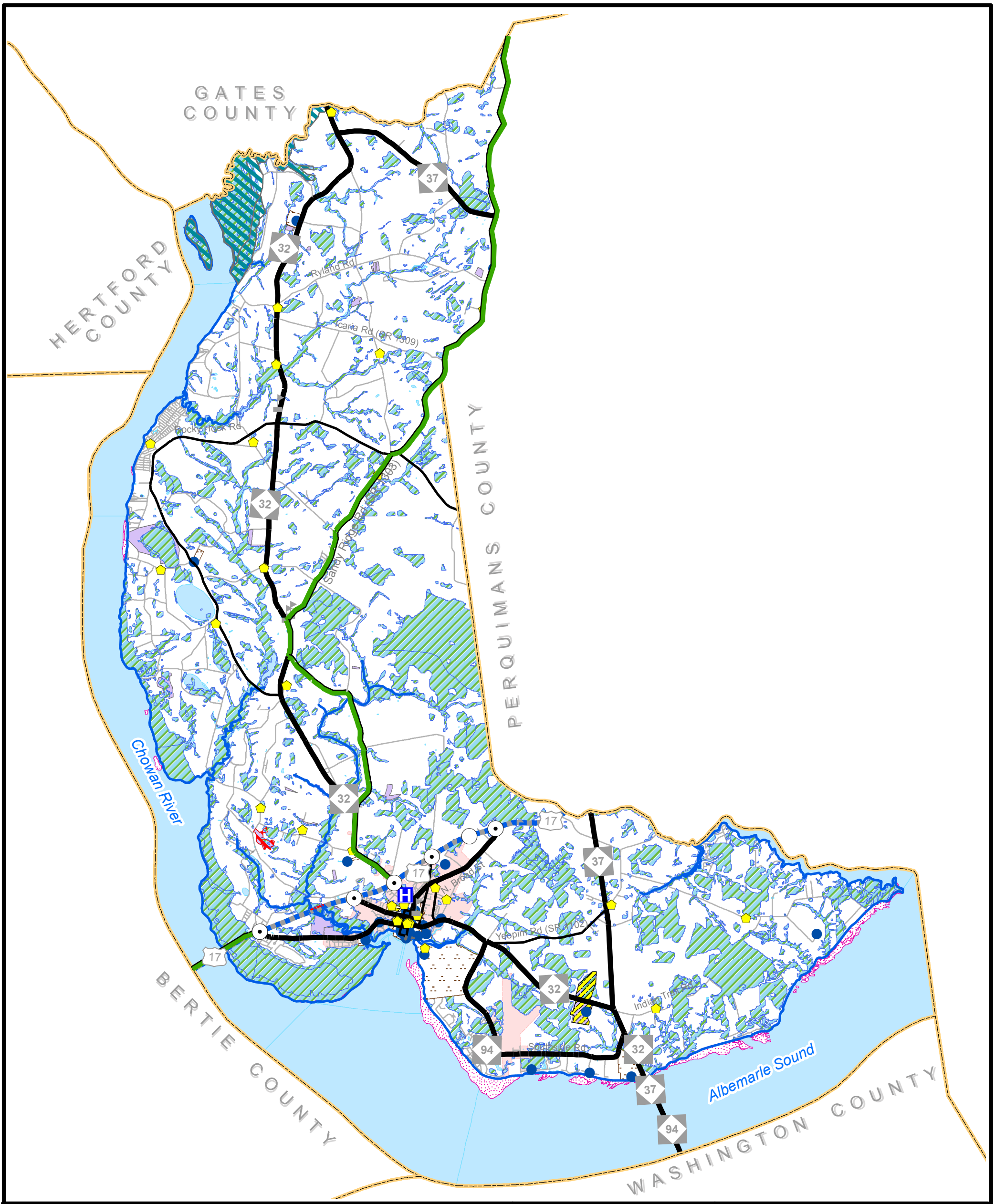
Throughout the course of the study, the NCDOT Transportation Planning Branch cooperatively worked with the Chowan County CTP Steering Committee which included representatives from the town of Edenton, Chowan County, the Albemarle Rural Planning Organization (RPO) and others. The committee provided information on current local plans, developed transportation vision and goals, discussed population and employment projections, and developed proposed CTP recommendations. Refer to Appendix H for detailed information on the vision statement, the goals and objectives survey and a listing of committee members.

The public involvement process included holding two public drop-in sessions in Chowan County to present the proposed CTP to the public and solicit comments. The first meeting was held on December 8, 2014 at the Edenton Town Hall; the second meeting was held on September 28, 2015. Each session was publicized in the local newspaper and was held from 4pm to 7pm. A few comments were submitted during the sessions which were incorporated into the plan.

A resolution for adoption was presented to the county commissioners during the Chowan County Commissioners meeting on October 19, 2015 at 6pm. The purpose of this meeting was to discuss the plan recommendations. The CTP was adopted during this meeting.

A resolution for adoption was also presented to the town council during the Edenton Town Council meeting on October 26, 2015 at 6pm. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting.

The Albemarle RPO endorsed the CTP on October 21, 2015. The North Carolina Department of Transportation mutually adopted the Chowan County CTP on December 3, 2015.



Legend

- Historic Resources Sites
- Churches and Cemetery
- Schools
- Hospitals
- 24K Hydro Lines
- Anadromous Fish Spawning Areas
- Bicycle Routes
- NCDOT Maintained Mitigation Sites
- Recreation Projects Land & Water Conservation Fund
- Landscape Habitat Indicator Guilds
- Submerged Aquatic Vegetation
- Conservation Tax Credit Property
- Historic Resources Areas
- NC Crews
- Managed Areas
- Hydrography - 1:24,000-scale
- Municipal Boundary
- County Boundary

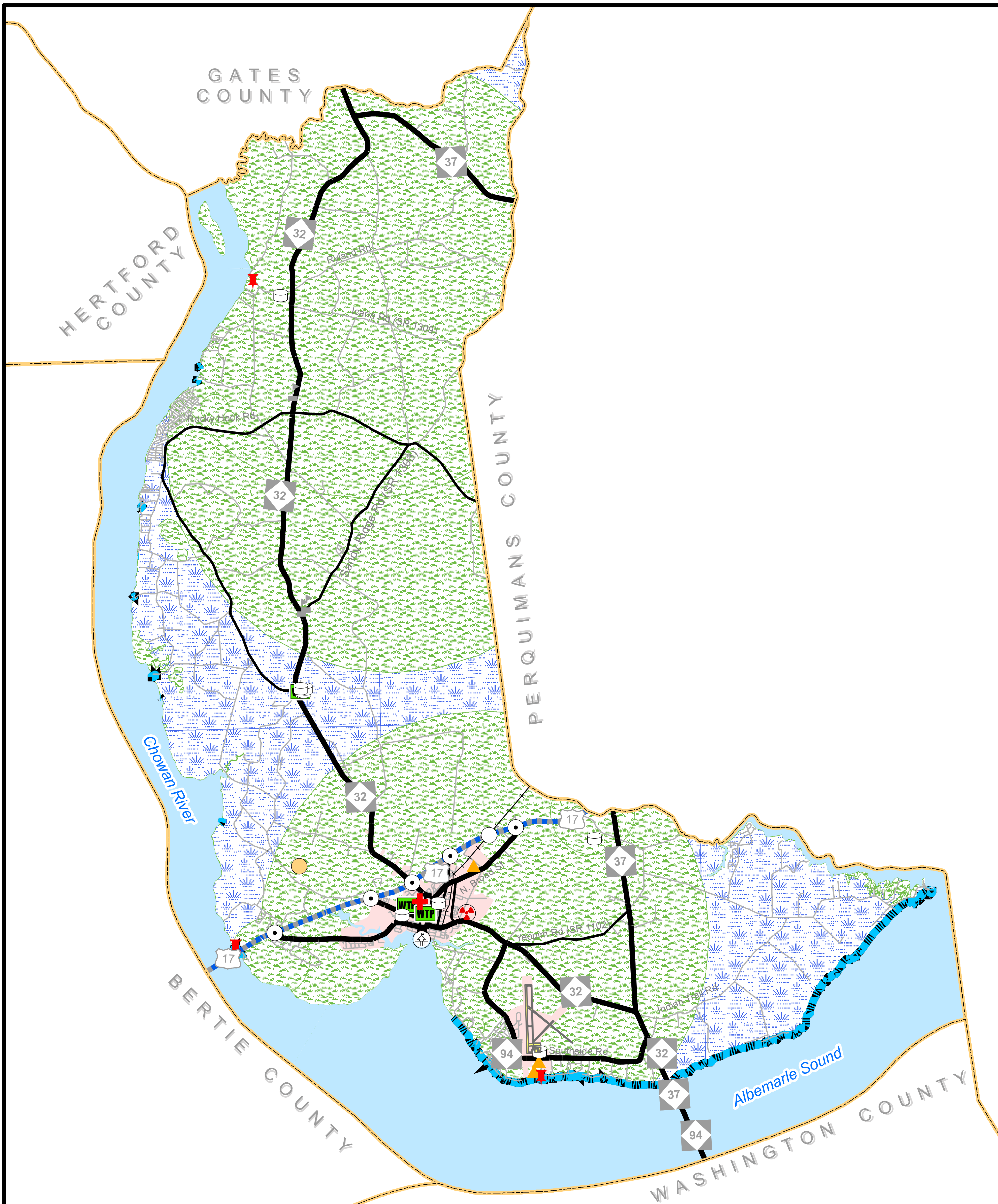
0 0.5 1 2 3 Miles

N W E S

Sheet 1 of 2

Figure 6
Environmental Features Map

Chowan County
North Carolina
Comprehensive Transportation Plan



Legend

Emergency Operation Centers	Railroads
Boating Access	303D Streams
Water Distribution Tanks	Water Bodies
Sanitary Sewer Systems - Treatment Plants	Municipal Boundary
Beach and Waterfront Access	Natural Heritage Element Occurrences
Water Distribution Treatment Plants	National Wetlands Inventory
Hazardous Substance Disposal Sites	Airports Boundaries
Hazardous Waste Facilities	County Boundary

Miles
0 0.5 1 2 3

N
W E
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Sheet 2 of 2

Figure 6
Environmental Features Map

Chowan County
North Carolina
Comprehensive Transportation Plan

2. Recommendations

This chapter presents recommendations for each mode of transportation in the 2015 Chowan County CTP as shown in Figure 1. More detailed information on each recommendation is tabulated in Appendix C.

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.

2.1 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 Albemarle RPO for regional prioritization and submittal to NCDOT. Refer to Appendix A for contact information on regional prioritization and funding. Local

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

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

Recommended improvements shown on the CTP map represent an agreement of identified transportation deficiencies and potential solutions to address the deficiencies. While the CTP does propose recommended solutions, it may not represent the final location or cross section associated with the improvement. All CTP recommendations are based on high level systems analyses that seek to minimize impacts to the natural and human environment. Prior to implementing projects from the CTP, additional analysis will be necessary to meet the National Environmental Policy Act (NEPA) or the North Carolina (or State) Environmental Policy Act[2] (SEPA). During the NEPA/SEPA process, the specific project location and cross section will be determined based on environmental analysis and public input. This CTP may be used to support transportation decision making and provide transportation planning data in the NEPA/SEPA process.

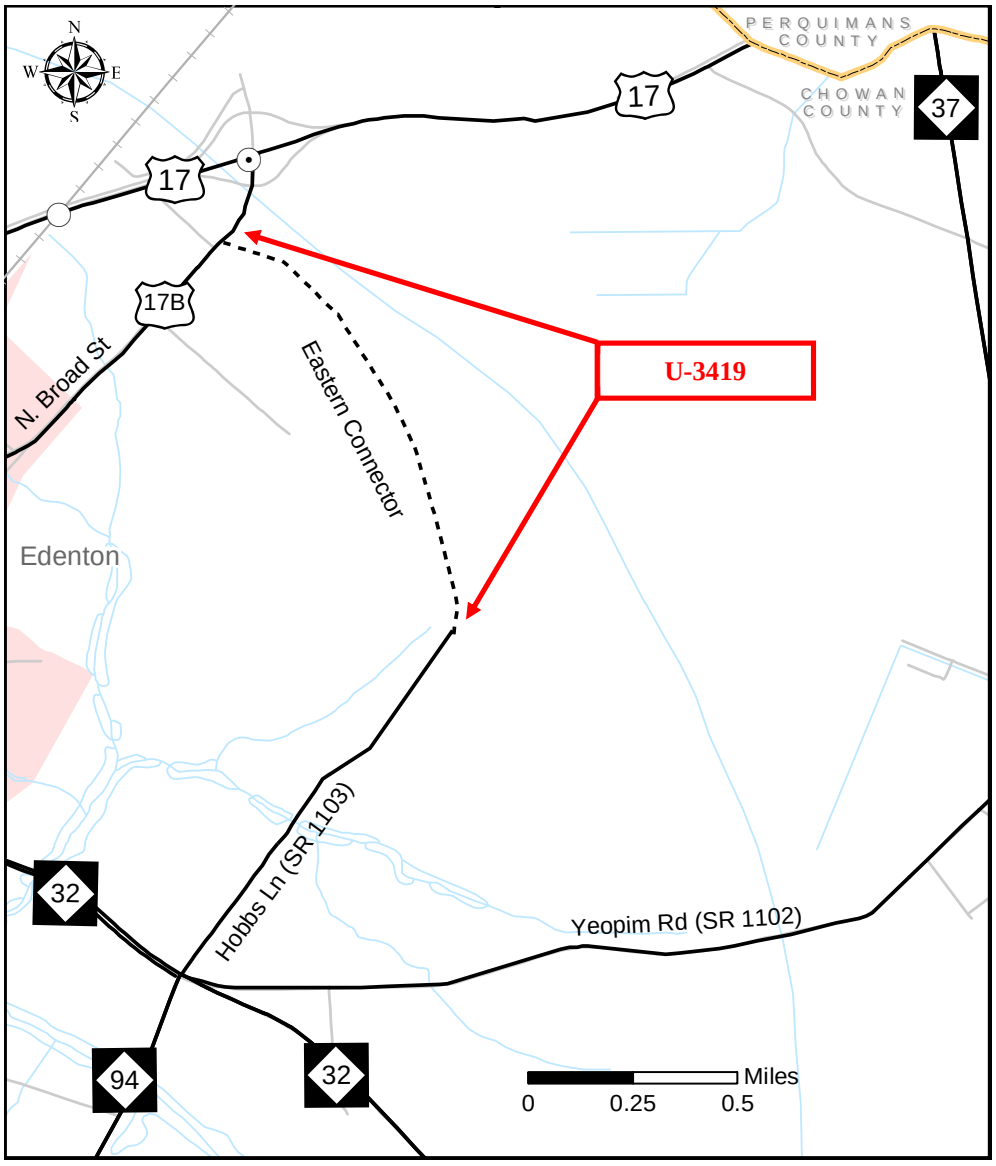
2.2 Problem Statements

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

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

HIGHWAY

NC 94 Extension (Eastern Connector) on new location from Hobbs Lane (SR 1103) to US 17 Business	**Local ID: U-3419** **Last updated: 8/12/2015**



Identified Problem

NC 94 is a two lane major thoroughfare with 11 foot lanes entering Chowan County from Washington County and terminating at NC 32 (Yeopim Road). Hobbs Lane (SR 1103) currently terminates approximately 1.4 miles north of NC 32 (Yeopim Road). Improvements are needed to provide better north-south mobility and connectivity east of the town center and to provide an alternate north-south route between US 17 Business and NC 94 on the eastern side of Edenton.

Justification of Need

Currently, vehicles from the airport area travelling north on NC 94 to access US 17 must travel west on NC 32, then north on US 17 Business through the center of Edenton, which is approximately 8 miles total. Alternatively, the only other available route is to travel east on NC 94, then west on NC 37 into Perquimans County to connect with US 17 for a total of approximately 9 miles. Hobbs Lane (SR 1103) is currently a two lane minor thoroughfare with 10 foot lanes on the eastern side of Edenton that currently dead ends approximately 0.2 miles from its beginning. Improvements are needed to enhance mobility and connectivity in this part of the county; to provide an alternate route between US 17 to the north and NC 94 that bypasses the town of Edenton's central business district; to provide improved access to the industrial area at the Edenton Airport; and to help reduce the growing number of trucks that travel thorough the town of Edenton's historic district.

Community Vision and Problem History

This problem has not been identified on any previous plan.

CTP Project Proposal

Project Description and Overview

The CTP project proposal (Local ID: U-3419) is to construct a two lane minor thoroughfare with 12 foot lanes on new location, extending Hobbs Lane (SR 1103) to US 17 Business (N Broad Street).

A crash assessment performed during the development of the CTP indicated that the intersection of NC 32 and NC 94 each experienced 4 to 9 crashes between January 1, 2007 and December 31, 2011. Refer to Chapter 1 of the CTP report for more detailed information on this location.

Relationship to Land Use Plans

Land use in the vicinity of the proposed project is currently agricultural and forestry. The Future Land Use Map (FLUM) from the 2008 Chowan County/Town of Edenton North Carolina Core Land Use Plan[3] categorizes this area as low density residential. The proposed project will provide improved access for development in the area and to the airport industrial area.

Linkages to Other Plans and Proposed Project History

This project was removed from the State Transportation Improvement Program (STIP) in 2011 and appeared in the deleted section of the 2012-2021 STIP. It is not currently funded within the 2016 – 2025 STIP.

This proposed project directly connects to minor widening improvements (CHOW0003-H) that are recommended on the existing Hobbs Road (SR 1103).

[3] *To view this plan, go to: http://www.chowancounty-nc.gov .*

Natural & Human Environmental Context

Based on a planning level environmental assessment using available GIS data, the proposed project is within landscape habitat indicator guilds and natural heritage element occurrence areas.

Multi-modal Considerations

There are no other modes of transportation associated with this proposed project.

Public/ Stakeholder Involvement

Improvements to Hobbs Lane (SR 1103) and the proposed NC 94 Extension were identified most frequently as a transportation issue by the steering committee for this study. Committee members were concerned on the following issues: connectivity, truck traffic and airport access.

US 17, TIP No. R-5731 and CHOW0001-H

US 17 is a major east-west corridor through Chowan County along the northern Edenton town limits. This facility is currently a four lane freeway with 12 foot lanes from Bertie County to US 17 Business and a four lane expressway with 12 foot lanes from US 17 Business to Perquimans County. Access along the freeway section is fully controlled with limited access along the expressway section. Improvements are needed to maintain mobility along the corridor.

The 2016 – 2025 TIP includes project R-5731 that will upgrade the existing facility to interstate standards from the south end of the Chowan River Bridge in Bertie County to US 17 Business in Edenton. Additionally, the section from US 17 Business to Perquimans County is recommended to be upgraded to interstate standards as project CHOW0001-H. The entire US 13/17 corridor from US 64 in Williamston to Virginia is being evaluated for upgrade to interstate standards as a part of NCDOT feasibility study FS-1501A which is currently in progress.

The US 17 corridor is identified as a Strategic Transportation Corridor (STC) within the North Carolina Transportation Network[4] (NCTN). The STC Policy and Map was adopted by the NCDOT on March 4, 2015. The purpose of the NC Transportation Network (NCTN) is to preserve and maximize mobility and connectivity on a core network of multimodal transportation corridors, promoting environmental stewardship and economic prosperity. The recommended improvements will help to meet this goal.

The 2008 Chowan County/Town of Edenton North Carolina Core Land Use Plan[5] identifies the land along US 17 as commercially-used land. This commercial corridor area contains retail, personal and business services, and some office uses.

In February of 2015, Chowan County and the Town of Edenton passed resolutions in support of a future Interstate designation for the US 64 corridor and the US 17 corridor which extends from Raleigh to the Hamptons Roads area of Virginia. The initiative is supported both locally and regionally. Supporters of this initiative include the regional metropolitan transportation planning agencies serving Raleigh, Hampton Roads, and Rocky Mount, NC, several rural planning organizations, as well as the business organizations serving these areas. Legislation was introduced, and passed, in both houses of Congress to designate the corridor as a future Interstate. The designation was included in the FAST Act which President Obama signed into law in December of 2015.

[4] *For more information on NCTN, go to: https://connect.ncdot.gov/projects/planning/Pages/NCTransportationNetwork.aspx.*

[5] *To view this plan, go to: http://www.chowancounty-nc.gov .*

Luke Street Extension (Western Connector), Local ID: CHOW0002-H

Luke Street is a two lane minor thoroughfare located adjacent to the Vidant Chowan Hospital in Edenton and is currently a dead end facility. Improvements are needed to enhance connectivity and mobility in western Edenton.

Within western Edenton, there is no direct access to Dr. Martin Luther King Jr Avenue (SR 1234) from NC 32 (Virginia Rd). There are interchange connections to both facilities further west of town along the freeway section of US 17. Additionally, the Vidant Chowan Hospital is located in the eastern quadrant of the NC 32 and Luke Street intersection. Currently, emergency vehicles travelling to and from southwestern Edenton must travel through the historic district of downtown Edenton to the hospital or travel further out using the freeway facility. Improvements are needed for improved mobility and connectivity in this area of town.

A short minor thoroughfare with 12 foot lanes is proposed on new location from Luke Street to Reginald and Mary Avenue. The proposed connector will provide more direct access to the hospital and southwestern Edenton.

Land use in the vicinity of the proposed project is currently institutional/public, including the Vidant Chowan Hospital, as well as residential and undeveloped land. The Future Land Use Map (FLUM) from the 2008 Chowan County/Town of Edenton North Carolina Core Land Use Plan[6] categorizes this area as institutional/public and medium/high residential.

Based on a planning level environmental assessment using available GIS data, the proposed project is within a natural heritage element occurrence area and a national wetland inventory area. The proposed project is near a water distribution treatment plant, hospital, and historic resources district.

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

Minor Widening Improvements

The following routes are not expected to exceed capacity, but were identified as candidates for upgrading to NCDOT design standards. All facilities listed are recommended to have a minimum of 12 foot lanes with paved shoulders in order to improve mobility, safety and/or to accommodate bicycles. Additionally, some facilities may require improvements to the vertical and/or horizontal alignment. Implementation of the proposed projects should be coordinated through NCDOT's Highway Division 1 office (reference Appendix A for contact information).

- **Hobbs Lane (SR 1103), CHOW0003-H:** from NC 32 (Yeopim Road) to 1.4 miles north of NC 32 (Yeopim Road).
- **Luke Street, CHOW0004-H:** from NC 32 (Virginia Road) to 0.4 miles south of NC

[6] *To view this plan, go to: http://www.chowancounty-nc.gov .*

32 (Virginia Road).

- **Reginald and Mary Avenue, CHOW0005-H:** from Dr. Martin Luther King Jr Avenue (SR 1234) to 0.4 miles north of Dr. Martin Luther King Jr Avenue (SR 1234).

PUBLIC TRANSPORTATION & RAIL

A public transportation and rail assessment was completed during the development of the CTP. There is one active rail line within the county; however, there are no planned improvements. There are currently no existing fixed route public transportation services in the county. The 2016 – 2025 TIP includes the following new route:

Raleigh to Norfolk, VA Intercity Bus Route (Greyhound Lines), TIP No. TI-6104

Intercity bus route from Raleigh to Norfolk VA, via Elizabeth City along US 64, US 301, US 264, and US 17 with stops at Raleigh, Rocky Mount, Wilson, Greenville, Washington, Williamston, Edenton and Elizabeth City. For additional information about the proposed route, contact the NCDOT Public Transportation Division. (Refer to Appendix A for contact information.)

BICYCLE

The 2013 Albemarle Regional Bicycle Plan[7], the 2003 Chowan County & Edenton Greenways and Open Space Plan[8], and the 2013 North Carolina Statewide Pedestrian and Bicycle Plan (WalkBikeNC)[9] were used to identify bicycle routes throughout the county. These facilities are shown on the Bicycle Map, Sheet 4 of Figure 1.

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

- Curb & gutter sections require a 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.

[7] *The 2013 Albemarle Regional Bicycle Plan can be viewed at: http://www.albemarlebikeplan.com/.*
[8] *The 2003 Chowan County & Edenton Greenway & Open Space Plan can be viewed at: http://www.townofedenton.com/index.asp?Type=B_BASIC&SEC={98A904CF-0EE0-4C8C-83F3-5FB3E029FD61}.*
[9] *For more information on WalkBikeNC, go to: http://www.ncdot.gov/bikeped/planning/walkbikenc/.*

PEDESTRIAN

The 2013 Albemarle Regional Bicycle Plan and 2003 Chowan County & Edenton Greenways and Open Space Plan were used to identify existing sidewalks, recommended sidewalks, and multi-use trails throughout the county. These features are shown on the Pedestrian Map, Sheet 5 of Figure 1.

Additionally, during the development of the Chowan County CTP the following facilities were identified as needing sidewalks. These needs are identified below.

- **E. Carteret Street, CHOW0001-P:** from N. Granville Street to 0.25 miles west of N. Granville Street
- **E. Freemason Street, CHOW0002-P:** from NC 32 to 0.3 miles west of NC 32 and from N. Granville Street to 0.3 miles west of N. Granville Street
- **Hicks Street, CHOW0003-P:** from Luke Street to NC 32
- **Mosely Street, CHOW0004-P:** from US 17 Business (W. Queen Street) to E. Carteret Street

APPENDICES

Appendix A
Resources and Contacts

Local Planning Organization

Albemarle Rural Planning Organization (http://www.albemarlecommission.org/)
Contact the RPO for information on long-range multi-modal planning services.
512 S. Church Street Hertford, NC 27944 (252) 426-5775

North Carolina Department of Transportation

Customer Service Office
Contact information for other units within the NCDOT that are not listed in this appendix is available by calling the Customer Service Office or by visiting the NCDOT directory:
1-877-DOT-4YOU (1-877-368-4968) *http://www.ncdot.gov/contact/*

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

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

Highway Division 1 (https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx)
113 Airport Drive Edenton, NC 27932 (252) 452-8722

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

Contact the following NCDOT divisions and units[1] for:

Transportation Planning Branch (TPB)	*Information on long-range multi-modal planning services.* 1554 Mail Service Center Raleigh, NC 27699 (919) 707-0900
Strategic Planning Office	*Information concerning prioritization of transportation projects.* 1501 Mail Service Center Raleigh, NC 27699 (919) 707-4740
Project Development & Environmental Analysis (PDEA)	*Information on environmental studies for projects that are included in the TIP.* 1548 Mail Service Center Raleigh, NC 27699 (919) 707-6000
State Asset Management Unit	*Information regarding the status for unpaved roads to be paved, additions and deletions of roads to the State maintained system and the Industrial Access Funds program.* 1535 Mail Service Center Raleigh, NC 27699 (919) 707-2500

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

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

Other State Government Offices

Department of Commerce – Division of Community Assistance

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

http://www.nccommerce.com/cd

Appendix B
Comprehensive Transportation Plan Definitions

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

Highway Map

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

Facility Type Definitions

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

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

❖ **Boulevards**

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

❖ **Other Major Thoroughfares**

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

❖ **Minor Thoroughfares**

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

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

Other Highway Map Definitions

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

Public Transportation and Rail Map

- **Bus Routes** – The primary fixed route bus system for the area. Does not include demand response systems.
- **Fixed Guideway** – Any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The term includes heavy rail, commuter rail, light rail,

monorail, trolleybus, aerial tramway, included plane, cable car, automated guideway transit, and ferryboats.

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

Bicycle Map

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

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

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

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

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

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

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

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

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

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

Pedestrian Map

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

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

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

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

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

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

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

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

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

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

Appendix C
CTP Inventory and Recommendations

Assumptions/ Notes:

- **Local ID:** This Local ID is the same as the one used for the Prioritization Project Submittal Tool. If a 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 'Total Width (ft)' is the approximate width of the roadway from edge of pavement to edge of pavement and under 'Lane Width (ft)' is the approximate width of a single lane based on centerline/ edge line markings. Listed under 'Lanes' is the total number of lanes, with 'D' if the facility is divided, and 'OW' if it is a one-way facility.
- **Existing ROW:** The estimated existing right-of-way is based on NCDOT's roadway characteristics shapefile. These right-of-way amounts are approximate and may vary.
- **Existing and Proposed Capacity:** The estimated capacities are given in vehicles per day (vpd) based on LOS D for existing facilities and LOS C for new facilities. These capacity estimates were developed based on the 2000 Highway Capacity Manual using the Transportation Planning Branch's LOS D Standards for Systems Level Planning, as documented in Chapter 1.
- **Existing and Proposed Volumes:** given in vehicles per day (vpd), are estimates only based on a systems-level analysis. The '2040 Volume E+C' is an estimate of the volume in 2040 with only existing plus committed projects assumed to be in place, where committed is defined as projects programmed for construction in the 2016 - 2025 Transportation Improvement Program (TIP). The '2040 Volume with CTP' is an estimate of the volume in 2040 with all proposed CTP improvements assumed to be in place. The '2040 Volume with CTP' is shown in bold if it exceeds the proposed capacity, indicating an unmet need. For additional information about the assumptions and techniques used to develop the volume estimates, refer to Chapter 1.
- **Proposed Cross-section:** The CTP recommended cross-sections are listed by code; for depiction of the cross-section, refer to Appendix D. An entry of 'ADQ' indicates the existing facility is adequate and there are no improvements recommended for the given mode as part of the CTP.

- **CTP Classification:** The CTP classification is listed, as shown on the adopted CTP Maps (see Figure 1). Abbreviations are F= freeway, E= expressway, B= boulevard, Maj= other major thoroughfare, Min= minor thoroughfare.
- **Tier:** Tiers are defined as part of the North Carolina Multimodal Investment Network (NCMIN). Abbreviations are Sta= statewide tier, Reg= regional tier, Sub= subregional tier.
- **Proposals for Other Modes:** If there is an improvement recommended for another mode of transportation that relates to the given recommendation, it is indicated by an alphabetic code (H= highway, T= public transportation, R= rail, B= bicycle, P= pedestrian, and M= multi-use path).

CHOWAN COUNTY CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																				
		Section				2014 Existing System							2040 Proposed System							
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd	2014 Volume	2040 Volume E+C	2040 Volume with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classifi-cation	Tier	Proposals for Other Modes
CHOW0001-H & R-5731	US 17 (Ocean Highway)	Perquimans County	Bertie County	Chowan County	9.3	36	4D	12	310	55-70	56400	9400	17500	17500	56400	4A	310	F	Sta	T, B
	US 17 Business (N. Broad St)	US 17 - Ocean Highway	Paradise Rd (SR 1319)	Edenton	2.0	20	2	10	*	35	12700	7800	5800	5800	12700	ADQ	ADQ	Maj	Reg	
	US 17 Business (S. Broad St)	Paradise Rd (SR 1319)	NC 32 (Virgina Rd)	Edenton	0.4	20	2	10	*	35	12700	8400	9400	9400	12700	ADQ	ADQ	Maj	Reg	B,P
	US 17 Business / NC 32 (S. Broad St)	NC 32 (Virgina Rd)	NC 32 (E. Church St)	Edenton	0.7	20	2	10	*	35	12700	7500	4000	4000	12700	ADQ	ADQ	Maj	Reg	P
	US 17 Business / NC 32 (S. Broad St)	NC 32 (E. Church St)	E Queen St	Edenton	0.2	20	2	10	*	35	12700	3800	2500	2500	12700	ADQ	ADQ	Maj	Reg	P
	US 17 Business (W Queen St)	E Queen St	US 17 - Ocean Highway	Edenton	3.4	22	2	11	60	35-45	13300	2700	3300	3300	13300	ADQ	ADQ	Maj	Reg	P
	NC 32/37/94 (Haughton Rd)	Washington County	NC 94 (Southside Rd)	Chowan County	3.0	26	2	12	120	55	12700	3800	3700	3700	12700	ADQ	ADQ	Maj	Reg	
	NC 32/37 (Haughton Rd)	NC 94 (Southside Rd)	NC 32/37 Split	Chowan County	0.7	26	2	12	120	55	12700	2200	3000	3000	12700	ADQ	ADQ	Maj	Reg	
	NC 32 (Poplar Neck Rd)	NC 32/37 Split	Old Hertford Rd	Chowan County	2.3	26	2	12	120	55	12700	3400	3400	3400	12700	ADQ	ADQ	Maj	Reg	
	NC 32 (Yeopim Rd/E Church St)	Old Hertford Rd	W Church St	Edenton	0.7	48	4	12	120	35	24300	13000	17900	17900	24300	ADQ	ADQ	Maj	Reg	B,P
	NC 32 (S Broad St)	W Church St	US 17 Business/NC 32 Split	Edenton	Concurrent with US 17 Business															
	NC 32 (Virginia Rd)	US 17 Business/NC 32 Split	US 17 (Ocean Highway)	Edenton	0.6	64	3	12	80	35	24300	14600	17400	17400	24300	ADQ	ADQ	Maj	Sub	B,P
	NC 32 (Virginia Rd)	US 17 (Ocean Highway)	Wildcat Rd (SR 1208)	Chowan County	1.1	160	4	12	64	45	29000	9500	10100	10100	29000	ADQ	ADQ	Maj	Sub	B
	NC 32 (Virginia Rd)	Wildcat Rd (SR 1208)	Gates County	Chowan County	18.7	90	2	12	18	55	14700	6300	7200	7200	14700	ADQ	ADQ	Maj	Sub	B
	NC 37 (Glide Rd)	NC 32 (Virgina Rd)	Perquimans County	Chowan County	4.3	22	2	11	60	55	12700	200	500	500	12700	ADQ	ADQ	Maj	Reg	
	NC 37 (Haughton Rd)	Perquimans County	NC 32 (Yeopim Rd)	Chowan County	4.5	26	2	12	120	55	12700	4200	5100	5100	12700	ADQ	ADQ	Maj	Reg	
	NC 37 (Haughton Rd)	NC 32 (Yeopim Rd)	Washington County	Chowan County	Concurrent with NC 32															

HIGHWAY																					
		Section				2014 Existing System							2040 Proposed System								
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd	2014 Volume	2040 Volume E+C	2040 Volume with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classifi-cation	Tier	Proposals for Other Modes
	NC 94 (Soundside Rd)	NC 32 (Yeopim Rd)	NC 32/NC37 (Haughton Rd)	Chowan County	6.2	22	2	11	100	55	14700	1700	2200	2200	14700	ADQ	ADQ	Maj	Reg	B
U-3419	NC 94 Extension/ Eastern Connector	US 17 Business (N Broad St)	Hobbs Ln (SR 1103)	Chowan County	1.5	-	-	-	-	-	-	-	-	700	12700	2A	60	Min		
	E. Albemarle St	N. Granville St (SR 1127)	US 17 Business/NC 32 (S Broad St)	Edenton	0.2	20	2	10	*	35	12700	2000	1800	1800	12700	ADQ	ADQ	Maj	Sub	P
	E. Albemarle St	US 17 Business/NC 32 (S Broad St)	N. Oakum St (SR 1319)	Edenton	0.2	20	2	10	*	35	12700	2000	1800	1800	12700	ADQ	ADQ	Min	Sub	P
	S. Broad St	US 17 Business/ W Queen St (SR 1204)	W Water St	Edenton	0.3	20	2	10	*	35	12700	1000	1500	1500	12700	ADQ	ADQ	Min	Sub	P
	Cannon's Ferry Rd (SR 1232)	NC 32 (Virgina Rd)	Dillard Mill Rd (SR 1226)	Chowan County	0.5	18	2	9	*	55	12700	500	600	600	12700	ADQ	ADQ	Min	Sub	
	Center Hill Rd (SR 1002)	NC 32 (Virgina Rd)	Happy Home Road (SR 1303)	Chowan County	3.0	20	2	10	*	55	14100	800	1000	1000	14100	ADQ	ADQ	Min	Sub	
	Center Hill Rd (SR 1312)	Happy Home Road (SR 1303)	Perquimans County	Chowan County	2.0	20	2	10	*	55	14100	1400	1700	1700	14100	ADQ	ADQ	Min	Sub	
	Coffield Rd (SR 1316)	Greenhall Rd (SR 1316)	Paradise Rd (SR 1319)	Chowan County	1.6	18	2	9	60	55	12700	700	800	800	12700	ADQ	ADQ	Min	Sub	
	Coke Avenue	US 17 Business (N Broad St)	NC 32 (E Church St)	Edenton	1.0	20	2	10	*	35	12700	3900	6500	6500	12700	ADQ	ADQ	Min	Sub	
	County Line Rd (SR 1002)	Center Hill Rd (SR 1002)	NC 37 (Gliden Rd)	Chowan County	0.9	18	2	9	*	55	12700	550	500	500	12700	ADQ	ADQ	Min	Sub	B
	Dillard Mill Rd (SR 1226)	NC 32 (Virgina Rd)	Cannon's Ferry Rd (SR 1232)	Chowan County	0.3	18	2	9	*	55	12700	500	600	600	12700	ADQ	ADQ	Min	Sub	
	Dr Martin Luthur King Jr Ave (SR 1234)	Mexico Rd (SR 1200)	N Granville St (SR 1127)	Edenton	1.2	24	2	12	60	35	14100	2000	3600	3600	14100	ADQ	ADQ	Maj	Sub	P
	Emperor Landinig Rd (1204)	Tip Toe Rd (SR 1204)	Queen St (SR 1204)	Chowan County	0.4	20	2	10	*	55	14100	1400	2300	2300	14100	ADQ	ADQ	Min	Sub	
	Emperor Landinig Rd (1239)	Queen St (SR 1204)	Hickory Fork (SR 1202)	Chowan County	0.3	20	2	10	*	55	14100	250	250	250	14100	ADQ	ADQ	Min	Sub	

HIGHWAY																				
		Section				2014 Existing System							2040 Proposed System							
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd	2014 Volume	2040 Volume E+C	2040 Volume with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classifi-cation	Tier	Proposals for Other Modes
	Forehand Rd (SR 1227)	Rocky Hock Rd (SR 1222)	Dillard Mill Rd (SR 1226)	Chowan County	0.5	18	2	9	*	40	12700	400	250	250	12700	ADQ	ADQ	Min	Sub	
	E. Freemason St	N. Granville St (SR 1127)	N. Oakum St (SR 1319)	Edenton	0.4	20	2	10	*	35	12700	1200	1500	1500	12700	ADQ	ADQ	Min	Sub	P
	N. Granville St (SR 1127)	NC 32 (Virgina Rd)	W Water St	Edenton	0.9	20	2	10	*	35	12700	3600	4500	4500	12700	ADQ	ADQ	Min	Sub	P
	Greenhall Rd (SR 1316)	NC 32 (Virginia Rd)	Paradise Rd (SR 1319)	Chowan County	1.4	18	2	9	60	55	12700	700	800	800	12700	ADQ	ADQ	Min	Sub	
	Happy Home Rd (SR 1303)	Ryland Rd (SR 1305)	Center Hill Rd (SR 1002)	Chowan County	4.4	18	2	9	*	55	12700	1500	1800	1800	12700	ADQ	ADQ	Min	Sub	B
	Happy Home Rd (SR 1303)	Center Hill Rd (SR 1002)	NC 32 (Virgina Rd)	Chowan County	4.5	18	2	9	*	55	12700	1600	2100	2100	12700	ADQ	ADQ	Min	Sub	B
	Hickory Fork Rd (SR 1202)	Emperor Landing (SR 1239)	Macedonia Rd (SR 1200)	Chowan County	1.1	20	2	10	60	55	14100	300	300	300	14100	ADQ	ADQ	Min	Sub	
CHOW0003-H	Hobbs Ln (SR 1103)	NC 32 (Yeopim Rd)	1.4 miles north of NC 32 (Yeopim Rd)	Chowan County	1.4	12	2	6	*	55	10700	300	600	700	12700	2A	60	Min	Sub	
CHOW0004-H	Luke St	NC 32 (Virgina Rd)	0.4 miles south of Luke St	Edenton	0.4	20	2	10	*	35	12700	200	300	300	12700	2A	60	Min	Sub	
CHOW0002-H	Luke St Extension (Western Connector)	0.4 miles south of Luke St	Reginald and Mary Ave	Edenton	0.5	-	-	-	-	-	-	-	-	300	12700	2A	60	Min	Sub	
	Macedonia Rd (SR 1200)	NC 32 (Virgina Rd)	Hickory Fork (SR 1202)	Chowan County	4.8	18-22	2	11	*	35-55	14100	1500	2500	2500	14100	ADQ	ADQ	Min	Sub	
	Mexico Rd (SR 1200)	Hickory Fork (SR 1202)	NC 32 (Virgina Rd)	Chowan County	2.2	18-22	2	11	*	35-55	14100	2400	3400	3400	14100	ADQ	ADQ	Min	Sub	B
	N Oakum St (SR 1319)	US 17 Business (N Broad St)	NC 32 (E Church St)	Edenton	1.0	20	2	10	*	35	12700	3900	6500	6500	12700	ADQ	ADQ	Min	Sub	P
	Paradise Rd (SR 1319)	Greenhall-Coffield Rd (SR 1316)	US 17 (Ocean Highway)	Chowan County	4.6	40	2	9	*	55	12700	1100	2300	2300	12700	ADQ	ADQ	Min	Sub	B

HIGHWAY																				
		Section				2014 Existing System							2040 Proposed System							
Local ID	Facility	From	To	Jurisdiction	Dist. (mi)	Total Width (ft)	Lanes	Lane Width (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd	2014 Volume	2040 Volume E+C	2040 Volume with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classifi-cation	Tier	Proposals for Other Modes
	Paradise Rd (SR 1319)	US 17 (Ocean Highway)	US 17 Business (N Broad St)	Edenton	0.6	40	3	10	50	35	12700	1500	1800	1800	12700	ADQ	ADQ	Min	Sub	B
	Queen St (SR1204)	Emperor Landinig Rd (SR 1204)	US 17 (Ocean Highway)	Chowan County	0.4	20	2	10	*	55	14100	1600	1500	1500	14100	ADQ	ADQ	Min	Reg	B
CHOW0005-H	Reginald and Mary Ave	Dr Martin Luthur King Jr Ave (SR 1234)	0.4 miles north of Reginald and Mary Ave	Edenton	0.4	*	2	*	*	25	9000	100	300	300	9700	2A	60	Min	Sub	
	Rocky Hock Rd (SR 1222)	NC 32 (Virgina Rd)	NC 32 (Virgina Rd)	Chowan County	9.6	22	2	11	*	55	14100	1600	700	700	700	ADQ	ADQ	Min	Sub	B
	Sandy Ridge Rd (SR 1303)	NC 32 (Virgina Rd)	Ryland Rd (SR 1305)	Chowan County	2.3	22	2	11	60	45	14100	1600	2100	2100	14100	ADQ	ADQ	Maj	Sub	
	Tip Toe Rd (SR 1204)	Macedonia Rd (SR 1200)	Emperor Landing (SR 1204)	Chowan County	1.5	20	2	10	*	55	14100	1000	1500	1500	14100	ADQ	ADQ	Min	Sub	
	W. Water St	N. Granville St (SR 1234)	S Broad St	Edenton	0.2	20	2	10	*	35	12700	700	1000	1000	12700	ADQ	ADQ	Min	Sub	P
	Yeopim Rd (SR 1102)	NC 32 (Poplar Neck Rd)	NC 37 (Haughton Rd)	Chowan County	3.0	24	2	12	60	55	12700	1000	2000	2000	12700	ADQ	ADQ	Min	Sub	

Footnotes:
(1) Undivided 4-lane with shoulder
(2) Raised median 2 lane with 8 ft on-street parking on both sides
* No data available

PUBLIC TRANSPORTATION AND RAIL

PUBLIC TRANSPORTATION							
			Speed		Existing System	Proposed System	
Local ID	Facility/ Route	Section (From - To)	Limit (mph)	Distance (mi)	Type	Type	Other Modes
TI-6104	US 17	Bertie County - Perquimans County	70	10.01	-	Bus	H

RAIL												
				Speed		Existing System			Proposed System			
Local ID	Facility/ Route	Section (From - To)	Class	Limit (mph)	Distance (mi)	Type	ROW (ft)	Trains per day	Type	ROW (ft)	Trains per day	Other Modes
	CNA RAIL	Elizabeth City, NC - Edenton, NC	III	varies	35	freight	-	(1)	-	-	-	-

(1) There is no daily or weekly service. Frequency is determined by orders from the construction plant in Edenton.

BICYCLE [1] AND PEDESTRIAN [2]

BICYCLE								
				Existing System		Proposed System		
			Distance	Cross-Section				Other
Local ID	Facility/ Route	Section (From - To)	(mi)	(ft)	lanes	Type	Cross-Section	Modes
	NC Route 3	Perquimens County - Gates County	6.7	60	varies			H

[1] Only major routes and proposals are shown here. For further documentation of bicycle and pedestrian facilities and proposals, refer to the 2013 Albemarle Regional Bicycle Plan , the 2003 Chowan County & Edenton Greenways and Open Space Plan , and the 2013 North Carolina Statewide Pedestrian and Bicycle Plan (WalkBikeNC).

PEDESTRIAN								
				Existing System		Proposed System		
			Distance	Cross-Section				Other
Local ID	Facility/ Route	Section (From - To)	(mi)	(ft)	lanes	Type	Cross-Section	Modes
CHOW0001-P	E. Carteret Street	N. Granville Street to 0.25 miles west of N. Granville Street	0.25			Sidewalk	Both	
CHOW0002-P	E. Freemason Street	NC 32 to 0.3 miles west of NC 32	0.3			Sidewalk	Both	
CHOW0002-P	E. Freemason Street	N. Granville to 0.3 miles west of N. Granville Street	0.3			Sidewalk	Both	
CHOW0003-P	Hicks Street	Luke Street to NC 32	0.5			Sidewalk	Both	
CHOW0004-P	Mosely Street	US 17 Business (W. Queen Street) to E. Carteret Street	0.6			Sidewalk	Both	

[2] Only community proposed routes are shown here. For further documentation of pedestrian facilities, refer to the 2013 Albemarle Regional Bicycle Plan and the 2003 Chowan County & Edenton Greenways and Open Space Plan.

Appendix D
Typical Cross Sections

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

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

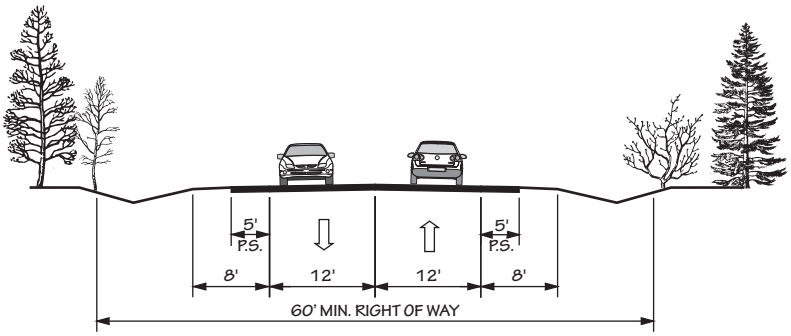
On all existing and proposed roadways delineated on the CTP, adequate right-of-way should be protected or acquired for the recommended cross sections. In addition to cross section and right-of-way recommendations for improvements, Appendix C may recommend ultimate needed right-of-way for the following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

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

[1] *For more information on STI, go to:* http://www.ncdot.gov/strategictransportationinvestments/.
[2] *For more information on prioritization, go to:* https://connect.ncdot.gov/projects/planning/Pages/StrategicPrioritization.aspx.
[3] *For more information on Complete Streets, go to:* http://www.completestreetsnc.org/.
[4] *For more information on NEPA, go to:* http://ceq.hss.doe.gov/.

FIGURE 7
"TYPICAL" HIGHWAY CROSS SECTIONS

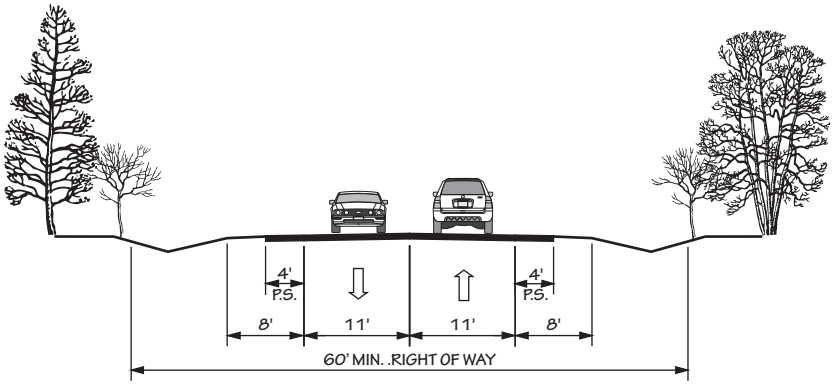
2A



2 LANE UNDIVIDED WITH PAVED SHOULDERS

POSTED SPEED 55 MPH

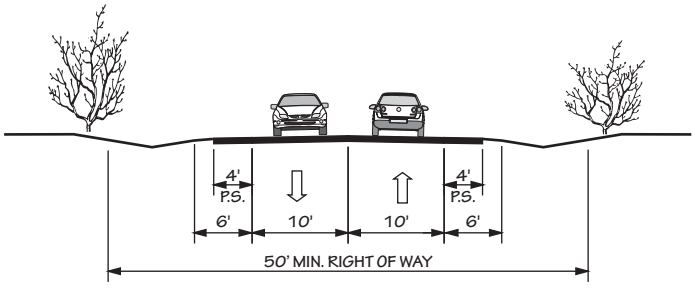
2B



2 LANES UNDIVIDED

POSTED SPEED 45 MPH OR LESS

2C



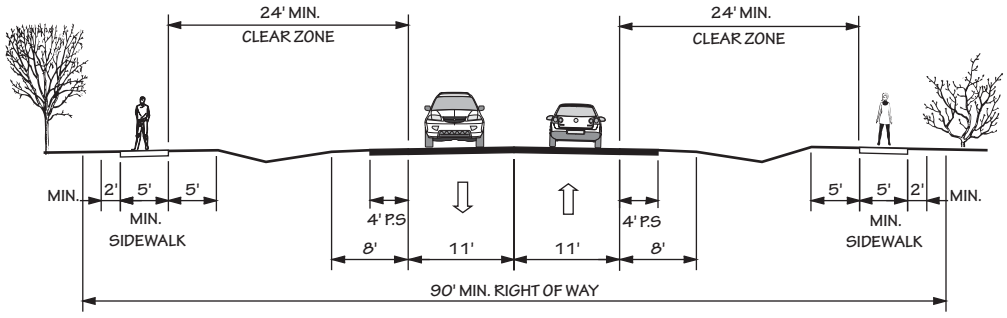
2 LANE UNDIVIDED WITH PAVED SHOULDERS

POSTED SPEED 25 - 35 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

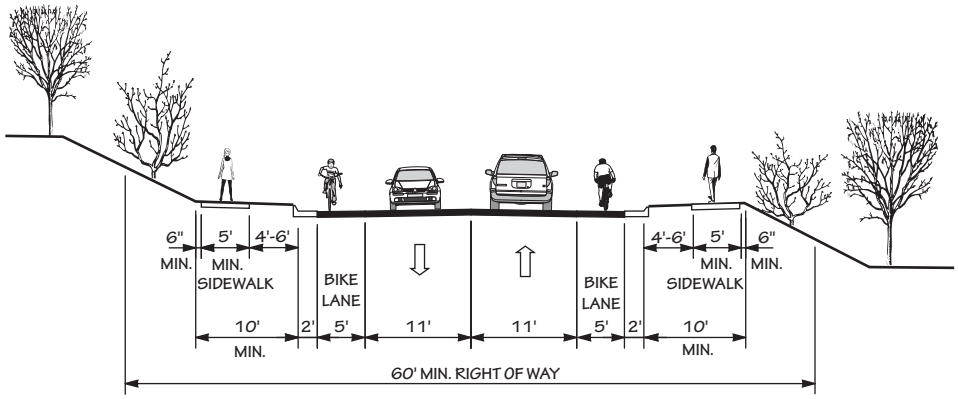
2D



2 LANE UNDIVIDED WITH PAVED SHOULDERS AND SIDEWALKS

POSTED SPEED 25-45 MPH

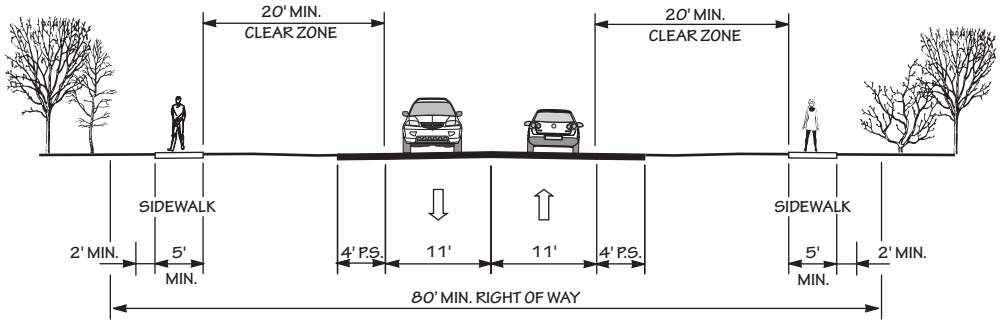
2E



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

POSTED SPEED 25-45 MPH

2F



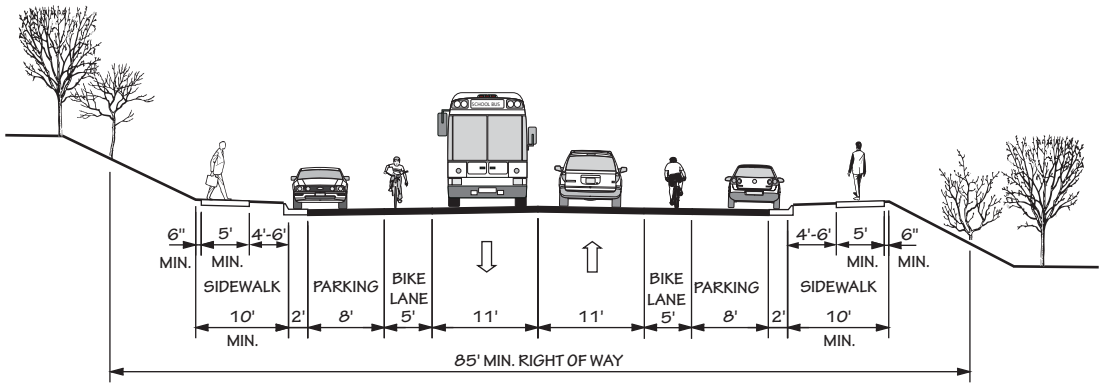
2 LANE UNDIVIDED WITH PAVED SHOULDERS AND SIDEWALKS
IN CAMA COUNTIES

POSTED SPEED 25-45 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

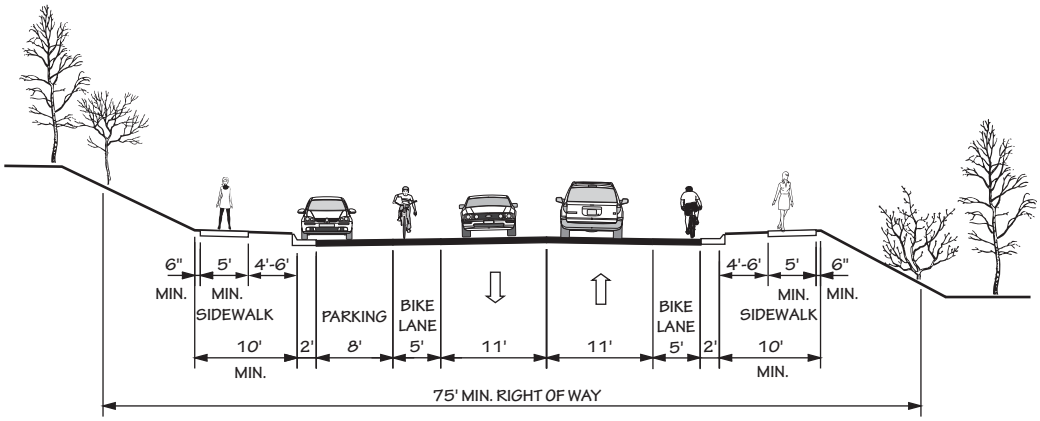
2G



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

POSTED SPEED 25-45 MPH

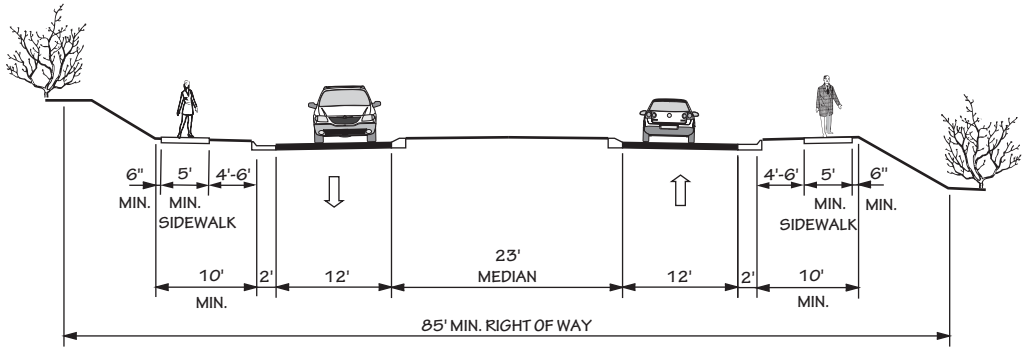
2H



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

POSTED SPEED 25-45 MPH

2I



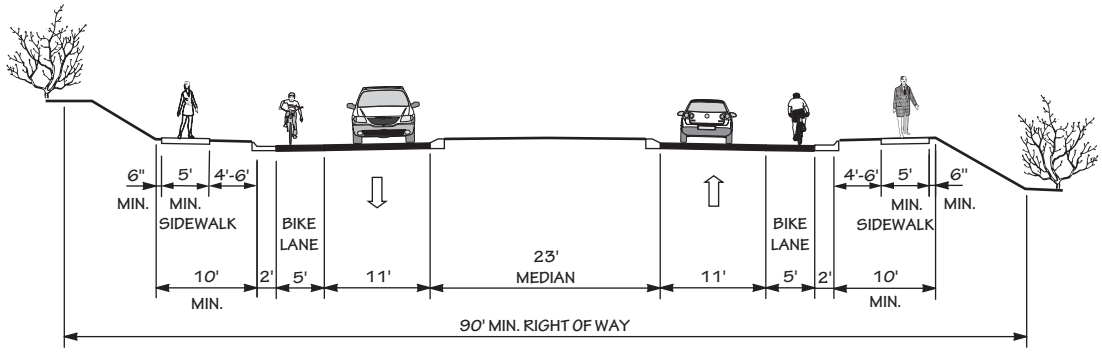
2 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER AND SIDEWALKS

POSTED SPEED 25-45 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

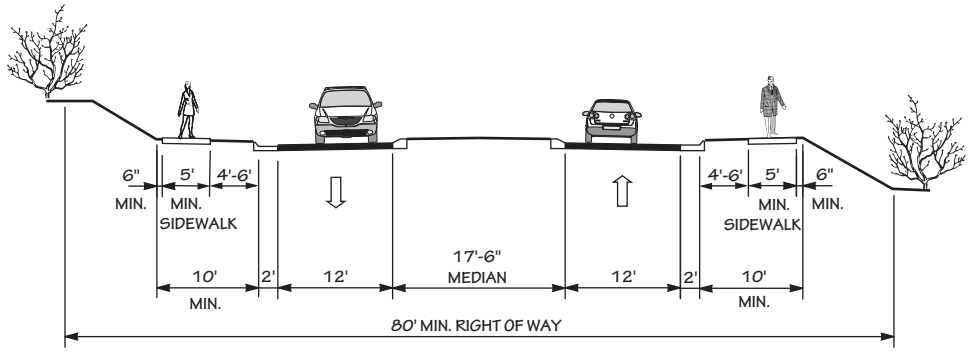
2J



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

POSTED SPEED 25-45 MPH

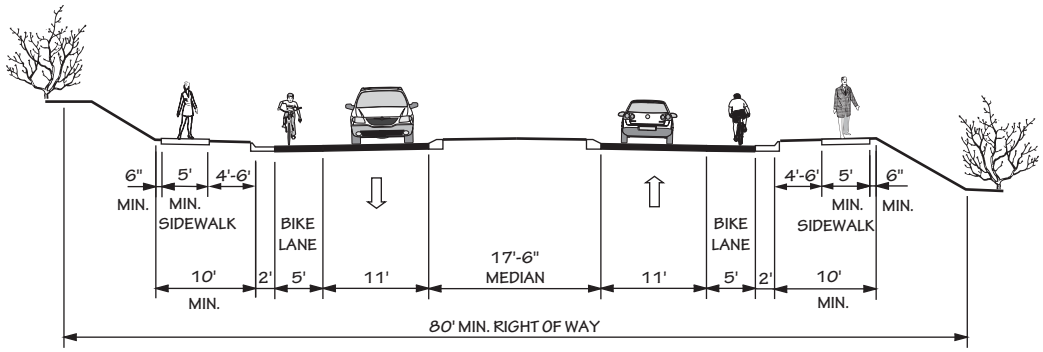
2K



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

POSTED SPEED 25-45 MPH

2L



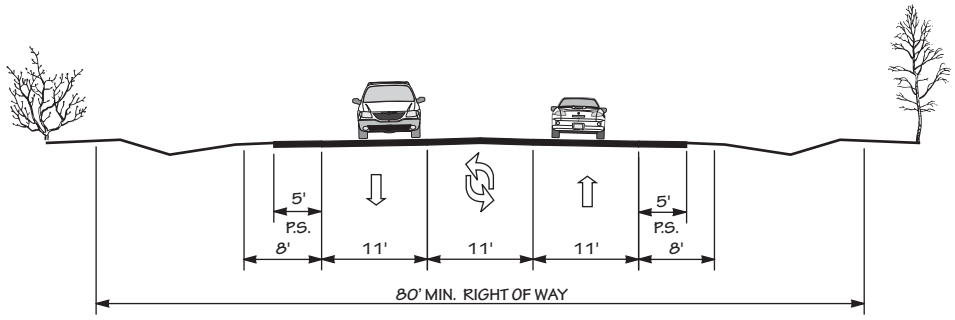
2 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

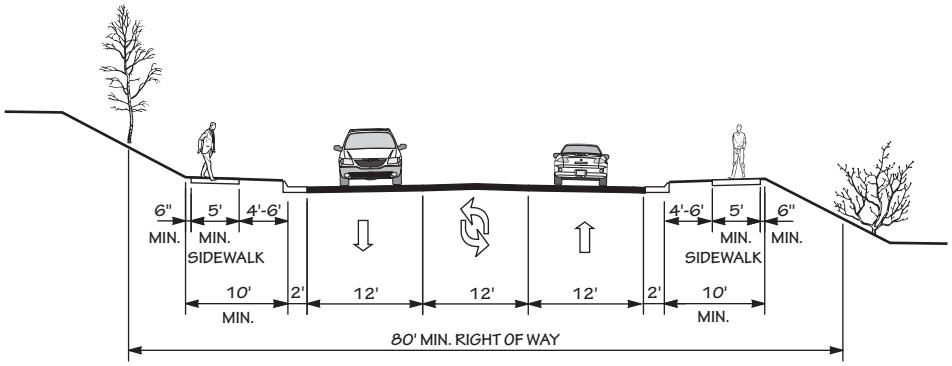
3A



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

POSTED SPEED 25-55 MPH

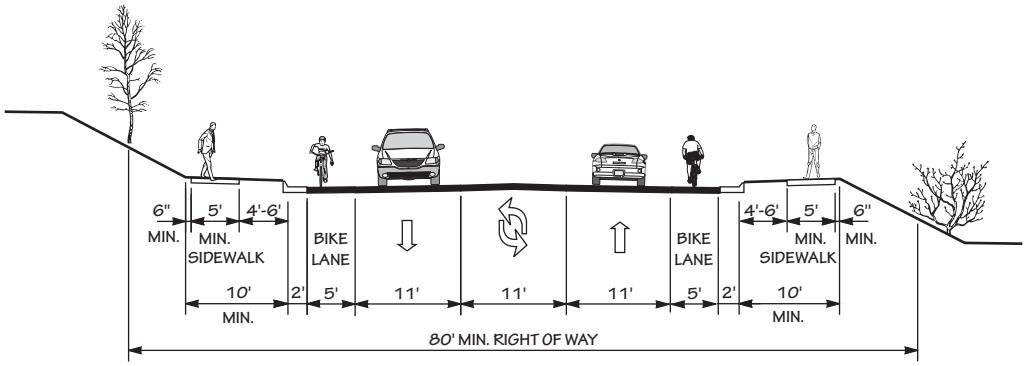
3B



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

POSTED SPEED 25-45 MPH

3C

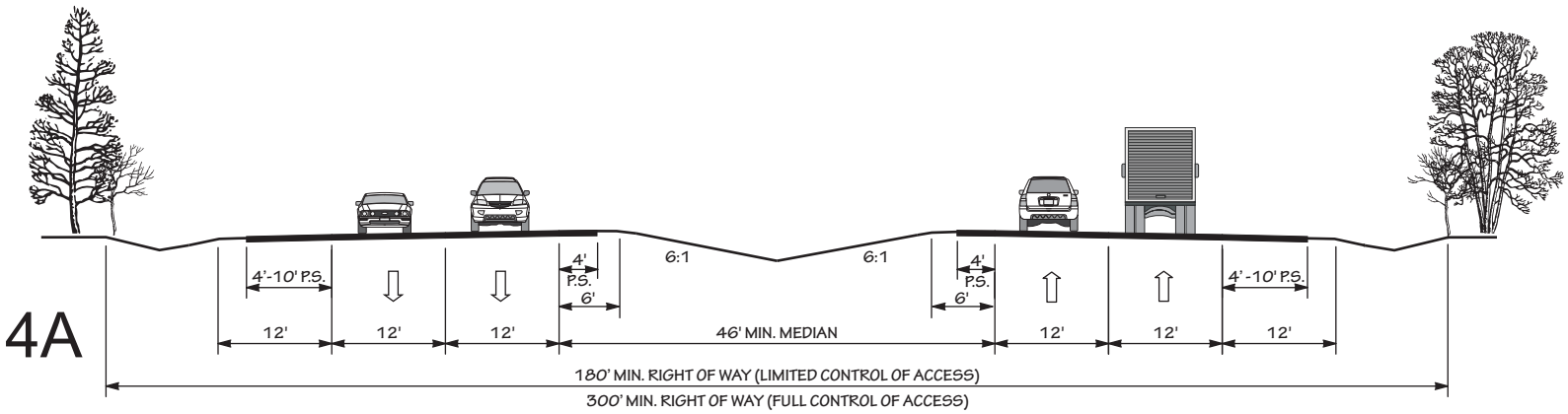


2 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER, BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

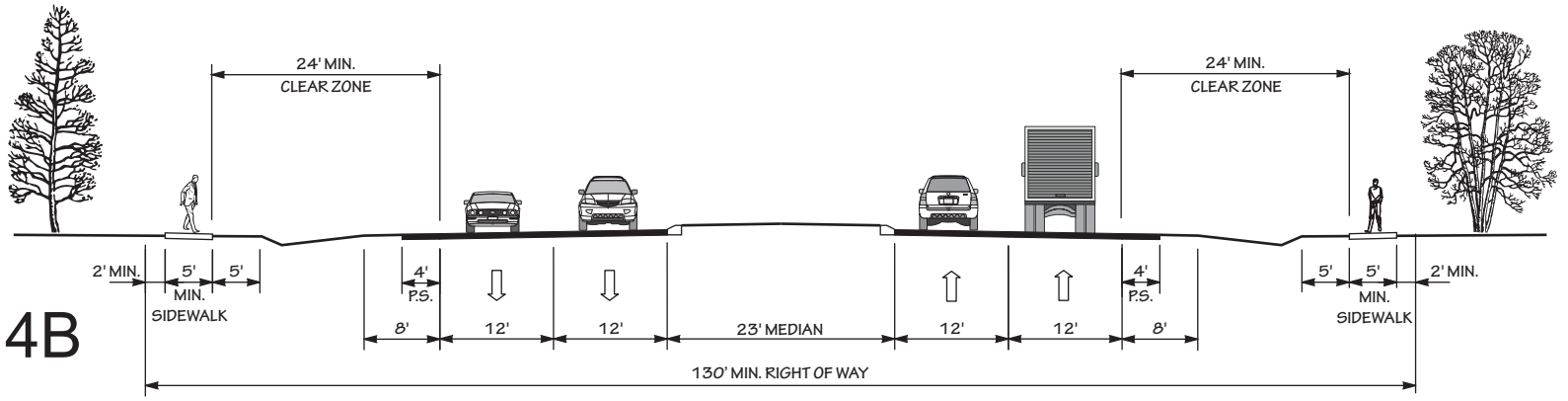
Revised 05/05/2014

"Typical" Highway Cross Sections



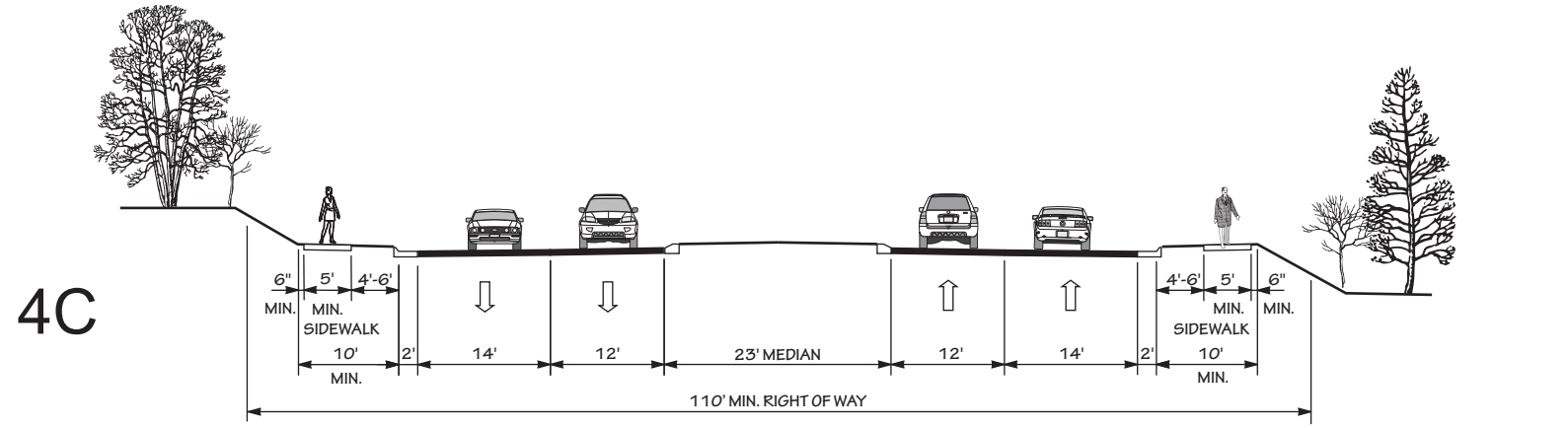
4 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS

POSTED SPEED 45-70 MPH



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

POSTED SPEED 35-55 MPH



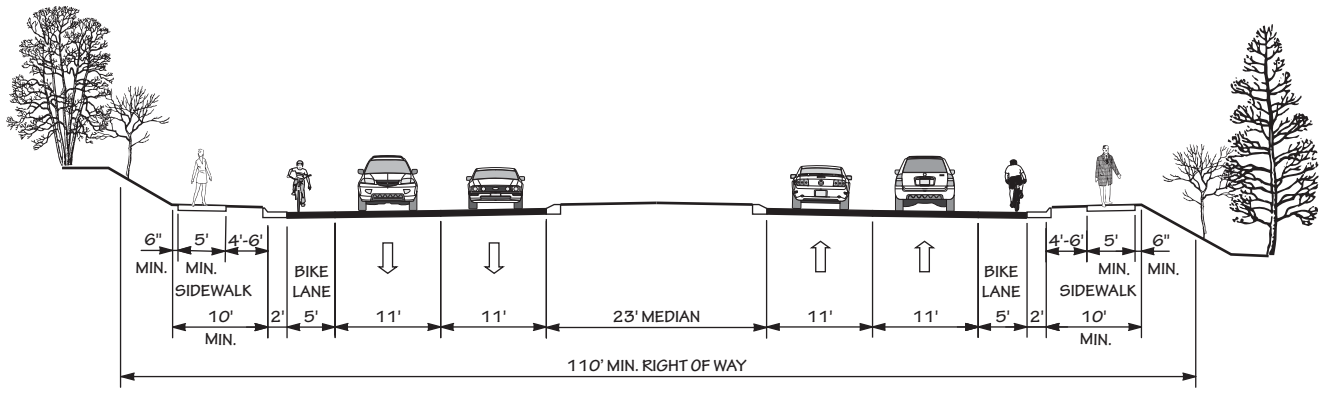
4 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES, AND SIDEWALKS

POSTED SPEED 35-45 MPH

Revised 05/05/2014

"Typical" Highway Cross Sections

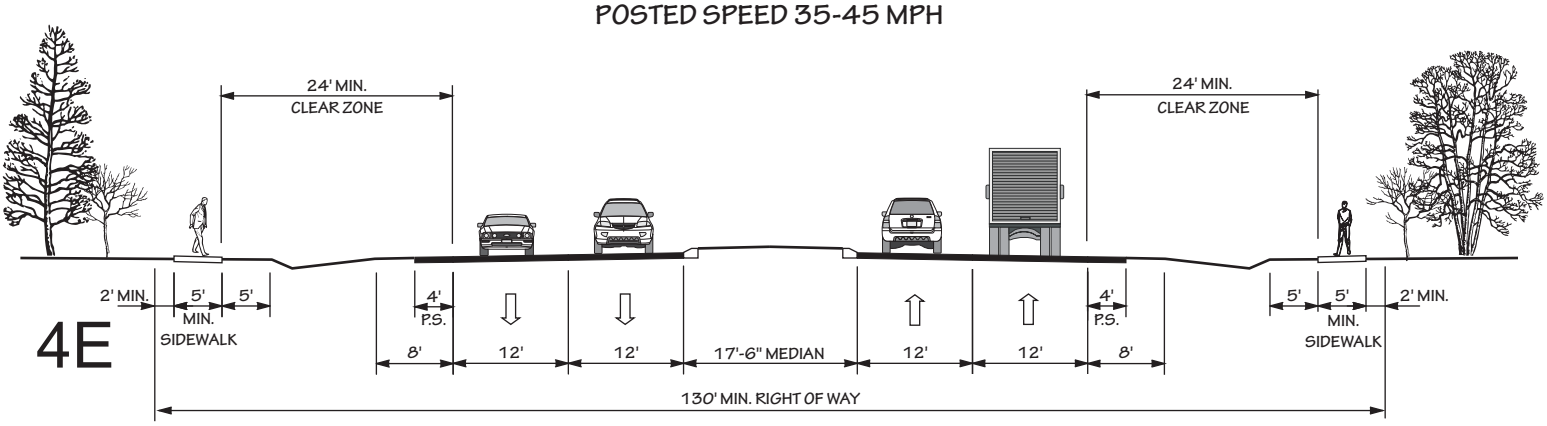
4D



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

POSTED SPEED 35-45 MPH

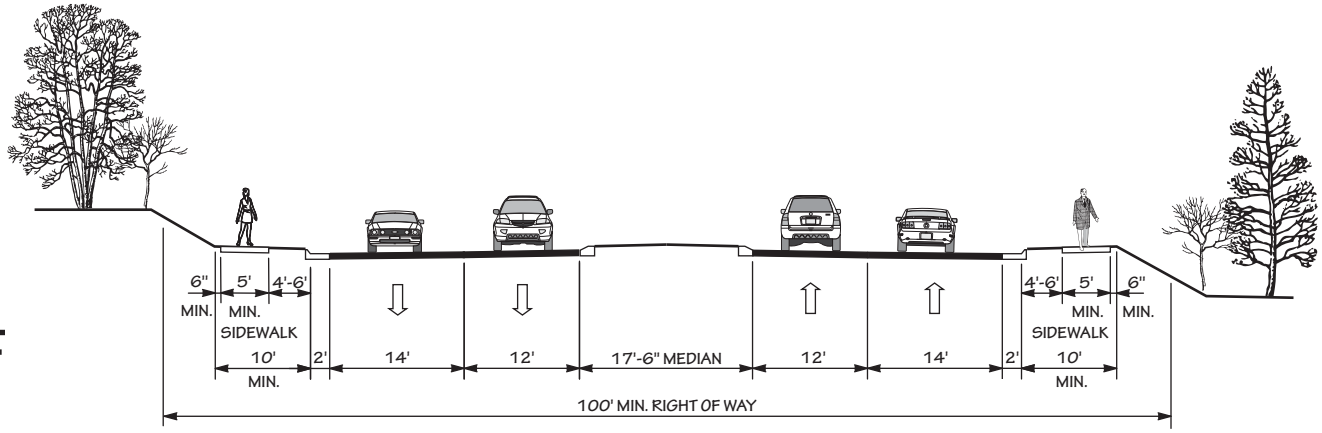
4E



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

POSTED SPEED 35-55 MPH

4F



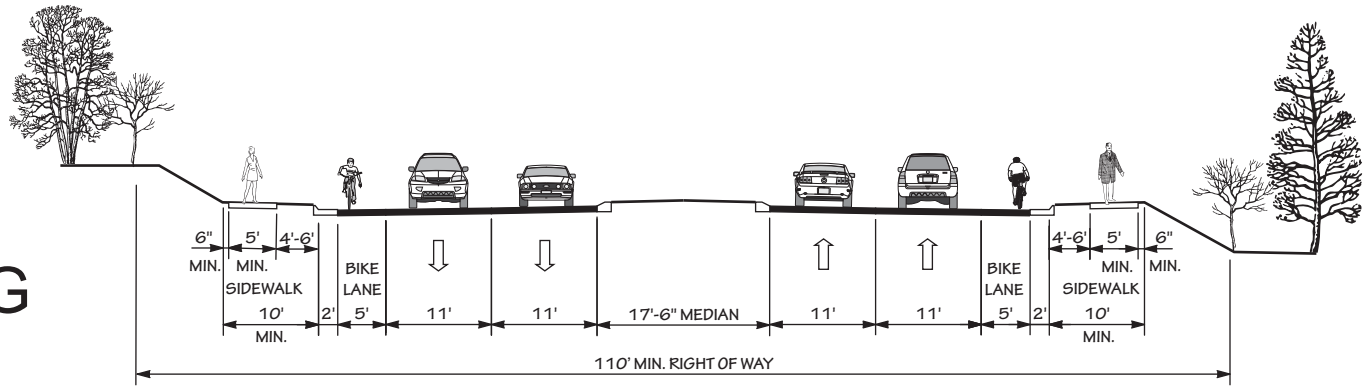
4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES AND SIDEWALKS

POSTED SPEED 35-45 MPH

Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS

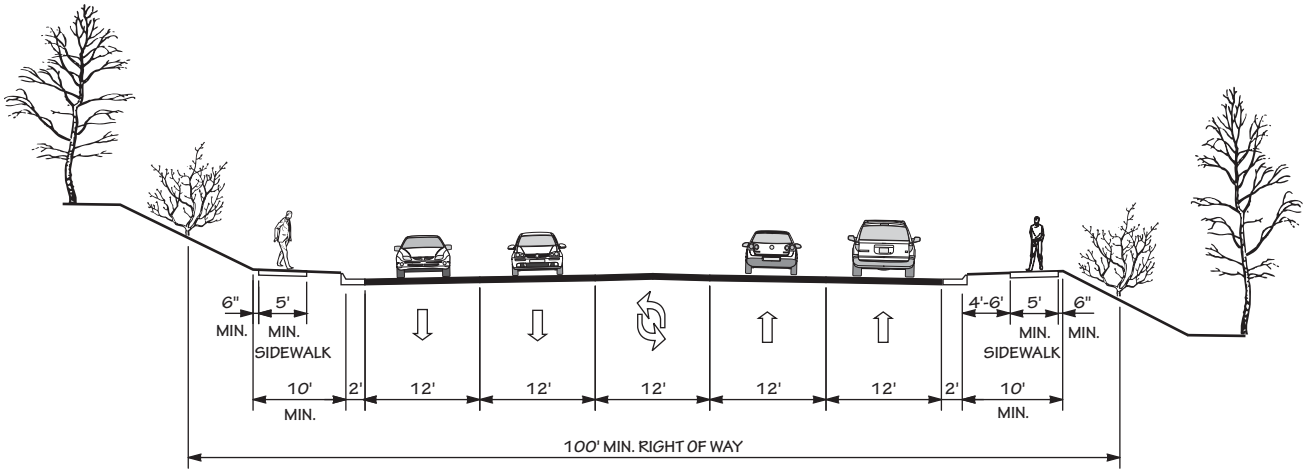
4G



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

POSTED SPEED 35-45 MPH

5A

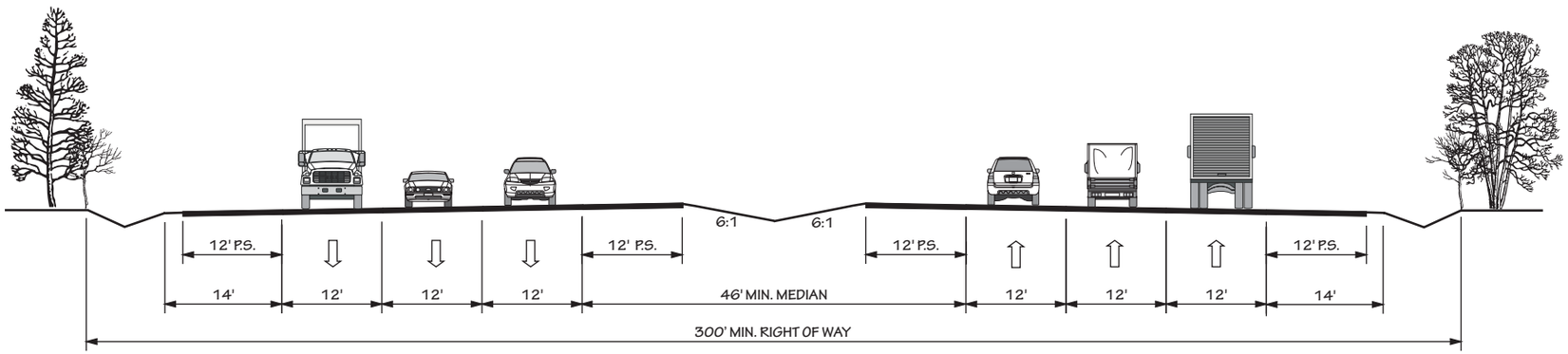


4 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER, AND SIDEWALKS

POSTED SPEED 35-45 MPH

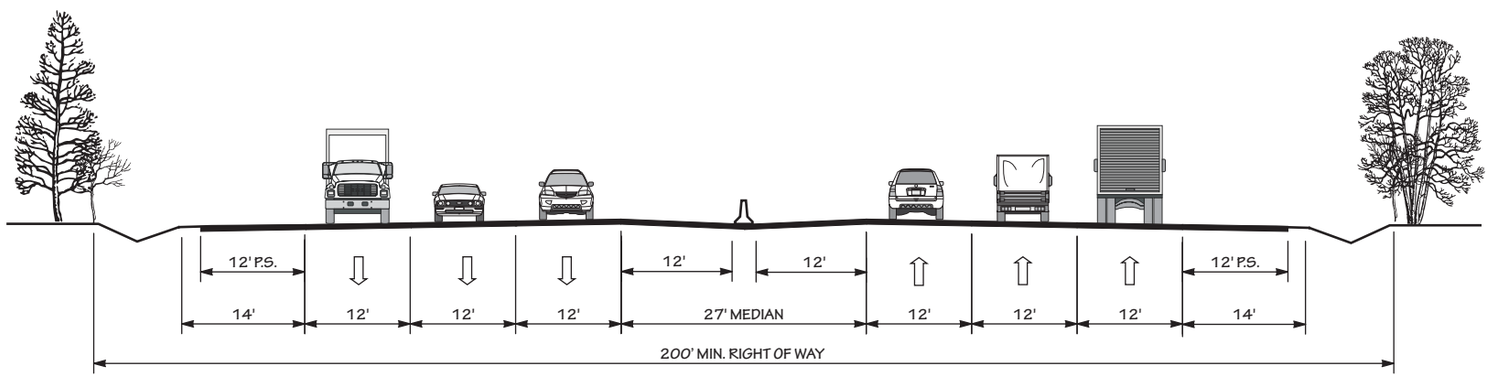
Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS



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

POSTED SPEED 45-70 MPH

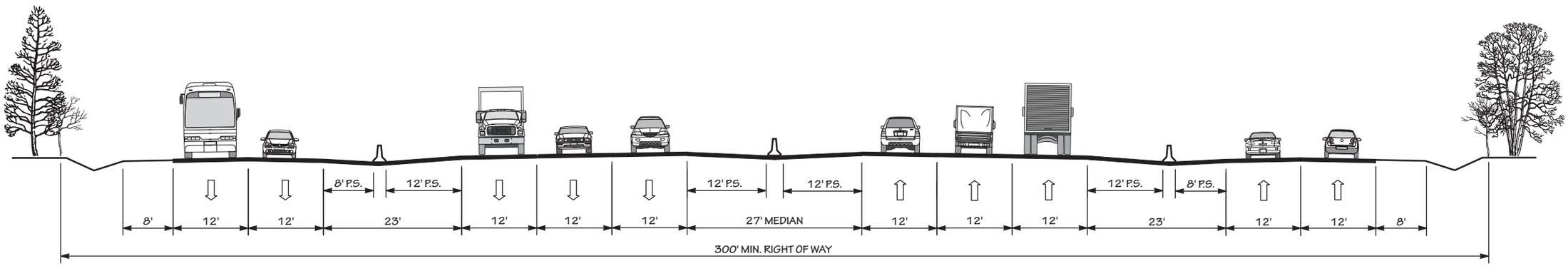


6B 6 LANE DIVIDED (27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS

POSTED SPEED 55-70 MPH

Revised 05/05/2014

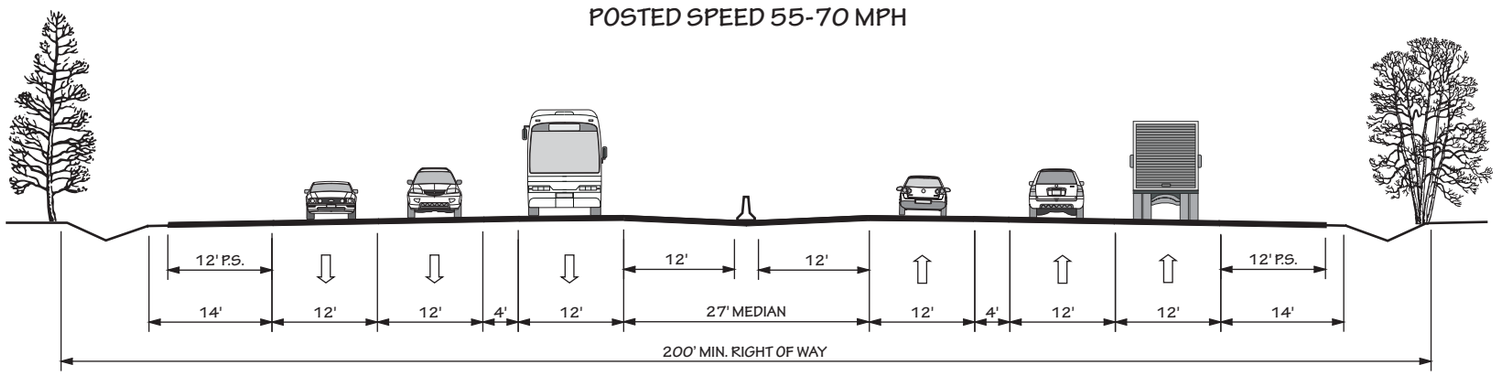
"TYPICAL" HIGHWAY CROSS SECTIONS



6C

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

POSTED SPEED 55-70 MPH



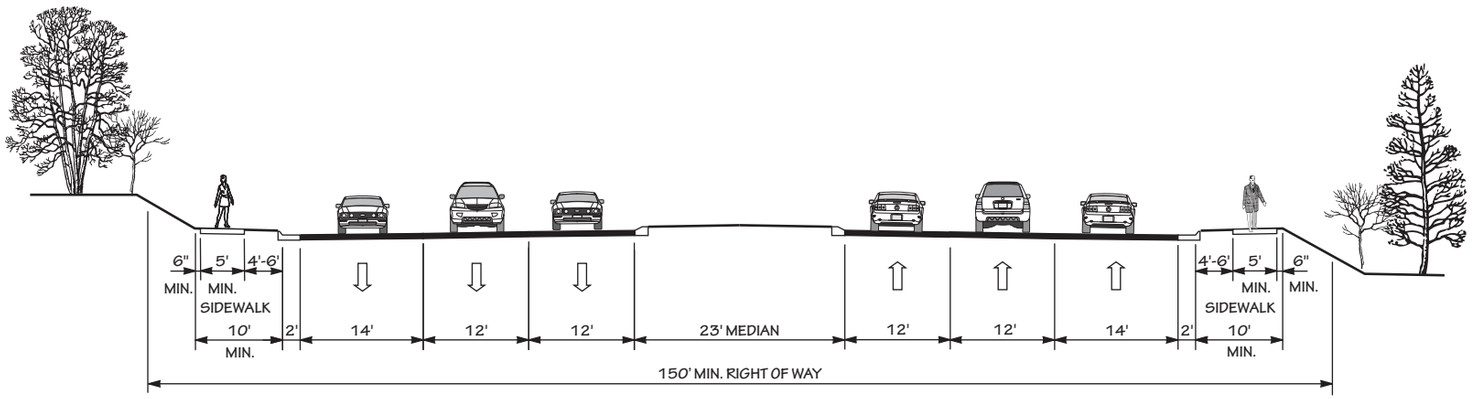
6D

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

POSTED SPEED 55-70 MPH

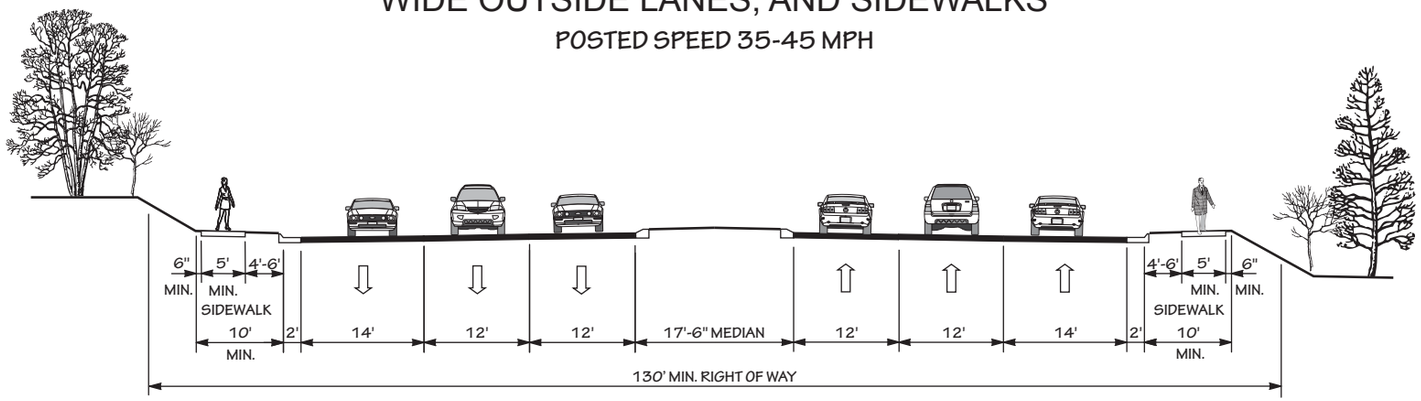
Revised 05/05/2014

"TYPICAL" HIGHWAY CROSS SECTIONS



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

POSTED SPEED 35-45 MPH



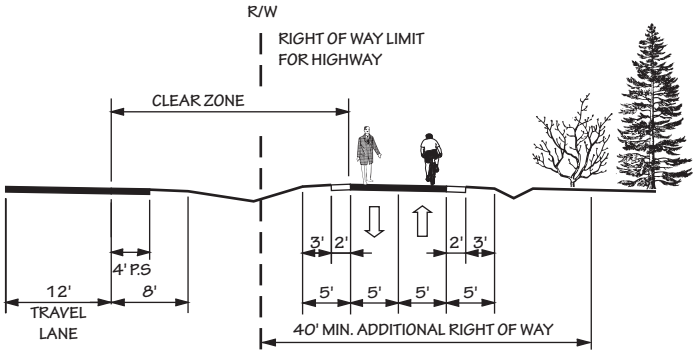
6F 6 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES, AND SIDEWALKS

POSTED SPEED 35-45 MPH

Revised 05/05/2014

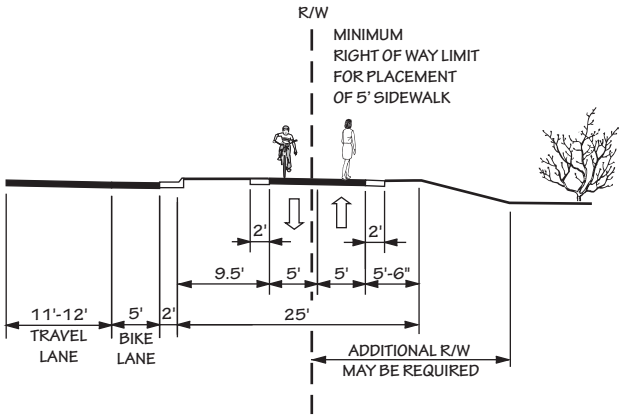
"TYPICAL" HIGHWAY CROSS SECTIONS

M A



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

M B



MULTI - USE PATH ADJACENT TO CURB AND GUTTER

Revised 05/05/2014

Appendix E
Level of Service Definitions

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

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

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

Figure 8 - Level of Service Illustrations

Source: 2010 Highway Capacity Manual, Exhibit 11-4

Appendix F
Bridge Deficiency Assessment

The 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 3. For more details on deficient bridges within the planning area, contact the Structures Management Unit using the information in Appendix A.

Table 3 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	Local ID
12	NC 32	Queen Anne Creek	FO	
20	NC 32	Dillard Creek	SD & FO	B-5507
21	NC 32	Sand Run	FO	B-5507
24	NC 32	Warwick Swamp	FO	B-5507
26	Martin Luther King Jr Avenue (SR 1234)	US17 Bypass	FO	
27	US 17 Bypass	NC 32	FO	CHOW0001-H
28	Paradise Road (SR 1319)	US 17 Bypass	FO	
38	US 17 North Bound	NC 32	FO	CHOW0001-H

Appendix G
Socio-Economic Data Forecasting Methodology

In the development of the Chowan County CTP, existing and anticipated deficiencies were determined through an analysis of the transportation system looking at both current and future travel patterns. Two analysis methods were used: one for the non-modeled/rural areas and another for the more urbanized area around Edenton.

For the non-modeled/rural portion of Chowan County, travel demand was projected from 2012 to 2040 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1990 to 2012. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns. For this CTP, the 2008 Chowan County/Town of Edenton North Carolina Core Land Use Plan[1] was used and is illustrated in Figures 9 and 10, respectively.

It is more difficult to predict future travel patterns in urban areas where there are more alternative route options. Therefore, for the town of Edenton and the surrounding area, travel demand was projected from 2012 to 2040 using a computerized travel demand model. Travel demand models are developed to replicate travel patterns on the existing transportation system as well as to estimate travel patterns for 2040. Additionally, travel demand models require a broad range of socio-economic input data such as population and employment. These inputs are available from sources such as the U.S. Census Bureau for the year 2010, but data for 2040 is also required.

The CTP Steering Committee worked with NCDOT to estimate population growth, economic development potential, and land use trends to determine the potential impacts on the future transportation system in 2040. This data was endorsed by the Edenton Town Council on August 12, 2014 and by the Chowan County Commissioners on August 18, 2014.

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

Population

Population trends were estimated using available data from the Office of State Budget and Management (OSBM), the 2008 Chowan County/Town of Edenton North Carolina Core Land Use Plan, and simple exponential growth. Table 6 shows current and projected population through the year 2040. The 2040 population was projected by applying a 1% growth rate as was done in 2020 and 2030.

[1] *To view this plan, go to: http://www.chowancounty-nc.gov .*

Table 4 – Population Data

Year	Edenton	Chowan County
1980	5,357	12,558
1990	5,268	13,506
2000	5,058	14,526
2010	5,004	14,793
2014	5,105*	15,090*
2020	5,259*	15,548*
2030	5,528*	16,341*
2040	5,809*	17,174*

* Extrapolated by NCDOT

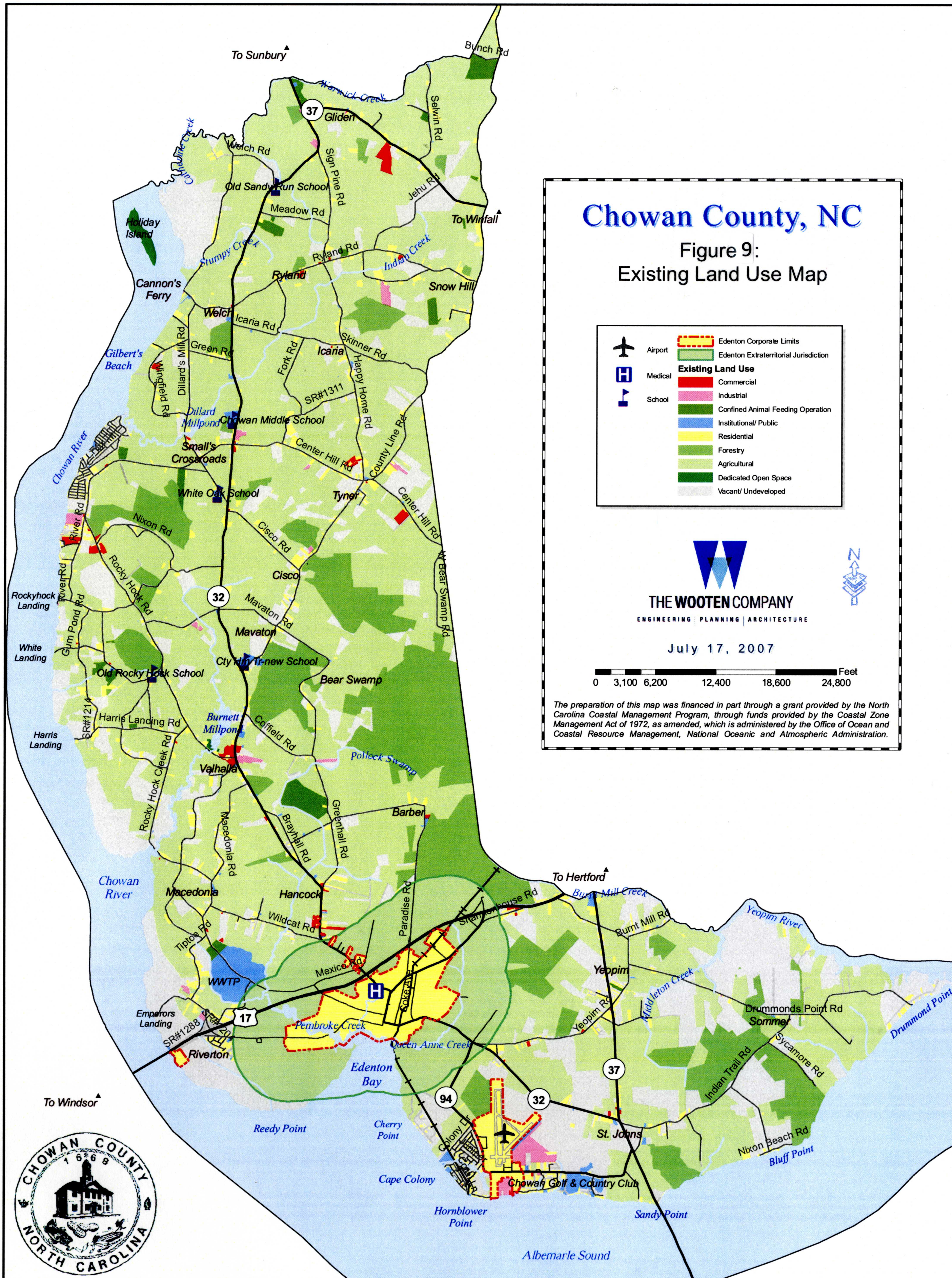
Employment

Future employment conditions within Chowan County were approved by the CTP Steering Committee. This included approximate locations and intensity for proposed employment centers. Any anticipated heavy demand on the future transportation system as a result of these proposals is accounted for in projected traffic volumes. Employment totals were based on US Census Bureau "Quick Facts," and growth rates came from the Federal Deposit Insurance Corporation (FDIC). Initial distribution for the modeled area was achieved with the help of GIS data provided by Chowan County Department of Planning. Countywide 2040 employment totals were based on maintaining the same population-employment ratio as present in 2008.

Table 5 – Employment Data

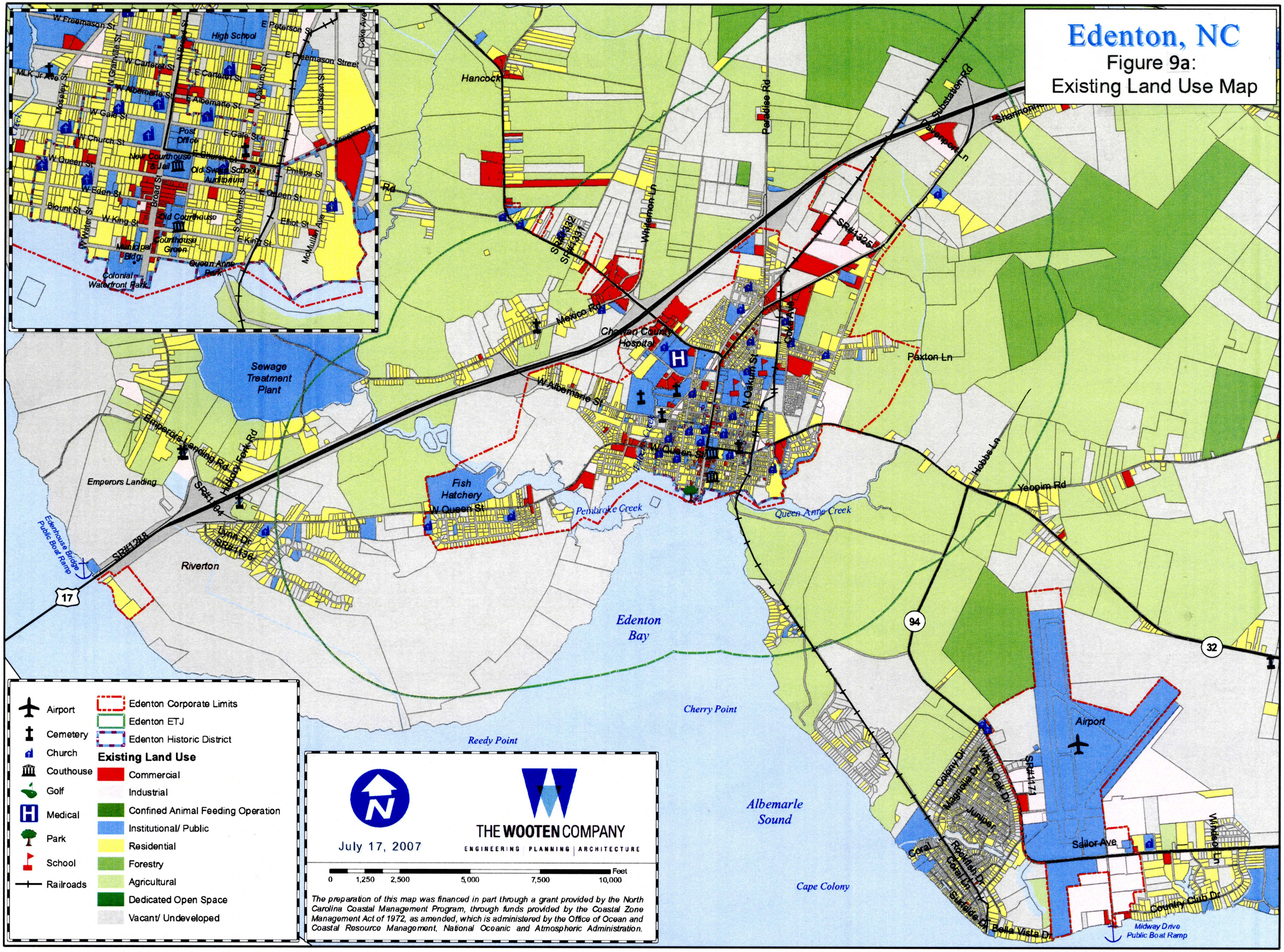
Year	2000	2005	2010	2014		2040
Employment - Chowan County	5974	5861	6190	6314*		7186*

** Estimated by NCDOT*


Chowan County, NC
Figure 9:
Existing Land Use Map
Airport
Medical
School
Edenton Corporate Limits
Edenton Extraterritorial Jurisdiction
Existing Land Use
Commercial
Industrial
Confined Animal Feeding Operation
Institutional/ Public
Residential
Forestry
Agricultural
Dedicated Open Space
Vacant/ Undeveloped
THE WOOTEN COMPANY
ENGINEERING | PLANNING | ARCHITECTURE
N
July 17, 2007
0 3,100 6,200 12,400 18,600 24,800 Feet
The preparation of this map was financed in part through a grant provided by the North Carolina Coastal Management Program, through funds provided by the Coastal Zone Management Act of 1972, as amended, which is administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration.
To Sunbury
Bunch Rd
Warwick Creek
Gliden
Selwin Rd
Welch Rd
Sign Pine Rd
Old Sandy Run School
Jehu Rd
Meadow Rd
To Winfall
Holiday Island
Stumpy Creek
Ryland Rd
Indian Creek
Ryland
Snow Hill
Cannon's Ferry
Welch
Icaria Rd
Skinner Rd
Green Rd
Icaria
Fork Rd
Happy Home Rd
Gilbert's Beach
Wingfield Rd
Dillard's Mill Rd
SR#1311
Dillard Millpond
Chowan Middle School
Chowan River
Small's Crossroads
Center Hill Rd
County Line Rd
White Oak School
Tyner
Center Hill Rd
Nixon Rd
River Rd
Cisco Rd
Rocky Hock Rd
Cisco
W Bear Swamp Rd
Rockyhock Landing
River Rd
Gum Pond Rd
Mavaton Rd
Mavaton
White Landing
Cty Hill Tr-new School
Old Rocky Hock School
Bear Swamp
SR#1214
Harris Landing Rd
Burnett Millpond
Coffield Rd
Harris Landing
Pollock Swamp
Rocky Hock Creek Rd
Valhalla
Macedonia Rd
Brayhall Rd
Greenhall Rd
Barber
Chowan River
Macedonia
Hancock
Paradise Rd
To Hertford
Burnt Mill Creek
Wildcat Rd
Yeopim River
Burnt Mill Rd
Tiptoe Rd
Mexico Rd
Yeopim
WWTP
Middleton Creek
Drummond Point
Drummonds Point Rd
Emperors Landing
Yeopim Rd
Sommer
SR#1288
Pembroke Creek
Queen Anne Creek
Sycamore Rd
Riverton
Indian Trail Rd
Edenton Bay
To Windsor
Reedy Point
Cherry Point
Colony Dr
St. Johns
Nixon Beach Rd
Bluff Point
Cape Colony
Chowan Golf & Country Club
Hornblower Point
Sandy Point
Albemarle Sound
CHOWAN COUNTY
1668
NORTH CAROLINA
37
32
17
94

Edenton, NC

Figure 9a:
Existing Land Use Map



Airport
Cemetery
Church
Couthouse
Golf
Medical
Park
School
Railroads

Edenton Corporate Limits
Edenton ETJ
Edenton Historic District

Existing Land Use

Commercial
Industrial
Confined Animal Feeding Operation
Institutional/ Public
Residential
Forestry
Agricultural
Dedicated Open Space
Vacant/ Undeveloped

July 17, 2007

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0 1,250 2,500 5,000 7,500 10,000 Feet

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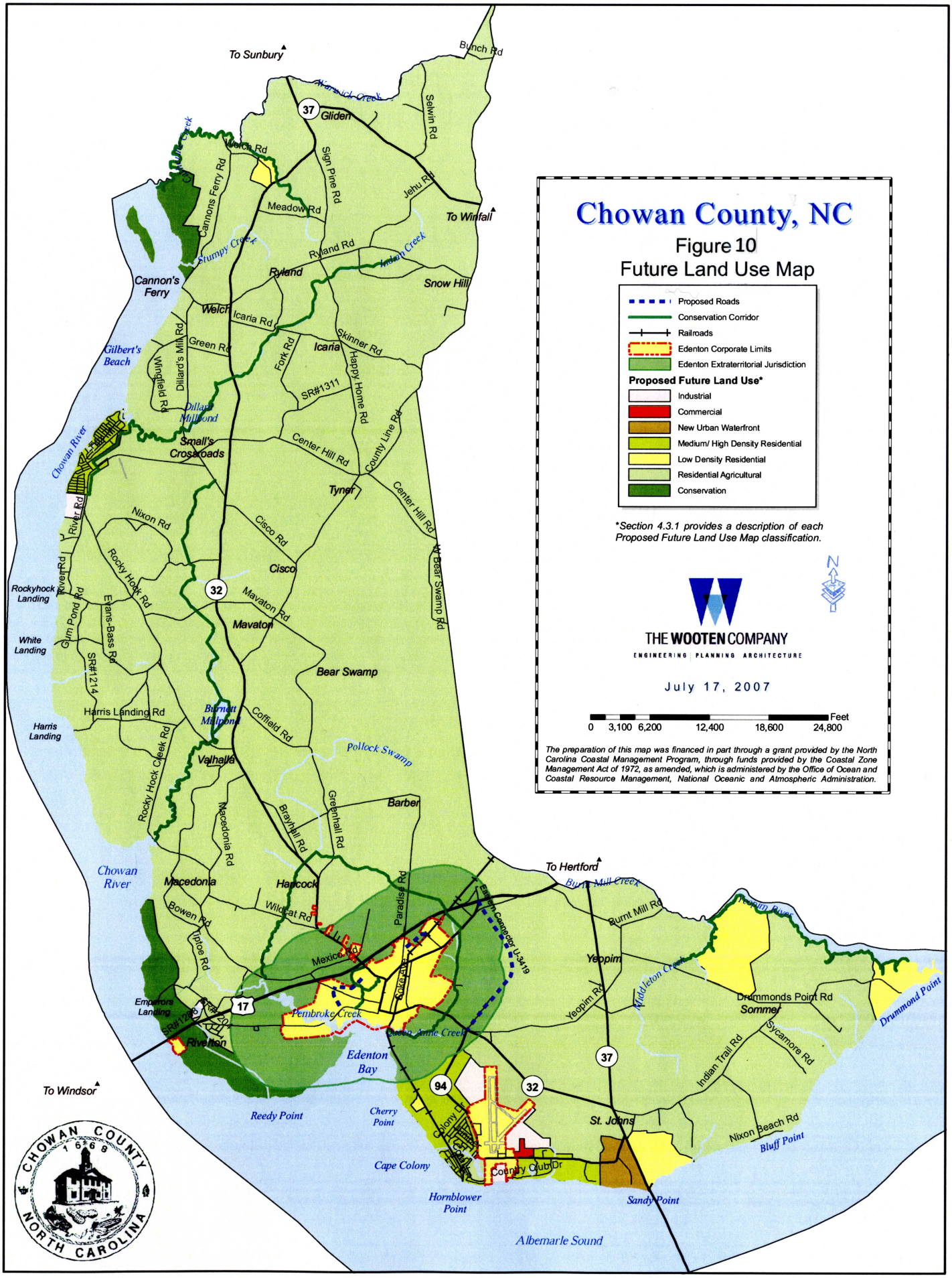
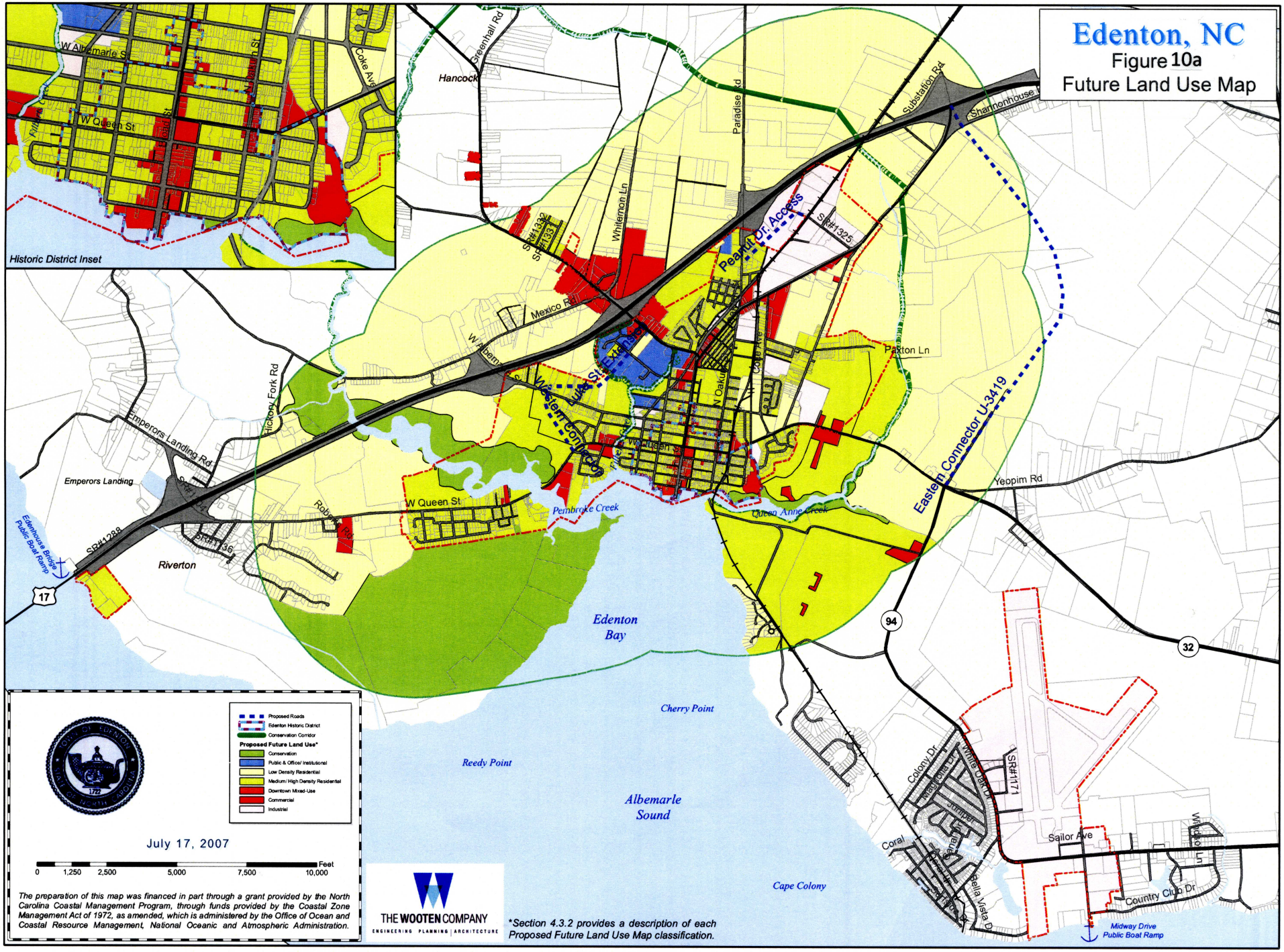

Chowan County, NC
Figure 10
Future Land Use Map
Proposed Roads
Conservation Corridor
Railroads
Edenton Corporate Limits
Edenton Extraterritorial Jurisdiction
Proposed Future Land Use*
Industrial
Commercial
New Urban Waterfront
Medium/ High Density Residential
Low Density Residential
Residential Agricultural
Conservation
*Section 4.3.1 provides a description of each Proposed Future Land Use Map classification.
THE WOOTEN COMPANY
ENGINEERING | PLANNING | ARCHITECTURE
July 17, 2007
0 3,100 6,200 12,400 18,600 24,800 Feet
The preparation of this map was financed in part through a grant provided by the North Carolina Coastal Management Program, through funds provided by the Coastal Zone Management Act of 1972, as amended, which is administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration.
To Sunbury
To Winfall
To Hertford
To Windsor
Bunch Rd
Glisden
Selwin Rd
Jehu Rd
Sign Pine Rd
Meadow Rd
Cannons Ferry Rd
Welch Rd
Stumpy Creek
Ryland Rd
Indian Creek
Ryland
Snow Hill
Cannon's Ferry
Welch
Icaria Rd
Skinner Rd
Icaria
Fork Rd
Happy Home Rd
SR#1311
Green Rd
Dillard's Mill Rd
Wingfield Rd
Gilbert's Beach
Dillard Millpond
Small's Crossroads
Center Hill Rd
County Line Rd
Tyner
Center Hill Rd
Chowan River
River Rd
Nixon Rd
Cisco Rd
Cisco
Rocky Hock Rd
Mt Bear Swamp Rd
Rockyhock Landing
Gum Pond Rd
Evans-Bass Rd
Mavaton Rd
Mavaton
White Landing
SR#1214
Bear Swamp
Harris Landing Rd
Burnett Millpond
Coffield Rd
Harris Landing
Rocky Hock Creek Rd
Pollock Swamp
Valhalla
Barber
Greenhall Rd
Braxhall Rd
Macedonia Rd
Chowan River
Macedonia
Hancock
Wildcat Rd
Bowen Rd
Triploe Rd
Paradise Rd
Mexico Rd
Eastern Connector U-3419
Burnt Mill Creek
Burnt Mill Rd
Yeopim River
Yeopim
Yeopim Rd
Middleton Creek
Drummonds Point Rd
Sommer
Drummond Point
Sycamore Rd
Indian Trail Rd
Emperors Landing
SR#1206
Riverton
Pembroke Creek
Queen Anne Creek
Edenton Bay
Reedy Point
Cherry Point
Colony Dr
Cape Colony
Country Club Dr
Hornblower Point
St. Johns
Nixon Beach Rd
Bluff Point
Sandy Point
Albemarle Sound
CHOWAN COUNTY
1668
NORTH CAROLINA



The preparation of this map was financed in part through a grant provided by the North Carolina Coastal Management Program, through funds provided by the Coastal Zone Management Act of 1972, as amended, which is administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration.

Appendix H
Public Involvement

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

List of CTP Steering Committee Members

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

❖ Ann-Marie Knighton	Edenton Town Manager
❖ Sam Barrow	Edenton Town Planner
❖ Frank Miglorie	Edenton Chowan Partnership
❖ Craig Miller	Edenton Town Planning Board
❖ Jeff Smith	Chowan County Commissioner
❖ Cordell Palmer	Chowan County Sheriff's Department
❖ Kevin Howard	Chowan County Manager
❖ Simon Rich	Business Owner
❖ Bobby Winslow	Chowan County Planning Board
❖ Linda Peterson	Albemarle Resource Conservation & Development
❖ Brad Bass	Chowan County Public Schools
❖ Angela Welsh	Albemarle Rural Planning Organization
❖ Gretchen Byrum	NCDOT Division 1, Division Planning Engineer
❖ Vernia Wilson	NCDOT Transportation Planning Branch

CTP Vision, Goals, Objectives and MOEs

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

The vision statement, goals and objectives reflect what is important for the area and defines any local preferences concerning the transportation system and community assets. The vision statement is the framework for the area's strategic planning. Goals and objectives document how the area plans to fulfill its vision. The goals break down the vision statement into themes, while the objectives document how the area plans to

make progress towards achieving each goal. MOEs are established to enable the area to track the progress of each objective.

VISION

To provide a safe, reliable, efficient and integrated multimodal transportation system throughout Chowan County without regards to jurisdictional boundaries that encourages healthy living, sustainable economic development, recreation and connectivity that is compatible with the environmental and land use patterns.

GOALS

1. Encourage development and use of waterways and multi-use trails for recreational activities throughout the county.
2. Preserve the rural character of the county while accommodating growth to targeted areas.
3. Advocate for US 17 to be the preferred expansion route for the I-44 connector.
4. Provide an efficient well designed highway system that is in harmony with economic and agricultural development.
5. Promote public involvement at the local level, to identify and prioritize transportation needs and improvements.
6. Enhance and expand services for alternative modes of transportation including but not limited to rail, aviation and the waterway systems thru increased funding and cooperative planning.

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 are tailored to each area as appropriate. A summary of the Chowan G&O survey is given below.

1. How important are the following Transportation goals?
   Answered: 623 Skipped: 8

Answer Choices	Public transportation options	Congested areas	Preserve community and rural character	Protect the environment	Support economic growth	Improve services for special needs	More opportunities for safe biking and walking instead of driving	Total Respondents
Not important	55.42% 184	52.71% 175	18.67% 62	8.13% 27	8.13% 27	19.28% 64	34.64% 115	332
Important	45.95% 244	45.39% 241	48.59% 258	45.95% 244	35.78% 190	52.92% 281	45.01% 239	531
Very important	30.80% 170	27.54% 152	50.72% 280	58.51% 323	70.65% 390	43.30% 239	44.75% 247	552

2. Please select which of the following methods you agree with for increasing a road's efficiency?
   Answered: 610 Skipped: 21

Answer Choices	Building additional travel lanes	Making improvements to intersection such as better traffic signal timing, adding guard rails, creating roundabouts	Controlling the frequency and locations of driveways and cross streets that access the road	Total Respondents
Agree	63.62% 355	87.46% 488	70.07% 391	558
Disagree	69.50% 221	31 .45% 100	55.97% 178	318

3. Are you concerned with bicycle and pedestrian safety at any specific locations?
   Answered: 601 Skipped: 30

Answer Choices	Responses
Yes	41.10% (247)
No	58.90% (354)

4. Are you concerned with vehicle accident problems at any specific locations?
   Answered: 596 Skipped: 35

Answer Choices	Responses
Yes	41.10% (247)
No	58.90% (354)

5. Is commercial truck traffic negatively affecting your area?
   Answered: 618 Skipped: 13

Answer Choices	Responses
Yes	20.55% (127)
No	79.45% (491)

6. To what areas would you like to have improved access?
   Answered: 416 Skipped: 215

Answer Choices	Responses
Hampton Roads	37.02% (154)
Greenville, NC	43.03% (179)
Washington, NC	16.83% (70)
Tidewater	32.45% (135)
Outer Banks	58.17% (242)

7. What roads would you like to have improved access to?
   Answered: 416 Skipped: 215

Answer Choices	Responses
US 17	35.66% (133)
NC 32	76.41% (285)
NC 37	24.66% (92)
NC 94	17.16% (64)
BUS 17	16.62% (62)
BUS 32	17.69% (66)
US 17 Bypass	20.38% (76)

8. Are there areas where you would like to see sidewalks or multi-use paths (for bicycling or walking) constructed or improved?
   Answered: 99 Skipped: 532

Answer Choices	Responses
US 17	18.18% (18)
NC 32	68.69% (68)
NC 37	20.20% (20)
NC 94	21 .21% (21)
BUS 17	28.28% (28)
BUS 32	25.25% (25)
US 17 Bypass	11.11% (11)

9. Do you use the local waterways?
   Answered: 607 Skipped: 24

Answer Choices	Commercial	Recreational
Yes	98.24% (335)	85.04% (290)
No	7.32% (23)	98.73% (310)

10. Would you use on-road bicycle facilities such as bicycle lanes and wider road shoulders?
    Answered: 590 Skipped: 41

Answer Choices	Responses
Yes	43.73% (258)
No	56.27% (332)

11. What is your age?
    Answered: 614 Skipped: 17

Answer Choices	Responses
Under 18	0% (0)
18-24	0.49% (3)

25-34	4.07% (25)
35-44	8.63% (53)
45-54	14.98% (92)
55-64	22.64% (139)
65-74	31.43% (193)
Over75	17.75% (109)

12. How would you classify your race?
Answered: 592 Skipped: 39

Answer Choices	Responses
White	89.19% (528)
Black	8.11% (48)
Native American	0.17% (1)
Hispanic	0.17% (1)
Asian	0.34% (2)
Other	2.03% (12)

13. How many people live in your household?
Answered: 612 Skipped: 19

Answer Choices	Responses
1	21.73% (133)
2	50.65% (310)
3	11.60% (71)
4	11.27% (69)
5	2.94% (18)
6	1.14% (7)
7	0.00% (0)
8 or more	0.65% (4)

14. Where do you live?
Answered: 612 Skipped: 19

Answer Choices	Responses
Edenton (in Town)	33.66% (206)
Chowan County	66.34% (406)

Public Meetings

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

Public Workshop # 1

The first meeting was held on December 8, 2014 at the Edenton Town Hall. The session was publicized in the local newspaper and was held from 4pm to 7pm. This workshop introduced the draft CTP maps to the public, as well as what could be expected of the final plan. Seven citizens were in attendance. They were given the opportunity to look over the maps and give additional feedback if anything needed to be added, removed, or changed. There were minimal comments about the plan, which were included in the update of the plan.

Public Workshop # 2

The second meeting was held on September 28, 2015, at the Edenton Town Hall. This workshop presented the revised draft CTP maps to the public for review. Approximately three citizens were in attendance. The revisions to the plan since the first workshop were reviewed and additional feedback was sought on whether anything needed to be added, removed, or changed. There were a few comments given in support of the bicycle recommendations that were already included in the plan.

Local Adoptions

A resolution for adoption was presented to the county commissioners during the Chowan County Commissioners meeting on October 19, 2015 at 6pm. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting.

A resolution for adoption was also presented to the town council during the Edenton Town Council meeting on October 26, 2015 at 6pm. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting.