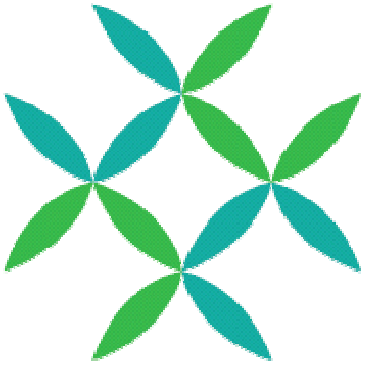
Comprehensive Transportation Plan



Camden County

July, 2014

Comprehensive Transportation Plan

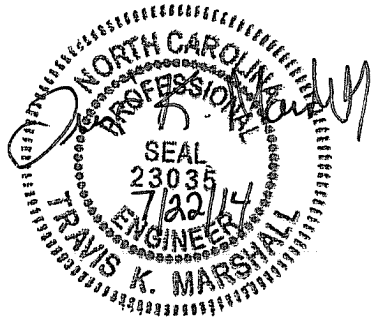
Camden County

Prepared by: Nazia Sarder, Project Engineer

Behshad Norowzi, Northeast Planning Group Supervisor
Transportation Planning Branch
N.C. Department of Transportation

In Cooperation with: Camden County
Albemarle Rural Planning Organization

July, 2014



Travis Marshall, PE

Executive Summary

The Comprehensive Transportation Plan (CTP) is a long range plan that identifies major transportation improvement needs in the study area. These needs are determined with the best information available including, but not limited to, population, economic conditions, traffic trends, and patterns of land development. The CTP is a multi-modal plan, which in addition to highway users addresses the concerns of transit users, bicyclists, and pedestrians. The plan develops long term solutions and recommendations for the next 25 to 30 years by promoting and providing safe, efficient, cost-effective and environmentally sensitive use of the transportation system, while addressing current and future travel needs.

In July of 2011, a study was initiated in a joint effort between Camden County, the North Carolina Department of Transportation (NCDOT), and Albemarle Rural Planning Organization to cooperatively develop the Camden County Comprehensive Transportation Plan (CTP). The plan covers transportation needs through year 2040. It 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. Recommendations are shown on Figure 1 – Camden County Comprehensive Transportation Plan (Sheets 1-5), which were mutually endorsed/adopted in 2013. Implementation of the plan is the responsibility of Camden County and NCDOT. Chapter 2 provides more detailed information on the implementation process.

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

- **US-158 Proposed Relocation (US 64/74A Relocation):** The proposed project (local ID: CAMD0001-H) is to upgrade part of US-158 to a four-lane divided highway from Currituck County line to NC 34 intersection and relocate part of US-158 on a new location from NC 34 intersection to Pasquotank County line. The proposed project will fulfill the SHC Vision Plan, which designates US-158 as an expressway.

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Appendices

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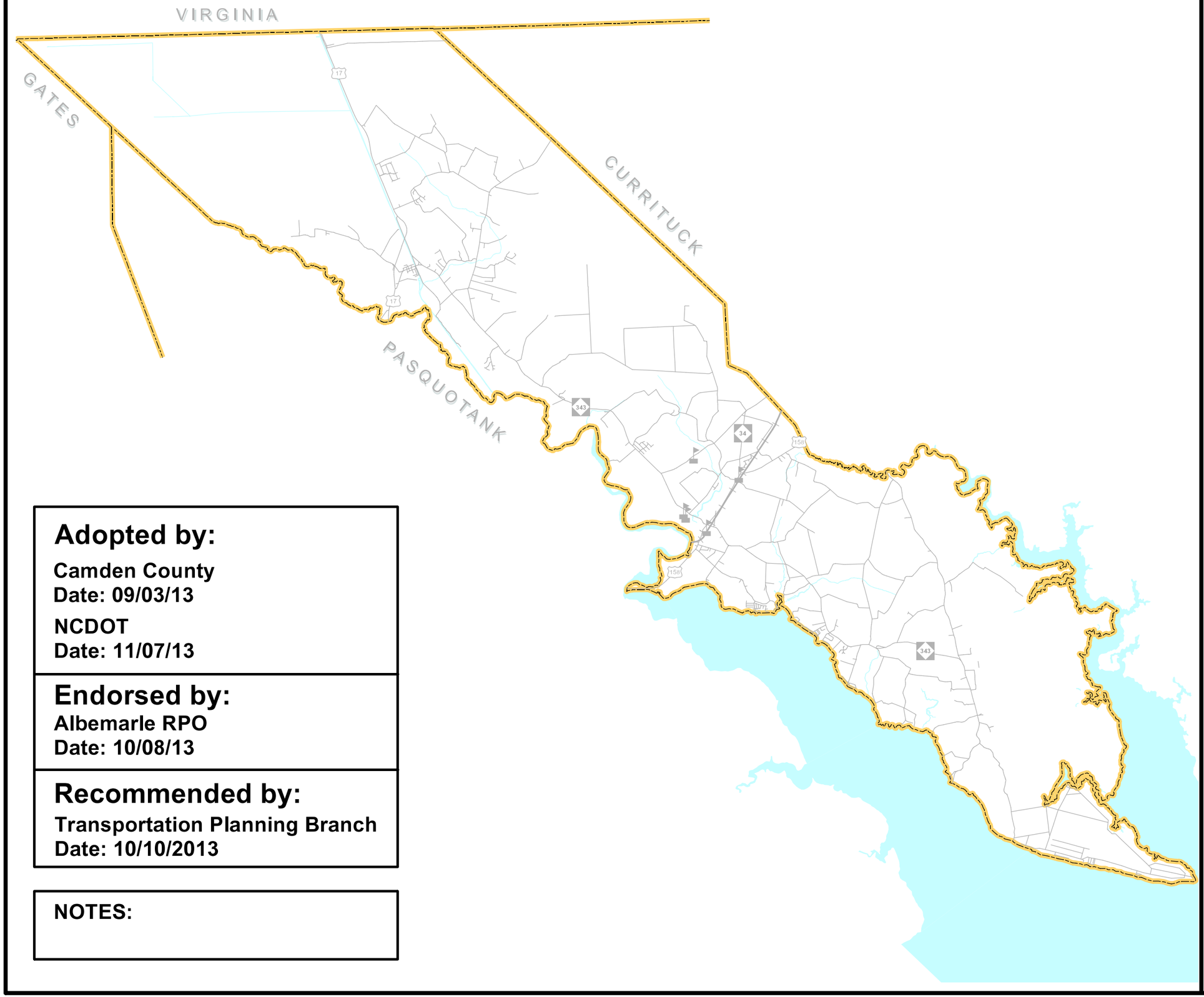


Camden County

North Carolina

Comprehensive Transportation Plan

Plan date: May, 2013

Legend

- CamdenBoundary
- Roads
- Railroads
- Schools
- Rivers and Streams

Miles

0 1.5 3 6

N W E S

Figure 1, Sheet 1 of 5

Base map date: November 2011

Adopted by:

Camden County
Date: 09/03/13

NCDOT
Date: 11/07/13

Endorsed by:

Albemarle RPO
Date: 10/08/13

Recommended by:

Transportation Planning Branch
Date: 10/10/2013

NOTES:

Highway Map

Camden County
North Carolina

Comprehensive Transportation Plan

Plan date: May, 2013

Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

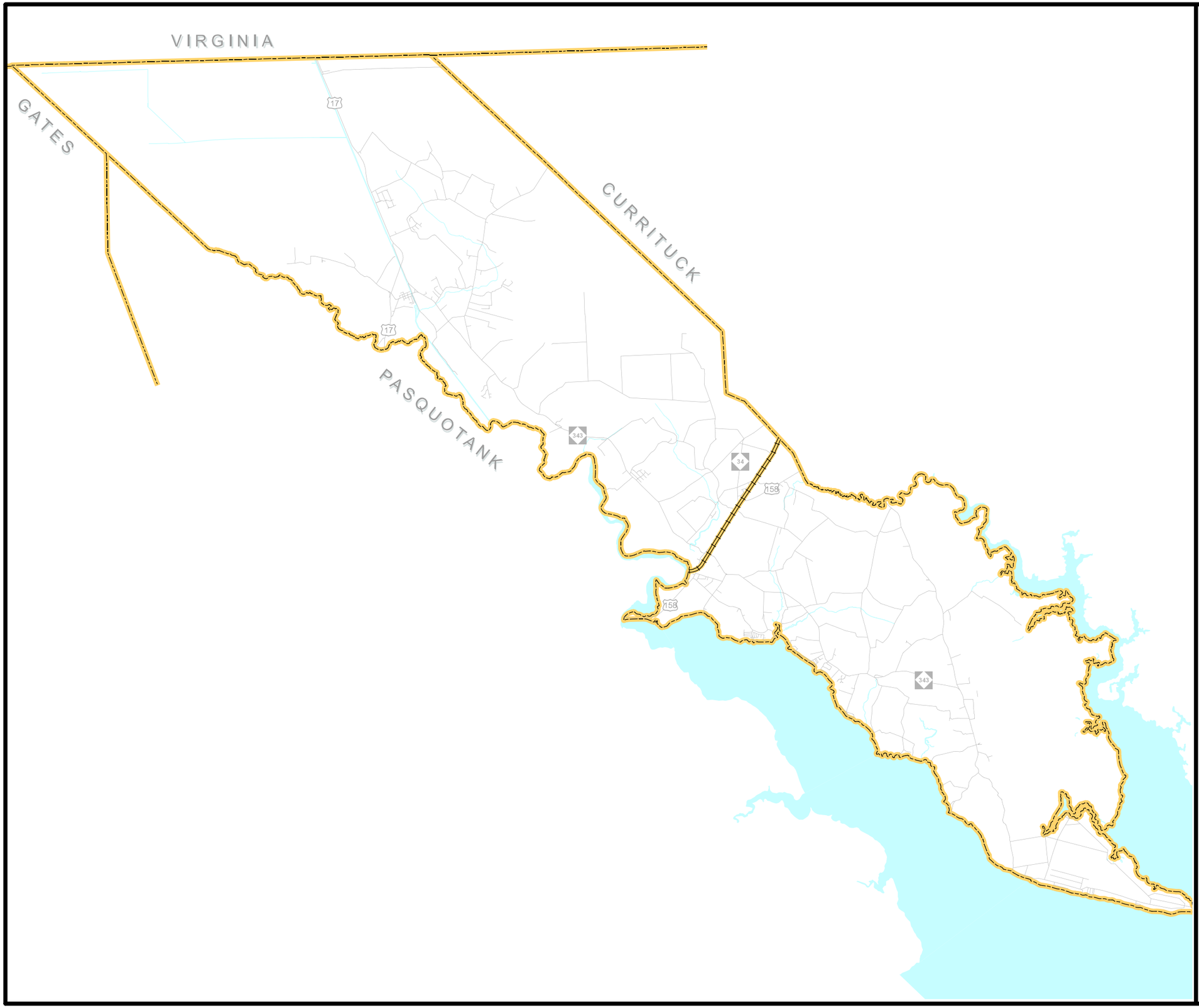
- Existing Interchange
- Proposed Interchange
- Existing Grade Separation
- Proposed Grade Separation

Miles
0 1.5 3

N W E S

Figure 1, Sheet 2 of 5

Base map date: November 2011



Public Transportation and Rail Map

Camden County
North Carolina

Comprehensive Transportation Plan

Plan date: May, 2013

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

Park and Ride Lot
- Existing
- Recommended

Miles
0 1.5 3

N W E S

Figure 1, Sheet 3 of 5

Base map date: November 2011

Bicycle Map

Camden County

North Carolina

Comprehensive Transportation Plan

Plan date: May, 2013

On-road
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

Miles
0 1.5 3

N W E S

Figure 1, Sheet 4 of 5

Base map date: November 2011

VIRGINIA

GATES

CURRITUCK

PASQUOTANK

CAMDEN

Inset A

SR-1219 Norseshoe Rd

SR-1203 Scotland Rd

SR-1107 Sawyer Hook Rd

SR-1132 Bunker Hill Rd

SR-1152 Country Club Rd

SR-1104 Wharf Rd

NC 4

17

343

34

158

Inset A

0 0.4 0.8 Miles

SR - 1219 Horseshoe Rd

Halstead St

McBride St

Mullen Rd

Spencer Ave

Union Camp Rd

Main St

Canal Dr

Bunker Hill Rd

McCoy Rd

Old Swamp Rd

Joys Creek Rd

River Bridge Rd

Dismal Swamp Canal

Turners Cut

Bingham Rd

Jerome Camel Rd

Pasquotank River

Pedestrian Map

Camden County
North Carolina

Comprehensive Transportation Plan

Plan date: May, 2013

Sidewalks
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

Miles
0 1.5 3 6

N W E S

Figure 1, Sheet 5 of 5

Base map date: November 2011

VIRGINIA

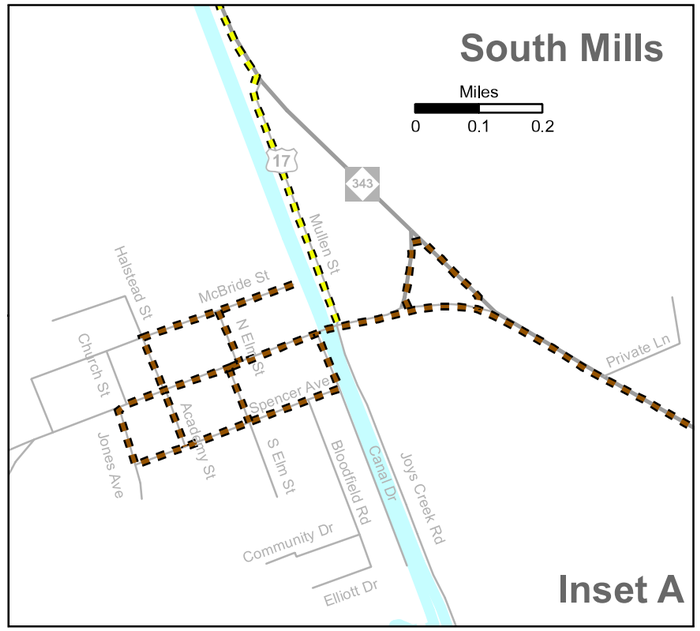
GATES

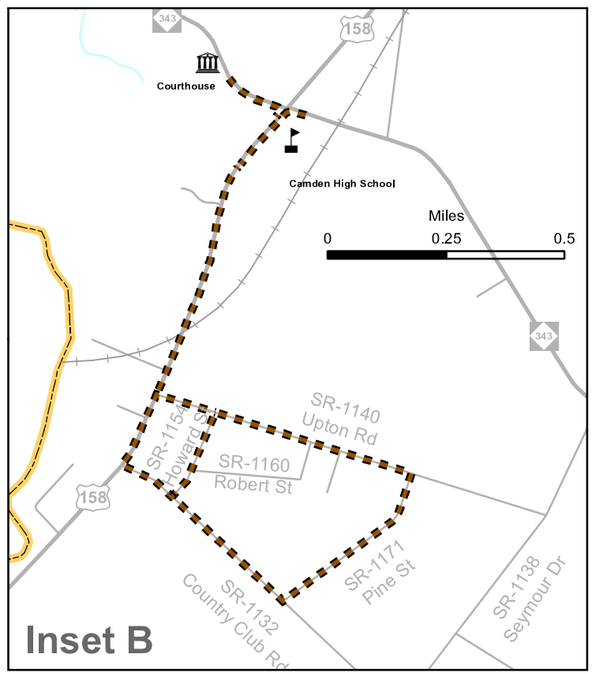
CURRITUCK

PASQUOTANK

Inset A

Inset B





I. Analysis of the Existing and Future Transportation System

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

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

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

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, traffic crash analysis, and a system deficiency analysis. This information, along with population growth, economic development potential, and land use trends, is used to determine the potential impacts on the future transportation system.

Roadway System Analysis

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

One of those statewide initiatives is the Strategic Highway Corridor (SHC) Vision Plan adopted by the Board of Transportation on September 2, 2004 and last revised on July 10, 2008. The SHC Vision Plan represents a timely initiative to protect and maximize

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

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

In the development of this plan, travel demand was projected from 2010 to 2040 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1990 to 2010. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns. The established future growth rates were endorsed by the Camden County CTP Steering Committee in December of 2011. Refer to Table 7 in Appendix J for details.

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

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

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

- Directional split of traffic or the percentages of vehicles traveling in each direction along a road at any given time.

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

LOS D indicates "practical capacity" of a roadway, or the capacity at which the public begins to express dissatisfaction. The practical capacity for each roadway was developed based on the 2000 Highway Capacity Manual using the "Level of Service D Standards for System Level Planning" developed by the NCDOT's Transportation Planning Branch. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C for new facilities. Refer to Appendix E for detailed information on LOS.

Traffic Crash Analysis

Traffic crashes are often used as an indicator for locating congestion and roadway problems. Crash patterns obtained from an analysis of crash data can lead to the identification of improvements that will reduce the number of crashes. A crash analysis was performed for the Camden County CTP for crashes occurring in the planning area between November 1, 2008 and November 1, 2011. During this period, the intersection Lambs Road and Scotland Road was identified as an intersection having crashes with severity higher than the state average. The intersection of US 158 and NC 343 had the highest number of crashes; 13 crashes. Due to this intersection being surrounded by major buildings and businesses (Camden County High School, County Office, Post Office, SECU etc.), there is a high volume of crashes compared to the remainder of the county. Refer to Figure 4 and Appendix F for detailed crash analysis.

Bridge Deficiency Assessment

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

The NCDOT Structure 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. Seven deficient bridges were identified within the planning area and are illustrated in Figure 5. Refer to Appendix G for more detailed information.

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2010 Traffic Volumes Capacity Deficiencies

Camden County

North Carolina

Comprehensive Transportation Plan

Plan date: May, 2013

Legend

- Over Capacity
- Near Capacity
- Under Capacity
- Railroads
- Rivers and Streams
- ####
2010 Volume (AADT)
2010 Road Capacity

Miles

0 1.5 3 6

N W E S

Figure 2

Base map date: November 2011

2040 Volumes and Capacity Deficiencies

Camden County

North Carolina

Comprehensive Transportation Plan

Plan date: May, 2013

Legend

- Over Capacity
- Near Capacity
- Under Capacity
- Railroads
- Rivers and Streams
- #### / #### 2040 Volume (AADT) / 2010 Road Capacity

Miles

0 1.5 3 6

N W E S

Figure 3

Base map date: November 2011

Crash Locations 11/2008 - 11/2011

Camden County

North Carolina

Comprehensive Transportation Plan

Plan date: May, 2013

Legend

- Roads
- Railroads
- Rivers and Streams
- # Crash Locations (# - Map Index)

Miles

0 1.5 3 6

N W E S

Figure 4

Base map date: November 2011

Public Transportation and Rail

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

Public Transportation

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

- Community Transportation - Local transportation efforts formerly centered on assisting clients of human service agencies. Today, the vast majority of rural systems serve the general public as well as those clients.

- Regional Community Transportation - Regional community transportation systems are composed of two or more contiguous counties providing coordinated / consolidated service. Although such systems are not new, the NCDOT Board of Transportation is encouraging single-county systems to consider mergers to form more regional systems.

- Urban Transportation – There are currently nineteen urban transit systems operating in North Carolina, from locations such as Asheville and Hendersonville in the west to Jacksonville and Wilmington in the east. In addition, small urban systems are at work in three areas of the state. Consolidated urban-community transportation exists in five areas of the state. In those systems, one transportation system provides both urban and rural transportation within the county.

- Regional Urban Transportation - Regional urban transit systems currently operate in three areas of the state. These systems connect multiple municipalities and counties.

- Intercity Transportation - Intercity bus service is one of a few remaining examples of privately owned and operated public transportation in North Carolina. Intercity buses serve many cities and towns throughout the state and provide connections to locations in neighboring states and throughout the United States and Canada. Greyhound/Carolina Trailways operates in North Carolina. However, community, urban and regional transportation systems are providing increasing intercity service in North Carolina.

Camden County is a member of the Inter-County Public Transportation Authority (ICPTA) along with Currituck, Chowan, Perquimans and Pasquotank counties. ICPTA provides non-fixed route transportation services in rural areas to health care, shopping, education, employment, public services, and recreation. ICPTA maintains a fleet of busses and vans and its offices are located in Elizabeth City in Pasquotank County.

Currently there is no existing fixed public transportation route in Camden County, but the public survey conducted as part of the study indicated that there is potential interest

in providing such services to Hampton Roads, Virginia, Elizabeth City and the Outer Banks in North Carolina.

Rail

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

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

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

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

An inventory of existing and planned rail facilities for the planning area is presented on Sheet 3 of Figure 1. Five miles of a short railroad line cross Camden County running parallel to US 158. The railroad belongs to the “Chesapeake and Albemarle Railroad Company” and runs from Norfolk, Virginia to Edenton, North Carolina. The line provides no passenger service. Only three trains per day serving local businesses and traveling at 15 to 20 mph use the railroad.

There are no recommendations for additional train services at this time. Refer to Appendix A for contact information for the Rail Division.

Bicycles & Pedestrians

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

NCDOT’s Bicycle Policy, updated in 1991, clarifies responsibilities regarding the provision of bicycle facilities upon and along the 77,000-mile state-maintained highway system. The policy details guidelines for planning, design, construction, maintenance,

and operations pertaining to bicycle facilities and accommodations. All bicycle improvements undertaken by the NCDOT are based upon this policy.

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

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

NC Bike Route 4 (North Line Trace) is a 400-mile route across the state that runs east-west just south of the Virginia border from the mountains to the coast. NC Bike Route 4 enters Camden county near Elizabeth City as it follows US 158, then it turns onto NC 343 and exits the county at the border with Currituck County through SR 1203 (Scotland Road).

Inventories of existing and planned bicycle and pedestrian facilities for the planning area are presented on Sheets 4 and 5 of Figure 1. All recommendations for bicycle and pedestrian facilities were coordinated with the local governments and the NCDOT Division of Bicycle and Pedestrian Transportation. Refer to Appendix A for contact information.

Land Use

G.S. §136-66.2 requires that local areas have a current (less than five years old) land development plan prior to adoption of the CTP. For this CTP, the 2005 Camden County Land Use Plan was used after resolution to reaffirm its use by the county commissioners was passed on October, 2011. The resolution stated that the plan remained in effect for the development of the 2011 Camden County CTP. Existing and future land use plans are shown in Figures 6 and 7, respectively.

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

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

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

There is significant anticipated growth in the north portion of the county along the US 17 corridor. An expected development called Camden Plantation will cover an area of near 660 acres and will consist of approximately 1700 homes, condos, apartments, and 160,000 square feet of commercial development. It is scheduled to be built in four phases over the next 15-20 years, which fits within the planning horizon for this plan.

An Eco-Industrial park consisting of 12 light industrial lots is planned less than a mile north of Camden Plantation along US 17. The complex will occupy 300 acres of land and at the end of its 20-year vision it will include commercial, research and industrial development.

Deficient Bridges

Camden County

North Carolina

Comprehensive Transportation Plan

Plan date: May, 2013

Legend

- Roads
- Railroads
- Rivers and Streams
- # Defficient Bridges (# - Bridge Number)

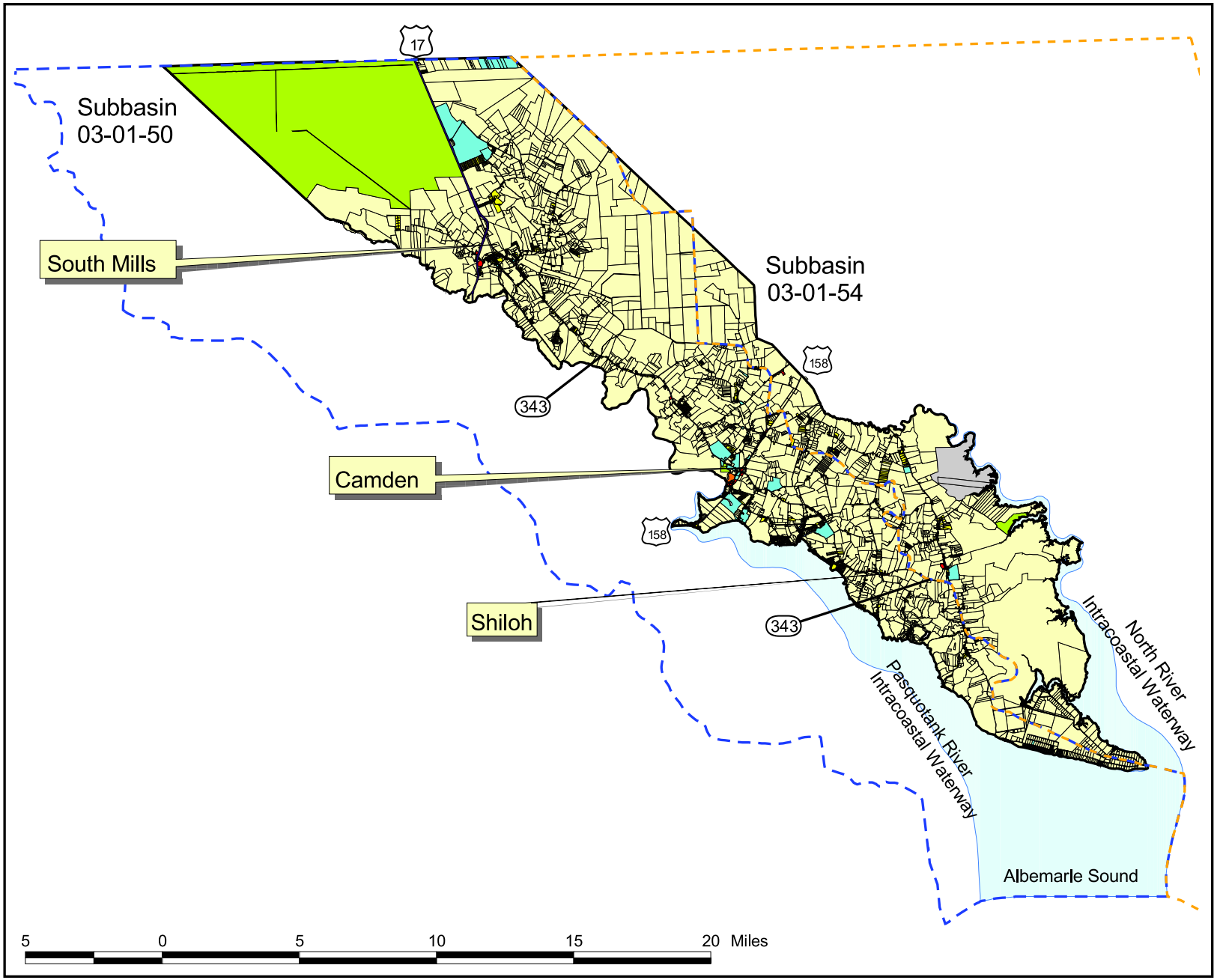
Miles

0 1.5 3 6

N W E S

Figure 5

Base map date: November 2011



Camden County Land Use Plan

Existing Land Use

Legend

- Subbasin 03-01-54
- Subbasin 03-01-50
- Hydrology

Existing Land Use

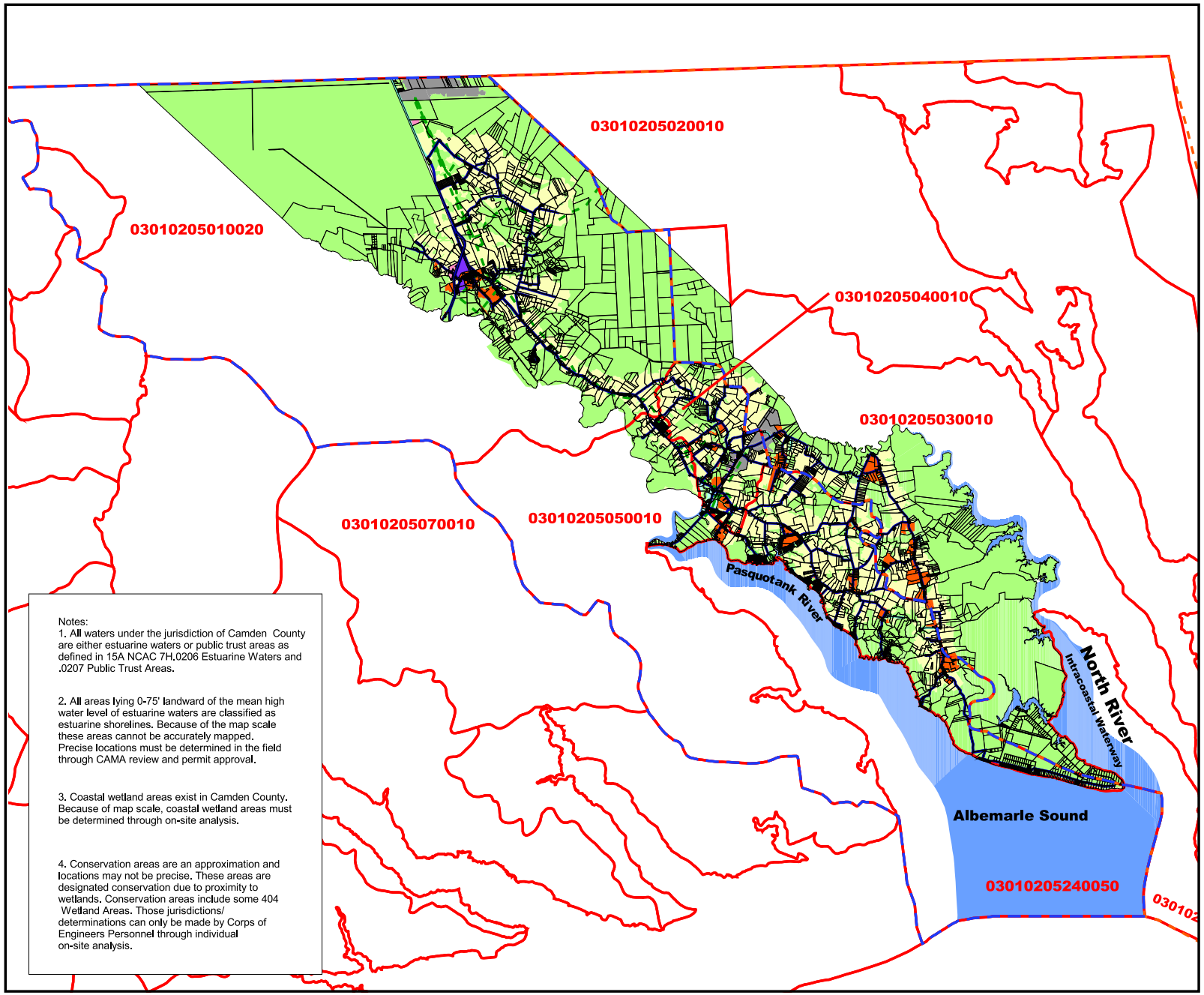
- Agricultural/Low Density Residential
- Commercial
- Industrial
- Multi-Family
- Office and Institutional Complex
- Residential
- Recreational

* The orange and blue dash line represent the shared boundary between Subbasin 03-01-50 and Subbasin 03-01-54.

N
W E
S

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.

Figure 6



Camden County Land Use Plan

Future Land Use

Legend

- Subbasin 03-01-50
- Subbasin 03-01-54
- 14 Digit Hydrologic Code
- Hydrology
- Existing Water Lines
- Future Sewer Lines *
- Future Water Lines

Future Land Use

- Commercial
- Community Core
- Conservation
- Industrial
- Low Density Residential/Agricultural (1-2 acres or greater)
- Moderate Density Residential (R-2 (minimum lot size of 40,000 Sq Feet))
- Planned Unit Development (3-4 dwelling units per acre)

* Camden County has no existing sewer lines.

*The orange and blue dash line represent the shared boundary between Subbasin 03-01-50 and Subbasin 03-01-54.

N W E S

10 0 10 20 Miles

Notes:
1. All waters under the jurisdiction of Camden County are either estuarine waters or public trust areas as defined in 15A NCAC 7H.0206 Estuarine Waters and .0207 Public Trust Areas.

2. All areas lying 0-75' landward of the mean high water level of estuarine waters are classified as estuarine shorelines. Because of the map scale these areas cannot be accurately mapped. Precise locations must be determined in the field through CAMA review and permit approval.

3. Coastal wetland areas exist in Camden County. Because of map scale, coastal wetland areas must be determined through on-site analysis.

4. Conservation areas are an approximation and locations may not be precise. These areas are designated conservation due to proximity to wetlands. Conservation areas include some 404 Wetland Areas. Those jurisdictions/ determinations can only be made by Corps of Engineers Personnel through individual on-site analysis.

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.

Figure 7

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

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

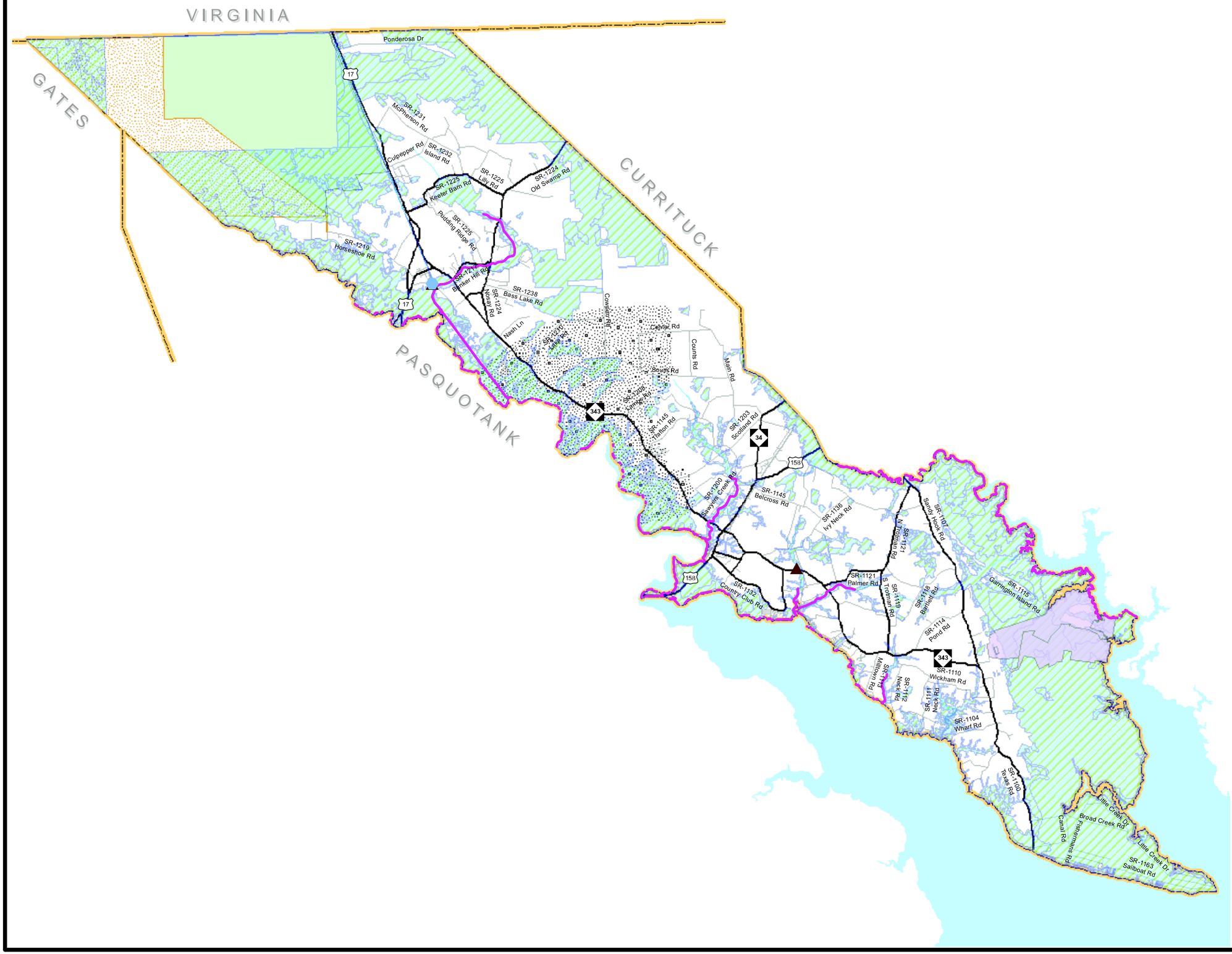
Table 1 – Environmental Features

- Airport Boundaries
- **Anadromous Fish Spawning Areas**
- Beach Access Sites
- Bike Routes (NCDOT)
- Coastal Marinas
- Colleges and Universities
- **Conservation Tax Credit Properties**
- Emergency Operation Centers
- **Federal Land Ownership**
- **Fisheries Nursery Areas**
- Geology (including Dikes and Faults)
- Hazardous Substance Disposal Sites
- Hazardous Waste Facilities
- High Quality Water and Outstanding Resource Water Management Zones
- Hospital Locations
- Hydrography (1:24,000 scale)
- Land Trust Priority Areas
- Natural Heritage Element Occurrences
- **National Wetlands Inventory**
- North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS)
- Paddle Trails – Coastal Plain
- Railroads (1:24,000 scale)
- Recreation Projects – Land and Water Conservation Fund
- **Sanitary Sewer Systems – Discharges, Land Application Areas, Pipes, Pumps and Treatment Plants**
- Schools – Public and Non-Public
- Shellfish Strata
- Significant Natural Heritage Areas
- **State Parks**
- Submersed Rooted Vasculars
- Target Local Watersheds - EEP
- Trout Streams (DWQ)
- Trout Waters (WRC)
- **Water Distribution Systems – Pipes, Pumps, Tanks, Treatment Plants, and Wells**
- **Water Supply Watersheds**
- Wild and Scenic Rivers

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

Table 2 – Restricted Environmental Features

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



Environmental Features

Camden County

North Carolina

Comprehensive Transportation Plan

Plan date: May, 2013

Legend

- Roads
- Railroads
- Rivers and Streams
- Water Treatment Plants
- Water Tanks
- Cons Tax Credit Prop
- Wetlands
- Water Supply Watersheds
- Federal Land Ownership
- State Parks
- Anadromous Fish Spawning Areas

Miles

0 1.5 3 6

N W E S

Figure 8

Base map date: November 2011

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 Camden County Board of Commissioners in June of 2011 to formally initiate the study, provide an overview of the transportation planning process, and to gather input on the area transportation needs.

Throughout the course of the study, the Transportation Planning Branch cooperatively worked with the Camden County Steering Committee and Camden County Technical Committee, which included representatives from the county, and the RPO, to provide information on current local plans, to develop transportation vision and goals, to discuss population and employment projections, and to develop proposed CTP recommendations. During the development of the plan a total of six meetings were held with the committees to solicit input and discuss plan 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 developing and distributing a traffic survey, which included 10 transportation related questions and generated more than 100 responses. Another form of public involvement was developing a website with information on the CTP and email address where interested parties could provide comments. Lastly four public drop-in sessions were held in Camden County to present the proposed CTP to the public and solicit comments. The first two meetings were held on November 14th, 2011 at Camden County Middle School Cafeteria. The second two meetings were held on May 8th, 2012 at the same location. Each session was publicized in the local newspaper and was held from 4pm to 6pm and from 7pm to 9pm.

A public hearing was held on September 3, 2013 during the Camden County Commissioners meeting. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting.

The Albemarle RPO endorsed the CTP on 10/08/2013. The North Carolina Board of Transportation voted to mutually adopt the Camden County CTP on 11/08/2013.

II. Recommendations

This report documents the development of the 2040 Camden County CTP as shown in Figure 1. This chapter presents recommendations for each mode of transportation in the County.

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

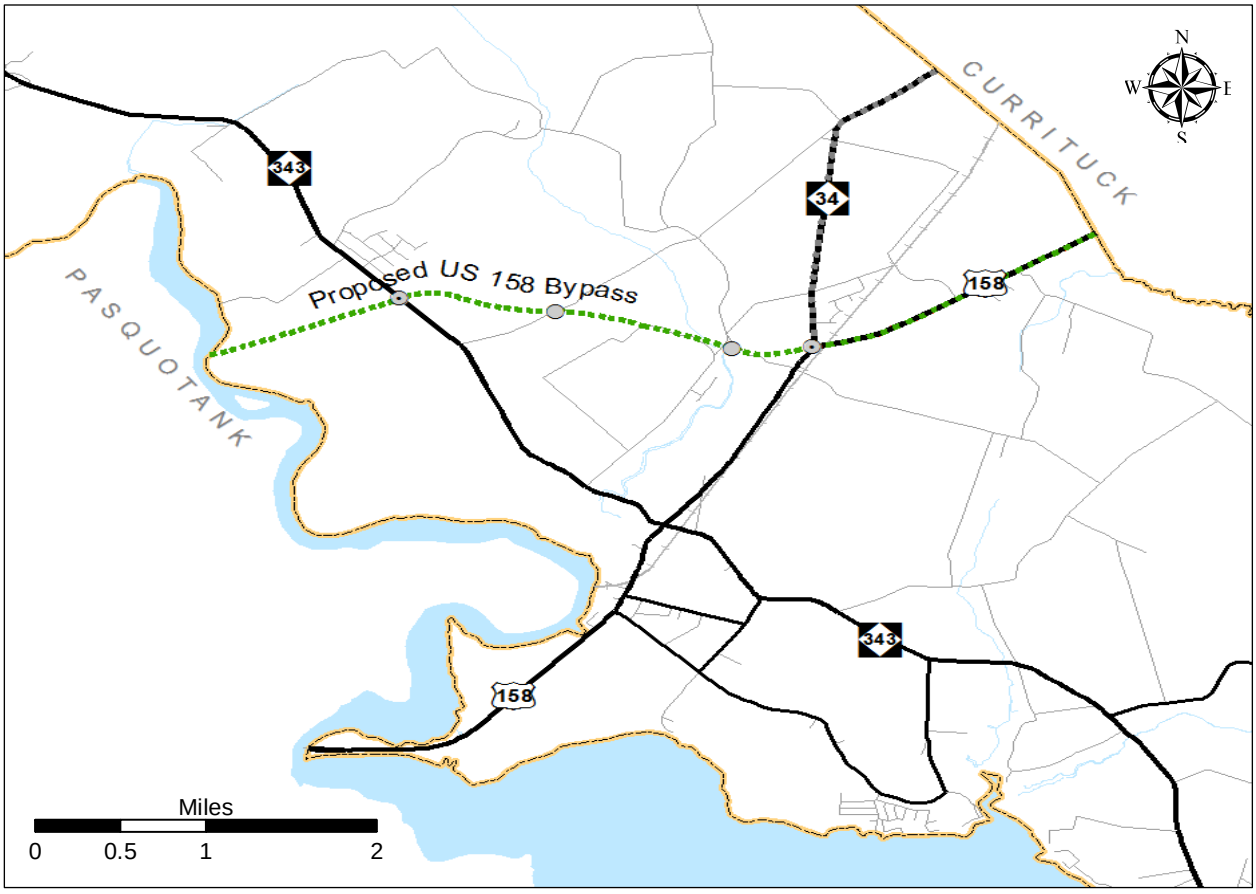
Prior to implementing projects from the CTP, additional analysis will be necessary to meet the National Environmental Policy Act (NEPA) or the North Carolina (or State) Environmental Policy Act (SEPA). This CTP may be used to provide information in the NEPA/SEPA process.

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

Problem Statements

HIGHWAY

US-158 Proposed Relocation	**Local ID: CAMD0001-H** **Last Updated: 12/12/12**



US-158 is a two-lane road crossing Camden County from the west near Elizabeth City (Pasquotank County) to the east at the border with Currituck County. US-158 is a major thoroughfare that passes through downtown Elizabeth City. Recently a portion of US-158 from east of Pasquotank River to south of SR 1139 (Country Club Road) was widened to a four-lane section under project R-2414A. Another section of US-158, from south of SR 1139 (Country Club Road) to east of NC 34 in Belcross, is currently being widened under TIP project R-2414B. Total length of the R-2414 project is 5.3 miles.

TIP project R-2574 scheduled to begin in 2019 will widen the rest of US-158 to four lanes, from east of NC 34 to the intersection with US-168 in Currituck County.

Identified Problem

US-158 is designated as an expressway on the North Carolina Strategic Highway Corridor Vision Plan. Typical characteristics of an expressway are higher speeds, limited or partial control of access, lack of traffic signals and a four-lane medium divided cross-section. Current roadway characteristics are lower speed limits, existence of traffic signals and higher frequency of driveways accessing the roadway. All this currently classifies US-158 as a major thoroughfare.

US-158 passes through Elizabeth City in Pasquotank County and due to the urban nature of the area, historic properties and lack of right of way along the corridor, it becomes increasingly difficult to maintain the desired mobility on such an important highway corridor.

Justification of Need

US-158 connects the northeastern part of the state to I-95, as well as the northern Outer Banks to the mainland and carries significant volumes of tourist traffic during the summer season. It also serves as a hurricane evacuation route for the area.

To continue fulfilling the requirements for mobility, safety and connectivity US-158 must meet design criteria for an expressway, which would be four-lane, median-divided highway with limited or partial access control and speeds ranging from 45 mph to 60 mph. In order to meet this criteria, US 158 will have to be relocated outside Elizabeth City.

CTP Project Proposal

Project Description

The proposed project (local ID: CAMD0001-H) is to upgrade part of US-158 to a four-lane divided highway from the Currituck County line to the NC 34 intersection and relocate part of US-158 on a new location from the NC 34 intersection to the Pasquotank County line. The proposed project will fulfill the SHC Vision Plan, which designates US-158 as an expressway.

Relationship to Land Use Plans

Camden County is a rural county and its current land use plan reflects its character.
Vast spans of land are either in their natural state (mostly wetlands) or being farmed as agricultural fields. The county is sprinkled with small single-home developments with lots of an acre or greater. Developments occur alongside US-158, mostly from the intersection with NC 34 to Pasquotank River. The proposed new corridor will intersect mostly farmland and some wetlands.

Natural and Human Environmental Context

By analyzing different alternatives for the proposed US-158, efforts were made to mitigate the effects the newly proposed roadway will have on the natural and human environment. Based on a planning level environmental assessment using available GIS data, some natural and human environmental features examined will be affected in the immediate vicinity of the project. A map of the studied alternatives along with their associated preliminary cost estimates are shown in Appendix I, Table 6.

US-158, TIP No. R- 2414

Existing US-158 is projected to be near capacity by 2040 from Pasquotank County to NC 34 (Bellcross). The primary purpose of this project is to relieve anticipated congestion on the existing facility such that a minimum LOS D can be achieved.

Traffic on US-158 from Pasquotank County to NC 343 is projected to increase from 18,000 vehicles per day (vpd) in 2010 to 24,300 vpd in 2040. Traffic from NC 343 to intersection with NC 34 is projected to increase from 9,500 vpd in 2010 to 14,800 vpd in 2040. Under the proposed project (TIP No. R-2414), NC 158 will be widened from two lanes to a four-lane roadway from east of Elizabeth City to east of Bellcross in Camden County.

US-158, TIP No. R- 2574

Existing US 158 is projected to be near capacity by 2040 from Belcross in Camden County to US 168 in Currituck County. Future 2040 AADT is projected to be 24,300 and 2040 Capacity is projected to be 57,000 vpd on US 158. The primary purpose of this project is to relieve anticipated congestion on the existing facility such that a minimum of LOS D can be achieved.

The 2005 “NCDOT State Hurricane Evacuation Study” completed by PBS&J identified that the existing 2 lane US 158 cannot meet the minimum 18 hour evacuation criteria.

US-158 is also designated as an expressway in the Strategic Highway Corridor Vision Plan, another factor that contributes to the initiation of TIP R-2574.

It is recommended that US-158 be widened to a four-lane facility.

NC 34 Proposed Improvements from the Currituck County Line to US-158, Local ID: CAMD0002-H

The proposed improvements are to widen NC 34 from the Currituck County line to US-158. This will help the road to meet the standards for a major thoroughfare, thus enhancing mobility and connectivity. The proposed recommendations are directly related to recommendations in the Currituck County CTP, where NC 34 connects to NC 168 and will be affected by the proposed NC 168 Bypass, which includes an interchange at NC 34.

Northern Connector (Ponderosa Road) upgrade, Local ID: CAMD0003-H

A large development in Camden County named Camden Plantation is planned to be built along US 17 and populated within the next 15 to 20 years. More than 1,700 houses, condos and apartments will be built on 600 acres of farmland, which will bring a significant increase in the county's population.

Another development along the stretch of US 17 near Camden Plantation is the Eco-Industrial Park. The vision for the park is a large regional complex offering different types of businesses 300 acres of land for commercial, professional, research and development, residential and industrial development opportunities.

The concentration of residential and business development in the northern part of the county will require improvements to the existing transportation infrastructure. US 17 and NC 168 are two major thoroughfares bringing traffic back and forth between North Carolina and Virginia, but adequate linkage between the US 17 and NC 168 in the northern Camden County is lacking.

It is recommended that the unpaved Ponderosa Road be paved and extended to its intersection with Backwoods Road in Currituck County. This will provide a connection between Camden Plantation and the Eco-Industrial Complex in Camden County and the town of Moyock in Currituck County. The proposed road will serve the residential community of Camden Plantation and businesses in the Eco-Industrial Park. It will provide a more direct connection between US 17 and NC 168.

SR 1224 (Old Swamp Road) upgrade, Local ID: CAMD0004-H

SR 1224 (Old Swamp Road.) is a two-lane rural road that connects NC 343 and US 17 in Camden County to US 168 in Moyock, Currituck County. In addition to local residential traffic, the road carries logging trucks and farming equipment. The roadway condition has deteriorated through the years, which makes it unsafe for travelers. It is expected that traffic volumes will increase to near capacity with the development of Camden Plantation near US 17 and another anticipated development (Mega-Industrial Site) in Currituck County along US-168.

It is recommended that SR 1224 (Old Swamp Road) be repaved and lanes widened.

PUBLIC TRANSPORTATION AND RAIL

ICPTA (Inter-County Public Transportation Authority) provides transportation to the general public within Pasquotank, Perquimans, Camden, Chowan and Currituck counties. ICPTA operates by scheduled appointments and its service is provided through the use of a fleet of vans within the urban and rural areas around Camden County.

The approximately 5 miles of railroad running through Camden County are owned and maintained by “Chesapeake and Albemarle” Railroad Company. The track runs from Norfolk, VA to Edenton, NC and is used by freight trains serving the east coast. See Figure 1, Sheet 3.

The rural nature of Camden County and the lack of more densely populated centers do not warrant recommending a fixed public transportation route or passenger rail at this time.

BICYCLE

The NCDOT envisions that all citizens of North Carolina and visitors to the state should be able to walk and bicycle safely and conveniently to their chosen destinations with reasonable access to roadways. Information on events, funding, maps, policies, projects and processes dealing with these modes of transportation can be accessed at the Division of Bicycle and Pedestrian Transportation.

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

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

Before any improvements are made to those facilities the Division of Bicycle and Pedestrian Transportation should be consulted.

The following are recommendations for improving bicycle facilities in the county:

NC 343, Local ID: CAMD0001-B
The Comprehensive Transportation Plan (CTP) recommends upgrading NC 343 from US-17 to SR 1203 (Scotland Road) to accommodate bicycle travel along the NC 343 corridor. The recommended cross-section is 2A, Appendix D.

NC 343, Local ID: CAMD0002-B
The Comprehensive Transportation Plan (CTP) recommends upgrading NC 343 from US-158 to SR 1104 (Wharf Road) to accommodate bicycle travel along the NC 343 corridor. The recommended cross-section is 2A, Appendix D.

SR 1132 (Country Club Road), Local ID: CAMD0003-B
The Comprehensive Transportation Plan (CTP) recommends upgrading SR 1132 (Country Club Road) from US-158 to SR 1132 (Sandy Hills Road) to accommodate bicycle travel along the NC 343 corridor. The recommended cross-section is 2A, Appendix D.

SR 1219 (Horseshoe Road), Local ID: CAMD0004-B
The Comprehensive Transportation Plan (CTP) recommends upgrading SR 1219 (Horseshoe Road) from Main Street to 2.8 miles north-west of US-17 (Main Street) to accommodate bicycle travel along the NC 343 corridor. The recommended cross-section is 2A, Appendix D.

US-17 (Main Street), Local ID: CAMD0005-B
The Comprehensive Transportation Plan (CTP) recommends upgrading US-17 (Main Street) from US-17 to SR 1219 (Horseshoe Road) to accommodate bicycle travel along the NC 343 corridor. The recommended cross-section is 2A, Appendix D.

US-17 (Main Street), Local ID: CAMD0006-B
The Comprehensive Transportation Plan (CTP) recommends upgrading US-17 (Main Street) from SR 1219 (Horseshoe Road) to NC 343 to accommodate bicycle travel along the NC 343 corridor. The recommended cross-section is 2A, Appendix D.

Morgans Corner Road, Local ID: CAMD0005-B
The Comprehensive Transportation Plan (CTP) recommends upgrading Morgans Corner Road from Pasquotank County Line to US-17 to accommodate bicycle travel along the NC 343 corridor. The recommended cross-section is 2A, Appendix D.

SR 1107 (Sandy Hook Road), Local ID: CAMD0005-B
The Comprehensive Transportation Plan (CTP) recommends upgrading SR 1107 (Sandy Hook Road) from Currituck County Line to NC 343 to accommodate bicycle travel along the NC 343 corridor. The recommended cross-section is 2A, Appendix D.

SR 1132 (Sandy Hills Road), Local ID: CAMD0005-B
The Comprehensive Transportation Plan (CTP) recommends upgrading SR 1132 (Sandy Hills Road) from NC 343 to SR 1132 (Country Club Road) to accommodate bicycle travel along the NC 343 corridor. The recommended cross-section is 2A, Appendix D.

PEDESTRIAN

Comprehensive Transportation Plan recommendations call for new sidewalks along the following facilities in order to provide adequate connectivity for pedestrians in the area:

CAMD0001-P: US-158 from NC 343 to SR 1132 (Country Club Road)
CAMD0002-P: NC 343 from Camden Court House to Camden High School
CAMD0003-P: SR 1132 (Country Club Road) from US-158 to SR 1171 (Pine Street)
CAMD0004-P: SR 1154 (Howard Street) from SR 1131 (Country Club Road) to SR 1140 (Upton Road)
CAMD0005-P: SR 1171 (Pine Street) from SR 1131 (Country Club Road) to SR 1140 (Upton Road)
CAMD0006-P: SR 1140 (Upton Road) from US-158 to SR 1171 (Pine Street)
CAMD0007-P: US-17 from Main Street to NC 343
CAMD0008-P: NC 343 from US-17 to 0.3 miles South of Main Street
CAMD0009-P: Academy Street from Main Street to Spencer Avenue
CAMD0010-P: Halstead Street from Main Street to McBride Street
CAMD0011-P: Jones Avenue from Main Street to Spencer Avenue
CAMD0012-P: Main Street from Jones Avenue to NC 343
CAMD0013-P: McBride Street from Halstead Street to Canal Street
CAMD0014-P: North Elm Street from Main Street to McBride Street
CAMD0015-P: South Elm Street from Main Street to Spencer Avenue

MULTI-USE PATH

A Multiuse path is an off-road hard-surfaced path that is separated from motorized vehicular traffic and is designed for public use for human-powered travel or movement. Human-powered meaning movement accomplished or propelled by human power, such

as walking, running, or by any vehicle or device which is designed and equipped to be propelled by human power, without any assistance by a motor or power unit (*e.g.*, bicycle, roller skates, skateboard, wheel chair).

CAMD0001-M: US-17 from Main Street to existing multiuse path
CAMD0002-M: US-17 from existing multiuse math to Virginia State Line
CAMD0003-M: New location – from existing multi-use path west of Dismal Swamp State Park to SR 1219 (Horseshoe Road)
CAMD0004-M: NC 343 from Mullen Street to US-17
CAMD0005-M: Mullen Street from Main Street to NC 343

APPENDICES

Appendix A
Resources and Contacts

North Carolina Department of Transportation

Customer Service Office

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

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

Secretary of Transportation

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

Board of Transportation Member

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

Highway Division Engineer

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

113 Airport Drive
Suite 100
Edenton, NC 27932
https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=640

Division Project Manager

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

113 Airport Drive
Suite 100
Edenton, NC 27932
(252) 482-7977

Division Construction Engineer

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

113 Airport Drive
Suite 100
Edenton, NC 27932
(252) 482-4877

Division Traffic Engineer

Contact the Division Traffic Engineer for information concerning traffic signals, highway signs, pavement markings and crash history.

113 Airport Drive
Suite 100
Edenton, NC 27932
(252) 482-4877

Division Operations Engineer

Contact the Division Operations Engineer for information concerning facility operations.

113 Airport Drive
Suite 100
Edenton, NC 27932
(252) 482-4877

Division Maintenance Engineer

Contact the Division Maintenance Engineer information regarding maintenance of all state roadways, improvement of secondary roads and other small improvement projects. The Division Maintenance Engineer also oversees the District Offices, the Bridge Maintenance Unit and the Equipment Unit.

113 Airport Drive
Suite 100
Edenton, NC 27932
(252) 482-4877

District Engineer
Contact the District Engineer for information on outdoor advertising, junkyard control, driveway permits, road additions, subdivision review and approval, Adopt A Highway program, encroachments on highway right of way, issuance of oversize/overwidth permits, paving priorities, secondary road construction program and road maintenance.

1929 North Road Street
Elizabeth City, NC 27909
(250) 331-4737

Transportation Planning Branch (TPB)
Contact the Transportation Planning Branch for information on long-range multi-modal planning services, including Strategic Highway Corridors.

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

Albemarle Rural Planning Organization (RPO)
Contact the RPO for information on long-range multi-modal planning services.

Post Office Box 646
1929 South Church Street
Heartford, NC 27 944
(252) 476-5753

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

1501 Mail Service Center
Raleigh, NC 27699-1501
(919) 707-4740
https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=11054

Project Development & Environmental Branch (PDEA)
Contact PDEA for information on environmental studies for projects that are included in the TIP.

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

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

1535 Mail Service Center
Raleigh, NC 27699-1535
(919) 733-3250
http://www.ncdot.gov/doh/operations/secondaryroads/

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

1534 Mail Service Center
Raleigh, NC 27699-1534
(919) 733-2039
http://www.ncdot.org/planning/development/

Public Transportation Division
Contact the Public Transportation Division for information public transit systems.

1550 Mail Service Center
Raleigh, NC 27699-1550
(919) 733-4713
http://www.ncdot.org/transit/nctransit/

Rail Division
Contact the Rail Division for rail information throughout the state.

1553 Mail Service Center

Raleigh, NC 27699-1553
(919) 733-7245
http://www.bytrain.org/

Division of Bicycle and Pedestrian Transportation
Contact Division for bicycle and pedestrian transportation information throughout the state.

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

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

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

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

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

Customer Service Office
Contact information for other units within the NCDOT that are not listed in this appendix is available by calling the Customer Service Office or by visiting the NCDOT homepage:
1-877-DOT-4YOU
(1-877-368-4968)
https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx

Other State Government Offices

Department of Commerce – Division of Community Assistance

Contact the Department of Commerce for resources and services to help realize economic prosperity, plan for new growth and address community needs.
http://www.nccommerce.com/en/CommunityServices/

Appendix B
Comprehensive Transportation Plan Definitions

Highway Map

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

Facility Type Definitions

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

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

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

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

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

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

Other Highway Map Definitions

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

Public Transportation and Rail Map

- **Bus Routes** – The primary fixed route bus system for the area. Does not include demand response systems.
- **Fixed Guideway** – Any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The term includes heavy rail, commuter rail, light rail, monorail, trolleybus, aerial tramway, included plane, cable car, automated guideway transit, and ferryboats.

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

Bicycle Map

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

- **Off Road-Existing** – A facility that accommodates only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way.
- **Off Road-Needs Improvement** – A facility that accommodates only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way that will not adequately serve future bicycle needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment.
- **Off Road-Recommended** – A facility needed to accommodate only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way.
- **Multi-use Path-Existing** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- **Multi-use Path-Needs Improvement** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic that will not adequately serve future needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment. Sidewalks should not be designated as a multi-use path.
- **Multi-use Path-Recommended** – A facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that is needed to serve bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- **Existing Grade Separation** – Locations where existing “Off Road” facilities and “Multi-use Paths” are physically separated from existing highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.
- **Proposed Grade Separation** – Locations where “Off Road” facilities and “Multi-use Paths” are recommended to be physically separated from existing or recommended highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.

Pedestrian Map

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

- **Sidewalk-Needs Improvement** – Improvements are needed to provide paved paths on both sides of a highway facility. The highway facility may or may not need improvements. Improvements do not include re-paving or other maintenance activities but may include: filling in gaps, widening sidewalks, or meeting ADA (Americans with Disabilities Act) requirements.
- **Sidewalk-Recommended** – At the systems level, it is desirable for a recommended highway facility to accommodate pedestrian transportation **or** to add sidewalks on an existing facility where no sidewalks currently exist. The highway should be designed and built to safely accommodate pedestrian traffic.
- **Off Road-Existing** – A facility that accommodates only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way.
- **Off Road-Needs Improvement** – A facility that accommodates only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way that will not adequately serve future pedestrian needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), improved horizontal or vertical alignment, and meeting ADA requirements.
- **Off Road-Recommended** – A facility needed to accommodate only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way.
- **Multi-use Path-Existing** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- **Multi-use Path-Needs Improvement** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic that will not adequately serve future needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment. Sidewalks should not be designated as a multi-use path.
- **Multi-use Path-Recommended** – A facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that is needed to serve bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- **Existing Grade Separation** – Locations where existing “Off Road” facilities and “Multi-use Paths” are physically separated from existing highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.

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

Appendix C
CTP Inventory and Recommendations

Assumptions/ Notes:

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

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

- **Existing Cross-Section:** Listed under '(ft)' is the approximate width of the roadway from edge of pavement to edge of pavement. Listed under 'lanes' is the total number of lanes, with the letter 'D' if the facility is divided.

- **Existing ROW:** The estimated existing right-of-way is based on NCDOT's GIS conditions layer data, the NCDOT Pavement management Unit data and data from NCDOT Div. 1 District Office 2. These right-of-way amounts are approximate and may vary.

- **Existing and Proposed Capacity:** The estimated capacities are given in vehicles per day (vpd) based on LOS D for existing facilities and LOS C for new facilities. These capacity estimates were developed using NCLOS (North Carolina Level of Service) methodology, as documented in Chapter I.

- **Existing and Proposed AADT** (Annual Average Daily Traffic) volumes, given in vehicles per day (vpd), are estimates only based on a systems-level analysis. The '2040 AADT E+C' is an estimate of the volume in 2040 with only existing plus committed projects assumed to be in place, where committed is defined as projects programmed for construction in the 2012 – 2018 Transportation Improvement Program (TIP). The '2040 AADT with CTP' (or '2040 AADT with LRTP', in MPO areas) is an estimate of the volume in 2040 with all proposed CTP improvements assumed to be in place. The '2040 AADT with CTP' is shown in bold if it exceeds the proposed capacity, indicating an unmet need. For additional information about the assumptions and techniques used to develop the AADT volume estimates, refer to Chapter I.

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

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

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

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

Insert Tables Here – See also **"CTP Inventory and Recommendations Tables"** (in Excel format) and the "**CTP Inventory and Recommendations Guidance**" under the Resources and Tools section of this procedure.

TABLE 3 - CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																			
					2010 EXISTING SYSTEM						2040 PROPOSED SYSTEM								
LOCAL ID	FACILITY	SECTION (FROM-TO)	JURISDICTION	Distance (mi)	CROSS-SECTION (ft)	CROSS-SECTION LANES	ROW (ft)	SPEED LIMIT (mph)	EXISTING CAPACITY (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	PROPOSED CAPACITY (vpd)	CROSS-SECTION	ROW (ft)	CTP CLASSIFICATION	TIER	OTHER MODES
CAMD00001-H	US 158	Currituck County - NC	Camden	2.2	20	2	100	55	16,400	5,700	7,800	7,800	57,000	4B	150	E	Reg	
CAMD00001-H	US 158	NC 34 - NC 3	Camden	1.9	22	2	100	55	16,400	11,000	14,800	14,800	57,000	4B	150	E	Reg	
CAMD00001-H	US 158	NC 343 - Country Club Rd. (SR 1	Camden	0.2	22	2	150	35	16,400	18,000	24,300	24,300	57,000	4B	150	E	Reg	
CAMD00001-H	US 158	Country Club Rd. (SR 1139) - Pasquotank County	Camden	0.2	22	2	150	45	16,400	18,000	24,300	24,300	57,000	4B	150	E	Reg	
CAMD00001-H	Proposed US 158 Bypa	NC 34 - NC 3	Camden	2.3	-	-	-	-	-	-	24,300	24,300	57,000	4B	150	E	Reg	
CAMD00001-H	Proposed US 158 Bypa	NC 343 - Currituck County l	Camden	1.4	-	-	-	-	-	-	24,300	24,300	57,000	4B	150	E	Reg	
	US 17	Virginia Border - McPherson Rd. (SR 1	Camden	3.2	24	2	145	60	57,000	57,000	29,100	29,100	57,000	ADQ	145	F	Sta	
	US 17	McPherson Rd. (SR 1231) - NC 3	Camden	3.0	24	2	170	60	57,000	57,000	29,100	29,100	57,000	ADQ	170	F	Sta	
	US 17	NC 343 - Pasquotank Cour	Camden	3.6	24	2	180	60	57,000	57,000	29,100	29,100	57,000	ADQ	180	F	Sta	
CAMD00002-H	NC 34	Currituck County Line - US	Camden	2.8	26	2	100	55	16,400	4,000	9,000	9,000	16,400	ADQ	100	Maj	Reg	
	NC 343	US 17 - Bunker Hill Rd. (SR 1	Camden	2.3	24	2	100	45	15,900	1,200	3,600	3,600	15,900	ADQ	100	Maj	Reg	B
	NC 343	Bunker Hill Rd. (SR 1217) - Old Swamp Rd. (SR	Camden	0.7	24	2	100	55	15,900	3,000	4,000	4,000	15,900	ADQ	100	Maj	Reg	B
	NC 343	Old Swamp Rd. (SR 1223) - Scotland Rd. (SR	Camden	2.2	24	2	100	55	15,900	3,000	4,000	4,000	15,900	ADQ	100	Maj	Reg	B
	NC 343	Scotland Rd. (SR 1203) - US	Camden	8.8	24	2	100	55	15,900	3,400	5,600	5,600	15,900	ADQ	100	Maj	Reg	
	NC 343	US 158 - S. Trotman Rd. (SR-11	Camden	6.9	20	2	60	55	15,900	4,300	5,800	5,800	15,900	ADQ	100	Maj	Reg	B
	NC 343	S. Trotman Rd. (SR-1119) - S Sandy Hook Rd. (SR	Camden	3.0	18	2	100	55	15,900	1,200	3,600	3,600	15,900	ADQ	100	Maj	Reg	B
	NC 343	S Sandy Hook Rd. (SR 1107) - Texas Rd (SR-	Camden	1.8	18	2	100	55	15,900	800	1,100	1,100	15,900	ADQ	100	Maj	Reg	B
	Bunker Hill Rd. (SR 12	Old Swamp Rd. (SR 1224) - NC	Camden	1.4	18	2	60	55	13,100	1,600	3,900	3,900	13,100	ADQ	60	Min	Sub	
	Country Club Rd. (SR 113	US 158 - Sandy Hills SR. (SR 1	Camden	3.0	18	2	60	55	12,500	2,300	2,900	2,900	12,500	ADQ	60	Min	Sub	B
	Keeter Barn Rd. (SR 122	US 17 - Pudding Ridge Rd. (SR	Camden	0.7	24	2	60	55	13,100	1,100	3,100	3,100	13,100	ADQ	60	Min	Sub	
	Keeter Barn Rd. (SR 122	Pudding Ridge Rd. (SR 1225) - Sharon Church Rd. (SR	Camden	1.7	20	2	60	55	13,100	1,100	3,100	3,100	13,100	ADQ	60	Min	Sub	
	Lilly Rd (SR 122	Sharon Church Rd. (SR 1231) - Old Swamp Rd. (SR	Camden	0.2	20	2	60	55	13,100	1,100	3,100	3,100	13,100	ADQ	60	Min	Sub	
	Main St. (US 1	US 17 - Horseshoe Rd. (SR 12	Camden	0.6	22	2	60	45	13,100	3,500	4,700	4,700	13,100	ADQ	60	Min	Sub	
	Main St. (US 1	Horseshoe Rd. (SR 1219) - NC	Camden	0.6	24	2	60	35	13,100	3,500	4,700	4,700	13,100	ADQ	60	Min	Sub	
	Morgans Corner Rd	Currituck County Line - US	Camden	0.4	20	2	60	45	14,100	2,800	3,800	3,800	14,100	ADQ	60	Min	Sub	
	Nosay Rd. (SR 122	NC 343 - Old Swamp Rd. (SR 1	Camden	1.1	20	2	60	45	13,100	600	1,100	1,100	13,100	ADQ	60	Min	Sub	
CAMD00003-H	Old Swamp Rd. (SR 122	Currituck County - Lilly Rd. (SR 1	Camden	2.6	20	2	60	55	13,100	2,400	6,800	6,800	13,100	2B	60	Min	Sub	
CAMD00003-H	Old Swamp Rd. (SR 122	Lilly Rd. (SR 1225) - Bunker Hill Rd. (SR	Camden	2.1	20	2	60	55	13,100	2,400	5,600	5,600	13,100	2B	60	Min	Sub	
CAMD00003-H	Old Swamp Rd. (SR 122	Bunker Hill Rd. (SR 1217) - NC	Camden	2.0	20	2	60	55	13,100	800	2,300	2,300	13,100	2B	60	Min	Sub	
	Palmer Rd. (SR 112	NC 343 - Trotman Rd. (SR 11	Camden	2.0	18	2	60	55	13,100	600	1,100	1,100	13,100	ADQ	60	Min	Sub	
CAMD00004-H	Northern Connector (Ponderosa D	US 17 - Currituck County l	Camden	2.7	-	-	-	-	-	-	4,000	4,000	13,100	2B	60	Min	Sub	
	Sandy Hook Rd. (SR 110	Currituck County - NC 3	Camden	6.5	18	2	60	55	13,100	600	1,500	1,500	13,100	2B	60	Min	Sub	B

TABLE 3 - CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																		
					2010 EXISTING SYSTEM						2040 PROPOSED SYSTEM							
LOCAL ID	FACILITY	SECTION (FROM-TO)	JURISDICTION	Distance (mi)	CROSS-SECTION (ft)	CROSS-SECTION LANES	ROW (ft)	SPEED LIMIT (mph)	EXISTING CAPACITY (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	PROPOSED CAPACITY (vpd)	CROSS-SECTION	ROW (ft)	CTP CLASSIFICATION	TIER	OTHER MODES
	Sandy Hills SR. (SR 11	NC 343 - Country Club Rd. (SR 1	Camden	1.2	18	2	60	55	12,500	400	1,000	1,000	12,500	ADQ	60	Mi n	Sub	B
	Seymor Dr. (SR 113	NC 343 - Country Club Rd. (SR 1	Camden	0.8	18	2	60	45	12,500	1,000	2,400	2,400	12,500	ADQ	60	Mi n	Sub	
	Texas Rd (SR 110	NC 343 - Camden County L	Camden	4.5	20	2	60	45	13,100	300	1,500	1,500	13,100	ADQ	60	Mi n	Sub	
	Trotman Rd. (SR 111	NC 343 - Sandy Hook Rd. (SR 1	Camden	5.3	20	2	60	55	13,100	600	1,500	1,500	13,100	ADQ	60	Mi n	Sub	
	Upton Rd. (SR 114	US 158 - Seymour Ln. (SR 1	Camden	0.9	20	2	60	45	12,500	2,000	2,700	2,700	12,500	ADQ	60	Mi n	Sub	

5A * - No pedestri an accomodati ons recomme

4C * - No medi an recommen

BICYCLE AND PEDESTRIAN [1]

BICYCLE								
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Cross-Section		Type	Cross-Section	
				(ft)	lanes			
CAMD0001-B	NC 343	US 17 - Scotland Rd (SR 1	10.3	24	2	On-road	2A	-
CAMD0002-B	NC 343	US 158 - Wharf Rd. (SR 1	11.9	20	2	On-road	2A	-
CAMD0003-B	Country Club Rd. (SR 113	US 158 - Sandy Hills Rd. (SR 1	3.0	18	2	On-road	2A	-
CAMD0004-B	Horseshoe Rd. (SR 121	Main St. - 2.8 miles North-West of Mai	2.8	20	2	On-road	2A	-
CAMD0005-B	Main St. (US 1	US 17 - Horseshoe Rd. (SR 1	0.6	22	2	On-road	2A	P
CAMD0006-B	Main St. (US 1	Horseshoe Rd. (SR 1219) - NC	0.6	24	2	On-road	2A	P
CAMD0007-B	Morgans Corner R	Currituck County Line - US	0.4	20	2	On-road	2A	-
CAMD0008-B	Sandy Hook Rd. (SR 110	Currituck County Line - NC	6.4	18	2	On-road	2A	-
CAMD0009-B	Sandy Hills Rd. (SR 113	NC 343 - Country Club Rd. (SR 1	1.2	18	2	On-road	2A	-

PEDESTRIAN								
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Type	Side of Street	Type	Side of Street	
CAMD0001-P	US 158	NC 343 - Country Club Rd (SR 1	0.8	-	-	Sidewalk	-	B
CAMD0002-P	NC 343	Camden Court House - Camden High Sch	0.2	-	-	Sidewalk	-	B
CAMD0003-P	Country Club Rd. (SR 113	US 158 - Pine St. (SR 1	0.5	-	-	Sidewalk	-	-
CAMD0004-P	Howard St. (SR 115	Country Club Rd. (SR 1131) - Upton Rd. (SR	0.2	-	-	Sidewalk	-	-
CAMD0005-P	Pine St. (SR 117	Country Club Rd. (SR 1131) - Upton Rd. (SR	0.4	-	-	Sidewalk	-	-
CAMD0006-P	Upton Rd. (SR 114	US 158 - Pine St. (SR 1	0.6	-	-	Sidewalk	-	-
South Mills								
CAMD0007-P	US 17	Main St. - NC 3	0.1	-	-	Sidewalk	-	-
CAMD0008-P	NC 343	US 17 - 0.3 miles South of Ma	0.4	-	-	Sidewalk	-	B
CAMD0009-P	Academy St.	Main St. - Spencer Av	0.1	-	-	Sidewalk	-	-
CAMD0010-P	Halstead St	Main St. - McBride	0.1	-	-	Sidewalk	-	-
CAMD0011-P	Jones Ave	Main St. - Spencer Av	0.1	-	-	Sidewalk	-	-
CAMD0012-P	Main St	Jones Ave. - NC 3	0.5	-	-	Sidewalk	-	B
CAMD0013-P	McBride St	Halstead St. - Canal	0.2	-	-	Sidewalk	-	-
CAMD0014-P	North Elm St	Main St. - McBride	0.1	-	-	Sidewalk	-	-
CAMD0015-P	South Elm St	Main St. - Spencer Av	0.1	-	-	Sidewalk	-	-

MULTI-USE PATH								
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Existing System		Proposed System		Other Modes
				Side of Street	Cross-Section	Side of Street	Cross-Section	
CAMD0001-M	US 17	Main St. - Existing Multiuse Pa	1.6	-	-	-	-	
CAMD0002-M	US 17	Existing Multiuse Path - Virginia State	1.3	-	-	-	-	
CAMD0003-M	New Location	Existing multi-use path west of Dismal Swamp State Park - Horseshoe Rd. (SR 1219)	0.7	-	-	-	-	
CAMD0004-M	NC 343	Mullen St. - US	1.3	-	-	-	-	
CAMD0005-M	Mullen St	Main St. - NC 3	0.3	-	-	-	-	

[1] Only major routes and proposals are shown here. For further documentation of bicycle and pedestrian facilities and proposals, refer to *[insert name of document(s)]*.

PUBLIC TRANSPORTATION AND RAIL

RAIL												
Local ID	Facility/ Route	Section (From - To)	Class	Speed Limit (mph)	Distance (mi)	Existing System			Proposed System			Other Modes
						Type	ROW (ft)	Trains per day	Type	ROW (ft)	Trains per day	
	Dead End Track	Norfolk, VA - Edenton, NC	Regional	25	4.9	Standard - Short Line	100	3				

Appendix D
Typical Cross Sections

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

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

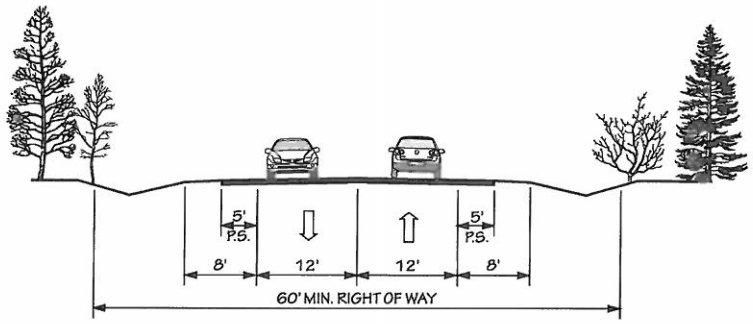
On all existing and proposed roadways delineated on the CTP, adequate right-of-way should be protected or acquired for the recommended cross sections. In addition to cross section and right-of-way recommendations for improvements, Appendix C may recommend ultimate needed right-of-way for the following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

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

Figure 9

"TYPICAL" HIGHWAY CROSS SECTIONS

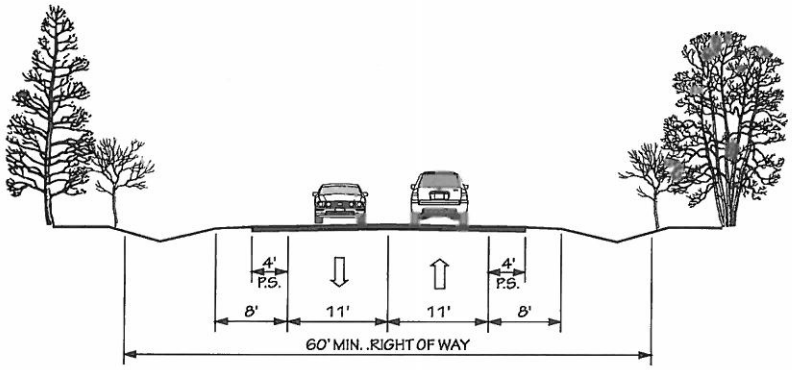
2A



2 LANE UNDIVIDED WITH PAVED SHOULDERS

POSTED SPEED 55 MPH

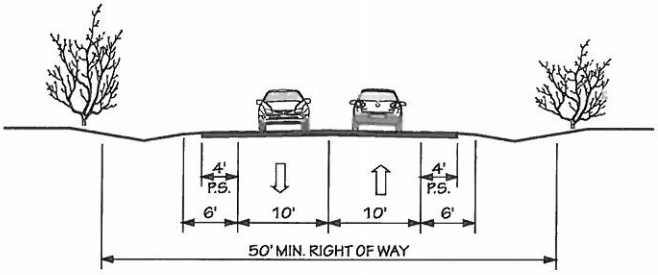
2B



2 LANES UNDIVIDED

POSTED SPEED 45 MPH OR LESS

2C

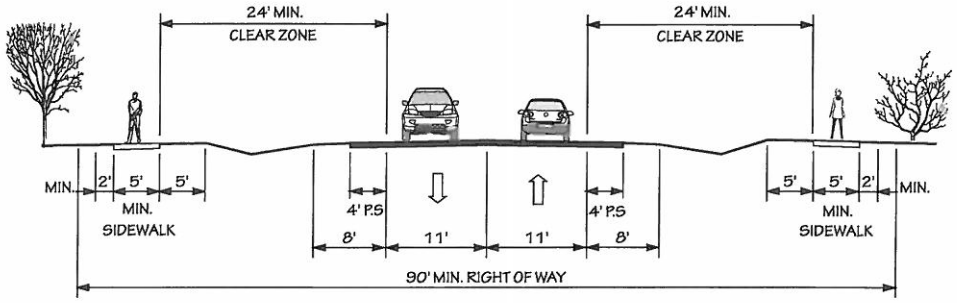


2 LANE UNDIVIDED WITH PAVED SHOULDERS

POSTED SPEED 25 - 35 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS

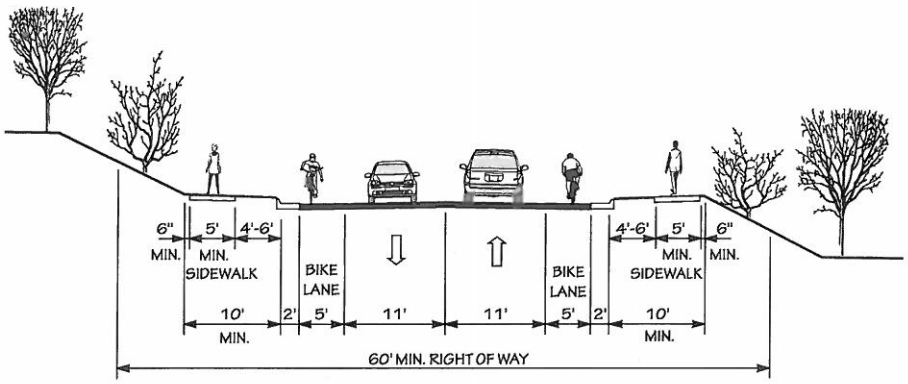
2D



2 LANE UNDIVIDED WITH PAVED SHOULDERS AND SIDEWALKS

POSTED SPEED 25-45 MPH

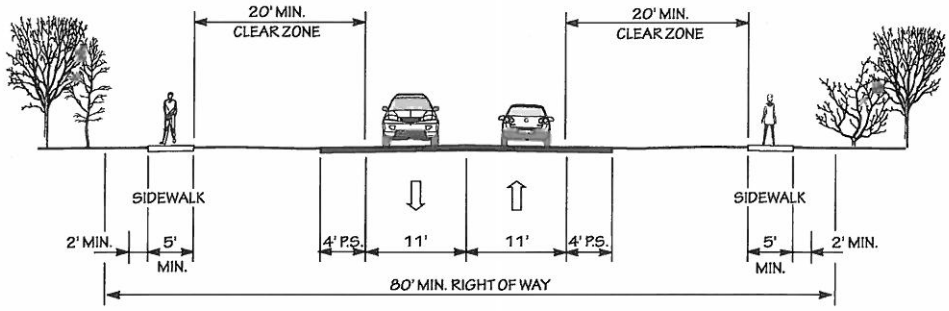
2E



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

POSTED SPEED 25-45 MPH

2F

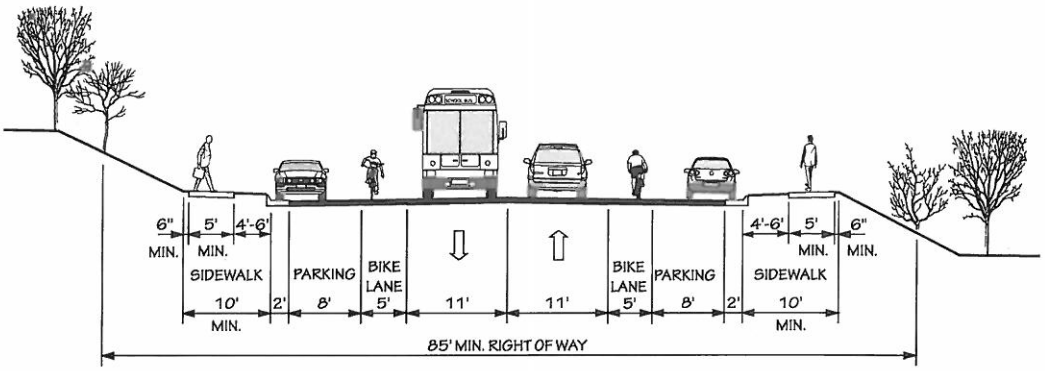


2 LANE UNDIVIDED WITH PAVED SHOULDERS AND SIDEWALKS
IN CAMA COUNTIES

POSTED SPEED 25-45 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS

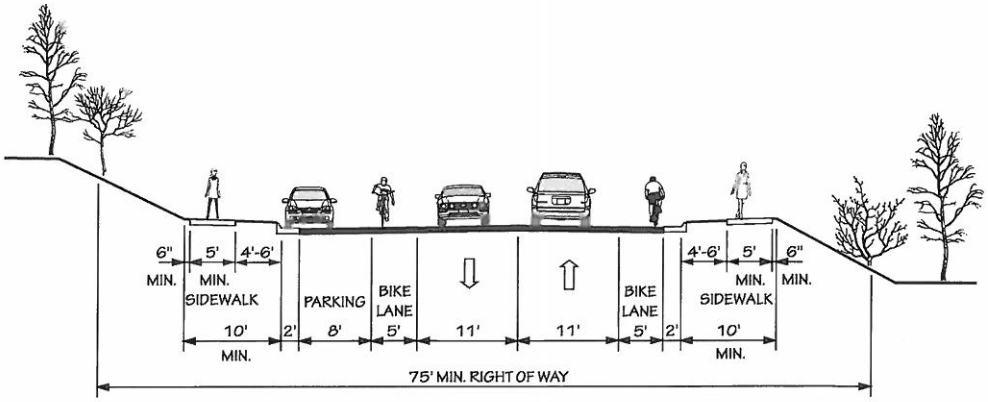
2G



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

POSTED SPEED 25-45 MPH

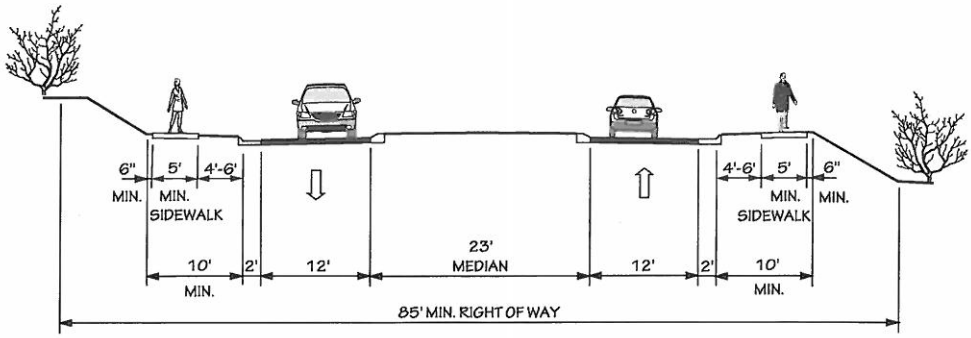
2H



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

POSTED SPEED 25-45 MPH

2I

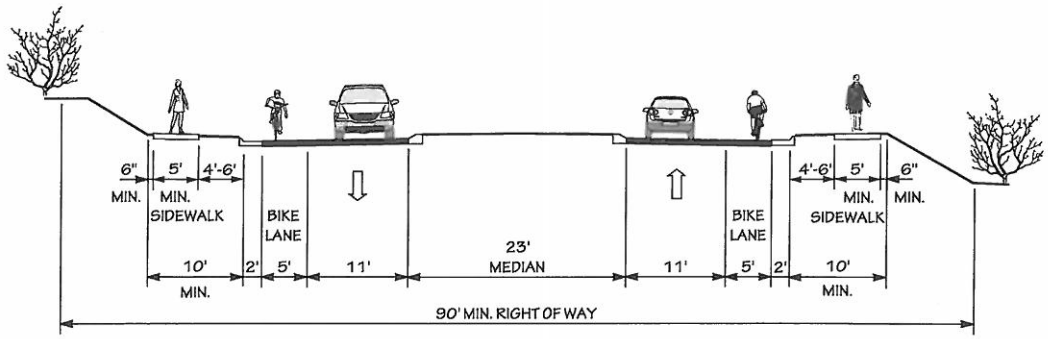


2 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER AND SIDEWALKS

POSTED SPEED 25-45 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS

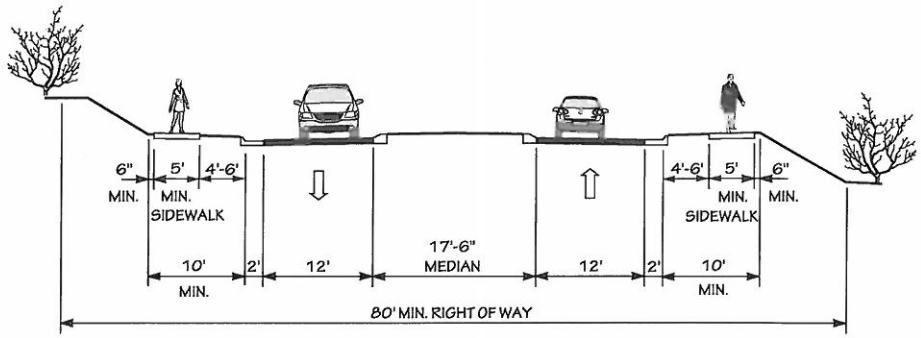
2J



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

POSTED SPEED 25-45 MPH

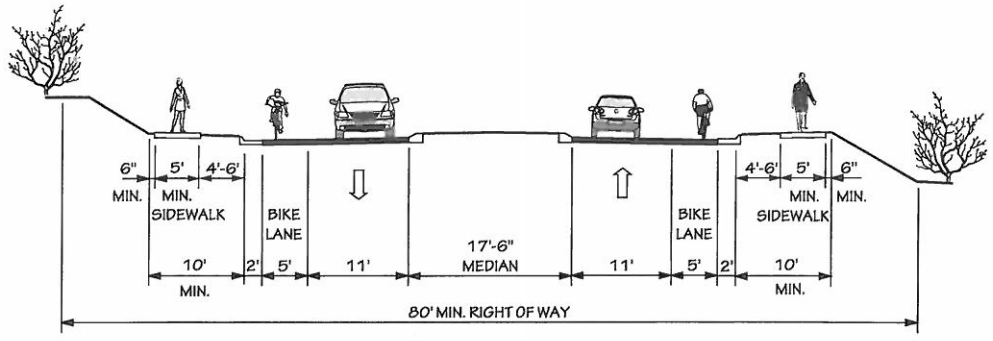
2K



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

POSTED SPEED 25-45 MPH

2L

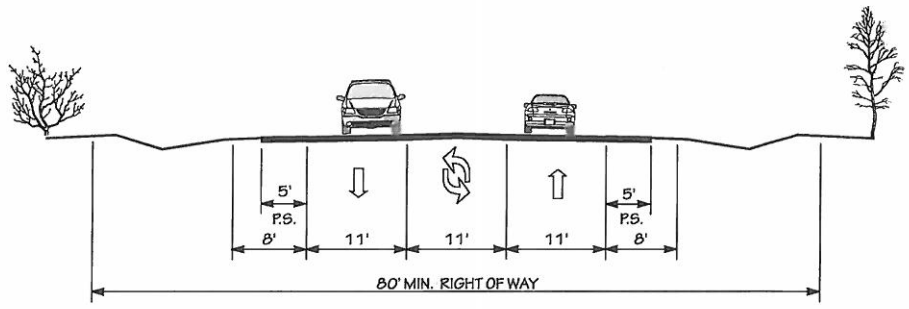


2 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS

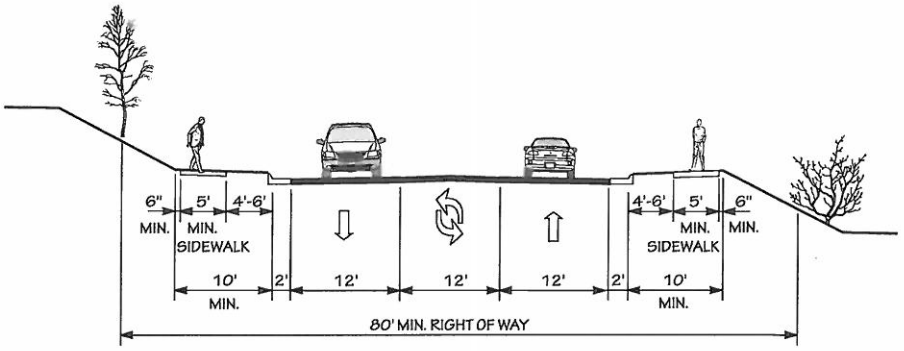
3A



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

POSTED SPEED 25-55 MPH

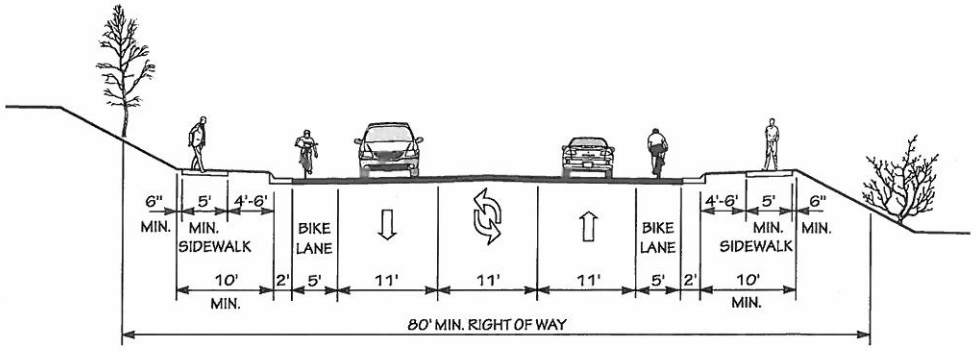
3B



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

POSTED SPEED 25-45 MPH

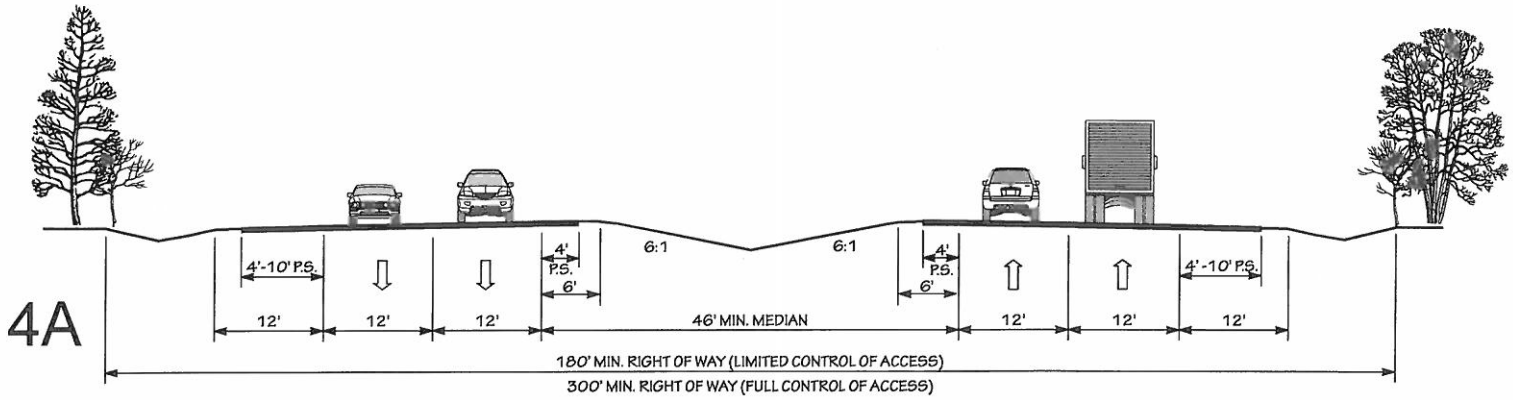
3C



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

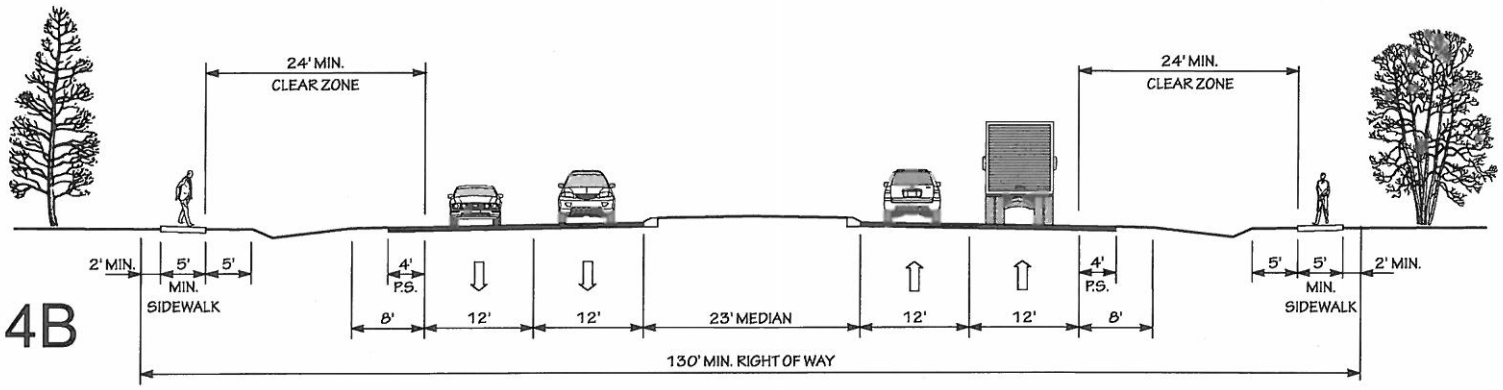
POSTED SPEED 25-45 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



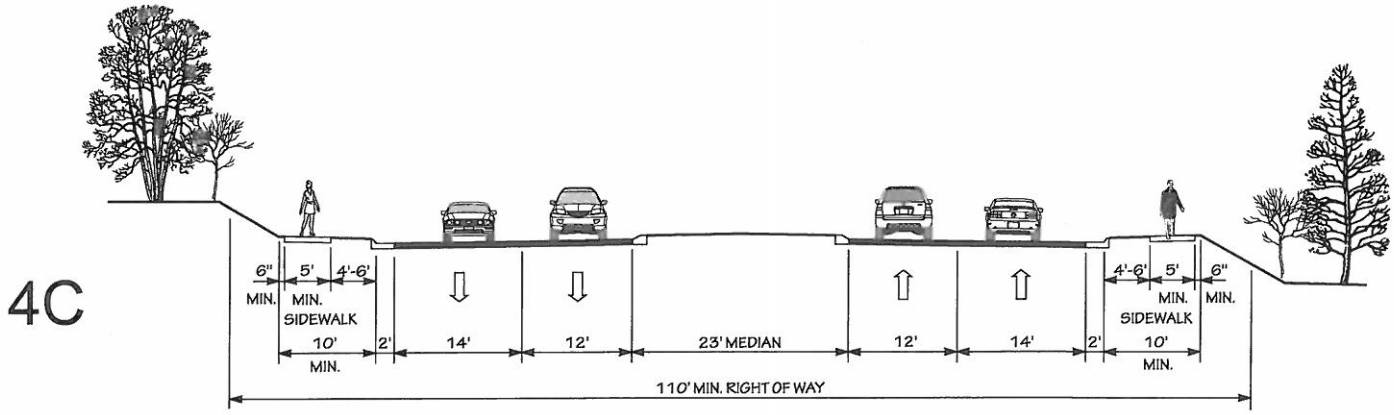
4 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS

POSTED SPEED 45-70 MPH



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

POSTED SPEED 35-55 MPH

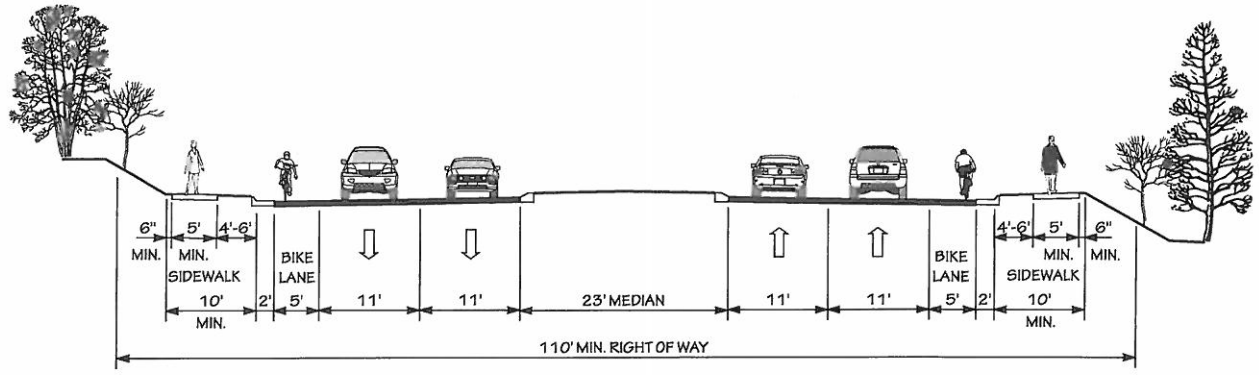


4 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES, AND SIDEWALKS

POSTED SPEED 35-45 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS

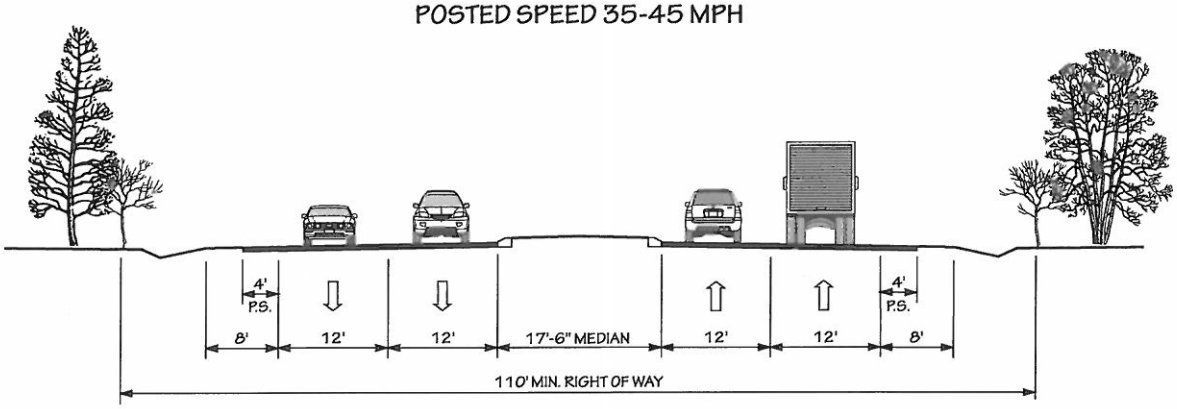
4D



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

POSTED SPEED 35-45 MPH

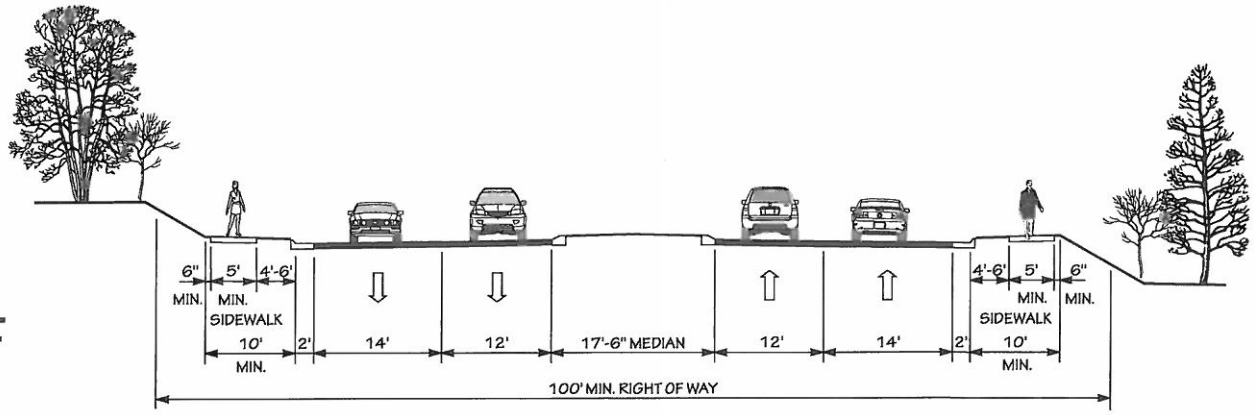
4E



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

POSTED SPEED 35-55 MPH

4F

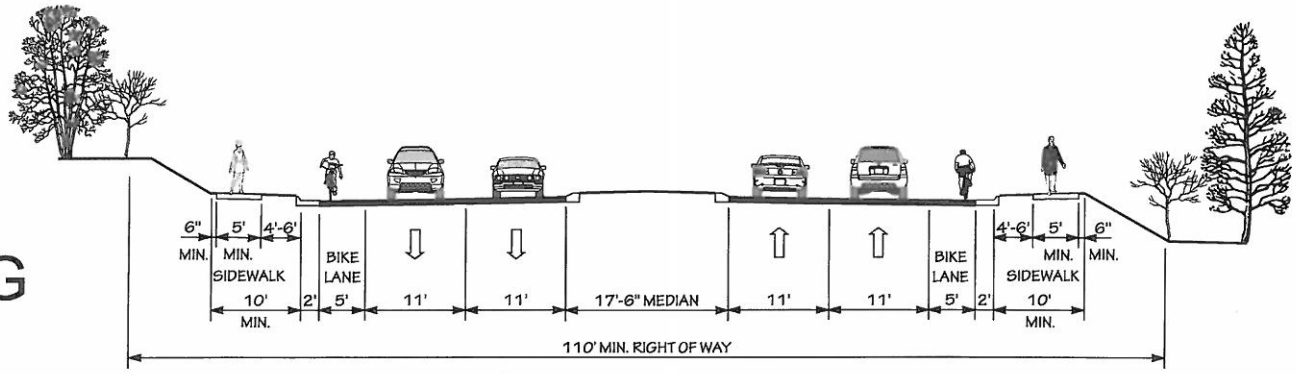


4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES, AND SIDEWALKS

POSTED SPEED 35-45 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS

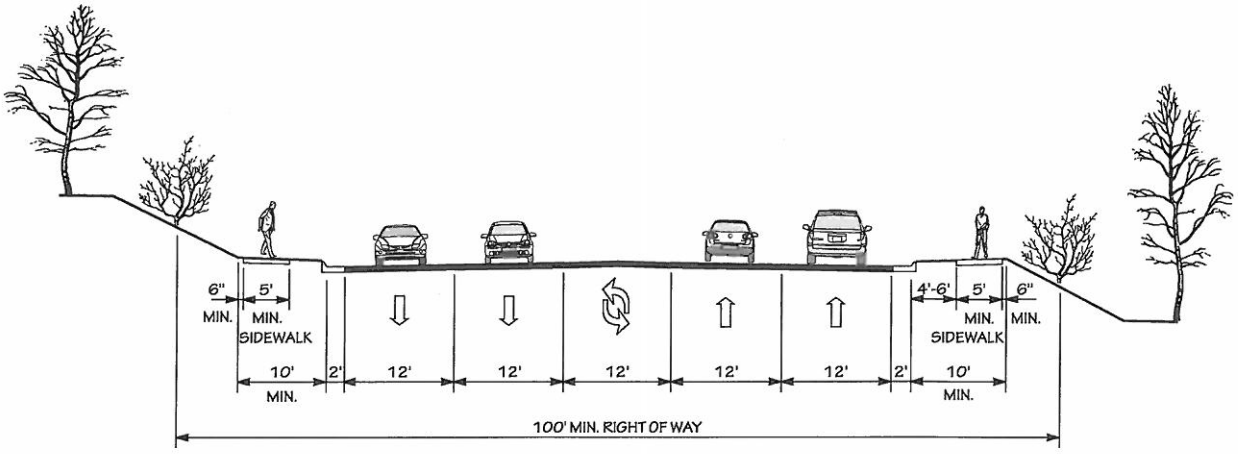
4G



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

POSTED SPEED 35-45 MPH

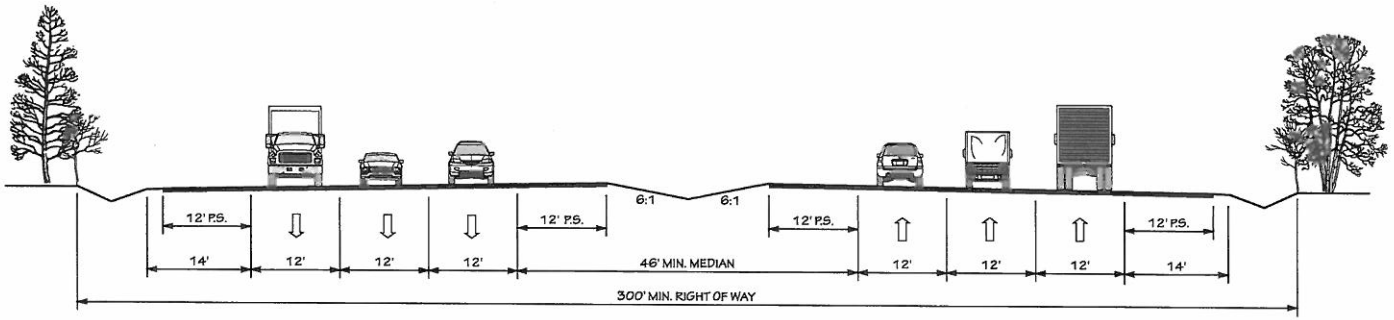
5A



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

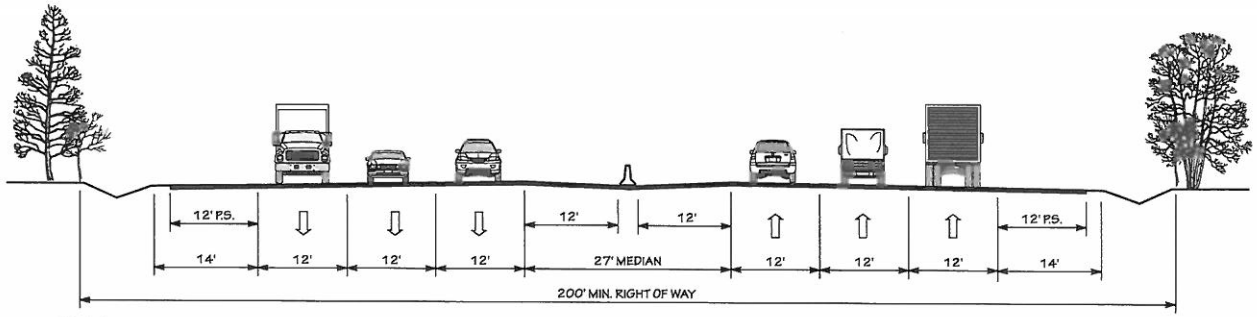
POSTED SPEED 35-45 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



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

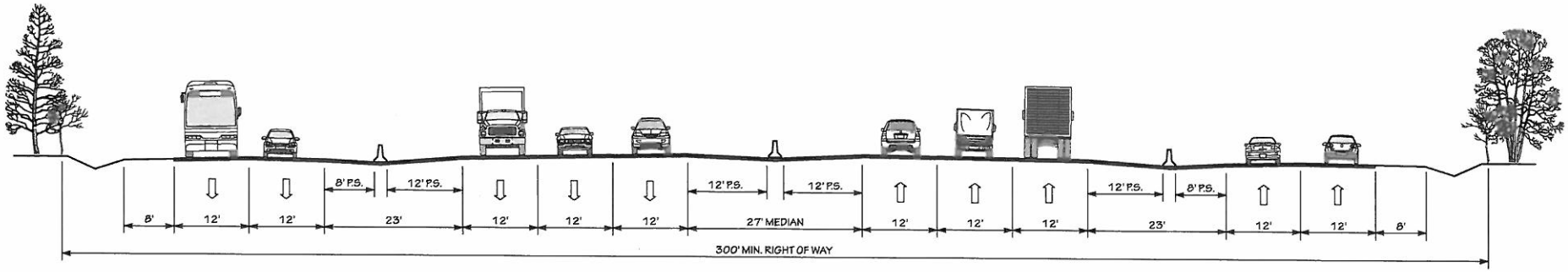
POSTED SPEED 45-70 MPH



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

POSTED SPEED 55-70 MPH

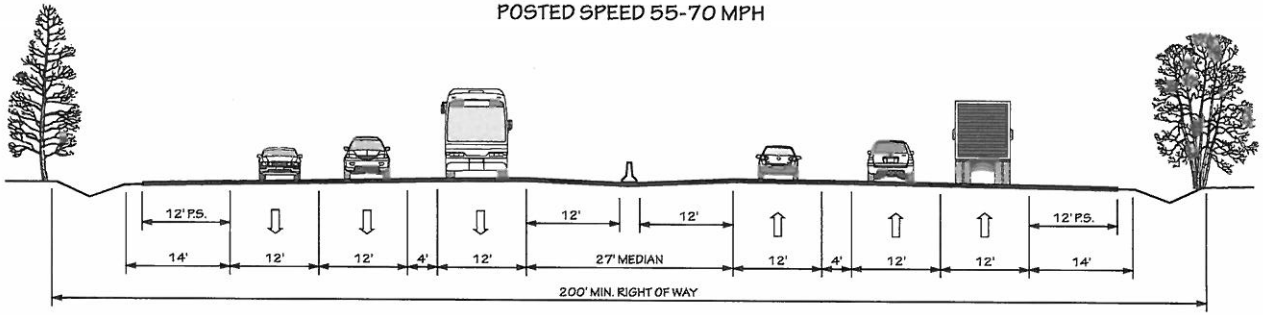
"TYPICAL" HIGHWAY CROSS SECTIONS



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

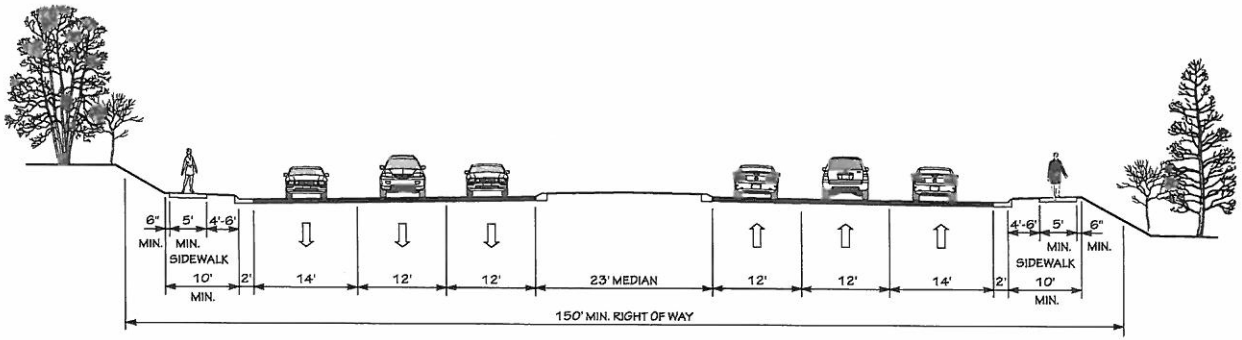


6D

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

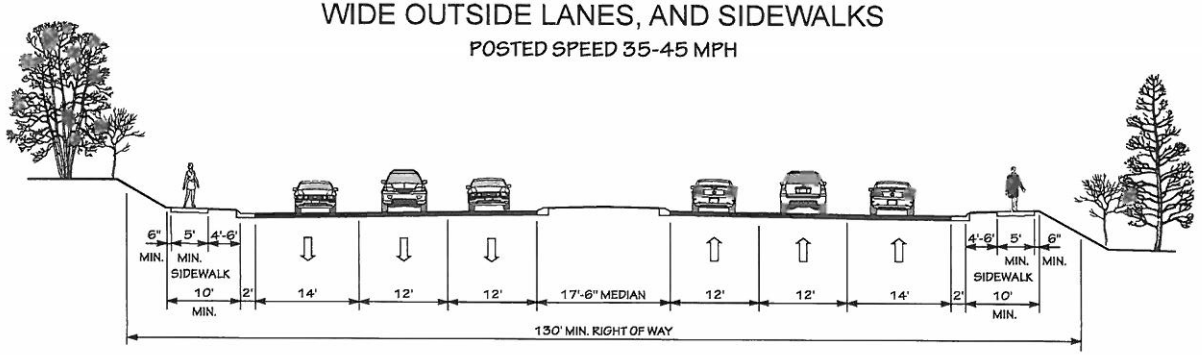
POSTED SPEED 55-70 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



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

POSTED SPEED 35-45 MPH

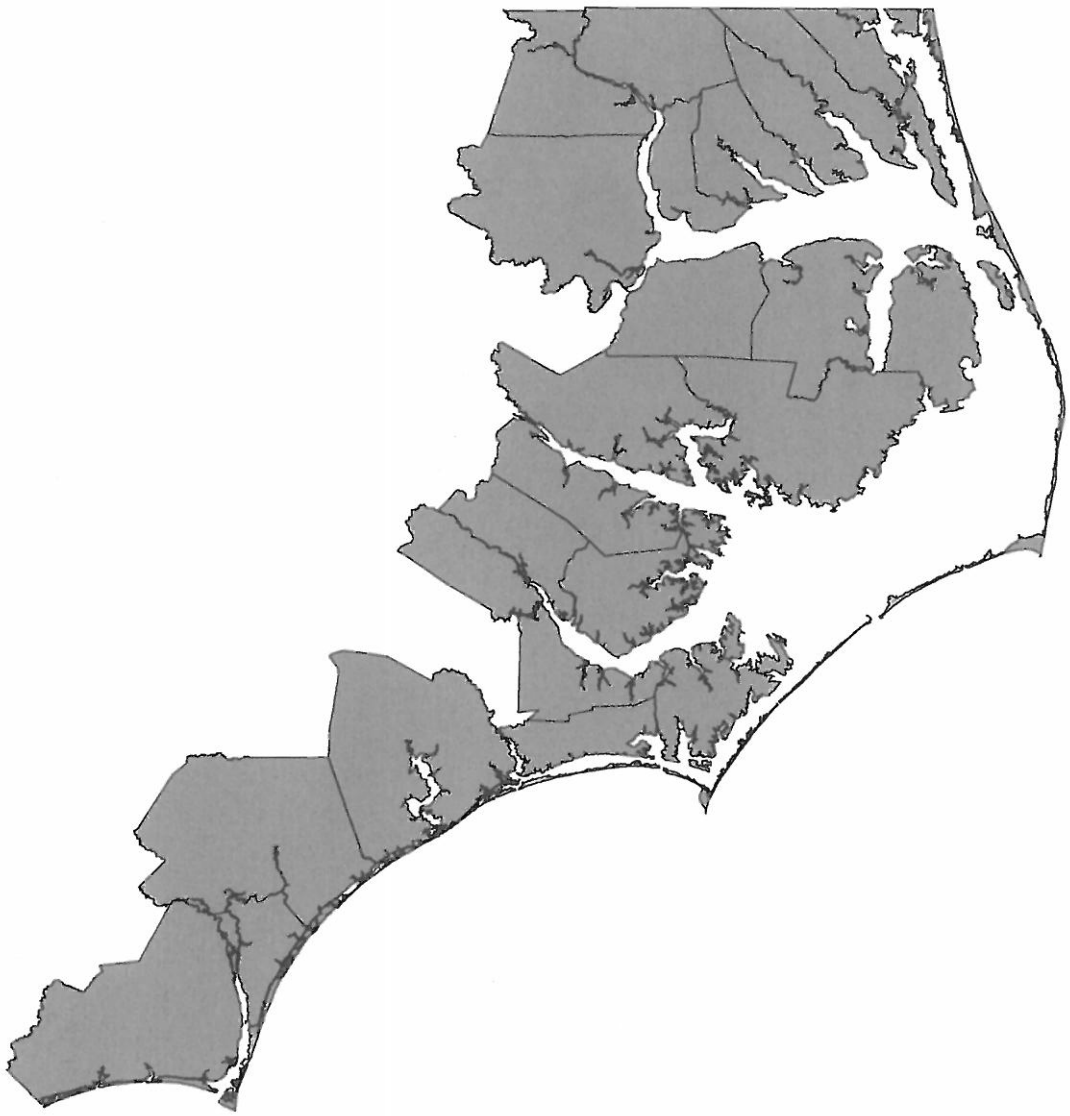


6F 6 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES, AND SIDEWALKS

POSTED SPEED 35-45 MPH

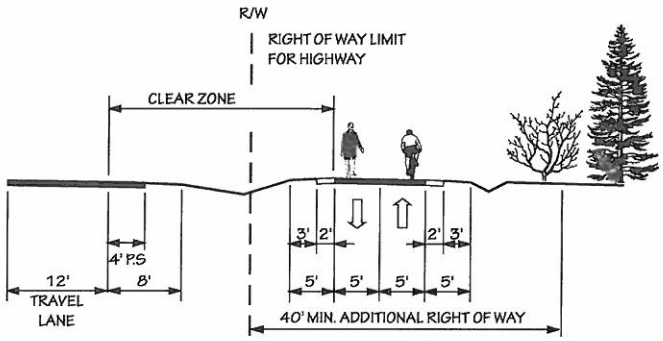
CAMA COUNTIES

Beaufort
Bertie
Brunswick
Camden
Carteret
Chowan
Craven
Currituck
Dare
Gates
Hertford
Hyde
New Hanover
Onslow
Pamlico
Pasquotank
Pender
Perquimans
Tyrrell
Washington



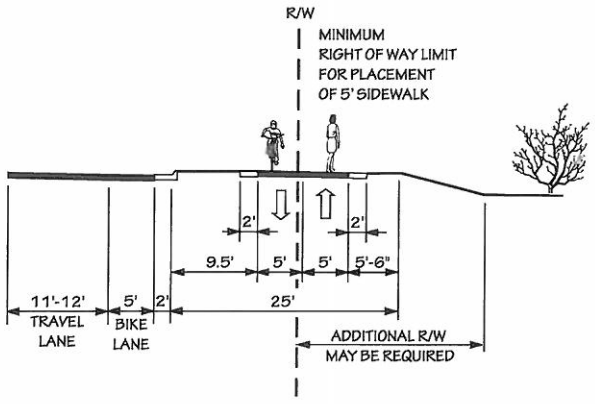
"TYPICAL" HIGHWAY CROSS SECTIONS

M A



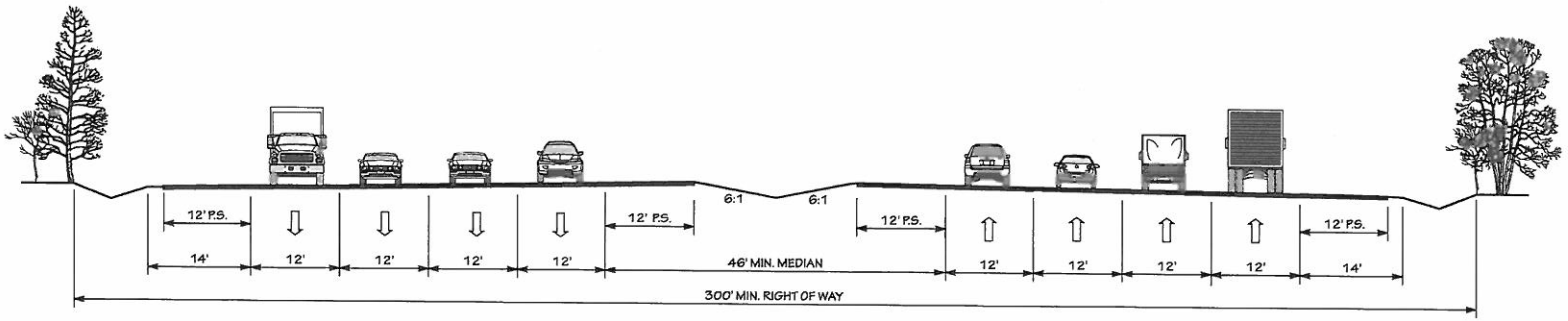
MULTI - USE PATH
ADJACENT TO RIGHT OF WAY OR SEPARATE PATHWAY

M B



MULTI - USE PATH ADJACENT TO CURB AND GUTTER

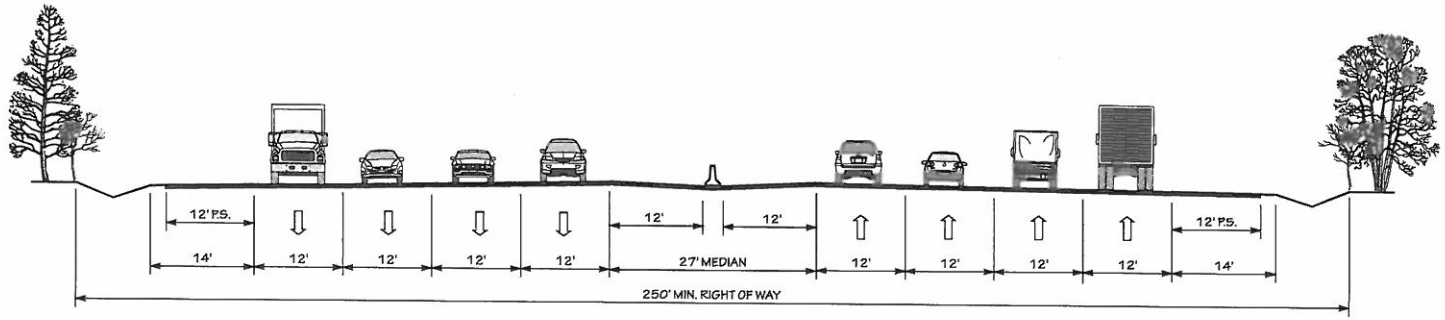
"TYPICAL" HIGHWAY CROSS SECTIONS



8A

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

POSTED SPEED 45-70 MPH

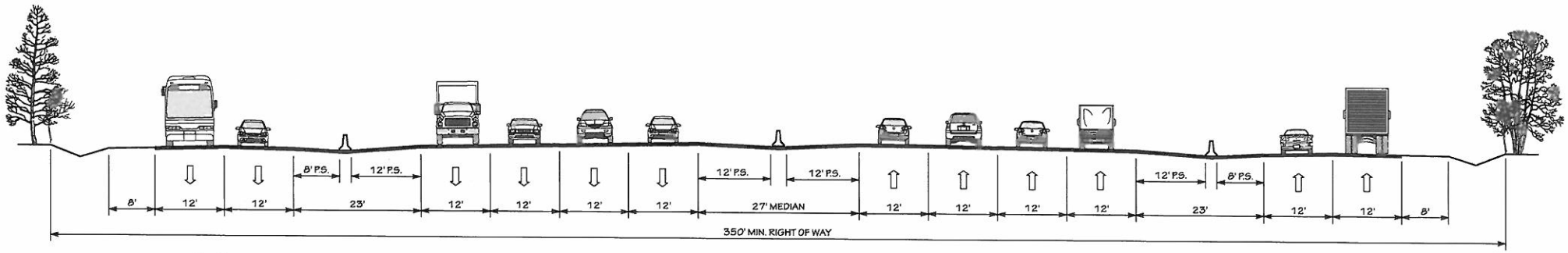


8B

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

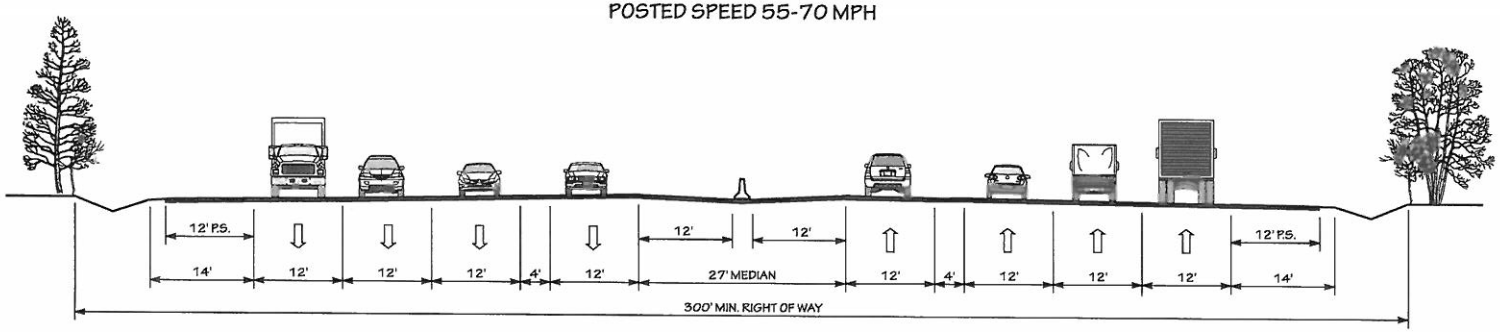
POSTED SPEED 55-70 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



8C 8 LANE FREEWAY (27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS AND 2 LANE ONE-WAY SERVICE ROADS EACH SIDE

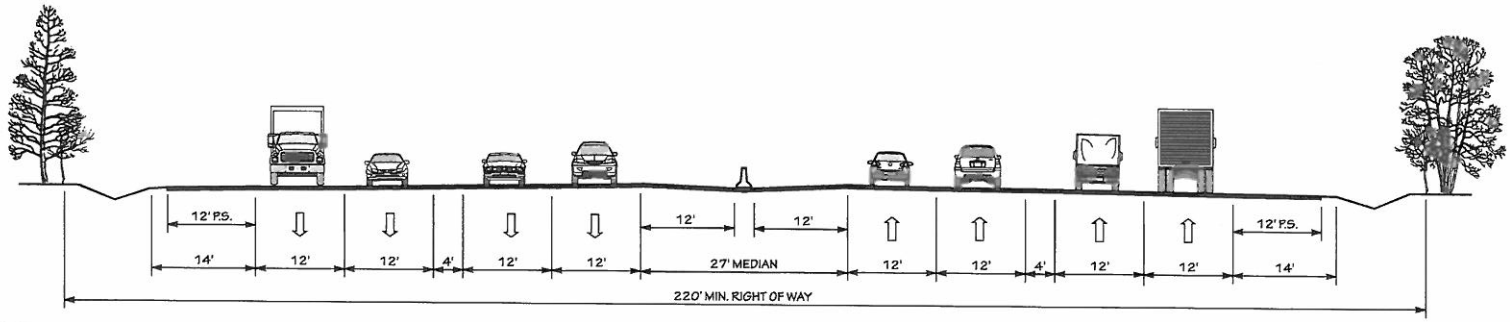
POSTED SPEED 55-70 MPH



8D 8 LANE FREEWAY (6 GENERAL PURPOSE LANES, 2 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS

POSTED SPEED 55-70 MPH

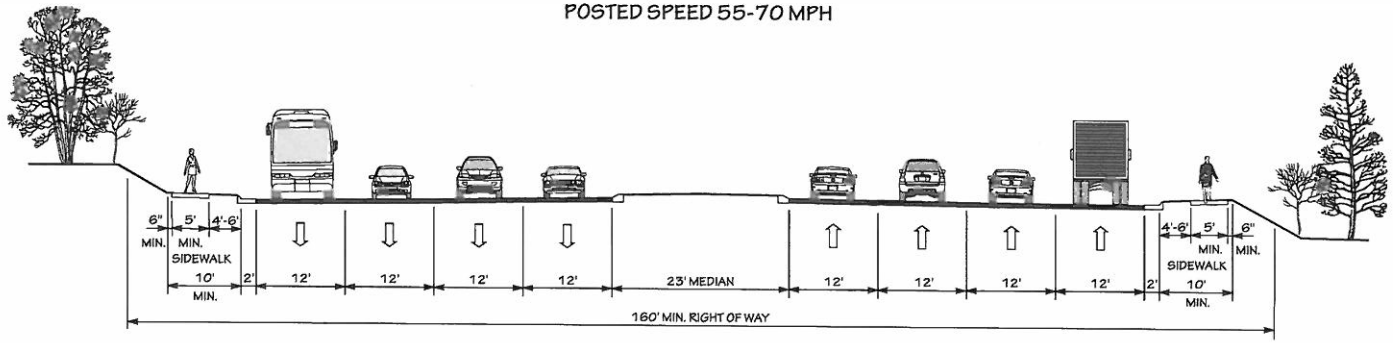
"TYPICAL" HIGHWAY CROSS SECTIONS



8E

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

POSTED SPEED 55-70 MPH

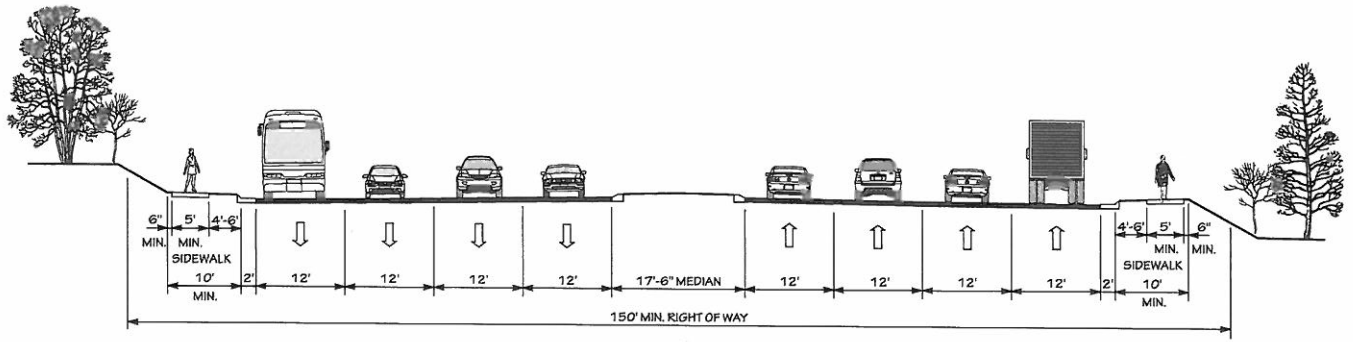


8F

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

POSTED SPEED 35-45 MPH

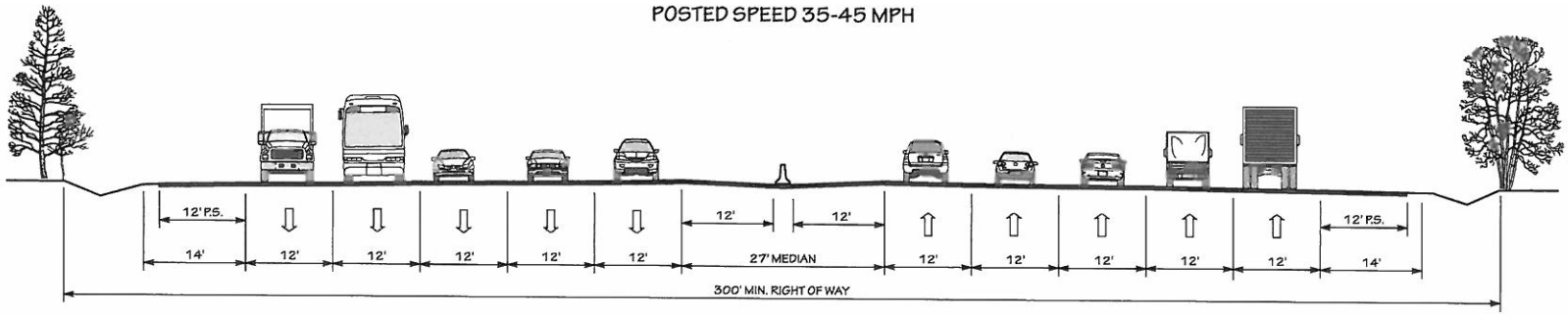
"TYPICAL" HIGHWAY CROSS SECTIONS



8G

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

POSTED SPEED 35-45 MPH

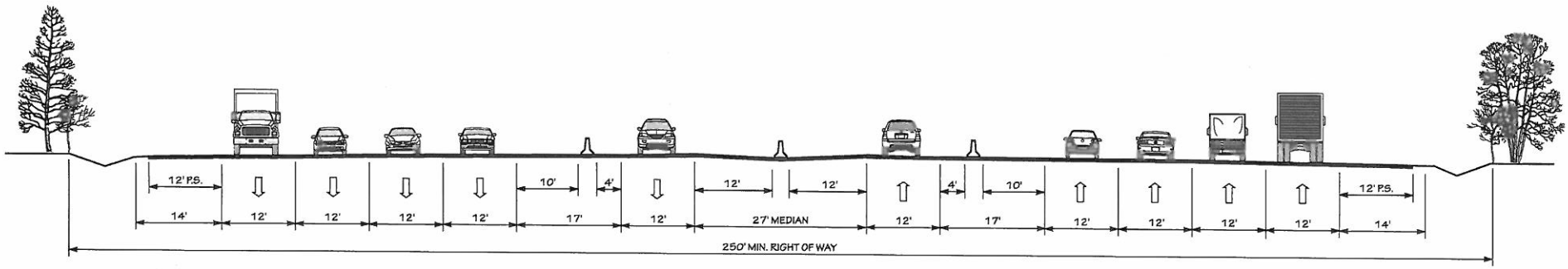


10A

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

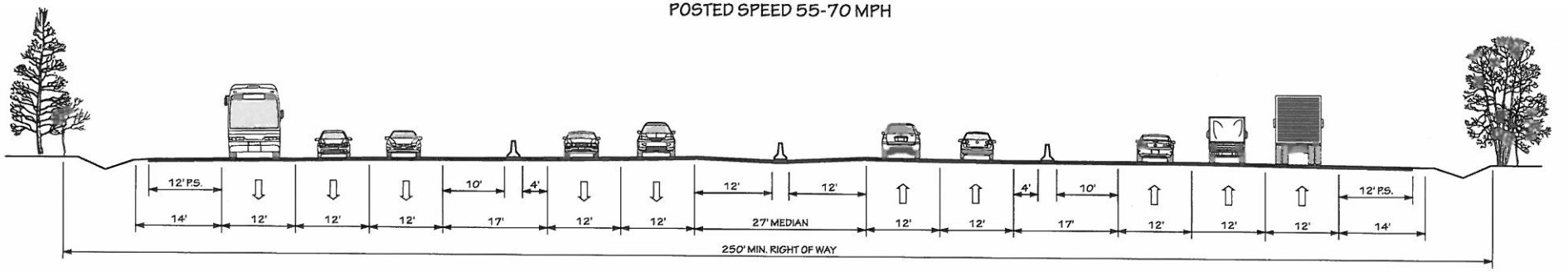
POSTED SPEED 55-70 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



10B 10 LANE FREEWAY (8 GENERAL PURPOSE LANES, 2 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS

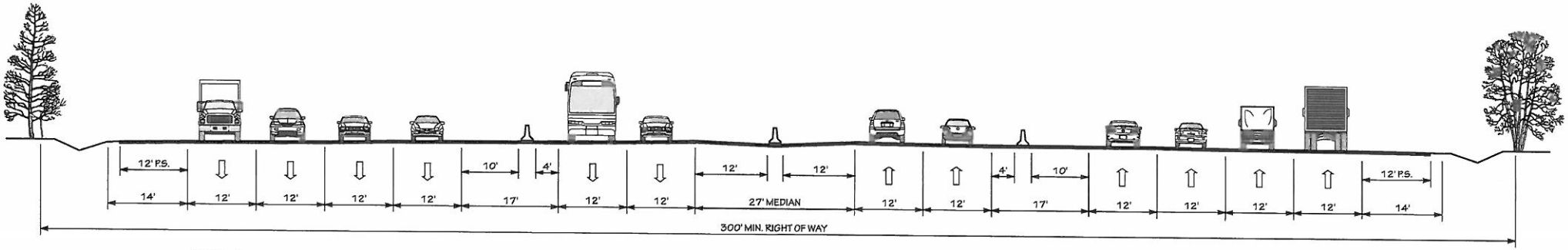
POSTED SPEED 55-70 MPH



10C 10 LANE FREEWAY (6 GENERAL PURPOSE LANES, 4 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS

POSTED SPEED 55-70 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



12A 12 LANE FREEWAY (8 GENERAL PURPOSE LANES, 4 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS

POSTED SPEED 55-70 MPH

Appendix E
Level of Service Definitions

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

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

- **LOS A**: Describes primarily free flow conditions. The motorist experiences a high level of physical and psychological comfort. The effects of minor incidents of breakdown are easily absorbed. Even at the maximum density, the average spacing between vehicles is about 528 ft, or 26 car lengths.
- **LOS B**: Represents reasonably free flow conditions. The ability to maneuver within the traffic stream is only slightly restricted. The lowest average spacing between vehicles is about 330 ft, or 18 car lengths.
- **LOS C**: Provides for stable operations, but flows approach the range in which small increases will cause substantial deterioration in service. Freedom to maneuver is noticeably restricted. Minor incidents may still be absorbed, but the local decline in service will be great. Queues may be expected to form behind any significant blockage. Minimum average spacing is in the range of 220 ft, or 11 car lengths.
- **LOS D**: Borders on unstable flow. Density begins to deteriorate somewhat more quickly with increasing flow. Small increases in flow can cause substantial deterioration in service. Freedom to maneuver is severely limited, and the driver experiences drastically reduced comfort levels. Minor incidents can be expected to create substantial queuing. At the limit, vehicles are spaced at about 165 ft, or 9 car lengths.
- **LOS E**: Describes operation at capacity. Operations at this level are extremely unstable, because there are virtually no usable gaps in the traffic stream. Any disruption to the traffic stream, such as a vehicle entering from a ramp, or changing lanes, requires the following vehicles to give way to admit the vehicle. This can establish a disruption wave that propagates through the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate any disruption. Any incident can be expected to produce a serious breakdown with extensive queuing. Vehicles are spaced at approximately 6 car lengths, leaving little room to maneuver.

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

Figure 10 - Level of Service Illustrations

Level of Service A

Driver Comfort: High

Maximum Density:

12 passenger cars per mile per lane

Level of Service B

Driver Comfort: High

Maximum Density:

20 passenger cars per mile per lane

Level of Service C

Driver Comfort: Some Tension

Maximum Density:

30 passenger cars per mile per lane

Level of Service D

Driver Comfort: Poor

Maximum Density:

42 passenger cars per mile per lane

Level of Service E

Driver Comfort: Extremely Poor

Maximum Density:

67 passenger cars per mile per lane

Level of Service F

Driver Comfort: The lowest

Maximum Density:

More than 67 passenger cars per mile per lane

Source: 2000 Highway Capacity Manual

Appendix F
Traffic Crash Analysis

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

The severity of every crash is measured with a series of weighting factors developed by the NCDOT Division of Highways (DOH). These factors define a fatal or incapacitating crash as 47.7 times more severe than one involving only property damage and a crash resulting in minor injury is 11.8 times more severe than one with only property damage. In general, a higher severity index indicates more severe accidents. Listed below are levels of severity for various severity index ranges.

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

Table 4 and Figure 4 depicts a summary of the crashes occurring in the planning area between November 1, 2008 and November 1, 2011. The data represents locations with 10 or more crashes and/or a severity index average greater than that of the state's 4.56 index. The "Total" column indicates the total number of crashes reported within 150-ft of the intersection during the study period. The severity listed is the average crash severity for that location.

Table 4 - Crash Locations

Map Index	Intersection	Average Severity	Total Crashes
1	US 158 and NC343	2	13
2	US 17 and SR 1219	4	10
3	SR 1145 and SR 1203	26	3
4	US 17 and NC 343	5	3
5	US 158 and NC 34	5	4

The NCDOT is actively involved with investigating and improving many of these locations. To request a more detailed analysis for any of the locations listed in Table 4,

or other intersections of concern, contact the Division Traffic Engineer. Contact information for the Division Traffic Engineer is included in Appendix A.

Appendix G
Bridge Deficiency Assessment

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

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

The NCDOT Structure Maintenance Unit inspects all bridges in North Carolina at least once every two years. A sufficiency rating for each bridge is calculated and establishes the eligibility and priority for replacement. Bridges having the highest priority are replaced as Federal and State funds become available.

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

A bridge must be classified as deficient in order to quality for Federal replacement funds. Additionally, the sufficiency rating must be less than 50% to qualify for replacement or less than 80% to qualify for rehabilitation under federal funding. Deficient bridges within the planning area are listed in Table 5.

Table 5 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	Local ID
09	US 158	Run Swamp	Functionally Obsolete	CAMD0001-H
13	SR 1224	Joyce Creek	Functionally Obsolete	CAMD0002-H
14	US 17 BUS	Dismal Swamp Canal	Functionally Obsolete	-
20	NC 343	Sawyer Creek	Structurally Deficient & Functionally Obsolete	B-4452
21	NC 343	Jarvis Creek	Structurally Deficient & Functionally Obsolete	B-4451
41	SR 1148	Portohonk Creek	Functionally Obsolete	-
44	US 17 NBL	Drummond Canal	Structurally Deficient & Functionally Obsolete	-

Appendix H
Public Involvement

Vision Statement

Camden County

Community Vision and CTP Goals and Objectives Statement

Vision:

Enhance transportation connectivity within Camden County by providing a safe, reliable, efficient, and sustainable multi-modal transportation network that supports economic development and efficient movement of people and products while being compatible with environmental and land use patterns.

Goals:

1. Complete a study of transportation facilities, capacity, connectivity, crashes, and access management techniques and develop a plan that address traffic congestion safety, traffic flow and considers economic impacts.

2. Provide means to identifying and prioritizing needs and improvements that would enhance quality of life through multi-modal CTP implementation.

3. Make recommendations for implementing alternative means of transportation including, but not limited to transit, walking and bicycling.

4. Coordinate Camden County transportation and land use plans with Albemarle Rural Planning Organization, NCDOT, and other relevant local and state organizations.

5. Coordinate with Camden County Emergency Management and relevant organizations to ensure that emergency plans are considered in plan development.

Camden County Comprehensive Plan Steering Committee

Ray Albertson
Phil Faison
Craig Carey
Butch Flythe
Dorothy Drake
Gloria Gallop
Ramona Gilbert
Terri Griffin
Larry Glasscock
Fletcher Harris
Joy Greenwood
Janice Hassell
Eddie Hyman
David Moehring
Alex Leary
Christian Overton
Nancy McAlister
Tony Perry
Waverly Sawyer
Sam West
Kathy Williams
David Simpson
Donna Stewart

Camden County Comprehensive Plan Technical Committee

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Gretchen Byrum
David Credle
Melvin Hawkins
Sylvia Holley
Ashley Honaker
Laura Konwinski
Steve Lambert
Pat Mansfield
Herb Mullen
Charlan Owens
Eric Parker
Dave Parks
Dan Porter
Mark Powell
Paul Raper
Shana Trafton
Tim White
Christy Saunders

Public Meetings

Five public drop-in sessions were held in Camden County to present the proposed CTP to the public and solicit comments. The first two meetings were held on November 14th, 2011 at Camden County Middle School Cafeteria; the second two meetings were held on May 8th, 2012 at the same location, and the fifth took place on September 3, 2013 at the Camden County Senior Citizen Center. Each session was publicized in the local newspaper and was held from 4pm to 6pm and/or from 7pm to 9pm.

During the sessions the residents of Camden County were provided information on the CTP, the different modes of transportation and the proposed improvements for each mode.

Most concerns were raised about the new US 158 location and is there really need for it.

Public Survey

The following pages contain the Camden County Transportation Survey and a summary of its results.

Camden County

Comprehensive Transportation Plan

Public Survey

Dear Camden County Resident:

We need YOUR input! Camden County is working in coordination with the North Carolina Department of Transportation and the Albemarle RPO to develop a county wide Comprehensive Transportation Plan. The purpose of this plan is to identify county and municipal transportation problems, now as well as in the future, and identify solutions, which provide for a safe and reliable transportation system. In order for this plan to be truly comprehensive it must contain input from local residents. Please take a few minutes to complete this survey and ensure the opinions and concerns of Camden County residents are addressed within the plan.

Thank you for your assistance!

All answers are ANONYMOUS and will only be used for the purpose of public input for this plan.

Camden County Comprehensive Transportation Plan Survey

1. What mode(s) of transportation do you use? (Check all that apply)

	Response Percent	Response Count
Drive by yourself	**84.2%**	**85**
Drive/ride with others	45.5%	46
Walk	15.8%	16
Bicycle	16.8%	17
Other (please specify)	3.0%	3
answered question		**101**
skipped question		**1**

2. If Public Transportation (Van/Carpool, Buses, Rail) was made accessible in your area , would you use it?

	Response Percent	Response Count
Yes	37.1%	36
No	**62.9%**	**61**
If yes, to where?		31
answered question		**97**
skipped question		**5**

3. How would you rate the following suggestions for increasing a road's efficiency.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Response Count
Building additional lanes	13.1% (13)	20.2% (20)	26.3% (26)	**29.3% (29)**	11.1% (11)	99
Widening existing lanes and/or adding shoulders	8.0% (8)	7.0% (7)	14.0% (14)	**38.0% (38)**	33.0% (33)	100
Improving signal timing	3.0% (3)	5.1% (5)	**39.4% (39)**	34.3% (34)	18.2% (18)	99
Controlling the frequency and locations of driveways and cross-streets that access the road.	4.0% (4)	14.1% (14)	**42.4% (42)**	24.2% (24)	15.2% (15)	99
					answered question	**100**
					skipped question	**2**

4. Are you concerned with safety or crash problems at any specific locations in Camden County?

		Response Percent	Response Count
Yes		46.9%	45
No		**53.1%**	**51**
		If yes, please list specific locations:	42
		answered question	**96**
		skipped question	**6**

5. Do you have any concerns with truck traffic in the area? (Check all that apply)

	Response Percent	Response Count
Congestion	17.3%	13
Damage to existing roadways, curbs/gutters, signs	**56.0%**	**42**
Truck traffic on minor streets	42.7%	32
Other (please specify)	22.7%	17
answered question		**75**
skipped question		**27**

6. Are there areas where you would like to see sidewalks constructed or improved?

	Response Percent	Response Count
Yes	35.4%	34
No	**64.6%**	**62**
If yes, please list desired locations		29
answered question		**96**
skipped question		**6**

7. If available, would you use off-road trails or greenways for walking and biking instead of driving as a mean of transportation?

	Response Percent	Response Count
Yes	43.4%	43
No	**56.6%**	**56**
If yes, please list desired locations:		28
answered question		**99**
skipped question		**3**

8. If available, would you use on-road bicycle facilities such as bike lanes and wide shoulders instead of driving as a means of transportation?

	Response Percent	Response Count
Yes	31.6%	31
No	**68.4%**	**67**
If yes, please specify desired locations		20
answered question		**98**
skipped question		**4**

9. Based on your regular travel experience, do you feel that any of the following roads needs improvement?

	Agree	Neutral	Disagree	Response Count
US 17	23.8% (20)	**48.8% (41)**	27.4% (23)	84
US 158	**51.7% (46)**	39.3% (35)	9.0% (8)	89
NC 34	32.1% (25)	**55.1% (43)**	12.8% (10)	78
NC 343	40.2% (33)	**47.6% (39)**	12.2% (10)	82
Sandy Hook Rd	26.6% (21)	**64.6% (51)**	8.9% (7)	79
Old Swamp Rd	**58.0% (51)**	38.6% (34)	3.4% (3)	88
Other	**44.8% (13)**	**44.8% (13)**	10.3% (3)	29
		If Other, please provide the corresponding road		19

answered question	**98**
skipped question	**4**

10. What do you think are the key transportation issues in Camden County?

	Response Count
	57

answered question	**57**
skipped question	**45**

11. In what part of Camden County do you reside?

	Response Percent	Response Count
South Mills Township	34.0%	33
Camden Township	**36.1%**	**35**
Shiloh Township	16.5%	16
Elizabeth City	3.1%	3
I do not reside in Camden County, but live in a neighboring county in North Carolina	8.2%	8
I do not reside in Camden County, but live in a neighboring county in Virginia	1.0%	1
Other (please specify)	1.0%	1
	answered question	**97**
	skipped question	**5**

12. Where do you work?

	Response Percent	Response Count
Camden County	**27.8%**	**27**
Pasquotank County/Elizabeth City	13.4%	13
Currituck County	0.0%	0
Virginia	24.7%	24
I don't currently work	16.5%	16
Other (please specify)	17.5%	17
	answered question	**97**
	skipped question	**5**

13. What is your age?

	Response Percent	Response Count
17 and under	10.1%	10
18-24	0.0%	0
25-34	9.1%	9
35-44	16.2%	16
45-64	**52.5%**	**52**
65-74	10.1%	10
75 and over	2.0%	2
	answered question	**99**
	skipped question	**3**

14. What is your ethnic background?

	Response Percent	Response Count
White		

Appendix I
Alternatives & Scenarios Studied

This appendix includes documentation for alternatives and scenarios that were for the proposed relocation of US-158, including ones not shown on the adopted CTP.

Multiple alternatives at different locations were considered at an initial preliminary round of alternatives discussion. As a result of the meetings held, three alternatives were then chosen for further, more detailed analysis. Figure 11 shows the three studied alternatives.

A preliminary cost estimate was calculated for each alternative. Factors taken under consideration were cost of right of way, new road construction, wetlands and homes affected, etc. Table 6 shows the cost for each alternative.

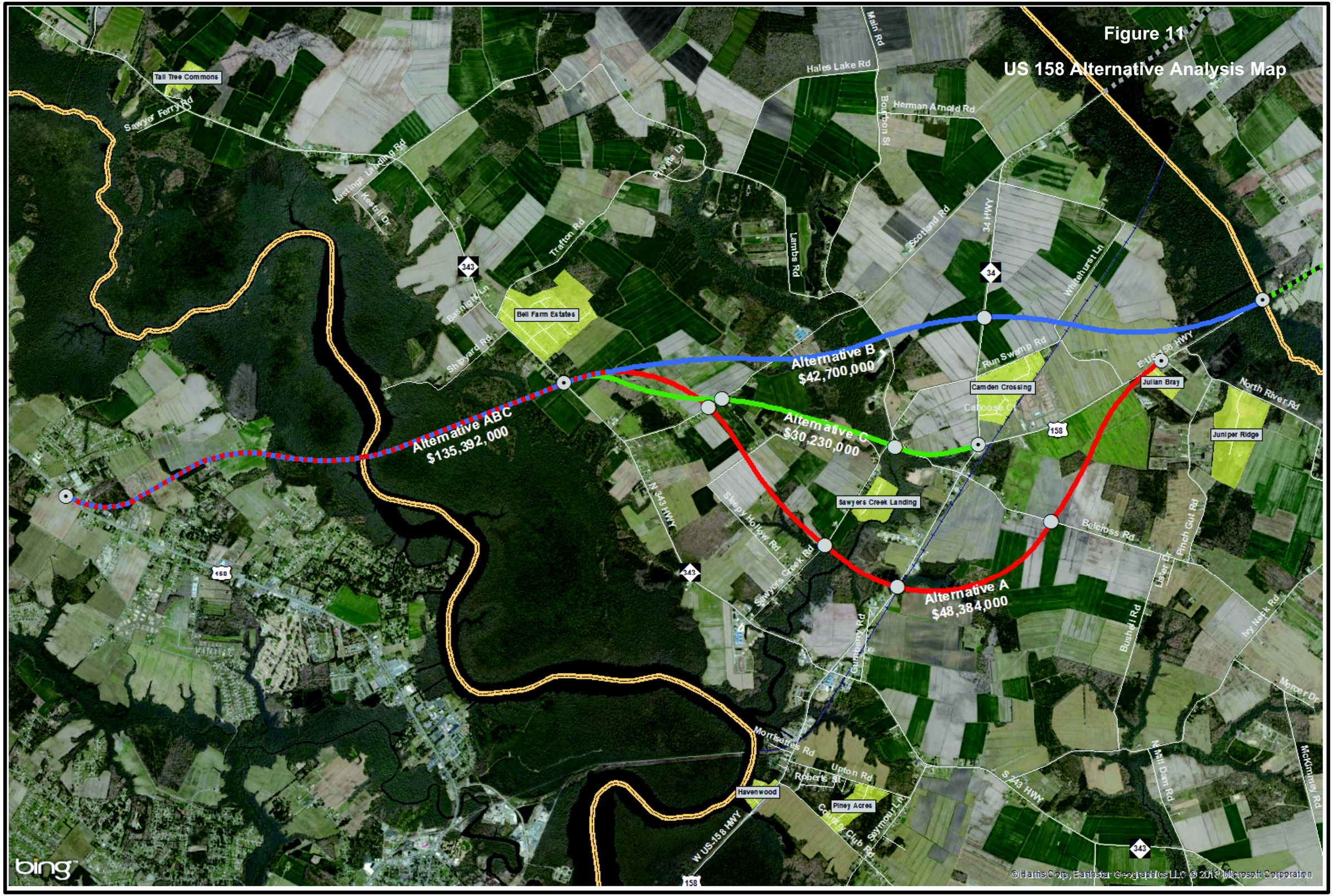
The alternative selected was Alternative C. It was selected because it had the smallest impact on natural and human environment and lowest cost. Even though the CTP report recommends Alternative C as the selected one, Alternative A and Alternative B were not unreasonable alternatives and can still be considered for further future studies.

Table 6 - US-158 Alternatives Cost Estimate

Type	Per	Price	AB	A	B	C	AB	A	B	C
ROW	acre	$30,000	94	124	112	69	$2,820,000	$3,720,000	$3,360,000	$2,070,000
New Road	mile	$4,800,000	4	5	5	3	$18,672,000	$24,624,000	$22,080,000	$13,440,000
Interchange with US Route	each	$10,000,000	1	1	1	1	$10,000,000	$10,000,000	$10,000,000	$10,000,000
Interchange with NC route or other road	each	$7,000,000	1	0	0	0	$7,000,000	$0	$0	$0
Grade Separation	each	$2,000,000	0	4	3	2	$0	$8,000,000	$6,000,000	$4,000,000
Wetlands	acre	$60,000	40	34	21	12	$2,400,000	$2,040,000	$1,260,000	$720,000
Structures (Est.)	ft^2	$105	900,000	0	0	0	$94,500,000	$0	$0	$0
Churches	each	$500,000	0	0	0	0	$0	$0	$0	$0
Cemeteries	each	$100,000	0	0	0	0	$0	$0	$0	$0
Schools	each	$500,000	0	0	0	0	$0	$0	$0	$0
TOTALS							$135,392,000	$48,384,000	$42,700,000	$30,230,000

Figure 11

US 158 Alternative Analysis Map



Appendix J
Growth Rates

In the development of this plan, travel demand was projected from 2010 to 2040 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1990 to 2010. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns. The established future growth rates were endorsed by the Camden County CTP Steering Committee in December of 2011.

Table 7: Road Growth Rates

Route	Average annual growth			Growth Rate 2040 Estimated
	1991-2000 (10 year period)	2001-2010 (10 year period)	1991-2010 (20 year period)	
US 17	1.0%	3.5%	3.0%	**3.0%**
US 17 – BUSINESS	-1.7%	0.6%	0.3%	**1.0%**
US 158	2.2%	-1.4%	0.8%	**1.0%**
NC 34	1.9%	-0.3%	2.6%	**3.0%**
NC 343	3.0%	-0.5%	1.02%	**1.0%**
SR 1107 (Sandy Hook Rd)	1.1%	3.8%	3.1%	**3.0%**
SR 1100 (Texas Rd)	1.5%	3.0%	2.7%	**3.0%**
SR 1119 (S Trotman Rd)	1.0%	4.1%	2.8%	**3.0%**
SR 1121 (N Trotman Rd)	1.5%	3.7%	3.2%	**3.0%**
SR 1121 (Palmer Rd)	3.2%	3.1%	1.8%	**2.0%**
SR 1132 (Sand Hills Rd)	5.8%	6.1%	5.8%	**5.0%**
SR 1139 (Country Club Rd)	0.3%	3.8%	2.6%	**3.0%**
SR 1140 (Upton Rd)	2.2%	-0.3%	1.2%	**1.0%**
SR 1217 (Bunker Hill Rd)	3.3%	5.3%	3.3%	**3.5%**
SR 1224 (Old Swamp Rd)	0.7%	3.5%	3.5%	**3.5%**
SR 1224 (Nosay Rd)	0.7%	-1.2%	2.0%	**2.0%**
SR 1241 (Main St)	1.7%	0.7%	1.4%	**1.5%**
SR 1251 (North Side Rd)	1.9%	-0.4%	1.0%	**1.0%**
SR 1138 (Seymour Dr)	No count station	No count station		**3.0%**