Dare County
Comprehensive Transportation Plan

July 2015

2015 Dare County
Comprehensive Transportation Plan

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Transportation Planning Branch
N.C. Department of Transportation

In Cooperation with: Dare County
Town of Manteo
Town of Nags Head
Town of Kill Devil Hills
Town of Kitty Hawk
Town of Southern Shores
Town of Duck
Albemarle Rural Planning Organization

Published: July 2015

Travis Marshall, PE
Eastern Planning Unit Head

Table of Contents

List of Figures

List of Tables

Executive Summary

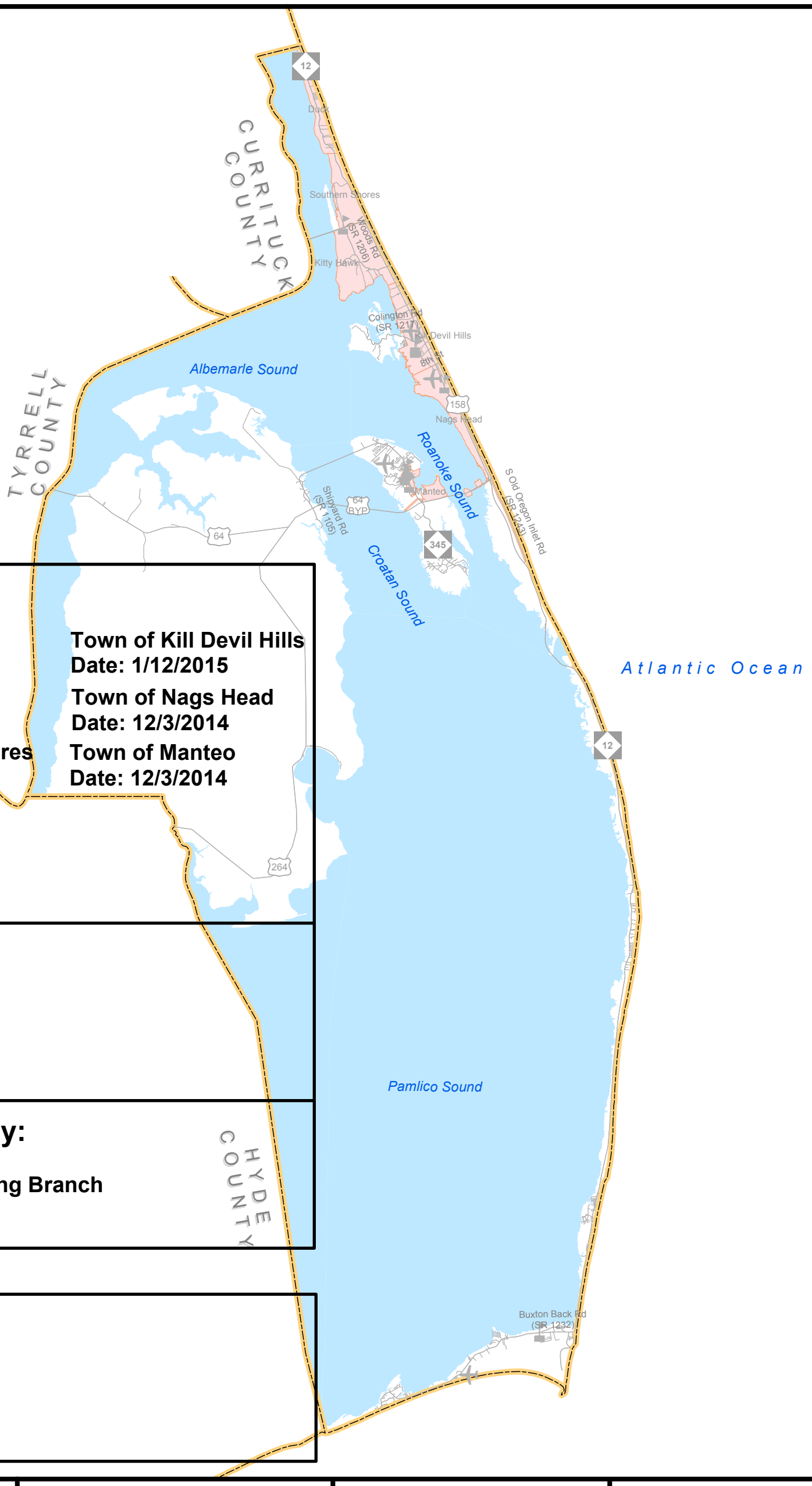
In July of 2011, the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT) and Dare County initiated a study to cooperatively develop the Dare County Comprehensive Transportation Plan (CTP), with Dare County and the incorporated municipalities of Manteo, Nags Head, Kill Devil Hills, Kitty Hawk, Southern Shores and Duck. This is a long range multi-modal transportation plan that covers transportation needs through 2040. Modes of transportation evaluated as part of this plan include: highway, public transportation and rail, bicycle, and pedestrian. This plan does not cover routine maintenance or minor operations issues. Refer to Appendix A for contact information on these types of issues.

Findings of this CTP study were based on an analysis of the transportation system, environmental screening and public input, which are detailed in Chapter 1. Figure 1 shows the CTP maps, which were mutually adopted by NCDOT in 2015. Descriptive information and definitions for designations depicted on the CTP maps can be found in Appendix B. Implementation of the plan is the responsibility of the county and its municipalities, and NCDOT. Refer to Chapter 2 for information on the implementation process.

This report documents the recommendations for improvements that are included in the Dare 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 64:** Widen to a four lane expressway from Tyrrell County to US 264.

- **US 158:** Improve the existing 5-lane facility to a 4-lane divided boulevard from US 64 to the Currituck County line.



Adopted by:

Dare County
Date: 1/5/2015

Town of Duck
Date: 11/5/2014

Town of Southern Shores
Date: 11/18/2014

Town of Kitty Hawk
Date: 12/1/2014

NCDOT
Date: 3/4/2015

Town of Kill Devil Hills
Date: 1/12/2015

Town of Nags Head
Date: 12/3/2014

Town of Manteo
Date: 12/3/2014

Endorsed by:

Albemarle RPO
Date: 1/21/2015

Recommended by:

Transportation Planning Branch
Date: 2/13/2015

NOTES:

Legend

- Airports
- Roads
- County Boundary
- Municipalities
- Schools
- Water

0 1.5 3 6 9 Miles

N W E S

Figure 1
Sheet 1 of 5

Base map date: June 2012

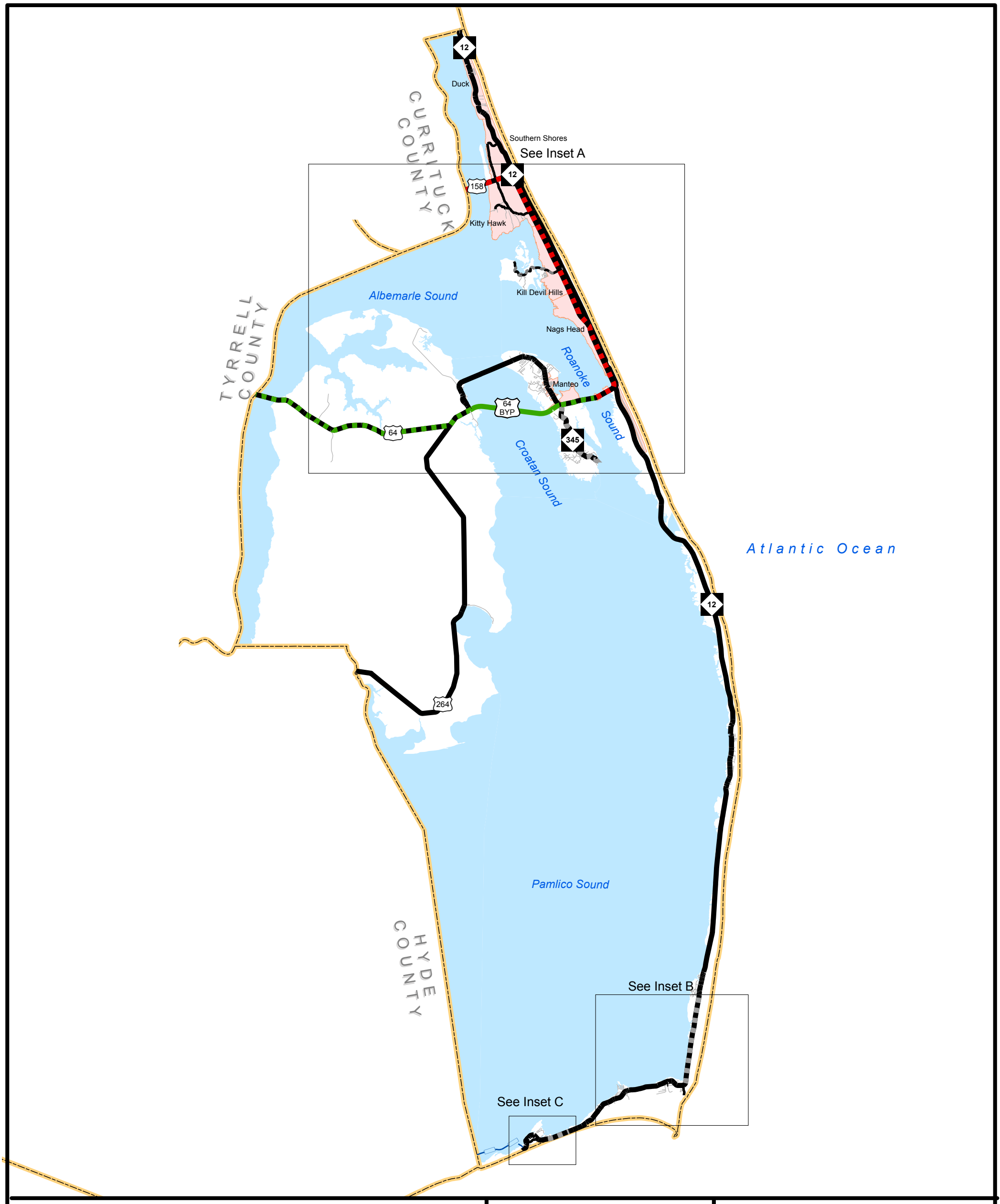
Refer to CTP document for more details

Dare County

North Carolina

Comprehensive Transportation Plan

Plan date: October 30, 2014



Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Ferry Route

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

Existing Interchange
Proposed Interchange
Interchange Needs Improvement
Existing Grade Separation
Proposed Grade Separation
Ferry Dock

Miles
0 1.5 3 6 9

N W E S

Figure 1
Sheet 2 of 5

Base map date: June 2012

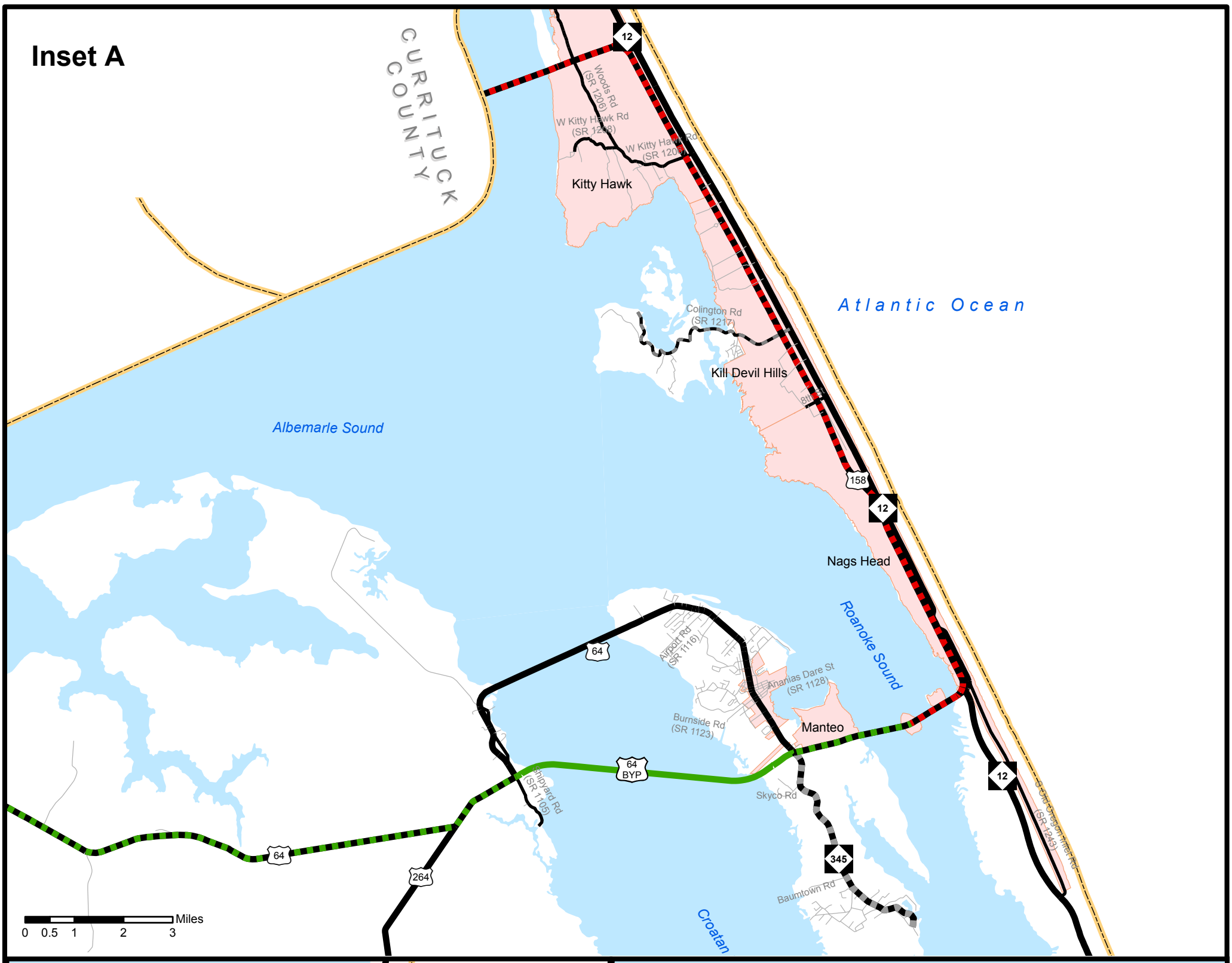
Refer to CTP document for more details

Highway Map

Dare County
Comprehensive Transportation Plan

Plan date: October 30, 2014

Inset A



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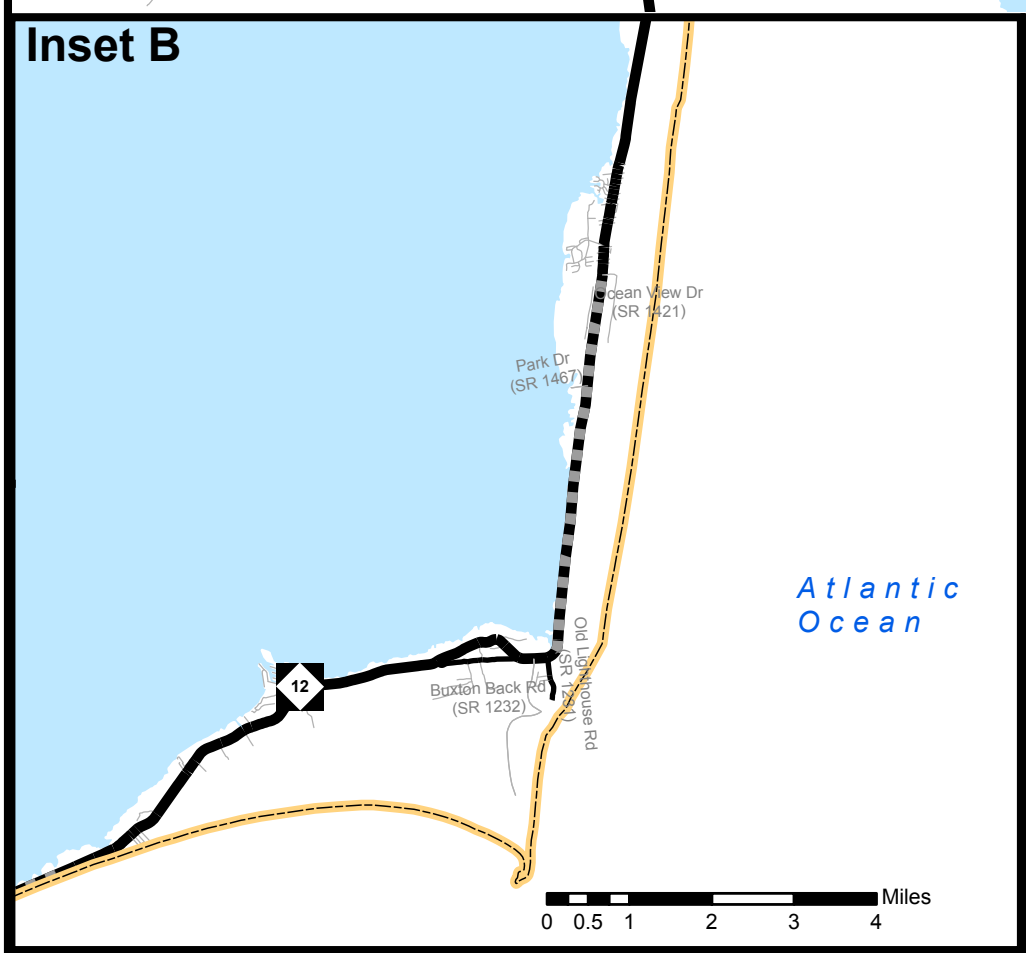
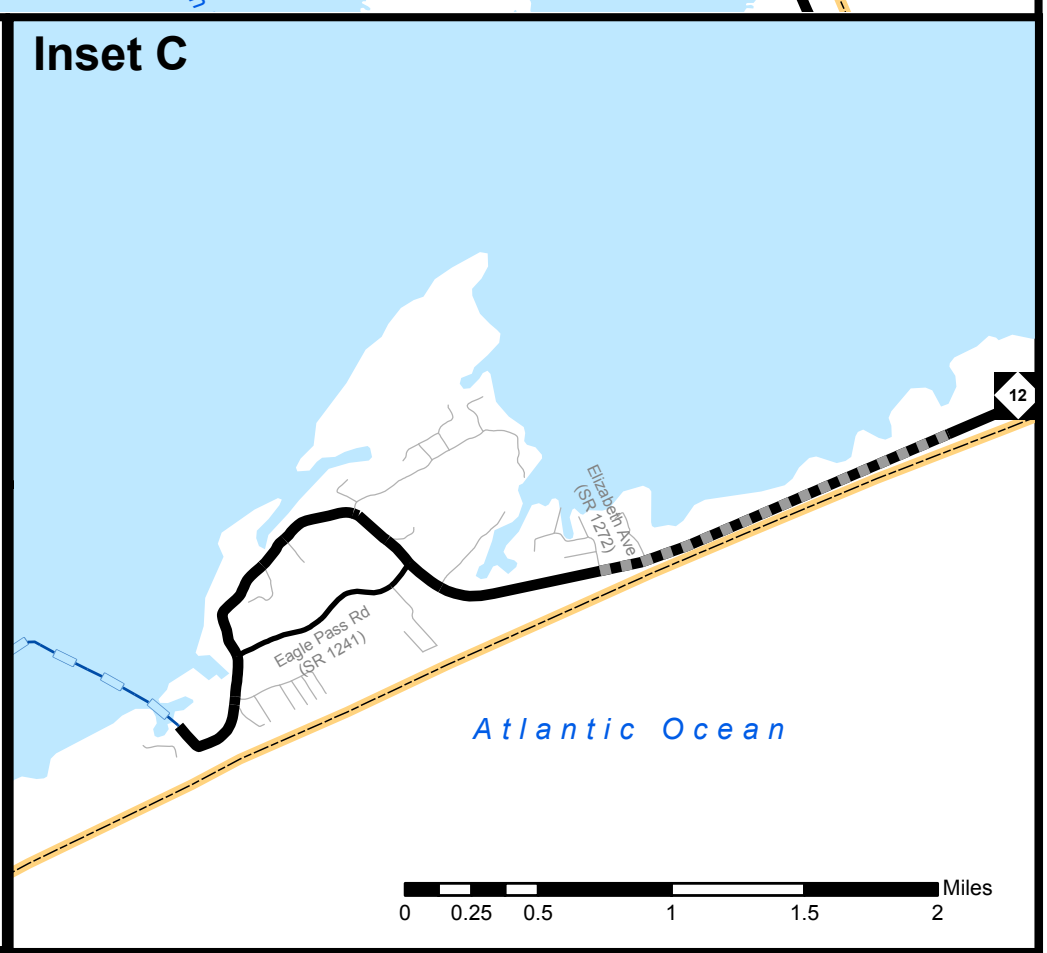


Inset C



Freeways
- Existing
- Needs Improvement
- Recommended

Expressways
- Existing
- Needs Improvement
- Recommended

Boulevards
- Existing
- Needs Improvement
- Recommended

Ferry Route

Other Major Thoroughfares
- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares
- Existing
- Needs Improvement
- Recommended

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

N W E S

Figure 1

Sheet 2A of 5

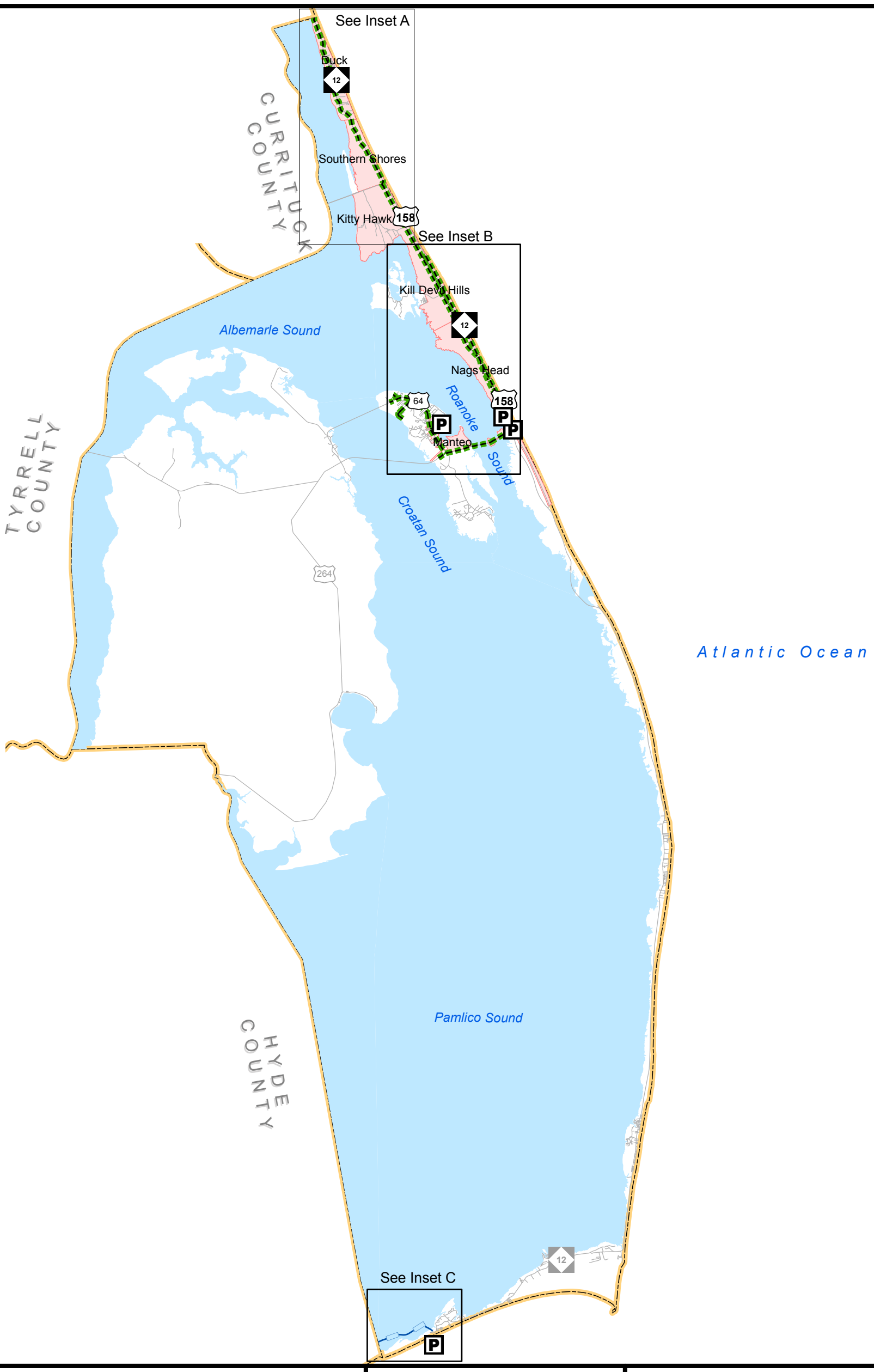
Base map date: June 2012

Refer to CTP document for more details

Highway Map Inset A-C

Dare County Comprehensive Transportation Plan

Plan date: October 30, 2014



Bus Routes
- Existing
- Needs Improvement
- Recommended

Fixed Guideway
- Existing
- Needs Improvement
- Recommended

Operational Strategies
- Existing
- Needs Improvement
- Recommended

Rail Corridor
- Active
- Inactive
- Recommended

High Speed Rail Corridor
- Existing
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

- Ferry Route
- Ferry Dock

Intermodal Connector
- Existing
- Recommended

Rail Stops
- Existing
- Recommended

Park and Ride Lot
- Existing
- Recommended

Miles
0 1.5 3 6 9

N W E S

Figure 1
Sheet 3 of 5

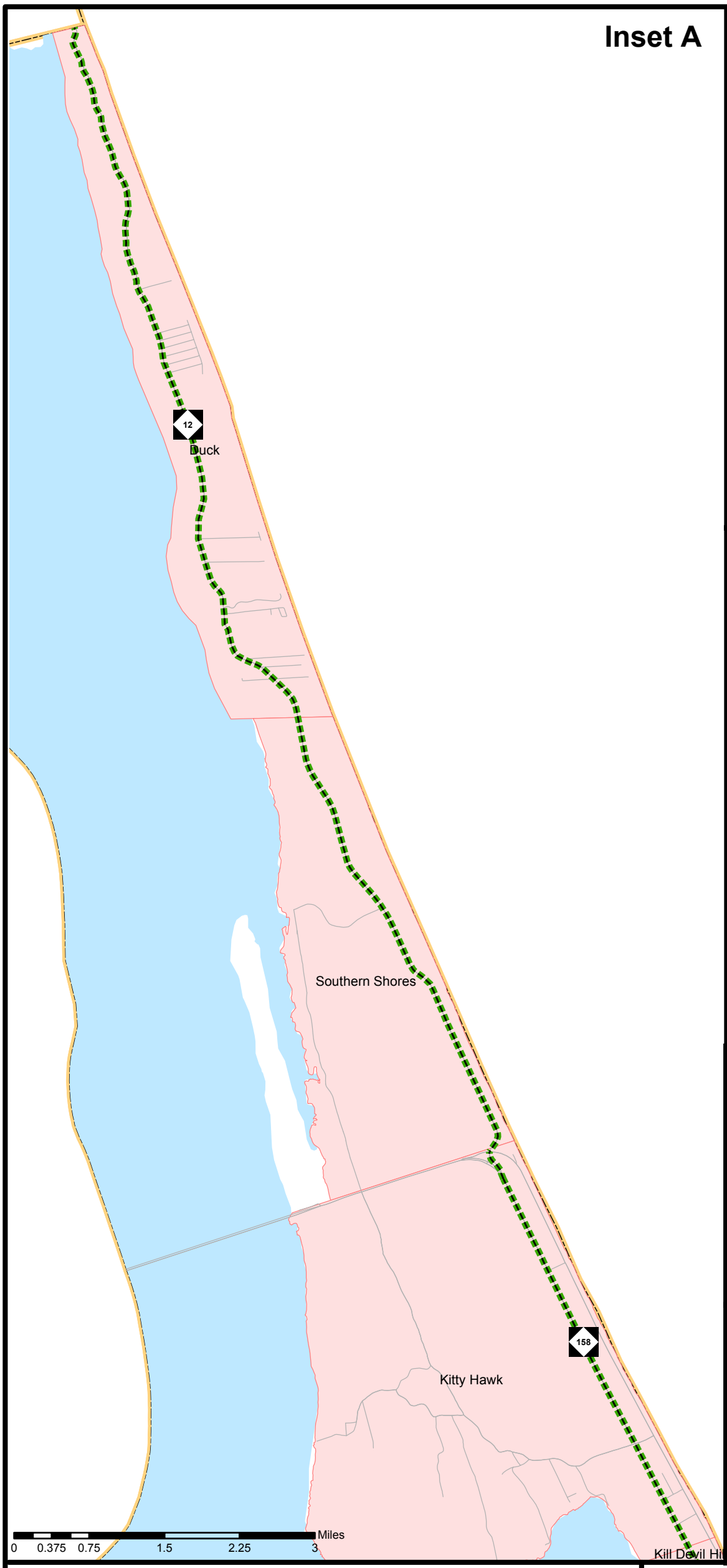
Base map date: June 2012

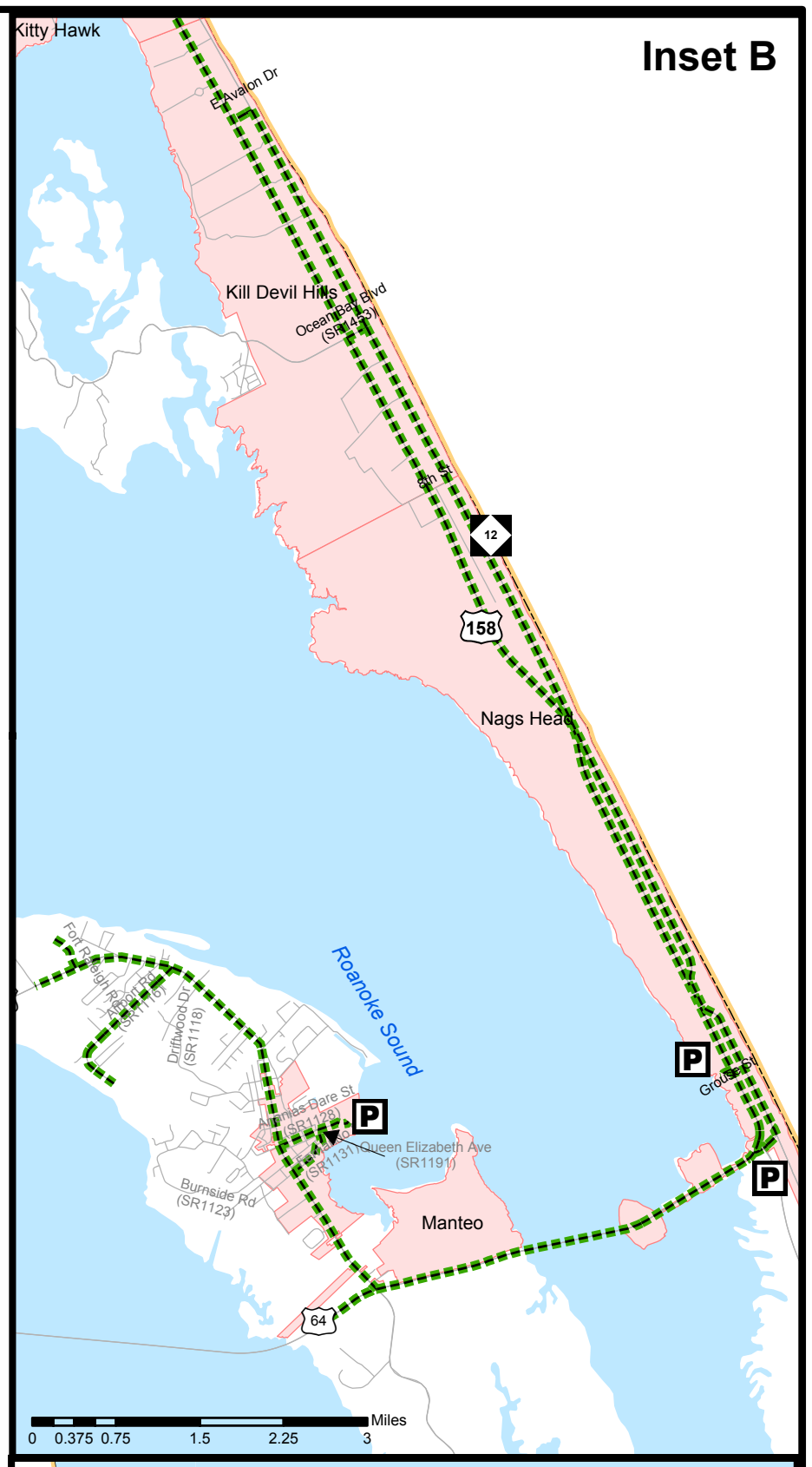
Refer to CTP document for more details

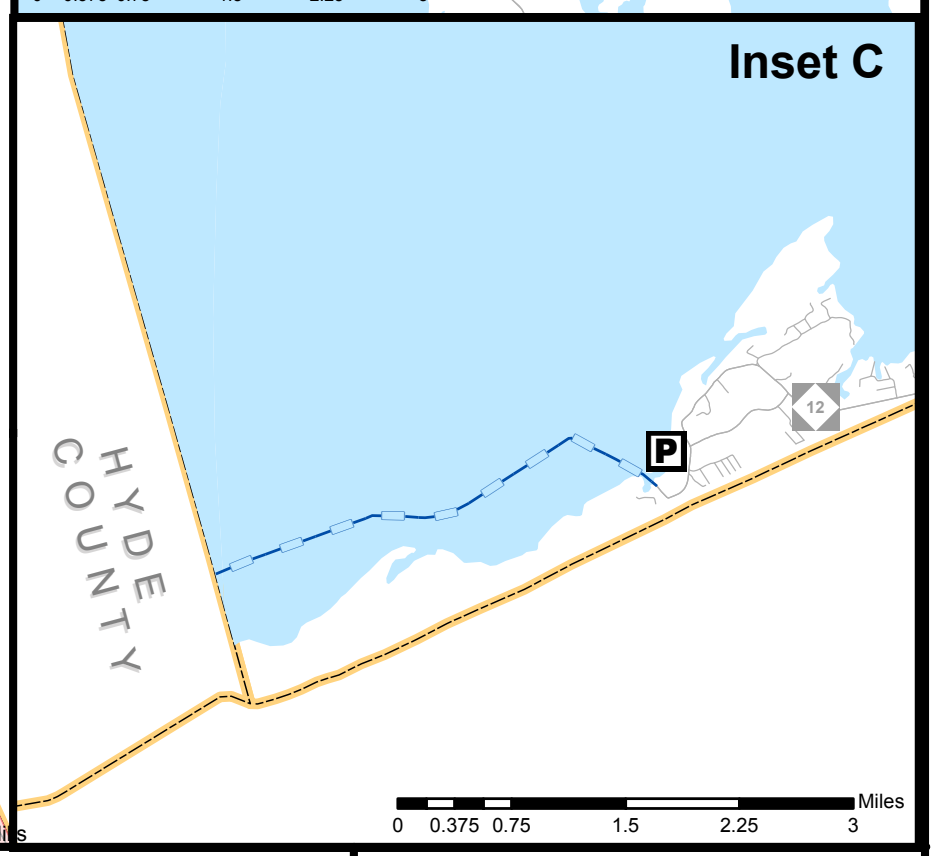
Public Transportation and Rail Map

Dare County
Comprehensive Transportation Plan

Plan date: October 30, 2014







Bus Routes
- Existing
- Needs Improvement
- Recommended

Fixed Guideway
- Existing
- Needs Improvement
- Recommended

Operational Strategies
- Existing
- Needs Improvement
- Recommended

Rail Corridor
- Active
- Inactive
- Recommended

High Speed Rail Corridor
- Existing
- Recommended

Existing Grade Separation

Proposed Grade Separation

Ferry Route

Ferry Dock

Intermodal Connector
- Existing
- Recommended

Rail Stops
- Existing
- Recommended

Park and Ride Lot
- Existing
- Recommended

N W E S

Figure 1
Sheet 3A of 5

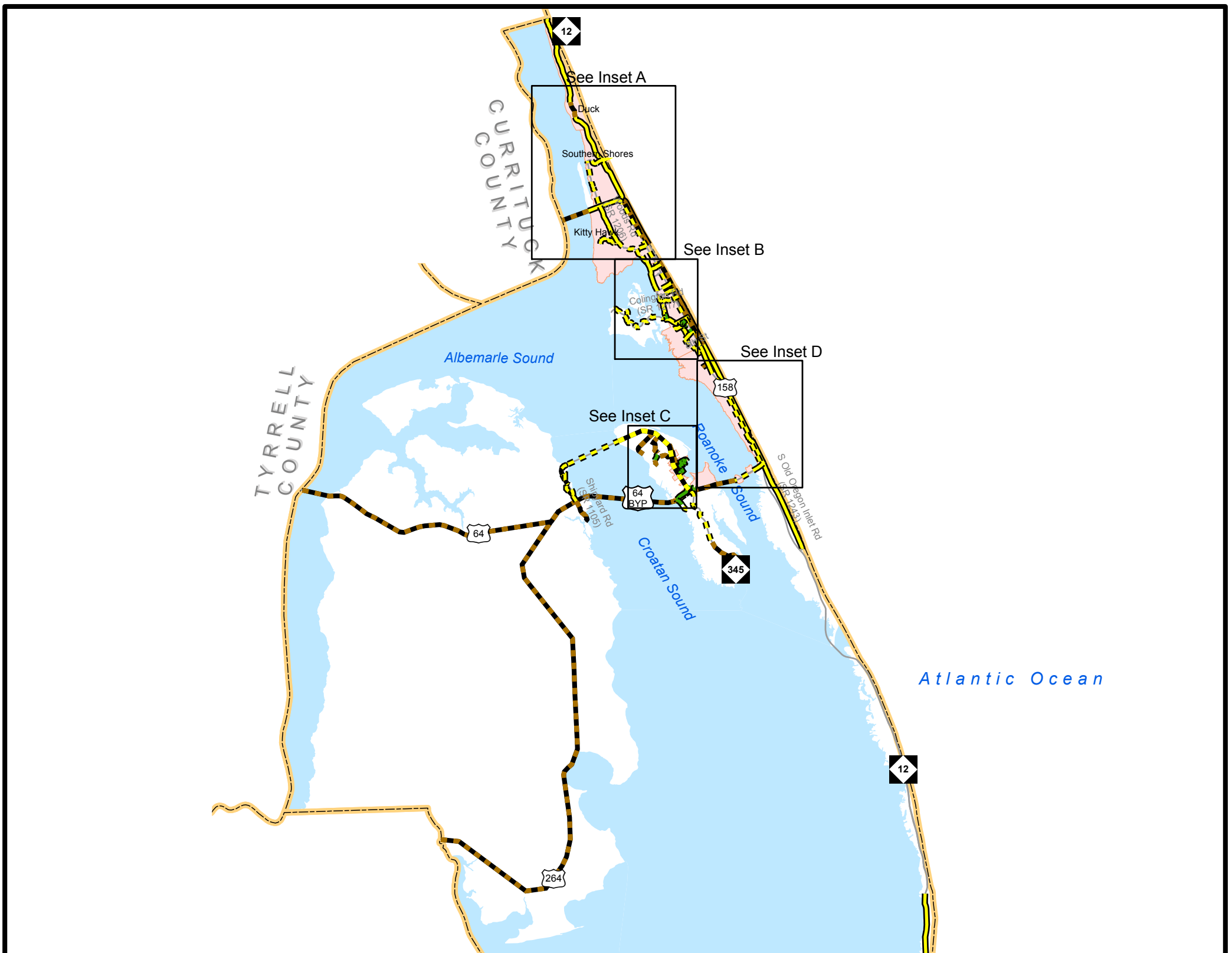
Base map date: June 2012

Refer to CTP document for more details

Public Transportation, Ferry and Rail Map Insets A - C

Dare County Comprehensive Transportation Plan

Plan date: October 30, 2014



On-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

Miles
0 1.5 3 6 9

N W E S

Figure 1
Sheet 4 of 5

Base map date: June 2012

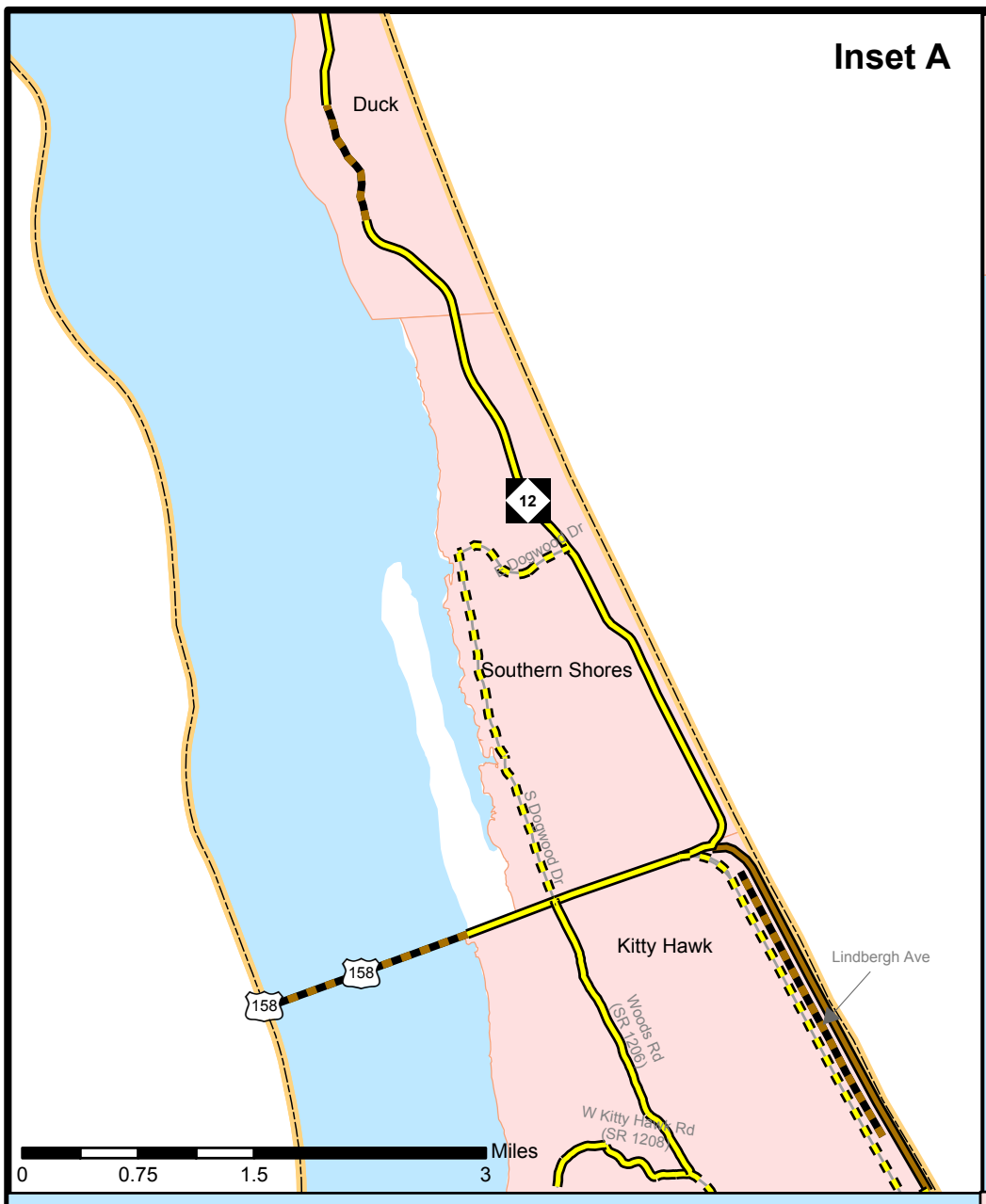
Refer to CTP document for more details

Bicycle Map

Dare County
Comprehensive Transportation Plan

Plan date: October 30, 2014

Inset A



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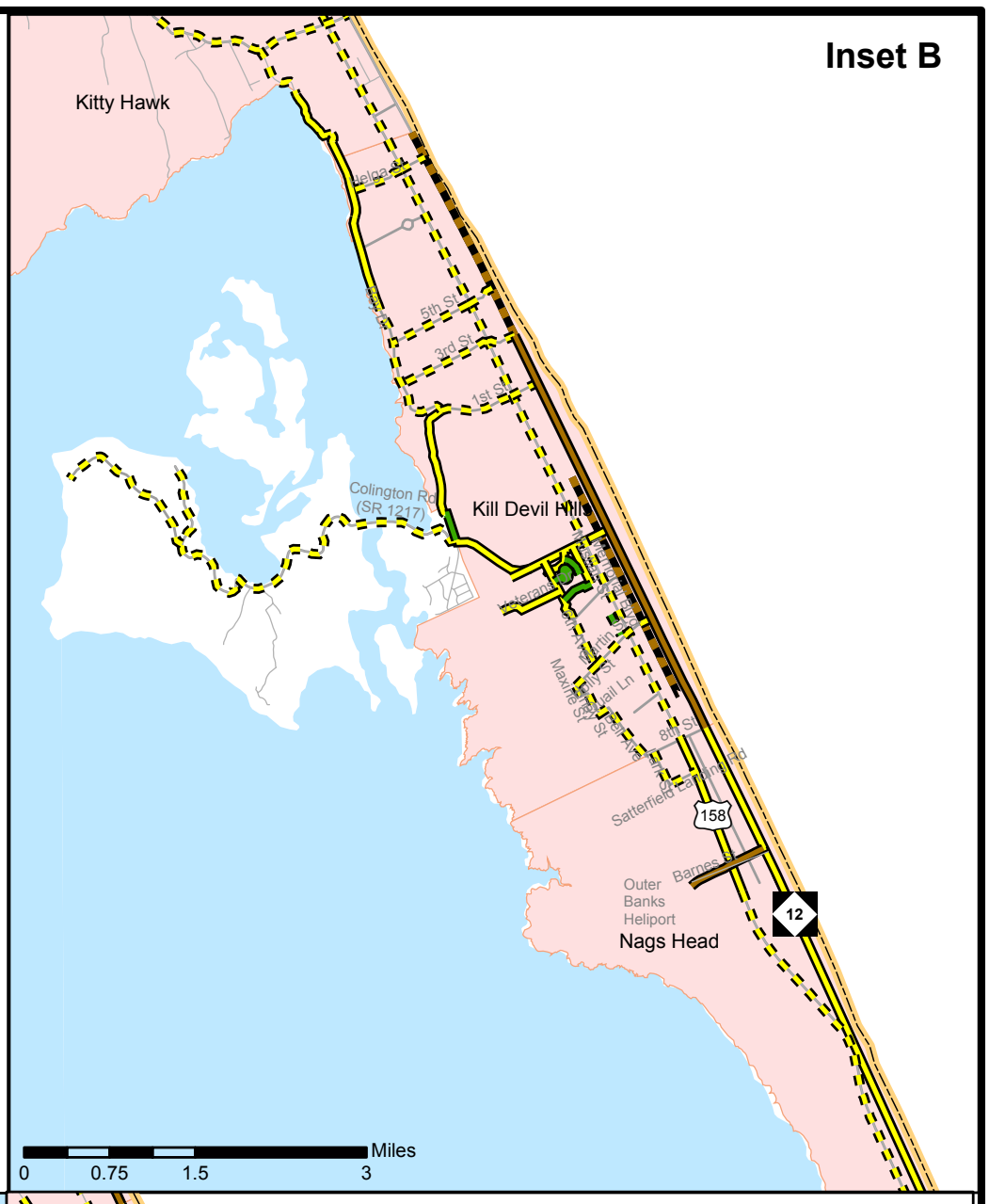

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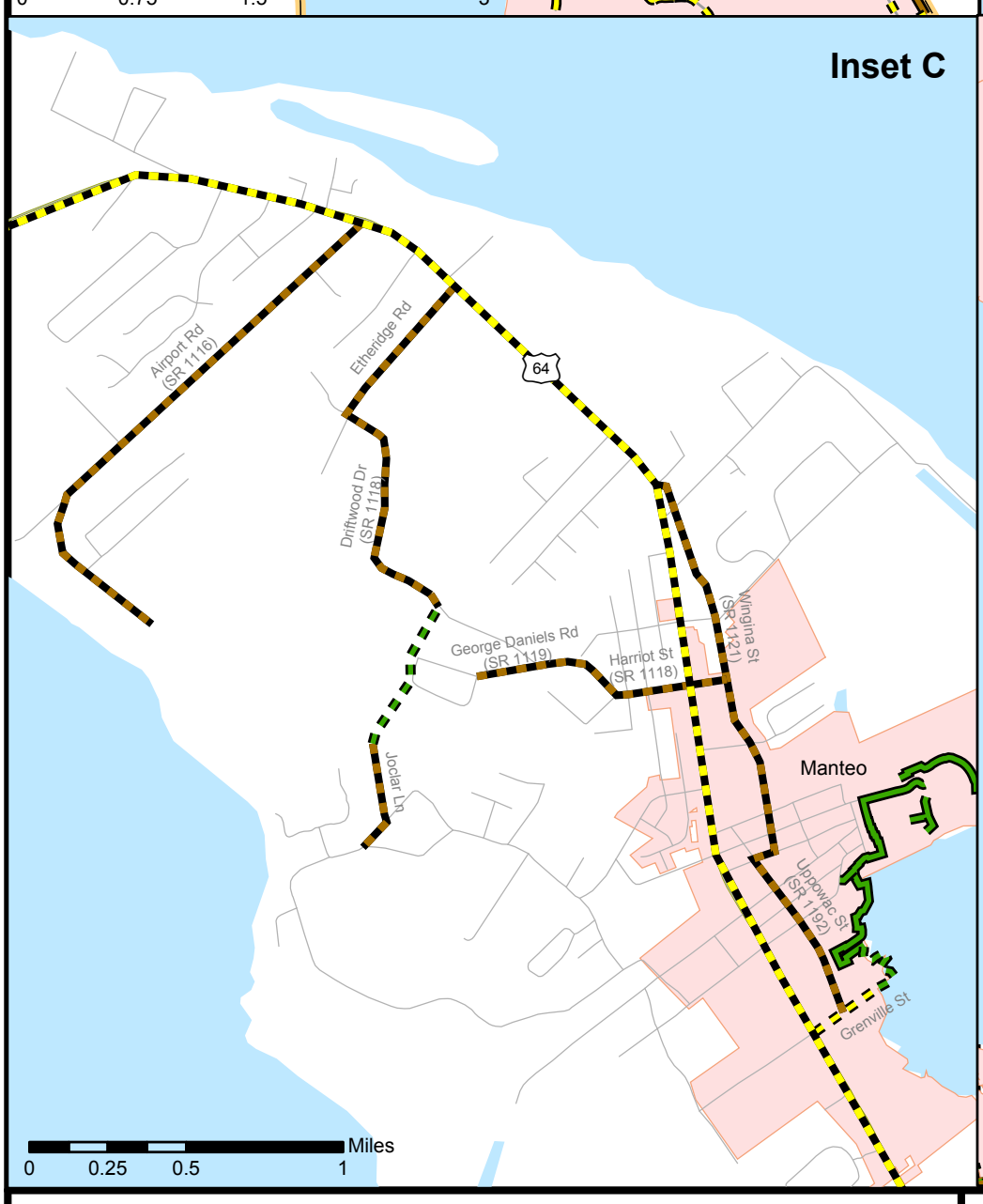

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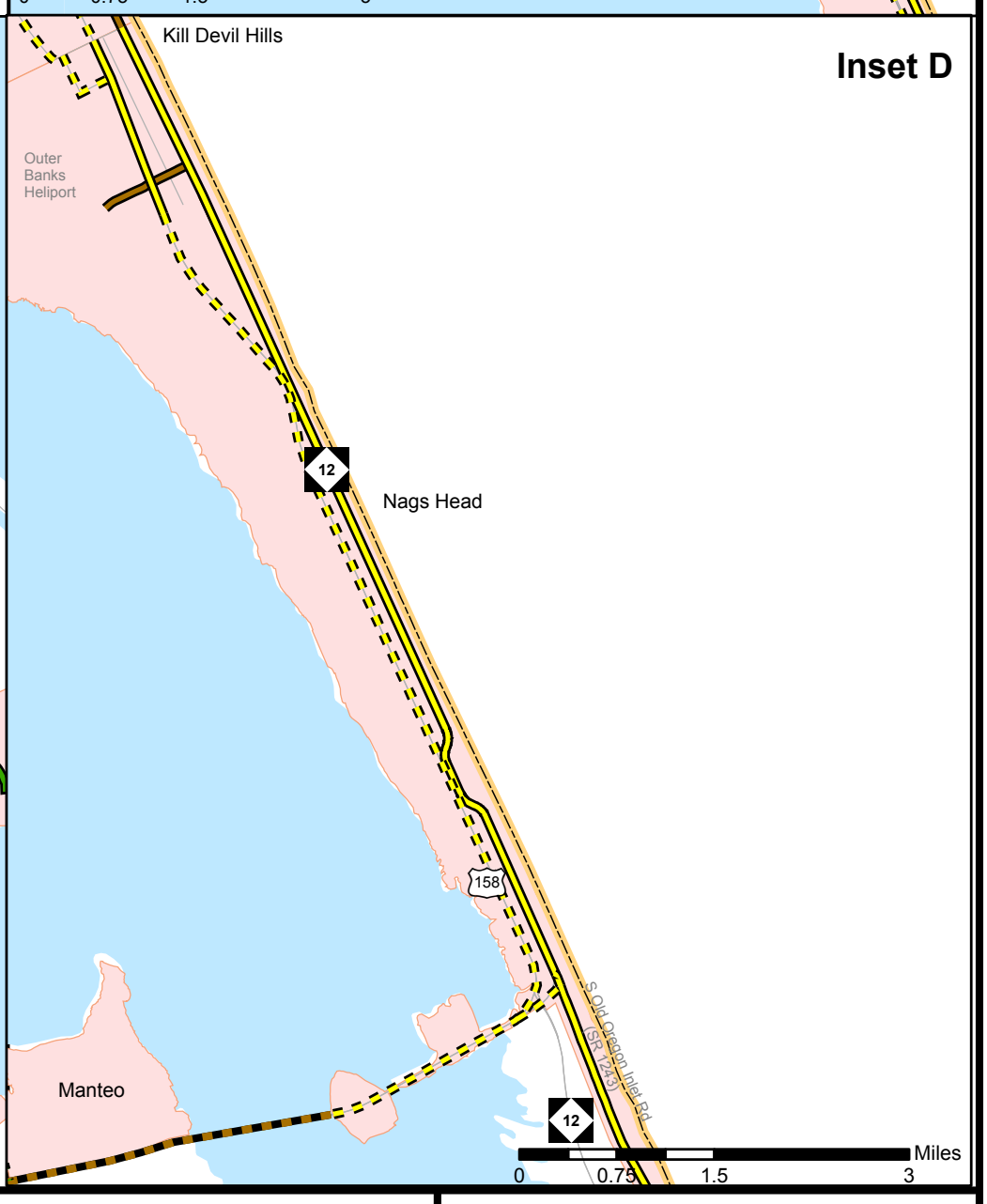


On-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

N W E S

Figure 1
Sheet 4A of 5

Base map date: June 2012

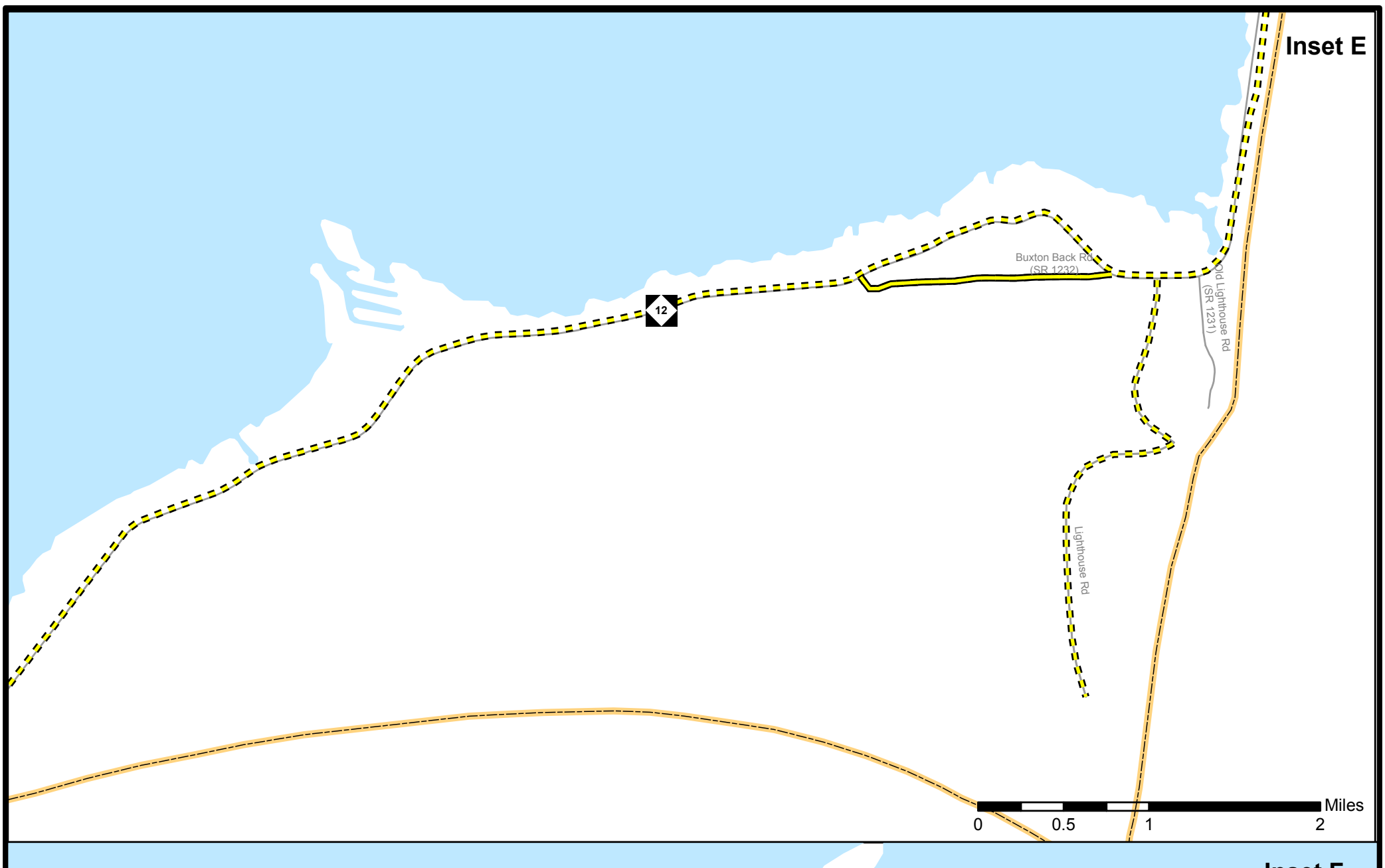
Refer to CTP document for more details

Bicycle Map Inset A-D

Dare County
Comprehensive Transportation Plan

Plan date: October 30, 2014

Inset E



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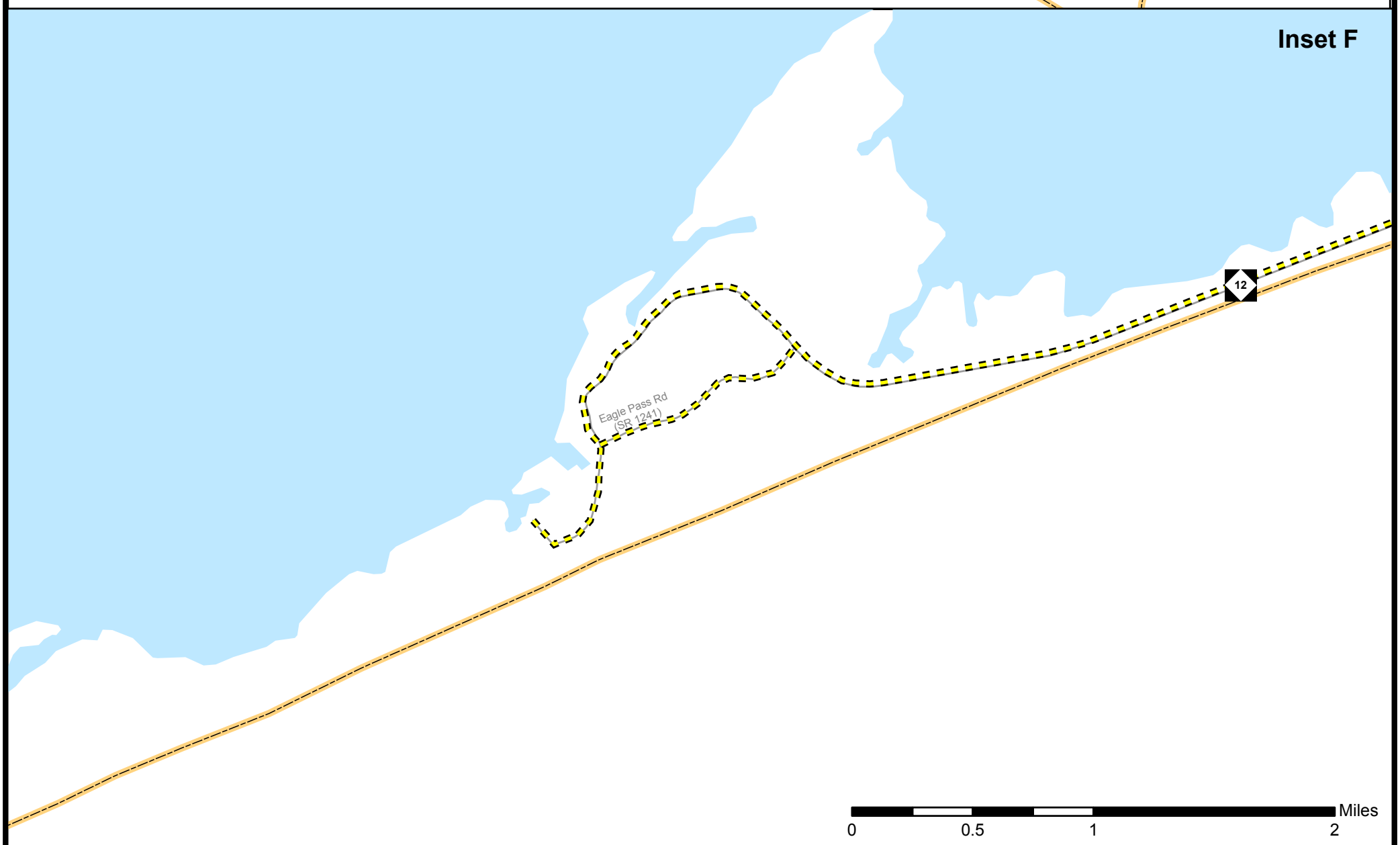


On-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

N W E S

Figure 1
Sheet 4B of 5

Base map date: June 2012

Refer to CTP document for more details

Bicycle Map
Inset E & F

Dare County
Comprehensive Transportation Plan

Plan date: October 30, 2014

Sidewalks
- Existing
- Needs Improvement
- Recommended

Off-Road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

0 1.5 3 6 9 Miles

N W E S

Figure 1

Sheet 5 of 5

Base map date: June 2012

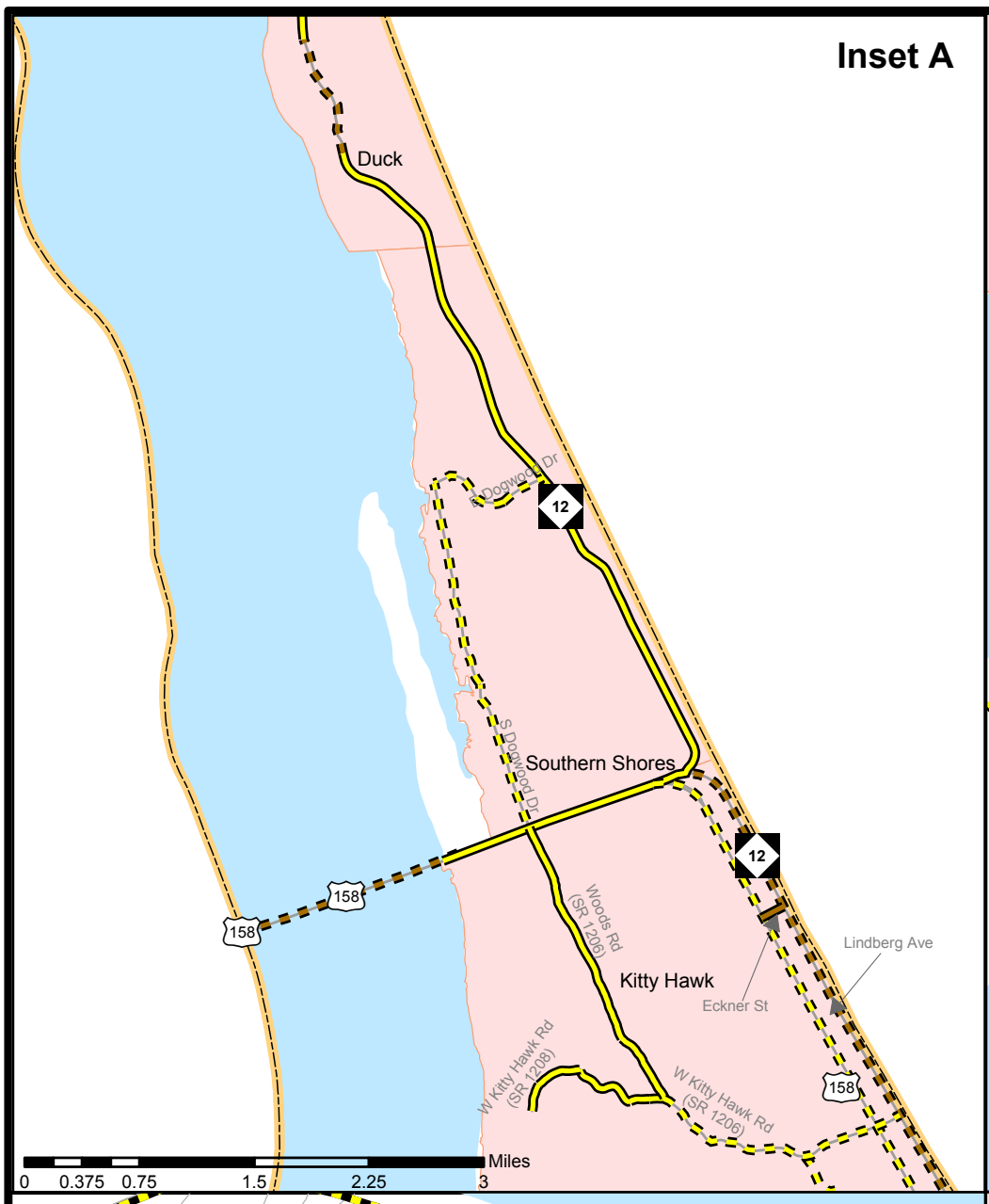
Refer to CTP document for more details

Pedestrian Map

Dare County
Comprehensive Transportation Plan

Plan date: October 30. 2014

Inset A



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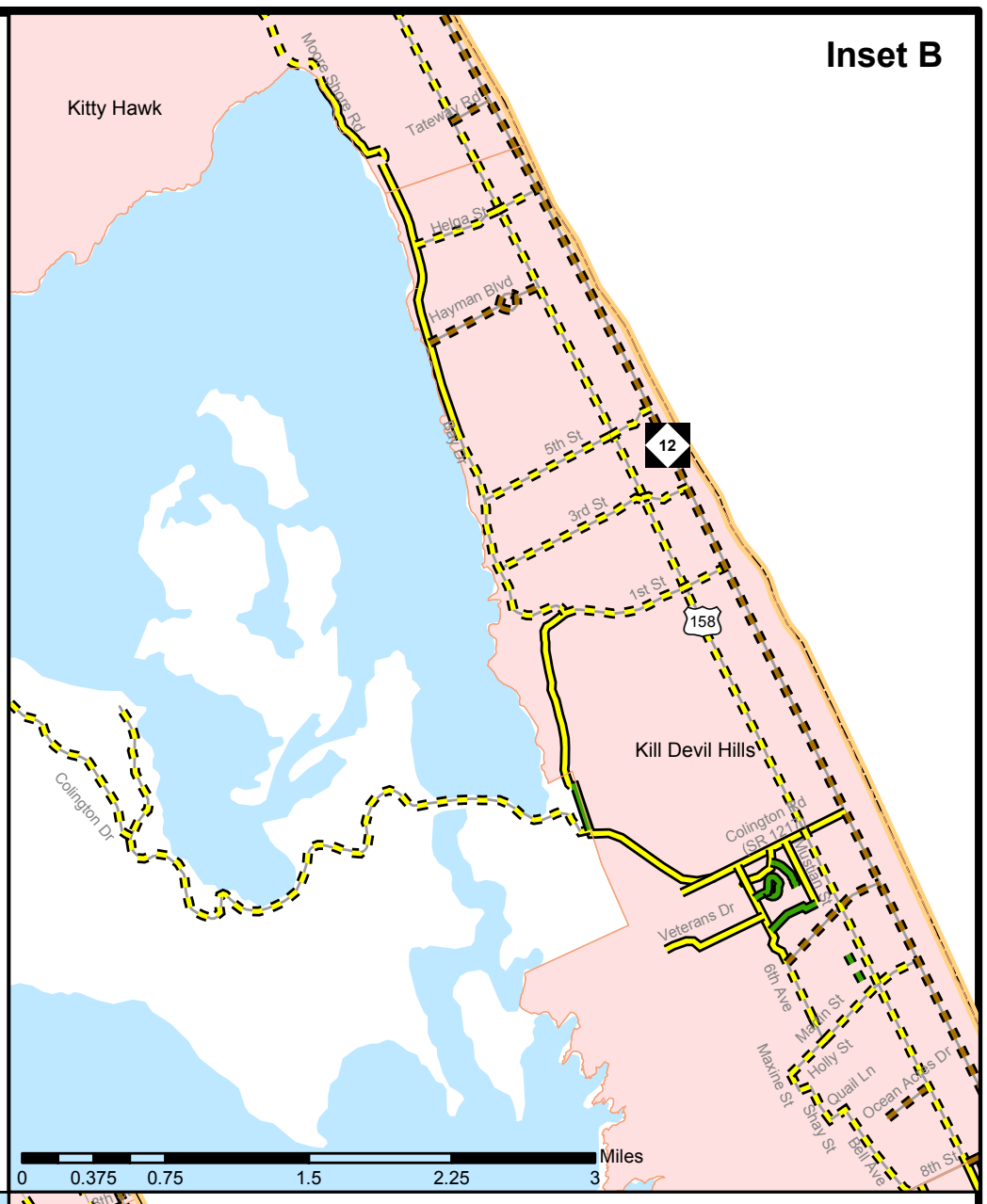

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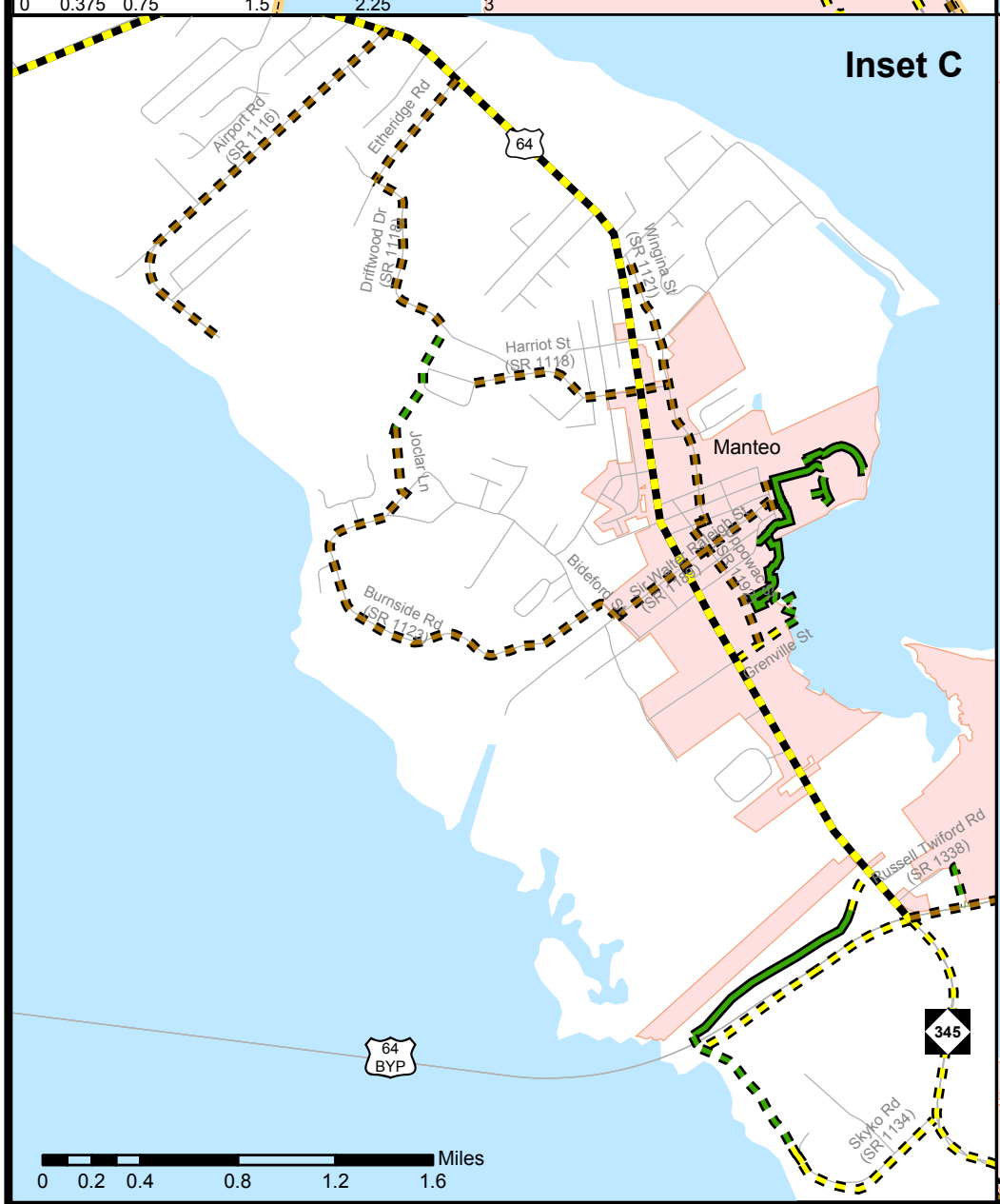

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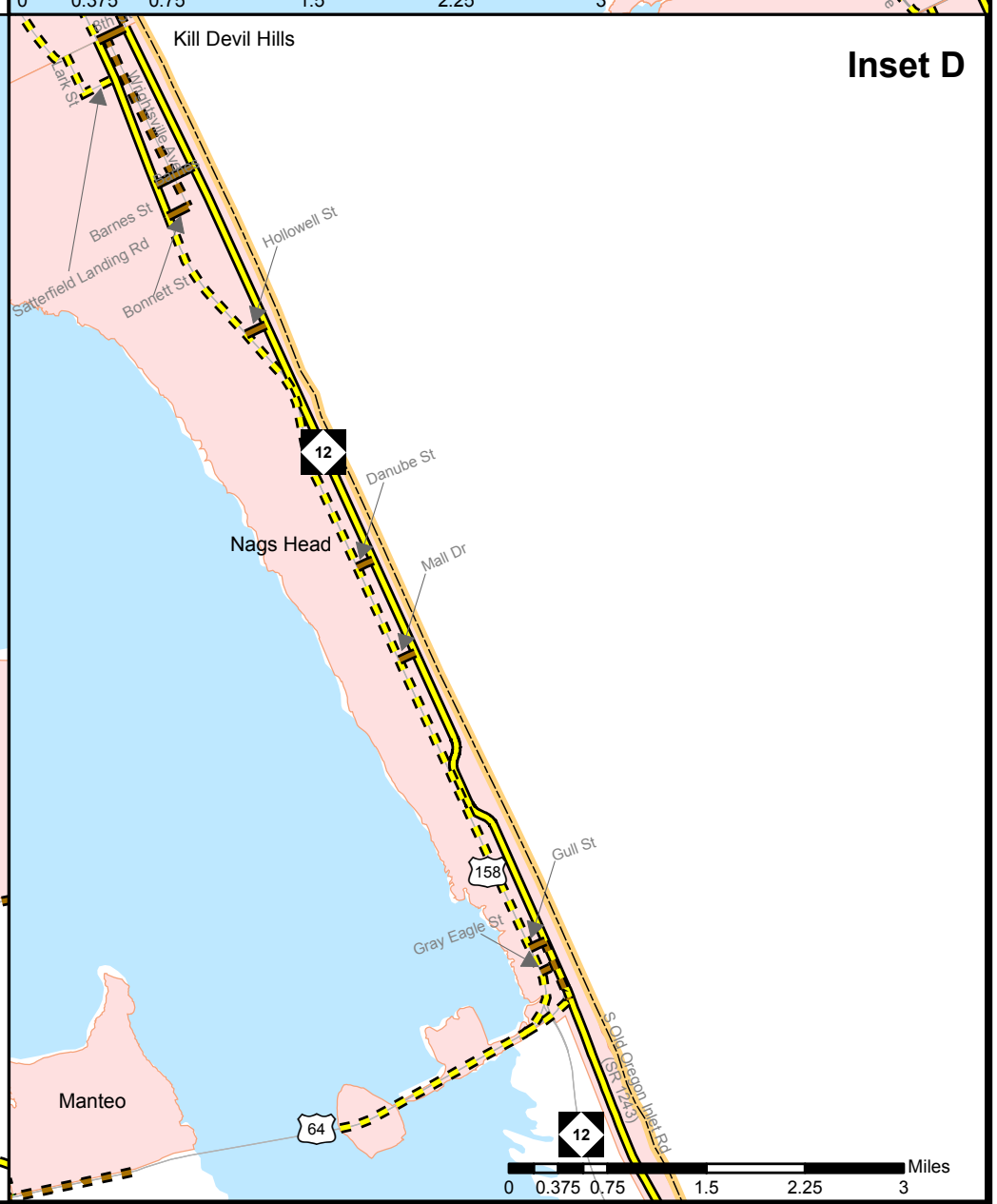


Sidewalks
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

N W E S

Figure 1

Sheet 5A of 5

Base map date: June 2012

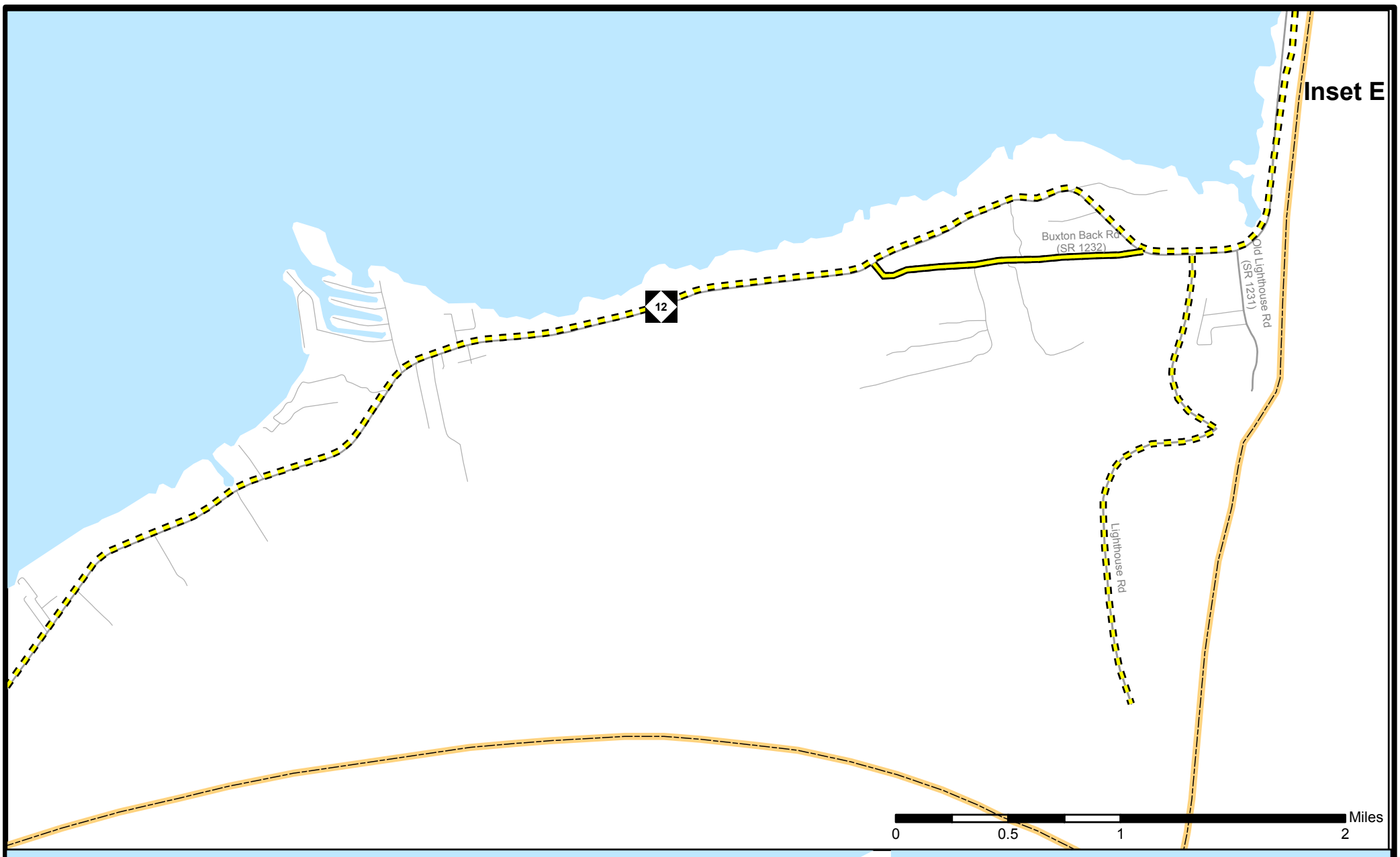
Refer to CTP document for more details

Pedestrian Map Inset A-D

Dare County
Comprehensive Transportation Plan

Plan date: October 30, 2014

Inset E



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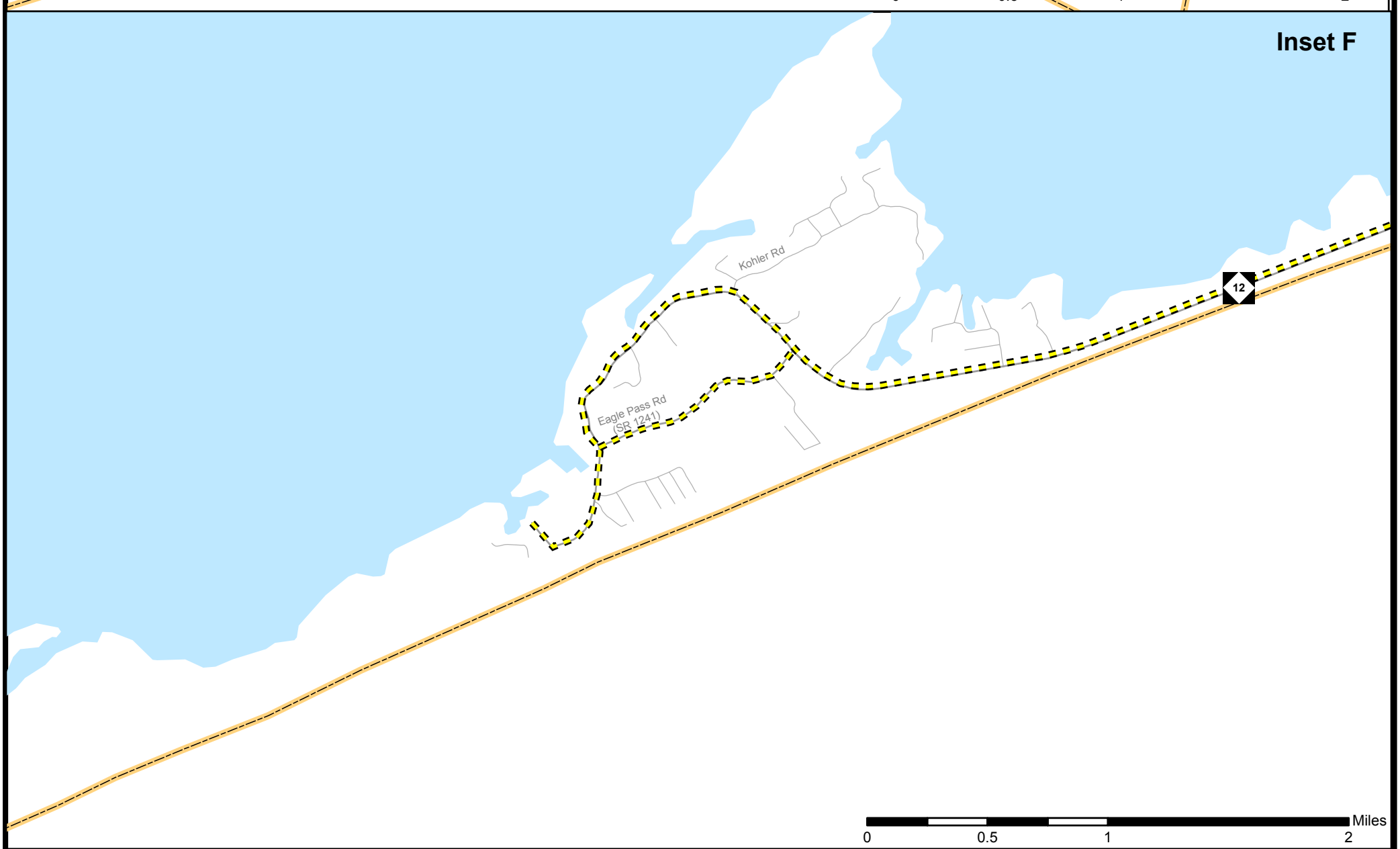


Sidewalks
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

N W E S

Figure 1

Sheet 5B of 5

Base map date: June 2012

Refer to CTP document for more details

Pedestrian Map
Inset E & F

Dare County
Comprehensive Transportation Plan

Plan date: October 30, 2014

1. Analysis of the Existing and Future Transportation System

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

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

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

1.1 Analysis Methodology and Data Requirements

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

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

Roadway System Analysis

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

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

[1] *For more information on the SHC Vision Plan, go to:* *https://connect.ncdot.gov/projects/planning/Pages/StrategicHighwayCorridors.aspx*

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

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

In the development of this plan, travel demand was projected from 2012 to 2040 using a trend line analysis based on June weekday traffic volumes (extrapolated from Annual Average Daily Traffic (AADT) counts) from 1991 to 2010. Due to the significant impact of tourism on the Dare County transportation system, it was decided that using June weekday traffic volumes was an appropriate way to plan for the heavy tourist impact that affects this region for a large portion of the year. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns. US 158 is the gateway to the Outer Banks for the vast majority of its visitors. In the tourist season, this highway becomes crowded and congested, particularly on weekends when vacation rentals change tenancy. Traffic congestion is common on US 158 with delays up to three to four hours, and sometimes even longer in the event of a traffic incident. Another concern is rainy day congestion along US 158, NC 12 and US 64 in Manteo when the beach population takes to the highway in search of alternative activities. These problems are exasperated by the many first time visitors to the Outer Banks who are unfamiliar with the roadways and traffic patterns. Traffic problems are compounded for residents plus the 300,000 or more visitors when a storm approaches and evacuation is ordered. The established future growth rates were endorsed by the Dare County Commissioners October 15, 2012, Duck Town Council September 5, 2012, Southern Shores Town Council October 16, 2012, Kitty Hawk Town Council September 4, 2012, Kill Devil Hills Town Council September 10, 2012, Nags Head Town Council October 3, 2012 and Manteo Town Council October 3, 2012. Refer to Appendix H for more detailed information on growth expectations and the socio-economic data forecasting methodology.

Existing and future travel demand is compared to existing roadway capacities. Capacity deficiencies occur when the traffic volume of a roadway exceeds the roadway's capacity. Roadways are considered near capacity when the traffic volume is at least eighty percent of the capacity. Refer to Figures 2 and 3 for existing and future capacity deficiencies. The 2040 traffic volume in Figure 3 is an estimate of the traffic volume in 2040 with only existing plus committed projects assumed to be in place, where

committed is defined as projects programmed for construction in the 2013 – 2023 Transportation Improvement Program[2] (TIP).

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

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

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

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

Traffic Crash Assessment

Traffic crashes are often used as an indicator for locating congestion and roadway problems. Crash patterns obtained from an analysis of crash data can lead to the identification of improvements that will reduce the number of crashes. The Traffic Safety Unit of NCDOT's Transportation Mobility and Safety Division identifies high frequency crashes at intersections and along roadway sections during a five year

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

period. The high frequency crash locations examined during the development of the Dare County CTP occurred between January 1, 2007 and December 31, 2011. During this period, a total of fifty-one intersections and forty-six roadway sections were identified as having a high frequency of crashes as illustrated in Figure 4. Contact information for the Transportation Mobility and Safety Division can be found in Appendix A.

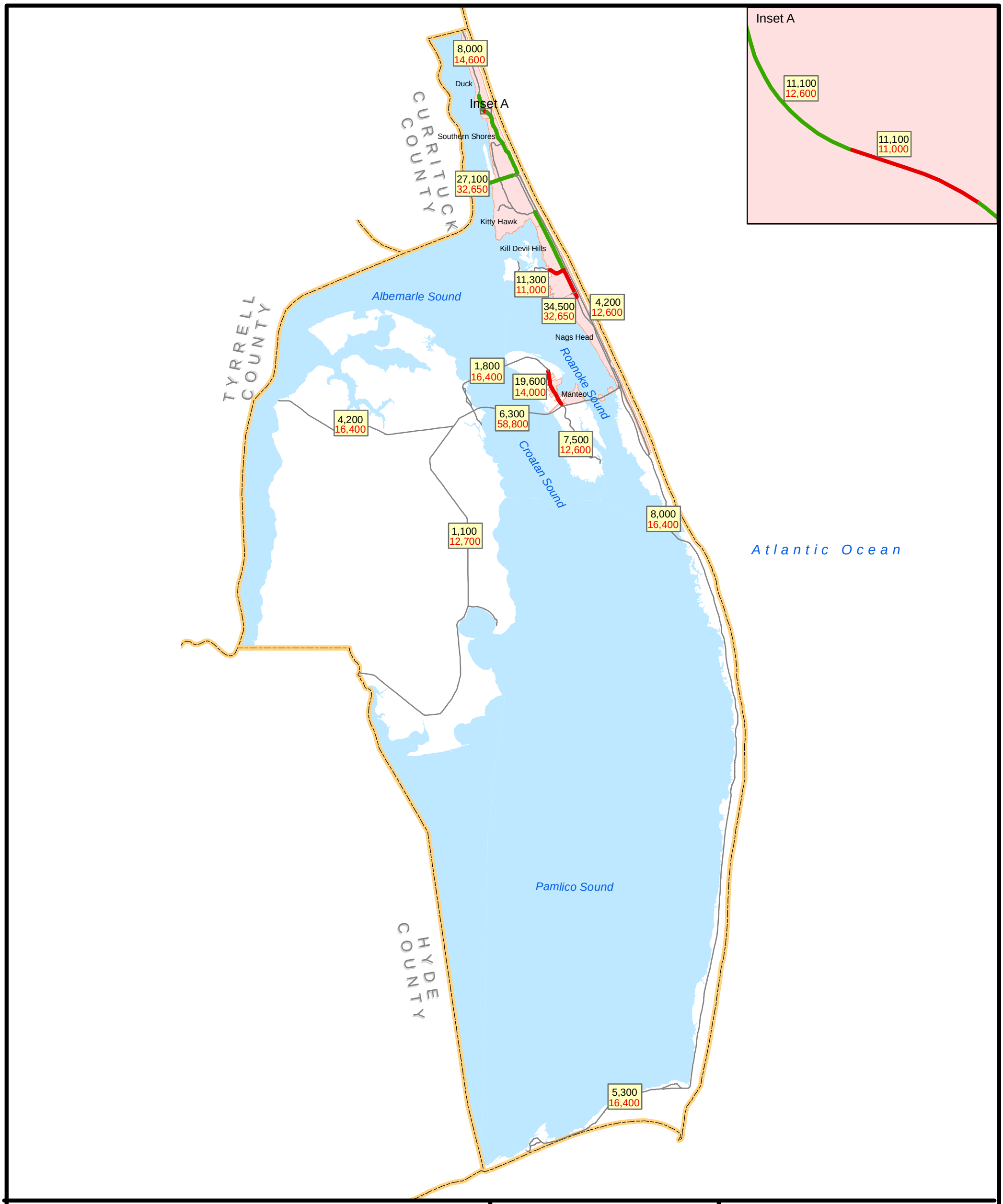
The NCDOT is actively involved with investigating and improving many of these locations. To request a more detailed analysis for any of these locations, or other intersections of concern, contact the Division Traffic Engineer (see Appendix A).

Bridge Deficiency Assessment

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

One bridge that stands out as deficient in Dare County is the Herbert C. Bonner Bridge which spans Oregon Inlet. This bridge was built in 1962 and has been ranked by the State as a sufficiency rating of 4 on a scale of 1-100. It is located along NC 12, the only major highway route, supply route and evacuation route for residents and visitors on Hatteras Island. The State acknowledges the importance of this route spending millions every year to keep this bridge open to traffic. Lawsuits have delayed construction of the replacement bridge which is a critical lifeline to the mainland. Refer to Chapter 2 for more information on the Bonner Bridge replacement project (B-2500).

The NCDOT Structures Management Unit inspects all bridges in North Carolina at least once every two years. Bridges having the highest priority are replaced as federal and state funds become available. Eighteen deficient bridges were identified on roads evaluated as part of the CTP and are illustrated in Figure 5. Of these, one is scheduled for replacement in the 2013 – 2023 TIP. Additionally, four others occur along roadways recommended for improvement in the CTP. As deficient bridges are replaced, every consideration should be given to proposed CTP recommendation and cross section associated with the recommendation. Table 4 in Appendix F gives a listing of the deficient bridges identified in the CTP and the ID number associated with CTP project proposal. Refer to Appendix F for more detailed bridge deficiency information.



Legend

- Municipalities
- Water
- XXXX / XXXX — 2012 June Volumes / 2012 Capacities
- County Boundary
- Under Capacity (0.00 - 0.79)
- Near Capacity (0.80 - 0.99)
- Over Capacity (1.00 - 1.49)

0 1.5 3 6 9 Miles

N W E S

Figure 2

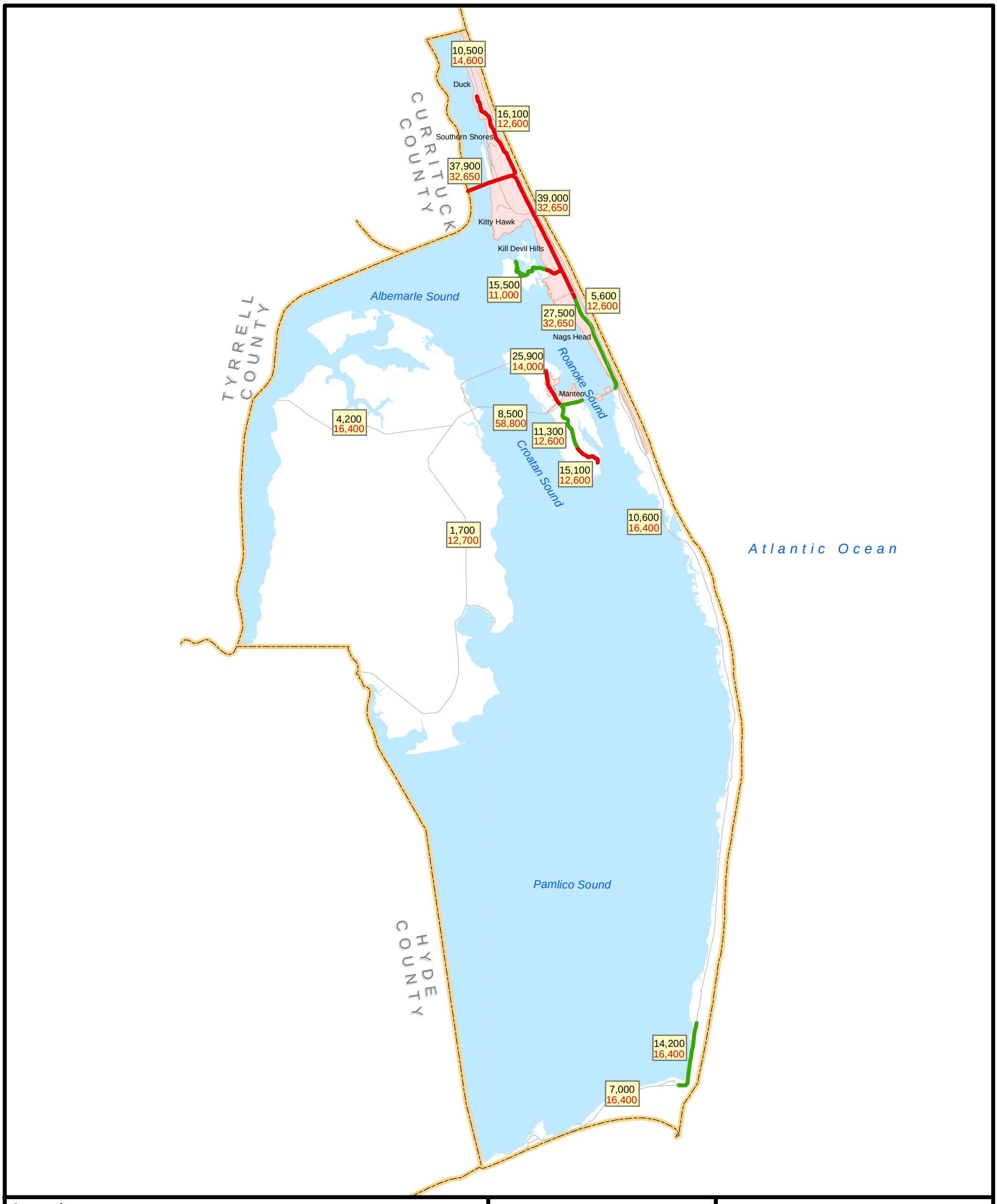
Base map date: June 2012

Refer to CTP document for more details

2012 Volumes and Capacity Deficiencies

Dare County
Comprehensive Transportation Plan

Plan date: October 1, 2014



Legend

- Municipalities
- Water
- XXXX / XXXX — 2040 June Volumes / 2012 Capacities
- County Boundary
- Under Capacity (0.00 - 0.79)
- Near Capacity (0.80 - 0.99)
- Over Capacity (1.00 - 1.49)

Miles
0 1.5 3 6 9

N W E S

Figure 3

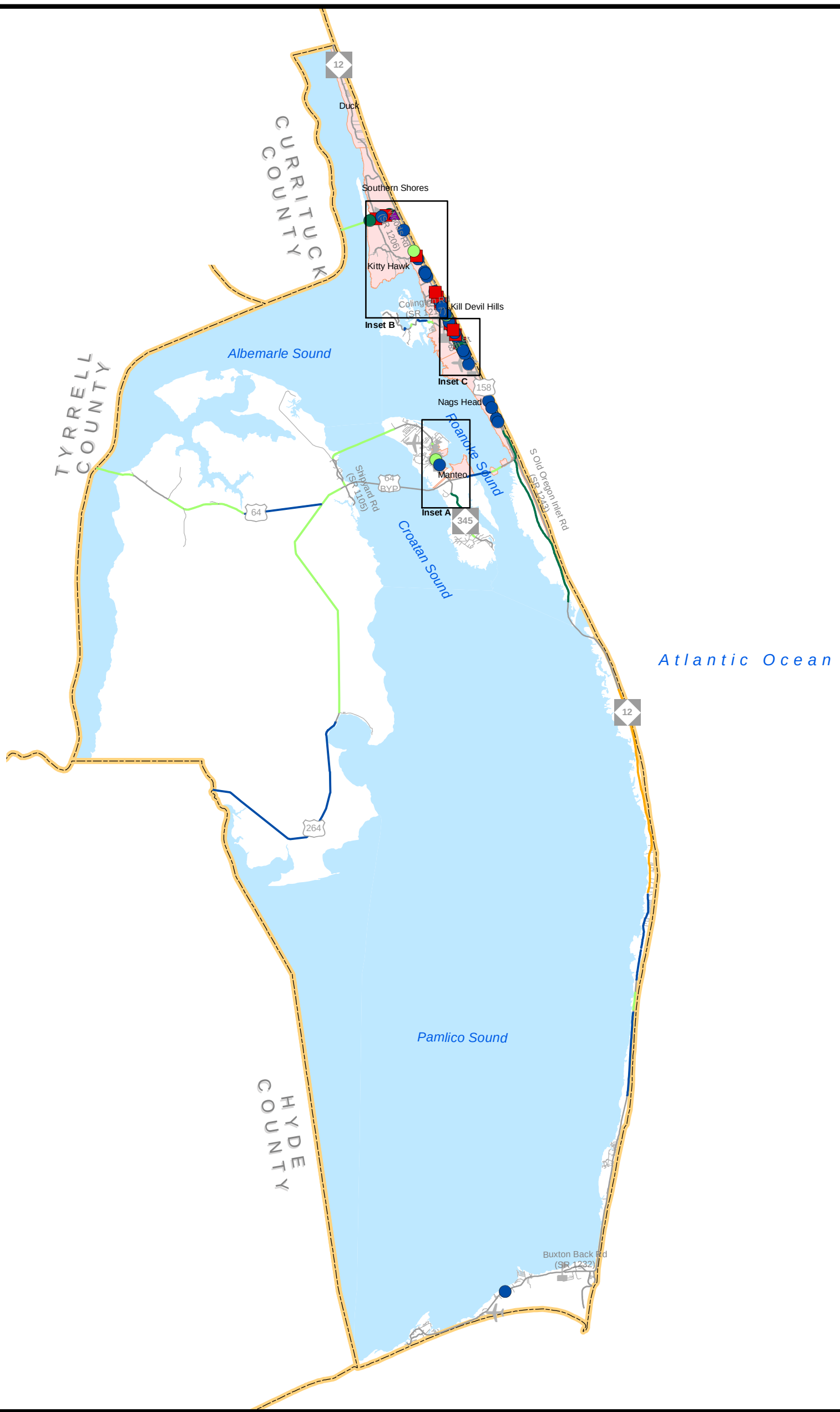
Base map date: June 2012

Refer to CTP document for more details

2040 Future Volumes and Capacity Deficiencies

Dare County
Comprehensive Transportation Plan

Plan date: October 1, 2014



Legend

Crash Intersections

- 50 and above
- 40 to 49
- 30 to 39
- 20 to 29
- 10 to 19
- 4 to 9

Crash Sections

- 50 and above
- 40 to 49
- 30 to 39
- 20 to 29
- 10 to 19
- 4 to 9

- Airports
- Schools
- Roads
- County Boundary
- Water

0 1.5 3 6 9 Miles

N W E S

Figure 4
Sheet 1 of 2

Base map date: June 2012

Refer to CTP document for more details

HIGH FREQUENCY CRASH LOCATIONS

Dare County
Comprehensive Transportation Plan

Plan date: October 1, 2014

Inset A

Harriot St (SR 1116)

Sir Walter Raleigh St (SR 1189)

Grenvile St

Manteo

64

64 BYP

Skyko Rd (SR 1134)

345

0 0.175 0.35 0.7 1.05 Miles

Inset B

Southern Shores

12

S Dogwood Dr

158

Woods Rd (SR 1206)

Kitty Hawk

W Kitty Hawk Rd (SR 1208)

W Kitty Hawk Rd (SR 1206)

Helga St

158

Hayman Blvd

12

5th St

Kill Devil Hills

Bay Dr

3rd St

1st St

0 0.35 0.7 1.4 2.1 Miles

Inset C

Colington Rd (SR 1217)

Kill Devil Hills

6th Ave

Manin St

Ocean Acres St

158

Bell Ave

8th St

12

Lark St

Satterfield Landing

Nags Head

0 0.125 0.25 0.5 0.75 1 Miles

Legend

Crash Intersections	Crash Sections	
50 and above	50 and above	Airports
40 to 49	40 to 49	Schools
30 to 39	30 to 39	Roads
20 to 29	20 to 29	County Boundary
10 to 19	10 to 19	Water
4 to 9	4 to 9	

N W E S

Figure 4
Sheet 2 of 2

Base map date: June 2012

Refer to CTP document for more details

HIGH FREQUENCY CRASH LOCATIONS

Dare County
Comprehensive Transportation Plan

Plan date: October 1, 2014

Legend

- Deficient Bridge
- Airports
- County Boundary
- Roads
- Municipalities
- Schools
- Water

Miles

0 1.5 3 6 9

N W E S

Figure 5

Base map date: June 2012

Refer to CTP document for more details

DEFICIENT BRIDGE LOCATIONS

Dare County
Comprehensive Transportation Plan

Plan date: October 1, 2014

Public Transportation and Rail

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

Public Transportation

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

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

An inventory of existing and planned fixed public transportation routes for the planning area is presented on Sheet 3 of Figure 1. Dare County Transportation System (DCTS) is a demand-responsive public transportation service that serves residents of Dare County. DCTS provides public transportation within Dare County during weekdays, along with transportation outside the county for medical appointments. All recommendations for public transportation were coordinated with the local governments and the Public Transportation Division of NCDOT. Refer to Appendix A for contact information for the Public Transportation Division.

Rail

Today North Carolina has 3,245 miles of railroad tracks throughout the state. There are two types of trains that operate in the state, passenger trains and freight trains.

Intercity passenger service is provided by Amtrak which currently operates six passenger services daily in or through North Carolina serving 16 cities across the state. Five of the services are interstate (Crescent, Palmetto, Silver Meteor, Silver Star, and Carolinian passenger trains) and one service (Piedmont passenger train) operates exclusively within North Carolina. In addition to the six passenger services mentioned, Amtrak also operates its Auto Train service which passes through North Carolina but does not make any stops. Amtrak ridership demand has been on a rise in the state. In 2010 ridership was 840,000 and increased to 975,645 passengers in 2013.

The North Carolina Department of Transportation sponsors two passenger trains, the Carolinian and Piedmont. The Carolinian runs between Charlotte and New York City, while the Piedmont train carries passengers from Raleigh to Charlotte and back every day. However, no passenger trains operate over the rail line from High Point that dead ends at Asheboro or over the rail line that runs from Gulf, NC to Greensboro. Combined, the Carolinian and Piedmont carry more than 300,000 passengers each year.

There are two major freight railroad companies that operate in North Carolina, CSX Transportation and Norfolk Southern Corporation. Also, there are more than 17 smaller freight railroads, known as shortlines.

Dare County does not have any rail lines within its borders.

Bicycles & Pedestrians

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

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

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

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

Inventories of existing and planned bicycle and pedestrian facilities for the planning area are presented on Sheets 4 and 5 of Figure 1. The 2013 Albemarle Regional Bicycle Plan, the 2011 Kill Devil Hills Pedestrian Plan and the 2013 Town of Duck Pedestrian Plan were utilized in the development of these elements of the CTP. All recommendations for bicycle and pedestrian facilities were coordinated with the local governments and the NCDOT Division of Bicycle and Pedestrian Transportation. Refer to Appendix A for contact information for the Division of Bicycle and Pedestrian Transportation.

Ferry & Waterway

The ferry system operated by the NCDOT serves as a principal component of Dare County's transportation infrastructure in meeting the daily transportation needs of its citizens, local businesses, and visitors. The ferry system is also a crucial element of storm recovery as evidenced in the past decade when storm events rendered the highway system onto Hatteras Island non-functioning and emergency ferry operations were mobilized by NCDOT between Stumpy Point and Rodanthe. The daily Hatteras ferry service from Hatteras Village to Ocracoke Island serves as one of only three ferry routes to Ocracoke Island. There is no bridge to Ocracoke Island. The continued viability of Dare County's waterways for use by the NCDOT ferry system is a priority for Dare County.

In addition to the NCDOT ferry system, the waterways of Dare County have historically served as transportation corridors and continue to be utilized daily for transportation and commerce in Dare County and beyond. The waterway system of Dare County is comprised of a vast network of estuaries, inlets, canals, bays, and other navigable routes that serve the local fishermen of Dare County in their daily occupations, the thousands of visitors that come to the area for boating and recreational purposes, and a large contingent of commercial barges and recreational boaters traveling up and down the Atlantic Intercoastal Waterway. While most people in the state commute to their work locations by roads, bicycles, or trains, the waters of Dare County are used by many of its residents in their occupations of commercial fishing and charter boat operations. Oregon Inlet is a critical component of the waterway transportation corridor used by Dare County residents and visitors and its continued viability is of paramount concern to Dare County and the State of North Carolina. Efforts by the State of North Carolina to identify a long term sand management system for Oregon Inlet are supported by Dare County. The Atlantic Intercoastal Waterway, a portion of which runs through various water bodies in Dare County, is used for commercial shipping of petroleum products, building materials, food stuffs, manufactured goods and many other products. Recreational boaters visit Dare County for fishing, hunting and other

recreational water sports. Recreational boating contributes $142 million[3] to the overall tourist economy of Dare County, bringing visitors to the area not just in the summer months but year-round because of the variety of waterfowl and fishing opportunities available in the area. A map of Dare County's main waterways is included in the Figure 7.

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 2009 Dare County Land Use Plan, 2010 Town of Nags Head Land Use Plan, 2003-2004 Kitty Hawk CAMA Core Land Use Plan Update (reaffirmed 2011), 2003-2004 Duck CAMA Core Land Use Plan Update, 2007 Town of Manteo CAMA Land Use Plan Update, 2012 Town of Southern Shores CAMA Land Use Plan Update, and 2008-2009 Kill Devil Hills CAMA Land Use Plan Update (refer to Appendix H) were used to meet this requirement.

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

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

[3] *Study of Economic Impacts of Oregon Inlet Navigability to Dare County, The Surrounding Region, and The State of North Carolina Final Report*

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.

Existing commercial land uses in Dare County are mainly along US 158, US 64 and NC 12. The Towns of Duck, Southern Shores, Kitty Hawk, Kill Devil Hills and Nags Head are dominated by a mixture of residential and commercial land use, particularly along NC 12 and US 158. Similarly, most of the areas with larger employment growth projections are near or along US 158 or NC 12. The same is true for the unincorporated villages along NC 12, south of Nags Head. Manteo, the county seat, has a mixture of commercial, residential and government space. The remainder of Roanoke Island and mainland Dare County is primarily residential.

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

1.2 Consideration of Natural and Human Environment

Environmental features are a key consideration in the transportation planning process. Section 102 of the National Environmental Policy Act[4] (NEPA) requires consideration of impacts on wetlands, wildlife, water quality, historic properties, and public lands. While a full NEPA evaluation was not conducted as part of the CTP, every effort was made to minimize potential impacts to these features utilizing the best available data. Any potential impacts to these resources were identified as a part of the project recommendations in Chapter 2 of this report. Prior to implementing transportation recommendations of the CTP, a more detailed environmental study would need to be completed in cooperation with the appropriate environmental resource agencies.

A full listing of environmental features that are typically examined as a part of a CTP study is shown in the following tables. Environmental features occurring within Dare County are shown in Figures 6 and 7 and highlighted in Tables 1 and 2.

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

Table 1 – Environmental Features

- Airports
- Beach Access Sites
- Coastal Marinas
- Conservation Tax Credit Properties
- Hazardous Substance Disposal Sites
- Hazardous Waste Facilities
- High Quality Water and Outstanding Resource Water Management Zones
- Waterways
- Natural Heritage Element Occurrences
- National Wetlands Inventory
- Recreation Projects – Land and Water Conservation Fund
- Significant Natural Heritage Areas
- State Parks
- Water Distribution Systems – Pipes, Pumps, Tanks, Treatment Plants, and Wells
- Managed Lands

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
- Megasite Boundaries

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.

Meetings were held with the Dare County Board of Commissioners, Duck Town Council, Southern Shores Town Council, Kitty Hawk Town Council, Kill Devil Hills Town Council, Nags Head Town Council and Manteo Town Council in August and September 2011 to

formally initiate the study, provide an overview of the transportation planning process, and to gather input on area transportation needs.

Throughout the course of the study, the NCDOT Transportation Planning Branch cooperatively worked with the Dare County CTP Steering Committee, which included a representative from each municipality, county staff, the RPO, the Outer Banks Chamber of Commerce and others. The committee provided information on current local plans, developed transportation vision and goals, discussed population and employment projections, and developed proposed CTP recommendations. Refer to Appendix H for detailed information on the vision statement, the goals and objectives survey and a listing of committee members.

The public involvement process included holding three public drop-in sessions in Dare County to present the proposed CTP to the public and solicit comments. The first meeting was held on December 5, 2013 at the Dare County Administrative Building in Manteo; the second and third meetings were held simultaneously on December 16, 2013 at the Rodanthe/Waves/Salvo Community Building in Rodanthe and at Kitty Hawk Town Hall. Each session was publicized in the local newspaper and was held from 4:00 p.m. to 7:00 p.m. Four comment forms were submitted in Rodanthe and one comment form was submitted in Kitty Hawk during the sessions held on December 16, 2013.

Public hearings were held during the Dare County Commissioners meeting January 1, 2015, Duck Town Council meeting November 5, 2014, Southern Shores Town Council meeting November 18, 2014, Kitty Hawk Town Council meeting December 1, 2014, Kill Devil Hills Town Council meeting January 12, 2015, Nags Head Town Council meeting December 3, 2014 and Manteo Town Council meeting December 3, 2014. The purpose of these meetings was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted during these meetings.

The Albemarle RPO endorsed the CTP on January 21, 2015. The North Carolina Department of Transportation mutually adopted the Dare County CTP on March 4, 2015.

CURRITUCK COUNTY

TYRRELL COUNTY

Albemarle Sound

Roanoke Sound

Croatan Sound

Atlantic Ocean

Pamlico Sound

HYDE COUNTY

Legend

- Hazardous Waste Sites
- Coastal Marinas
- Beach Access Points
- Wetlands
- Significant Natural Heritage Areas
- Recreation Projects
- High Quality Waters
- Fish Nursery Areas
- Conservation Tax Credit Properties
- County Boundary
- Municipalities
- Water

0 1.5 3 6 9 Miles

N W E S

Figure 6

Base map date: June 2012

Refer to CTP document for more details

Environmental Map 1

Dare County
Comprehensive Transportation Plan

Plan date: October 1, 2014

Legend

- Airports
- State Parks
- Waterways
- Major Surface Waters
- Regional Trails
- Water Pipes
- Managed Lands
- County Boundary
- Municipalities
- Water

0 1.5 3 6 9 Miles

N W E S

Figure 7

Base map date: June 2012

Refer to CTP document for more details

Environmental and Waterways Map

Dare County
Comprehensive Transportation Plan

Plan date: October 1, 2014

2. Recommendations

This chapter presents recommendations for each mode of transportation in the 2014 Dare County CTP as shown in Figure 1. More detailed information on each recommendation is tabulated in Appendix C. Refer to Appendix I for documentation of project alternatives and scenarios that were studied, but are not included in the adopted CTP.

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

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

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

2.1 Unaddressed Deficiencies

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

- US 64 from Marshall C. Collins Drive to Mother Vineyard Road (SR 1120) on Roanoke Island is currently over capacity. This stretch of the facility goes through the Town of Manteo as well as Dare County, and it includes the intersection of US 64 and Marshall C. Collins Drive. Because of physical constraints, no method of improvement was found to be acceptable to Manteo or Dare County at this time. Storefront development prevents any additions to the current pavement width. Other routes connecting the Outer Banks to the northern end of Roanoke Island were studied as part of this CTP; however none proved feasible at this time. An

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

intersection improvement need at NC 345, US 64, and US 64 Bypass has been identified. Since any improvement that involves a grade separation is not preferred locally, no proposed improvement has been agreed upon. The steering committee would like to recommend this intersection for further study.

- The intersection of NC 12 and Kohler Road in Hatteras has been identified as needing improvement. A locally preferred improvement of a roundabout is included in NCDOT Feasibility Study FS-1001A.

- NC 12 from Virginia Dare Trail to Dune Road (SR 1518) is projected to be over capacity in the year 2035. This portion of the facility goes through the Town of Southern Shores and the Town of Duck. No highway improvements to this facility are recommended in this plan, however the proposed Mid-Currituck Bridge (TIP R-2576) in Currituck County would likely have a significant impact in relieving congestion on this stretch of NC 12. The Towns of Nags Head, Manteo, Southern Shores, Kill Devil Hills, Kitty Hawk, Dare County, and Currituck County are all in support of the Mid-Currituck Bridge. Notwithstanding progress on the Mid-Currituck Bridge, NCDOT and/or the Town of Southern Shores will research potential solutions to alleviate traffic congestion on NC 12.

2.2 Secondary Roads

Comprehensive Transportation Plans are designed to identify the long-term transportation and infrastructure needs for counties and municipalities. The CTPs often serve as the first step in a lengthy process from a project's original identification by a community in the CTP to its funding and eventual construction by the NC Department of Transportation many years later. Due to the vast network of highways, bridges and other transportation improvements that are located within the geographic boundaries of a county, the CTP is not designed to identify all collector streets in municipalities or all secondary roads in unincorporated areas. These street and transportation infrastructure needs are addressed in locally-developed street maintenance plans by municipal governments. The maintenance of state owned residential streets and other secondary roads in unincorporated areas are the responsibility of NCDOT.

Maintenance of municipal streets is the responsibility of the jurisdiction for which they are located. There are often state-maintained primary and secondary roads within municipalities that are maintained by NCDOT. Priority for funding of municipal owned streets is established by the local municipalities. Financial assistance from the State of North Carolina is awarded annually to municipalities through a state street-aid bill known as the Powell Bill. Municipalities must establish their eligibility and qualify as provided in the North Carolina General Statutes. The North Carolina General Statutes provide an allocation formula for reimbursement of a portion of the motor fuels tax to eligible municipalities each year. Powell Bill funds can only be used for the purposes of maintaining, repairing, constructing, reconstructing or widening public streets and for the planning, construction and maintenance of bikeways, greenways, or sidewalks within the municipality.

County governments have not been granted legislative authority to construct and maintain collector and neighborhoods streets within their geographic boundaries. All of the 100 counties located with North Carolina must rely on NCDOT for maintenance of state owned collector streets and secondary roads that are located within the unincorporated portions of their county. The maintenance of secondary roads in unincorporated portions of counties is addressed each year by the individual fourteen highway divisions of the Department of Transportation. Counties located within the divisions must compete with other counties in the respective NCDOT division for funding to address street maintenance needs within their geographic boundaries. Each year NCDOT presents a report to the local elected boards on how secondary road funds will be allocated in each county. County officials may provide feedback, however, they do not have a formal role in the allocation of secondary road funds. Dare County officials view this as a disadvantage when compared to the dedicated allocation of Powell Bill funds for municipalities. In unincorporated Dare County, there is a vast number of secondary roads that need maintenance but remain unaddressed due to the limited amount of funds budgeted each year by the State of North Carolina that are used for secondary road maintenance.

2.3 Implementation

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

Initiative for implementing the CTP rests predominately with the policy boards and citizens of the county and its municipalities. As transportation needs throughout the state exceed available funding, it is imperative that the local planning area aggressively pursue funding for priority projects. Projects should be prioritized locally and submitted to the Albemarle RPO for regional prioritization and submittal to NCDOT. Refer to Appendix A for contact information on regional prioritization and funding. Local governments may use the CTP to guide development and protect corridors for the recommended projects. It is critical that NCDOT and local governments coordinate on relevant land development reviews and all transportation projects to ensure proper implementation of the CTP. Local governments and NCDOT share the responsibility for access management and the planning, design and construction of the recommended projects.

Prior to implementing projects from the CTP, additional analysis will be necessary to meet the National Environmental Policy Act (NEPA) or the North Carolina (or State)

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

2.4 Problem Statements

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

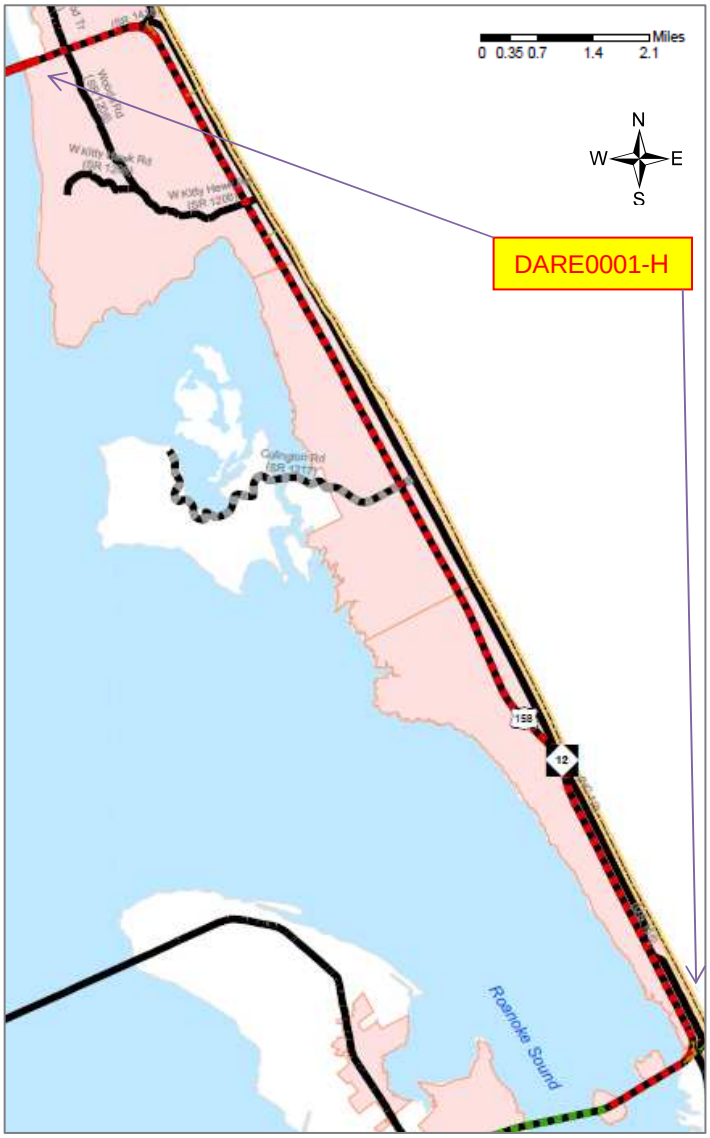
[2] *For more information on SEPA, go to: http://www.doa.nc.gov/clearing/faq.aspx.*

HIGHWAY

US 158 Proposed Improvements from US 64 to Currituck County Line	Local ID: R-3419 Last Updated: 9/13/13

Identified Problem

Existing US 158 is projected to be over capacity by 2040 from the Currituck County line to 8th Street, and near capacity from 8th Street to US 64. There is significant congestion on this facility during the summer tourist season. The primary purpose of improving US 158 is to relieve congestion on the existing facility such that a minimum of Level of Service (LOS) D can be achieved, and to improve mobility of the facility through Dare County, consistent with the North Carolina Strategic Highway Corridor (SHC) Vision Plan. Another desired outcome of this improvement is safety.



Justification of Need

US 158 is a major corridor in Dare County that connects Currituck County in the north to US 64 on the southern end, which leads westward to Roanoke Island and the mainland. This facility is the primary north-south connector through the towns of Kitty Hawk, Kill Devil Hills and Nags Head, which comprise the more densely populated portion of the Outer Banks in Dare County. It also serves as a parallel alternative to a portion of NC 12, which is a 2-lane facility that runs along the coastline through the entire length of the Outer Banks.

By 2040 the facility is projected to be over capacity from the Currituck County line to 8th Street and near capacity from 8th Street to US 64, based on providing a LOS D. Summer weekday traffic counts are projected to increase in range from 20,800 to 34,500 vehicles per day (vdp) in 2012 to 27,500 to 45,500 vpd in 2040, compared to a LOS D capacity of 32,650 vpd for most of the facility.

There are 18 sections that have been identified as high crash sections with crash counts ranging from 5 to 12 crashes per section from January 1, 2007 to December 31, 2011. There are 45 intersections that have been identified as high crash sections with crash counts ranging from 9 to 46 crashes per intersection from January 1, 2007 to December 31, 2011.

Community Vision and Problem History

Currently US 158 is a five-lane boulevard from US 64 to Currituck County, running through the towns of Kitty Hawk, Kill Devil Hills and Nags Head. The facility is used heavily by tourists visiting the Outer Banks. Residents who live in these three towns as well as the large unincorporated community of Colington use the facility to access jobs and other amenities throughout the area. The continuous middle turn lane creates potential safety problems at various at-grade intersections as well as at many private access roads and driveways. The 1988 Dare County Thoroughfare Plan identified the capacity deficiency along this corridor. The 2012 Currituck County CTP also identifies this deficiency for the portion of US 158 directly north of Dare County.

CTP Project Proposal

Project Description and Overview

The proposed project (Local ID: DARE0001-H) is to improve the existing 5-lane facility to a 4-lane boulevard from US 64 to the Currituck County line.

The proposed improvements to US 158 will help to reduce congestion of traffic traveling from north of Dare County to various destinations along the Outer Banks. Additionally, it will fulfill the SHC Vision Plan. It is recommended by the steering committee that a corridor study be completed for this portion of US 158 in order to determine exact cross-sections for various segments of the facility. During this corridor study, it is recommended that the following four intersections along US 158 be examined for possible improvements: US 158 and NC 12, in Kitty Hawk/Southern Shores; US 158 and Kitty Hawk Road (SR 1206), in Kitty Hawk; US 158 and Colington Road (SR 1217), in Kill Devil Hills; and US 158, US 64 and NC 12 (Whalebone Junction). The intersection at US 158 and NC 12 in Kitty Hawk/Southern Shores is in need of capacity related improvements.

Natural & Human Environmental Context

US 158 has quite a few businesses with driveway access located directly on the facility. Wright Brothers National Memorial, Jockey's Ridge State Park and Outer Banks Hospital are located along US 158 as well.

Based on a planning level environmental assessment using available GIS data, the proposed project is in the vicinity (300ft from centerline) of wetlands, beach access sites, conservation tax credit properties, high quality water outstanding resource water management zones, hazardous substance disposal sites, land and water conservation

fund recreation projects, water distribution systems, and significant natural heritage areas.

Relationship to Land Use Plans

Land use plans for the towns of Kitty Hawk, Kill Devil Hills and Nags Head show that current land use along US 158 is primarily business. Land use along US 158 is high density and continues to grow. There are a numerous restaurants and shopping venues located along the facility, including the Tanger Outlets and Outer Banks Mall in Nags Head. Also located on US 158 are Outer Banks Hospital, Jockey's Ridge State Park, and Wright Brothers National Memorial.

Linkages to Other Plans and Proposed Project History

The improvement proposal for US 158 is an important link to other recommendations in the Dare County CTP. US 158 improvements directly connect to the proposed improvements along Colington Road and Ocean Bay Boulevard (TIP Project R-5014). A few intersections along US 158 have been identified as needing improvements as well.

The 1988 Dare County Thoroughfare Plan identified the capacity deficiency along this corridor. The 2012 Currituck County CTP also identifies this deficiency for the portion of US 158 directly north of Dare County.

Multi-modal Considerations

The CTP includes recommendations for bicycle and pedestrian facilities along US 158. Wide shoulders for bicycles are proposed for the entire length of the facility. Additionally, a multi-use path for both bicycles and pedestrians is recommended along the entire length of the highway on the west side.

Public/ Stakeholder Involvement

Considerable efforts were made to involve the public and local stakeholders throughout the CTP process, particularly regarding improvements to US 158. In April 2012, open houses were held in Kill Devil Hills, Rodanthe and Manteo to get early input on specific transportation topics, including access management along US 158, and information to be used over the course of development of the CTP. Several local stakeholders were personally invited to these open houses, and they were heavily advertised to the public in Dare County.

In April 2013, a presentation was made to commissioners from Dare County and each of its towns regarding access management and how it would potentially impact the US 158 corridor in Dare County. In June 2013, a similar presentation was made to the Outer Banks Chamber of Commerce Legislative Committee. Both the presentations resulted in positive local feedback.

NC 345, Local ID: DARE0001-H

NC 345 is expected to be over capacity from Thicket Lump Road (SR 1141) to Baumtown Road (SR 1135) and near capacity from Baumtown Road (SR 1135) to US 64 by the year 2040. Improvements are needed to accommodate projected traffic in order to maintain a Level of Service D.

This section of NC 345 currently has a two-lane, 20-foot cross section. The 2012 annual average daily traffic (AADT) is 6,800 vehicles per day (vpd) from Thicket Lump Road (SR 1141) to Baumtown Road (SR 1135), and 7,500 vpd from Baumtown Road (SR 1135) to US 64. By 2040, the AADT is expected to be 15,100 vpd from Thicket Lump Road (SR 1141) to Baumtown Road (SR 1135) and 11,300 vpd from Baumtown Road (SR 1135) to US 64, compared to a LOS "D" capacity of 12,600 vpd for the existing cross section. The CTP project proposal (Local ID DARE0002-H) is to upgrade the existing facility to 24 feet with paved shoulders, including turn lanes at all major intersections.

An intersection improvement need at NC 345, US 64, and US 64 Bypass has been identified. Since any improvement that involves a grade separation is not preferred locally, no proposed improvement has been agreed upon. The steering committee would like to recommend this intersection for further study.

US 64, TIP No. R-2544/2545

US 64 from Tyrrell County to US 264 is a Strategic Highway Corridor and hurricane evacuation route. The 2009-2015 TIP includes project R-2544/2545 that is intended to address this problem. This project includes the replacement of the Alligator River Bridge. It is currently in the project development process for environmental analysis. For additional information about this project, including the Purpose and Need, contact NCDOT's Project Development and Environmental Analysis Branch.

Colington Road (SR 1217), TIP No. R-5014

Colington Road (SR 1217) is a two-lane road that leads to one of the largest residential communities in the Outer Banks. Currently the facility floods frequently, causing safety and operational concerns. The 2009-2015 TIP includes project R-5014 that is intended to address these concerns. The project also includes the portion of Ocean Bay Boulevard (SR 1453) from Colington Road (SR 1217) to US 158. This project is currently in the project development process for environmental analysis. For additional information about this project, including the Purpose and Need, contact NCDOT's Project Development and Environmental Analysis Branch.

Bonner Bridge Replacement, TIP No. B-2500

The Herbert C. Bonner Bridge, located along NC 12, provides the only highway connection between Hatteras Island and mainland North Carolina.The Bonner Bridge Replacement Project will replace the existing bridge over Oregon Inlet and provide for the long-term retention of NC 12 between Oregon Inlet and Rodanthe. Phase II-A (B-2500A) includes long-term solutions along NC 12 on Pea Island, while Phase II-B (B-

2500B) includes long-term solutions along NC 12 in Rodanthe. This project is currently in the project development process for environmental analysis. For additional information about this project, including the Purpose and Need, contact NCDOT's Project Development and Environmental Analysis Branch.

The Bonner Bridge replacement has been postponed due to a lawsuit. TIP project B-5014 is a project that puts repair efforts in place for the current bridge while the construction of the new bridge is delayed.

NC 12 Hot Spot, TIP No. R-4070B

NC 12 is the only highway connection between mainland North Carolina and the communities on Hatteras Island. Due to severe storms along the coast of North Carolina, this facility is frequently subject to ocean overwash which damages the roadway. The purpose of this project is to implement measures to protect and maintain the portion of NC 12 beginning near Old Lighthouse Road (SR 1231) in Buxton extending approximately 4.7 miles north to Ocean View Drive (SR 1421) in Avon. This project is currently in the project development process for environmental analysis. For additional information about this project, including the Purpose and Need, contact NCDOT's Project Development and Environmental Analysis Branch.

NC 12 Hot Spot, TIP No. R-3116B

NC 12 is the only highway connection between mainland North Carolina and the communities on Hatteras Island. Due to severe storms along the coast of North Carolina, this facility is frequently subject to ocean overwash which damages the roadway. The purpose of this project is to implement measures to protect and maintain the portion of NC 12 beginning near Elizabeth Avenue (SR 1272) in Hatteras Village extending approximately 1.7 miles north. This project is currently in the project development process for environmental analysis. For additional information about this project, including the Purpose and Need, contact NCDOT's Project Development and Environmental Analysis Branch.

PUBLIC TRANSPORTATION, RAIL & FERRY

There are no railroads within Dare County, therefore no rail improvements were recommended in this plan. However, a need for improved public transportation was identified. Currently, there are no fixed route public transportation services in Dare County. There is extremely heavy tourist traffic during the summertime, particularly along NC 12, US 158 and US 64. During this peak season, it takes extended amounts of time for tourists and residents to make trips to shops, restaurants and other amenities in the area. The primary purpose of proposing transit service along NC 12, US 158 and US 64 is to provide another mode of transportation to get around the Outer Banks, including tourist attractions from Duck to Roanoke Island, and to provide ways to connect different modes of transportation.

Bus Route Recommendations:

US 158, Local ID: DARE001-T: provide service from East Avalon Drive in Kill Devil Hills to NC 12 in Southern Shores.

NC 12, Local ID: DARE002-T: provide service from US 158 in Southern Shores though Duck to Currituck County line.

NC 12, Local ID: DARE003-T: Provide service from the intersection of US 64, US 158, and NC 12 (Whalebone Junction) in Nags Head to Roanoke Island, serving the town of Manteo and tourist attractions such as Festival Park.

Loop Service Recommendations:

NC 12, Local ID: DARE004-T: provide service between US 64 in Nags Head and Ocean Bay Boulevard in Kill Devil Hills.

US 158, Local ID: DARE005-T: provide service between US 64 in Nags Head and Ocean Bay Boulevard in Kill Devil Hills.

NC 12, Local ID: DARE006-T: provide service between Ocean Bay Boulevard in Kill Devil Hills and the US 158/NC 12 intersection in Southern Shores. The route would cross over from NC 12 to US 158 at East Avalon Drive in Kill Devil Hills.

US 158, Local ID: DARE007-T: provide service between Ocean Bay Boulevard in Kill Devil Hills and the US 158/NC 12 intersection in Southern Shores. The route would cross over from NC 12 to US 158 at East Avalon Drive in Kill Devil Hills.

Park and Ride Recommendations:

Public Transportation Park and Ride, Local ID: DARE008-T: One facility is recommended located south of the intersection of US 64, US 158, and NC 12 (Whalebone Junction) for residents and visitors traveling via transit between Roanoke Island and the beach.

Private Water Transportation Park and Ride, Local ID: DARE009-T: The facility is recommended along Grouse Street in Nags Head. This facilities are both accessible from the proposed transit routes and are intended to enable access to private water transportation between Nags Head and Roanoke Island.

Private Water Transportation Park and Ride, Local ID: DARE010-T: The facility is recommended along Ananias Dare Street (SR 1128), Manteo waterfront. These facilities are both accessible from the proposed transit routes and are intended to enable access to private water transportation between Nags Head and Roanoke Island.

Passenger Ferry Park and Ride, Local ID: DARE011-T: One facility is recommended along NC 12 near the existing ferry dock location in Hatteras Village in order to accommodate those traveling via passenger ferry from Hatteras Island to Ocracoke Island (as described below in Ferry Service section).

Ferry Service

Currently, there is one ferry route in Dare County, from the ferry dock located in Hatteras Village to Ocracoke Island in Hyde County. In addition to this permanent year-round Hatteras-Ocracoke ferry route, an additional emergency ferry route is mobilized temporarily during storm events that prevent travel along NC 12 on Hatteras Island. The emergency ferry docks are set up in Rodanthe and Stumpy Point, allowing residents to travel between Hatteras Island and Mainland Dare County.

In Dare County, three ferry vessel replacements are being considered for the Hatteras-Ocracoke ferry route in the NCDOT prioritization process.

NCDOT Ferry Division is currently looking into funding a feasibility study for a potential high-speed passenger ferry route (which is different from the traditional vehicle ferry route currently in place) between Hatteras Village and Ocracoke Island. The passenger ferry service would not replace the current ferry service, but would be an additional operation. To accommodate this new route, an additional park and ride location is recommended near the existing ferry dock location in Hatteras Village.

BICYCLE

Currently, there are many bicycle routes connecting different parts of Dare County. There are existing bicycle facilities in the county from the north end of Duck all the way to Hatteras Island. There are also many gaps connecting these facilities. The primary purpose of recommending additional bike routes improvements is to better connect the Dare County area's outer banks, national and State parks, and historic monuments. In accordance with American Association of State Highway and Transportation Officials (AASHTO), roadways identified as bicycle routes should incorporate the following Standards as roadway improvements are made and funding is available:

- Curb & gutter sections require at minimum 5 foot bike lanes or 14 foot wide shoulder lanes.
- Shoulder sections require a minimum of 4 foot paved shoulder.
- All bridges along the roadways where bike facilities are recommended shall be equipped with 54 inch railings.

When building new infrastructure alongside existing development, NCDOT may be called on to adapt AASHTO standards to fit the area.

The 2013 Albemarle Regional Bike Plan, the 2011 Kill Devil Hills Pedestrian Plan, the 2013 Town of Duck Pedestrian Plan, the 2014 Town of Nags Head Pedestrian Plan, the 2014 Town of Kitty Hawk Reactional Master Plan and the Town of Manteo Downtown

Plan identify recommended greenways, bike lanes, and pedestrian facilities throughout the county and municipalities. For more detailed information about bicycle and pedestrian recommendations, refer to the plans listed above. In addtion, the CTP recommends the following facilities:

Duck/Southern Shores

NC 12, Local ID: DARE001-B: Cook Drive to South of Scarborough Lane

US 158, Local ID:DARE002-B: Wright Memorial Bridge

Kitty Hawk

Lindbergh Avenue, Local ID: DARE003-B: Byrd Street to Starfish Lane (SR 1496)

Kill Devil Hills/Colington

Memorial Blvd, Local ID: DARE004-B: Woodmere Avenue to Carolyn Drive

NC 12, Local ID: DARE005-B: Kitty Hawk town limits to Third Street

Roanoke Island

Wingina Street (SR 1121)/ Budleigh Street (SR 1150)/ Uppowac Street (SR 1192)/ Grenville Street, Local ID: DARE006-B: US 64 to US 64

NC 345, Local ID: DARE007-B: UNC Coastal Studies Institute to end of NC 345

US 64/264, Local ID: DARE008-B: NC 345 to Pirates Way

Airport Road (SR 1116), Local ID: DARE009-B: US 64 to end of Airport Road (SR 1116)

Payne Road (SR 1116), Local ID: DARE010-B: Joclar Lane to Burnside Road (SR 1123)

Joclar Lane, Local ID: DARE011-B: DARE033-M to Payne Road (SR1116)

Etheridge Road/ Driftwood Drive (SR 1118), Local ID: DARE012-B: Driftwood Drive to US 64

Driftwood Drive (SR 1118), Local ID: DARE013-B: Etheridge Road to DARE033-M

George Daniels Road (SR 1119)/Harriott Street (SR 1118), Local ID: DARE014-B: Wescott Park Road to Wingina Street (SR 1121)

Mainland Dare County

US 64, Local ID: DARE015-B: US 264 to Tyrrell County line

US 264, Local ID: DARE016-B: Virginia Dare Memorial Bridge to Hyde County line

Shipyard Road (SR 1105), Local ID: DARE015-B: Manns Harbor Bridge to US 64/264

Multi-Use Path Facilities:

Multi-use paths are facilities physically separated from motor vehicle traffic. Such paths are within the highway right-of-way or on an independent right-of-way. Multi-use paths include bicycle paths, rail-trails, or other facilities built for bicycle and pedestrian traffic.

US 158, Local ID: DARE001-M: NC 12 in Kitty Hawk to 8th Street

US 158, Local ID: DARE002-M: Bonnett Street to NC 12/US 64 in Nags Head (spans Kitty Hawk, Kill Devil Hills and Nags Head)

Duck/Southern Shores

East Dogwood Trail, Local ID: DARE003-M: South Dogwood Trail to NC 12

South Dogwood Trail, Local ID: DARE004-M: US 158 to East Dogwood Trail

Kitty Hawk

Moore Shore Road, Local ID: DARE005-M: Kitty Hawk Road to Beacon Drive

West Kitty Hawk Road, Local ID: DARE006-M: The Woods Road to NC 12

Windgrass Circle, Local ID: DARE007-M: North of Tateway Road to Tateway Road

Tateway Road, Local ID: DARE008-M: Windgrass Circle to Bay Drive

Kill Devil Hills/Colington

Helga Street, Local ID: DARE009-M: Bay Drive to NC 12

Bay Drive, Local ID: DARE010-M: Avalon Drive to Indian Drive

Canal Street, Local ID: DARE011-M: Indian Drive to First Street (SR 1172)

Fifth Street, Local ID: DARE012-M: Bay Drive to NC 12

Third Street, Local ID: DARE013-M: Bay Drive to NC 12

First Street (SR 1172), Local ID: DARE014-M: Canal Drive to NC 12

Colington Road (SR 1217), Local ID: DARE015-M: End to Baum Bay Drive

Colington Drive, Local ID: DARE016-M: Collington Road (SR 1217) to End

New Facility, Local ID: DARE017-M: Blue Jay Street to Martin Street

6th Avenue, Local ID: DARE018-M: Baum Street to Martin Street

Martin Street, Local ID: DARE019-M: NC 12 to Maxine Street

Maxine Street, Local ID: DARE020-M: Martin Street to Holly Street

Holly Street, Local ID: DARE021-M: Maxine Street to Shay Street

Shay Street, Local ID: DARE022-M: Holly Street to Quail Lane

Quail Lane, Local ID: DARE023-M: Shay Street to Pine Grove Trail

Bell Avenue/ Pond Street, Local ID: DARE024-M: Pine Grove Trail to Eighth Street (partially off-road between Quail Lane and Burns Drive, between Bell Avenue and Pond Street, and south of Fresh Pond Drive)

Nags Head

Satterfield Landing Road/Lark Street, Local ID: DARE025-M: US 158 to 8th Street

Roanoke Island

Marshall C. Collins, Local ID: DARE026-M: US 64 to end of Marshall C. Collins Drive

New Facility, Local ID: DARE027-M: Existing Off-Road Trail west of Marshall C. Collins Drive to Skyco Road (SR1134)

Skyco Road (SR 1134), Local ID: DARE028-M: End of Skyco Road (SR 1134) to NC 345

New Facility , Local ID: DARE029-M: Manteo Boardwalk to Grenville Street

Grenville Street, Local ID: DARE030-M: New Facility (DARE029-M) to US 64

New Facility, Local ID: DARE031-M: US 64 to Russell Twiford Road (SR 1338)

US 64BYP, Local ID: DARE032-M: NC 345 to DARE027-M

New Facility, Local ID: DARE033-M: Driftwood Drive to Joclar Lane

NC 345, Local ID: DARE034-M: US 64 to Baumtown Road (SR 1135)

US 64/264, Local ID: DARE035-M: Manns Harbor Bridge to NC 345

US 64, Local ID: DARE036-M: South Oregon Inlet Road (SR 1243) to Washington Baum Bridge

Mainland Dare County

Old Ferry Dock Road, Local ID: DARE037-M: US 64 to US 64

Old Manns Harbor Road, Local ID: DARE038-M: US 64 to US 64

US 64, Local ID: DARE039-M: Shipyard Road (SR 1105) to the east end of Manns Harbor Bridge

Hatteras Island

Eagle Pass Road, Local ID: DARE040-M: NC 12 to NC 12

NC 12, Local ID: DARE041-M: Salvo Day Use Area entrance to northern terminus of multi-use trail in Avon

NC 12, Local ID: DARE042-M: Park Drive (SR 1467) in Avon to Hatteras Landing

Lighthouse Road, Local ID: DARE043-M: NC 12 to end

PEDESTRIAN

Currently, there are many pedestrian accommodations in Dare County. There is a need for pedestrian accommodations to connect Currituck County all the way to Hatteras. It is important to safely connect pedestrians with beach communities, recreational facilities,

shopping centers, and schools. The primary purpose of recommending pedestrian accommodations is to provide an alternative mode of transportation within Dare County.

The 2013 Albemarle Regional Bike Plan, the 2011 Kill Devil Hills Pedestrian Plan, the 2013 Town of Duck Pedestrian Plan, the 2014 Town of Nags Head Pedestrian Plan, the 2014 Town of Kitty Hawk Reactional Master Plan and the Town of Manteo Downtown Plan identify recommended greenways, bike lanes, and pedestrian facilities throughout the county and municipalities. For more detailed information about bicycle and pedestrian recommendations, refer to the plans listed above. In addtion, the CTP recommends the following facilities:

Duck/Southern Shores

NC 12, Local ID: DARE001-P: Cook Drive to South of Scarborough Lane

US 158, Local ID: DARE002-P: Wright Memorial Bridge

Kitty Hawk

NC 12, Local ID: DARE003-P: US 158 to Kill Devil Hill town limits

Tateway Road, Local ID: DARE004- P: US 158 to NC 12

Kill Devil Hills/Colington

NC 12, Local ID: DARE005- P: Kitty Hawk town limits to Nags Head town limits

Hayman Boulevard, Local ID: DARE006- P: Bay Drive to US 158

Baum Street, Local ID: DARE007- P: Sixth Avenue to NC 12

Ocean Acres Drive, Local ID: DARE008- P: Harrington Avenue to US 158

Nags Head

NC 12, Local ID: DARE009- P: Gull Street to Old Oregon Inlet Road (SR 1243)

Wrightsville Avenue, Local ID: DARE010- P: Bonnett Street to Eighth Street

Gray Eagle Street, Local ID: DARE011- P: US 158 to NC 12

Roanoke Island

Driftwood Drive (SR 1118), Local ID: DARE012- P: Etheridge Road to DARE033-M

Airport Road (SR 1116), Local ID: DARE013- P: US 64 to end of Airport Road (SR 1116)

Etheridge Road, Local ID: DARE014- P: Driftwood Drive (SR 1118) to US 64

George Daniels Road (SR 1119)/Harriot Street (SR 1118), Local ID: DARE015- P: Wescott Park Road (SR 1337) to Wingina Street (SR 1121)

Sir Walter Raleigh Street (SR 1189), Local ID: DARE016- P: Bideford Street to US 64

Burnside Road (SR 1123), Local ID: DARE017- P: Bideford Street to end

Wingina Street(SR 1121)/ Budleigh Street (SR 1150)/ Uppowac Street(SR 1192)/ Grenville Street, Local ID: DARE018- P: US 64 to US 64

NC 345, Local ID: DARE019- P: Baumtown Road (SR 1135) to end

The Lane, Local ID: DARE020- P: NC 345 to NC 345

US 264/64, Local ID: DARE021-P: NC 345 to Pirates Way

US 264/64, Local ID: DARE022-P: Shipyard Road (SR 1105) to US 264/64 split

US 64, Local ID: DARE023-P: US 264/64 split to Tyrrell County Line

US 264, Local ID: DARE024-P: US 264/64 split to Hyde County Line

APPENDICES

Appendix A
Resources and Contacts

North Carolina Department of Transportation

Customer Service Office

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

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

Secretary of Transportation

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

Board of Transportation

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

Highway Division

113 Airport Dr., Suite 100 Edenton, NC 27932 (252) 482-1850
https://connect.ncdot.gov/letting/Pages/Letting-List.aspx?let_type=10

Contact the:

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

  1929 North Road St. Elizabeth City, NC 27909 (252) 331-4737

Transportation Planning Branch (TPB)

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

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

Albemarle Rural Planning Organization (RPO)

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

102 Dobbs St. Hertford, NC 27944 (252) 426-5775
www.albemarlecommission.org/planning

Strategic Planning Office

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

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

Project Development & Environmental Analysis (PDEA)

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

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

Secondary Roads Unit

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

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

Program Development Branch

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

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

Public Transportation Division

Contact the Public Transportation Division for information public transit systems.

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

Rail Division

Contact the Rail Division for rail information throughout the state.

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

Division of Bicycle and Pedestrian Transportation

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

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

Structures Management Unit

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

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

Roadway Design Unit

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

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

Transportation Mobility and Safety Division

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

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

Other State Government Offices

Department of Commerce – Division of Community Assistance

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

http://www.nccommerce.com/cd

Appendix B
Comprehensive Transportation Plan Definitions

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

Highway Map

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

Facility Type Definitions

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

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

❖ **Boulevards**

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

❖ **Other Major Thoroughfares**

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

❖ **Minor Thoroughfares**

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

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

Other Highway Map Definitions

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

Public Transportation and Rail Map

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

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

- **Operational Strategies** – Plans geared toward the non-single occupant vehicle. This includes but is not limited to HOV lanes or express bus service.
- **Rail Corridor** – Locations of railroad tracks that are either active or inactive tracks. These tracks were used for either freight or passenger service.
  - Active – rail service is currently provided in the corridor; may include freight and/or passenger service
  - Inactive – right of way exists; however, there is no service currently provided; tracks may or may not exist
  - Recommended – It is desirable for future rail to be considered to serve an area.
- **High Speed Rail Corridor** – Corridor designated by the U.S. Department of Transportation as a potential high speed rail corridor.
  - Existing – Corridor where higher-speed rail service (over 79 mph) is provided or a corridor that is officially designated by FRA to run higher speed trains in the future. There is currently one federally designated high-speed rail corridor in North Carolina - The Southeast High Speed Rail Corridor.
  - Recommended – Proposed corridor for high speed rail service.
- **Rail Stop** – A railroad station or stop along the railroad tracks.
- **Multimodal Connector** - A location where more than one mode of transportation meet such as where light rail and a bus route come together in one location. (NOTE- intermodal refers to two or more modes that transfer the same cargo unit-like 40' shipping container from ship to train or truck); multimodal is the transfer of people/cargo between two or more modes and in NC is used in public transit settings i.e. Charlotte Multimodal Station)
- **Park and Ride Lot** – A strategically located parking lot that provides commuters connections to transit or carpools.
- **Existing Grade Separation** – Locations where existing rail facilities 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 'Total Width (ft)' is the approximate width of the roadway from edge of pavement to edge of pavement and under 'Lane Width (ft)' is the approximate width of a single lane based on centerline/ edge line markings. Listed under 'Lanes' is the total number of lanes, with 'D' if the facility is divided, and 'OW' if it is a one-way facility.
- **Existing ROW:** The estimated existing right-of-way is based NCDOT Roadway Characteristics shapefile. These right-of-way amounts are approximate and may vary.
- **Existing and Proposed Capacity:** The estimated capacities are given in vehicles per day (vpd) based on LOS D for existing facilities and LOS C for new facilities. These capacity estimates were developed based on the 2000 Highway Capacity Manual using the Transportation Planning Branch's LOS D Standards for Systems Level Planning, as documented in Chapter 1.
- **Existing and Proposed June Traffic Volumes** (June Week Day Traffic) volumes, given in vehicles per day (vpd), are estimates only based on a systems-level analysis. The June '2040 E+C' is an estimate of the volume in 2012 with only existing plus committed projects assumed to be in place, where committed is defined as projects programmed for construction in the 2013 - 2023 Transportation Improvement Program (TIP). The June '2040 with CTP' is an estimate of the volume in 2012 with all proposed CTP improvements assumed to be in place. The June '2040 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 1.
- **Proposed Cross-section:** The CTP recommended cross-sections are listed by code; for depiction of the cross-section, refer to Appendix D. An entry of 'ADQ' indicates the existing facility is adequate and there are no improvements recommended for the given mode as part of the CTP.

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

CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																		
					2012 Existing System						2040 Proposed System							
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	June Estimated 2012 Volume	June 2040 E+C	June 2040 with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
R-3419	US 158	US 64 to Cape Hatteras National Park Rd (SR 1543)	Nags Head	0.3		6	-	50	32650	20800	27500	27500	39600	4B	-	B	Sta	BP
R-3419	US 158	Cape Hatteras National Park Rd (SR 1543) to E Gull St	Nags Head	0.6	60	5	150	50	32650	20800	27500	27500	39600	4B	150	B	Sta	BP
R-3419	US 158	E Gull St to S Seachase Dr	Nags Head	1.3	60	5	150	50	32650	20800	27500	27500	39600	4B	150	B	Sta	BP
R-3419	US 158	S Seachase Dr to E Driftwood St	Nags Head	4.6	60	5	150	50	32650	20800	27500	27500	39600	4B	150	B	Sta	BP
R-3419	US 158	E Driftwood St to 8th Street	Nags Head	0.3	60	5	150	50	32650	34500	45500	45500	39600	4B	150	B	Sta	BP
R-3419	US 158	8th St to Ocean Bay Blvd (SR 1217)	Kill Devil Hills	1.6	60	5	150	50	32650	34500	45500	45500	39600	4B	150	B	Sta	BP
R-3419	US 158	Ocean Bay Blvd (SR 1217) to 5th Street	Kill Devil Hills	1.9	60	5	150	50	32650	29500	39000	39000	39600	4B	150	B	Sta	BP
R-3419	US 158	5th Street to Kitty Hawk Town Limit	Kill Devil Hills	1.3	60	5	150	50	32650	29500	39000	39000	39600	4B	150	B	Sta	BP
R-3419	US 158	Kill Devil Hills Town Limit to Kitty Hawk Rd (SR 1206)	Kitty Hawk	1.0	60	5	150	45	29900	29500	39000	39000	39600	4B	150	B	Sta	BP
R-3419	US 158	Kitty Hawk Rd (SR 1206) to SR 1493	Kitty Hawk	2.6	60	5	150	50	32650	25800	34100	34100	39600	4B	150	B	Sta	BP
R-3419	US 158	SR 1493 to SR 1418	Kitty Hawk	0.3	60	5	75	50	32650	25800	34100	34100	39600	4B	75	B	Sta	BP
R-3419	US 158	SR 1418 to Woods Rd (SR 1206)	Kitty Hawk	0.8	60	5	180	50	32650	27100	37900	37900	39600	4B	180	B	Sta	BP
R-3419	US 158	Woods Rd (SR 1206) to Martins Point Rd	Kitty Hawk	0.4	60	5	180	50	32650	27100	37900	37900	39600	4B	180	B	Sta	BP
R-3419	US 158	Martins Point Rd to Currituck County Line	Kitty Hawk	0.2	60	4	180	45	29900	27100	37900	37900	39600	4B	180	B	Sta	BP
R-2544/2545	US 64	Tyrrell County Line to Lake Neighborhood Rd (SR 1102)	Dare	3.1	24	2	80	55	16400	3700	7300	7300	-	4A	80	E	Sta	
R-2544/2545	US 64	Lake Neighborhood Rd (SR 1102) to Robertson Landing Rd (SR 1169)	Dare	3.0	24	2	80	55	16400	4200	6900	6900	-	4A	80	E	Sta	
R-2544/2545	US 64	Robertson Landing Rd (SR 1169) to US 264	Dare	5.7	24	2	80	55	16400	4200	6900	6900	-	4A	80	E	Sta	
	US 64	US 264 to Bratten Ln	Dare	1.3	63	4	60	55	32800	4900	6500	6500	-	4A	60	E	Sta	
	US 64	Bratten Ln to Shipyard Rd (SR 1105)	Dare	0.3	63	5	60	35	25500	4900	6500	6500	-	4A	60	E	Sta	
	US 64	Shipyard Rd (SR 1105) to Old Ferry Dock Rd (SR 1110)	Dare	1.2	24	2	60	55	16400	1800	2400	2400	16400	4A	60	Maj	Reg	
	US 64	Old Ferry Dock Rd (SR 1110) to Mashoes Rd (SR 1113)	Dare	0.5	24	2	60	55	16400	1800	2400	2400	16400	4A	60	Maj	Reg	
	US 64	Mashoes Rd (SR 1113) to William B Umstead Memorial Bridge	Dare	0.6	24	2	150	55	16400	1800	2400	2400	16400	4A	150	Maj	Reg	
	US 64	William B Umstead Memorial Bridge	Dare	2.7	26	2	200	55	16400	1800	2400	2400	16400	4A	200	Maj	Reg	
	US 64	William B Umstead Memorial Bridge to Weir Point Dr (SR 1161)	Dare	0.6	24	2	100	45	14600	1800	2400	2400	14600	4A	100	Maj	Reg	
	US 64	Weir Point Dr (SR 1161) to Old State Rd 345 (SR 1167)	Dare	0.8	24	2	100	45	14600	8200	10800	10800	14600	4A	100	Maj	Reg	
	US 64	Old State Rd 345 (SR 1167) to Airport Rd (SR 1116)	Dare	0.5	24	2	100	45	14600	8200	10800	10800	14600	4A	100	Maj	Reg	
	US 64	Airport Rd (SR 1116) to Etheridge Rd (SR 1117)	Dare	0.3	24	2	100	45	14600	8200	10800	10800	14600	4A	100	Maj	Reg	
	US 64	Etheridge Rd (SR 1117) to Mother Vineyard Rd (SR 1120)	Dare	0.8	24	2	100	45	14600	8200	10800	10800	14600	4A	100	Maj	Reg	
	US 64	Mother Vineyard Rd (SR 1120) to Harriet St (SR 1118)	Manteo	0.5	24	2	100	45	13800	19600	25900	25900	13800	4A	100	Maj	Reg	
	US 64	Harriet St (SR 1118) to Burnside Rd (SR 1123)	Manteo	0.3	43	3	60	35	14000	19600	25900	25900	14000	4A	60	Maj	Reg	
	US 64	Burnside Rd (SR 1123) to NC 400 (Fernando St)	Manteo	0.4	43	3	60	35	14000	19600	25900	25900	14000	4A	60	Maj	Reg	
	US 64	Fernando St to Bowsertown Rd (SR 1129)	Manteo	0.3	43	3	60	35	14000	19600	25900	25900	14000	4A	60	Maj	Reg	
	US 64	Bowsertown Rd (SR 1129) to Patty Ln	Manteo	0.4	30	3	100	35	14000	19600	25900	25900	14000	4A	100	Maj	Reg	
	US 64	Patty Ln to Marshall C Collins Dr	Manteo	0.4	43	3	100	45	14900	21100	27900	27900	14900	4A	100	Maj	Reg	
	US 64	Marshall C Collins Dr to NC 345	Manteo	0.2	64	5	100	45	29900	21100	27900	27900	29900	4A	100	Maj	Reg	
	US 64	NC 345 to Pirates Way	Manteo	1.0	70	4	100	55	31600	19600	25900	25900	31600	4A	100	E	Sta	
	US 64	Pirates Way to Virginia Dare Memorial Bridge	Manteo	0.4	70	4	100	55	31600	19600	25900	25900	31600	4A	100	E	Sta	
	US 64	Virginia Dare Memorial Bridge	Dare	1.3	52	4	250	55	32800	19600	25900	25900	32800	4A	250	E	Sta	
	US 64	Virginia Dare Memorial Bridge to Marina Dr	Dare	0.1	66	4	250	55	32800	19600	25900	25900	32800	4A	250	E	Sta	
	US 64	Marina Dr to US 158	Dare	1.2	60	5	100	50	32650	19600	25900	25900	32650	4A	100	B	Sta	
	US 264	Hyde County Line to Bayview Dr (SR 1100)	Dare	13.5	22	2	60	55	12700	700	900	900	12700	2A	60	Maj	Reg	
	US 264	Bayview Dr (SR 1100) to Point Peter Rd	Dare	4.2	22	2	60	55	12700	800	1100	1100	12700	2A	60	Maj	Reg	
	US 264	Point Peter Rd to US 64	Dare	8.3	22	2	60	55	12700	1100	1700	1700	12700	2A	60	Maj	Reg	
	US 64 BYP	Shipyard Rd (SR 1105) to NC 345	Dare	6.0	24	4	80	65	58800	6300	8500	8500	-	4A	80	E	Sta	
	NC 12	Southern end of NC 12 to Eagle Pass Rd (SR 1241)	Dare	0.4	32	2	60	55	15800	4000	5300	5300	15800	2F	60	Maj	Sta	
	NC 12	Western end of Eagle Pass Rd (SR 1241) to Fulcher Ln (SR 1258)	Dare	0.4	32	2	60	55	15800	5000	6600	6600	15800	2F	60	Maj	Sta	
	NC 12	Fulcher Ln (SR 1258) to Kohler Rd	Dare	0.4	32	2	60	55	15800	5000	6600	6600	15800	2F	60	Maj	Sta	
	NC 12	Kohler Dr (SR 1237) to Eastern end of Eagle Pass Rd (SR 1241)	Dare	0.3	32	2	60	55	15800	5000	6600	6600	15800	2F	60	Maj	Sta	
	NC 12	Eastern end of Eagle Pass Rd (SR 1241) to C Deering Ridge Rd (SR	Dare	0.2	32	2	60	55	15800	5000	6600	6600	15800	2F	60	Maj	Sta	

HIGHWAY																		
					2012 Existing System						2040 Proposed System							
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	June Estimated 2012 Volume	June 2040 E+C	June 2040 with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
R-3116	NC 12	C Deering Ridge Rd (SR 1236) to Austin Rd (SR 1246)	Dare	0.8	32	2	60	55	15800	5300	7000	7000	15800	2F	60	Maj	Sta	
R-3116	NC 12	Austin Rd (SR 1246) to Sandpiper Dr	Dare	1.9	32	2	60	55	16400	5300	7000	7000	16400	2F	60	Maj	Sta	
	NC 12	Sandpiper Dr to Park Rd	Dare	1.0	32	2	60	55	15800	5300	7000	7000	15800	2F	60	Maj	Sta	
	NC 12	Park Rd to Old Doctors Rd	Dare	4.2	32	2	60	55	16400	5300	7000	7000	16400	2F	60	Maj	Sta	
	NC 12	Old Doctors Rd to W Buxton Back Rd (SR 1232)	Dare	0.8	32	2	60	55	15800	8700	11500	11500	15800	2F	60	Maj	Sta	
	NC 12	W Buxton Back Rd (SR 1232) to E Buxton Back Rd (SR 1232)	Dare	1.4	32	2	60	55	15800	8700	11500	11500	15800	2F	60	Maj	Sta	
	NC 12	E Buxton Back Rd (SR 1232) to Lighthouse Rd	Dare	0.3	32	2	60	55	15800	10700	14200	14200	15800	2F	60	Maj	Sta	
R-4070	NC 12	Lighthouse Rd to 1 Way Rd	Dare	3.3	32	2	60	55	16400	10700	14200	14200	16400	2F	60	Maj	Sta	
R-4070	NC 12	1 Way Rd to Park Dr (SR 1467)	Dare	1.0	32	2	60	55	16400	10700	14200	14200	16400	2F	60	Maj	Sta	
R-4070	NC 12	Park Dr (SR 1467) to Yucca St (SR 1525)	Dare	1.2	32	2	100	55	15800	8700	11500	11500	15800	2F	100	Maj	Sta	
	NC 12	Yucca St (SR 1525) to Moore Way (SR 1494)	Dare	0.6	32	2	100	55	15800	8700	11500	11500	15800	2F	100	Maj	Sta	
	NC 12	Moore Way (SR 1494) to Dolphin Ln (SR 1262)	Dare	0.7	32	2	60	55	15800	8700	11500	11500	15800	2F	60	Maj	Sta	
	NC 12	Dolphin Ln (SR 1262) to Pamlico Ct (SR 1464)	Dare	0.8	32	2	60	55	15800	5700	7500	7500	15800	2F	60	Maj	Sta	
	NC 12	Pamlico Ct (SR 1464) to Ocean Spray Rd (SR 1470)	Dare	11.6	32	2	60	55	16400	5700	7500	7500	16400	2F	60	Maj	Sta	
	NC 12	Ocean Spray Rd (SR 1470) to Bosun St (SR 1443)	Dare	1.2	30	2	60	35	12600	7300	9600	9600	12600	2F	60	Maj	Sta	
	NC 12	Bosun St (SR 1443) to Bold Dune Dr (SR 1412)	Dare	1.0	30	2	60	35	12600	7300	9600	9600	12600	2F	60	Maj	Sta	
	NC 12	Bold Dune Dr (SR 1412) to S Holiday Blvd (SR 1448)	Dare	1.2	30	2	60	35	12600	7300	9600	9600	12600	2F	60	Maj	Sta	
	NC 12	S Holiday Blvd (SR 1448) to Corbina Dr (SR 1495)	Dare	1.0	30	2	60	35	12600	7300	9600	9600	12600	2F	60	Maj	Sta	
	NC 12	Corbina Dr (SR 1495) to Beg. of Wildlife Refuge	Dare	6.2	30	2	60	45	14600	5400	7200	7200	14600	2F	60	Maj	Sta	
	NC 12	Beg. of Wildlife Refuge to End. of Wildlife Refuge	Dare	3.5	30	2	100	45	14600	5400	7200	7200	14600	2F	100	Maj	Sta	
	NC 12	End of Wildlife Refuge to Oregon Inlet Rd	Dare	5.3	26	2	60	45	14600	5400	7200	7200	14600	2F	60	Maj	Sta	
	NC 12	Oregon Inlet Rd to S Old Oregon Inlet Rd (SR 1243)	Dare	3.5	38	2	60	55	16400	8000	10600	10600	16400	2F	60	Maj	Sta	
	NC 12	S Old Oregon Inlet Rd (SR 1243) to NC 12 (S Virginia Trail Rd)	Dare	4.7	38	2	-	55	16400	6700	8900	8900	16400	2F	-	Maj	Sta	
	NC 12	NC 12 (Cape Hatteras National Park Rd) to S Old Oregon Inlet Rd (SR	Nags Head	0.2	20	2	30	35	12600	6700	8900	8900	12600	2F	30	Maj	Sta	
	NC 12	S Old Oregon Inlet Rd (SR 1243) to 8th Street	Nags Head	6.5	20	2	60	35	12600	4200	5600	5600	12600	2F	60	Maj	Sta	
	NC 12	8th St to Ocean Bay Blvd (SR 1217)	Kill Devil Hills	1.6	20	2	60	35	12600	5700	7500	7500	12600	2F	60	Maj	Sta	
	NC 12	Ocean Bay Blvd (SR 1217) to 5th Street	Kill Devil Hills	1.9	20	2	60	35	12600	4000	5300	5300	12600	2F	60	Maj	Sta	
	NC 12	5th Street to Kitty Hawk Town Limit	Kill Devil Hills	1.2	24	2	60	35	12600	4000	5300	5300	12600	2F	60	Maj	Sta	
	NC 12	Kill Devil Hills Town Limit to Kitty Hawk Rd (SR 1206)	Kitty Hawk	1.0	24	2	60	35	12600	4000	5300	5300	12600	2F	60	Maj	Sta	
	NC 12	Kitty Hawk Rd (SR 1206) to NC 12 (Ocean Blvd)	Kitty Hawk	2.7	24	2	60	35	12600	4000	5300	5300	12600	2F	60	Maj	Sta	
	NC 12	NC 12 (N Virginia Trail Rd) to E Dogwood Trail	Southern Shores	2.2	26	2	60	35	12600	12200	16100	16100	12600	2F	60	Maj	Sta	
	NC 12	E Dogwood Trail to Sea Oats Trail	Southern Shores	1.7	26	2	60	35	12600	12200	16100	16100	12600	2F	60	Maj	Sta	
	NC 12	Sea Oats Trail to Georgetown Sands Rd (SR 1293)	Duck	0.6	26	2	60	35	12600	11100	14600	14600	12600	2F	60	Maj	Sta	
	NC 12	Georgetown Sands Rd (SR 1293) to Plover Dr (SR 1417)	Duck	0.1	26	2	60	25	11000	11100	14600	14600	11000	2F	60	Maj	Sta	
	NC 12	Plover Dr (SR 1417) to 4 Seasons Dr	Duck	0.2	-	3	60	25	12700	11100	14600	14600	12700	2F	60	Maj	Sta	
	NC 12	4 Seasons Dr to Dune Rd (SR 1518)	Duck	1.0	-	3	60	25	12700	11100	14600	14600	12700	2F	60	Maj	Sta	
	NC 12	Dune Rd (SR 1518) to Barrier Island Station	Duck	0.2	26	2	60	45	14600	8000	10500	10500	14600	2F	60	Maj	Sta	
	NC 12	Barrier Island Station to Wideon Rd (SR 1479)	Duck	1.2	26	2	60	45	14600	8000	10500	10500	14600	2F	60	Maj	Sta	
	NC 12	Wideon Rd (SR 1479) to Currituck County Line	Duck	2.9	26	2	60	45	14600	8000	10500	10500	14600	2F	60	Maj	Sta	
DARE0001-H	NC 345	Thicket Lump Dr (SR 1141) to Harbor Rd (SR 1140)	Dare	1.0	-	2	60	35	12600	6800	15100	15100	12600	2C	60	Maj	Reg	
DARE0001-H	NC 345	Harbor Rd (SR 1140) to Baumtown Rd (SR 1135)	Dare	1.0	-	2	60	35	12600	6800	15100	15100	12600	2C	60	Maj	Reg	
DARE0001-H	NC 345	Baumtown Rd (SR 1135) to Skyco Rd (SR 1134)	Dare	2.2	-	2	60	35	12600	7500	11300	11300	12600	2F	60	Maj	Reg	BP
DARE0001-H	NC 345	Skyco Rd (SR 1134) to US 64	Dare	0.7	-	2	60	35	12600	7500	11300	11300	12600	2F	60	Maj	Reg	BP
	Woods Rd	W Kitty Hawk Rd (SR 1206) to Twiford St (SR 1207)	Kitty Hawk	0.5	-	2	60	35	11000	2500	3300	3300	11000	-	60	-		
	Woods Rd	Twiford St (SR 1207) to US 158	Kitty Hawk	1.5	-	2	60	35	11000	2500	3300	3300	11000	-	60	-		
	Kitty Hawk Rd	Rogers St (SR 1209) to Twiford St (SR 1207)	Kitty Hawk	0.5	-	2	Variabl	35	11000	-	-	-	11000	2F	-	Min	Sub	M
	Kitty Hawk Rd	Twiford St (SR 1207) to Woods Rd (SR 1206)	Kitty Hawk	0.7	-	2	Variabl	35	11000	-	-	-	11000	2F	-	Min	Sub	M
	Kitty Hawk Rd	Woods Rd (SR 1206) to Moore Shore Rd (SR 1218)	Kitty Hawk	1.1	-	2	Variabl	35	11000	4800	6400	6400	11000	2F	-	Min	Sub	M
	Kitty Hawk Rd	Moore Shore Rd (SR 1218) to US 158	Kitty Hawk	0.5	-	2	Variabl	35	11000	4800	6400	6400	11000	2F	-	Min	Sub	M
	Kitty Hawk Rd	US 158 to NC 12	Kitty Hawk	0.2	-	2	Variabl	35	11000	1800	2400	2400	11000	2F	-	Min	Sub	M

HIGHWAY																		
					2012 Existing System						2040 Proposed System							
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	June Estimated 2012 Volume	June 2040 E+C	June 2040 with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
R-5014	Colington Rd	Western end of Colington Rd to Williams Dr (SR 1490)	Kill Devil Hills	1.5	-	2	Variabl	35	11000	8000	10600	10600	-	2F	-	Min	Sub	BP
R-5014	Colington Rd	Williams Dr (SR 1490) to Baum Bay Dr (SR 1452)	Kill Devil Hills	1.9	-	2	Variabl	35	11000	8000	10600	10600	-	2F	-	Min	Sub	BP
R-5014	Colington Rd	Baum Bay Dr (SR 1452) to Ocean Bay Blvd	Kill Devil Hills	0.5	-	2	Variabl	35	11000	11700	15500	15500	-	2F	-	Min	Sub	BP
	S Old Oregon Inlet Rd	NC 12 (Cape Hatteras National Park Rd) to Gulfstream St (Sr 1544)	Nags Head	4.8	-	2	100	45	13300	2400	4700	4700	13300	2F	-	Min	Sub	
	S Old Oregon Inlet Rd	Gulfstream St (SR 1544) to NC 12 (S Virginia Dare Trail)	Nags Head	0.1	-	2	100	35	11000	400	900	900	11000	2F	-	Min	Sub	
	Eagle Pass Rd	NC 12 to NC 12	Dare	0.8	-	2	60	35	11000	1100	1400	1400	11000	2F	-	Min	Sub	M
	Buxton Back Rd	NC 12 to NC 12	Dare	1.3	-	2	60	35	11000	2200	3600	3600	11000	2F	-	Min	Sub	
	S Dogwood Rd	US 158 to E Dogwood Trail	Southern Shores	2.5	-	2	-	25	10000	2100	2800	2800	10000	2F	-	Min	Sub	M
	E Dogwood Rd	S Dogwood Rd to Bayberry Trail	Southern Shores	0.5	-	2	-	25	10000	1500	2000	2000	10000	2F	-	Min	Sub	M
	E Dogwood Rd	Bayberry Trail to NC 12 (Duck Rd)	Southern Shores	0.4	-	2	-	25	10000	1500	2000	2000	10000	2F	-	Min	Sub	M
	E Dogwood Rd	NC 12 (Duck Rd) to Ocean Blvd	Southern Shores	0.2	-	2	-	25	10000	1500	2000	2000	10000	2F	-	Min	Sub	M
	Old Ferry Dock Rd (SR	US 64 to US 64	Dare	0.4	-	2	-	35	11000	300	400	400	11000	2F	-	Min	Sub	
	Shipyard Rd (SR 1105)	Southern end to US 64	Dare	1.0	-	2	60	45	13300	600	800	800	13300	2F	-	Min	Sub	
	Ocean Bay Blvd (SR 1453)	Colington Rd to US 158	Kill Devil Hills	0.5	-	2	100	35	11000	11300	21900	21900	-	2F	-	Min	Sub	
	Ocean Bay Blvd (SR 1453)	US 158 to NC 12 (Virginia Dare Trail)	Kill Devil Hills	0.2	-	2	100	35	11000	1600	2100	2100	-	2F	-	Min	Sub	
	8th Street	West end of 8th St to US 158	Nags Head	0.3	-	2	-	25	10000	3300	4400	4400	10000	2F	-	Min	Sub	P
	8th Street	US 158 to East end of 8th St	Nags Head	0.3	-	2	-	25	10000	2400	2400	2400	10000	2F	-	Min	Sub	P

PUBLIC TRANSPORTATION

PUBLIC TRANSPORTATION[1]							
			Speed		Existing System	Proposed System	
Local ID	Facility/ Route	Section (From - To)	Limit (mph)	Distance (mi)	Type	Type	Other Modes
DARE001-T	US 158	East Avalon Drive to NC 12	50	10.4	N/A	Bus	
DARE002-T	NC 12	US 158 to Currituck County line	35	25.2	N/A	Bus	
DARE003-T	NC 12	US 158/US 64/ NC 12 (Whalebone Junction)	55	4.6	N/A	Bus	
DARE004-T	NC 12	US 64 to Ocean Bay Boulevard	35	8.3	N/A	Bus	
DARE005-T	US 158	US 64 to Ocean Bay Boulevard	50	8.3	N/A	Bus	
DARE006-T	NC 12	Ocean Bay Boulevard to US 158/NC 12	35	6.3	N/A	Bus	
DARE007-T	US 158	Ocean Bay Boulevard to US 158/NC 12	50	6.3	N/A	Bus	
DARE008-T	Public Transportion Park and Ride Lot	South of the intersection of US 64 / US158/ NC12 (Whaleborne Junction)			N/A	Park and Ride Lot	
DARE009-T	Private Water Transportation Park and Ride Lot	Along Grouse Street			N/A	Park and Ride Lot	
DARE010-T	Private Water Transportation Park and Ride Lot	Along Ananias Dare Street (SR 1128)			N/A	Park and Ride Lot	
DARE011-T	Passenger Ferry Park and Ride Lot	Along NC 12 near the ferry dock in Hatteras Village			N/A	Park and Ride Lot	

[1] Only major public transportation routes and proposals are shown here. For further documentation of the public transportation system, refer to *Chapter 2*.

BICYCLE AND PEDESTRIAN [1]

BICYCLE								
				Existing System		Proposed System		
				Cross-Section				Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	(ft)	lanes	Type	Cross-Section	Modes
DARE001-B	NC 12	Cook Drive to South of Scarborough Lane	1.1	5	2	lanes	2F	P,T
DARE002-B	US 158	Wright Memorial Bridge	3	-	-	lanes	2F	H,P
	NC 12	US 158 to Kitty Hawk Road	3.3	5	2	lanes	2F	P
DARE003-B	Lindbergh Avenue	Byrd Street to Starfish Lane (SR 1496)	2.4	-	-	lanes	2F	
DARE004-B	Memorial Blvd	Woodmere Avenue to Carolyn Drive	1.7	-	-	lanes	2F	
DARE005-B	NC 12	Sibbern Street to Third Street	1.6	-	-	lanes	2F	P,T
	NC 12	Third Street to Eigth Street	3	5	2	lanes	2F	P,T
	Barnes Street	NC 12 to Outer Banks Heliport	0.7	5	2			
DARE006-B	Wingina Street (SR 1121)/ Budleigh Street (SR 1150)/ Uppowac Street (SR 1192)/ Grenville Street	US 64 to US 64	1.8	-	-	lanes	2F	P
DARE007-B	NC 345	UNC Coastal Studies Institute to End of 345	3.5	-	-	lanes	2F	H,M
DARE008-B	US 64/264	NC 345 to End of Washington Baum Bridge	2.8	-	-	lanes	2F	H,T,P
DARE009-B	Airport Road (SR 1116)	US 64 to End to Airport Road (SR 1116)	1.5	-	-	lanes	2F	T,P
DARE010-B	Payne Road (SR 1116)	Joclar Lane to Burnside Road (SR 1123)	0.1	-	-	lanes	2F	P
DARE011-B	Joclar Lane	DARE033-M to Payne Road (SR 1116)	0.3	-	-	lanes	2F	P
DARE012-B	Etheridge Road	Driftwood Drive to US 64	0.5	-	-	lanes	2F	P
DARE013-B	Driftwood Drive (SR 1118)	Etheridge Road to DARE033-M	0.8	-	-	lanes	2F	P
DARE014-B	George Daniels(SR 1119)/ Harriott Street	Wescott Park Road to Wingina Street (SR 1121)	0.9	-	-	lanes	2F	P
DARE015-B	US 64	US 264 to Tyrrell County	11.7	-	-	lanes	2F	H, P
DARE016-B	US 264	Virginia Dare Memorial Bridge to Hyde County	26	-	-	lanes	2F	P
DARE017-B	Shipyard Road (SR 1105)	Manns Harbor Bridge to US 64/264	2.2	-	-	lanes	2F	M

[1] Only major routes and proposals are shown here. For further documentation of bicycle and pedestrian facilities and proposals, refer to Chapter 2.

BICYCLE AND PEDESTRIAN 1

PEDESTRIAN								
				Existing System		Proposed System		Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Type	Side of Street	Type	Side of Street	Modes
DARE001-P	NC 12	Cook Drive to South of Scarborough Lane	1.1	-	-	Sidewalk	Both	B,T
DARE002-P	US 158	Wright Memorial Bridge	3	-	-	Sidewalk	Both	H,B
DARE003-P	NC 12	US 158 to Kill Devil Hill town limits	3.5	Multi-use	West	Sidewalk	Both	B
	Eckner Street	US 158 to NC 12	0.2	Sidewalk	South	Sidewalk	Both	
DARE004-P	Tateway Road	US 158 to NC 12	0.2	-	-	Sidewalk	Both	
DARE005-P	NC 12	Kitty Hawk town limits to Nags Head town limits	5.8	-	-	Sidewalk	Both	B,T
	8th Street	US 158 to NC 12	0.4	Sidewalk	South	Sidewalk	Both	
DARE006-P	Hayman Boulevard	Bay Drive to US 158	0.6	-	-	Sidewalk	Both	
DARE007-P	Baum Street	Sixth Avenue to NC 12	0.5	-	-	Sidewalk	Both	
DARE008-P	Ocean Acres Drive	Harrington Avenue to US 158	0.2	-	-	Sidewalk	Both	
DARE009-P	NC 12	Gull Street to Old Oregon Inlet Road (SR 1243)	0.4	-	-	Sidewalk	Both	
DARE010-P	Wrightsville Avenue	Bonnett Street to Eighth Street	1.2	-	-	Sidewalk	Both	
	Barnes Street	End to NC 12	0.7	Sidewalk	North	Sidewalk	Both	
	Bonnett Street	US 158 to Wrightsville Avenue	0.2	Sidewalk	South	Sidewalk	Both	
	Hollowell Street	US 158 to NC 12	0.2	Sidewalk	South	Sidewalk	Both	
	Danube Street	US 158 to NC 12	0.1	Sidewalk	South	Sidewalk	Both	
	Mall Drive	US 158 to NC 12	0.1	Sidewalk	South	Sidewalk	Both	
	Gull Street	US 158 to NC 12	0.1	Sidewalk	South	Sidewalk	Both	
DARE011-P	Gray Eagle Street	US 158 to NC 12	0.1	-	-	Sidewalk	Both	
DARE012-P	Driftwood Drive (SR 1118)	Etheridge Road to DARE033-M	0.8	-	-	Sidewalk	Both	B
DARE013-P	Airport Road (SR 1116)	US 64 to End to Airport Road (SR 1116)	1.5	-	-	Sidewalk	Both	T,B
DARE014-P	Etheridge Road	Driftwood Drive to US 64	0.5	-	-	Sidewalk	Both	B
DARE015-P	George Daniels Road(SR 1119)/ Harriot Street (SR 1118)	Wescott Park Road (SR 1337) to Wingina Street (SR 1121)	0.9	Sidewalk	Both	Sidewalk	Both	B
DARE016-P	Sir Walter Raleigh Street (SR 1189)	Bideford Street to US 64	0.3	Sidewalk	South	Sidewalk	Both	B
DARE017-P	Burnside Road (SR 1123)	Bideford Street to End	2	-	-	Sidewalk	Both	B
DARE018-P	Wingina Street (SR 1121)/ Budleigh Street (SR 1150)/ Uppowac Street (SR 1192)/ Grenville Street	US 64 to US 64	1.8	-	-	Sidewalk	Both	B
DARE019-B	NC 345	Baumtown Road (SR 1135) to End	1.9	-	-	Sidewalk	Both	
DARE020-B	The Lane	NC 345 to NC 345	0.6	-	-	Sidewalk	Both	
DARE021-B	US 264/64	NC 345 to Pirates Way	1.2	-	-	Sidewalk	Both	H,T,B
DARE022-B	US 264/64	Shipyard Road (SR 1105) to US 264/64 split	2	-	-	Sidewalk	Both	H
DARE023-B	US 64	US 264/64 split to Tyrrell County Line	16.1	-	-	Sidewalk	Both	B,H
DARE024-B	US 264	US 264/64 split to Hyde County Line	32	-	-	Sidewalk	Both	

[1] Only major routes and proposals are shown here. For further documentation of bicycle and pedestrian facilities and proposals, refer to Chapter 2.

BICYCLE AND PEDESTRIAN 1

MULTI-USE PATH								
			Existing System			Proposed System		Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Side of Street	Cross-Section	Side of Street	ross-Sectio	Modes
	S. Old Oregon Inet (SR 1243)	NC 12 to Park Service Road	5.9	East	MA	East	MA	
	US 158	NC 12 to Wright Memorial Bridge	2.1	South	MA	South	MA	
DARE001-M	US 158	NC 12 in Kitty Hawk to 8th Street	8.4	-	-	Both	MA	H
DARE002-M	US 158	Bonnett Street to NC 12/ US 64 in Nags Head (spans Kitty Hawk, Kill Devil Hills and Nags Head)	5.3	-	-	Both	MA	H
	US 158	8th Street to Bonnett Street	1.4	West	MA	West	MA	
DARE003-M	East Dogwood Trail	South Dogwood Trail to NC 12	0.9	-	-	TBD[2]	MA	
DARE004-M	South Dogwood Trail	US 158 to East Dogwood Trail	2.3	-	-	TBD[2]	MA	
DARE005-M	Moore Shore Road	Kitty Hawk Road to Beacon Drive	0.6	-	-	Both	MA	
	Moore Shore Road	Beacon Drive to Windgrass Circle (Off-Road)	0.4	N/A	N/A	N/A	N/A	
DARE006-M	West Kitty Hawk Road	The Woods Road to NC 12	2.2	-	-	Both	MA	
	West Kitty Hawk Road	The Woods Road to Rogers Street	1.4	North	MA	North	MA	
	The Woods Road	West Kitty Hawk Road to US 158	2.5	West	MA	West	MA	
DARE007-M	Windgrass Circle	North of Tateway Road to Tateway Road	0.1	-	-	Both	MA	
	Windgrass Circle	Moore Shore Road to North of Tateway Road (Off-Road)	0.1	N/A	N/A	N/A	N/A	
DARE008-M	Tateway Road	Windgrass Circle to Bay Drive	0.1	-	-	Both	MA	
DARE009-M	Helga Street	Bay Drive to NC 12	0.7	-	-	Both	MA	
DARE010-M	Bay Drive	Avalon Drive to Indian Drive	1	-	-	Both	MA	
	Bay Drive	Tateway Road to Avalon Drive	1.5	West	MA	West	MA	
DARE011-M	Canal Drive	Indian Drive to First Street (SR 1172)	0.3	-	-	Both	MA	
DARE012-M	Fifth Street	Bay Drive to NC 12	1	-	-	Both	MA	
DARE013-M	Third Street	Bay Drive to NC 12	1.1	-	-	Both	MA	
DARE014-M	First Street (SR 1172)	Canal Drive to NC 12	0.9	-	-	Both	MA	
	First Street (SR 1172)	End of First Street (SR 1172) to Canal Drive	1	West	MA	West	MA	
DARE015-M	Colington Road (SR 1217)	End to Baum Bay Drive	3.1	-	-	Both	MA	H
DARE016-M	Colington Drive	Colington Road (SR 1217) to End	1.4	-	-	Both	MA	
	Existing Off-Road Trail	Collington Rd (SR 1217) to W. 1st Street	0.3	N/A	N/A	N/A	N/A	
	Ocean Bay Blvd	NC 12 to Bermuda Bay Blvd	1	South	MA	South	MA	
	Existing Off-Road Trail	Mustian Avenue to 6th Avenue	0.3	N/A	N/A	N/A	N/A	
	Town Hall Drive	Ocean Bay Blvd to Veterans Drive	0.2	South	MA	South	MA	
	Veterans Drive	Ocean Bay Blvd to End of Veterans Drive	0.9	West	MA	West	MA	
DARE017-M	New Facility	Blue Jay Street to Martin Street	0.2	-	-	Both	MA	
DARE018-M	6th Avenue	Baum Street to Martin Street	0.4	-	-	Both	MA	
	6th Avenue	Veterans Drive to Baum Street	0.3	East	MA	East	MA	
DARE019-M	Martin Street	NC 12 to Maxine Street	0.7	-	-	Both	MA	
DARE020-M	Maxine Street	Martin Street to Holly Street	0.1	-	-	Both	MA	
DARE021-M	Holly Street	Maxine Street to Shay Street	0.1	-	-	Both	MA	
DARE022-M	Shay Street	Holly Street to Quail Lane	0.2	-	-	Both	MA	
DARE023-M	Quail Lane	Shay Street to Pine Grove Trail	0.1	-	-	Both	MA	
DARE024-M	Bell Avenue/Pond Street	Pine Grove Trail to Eighth Street (partially off-road between Quail Lane and Burns Drive, between Bell Avenue and Pond Street, and south of Fresh Pond Drive)	0.4	-	-	Both	MA	
DARE025-M	Satterfield Landing Road/Lark Street	US 158 to 8th Street	0.5	-	-	Both	MA	
DARE026-M	Marshall C. Collins Drive	US 64 to End of Marshall C. Collins Drive	0.2	-	-	Both	MA	
	Existing Off-Road Trail	End of Marshall C. Collins to DARE028-M	0.8	-	-	-	-	
DARE027-M	New Facility	Existing Off-Road Trail West of Marshall C. Collins Drive to Skyco Road (SR 1134)	0.6	-	-	Both	MA	
DARE028-M	Skyco Road (SR 1134)	End of Skyco Road (SR 1134) to NC 345	0.8	-	-	Both	MA	
DARE029-M	New Facility	Manteo Boardwalk to Grenville Street	0.3	-	-	Both	MA	
DARE030-M	Grenville Street	New Facility (DARE030-M) to US 64	0.3	-	-	Both	MA	

BICYCLE AND PEDESTRIAN 1

	Manteo Broadwalk	Along Manteo waterfront	1.4	N/A	N/A	N/A	N/A	
DARE031-M	New Facility	US 64 to Russell Twiford Road (SR 1338)	0.2	-	-	Both	MA	
DARE032-M	US 64 BYP	DARE027-M to NC 345	1	-	-	Both	MA	
DARE033-M	New Facility	Driftwood Drive to Joclar Lane	0.5	-	-	Both	MA	
DARE034-M	NC 345	US 64 to Baumtown Road (SR 1135)	2.9	-	-	Both	MA	
DARE035-M	US 264/64	NC 345 to Mans Harbor Bridge	6.7	-	-	Both	MA	H
DARE036-M	US 64	S. Old Oregon Inlet Road (SR 1243) to Washington Baum Bridge	2	-	-	Both	MA	
DARE037-M	Old Ferry Dock Road	US 64 to US 64	0.5	-	-	Both	MA	
DARE038-M	Old Manns Harbor Road	US 64 to US 64	0.7	-	-	Both	MA	
DARE039-M	US 264/64	Shipyard Road (SR 1105) to East End of Manns Harbor Bridge	6.1	-	-	Both	MA	
DARE040-M	Eagle Pass Road (SR 1241)	NC 12 to NC 12	1	-	-	Both	MA	H
	NC 12	Currituck County Line to Cook Drive	5.4	East	MA	East	MA	
	NC 12	Four Seaons Drive to US 158	6	East	MA	East	MA	
	NC 12	8th Street to S Old Oregon Inlet Road (SR 1243)	8.2	East	MA	East	MA	
	NC 12	Myrna Peters Road to Campground Road	5.8	West	MA	West	MA	
DARE041-M	NC 12	Campground Road to Avon	13.5	-	-	Both	MA	
	NC 12	Avon to Park Drive	4.2	West	MA	West	MA	
DARE042-M	NC 12	Park Drive to Hatteras Landing	20.1	-	-	Both	MA	
DARE043-M	Lighthouse Road	NC 12 to End	3	-	-	Both	MA	
	Buxton Back Road (SR 1232)	NC 12 to NC 12	1.5	South	MA	South	MA	

[1] Only major routes and proposals are shown here. For further documentation of bicycle and pedestrian facilities and proposals, refer to Chapter 2.

[2] Further analysis will be done to determine side of street.

Appendix D
Typical Cross Sections

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

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

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

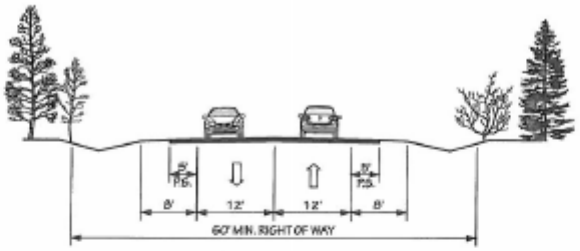
- roadways which may require widening after the current planning period,
- roadways which are borderline adequate and accelerated traffic growth could render them deficient,
- roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment,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

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

Figure 7

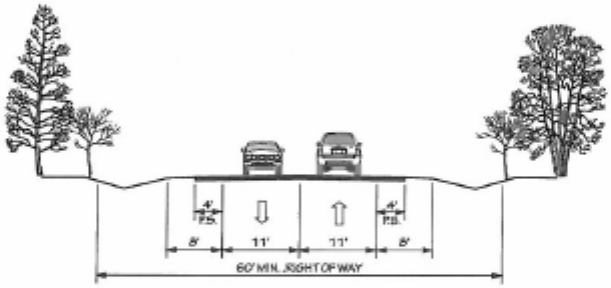
"TYPICAL" HIGHWAY CROSS SECTIONS

2A



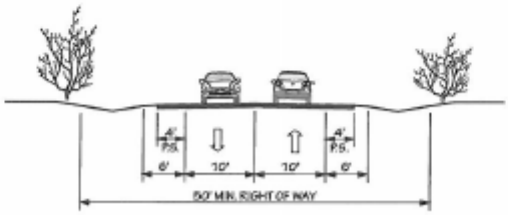
2 LANE UNDIVIDED WITH PAVED SHOULDERS
POSTED SPEED 55 MPH

2B



2 LANES UNDIVIDED
POSTED SPEED 45 MPH OR LESS

2C

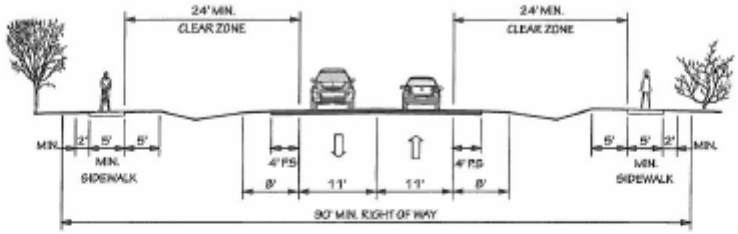


2 LANE UNDIVIDED WITH PAVED SHOULDERS
POSTED SPEED 25 - 35 MPH

Figure 7

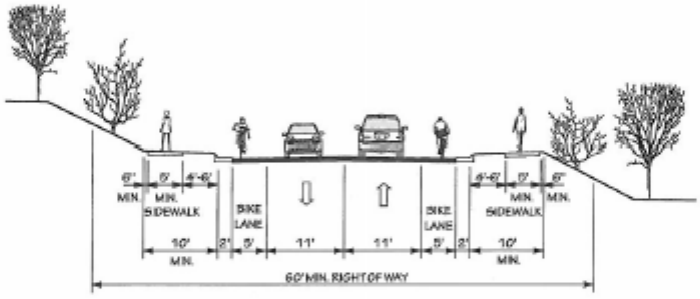
"TYPICAL" HIGHWAY CROSS SECTIONS

2D



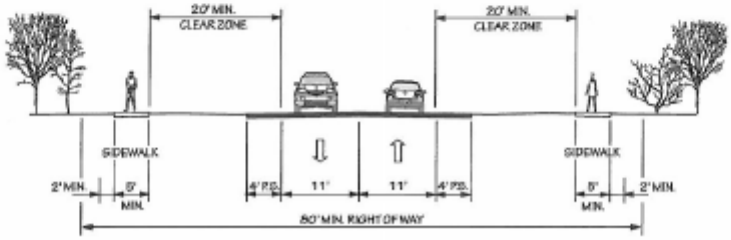
2 LANE UNDIVIDED WITH PAVED SHOULDERS AND SIDEWALKS
POSTED SPEED 25-45 MPH

2E



2 LANE UNDIVIDED WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS
POSTED SPEED 25-45 MPH

2F

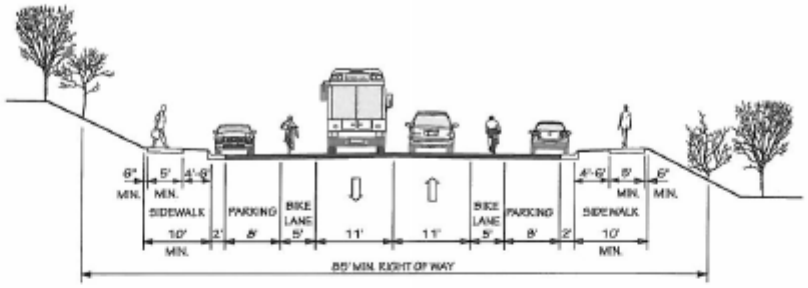


2 LANE UNDIVIDED WITH PAVED SHOULDERS AND SIDEWALKS
IN CAMA COUNTIES
POSTED SPEED 25-45 MPH

Figure 7

"TYPICAL" HIGHWAY CROSS SECTIONS

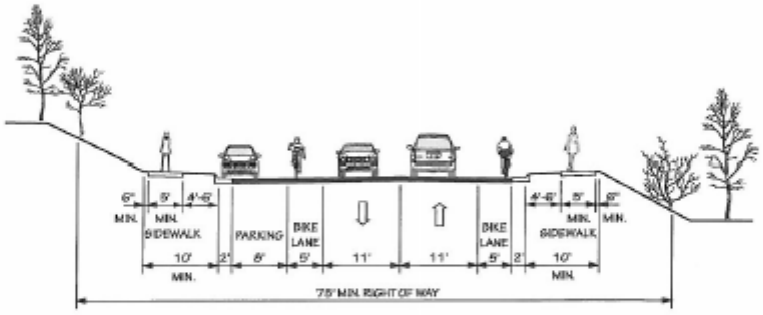
2G



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

POSTED SPEED 25-45 MPH

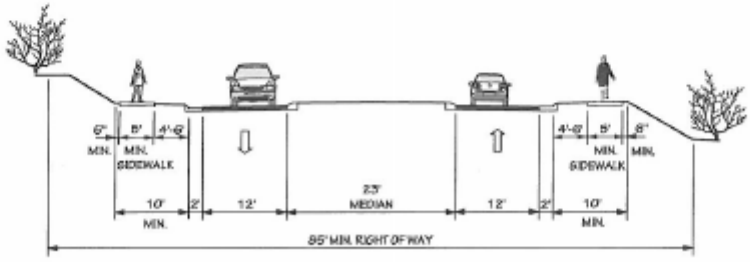
2H



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

POSTED SPEED 25-45 MPH

2I



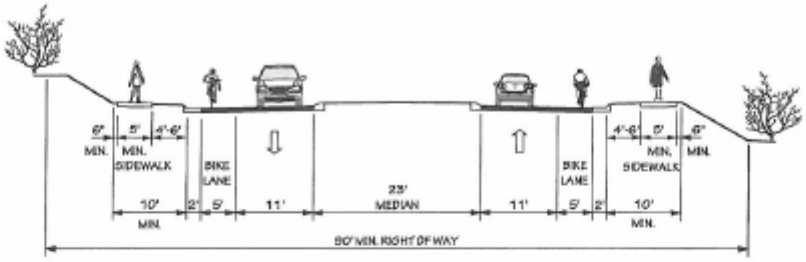
2 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER AND SIDEWALKS

POSTED SPEED 25-45 MPH

Figure 7

"TYPICAL" HIGHWAY CROSS SECTIONS

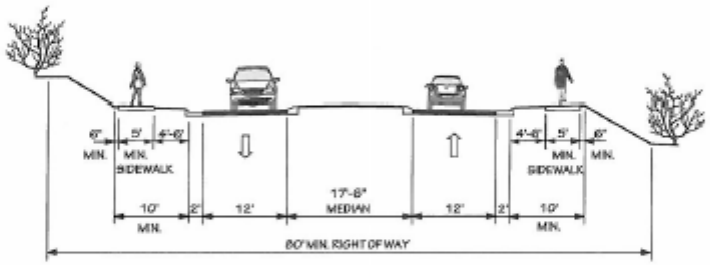
2J



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

POSTED SPEED 25-45 MPH

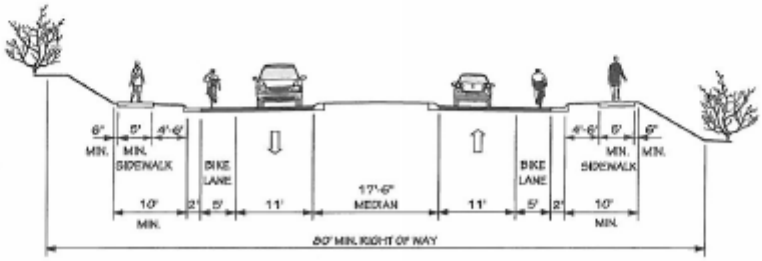
2K



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

POSTED SPEED 25-45 MPH

2L



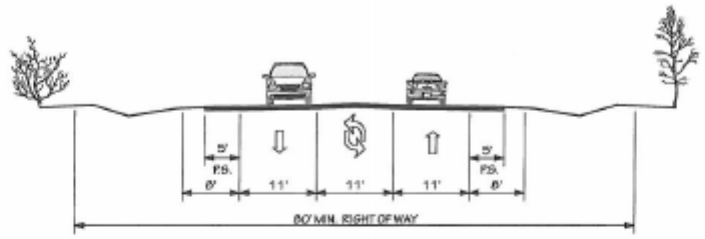
2 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

Figure 7

"TYPICAL" HIGHWAY CROSS SECTIONS

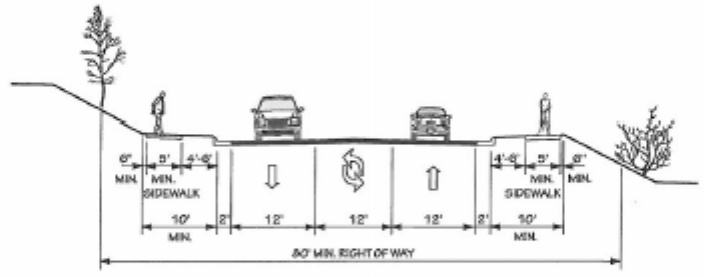
3A



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

POSTED SPEED 25-55 MPH

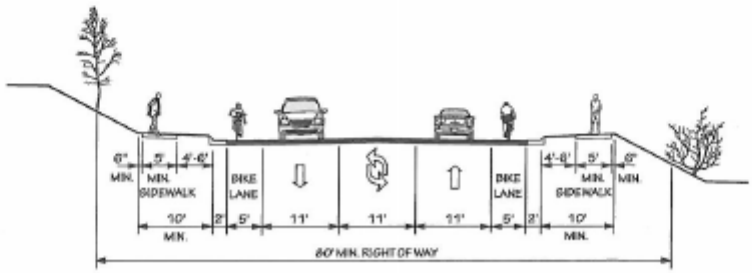
3B



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

POSTED SPEED 25-45 MPH

3C

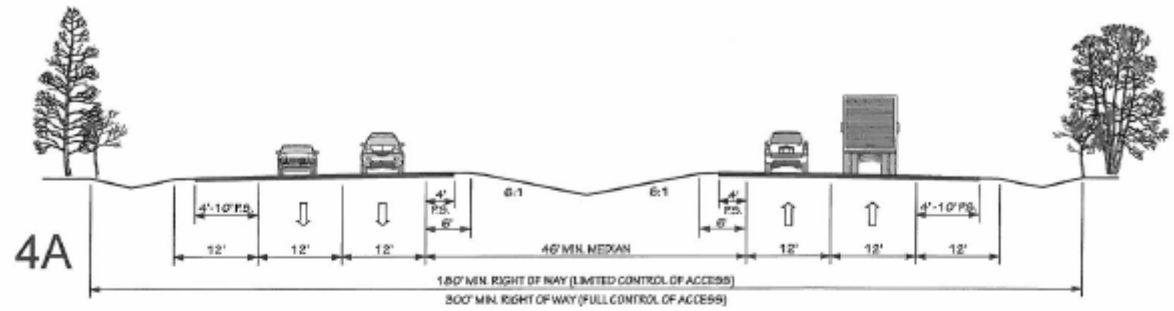


2 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER,
BIKE LANES, AND SIDEWALKS

POSTED SPEED 25-45 MPH

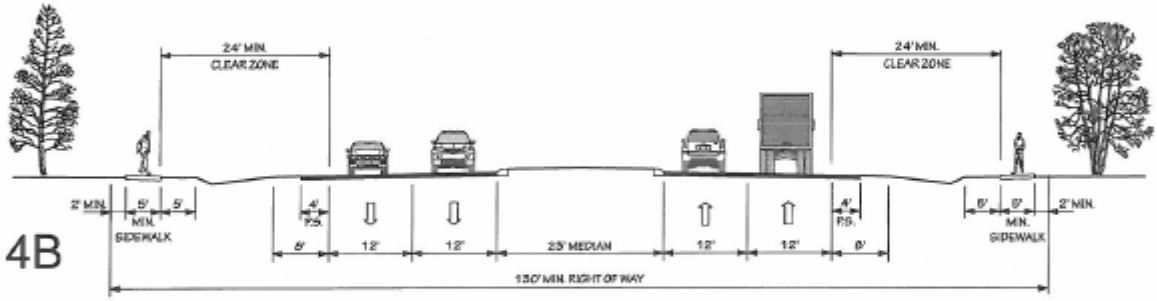
Figure 7

"TYPICAL" HIGHWAY CROSS SECTIONS



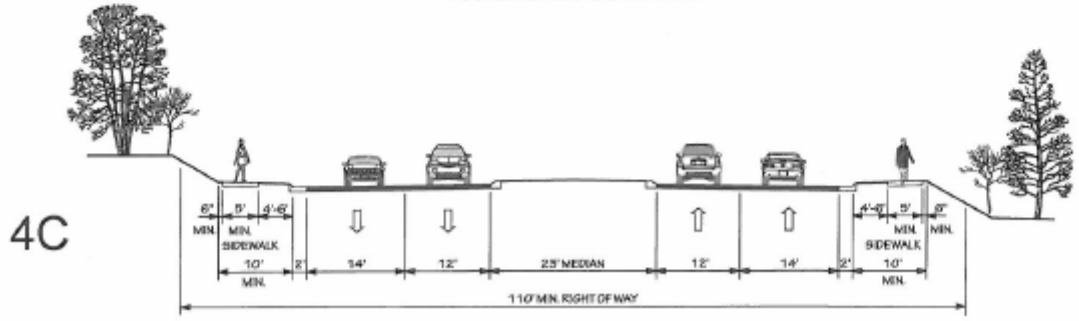
4 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS

POSTED SPEED 45-70 MPH



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

POSTED SPEED 35-55 MPH



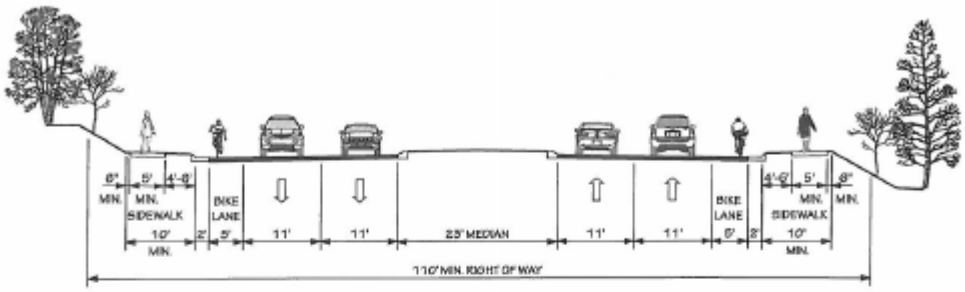
4 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES, AND SIDEWALKS

POSTED SPEED 35-45 MPH

Figure 7

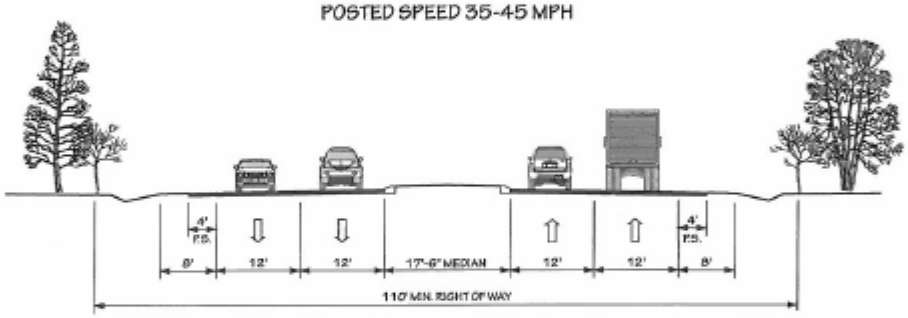
"TYPICAL" HIGHWAY CROSS SECTIONS

4D



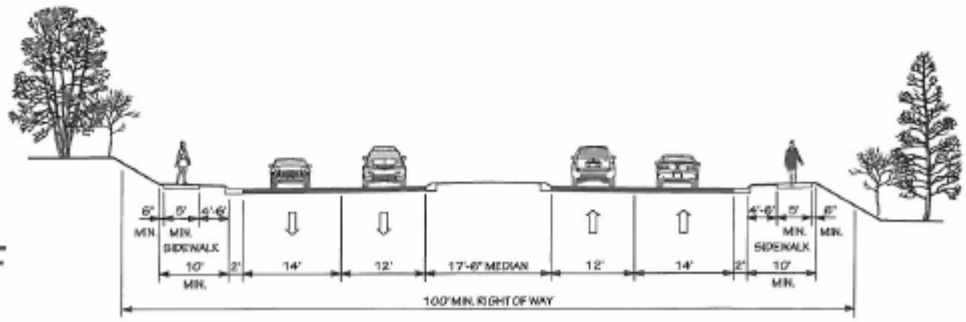
4 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER,
WIDE OUTSIDE LANES, BIKE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH

4E



4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH
PAVED SHOULDERS AND SIDEWALKS
POSTED SPEED 35-55 MPH

4F

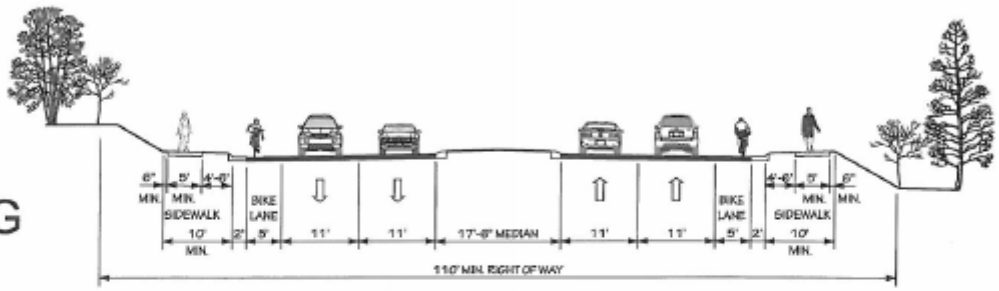


4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER,
WIDE OUTSIDE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH

Figure 7

"TYPICAL" HIGHWAY CROSS SECTIONS

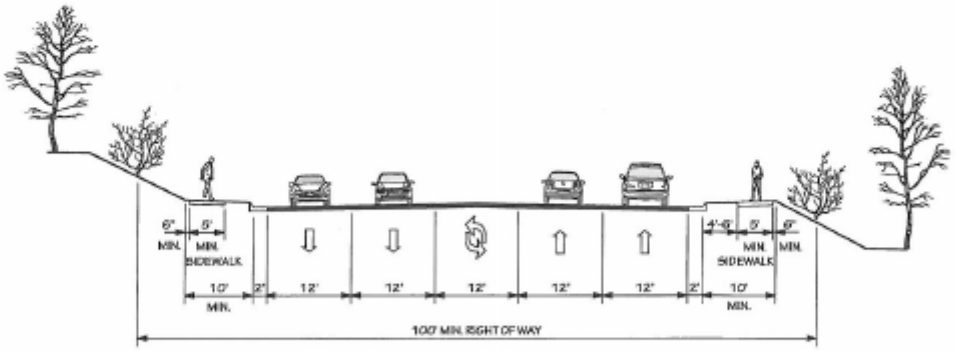
4G



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

Figure 7

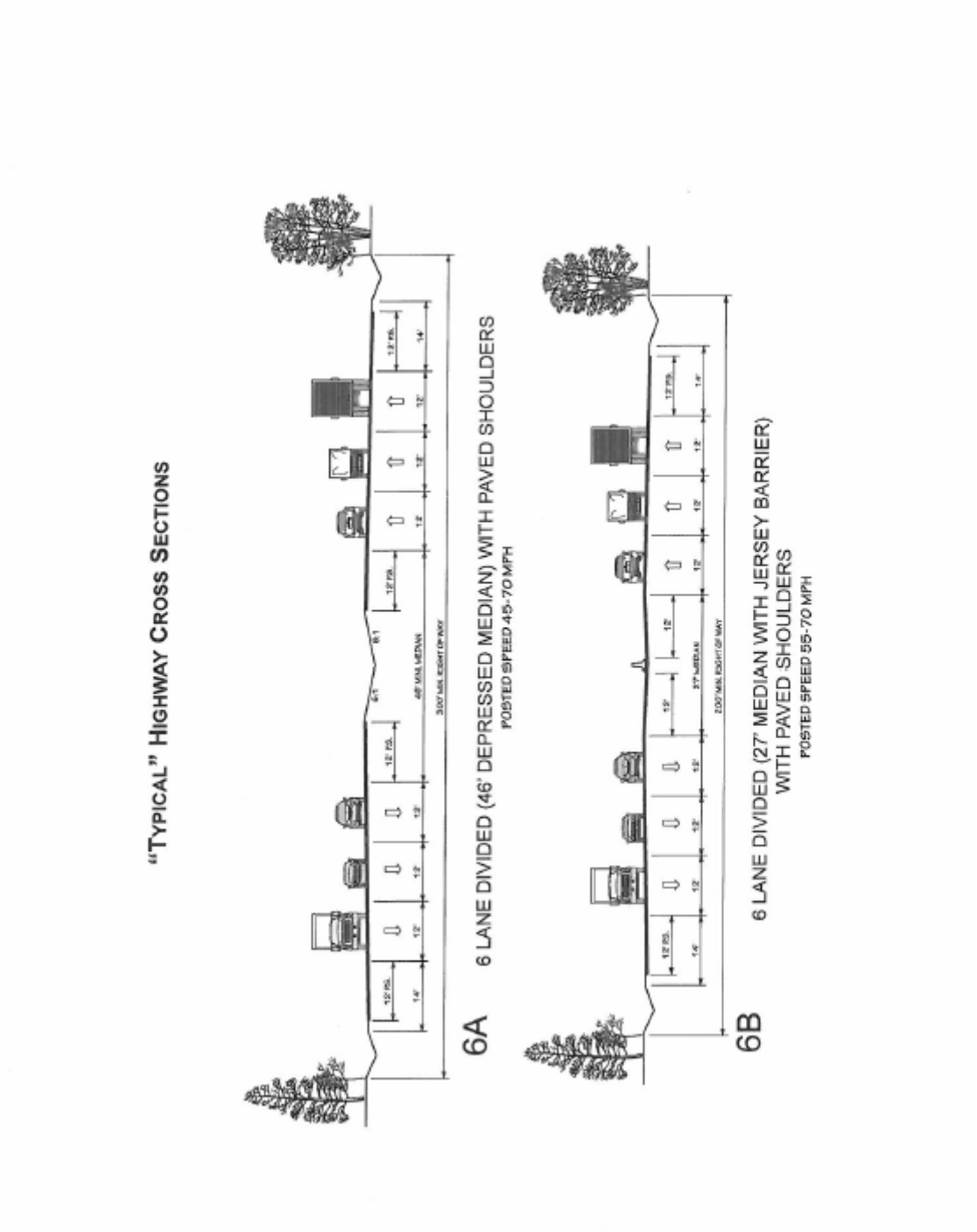

"TYPICAL" HIGHWAY CROSS SECTIONS
6A
6 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS
POSTED SPEED 45-70 MPH
6B
6 LANE DIVIDED (27' MEDIAN WITH JERSEY BARRIER)
WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

Figure 7

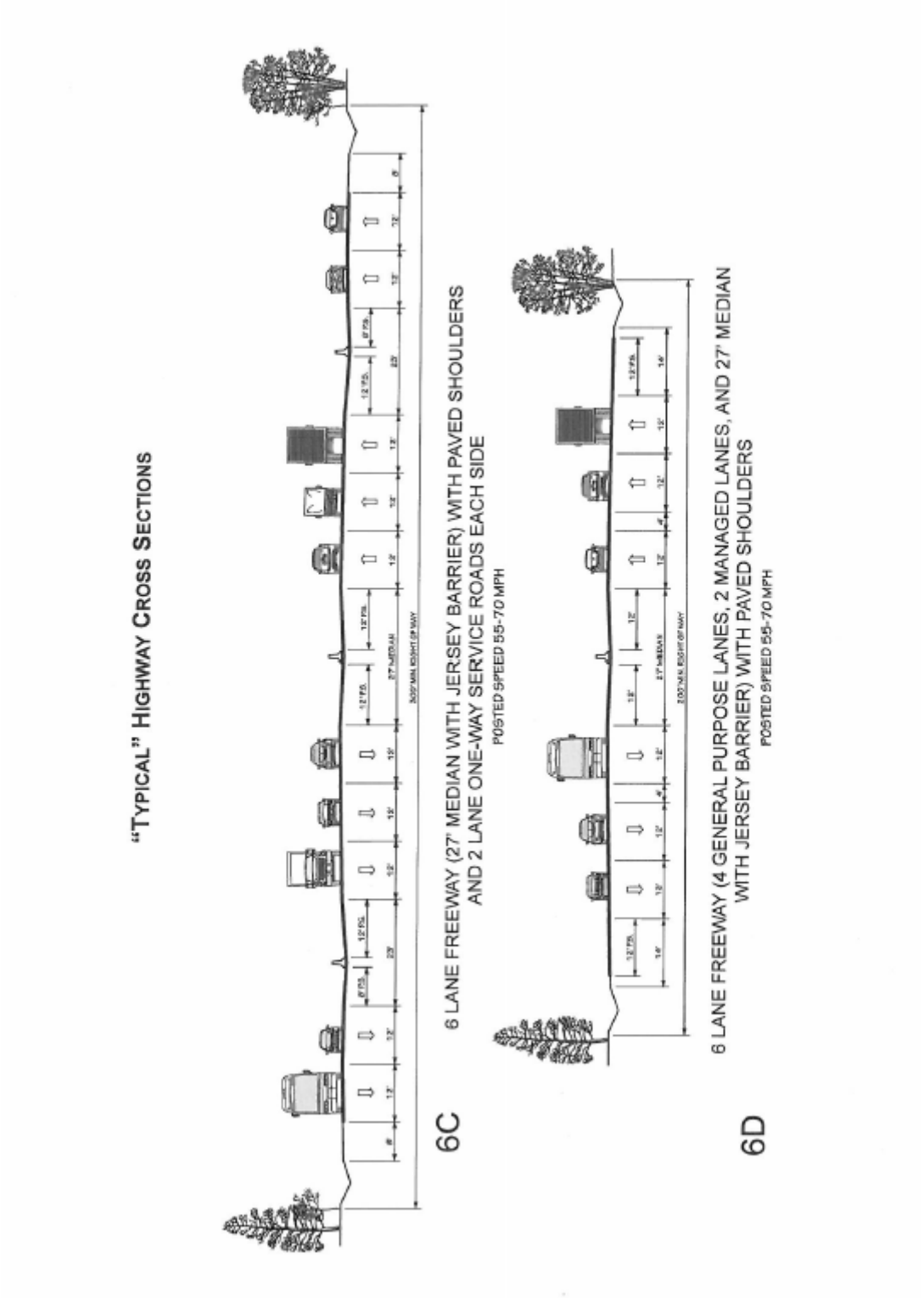

"TYPICAL" HIGHWAY CROSS SECTIONS
6C
6 LANE FREEWAY (27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS AND 2 LANE ONE-WAY SERVICE ROADS EACH SIDE
POSTED SPEED 55-70 MPH
6D
6 LANE FREEWAY (4 GENERAL PURPOSE LANES, 2 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

Figure 7

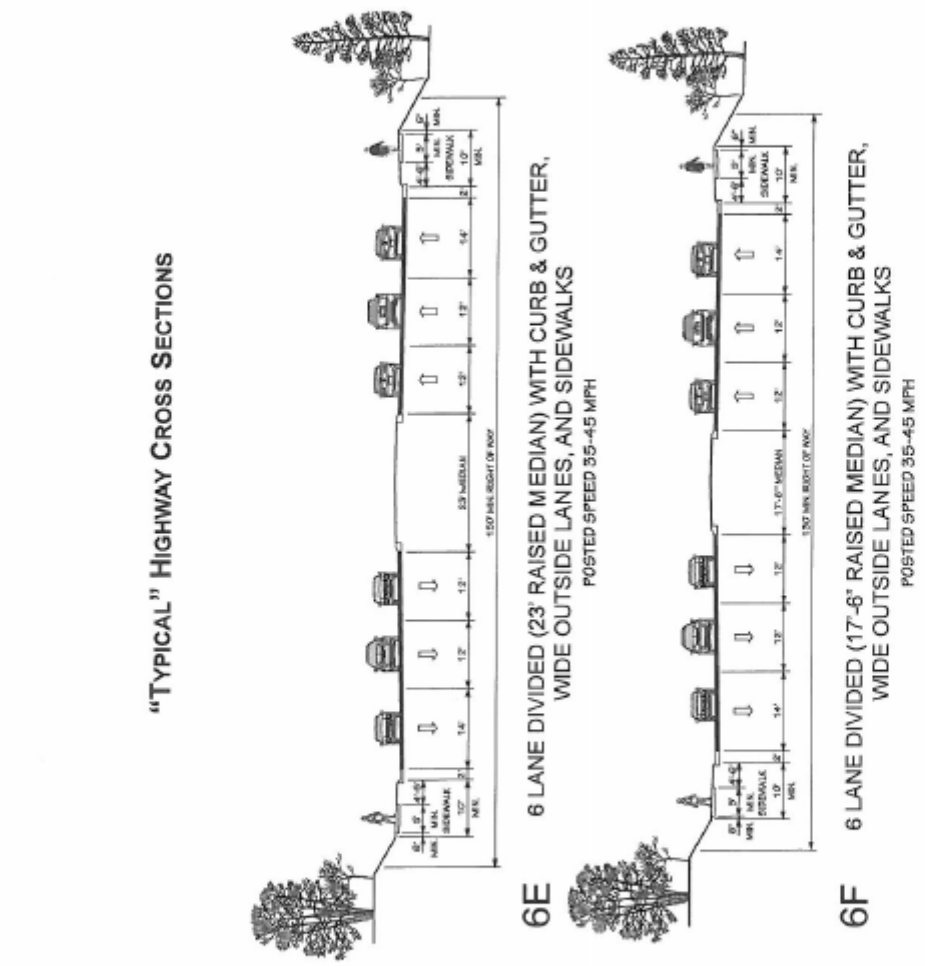

"TYPICAL" HIGHWAY CROSS SECTIONS
6E
6 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER,
WIDE OUTSIDE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH
6F
6 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER,
WIDE OUTSIDE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH

Figure 7

CAMA COUNTIES

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

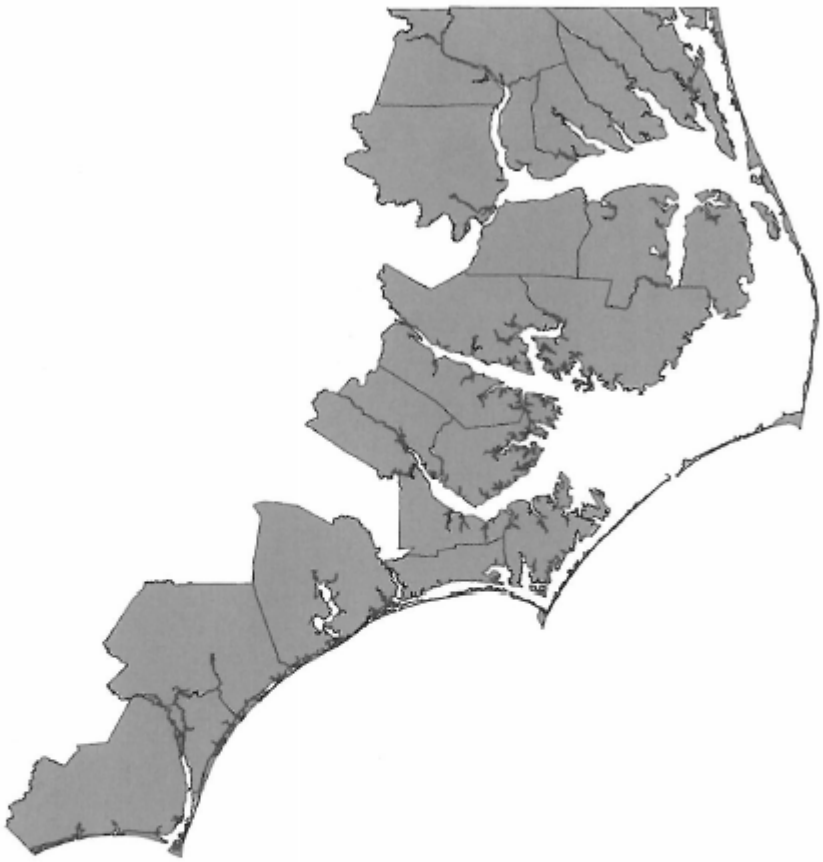
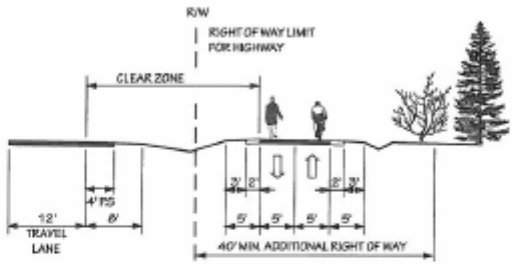


Figure 7

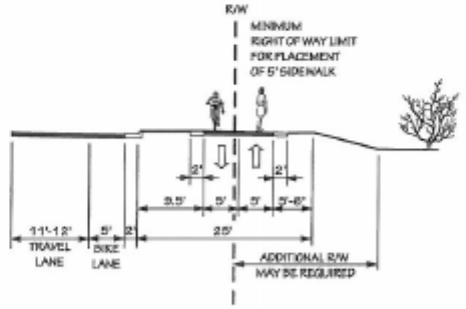
"TYPICAL" HIGHWAY CROSS SECTIONS

M A



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

M B



MULTI - USE PATH ADJACENT TO CURB AND GUTTER

Figure 7

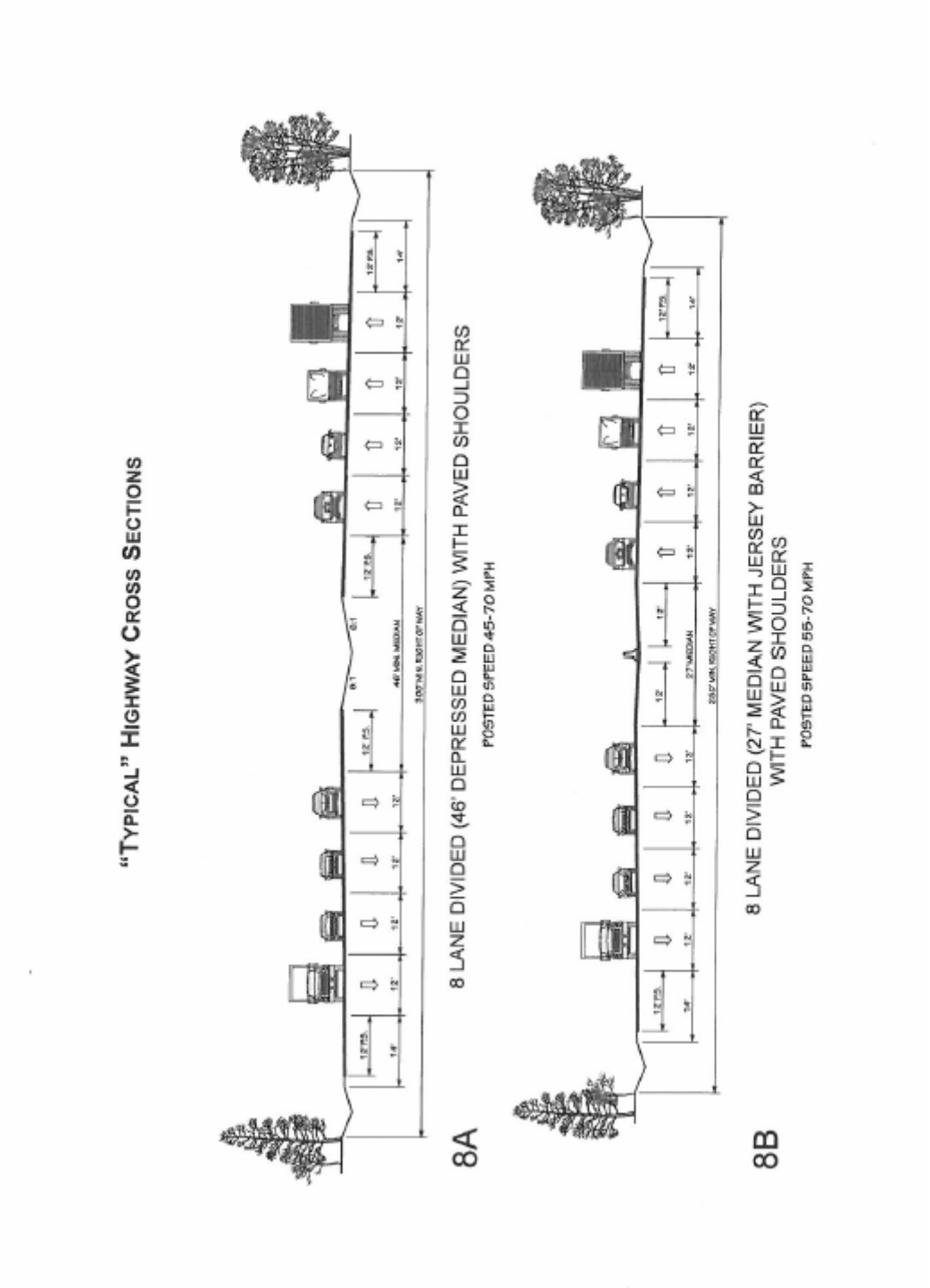

"TYPICAL" HIGHWAY CROSS SECTIONS
8 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS
POSTED SPEED 45-70 MPH
8A
8 LANE DIVIDED (27' MEDIAN WITH JERSEY BARRIER)
WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH
8B

Figure 7

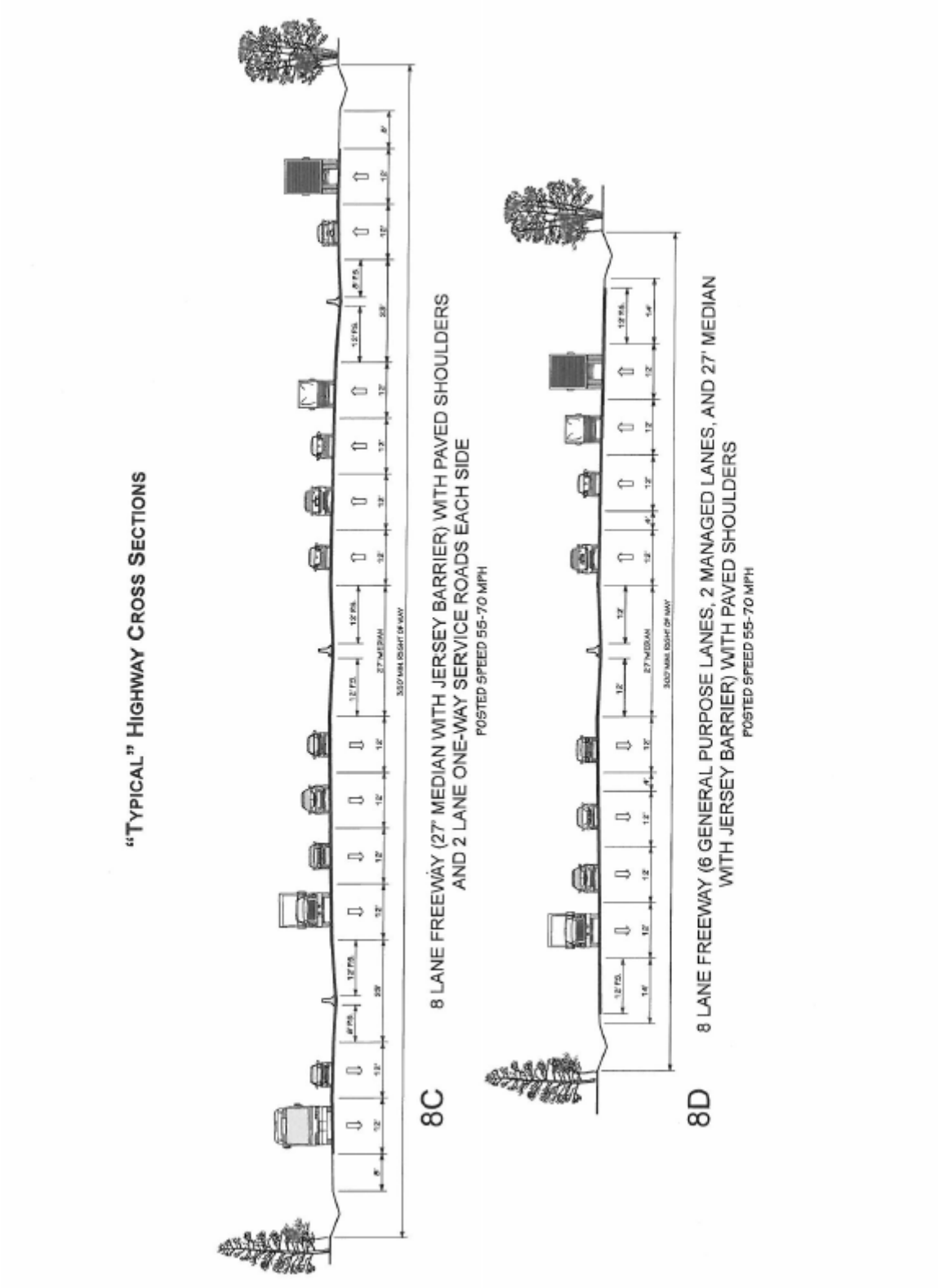

"TYPICAL" HIGHWAY CROSS SECTIONS
8C
8 LANE FREEWAY (27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS AND 2 LANE ONE-WAY SERVICE ROADS EACH SIDE
POSTED SPEED 55-70 MPH
8D
8 LANE FREEWAY (6 GENERAL PURPOSE LANES, 2 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

Figure 7

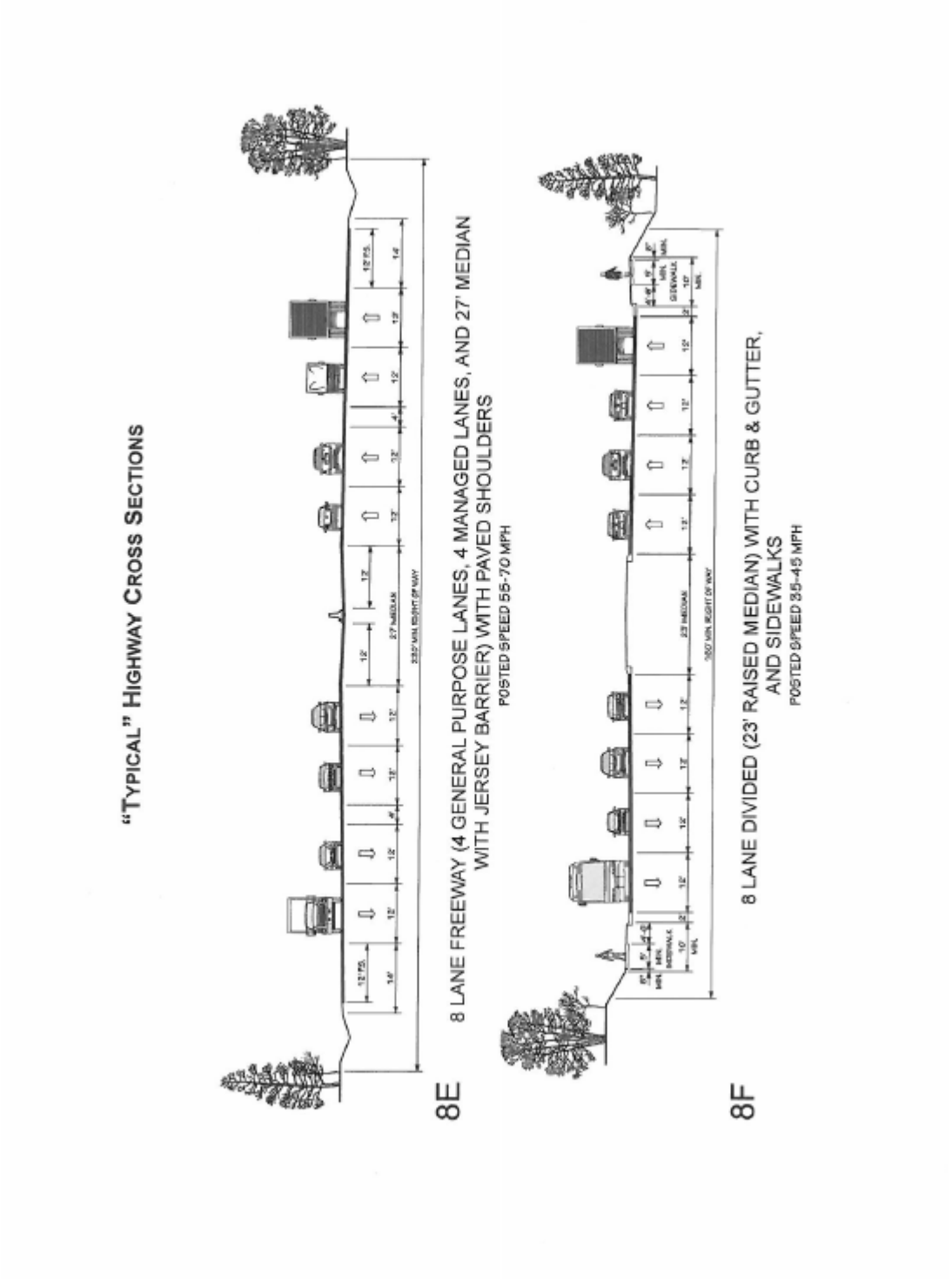

"TYPICAL" HIGHWAY CROSS SECTIONS
8E
8 LANE FREEWAY (4 GENERAL PURPOSE LANES, 4 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH
8F
8 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER, AND SIDEWALKS
POSTED SPEED 35-45 MPH

Figure 7

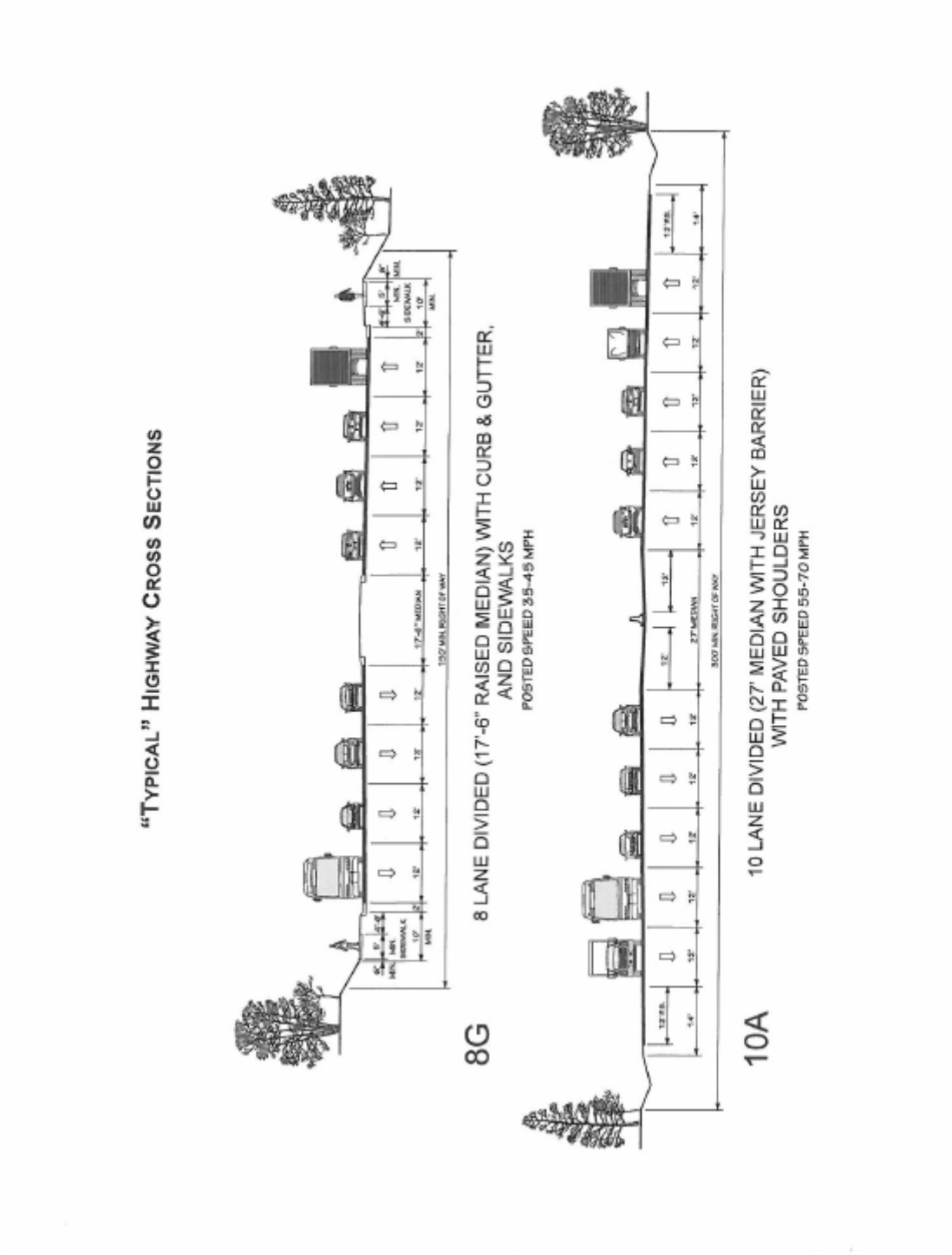

"TYPICAL" HIGHWAY CROSS SECTIONS
8G
8 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, AND SIDEWALKS
POSTED SPEED 35-45 MPH
10A
10 LANE DIVIDED (27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

Figure 7

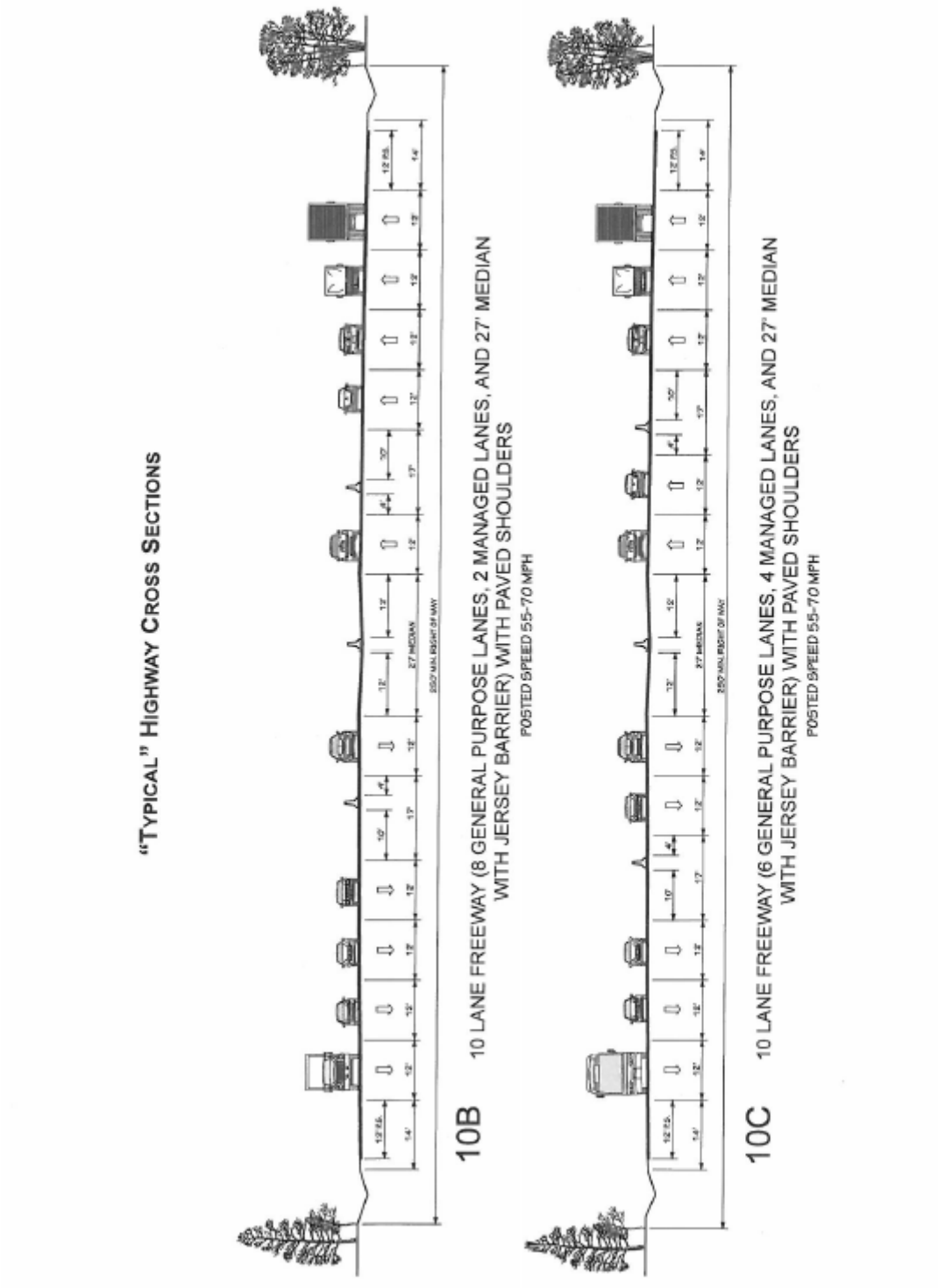
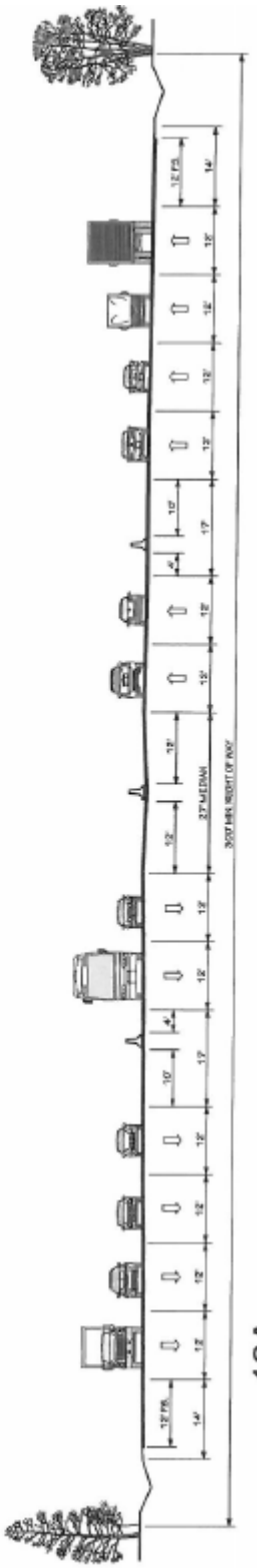

"TYPICAL" HIGHWAY CROSS SECTIONS
10B
10 LANE FREEWAY (8 GENERAL PURPOSE LANES, 2 MANAGED LANES, AND 27' MEDIAN
WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH
10C
10 LANE FREEWAY (6 GENERAL PURPOSE LANES, 4 MANAGED LANES, AND 27' MEDIAN
WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

Figure 7

"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 9.

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

Figure 9 - Level of Service Illustrations

Source: 2010 Highway Capacity Manual, Exhibit 11-4

Appendix F
Bridge Deficiency Assessment

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

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

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

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

A bridge must be classified as deficient in order to qualify for federal replacement funds. Additionally, the sufficiency rating must be less than 50% to qualify for replacement or less than 80% to qualify for rehabilitation under federal funding. Deficient bridges located on roads evaluated as a part of the CTP are listed in Table 4. For more details on deficient bridges within the planning area, contact the Structures Management Unit using the information in Appendix A.

Table 4 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	Local ID
3	US 264	Deep Creek	SD & FO	DARE014-B
5	Colington Road (SR 1217)	Creek	FO	R-5014
8	NC 12	Canal	SD &FO	DARE042-M
9	US 64	Croatan Sound	SD &FO	DARE039-M
10	US 264	Pains Bay Canal	SD &FO	DARE014-B
11	NC 12	Oregon Inlet	SD &FO	
13	US 264	Stumpy Point Bay	SD &FO	DARE014-B
15	US 264	Stumpy Point Bay	FO	DARE014-B
16	US 264	Canal	FO	DARE014-B
17	S. Dogwood Trail	Snow Goose Canal	FO	DARE004-M
39	Thicket Lump Street (SR 1141)	Creek	SD	
40	Kitty Hawk Road/ Sound Landing Road (SR 1208)	Canal	SD	DARE006-M
44	NC 12 Ferry Ramp	Hatteras Inlet	SD &FO	DARE042-M
45	NC 12 Ferry Ramp	Hatteras Inlet	SD & FO	DARE042-M
46	NC 12 Ferry Ramp	Hatteras Inlet	SD & FO	DARE042-M
63	NC 12	Creek	FO	DARE042-M
67	NC 12	Oregon Inlet	SD & FO	
69	NC 12	Irene Breach	SD & FO	

Appendix G
Socio-Economic Data Forecasting Methodology

In the development of the Dare County CTP, existing and anticipated deficiencies were determined through an analysis of the transportation system looking at both current and future travel patterns. Trend line analysis methodology based on historic traffic volumes was used to project travel demand from 2012 to 2040. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns. For this CTP, the 2010 Dare County Land Use Plan Update, 2003-2004 Duck CAMA Core Land Use Plan, 2012 Town of Southern Shore CAMA Core Land Use Plan, 2003-2004 Kitty Hawk CAMA Core Land Use Plan, 2007 Town of Manteo CAMA Core Land Use Plan were used and are illustrated in Figures 9 and 10, respectively.

The CTP Steering Committee worked with NCDOT to estimate population growth, economic development potential, and land use trends to determine the potential impacts on the future transportation system in 2040.

Data used to project future traffic volumes was endorsed by the Dare County Commissioners on October 15, 2012, Duck Town Council September 5, 2012, Southern Shores Town Council October 16, 2012, Kitty Hawk Town Council September 4, 2012, Kill Devil Hills Town Council September 10, 2012, Nags Head Town Council October 3, 2012 and Manteo Town Council October 3, 2012.

Population

Population trends were estimated using available data from the Office of State Budget and the year 2030 which were taken from the OSBM website. The 2035 population was projected by applying the same growth rate as 2025 to 2030.

Table 5 – Historic Population Data

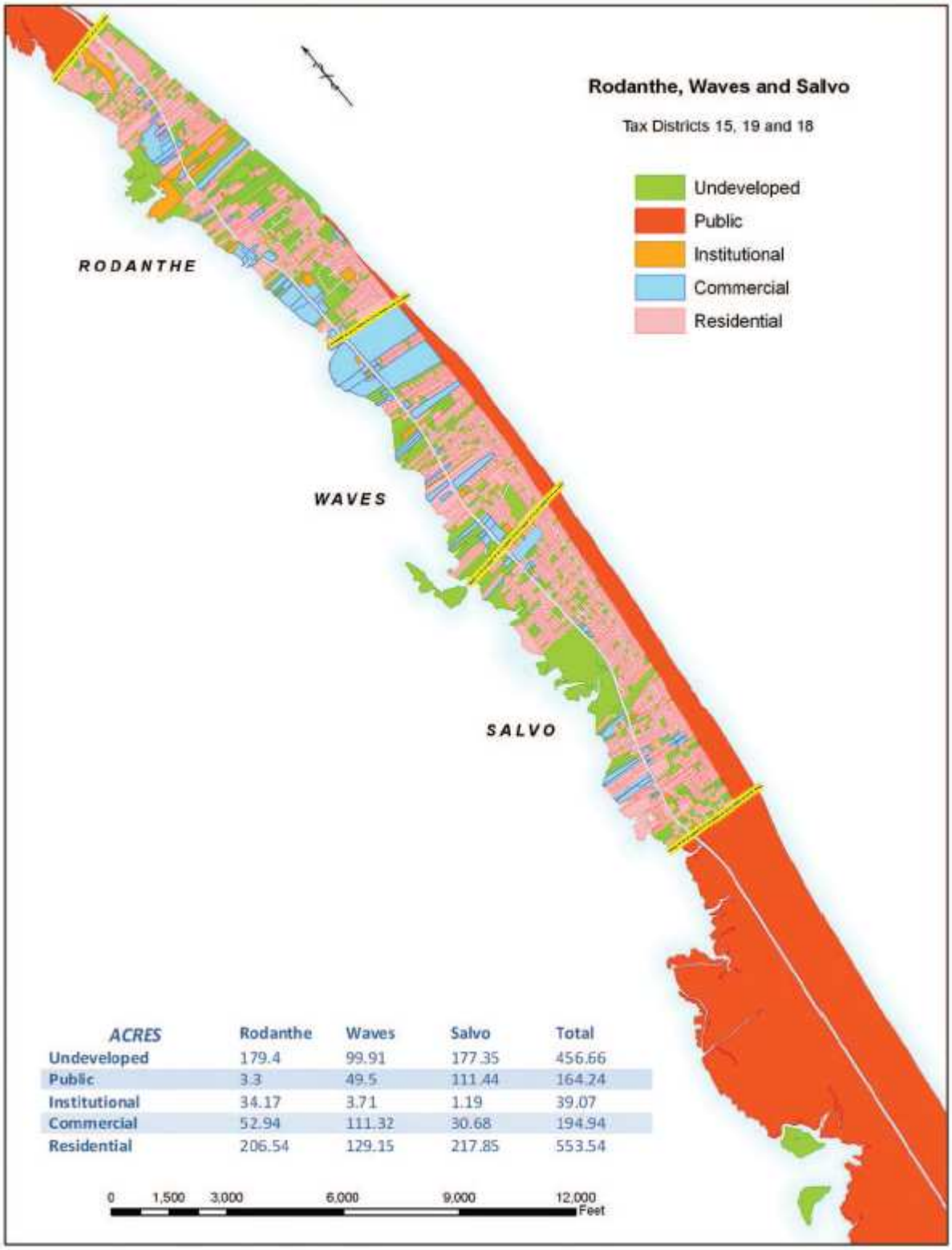
Year	Population – Dare County
1990	22,746
1995	26,051
2000	30,170
2005	34,322
2010	34,006
2015	35,736
2020	36,799
2025	37,526
2030	38,020

Population distribution among the six municipalities and the non-municipal areas of Dare County are shown below in Table 6.

Table 6 –Population Change and Distribution

Population Change in Dare County (1980 to 2010)							
Location	1980	1990	2000	2010	% Change		
					2000 to 2010	1990 to 2000	1980 to 1990
Duck	---	---	---	369	---	---	---
Southern Shores	520	1,447	2,201	2,714	23%	52%	178%
Kitty Hawk	849	1,937	2,974	3,272	10%	54%	128%
Kill Devil Hills	1,671	4,238	5,863	6,683	14%	38%	154%
Nags Head	1,020	1,838	2,691	2,757	2%	46%	80%
Manteo	902	997	1,045	1,434	37%	5%	11%
Dare County	13,377	22,746	29,967	33,920	13%	32%	70%
Municipal	4,962	10,457	14,774	17,229	17%	41%	111%
Non-municipal	8,415	12,289	15,193	16,691	10%	24%	46%

Figure 9



ACRES	Rodanthe	Waves	Salvo	Total
Undeveloped	179.4	99.91	177.35	456.66
Public	3.3	49.5	111.44	164.24
Institutional	34.17	3.71	1.19	39.07
Commercial	52.94	111.32	30.68	194.94
Residential	206.54	129.15	217.85	553.54

Figure 9

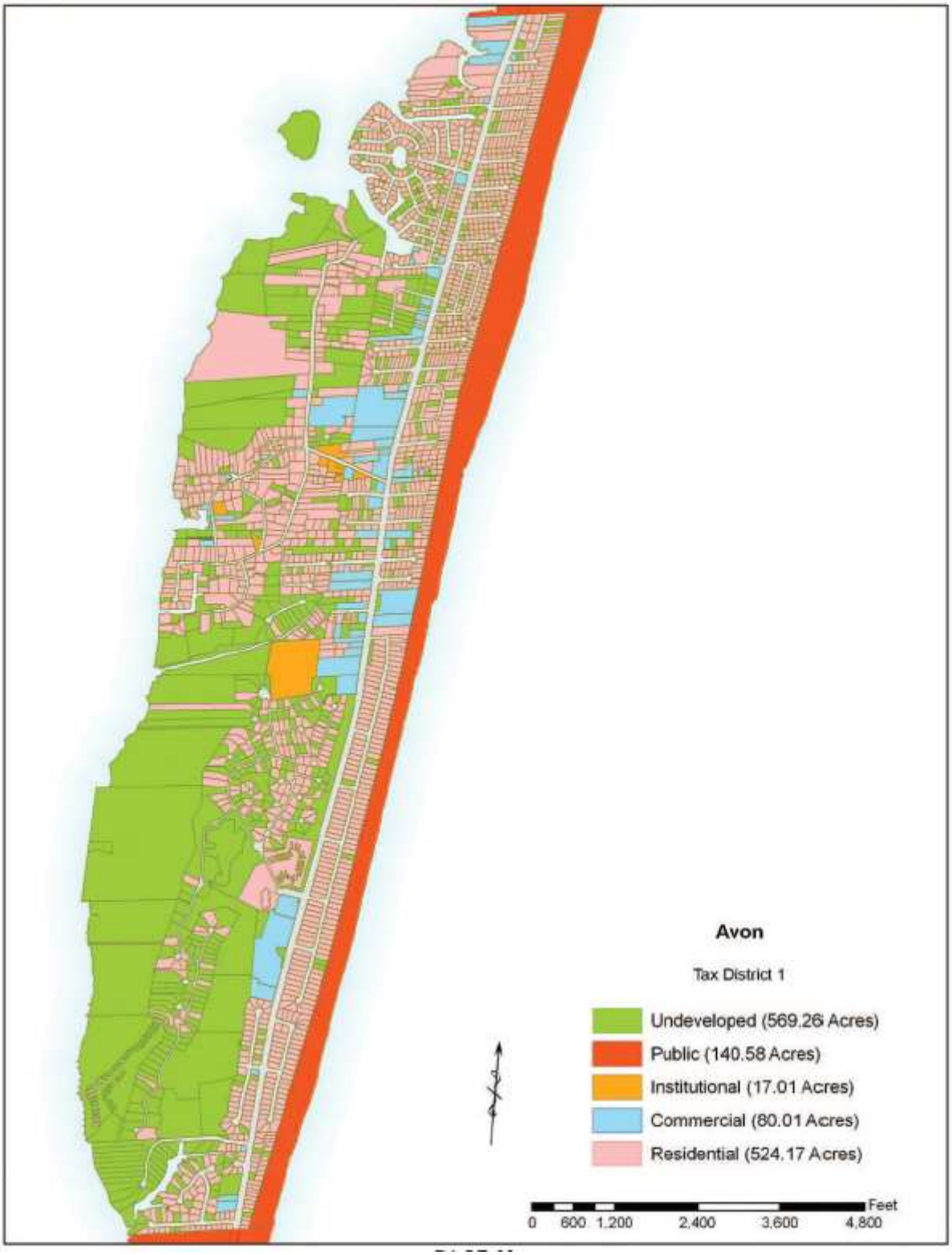

Avon
Tax District 1
Undeveloped (569.26 Acres)
Public (140.58 Acres)
Institutional (17.01 Acres)
Commercial (80.01 Acres)
Residential (524.17 Acres)
Feet
0 600 1,200 2,400 3,600 4,800

Figure 9

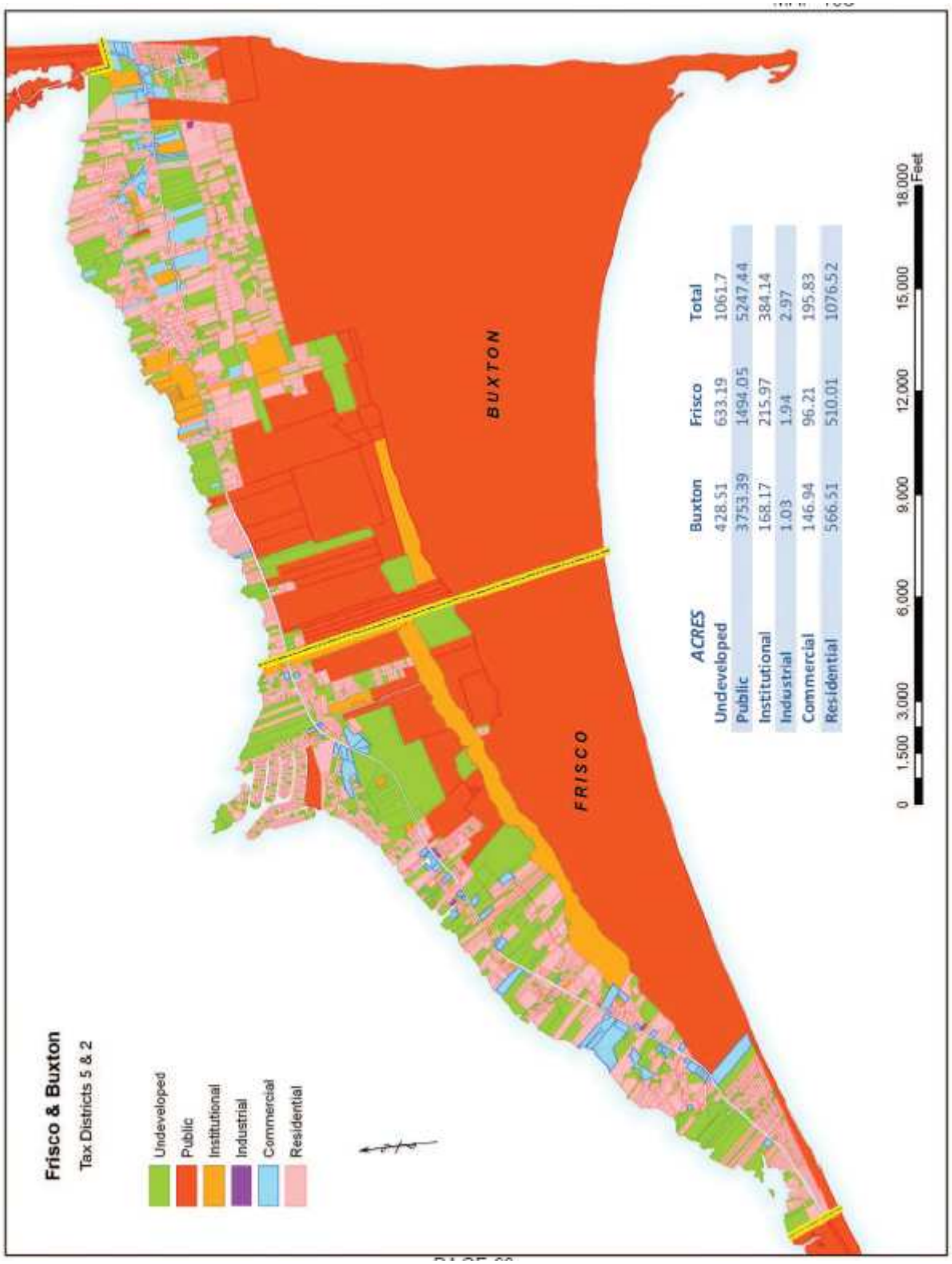

Frisco & Buxton
Tax Districts 5 & 2
Undeveloped
Public
Institutional
Industrial
Commercial
Residential
BUXTON
FRISCO
ACRES
Undeveloped 428.51 633.19 1061.7
Public 3753.39 1494.05 5247.44
Institutional 168.17 215.97 384.14
Industrial 1.03 1.94 2.97
Commercial 146.94 96.21 195.83
Residential 566.51 510.01 1076.52
0 1,500 3,000 6,000 9,000 12,000 15,000 18,000 Feet

Figure 9

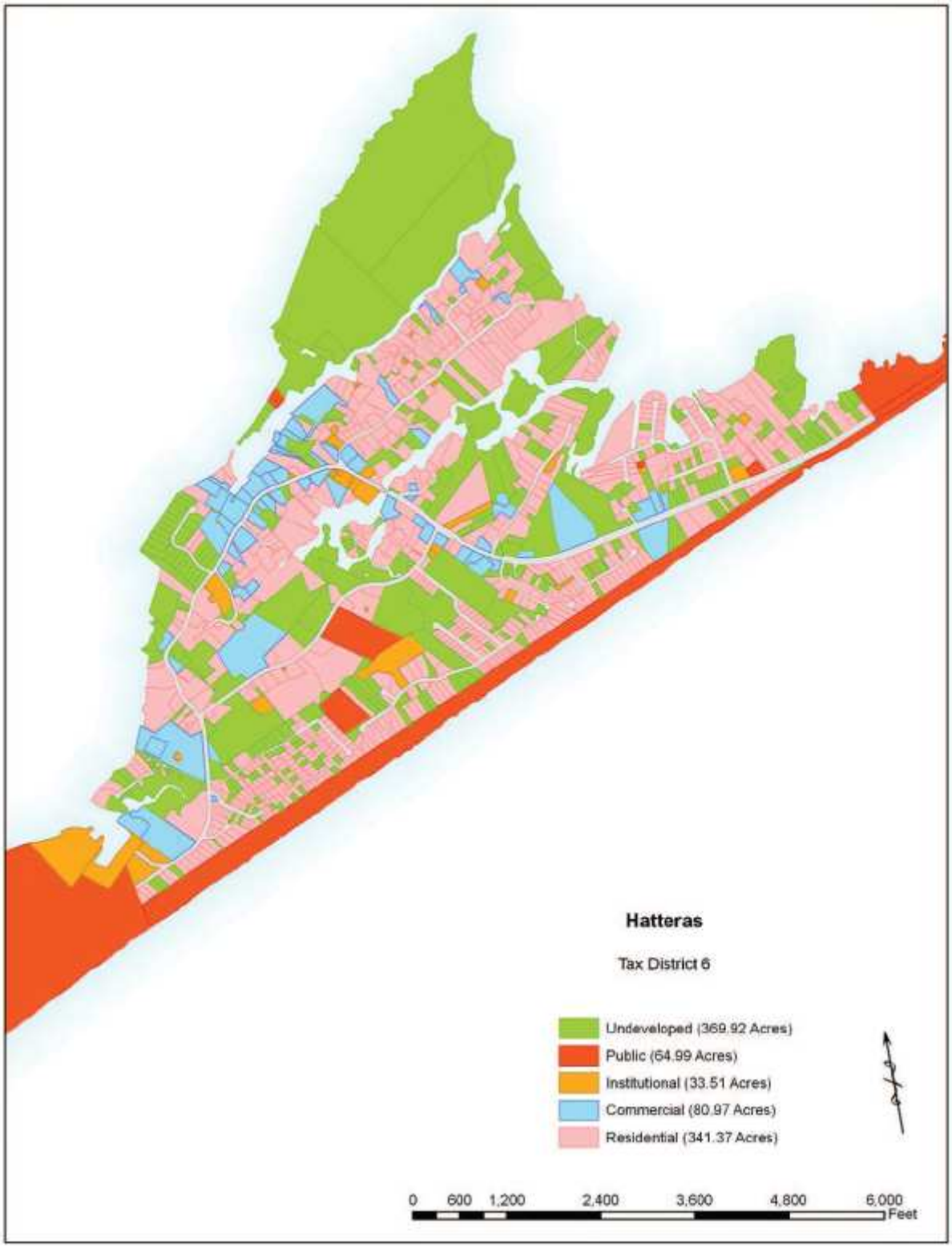

Hatteras
Tax District 6
Undeveloped (369.92 Acres)
Public (64.99 Acres)
Institutional (33.51 Acres)
Commercial (80.97 Acres)
Residential (341.37 Acres)
0 600 1,200 2,400 3,600 4,800 6,000
Feet

Figure 9

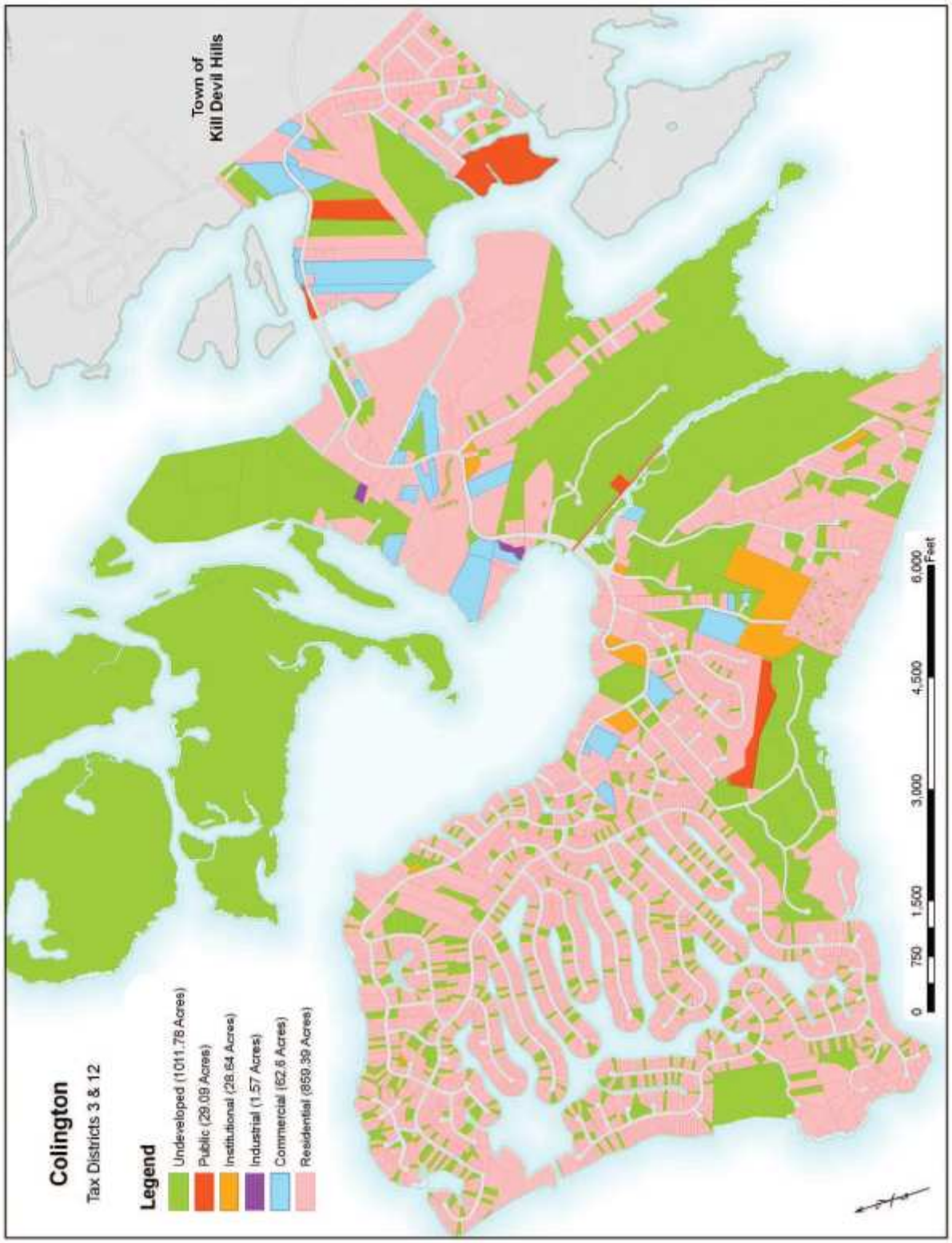

Town of
Kill Devil Hills
Colington
Tax Districts 3 & 12
Legend
Undeveloped (1011.78 Acres)
Public (29.09 Acres)
Institutional (28.84 Acres)
Industrial (1.57 Acres)
Commercial (62.6 Acres)
Residential (859.39 Acres)
0
750
1,500
3,000
4,500
6,000
Feet

Figure 9

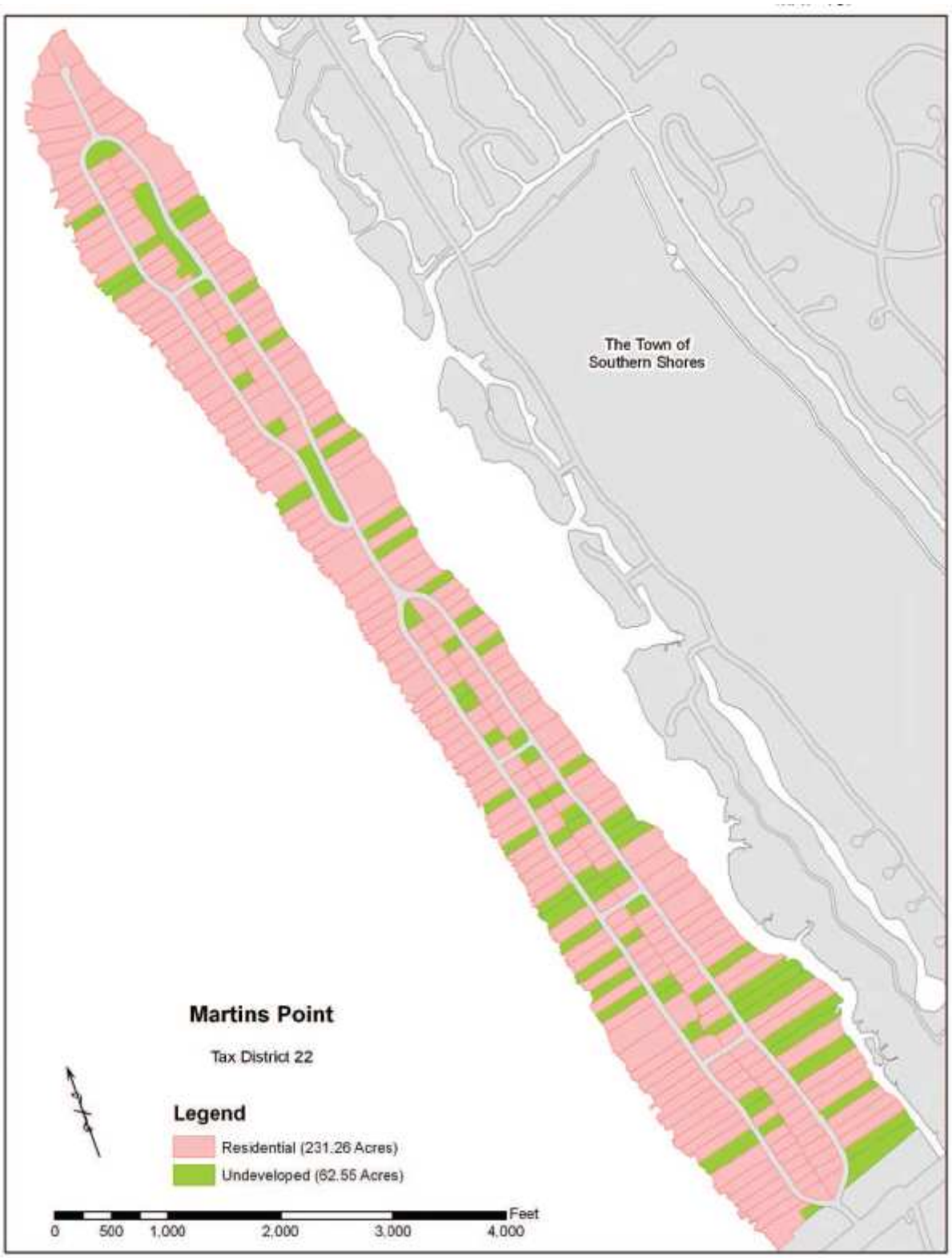
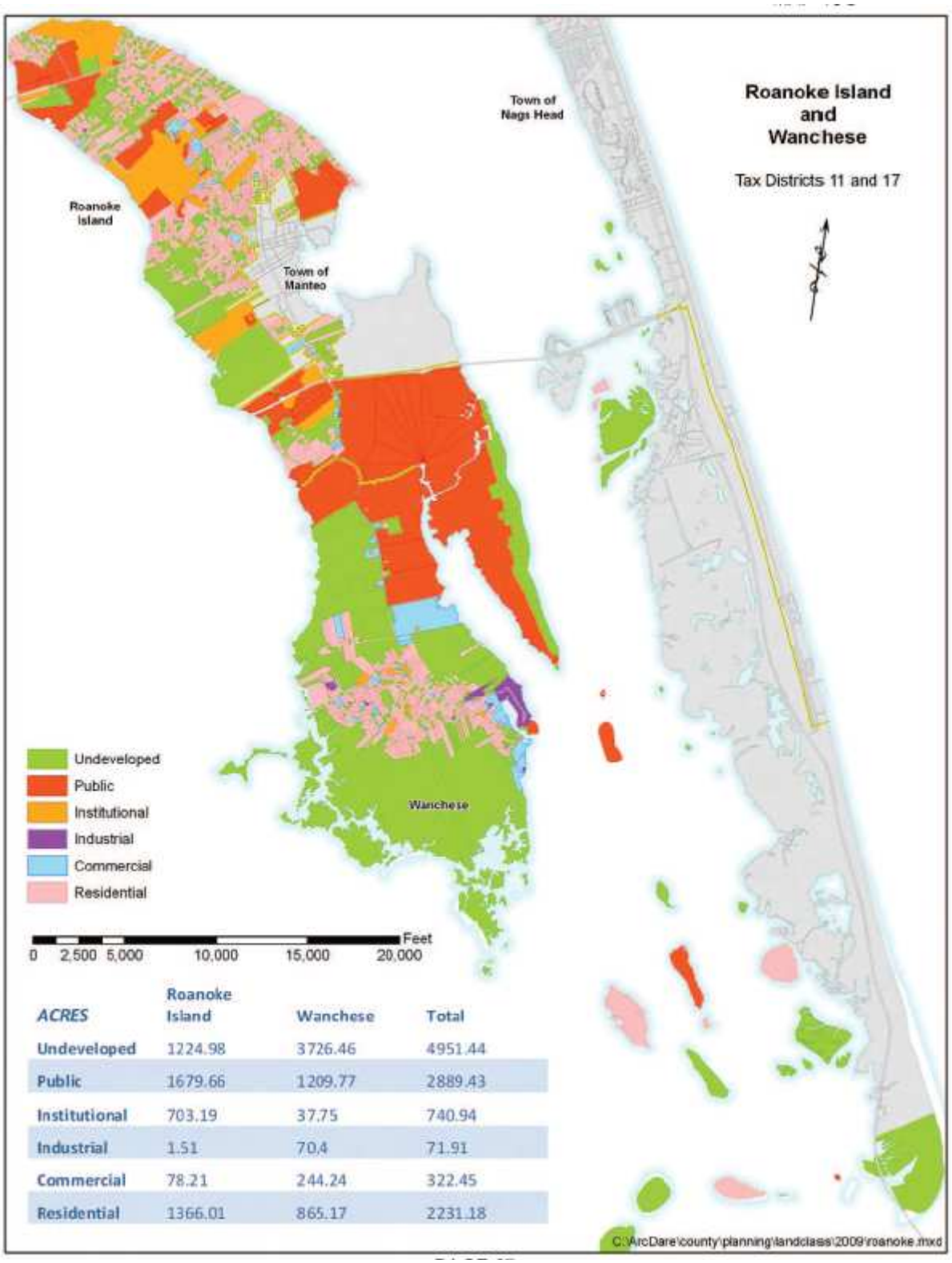

The Town of
Southern Shores
Martins Point
Tax District 22
Legend
Residential (231.26 Acres)
Undeveloped (62.55 Acres)
0
500
1,000
2,000
3,000
4,000
Feet

Figure 9



ACRES	Roanoke Island	Wanchese	Total
Undeveloped	1224.98	3726.46	4951.44
Public	1679.66	1209.77	2889.43
Institutional	703.19	37.75	740.94
Industrial	1.51	70.4	71.91
Commercial	78.21	244.24	322.45
Residential	1366.01	865.17	2231.18

Figure 9


East Lake
Tax District 4
Legend
Institutional (3.64 Acres)
Residential (340.87 Acres)
Undeveloped (4770.82 Acres)
Public (88,209.31 Acres)
0
1,500
3,000
6,000
9,000
12,000
Feet
Mathews
Mathews Harbor
Stumpy Point
East Lake

Figure 9

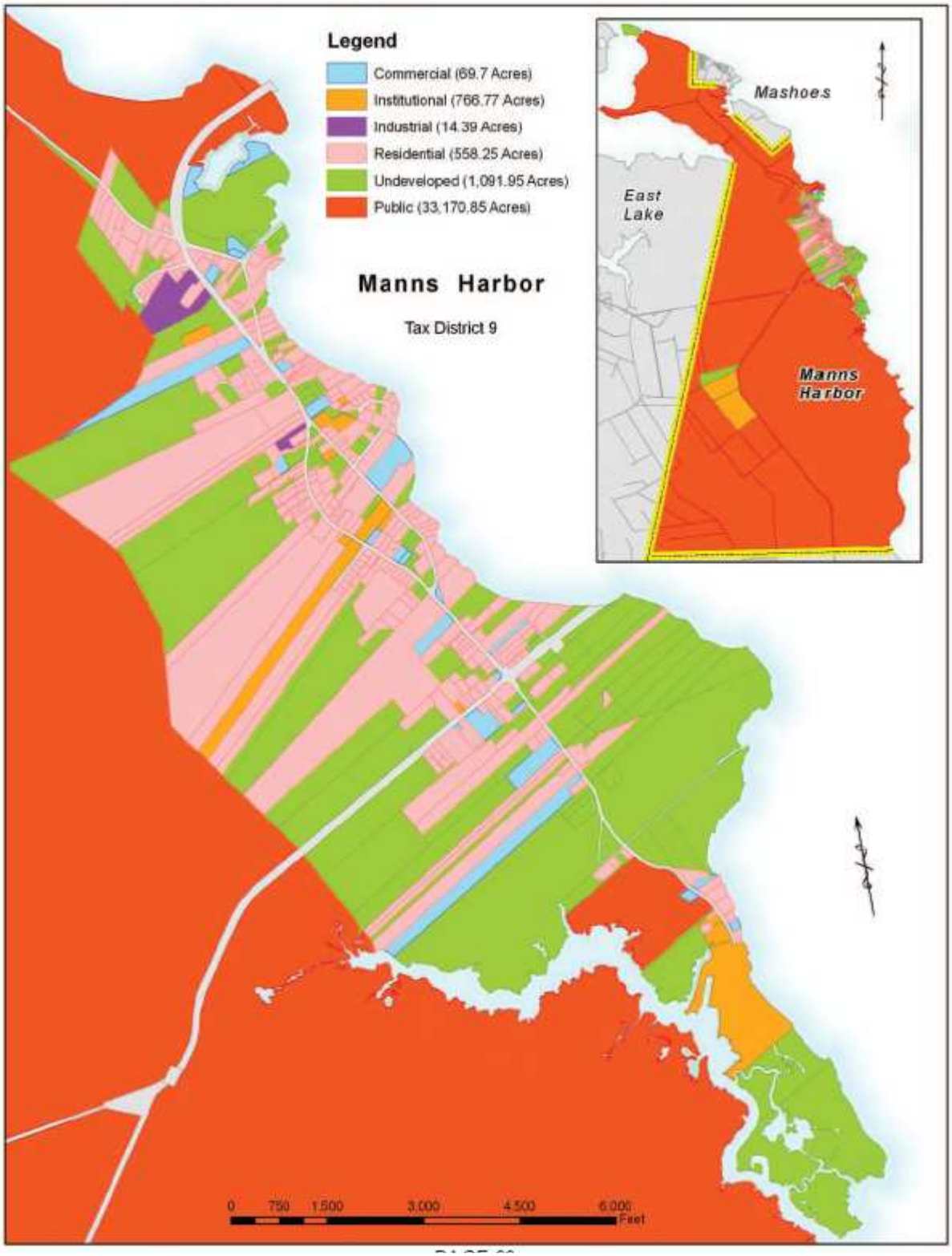

Legend
Commercial (69.7 Acres)
Institutional (766.77 Acres)
Industrial (14.39 Acres)
Residential (558.25 Acres)
Undeveloped (1,091.95 Acres)
Public (33,170.85 Acres)
Manns Harbor
Tax District 9
Mashoes
East Lake
Manns Harbor
0 750 1,500 3,000 4,500 6,000
Feet

Figure 9

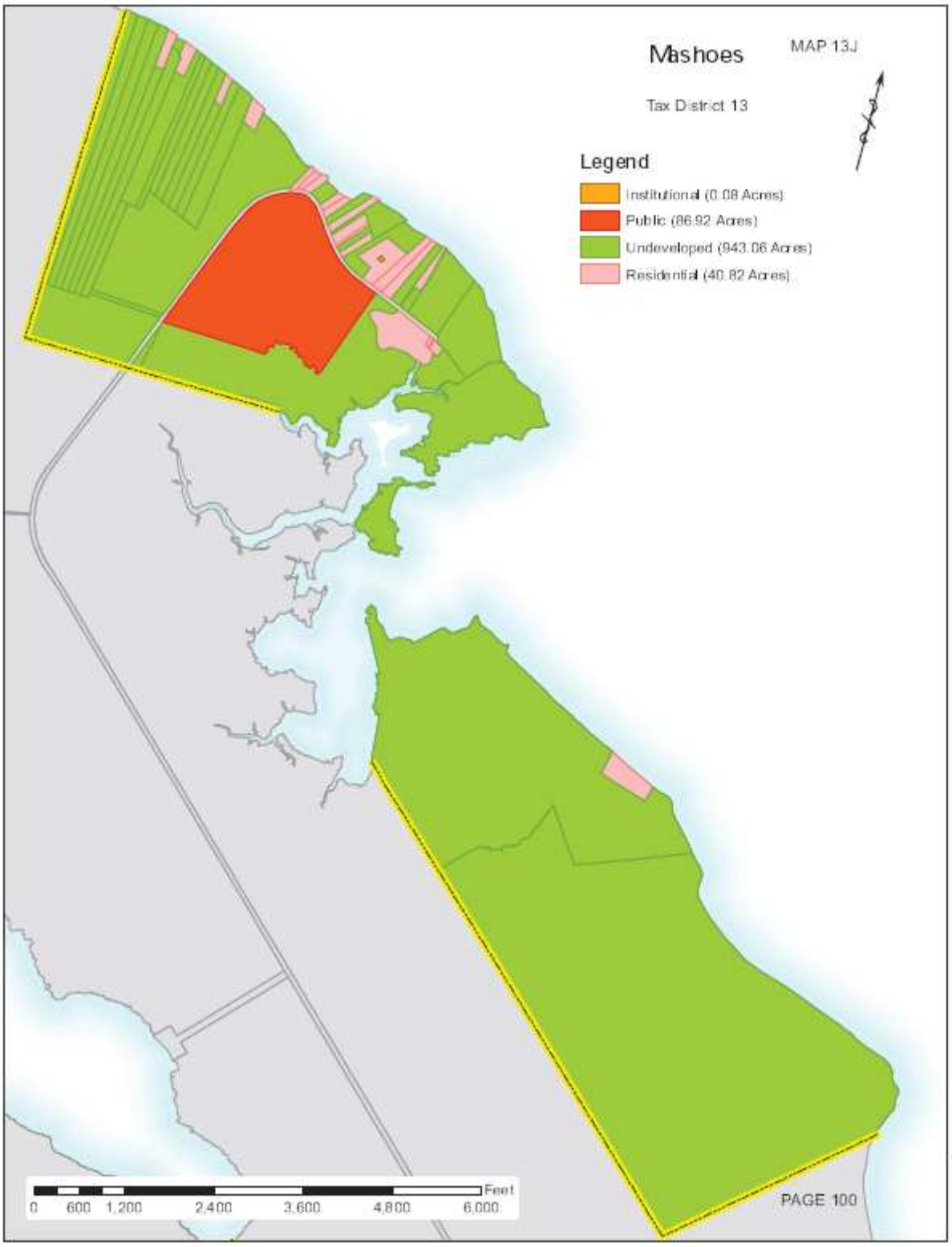

Mashoes
MAP 13J
Tax District 13
Legend
Institutional (0.08 Acres)
Public (86.92 Acres)
Undeveloped (943.06 Acres)
Residential (40.82 Acres)
Feet
0 600 1,200 2,400 3,600 4,800 6,000
PAGE 100

Figure 9

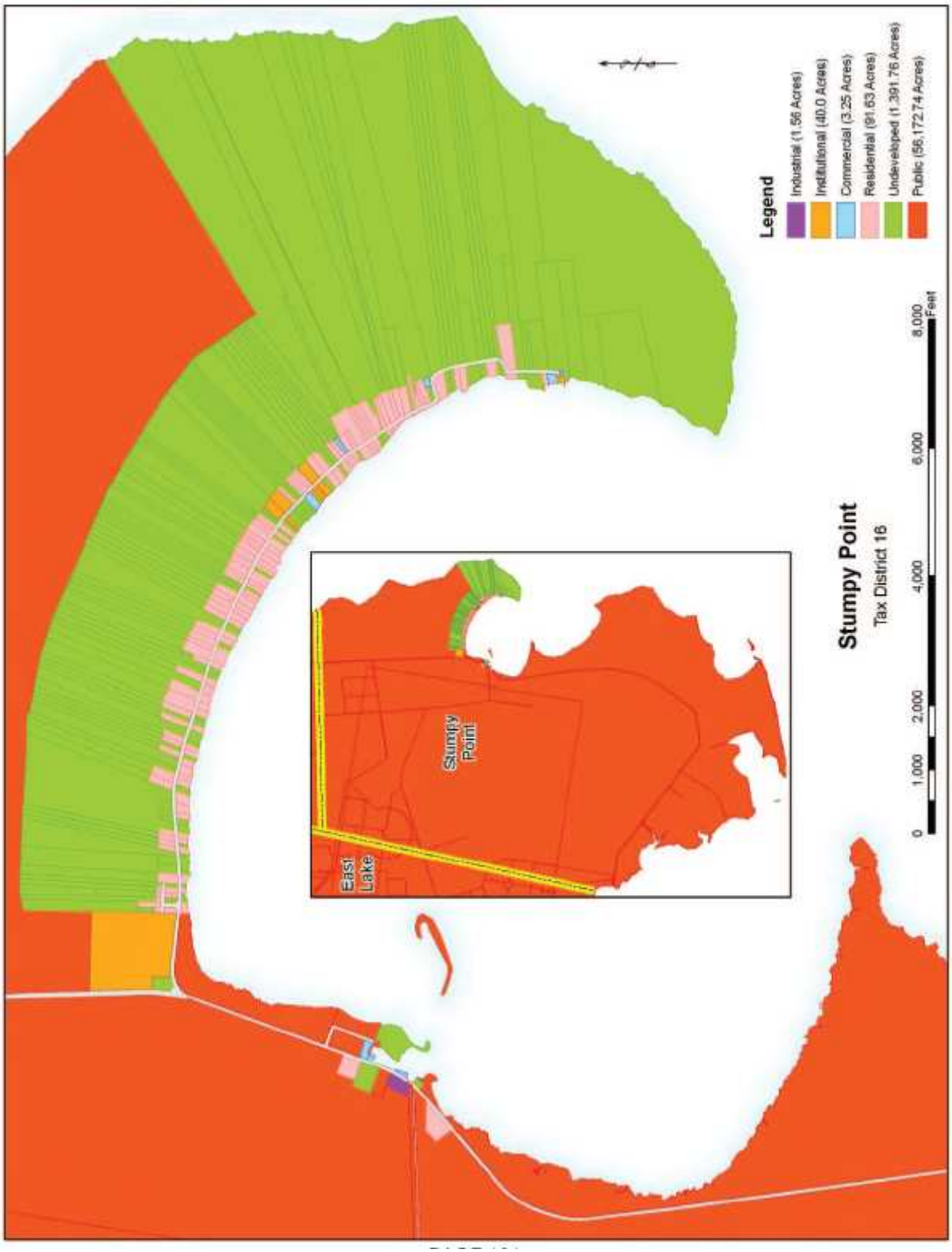

Legend
Industrial (1.56 Acres)
Institutional (40.0 Acres)
Commercial (3.25 Acres)
Residential (91.63 Acres)
Undeveloped (1,391.76 Acres)
Public (56,172.74 Acres)
Stumpy Point
Tax District 16
0
1,000
2,000
4,000
6,000
8,000
Feet
Stumpy Point
East Lake

Figure 9

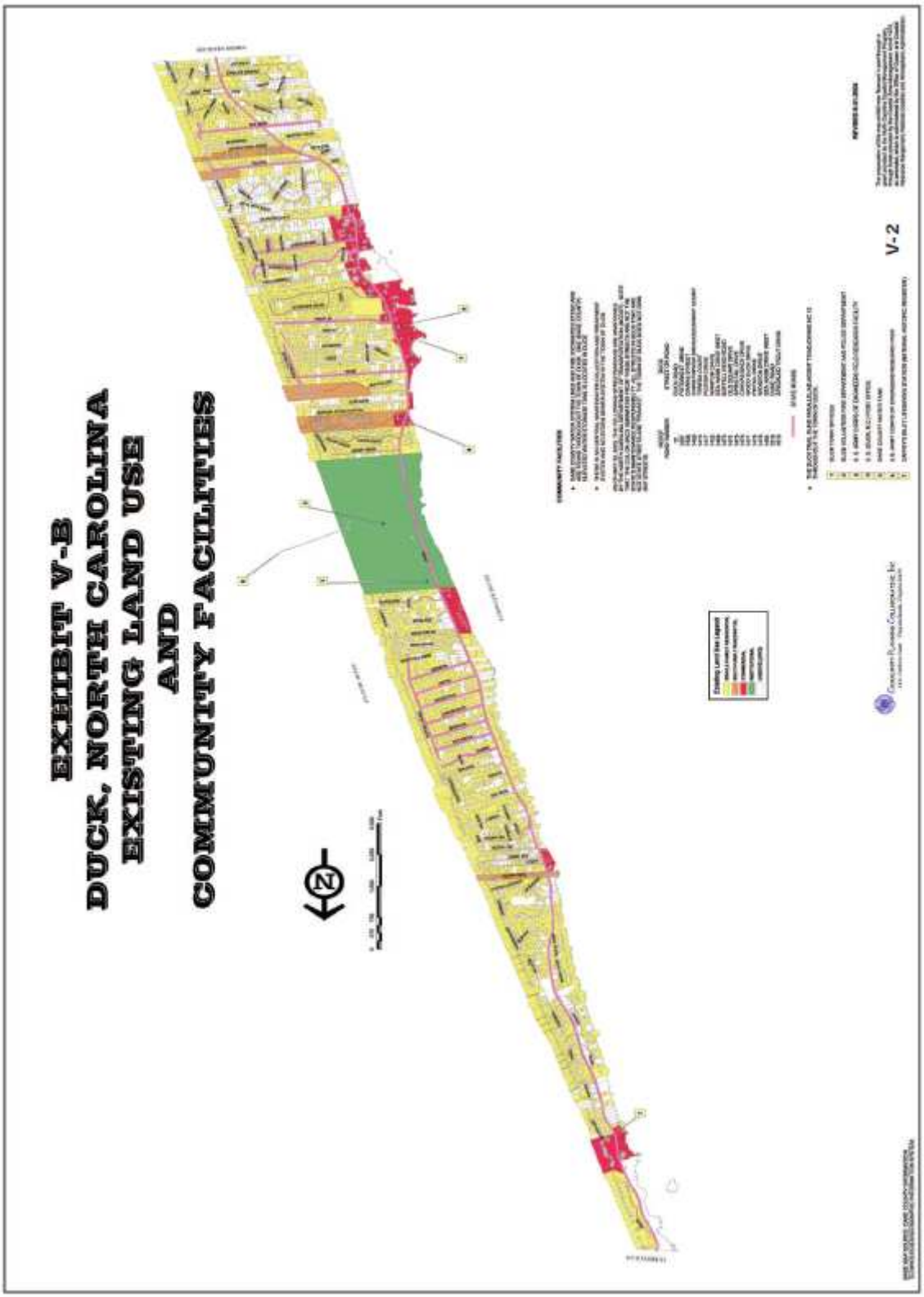


EXHIBIT V-B
DUCK, NORTH CAROLINA
EXISTING LAND USE
AND
COMMUNITY FACILITIES
V-2

Figure 9

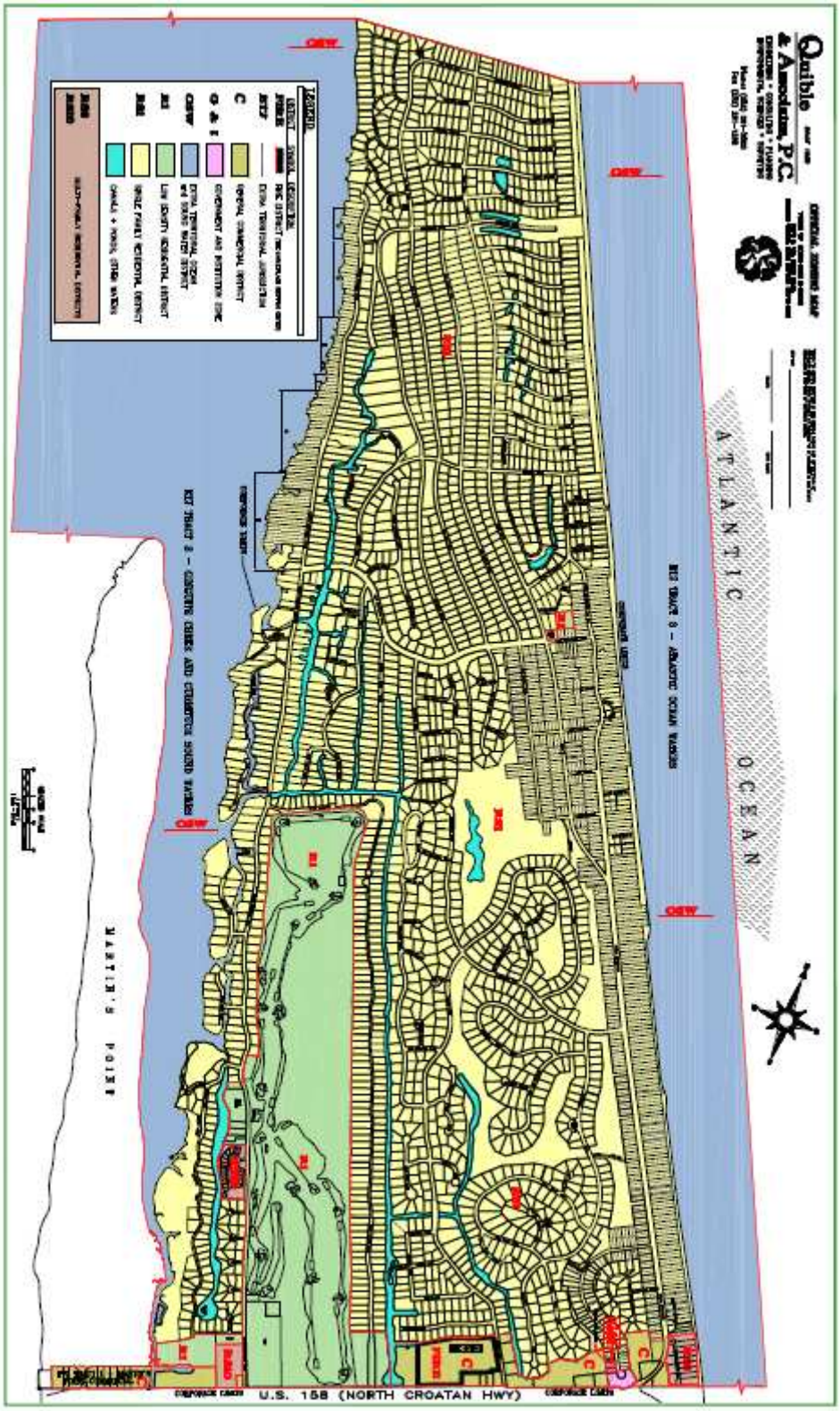


Figure 9

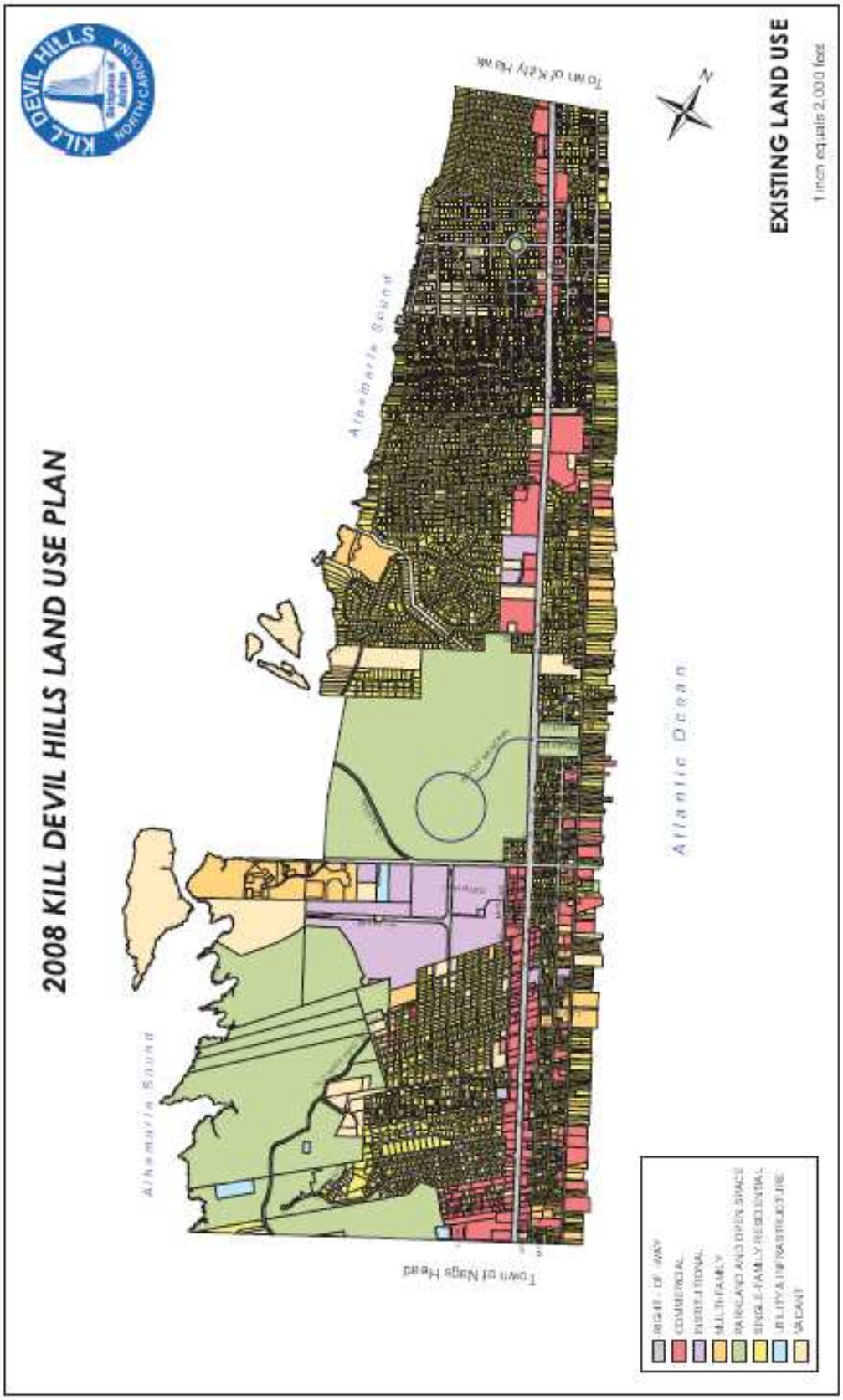

2008 KILL DEVIL HILLS LAND USE PLAN
EXISTING LAND USE
1 inch equals 2,000 feet
KILL DEVIL HILLS
NORTH CAROLINA
Albemarle Sound
Atlantic Ocean
Town of Kitty Hawk
Town of Nags Head
N
EXHIBIT V - B

Figure 9

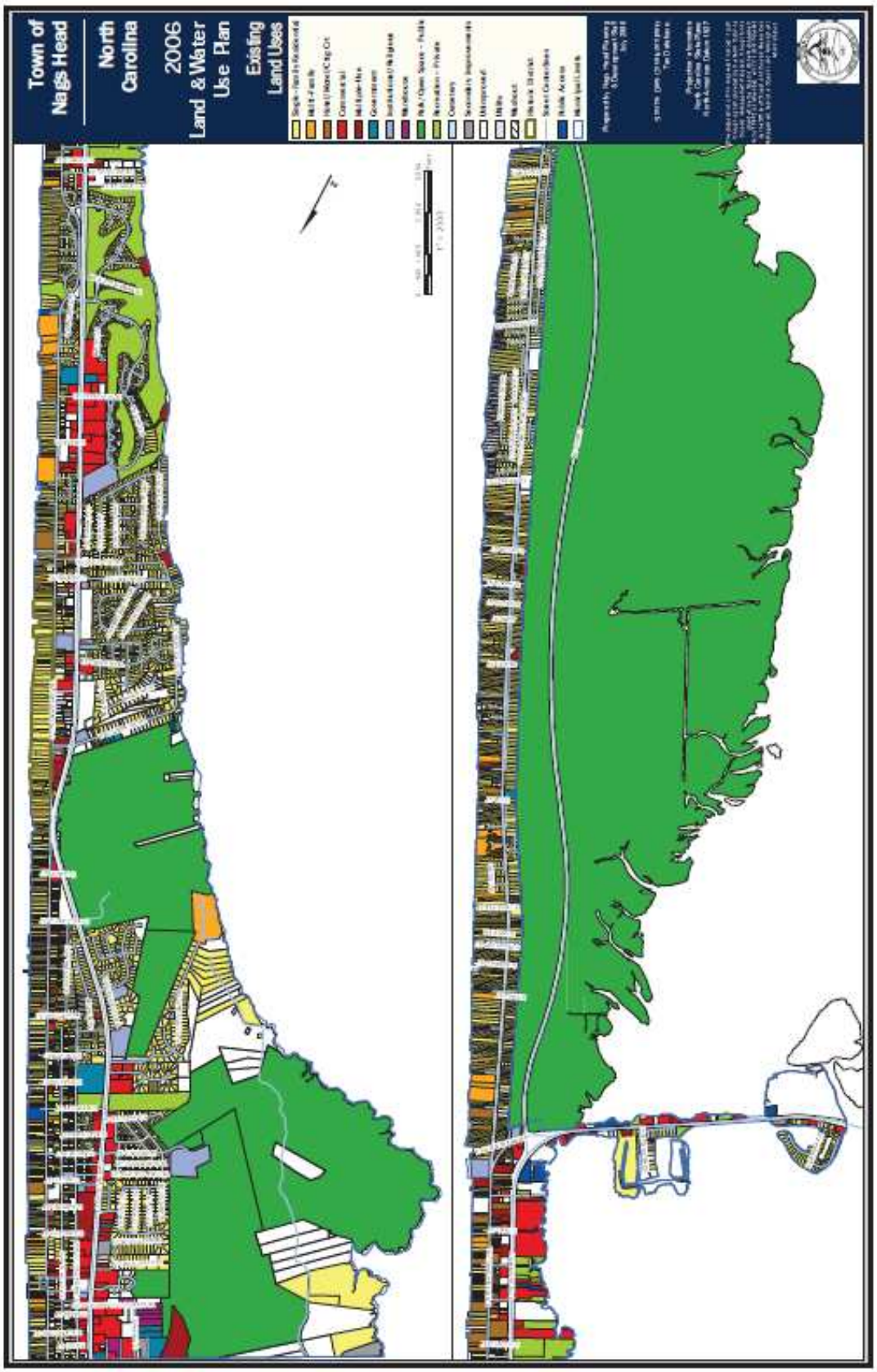
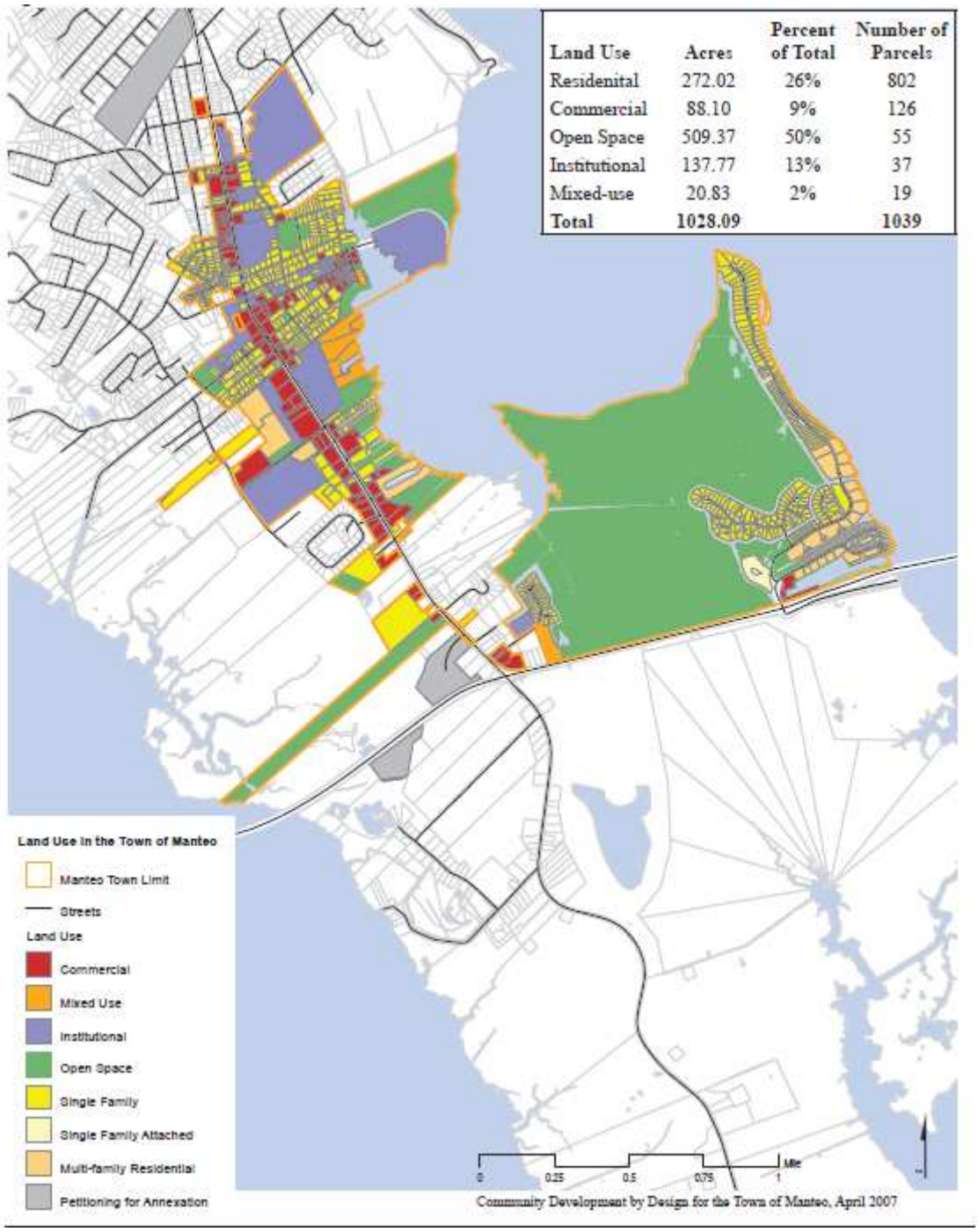
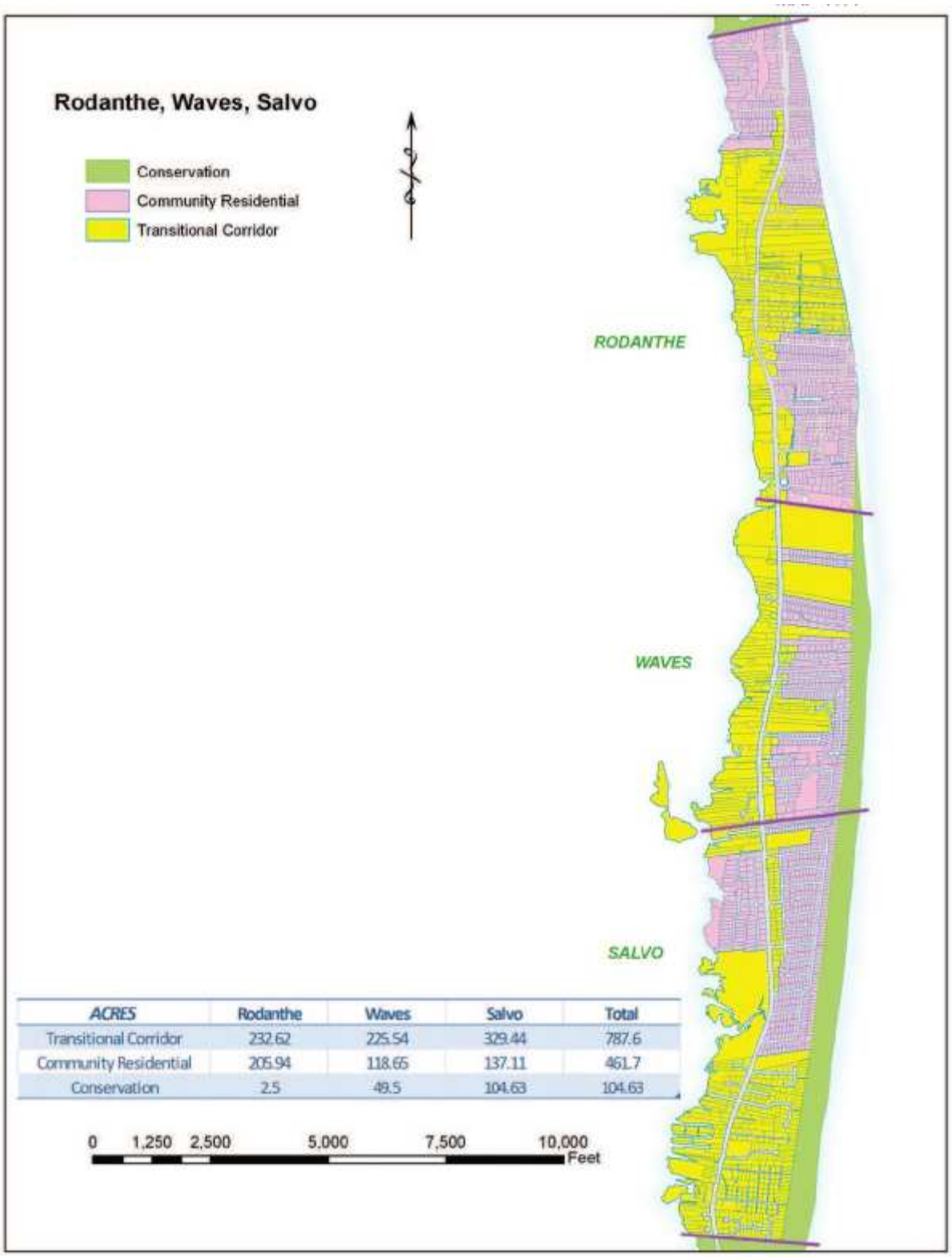

Town of Nags Head
North Carolina
2006 Land & Water Use Plan
Existing Land Uses

Figure 10



Land Use	Acres	Percent of Total	Number of Parcels
Residenital	272.02	26%	802
Commercial	88.10	9%	126
Open Space	509.37	50%	55
Institutional	137.77	13%	37
Mixed-use	20.83	2%	19
Total	**1028.09**		**1039**

Figure 10



ACRES	Rodanthe	Waves	Salvo	Total
Transitional Corridor	232.62	225.54	329.44	787.6
Community Residential	205.94	118.65	137.11	461.7
Conservation	2.5	49.5	104.63	104.63

Figure 10

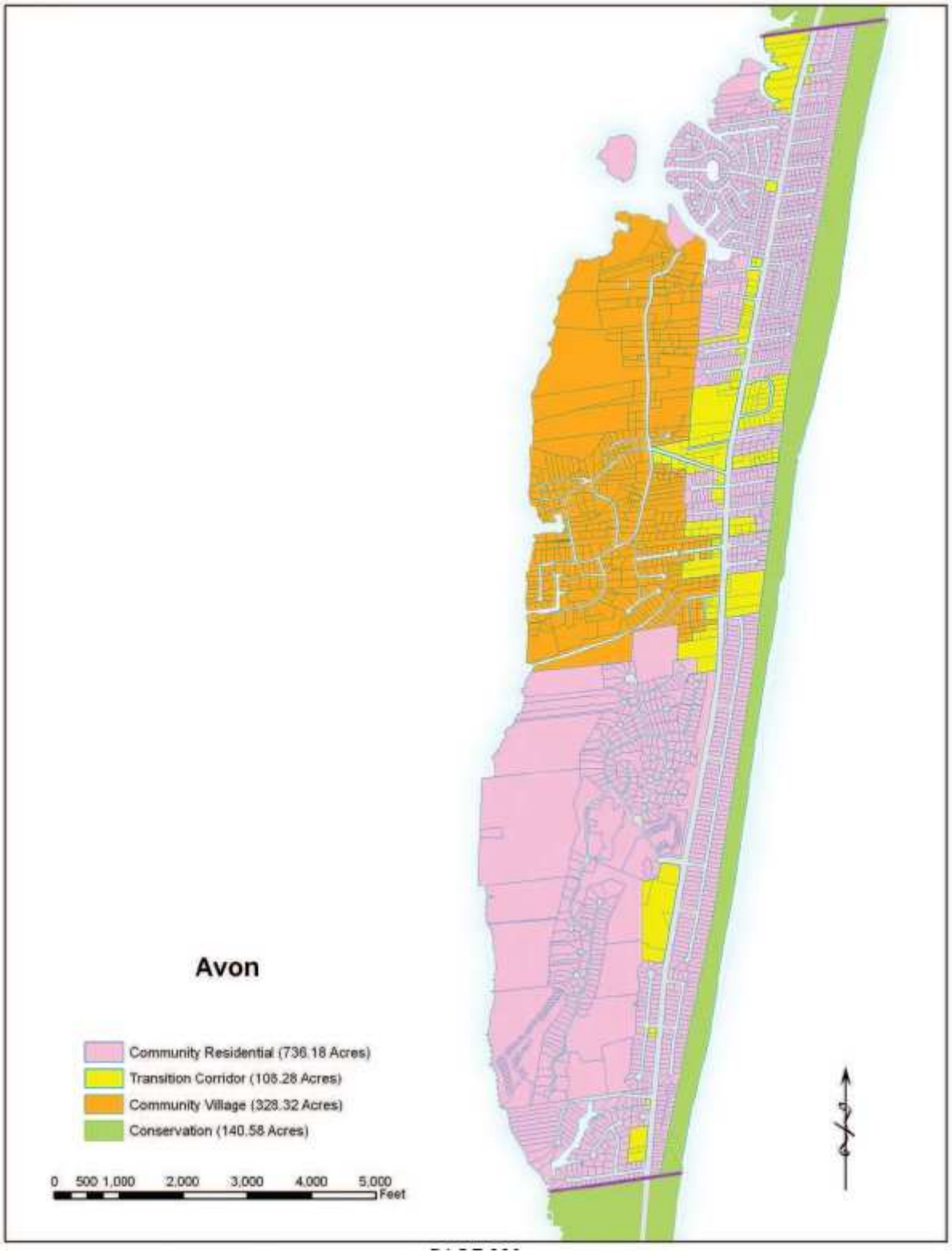

Avon
Community Residential (736.18 Acres)
Transition Corridor (108.28 Acres)
Community Village (328.32 Acres)
Conservation (140.58 Acres)
0 500 1,000 2,000 3,000 4,000 5,000
Feet

Figure 10

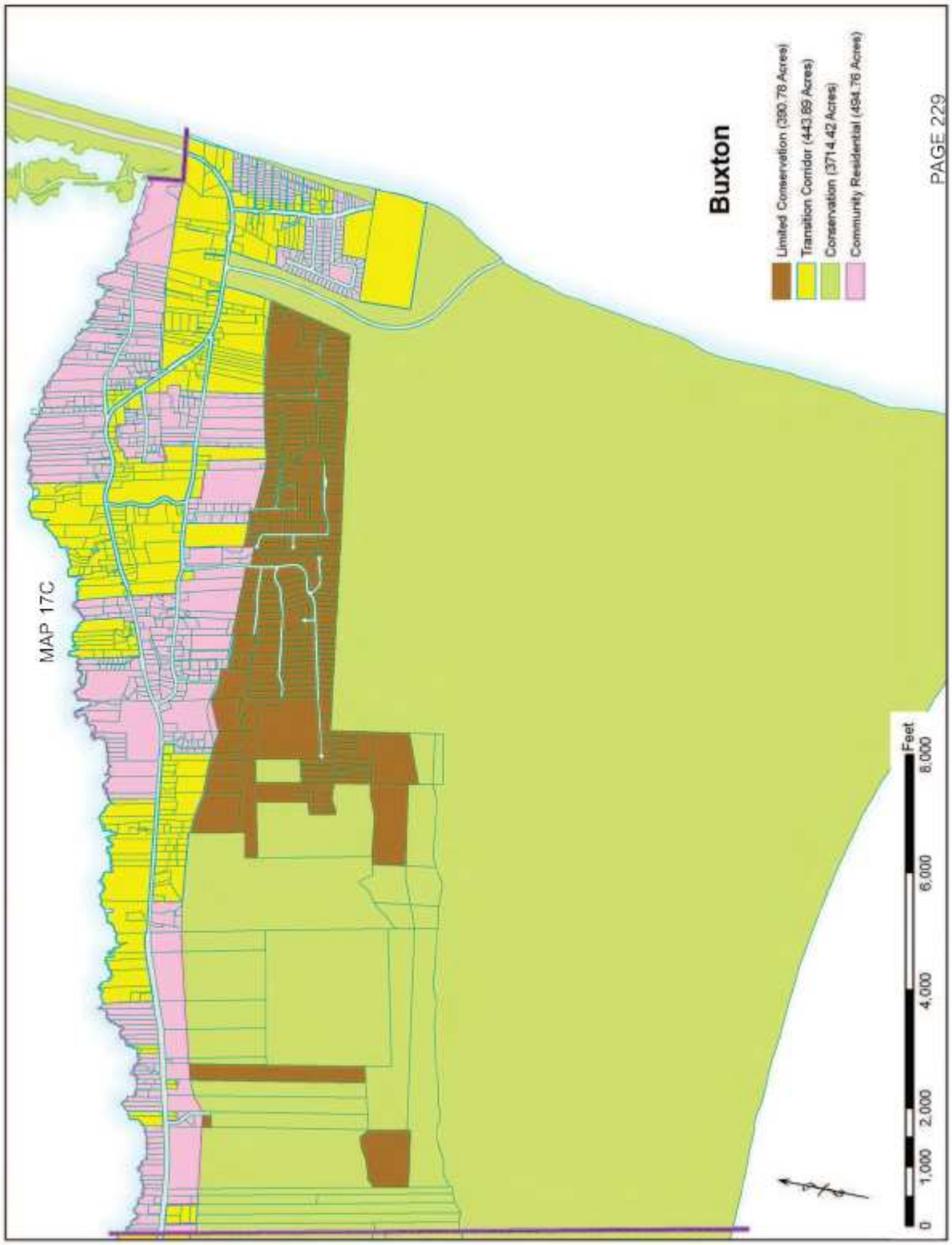

Buxton
Limited Conservation (390.78 Acres)
Transition Corridor (443.89 Acres)
Conservation (3714.42 Acres)
Community Residential (494.76 Acres)
PAGE 229
MAP 17C
Feet
0
1,000
2,000
4,000
6,000
8,000

Figure 10

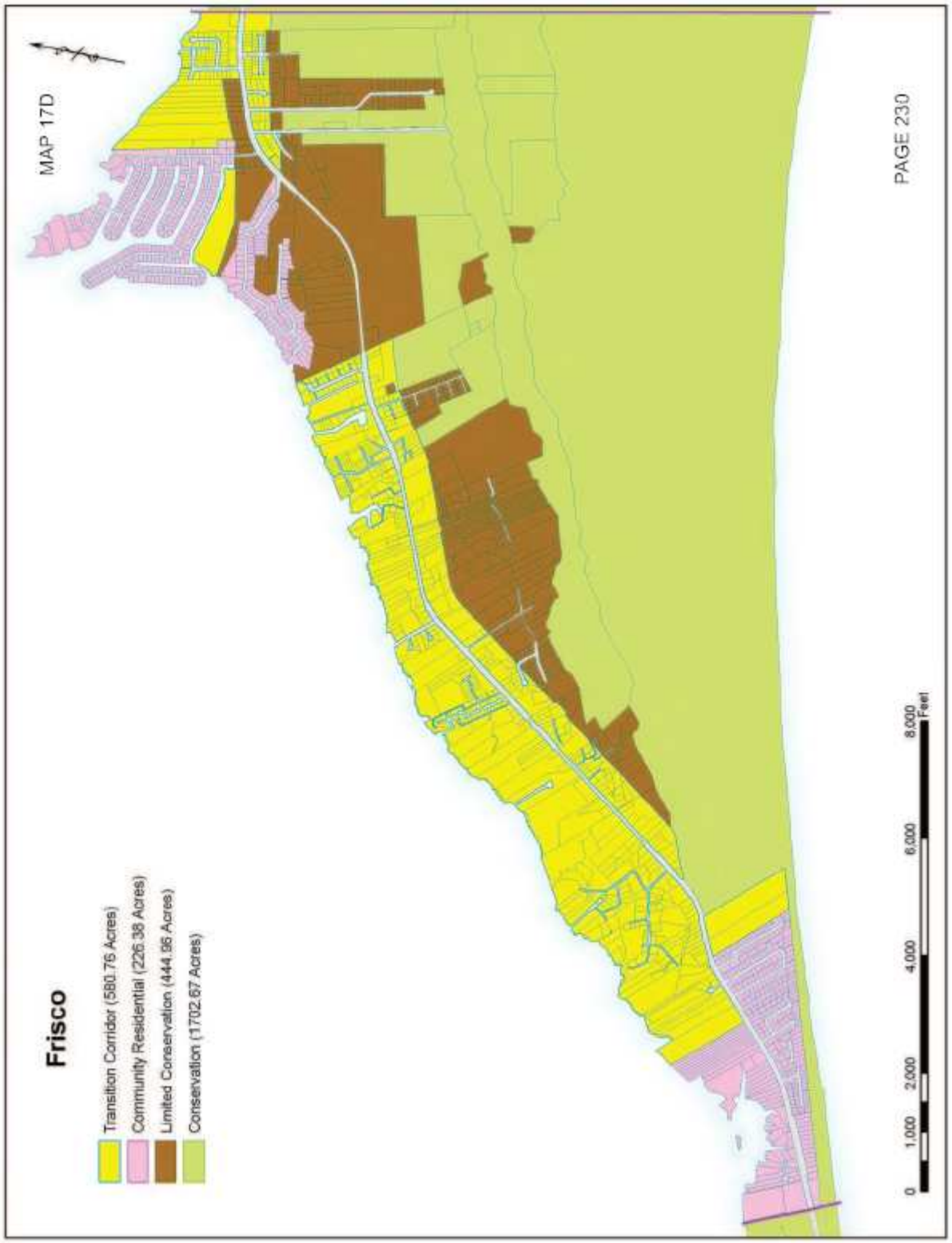

MAP 17D
PAGE 230
Frisco
Transition Corridor (580.76 Acres)
Community Residential (226.38 Acres)
Limited Conservation (444.86 Acres)
Conservation (1702.67 Acres)
0
1,000
2,000
4,000
6,000
8,000
Feet

Figure 10

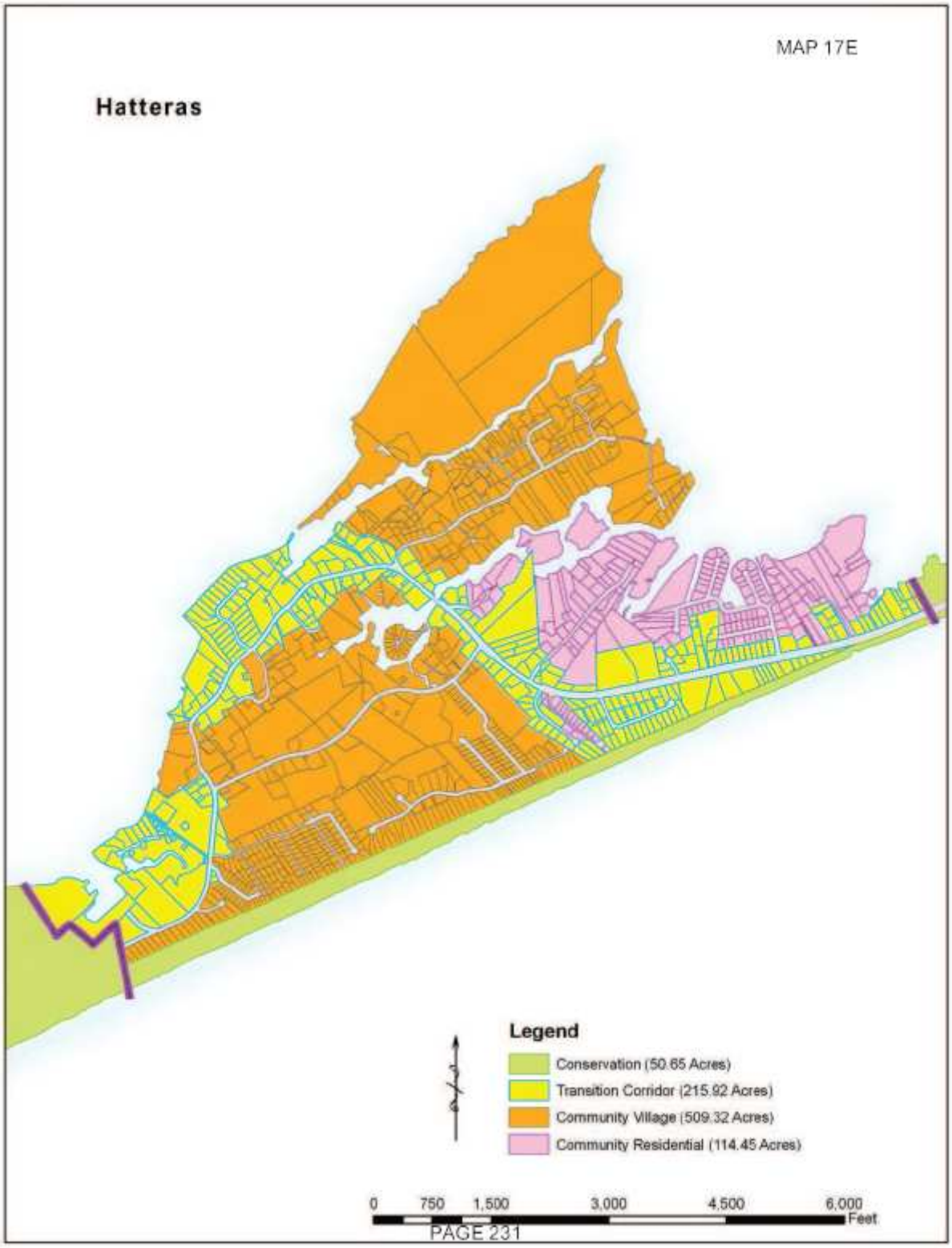

MAP 17E
Hatteras
Legend
Conservation (50.65 Acres)
Transition Corridor (215.92 Acres)
Community Village (509.32 Acres)
Community Residential (114.45 Acres)
0
750
1,500
3,000
4,500
6,000
Feet
PAGE 231

Figure 10

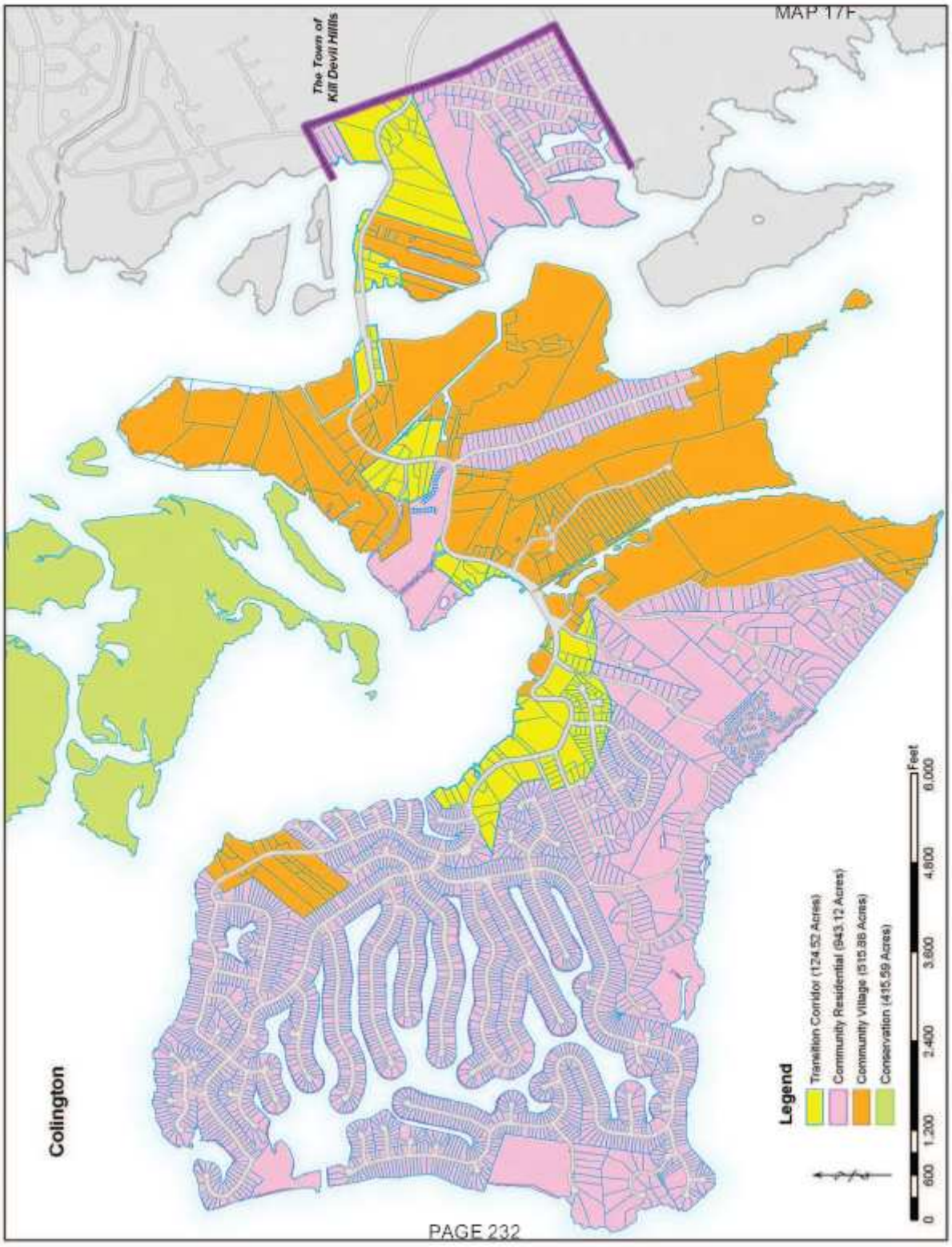

MAP 17F
The Town of Kill Devil Hills
Colington
PAGE 232
Legend
Transition Corridor (124.52 Acres)
Community Residential (943.12 Acres)
Community Village (515.86 Acres)
Conservation (415.59 Acres)
0
600
1,200
2,400
3,600
4,800
6,000
Feet

Figure 10

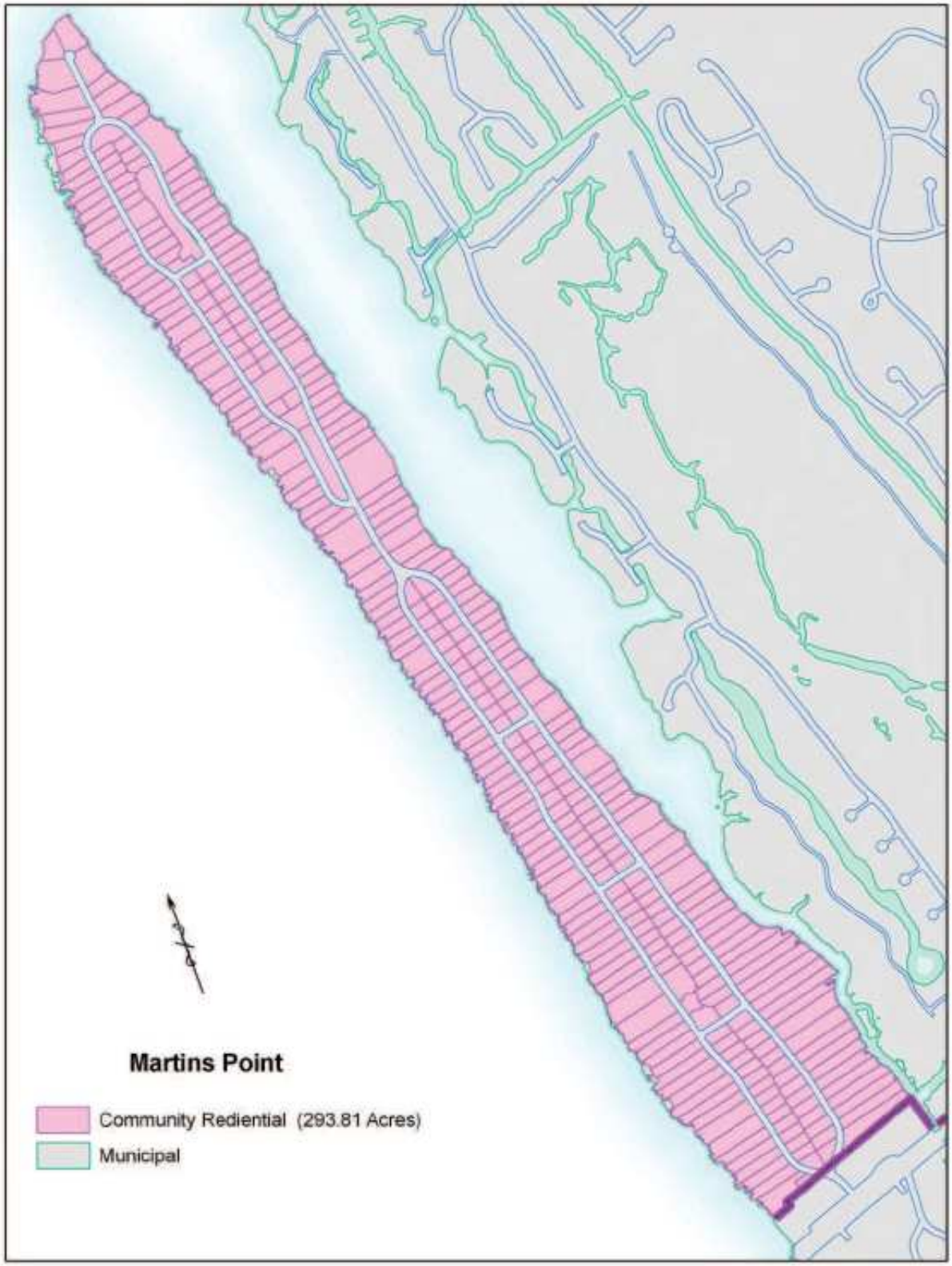

Martins Point
Community Rediential (293.81 Acres)
Municipal

Figure 10

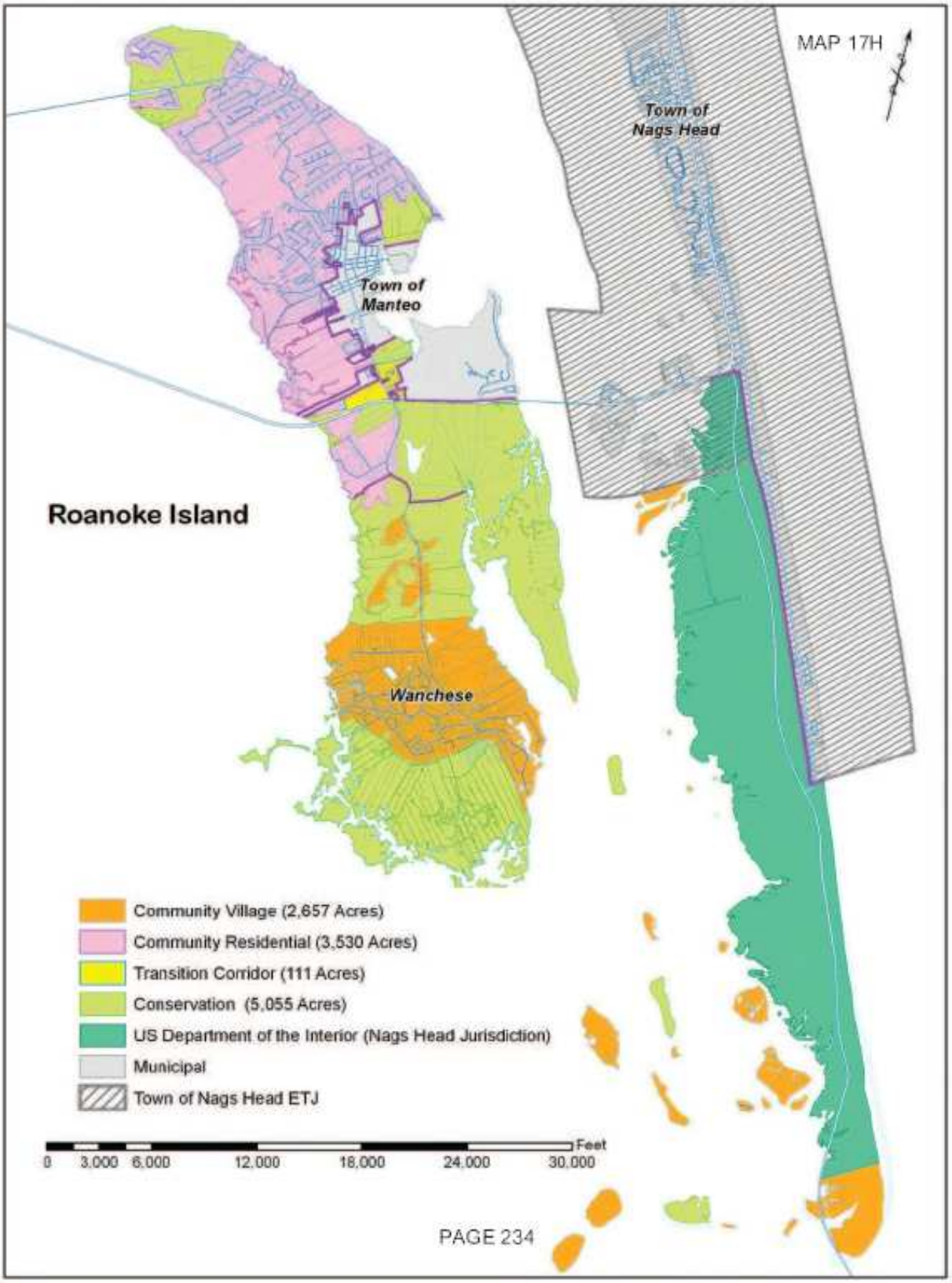

MAP 17H
Town of Nags Head
Town of Manteo
Roanoke Island
Wanchese
Community Village (2,657 Acres)
Community Residential (3,530 Acres)
Transition Corridor (111 Acres)
Conservation (5,055 Acres)
US Department of the Interior (Nags Head Jurisdiction)
Municipal
Town of Nags Head ETJ
0 3,000 6,000 12,000 18,000 24,000 30,000 Feet
PAGE 234

Figure 10

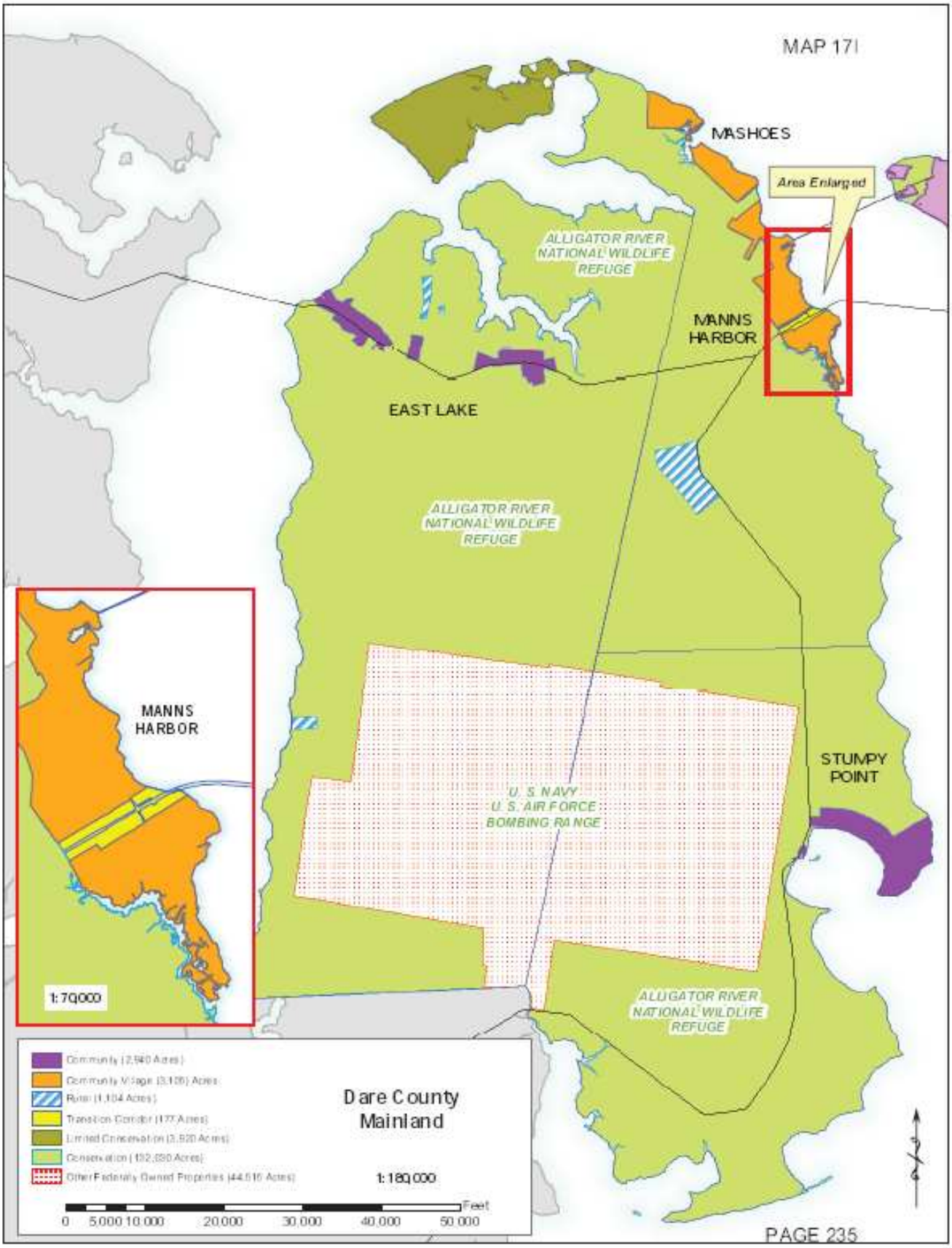

MAP 17I
MASHOES
Area Enlarged
ALLIGATOR RIVER NATIONAL WILDLIFE REFUGE
MANNS HARBOR
EAST LAKE
ALLIGATOR RIVER NATIONAL WILDLIFE REFUGE
MANNS HARBOR
1:70,000
U. S. NAVY U. S. AIR FORCE BOMBING RANGE
STUMPY POINT
ALLIGATOR RIVER NATIONAL WILDLIFE REFUGE
Community (2,940 Acres)
Community Village (3,136) Acres
Rural (1,104 Acres)
Transition Corridor (177 Acres)
Limited Conservation (3,920 Acres)
Conservation (152,030 Acres)
Other Federally Owned Properties (44,516 Acres)
Dare County Mainland
1:180,000
Feet
0 5,000 10,000 20,000 30,000 40,000 50,000
PAGE 235

Figure 10

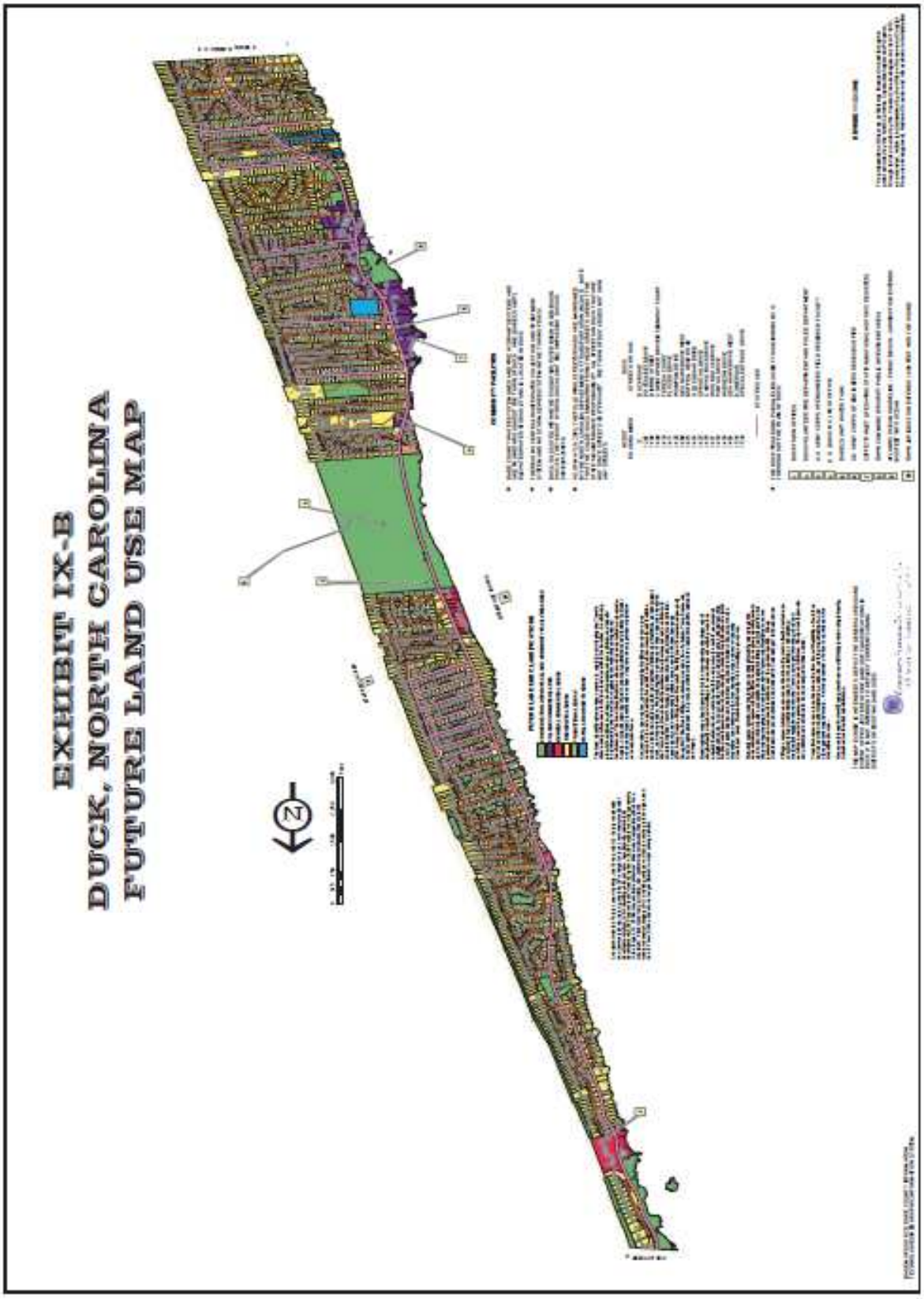


Figure 10

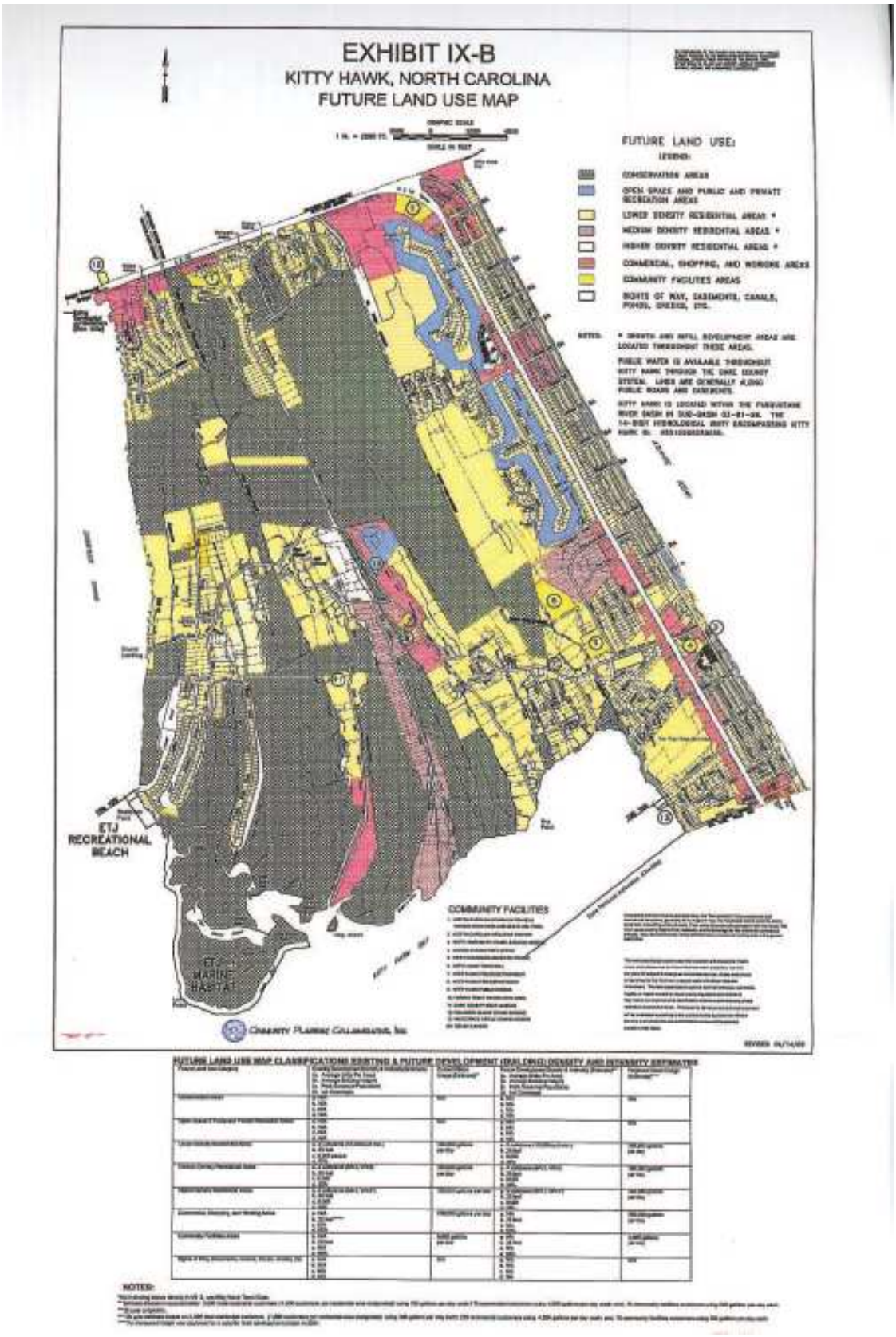


EXHIBIT IX-B
KITTY HAWK, NORTH CAROLINA
FUTURE LAND USE MAP
FUTURE LAND USE:
LEGEND:
CONSERVATION AREAS
OPEN SPACE AND PUBLIC AND PRIVATE RECREATION AREAS
LOWER DENSITY RESIDENTIAL AREAS *
MEDIUM DENSITY RESIDENTIAL AREAS *
HIGHER DENSITY RESIDENTIAL AREAS *
COMMERCIAL, SHOPPING, AND WORKING AREAS
COMMUNITY FACILITIES AREAS
RIGHTS OF WAY, EASEMENTS, CANALS, PONDS, CREEKS, ETC.
NOTES:
* GROWTH AND INFILL DEVELOPMENT AREAS ARE LOCATED THROUGHOUT THESE AREAS.
PUBLIC WATER IS AVAILABLE THROUGHOUT KITTY HAWK THROUGH THE DARE COUNTY SYSTEM. LINES ARE GENERALLY ALONG PUBLIC ROADS AND EASEMENTS.
KITTY HAWK IS LOCATED WITHIN THE PASQUOTANK RIVER BASIN IN SUB-BASIN 03-01-06. THE 14-DIGIT HYDROLOGICAL UNITY ENCOMPASSING KITTY HAWK IS:
ETJ RECREATIONAL BEACH
ETJ MARINE HABITAT
COMMUNITY FACILITIES
COMMUNITY PLANNING COLLABORATIVE, INC.
REVISED 06/14/00
FUTURE LAND USE MAP CLASSIFICATIONS EXISTING & FUTURE DEVELOPMENT (DWELLING) DENSITY AND INTENSITY ESTIMATES
NOTES:

Figure 10

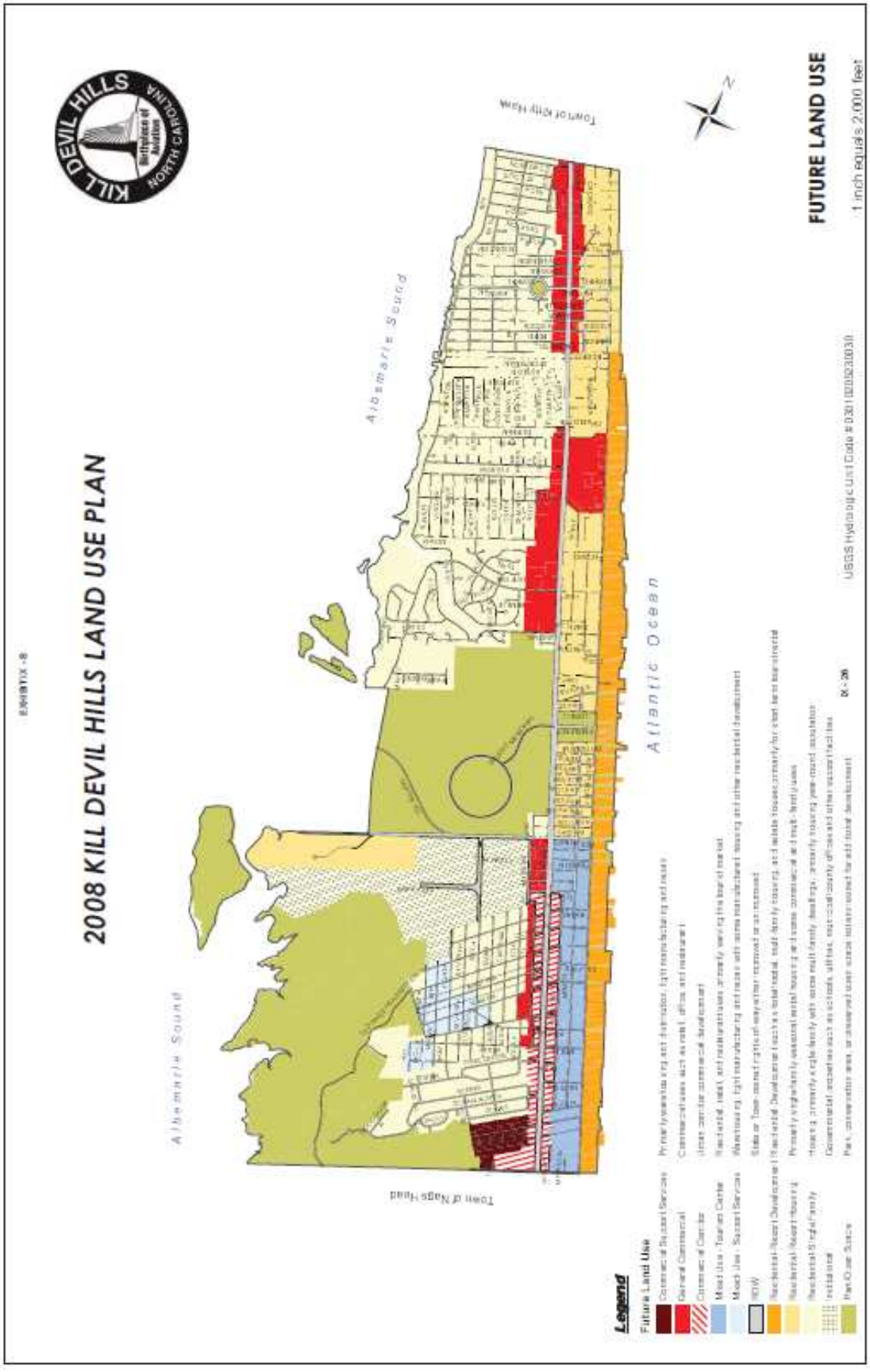

2008 KILL DEVIL HILLS LAND USE PLAN
KILL DEVIL HILLS
NORTH CAROLINA
Birthplace of Aviation
Albemarle Sound
Atlantic Ocean
Town of Kitty Hawk
Town of Nags Head
Legend
Future Land Use
FUTURE LAND USE
1 inch equals 2,000 feet
USGS Hydrologic Unit Code # 030100020301

Figure 10

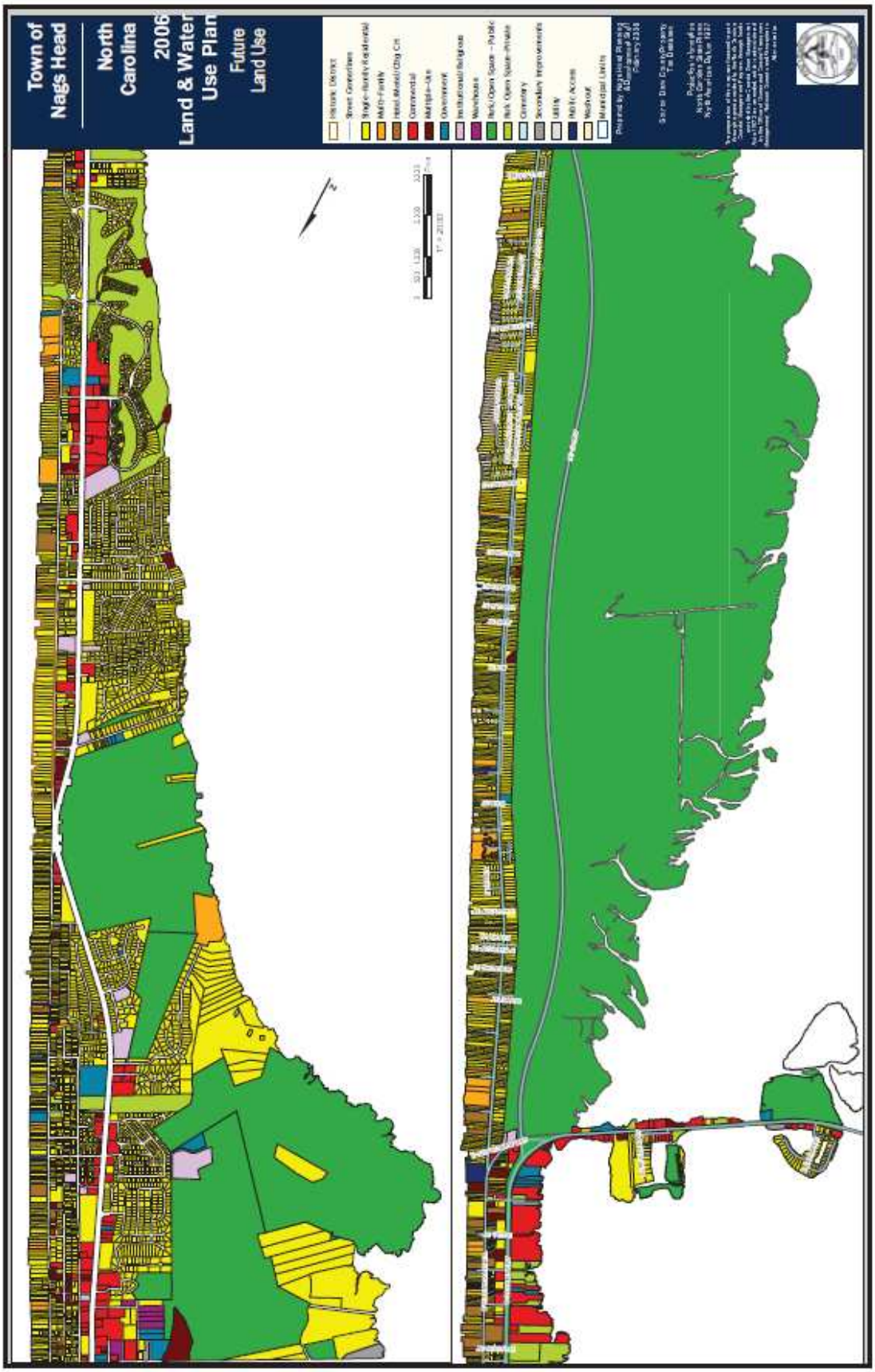

Town of Nags Head
North Carolina
2006 Land & Water Use Plan
Future Land Use

Figure 10

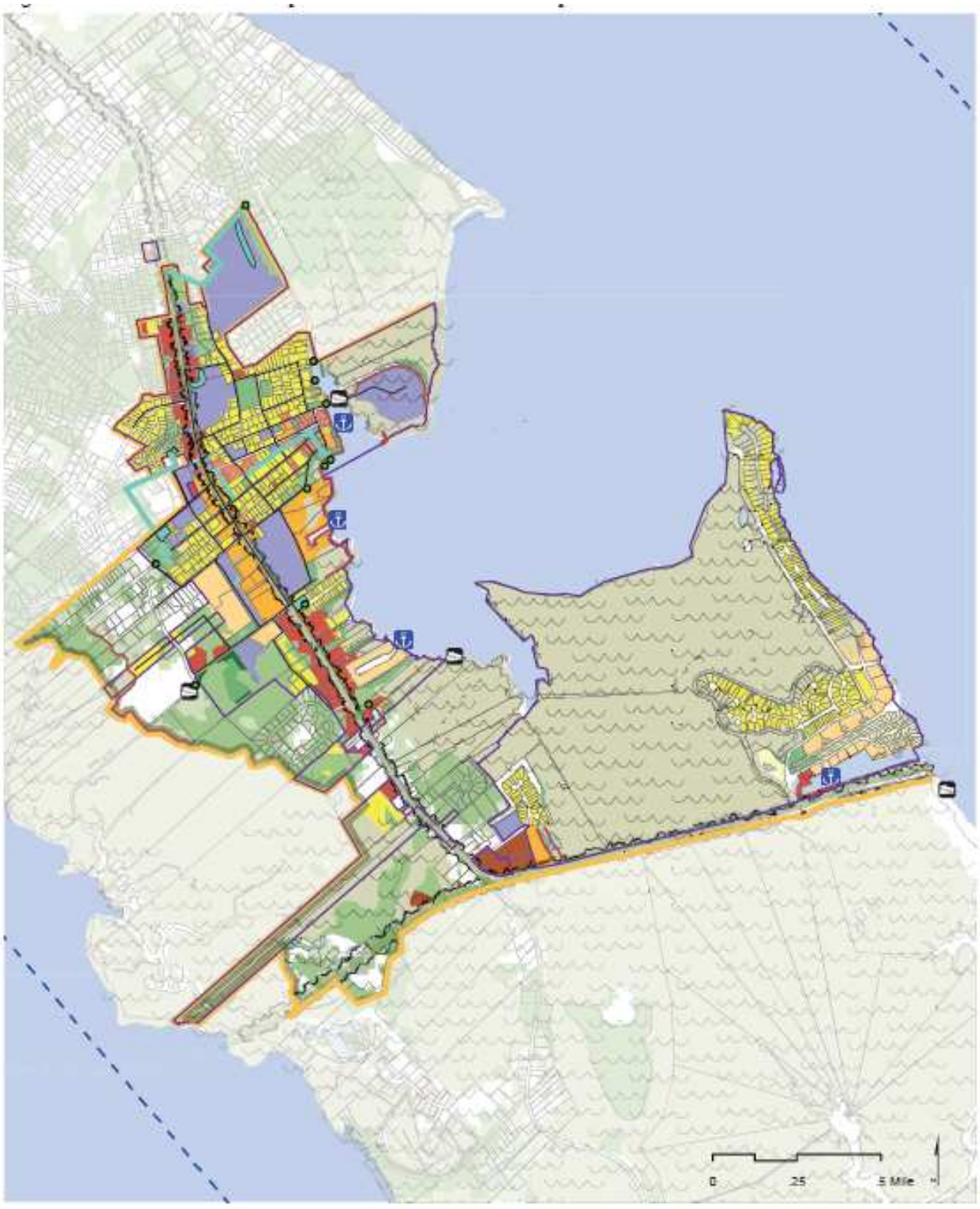
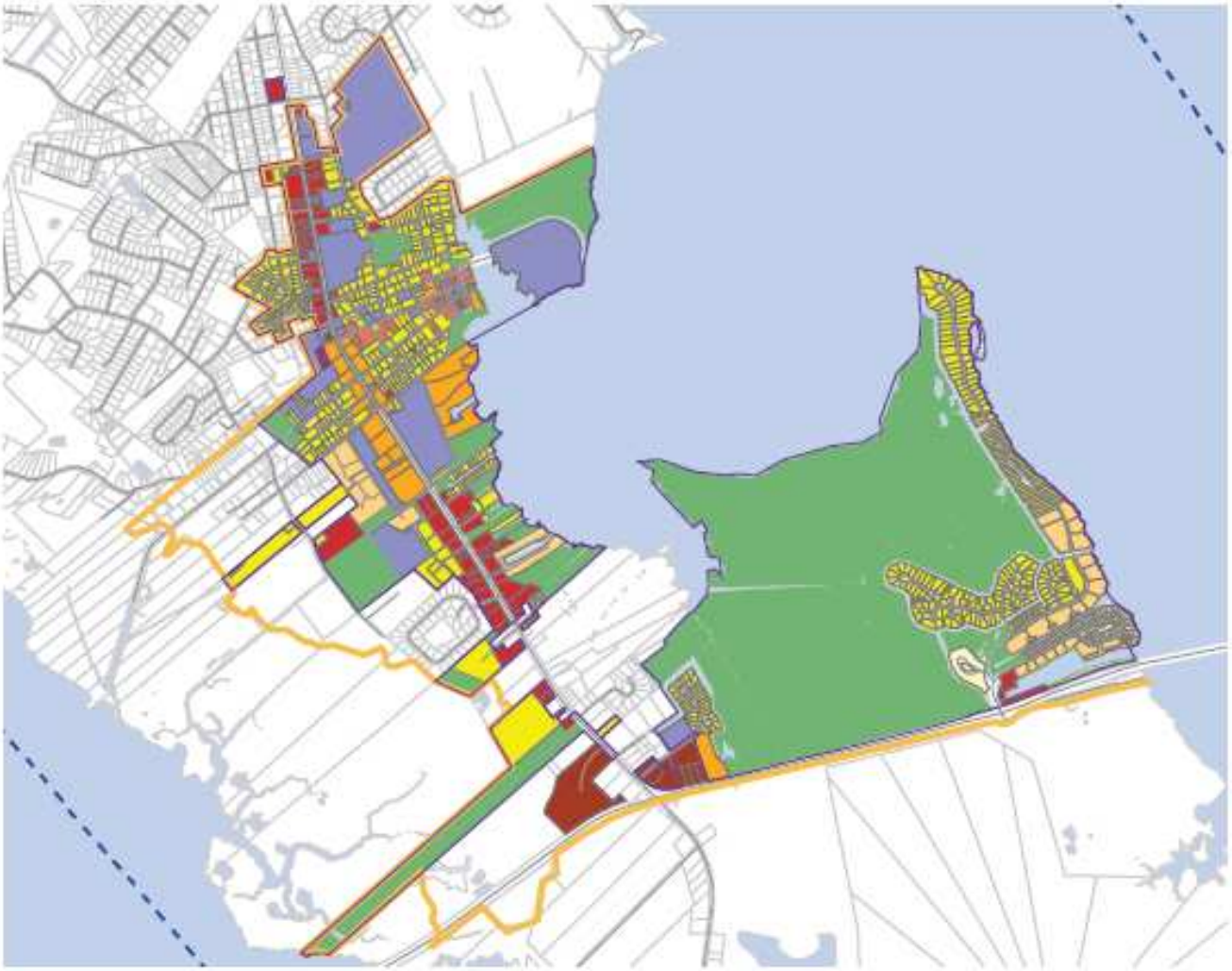


Figure 10



	Existing Land Use Distribution (acres)								
	Commercial	Mixed Use	Institutional	Open Space	Single-family Detached	Single-family Attached	MFR	Areas of Future Annexation	Future Land Use Distribution
	88.10	20.83	137.78	509.37	212.60	13.90	45.52	21.57	1049.67
Future Land Use Designation									
Commercial	67.33	0	0	0	7.27	0	0	21.57	96.17
Mixed Use	20.77	20.83	1.14	0	0	0	0	0	42.74
Institutional	0	0	124.64	0	0	0	0	0	124.64
Open Space	0	0	12.00	509.37	1.09	0	0	0	522.46
Single-family Detached	0	0	0	0	204.24	0	0	0	204.24
Single-family Attached	0	0	0	0	0	13.90	0	0	13.90
MFR	0	0	0	0	0	0	45.52	0	45.52
Total Acreage	88.10	20.83	137.78	509.37	212.60	13.90	45.52	21.57	1049.67

Appendix H
Public Involvement

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

List of CTP Steering Committee Members

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

- Donna Creef, Dare County Planning Director
- Greg Loy, Kill Devil Hills Town Planner
- Joe Heard, Kitty Hawk Town Planner
- John Stockton, Kitty Hawk Town Manager
- Elizabeth Teague, Nags Head Planning Director
- Erin Burke, Manteo Town Planner
- Wes Haskett, Southern Shores Town Planner
- Andy Garman, Duck Town Planner
- Jack Flythe, Dare County Health Department
- Mary Helen Goodloe-Murphy, Dare County Resident
- Sandy Ball, Colington Resident
- Willo Kelly, OBX Association of Realtors
- Steve Lambert, Albemarle RPO Planner
- Gretchen Byrum, PE, NCDOT Division 1Planning Engineer
- Mike Bryant, USFWS – Pea Island & Alligator River Wildlife Refuges
- Darrell Echols, NPS – Cape Hatteras NSDeputy Superintendent
- Ralph Buxton, OBX Chamber of Commerce
- Gary Perry, Kitty Hawk Mayor Pro Tem
- Don Cabana, Dare County Transportation System Director

CTP Vision, Goals and Objectives

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

The vision statement, goals and objectives reflect what is important for the area and defines any local preferences concerning the transportation system and community

assets. The vision statement is the framework for the area's strategic planning. Goals and objectives document how the area plans to fulfill its vision. The goals break down the vision statement into themes, while the objectives document how the area plans to make progress towards achieving each goal.

Vision:

A long-range, multi-modal Comprehensive Transportation Plan that will strengthen the social and economic vitality of Dare County and its municipalities and preserve and promote the quality of life that makes Dare County a special place for living and visiting.

Goals:

1. Provide residents and visitors with safe, accessible, efficient transportation that provides for current and future economic development.

2. Recognize existing plans and/or policies adopted by Dare County, its municipalities and the State of North Carolina.

3. Devise an integrated and connected plan for bicycle, pedestrian and public transportation systems throughout the county, and promote a system of complete streets where appropriate.

4. Identify options for ferry service.

5. Identify options for future public transportation.

6. Recognize the complex and unique nature of Dare County's roadways that also serve as evacuation routes, and coordinate with Dare County Emergency Management and relevant organizations to ensure that emergency plans are considered in the plan development.

7. Develop long-term solutions to the transportation infrastructure that address the geographic challenges of Dare County.

8. Address deficiencies in the region's transportation network.

Goals and Objectives Survey

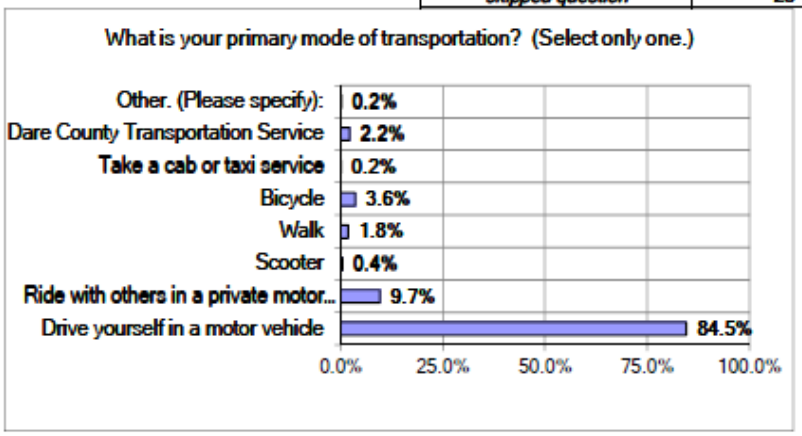
A G&O survey is a public involvement technique used to help identify an area's perception of transportation-related issues, identify concerns that should be addressed during the development of a CTP, and to help develop a vision for the community. The G&O survey is most appropriately implemented at the beginning of the transportation

planning study. In addition to determining up front what is important to the citizens of the planning area, initiating the G&O survey early in the planning process allows the survey to serve as an introduction to the transportation planning process. The survey usually includes a brief introduction explaining what a transportation plan is and how the area can benefit from having one. The survey also includes a wide variety of questions that is tailored to each area as appropriate. For the Dare County CTP, two G & O surveys were conducted: one aimed at Dare County residents; and one targeting Outer Banks visitors. Summaries of these Dare County G & O surveys are given below.

See the next page for the Resident Survey:

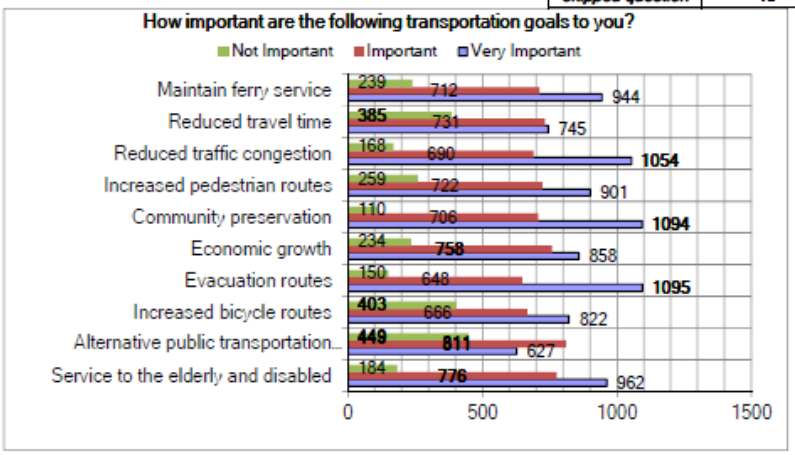
Question 1

What is your primary mode of transportation? (Select only one.)		
Answer Options	**Response Percent**	**Response Count**
Drive yourself in a motor vehicle	84.5%	1662
Ride with others in a private motor vehicle	9.7%	190
Scooter	0.4%	8
Walk	1.8%	36
Bicycle	3.6%	70
Take a cab or taxi service	0.2%	3
Dare County Transportation Service	2.2%	43
Other. (Please specify):	0.2%	4
	answered question	**1967**
	skipped question	**25**



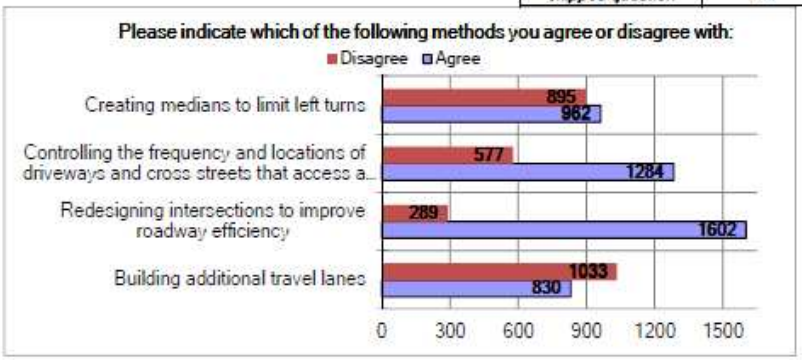
Question 2

How important are the following transportation goals to you?					
Answer Options	**Very Important**	**Important**	**Not Important**	**Rating Average**	**Response Count**
Service to the elderly and disabled	962	776	184	1.60	1922
Alternative public transportation services	627	811	449	1.91	1887
Increased bicycle routes	822	666	403	1.78	1891
Evacuation routes	1095	648	150	1.50	1893
Economic growth	858	758	234	1.66	1850
Community preservation	1094	706	110	1.48	1910
Increased pedestrian routes	901	722	259	1.66	1882
Reduced traffic congestion	1054	690	168	1.54	1912
Reduced travel time	745	731	385	1.81	1861
Maintain ferry service	944	712	239	1.63	1895
				answered question	**1979**
				skipped question	**13**



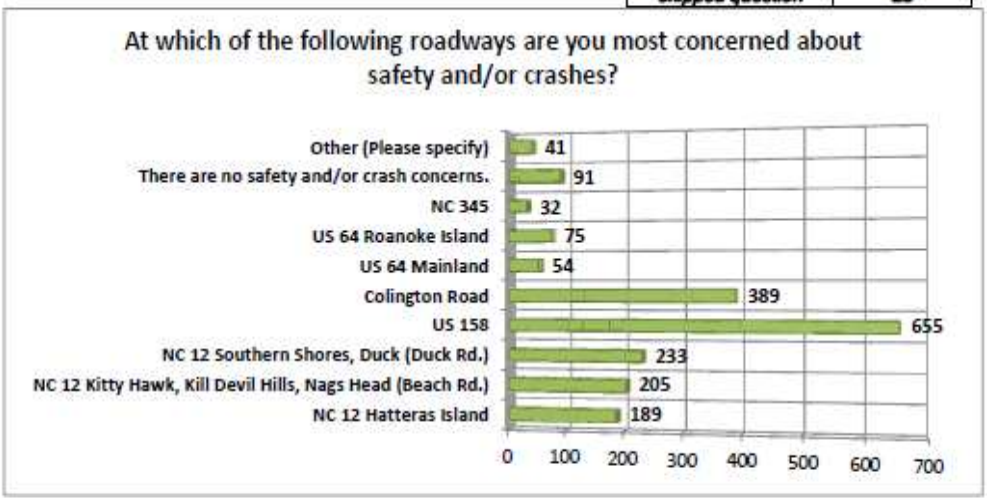
Question 3

Please indicate which of the following methods you agree or disagree with:				
Answer Options	**Agree**	**Disagree**	**Rating Average**	**Response Count**
Building additional travel lanes	830	1033	1.55	1863
Redesigning intersections to improve roadway efficiency	1602	289	1.15	1891
Controlling the frequency and locations of driveways and cross streets that access a road	1284	577	1.31	1861
Creating medians to limit left turns	962	895	1.48	1857
			answered question	**1933**
			skipped question	**59**



Question 4

At which of the following roadways are you most concerned about safety and/or crashes? (Choose only one.)		
Answer Options	**Response Percent**	**Response Count**
NC 12 Hatteras Island	9.6%	189
NC 12 Kitty Hawk, Kill Devil Hills, Nags Head (Beach Rd.)	10.4%	205
NC 12 Southern Shores, Duck (Duck Rd.)	11.9%	233
US 158	33.4%	655
Colington Road	19.8%	389
US 64 Mainland	2.7%	54
US 64 Roanoke Island	3.8%	75
NC 345	1.6%	32
There are no safety and/or crash concerns.	4.6%	91
Other (Please specify)	2.1%	41
	answered question	**1964**
	skipped question	**28**

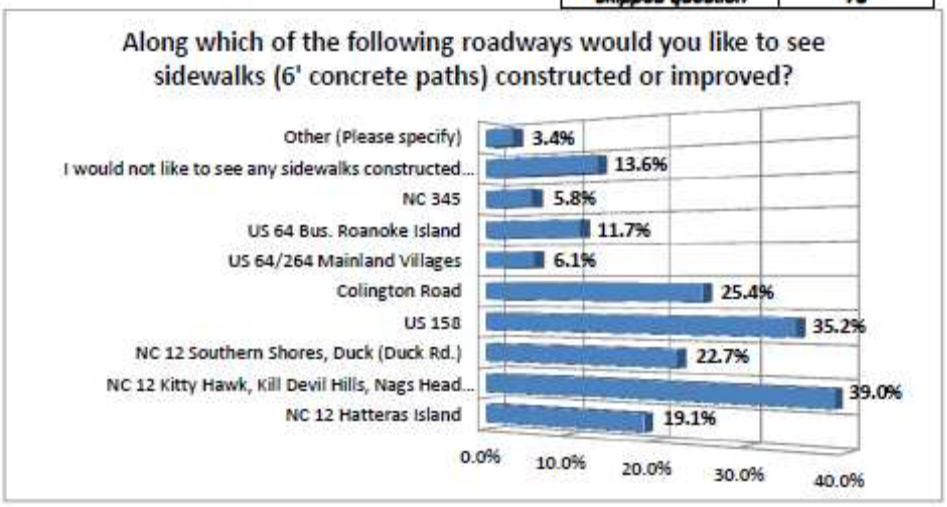


Comments:

- (6 comments) US 158/NC 12 Intersection (Southern Shores/Kitty Hawk)
- (5 comments) US 158/Colington Road Intersection
- (5 comments) Dogwood Trail (Southern Shores)
- (5 comments) All of the above
- (4 comments) US 64/NC 345 Intersection
- (3 comments) Kitty Hawk Road
- Bay Drive
- Whalebone Junction
- Deer Path Lane
- Canal without guardrails on road from Pirates Cove to US 64 intersection.
- Airport Road, Manteo
- At several main intersections throughout the Dare County.
- US 158 and 1st St., Kill Devil Hills
- Mashoes Road, Dare Mainland

Question 5

Along which of the following roadways would you like to see sidewalks (6' concrete paths) constructed or improved?		
Answer Options	**Response Percent**	**Response Count**
NC 12 Hatteras Island	19.1%	365
NC 12 Kitty Hawk, Kill Devil Hills, Nags Head (Beach Rd.)	39.0%	747
NC 12 Southern Shores, Duck (Duck Rd.)	22.7%	435
US 158	35.2%	674
Colington Road	25.4%	487
US 64/264 Mainland Villages	6.1%	116
US 64 Bus. Roanoke Island	11.7%	223
NC 345	5.8%	111
I would not like to see any sidewalks constructed or improved.	13.6%	261
Other (Please specify)	3.4%	65
	answered question	**1914**
	skipped question	**78**

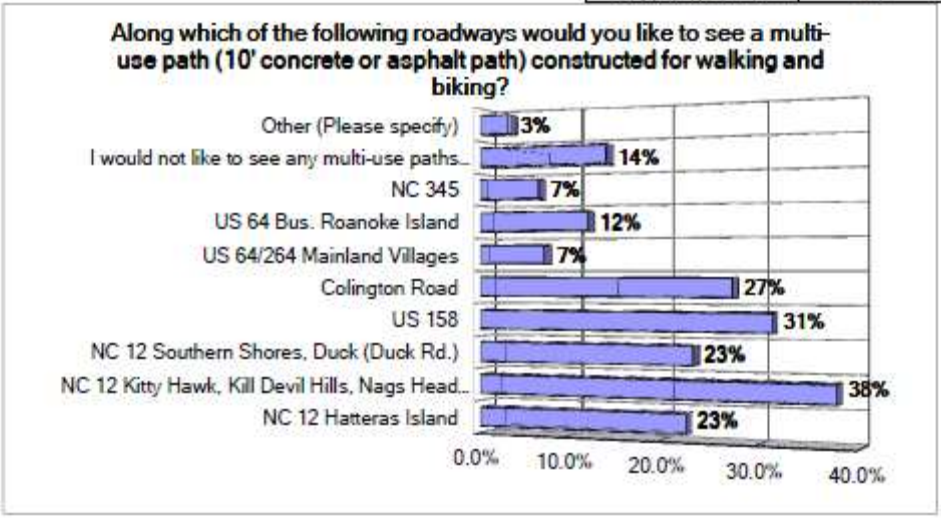


Comments:

- (7 comments) Kitty Hawk Road
- (6 comments) Bay Drive
- (4 comments) Burnside Road
- (2 comments) Improve the existing sidewalks before adding new ones.
- (2 comments) 3rd St. in Kill Devil Hills
- (2 comments) Airport Road, Manteo
- (2 comments) SR 1243
- (2 comments) 6' concrete paths are too wide
- Would like sidewalk access around Wright Brothers Memorial Park
- West Landing Road in Kill Devil Hills
- Devon Street and Agona Street in Manteo

Question 6

Along which of the following roadways would you like to see a multi-use path (10' concrete or asphalt path) constructed for walking and biking?		
Answer Options	**Response Percent**	**Response Count**
NC 12 Hatteras Island	22.5%	428
NC 12 Kitty Hawk, Kill Devil Hills, Nags Head (Beach Rd.)	37.7%	717
NC 12 Southern Shores, Duck (Duck Rd.)	23.3%	442
US 158	31.4%	596
Colington Road	27.4%	520
US 64/264 Mainland Villages	7.2%	137
US 64 Bus. Roanoke Island	12.1%	229
NC 345	6.5%	124
I would not like to see any multi-use paths constructed.	14.1%	267
Other (Please specify)	3.2%	60
	answered question	**1900**
	skipped question	**92**

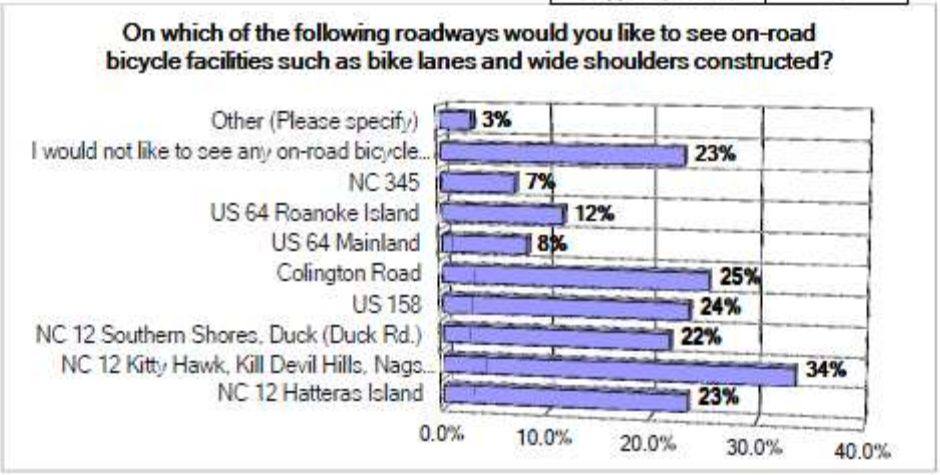


Comments:

- (9 comments) Bay Drive in Kill Devil Hills
- (8 comments) Kitty Hawk Road
- (8 comments) 10' is too wide
- (4 comments) It is important to improve and maintain the ones we already have
- (4 comments) Dogwood Trail in southern shores
- (3 comments) It would be nice if bikers actually used the paths we already have.
- (2 comments) Airport Road, Manteo
- (2 comments) West Landing Road in Kill Devil Hills.
- (2 comments) Burnside Road Manteo
- From Nags Head to Corolla (should also function as beach erosion barrier)
- Multi-use paths should be away from busy roads, in quiet, scenic areas.

Question 7

On which of the following roadways would you like to see on-road bicycle facilities such as bike lanes and wide shoulders constructed?		
Answer Options	**Response Percent**	**Response Count**
NC 12 Hatteras Island	23.5%	435
NC 12 Kitty Hawk, Kill Devil Hills, Nags Head (Beach Rd.)	33.5%	621
NC 12 Southern Shores, Duck (Duck Rd.)	21.8%	404
US 158	23.7%	438
Colington Road	25.5%	472
US 64 Mainland	8.2%	151
US 64 Roanoke Island	11.7%	216
NC 345	7.1%	132
I would not like to see any on-road bicycle facilities constructed.	23.1%	428
Other (Please specify)	3.0%	55
	answered question	**1852**
	skipped question	**140**

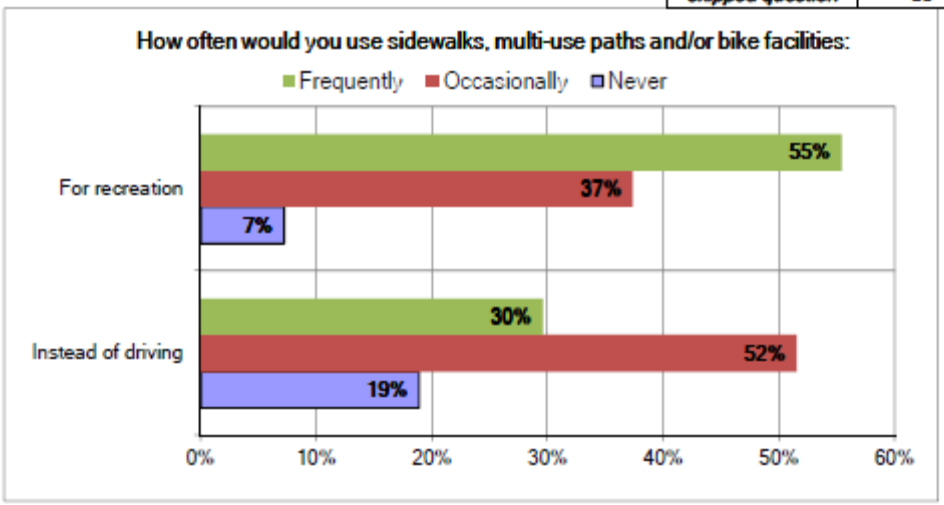


Comments:

- (9 comments) Kitty Hawk Road
- (5 comments) Bikers do NOT use the existing bike lanes.
- (4 comments) Airport Road, Manteo
- (3 comments) Rather see separated bike/pedestrian path; not expanded shoulders
- (3 comments) Dogwood Trail (Southern Shores)
- (2 comments) Bay Drive
- (2 comments) SR 1243
- It would nice to have bike lanes on bridges.
- West Landing Road in Kill Devil Hills
- Burnside Road, Manteo

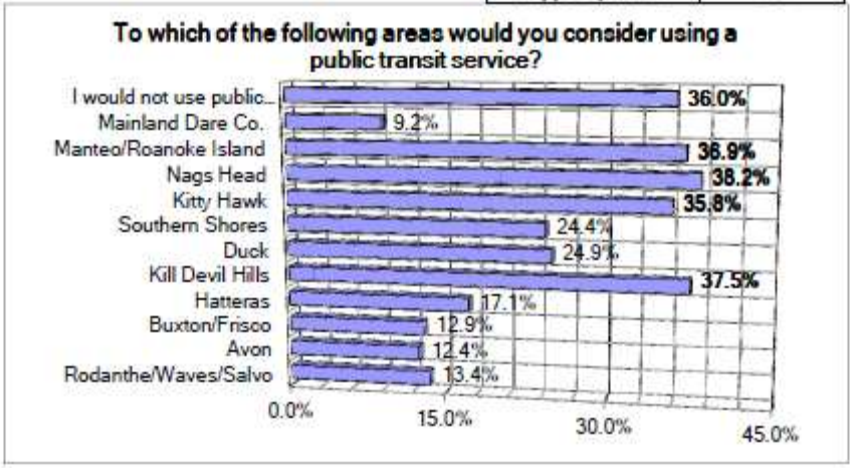
Question 8

How often would you use sidewalks, multi-use paths and/or bike facilities:								
Answer Options	**Never**		**Occasionally**		**Frequently**		**Rating Average**	**Response Count**
Instead of driving	349	*19%*	951	*52%*	546	*30%*	2.11	1846
For recreation	132	*7%*	682	*37%*	1011	*55%*	2.48	1825
							answered question	**1912**
							skipped question	**80**



Question 9

To which of the following areas would you consider using a public transit service? (Check all that apply.)		
Answer Options	**Response Percent**	**Response Count**
Rodanthe/Waves/Salvo	13.4%	248
Avon	12.4%	229
Buxton/Frisco	12.9%	239
Hatteras	17.1%	316
Kill Devil Hills	37.5%	692
Duck	24.9%	460
Southern Shores	24.4%	450
Kitty Hawk	35.8%	660
Nags Head	38.2%	706
Manteo/Roanoke Island	36.9%	682
Mainland Dare Co.	9.2%	169
I would not use public transit.	36.0%	665
Other (Please specify):	2.9%	53
	answered question	**1846**
	skipped question	**146**



Comments:

- (10 comments) Between Outer Banks and Norfolk Airport/Chesapeake, VA area
- (7 comments) Corolla
- (4 comments) Colington Island
- (3 comments) Elizabeth City
- (2 comments) Along US 158
- (2 comments) Mainland Dare County (Mann's Harbor and East Lake)
- (2 comments) Business areas and shopping centers
- (2 comments) Linking Hatteras Villages to Roanoke Island
- Roanoke Island
- Last time a Beach Bus was tried, Kill Devil Hills killed it by imposing high sign permit fees for bus stop signs.

Question 10

What other problems do you consider to be major transportation issues in Dare County and where do they exist?	
	Response Count
answered question	**953**
skipped question	**1039**

Mid-Currituck Bridge/NC 12 Congestion (Duck/Southern Shores) (142 comments)

- Building a bridge for the northern areas of the Outer Banks will help lessen traffic congestion and provide another much needed evacuation route. Building the Mid-Currituck Bridge would alleviate much of the northern Outer Banks summer traffic congestion issues along NC 12 (Duck Rd.) in Southern Shores, Duck, and Corolla, as well as, at the US 158/NC 12 intersection and US 158 (Wright Memorial Bridge).
- Traffic congestion is a major problem along most NC 12 (Duck Rd.). During tourist season, (particularly the weekends and "turn-over" days) heavy congestion and bottlenecks in Duck and Southern Shores become a critical issue. With only one route to/from Duck and Corolla, the heavy traffic along NC 12 increases the congestion on US 158, especially at the "Southern Shores/Kitty Hawk intersection" and on Wright Memorial Bridge.

Multi-use Paths/Bike Routes/Sidewalks (136 comments)

- Creating a better multi-use path and bike route (on-road/off-road) system would be a useful way for pedestrians and bicyclist to travel around the area without needing a motor vehicle and adding congestion to the roadways. The people who want to engage in recreational activities can do so in a safer manner with the addition of properly constructed multi-use paths and bike path/lanes.
- Bicycles and low speed scooters/mopeds traveling on the roadway is dangerous because it slows down and impedes traffic flow (US 158). Bicyclists don't always use the existing bike path/lanes routes. They need wide shoulders or separate bike paths with improved marking/signage and maintenance so that bicyclist will use them more and not travel in the roadway.
- US 158 and NC 12 need an improved sidewalk system. Sidewalks are needed on busy residential streets and near shopping centers because it is dangerous for pedestrians to walk along the roadway. There are little to no sidewalks in Duck, Southern Shores, Kitty Hawk, Kill Devil Hills, and Beach Rd.
- Neighborhood streets (secondary roads) full of vehicular and pedestrian traffic (Colington Road, Beach Road, Bay Drive, Dogwood Trail, Kitty Hawk Road, Hatteras Villages and Airport Road) need a multi-use path and bike path/lanes. There needs to be better connectivity of residential neighborhoods.
- Lack of multi-modal lanes on bridges.
- Note that cyclists traveling 15 - 20 mpg cannot use multi-use paths because walkers and recreational cyclists are hazards. These cyclists need wide road shoulders.

Bonner Bridge/NC 12 Stabilization (Pea Island/Hatteras Island) (128 comments)

- Access to Hatteras needs improvement, and replacing Bonner Bridge is one of the top concerns for area residents. It is a primary evacuation route and a lifeline for the southern Outer Banks area.
- Stabilizing NC 12 is vital and the roadway needs major upgrading. Having only one bridge access to Hatteras Island and being a narrow two-lane roadway, with no shoulder is a problem. Over wash, flooding and inadequate drainage after weather events are a critical concern for most of the area, especially along NC 12. (Pea Island, Hatteras Island, Duck). Making NC 12 into an elevated, more sustainable road is ideal.
- The new inlet, formed by Hurricane Irene in Pea Island, needs to have a permanent bridge structure. Building a long bridge for Hatteras Island and/or the construction of small bridges at the S-turns and hotspots could possibly reduce the problems in the area.
- Evacuating from the entire Outer Banks area (NC 12, US 158, US 64) has been a serious concern. With a one way in/out roadway system (NC 12 from Corolla/Duck and NC 12 from Hatteras Island) combined with heavy congestion, makes evacuating times increase considerably.

Center Turn Lane/Left Turn/Driveway Accesses (88 comments)

- Making left turns from US 158 (center turn lane) is considered very dangerous with many accidents occurring there, especially during tourist season. It is often difficult and dangerous to make left turns from US 158 with heavy traffic congestion and many cars entering/leaving the highway from opposite directions via the center turn lane. Having left turns only possible at intersections (U-turns) and an impassable median divider (i.e. grass median, landscaped median strips, raised/elevated median) could reduce the problems.
- Drivers find it hazardous making a left turn merging onto US 158. The center turn lane is being used as an acceleration lane to merge with the US 158 traffic flow, which becomes a problem for cars using the center turn lane to exit the highway.
- US 158 allows too many driveway accesses, which leads to frequent/abrupt stops on a highway with a high speed limit. There needs to be adjoining business access roads (feeder roads) with limitations to access main thoroughfare, instead of adding more traffic lights.
- There needs to be a center turn lane for NC 12, because there are not enough protected left turn traffic lights or left turn lanes. It is extremely difficult to make left turns on and off of NC 12 when traffic is heavy congested and many tourists around.
- There are not enough right turn deceleration lanes for making right hand turns. US 158 has too few turning lanes to get off the highway and into businesses and onto side roads, and results in many fender benders. Manteo/Wanchese Intersection needs longer access lane for Justice Center. US 158 to Colington Road intersection needs a longer turn lane.

Public Transportation/Rail/Other Modes of Transportation (87 comments)

- Public transportation to get to the Outer Banks (Inter-County), in addition to, public transportation to navigate within the Outer Banks is a key issue. An affordable shuttle bus, tour bus/trolley, or train system that can be used to alleviate congestion in the more populated areas (from Corolla to Nags Head), as well as, a public transit system that can used to connect more distant towns in the Outer Banks.
- There is also a need for public transportation system to assist the elderly and disabled in the area.
- There is a lack of reliable public transport to other towns in the region like Elizabeth City, Edenton/Hertford, Hampton Roads (Norfolk Airport), and Greenville. Dare should cooperate with other regional counties to link up existing services and provide transport to/from workplaces and rail/air hubs. Lack of public transit to Raleigh area and Virginia (Airport and Railroad station).
- A public transit option at night during the summer would be ideal in the more populated areas.
- A water transportation alternative (water bus/taxi) for pedestrians to travel the Outer Banks for tourism purposes and help reduce road congestion.
- Lack of rail to the island, when a close-by railroad exists.
- Need a passenger ferry service between Corolla and Roanoke Island as alternative to driving, and mode for school transportation. High speed ferries (to move people, vehicles and supplies on and off Hatteras Island with a quicker turn around period) are needed so that future NC 12 breaches can be by-passed. Also a long bridge alternative at Pea Island is ideal. Keeping the ferry routes open to Ocracoke is very important.

Roadway Conditions/Configurations (80 comments)

- Poor road conditions (potholes, flooding, and resurfacing needed) on secondary roads.
- Road visibility has been a problem for drivers in the area. Better street lighting (poorly lit intersections) and reflective pavement markings are badly needed in areas along NC 12 and US 158. It is hard for drivers to navigate at night and in the rain. The new finished road in Manteo is uneven and needs better reflective pavement markings. All traffic lights need backstops (or sunshades) and a strobe in the red light to increase visibility
- Better informational signage throughout the area may alleviate some of the problems in the area. The signage along NC 12 and US 158 are not clear, and tourists, having a difficult time navigating the area and locating their turns, drive slower and make sudden stops which can create traffic problems There should be more speed limit signs, more visible and consistent Mile Post markers, and secondary street signs need to be better marked.
- Heavy traffic congestion has increased the usage of secondary roads, which drivers are using as a cut-through/shortcut. Drivers using these roads in residential areas often exceed the speed limit, and implementing some sort of traffic control device might help reduce the speeding in those areas.
- Manteo has heavy congestion and many accidents occur on US 64. US 64 and Airport Road need to be widened.
- US 64/US 264 needs to be widen along the Alligator River from the county line to Mann's Harbor. There needs to be guardrails along US 64 from Whalebone Junction to the Manteo/Wanchese intersection.
- It is difficult to enter and exit the Dare County Community Center and Court House in Manteo.
- Round-a-bouts can be used to ease traffic congestion, saves on gas and reduces the number of vehicles having to frequent stop-and-go (NC 12 Hatteras Island).
- Deer Path Lane in Southern Shores is almost impossible to navigate. Driving on Deer Path Lane is like having to drive over two dozen speed bumps in a short distance. The road condition of Deer Path Lane is dangerous and destructive to drivers, their vehicles, pedestrians, and cyclists.

Traffic Signals (72 comments)

- The traffic signal timings are not sequenced properly and should be better synchronized to improve traffic flow along US 158 and NC 12. The traffic signals regularly causes excess stop and go traffic.
- The traffic signaling for secondary roads entering US 158 and NC 12 needs to be adjusted accordingly, relative to the peak and non-peak months of the year. Drivers find it aggravating and difficult entering onto these major routes from side streets due to waiting at a red light for lengthy amounts of time. The traffic lights are too long and are on a short time cycle. It would help to have stoplight traffic signals during hours of heavy congestion and flashing caution lights in hours of light travel.
- There are not enough left turn protected traffic signals, especially during the heavily congested summer months.
- Red light cameras are needed at intersections to monitor traffic obstructions and red-light violations.
- There are too many traffic lights. The combination of a high speed limit and frequent traffic signals, along US 158 and NC 12, creates a dangerous transportation environment.

Colington Road Issues (63 comments)

- Major concerns are the heavy congestion (vehicles, bikes, and pedestrians) along Colington Road, and the many accidents at the intersection of Ocean Bay Blvd./Colington Road and US 158.
- There is a strong need for sidewalks and multi-use paths because the roadway is extremely dangerous for pedestrians, scooters, and bicycles because of the curvy road, which lends itself to blind spots and little to no shoulder space. Having multi-use paths would enable adults and children with safer access to other avenues of the Outer Banks without motor vehicles.
- Colington Road and its bridges are too narrow and need to be widened.
- The problem of standing water and flooding is also a very important issue in this area.

Speed Limit Reduction (55 comments)

- Variable speed limits are wanted along US 158 and NC 12, in Southern Shores, Kitty Hawk, Kill Devil Hills, and Nags Head, for peak and non-peak seasons throughout the year. Numerous amounts of cars exceed the speed limit, and it's most frequent during the summer months. The speed limit is too fast in the heavily developed business areas with numerous driveways accessing the highway, numerous signalized intersections, and many bicyclists and pedestrians in the area.

US 158 & NC 12 (Kitty Hawk/Kill Devil Hills/Nags Head) (53 comments)

US 158 and NC 12 (Beach Rd.) are extremely congested (vehicles/bicycles/pedestrians) during the summer months in Kitty Hawk, Kill Devil Hills and Nags Head. There are frequent car crashes that occur on US 158.

Intersection Problems (49 comments)

- The Southern Shores/Kitty Hawk intersection at US 158 (N Croatan Highway) and NC 12(Ocean Blvd./N Virginia Dare Trail). Northbound summer traffic heading to Corolla, Duck and Southern Shores becomes very congested and regularly back up into this intersection, blocking traffic heading in other directions.
- US 158/Colington Road intersection.
- The Manteo/Wanchese intersection, (US 64 & NC 345).
- US 158/3rd Street intersection.
- Pirates Cove/US 64 intersection.
- The US 158/NC 12 intersection at the Whalebone Junction intersection is confusing and needs to be better configured.
- US 158/5th Street intersection.
- US 158/Kitty Hawk Road intersection.
- US 158/Baum Street intersection.

Pedestrian Crossings (31 comments)

- US 158 is extremely dangerous for pedestrians to travel across, and pedestrian bridges/overpasses/crossovers can reduce the number of accidents and make crossing US 158 safer. With pedestrian crossovers, fast moving traffic does not have to frequently/abruptly stop for pedestrians at crosswalks and can flow uninterruptedly. The pedestrian crossovers should be constructed at major intersections, neighborhoods, locations near shopping centers and at public beach accesses.
- There is a need for more controlled crosswalks on NC 12. Few cars stop at crosswalks on the beach road. The existing pedestrian crossings need to have better defined markings, signage and signals (flashing lights).

Miscellaneous Comments

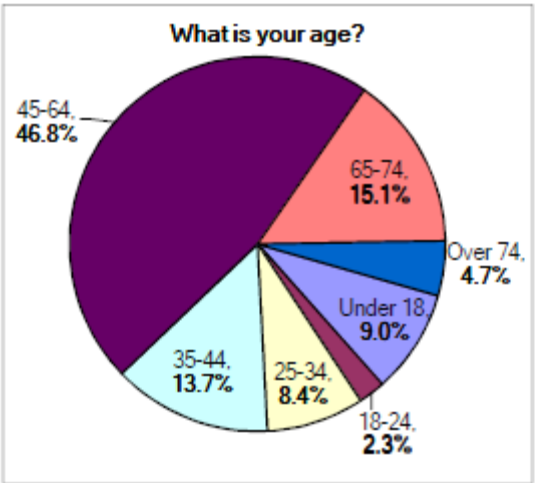
- There needs to be better connectivity in the Outer Banks neighborhoods for a more "town-like" feel (West side neighborhoods in Nags Head).
- Keeping "natural" pathways is most important. Beautification is important.
- Ban bridges on NC 12/Hatteras Island and do beach reclamation.
- Lack of coordination, unity and vision between towns for facility design and construction, as well as, surrounding counties like Currituck.
- There should be electric car charging stations.
- There needs to be more beach parking and access to the beach. Parking used as overflow for overcrowded rental houses adds to the parking capacity issues. The parking on the side of the road, at the s-curves (Mirlo Beach), is a major issue during summer season as well. Illegal parking on NC 12 (Beach Road). Parking in Downtown Manteo needs to be improved.
- Too much parking on E. Dogwood for such a narrow, busy street with an EMS station and many pedestrians.
- Fire Dept. being blocked during the summer with the new Lowe's light being added.
- Speed on US 64 and US 264 should be higher than 55 mph.
- Vegetative clutter (tree, bush, shrub, flower, etc.) in the median reduces sight-lines and visibility for all of vehicle drivers, cyclists and pedestrians. Grow only grass.

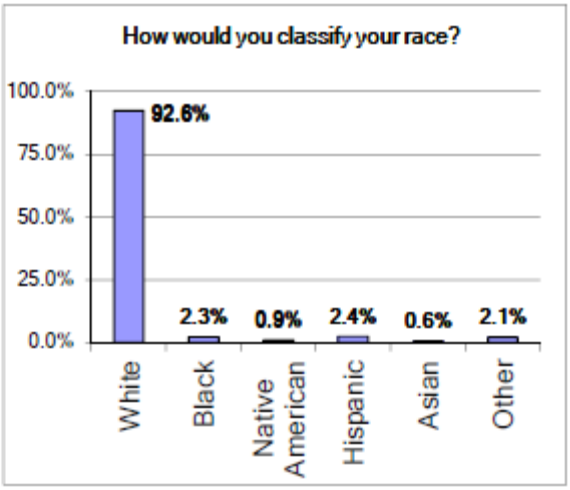
Question 11

What is your age?		
Answer Options	**Response Percent**	**Response Count**
Under 18	9.0%	166
18-24	2.3%	42
25-34	8.4%	155
35-44	13.7%	252
45-64	46.8%	863
65-74	15.1%	279
Over 74	4.7%	87
	answered question	**1844**
	skipped question	**148**

Question 12

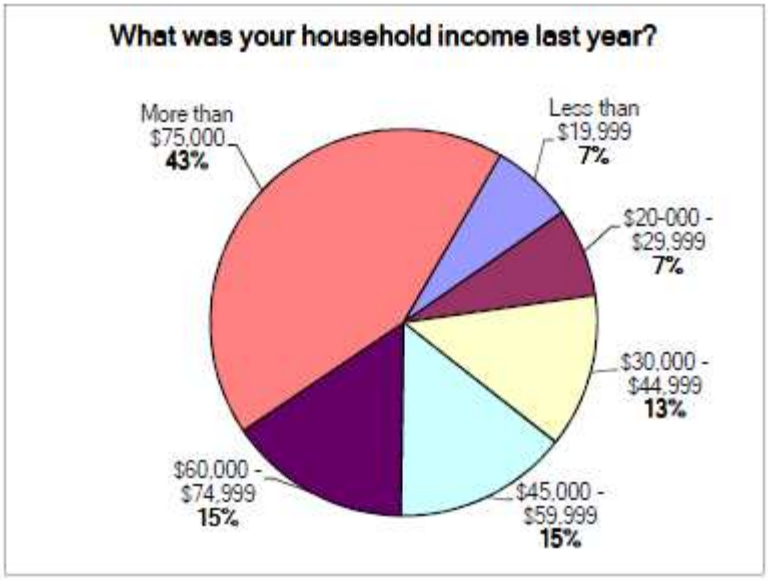
How would you classify your race?		
Answer Options	**Response Percent**	**Response Count**
White	92.6%	1679
Black	2.3%	42
Native American	0.9%	16
Hispanic	2.4%	43
Asian	0.6%	11
Other	2.1%	38
	answered question	**1813**
	skipped question	**179**





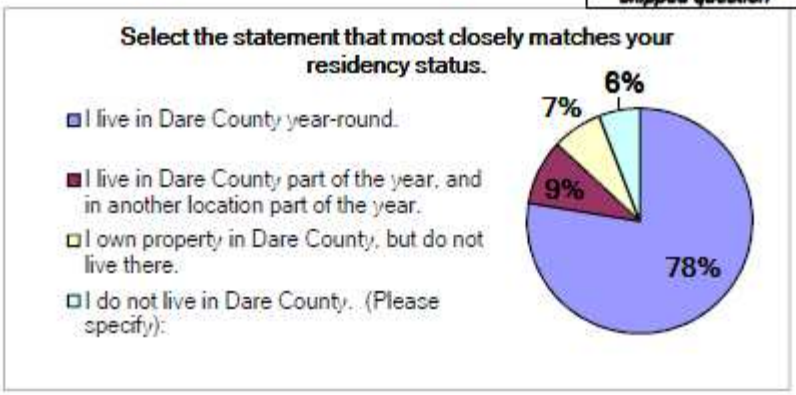
Question 13

What was your household income last year?		
Answer Options	**Response Percent**	**Response Count**
Less than $19,999	7.0%	116
$20-000 - $29,999	7.4%	121
$30,000 - $44,999	12.9%	213
$45,000 - $59,999	14.6%	240
$60,000 - $74,999	15.3%	252
More than $75,000	42.8%	704
	answered question	**1646**
	skipped question	**346**



Question 14

Select the statement that most closely matches your residency status:		
Answer Options	**Response Percent**	**Response Count**
I live in Dare County year-round.	77.6%	1417
I live in Dare County part of the year, and in another location part of the year.	9.4%	171
I own property in Dare County, but do not live there.	7.2%	132
I do not live in Dare County. (Please specify):	5.9%	107
	answered question	**1827**
	skipped question	**165**

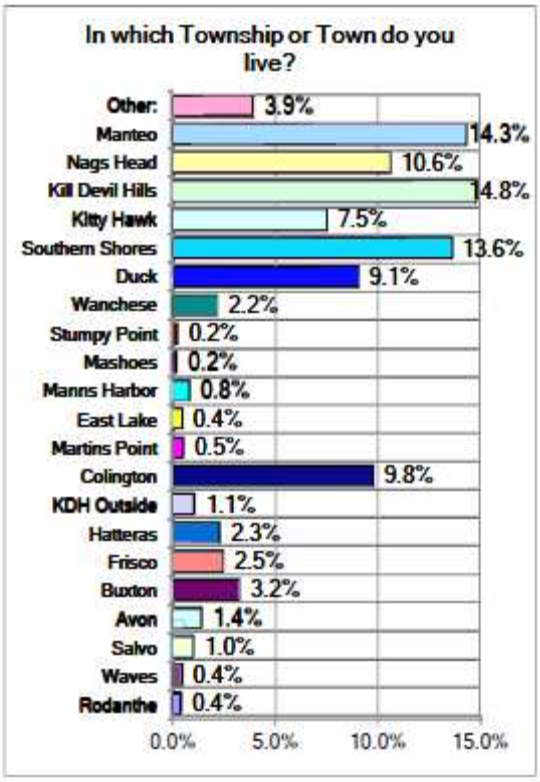


Other:

- (29 comments) Annual or Frequent Visitor (Vacationer)
- (24 comments) Currituck County
- (21 comments) Work in Dare County
- (11 comments) Grew up in Dare County/Family lives in Dare County
- (3 comments) Travel through Dare County to Corolla
- (3 comments) Tyrrell County

Question 15

In which Township or Town do you live?		
Answer Options	**Response Percent**	**Response Count**
Rodanthe	0.4%	7
Waves	0.4%	8
Salvo	1.0%	18
Avon	1.4%	25
Buxton	3.2%	58
Frisco	2.5%	44
Hatteras	2.3%	41
KDH Outside	1.1%	19
Colington	9.8%	175
Martins Point	0.5%	9
East Lake	0.4%	8
Mann's Harbor	0.8%	14
Mashoes	0.2%	3
Stumpy Point	0.2%	4
Wanchese	2.2%	39
Duck	9.1%	162
Southern Shores	13.6%	243
Kitty Hawk	7.5%	134
Kill Devil Hills	14.8%	264
Nags Head	10.6%	190
Manteo	14.3%	256
Other:	3.9%	70
	answered question	**1788**
	skipped question	**204**



Other:

- (36 comments) Currituck County
- (4 comments) Tyrrell County
- (3 comments) Catawba County
- (2 comments) Hyde County

Visitor Survey:

1. How concerned are you about the following transportation issues?

	Very Concerned	Somewhat Concerned	Not at all	Rating Average	Response Count
Congestion traveling to the Outer Banks	33.7% (177)	**42.9% (225)**	23.4% (123)	1.90	525
Congestion traveling while on the Outer Banks	24.0% (126)	**38.6% (203)**	37.5% (197)	2.13	526
Truck traffic	12.1% (63)	36.5% (190)	**51.3% (267)**	2.39	520
Safety of the center lane on US 158	23.9% (124)	**44.6% (231)**	31.5% (163)	2.08	518
Directional signage	12.8% (66)	35.9% (185)	**51.3% (264)**	2.38	515
Pedestrian crossings	26.0% (135)	**41.4% (215)**	32.6% (169)	2.07	519
			answered question		**528**
			skipped question		**4**

2. How much would bicycle and pedestrian facilities enhance the Outer Banks?

	Very Much	Somewhat	Not at all	Rating Average	Response Count
Sidewalks on US 158	**40.6% (206)**	40.2% (204)	19.1% (97)	1.79	507
Sidewalks on NC 12	**54.3% (276)**	29.3% (149)	16.3% (83)	1.62	508
On-road bicycle accommodations	**39.8% (202)**	35.8% (182)	24.4% (124)	1.85	508
Off-road trails/greenways for walking/biking	**65.8% (337)**	23.0% (118)	11.1% (57)	1.45	512
			answered question		**515**
			skipped question		**17**

3. If available, would you consider using public transit service around the Outer Banks?

	Response Percent	Response Count
Yes	45.7%	236
No	**54.3%**	**280**
	answered question	**516**
	skipped question	**16**

4. If your response to Question #3 was yes, please check the desired locations for the service:

	Response Percent	Response Count
Duck	50.4%	115
Southern Shores	34.2%	78
Kitty Hawk	69.7%	159
Kill Devil Hills	**72.4%**	**165**
Colington	13.6%	31
Nags Head	70.6%	161
Manteo/Roanoke Island	49.1%	112
Mainland Dare Co.	11.0%	25
Rodanthe/Waves/Salvo	28.1%	64
Avon	28.1%	64
Buxton/Frisco	26.3%	60
Hatteras	47.8%	109
	Other (Please specify):	16
	answered question	**228**
	skipped question	**304**

5. Below is a map showing Dare County. In which area have you stayed most often?

	Response Percent	Response Count
Duck	12.8%	64
Southern Shores	4.4%	22
Kitty Hawk	7.8%	39
Kill Devil Hills	15.6%	78
Colington	0.2%	1
Nags Head	**19.8%**	**99**
Manteo/Roanoke Island	1.4%	7
Mainland Dare Co.	0.0%	0
Rodanthe/Waves/Salvo	10.2%	51
Avon	9.4%	47
Buxton/Frisco	5.2%	26
Hatteras	6.8%	34
Other:	6.6%	33
	answered question	**501**
	skipped question	**31**

6. Please list other transportation improvements that would improve your visit and experience in Dare County.

	Response Count
	165
answered question	**165**
skipped question	**367**

Comments:

- (20 Comments) Improve public transportation (trolley, bus, tram, shuttle)
- (17 Comments) Additional connection to beach/Mid-Currituck Bridge
- (16 Comments) No changes wanted
- (15 Comments) Improve bicycle paths
- (12 Comments) Improve pedestrian paths
- (12 Comments) Adjust/enforce speed limits

- (9 Comments) Reduce congestion somehow
- (7 Comments) Improve signage
- (7 Comments) Increase/improve ferry service
- (7 Comments) Off-road vehicles on beach
- (6 Comments) Increase left turn lanes
- (5 Comments) Replace Bonner Bridge
- (5 Comments) Improve signalization
- (4 Comments) Improve beach access
- (4 Comments) Widen NC 12
- (3 Comments) Improve taxi service
- (2 Comments) Allow golf carts
- (2 Comments) Reduce number of cyclists

Public Meetings

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

Public Workshop # 1
Held in Manteo on 12/5/13

Public Workshop # 2
Held in Rodanthe on 12/16/13

Public Workshop #3
Held in Kitty Hawk on 12/16/13

Appendix I
Alternatives & Scenarios Studied

US 64 on Roanoke Island

US 64 from Marshall C. Collins Drive to Mother Vineyard Road (SR 1120) on Roanoke Island is currently over capacity. This stretch of the facility goes through the town of Manteo as well as Dare County, and it includes the intersection of US 64 and Marshall C. Collins Drive. Because of physical constraints, no method of improvement was found to be acceptable to Manteo or Dare County at this time. Storefront development prevents any additions to the current pavement width. Other routes connecting the Outer Banks to the northern end of Roanoke Island were studied as part of this CTP; however none proved feasible at this time.

Alternatives Studied:

Alternative A: New bridge connecting Roanoke Island to Beach
The first alternative studied was to construct a new bridge connecting the north end of Roanoke Island with Nags Head, Kill Devil Hills, or Colington over the Roanoke Sound. This would create an additional route connecting beachgoers with the many tourist attractions on Roanoke Island. There was not enough local support for this alternative due to the high cost of such an improvement.

Alternative B: New ferry connecting Roanoke Island to Beach
The second alternative studied was to create a new ferry route connecting the north end of Roanoke Island with either Nags Head, Kill Devil Hills, or Colington through the Roanoke Sound. Concerns were expressed locally and by Division 1 about the depth of the sound making this alternative unfeasible.

Alternative C: Parallel route to US 64
The third alternative studied was to improve/realign a combination of existing roads in Manteo to create a parallel route to US 64 in order to relieve traffic on that facility. The town of Manteo and Dare County were not in favor of this alternative due to potential impacts to businesses and historic properties in the vicinity both east and west of this portion of US 64.

Alternative D: Widen US 64
The third alternative studied was to widen the existing alignment of US 64 through Roanoke Island. The town of Manteo and Dare County were not in favor of this alternative due to severe potential impacts to businesses along the facility.

NC 12 in Duck and Southern Shores

NC 12 from NC 12/ North Virginia Dare Trail in Southern Shores to Dune Road (SR 1518) on in Duck is currently near or over capacity, and is projected to be significantly

over capacity by the year 2040. This stretch of the facility is located just north of the intersection of US 158 and NC 12. No method of improvement along this portion of NC 12 within Dare County was found to be acceptable to Duck or Southern Shores at this time. Storefront development prevents any additions to the current pavement width. The town of Duck and the town of Southern Shores (as well as Dare County, Currituck County, and all the other towns in Dare County) have expressed their support for the proposed Mid-Currituck Bridge (TIP No. R-2576). The Mid-Currituck Bridge would relieve congestion along this portion of NC 12, as stated in the project's 2008 Statement of Purpose and Need. The proposed bridge would allow vehicles travelling to the northern portion of the Outer Banks to travel there directly without having to travel through Duck and Southern Shores.

Appendix J
Existing Transportation Plans

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

- 1996 Outerbanks Thoroughfare Plan
- 1972 Nags Head Thoroughfare Plan

Additionally, the following Comprehensive Transportation Plans for adjacent counties were reviewed and checked for consistency with the Dare County Comprehensive Transportation Plan.

- 2012 Currituck County Comprehensive Transportation Plan
- 2012 Tyrrell County Comprehensive Transportation Plan
- 2012 Hyde County Comprehensive Transportation Plan