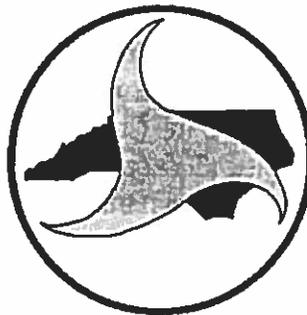


**FEASIBILITY STUDY**

**New Connector  
from US 17 in Jones County  
to US 70 in Craven County**

**Division 2**

**R-3821**



Prepared by the  
Program Development Branch  
Division of Highways  
N. C. Department of Transportation

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2/26/98

Date

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## I. General Description

This feasibility study describes constructing a new connector from US 17 in Jones County to US 70 in Craven County, a distance of 15.0 miles (24.2 km). The project location is shown on Figures 1 and 2. The recommended cross-section is a two-lane roadway, 24 feet (7.3 m) wide with 2-foot (0.6-m) paved shoulders on 100 feet (30.5 m) of right-of-way with no access control. It is recommended to utilize the existing alignments of SR 1004 (Brices Creek Rd.) and SR 1101 (County Line Rd.) for this project. It is anticipated that there will be one residence and no businesses relocated due to this project. The total cost of the project, including construction and right-of-way, is estimated to be \$20,200,000.

This study is the initial step in the planning and design process for this project and is not the product of exhaustive environmental or design investigations. The purpose of this study is to describe the proposed project including costs, and to identify potential problems that may require consideration in the planning and design phases.

## II. Need for Project

The purpose of this project is to provide an alternate route from US 17 to US 70. The existing route requires following US 17 into New Bern through areas of congestion. This project is supported by the Craven/Pamlico Transportation Advisory Committee.

SR 1004 (Brices Creek Rd.) is designated as a major rural collector in the North Carolina Statewide Functional Classification System.

SR 1004 is currently a two-lane roadway with a pavement width of 20 feet (6.1 m) with soil shoulders 4 feet (1.2 m) wide on approximately 60 feet (18.3 m) of right-of-way. There is moderate residential development along both sides of this roadway, which increases in density in the vicinity of Pollocksville. SR 1101 (County Line Rd.) is currently an unimproved two-lane roadway that is approximately 20 feet (6.1 m) wide. This roadway is located in the Croatan National Forest and has no recorded right-of-way. There is no development along this roadway. There are also no existing traffic signals within the project limits.

Along SR 1004 (Brices Creek Rd.), there are two bridges that will require replacement. Bridge No. 19 carries SR 1004 over Mill Creek east of US 17. This bridge is a steel plank bridge on I-beams and is 71 feet (21.6 m) long with a clear roadway width of 24 feet (7.3 m). This bridge was built in 1968 and has a sufficiency rating of 46.8. Bridge No. 20 carries SR 1004 over Island Creek approximately 2 miles (3.2 km) west of SR 1101 (County Line Rd.). This bridge is a steel plank bridge on I-beams and is 51 feet (15.5 m) long with a clear roadway width of 29.1 feet (8.9 m). This bridge was built in 1974 and has a sufficiency rating of 64.2.

Along SR 1101 (County Line Rd.), there are also two bridges that will require replacement. Bridge No. 150 carries SR 1101 over a branch of Brices Creek approximately 3.5 miles (5.6 km) west of SR 1004. This bridge has a timber floor on timber joists and is 19 feet (5.8 m) long with a clear roadway width of 19.2 feet (5.9 m). This bridge was built in 1956 and has a sufficiency rating of 73.7. Bridge No. 9 carries SR 1101 over Brices Creek approximately 0.5 miles (0.8 km) west of SR 1110 (Wilcox Rd.) (see Figure 2). This bridge has a timber floor on timber and concrete I-beams and is 98 feet (30.0 m) long with a clear roadway width of 19.2 feet (5.9 m). This bridge was built in 1954 and has a sufficiency rating of 60.4.

The Norfolk Southern Railroad operates a railway that runs parallel to US 70. This railway carries four trains per day at an average speed of 30 mph (48.3 km/h). Where the project crosses this railroad as a part of the alternate alignments, the exposure index will be 29,600 in the design year. There is also an abandoned railway located adjacent to US 17.

TIP Project R-2301 A and R-2514 E will construct the US 17 Bypass as a four-lane facility on new location in the vicinity of this project. R-2301 A is currently scheduled for right-of-way acquisition in June 1999 and for construction in June 2001. R-2514 E is currently scheduled for right-of-way acquisition in October 2003 and for construction in October 2004.

Traffic projections vary greatly between the alternate alignments for this project. The following table shows the projected traffic volumes for each alternate being considered, and the anticipated Level of Service (LOS) for each. Traffic volumes are expressed in vehicles per day (vpd).

*Table 1. Traffic Volumes & Levels of Service*

<b>Alternate</b>	<b>1997 Traffic</b>	<b>2025 Traffic</b>	<b>Percent Trucks</b>	<b>1997 LOS</b>	<b>2025 LOS</b>
US 17 Bypass to US 70 via SR 1101	4,100	7,200	5 %	B	C
US 17 Business to US 70 via SR 1101	4,200	7,400	5 %	B	C
US 17 to US 70 via SR 1004 and SR 1101	1,300	2,500	3 %	A	B

During the three-year period from October 1994 to September 1997, there were thirty-four accidents reported on SR 1004 (Brices Creek Rd.) within the project limits. There were twenty-three injuries reported as a result of these accidents, including one fatality. The accident rate along SR 1004 within the project limits is 340.00 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1996 statewide rate of 255.93 acc/100mvm for two-lane rural secondary routes. From March 1994 to February 1997, there were two accidents reported on SR 1101 (County Line Rd.).

### III. Discussion of Project

It is proposed to construct a new connector from US 17 in Jones County to US 70 in Craven County. The project location is shown on Figure 1. The recommended cross-section is a two-lane roadway, 24 feet (7.3 m) wide with 2-foot (0.6-m) paved shoulders on 100 feet (30.5 m) of right-of-way with no access control.

#### All Alternates - SR 1101 from SR 1004 to US 70

Several alignments were evaluated in order to accomplish the connection of US 17 and US 70 south of New Bern. All three alternates utilize the alignment of existing SR 1101 (County Line Rd.) in Craven County through the Croatan National Forest from SR 1004 (Brices Creek Rd.) to US 70 at SR 1108 (Riverdale Rd.). SR 1101 will require significant improvements to the existing alignment, including realigning several curves to accommodate a 50 mph (80 km/h) design speed, and replacing two bridges. Bridge No. 150 over a branch of Brices Creek is to be replaced with a new structure approximately 30 feet (9.1 m) long and 32 feet (9.8 m) wide, and Bridge No. 9 over Brices Creek is to be replaced with a new structure approximately 150 feet (45.7 m) long and 32 feet (9.8 m) wide.

In Jones County, three different alignments were considered.

#### Alternate 1 - New location from proposed US 17 Bypass to SR 1004

Alternate 1 constructs the connector on new location from the proposed US 17 Bypass to SR 1004 (Brices Creek Rd.). US 17 Bypass will be a controlled access facility constructed under TIP Project R-2301 A. An interchange will be required in order to provide access to the connector. Due to the proximity of a proposed interchange at US 17 Bypass and US 17 Business, and due to the anticipated flow of traffic in the area, it is proposed to construct this interchange with a trumpet configuration (see Figure 1).

Alternate 1 continues southeast from US 17 Bypass and crosses the Trent River with a new structure approximately 650 feet (198.2 m) long and 32 feet

(9.8 m). The alignment avoids a large marsh and crosses Island Creek with a new structure approximately 1000 feet (304.9 m) long and 32 feet (9.8 m) wide. The new location intersects SR 1004 approximately 0.9 miles (1.4 km) west of SR 1101.

The structures in Alternate 1 are unusually long because the Trent River and Island Creek both reside in wide gullies and are flanked by marshes.

The total length of the project under Alternate 1 is 13.8 miles (22.2 km). It is anticipated that eight residences and no businesses will be relocated due to this alternate. The total cost of the project under Alternate 1 is as follows:

Construction.....	\$ 30,400,000
Right-of-way.....	\$ 3,200,000
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Total Cost .....	\$ 33,600,000

Alternate 2 - New location from proposed US 17 Business to SR 1004

This alternate is similar to Alternate 1 since it ties into US 17 and follows new location to SR 1004. However Alternate 2 connects to existing US 17 at SR 1224 (Tuscarora Rd.) instead of US 17 Bypass. This segment of US 17 will be designated US 17 Business after the construction of US 17 Bypass. Alternate 2 proceeds south on new location from US 17 and crosses the Trent River with a new structure approximately 2000 feet (609.8 m) long and 32 feet (9.8 m) wide. This alignment crosses the Trent River and its surrounding marshes at one of its widest points. Alternate 2 avoids a large marsh and follows the same alignment as Alternate 1 across Island Creek until it intersects with SR 1004 (see Figure 1). Also, the proposed structure over Island Creek will be approximately 1000 feet (304.9 m) long and 32 feet (9.8 m) wide.

The total length of the project under Alternate 2 is 13.7 miles (22.0 km). It is anticipated that no residences or businesses will be relocated due to this alternate. The total cost of the project under Alternate 2 is as follows:

Construction.....	\$ 28,400,000
Right-of-way.....	\$ 1,500,000
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Total Cost .....	\$ 29,900,000

Alternate 3 - Existing location from US 17 to SR 1101 via SR 1004

Unlike Alternates 1 and 2, this alternate utilizes existing roadways for the entire project. Alternate 3 follows the existing alignment of SR 1004 (Brices

Creek Rd.) from US 17 in Pollocksville to SR 1101 (County Line Rd.). This option will have limited wetlands impacts and will not require any new waterway crossings.

Bridge No. 19 at Mill Creek will require replacement with a new structure approximately 80 feet (24.4 m) long and 32 feet (9.8 m) wide, and Bridge No. 20 at Island Creek will require replacement with a new structure approximately 60 feet (18.3 m) long and 32 feet (9.8 m) wide.

The total length of the project under Alternate 3 is 15.0 miles (24.2 km). It is anticipated that one residence and no businesses will be relocated due to this alternate. The total cost of the project under Alternate 3 is as follows:

Construction.....	\$ 18,400,000
Right-of-way.....	\$ 1,800,000
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Total Cost .....	\$ 20,200,000

#### IV. Discussion of Alternatives

This project is not without merit in providing a new east-west access from US 17 to US 70 south of New Bern. The current means of traveling between the two highways requires drivers to follow US 17 into New Bern, where it is currently congested within the city limits. The three military bases in the area, Camp Lejeune in Jacksonville, Oak Grove Auxiliary Air Field in Pollocksville, and Cherry Point Air Station in Havelock generate sufficient traffic through the existing route along US 17 and US 70 to warrant some type of alternate route. This proposed connector would alleviate some congestion within the existing US 17 corridor through New Bern, and it will reduce the trip length by as much as seven miles.

The three alternate alignments considered for this project have varying impacts. While traffic projections show Alternates 1 and 2 will generate the most usage of this facility, they will also have the most substantial impact to the environment and will be the costliest to build. It is anticipated that there will be problems acquiring permits for Alternates 1 or 2 due to the presence of a reasonable alternate route, which was evaluated as Alternate 3. This alternate utilizes the existing alignment SR 1004 (Brices Creek Rd.) and implements shoulder and right-of-way improvements along this roadway. This route, while not providing a direct connection to the proposed US 17 Bypass, will serve the purpose of connecting US 17 and US 70 at a lower cost and with limited impacts, and it is on this basis that Alternate 3 is the recommended alignment for this project.

## V. Additional Comments

An environmental screening was not conducted for this study. However, no impacts to historic properties are anticipated.

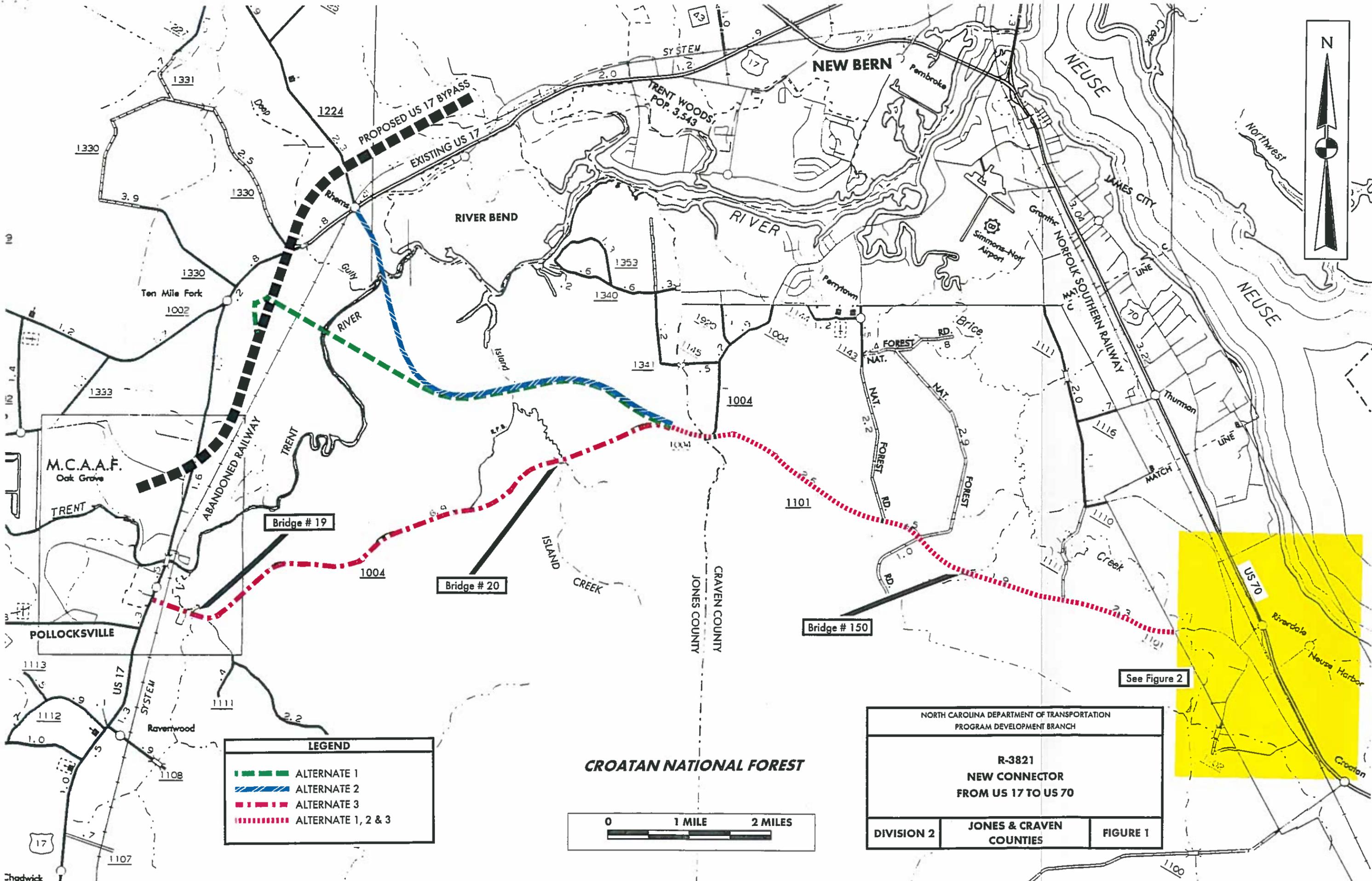
Heavy impacts to wetlands are expected for Alternates 1 and 2; lesser impacts are anticipated for Alternate 3. A Corps of Engineers Section 404 Permit is anticipated under any of the alternates.

Based on maps at the Department of Environment, Health & Natural Resources - Natural Heritage Section, several candidates for protection as threatened/endangered species were identified within and adjacent to the project corridor. The following plants, animals, and habitats were identified:

- Asplenium heteroresiliens (Carolina Spleenwort)
- Carex lupuliformis (Hop-like Sedge)
- Carex willdenowii (Southern Willdenow's Sedge)
- Cystopteris tennesseensis (Tennessee Bladder Fern)
- Fissidens hallii (Hall's Pocket Moss)
- Malaxis spicata (Florida Adder's Mouth)
- Minuartia godfreyi (Godfrey's Sandwort)
- Necturus lewisi (Neuse River Waterdog)
- Picoides borealis (Red-cockaded Woodpecker)
- Ponthieva racemosa (Shadow Witch)
- Quercus austrina (Bluff Oak)
- Scirpus lineatus (Drooping Bulrush)
- Solidago tortifolia (Twisted-leaf Goldenrod)
- Solidago verna (Spring-flowering Goldenrod)
- Basic Mesic Forest - Coastal Plain Subtype
- Coastal Plain Marl Outcrop
- Coastal Plain Small Stream Swamp - Blackwater Subtype

The sections of Deep Gully, Brices Creek, and Island Creek within the project corridor are Class C waterway and are classified as nutrient sensitive swamp waters. The Trent River is classified as primary recreation tidal salt waters. These waterways are part of the Neuse River Basin.

No special accommodation for bicycles is recommended on this project.



**LEGEND**

-  ALTERNATE 1
-  ALTERNATE 2
-  ALTERNATE 3
-  ALTERNATE 1, 2 & 3



**CROATAN NATIONAL FOREST**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROGRAM DEVELOPMENT BRANCH		
R-3821 NEW CONNECTOR FROM US 17 TO US 70		
DIVISION 2	JONES & CRAVEN COUNTIES	FIGURE 1

See Figure 2

Chadwick

