

NC 211  
From SR 1500 (Midway Road) to NC 87  
Brunswick County  
Federal-Aid Project STP-0211(21)  
WBS Element 41582.1.1  
TIP Project R-5021

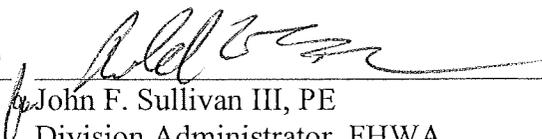
ADMINISTRATIVE ACTION  
ENVIRONMENTAL ASSESSMENT

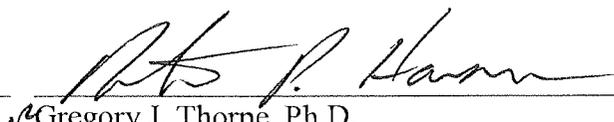
U. S. Department of Transportation  
Federal Highway Administration  
And  
N. C. Department of Transportation  
Division of Highways

Submitted pursuant to 42 U. S. C. 4332(2)(C)



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2/1/11   
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**ENVIRONMENTAL ASSESSMENT**



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## **PROJECT COMMITMENTS**

NC 211  
From SR 1500 (Midway Road) to NC 87  
Brunswick County  
Federal Aid Project STP-0211(21)  
WBS Element 41582.1.1  
TIP Project R-5021

### **Roadside Environmental Unit/Division Three Construction**

Beaverdam Creek, its tributaries, and Dutchman Creek are listed as high quality waters (HQW). Therefore, NCDOT Design Standards in Sensitive Watersheds will be implemented during project construction.

### **Project Development and Environmental Analysis Branch**

Concurrence from the US Fish and Wildlife Service will be obtained on a biological conclusion of “may affect, not likely to adversely affect” for the red-cockaded woodpecker and the eastern cougar prior to completion of the final environmental document for this project.

A conservation easement is located approximately 1,250 feet east of Beaverdam Creek on the north side of NC 211. Payment to the North Carolina Ecosystem Enhancement Program (NC EEP) may be necessary, sufficient to perform restoration to non-riparian wetlands in the Cape Fear River Basin in the area of the conservation easement.

### **Roadway Design Unit/Structure Design Unit**

Five-foot paved shoulders will be provided along the project to accommodate bicycles. Fifty-four inch bridge rails will be provided on proposed bridges in order to accommodate bicycles. If feasible, the outside rail on the existing bridge carrying NC 211 over the Progress Energy discharge canal will be retrofitted to the AASHTO standard bicycle-safe bridge railing height of 54 inches.

### **Division 3 Construction**

Dutchman Creek is designated a Primary Nursery Area for fish. Therefore, an in-water moratorium on construction activities will be observed between April 1st and September 30th for Dutchman Creek.

Due to the presence of potentially suitable red-cockaded woodpecker foraging habitat on both sides of NC 211, total clearing for the project (including existing cleared area) between Regency Drive and Patrick Newton Drive will be limited to less than 200 feet wide.

### **Hydraulics Unit/Division 3 Construction**

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine whether the Memorandum of Agreement between NCDOT and FMP is applicable or if approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR) will be required for this project.

This project involves construction activities on or adjacent to FEMA-regulated streams. Therefore, NCDOT Division Three shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankment located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

**SUMMARY**  
Environmental Assessment  
Prepared by the  
Project Development and Environmental Analysis Branch  
of the  
North Carolina Department of Transportation

**1. Type of Action**

This is a Federal Highway Administration (FHWA) Action, Environmental Assessment.

**2. Project Purpose/Description of Action**

The purpose of the proposed project is to improve the traffic carrying capacity of NC 211 between SR 1500 (Midway Road) and NC 87. The subject project proposes to widen NC 211 within the project limits in to four lanes with a median between from SR 1500 to NC 87 in Brunswick County. The project length is approximately 6.6 miles.

**3. Alternatives Considered**

Improving the existing facility, alternate modes of transportation, transportation systems management, and the “no-build” alternative were considered for this project.

Improving the existing facility by widening NC 211 to four lanes with a 30-foot median was selected for detailed study (see Section V-A). The project was divided into three sections and both north side widening and south side widening was studied for each section. In addition, both an at-grade intersection and an interchange are being considered at the SR 1500 (Midway Road) intersection.

Alternate modes of transportation, transportation systems management, and the “no-build” alternative would not address the capacity concerns along NC 211 within the project limits; and therefore, would not effectively meet the purpose and need of the project.

**4. Summary of Environmental Impacts**

Each alternative will require the relocation of homes and businesses, and will affect wetlands and streams. The project will not impact any properties or sites listed on or eligible for the National Register of Historic Places, and will not impact any resources protected by Section 4(f) of the USDOT Act of 1966, as amended. Table S-1 presents anticipated environmental effects of the project alternatives.

**Table S-1  
Anticipated Environmental Effects of the Project Alternatives**

	Section 1				Section 2		Section 3	
	North Interchange	North At-Grade	South Interchange	South At-Grade	North	South	North	South
<b>Residential Relocates</b>	2	4	2	0	1	1	1	0
<b>Business Relocates</b>	1	1	2	1	2	4	2	7
<b>Jurisdictional Wetlands Affected (Acres)</b>	15.02	1.03	17.17	3.32	41.09	35.49*	1.40	0.96
<b>Open Waters Affected (Acres)</b>	0.67	0.60	1.76	1.73	0.00	0.00	0.10	0.00
<b>Stream Impacts (Linear Feet)</b>	0	0	0	0	583	479	192	122
<b>Receptors Impacted by Traffic Noise</b>	6	6	3	3	13	11	10	13
<b>Forested Areas Affected</b>	8.94	1.94	19.22	4.19	19.04	18.09	5.33	5.48
<b>Prime and Important Farmland Affected</b>	0	0	0	0	0	0	0	0
<b>Effect on Federally Protected Species?</b>	No <sup>i</sup>	No <sup>i</sup>	No <sup>i</sup>	No <sup>i</sup>	No <sup>i,iii</sup>	No <sup>i,iii</sup>	No <sup>i</sup>	No <sup>i</sup>
<b>Effect on Historic Resources?</b>	No	No	No	No	No	No	No	No
<b>Section 4(f)/Section 6(f) Properties</b>	No	No	No	No	No	No	No	No
<b>Adverse/Disproportional Impact to Low Income or Minority Populations</b>	No	No	No	No	No	No	No	No
<b>Right of Way Cost</b>	\$16.425	\$5.525	\$16.950	\$4.500	\$7.575	\$8.175	\$6.975	\$8.625
<b>Construction Cost</b>	\$31.000	\$20.800	\$31.000	\$20.800	\$27.000	\$27.000	\$14.000	\$13.200
<b>Total Cost (Millions)</b>	\$51.059	\$27.066	\$51.774	\$25.949	\$39.163	\$40.512	\$21.972	\$22.912

\*Six acres of wetland impacts are clearing for power line easement.

<sup>i</sup>The project has a biological conclusion of “may affect, not likely to adversely affect” on the eastern cougar.

<sup>ii</sup>The project has a biological conclusion of “may affect, not likely to adversely affect” on the red-cockaded woodpecker.

## **5. Special Permits Required**

The proposed project will likely require an Individual Section 404 Permit from the US Army Corps of Engineers. Final permit decisions rest with the US Army Corps of Engineers.

This project will also require a 401 Water Quality Certification from the NC Division of Water Quality prior to issuance of the Individual 404 Permit. A state stormwater permit may also be required.

## **6. Coordination**

Comments regarding the proposed project were requested from various federal, state and local agencies. Copies of the comments received are included in Appendix A. An asterisk indicates comments were received from that agency.

U.S. Department of the Army – Corps of Engineers \*

U.S. Department of the Interior – Fish and Wildlife Service\*

National Oceanic and Atmospheric Administration – National Marine Fisheries

N.C. Department of Administration – State Clearinghouse\*

N.C. Department of Cultural Resources\*

N.C. Department of Environment and Natural Resources, Division of  
Environmental Health

N.C. Department of Environment and Natural Resources, Natural Heritage  
Program\*

N.C. Department of Environment and Natural Resources, Division of Parks and  
Recreation

N.C. Department of Environment and Natural Resources, Division of Coastal  
Management\*

N.C. Department of Environment and Natural Resources, Division of Water  
Quality\*

N.C. Department of Public Instruction – School Planning\*

N.C. Wildlife Resources Commission\*

Brunswick County

City of Southport

Town of Boiling Spring Lakes

Town of St. James

## **7. Contact Information**

The following persons may be contacted for additional information concerning this proposal and statement:

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## I. DESCRIPTION OF PROPOSED ACTION

### A. General Description

The subject project proposes to widen the portion of NC 211 between SR 1500 (Midway Road) and NC 87 in Brunswick County. The project length is approximately 6.6 miles.

### B. Historical Resume and Project Status

The proposed project was first programmed in the draft 2008-2015 North Carolina State Transportation Improvement Program (STIP) for right of way acquisition. Project development studies began for the project in 2007.

The project is included in the approved 2009-2015 STIP. Right of way is scheduled for federal fiscal year 2015 and construction is currently scheduled for 2019 in the draft NCDOT 10-year Work Program.

### C. Cost Estimates

The cost estimate included in the draft NCDOT 10-year Work Program for the project is \$65,300,000. Of this total, \$10,000,000 is estimated for right of way acquisition, and \$55,300,000 for construction. Current cost estimates for each alternative are shown in Table 1. Costs shown in Table 1 are in millions. Refer to Figure 2 for alternatives.

**TABLE 1  
COST ESTIMATES**

(Cost in Millions)	Section 1				Section 2		Section 3	
	North Interchange	North At-Grade	South Interchange	South At-Grade	North	South	North	South
<b>Construction Cost</b>	\$31.000	\$20.800	\$31.000	\$20.800	\$27.000	\$27.000	\$14.000	\$13.200
<b>Wetland/ Stream Mitigation Cost</b>	\$1.358	\$0.112	\$1.548	\$0.303	\$4.242	\$3.621	\$0.285	\$0.191
<b>Utility Relocation Cost</b>	\$2.276	\$0.629	\$2.276	\$0.346	\$0.346	\$1.716	\$0.712	\$0.896
<b>Right Of Way Cost</b>	\$16.425	\$5.525	\$16.950	\$4.500	\$7.575	\$8.175	\$6.975	\$8.625
<b>TOTAL</b>	\$51.059	\$27.066	\$51.774	\$25.949	\$39.163	\$40.512	\$21.972	\$22.912

## **II. PURPOSE AND NEED FOR PROJECT**

### **A. Project Purpose**

The purpose of the proposed project is to improve the traffic carrying capacity of NC 211 between SR 1500 (Midway Road) and NC 87.

### **B. Need for Project**

#### **1. Description of Existing Conditions**

NC 211 extends from US 220A in Montgomery County to the Fort Fisher ferry east of Southport in Brunswick County. The portion of NC 211 in the project area connects the Towns of Southport, Oak Island (via NC 133) and St. James with US 17 (see Figure 1).

##### **a. Route Classification**

NC 211 is classified as a rural major collector in the North Carolina Functional Classification System from SR 1500 to Beaverdam Swamp and from the Progress Energy Discharge Canal to NC 87. NC 211 is classified as an urban collector from Beaverdam Swamp to the Progress Energy Discharge Canal.

The draft Brunswick County Comprehensive Transportation Plan (revised August 12, 2008) recommends NC 211 in the project area be upgraded as a boulevard.

NC 211 is designated as a hurricane and nuclear plant emergency evacuation route.

##### **b. Physical Description of Existing Facility**

###### **(1) Roadway Typical Section**

NC 211 is mainly a two-lane road with 12-foot travel lanes. Three lanes exist on NC 211 with two 12-foot travel lanes and a center turn lane from the town limits of St. James to NC 133 (Long Beach Road). NC 211 has two 12-foot lanes within the remainder of the project area.

## **(2) Horizontal and Vertical Alignment**

NC 211 within the project limits is a straight road, with one horizontal curve just north of the NC 87 intersection. The vertical alignment of NC 211 within the project limits is fairly flat, with no steep grades.

## **(3) Right of Way and Access Control**

Existing right of way along NC 211 varies within the project study area. The right of way is 60 feet from NC 87 to 20 feet west of NC 87. Existing right of way is 150 feet wide within the remainder of the project study area.

## **(4) Speed Limit**

The posted speed limit on NC 211 varies from 45 to 55 mph within the study area. From SR 1500 to 0.6 mile west of the NC 211/SR 1549 (Oakview Drive) intersection, the speed limit on NC 211 is 55 mph. From 0.6 mile west of SR 1549 to NC 87, the speed limit on NC 211 is 45 mph.

## **(5) Intersections**

Six signalized intersections exist along NC 211 within the study area: SR 1500 (Midway Road), St. James Drive, NC 133 (Long Beach Road), NC 133 (Doshier Cutoff Road), Sandy Lane, and NC 87. Other intersections within the project area (see Figure 5) are controlled by stop signs.

## **(6) Railroad Crossings**

No railroad crossings exist on NC 211 within the project area.

## **(7) Structures**

There are three bridge structures and two culverts on NC 211 within the study area. Table 2 describes the bridge structures.

**TABLE 2  
EXISTING BRIDGE STRUCTURES**

<b>Bridge Number</b>	<b>Carries/Crosses</b>	<b>Clear Roadway Width</b>	<b>Length</b>	<b>Sufficiency Rating*</b>
76	NC 211/ Beaverdam Swamp	26.3 feet	20 feet	55.5
24	NC 211/ Dutchman's Creek	28.9 feet	31 feet	53.8
93	NC 211/ Progress Energy Discharge Canal	44.0 feet	326 feet	96.4

\*out of a possible 100 points

One culvert is a one barrel, 6-foot by 5-foot reinforced concrete box culvert located 550 feet east of SR 1500 and carries an unnamed tributary to River Swamp. The second is a two barrel, 6-foot by 4-foot reinforced concrete box culvert located 200 feet west of SR 1549 and carries an unnamed tributary to Jump and Run Creek.

**(8) Bicycle and Pedestrian Facilities/Greenways**

NC 211 is on NC Bike Route No. 3 (Ports of Call). No special bicycle accommodations or sidewalks exist along NC 211 within the project area.

**(9) Utilities**

A water line runs along the south side of NC 211. Overhead power lines also exist along NC 211. Underground fiber-optic cable runs along both the north and south side of NC 211 in the project area.

A power transmission line exists on the south side of NC 211 from SR 1500 (Midway Road) to NC 133 (Long Beach Road). The Brunswick Nuclear Plant is approximately one mile east of the eastern NC 133/NC 211 intersection.

**c. School Bus Usage**

Approximately 20 school buses traverse the area twice daily.

#### **d. Traffic Carrying Capacity**

##### **(1) Traffic Volumes Without Project**

Traffic volumes for NC 211 were estimated for the years 2007 and 2035. These volumes are shown on Figures 3 and 4. In the year 2007, traffic along NC 211 in the project area ranged between 14,200 and 24,800 vehicles per day (vpd). In the year 2035, traffic along NC 211 is expected to range between 34,200 and 39,300 vpd.

##### **(2) Levels of Service Without Project**

The effectiveness of a roadway to service traffic demand is measured in terms of level of service (LOS). Level of service is a qualitative measure describing the ability of a facility to carry traffic and how individual users perceive traffic conditions. It is based on factors of speed, travel time, comfort, maneuverability, interruptions, convenience and safety. Levels of Service range from "A" to "F", with "A" representing free flow (ideal conditions), and "F" representing forced or breakdown flow (undesirable condition).

A transportation facility is considered to be operating at capacity when it is just able to accommodate the traffic demand. Once the traffic demand exceeds the facility's capacity (LOS E), excessive delays occur.

In 2007, portions of NC 211 within the project limits were operating at capacity (level of service E). By the year 2035, all of NC 211 within the project limits will operate at level of service F. Figures 5 and 6 present the level of service along NC 211 without the proposed project for the years 2007 and 2035, respectively.

#### **e. Accident Record**

An accident study was conducted along NC 211 within the project area for the time period between April 1, 2004 and March 31, 2007. During this time period, 290 crashes, three of which were fatal, were reported along NC 211 within the project area. These 290 crashes resulted in three people killed and \$1,398,500 in property damage.

Forty-six percent of these crashes were frontal impact accidents. The section of NC 211 near the Southport-Oak Island Business Park had 74% of the frontal impact crashes. Rear-end collisions accounted for 35% of the total crashes on NC 211 in the project area.

**TABLE 3  
ACCIDENT RATE COMPARISON**

	<b>Total Accident Rate (ACC/100MVM)</b>	<b>Fatal Accident Rate (ACC/100MVM)</b>
<b>NC 211 (4/04 to 3/07)</b>	229.74	2.38
<b>2005-2007 Statewide Average Two-Lane NC Routes</b>	191.04	2.24
<b>Critical Rate*</b>	211.67	4.83

ACC/100MVM - Accidents per 100 million vehicle miles

\* The critical rate is a statistically derived number that can be used to identify high accident roadway segments.

As Table 3 above shows, the total accident rate on NC 211 within the project area for the studied time period was higher than the statewide average and the critical rate. While the fatal crash rate for NC 211 exceeds the statewide fatal crash rate, it does not exceed the critical rate. The fact the total crash rate exceeds the critical rate suggests possible safety and operational issues along NC 211 within the study area.

**f. Airports**

The Brunswick County Airport is a public airport located approximately two miles south of NC 211 along NC 133 (Long Beach Road).

## **g. Other Highway Projects in the Area**

Several projects are included in the approved TIP for Brunswick County. Information for projects that are proposed in the vicinity of the project is listed below.

R-2245 - new route from SR 1104 (Beach Drive) to NC 211 at SR 1500. This project widens SR 1106 (Middleton Avenue) from SR 1104 to SR 1190 (Oak Island Drive), replaces Bridge #206 over Davis Creek, and constructs multi-lanes from SR 1190 to NC 211 on new location. This project was completed & opened in September 2010.

R-3324 - new route from NC 211/NC 133 (Long Beach Road) intersection to NC 87/SR 1525 (Bethel Road) intersection. This project constructs a two-lane connector on new location. Right of way acquisition is currently in progress. Construction is scheduled for federal fiscal year 2013 in NCDOT's draft Ten-Year Plan.

R-3434 - SR 1500 (Midway Road)/SR 1401 (Galloway Road) from NC 211 to US 17 Bypass. This project involves widening SR 1500/1401 to a multi-lane facility. Right of way is scheduled for federal fiscal year 2019 in the draft Ten-Year Plan. Construction is currently not funded.

These projects are shown on Figure 8.

In addition to these funded projects, a feasibility study (WS 40814) is underway that addresses widening NC 211 from US 17 to SR 1500. However, this work is not funded for project development studies, right of way acquisition, or construction.

## **2. Transportation and Land Use Plans**

### **a. Local Transportation Plans**

The Brunswick County Comprehensive Transportation Planning Study (CTP) is currently underway. The draft CTP was last revised on August 12, 2008. The August 2008 draft CTP recommendations include widening NC 211 to a multi-lane facility from US 17 to East Moore Street in Southport.

### **b. Land Use Plans**

The Brunswick County Coastal Area Management Act (CAMA) Core Land Use Plan was adopted on November 30, 2007. The Plan analyzed existing and emerging conditions by stating policies and implementation actions in order to guide development in the CAMA permitting process. The City of Southport also adopted a CAMA Land Use Plan on October 11, 2007 (adopted by CAMA on November 30, 2007).

The Brunswick County CAMA Land Use Plan shows the future land use of most of the property north of NC 211 in the project area as commercial, industrial or mixed use. Property

south of NC 211 within the Town of St. James is mostly residential. Property within the Southport surrounding NC 211 is shown as commercial in Southport's CAMA Land Use Plan.

### **3. Evacuation Route**

The Brunswick Nuclear Plant is located off of NC 87 approximately one mile north of NC 211. Southport is located southeast of the project limits. Oak Island is located south of NC 211. NC 211 is a designated hurricane and nuclear emergency evacuation route.

## **C. Benefits of Proposed Project**

### **1. Capacity**

Widening NC 211 to a multi-lane facility will improve its capacity. As discussed in Section II-B-1-d-(1), in 2007, portions of NC 211 within the project limits were operating at capacity (level of service E). By the year 2035, all of NC 211 within the project limits will operate at level of service F. Traffic projections prepared for this project have assumed the completion of the adjacent TIP projects. With the proposed project, it is expected that NC 211 in the project area will operate at level of service B in 2035. Levels of service in 2035 at intersections along NC 211 with the proposed project are shown on Figure 8. An interchange is being considered as an alternative for the intersection of SR 1500 with NC 211. An interchange at SR 1500 would operate at level of service B for the on-ramps onto NC 211 and level of service A for the off-ramps. The signalized intersections of the ramp terminals with SR 1500 would operate at level of service D.

### **2. Safety**

Widening NC 211 to a four-lane divided roadway is expected to improve the safety of the route throughout the study area. As noted in Section II-B-1-e, many frontal impact crashes occurred along NC 211. Construction of a median divided facility is expected to reduce these types of accidents by channelizing all left turn and side road through movements, thus providing better access management and control. The proposed additional lanes should help to reduce the number of rear-end type crashes occurring on NC 211 by reducing congestion and providing another lane for faster moving traffic to move into to avoid stopping or slowing vehicles. Two of the three fatal accidents along NC 211 were head-on collisions. The proposed median will reduce the likelihood of such accidents by separating the opposing lanes. The additional lanes will also reduce the likelihood of head-on collisions by providing a way for faster moving traffic to pass slower vehicles without using the opposing traffic lanes.

Widening NC 211 will improve its capacity. This improvement can also provide for a better evacuation route for hurricanes and the Brunswick Nuclear Plant.

### **III. ALTERNATIVES**

#### **A. Preliminary Study Alternatives**

##### **1. Alternate Modes of Transportation**

The county's public transportation system, Brunswick Transit System (BTS), has a shuttle service available from the Leland area to Bolivia, and it recently partnered with the Wilmington Transit System to link services between Brunswick and New Hanover Counties. A long-term goal of the BTS is to make transportation available to the general public throughout the county.

However, any improvements (funding, park-and-ride lots, etc.) to the BTS would not meet the project purpose. The number of cars used on NC 211 to reach the destinations of the BTS users may be reduced by the use of the BTS, but the current and future traffic demand on NC 211 would still exceed the capacity of the road. Alternate modes of transportation would not meet the purpose and need of the subject project, and therefore, is not considered a viable alternative to the proposed project.

##### **2. "No-Build" Alternative**

The "no-build" alternative avoids impacts to the project area. However, this alternative does not address the purpose and need of the project. The "no-build" alternative does not improve the capacity of NC 211. In 2007, portions of NC 211 within the project limits were operating at capacity (level of service E). By the year 2035, all of NC 211 within the project limits will operate at level of service F. For these reasons, this alternative was eliminated from further consideration.

##### **3. Transportation Systems Management**

Another alternative considered was the implementation of Transportation Systems Management (TSM), which would have involved improvements to features such as turning lanes, traffic signals and speed limits. Such changes would only improve individual intersections along NC 211 without addressing the capacity issues along NC 211 between intersections. The future traffic volumes along NC 211 exceed the capacity of a two-lane roadway (Section II-B-1-d-(2)). This alternative would not meet the purpose and need of the subject project, and therefore, was not considered a viable alternative to the proposed project.

#### **4. Improve Existing Facility**

It is expected that widening the existing roadway would meet the project purpose and need by increasing the traffic carrying capacity of NC 211 in the project area.

#### **B. Detailed Study Alternatives**

Widening existing NC 211 to four lanes with a 30-foot median was selected for detailed study. The project was divided into three sections, and the following alternatives were studied in detail in each section:

Section 1 – Just west of SR 1500 (Midway Road) to just east of SR 1500.

- North side widening with an interchange at SR 1500
- North side widening with an at-grade intersection at SR 1500
- South side widening with an interchange at SR 1500
- South side widening with an at-grade intersection at SR 1500

Section 2 – East of SR 1500 to Dutchman Village Entrance

- North side widening
- South side widening

Section 3 – Dutchman Village Entrance to just east of NC 87

- North side widening
- South side widening.

The interchange design being considered at SR 1500 would not have typical high speed ramp terminal onto NC 211, but would have two-way slip ramps in each quadrant with stop signs or yield signs at both NC 211 and SR 1500. All movements could be accommodated with right turns.

Each alternative is shown on Figure 2. Table 4 on the next page presents a summary of the impacts and costs of the alternatives. Table 5 in Section IV-I presents hydraulic structure requirements for the alternatives.

**Table 4  
Alternative Comparison**

	Section 1				Section 2		Section 3	
	North Interchange	North At-Grade	South Interchange	South At-Grade	North	South	North	South
<b>Residential Relocates</b>	2	4	2	0	1	1	1	0
<b>Business Relocates</b>	1	1	2	1	2	4	2	7
<b>Jurisdictional Wetlands Affected (Acres)</b>	15.02	1.03	17.17	3.32	41.09	35.49*	1.40	0.96
<b>Open Waters Affected (Acres)</b>	0.67	0.60	1.76	1.73	0.00	0.00	0.10	0.00
<b>Stream Impacts (Linear Feet)</b>	0	0	0	0	583	479	192	122
<b>Receptors Impacted by Traffic Noise</b>	6	6	3	3	13	11	10	13
<b>Forested Areas Affected (Acres)</b>	8.94	1.94	19.22	4.19	19.04	18.09	5.33	5.48
<b>Prime and Important Farmland Affected</b>	0	0	0	0	0	0	0	0
<b>Total Cost (Millions)</b>	\$51.059	\$27.066	\$51.774	\$25.949	\$39.163	\$40.512	\$21.972	\$22.912

\*Six acres of wetland impacts are clearing for power line easement.

## **IV. PROPOSED IMPROVEMENTS**

### **A. Roadway Cross-section and Alignment**

The project proposes to widen NC 211 to a four-lane divided roadway, with 12-foot lanes, 8-foot shoulders (5-foot paved). The proposed typical section will have a 30-foot raised median.

### **B. Right of Way and Access Control**

The proposed right of way is 200 feet. Partial control of access (one driveway per parcel with no other access) is proposed.

### **C. Speed Limit**

It is anticipated NC 211 will be signed 55 MPH from SR 1500 to 0.6 mile west of the NC 211/SR 1549 (Oakview Drive) intersection and 45 MPH from 0.6 mile west of SR 1549 to NC 87. The actual speed limit(s) for the project will be determined during final design.

### **D. Design Speed**

The proposed design speed for the project is 60 MPH from SR 1500 to 0.6 mile west of the NC 211/SR 1549 (Oakview Drive) intersection and 50 MPH from 0.6 mile west of SR 1549 to NC 87. This is consistent with the anticipated 55 MPH and 45 MPH speed limit.

### **E. Anticipated Design Exceptions**

It is anticipated no design exceptions will be required for the project.

### **F. Intersections/Interchanges**

An interchange is being considered as an alternative at the NC 211/SR 1500 intersection. Acquiring right of way for a future interchange but only constructing an at-grade signalized intersection as part of this project is also being considered.

The existing signalized intersections of NC 211 with St. James Drive, NC 133 (Long Beach Road), NC 133 (Doshier Cutoff Road) and NC 87 will remain signalized and will allow for all traffic movements (left turns will be allowed from the side streets). Additional turn lanes will be required at these intersections.

These five intersections will remain unsignalized and have left-in/right-in/right-out only restrictions (no left turns allowed from the side streets):

- NC 211/SR 1571 (Executive Park Boulevard)
- NC 211/Regency Crossing
- NC 211/Creek Road
- NC 211/West Trace Drive
- NC 211/SR 1549 (Oakview Drive)

**G. Service Roads**

It is not expected service roads will be required for the project.

**H. Railroad Crossings**

There are no railroad crossings within the project area.

**I. Structures**

Table 5 lists four major structures and their proposed improvements. Figure 2 and Figure 7 depict the location of these stream crossings.

**Table 5  
PROPOSED STRUCTURES**

<b>Site</b>	<b>Stream</b>	<b>Existing Structure</b>	<b>Proposed Structure</b>
5	UT to River Swamp	1 @ 6'x5' RCBC	Extend 1 @ 6'x5' RCBC
1	Beaverdam Swamp	Bridge # 76 19'-8" long	Replace with 2 @ 10'x11' RCBC
2	UT to Jump and Run Creek	2 @ 6'x4' RCBC	Extend w/ 2 @ 6'x6' & supplement
3	Dutchmans Creek	Bridge # 24 30-foot long	Replace with 36-foot wide by 140- foot long bridge
4	Progress Energy Discharge Canal	Bridge #93 326-foot long	Retain existing; Add 36-foot wide by 326-foot long bridge

Fifty-four inch bridge rails will be provided on proposed bridges in order to accommodate bicycles. If feasible, the outside rail on the existing bridge carrying NC 211 over the CP&L discharge canal will be retrofitted to the AASHTO standard bicycle-safe bridge railing height of 54 inches. It is anticipated that no other major drainage structures will be required for the project.

#### **J. Bicycle and Pedestrian Facilities/Greenways**

As discussed in Section II-B-1-b-(8), NC Bike Route 3 (Ports of Call) is routed along NC 211. Five-foot paved shoulders will be provided along the project to accommodate bicycles. Fifty-four inch bridge rails will be provided on proposed bridges in order to accommodate bicycles. The outside rail on the existing bridge carrying NC 211 over the CP&L discharge canal will be retrofitted to the AASHTO standard bicycle-safe bridge railing height of 54 inches. The proposed 8-foot outside shoulders on bridges will accommodate pedestrians.

#### **K. Utilities**

A south widening alternative would impact the power transmission line and the water line located to the south of NC 211. The Town of Southport is in the process of installing a sewer line on the north side of the NC 211 from approximately 180 feet east of the NC 211/St. James Drive intersection to roughly 90 feet east of the NC 211/Sandy Lane intersection. Construction is due to be completed in November 2010. The sewer line will lie nearly 65 feet north of NC 211. A north widening alternative would impact this proposed sewer line.

#### **L. Landscaping**

No special landscaping is proposed as a part of the project. Disturbed areas along the project will be reseeded with grass.

#### **M. Noise Barriers**

No noise barriers are proposed along the project (see Section V-J).

## V. ENVIRONMENTAL EFFECTS OF PROPOSED ACTION

### A. Natural Resources

#### 1. Biotic Resources

Biotic resources include aquatic and terrestrial communities. Descriptions of the terrestrial systems are presented in the context of plant community classifications. Dominant plants and animals likely to occur in each community are described and discussed.

##### a. Terrestrial Communities

The majority of the project study area is comprised of disturbed land, including continually maintained areas as well as early-successional plant community types such as pine plantations, scrub-shrub, and mixed successional forests. Much of the project study area has been impacted in the past by croplands, pasture, and timber production. In more recent times, residential and commercial uses have increased. Historical communities such as pocosin wetlands and Coastal Plain Bottomland Hardwoods occupy areas less suited to intensive human development.

Individual plant communities are described below in the order of their predominance within the project study area.

#### **Maintained/Disturbed**

Approximately 31 percent of the project study area is comprised of maintained/disturbed land. This community is concentrated along NC 211, NC 87 and Midway Road, and includes roadway and utility rights-of-way, maintained residential and commercial lots, driveways, recent clearcuts, and other intensively disturbed and/or maintained areas. Roadside margins and utility rights-of-way consist primarily of regularly maintained grasses and opportunistic herb species, including fescue, pennywort, eastern daisy fleabane, ragweed, goldenrod, Japanese stilt grass, lespedeza, common mullein, beggartick, wild onion, broomsedge, clover species, and dog fennel. Several woody species are sparsely represented within the sapling and shrub layers, including blackberry, multiflora rose, groundsel, Chinese privet, sassafras, smooth sumac, winged sumac, tulip poplar, sweetgum, eastern red cedar, red bud, flowering dogwood, winged elm, pine species, oak species, red maple, and mimosa. Vines include greenbrier, Japanese honeysuckle, kudzu, muscadine grape, and poison ivy. Residential and commercial development areas contain buildings, impervious surfaces such as parking lots and driveways, and maintained lawns. Vegetation in the residential and commercial development areas is predominantly herbaceous, with a few ornamental shrubs and hedges and a few relict canopy trees (primarily pine), which reflect historic plant assemblages.

### **Pocosin Wetlands**

Approximately 24 percent of the project study area is composed of pocosin wetlands. Pocosin wetlands occupy long stretches along the central portion of the project study area, where NC 211 cuts through several Carolina bays. The canopy of this community is variable and somewhat scattered, with a few stunted to robust individuals of pond pine, loblolly bay and some longleaf pine. In some areas, a distinct subcanopy of sweetbay and red bay is distinguishable from the shrub layer. Shrubs are dense and include red bay, fetterbush, titi, honeycup, gallberry, highbush blueberry, and inkberry. Laurel-leaf greenbrier is found throughout. Vines also include Carolina jessamine. A few herbs were noted in rare openings: Virginia chainfern, sphagnum moss, and various sedges.

### **Mesic Pine Flatwoods**

Approximately 7 percent of the project study area is comprised of Mesic Pine Flatwoods. This community is often found in lower-elevation areas adjacent to Coastal Plain Bottomland Hardwoods. The canopy consists of loblolly, longleaf, slash, and pond pine. The subcanopy contains saplings of the canopy species, oaks, and loblolly bay. The shrub layer is dominated by fetterbush, staggerbush, sweetbay, titi, gallberry, dwarf huckleberry, and sand myrtle. Scattered individuals of dahoon and myrtle dahoon are present. Laurel-leaf greenbrier is frequent. The herb layer includes beaksedge, sphagnum moss, and cinnamon fern.

### **Xeric Sandhill Scrub**

Approximately 4 percent of the project study area is encompassed by Xeric Sandhill Scrub. This community is concentrated along sand rims of Carolina bays bisected by NC 211, along with a few other inclusions of dry, sandy scrubland. This community is exceedingly dry with an open canopy of longleaf pine. The community is made up of a frequently dense subcanopy and shrub layer consisting of live oak, turkey oak, persimmon, dwarf huckleberry, and sand live oak. The fragmented herb layer is dominated by wiregrass and deer moss.

### **Mixed Successional Forest**

Mixed successional forest comprises approximately 5 percent of the project study area. This designation is used to describe fragmented communities that contain mature canopy trees as well as variously developed shrub, subcanopy, and herb layers. This community generally occurs in upland areas and landscapes near maintained/disturbed land, and is usually too small and immature to form coherent natural plant communities. Trees include a mixture of species characteristic of surrounding communities, such as red maple, sweetgum, tulip poplar, live oak, water oak, winged elm, slash pine, and blackgum. Shrubs and subcanopy species might include red bay, wax myrtle, groundsel, eastern red cedar, flowering dogwood, or blackberry. Herbs are usually present only on exposed edges, and may include goldenrod, broomsedge, dog fennel, lespedeza, clovers, and other opportunistic species.

### **Pine Plantation**

Approximately 5 percent of the project study area is occupied by pine plantations. This community is generally concentrated in upland areas of the project study area, in the less developed central and western portions and in the eastern portion. The dominant species is planted loblolly pine, with a few encroaching hardwoods such as red maple and sweetgum. Shrubs might include wax myrtle, red bay, or groundsel. The herb layer is sparse to significant, depending on exposure. Herbs may include wiregrass, broomsedge, dog fennel, and lespedeza. Vines may include Carolina jessamine, poison ivy, and greenbrier.

### **Scrub-Shrub**

Approximately 2 percent of the project study area consists of scrub-shrub land. This land is either too barren to support forested communities, or has been repeatedly cut so that tree succession is arrested. Small inclusions of this community occur throughout the project study area. Shrubs in these areas may include stunted individuals of canopy species such as pines, sweetgum or red maple, but usually consist of eastern red cedar, wax myrtle, groundsel and other hardy species. Wetter areas include pond pine, titi, and button bush. The scattered herb layer includes wiregrass, bracken fern, common mullein, goldenrod, ragweed, woolgrass, false foxglove, flat-top goldentop, and deer moss.

### **Coastal Plain Bottomland Hardwoods (Blackwater subtype)**

Approximately 2 percent of the project study area is encompassed by Coastal Plain Bottomland Hardwoods (Blackwater Subtype). This community occupies the floodplains of River Swamp, Beaverdam Creek, and Dutchman Creek. These forests, although fragmented, are relatively mature, with canopy species including red maple, water oak, willow oak, loblolly pine, sweetgum, loblolly bay, and blackgum. Subcanopy species include canopy species as well as sweetbay and red bay. The shrub layer is well developed but not dense and contains highbush blueberry, gallberry, fetterbush, titi, wax myrtle, and multiflora rose. The herb layer includes scattered individuals of giant cane, netted chainfern, bracken fern, dwarf huckleberry, and cinnamon fern. Vines include climbing hempvine, Virginia creeper, muscadine grape, laurel-leaf greenbrier, and greenbrier.

### **Wet Pine Flatwoods**

Approximately one percent of the project study area is composed of Wet Pine Flatwoods. This community generally occurs on flat or nearly flat Coastal Plain soils like the Mesic Pine Flatwoods described above but on sites that are seasonally wet to usually wet. This community is often associated with pocosins or Xeric Sandhill Scrub communities. The canopy consists of loblolly, longleaf, and more pond pine than the Mesic Pine Flatwoods. The subcanopy contains saplings of the canopy species and loblolly bay with fewer oaks than its mesic counterpart. As with the Mesic Pine Flatwoods, the shrub layer is dominated by fetterbush, staggerbush, sweetbay, titi, gallberry, dwarf huckleberry, and sand myrtle. Scattered individuals of dahoon and myrtle dahoon are again present along with laurel-leaf greenbrier. The herb layer includes meadowbeauty, blazing star, and Carolina redroot along with the Mesic Pine Flatwood species.

## b. Summary of Anticipated Effects

Terrestrial communities in the study area may be impacted by project construction. Table 6 below presents the anticipated effects of the project on terrestrial communities within the proposed right of way.

**Table 6**  
**Anticipated Effects on Terrestrial Communities**

<b>Community</b>	<b>Impacts (acres)</b>
Maintained/disturbed land	61.7
Pocosin wetlands	48.9
Mesic Pine Flatwoods	13.9
Xeric Sandhill Scrub	8.8
Mixed successional forest	9.7
Pine plantation	9.5
Scrub-shrub	4.8
Coastal Plain Bottomland Hardwoods (Blackwater Subtype)	4.3
Wet Pine Flatwoods	1.5

Figures presented are one third of the amount of the community present within the project study area.

## c. Terrestrial Wildlife

Terrestrial communities in the project study area are predominantly disturbed. However, more natural ecosystems exist in the study corridor. Wildlife directly observed or determined to be present through evidence (tracks, scat) during field investigations are indicated with an asterisk (\*).

Woodland communities and sapling/shrub layers in particular provide excellent habitat for insects and insectivorous wildlife species. Insectivorous amphibians such as the gray treefrog, Carolina anole, marbled salamander, and southern leopard frog thrive in this community. Birds that are likely to be supported by this community include downy woodpecker, red-bellied woodpecker, American woodcock, white-eyed vireo\*, Carolina chickadee\*, Carolina wren\*, golden-crowned kinglet\*, pine warbler, and common yellowthroat\*. The sparse to dense understories of wooded communities favor small mammal species like the gray squirrel, raccoon, marsh rabbit and cotton mouse. Large mammals favoring the refuge of dense cover include the white-tailed deer and the coyote. Reptiles likely to be found in woodland communities include dwarf salamander, copperhead, eastern kingsnake, eastern ribbon snake\*, rat snake, and eastern box turtle\*. Pine dominated woodlands in the Coastal Plain with well-developed to dense understories regularly support the tufted titmouse\*, northern cardinal, and eastern towhee\*.

Pocosins and wooded wetlands usually have canopy gaps with standing water that support ducks such as mallard, green-winged teal, wood duck, and American wigeon. These ducks are supported particularly during fall and winter. Other birds such as swamp sparrow,

green heron, American bittern, and least bittern should occur here as well. Mammals favoring pocosin cover would include marsh rabbit, cotton mouse, white-tailed deer, and black bear.

More open and disturbed plant communities harbor a largely distinct community of animals. Bird species include red-winged blackbird, mourning dove, northern cardinal, brown-headed cowbird, American goldfinch, prairie warbler\*, brown-headed nuthatch, and the American crow\*. Reptiles in disturbed areas might include eastern box turtle\*, northern black racer, eastern glass lizard\*, southern toad, and Carolina anole\*.

#### **d. Aquatic Communities**

Streams of various sizes occur within the project study area and provide adequate habitat for a variety of aquatic wildlife. The stream banks and over-stream air space also act as travel corridors for non-aquatic species. Aquatic/aquatic dependent wildlife expected to occur within the project study area include: muskrat, mink, belted kingfisher, great blue heron\*, mallard, southern dusky salamander, eastern newt, snapping turtle, painted turtle, cottonmouth, bullfrog, green frog, and pickerel frog.

The larger streams are expected to support a more diverse fishery than smaller tributaries. Fish that may occur within large streams within the project study area include redbreast sunfish, gizzard shad, channel catfish, longnose gar, and creek chub. The smaller tributaries are expected to support different species including banded pigmy sunfish, common carp, coastal shiner, redbreast sunfish, tessellated darter, and bowfin. Ponds within the project study area may support a combination of stocked and native fish including largemouth bass, margined madtom, goldfish, yellow bullhead, grass carp, pumpkinseed, redear sunfish, and bluegill.

#### **e. Invasive Species**

Eight species from the NCDOT Invasive Exotic Plant List for North Carolina were found to occur in the project study area. The species identified were Chinese privet (Threat Level 1), Asiatic dayflower (Threat Level 3), Japanese stilt grass (Threat Level 1), Japanese honeysuckle (Threat Level 2), lespedeza (Threat Level 1), kudzu (Threat Level 1), mimosa (Threat Level 2), and multiflora rose (Threat Level 1). NCDOT will follow the Department's Best Management Practices for the management of invasive plant species.

**f. Summary of Anticipated Effects**

Construction of the subject project will have various impacts on the biotic resources described. Any construction related activities in or near these resources have the potential to impact biological functions.

**2. Waters of the United States**

Surface waters and jurisdictional wetlands fall under the broad category of “waters of the United States,” as defined under 33 CFR §328.3(a). Any action that proposes to place fill material into these areas falls under the jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344).

**a. Streams, Rivers and Impoundments**

The project study area is located in USGS Hydrologic Units (HU) 03040207 and 03030005 of the Lumber and Cape Fear River Basins, respectively. Nine jurisdictional stream reaches were identified within the project study area (Figure 8). The characteristics of these streams are listed in Table 7.

**Table 7  
Physical Characteristics of Water Resources in the Project Area**

<b>Stream</b>	<b>Bank Height (ft)</b>	<b>Bankfull Width (ft)</b>	<b>Water Depth (in)</b>	<b>Channel Substrate</b>	<b>Flow</b>	<b>Clarity</b>	<b>DWQ Index Number</b>	<b>Best Usage Classification</b>
SA (UT to River Swamp)	1-2	4-6	12-24	Sand, Silt	Slow	Clear	15-25-1-6	C; Sw
SB (UT to Beaverdam Creek)	1-2	4-5	12	Silt	Slow	Clear	18-88-9-1-(0.5)	SC; Sw, HQW
SC (UT to Beaverdam Creek)	1-2	2-4	12	Silt	Slow	Clear	18-88-9-1-(0.5)	SC; Sw, HQW
Beaverdam Creek	1	10-20	12-36	Silt	Slow	Clear	18-88-9-1-(0.5)	SC; Sw, HQW
SD (UT to Jump and Run Creek)	1-2	4-8	12	Sand, Silt	Slow	Clear	18-88-9-3-2	SC; Sw
Dutchman Creek	3	30	36	Silt	Slow	Clear	18-88-9-3-(1)	SC; Sw, HQW
SF (UT to Dutchman Creek)	1-2	2-4	10	Silt	Slow	Clear	18-88-9-3-(1)	SC; Sw, HQW
Price Creek	2-4	4-10	12	Sand, Silt	Slow	Clear	18-88-3	SC; Sw
SE (UT to Price Creek)	2-4	6-8	12	Sand, Silt	Slow	Clear	18-88-3	SC; Sw

No special designations, such as anadromous fish waters or fish nursery areas, are in effect for any of the project study area water resources. The closest Primary Nursery Area for fish is located approximately 1,000 feet downstream of the project study area on Dutchmans Creek. Dutchmans Creek and waters associated with Beaverdam Creek and its tributaries are listed as High Quality Waters (HQW). No other streams designated as HQW, Outstanding Resource Waters (ORW), or water supply watersheds (WS-I or WS-II), or streams listed on the 2006 Final NC 303(d) list of impaired waters, are located within the project study area or within one mile downstream.

Twelve ponds are located within the project study area. A number of other surface waters also occur within the project study area. These consist of linear features that have no flow characteristics, such as swamp waters or ditches. Refer to Figure 8 for pond and other surface water locations.

#### **b. Wetlands**

Thirty-five jurisdictional wetlands were identified within the project study area (Figure 8). Wetland classification and quality rating data are presented in Table 8. All wetlands in the project study area are within the Cape Fear and Lumber River basins (USGS Hydrologic Units 3040207 and 3030005 respectively).

**Table 8**  
**Jurisdictional Characteristics of Wetlands in the Project Area**

<b>Map ID</b>	<b>Cowardin Classification</b>	<b>Classification</b>	<b>DWQ Wetland Rating</b>
WA	PFO1/4C	Riparian	N/A
WB	PFO1/4B / PSS3B	Non-riparian	35
WC	PFO1/4E	Non-riparian	35
WD	PSS3B / PFO4B	Non-riparian	35
WE	PFO1/4F	Non-riparian	35
WF	PFO1/4B / PSS3B	Non-riparian	35
WG	PFO1/4B / PSS3B	Non-riparian	35
WH	PFO1/4E	Non-riparian	35
WI	PFO1/4B	Non-riparian	35
WJ	PFO1/4E	Non-riparian	35
WK	PFO4A / PSS3A	Non-riparian	35
WL	PFO4A / PSS3A	Non-riparian	35
WM	PSS3A	Non-riparian	35
WN	PFO4C / PSS3C	Non-riparian	35
WO	PFO4C / PSS3C	Non-riparian	35
WP	PSS1/7F	Non-riparian	N/A
WQ	PSS1/7F	Riparian	N/A
WR	PSS1/7F	Non-riparian	N/A
WS	PSS3F / PFO4F	Non-riparian	N/A
WT	PSS3F / PFO4F	Riparian	89
WU	PSS3F / PFO4F	Riparian	89
WV	PSS7A	Non-riparian	N/A
WW	PSS1/7F	Non-riparian	N/A
WX	PFO4B	Non-riparian	35
WY	PFO4B	Non-riparian	35
WZ	PFO4A / PSS7A	Non-riparian	35
WAA	PFO4B	Riparian	N/A
WAB	PSS1/7C	Riparian	N/A
WAC	PFO4A / PSS7A	Non-riparian	35
WAD	PFO4A / PSS7A	Non-riparian	35
WAE	PFO1/3C	Riparian	85
WAF	PFO1/3C	Riparian	85
WAG	PFO1/3C	Riparian	46
WAH	PFO1C	Riparian	85
WAI	PEM/SS1C	Riparian	13

Cowardin Classifications: PFO – Palustrine, forested; PSS – Palustrine, scrub-shrub  
N/A – information not available.

**c. Summary of Anticipated Impacts**

Construction of the proposed project will likely impact streams by pipe installation and/or the lengthening of existing pipes. Construction activities are likely to alter and/or interrupt stream flows and water levels at each aquatic site.

Project construction may result in the following impacts to surface waters:

- Increased sedimentation and siltation from construction and/or erosion.
- Changes in light incidence and water clarity due to increased sedimentation and vegetation removal.
- Alteration of water levels and flows due to interruptions and/or additions to surface and ground water flow from construction.
- Changes in water temperature due to removal of streamside vegetation.
- Increased nutrient loading during construction via runoff from exposed areas.
- Increased concentration of toxic compounds from highway runoff, construction, toxic spills, and increased vehicular use.

Precautions will be taken to minimize impacts to water resources in the study area. NCDOT’s Best Management Practices for the Protection of Surface Waters will be strictly enforced during construction of the project.

Tables 9, 10, and 11 present the estimated impacts to surface waters. Impacts lie within an area delineated 25 feet outside of the slope stakes.

**Table 9  
Estimated Impacts to Streams**

<b>Map ID</b>	<b>Classification</b>	<b>Project Section</b>	<b>North Side Widening Impacts (feet)</b>	<b>South Side Widening Impacts (feet)</b>
SA	Perennial	1	0 (both)	0 (both)
SB	Perennial	2	149	28
SC	Perennial	2	0	0
Beaverdam Creek	Perennial	2	230	257
SD	Perennial	2	204	194
Price Creek	Perennial	3	160	66
SE	Perennial	3	32	56
Dutchman Creek	Perennial	3	Bridged	Bridged
SF	Intermittent	3	0	0

**Table 10**  
**Estimated Impacts to Open Waters**

<b>Pond Map Code</b>	<b>Project Section</b>	<b>North Side Widening Impacts (acres)</b>	<b>South Side Widening Impacts (acres)</b>
Pond 1	1	0.02	1.25
Pond 2	1	0.00	0.00
Pond 3	1	0.00	0.00
Pond 4	1	0.19	0.00
Pond 5	1	0.06	0.00
Pond 6	1	0.03	0.00
Pond 7	1	0.0003	0.10
Pond 8	1	0.00	0.07
OWA	1	0.03 (I), 0.01 (AG)	0.02 (I), 0.01 (AG)
OWB	1	0.29 (I), 0.28 (AG)	0.28 (I), 0.29 (AG)
OWC	1	0.05 (I), 0.01 (AG)	0.04 (I), 0.005 (AG)
OWD	2	0.00	0.00
OWE	2	0.00	0.00
Pond 9	3	0.00	0.00
Pond 10	3	0.00	0.00
Pond 11	3	0.00	0.00
Pond 12	3	0.09	0.00
Ditch 1	3	0.01	0.00

I - Interchange; AG - At-grade intersection.

**Table 11**  
**Estimated Impacts to Wetlands**

<b>Map ID</b>	<b>Cowardin Classification</b>	<b>Classification</b>	<b>Project Section</b>	<b>DWQ Wetland Rating</b>	<b>North Side Widening Impacts (Acres)</b>	<b>South Side Widening Impacts (Acres)</b>
WA	PFO1/4C	Riparian	1	N/A	0 (both)	0 (both)
WB	PFO1/4B / PSS3B	Non-riparian	1	35	9.84 (I) 0.57 (AG)	11.18 (I) 2.42 (AG)
WC	PFO1/4E	Non-riparian	1	35	2.10 (I) 0.13 (AG)	1.97 (I) 0.00 (AG)
WD	PSS3B / PFO4B	Non-riparian	1	35	3.08 (I) 0.33 (AG)	4.02 (I) 0.90 (AG)
WE	PFO1/4F	Non-riparian	2	35	0.01	0.0039*
WF	PFO1/4B / PSS3B	Non-riparian	2	35	0.55	0.00*
WG	PFO1/4B / PSS3B	Non-riparian	2	35	0.17	0.00*
WH	PFO1/4E	Non-riparian	2	35	1.62	0.38*
WI	PFO1/4B	Non-riparian	2	35	0.30	0.73*
WJ	PFO1/4E	Non-riparian	2	35	0.20	0.29*
WK	PFO4A / PSS3A	Non-riparian	2	35	0.00	0.00
WL	PFO4A / PSS3A	Non-riparian	2	35	3.74	1.58*
WM	PSS3A	Non-riparian	2	35	0.00	0.20*
WN	PFO4C / PSS3C	Non-riparian	2	35	11.39	4.48*
WO	PFO4C / PSS3C	Non-riparian	2	35	3.50	10.00*
WP	PSS1/7F	Non-riparian	2	N/A	0.03	0.03*
WQ	PSS1/7F	Riparian	2	N/A	0.19	0.11*
WR	PSS1/7F	Non-riparian	2	N/A	0.07	0.10*
WS	PSS3F / PFO4F	Non-riparian	2	N/A	0.05	0.01*
WT	PSS3F / PFO4F	Riparian	2	89	0.46	0.17*
WU	PSS3F / PFO4F	Riparian	2	89	0.10	0.38*
WV	PSS7A	Non-riparian	2	N/A	0.88	0.47*
WW	PSS1/7F	Non-riparian	2	N/A	0.03	0.03*
WX	PFO4B	Non-riparian	2	35	7.27	4.13*
WY	PFO4B	Non-riparian	2	35	2.80	1.59*
WZ	PFO4A / PSS7A	Non-riparian	2	35	3.95	8.65*
WAA	PFO4B	Riparian	2	N/A	3.64	2.03*
WAB	PSS1/7C	Riparian	2	N/A	0.06	0.12*
WAC	PFO4A / PSS7A	Non-riparian	2	35	0.06	0.00
WAD	PFO4A / PSS7A	Non-riparian	2	35	0.00	0.00
WAE	PFO1/3C	Riparian	3	85	0.69	0.27
WAF	PFO1/3C	Riparian	3	85	0.20	0.51
WAG	PFO1/3C	Riparian	2	46	0.02	0.003
WAH	PFO1C	Riparian	3	85	0.49	0.16
WAI	PEM/SS1C	Riparian	3	13	0.02	0.02

Cowardin Classifications: PFO – Palustrine, forested; PSS – Palustrine, scrub-shrub  
I: Interchange; AG: At-grade intersection; both: both configurations yielded the same impact calculations.  
\*-Six acres of wetland impacts are clearing for power line easement.

#### **d. Anticipated Permit Requirements**

The proposed project will likely require an Individual Section 404 Permit from the US Army Corps of Engineers. Final permit decisions rest with the US Army Corps of Engineers.

This project will also require a 401 Water Quality Certification from the NC Division of Water Quality prior to issuance of the Individual 404 Permit. A state stormwater permit may also be required.

Dutchman Creek is designated a Primary Nursery Area for fish. Therefore, an in-water moratorium on construction activities will be observed between April 1st and September 30th for Dutchman Creek.

A CAMA permit may also be required.

#### **e. Avoidance, Minimization and Mitigation**

Given the number of streams and wetlands in the project area, total avoidance of surface waters and wetlands by this project is not feasible.

Impacts on wetlands and streams will be considered in the selection of the preferred alternative for the project. Additional minimization measures will be considered as the project progresses.

Beaverdam Creek, its tributaries, and Dutchman Creek are listed as HQW. Therefore, Design Standards in Sensitive Watersheds will be implemented during project construction. The NCDOT will attempt to avoid and minimize impacts to streams and wetlands to the greatest extent practicable in finalizing project design. Best Management Practices will be used during construction in order to minimize the project's effects on these wetlands.

NCDOT will investigate potential on-site stream and wetland mitigation opportunities once a final design has been prepared. If on-site mitigation is not feasible, mitigation will be provided by North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP). In accordance with the "Memorandum of Agreement Among the North Carolina Department of Transportation, and the U.S. Army Corps of Engineers, Wilmington District" (MOA), July 28, 2010, the EEP will be requested to provide offsite mitigation to satisfy the federal Clean Water Act compensatory mitigation requirements for this project.

### **3. Rare and Protected Species**

#### **a. Federally-Protected Species**

Species with the federal classification of Endangered, Threatened, or officially proposed for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Fourteen federally protected species are listed for Brunswick County as of September 22, 2010 (Table 12). Table 12 presents the federally protected species listed for Brunswick County and specifies their status as Endangered (E), Threatened (T), or Threatened due to Similarity of Appearance (T (S/A)).

**Table 12**  
**Federally-Protected Species for Brunswick County**

Scientific Name	Common Name	Habitat	Federal Status	Biological Conclusion
<i>Alligator mississippiensis</i>	American alligator	Yes	T (S/A)	Not required
<i>Picoides borealis</i>	Red-cockaded woodpecker	Yes	E	May Affect – Not Likely to Adversely Affect
<i>Puma concolor cougar</i>	Eastern cougar	Yes	E	May Affect – Not Likely to Adversely Affect
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	No	E	No Effect
<i>Chelonia mydas</i>	Green sea turtle	No	T	No Effect
<i>Lepidochelys kempii</i>	Kemp’s ridley sea turtle	No	E	No Effect
<i>Dermochelys coriacea</i>	Leatherback sea turtle	No	E	No Effect
<i>Caretta caretta</i>	Loggerhead sea turtle	No	T	No Effect
<i>Trichechus manatus</i>	West Indian manatee	No	E	No Effect
<i>Charadrius melodus</i>	Piping plover	No	T	No Effect
<i>Mycteria americana</i>	Wood stork	No	E	No Effect
<i>Thalictrum cooleyi</i>	Cooley’s meadowrue	Yes	E	No Effect
<i>Amaranthus pumilus</i>	Seabeach amaranth	No	T	No Effect
<i>Lysimachia asperulaefolia</i>	Rough-leaved loosestrife	Yes	E	No Effect

T (S/A) = Threatened due to similarity of appearance. A species that is threatened due to similarity of appearance with another listed species and is listed for its protection.

T = Threatened. A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

E = Endangered. A taxon "in danger of extinction throughout all or a significant portion of its range."

The American Alligator is listed as threatened due to similarity of appearance (T(S/A)). T(S/A) species are not subject to Section 7 consultation and a biological conclusion for this species is not required. Potential habitat for American alligator exists within the study area.

No suitable habitat for shortnose sturgeon, green sea turtle, Kemp’s ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, West Indian manatee, piping plover, wood stork or seabeach amaranth exists in the project area. In addition, NC Natural Heritage Program (NCNHP) records document no occurrences of these species within one mile of the project study area. It is expected the proposed project will have “no effect” on any of these species.

Suitable habitat for red-cockaded woodpecker, eastern cougar, Cooley’s meadowrue and rough-leaved loosestrife exists in the project area. Surveys for these species were conducted.

Aerial surveys for the red-cockaded woodpecker (*Picoides borealis*) (RCW) were conducted in March 2010 and ground surveys in April 2010. Thirty one RCW cavity trees were found south of NC 211 within 0.5 mile of the study area near St. James. Due to the large number of cavity trees and their distribution, RCWs in the area were followed and an adult RCW was banded in order to determine whether one or two RCW groups are using the cavity trees. This work was conducted during July and August of 2010. It was determined that the cavity trees are being used by a single group.

A foraging habitat analysis was also conducted. Only potentially suitable habitat for RCW was found, no suitable habitat is available within the 0.5 mile foraging partition for the cluster. Potentially suitable foraging habitat is habitat that would be suitable for RCW if it were managed. No cavity trees will be affected by the proposed project, but it was found that the proposed widening of NC 211 will affect potentially suitable RCW foraging habitat.

The standard for managed stability outlined in the US Fish and Wildlife Service’s Recovery Plan for red-cockaded woodpecker requires each RCW cluster have available 75 acres of suitable or potentially suitable foraging habitat and 3,000 square feet basal area of pine trees greater than 10 inches in diameter. The foraging partition for this RCW cluster does not meet the basal area requirements using trees greater than 10 inches in diameter; however, if trees greater than or equal to 8 inches in diameter are included, it does meet the requirement pre and post project.

The habitat in this area does not match the open pinelands described as RCW foraging habitat in the RCW Recovery Plan. However, RCWs have survived and reproduced at this site and have been observed using similar habitat in other places. Therefore, it is believed including trees greater or equal to 8 inches in diameter in the foraging habitat analysis for this cluster is appropriate.

Table 13 below presents the pre-project, removals and post-project RCW foraging habitat totals using the standard for managed stability within the 0.5 mile radius foraging partition.

**TABLE 13  
SUMMARY OF RCW FORAGING HABITAT ANALYSIS**

<b>Pre-Project Potentially Suitable Foraging Habitat</b>		<b>Potentially Suitable Habitat Removals</b>		<b>Post-Project Potentially Suitable Foraging Habitat</b>	
<b>Acres</b>	<b>BA</b>	<b>Acres</b>	<b>BA</b>	<b>Acres</b>	<b>BA</b>
86.7	4,627.2	2.6	169.4	84.2	4,457.8

BA – Basal area pines greater than or equal to 8 inches dbh (diameter at breast height).  
Removals assume a 198-foot wide cleared area for project.

The project impacts in Table 13 assume clearing for the project will be less than 200 feet wide. If clearing for the project is wider than 200 feet, potentially suitable habitat north of NC 211 can no longer be counted as foraging habitat for the cluster and the cluster will not meet the standard for managed stability. This would mean the project would result in a “take” of this cluster pursuant to Section 7 of the Endangered Species Act.

Due to the presence of potentially suitable red-cockaded woodpecker foraging habitat on both sides of NC 211, total clearing for the project (including existing cleared area) between Regency Crossing and Patrick Newton Drive will be limited to less than 200 feet wide. As Table 13 shows, with the proposed limits on clearing, this RCW cluster will have sufficient foraging habitat according to the standard for managed stability following project construction. Therefore, the proposed project “may affect, but is not likely to adversely affect” the red-cockaded woodpecker. Concurrence from the US Fish and Wildlife Service on this biological conclusion will be obtained prior to completion of the final environmental document for this project.

Suitable habitat for eastern cougar does occur within the project study area in the form of wooded pocosin and bottomland hardwood forest encompassing portions of the center of the project study area and constituting an edge of a large, relatively undisturbed wilderness area already experiencing development pressure. However, NCNHP records document no occurrences of this species within one mile of the project study area as of August 2008 or as of August 2009. No individuals were observed during field investigations conducted in June 2008 or in August 2009. A biological conclusion of “may affect, not likely to adversely affect” is appropriate for this project, even though no individuals were found, because suitable habitat for the eastern cougar exists in the project study area. Concurrence from the US Fish and Wildlife Service will be obtained on this biological conclusion prior to completion of the final environmental document for this project.

The project study area was surveyed for Cooley’s meadowrue in June 2008 and in June 2010. Surveys were conducted using systematic linear, overlapping transects within suitable habitat. However, no occurrences of Cooley’s meadowrue were found in suitable habitat areas. The NCNHP lists no occurrences of Cooley’s meadowrue within one mile of the project study area. It is anticipated the proposed project will have “no effect” on Cooley’s meadowrue.

The project study area was surveyed for rough-leaved loosestrife in June 2008 and in June 2010. All surveys were conducted using systematic linear, overlapping transects within suitable habitat. However, no occurrences of rough-leaved loosestrife were found in any suitable habitat areas. The NCNHP lists no occurrences of rough-leaved loosestrife within one mile of the project study area. Plant-by-plant surveys conducted in June 2005 approximately two miles north of the project study area resulted in the discovery of ten populations of this species. Based on the fact that no plants were found in the project study area, it is anticipated the proposed project will have “no effect” on rough-leaved loosestrife.

#### **b. Bald Eagle and Golden Eagle Protection Act**

Habitat for the bald eagle (*Haliaeetus leucocephalus*) primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within one mile of open water. The project study area contains no suitable nesting or foraging habitat for bald eagle. NCNHP records (reviewed August 30, 2008) document no occurrence of bald eagle within 660 feet of the project study area. No bald eagles

or bald eagle nests were observed during field investigations. Based on field observations and NCNHP documentation, this project will have no effect on bald eagle.

#### 4. Coastal Zone Issues

##### (1) Coastal Area Management Act Areas of Environmental Concern

No project study area waters are considered navigable; therefore, no Areas of Environmental Concern occur within or near the project study area.

##### (2) Essential Fish Habitat

While this project is in a county subject to Essential Fish Habitat (EFH) requirements, Beaverdam and Price Creek are not identified as water bodies that require an EFH assessment. As such, the proposed project will result in a negligible effect on available EFH.

#### 5. Soils

The Brunswick County Soil Survey identifies 14 soil series within the project study area (Table 14). This information is based on soil mapping for Brunswick County.

**Table 14**  
**Soils within the Project Area**

<b>Soil Series</b>	<b>Map Unit</b>	<b>Drainage Class</b>	<b>Hydric</b>
Baymeade fine sand	BaB	Well Drained	Nonhydric
Murville mucky fine sand	Mu	Very Poorly Drained	Hydric*
Foreston loamy fine sand	Fo	Moderately Well Drained	Hydric*
Leon fine sand	Lo	Poorly Drained	Hydric*
Pantego mucky loam	Pn	Very Poorly Drained	Hydric*
Norfolk loamy fine sand	NoB	Well Drained	Hydric*
Woodington fine sandy loam	Wo	Poorly Drained	Hydric*
Lynchburg fine sandy loam	Ly	Somewhat Poorly Drained	Hydric*
Goldsboro fine sandy loam	GoA	Moderately Well Drained	Nonhydric
Grifton fine sandy loam	Gt	Poorly Drained	Hydric*
Mandarin fine sand	Ma	Somewhat Poorly Drained	Hydric*
Bragg fine sandy loam	BrB	Well Drained	Nonhydric
Newhan fine sand	NeE	Excessively Drained	Hydric*
Newhan fine sand	NhE	Excessively Drained	Nonhydric
Torhunta mucky fine sandy loam	To	Very Poorly Drained	Hydric*
Pactolus fine sand	PaA	Moderately Well Drained/ Somewhat Poorly Drained	Hydric*
Tomahawk loamy fine sand	Tm	Moderately Well Drained	Hydric*
Muckalee loam	Mk	Poorly Drained	Hydric*

Hydric\* - contains hydric soil inclusions

## **B. Cultural Resources**

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified as 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally-funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council a reasonable opportunity to comment on such undertakings.

### **1. Historic Architectural Resources**

A field survey of the Area of Potential Effects (APE) was conducted by a NCDOT architectural Historian in May 2008. All structures over fifty years of age within the APE were photographed, and reviewed with the State Historic Preservation Office (HPO) in a meeting on May 21, 2008. At that meeting HPO staff concurred that there are no National Register-listed or National Register-eligible properties within the APE for this project. The concurrence form is included in Appendix A.

### **2. Archaeological Resources**

According to a letter from HPO dated August 14, 2007 (Appendix A), there are no known archaeological sites within the proposed project area and it is unlikely any archaeological resources that may be eligible for inclusion in the National Register of Historic Places will be affected by the project. Their recommendation was that no archaeological investigation be conducted for this project.

## **C. Section 4(f)/6(f) Resources**

Section 4(f) of the U.S. Department of Transportation Act of 1966 specifies that publicly owned land from a public park, recreation area, wildlife and waterfowl refuge, and all historic sites of national, state, and local significance may be used for federal projects only if: a) there is no feasible and prudent alternative to the use of the land; and b) the project includes all possible planning to minimize harm to 4(f) lands resulting from such use.

No Section 4(f) resources exist within the project study area; therefore, this project will not impact any resources protected by Section 4(f) of the USDOT Act of 1966, as amended.

## **D. Prime and Important Farmland**

The Farmland Protection Policy Act of 1981 requires all federal agencies or their representatives to consider the impact of land acquisition and construction projects on prime and important farmland soils. Land which has been previously developed or planned for development by the local governing body is exempt from the requirements of the Act.

North Carolina Executive Order Number 96 requires all state agencies to consider the impact of land acquisition and construction projects on prime farmland soils, as designated by the US Natural Resources Conservation Service (NRCS). Land which is planned or zoned for urban development is not subject to the same level of preservation afforded other rural, agricultural areas.

No active farm operations exist in the project area. All of the land surrounding the proposed project is designated for future residential, commercial or industrial development.

**E. Social Effects**

**1. Neighborhoods/Communities**

Much of the land immediately adjacent to NC 211 between SR 1500 and SR 1571 (Executive Park Boulevard) is undeveloped, with scattered residences and businesses. St. James Plantation is a private residential and recreational development that was incorporated as a town in 1999. This community is located south of NC 211 between SR 1500 and NC 133 (Long Beach Road). There are two entrances into the subdivision from NC 211, but no homes in the neighborhood have driveways onto NC 211.

Two other neighborhoods have entrances on NC 211 just west of NC 133 (Long Beach Road). No homes in either of these neighborhoods have driveways on NC 211.

The Southport Town Limits are located on NC 211 between the Progress Energy Discharge Canal and NC 87. Mostly commercial development exists along NC 211 in this area.

**2. Relocation of Homes and Businesses**

Each alternative considered will impact homes and businesses. Table 15 below presents the anticipated effects of the project on homes and businesses.

**Table 15  
Relocation of Homes and Businesses**

	Section 1				Section 2		Section 3	
	North Interchange	North At-Grade	South Interchange	South At-Grade	North	South	North	South
<b>Residential Relocates</b>	2 (1)	4 (1)	2 (1)	0	1 (0)	1 (0)	1 (0)	0
<b>Business Relocates</b>	1 (0)	1 (0)	2 (0)	1 (0)	2 (0)	4 (0)	2 (0)	7 (0)

Numbers in parenthesis indicate minority-owned or occupied homes and businesses.

The relocation program for the project will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646), and/or the North Carolina Relocation Assistance Act (GS-133-5 through 133-18). The NCDOT relocation program is designed to provide assistance to displaced persons in relocating to a replacement site in which to live or do business. Appendix B contains additional information regarding NCDOT relocation programs and includes copies of the relocation reports prepared for the project.

### **3. Minority/Low-Income Populations**

Title VI of the Civil Rights Act of 1964, protects individuals from discrimination on the grounds of race, age, color, religion, disability, sex, and national origin. Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” provides that each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations.

The racial character of the project study area in the 2000 census was very similar to that of Brunswick County. Whites were the majority of residents in the demographic study area, making up 77 percent of the population, less than the County’s total of 82 percent. The racial group with the second-largest share of the study area’s population was African Americans, who made up 21 percent. This is higher than the County’s African American population which made up 14 percent of Brunswick County in the 2000 census.

People who identified themselves as Hispanic in ethnicity represent less than one percent of the population in the demographic study area, as reflected by the 2000 census. Comparatively, Brunswick County’s Hispanic percentage was almost double the amount at 2.67 percent of the County’s total population. The State’s Hispanic population is 4.7 percent.

Based on the 2000 Census, 11 percent of the residents of the demographic area had household incomes below the poverty level. The poverty rate for Brunswick County was slightly lower than the study area at 7.35 percent. The study area has seen a decline in the last ten years in the poverty rate, poverty levels decreased by 5.75 percent, while the County experienced a substantial increase of 14.86 percent. Poverty rates for the study area are lower than the State’s rate of 12.4 percent.

A citizens informational workshop was held for the project on February 26, 2008 (see Section VI-A). This workshop was advertised in local newspapers and newsletters announcing the workshop were mailed to area property owners.

Through the public involvement program, citizens have been kept informed of the proposed project. The project will not impact any neighborhoods with large minority populations. Based on project studies, this project will not have a disproportionate impact on

low-income or minority populations. This project is being implemented in accordance with Executive Order 12898.

## **F. Land Use**

### **1. Existing Land Use and Zoning**

The land uses along NC 211 between SR 1500 (Midway Road) and NC 133 (Long Beach Road) are a mixture of commercial developments fronting the highway and residential subdivisions, such as St. James Plantation, whose sole access is to NC 211.

A mixed-use development, Dutchman Village, is located on the north side of NC 211 east of Long Beach Road and is partially developed with commercial uses near NC 211 and residential uses to the north of the commercial sites.

On the south side of NC 211, across from the Dutchman Village, is a dirt road (Trails End) containing several residential structures, including manufactured homes. Further east is a small commercial development with various businesses.

The south side of NC 211 between the commercial development and NC 133 (Doshier Cutoff Road) is vacant or undeveloped land. A parcel in the southwest quadrant of the NC 211/ NC 133 (Doshier Cutoff Road) intersection is advertised for use as a weekend yard sale/flea market.

The northwest quadrant of the NC 211/NC 133 (Doshier Cutoff Road) intersection contains Sacred Heart Catholic Church. The primary access to the church is along the north side of NC 211, approximately 500 feet west of the intersection.

The northeast and southeast quadrants of the NC 211/NC 133 (Doshier Cutoff Road) intersection are undeveloped.

The portion of NC 211 between the Progress Energy discharge canal and NC 87 is primarily within the corporate limits of Southport and contains a large shopping center on the south side of NC 211 with a Wal-Mart store and several smaller businesses. The land along the north side of NC 211 across from the shopping center is primarily forestland with a few small businesses and a residential subdivision containing less than ten homes.

Land along NC 211 in the project area is within the zoning jurisdictions of Brunswick County and the Towns of Oak Island, St. James and Southport. Land along NC 211 in the project area is zoned primarily for heavy commercial, office, industrial and manufacturing uses. Areas zoned for low-density, residential uses along the corridor are already in the development process. St. James Plantation comprises the remaining land uses along the project, with the parcels fronting NC 211 designated for low density residential uses.

## **2. Future Land Use**

The City of Southport's 2007 *CAMA Core Land Use Plan* shows a future land use plan that would extend the municipal boundaries to include areas along NC 211 west to a point past the intersection with NC 133 (Long Beach Road). The City of Southport is pursuing annexation of properties along NC 211, west to the intersection of NC 133 (Dosher Cutoff).

Based on current development patterns within the St. James corporate limits, these future residential uses will likely be buffered from NC 211 by landscaping or forestland and will have indirect access to NC 211 through streets within the gates of the development.

The Brunswick County *CAMA Core Land Use Plan* designates future land uses along the north side of NC 211 from NC 133 (Long Beach Road) to SR 1500 (Midway Road). The prevailing land use designation is commercial, with mixed use designated for the area around the intersection with SR 1500 (Midway Road).

## **3. Project Compatibility with Local Plans**

This project is consistent with local land use plans.

## **G. Economic Effects**

No direct economic impacts are expected to result from this project, although access to some businesses could be marginally disrupted during construction.

## **H. Indirect and Cumulative Effects**

Project construction is expected to result in minimal indirect and cumulative growth-related effects. It is expected that growth will occur in most of the project area irrespective of the proposed project. Proposed development activity is expected at the west end of the project, due to the three multi-use developments proposed for construction at the NC 211/SR 1500 intersection. In addition, the project's proximity to Oak Island, Southport, Yaupon Beach, and Sunny Point Military Ocean Terminal is a factor in the ongoing modest rate of development.

As discussed in Section II-B-1-g, three funded highway projects are under construction or planned for the project area. The expected environmental effects of these other projects are presented in Table 16 on the next page.

**Table 16  
Environmental Effects of Adjacent Projects**

	TIP Project R-2245 (New Route From SR 1104 to NC 211 at SR 1500)	TIP Project R-3324 (New Route From NC 211 at NC 133 to NC 87 at SR 125)	TIP Project R-3434 (SR 1500/SR 1401 From NC 211 to US 17)
Detailed Environmental Surveys Complete?	Yes	Yes	Partially complete
Homes Relocated	7	6	N/A
Businesses Relocated	0	10	N/A
Wetlands Affected (Acres)	16.37	7.69	2-lane: 5.5 4-lane: 8.9
Streams Affected (Linear Feet)	0	202	2-lane: 3,790 4-lane: 5,930
No. of Historic Properties Affected	0	0	Possibly 2
Forested Land Affected (Acres)	43.00	24.5	N/A
Project Length (Miles)	3.7	1.2	6.8

N/A – Information is not available at this time.

It is expected the cumulative environmental effect of these projects will be limited to the sum of each project’s individual effects. It is not expected the projects will have a synergistic effect which would increase the overall cumulative effect beyond each project’s direct effects.

**I. Flood Hazard Evaluation**

Brunswick County is a participant in the National Flood Insurance Program. Flood zones in the project area are shown on Figure 8. Based on the most current information available from the NC Floodplain Mapping Program (FMP), Dutchman's Creek is in a designated flood hazard zone which is within a detailed flood study reach, having a regulated 100-year floodway.

Beaverdam Swamp is in a designated flood hazard zone which is within a limited detailed flood study reach, having a regulated 100-year non-encroachment width regulated as a floodway. The proposed bridge replacement will provide equivalent or greater conveyance than that of the existing bridge. The proposed bridge replacements at these two crossings will provide equivalent or greater conveyance than that of the existing bridge.

NCDOT will coordinate with the NC Floodplain Mapping Program (FMP), to determine whether the Memorandum of Agreement between NCDOT and FMP is applicable or if approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR) will be required for this project.

This project involves construction activities on or adjacent to FEMA-regulated streams. Therefore, NCDOT Division Three shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankment located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

## **J. Traffic Noise Analysis**

In accordance with Title 23 Code of Federal Regulations Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (Title 23 CFR 772), each Type I highway project must be analyzed for predicted traffic noise impacts. Type I projects are proposed federal or federal-aid highway projects for construction of a highway on new location or improvements to an existing highway which substantially changes the horizontal or vertical alignment or increases the vehicle capacity. Traffic noise impacts are determined from the current procedures for the abatement of highway traffic noise and construction noise found in Title 23 CFR 772, which also includes provisions for traffic noise abatement measures. When traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures must be considered for reducing or eliminating these impacts. A copy of the unabridged version of the full technical report entitled Highway Traffic Noise/Construction Noise Analysis can be viewed in the Transportation Building, 1 South Wilmington Street, Raleigh.

### **1. Traffic Noise Impacts and Noise Contours**

The maximum number of receptors along each project alternative predicted to be impacted by future traffic noise is shown in Table 17 on the next page. The table includes those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria or by a substantial increase in exterior noise levels.

**Table 17  
Predicted Traffic Noise Impacts by Alternative**

	Section 1				Section 2		Section 3	
	North Interchange	North At-Grade	South Interchange	South At-Grade	North	South	North	South
<b>Homes</b>	6	6	3	3	6	5	5	5
<b>Businesses</b>	0	0	0	0	7	6	5	7
<b>Churches/Schools</b>	0	0	0	0	0	0	0	0
<b>Total</b>	6	6	3	3	13	11	10	13

\*Per TNM<sup>®</sup>2.1 and in accordance with 23 CFR Part 772

The maximum extent of the 72 dBA noise level contour, measured from the center of the proposed roadway, is 105 feet. The maximum extent of the 67 dBA noise level contour, measured from the center of the proposed roadway, is 172 feet.

The traffic noise impacts of the no-build alternative were also considered. If the proposed project is not constructed, one receptor is expected to experience noise levels approaching or exceeding the FHWA Noise Abatement Criteria. This receptor would experience an increase in exterior noise levels of approximately 5 dBA.

## **2. Noise Abatement Alternatives**

Measures for reducing or eliminating traffic noise impacts were considered for all impacted receptors in each alternative. For each of these measures, benefits versus costs, engineering feasibility, effectiveness and practicability, land use issues and other factors were considered. Benefits versus costs are evaluated based on cost per benefitted receptor. The cost of noise abatement is considered reasonable if it does not exceed \$35,000 per benefitted receptor plus an incremental increase of \$500 per dBA average increase in the predicted exterior noise levels of the impacted receptors in the area.

### **Traffic System Management Measures**

Traffic system management measures are not considered viable for noise abatement due to the negative impact they would have on the capacity and level of service of the proposed roadway.

### **Highway Alignment Changes**

Substantially changing the highway alignment to minimize noise impacts is not considered to be a viable option for this project due to engineering and environmental factors.

## **Noise Barriers**

Noise barriers can be earthen berms or noise walls. These structures act to diffract, absorb and reflect highway traffic noise.

This project will maintain partial control of access, meaning most commercial establishments and residences will have direct access connections to the proposed project, and most intersections will be at-grade. Access openings in the barrier severely reduce the noise reduction provided by the barrier, making it economically unreasonable to construct a barrier for a small noise reduction. Safety at access openings due to restricted sight distance is also a concern. In addition, businesses, churches and other related establishments require accessibility and high visibility. Noise barriers do not allow uncontrolled access, easy accessibility or high visibility, and would therefore not be acceptable abatement measures for this project.

## **Other Mitigation Measures**

Costs to acquire buffer zones for impacted receptors will exceed the NCDOT abatement cost threshold. Therefore, this abatement measure is unreasonable.

The use of vegetation for noise mitigation is not considered reasonable for this project, due to the substantial amount of right of way required to provide an effective vegetative barrier. The cost of acquiring additional right of way and planting sufficient vegetation is estimated to exceed the NCDOT abatement threshold.

### **3. Construction Noise**

The major construction elements of this project are expected to be earth removal, hauling, grading, and paving. General construction noise impacts, such as temporary speech interference for passers-by and those individuals living or working near the project, can be expected particularly from paving operations and from the earth moving equipment during grading operations. However, considering the relatively short-term nature of construction noise, these impacts are not expected to be substantial. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

### **4. Summary**

Based on this preliminary study, traffic noise abatement is not recommended and no noise abatement measures are proposed. This evaluation completes the highway traffic noise requirements of Title 23 CFR Part 772. No additional noise analysis will be performed for this project unless warranted by a substantial change in the project scope, vehicle capacity or alignment.

In accordance with NCDOT Traffic Noise Abatement Policy, the Federal/State governments are not responsible for providing noise abatement measures for new development

for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the Finding of No Significant Impact (FONSI). For development occurring after this date, local governing bodies are responsible for insuring noise compatible designs are utilized along the proposed facility.

## **K. Air Quality Analysis**

Air pollution originates from various sources. Emissions from industry and internal combustion engines are the most prevalent sources. The impact resulting from highway construction ranges from intensifying existing air pollution problems to improving the ambient air quality.

### **1. Project Air Quality Effects**

National Ambient Air Quality Standards (NAAQS) are set for carbon monoxide (CO), nitrogen oxide (NO), ozone (O<sub>3</sub>), lead (Pb), particulate matter (PM) and sulfur dioxide (SO<sub>2</sub>). The main pollutants from transportation sources are CO, O<sub>3</sub>, and PM.

The project is located in Brunswick County, which has been determined to be in compliance with the NAAQS. 40 CFR parts 51 and 93 are not applicable because the project is applicable because the project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

### **2. Mobile Source Air Toxics**

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. For this project's selected alignment, the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative considered. The VMT estimated for each of the Build Alternatives will likely be slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. The increased VMT would lead to higher MSAT emissions for the action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOBILE6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases will offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

Because the estimated VMT under each of the alternatives are nearly the same, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are

projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the project alternatives will have the effect of moving some traffic closer to nearby homes and businesses; therefore, under each alternative, there may be localized areas where ambient concentrations of MSAT could be higher under certain build alternatives than the no-build alternative. The localized increases in MSAT concentrations would likely be most pronounced along NC 211 and SR 1852 (Robert Ruark Road) as proposed lanes move closer to receptors. Such increases are greatest along new lanes when asymmetrical widening occurs. There were no observed potentially sensitive receptor(s) within the project study area. However, as discussed above, the magnitude and the duration of these potential increases and decreases compared to the no-build alternative cannot be accurately quantified due to the inherent deficiencies of current models. In summary, when a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the build alternative could be higher relative to the no-build alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover will, over time, cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be lower than today.

A copy of the unabridged version of the full air quality technical report entitled Air Quality Analysis can be viewed in the Transportation Building, 1 South Wilmington Street, Raleigh.

### **3. Construction Air Quality Effects**

During construction of the proposed project, all materials resulting from clearing and grubbing, demolition or other operations will be removed from the project, burned or otherwise disposed of by the Contractor. Any burning will be performed in accordance with applicable local laws and ordinances and regulations of the North Carolina State Implementation Plan for air quality in compliance with 15 NCAC 2D.0520. Care will be taken to insure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance. Also during construction, measures will be taken to reduce the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents. This evaluation completes the assessment requirements for air quality of the 1990 Clean Air Act Amendments and the NEPA process, and no additional reports are necessary.

## **L. Hazardous Materials**

Four sites presently or formerly containing petroleum underground storage tanks (USTs) were identified within the project limits:

- The Midway Trading Post currently operates as a convenience store and gas station. The facility is located in the northwest quadrant of the NC 211/SR 1500 intersection. The UST Section Registry shows two USTs currently in use at this facility.
- The Han-Dee Hugo's #7 also operates as a convenience store and gas station. The facility is located in the southwest quadrant of the NC 211/NC 133 (Long Beach Road) intersection. According to the UST Section Registry, five tanks currently are in use at this facility. Several monitoring wells were noted. GWI #32211 has been assigned to this facility, after a 2004 site assessment determined ground water on the property had been contaminated with petroleum. However, this site is a low risk site, due to its distance from drinking water wells and surface waters of the US.
- The Gogas #8 is located in the northwest quadrant of the NC 211 (Howe Street)/NC 87 (River Road) intersection. The UST Section Registry shows five tanks currently in use at this facility.
- Brunswick Electric Membership operates a maintenance facility located approximately 290 feet east of Executive Park Boulevard on the south side of NC 211. The UST Section Registry shows two USTs currently in use at this facility. The tanks are located approximately 560 feet from NC 211.

The first three sites each operate as a convenience store and gas station. Each of these sites is anticipated to present low geoenvironmental impacts to the project. The Brunswick Electric Membership is anticipated to present negligible geoenvironmental impacts to the project.

No hazardous waste sites or landfills were identified within the project limits. One auto junkyard was identified within the project limits. This facility is located approximately 500 feet east of Arbor Creek Drive on the north side of NC 211. The fence surrounding the property is approximately 100 feet from NC 211. This site is anticipated to present low to medium geoenvironmental impacts to the project. If right of way is required from any of these properties, soil and groundwater assessments will be performed before right of way acquisition. Discovery of additional sites not recorded by regulatory agencies and not reasonably discernable during the project reconnaissance may occur.

## **VI. COMMENTS AND COORDINATION**

### **A. Citizens Informational Workshop**

A citizens informational workshop was held on February 26, 2008 at South Brunswick High School in Southport. Property owners in the area were notified about the workshop by

informational flyers distributed by mail and advertisements in the local paper. An aerial photograph delineating the study area was displayed and informational handouts were available to workshop participants.

Sixty-three citizens attended this workshop. Eight comment sheets about the subject project were received from local citizens at the workshop. Most of those commenting were in favor of the project being built; however, they believed the project should have been constructed years ago.

## **B. Public Hearing**

A public hearing will be held following approval of this document. The public hearing will allow the public to view more detailed information than previously available at the citizens informational workshop and will provide a forum for public comments. Comments received at the hearing will be reviewed and may be incorporated into the project, if feasible and practicable.

## **C. NEPA/404 Merger Process**

This project has followed the NEPA/404 merger process. The merger process is an interagency procedure integrating the regulatory requirements of Section 404 of the Clean Water Act into the National Environmental Policy Act decision making process.

Representatives of the Federal Highway Administration, the US Army Corps of Engineers and NCDOT served as co-chairs for the merger team. The following agencies also participated on the NEPA/404 merger team for this project:

- US Fish and Wildlife Service
- US Environmental Protection Agency
- National Marine Fisheries
- NC Department of Cultural Resources
- NC Division of Water Quality
- NC Wildlife Resources Commission
- NC Division of Marine Fisheries
- NC Division of Coastal Management

The merger team has concurred on the purpose and need, alternatives to be studied in detail, and the wetlands/streams to be bridged. Copies of concurrence forms are included in **Appendix C**.

The merger team will select the least environmentally damaging practicable alternative for the project following the public hearing. The team will also concur on further avoidance and minimization measures for the project following selection of the preferred alternative.

#### **D. Other Agency Coordination**

Comments regarding the proposed project were requested from various federal, state and local agencies. Copies of the comments received are included in **Appendix A**. An asterisk indicates comments were received from that agency.

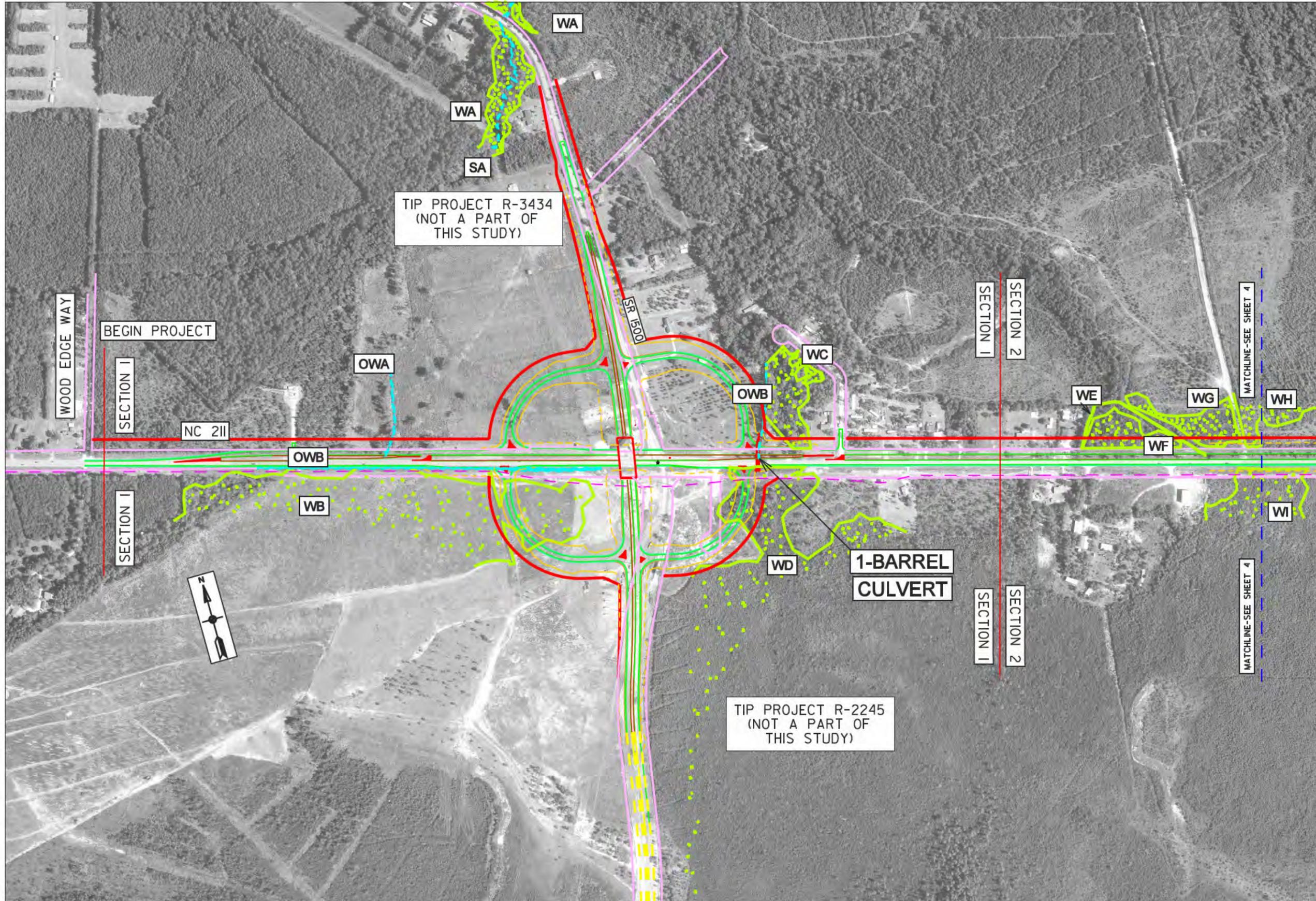
U.S. Department of the Army – Corps of Engineers\*  
U.S. Department of the Interior – Fish and Wildlife Service\*  
National Oceanic and Atmospheric Administration – National Marine Fisheries  
N.C. Department of Administration – State Clearinghouse\*  
N.C. Department of Cultural Resources\*  
N.C. Department of Environment and Natural Resources, Division of Environmental  
Health  
N.C. Department of Environment and Natural Resources, Natural Heritage Program\*  
N.C. Department of Environment and Natural Resources, Division of Parks and  
Recreation  
N.C. Department of Environment and Natural Resources, Division of Coastal  
Management\*  
N.C. Department of Environment and Natural Resources, Division of Water  
Quality\*  
N.C. Department of Public Instruction – School Planning\*  
N.C. Wildlife Resources Commission\*  
Brunswick County  
City of Southport  
Town of Boiling Spring Lakes  
Town of St. James







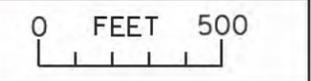
# INTERCHANGE WITH NORTH SIDE WIDENING



NORTH CAROLINA  
DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF  
HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
BRANCH

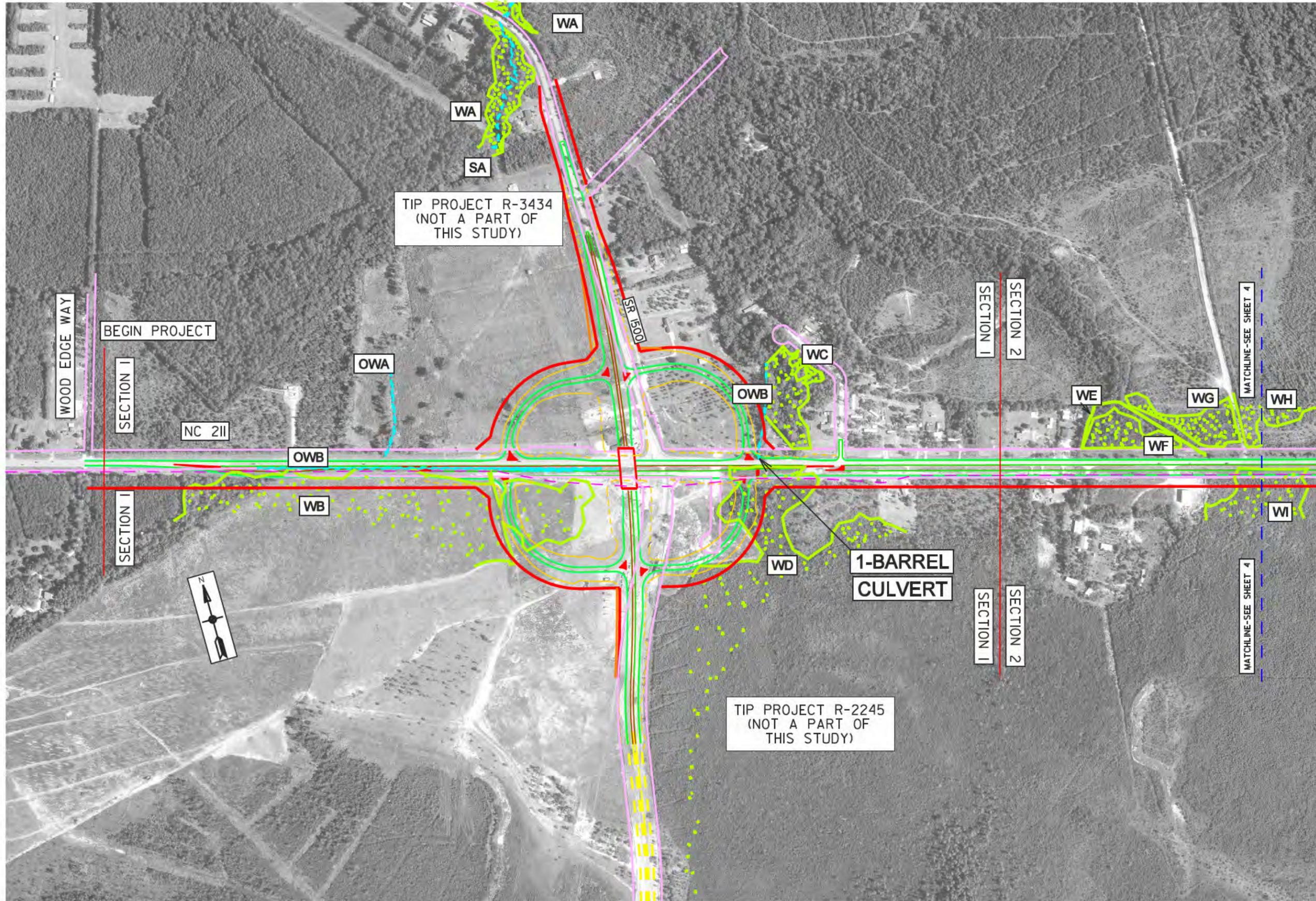
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- EXISTING RIGHT OF WAY
  - PROPOSED PAVEMENT
  - PROPOSED STRUCTURE
  - PROPOSED RIGHT OF WAY
  - PROPOSED SLOPESTAKES
  - IMPROVEMENTS TO BE MADE BY ADJACENT PROJECT
  - EXISTING POWER LINE
  - DELINEATED WETLANDS
  - DELINEATED STREAMS OR OPEN WATER



NC 211  
FROM  
SR 1500 (MIDWAY RD.)  
TO NC 87  
BRUNSWICK COUNTY  
TIP PROJECT R-5021

# INTERCHANGE WITH SOUTH SIDE WIDENING



TIP PROJECT R-3434  
(NOT A PART OF  
THIS STUDY)

TIP PROJECT R-2245  
(NOT A PART OF  
THIS STUDY)

1-BARREL  
CULVERT



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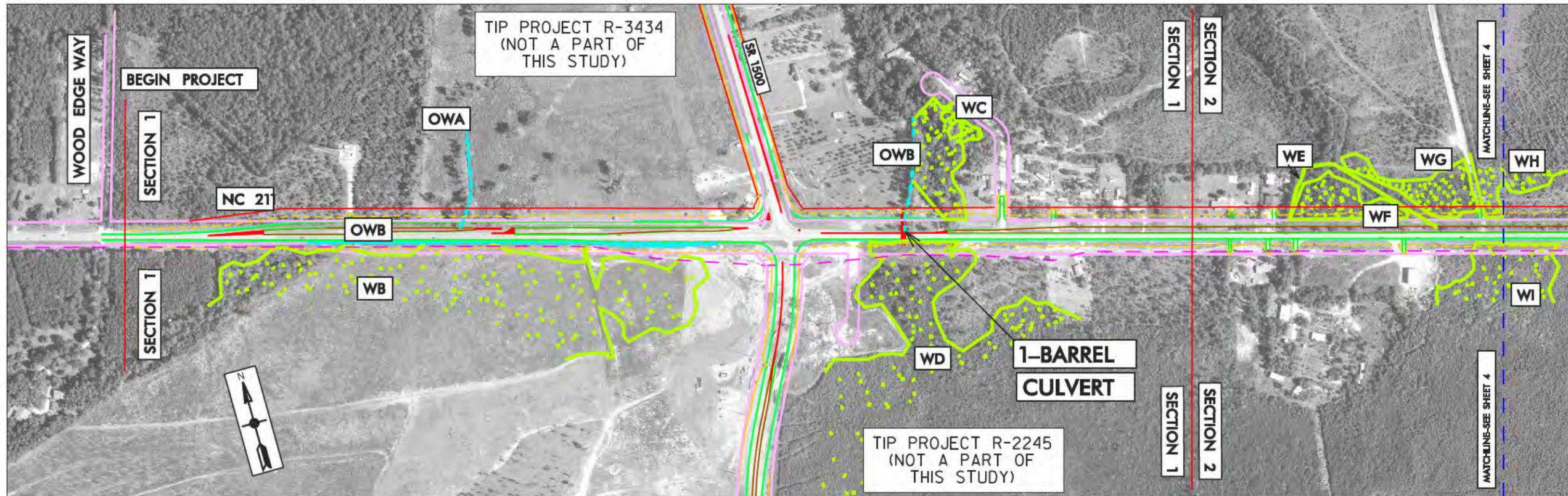
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  - PROPOSED SLOPESTAKES
  - IMPROVEMENTS TO BE MADE BY ADJACENT PROJECT
  - EXISTING POWER LINE
  - DELINEATED WETLANDS
  - DELINEATED STREAMS OR OPEN WATER



NC 211  
FROM  
SR 1500 (MIDWAY RD.)  
TO NC 87  
BRUNSWICK COUNTY  
TIP PROJECT R-5021

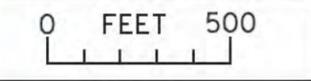
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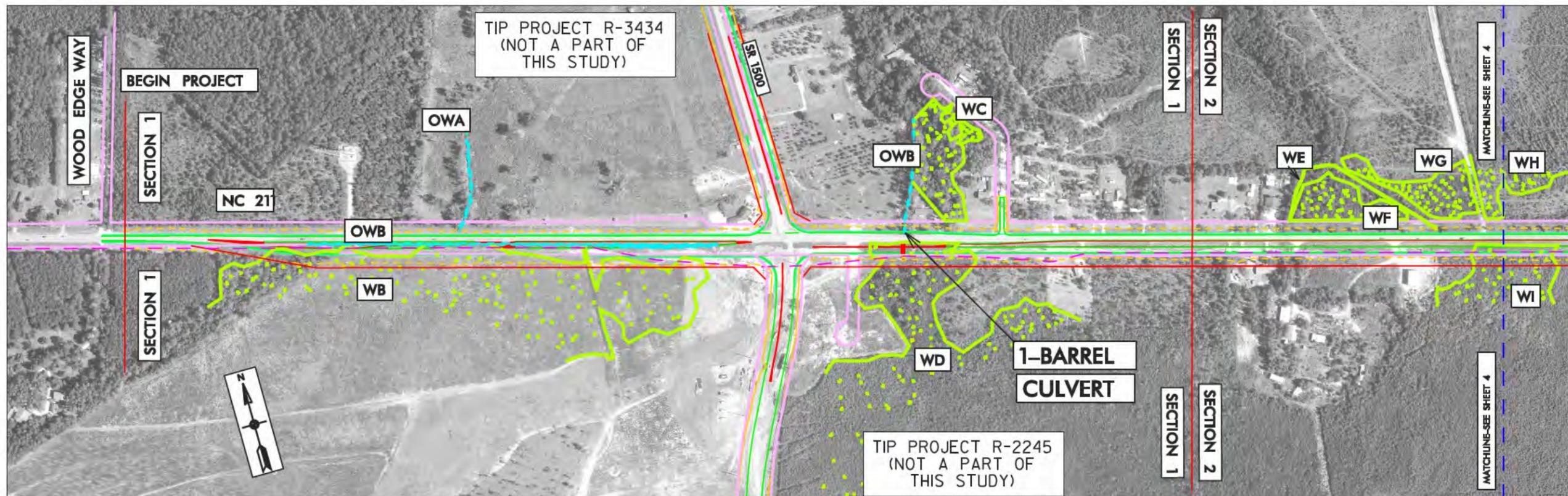
NORTH CAROLINA  
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TRANSPORTATION  
DIVISION OF  
HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
BRANCH

PRELIMINARY DESIGN  
SUBJECT TO CHANGE

- LEGEND**
- EXISTING RIGHT OF WAY
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  - PROPOSED STRUCTURE
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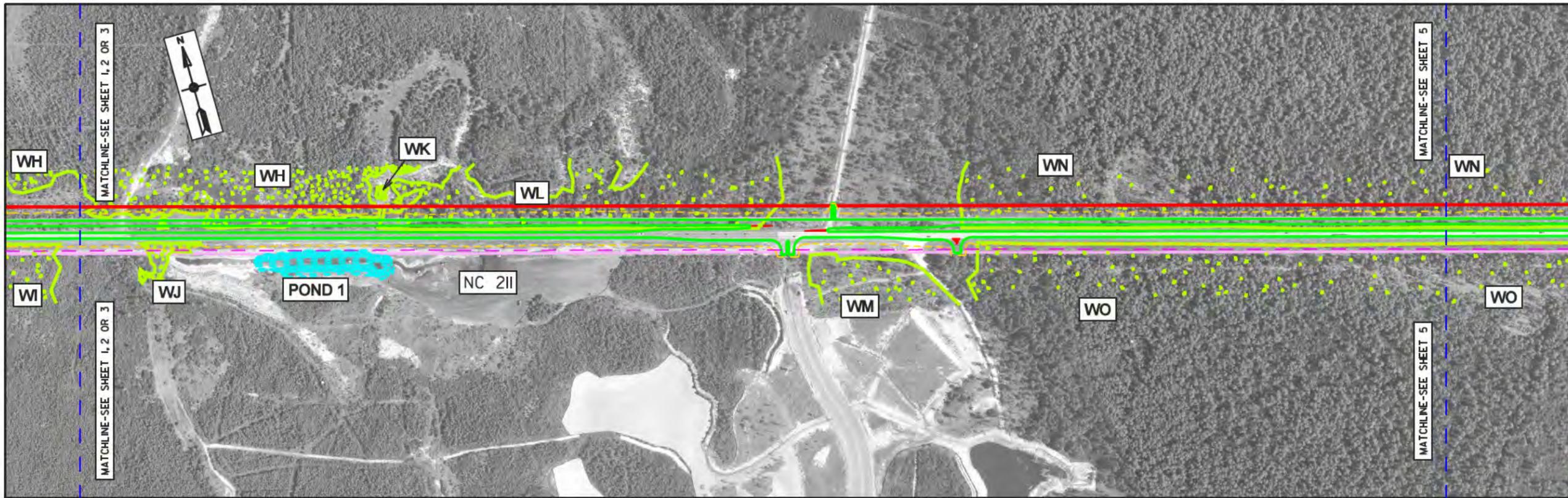


# SOUTH SIDE WIDENING WITH AT-GRADE INTERSECTION



NC 211  
FROM  
SR 1500 (MIDWAY RD.)  
TO NC 87  
BRUNSWICK COUNTY  
TIP PROJECT R-5021

# NORTH SIDE WIDENING



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PROJECT DEVELOPMENT  
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BRANCH

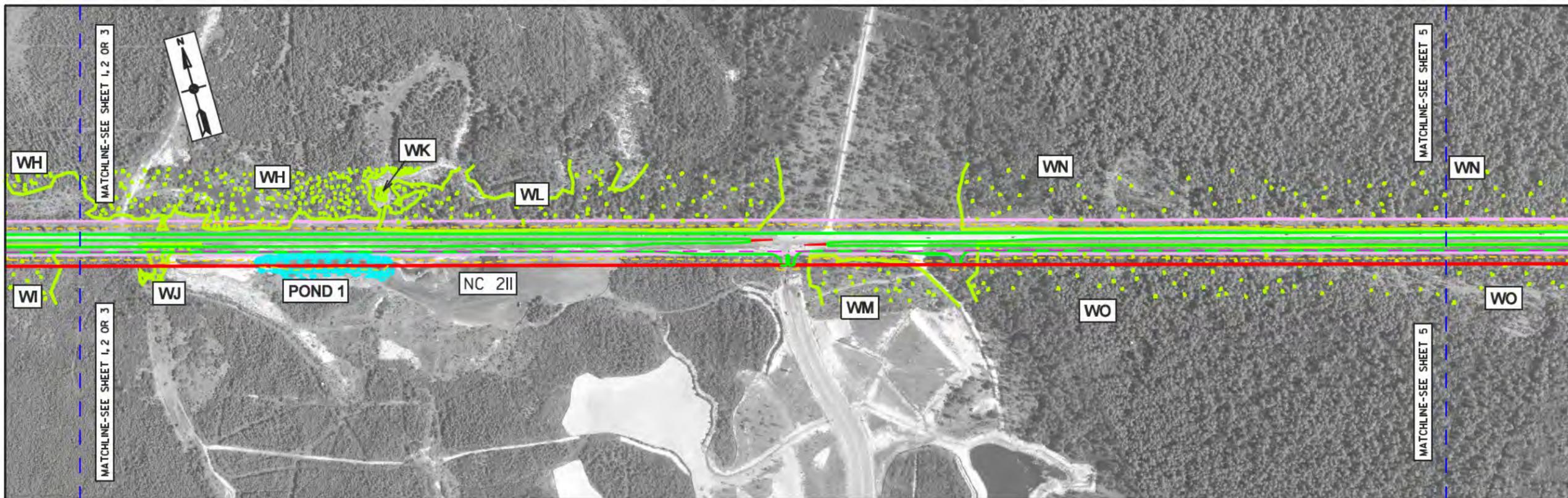
PRELIMINARY DESIGN  
SUBJECT TO CHANGE

## LEGEND

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-  PROPOSED STRUCTURE
-  PROPOSED RIGHT OF WAY
-  PROPOSED SLOPESTAKES
-  IMPROVEMENTS TO BE MADE BY ADJACENT PROJECT
-  EXISTING POWER LINE
-  DELINEATED WETLANDS
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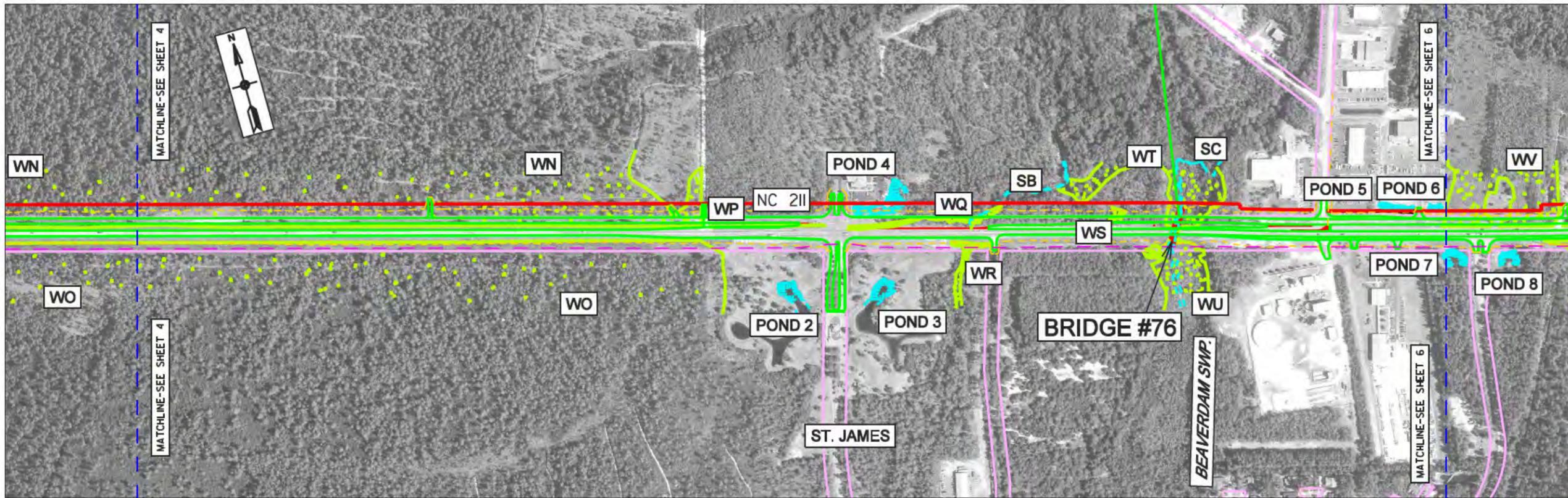
# SOUTH SIDE WIDENING



NC 211  
FROM  
SR 1500 (MIDWAY RD.)  
TO NC 87  
BRUNSWICK COUNTY  
TIP PROJECT R-5021

SHEET 4 OF 8  
FIGURE 2

# NORTH SIDE WIDENING



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AND  
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BRANCH

PRELIMINARY DESIGN  
SUBJECT TO CHANGE

## LEGEND

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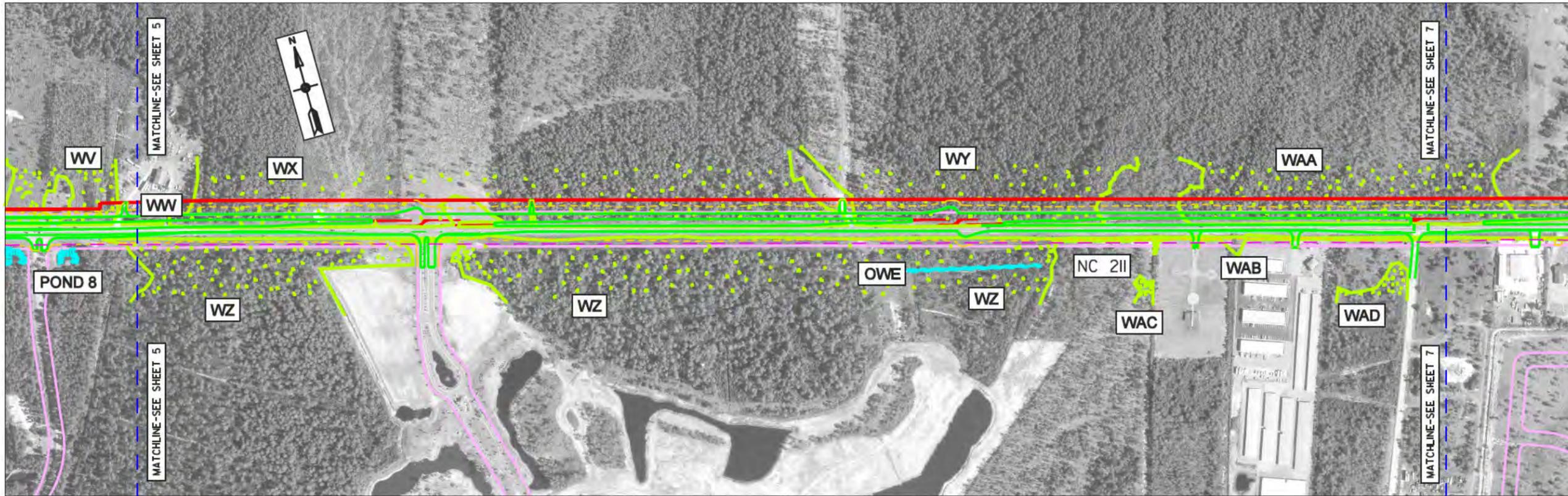
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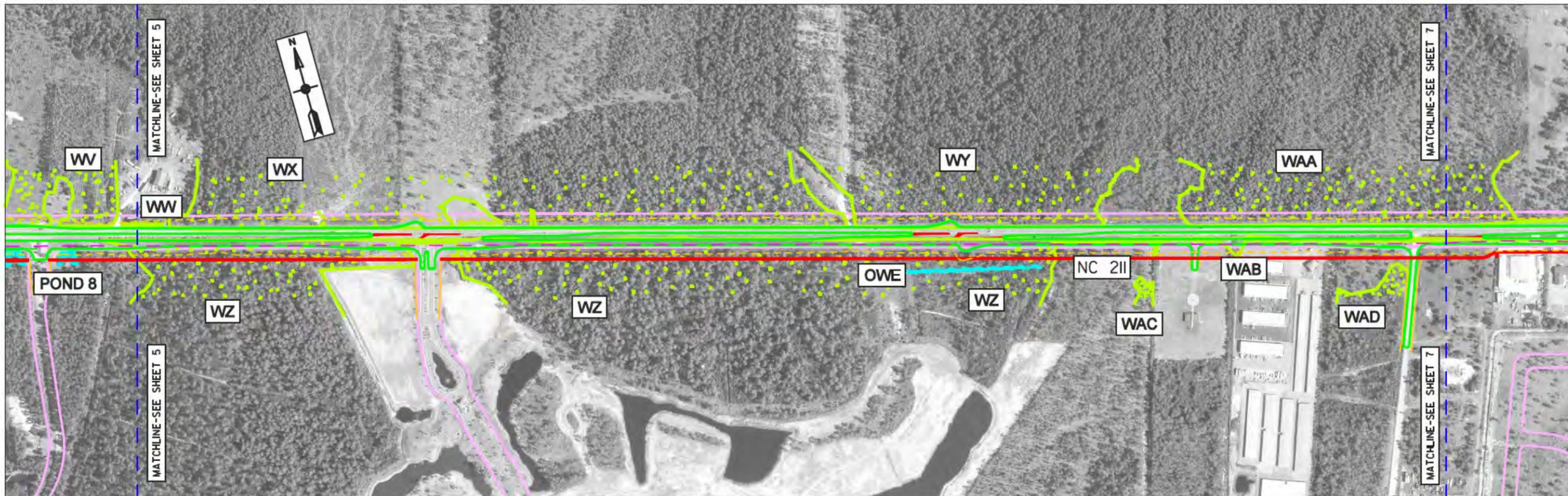
NC 211  
FROM  
SR 1500 (MIDWAY RD.)  
TO NC 87  
BRUNSWICK COUNTY  
TIP PROJECT R-5021

SHEET 5 OF 8  
FIGURE 2

# NORTH SIDE WIDENING



# SOUTH SIDE WIDENING



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PROJECT DEVELOPMENT  
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BRANCH

PRELIMINARY DESIGN  
SUBJECT TO CHANGE

### LEGEND

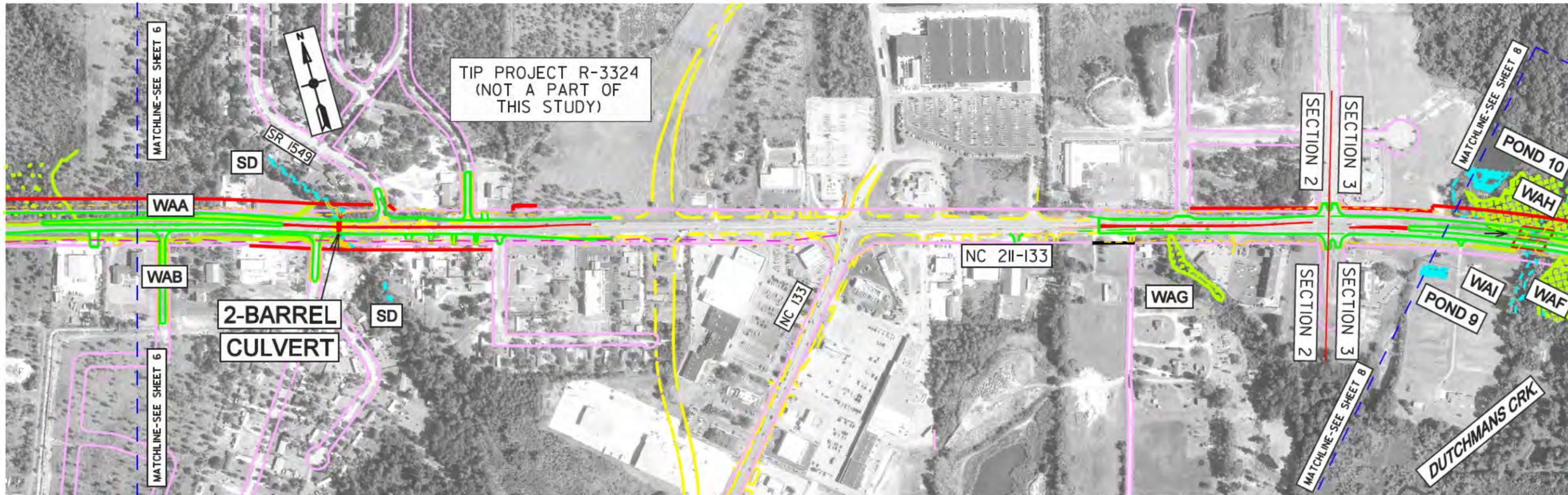
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NC 211  
FROM  
SR 1500 (MIDWAY RD.)  
TO NC 87  
BRUNSWICK COUNTY  
TIP PROJECT R-5021

SHEET 6 OF 8  
FIGURE 2

# NORTH SIDE WIDENING

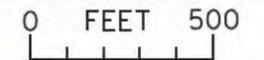


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TRANSPORTATION  
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HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
BRANCH

PRELIMINARY DESIGN  
SUBJECT TO CHANGE

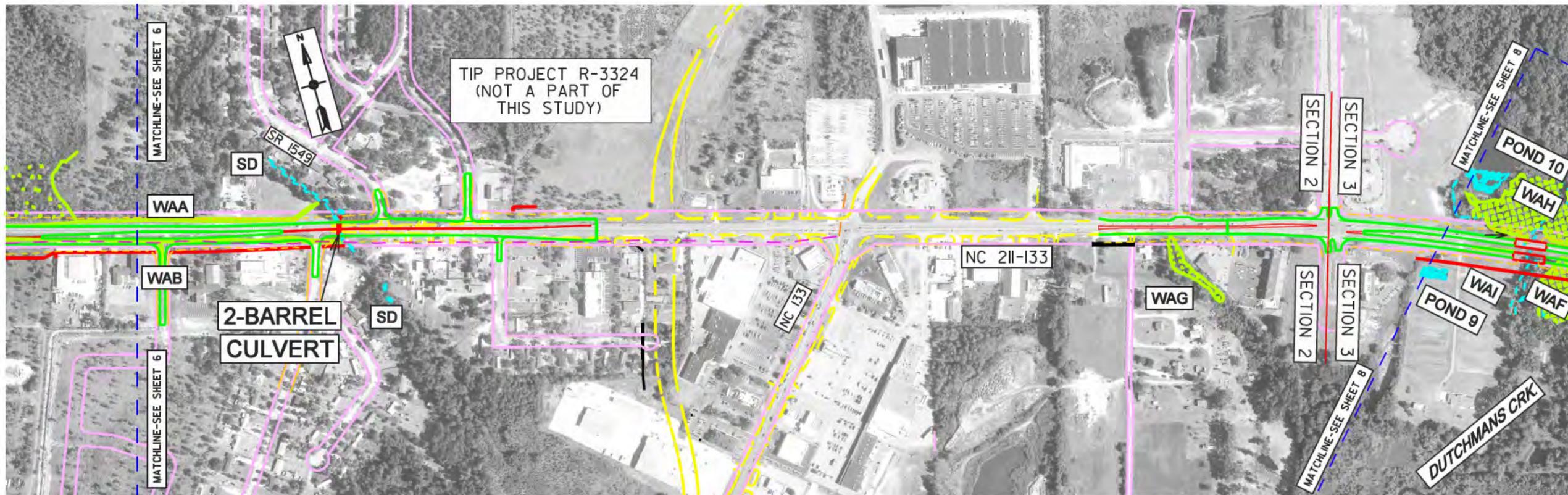
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- PROPOSED PAVEMENT
- PROPOSED RIGHT OF WAY
- PROPOSED SLOPESTAKES
- IMPROVEMENTS TO BE MADE BY ADJACENT PROJECT
- - - EXISTING POWER LINE
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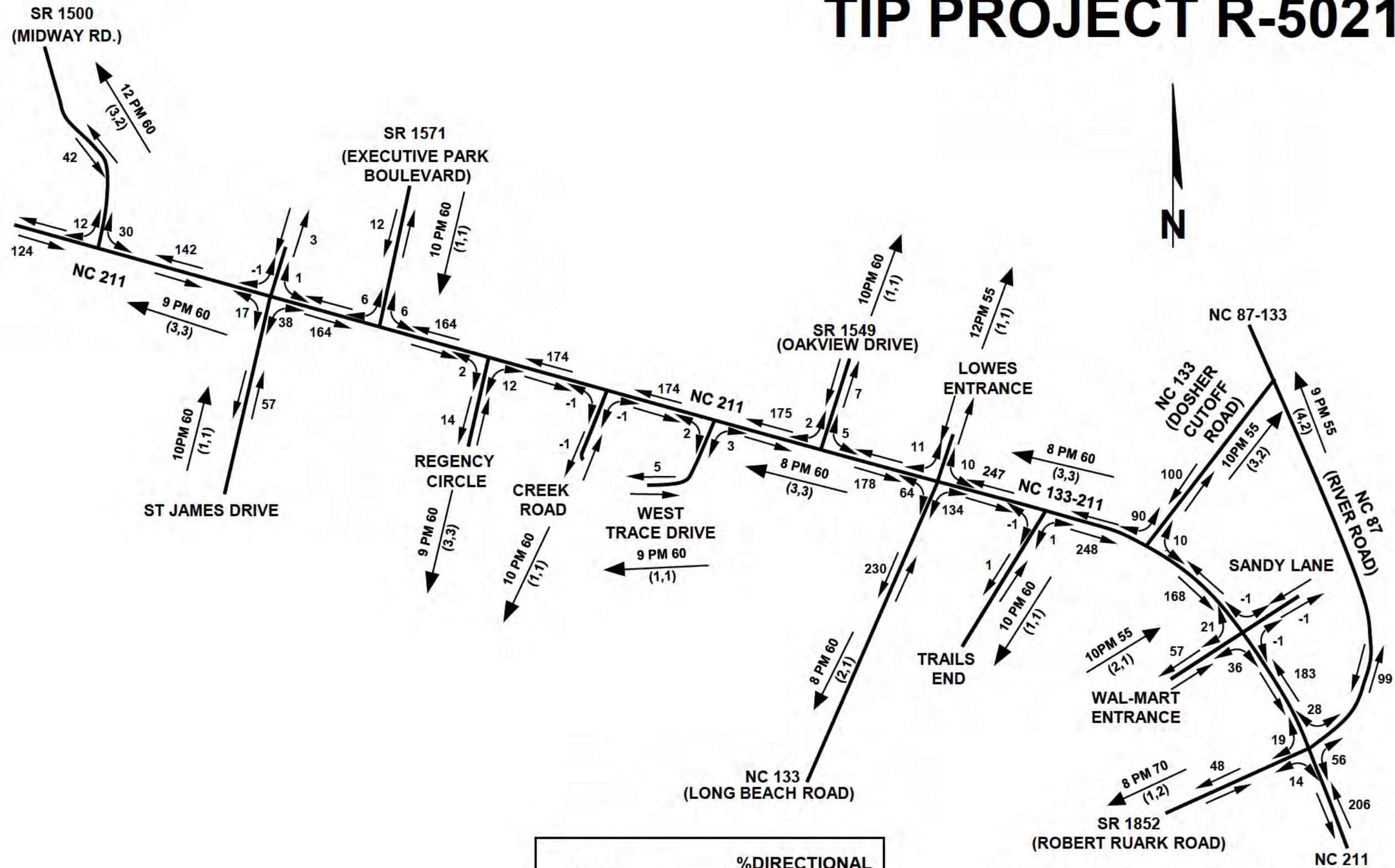
NC 211  
FROM  
SR 1500 (MIDWAY RD.)  
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BRUNSWICK COUNTY  
TIP PROJECT R-5021

# SOUTH SIDE WIDENING

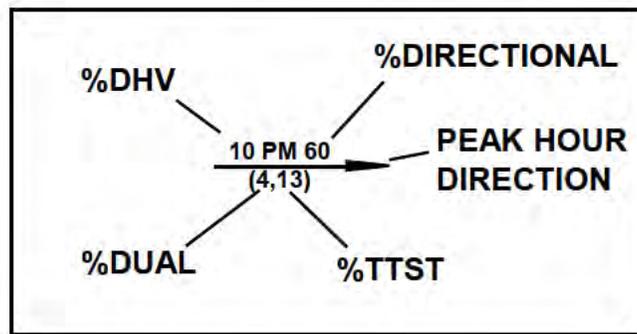




# TIP PROJECT R-5021



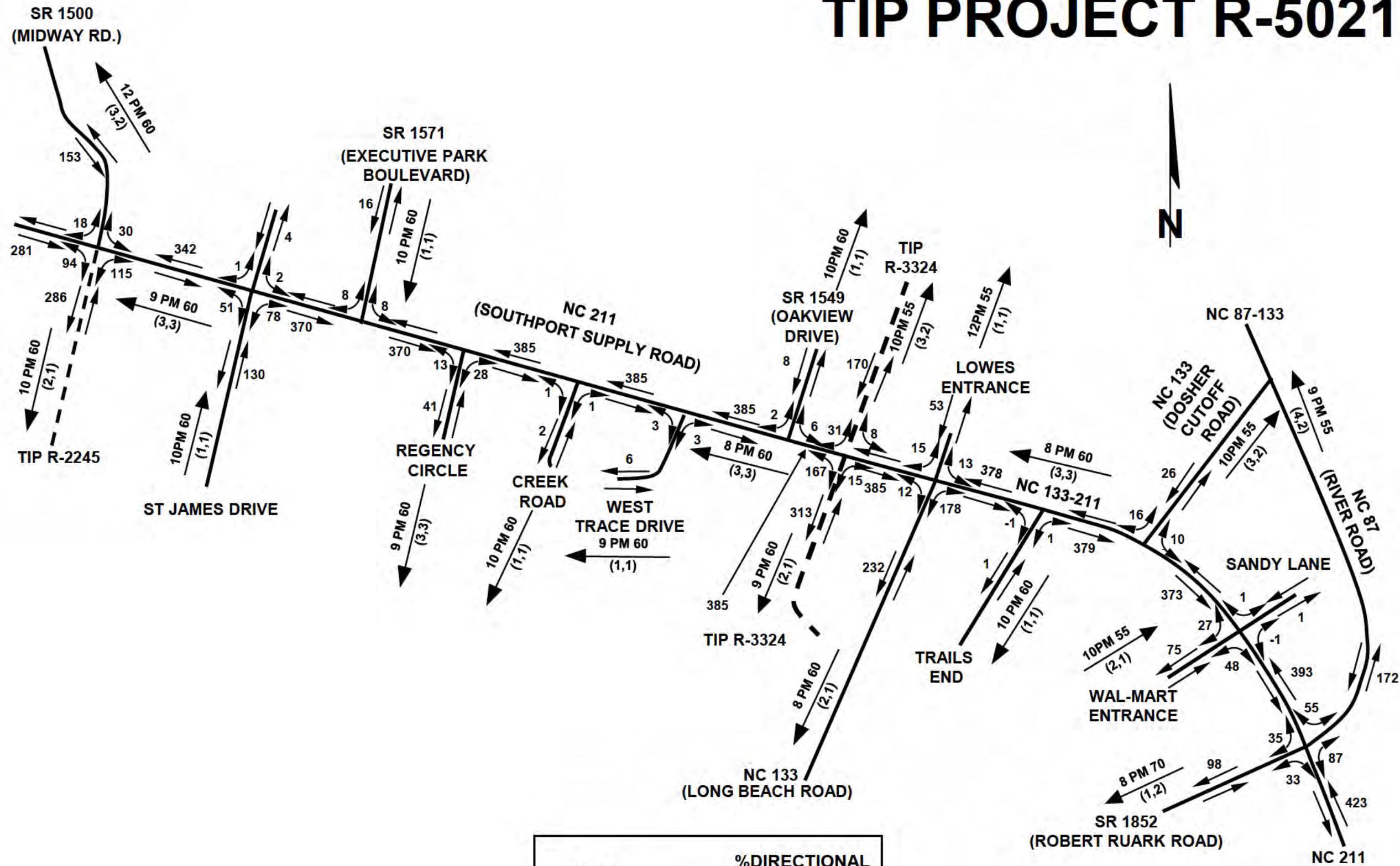
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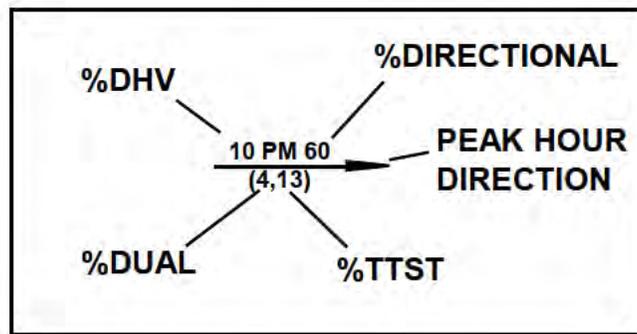
2007 AVERAGE DAILY TRAFFIC  
IN HUNDREDS

## FIGURE 3

# TIP PROJECT R-5021



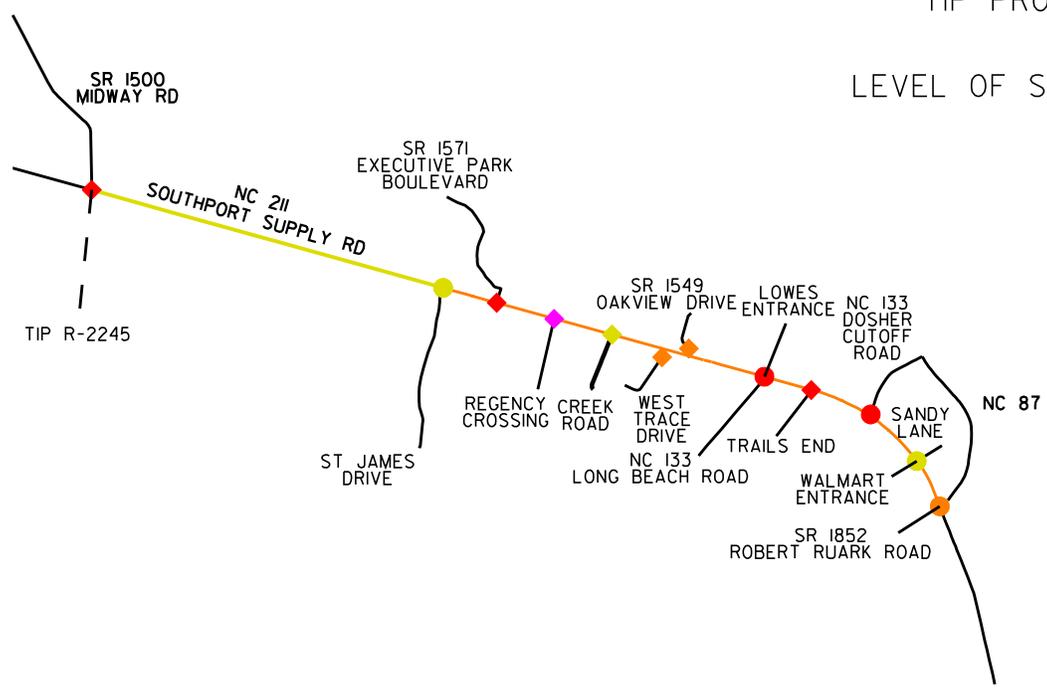
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2035 AVERAGE DAILY TRAFFIC  
IN HUNDREDS

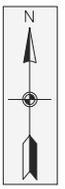
## FIGURE 4

TIP PROJECT R-5021  
 NO-BUILD  
 LEVEL OF SERVICE 2007  
 FIGURE 5



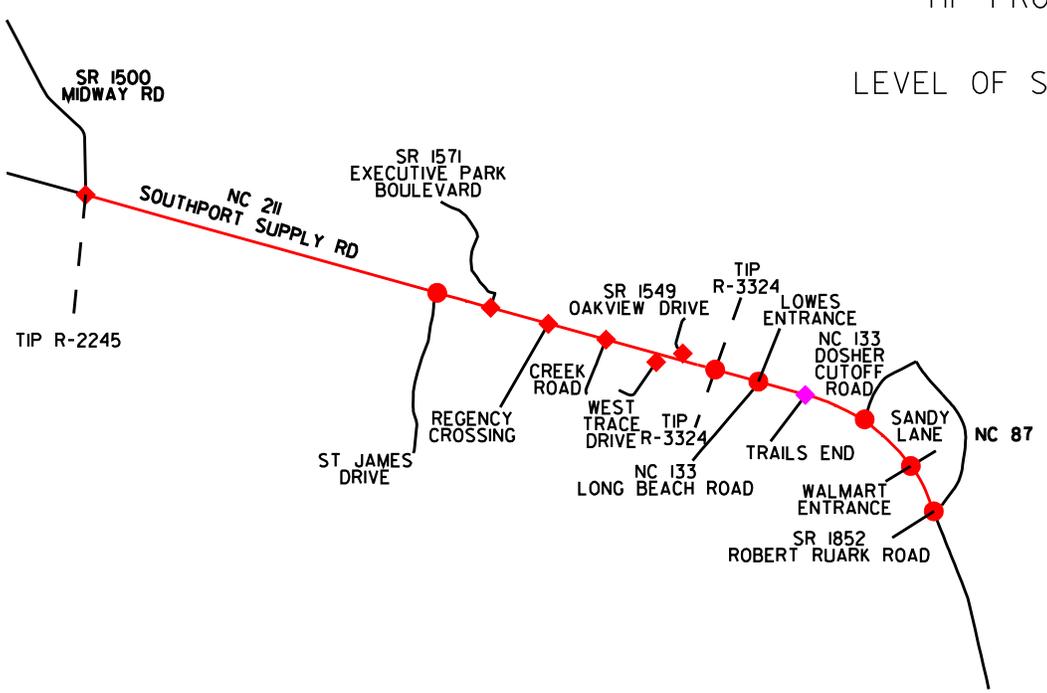
●	SIGNALIZED INTERSECTION	◆	LEVEL OF SERVICE C
◆	UNSIGNALIZED INTERSECTION	◆	LEVEL OF SERVICE D
◆	LEVEL OF SERVICE A	◆	LEVEL OF SERVICE E
◆	LEVEL OF SERVICE B	◆	LEVEL OF SERVICE F

NOT TO SCALE

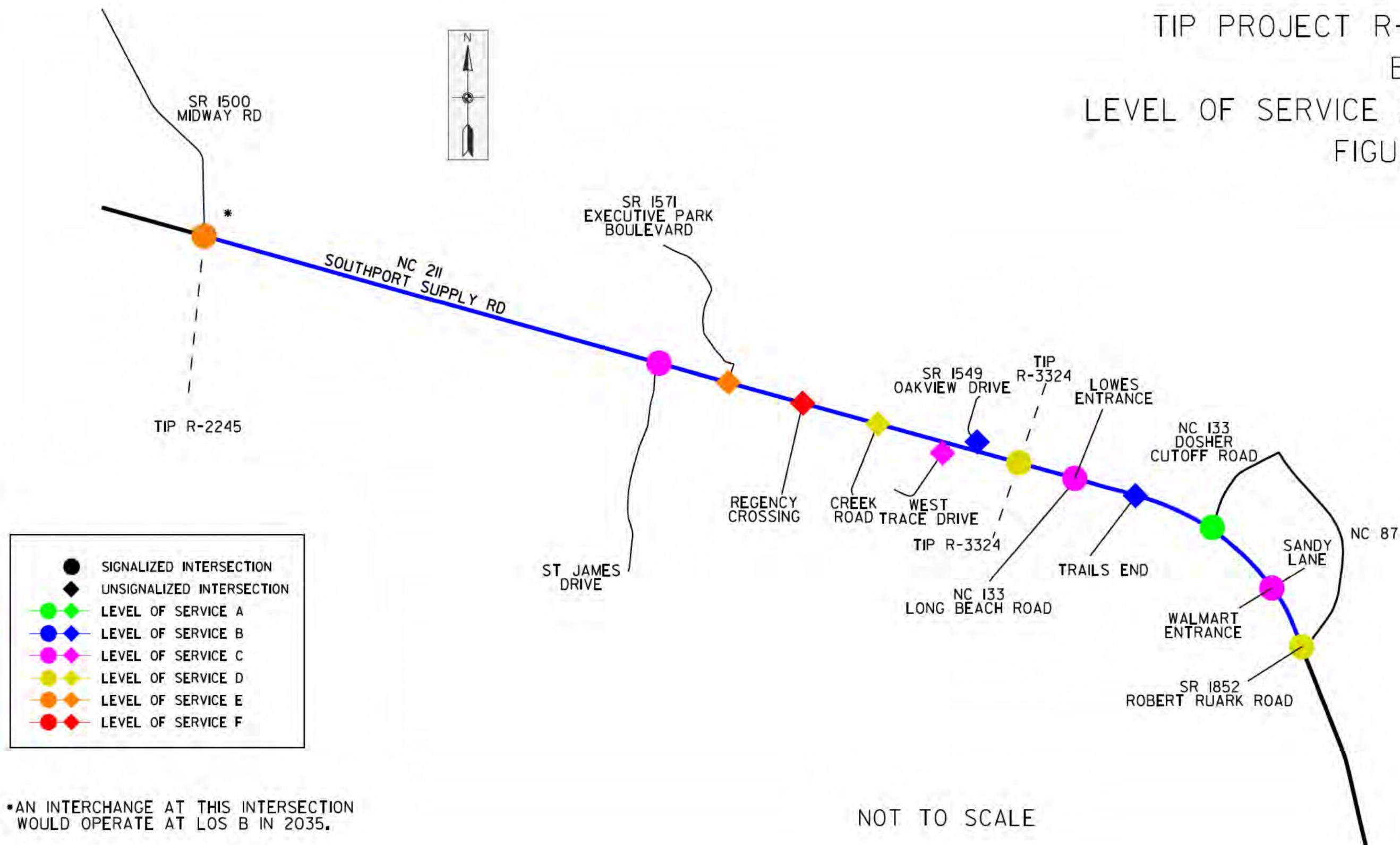


\*NOTE: UNSIGNALIZED INTERSECTION LOS CORRESPONDS TO MINOR APPROACH LEVEL OF SERVICE

TIP PROJECT R-5021  
 NO-BUILD  
 LEVEL OF SERVICE 2035  
 FIGURE 6

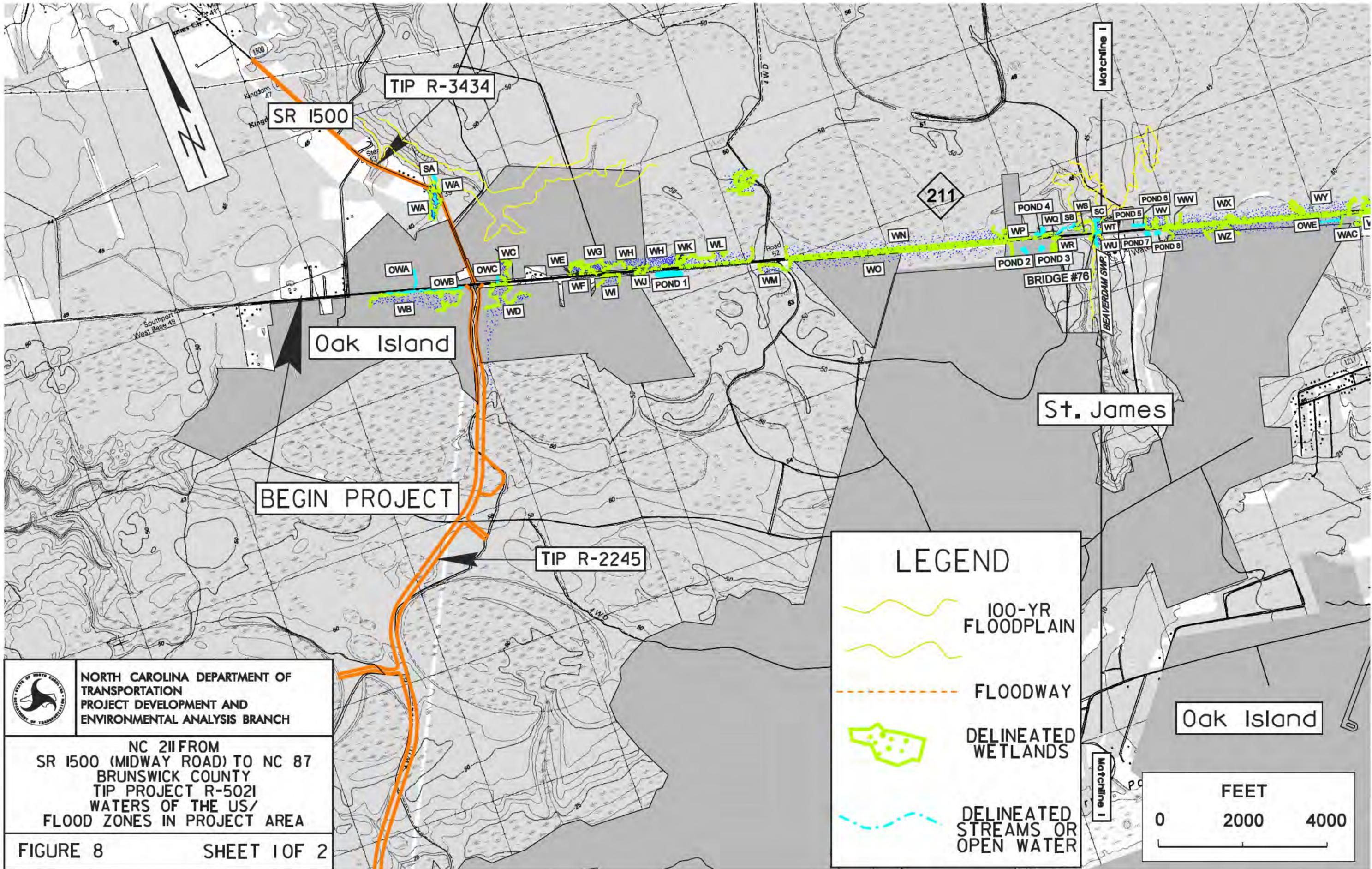


TIP PROJECT R-5021  
 BUILD  
 LEVEL OF SERVICE 2035  
 FIGURE 7



\*AN INTERCHANGE AT THIS INTERSECTION  
 WOULD OPERATE AT LOS B IN 2035.

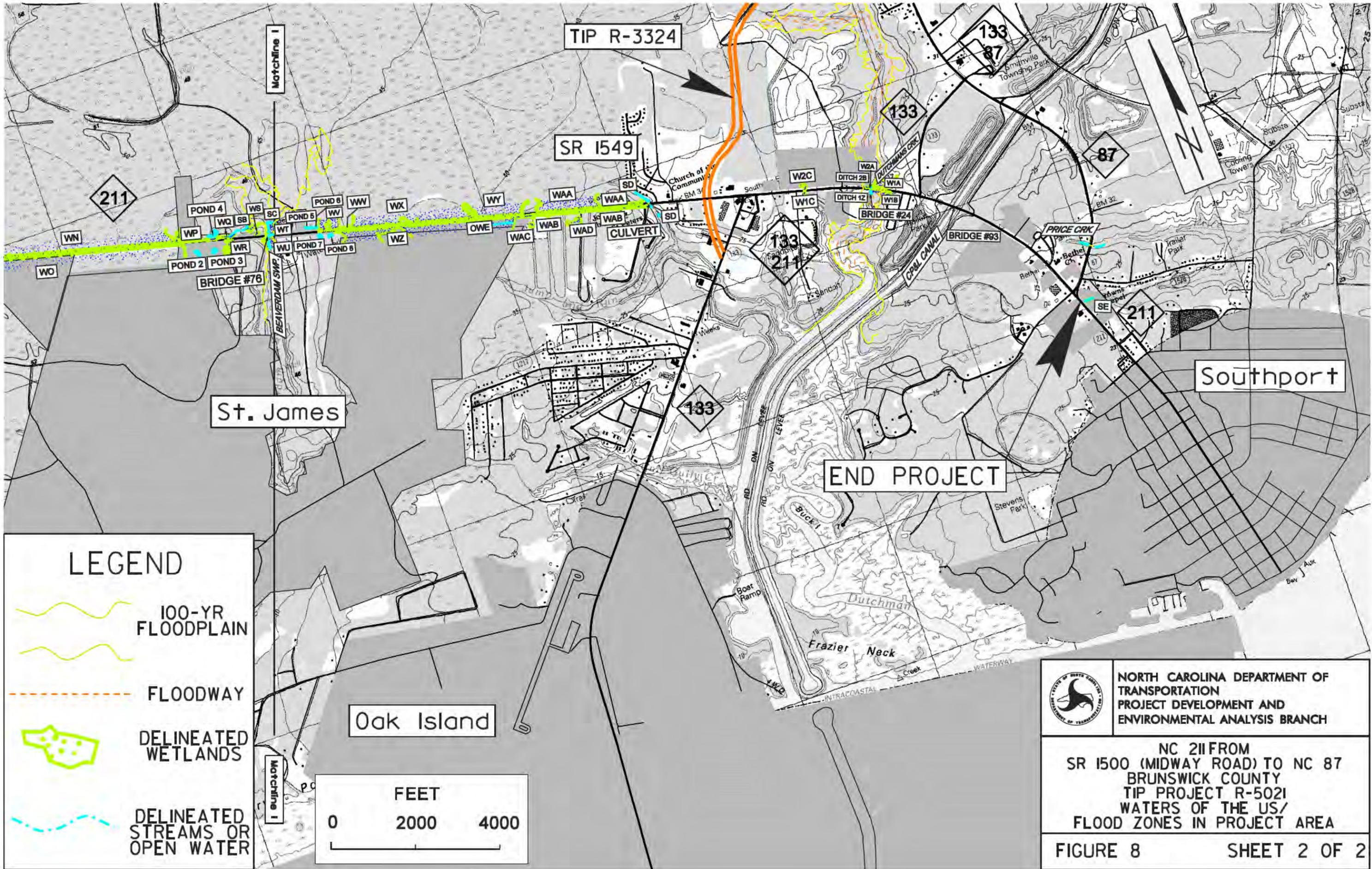
NOT TO SCALE



 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

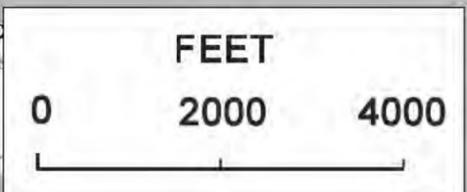
NC 211 FROM  
SR 1500 (MIDWAY ROAD) TO NC 87  
BRUNSWICK COUNTY  
TIP PROJECT R-5021  
WATERS OF THE US/  
FLOOD ZONES IN PROJECT AREA

FIGURE 8 SHEET 1 OF 2



**LEGEND**

-  100-YR FLOODPLAIN
-  FLOODWAY
-  DELINEATED WETLANDS
-  DELINEATED STREAMS OR OPEN WATER

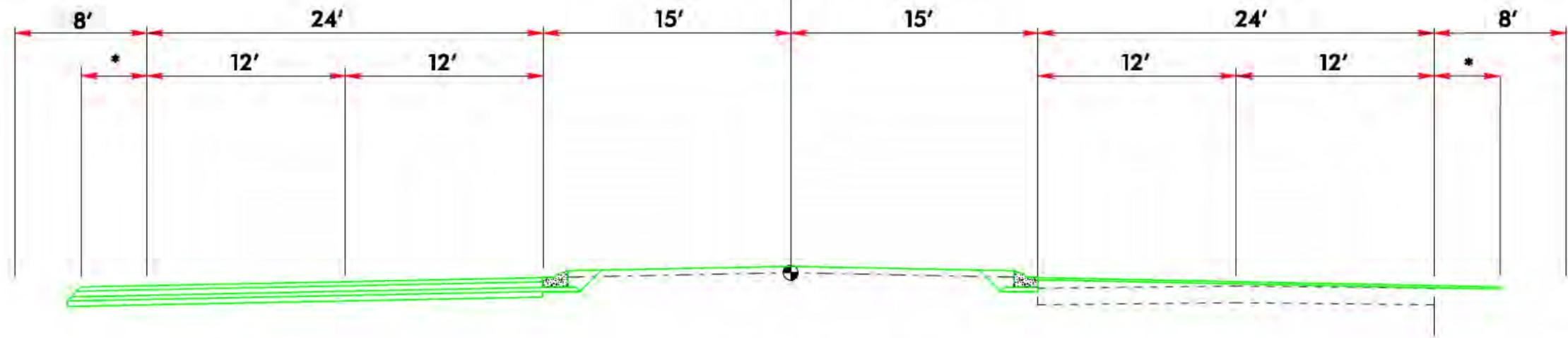


	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH</p>
	<p>NC 211 FROM SR 1500 (MIDWAY ROAD) TO NC 87 BRUNSWICK COUNTY TIP PROJECT R-5021 WATERS OF THE US/ FLOOD ZONES IN PROJECT AREA</p>
<p>FIGURE 8</p>	<p>SHEET 2 OF 2</p>

-L- (NC 211)

30' RAISED MEDIAN

CL



### TYPICAL SECTION FOR PROPOSED NC 211 WIDENING

NOT TO SCALE  
\* 4' PAVED SHOULDER

FIGURE 9

**APPENDIX A**  
**COMMENTS RECEIVED**



RECEIVED  
Division of Environment

JUL 30 2007



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Raleigh Field Office  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726

July 25, 2007

Gregory J. Thorpe, Ph.D.  
North Carolina Department of Transportation  
Project Development and Environmental Analysis  
1548 Mail Service Center  
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

<b>PDEA BRANCH</b>		
<i>original to PDE</i>		
JUL 30 2007		
<input type="checkbox"/> PDW	<input type="checkbox"/> HEU	<input type="checkbox"/> Staff Eng
<input checked="" type="checkbox"/> PDE	<input checked="" type="checkbox"/> NEU	<input type="checkbox"/> PRep
<input type="checkbox"/> PDC	<input type="checkbox"/> CMgmt	<input type="checkbox"/> Sec.
<input type="checkbox"/> PDB		
<input type="checkbox"/> FYI		
<input checked="" type="checkbox"/>	Take appropriate Action	
<input type="checkbox"/>	Prepare reply for	

This letter is in response to your request for comments from the U.S. Fish and Wildlife Service (Service) on the potential environmental effects of the proposed widening of NC 211 from SR 1500 (Midway Road) to NC 87 in Brunswick County, North Carolina (TIP No. R-5021). These comments provide information in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661-667d) and section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

The project area is located within an extensive complex of wetlands including Carolina bays and other important wildlife habitat types. A great diversity of rare animals and plants likely occur within the project corridor.

For road widening projects the Service recommends the following general conservation measures to avoid or minimize environmental impacts to fish and wildlife resources:

1. Wetland and forest impacts should be avoided and minimized to the maximal extent practical. Highway shoulder and median widths should be reduced through wetland areas;
2. Crossings of streams and associated wetland systems should use existing crossings and/or occur on a bridge structure wherever feasible. Bridges should be long enough to allow for sufficient wildlife passage along stream corridors. Where bridging is not feasible, culvert structures that maintain natural water flow and hydraulic regimes without scouring or impeding fish and wildlife passage should be employed;
3. Bridges and approaches should be designed to avoid any fill that will result in damming or constriction of the channel or flood plain. To the extent possible, piers and bents should be placed outside the bank-full width of the stream;
4. Bridge designs should include provisions for roadbed and deck drainage to flow through

a vegetated buffer prior to reaching the affected stream. This buffer should be large enough to alleviate any potential effects from run-off of storm water and pollutants;

5. If unavoidable wetland or stream impacts are proposed, a plan for compensatory mitigation to offset unavoidable impacts should be provided early in the planning process;
6. Best Management Practices (BMP) for Construction and Maintenance Activities should be implemented.

Section 7(a)(2) of the Endangered Species Act requires that all federal action agencies (or their designated non-federal representatives), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally-listed threatened or endangered species. A biological assessment/evaluation may be prepared to fulfill the section 7(a)(2) requirement and will expedite the consultation process. To assist you, a county-by-county list of federally protected species known to occur in North Carolina and information on their life histories and habitats can be found on our web page at <http://nc-es.fws.gov/es/countyfr.html>.

Based on available information, the Service is aware of at least one federally endangered red-cockaded woodpecker (RCW)(*Picoides borealis*) cluster that may be affected by the project. There is likely potential habitat for other clusters as well. A survey should be conducted within a 0.5 mile radius of the project area boundaries within potentially suitable habitat to determine whether any RCW cavity trees are present. Also, there may be suitable habitat for the federally endangered rough-leaved loosestrife (*Lysimachia asperulaefolia*) within the project area. A plant survey should be conducted during the species' flowering season (mid-May through June). If suitable habitat occurs within the project vicinity for any other listed species, surveys should be conducted to determine presence or absence of the species.

If you determine that the proposed action may affect (i.e., likely to adversely affect or not likely to adversely affect) a listed species, you should notify this office with your determination, the results of your surveys, survey methodologies, and an analysis of the effects of the action on listed species, including consideration of direct, indirect, and cumulative effects, before conducting any activities that might affect the species. If you determine that the proposed action will have no effect (i.e., no beneficial or adverse, direct or indirect effect) on listed species, then you are not required to contact our office for concurrence.

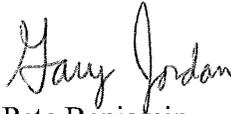
We reserve the right to review any federal permits that may be required for this project, at the public notice stage. Therefore, it is important that resource agency coordination occur early in the planning process in order to resolve any conflicts that may arise and minimize delays in project implementation. In addition to the above guidance, we recommend that the environmental documentation for this project include the following in sufficient detail to facilitate a thorough review of the action:

1. A clearly defined and detailed purpose and need for the proposed project;

2. A description of the proposed action with an analysis of all alternatives being considered;
3. A description of the fish and wildlife resources, and their habitats, within the project impact area that may be directly or indirectly affected;
4. The extent and acreage of waters of the U.S., including wetlands, that are to be impacted by filling, dredging, clearing, ditching, or draining. Acres of wetland impact should be differentiated by habitat type based on the wetland classification scheme of the National Wetlands Inventory (NWI). Wetland boundaries should be determined by using the 1987 Corps of Engineers Wetlands Delineation Manual and verified by the U.S. Army Corps of Engineers;
5. The anticipated environmental impacts, both temporary and permanent, that would be likely to occur as a direct result of the proposed project. The assessment should also include the extent to which the proposed project would result in indirect and cumulative effects to natural resources;
6. Design features and construction techniques which would be employed to avoid or minimize impacts to fish and wildlife resources, both direct and indirect, and including fragmentation and direct loss of habitat;
7. Design features, construction techniques, or any other mitigation measures which would be employed at wetland crossings and stream channel relocations to avoid or minimize impacts to waters of the US; and,
8. If unavoidable wetland or stream impacts are proposed, project planning should include a compensatory mitigation plan for offsetting the unavoidable impacts.

The Service appreciates the opportunity to comment on this project. Please continue to advise us during the progression of the planning process, including your official determination of the impacts of this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520, ext. 32.

Sincerely,

*for*   
Pete Benjamin  
Field Supervisor

cc: Jennifer Frye, USACE, Washington, NC  
David Wainwright, NCDWQ, Raleigh, NC  
Travis Wilson, NCWRC, Creedmoor, NC  
Chris Militscher, USEPA, Raleigh, NC





RECEIVED  
Division of Highways

AUG 30 2007

Preconstruction  
Project Development and  
Environmental Analysis Branch

North Carolina  
Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

August 28, 2007

Mr. Gregory Thorpe  
N.C. Dept. of Transportation  
Program Development  
1548 Mail Service Center  
Raleigh, NC 27699-1534

Dear Mr. Thorpe:

Re: SCH File # 08-E-4220-0025; Scoping; Proposed widening of NC 211 from SR 1500 (Midway Road) to NC 87 in Brunswick County. TIP No. R-5021

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

A handwritten signature in cursive script that reads "Chrys Baggett/stc".

Ms. Chrys Baggett  
Environmental Policy Act Coordinator

Attachments

cc: Region O  
Region K

*Mailing Address:*  
1301 Mail Service Center  
Raleigh, NC 27699-1301

*Telephone: (919)807-2425*  
*Fax (919)733-9571*  
*State Courier #51-01-00*  
*e-mail Chrys.Baggett@ncmail.net*

*Location Address:*  
116 West Jones Street  
Raleigh, North Carolina



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

MEMORANDUM

TO: Chrys Baggett  
State Clearinghouse

FROM: Melba McGee *MM*  
Environmental Review Coordinator

SUBJECT: 08-0025 Scoping for the Proposed Widening of NC 211 to NC 87 in  
Brunswick County

DATE: August 21, 2007

The Department of Environment and Natural Resources has reviewed the proposed information. The attached comments are for the applicant's information.

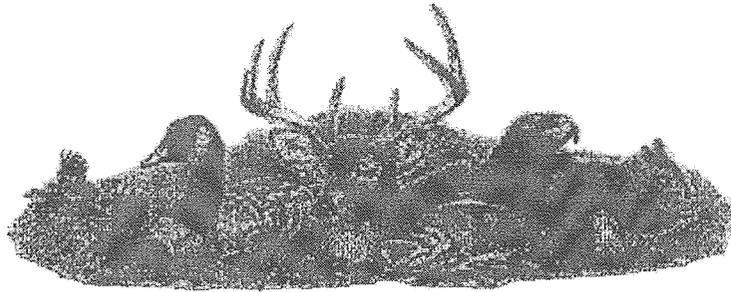
Thank you for the opportunity to review.

Attachments

1601 Mail Service Center, Raleigh, North Carolina 27699-1601  
Phone: 919-733-4984 \ FAX: 919-715-3060 \ Internet: [www.enr.state.nc.us/ENR/](http://www.enr.state.nc.us/ENR/)

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## North Carolina Wildlife Resources Commission

### MEMORANDUM

TO: Melba McGee  
Office of Legislative and Intergovernmental Affairs, DENR

FROM: Travis Wilson, Highway Project Coordinator  
Habitat Conservation Program *T. Wilson*

DATE: August 17, 2007

SUBJECT: Response to the start of study notification from the N. C. Department of Transportation (NCDOT) regarding fish and wildlife concerns for the proposed widening of NC 211 from SR 1500 to NC 87 in Brunswick County, North Carolina. TIP No. R-5021, SCH Project No. 08-0025

This memorandum responds to a request from Gregory J. Thorpe of the NCDOT for our concerns regarding impacts on fish and wildlife resources resulting from the subject project. Biologists on the staff of the N. C. Wildlife Resources Commission (NCWRC) have reviewed the proposed improvements. Our comments are provided in accordance with certain provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

Portions of this project study area are located within Boiling Springs Lakes Wetland Complex, a Significant Natural Heritage Area (SNHA) of national importance as identified of the NC Natural Heritage Program. Multiple listed species have been identified within this SNHA, NCDOT should limit the project study area to widening the existing facility to minimize impacts to this resource. Furthermore, to help facilitate document preparation and the review process, our general informational needs are outlined below:

1. Description of fishery and wildlife resources within the project area, including a listing of federally or state designated threatened, endangered, or special concern species. Potential borrow areas to be used for project construction should be included in the inventories. A listing of designated plant species can be developed through consultation with:

---

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721  
Telephone: (919) 707-0220 • Fax: (919) 707-0028

NC Natural Heritage Program  
Dept. of Environment & Natural Resources  
1601 Mail Service Center  
Raleigh, NC 27699-1601.  
[WWW.ncnhp.org](http://WWW.ncnhp.org)

and,

NCDA Plant Conservation Program  
P. O. Box 27647  
Raleigh, N. C. 27611  
(919) 733-3610

2. Description of any streams or wetlands affected by the project. The need for channelizing or relocating portions of streams crossed and the extent of such activities.
3. Cover type maps showing wetland acreages impacted by the project. Wetland acreages should include all project-related areas that may undergo hydrologic change as a result of ditching, other drainage, or filling for project construction. Wetland identification may be accomplished through coordination with the U. S. Army Corps of Engineers (COE). If the COE is not consulted, the person delineating wetlands should be identified and criteria listed.
4. Cover type maps showing acreages of upland wildlife habitat impacted by the proposed project. Potential borrow sites should be included.
5. The extent to which the project will result in loss, degradation, or fragmentation of wildlife habitat (wetlands or uplands).
6. Mitigation for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses.
7. A cumulative impact assessment section which analyzes the environmental effects of highway construction and quantifies the contribution of this individual project to environmental degradation.
8. A discussion of the probable impacts on natural resources which will result from secondary development facilitated by the improved road access.
9. If construction of this facility is to be coordinated with other state, municipal, or private development projects, a description of these projects should be included in the environmental document, and all project sponsors should be identified.

Thank you for the opportunity to provide input in the early planning stages for this project. If we can further assist your office, please contact me at (919) 528-9886.



Michael F. Easley, Governor  
 William G. Rosa Jr., Secretary  
 North Carolina Department of Environment and Natural Resources

Coleen H. Sullins, Director  
 Division of Water Quality

August 14, 2007

**MEMORANDUM**

To: Melba McGee, Environmental Coordinator

Through: John Hennessy, Supervisor, NC Division of Water Quality, Transportation Permitting Unit *JH*

From: David Wainwright, NC Division of Water Quality, Transportation Permitting Unit *DW*

Subject: Scoping comments on proposed improvements to NC211 from SR 1500 (Midway Road) to NC 87 in Brunswick County, Federal Aid Project No. STP-0211(21), State Project No. TIP R-5021.

Reference your correspondence dated July 20, 2007 in which you requested comments for the referenced project. Preliminary analysis of the project reveals the potential for multiple impacts to perennial streams and jurisdictional wetlands in the project area. More specifically, impacts to:

Stream Name	River Basin	Stream Classification(s)	Stream Index Number
UT to Price Creek	Cape Fear	SC;Sw	18-88-3
Dutchman Creek	Cape Fear	SC;Sw;HQW	18-88-9-3-(1)
UT to Jump and Run Creek	Cape Fear	SC;SW	18-88-9-3-2
Beaverdam Swamp	Cape Fear	SC;Sw;HQW	18-88-9-1-(0.5)

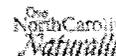
There appears to be extensive areas of wetlands in the project area. In addition to potential impacts to the streams listed above, the DWQ is also concerned about potential impacts to the wetlands along the existing road that may be impacted by the construction of this project.

Further investigations at a higher resolution should be undertaken to verify the presence of other streams and/or jurisdictional wetlands in the area. In the event that any jurisdictional areas are identified, the Division of Water Quality requests that NCDOT consider the following environmental issues for the proposed project:

**Project Specific Comments:**

Portions of Dutchman Creek downstream of the project area are class SA;HQW; 303(d) waters of the State. Dutchman Creek is on the 303(d) list for impaired use of shellfish harvesting beds due to coliforms. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ *Stormwater Best Management Practices* in order to protect Dutchman Creek from further degradation.

Review of the project reveals the presence of surface waters classified as SC;Sw; High Quality Waters of the State in the project study area. This is one of the highest classifications for water quality. Pursuant to 15A NCAC 02B .1006 and 15A NCAC 2B .0224, NC DOT will be required to obtain a State Stormwater Permit prior to construction.



**General Project Comments:**

1. The environmental document should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.
2. Environmental assessment alternatives should consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives should include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ *Stormwater Best Management Practices*, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.
3. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules (15A NCAC 2H.0506(h)), mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.
4. In accordance with the Environmental Management Commission's Rules (15A NCAC 2H.0506(h)), mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.
5. DWQ is very concerned with sediment and erosion impacts that could result from this project. NC DOT should address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.
6. If a bridge is being replaced with a hydraulic conveyance other than another bridge, DWQ believes the use of a Nationwide Permit may be required. Please contact the US Army Corp of Engineers to determine the required permit(s).
7. If the old bridge is removed, no discharge of bridge material into surface waters is allowed unless otherwise authorized by the US ACOE. Strict adherence to the Corps of Engineers guidelines for bridge demolition will be a condition of the 401 Water Quality Certification.
8. Bridge supports (bents) should not be placed in the stream when possible.
9. Whenever possible, the DWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allow for human and

- wildlife passage beneath the structure, do not block fish passage and do not block navigation by canoeists and boaters.
10. Bridge deck drains should not discharge directly into the stream. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NC DWQ *Stormwater Best Management Practices*.
  11. If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
  12. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas should be seeded or mulched to stabilize the soil and appropriate native woody species should be planted. When using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.
  13. Placement of culverts and other structures in waters, streams, and wetlands shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.
  14. If multiple pipes or barrels are required, they should be designed to mimic the natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
  15. If foundation test borings are necessary, it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3624/Nationwide Permit No. 6 for Survey Activities.
  16. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250.

17. All work in or adjacent to stream waters should be conducted in a dry work area unless otherwise approved by NC DWQ. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures should be used to prevent excavation in flowing water.
18. Sediment and erosion control measures should not be placed in wetlands and streams.
19. Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas could precipitate compensatory mitigation.
20. While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.
21. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
22. In most cases, the DWQ prefers the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed and restored to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. Tall fescue should not be used in riparian areas.
23. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.

Thank you for requesting our input at this time. The DOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact David Wainwright at (919) 715-3415.

cc: Jennifer Fryc, US Army Corps of Engineers, Wilmington Field Office  
Clarence Coleman, Federal Highway Administration  
Chris Miltscher, Environmental Protection Agency  
Travis Wilson, NC Wildlife Resources Commission  
Gary Jordan, US Fish and Wildlife Service  
Steve Sollod, Division of Coastal Management  
Ken Averitte, DWQ Fayetteville Regional Office  
File Copy



North Carolina Department of Environment and Natural Resources  
Division of Coastal Management

Michael F. Easley, Governor

James H. Gregson, Director

William G. Ross Jr., Secretary

MEMORANDUM

**TO:** Melba McGee, NCDENR  
**FROM:** Steve Sollod, DCM *SS*  
**DATE:** August 20, 2007  
**SUBJECT:** Proposed Widening of NC 211 from SR 1500 (Midway Road) to NC 87 in Brunswick County, TIP No. R-5021, Project Review No. 08-0025

The North Carolina Division of Coastal Management (DCM) has reviewed the scoping letter regarding the above referenced project, which was submitted to the NC State Clearinghouse for intergovernmental review. We appreciate the opportunity to provide information relevant to the potential permitting of the proposed project by our agency and offer the following comments, which should be considered in preparation of an environmental document.

Based on the available information, it appears that the proposed project described in your request will not impact a CAMA Area of Environmental Concern (AEC). Therefore, the proposed project will not likely require a CAMA Permit, however, NCDOT is encouraged to coordinate with DCM in the field once the final alignment of the project is determined to verify potential AEC impacts.

In accordance with the requirements of Federal Consistency, under the federal Coastal Zone Management Act, a project proponent must certify to the federal agency and DCM that the proposed activity will be conducted in a manner that is consistent with the State's coastal management program, if the project requires a USACE Individual Permit. This consistency certification includes a review of the State's coastal management program and contains an analysis describing how the proposed project would be consistent, to the maximum extent feasible, with the State's enforceable coastal policies as mandated by the requirements of Federal Consistency (15 CFR 930).

DCM's review and evaluation of a consistency analysis and certification, if necessary for this project, will commence when the consistency certification and all the information and data required by 15 CFR 930.58 is received. The Office of Coastal Resource Management (OCRM) revised the regulations pertaining to the filing and completion of consistency certification submissions on February 6, 2006. The effect of this rule change is that DCM will not file consistency certification submissions as complete until the applications filed by the project proponent for other required State permits have also been filed complete by those State agencies.

400 Commerce Avenue, Morehead City, North Carolina 28557-3421  
Phone: 252-808-2808 \ FAX: 252-247-3330 \ Internet: [www.nccoastalmanagement.net](http://www.nccoastalmanagement.net)

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TIP No. R-5021

Project Review No. 08-0025

In line with this revision, DCM will withhold issuing a final consistency decision until all other required State permits for the proposed project have been issued.

We hope that you find these comments helpful and that they will be addressed during planning and preparation of the environmental document for this project. During future interagency project coordination and review, DCM may have additional comments on the project. The information provided in this letter shall not preclude DCM from requesting additional information throughout the interagency project coordination and review process, and following normal consistency review procedures.

If you have any questions or concerns, please contact me at (919) 733-2293 x 230, or via e-mail at [steve.sollod@ncmail.net](mailto:steve.sollod@ncmail.net). Thank you for your consideration of the North Carolina Coastal Management Program.

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/> Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/> NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
<input type="checkbox"/> Water Use Permit	Pre-application technical conference usually necessary.	30 days (N/A)
<input type="checkbox"/> Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
<input type="checkbox"/> Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filing may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/> Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q 0100, 2Q 0300, 2H 0600)	N/A <i>Deane</i>	60 days
<input type="checkbox"/> Any open burning associated with subject proposal must be in compliance with 15 A NCAC 20 1900		
<input type="checkbox"/> Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20 1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950	N/A	60 days (90 days)
<input type="checkbox"/> Complex Source Permit required under 15 A NCAC 2D 0800		
<input type="checkbox"/> The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) At least 30 days before beginning activity. A fee of \$50 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
<input checked="" type="checkbox"/> Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.		(30 days)
<input type="checkbox"/> Mining Permit	On-site inspection usual. Surety bond filed with ENR Bond amount varies with type mine and number of acres of affected land. Any acre mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/> North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days.	1 day (N/A)
<input type="checkbox"/> Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
<input type="checkbox"/> Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/> Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to prepare plans, inspect construction certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage of the total project cost will be required upon completion.	30 days (60 days)

PERMITS		SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with ENR running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit Application by letter. No standard application form	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15-20 days N/A
<input checked="" type="checkbox"/>	401 Water Quality Certification	N/A	60 days (130 days)
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 fee must accompany application	55 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$50.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/>	Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify N.C. Geodetic Survey, Box 27687 Raleigh, NC 27611		
<input checked="" type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A Subchapter 2C 0100		
<input checked="" type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTs) are discovered during any excavation operation		
<input checked="" type="checkbox"/>	Compliance with 15A NCA 2H 1000 (Coastal Stormwater Rules) is required		45 days (N/A)
<input type="checkbox"/>	Tar Pamico or Neuse Riparian Buffer: Rules required		
* Other comments (attach additional pages as necessary, being certain to cite comment authority)			

### REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

**Asheville Regional Office**  
2090 US Highway 70  
Swannanoa, NC 28778  
(828) 296-4500

**Mooresville Regional Office**  
610 East Center Avenue, Suite 301  
Mooresville, NC 28115  
(704) 663-1699

**Wilmington Regional Office**  
127 Cardinal Drive Extension  
Wilmington, NC 28405  
(910) 796-7215

**Fayetteville Regional Office**  
225 North Green Street, Suite 714  
Fayetteville, NC 28301-5043  
(910) 433-3300

**Raleigh Regional Office**  
3800 Barrett Drive, Suite 101  
Raleigh, NC 27609  
(919) 791-4200

**Winston-Salem Regional Office**  
585 Waughtown Street  
Winston-Salem, NC 27107  
(336) 771-5000

**Washington Regional Office**  
943 Washington Square Mall  
Washington, NC 27889

NORTH CAROLINA STATE CLEARINGHOUSE  
DEPARTMENT OF ADMINISTRATION  
INTERGOVERNMENTAL REVIEW

RECEIVED  
JUL 24 2007

STATE NUMBER: 08-E-4220-0025  
DATE RECEIVED: 07/24/2007  
AGENCY RESPONSE: 08/20/2007  
REVIEW CLOSED: 08/24/2007

MS RENEE GLEDHILL-EARLEY  
CLEARINGHOUSE COORD  
DEPT OF CUL RESOURCES  
ARCHIVES-HISTORY BLDG - MSC 4617  
RALEIGH NC

REVIEW DISTRIBUTION

CAPE FEAR COG  
CC&PS - DEM, NFIP  
DEHNR - COASTAL MGT  
DENR LEGISLATIVE AFFAIRS  
DEPT OF AGRICULTURE  
DEPT OF CUL RESOURCES  
DEPT OF TRANSPORTATION



CH 07 - 1545  
A- ARG-15 (NC)  
RWL/BJS 8-7-07  
S- 8/21/07 see  
SDM LTR  
8/8/07

PROJECT INFORMATION

APPLICANT: N.C. Dept. of Transportation  
TYPE: National Environmental Policy Act  
ERD: Scoping  
DESC: Proposed widening of NC 211 from SR 1500 (Midway Road) to NC 87 in Brunswick county. TIP No. R-5021

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

- NO COMMENT
- COMMENTS ATTACHED

SIGNED BY: Renee Gledhill-Earley  
DATE: 8/14/07

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AUG 01 2007

JUL 25 2007





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Division of Highways

AUG 16 2007

Preconstruction

Project Development and  
Environmental Analysis Branch

North Carolina Department of Cultural Resources  
State Historic Preservation Office

Peter B. Sandbeck, Administrator

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

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

August 14, 2007

MEMORANDUM

TO: Gregory Thorpe, Ph.D., Director  
Project Development and Environmental Analysis Branch  
NCDOT Division of Highways

FROM: Peter Sandbeck *PBS for Peter Sandbeck*

SUBJECT: Proposed widening of NC 211 from SR 1500 (Midway Road) to NC 87, R-5021,  
Brunswick County, CH07-1545

Thank you for your letter of July 20, 2007, concerning the above project.

We have conducted a search of our files and are aware of no structures of historical or architectural importance located within the planning area. However, since this area has not been surveyed in over thirty years and there may structures of which we are unaware located within the planning area.

We recommend that a Department of Transportation architectural historian identify and evaluate any structures over fifty years of age within the project area and report the findings to us.

There are no known archaeological sites within the proposed project area. Based on our knowledge of the area, it is unlikely that any archaeological resources that may be eligible for inclusion in the National Register of Historic Places will be affected by the project. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

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

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

cc: State Clearinghouse  
Mary Pope Furr  
Matt Wilkerson

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

**CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR  
THE NATIONAL REGISTER OF HISTORIC PLACES**

**RECEIVED**  
Division of Highways

Project Description: **Widen NC 211 from SR 1500 (Midway Road) to NC 87**

**MAR 26 2009**

On **May 21, 2008** representatives of the

Preconstruction  
Project Development and  
Environmental Analysis Branch

- North Carolina Department of Transportation (NCDOT)
- Federal Highway Administration (FHWA)
- North Carolina State Historic Preservation Office (HPO)
- Other

Reviewed the subject project at

- Scoping meeting
- Historic architectural resources photograph review session/consultation
- Other

All parties present agreed

- There are no properties over fifty years old within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the properties identified as L-14 are considered not eligible for the National Register and no further evaluation of them is necessary.
- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties affected by this project. (Attach any notes or documents as needed)

Signed:

Shelby J. Spiller  
Representative, NCDOT

5/21/08  
Date

FHWA, for the Division Administrator, or other Federal Agency

Date

Representative, HPO

Date

Renee Medkiff-Early  
State Historic Preservation Officer

5-21-08  
Date



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

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Division of Highways

AUG 08 2007

Preconstruction  
Project Development and  
Environmental Analysis Branch

William G. Ross Jr., Secretary

August 6, 2007

MEMORANDUM

TO: Gregory J. Thorpe, DOT Project Development and Environmental Analysis

FROM: <sup>HL</sup> Harry LeGrand, Natural Heritage Program

SUBJECT: Widening of NC 211 (from two lanes to four lanes), from SR 1500 (Midway Road) to NC 87; Brunswick County

REFERENCE: Federal Aid Project STP-0211(21), WBS Element 41582.1.1, TIP No. R-5021

The Natural Heritage Program has a number of records of a rare species and a significant natural heritage area within the project area. The Nationally significant Boiling Spring Lakes Wetland Complex lies on both sides of NC 211, for much of the length of the project. Roughly 2 miles of the northern edge of NC 211 abuts the southern edge of the Primary Area. However, that part of the natural area south of the road lies within the Secondary Area of the natural area. Thus, the more significant portion of the natural area, which is unprotected in the project vicinity, lies along the northern side of NC 211.

Four rare plant species and one rare animal species have been found in close proximity to NC 211 in the project area. Only one of these is currently known to be extant – the State Special Concern and Federal Species of Concern Venus flytrap (*Dionaea muscipula*). A large population was found in 2000 immediately north of NC 211, not far east of Midway. The population of threadleaf sundew (*Drosera filiformis*), first found in 1975, could not be re-located in 1994; and the lanceleaf seedbox (*Ludwigia lanceolata*) location was reported in 1956, though we have no information on later survey attempts. The location of the brown bogbutton (*Lachnocaulon minus*) is rather vague and might not have actually been along NC 211. The same is true for the location of the black swamp snake (*Seminatrix pygaea*).

This project will cause significant impacts to wetlands, which lie on both sides of NC 211, for most of the project length. This road crosses many Carolina bays, as well as at least two creek crossings. Some loss of the Boiling Spring Lakes Wetland Complex natural area will take place. And, some impact to Venus flytrap may occur, especially if the road is widened to the north.

Based on the information in the Natural Heritage Program database, less damage to rare species and significant natural areas would occur if the widening were to be to the south, than to the north, of the existing NC 211. We strongly recommend a survey for rare plants and animals, in particular for Venus flytrap. The Federally Endangered red-cockaded woodpecker (*Picoides borealis*) also has extant colonies within several miles of the project area, and a survey for this species should be undertaken, as well.

You may wish to check the Natural Heritage Program database website at [www.ncnhp.org](http://www.ncnhp.org) for a listing of rare plants and animals and significant natural communities in the county and on the quad map.

Please do not hesitate to contact me at 919-715-8697 if you have questions or need further information.

Enclosures



# PUBLIC SCHOOLS OF NORTH CAROLINA

STATE BOARD OF EDUCATION Howard N. Lee, *Chairman*

DEPARTMENT OF PUBLIC INSTRUCTION June St. Clair Atkinson, ED.D., *State Superintendent*

WWW.NCPUBLICSCHOOLS.ORG

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Division of Highways

SEP 10 2007

Preconstruction  
Project Development and  
Environmental Analysis Branch

September 5, 2007

## MEMORANDUM

TO: Gregory J. Thorpe, Ph.D., Manager  
NC Department of Transportation  
Project Development and Environmental Analysis Branch

FROM: Steven M. Taynton, Section Chief, School Planning *SM*

SUBJECT: Start of Study for NC 211, from SR 1500 (Midway Road) to NC 87, Brunswick County, NCDOT Division 3, Federal-Aid Project STP-0211(21), WBS Element 41582.1.1, Project R-5021

Enclosed is a response from Brunswick County Schools in regard to the above referenced inquiry.

ST/pr  
Enclosure

**From:** "Stephen Miley" <smiley@bcswan.net>  
**To:** "Steve Taynton" <staynton@dpi.state.nc.us>  
**Date:** 9/5/2007 10:10 AM  
**Subject:** SR 211

Steve,

What with vacations and school opening , I am afraid we missed the end date for comments on NCDOT project R5021. In case there is still an opportunity to have our comments introduced I wanted you to know that approximately 20 bus routes traverse the area daily. So, the construction phase will most definitely impact or operations.

The ultimate project will be very positive but during the construction process it will be necessary to re-route as many of these buses as possible. The problem is that there is no parallel route to avoid the construction within about 8 to 10 miles. There is an unimproved ROW at Antenna Farm Road that if it were widened and paved would provide an acceptable alternate for many of the concerned routes.

I am meeting tomorrow with the mayor of Boiling Spring Lakes to discuss a strategy to move NCDOT to work with us on this project which would have very good long term effects on our transportation in this part of the county.

I would appreciate any thoughts you may have on this.

Stephen H. Miley  
Executive Director  
Brunswick County Schools  
Operations  
910.253.2846



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
69 DARLINGTON AVENUE  
WILMINGTON, NORTH CAROLINA 28403-1343

November 18, 2009

**RECEIVED**

NOV 20 2009

Regulatory Division

Action ID Number: SAW-2009-02101

**DIVISION 3 OFFICE**

Progress Energy Service Company  
Attn: William T. Bryson  
410 South Wilmington Street, PEB 4A  
Raleigh, NC 27601

Dear Mr. Bryson:

Please reference a recent request from the North Carolina Department of Transportation regarding jurisdictional features along a proposed widening of Hwy 211 in Brunswick County from Dutchman Village to Midway Road (R-5021). Along this corridor, Hwy 211 crosses the Progress Energy Discharge Canal, a conveyance of discharge water that originates from the power plant and terminates at a pumping station on the back side of Oak Island. Water is then pumped from the Canal offshore into the Atlantic Ocean. As part of the request regarding jurisdictional features, the Corps revisited the jurisdictional status of the Canal and has made a final jurisdictional determination.

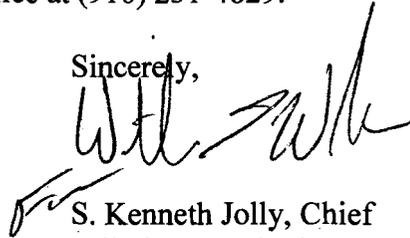
The Corps has regulatory authority over waters of the United States through both the Rivers and Harbors Act (RHA) and the Clean Water Act (CWA). RHA jurisdiction is limited to those waters considered navigable due to their historic, current or potential use to transport interstate commerce; lateral limits of jurisdiction within these waters extends to the reach of the tides. Waters of the US subject to CWA regulation are defined at 33 CFR 328.3 and include navigable waters as well as their tributaries and adjacent wetlands. Specifically exempted from categorization as waters of the US under CWA are waste treatment systems designed to meet the requirements of CWA.

We have considered several factors in determining whether the subject Progress Energy Discharge Canal is regulated pursuant to Section 10 of the RHA and/or Section 404 of the CWA. In terms of RHA jurisdiction, this canal was man-made and has never been used as a navigable conveyance of interstate commerce. It ends to the west at the nuclear plant and to the east at a large pump facility and is not open to any other watercourse at any point. It therefore has no reasonable potential to be used to transport interstate commerce. Finally, because it is not connected to any other watercourse, the Canal is not subject to the ebb and flow of the tide. It is our understanding that the Canal was constructed as part of a facility designed to meet requirements of the plant's National Pollutant Discharge Elimination System permit issued pursuant to Section 402 of the CWA. Therefore, it is eliminated by definition from consideration as a water of the US pursuant to the CWA.

It is the Corps determination that the discharge canal described above is not a regulated water of the United States under either the Clean Water Act or Rivers and Harbors Act. Unless there is a change in the law or our published regulations, this determination can be relied on for a period not to exceed 5 years from the date of this correspondence.

If you have any questions or comments in this matter please contact me at (910) 251-4630. For any future permit or jurisdiction inquiries within Brunswick County, please contact Mr. Ronnie Smith of the Wilmington Field Office at (910) 251-4829.

Sincerely,



S. Kenneth Jolly, Chief  
Wilmington District Regulatory Division

Copies Furnished:

PBS&J  
Attn: David O'Loughlin  
1101 Haynes Street, Suite 101  
Raleigh, NC 27604

  
Division 5  
Attn: Mason Herndon  
124 Division Drive  
Wilmington, NC 28401

Mr. David Wainwright  
NCDENR-DWQ, Transportation Permitting Unit  
1650 Mail Service Center  
Raleigh, NC 27699-1650

Mr. Stephen Lane  
Division of Coastal Management  
NC Dept of Environmental & Natural Resources  
400 Commerce Ave  
Morehead City, NC 28557-3421

**APPENDIX B**

**NCDOT RELOCATION ASSISTANCE PROGRAM/  
RELOCATION REPORTS**



## **DIVISION OF HIGHWAYS RELOCATION PROGRAMS**

It is the policy of NCDOT to ensure comparable replacement housing will be available prior to construction of state and federally-assisted projects. Furthermore, the North Carolina Board of Transportation has the following three programs to minimize the inconvenience of relocation:

- Relocation Assistance
- Relocation Moving Payments
- Relocation Replacement Housing Payments or Rent Supplement

As part of the Relocation Assistance Program, experienced NCDOT staff will be available to assist displacees with information such as availability and prices of homes, apartments, or businesses for sale or rent and financing or other housing programs. The Relocation Moving Payments Program provides for payment of actual moving expenses encountered in relocation. Where displacement will force an owner or tenant to purchase or rent property of higher cost or to lose a favorable financing arrangement (in case of ownership), the Relocation Replacement Housing Payments or Rent Supplement Program will compensate up to \$22,500 to owners who are eligible and qualify and up to \$5,250 to tenants who are eligible and qualify.

The relocation program for the proposed action will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646), and/or the North Carolina Relocation Assistance Act (GS-133-5 through 133-18). The program is designed to provide assistance to displaced persons in relocating to a replacement site in which to live or do business. At least one relocation officer is assigned to each highway project for this purpose.

The relocation officer will determine the needs of displaced families, individuals, businesses, non-profit organizations and farm operations for relocation assistance advisory services without regard to race, color, religion, sex, or national origin. The NCDOT will schedule its work to allow ample time, prior to displacement, for negotiations and possession of replacement housing which meets decent, safe and sanitary standards. The displacees are given at least a 90-day written notice after NCDOT purchases the property. Relocation of displaced persons will be offered in areas not generally less desirable in regard to public utilities and commercial facilities. Rent and sale prices of replacement property will be within the financial means of the families and individuals displaced and will be reasonably accessible to their places of employment. The relocation officer will also assist owners of displaced businesses, non-profit organizations and farm operations in searching for and moving to replacement property.

All tenant and owner residential occupants who may be displaced will receive an explanation regarding all available options, such as (1) purchase of replacement housing, (2) rental of replacement housing, either private or public, or (3) moving existing owner-occupant housing to another site (if possible). The relocation officer will also supply

information concerning other state and federal programs offering assistance to displaced persons and will provide other advisory services as needed in order to minimize hardships to displaced persons in adjusting to a new location.

The Moving Expense Payments Program is designed to compensate the displacee for the costs of moving personal property from homes, businesses, non-profit organizations and farm operations acquired for a highway project. Under the Replacement Program for Owners, NCDOT will participate in reasonable incidental purchase payments for replacement dwellings such as attorney's fees, surveys, appraisals, and other closing costs and, if applicable, make a payment for any increased interest expenses for replacement dwellings. Reimbursement to owner-occupants for replacement housing payments, increased interest payments and incidental purchase expenses may not exceed \$22,500 (combined total), except under the Last Resort Housing provision.

A displaced tenant may be eligible to receive a payment, not to exceed \$5,250, to rent a replacement dwelling or to make a down payment, including incidental expenses, on the purchase of a replacement dwelling. The down payment is based upon what the state determines is required when the rent supplement exceeds \$5,250.

It is a policy of the State that no person will be displaced by NCDOT's state or federally-assisted construction projects unless and until comparable replacement housing has been offered or provided for each displacee within a reasonable period of time prior to displacement. No relocation payment received will be considered as income for the purposes of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law.

Last Resort Housing is a program used when comparable replacement housing is not available, or when it is unavailable within the displacee's financial means, and the replacement payment exceeds the federal/state legal limitation. The purpose of the program is to allow broad latitude in methods of implementation by the state so that decent, safe and sanitary replacement housing can be provided. It is not believed this program will be necessary on the project, since there appear to be adequate opportunities for relocation within the area.

# EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.     CORRIDOR     DESIGN

WBS:	41582.1.1	COUNTY	Brunswick	Alternate	North Side	w/ Interchange
I.D. NO.:	R-5021	F.A. PROJECT	STP-0211(21)			
DESCRIPTION OF PROJECT:		Section 1: North side widening with proposed Interchange for NC 211 & SR 1500 (Midway Rd)				

ESTIMATED DISPLACED					INCOME LEVEL				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	1	1	2	1	0	0	0	2	0
Businesses	1	0	1	0	VALUE OF DWELLING				
Farms	0	0	0	0	DSS DWELLING AVAILABLE				
Non-Profit	0	0	0	0	Owners	Tenants	For Sale	For Rent	

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc. (See # 2)
	X	5. Will relocation cause a housing shortage?
	X	6. Source for available housing (list).
X		7. Will additional housing programs be needed?
	X	8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list).
		15. Number months estimated to complete RELOCATION? <span style="float: right;">18</span>

VALUE OF DWELLING		DSS DWELLING AVAILABLE			
0-20M	\$ 0-150	0-20M	20-40M	40-70M	70-100M
0	0	0	4	41	68
20-40M	150-250	0	150-250	250-400	400-600
40-70M	250-400	0	150-250	250-400	400-600
70-100M	400-600	1	150-250	250-400	400-600
100 UP	600 UP	0	150-250	250-400	400-600
TOTAL	1	1	313	600 UP	25

**REMARKS (Respond by Number)**

3. There are similar businesses not affected by the project.

4. Midway Trading Post – Gas Station 5 employees

6. & 14. MLS Services, websites, local REALTORS, etc.

8. As mandated by law

11. Brunswick County

12. Or build if necessary

Note- BEMC Substation & ATMC building will need to relocate.

<p><i>Samantha L. Strangman</i></p> <p>Samantha Strangman Senior Right of Way Agent</p>	<p>2/16/11</p> <p>Date</p>		<p><i>[Signature]</i></p> <p>Relocation Coordinator</p>	<p>2/18/11</p> <p>Date</p>
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# EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.       CORRIDOR       DESIGN

WBS:	41582.1.1	COUNTY	Brunswick	Alternate	South w/ side	Interchange
I.D. NO.:	R-5021	F.A. PROJECT	STP-0211(21)			
DESCRIPTION OF PROJECT:	Section 1: Southside with Proposed Interchange for NC 211 & SR 1500 (Midway Rd)					

ESTIMATED DISPLACES					INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP	
Residential	1	1	2	1	0	0	0	2	0	
Businesses	2	0	2	0	VALUE OF DWELLING			DSS DWELLING AVAILABLE		
Farms	0	0	0	0	Owners		Tenants		For Sale      For Rent	
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	0
					20-40M	0	150-250	0	20-40M	4
					40-70M	0	250-400	0	40-70M	41
					70-100M	1	400-600	1	70-100M	68
					100 UP	0	600 UP	0	100 UP	200+
					TOTAL	1		1		313

**ANSWER ALL QUESTIONS**

Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc. (See # 2)
	X	5. Will relocation cause a housing shortage?
	X	6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list).
		15. Number months estimated to complete RELOCATION? <b>18</b>

**REMARKS (Respond by Number)**

3. There are similar area businesses not affected by the project.

4. Midway Trading Post – Gas Station 5 employees  
CL Smith Construction Co. – 1 onsite employee

6. & 14. MLS Servies, websites, local REALTORS, etc

8. As mandated by law

11. Brunswick County

12. Or build if necessary

NOTE: BEMC Substation and Atlantic Telephone Service building Will also need to be moved.

Samantha Strangman Senior Right of Way Agent	2/16/11		Relocation Coordinator	2/16/11
Date			Date	

# EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.       CORRIDOR       DESIGN

WBS:	41582.1.1	COUNTY	Brunswick	Alternate	South of side	Alternate
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I.D. NO.:	R-5021	F.A. PROJECT	STP-0211(21)
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DESCRIPTION OF PROJECT:	Section 1 : South side widening from NC 211 west of SR 1500 (Midway Rd) To East of Midway Rd
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ESTIMATED DISPLACEDS					INCOME LEVEL								
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP				
Residential	0	0	0	0	0	0	0	0	0				
Businesses	1	0	1	0	VALUE OF DWELLING				DSS DWELLING AVAILABLE				
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent		
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	0	\$ 0-150	0	
ANSWER ALL QUESTIONS					20-40M	0	150-250	0	20-40M	4	150-250	0	
Yes	No	Explain all "YES" answers.			40-70M	0	250-400	0	40-70M	41	250-400	0	
	X	1. Will special relocation services be necessary?			70-100M	0	400-600	0	70-100M	68	400-600	7	
	X	2. Will schools or churches be affected by displacement?			100 UP	0	600 UP	0	100 UP	200+	600 UP	25	
X		3. Will business services still be available after project?			<b>TOTAL</b>	<b>0</b>		<b>0</b>		<b>313</b>		<b>32</b>	

**REMARKS (Respond by number)**

3. There are similar area businesses not affected by the project.  
4. CL Smith Construction Co. – 1 onsite employee

6. & 14. MLS Servies, websites, local REALTORS, etc  
8. As mandated by law  
11. Brunswick County  
12. Or build if necessary

*Samantha L. Strangman*      2/3/11

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Samantha Strangman      Date

Senior Right of Way Agent

*[Signature]*      2/16/11

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Relocation Coordinator      Date

# EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.       CORRIDOR       DESIGN

WBS:	41582.1.1	COUNTY	Brunswick	Alternate	North side	Alternate
I.D. NO.:	R-5021	F.A. PROJECT	STP-0211(21)			
DESCRIPTION OF PROJECT:	Section 2: NC 211 Widening on Northside from East of SR 1500 (Midway Rd) to J. Swain Blvd.					

ESTIMATED DISPLACEDS					INCOME LEVEL								
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP				
Residential	1	0	1	0	0	0	0	1	0				
Businesses	2	0	2	0	VALUE OF DWELLING				DSS DWELLING AVAILABLE				
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent		
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	0	\$ 0-150	0	
					20-40M	0	150-250	0	20-40M	4	150-250	0	
					40-70M	0	250-400	0	40-70M	41	250-400	0	
					70-100M	1	400-600	0	70-100M	68	400-600	7	
					100 UP	0	600 UP	0	100 UP	200+	600 UP	25	
					<b>TOTAL</b>	<b>1</b>		<b>0</b>		<b>313</b>		<b>32</b>	

ANSWER ALL QUESTIONS		REMARKS (Respond by number)	
Yes	No		
	X	1. Will special relocation services be necessary?	
	X	2. Will schools or churches be affected by displacement?	
X		3. Will business services still be available after project?	
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc. (See #2)	
	X	5. Will relocation cause a housing shortage?	
	X	6. Source for available housing (list).	
	X	7. Will additional housing programs be needed?	
X		8. Should Last Resort Housing be considered?	
	X	9. Are there large, disabled, elderly, etc. families?	
	X	10. Will public housing be needed for project?	
X		11. Is public housing available?	
X		12. Is it felt there will be adequate DSS housing available during relocation period?	
	X	13. Will there be a problem of housing within financial means?	
X		14. Are suitable business sites available (list).	
		15. Number months estimated to complete RELOCATION? <b>18</b>	
		3. There is an ample supply of similar businesses in this area not affected by the project.	
		4. Bruett Insurance Agency - 3 employees Wildwood Nursery & Landscaping	
		6. & 14. MLS Servies, websites, local REALTORS, etc.	
		8. As mandated by law	
		11. Brunswick County	
		12. Or build if necessary	

Samantha Strangman Senior Right of Way Agent	2/3/11		Relocation Coordinator	2/16/11
Date			Date	

# EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.       CORRIDOR       DESIGN

WBS:	41582.1.1	COUNTY	Brunswick	Alternate	South of	Alternate
I.D. NO.:	R-5021	F.A. PROJECT	STP-0211(21)			
DESCRIPTION OF PROJECT:	Section 2 : South side widening from east of SR 1500 (Midway Rd) to J. Swain Blvd.					

ESTIMATED DISPLACEDS					INCOME LEVEL								
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP				
Residential	1	0	1	0	0	0	1	0	0				
Businesses	0	4	4	0	VALUE OF DWELLING				DSS DWELLING AVAILABLE				
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent		
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	0	\$ 0-150	0	
					20-40M	0	150-250	0	20-40M	4	150-250	0	
					40-70M	1	250-400	0	40-70M	41	250-400	0	
					70-100M	0	400-600	0	70-100M	68	400-600	7	
					100 UP	0	600 UP	0	100 UP	200+	600 UP	25	
					<b>TOTAL</b>	<b>1</b>		<b>0</b>		<b>313</b>		<b>32</b>	

**ANSWER ALL QUESTIONS**

Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc. (See # 2)
	X	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list).
		15. Number months estimated to complete RELOCATION? <b>18</b>

**REMARKS (Respond by Number)**

Note: Cape Fear Memorial Park Cemetery – 32 potential graves

3. There are similar area businesses not affected by the project.

4. Cyber Express – computer service - 5 employees  
 Claire's Attic – Resale shop - 3 employees  
 Cygnus Technologies – sweepstakes business 3 employees  
 Unmarked office appears to be occupied – 2 employees

6. & 14. MLS Servies, websites, local REALTORS, etc

8. As mandated by law

11. Brunswick County

12. Or build if necessary

Samantha L. Strangman Senior Right of Way Agent	2/3/11		Relocation Coordinator	2/16/11
Date			Date	

# EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.       CORRIDOR       DESIGN

WBS:	41582.1.1	COUNTY	Brunswick	Alternate	North side	Alternate
I.D. NO.:	R-5021	F.A. PROJECT	STP-0211(21)			
DESCRIPTION OF PROJECT:	Section 3: NC 211 Widening on Northside from East of J. Swain Blvd to East of NC 87 in Southport					

ESTIMATED DISPLACEDS					INCOME LEVEL											
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M		15-25M		25-35M		35-50M		50 UP			
Residential	0	1	1	0	0	0	0	0	0	0	1	0	0	0		
Businesses	0	2	2	0	VALUE OF DWELLING				DSS DWELLING AVAILABLE							
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent					
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	0	\$ 0-150	0	20-40M	4	150-250	0
					20-40M	0	150-250	0	40-70M	41	250-400	0	70-100M	68	400-600	7
					40-70M	0	250-400	0	40-70M	41	250-400	0	70-100M	68	400-600	7
					70-100M	0	400-600	1	70-100M	68	400-600	7	70-100M	68	400-600	7
					100 UP	0	600 UP	0	100 UP	200+	600 UP	25	100 UP	200+	600 UP	25
					TOTAL	0		1		313		32				

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc. (See #2)
	X	5. Will relocation cause a housing shortage?
	X	6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list).
		15. Number months estimated to complete RELOCATION? <span style="float: right; border: 1px solid black; padding: 2px;">18</span>

REMARKS (Respond by Number)	
	3. There is an ample supply of similar businesses in this area not affected by the project.
	4. Party Time – 4 employees Splish Splash – Women's swimwear/gifts 4 employees (due to loss of parking)
	6. & 14. MLS Servies, websites, local REALTORS, etc.
	8. As mandated by law
	11. Brunswick County
	12. Or build if necessary

<p>Samantha Strangman Senior Right of Way Agent</p>	2/3/11 Date	<p>Relocation Coordinator</p>	2/16/11 Date
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## **APPENDIX C**

### **CONCURRENCE INFORMATION**



# NEPA/404 MERGER TEAM MEETING AGREEMENT

## Concurrence Point No. 1: Purpose and Need

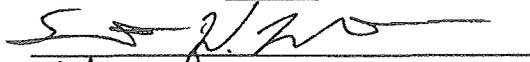
### PROJECT NO./TIP NO./ NAME/DESCRIPTION:

Federal Aid Project Number: STP-0211(21)  
State Project Number: WBS Element 41582.1.1  
TIP Project Number: ~~R-4003~~ R-5021  
TIP Description: NC 211 improvements from SR 1500 (Midway Road) to NC 87, Brunswick County

The Project Team concurred on this date of May 21, 2009 with the purpose of and need for the proposed project as stated below and the project study area as described below and shown in the attached exhibit.

### Purpose and Need of Proposed Project

The purpose of the proposed project is to improve the traffic-carrying capacity of NC 211 between SR 1500 (Midway Road) and NC 87.

<u>NAME</u>	<u>AGENCY</u>
	NCWRC
Gary Jordan	USFWS
Chad A. [unclear]	USEPA
Shirley [unclear]	NC DWR
St. O. [unclear]	NC DCM
Ronald Glass	FHWA
Brad [unclear]	USACE
Allyn Kim Gillespie	NC DOT
Renee Hedrick-Easley	SHPO/PCR



# NEPA/404 MERGER TEAM MEETING AGREEMENT

## Concurrence Point No. 2: Alternatives to be Carried Forward for Detailed Study

### PROJECT NO./TIP NO./ NAME/DESCRIPTION:

Federal Aid Project Number: STP-0211(21)  
State Project Number: WBS Element 41582.1.1  
TIP Project Number: ~~R-4903~~ R-5021  
TIP Description: NC 211 improvements from SR 1500 (Midway Road) to NC 87, Brunswick County

### Alternatives to be studied in detail in the NEPA Document:

The Section 404/NEPA Merger Project Team has concluded that the following Build Alternatives are to be studied in detail in the NEPA document:

- \_\_\_\_\_ Section 1 (NC 211/SR 1500 (Midway Road) intersection)  
Interchange (w/options)      No interchange
- \_\_\_\_\_ Section 2 (from NC 211/Midway Rd intersection to Dutchman Village Entrance)  
North      South      Symmetrical
- \_\_\_\_\_ Section 3 (from Dutchman Village Entrance to east of NC 87)  
North      South      Symmetrical

The Project Team concurred on this date of May 21, 2009 with the alternatives to be studied in detail in the NEPA Document as stated above.

<u>NAME</u>	<u>AGENCY</u>
<u>[Signature]</u>	<u>NCWRC</u>
<u>Gary Jordan</u>	<u>USFWS</u>
<u>[Signature]</u>	<u>USEPA</u>
<u>[Signature]</u>	<u>NC DWG</u>
<u>[Signature]</u>	<u>NC DCM</u>
<u>[Signature]</u>	<u>USACE</u>
<u>[Signature]</u>	<u>FHWA</u>
<u>Allyson Kim Gillespie</u>	<u>NC DOT</u>
<u>Renee Blackhill-Earley</u>	<u>SHPO/PCR</u>
_____	_____
_____	_____



R-5021

**Section 404/NEPA Interagency Agreement  
Concurrence Point No. 2A-Bridging Decisions**

Project Title: NC 211 from SR 1500 (Midway Road) to NC 87, Brunswick County, TIP Project R-5021, Federal Aid Project STP-0211(21), WBS Element 41582.1.1

Project Description: The purpose of the project is to improve the traffic carrying capacity of NC 211 within the project limits.

Bridging Decisions: NCDOT will provide the following structures over the listed streams on the project. All other stream crossings will be by culvert or pipe smaller than 72 inches.

**PROPOSED BRIDGE/CULVERT LOCATIONS AND LENGTHS**

Site	Stream	Existing Structure	Proposed Structure
5	UT to River Swamp	1 @ 6'x5' RCBC	Extend 1 @ 6'x5' RCBC
1	Beaverdam Swamp (FEMA Limited)	Bridge # 76 19'-8" long	Replace bridge with 2 @ 10'x11' RCBC
2	UT to Jump and Run Creek	2 @ 6'x4' RCBC	Extend culvert w/ 2 @ 6'x6' & Supplement (Perched)
3	Dutchman's Creek (FEMA Detailed)	Bridge # 24 30-foot long	Replace with 140-foot long dual bridges
4	Progress Energy Discharge Canal	Bridge #93 326-foot long	Retain Existing bridge; Add Parallel Bridge (326')

The Section 404/NEPA Merger Team met on this date of December 1, 2009. The team concurred with the proposed bridge and culvert locations as listed above.

**CONCURRING AGENCIES**

NAME	AGENCY	DATE
<i>Harry Jordan</i>	USEWS	3/8/2010
<i>Karen DeWitt Easley</i>	DCR, SHAPO	3-11-10
<i>Stanley P. ...</i>	NCDWR	3/11/10
<i>[Signature]</i>	NC DMK	3-22-10
<i>[Signature]</i>	FHWA	3-25-10
<i>Chris A. ...</i>	USEPA - Raleigh	3-26-10
<i>[Signature]</i>	NCDCM	3/29/10
<i>Bruce ...</i>	USACE	3/30/10
<i>Kim ...</i>	NCDOT	3/30/10
<i>[Signature]</i>	NCWRC	4-14-10
<i>Ron Seckler</i>	NOAA Fisheries	5/19/10





