

**Administrative Action
Wilmington Bypass
US 17 to US 421
Brunswick & New Hanover Counties, North Carolina**

**Federal Aid Project No: STPNHF-17 (1)
State Project No: 34491.1.2
TIP No: R-2633A/B**

Record of Decision

**U.S. Department of Transportation
Federal Highway Administration
And
North Carolina Department of Transportation**

October 2007

Project Commitments
WILMINGTON BYPASS
FROM US 17 IN BRUNSWICK COUNTY, NC TO US 421 IN NEW HANOVER COUNTY, NC
FEDERAL AID PROJECT No: STP-17 (1)
State Project No: 8.U250901
TIP No. R-2633A/B

PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

Study proposed noise barrier at the southwest quadrant of the interchange at SR 1430 (Cedar Hill Road). This issue shall be presented for review and comment at the Design Public Hearing to receive input from the residents affected. A decision on whether or not to construct a noise barrier or to implement other noise abatement measures, if any, will be made after the public comment period expires.

ROADWAY DESIGN UNIT / STRUCTURE DESIGN UNIT / GEOTECHNICAL ENGINEERING UNIT / ROADSIDE ENVIRONMENTAL UNIT

1) Wetlands on the periphery of the Cape Fear River will be bridged to minimize impacts. USCOE gave concurrence that Alternative 9 represented the Preferred Alternative in March of 1998 on the condition that the Cape Fear River floodplain wetlands be bridged. NCDOT intends to bridge the wetland zones on both banks of the river. Fill slopes will not encroach into the jurisdictional wetland boundaries. The bridge(s) will be constructed such that wetland impacts are minimized and construction practices that minimize impacts to populations of shortnose sturgeon known to utilize the river during spawning season (February to June) will be implemented. In order to protect shortnose sturgeon and other anadromous fish, there shall be no in-water work in the Cape Fear River and Toomers Creek between February 1 and June 15 of any year. For the purposes of this moratorium, in-water is defined as the main channel where the vegetation line meets open water and extending 35 meters (115 feet) into adjacent wetlands on both sides of the channel'.

This condition was developed specifically for this project in coordination with the National Marine Fisheries Service (NMFS), the North Carolina Division of Marine Fishes (NCDMF), and the North Carolina Wildlife Resources Commission (NCWRC). The 35-meter (115-foot) buffer from where the vegetation line meets the open water includes wetlands only and not upland areas. Construction equipment will be allowed to traverse the temporary work bridges during the moratorium period.

2) Fill slopes within the Natural Heritage Program (NHP) US 421 Sand Ridge Significant Natural Heritage Area (SNHA) located east of the Cape Fear River will be minimized to the greatest extent possible so that impacts to populations of Pickering's dawnflower (*Stylisma pickeringii* var. *pickeringii*) will be avoided and minimized. Construction easements within the US 421 Sand Ridge SNHA will be limited to greatest extent practicable. Several populations of this floral species, which is listed as a Federal Species of Concern and is state-listed as endangered, are present within and along the right of way. Minimizing slope and construction easement footprints and temporary protective fencing will be installed during construction on the south side of the project construction limits from station 208+40 to station 211+00 and from station 212+00 to station 213+00 to ensure that no inadvertent impacts occur outside the limits of the construction easement. Coordination with NHP shall continue well in

advance of project construction regarding protection of this species, as NHP may want to relocate populations of this species that would be impacted by the project.

3) Provide temporary protective fencing between project construction area and archaeological site 31NH39.** As currently designed, the proposed highway plans do not directly impact sites 31NH39** and 31BW604. However, because the sites are close to the edge of the proposed highway corridor, temporary protective fencing will be installed during construction on the south side of the project construction limits from station 208+40 to station 211+00 and on the west side of the project construction limits from station 13+75 to station 15+50 to ensure that no inadvertent impacts occur. If the final highway design changes such that avoidance is not possible and if the effect of this alternative on these sites is adverse, pursuant to 36CFR800.5, then appropriate measures to address these adverse effects will be developed.

4) Wildlife passages will be provided at locations agreed to by federal and state resource agencies and the dimensions of each passage shall be constructed as specified on the preliminary design plans. Wildlife passages will be provided at three locations on the mainline: one (a box culvert designed for small animal passage) will be located within a wetland between US 74/76 and SR 1426 and two bridge structures will be located between SR 1414 and US 74/76. Additional wildlife passage will be accommodated by lengthening bridge structures over stream and wetland areas as indicated on the preliminary design plans. Bridge structures and fill slopes will be placed outside jurisdictional wetland boundaries such that sufficient ground-to-structure clearance and dry passage is provided for large-bodied wildlife. The crossing areas under the bridge structures will provide a minimum of eight feet of vertical clearance. The horizontal width is specific to each crossing and is identified on the preliminary design plans. The box culvert crossing will have a vertical clearance of 6 feet and a horizontal clearance of 12 feet. Fencing will be installed for a distance of approximately 2,500 feet on either side of any of the proposed crossings and will be of sufficient height to guide wildlife into the passageways. The final distance and height of the fence shall be determined during final design through coordination between NCDOT, US Fish and Wildlife Service, and the NC Division of Wildlife Resource Conservation. Locations of wildlife crossings and bridge lengths (toe of slope limits at abutments) were determined using a global positioning system (GPS) and through agency coordination.

4) Revise Phase I Environmental Site Assessment. For all sites identified within the corridor ranked low for severity of potential impact, the data accumulated for the initial Phase I Assessment will be revisited prior to project right-of-way acquisition and construction and an updated review of agency files and public records will be conducted to determine if there has been any substantial change in the status since the report was prepared. For those sites ranked with a moderate to high expected severity of impact, a further review of records will be conducted to determine the status of any contamination assessments or remedial actions taking place at those sites. Phase II Site Assessments, including, at a minimum, soil and water sampling, will be conducted as necessary.

6) Provide evergreen vegetation along National Register-eligible boundary of the Goodman House and Doctor's Office. Native evergreen vegetation will be planted at the edge of the project right-of-way from station 34 + 50 to station 36 + 00 on the preliminary design plans between the roadway and the Goodman House and Doctor's Office. Best planning practices will be used for tree removal to reduce impacts to the woods adjacent to the Goodman House and Doctor's Office.

DIVISION 3

1) Implement moratorium on construction of the Bridge over the Cape Fear and Toomers Creek from February 1 to June 15. A construction moratorium shall be imposed as follows:

In order to protect shortnose sturgeon and other anadromous fish, there shall be no in-water work in the Cape Fear River and Toomer's Creek between February 1 and June 15 of any year. For the purposes of this moratorium, in-water is defined as the main channel where the vegetation line meets open water and extending 35 meters (115 feet) into adjacent wetlands on both sides of the channel. This condition was developed specifically for this project in coordination with the National Marine Fisheries Service, NC Division of Marine Fisheries and the NC Wildlife Resources Commission and applies to either vibratory or impact pile driving.

The 35-meter (115-foot) buffer from where the vegetation line meets the open water includes wetlands only and not upland areas.

2) Procedures for construction of bridges over wetlands will utilize temporary work bridges to minimize impacts to wetlands. Temporary work bridges will be required to construct the project's bridges over wetland areas at tributaries to Morgan's Branch, Cartwheel Branch, and Cape Fear River/ Toomers Creek. It is anticipated that both single and dual work bridges will be constructed. Finger bridges will be constructed at bent locations. Preliminary work bridge plans, including pile construction information, will be prepared before Concurrence Points 4B and 4C can be achieved. Construction within the main channel of the Cape Fear River may be accomplished using a barge. NCDOT has identified a wetland fill area on the west bank of the Cape Fear River adjacent to the proposed bridge location. This area appears to be an old roadbed leading to the remains of a pier on the river, south of the proposed alignment. NCDOT will consider using this as a temporary work bridge/construction easement for construction of the proposed bridge and the post construction removal of this fill area as a potential mitigation measure.

3) Fill slopes within the Natural Heritage Program (NHP) US 421 Sand Ridge Significant Natural Heritage Area (SNHA) located east of the Cape Fear River will be minimized to the greatest extent possible so that impacts to populations of Pickering's dawnflower (*Stylisma pickeringii* var. *pickeringii*) will be avoided and minimized. See Number 2) under Roadway Design Unit

4) Provide temporary protective fencing between project construction area and archaeological site 31NH39.** See Number 3) under Roadway Design Unit.

5) The Project Engineer or contractor will inform all personnel associated with the project construction that manatees may be present in the project area during the months of June through October. The Project Engineer will ensure that the Contractor has a copy of the US Fish and Wildlife Service *Guidelines for Avoiding Impacts to the West Indian Manatee - Precautionary Measures for Construction Activities in North Carolina Waters* on-site during construction. A copy of the Guidelines can be found in the Appendix of the Final EIS or at the following website address (<http://nc-es.fws.gov/es/publications.html>). The contractor is responsible for complying with the *Guidelines* and reviewing them with all personnel associated with the project construction.

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1.0 DECISION

This Record of Decision (ROD) identifies the Selected Alternative for the proposed Wilmington Bypass in Brunswick and New Hanover counties, North Carolina. In accordance with the National Environmental Policy Act (NEPA) and the requirements set by the Council of Environmental Quality (CEQ) (40 CFR 1505.2), this ROD identifies: 1) the selected alternative; 2) all alternatives considered by the Federal Highway Administration and the factors (e.g. environmental consequences, cost, and social and economic impacts) that were considered during evaluation of the alternatives; 3) measures adopted to avoid and minimize harm; 4) monitoring and enforcement programs for the implementation of mitigation measures; and, 5) comments on the Final Environmental Impact Statement (FEIS).

The Selected Alternative for the proposed project is an alignment within the Alternative 9 corridor, which was the Preferred Alternative, as modified during the FEIS phase of the project to avoid and minimize environmental impacts. The Selected Alternative alignment is described in Section 2.3 of this ROD.

The project is the continuation of an urban loop around Wilmington, North Carolina. Construction of the initial section of the urban loop, which extends from US 421 to Interstate 40 (I-40) (referred to as R-2633C in the TIP and in the FEIS) in New Hanover County, was completed in 2006. This project and R-2633C together are referred to as the Wilmington Bypass. When completed, the Wilmington Bypass will be designated as Interstate 140 (I-140).

The project will be a fully controlled access freeway with a design speed of 70 miles per hour (mph). Interchanges are proposed at US 17, US 74/76, SR 1426, SR 1430, and US 421. The US 17/NC 87 intersection will be relocated farther south on US 17 to provide safe spacing between the intersection and the US 17/Future I-140 interchange. The project includes bridges over stream crossings and a bridge over the Cape Fear River. Additionally, two bridges and a box culvert are provided for wildlife passage. For more information, please refer to the FEIS which was approved on April 17, 2007.

2.0 ALTERNATIVES CONSIDERED

Alternatives considered in the Environmental Impact Statement included the No-build Alternative, Transportation Systems Management (TSM) Alternatives, Multi-Modal Alternatives, and four Build Alternatives. As discussed in the FEIS, the No-build, TSM, and Mass Transit Alternatives do not meet the purpose and need for the project.

Four highway build alternative corridors (Figure 1) were selected for further study from thirty-six preliminary alternative corridor segments. The preliminary corridor segments and these four alternative corridors were discussed in the DEIS; the Reevaluation of the DEIS; and the FEIS. Public Involvement was conducted to solicit public input on the alternatives through the use of newsletters, small group meetings, and Citizens' informational workshops. Detailed information on the Public Involvement is provided in Section 7 of the FEIS. Alternative 9 was selected as the Preferred Alternative after positive and negative impacts of shifting the alignment were presented and discussed.

After the selection of Alternative 9 as the Preferred Alternative it was decided that additional traffic and environmental analyses were necessary before beginning preliminary design and preparation of the FEIS. In early 1999, preliminary design and preparation of the FEIS was initiated. At this time the project entered into the Section 404/NEPA Merger Process, the

environmental streamlining process newly implemented by NCDOT, US Army Corps of Engineers (USACE) and the North Carolina Department of Environment and Natural Resources (NCDENR).

The Section 404/NEPA Merger Process requires agency concurrence at major decision points in the NEPA and USACE Section 404 permitting processes. The major decision points reached during the FEIS phase of the project include Concurrence Point 2A, decisions on bridge lengths; Concurrence Point 3, Least Environmentally Damaging Practicable Alternative (LEDPA); and Concurrence Point 4A, avoidance and minimization of impacts.

During preliminary design, it was determined that a minority community, Spring Hill, which was located outside of the Preferred Alternative corridor, would be affected by alignment modifications developed to reduce project impacts. After a meeting with the community of Spring Hill, it was determined that members of the community had unintentionally not been included in the project development process. A Section 404/NEPA Merger Team meeting was held to discuss these findings and to reevaluate Concurrence Point 4A (Avoidance and Minimization). The additional environmental analysis resulted in a widening of the Preferred Alternative study corridor. Expansion of the study corridor allowed for changes in the preliminary alignment to avoid and minimize impacts to environmental resources. The expanded study corridor and several alignments studied for avoidance and minimization purposes are presented on Figure 2. Several opportunities were provided for the public to provide input on the expanded study corridor (see Chapter 8 of the FEIS for a record of public involvement activities).

Several changes and additions were made to the alignment during the preliminary design process to avoid and minimize impacts to the human and natural environment. These changes included shifts in the alignment, changes in interchange design, inclusion of bridges over streams, and inclusion of wildlife crossings. Section 2.3.1 of the FEIS describes specific alignment changes made to avoid and minimize impacts. Many of the changes were a direct result of agency and public input.

2.1 BASIS FOR SELECTION

FHWA chooses Alternative 9 (with the Pink alignment near Spring Hill) as identified in the FEIS as its Selected Alternative. The decision that Alternative 9 be the Selected Alternative for the project was based primarily on an analysis of relevant environmental and social public interest factors, including impacts to wetlands, fish and wildlife habitat, flood hazards and floodplain functions, water quality, protected species, residential and business relocations, cultural and historic resources, indirect and cumulative effects, and other social and economic factors. For example, Alternative 9 has the fewest number of relocations, impacts the least acres of Red-Cockaded Woodpecker foraging habitat, and minimizes impacts to floodplains and wetlands. Alternative 9 was chosen to be the Selected Alternative and is the environmentally preferable alternative because it:

- Best balances impacts to various resources with the need for transportation infrastructure;
- Has been chosen by the Merger Team as the Least Environmentally Damaging Practicable Alternative (LEDPA), which is Concurrence Point 3 in the Section 404/NEPA Merger Process; and

-
- Takes into account all practicable measures to avoid or minimize harm, as discussed in Section 4 of this ROD.

2.2 DESCRIPTION OF THE SELECTED ALTERNATIVE

The recommended alignment (shown in Figure 3) of the Selected Alternative begins at a point along US 17, between Bishop and Spring Hill, traveling north toward the military railroad "turn-around" yard to parallel the western fence line of the yard. The alignment then turns northwesterly and intersects with US 74/76 at the west end of the Leland Industrial Park. It then curves eastward through the Leland Industrial Park to cross the railroad tracks west of Davis Yard. The recommended alignment parallels the north side of the railroad tracks through Eastbrook, turning northeastward at Davis Yard toward the Cape Fear River. The alignment crosses the Cape Fear River and associated wetlands on a high-level, fixed-span bridge. The project terminus aligns with R-2633C at US 421, south of Lake Sutton and the Progress Energy Plant. The recommended proposed centerline, slope stake limits, and proposed right of way were established through preliminary design of the recommended alignment.

Three wildlife crossings, two of which are bridges and one of which is a culvert, are provided at various locations along the alignment. In addition to the bridge over the Cape Fear River and Toomers Creek, four bridges are provided at stream crossing locations along the mainline alignment. Additionally, two bridges are provided at stream crossings on NC 87 and SR 1430. Grade separation is provided at each of the project's five interchanges (US 17, US 74/76, SR 1426, SR 1430 and US 421) as well as at three locations where the alignment crosses a railroad. The project also provides grade separation at two roads near US 421. Each interchange location and configuration is described below:

US 17: The interchange at US 17 is a trumpet configuration and would provide free-flow traffic movements between the project and US 17. NC 87 and SR 1522 (Snowfield Road) will be realigned to tie into US 17 so that a desirable control of access distance from the interchange can be provided as part of US 17 Strategic Highway Corridor. SR 1522 (Snowfield Road) will be realigned to provide a four-legged intersection with SR 1701 (Zion Church Road). Three service roads will be required to maintain access to properties in this area and cul-de-sacs will be provided on SR 1414 (Goodman Road) in lieu of a grade separation. Existing access to SR 1414 (Goodman Road) will be maintained at US 17 and at NC 87.

US 74/76: The interchange at US 74/76 is a modified diamond with all ramps and loops placed in the northern quadrants of the interchange due to the railroad tracks that parallel US 74/76 to the south. The ramps and loops will have stop conditions at their termini on US 74/76. The mainline of the project will be grade separated over US 74/76 and the CSX railroad.

SR 1426: A modified diamond interchange is provided at SR 1426 and all ramps have stop conditions at their termini on SR 1426. SR 1426 will be realigned to the west to have grade separated crossings over the CSX railroad and the project.

SR 1430: A modified diamond interchange is provided at SR 1430 and all ramps have stop conditions at their termini on SR 1430. Restriction of access through the interchange on SR 1430 requires that access roads be provided to residences on the north and south sides of the interchange. South of the interchange, SR 1431 will be realigned to a perpendicular intersection with SR 1430. South of the interchange, SR 1430 currently has a reverse curve with a substandard design speed and is prone to flooding. This section of SR 1430 will be improved to mitigate the safety problems from flooding and future traffic generated by the

project. A bridge will be provided over a stream and wetland system and the reverse curve will be eliminated and the curve radius will be increased to improve the design speed of the road.

US 421: The interchange at US 421 will provide a modified diamond interchange. The ramps will have stop conditions at their termini on US 421, while the loop would have both free-flow and stop condition at its termini on US 421. A portion of this interchange is in place as it was constructed under R-2633C. To the southwest of the interchange, a grade separation will be provided for SR 1394. SR 2169 will be realigned to tie into SR 1394 to the north and a cul-de-sac will be provided on SR 2169 to the south of the project.

2.3 COST ESTIMATES

Combined estimated construction and right-of-way costs for the alternatives studied in the DEIS in 1996 dollars were \$133,375,000 for Alternative 2, \$136,315,000 for Alternative 3, \$133,225,000 for Alternative 8, and \$136,650,000 for Alternative 9. These costs were not calculated based on preliminary design drawings and did not include cost for bridging wetlands or for wildlife crossings as was done for the recommended alignment. It is assumed that the difference in cost between alternatives would be similar if they were recalculated in 2006 dollars using the same methods as were used for the recommended alignment. Subsequent construction costs for the recommended alignment were developed in March 2006 based on preliminary design plans and consider the costs for right-of-way, bridging of wetlands, wildlife crossings and temporary work bridges.

Construction Costs = \$273,700,000

Part A: \$70,000,000

Part B: \$203,700,000

Right-of-way Costs = \$27,175,000

Part A: \$10,850,000

Part B: \$16,325,000

Total Estimated Cost = \$300,875,000

2.4 SUMMARY OF IMPACTS

The following is a summary of the environmental effects of the Selected Alternative. The evaluation of impacts incorporated avoidance and minimization measures into the preliminary design of the Selected Alternative alignment through the Section 404/NEPA Merger Process. Estimated environmental impacts associated with the Selected Alternative alignment are summarized in Table 1. Impacts to North Carolina Natural Heritage Program (NHP) Identified Priority Areas (IPAs), as presented in the FEIS have been revised and are included in the table and are described in Section 2.5.3 of this Record of Decision. Some of the projected effects of the project can only be presented qualitatively and therefore could not be quantified for inclusion in Table 1. These issues include: community cohesion, economic effects, regional planning consistency, visual impacts, water quality, indirect and cumulative impacts, soils, and mineral resources. These impacts are discussed in Section 4 of the FEIS, and are briefly summarized below:

Community Cohesion

Because of the rural, sparsely developed nature of the study area, displaced households along the project are not anticipated to cause substantial disruptions in developed communities.

Economic Effects

It is likely that the project would have an overall beneficial economic impact on the region by providing facilitated access to major industries and trade centers in both Brunswick and New Hanover counties. However, there would also be a loss of land from property tax rolls.

Regional Planning

The project is consistent with the Wilmington Urban Area Long Range Transportation Plan, the Brunswick County Thoroughfare plan, and the region's land use plan.

Visual Impacts

The project will introduce a new visual element into the context of the landscape thereby adversely impacts views of natural area that will be converted to transportation uses. However, the terrain in the area is generally flat and expansive and scenic vistas are uncommon. The project corridor will generally be screened from view by existing vegetation, except in the vicinity of interchanges and grade separations.

Water Quality

Stormwater runoff rates would increase slightly due to the increase in impervious roadway surface area. The Selected Alternative also has the potential to temporarily degrade the quality of water in the surrounding streams as a result of soil erosion during construction. Best management practices will be employed during construction to minimize water quality degradation.

Indirect and Cumulative Impacts

Due to the growth trends already apparent in the area without the project and since the project does not provide direct access to major employment centers, the project is not anticipated to substantially affect the urban spatial structure of greater Wilmington. The main effects of the project are expected within interchange catchment areas. The project is generally expected to intensify and concentrate development trends already apparent in the area.

Soils and Mineral Resources

The properties of the soils in the area could affect the engineering design of the project. Due to the proximity of the project to existing construction material sites, more efficient transport of these construction materials may result. Construction of the roadway may temporarily increase demand for local mineral resources.

Table 1: Summary of Environmental Impacts

FACTORS	SELECTED ALTERNATIVE
Project Features	
Length (miles)	14.2
Number of Interchanges	5
Number of railroad crossings	6
Construction Costs	\$273,700,000
Right of way Costs	\$27,175,000
Total Costs	\$300,875,000
Socioeconomic Features	
Residential Relocations	21
Business Relocations	7
Schools Impacted	0
Parks Impacted	0
Churches Impacted	0
Cemeteries Impacted	0
Physical Factors	
Electric Power Lines Crossed	7
Gas Lines Crossed	2
Water Lines Crossed	3
Receptors Impacted by Noise	54
Moderate and High Ranked Haz. Mat. Sites	2 High, 2 Low-Moderate
Prime and Unique Farmland (AD-1006 rating)	66
Number of Exceedances of Carbon Monoxide Ambient Standards	0
Cultural Resources	
Previously Recorded Archaeological Sites Impacted	0
Previously Recorded Archaeological Sites	1
Recorded Historical Sites	0
National Register Historic Districts Impacted	0
Natural Resources	
Stream Crossings	20
Navigable Waterway Crossings	1
Stream Crossings Bridged	6
Stream Impacts (linear feet)	1,003
Red-Cockaded Woodpecker Colony Sites Impacted	0
Red-Cockaded Woodpecker Foraging Habitat (acres)	0.07
NCHP Identified Priority Areas (IPAs) (with in slope stake limits)	18
Primary (acres)	7
Secondary (acres)	16
Floodplains (linear feet)	7,335
Floodplains (acres)	31.1
Natural Communities (total acres)	377
Mesic Pine Flatwoods (acres)	124
Pine/Scrub Oak Sandhills (acres)	77
Mesic Mixed Hardwood Forests (acres)	52

FACTORS	SELECTED ALTERNATIVE
Wet Pine Flatwoods (acres)	67
Tidal Freshwater Marsh	0
Tidal Cypress Gum Swamp/Gum Swamp (acres)	0
Coastal Plain Bottomland Hardwoods (acres)	11
Coastal Plain Semi-permanent Impoundments (acres)	<1
Small Stream Swamp (acres)	4
Pocosin/Streamhead Pocosin (acres)	42
Open Water (acres)	0
Altered Communities (total acres)	120
Urban/Disturbed (acres)	75
Agricultural Land (acres)	36
Maintained Utility Right of Way (acres)	9
Wetlands	
Palustrine (total acres)	78.8
Palustrine Emergent (PEM) (acres)	0.7
Palustrine Forested (PFO) (acres)	78.1
Riverine (total acres)	0

2.4.1 AQUATIC COMMUNITIES AND WILDLIFE

Section 4.1.3.4 of the FEIS describes impacts to river and stream crossings. The description of stream impacts and Table 4-13, Impacts to Streams within the Expanded Study Corridor, were found to be somewhat confusing. The following provides clarification regarding project related stream impacts.

The narrative on page 4-48 in the FEIS should state, “The recommended alignment is surrounded by 29 identified stream stations and the Cape Fear River. Fourteen stations are perennial stream crossings, in addition to the Cape Fear River, and six stations are intermittent stream crossings, resulting in an impact of 1,003 linear feet. Nine stations are outside the slope stake limits and are therefore not applicable to the recommended alignment.” This should replace the existing statement, “The recommended alignment will cross 14 perennial stream channels, in addition to the Cape Fear River, and six intermittent stream channels, resulting in an impact of 1,003 linear feet.”

Table 2 presents a revised version of Tabled 4-13 presented in the FEIS. The table was revised for clarification purposes to separate stream stations with linear impacts from stream stations with no linear impacts.

According to the North Carolina Division of Highways Guidelines for Drainage Studies and Hydraulic Design, culverts must be designed for passage of the 100-year storm. Though the hydraulic design specifies the design for a 50-year storm, the culverts are initially believed to be adequately sized to pass the 100-year storm. This will be verified during the final design phase of the project. Table 3 presents preliminary sizing of proposed hydraulic crossings. The table from the DEIS is considered obsolete when compared to the more current table in the drainage analysis prepared for the FEIS.

Table 2: Impacts to Streams within the Expanded Study Corridor

URS Stream ID	Stream Name as Indicated on USGS Quad	NCDWQ Stream Classification	NCDWQ Stream Score	Linear Feet w/in Right-of-Way	Linear Feet of Impact	Crossing Type
Stream Stations with Linear Feet of Impact						
S1	Bishop Branch	Perennial	59.0	70/236	0/62	Bridge, Extend Culvert
S4	UT Morgan Branch	Intermittent	26.5	414	72	Extend Culvert
S12	Morgan Branch	Perennial	47.5	288	49	Extend Culvert
S16	UT Sturgeon Branch	Perennial	30.0	334	165	Culvert
S17	UT Sturgeon Branch	Perennial	30.0	412	236	Culvert
S18	Mill Branch	Intermittent	27.0	296	172	Culvert
SM	UT Morgan Branch	Intermittent	25.0	153	79	Culvert
SNO	UT Sturgeon Branch	Intermittent	25.0	323	168	Culvert
Stream Stations with 0 Linear Feet of Impact						
2TR	UT Morgan Branch	Perennial	32.0	35	0	Outside slope stakes
CART	Cartwheel Branch	Perennial	39.0	214	0	Bridge
CART7A	UT Cartwheel Branch	Intermittent	21.0	20	0	Outside slope stakes
S2	UT Bishop Branch	Perennial	44.5	66	0	Bridge
S7	UT Morgan Branch	Perennial	53.0	162/323	0	Bridge, Existing Culvert
S8	UT Morgan Branch	Perennial	39.5	437	0	Bridge
S9	UT Morgan Branch	Perennial	40.0	348	0	Bridge
S13	UT Alligator Branch	Perennial	42.0	8	0	Existing Culvert
S13A	UT Alligator Branch	Intermittent	28.0	164	0	Existing Culvert
S14	Rowel Branch	Perennial	40.0	99	0	Existing Culvert
TOTAL				4,402	1,003	

N/A denotes streams that are not crossed by the recommended alignment.

Table 3: Preliminary Sizing of Proposed Hydraulic Crossings

STREAM	CROSSING ID¹	URS ID²	STRUCTURE TYPE	STRUCTURE SIZE
Bishop Branch	E1	S1	Existing RCBC for Extension and Widening	Triple 10'x 4'
Tributary to Morgan Branch	E2	S4	Existing RCBC for Extension	Dual 10'x 4'
Morgan Branch	E3	S12	Existing RCBC for Extension and Widening	Triple 10'x 4'
Bishop Branch*	B1	S2	Proposed Bridge	410' long Approx 9' clearance
Tributary to Morgan Branch*	B2-A	S9	Proposed Bridge	115' long Approx 7' clearance
Tributary to Morgan Branch*	B2-B	S8	Proposed Bridge	213' long Approx 7' clearance
Morgan Branch Watershed	B3	No stream channel	Proposed Box Culvert	6' x 6'
Rowell Branch (Mill Creek)	E4	S14	Existing Dual CMP	Dual 84" CMP
Tributary to Cartwheel Branch*	B4	S22	Proposed Bridge	295' long Approx 10' clearance
Cartwheel Branch*	B5	CART1	Proposed Bridge	295' long Approx 7' clearance
Cape Fear River/Toomers Creek*	B6	CAPE FEAR	Proposed Bridge	7183' long 55' max clearance
Tributary to Morgan Branch*	B7	S7-2	Proposed Bridge	215' long Approx 7' clearance

2.4.2 RED-COCKADED WOODPECKER

Figure 3-16, Active Red-Cockaded Woodpecker Cluster and Rough-leaved loosestrife Locations, as presented in the FEIS was confusing in that it identified the cavity trees with different colored dots on the map, but only showed a brown dot in the legend. Figure 4 shows the corrected map on which the dots identifying the cavity trees have all been shaded brown to match the legend.

2.4.3 NATURAL HERITAGE PROGRAM IDENTIFIED PRIORITY AREAS (IPA)

Impacts to North Carolina Natural Heritage Program (NHP) Identified Priority Areas (IPAs) presented in Table 4-14 of Section 4.1.3.5 of the FEIS have been revised and are presented in Table 2. Impacts to Secondary habitat within the Battle Royal Bay IPA decreased from approximately 19 acres within right of way to approximately 10 acres and increased from 0 acre within slope stakes (fill limits) to approximately 5 acres.

Table 4: Impacts to Identified Priority Areas

IPA Name	ACRES WITHIN RIGHT OF WAY		ACRES WITHIN SLOPE STAKES (FILL LIMITS)	
	Primary	Secondary	Primary	Secondary
421 Sand Ridge	11	14	7	11
Battle Royal Bay	0.0	10	0.0	5
Brunswick and Cape Fear River Marshes	38	NA	0.0	NA
TOTAL	49	24	7	16

NA = Not Applicable

3.0 SECTION 4(f)

It was determined that the proposed action will not result in the direct or constructive use of lands protected under Section 4(f) of the US Department of Transportation Act of 1966, as amended.

4.0 MEASURES TO MINIMIZE HARM

Measures to minimize harm through coordination, avoidance, minimization, mitigation, and environmental commitments are discussed in detail in the Environmental Consequences Section (Section 4) of the FEIS and in the Special Project Commitments (Green Sheets) included at the front of this document.

4.1 RELOCATIONS

Overall, seven businesses and 21 residences would be relocated as a result of implementing the Selected Alignment. The NCDOT will provide new access wherever economically justifiable to properties isolated by a project. Property access changes and proposed solutions identified in the service road study will be presented during the Design Public Hearing (see Section 4.1.1.2 of the FEIS).

After completing preliminary design of the Selected Alignment, NCDOT reevaluated the Preferred Alternative studied in the FEIS for potential residential and business relocation impacts. The redesign of the US 17 interchange during preliminary engineering reduced the number of residential impacts south of US 17 by approximately eight residences.

The initial design of the interchange with SR 1430 was a diamond configuration. However, it was determined that by reconfiguring the interchange to locate the west bound on-ramp east of SR 1430, impacts to residences would be minimized. Impacts resulting from a larger footprint at the interchange are minimized by using 4 to 1 slopes, which would preclude the need for ditches and avoid the cost of guardrails. A detailed analysis of Secondary and Cumulative Impacts stemming from this interchange is presented in the FEIS.

4.2 HISTORIC ARCHITECTURE

The right of way for the Selected Alternative will be approximately 120 feet away from the Goodman House and Doctor's Office and will be separated by a forested area between the right

of way and the property. The project necessitates the termination of Goodman Road in a cul-de-sac near the western end of the NRHP-eligible boundary. The FHWA, NCDOT, and HPO determined (concurrence letter of February 2006, Appendix A) that the Selected Alternative alignment would have no adverse effect upon the Goodman House and Doctor's Office provided that:

- NCDOT shall use best management practices for tree removal to reduce impacts to the woods adjacent to the Goodman House and Doctor's Office; and
- NCDOT shall plant the edge of the right of way between stations 34+50 and 36+00 with native evergreens to further screen the new facility from the Goodman House and Doctor's Office.

Per FHWA, NCDOT, and HPO concurrence, native evergreen vegetation will be planted at the edge of the project right-of-way from station 34 + 50 to station 36 + 00 on the preliminary design plans between the roadway and the Goodman House and Doctor's Office. Best management practices will be used for tree removal to reduce impacts to the woods adjacent to the Goodman House and Doctor's Office.

4.3 NOISE IMPACTS

An analysis of noise impacts was completed using FHWA's *Traffic Noise Model (TNM)*, Version 2.5 in conjunction with NCDOT's *Traffic Noise Abatement Policy, 2004* to estimate traffic noise impacts associated with the Selected Alternative and analyze potential noise abatement measures (See Section 4.1.2.1 of the FEIS). The results indicate the predicted noise levels for the recommended alignment would result in 54 impacted receivers. Twenty (20) of these receptors would experience a substantial increase over the Noise Abatement Criteria (NAC). For detailed results of all receivers analyzed please refer to the updated *Noise Technical Memorandum*.

Two potential noise barrier locations were studied: Study Area A, located on the east side of the US 17/US 17 Bypass interchange between SR 1552 (Sloan Road) and Stoney Creek Lane; and Study Area B, located along SR 1430 (Cedar Hill Road) within the controlled access right-of-way adjacent to the southwest quadrant of the proposed interchange. A noise wall for Study Area A was determined to not be cost-effective, and therefore it was not recommended. However, the noise wall for Study Area B was determined to be cost-effective and is recommended for construction. For further details see Section 4.1.2.1 of the FEIS and the *Noise Technical Memorandum*.

4.4 WETLANDS AND STREAMS

4.4.1 CAPE FEAR RIVER FLOODPLAIN WETLANDS

The USACE gave concurrence to the Selected Alternative on the condition that the Cape Fear River floodplain wetlands be bridged. NCDOT intends to bridge the wetland zones on both banks of the river. The bridges will be constructed such that wetland impacts are minimized and construction procedures will be utilized which minimize impacts to populations of shortnose sturgeon known to utilize the river during spawning season (February – May). NCDOT has identified a wetland fill area on the west bank of the river adjacent to the proposed bridge location. This area appears to be an old roadbed leading to the remains of a pier on the river, south of the proposed alignment. NCDOT is considering using this as a temporary work bridge/construction easement for construction of the proposed bridge and the post construction

removal of this fill area as a potential on-site mitigation measure. Mitigation measures will be finalized during the final design phase of the project in consultation with regulatory agencies.

4.4.2 TRIBUTARY TO MORGAN BRANCH

The Selected Alternative originally had substantial impacts to Morgan Branch, crossing this stream and wetland system at three points. In selection of Alternative 9 as the Preferred Alternative after completion of the DEIS, the North Carolina Division of Water Quality (DWQ) and USACE requested NCDOT shift the roadway out of the wetland/stream area to reduce the number of crossings and impacts to this system.

At one point in the preliminary design process, the alignment was shifted to the east to minimize impacts, resulting in one crossing of Morgan Branch instead of three, but that alignment was determined to have significant impacts to the minority community of Spring Hill. The current alignment reflects a repositioning of the roadway such that the area of impact is west of the wetland and around the historic Dr. Goodman House property. With the revision, still only one crossing of Morgan Branch is required. While the alignment minimizes impacts to Morgan Branch, a shift into this area will impact approximately 3 acres more wetland than the earlier alignment, but this increase in wetland impacts was determined by the Project Merger Team to be acceptable considering the minimization of impacts to Morgan Branch and avoidance of impacts to Spring Hill.

4.4.3 HIGH QUALITY WETLANDS NEAR SOUTHERN TERMINUS OF US 17

The initial location of the Selected Alternative roadway and associated service roads would impact several high quality wetland areas around the southern terminus at US 17. DWQ and USACE requested that the roadway be shifted to reduce or avoid these impacts. The original interchange design required the location of service roads such that surrounding wetland areas, streams, and a minority community and recreation facility located south of US 17 would be negatively impacted. In response to the agencies' request, the study corridor was expanded in this area and wetlands were delineated. An alternative interchange configuration was developed to avoid and minimize impacts to the identified environmental resources in the vicinity of the interchange. The revision to the proposed interchange resulted in fewer wetland impacts and avoidance of impacts to the minority community and recreation area.

4.4.4 INTERCHANGE NEAR THE COMMUNITY OF EASTBOOK ON SR 1426

The interchange near the community of Eastbrook on SR 1426 was originally designed as a diamond configuration with the freeway elevated resulting in several residential relocations and approximately 26.4 acres of wetland impact in addition to an at grade rail crossing on SR 1426.

The interchange was reconfigured to relocate and elevate SR 1426 over the bypass to the west of the existing roadway. Additionally, the southbound off-ramp was relocated to the west side of SR 1426, and the northbound on-ramp was realigned toward the mainline to minimize wetland impacts in this quadrant of the interchange. This resulted in a reduction of approximately 7 acres of wetland impacts, and improves the safety of the interchange by grade separating the railroad crossing, but would displace one additional residence.

4.5 AQUATIC COMMUNITIES AND WILDLIFE

4.5.1 NATURAL HERITAGE AREAS

Four Natural Heritage Program (NHP) Identified Priority Areas (IPAs), also called Significant Natural Heritage Areas (SNHAs), are located within the corridor area. Two will be directly impacted by the Selected Alternative.

The four IPAs crossed by the study area are Battle Royal Bay, Alligator Branch Sandhill & Flatwoods, Brunswick & Cape Fear Rivers Marshes, and the 421 Sandridge. Of the four IPAs in the vicinity of the proposed roadway, the Brunswick & Cape Fear Rivers Marshes and the 421 Sandridge will be directly impacted. The Selected Alternative passes through the northern tip of the Brunswick & Cape Fear Rivers Marshes. This area will be bridged to minimize or avoid negative impacts. The Selected Alternative also passes through the 421 Sandridge at the southern end. Due to the fixed terminus at US 421 and the point at which the roadway must cross the Cape Fear River (due to navigation, span lengths, and other constraints), the alignment cannot be shifted to avoid these IPAs.

Alligator Branch Sandhill & Flatwoods are not directly impacted by the Selected Alternative. The Selected Alternative is located about 200 – 300 feet east of both of this IPA.

4.5.2 WILDLIFE CROSSINGS

Wildlife passages are proposed to mitigate for the barrier effect of the project on wildlife movement. Bridges planned for crossing over riparian areas have been extended to allow for wildlife passage on upland areas. Two independent bridge structures and a box culvert would be designed to allow for wildlife movement across the roadway via underpasses. The passage locations were selected by a team consisting of NCDOT, NCWRC and USFWS representatives. The independent bridge structures were located at select upland areas bordered by wetland systems because these edges, or transitional areas, serve as natural wildlife corridors. The box culvert was located within a wetland area north of US 74/76 and will be designed to serve as a small animal crossing.

Bridge structures and fill slopes will be placed such that sufficient ground to structure clearance and dry passage is provided for large-bodied wildlife. The crossing areas under the bridge structures will provide a minimum of eight feet of vertical clearance and will be made as wide as possible to encourage wildlife usage. Whitetail deer, bobcats, black bear, small mammals, reptiles, and amphibians were identified in these areas and these structures will allow diurnal and seasonal movements while minimizing mortality of individual animals from vehicle collisions.

Fencing will be installed for a distance of 2,500 feet on either side of any of the proposed crossings and will be of sufficient height to guide wildlife into the passageways. The height of fencing will be determined through coordination between NCDOT, NCWRC and USFWS during final design.

4.6 ENVIRONMENTAL JUSTICE

FHWA determined that Alternative 9 as originally proposed (the “Red alignment”) would have a disproportionate negative impact on the community cohesion of Spring Hill, a low-income and minority population. During the avoidance and minimization process, it was found that the Pink

alignment would best minimize adverse effects to the Spring Hill community while minimizing effects on some important natural and cultural resources in the expanded study corridor.

4.7 SECONDARY AND CUMULATIVE IMPACTS

A revised secondary and cumulative impact analysis was conducted prior to completion of the FEIS and included an analysis of the impacts of project related induced growth and land use changes on wetland areas adjacent to modified interchange areas. A detailed analysis of Secondary and Cumulative Impacts stemming from the construction of the Selected Alternative is presented in the FEIS. As stated above, due to the growth trends already apparent in the area without the project and since the project does not provide direct access to major employment centers, the project is not anticipated to substantially affect the urban spatial structure of greater Wilmington.

4.8 CONSTRUCTION

4.8.1 BRIDGING OF THE NORTHEAST CAPE FEAR RIVER

Construction procedures utilized for bridging the Northeast Cape Fear River during the R-2633C portion will apply to this section of the project. To minimize impacts to populations of shortnose sturgeon (Federally listed as Endangered) known to utilize the river during spawning season (February – May), a construction moratorium lasting from February 1 until June 15 was imposed following agency coordination and consultation conducted for the R-2633C portion of the project. These guidelines also pertain to R-2633A/B. Additional coordination may be necessary to discuss construction methods in greater detail. These issues are addressed in the FEIS and will be decided upon through agency coordination during final design of the project.

4.8.2 CLEARING OF RIGHT-OF-WAY

USACE requested that mechanized clearing impacts should be no greater than five feet along each side of the road throughout the proposed project instead of the NCDOT's usual ten feet. To minimize soil disturbance impacts on the periphery of the freeway right-of-way NCDOT will limit mechanized clearing and grubbing as much as is feasible and practical.

5.0 MONITORING OR ENFORCEMENT PROGRAM

Coordination will be maintained with all regulatory and resource agencies during final design, permitting, right-of-way acquisition, and construction to ensure that avoidance, minimization, and compensatory mitigation measures are implemented. The NCDOT and FHWA will enforce all pertinent specifications and contract provisions in accordance with the intent of the FEIS and the welfare of the public.

6.0 ENVIRONMENTAL COMMITMENTS

Environmental commitments [*Project Commitments* (Green Sheets)] are presented at the front of this document.

7.0 COMMENTS ON FINAL EIS

The Final Environmental Impact Statement for the project was approved on April 17, 2007 and circulated to environmental regulatory and resources agencies for comments. Section 6 of the FEIS, incorporated by reference, includes a full list of agencies and organizations that received

copies of the document. A Notice of Availability of the FEIS was published on June 13, 2007. Comments on the FEIS were received from federal and state resource agencies as well as local citizens. Copies of these letters are included in the Appendix. Paraphrased excerpts of the substantive comments from these agencies and citizens, and responses to those comments from the North Carolina Department of Transportation are included in the following subsections of this Record of Decision. Comments were received from the following federal and state agencies:

Federal Agencies

- US Environmental Protection Agency – June 25, 2007

State Agencies

- North Carolina Department of Administration – June 18, 2007
- North Carolina Department of Environment and Natural Resources – June 13, 2007
- North Carolina Department of Environment and Natural Resources, Division of Water Quality – June 11, 2006
- North Carolina Wildlife Resources Commission – June 11, 2006
- North Carolina Department of Environment and Natural Resources, Division of Coastal Management – June 14, 2007
- North Carolina Department of Cultural Resources – June 11, 2007
- Regional Office (Intergovernmental Review Form) – June 20, 2006

7.1 US ENVIRONMENTAL PROTECTION AGENCY (EPA)

Comment 1

In EPA's comments on the 1996 DEIS, the Preferred Alternative was given a rating of "EC-2," Environmental Concerns, more information requested. While some of EPA's concerns have been addressed since that time, there are several outstanding environmental concerns that EPA continues to have regarding the Preferred Alternative.

Response

Comment noted. Individual responses to each specific comment are addressed separately.

Comment 2

In the "Project Description and Purpose and Need" sections, the Preferred Alternative is described as an urban loop around Wilmington. The EPA does not fully agree with this characterization as nearly all of the project study area is outside urban areas and is almost entirely in undeveloped, rural and suburban land use areas.

Response

Comment noted.

Comment 3

The EPA does not have any significant environmental concerns regarding the alternatives carried forward for detailed study in the DEIS/FEIS or the selection of the LEDPA. After the re-

evaluation conducted by NCDOT and FHWA during the Merger process, EPA concurred with other agencies on the selection of Alternative 9 as the LEDPA.

Response

Comment noted.

Comment 4

The EPA requests that discrepancies between text on pages 4-47 and 4-48 and Table 4-13 describing hydrologic crossings are corrected.

Response

Refer to Section 2.5.3 of this Record of Decision which addresses this comment.

Comment 5

The EPA recommends the use of temporary work bridges for all wetland and stream crossings, including those described in Table 4-17. This is opposed to the discussion on page 4-49 and 4-74 that makes reference to the use of temporary haul roads.

Response

Comment noted. The effects of various construction methods are addressed in the FEIS to provide disclosure of the range of possible construction impacts. As stated in Section 4.1.4.8, Subsection Construction in Wetlands, the preferred method of construction is temporary work bridges.

Comment 6

The EPA is concerned that the Palustrine forested wetlands appear to have been consistently rated lower than other types of wetlands. The EPA recommends that the NCDOT and FHWA consider re-checking the wetland ratings for the impacted systems to confirm their relative value.

Response

NCDOT and FHWA believe that the rating for Palustrine forested wetlands accurately reflect the relative value of these systems which have been affected by human activities such as silvaculture and clear cutting. The US Army Corp of Engineers, which has jurisdiction over wetlands within the project study area has reviewed and concurred with the ratings of wetlands affected by the project.

Comment 7

The EPA is concerned that baseline impacts of acres of impacts to wetlands per mile for the Preferred Alternative is more than double the average for other new location projects in Eastern North Carolina. At the same time, residential relocations per mile and stream impacts per mile were both significantly less than the average. The EPA feels that greater emphasis should be placed on minimizing impacts to jurisdictional wetlands.

Response

Comment noted. Efforts have been taken to avoid and minimize harm to wetlands throughout the course of the project development phase of the project. While the EPA abstained from concurring, the Project Merger Team concurred on Concurrence Point 4a, "Avoidance and Minimization." This is documented Chapter 7 and in Appendix E of the FEIS.

Comment 8

The EPA is reminding the NCDOT and FHWA that new guidelines concerning jurisdictional determination of waters of the U.S.; and depending on the time of permitting for the Preferred Alternative, NCDOT may be required to adhere to the new guidance and requirements by the US Army Corps of Engineers.

Response

Comment noted.

Comment 9

According to page 4-56 of the FEIS, the NCDOT indicates that there are opportunities for on-site mitigation. The EPA requests that these sites be identified as soon as possible and that EPA be notified of the proposed plans.

Response

NCDOT is looking into opportunities for on-site mitigation. The EPA will be notified through the project merger process of the proposed on-site mitigation plans as they continue to be developed.

Comment 10

The EPA is concerned that there is no mention of mitigation sites or detailed plans mentioned in the FEIS.

Response

Comment noted. The EPA will be notified through the project merger process of the proposed mitigation plans as they continue to be developed.

Comment 11

The EPA is concerned with a discrepancy between the information presented in the FEIS on page 3-86 and Tables S-1 and 4-14 in regards to impacts to the NHP's IPAs or SNHAs and the information presented on these impacts during the Merger Team Meeting from 9/12/2005. This discrepancy is significant since the information presented at the Merger Meeting was the basis for EPA abstaining from CP 4A.

Response

As noted in the FEIS, IPAs are not statutorily protected; therefore, mitigation of effects to IPAs is not required; however, efforts were taken to minimize effects to IPAs during preliminary design of the recommended alignment. Project impacts to Battle Royal Bay were reviewed and the acreage of impact has been revised and is presented in Section 2.5.3 of this Record of Decision.

Comment 12

The EPA is concerned that the FEIS fails to address the requirements of Executive Order 13112, Invasive Species.

Response

As stated in *NCDOT's Compliance with Executive Order 13112*: "Complying with the executive order means that federal-aid and Federal Lands Highway Program funds cannot be used for construction, revegetation, or landscaping that purposely includes the use of known invasive plant species. The executive order established a National Invasive Species Council, and until an approved national list of invasive plants is defined by the council, 'known invasive plants' are defined as those listed on the official noxious weed list of the state in which the activity occurs. FHWA recommends use of federal-aid funds for new and expanded invasive species control under each state's roadside vegetation management program. In NC, the Department of Agriculture and Consumer Services (NCDA&CS) produces/maintains the State's official noxious weed list (<http://www.ncagr.com/plantind/plant/weed/noxweed.htm>). In addition to the June 30, 2006 federal list of approximately 64 genre of noxious weeds (http://aphis.usda.gov/plant_health/plant_pest_info/weeds/downloads/weedlist2006.pdf), there are 15 additional species specific to North Carolina's list.

"The Design and Development Section within the Roadside Environmental Unit maintains a listing of invasive 'ornamental' plants. It contains plants that may have been propagated or volunteered along the roadside in the distant past, but they are no loner being actively integrated within landscape plantings due to their invasive nature. Some examples from the list include: Mimosa (*Albizia julibrissin*), Thorny, Russian, & Autumn Olive (*Elaeagnus pungens, angustifolia, & umbellate*), Japanese Silvergrass (*Miscanthus sinensis*), Multiflora Rose (*Rosa multiflora*), Chinese & Japanese Privet (*Ligustrum sinese & japonicum*), Crown Vetch (*Coronilla varia*), Chinese & Japanese Wisteria (*Wisteria sinese & floribunda*), English Ivy (*Hedera helix*).

"NC Department of Transportation is currently funding two multi-year research projects totaling over \$600,000. These projects are investigating control methods of invasive terrestrial or aquatic weed species. Dr. Joe Neal and Dr. Rob Richardson are the principle investigators at North Carolina State University. Dr. Neal's Project (2006-05) is titled "Innovative and Environmentally Responsible Methods for Controlling Invasive Woody Plant Species in NC Rights-of-Way" and was initiated in 2005. The project goals include: investigating wet-blade technologies to determine their feasibility to control tree species including Tree-of-heaven (*Alianthus altissima*) and Princess tree (*Paulownia tomentosa*). In addition a new biological control agent (*Chondrostereum purpureum*) (tentative trade name: Chontrol) is being evaluated which is intended to prevent resprouting of woody weeds following cutting. Dr. Richardson's project (2008_06) is titled "Establishing Native Vegetation and Improved Invasive Species Control on North Carolina Roadsides." This project is in the initial phase of conducting an extensive literature search. The literature goals include: developing control methodologies for two aquatic invasive plants: Japanese knotweed (*Polygonum cuspidatum; Fallopia japonica; Reynoutria japonica*), and Alligator Weed (*Alternanthera philoxeroides*). In addition, the germination and growth habits of several native grasses and milkweed (*Asclepias tuberosa*) will be evaluated. The ultimate goal would be to develop a successful seeding methodology to allow incorporation of more native species along the roadsides."

Comment 13

EPA along with US Fish and Wildlife Service and North Carolina Wildlife Resources Commission proposed some conservation area measures for the Pink Alignment in a memorandum dated February 22, 2005. Neither NCDOT or FHWA responded to this proposal.

Response

This proposal was discussed at the November 17, 2005 Project Merger Team Meeting, as documented in the minutes of that meeting which can be found in Appendix E of the FEIS.

Comment 14

The EPA recommends that the NCDOT and FHWA consider additional noise abatement measures of the US 17 interchanges as this location has the largest number of impacted noise receptors on the project. Future foreseeable projects in the area may cause these noise levels to be further increased.

Response

Comment noted. A noise impact analysis was done for the project as documented in Section 4.1.2.1 in the FEIS. Noise abatement measures are also addressed in this section.

Comment 15

While the EPA acknowledges that the FEIS addresses Mobile Source Air Toxics MSATs in the form of FHWA's Interim Guidance, the EPA can not concur on this assessment due to the reliance on future EPA vehicle and fuel emission control regulations and FHWA's lack of acceptance of EPA tools in perform air modeling for MSATs.

Response

Comment noted.

7.2 DIVISION OF WATER QUALITY, NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Comment 1

This project is being planned as part of the 404/NEPA Merger Process. As a participating team member, the NCDWQ will continue to work with the team.

Response

Comment noted.

Comment 2

According to Section 1.5.2 TIP R-2633C was completed in July 2006. However, at the beginning of the document the Summary states that the project will be completed in June 2006. The text should be updated to reflect project completion.

Response

The correct date of completion for TIP R-2633C is July 2006.

Comment 3

There is a fairly extensive discussion in the document with respect to terrestrial and underwater archeological sites. However, there is no map showing these sites. This is important, especially since Site 31NH39** is located within the expanded corridor.

Response

NCDOT purposely does not present the location of archaeological resources to protect the resources from potential degradation by looting. Coordination with the State Division of Cultural Resources regarding historic, cultural, and archaeological resources has take place over the course of the project development process and will continue through the final design phase of the project.

Comment 4

Section 3.1.5.1, Historic Architectural Resources, mentions three properties that were to be evaluated at an intensive level - the Wrightsboro School, (#16), Reeves A.M.E. Zion Church (#39), and the Goodman Property (#57). There is discussion of the Reeves A.M.E. Zion Church and the Goodman Property. However, no further mention is made of the Wrightsboro School, nor is shown on Figure 3-4. Since it has been identified, and has been evaluated at an intensive level, further discussion is warranted.

Response

The Wrightsboro School was identified during the DEIS Phase and was relevant to Section C of the TIP R-2633C project. This resources was addressed in the R-2633C DEIS. It is therefore no longer applicable to the TIP R-2633A/B project. Coordination with the State Division of Cultural Resources regarding historic architectural resources has take place over the course of the project development process and will continue through the final design phase of the project.

Comment 5

Figure 3-16 shows the active Red-Cockaded Woodpecker cluster located within the study area. It is unclear what the multi-colored circles within the foraging area are. They are assumed to be cavity trees; however they are indicated as brown circle on the map legend.

Response

Comment noted. This figure has been corrected and is presented as Figure 4 of this Record of Decision.

Comment 6

Section 4.1.1.2, Relocations, discusses relocatees with respect to census tracts and blocks. However on Figure 4-1 none of the block groups are labeled which makes it difficult to follow the text. Additionally, using block groups on the map seems rather broad. If possible, the information should be presented at the block level, as was done in Figure 4-2. The same comment applies to Figure 4-2. The text discusses minority populations at the block level, but none of the blocks shown in Figure 4-2 are labeled.

Response

Comment noted. The discussion in Section 4.1.1.2 of the FEIS that discusses relocatees with respect to census tracks and blocks that the commentator is referring to was information

presented in the 1996 DEIS. The same information for year 2000 census was not available at the block group or block level at the time the information was updated for the FEIS. The demographic information and methods used for analysis of the Preferred Alternative in the FEIS are appropriate and generally accepted as adequate. The Census Tract and Block Group numbers have been added to Figures 4-1 and 4-2 and presented in this Record of Decision as Figures 4 and 5.

Comment 7

Table 4-10. Summary of Expected Degree of Impact – This table presents a summary of potential contaminated sites within the preferred corridor. The table includes the potential severity of each site. It is unclear how the severity of the impact (i.e. low, moderate, moderate-high, etc.) was determined.

Response

Comment noted. This determination of the severity of impact was made based on professional judgment of the sites relative potential to present a risk to the project.

Comment 8

Section 4.2.6.1 discusses water resources within the study area. While there are many stressors listed for waters in the study area (i.e. chlorophyll, low dissolved oxygen, pH, etc.), it may be worth stating that there are currently no 303(d) waters in the study area.

Response

The project study area was reviewed for the presence of 303(d) waters and there are currently no 303(d) waters in the study area.

Comment 9

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 401 Water Quality Certification.

Response

Comment noted. Mitigation plans are being developed and will be presented to Project Merger Team during the design phase of the project.

Comment 10

Environmental assessment alternatives should consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alterations 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 the NC DWQ Stormwater Best Management Practices, such as grasses swales, buffer area, preformed scour holes, retention basins, etc.

Response

Comment noted.

Comment 11

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 Enhanced Program may be available for the use as wetland mitigation.

Response

Comment noted.

Comment 12

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.

Response

Comment noted.

Comment 13

Future documentation, including 401 Water Quality Certification Application, should continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.

Response

Comment noted.

Comment 14

DWQ is very concerned with sediment and erosion impacts that could result from this project. The NCDOT 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.

Response

Comment noted.

Comment 15

An analysis of cumulative and secondary impacts anticipated as a result of this project is required. The type and detail of analysis should conform to the NC Division of Water Quality Policy on the assessment of secondary and cumulative impacts dated April 10, 2004.

Response

Comment noted.

Comment 16

The NC DOT is respectfully reminded that all impacts, including, but not limited to, bridging, fill, excavation and clearing, to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts; temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.

Response

Comment noted.

Comment 17

Where streams must be crossed, the DWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, DOT should not install the bridge bents in the creek, to the maximum extend practicable.

Response

Comment noted.

Comment 18

Sediment and erosion control measures should not be placed in wetlands or steams.

Response

Comment noted.

Comment 19

Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas will need to be presented in the 401 Water Quality Certification and could precipitate compensatory mitigation.

Response

Comment noted.

Comment 20

The 401 Water Quality Certification application will need to specifically address the proposed method for stormwater management. More specifically, stormwater should not be permitted to discharge directly into streams or surface waters.

Response

Comment noted.

Comment 21

Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an Individual Permit (IP) application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require submittal of a formal application by the NCDOT and written concurrence from the NC DWQ. Please be aware that any approval will be contingent on appropriate avoidance and minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.

Response

Comment noted.

Comment 22

Bridge supports (bents) should not be placed in the stream when possible.

Response

Comment noted.

Comment 23

Whenever possible, the DWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the stream banks 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.

Response

Comment noted.

Comment 24

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.

Response

Comment noted.

Comment 25

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 soils 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.

Response

Comment noted.

Comment 26

Placement of culverts and other structures in waters, streams, and wetlands shall be placed 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 the 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.

Response

Comment noted.

Comment 27

If multiple pipes or barrels are required, they should be designed to mimic 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 the structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

Response

Comment noted.

Comment 28

If foundation test borings are necessary; it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3494/Nationwide Permit No. 6 for Survey Activities.

Response

Foundation test borings are necessary for the project. Geotechnical work to be conducted for the project will be coordinated between NCDOT and federal and state regulatory agencies during the final design phase of the project through the Section 404/NEPA Merger Process.

Comment 29

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 NC8000250.

Response

Comment noted.

Comment 30

All work in or adjacent to stream waters should be conducted in a dry work area. 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.

Response

Comment noted.

Comment 31

While the use of National Wetlands 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.

Response

Comment noted.

Comment 32

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.

Response

Comment noted.

Comment 33

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.

Response

Comment noted.

Comment 34

Riparian vegetation (native trees and shrubs) should be preserved to the maximum extent possible. Riparian vegetation must be reestablished within construction limits of the project by the end of the growing season following completion of construction.

Response

Comment noted.

7.3 DIVISION OF COASTAL MANAGEMENT OF NCDENR

Comment 1

Based on a cursory review, it appears as though the information contained within the FEIS is consistent with the information provided to DCM through the NEPA/404 Merger Process, which DCM has already commented on.

Response

Comment noted.

Comment 2

A formal DCM review of the project to determine consistency with the state's Coastal Management Program will not occur until a Coastal Area Management Act (CAMA) major permit application is received. Due to the complexity of this project, NCDOT is urged to submit the CAMA major permit application for this project to DCM a minimum of one year prior to the anticipated construction let date.

Response

Comment noted.

Comment 3

The proposed bridge crossing the Cape Fear River will fall in two designated CAMA Areas of Environmental Concern: Public Trust Area; and Public Trust Shoreline. The proposed crossing at the Cape Fear River is also within waters classified as "joint waters" by agreement between the Marine Fisheries Commission and Wildlife Resources Commission.

Response

Comment noted.

7.4 CITIZEN COMMENTS

Comment

From Patrick J. Moore - The proposed project will require a portion of my property and leave the rest of the property and my family isolated from surrounding parcels and neighbors. I don't understand why no one can explain why my entire property will not be acquired.

Response

Current plans for the Project show Mt. Misery Road becoming a cul-de-sac before crossing the railroad, which would sever access to the property of Patrick J. Moore and require NCDOT to purchase the entire property. However, these plans are not final and are still being developed to include drainage design and other design elements before they will be used to acquire any property.

Comment

From Erica Gifford – Ms. Gifford's primary concerns are in regard to the analysis of community cohesion and the public involvement activities associated with the Wilmington Bypass Project.

She is concerned that the analysis of community cohesion with respect to her recently constructed neighborhood (Planter's Walk) did not properly consider the newness of her neighborhood and its potential to be cohesive in the future. She is concerned that no small group meetings regarding the project were held with her neighborhood but were held for an adjacent minority community. Ms. Gifford is also concerned that the North Carolina Turnpike Authority's possible Cape Fear Skyway toll road project would destroy her neighborhood.

Response

The North Carolina Department of Transportation's approach followed practices generally accepted to meet professional standards. The methods used for determining cohesiveness for communities within the project study area can be found in the National Cooperative Highway Research Program (NCHRP) Report 456 (Forckenbrock, David J. and Glen E. Weisbrod. *Guidebook for Assessing the Social and Economic Effects of Transportation Projects, Report 456*. National Cooperative Highway Research Program (NCHRP). National Academy Press. Washington D.C. 2001.). These methods were used for the determinations of community cohesiveness contained in the FEIS.

With respect to public involvement, as documented in the Final EIS, the public involvement process and activities undertaken by the Department occurred at key decision points throughout project development process. A great deal of effort was expended in notifying the public and included newsletters, citizens informational workshops, a public hearing held after completion of the Draft EIS, and small group meetings. Small group meetings were held at the request of interested communities such as Spring Hill, or groups of individuals interested in the project.

Citizens interested in the project will have an opportunity to comment on the design of the Selected Alternative at an upcoming Design Public Hearing. The hearing is currently scheduled for October of this year. The specific date, time and location of the hearing will be identified in a forth coming project newsletter and will also be advertised in the local newspapers.

Comments

The following set of comments received from Brian J. McMillan of Brooks, Pierce, McClendon, Humphrey & Leonard, L.L.P, representing Dr. Joseph Goodman in a letter dated January 8, 2007 were included by reference in a letter from the same law firm dated September 18, 2007 that provided comments on the FEIS. Each individual comment is followed by a response.

Comment 1

On behalf of the Goodmans, we object to the selection of the Pink Alternative and request that the DOT reconsider its decision, which we believe is arbitrary and capricious and arrived at without the observance of the procedures required by law. We urge the DOT to adopt instead the Green Alternative, which; (1) was originally the consensus choice; (2) has substantially less wetlands impacts than the Pink Alternative and only slightly greater impacts than the Red Alternative (based on the September 12, 2005 updated Wetland Impact Summary); (3) upon information and belief was (as of November 17, 2005) preferred over the Pink Alternative by the United States Environmental Protection Agency and the Army Corps of Engineers; and (4) has minimal (and certainly not disproportionate) impacts on the Spring Hill community and was, in fact, described by members of that community as an acceptable alignment.

Response

The FEIS was prepared in accordance with the requirements set forth in the National Environmental Policy Act (NEPA) of 1969, as amended, and the North Carolina (State) Environmental Policy Act (SEPA). The content of the FEIS conforms to the requirements of the Council on Environmental Quality (CEQ) guidelines, which provide direction regarding implementation of the procedural provisions of NEPA, and the Federal Highway Administration's (FHWA) *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*, 1987. Furthermore, the decision to select the Pink alignment as the preferred alignment was made in a careful, deliberative, and informed manner through the Section 404/NEPA Merger process, as documented in the FEIS (§2.3.1 and Appendix E, Part 1 and Part 3).

At the November 17, 2005 Project Merger Team Meeting, the United States Army Corps of Engineers concurred with the selection of the pink alignment, as documented in the minutes of that meeting contained in Appendix E of the FEIS. It was also noted at that meeting that the community of Spring Hill supported the Pink alignment. As discussed in Section 4.1.1.3 of the FEIS, the Pink alignment would best minimize adverse effects to the Spring Hill community while minimizing effects on some important natural and cultural resources in the expanded study corridor.

Comment 2

The selection of the Red Alternative (and, for that matter, the Green Alternative) is well-supported by the records of the DOT and the other agencies. In contrast, the Pink Alternative is the result of a truncated decision-making process in which, it appears from the record, the decision was a foregone conclusion that was pushed to keep the project on track, with insufficient regard for the environmental impact of the Pink Alternative or for the legality of the process that led to its selection.

Response

Please refer to response to Comment 1. The evaluation of five alternative alignments and subsequent selection of the Pink alignment is well documented in the FEIS and supporting project documentation. In addition to the Red, Green and Pink alignments, two other alignments, Orange and Blue, were also evaluated. All five of the alternative alignments were studied and compared using the same set of environmental parameters that included, but were not limited to estimated construction costs, relocation (residential and business), distance from the Goodman Historical Property boundary, NC Natural Heritage Program Identified Priority Areas, wetlands, streams, floodplains, and community cohesion. The environmental effect of each alternative was carefully considered by the Project Merger Team as indicated by the records of the six Merger Team meetings that occurred between June 10, 2004 and November 17, 2005, leading up to the decision by the Project Merger Team to select the Pink alternative alignment.

Comment 3

The concerns of those opposed to the Red Alternative should have been treated as a NIMBY [Not In My Backyard] issue. The Merger Team members acknowledged on many occasions that Spring Hill was a NIMBY issue, not an environmental justice issue, and the response to Spring Hill should have balanced the concerns of the Spring Hill community with the goals of protecting the environment and the interests of other local residents, including the Goodmans. In the end, however, there was no balancing - the chosen alignment totally bypasses Spring Hill

while resulting in the largest wetlands impacts the three (Red, Green and Pink) alternatives and virtually destroying the Goodman property.

Response

The Project Merger Team considered the "NIMBY" issue as well as environmental justice concerns, wetland impacts and community cohesion in their decision to select the Pink alternative alignment. The US Army Corps of Engineers and the North Carolina Division of Water Quality have jurisdiction over wetlands and waters of the state. Both of these regulatory agencies are represented on the Project Merger Team and both concurred that the Pink alignment, as part of the overall project, best avoided and minimized environmental impacts. Balancing adverse effects to both the natural and human environments was considered by the Project Merger Team. The decision-making process that was followed in selecting the Pink alignment alternative well is documented in Appendix E, Part 1 and Part 3.

Comment 4

With respect to the process that lead to the rescission of the original Concurrence Point 4A selection, the *Environmental Justice Assessment* prepared by URS Corporation for the DOT (the "Assessment") is fundamentally flawed in its methods and analyses and arbitrarily and capriciously concludes that the Red Alignment should be disfavored solely because it results in impacts to the "cohesion" of the Spring Hill community, contrary to the concepts of environmental justice - which require a focus on assessment of disproportionate, adverse impacts on minority and low income populations. Exec. Order 12898 §1-1. The Assessment is based on the erroneous assumption that because Spring Hill is a minority, low-income community, any impact on the community is adverse and disproportionate. Given this assumption and the Assessment's stated purpose - to evaluate the affects of the project "that were articulated during the small group meetings held with the citizens of the Spring Hill community...within the framework of environmental justice" (Assessment at p. ES-1) – the Assessment amounts to an arbitrary and capricious post-hoc rationalization for selecting an alternative alignment.

Response

The *Environmental Justice Assessment* was conducted in a thorough and appropriate manner consistent with Executive Order 12898. Upon review of the *Environmental Justice Assessment*, FHWA has concluded that the Red alternative alignment would result in disproportionate adverse community cohesion effects on low-income and minority populations within Spring Hill, and furthermore, determined that, of all of the alternative alignments evaluated, the Pink alignment would best minimize adverse effects to the Spring Hill community. Please also refer to the Response to Comment 2 above and to the Memorandum Report of Merger Team/ Agency Meeting of April 21, 2005, where the US Environmental Protection Agency expressed concern about environmental justice and where an Environmental Justice Assessment for the FEIS is identified as an action item. Refer also to the Memorandum Report of Merger Team/ Agency Meeting of November 17, 2005, which documents FHWA's determination regarding disproportionate effects of the Red alternative alignment.

Comment 5

The Assessment focuses only on the various alignments within the pre-determined LEDPA corridor instead of properly assessing environmental justice issues at the LEDPA selection stage, Concurrence Point 3, as it properly should have pursuant, *inter alia*, to the Merger Team agreement at the April 21, 2005 meeting. Moreover, even if Concurrence Point 4A were the

proper point of analysis, the Assessment is wholly misconceived, as its entire focus appears to be documenting adverse impacts to the "cohesion" of the Spring Hill community in order to justify, post-hoc, the selection of an alternative alignment, rather than to "identify and address, as appropriate, disproportionately high and adverse human health or environmental effects" the project on minority or low-income populations, as required by Exec. Order 12898 §1-I. It is interesting to note that as late as October 2005 the FHWA's representative on the Merger Team acknowledged at a Team Meeting that the Red Alternative did not have a disproportionate impact on Spring Hill.

Response

Please refer to the Response to Comment 4 above. As documented in §2.3.1 and Appendix E, Part 1 and Part 3, Concurrence Point 3, LEDPA, was appropriately reconsidered and subsequently concurred upon by the Project Merger Team. Adoption of the revised Concurrence Point 3, LEDPA, is documented in Report of Merger Team/Agency Meeting of November 17, 2005, Item 3. At that November 17, 2005 meeting, the FHWA representative stated that the Red alignment does have a disproportionate negative impact on community cohesion.

Comment 6

As another illustration of its arbitrary and capricious nature, the Assessment states that relocation or displacement of residences and businesses will cause the most adverse impacts, but does not actually determine the number of minority or low income residences or businesses that will be impacted by each of the alternative alignments. Instead, the Assessment quantifies the potential impacts of the Red Alignment on residences and businesses located in Spring Hill, (including minority and low-income) and disregards protected populations located outside the Spring Hill community. (Assessment at p. 25) The Assessment does not quantify or address the potential impact of other alignments on minority and low-income populations at all, and a determination as to the relative proportionality of impacts to protected populations of any alignment is impossible without such information. Similarly, the assessments of multiple other categories of impacts (positive and negative) on minority or low-income populations both within and outside the Spring Hill community are neither identified, quantified nor assessed to determine the relative proportionality of the impacts or to compare the impacts among alignments, as is required by NCHRP Report 532. The Assessment clearly does not meet the mandate of Exec. Order 12898 § 1-1 to "identify and address, as appropriate, disproportionately high and adverse human health or environmental effects" of the project on minority or low income populations.

Response

The study area boundary for the Assessment was delineated using a modified 3-mile buffer around the entire project corridor, not just near the Spring Hill community. The minority community of Spring Hill was identified as the only cohesive community within the study area and the only community for which further study of potential environmental justice impacts was warranted. The Assessment quantifies the relocation impacts for each of the five (Red, Green, Orange, Pink, Blue) alignments within Alternative 9 in Table 3. That table also compares the impacts of each alignment on division/barrier effects, isolation, induced development and land use change, transportation and neighborhood access, noise impacts, and visual impacts.

Comment 7

The Goodmans believe that the field work underlying that selection is flawed. The Goodmans retained Spangler Environmental to do its own field reconnaissance on the Goodman property for the purpose of confirming the presence of jurisdictional wetlands and streams, and to evaluate the delineation work performed by the DOT and/or its contractors. The field work and flagging done by Spangler Environmental, supported by GPS with sub-meter accuracy, show several discrepancies and inaccuracies. The DOT's current delineations do not coincide with the reported delineations shown on the map of the Pink Alternative provided to the Merger Team along with the "Updated September 12, 2005" table showing the Wetland Impact Summary of all alternatives. In addition, Spangler Environmental's field work has established the presence on the Goodman property, inside the study corridor, of wetlands that were not flagged, and therefore presumptively not identified, by the DOT's contractors.

Response

The United State Army Corps of Engineers (USACE) has jurisdiction over wetlands and waters of the state. The USACE has reviewed project wetlands and has made jurisdictional boundary determinations in the field for project wetlands. The latest delineation was approved on August 3, 2004 (see Appendix A, Part 1), and impacts in the FEIS are based on that delineation. Any discrepancy regarding project wetlands should be addressed with the US Army Corp of Engineers, Regulatory Branch, Wilmington District Office.

Comment 8

The center line actually flagged on the Goodman property, which Spangler Environmental confirmed with GPS, is not consistent with the center line for the Pink Alternative depicted on the Merger Teams maps.

Response

Comment noted. FHWA is confident that NCDOT has the correct survey and mapping data for the project.

Comment 9

Substantial development activity involving land adjacent to and in Spring Hill is underway or in the planning process. The fact is that there is a great likelihood that Spring Hill will be swallowed up by developers as the value of land in that area continues to explode. The irony is that the choice of the Pink Alternative, which cuts the Goodman property in half, is likely to hasten the development of the largest parcel of land in that area that is not already in the hands of someone bent on paving it over - the Goodman property.

Response

Refer to Appendix H, Part 1 of the FEIS, Record of Small Group Public Meeting of May 17, 2005, Item 3. Community Boundaries, Property and Development. Development within and adjacent to Spring Hill is addressed in this record which was made available to the Project Merger Team.

Comments

The following set of comments were received from Brian J. McMillan of Brooks, Pierce, McClendon, Humphrey & Leonard, L.L.P, representing Dr. Joseph Goodman in a letter dated September 18, 2007. Each individual comment is followed by a response.

Comment 1A

We write regarding the April 2007 Final Environmental Impact Statement ("FEIS") for Project R-2633A/B and with reference to our letter of January 8, 2007, in which we objected on behalf of the Goodmans to the improper selection of the Pink Alternative (now termed the "Recommended Alignment" in the FEIS). We do not reiterate the Goodmans' previously-stated objections in this letter, but do incorporate those objections by reference. As discussed in our prior correspondence, we believe the process which led to the selection of the Recommend Alignment was improper and unlawful, and the selection itself is arbitrary and capricious. The FEIS confirms our beliefs and the bases thereof, and brings to light additional concerns.

Response

The comments included in the January 8, 2007 letter have been included by reference and have been responded to in the Record of Decision.

Comment 2A

One concern is the apparent failure of the FEIS to properly respond to comments to pursuant to 40 CFR §§ 1502.9(b) and 1503.4, including comments made by the Goodman family which require, at a minimum, some level of response, including modification or, at the least, further explanation of, the selection of the Recommended Alignment.

Response

Previous comments were received from Mr. McMillan, representing Dr. Joseph Goodman, in a letter dated January 8, 2007 as noted above. A meeting was held between Mr. McMillan and NCDOT staff and lawyers on April 11, 2007 to discuss the concerns expressed in that letter. At that time, and in email correspondence, it was explained that the January 8, 2007 comments would be addressed in the Record of Decision and are addressed herein. No further response is required.

Comment 3A

A second example is the failure to prepare supplements to the DEIS or the FEIS pursuant to 40 CFR § 1502.9(c) to address, *inter alia*, the issues and information surrounding the evaluation of the various alternative alignments and the environmental justice issues used as a justification for selecting the Recommended Alignment.

Response

Applicable regulations do not require preparation of a supplemental environmental document for this Project.

Comment 4A

A third example is the failure of the FEIS and DEIS to rigorously explore and objectively evaluate all alternative alignments as required by 40 CFR § 1502.14 and 42 U.S.C. § 4332.

Neither the DEIS nor the FEIS fully set forth, let alone objectively evaluate, the various alternative alignments.

Response

The DEIS and FEIS fully evaluate all reasonable alternatives.

Comment 5A

The use of the "community cohesion" "analysis" in the FEIS and references to the environmental justice assessment continue the use of semantics to obfuscate the subjective and improper procedure used to back into the selection of the Recommended Alignment. An example of the "reasoning" behind the decision can be found in the Draft Reevaluation of the DEIS, which reads in part:

[While potential disproportionate negative impacts to protected populations were identified since the preparation of the DEIS the conclusion of the DEIS that protected populations would not be disproportionately impacted by the project is still valid for the revised alignment.

Draft Reevaluation of DEIS at p. 17.

In other words, the analysis conducted in connection with the preparation of the DEIS -- an analysis that was undertaken before any alleged disproportionate impacts to protected populations were identified - need not be undertaken anew because the "new" conclusion of the FEIS -- that the Revised Alignment eliminates the alleged disproportionate negative impact -- is supported by the DEIS analysis...which failed to identify or consider any disproportionate impacts.

Response

The excerpt cited above simply states that the conclusion of the DEIS remains valid -- that the Project will not disproportionately impact protected populations. The excerpt does not speak to the "analysis conducted in connection with the preparation of the DEIS."

Comment 6 A

The de-selection of the previously-selected Red Alignment and the selection of the Recommended Alignment cannot be justified except as a NIMBY issue, a knee-jerk reaction to the opposition some residents of the area, *post-hoc* justifications based on "environmental justice" and "community cohesion" "analyses".

Response

See response to Comment 4 above.

Approval

10/18/07

Date of Approval

Clarence W. Cohen, Jr.

for John F. Sullivan, III, P.E.
Division Administrator
Federal Highway Administration

FIGURES

Figure 1: Build Alternatives Evaluated in the DEIS

Figure 2: Expanded Study Corridor and Alternative Alignments

Figure 3: Recommended Alignment













Figure 4: Active Red-Cockaded Woodpecker Cluster and Rough-leaved loosestrife Locations

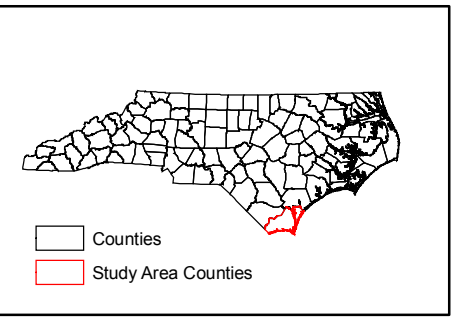
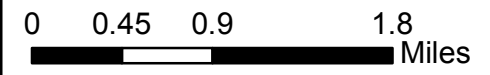
Figure 5: Recommended Alignment and Low-Income Populations

Figure 6: Recommended Alignment and Minority Populations

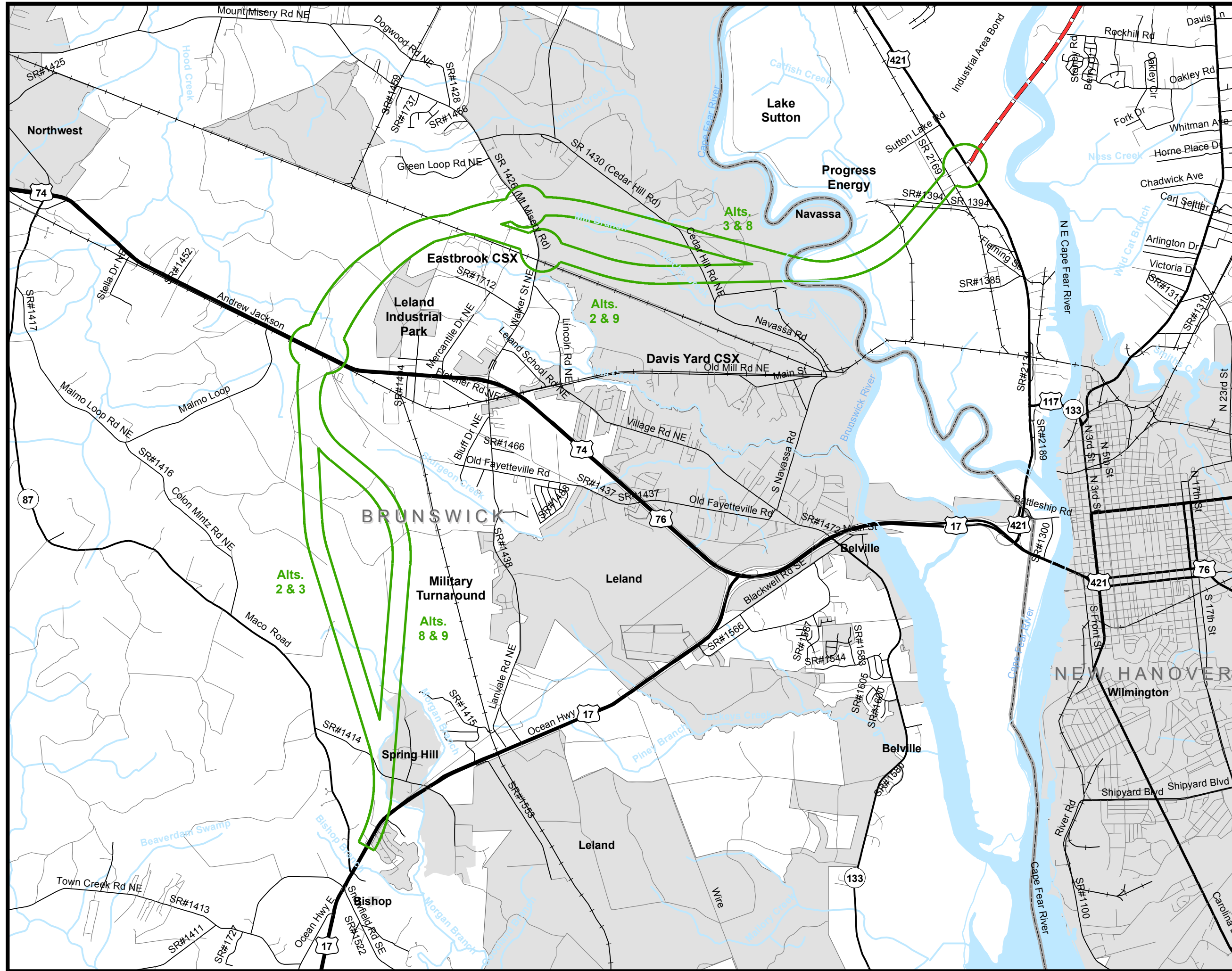
TIP R-2633 A/B
Wilmington Bypass

Figure 1
Build Alternatives
Evaluated in the DEIS

- Legend**
-  Build Alternatives
 -  R-2633 C
 -  Interstate Highways
 -  US Highways
 -  State Highways
 -  State Routes
 -  Local Roads
 -  Railroads
 -  Municipal Boundaries
 -  County Boundaries
 -  Water
 -  Streams (Non-delineated)

















July 2007
This map is for reference only.
Sources: ESRI, CGIA, Brunswick County,
New Hanover County, USDOT, NCDOT, URS.

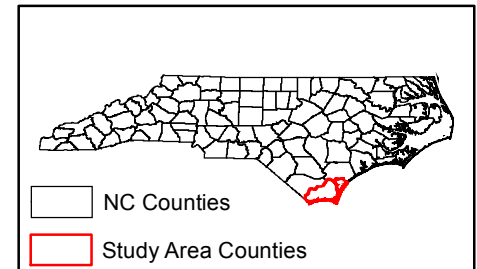


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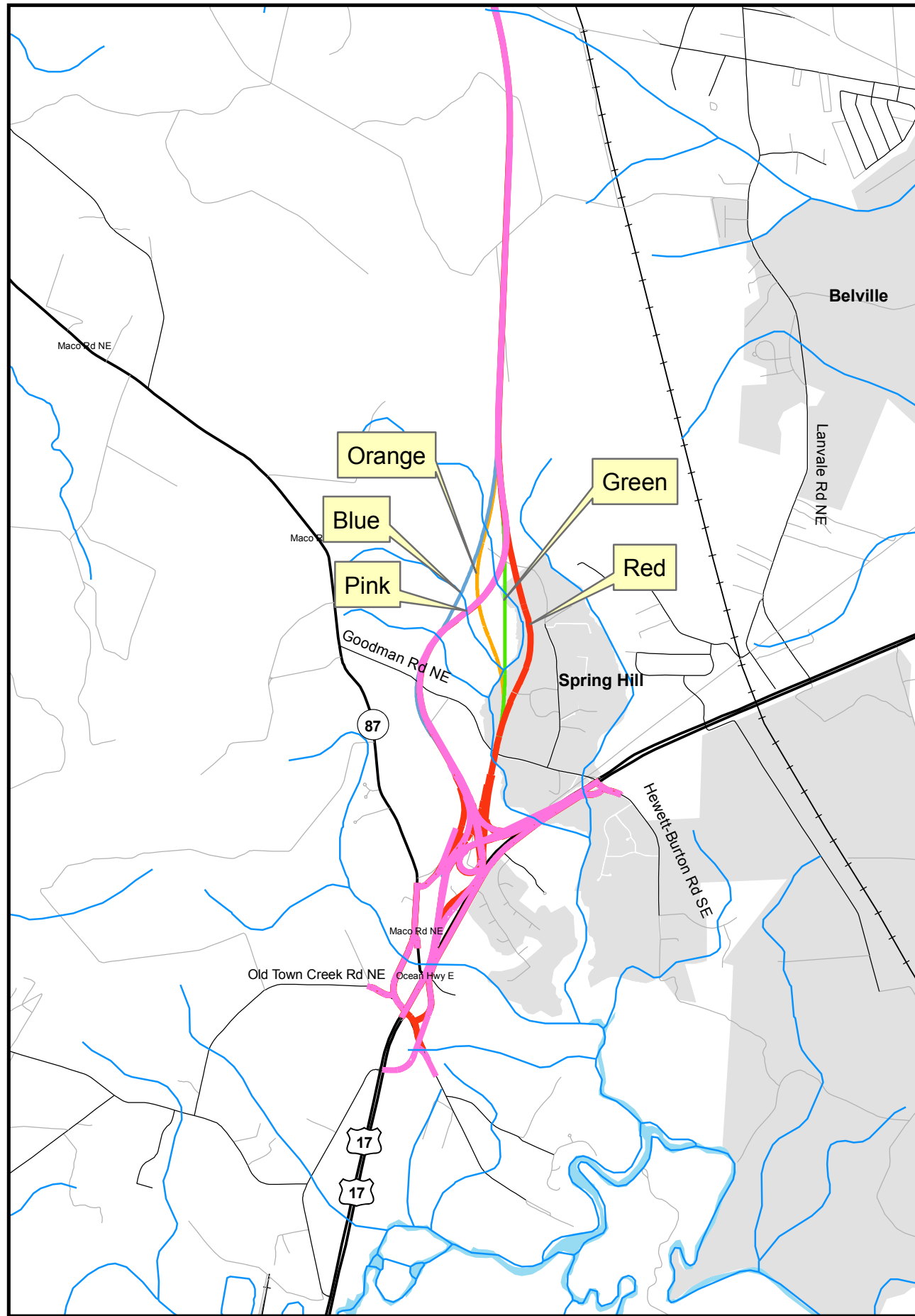
Figure 2
Expanded Study Corridor and
Alternative Alignments

Legend

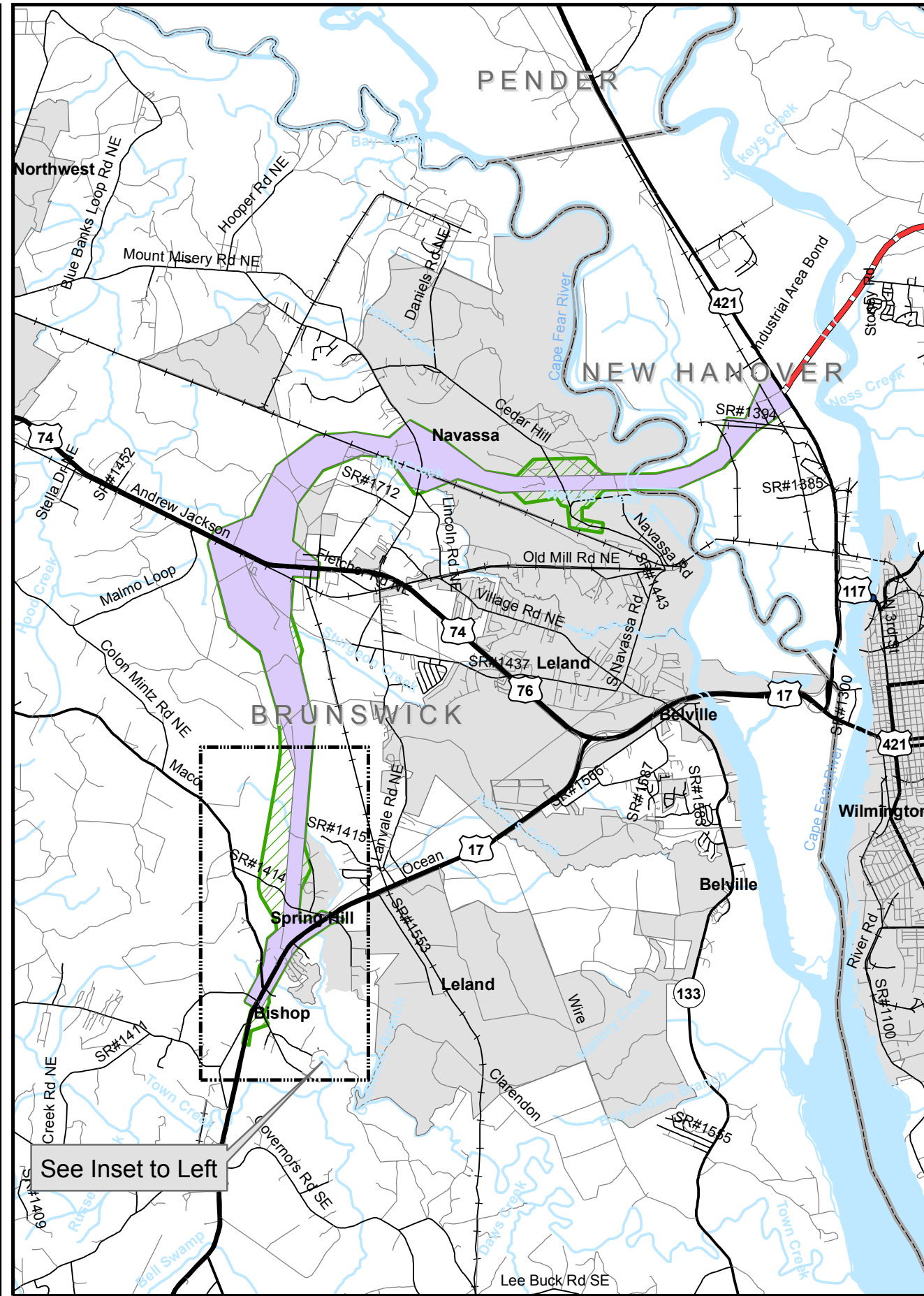
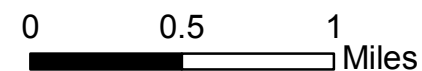
-  R-2633 A/B Initial Study Corridor
-  Expanded Study Corridor
-  R-2633 AB Final Alignment
-  R-2633 C
-  Interstate Highways
-  US Highways
-  State Highways
-  State Routes
-  Local Roads
-  Railroads
-  Municipal Boundaries
-  County Boundaries
-  Water
-  Streams (Non-delineated)



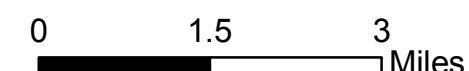
July 2007
This map is for reference only.
Sources: ESRI, URS, CGIA, NC DOT,
Brunswick County, and New Hanover County.



Alternative Alignments



Corridor Study Area







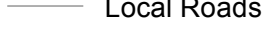


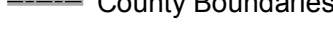

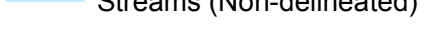


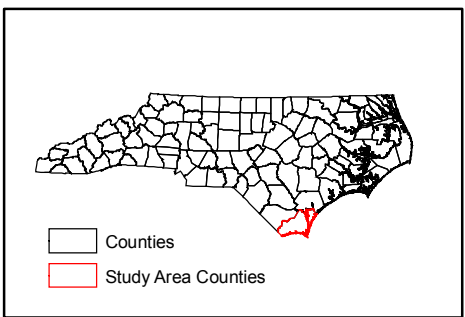
See Inset to Left

TIP R-2633 A/B
Wilmington Bypass

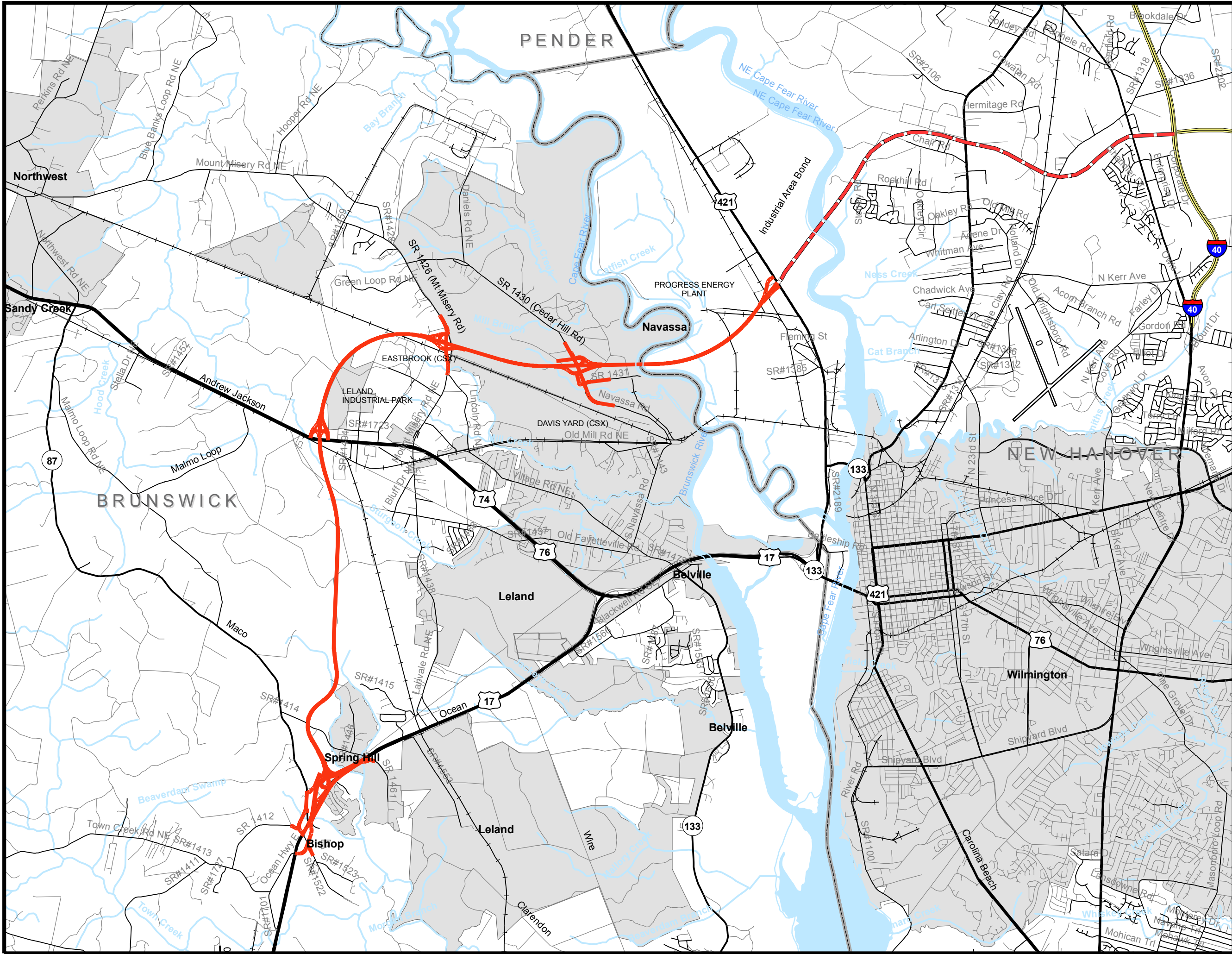
Figure 3
Final Alignment

Legend

-  R-2633 A/B Final Alignment
-  R-2633 C
-  Interstate Highways
-  US Highways
-  State Highways
-  State Routes
-  Local Roads
-  Railroads
-  Municipal Boundaries
-  County Boundaries
-  Water
-  Streams (Non-delineated)

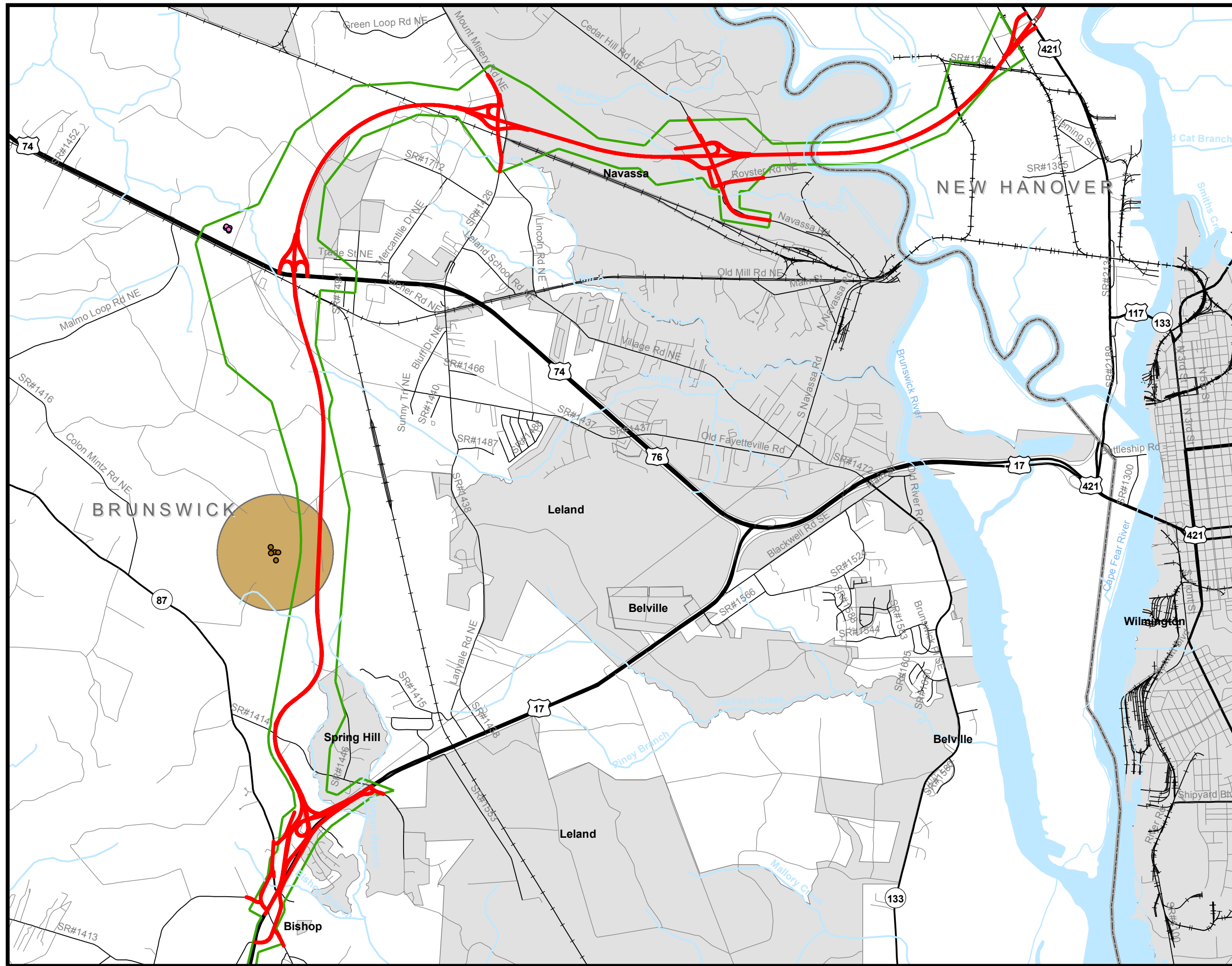


July 2007
 This map is for reference only.
 Sources: ESRI, CGIA, Brunswick County,
 New Hanover County, USDOT, NCDOT, URS.

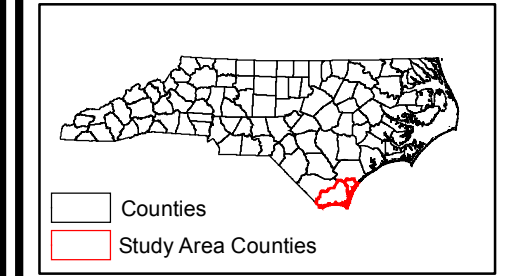
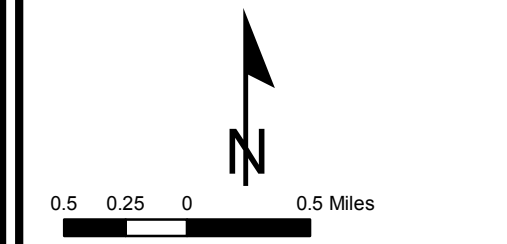


TIP R-2633 A/B
Wilmington Bypass

Figure 4
Active Red-Cockaded
Woodpecker Cluster and
Rough-leaved loosestrife
Locations



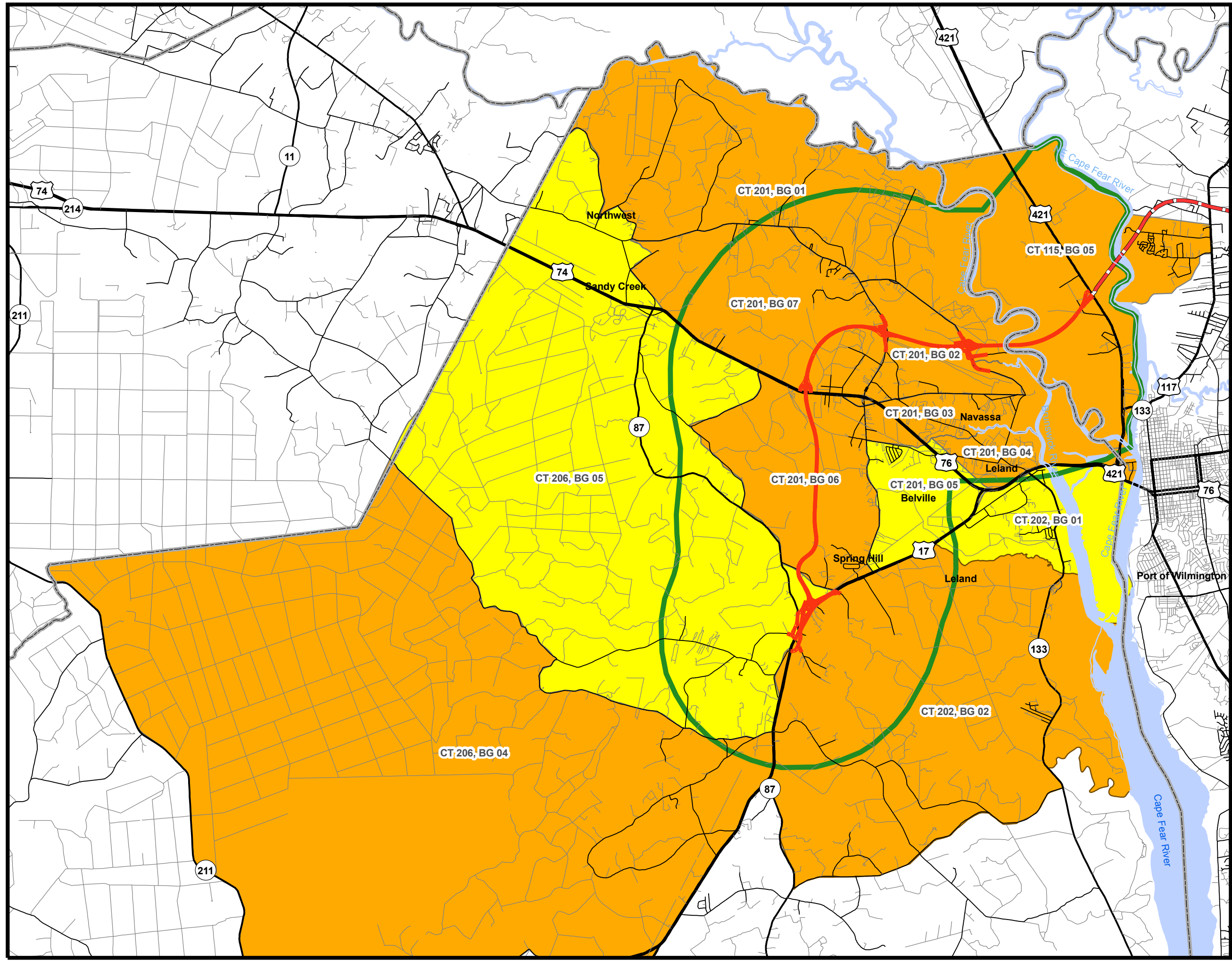
- Legend**
- Expanded Study Area
 - R-2633 A/B Recommended Alignment
 - R-2633 C
 - Interstate Highways
 - US Highways
 - State Highways
 - State Routes
 - Local Roads
 - Railroads
 - Municipal Boundaries
 - County Boundaries
 - Water
 - Streams (non-delineated)
 - Rough-leaved loosestrife Locations
 - Foraging Area (Half Mile Radius)
 - RCW Cavity Tree Locations



July 2007
This map is for reference only.
Sources: ESRI, CGIA, USDOT, Brunswick County,
New Hanover County, NCDOT, NCDENR, URS.

TIP R-2633A/B
Wilmington Bypass

Figure 5
Recommended Alignment and
Low-Income Populations



Legend

- EJ Study Area
- Recommended Alignment
- R-2633C
- Interstate
- US Highway
- State Route
- Local Roads
- Railroad
- County
- Water

**Percent Below Poverty
by Census Block Groups**

- 0% to 12.7% (below threshold)*
- 12.8% to 49.9% (above threshold)*
- 50% to 74.9%
- 75% to 100%

* The threshold was determined to be 12.8% based on the aggregate average of percent of residents below poverty in Brunswick County (12.6%) and New Hanover County (13.1%).

N

0 0.5 1 2
Miles

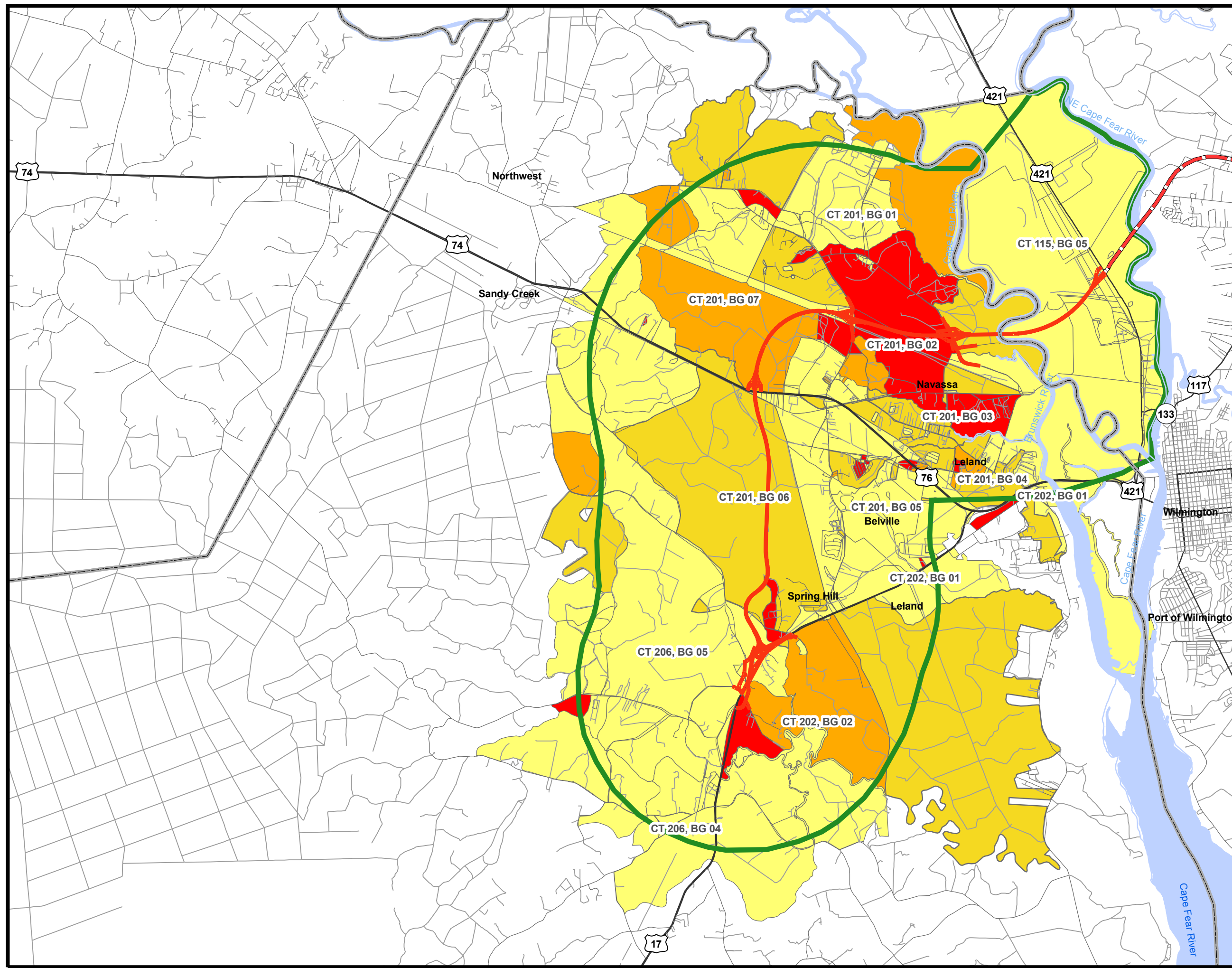
Counties
Study Area Counties



July 2007
This map is for reference only.
Sources: ESRI Inc., US Census, Brunswick County, New Hanover County, USDOT, NCDOT, CGIA, URS.

TIP R-2633A/B
Wilmington Bypass

Figure 6
Recommended Alignment and
Minority Populations



Legend

- EJ Study Area
- R-2633 A/B Recommended Alignment
- R-2633 C
- Interstate
- US Highway
- State Route
- Local Roads
- Railroad
- County
- Water

Percent Minority by Census Blocks

- 0% to 21.5% (below threshold)*
- 21.6% to 49.9% (above threshold)*
- 50% to 74.9%
- 75% to 100%

* The threshold was determined to be 21.6% based on the aggregate average of percent of minority population in Brunswick County (20.4%) and New Hanover County (22.1%).

North arrow pointing up.

Scale bar: 0, 1, 2 Miles.

Inset map of North Carolina showing counties. Study Area Counties (Brunswick and New Hanover) are highlighted in red.

- Counties
- Study Area Counties



APPENDIX

Comments on the FEIS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

Weaver/Rhea
RECEIVED
Division of Highways

June 25, 2007

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

JUN 29 2007

PDEA BRANCH

Project Development and Environmental Analysis Branch

JUN 29 2007

PDW HEU Staff Eng
 PDE NEU PRep
 PDC CMgmt Sec.
 PDB

FYI
 Take appropriate Action
 Prepare reply for

Subject: Wilmington Bypass (I-140), US 17 to US 421, Brunswick and New Hanover Counties
Final EIS; TIP R-2633 A/B
CEQ No.: 20070199; FHW-E40771-NC

Dear Dr. Thorpe:

The U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the subject document and is commenting in accordance with Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA). The North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) are proposing to construct a new location freeway from US 421 to US 17 (Wilmington Bypass) in New Hanover and Brunswick Counties. The 14.2-mile new freeway is proposed to address traffic capacity deficiencies, mobility in the region, and hurricane evacuation. This project was placed in the NEPA/Section 404 Merger process in November of 2000 as a 'pipeline' project and after Purpose and Need (Concurrence point 1), Detailed Study Alternatives (Concurrence point 2) and the Least Environmentally Damaging Practicable Alternative (LEDPA) had been decided.

EPA provided scoping comments on the proposed project on July 12, 1991. EPA provided formal review comments to FHWA and NCDOT on the December 1996 combined Federal Supplemental DEIS (For R-2633C) and DEIS (For R-2633A/B) on March 28, 1997. EPA provided follow-up comments to the U.S. Army Corps of Engineers (ACE) Public Notice in a letter dated July 13, 2005, concerning the potential preparation of a supplemental DEIS for this portion of the project as well as some of the other outstanding environmental issues.

EPA along with other Merger team agencies concurred on Alternative 9 as the LEDPA on November 17, 2005. There were a number of meetings held in this period to re-evaluate the optimum alignment for Alternative 9 to avoid and minimize impacts to both the human and natural environment. EPA (along with the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission) abstained from the concurrence of Concurrence Point 4A due to potential impacts to wetlands and streams

and the Battle Royal Bay ecosystem. (See Attachment "A"). A re-evaluation of the DEIS was performed by FHWA in February of 2007.

In EPA's comments on the 1996 DEIS, Alternative 9 (Preferred alternative and LEDPA) was given a rating of "EC-2", Environmental Concerns, more information requested. While some of EPA's concerns have been addressed since that time, there are several outstanding environmental concerns that EPA continues to have regarding the alignment ("Pink") selected within the Alternative 9 corridor. These environmental concerns are also detailed in the attachment to this letter (See Attachment "A")

In summary, EPA continues to have some remaining environmental concerns regarding impacts to stream and wetland systems and the Battle Royal Bay ecosystem, cumulative noise impacts to the Spring Hill community, and indirect and cumulative impacts to sensitive natural resources in the project study area. EPA plans to continue to work with the Merger Team to further address these issues through the hydraulic and permit review stages, including the detailed avoidance and minimization efforts for stormwater management and the use of Best Management Practices (BMPs). Should you have any questions about EPA's comments, please contact Mr. Christopher Militscher on my staff at (919) 856-4206 or by e-mail at: militscher.chris@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Heinz J. Mueller". The signature is written in a cursive style with a long horizontal stroke at the end.

Heinz J. Mueller
Chief, NEPA Program Office
Office of Policy and Management

Cc: K. Jolly, USACE Wilmington District
J. Sullivan, FHWA-NC
P. Benjamin, USFWS-Raleigh
J. Hennessy, NCDENR-DWQ

ATTACHMENT A
Wilmington Bypass, US 17 to US 421, New Hanover and Brunswick Counties
TIP# R-2633A/B

Specific Comments on FEIS

Project Description and Purpose and Need

The proposed project is a continuation of the other sections of the Wilmington Bypass that currently terminates at US 421. The FEIS describes the proposed action as an urban loop around Wilmington, North Carolina (Page S-2). EPA does not fully agree with this characterization as nearly all of the project study area is outside urban areas and is almost entirely in undeveloped, rural and suburban land use areas. This section of the Wilmington Bypass does circumvent the major urban area around the City of Wilmington and the towns of Leland and Navassa.

Project Alternatives and the Least Environmentally Damaging Preferred Alternative (LEDPA) or Preferred Alternative

EPA does not have any significant environmental concerns regarding the alternatives carried forward for detail study in the DEIS/FEIS or the selection of the LEDPA. After the re-evaluation conducted by NCDOT and FHWA during the Merger process, EPA concurred with other agencies on the selection of Alternative 9 as the LEDPA.

Stream and Wetland Impacts

There needs to be some clarification in the FEIS concerning the proposed number of stream crossings (Page 4-48). The FEIS also states that there will likely be more culvert crossings than are stated in the document (i.e., Pipes smaller than 72 inches). The data presented in Table 4-13 should be revised to match the narrative discussion on Page 4-48 of the FEIS. Stream systems that show 0 linear feet of impact should be either removed from the table or presented in a separate table to eliminate some of the confusion. Moreover, the impacts from the culvert extensions and the three new culverts (i.e., Table 4-12, Preliminary Hydrologic Crossings) do not appear to be accurately reflected in Table 4-13. On Page 4-47 of the FEIS, it is stated that the preliminary sizing of all culvert crossings was designed for inlet control under a 50-year storm. EPA believes that current FEMA and NCDOT hydrologic design requirements include passage of a 100-year storm. Thus, the structures proposed in Table 4-12 may be undersized for the stream systems listed (e.g., Morgan Branch and Alligator Branch).

EPA notes on Page 4-49 that temporary work bridges will be required to construct bridges over 'some' streams. On Page 4-74 of the FEIS, there is a discussion about the possibility of using temporary haul roads. EPA recommends the use of temporary work bridges for all wetland and stream crossings including those described in Table 4-17.

EPA continues to have environmental concerns regarding the direct impacts to wetlands and streams and that NCDOT and FHWA should pursue additional avoidance and minimization measures for the "Pink" alignment during hydraulic and final design phases.

Stream and Wetland Mitigation

EPA notes that NCDOT believes that there are opportunities for on-site mitigation (Page 4-56 of the FEIS). EPA requests that these on-site opportunities be identified as soon as possible and that EPA be notified of the proposed plans. NCDOT has also indicated that mitigation for all remaining jurisdictional stream and wetland impacts will be through the Ecosystem Enhancement Program (EEP). EPA is also generally familiar with some of the former NCDOT mitigation sites that were transferred to the EEP (e.g., Dale Tract, Rowell Branch, Eagle Brunswick and McIntyre) and that these sites were utilized either in whole or in part for the other section of the Wilmington Bypass (R-2633C). It appears that there may be mitigation credits remaining at the Dale Tract and the McIntyre sites. There is no mention of these sites in the FEIS. EPA is concerned that more detailed information regarding the overall mitigation plans for jurisdictional impacts is not included in the FEIS. Considering the length of time this project was in the NEPA/Section 404 planning and permitting process, it would appear, that the development of a draft mitigation plan could have been provided in the FEIS. Please contact Ms. Kathy Matthews, EPA Wetlands Program, for any on-site mitigation field reviews or submittals of draft mitigation proposals.

Direct and Indirect Impacts to Battle Royal Bay Ecosystem and Other Natural Heritage Program Identified Priority Areas (IPAs)

The FEIS includes detailed information regarding North Carolina Natural Heritage Program (NHP) IPAs or Significant Natural Heritage Areas (SNHAs). Page 3-86 of the FEIS describes several of the SNHAs, including the "421 Sand Ridge", the Alligator Branch Sandhill and Flatwoods, the Brunswick and Cape Fear River Marshes and Battle Royal Bay. According to Table S-1 and Table 4-14, direct impacts to the "421 Sand Ridge" IPA include a total of 18 acres of which 7 acres is in the primary area and 11 acres is in the secondary area. Table 4-14 includes new information that 19 acres of the Battle Royal Bay are within the new proposed right of way, but that 0 acres will be directly impacted. This appears to be different information than what has been provided to Merger team agencies in the past and that there would also be direct impacts to Battle Royal Bay, including the 'primary' IPA. The Environmental Impact Summary table dated January 18, 2005, revised, shows various direct impacts to Battle Royal Bay IPA ranging from 11.7 acres to 1.4 acres (within the right of way). From the September 12, 2005, Merger meeting handout, the maps included in the package show a direct impact to Battle Royal Bay IPA from all of the alignments – not just within the right of way limits but from the centerline of the roadway to the slope stakes as well.

This a very important issue to clarify since a substantial reason for EPA's

EPA notes that nearly the entire proposed project impacts to wetlands are to forested wetland systems (i.e., Palustrine forested – PFO) with 78.1 acres out of a total impact of 78.8 acres. EPA is concerned that these important wetland systems can be rated lower than other types of coastal wetland systems. These wetland systems vital functions in the landscape, including floodwater storage and groundwater recharge, habitat for wildlife, etc. From the wetland rating sheets contained in EPA's file, some of these wetlands appear to have been rated consistently lower than other types of wetlands. EPA recommends that NCDOT and FHWA consider re-checking the wetland ratings for the impacted systems to confirm their relative value.

EPA made a comparison of the project impacts to BASELINE wetland impacts per mile of highway improvement for Eastern NC new location projects and found that the proposed project has approximately 5.5 acres of impact per mile. The BASELINE for other new location Eastern NC projects is 2.58 acres per mile. The proposed project impact to wetlands is more than double the BASELINE. For additional comparison purposes, EPA found that residential relocations were 1.1 residential relocation per mile compared to 3.1 residential relocations per mile for Eastern NC new location projects. Stream impacts were approximately 70.6 linear feet of impact per mile compared to a BASELINE of 473.0 linear feet. Please note the aforementioned comment regarding the accuracy of stream impacts. While EPA recognizes NCDOT and FHWA's efforts to avoid and minimize impacts to residences and streams in the project study area, greater emphasis should be placed on minimizing impacts to jurisdictional wetlands.

It is also important to emphasize the new guidelines concerning jurisdictional determinations to waters of the U.S.; and that NCDOT and FHWA should confirm the jurisdictional determinations that were made for the impacted streams and wetlands. Ms. Kathy Matthews of EPA has previously forwarded the new jurisdictional form and instruction manual to NCDOT. Depending upon the time of permitting, NCDOT may be required to adhere to the new guidance and requirements by the ACE.

Additional Avoidance and Minimization Measures for Streams and Wetlands

As previously noted, EPA (along with the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission) abstained from the re-concurrence of Concurrence Point 4A due to potential impacts to wetlands and streams and the Battle Royal Bay ecosystem. While the net increase in wetland impacts was only approximately 3 acres between the "Pink" and "Green" alignments within the Alternative 9 corridor, the original agreed to "Red" alignment had substantially less impacts to wetlands and streams. EPA abstained primarily due to the lack of initiative to propose additional avoidance and minimization measures for the "Pink" alignment, including potentially steepening of side slopes, use of retaining walls for high quality wetlands and stream system crossings, reduction in the median width at wetland and stream crossings, etc. While bridging some of the smaller, headwater systems along the "Pink" alignment would not have been shown to be cost-effective, there was opportunity to propose other avoidance and minimization measures as cited above that would have provided a better balance to the project's overall impacts to the human and natural environment.

abstaining from CP 4A, avoidance and minimization, was the increased potential direct and indirect impacts to the Battle Royal Bay IPA. EPA appreciates the environmental commitment (#2 Green sheet), regarding the fill slopes within the US 421 Sand Ridge SNHA to minimize direct impacts to populations of Pickering's sunflower (listed Federal Species of Concern).

EPA recognizes that there is also substantial development pressure within the project study area. Nonetheless, the greatest single potential impact to these SNHAs will be access from new infrastructure, including new roadways. One of the primary reasons for the "Pilot Comprehensive Transportation Planning" effort for Brunswick County was the recognition by NCDOT, FHWA and the other ILT members on the uniqueness and importance of these natural resources in this area of North Carolina. This includes upland SNHAs, not strictly 'jurisdictional' areas. There are numerous state and Federally-listed plant and animal species within the project study area and this project will cause massive habitat fragmentation (EPA notes Figure 4-4, et al., Location of Wildlife Crossings). However, the FEIS fails to address the requirements of Executive Order 13112, Invasive Species.

It appears that one of greatest threats to endangered and threatened plant species for this project will come not from direct impacts, but indirect impacts including the introduction of aggressive significant threat invasive exotic plant species. The pristine ecosystems of the SNHAs, including Battle Royal Bay, which have survived relatively unchanged for more than 200 years will be severely and permanently impacted from invasive exotic plants species within years after construction of the new roadway is completed. In turn, wildlife habitat will become degraded and threatened and endangered animal species will also be impacted over time (Please see the FHWA website at <http://invasivespeciesinfo.gov/docs/plants/roadsides/htm>).

EPA, along with FWS and WRC, proposed some conservation area measures for the "Pink" alignment in a memorandum dated February 22, 2005. NCDOT nor FHWA responded to this proposal and the FEIS does not address the issues raised in this memorandum concerning aggressive invasive plant species along this 14.2-mile new location freeway. Foremost of EPA's concerns is the fact that the new highway right of way will become a major avenue for invasive exotic species to impact the Battle Royal Bay ecosystem and other SNHAs. FHWA regulations allow for the mitigation of all significant project impacts, not just for jurisdictional impacts to streams and wetlands. We recommend that NCDOT consider strict Best Management Practices (BMPs) in its Record of Decision (ROD), including the restriction of clearing grubbing, replanting with native plants, pro-active soil stabilization with locally native plant species, and the early identification and eradication of invasive exotic species (including all of the N.C. Native Plant Society's Significant Threat Species; <http://www.ncwildflower.org/invasives.htm>). EPA has also identified a significant threat from Japanese knotweed invasions in eastern North Carolina resulting from the placement of fill dirt and stone and requests that NCDOT and FHWA require construction contractors to 'pre-screen' sources of fill dirt and stone to minimize the accidental spread of this significant threat species. In addition, EPA requests that NCDOT and FHWA work directly with the NHP and local

planning officials to assist them in protecting and preserving these SNHAs in the spirit of environmental stewardship.

Noise Abatement

The FEIS addresses a potential noise wall at the southwest quadrant of the interchange at SR 1430 (Cedar Hill Road) where there are approximately 16 impacted noise receptors. EPA recommends that NCDOT and FHWA consider additional noise abatement measures for the US 17 interchange as this location actually has the largest number of impacted noise receptors on the project (Table 4-6; 21 receptors impacted based on approach or exceeding Noise Abatement Criteria). While these 21 noise receptors near the Spring Hill Community are not expected to be impacted by a substantial noise level increase, there will be future foreseeable projects (e.g., U-4738) in the area that may cause these noise levels to be further increased.

Mobile Source Air Toxics (MSATs)

EPA acknowledges that the FEIS addresses MSATs in the form of FHWA's Interim Guidance (Pages 4-28 to 4-31). EPA has previously provided NCDOT and FHWA with detailed comments on other projects concerning this type of qualitative assessment that is being inserted into various NEPA documents. Again, EPA can not concur on this assessment due to the reliance on future EPA vehicle and fuel emission control regulations and FHWA's lack of acceptance of EPA tools in performing air modeling for MSATs. While the specific quantitative analysis is lacking in the FEIS, there is a potential for increased MSAT emissions in the location of the Spring Hill Community as vehicle traffic will be concentrated there as opposed to current conditions. There is no real time monitoring data provided in the FEIS that can substantiate if there is or there is not an existing MSAT problem. Based upon the lack of actual quantifiable data on MSATs near the Spring Hill Community, it is impossible to ascertain if there is not an existing problem or what effect this new road and interchange will have on near roadway receptors. There are FHWA plans to connect the Cape Fear Skyway project (U-4738) interchange at the US 17 interchange for the Wilmington Bypass. This additional interchange across from the existing US 17 highway could have a cumulative adverse effect on the residents of the Spring Hill Community. However, without actual background data, it is not possible to predict what the health effects of MSATs will be on any specific community within the project study area.

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 07-E-4220-0354 F02
DATE RECEIVED: 05/16/2007
AGENCY RESPONSE: 06/11/2007
REVIEW CLOSED: 06/16/2007

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

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DEPT OF AGRICULTURE
DEPT OF CUL RESOURCES
DEPT OF TRANSPORTATION

PROJECT INFORMATION

APPLICANT: N.C. Dept. of Transportation

TYPE: National Environmental Policy Act

ERD: Final Environmental Impact Statement

DESC: Proposed Construction of the Wilmington Bypass, from US 17 to US 421; TIP No.
R-2633 A/B.

Brunswick, New Hanover

CROSS-REFERENCE NUMBER: 91-E-4220-0591 97-E-4220-0462

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
J. Kay MPM

DATE:

6/5/2007

RECEIVED
MAY 17 2007

INTERGOVERNMENTAL REVIEW OFFICE

Ref CH 91-0591
Commitments
A - acknowledged -
No response at
this time. BJS
S - Same as above
5-230
SDM
6/8 5/31k



RECEIVED
Division of Highways

JUN 21 2007

Preconstruction
Project Development and
Environmental Analysis Branch

North Carolina Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

June 18, 2007

Mr. Gregory Thorpe
N.C. Dept. of Transportation
Program Dev. & Env'l Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Thorpe:

Re: SCH File # 07-E-4220-0354; FEIS; Proposed Construction of the Wilmington Bypass, from US 17 to US 421; TIP No. R-2633 A/B.

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,

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region O

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
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

DATE: June 14, 2007

SUBJECT: Proposed Wilmington Bypass, US 17 to US 421, Brunswick and New Hanover Counties, R-2633A/B, Final Environmental Impact Statement, April 2007
Project No. 07-0354

The N.C. Division of Coastal Management (DCM) appreciates the opportunity to comment on the final Environmental Impact Statement (FEIS) for the above referenced project. Although DCM received a copy of the FEIS from the NC Department of Transportation (NCDOT), a copy of the document circulated by the State Clearinghouse could not be located in DCM offices. Due to time constraints, DCM was unable to conduct a thorough review of the FEIS by the State Clearinghouse review and comment deadline. However, based upon a cursory review, it appears as though the information contained within the FEIS is consistent with the information that has been provided to DCM, and upon which we have commented, through the NEPA/404 Merger Process.

A formal DCM review of the project to determine consistency with the state's Coastal Management Program will not occur until a Coastal Area Management Act (CAMA) major permit application is received. At that time, the CAMA major permit application will be circulated to the network of state agencies that comprise North Carolina's Coastal Management Program. The statutes, rules and policies of each of these agencies must be satisfied in order for the project to be determined to be consistent with the state's Coastal Management Program and for a CAMA permit to be issued. The consideration and incorporation by the NCDOT of the comments contained within this letter and within future correspondence into the final project design should help to expedite the CAMA major permit application review process. However, due to the complexity of the project and the extent of environmental impacts that are proposed, NCDOT is urged to submit the CAMA major permit application for this project to DCM a minimum of one year prior to the anticipated construction let date.

During the CAMA major permit application review process, DCM may have additional comments on the project's environmental impacts, and may place conditions on any CAMA permit (if issued) to minimize environmental impacts. The information provided in this letter shall not preclude DCM from requesting additional information throughout the CAMA major permit application review process, and following normal permitting procedures.

1638 Mail Service Center, Raleigh, North Carolina 27699-1638
Phone: 919-733-2293 \ FAX: 919-733-1495 \ Internet: <http://dom2.enr.state.nc.us>

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Please note that the proposed bridge crossing at the Cape Fear River will fall in two designated Coastal Area Management Act (CAMA) Areas of Environmental Concern: Public Trust Area; and Public Trust Shoreline. Please also note that the proposed crossing at the Cape Fear River is within waters classified as "joint waters", by agreement between the Marine Fisheries Commission and Wildlife Resource Commission.

Please contact me at (919) 733-2293 x 230 or via e-mail at steve.sollod@ncmail.net if you have any questions or concerns, or require additional information. Thank you for your consideration of the North Carolina Coastal Management Program.



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 *McGee*
Project Review Coordinator

RE: 07-0354 FEIS for the Wilmington Bypass, Brunswick and New
Hanover Counties

DATE: June 13, 2007

The Department of Environment and Natural Resources has reviewed the proposed project.

Several areas need further clarification as noted in the attached comments from the Division of Water Quality. Addressing these comments during project planning and/or during the NEPA Merger Process will avoid delays at the permit phase.

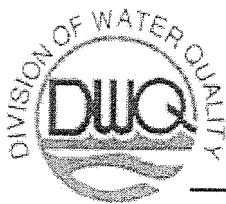
Thank you for the opportunity to comment on this project.

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/

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One
North Carolina
Naturally



June 11, 2007

MEMORANDUM

To: Melba McGee

Through: John Hennessy, Supervisor, DWQ Transportation Permitting Unit

From: David Wainwright, DWQ Transportation Permitting Unit

Subject: Comments on the Final Environmental Impact Statement related to the proposed Wilmington Bypass, New Hanover and Brunswick Counties, Federal Aid Project No. STPNHF-17(1), State Project No. 34491.1.2, TIP R-2633A/B.

This office has reviewed the referenced document dated April 2007. The Division of Water Quality (DWQ) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. It is our understanding that the project as presented will result in impacts to jurisdictional wetlands, streams, and other surface waters. The DWQ offers the following comments based on review of the aforementioned document:

Project Specific Comments:

1. This project is being planned as part of the 404/NEPA Merger Process. As a participating team member, the NCDWQ will continue to work with the team.
2. According to Section 1.5.2, TIP R-2633C was completed in July 2006. However, at the beginning of the document the Summary states that the project will be completed in June 2006. The text should be updated to reflect project completion.
3. There is a fairly extensive discussion in the document with respect to terrestrial and underwater archeological sites. However, there is no map showing these sites. This is important, especially since Site 31NH39** is located within the expanded corridor.
4. Section 3.1.5.1, Historic Architectural Resources, mentions three properties that were to be evaluated at an intensive level - the Wrightsboro School (#16), Reeves A.M.E. Zion Church (#39), and the Goodman Property (#57). There is discussion of the Reeves A.M.E. Zion Church and the Goodman Property. However, no further mention is made of the Wrightsboro School, nor is shown on Figure 3-4. Since it has been identified, and has been evaluated at an intensive level, further discussion is warranted.
5. Figure 3-16 shows the active Red-Cockaded Woodpecker cluster located within the study area. It is unclear what the multi-colored circles within the foraging area are. They are assumed to be cavity trees; however, they are indicated as a brown circle on the map legend.

6. Section 4.1.1.2, Relocations, discusses relocations with respect to census tracts and blocks. However, on Figure 4-1 none of the block groups are labeled which makes it difficult to follow the text. Additionally, using block groups on the map seems rather broad. If possible, the information should be presented at the block level, as was done in Figure 4-2.

The same comment applies to Figure 4-2. The text discusses minority populations at the block level, but none of the blocks shown in Figure 4-2 are labeled.

7. Table 4-10, Summary of Expected Degree of Impact, presents a summary of potential contaminated sites within the preferred corridor. The table includes the potential severity of each site. It is unclear how severity of the impact (i.e. low, moderate, moderate-high, etc.) was determined.
8. Section 4.2.6.1 discusses water resources within the study area. While there are many stressors listed for waters in the study area (i.e. chlorophyll, low dissolved oxygen, pH, etc.), it may be worth stating that there are currently no 303(d) waters in the study area.

General Comments:

9. 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.
10. 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.
11. 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.
12. 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.

13. Future documentation, including the 401 Water Quality Certification Application, should continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.
14. DWQ is very concerned with sediment and erosion impacts that could result from this project. The 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.
15. An analysis of cumulative and secondary impacts anticipated as a result of this project is required. The type and detail of analysis should conform to the NC Division of Water Quality Policy on the assessment of secondary and cumulative impacts dated April 10, 2004.
16. The NC DOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.
17. Where streams must be crossed, the DWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, DOT should not install the bridge bents in the creek, to the maximum extent practicable.
18. Sediment and erosion control measures should not be placed in wetlands or streams.
19. Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas will need to be presented in the 401 Water Quality Certification and could precipitate compensatory mitigation.
20. The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater should not be permitted to discharge directly into streams or surface waters.
21. Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an Individual Permit (IP) application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from the NCDWQ. Please be aware that any approval will be contingent on appropriate avoidance and minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.
22. Bridge supports (bents) should not be placed in the stream when possible.

23. 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.
24. 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.
25. 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.
26. Placement of culverts and other structures in waters, streams, and wetlands shall be placed 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.
27. If multiple pipes or barrels are required, they should be designed to mimic 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.
28. If foundation test borings are necessary, it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3494/Nationwide Permit No. 6 for Survey Activities.
29. 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.
30. All work in or adjacent to stream waters should be conducted in a dry work area. 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.

31. 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.
32. 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.
33. 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.
34. Riparian vegetation (native trees and shrubs) should be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

The NCDWQ appreciates the opportunity to provide comments on your project. Should you have any questions or require any additional information, please contact David Wainwright at (919) 715-3415.

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




 North Carolina Wildlife Resources Commission 

Richard B. Hamilton, Executive Director

MEMORANDUM

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

FROM: Travis Wilson, Highway Project Coordinator 
Habitat Conservation Program

DATE: June 11, 2007

SUBJECT: North Carolina Department of Transportation (NCDOT) Final Environmental Impact Statement (FEIS) for the Wilmington Bypass, Brunswick and New Hanover Counties North-Carolina. TIP No. R-2633 A/B, SCH Project No. 07-0354.

Staff biologists with the N. C. Wildlife Resources Commission have reviewed the subject FEIS and are familiar with habitat values in the project area. The purpose of this review was to assess project impacts to fish and wildlife resources. 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).

NCDOT proposes to construct the Wilmington Bypass as a fully controlled access freeway on new location from the US 17/NC 87 intersection in Brunswick County to US 421 in New Hanover county. The preferred alternative for this project is 14.2 miles in length, impacting 1,003 linear feet of jurisdictional streams and 78.8 acres of jurisdictional wetlands.

We have reviewed the data provided in the FEIS. At this time we concur with the FEIS for this project. Thank you for the opportunity to comment. As a member of the Merger team we will continue our involvement in future coordination for this project. If we can be of any further assistance please call me at (919) 528-9886.

cc: David Wainwright, DWQ, Raleigh
Jennifer Frye, USACE, Washington
Steve Sollod, DCM, Raleigh

The following is a citizen comment received on July 13, 2007, which was sent to the North Carolina Turnpike Authority and forward to NCDOT by David Griffin on the same day.

To Whom It May Concern,

I am writing as a concerned resident of Planter's Walk Community in Snee Farm. Recently, the final environmental impact study of the proposed alignment for the Wilmington Bypass was released. I read all 398 pages of the study and I was appalled at what was written about the cohesiveness of our neighborhood, which it seems to me the less "cohesive" a neighborhood is, the easier it will be to tear it down. How could a neighborhood be cohesive when it is only a few months since it was built and not everyone had moved in yet? However, Spring Hill was stated to be "distinctive and uniquely cohesive". Of course, newer communities are not going to be as cohesive as those that have been around for years, but does that make it any better to destroy those neighborhoods. What about the potential for cohesiveness. A timeline of Public Involvement for the project was in the impact statement, there was not even one small meeting with anyone from the Snee Farm, Stoney Creek or Planter's Walk communities, which are predominantly middle class, Caucasian families. However, there were 4 of these small meetings with Spring Hill, which was stated to be a 'minority community'. I am not trying to make this a racial issue. It just seems that our communities were not fairly represented. There was not anything on the timeline past March of 2005, which our community wasn't even built. As a homeowner, who has moved to the Wilmington area to raise my family, I am disgusted by the impact statement, if you can call it that since it is a misrepresentation of the true impact it would have on our community. We have been deceived by NCDOT, NCTA, Brunswick County, Signature Homes, The developer, and all real estate agents involved in the selling of these homes. I am appalled that this is being taken so lightly and the homes and futures of so many residents are being overlooked. I am not against the Bypass and possible Cape Fear Skyway Bridge; however, I am against it destroying the wonderful neighborhood in which I live. I invite anyone to come to our neighborhood and see how just how wonderful it is.

Sincerely,
Erica Gifford

7/13/2007

PATMOOREDBFSS@aol.com wrote:

>

> Dear Sir

> I have been trying to get some answers about the new
> bypass road. I went to the Leland Middle School and couldn't
> get any answers. My property is in the line of the road and I
> can't get any straight answers. One
> Engineer told me that they only wanted a portion of my land.
> Right now I have 2.19 acres and he told me that they wanted the
> back acre for the new Mt Misery Rd overpass of CSX railroad. On
> the side toward Nature Trail Rd. He said they will take half of
> that side for the entrance and exit from the new bypass to the
> new portion of Mt. Misery Rd.. After that he said because I
> would be the only person left on the old part of the rd. that
> they would put a cul-de-sac in the front. This will surround my
> house with road including the railroad track. I think this is a
> little much for me to take on. It will isolate me from
> everybody and leave me with less than one third of an acre
> which my house is on. I don't mind if you take all my property
> or I don't mind if you don't take any of it. I just think it is
> a Grave Injustice to take part of it and isolate my family. I
> think it should all be taken and a barrier put up at the old
> railroad crossing of Mt Misery Rd. and have the old gates
> removed by CSX. At least I think I should be told the truth and
> not be giving the run around anymore. I have attached a file
> showing where I am located.

>

>

> Thanks for reading my E-mail

>

>

> Patrick J. Moore

>

> 2203 Mt. Misery Rd. NE

>

> Leland, NC 28451

>

>

> Ph # (910) 371-9399

>

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January 8, 2007

Via Certified Mail, Return Receipt Requested

TO: TIP Proj. No. R-2633 A/B (Wilmington Bypass) Merger Team Members and counsel
(See attached distribution list)

RE: TIP Project R-2633 A/B – Selection of Final Alignment

Ladies and Gentlemen:

This firm represents the Goodman family, which owns a substantial tract of land that is in the path of the Wilmington Bypass, Project R-2633 A/B. We say "in the path" of R-2633 A/B because it appears that despite a multi-year deliberative process stretching all the way back to 1996 and resulting in a consensus selection of the Red Alternative, which avoids the Goodman property, the DOT has selected the Pink Alternative, which cleaves the Goodman property in two.

On behalf of the Goodmans, we object to the selection of the Pink Alternative and request that the DOT reconsider its decision, which we believe is arbitrary and capricious and arrived at without the observance of the procedure required by law. We urge the DOT to adopt instead the Green Alternative, which: (1) was originally the consensus choice; (2) has substantially less wetlands impacts than the Pink Alternative and only slightly greater impacts than the Red Alternative (based on the September 12, 2005 updated Wetland Impact Summary); (3) upon information and belief was (as of November 17, 2005) preferred over the Pink Alternative by the United States Environmental Protection Agency and the Army Corps of Engineers; and (4) has minimal (and certainly not disproportionate) impacts on the Spring Hill community and was, in fact, described by members of that community as an acceptable alignment.

The purpose of this letter is not to describe in detail how the Goodmans believe the selection of the Pink Alternative was arbitrary, capricious, without observance of procedures required by law, and in violation of the Goodmans' civil rights. However, in fairness to the DOT and the other agencies involved in the decision, we would like to offer some background and analysis in support of the Goodmans' position.

The Goodmans' concerns with the selection of the Pink Alternative include the decision-making process that resulted in that selection and the data, particularly the field work with respect to environmental issues, that was utilized in making that decision. First, as noted earlier, the selection of the original Concurrence Point 4A alignment, the Red Alternative, was the result of a careful deliberative process that stretched over a number of years. The selection of the Red Alternative (and, for that matter, the Green Alternative) is well-supported by the records of the DOT and the other agencies. In contrast, the Pink Alternative is the result of a truncated

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decision-making process in which, it appears from the record, the decision was a foregone conclusion that was pushed through in order to keep the project on track, with insufficient regard for the environmental impact of the Pink Alternative or for the legality of the process that lead to its selection. As members of the Merger Team pointed out numerous times during merger meetings, the DOT regularly faces opposition from people whose property is in the path of or adjacent to a new highway. This "not in my backyard" phenomenon is so pervasive that it has spawned its own acronym: NIMBY. The concerns of those opposed to the Red Alternative should have been treated as a NIMBY issue. The Merger Team members acknowledged on many occasions that Spring Hill was a NIMBY issue, not an environmental justice issue, and the response to Spring Hill should have balanced the concerns of the Spring Hill community with the goals of protecting the environment and the interests of other local residents, including the Goodmans. In the end, however, there was no balancing – the chosen alignment totally bypasses Spring Hill while resulting in the largest wetlands impacts of the three (Red, Green and Pink) alternatives and virtually destroying the Goodman property.

Further, with respect to the process that lead to the rescission of the original Concurrence Point 4A selection, the *Environmental Justice Assessment* prepared by URS Corporation for the DOT (the "Assessment") is fundamentally flawed in its methods and analyses and arbitrarily and capriciously concludes that the Red Alignment should be disfavored solely because it results in impacts to the "cohesion" of the Spring Hill community, contrary to the concepts of environmental justice – which require a focus on assessment of disproportionate, adverse impacts on minority and low income populations. Exec. Order 12898 § 1-1. The Assessment is based on the erroneous assumption that because Spring Hill is a minority, low-income community, any impact on the community is adverse and disproportionate. Given this assumption and the Assessment's stated purpose – to evaluate the affects of the project "that were articulated during the small group meetings held with the citizens of the Spring Hill community...within the framework of environmental justice" (Assessment at p. ES-1) – the Assessment amounts to an arbitrary and capricious post-hoc rationalization for selecting an alternative alignment.

As an example of its fundamentally flawed approach, the Assessment focuses only on the various alignments within the pre-determined LEDPA corridor instead of properly assessing environmental justice issues at the LEDPA selection stage, Concurrence Point 3, as it properly should have pursuant, *inter alia*, to the Merger Team agreement at the April 21, 2005 meeting. Moreover, even if Concurrence Point 4A were the proper point of analysis, the Assessment is wholly misconceived, as its entire focus appears to be documenting adverse impacts to the "cohesion" of the Spring Hill community in order to justify, post-hoc, the selection of an alternative alignment, rather than to "indentif[y] and address[], as appropriate, disproportionately high and adverse human health or environmental effects" of the project on minority or low income populations, as required by Exec. Order 12898 § 1-1. It is interesting to note that as late as October 2005 the FHWA's representative on the Merger Team acknowledged at a Team Meeting that the Red Alternative did not have a disproportionate impact on Spring Hill.

As another illustration of its arbitrary and capricious nature, the Assessment states that relocation or displacement of residences and businesses will cause the most adverse impacts, but does not actually determine the number of minority or low income residences or businesses that will be impacted by each of the alternative alignments. Instead, the Assessment quantifies the

potential impacts of the Red Alignment on residences and businesses located in Spring Hill, (including minority and low-income) and disregards protected populations located outside the Spring Hill community. (Assessment at p. 25) The Assessment does not quantify or address the potential impact of other alignments on minority and low-income populations at all, and a determination as to the relative proportionality of impacts to protected populations of any alignment is impossible without such information. Similarly, the assessments of multiple other categories of impacts (positive and negative) on minority or low-income populations both within and outside the Spring Hill community are neither identified, quantified nor assessed to determine the relative proportionality of the impacts or to compare the impacts among alignments, as is required by NCHRP Report 532. The Assessment clearly does not meet the mandate of Exec. Order 12898 § 1-1 to "indentif[y] and address[], as appropriate, disproportionately high and adverse human health or environmental effects" of the project on minority or low income populations.

In addition to their concerns over the process that lead to the selection of the Pink Alignment, the Goodmans believe that the field work underlying that selection is flawed. The Goodmans retained Spangler Environmental to do its own field reconnaissance on the Goodman property for the purpose of confirming the presence of jurisdictional wetlands and streams, and to evaluate the delineation work performed by the DOT and/or its contractors. The field work and flagging done by Spangler Environmental, supported by GPS with sub-meter accuracy, show several discrepancies and inaccuracies. The DOT's current delineations do not coincide with the reported delineations shown on the map of the Pink Alternative provided to the Merger Team along with the "Updated September 12, 2005" table showing the Wetland Impact Summary of all alternatives. In addition, Spangler Environmental's field work has established the presence on the Goodman property, inside the study corridor, of wetlands that were not flagged, and therefore presumptively not identified, by the DOT's contractors. Furthermore, the center line actually flagged on the Goodman property, which Spangler Environmental confirmed with GPS, is not consistent with the center line for the Pink Alternative depicted on the Merger Teams maps.

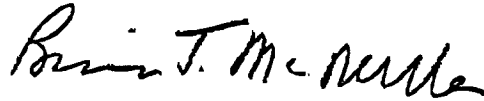
One last point with respect to the potential environmental impact of the Red Alternative: first, as Merger Team members may not be aware, substantial development activity involving land adjacent to and in Spring Hill is underway or in the planning process. The fact is that there is a great likelihood that Spring Hill will be swallowed up by developers as the value of land in that area continues to explode. The irony is that the choice of the Pink Alternative, which cuts the Goodman property in half, is likely to hasten the development of the largest parcel of land in that area that is not already in the hands of someone bent on paving it over -- the Goodman property.

The Goodmans have spent substantial time and resources analyzing this situation and evaluating their legal options. Attacking the selection of the Pink Alternative, once that selection is finalized by the issuance of a ROD, is a step they are prepared to take. However, it is our objective at this point to initiate a discussion with the DOT and the other agencies involved in an effort to achieve a mutually satisfactory result. From the Goodmans' perspective, that result might include concessions with respect to the development of the Goodman property and the protection of environmentally-sensitive areas that would benefit the citizens of North Carolina as much as the *quid pro quo* would benefit the Goodmans.

Merger Team
January 8, 2007
Page 4 of 6

We are available to discuss this matter at a mutually convenient time. Thank you.

Sincerely,



Brian J. McMillan

BJM/kab

cc: Dr. Joseph Goodman
James T. Williams, Jr.
Alex Elkan
Jim Spangler

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January 8, 2007
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September 18, 2007

Via e-mail and U.S. mail

Greg Thorpe, PhD

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gthorpe@dot.state.nc.us

RE: TIP Project R-2633 A/B – Alignment Selection and Final Environmental Impact Statement

Dear Mr. Thorpe:

This firm represents the Goodman family, which owns a tract of land that is in the path of the Wilmington Bypass, Project R-2633 A/B. We write regarding the April 2007 Final Environmental Impact Statement (“FEIS”) for Project R-2633A/B and with reference to our letter of January 8, 2007, in which we objected on behalf of the Goodmans to the improper selection of the Pink Alternative (now termed the “Recommended Alignment” in the FEIS). We do not reiterate the Goodmans’ previously-stated objections in this letter, but do incorporate those objections by reference. As discussed in our prior correspondence, we believe the process which led to the selection of the Recommended Alignment was improper and unlawful, and the selection itself is arbitrary and capricious. The FEIS confirms our beliefs and the bases thereof, and brings to light additional concerns.

One concern is the apparent failure of the FEIS to properly respond to comments pursuant to 40 CFR §§ 1502.9(b) and 1503.4, including comments made by the Goodman family which require, at a minimum, some level of response, including modification or, at the least, further explanation of, the selection of the Recommended Alignment.

A second example is the failure to prepare supplements to the DEIS or the FEIS pursuant to 40 CFR § 1502.9(c) to address, *inter alia*, the issues and information surrounding the evaluation of the various alternative alignments and the environmental justice issues used as a justification for selecting the Recommended Alignment.

A third example is the failure of the FEIS and DEIS to rigorously explore and objectively evaluate all alternative alignments as required by 40 CFR § 1502.14 and 42 U.S.C. § 4332. Neither the DEIS nor the FEIS fully set forth, let alone objectively evaluate, the various alternative alignments.

Greg Thorpe, PhD
September 18, 2007
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Furthermore, the use of the "community cohesion" "analysis" in the FEIS and references to the environmental justice assessment continue the use of semantics to obfuscate the subjective and improper procedure used to back into the selection of the Recommended Alignment. An example of the "reasoning" behind the decision can be found in the Draft Reevaluation of the DEIS, which reads in part:

[W]hile potential disproportionate negative impacts to protected populations were identified since the preparation of the DEIS, the conclusion of the DEIS that protected populations would not be disproportionately impacted by the project is still valid for the revised alignment.

Draft Reevaluation of DEIS at p. 17.

In other words, the analysis conducted in connection with the preparation of the DEIS -- an analysis that was undertaken before any alleged disproportionate impacts to protected populations were identified -- need not be undertaken anew because the "new" conclusion of the FEIS -- that the Revised Alignment eliminates the alleged disproportionate negative impact -- is supported by the DEIS analysis...which failed to identify or consider any disproportionate impacts.

The de-selection of the previously-selected Red Alignment and the selection of the Recommended Alignment cannot be justified except as a NIMBY issue, a knee-jerk reaction to the opposition some residents of the area, and *post-hoc* justifications based on "environmental justice" and "community cohesion" "analyses".

These are a few examples of deficiencies in the DIES, FEIS and the processes leading to and selection of the Recommended Alternative, in addition to those set forth in our previous correspondence. The fact that no action has been taken to address these concerns and correct these improprieties, including the undertaking of a rigorous and objective evaluation of the various alignments, is a great disappointment to the Goodmans.

We look forward to further communications with the DOT to attempt to resolve these matters without initiating litigation. We are available to discuss this matter at a mutually convenient time. Thank you.

Sincerely,



Brian J. McMillan

BJM/kab

cc: Lisa Glover, Esq.
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