Proposed US 701 and NC 87 Bypass Interchange
Bladen County
Federal-Aid Project NHF-87(15)
WBS Element 40226.1.1
TIP Project R-4903

ADMINISTRATIVE ACTION

CATEGORICAL EXCLUSION

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

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

APPROVED:

7/21/10
Date

FOR Gregory J. Thorpe, Ph.D., Manager,
Project Development and Environmental Analysis Branch

7/29/10
Date

for John F. Sullivan, III
Division Administrator, Federal Highway Administration (FHWA)

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Roadway Design Unit

Four-foot wide paved shoulders will be provided along US 701 within the project study area to accommodate bicycles.

Project Development and Environmental Analysis

NCDOT will investigate reducing impacts to wetlands WF and WO, and streams SA 6, SA 7, SA 10, SA 13 and SA 14 during final design.

NCDOT Best Management Practices for the Management of Invasive Plant Species will be followed for this project.

Hydraulics Unit

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT'S Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

Division 6

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

I. DESCRIPTION OF PROPOSED ACTION

A. Project Purpose

The purpose of the proposed project is to improve the safety and capacity of the NC 87 Bypass/US 701 intersection.

The proposed project is intended to address the following needs:

- A number of angle and left-turn accidents have occurred at this location. Several of these accidents have resulted in serious injuries or fatalities. Approximately 35% of these accidents occurred when a driver on NC 87 failed to stop at the traffic signal (see Section II-F).
- By the year 2030, the existing signalized intersection will operate at capacity (level of service E) (see Section II-E-2).

B. General Description

The subject project involves construction of an interchange at the intersection of US 701 and NC 87 Bypass in Bladen County.

The project is included in the approved 2009-2015 North Carolina Transportation Improvement Program (STIP). Right of way acquisition is scheduled for 2013. Construction is scheduled for federal fiscal year 2014 in the draft NCDOT Five-Year Work Program.

C. Cost Estimates

The cost estimate included in the 2009-2015 STIP for the project is $9,976,000. Of this total, $500,000 is estimated for right of way acquisition, $9,400,000 for construction and $76,000 for mitigation. Current cost estimates are as follows:

Table 1
Alternatives Cost Estimates

	Alternative 4
Construction Cost	$15,600,000
Right of Way Cost	$1,043,000
Wetland/Stream Mitigation	$1,216,000
Total Cost	$17,859,000

II. NEED FOR PROJECT

A. Description of Existing Facility

1. Functional Classification

Both NC 87 Bypass and US 701 in the project area are classified as minor arterials in the North Carolina Statewide Functional Classification System.

2. Roadway

Within the project area, NC 87 Bypass is a four-lane facility. Travel lanes are approximately 12 feet wide with a 56-foot median. US 701 has two 12-foot lanes. The posted speed limit on NC 87 is 55 mph and on US 701 is 45 mph within the study area.

3. Structures

There is one existing bridge in the project area. Bridge Number 3 (see Figure 1) is approximately 2,000 feet north of NC 87 and carries US 701 over Browns Creek. Bridge Number 3 is 46.9 feet long and has a clear roadway width of 25.8 feet. This bridge has a sufficiency rating of 48.9 out of a possible 100 points.

4. Right of Way and Access Control

Right of way varies throughout the project limits for both NC 87 Bypass and US 701. Control of access and right of way for an interchange was bought at US 701 when NC 87 Bypass was built.

5. Intersections

The project intersection is signalized, with protected-permitted left-turn phases for each leg. Other intersections within the project area are controlled by stop signs.

Two intersections exist along NC 87 Bypass on either side of the US 701 intersection. The intersection of NC 87 Bypass and SR 1145 (Martin Luther King Drive) is located approximately 2,900 feet west of US 701 and the intersection of NC 87 Bypass and SR 1700 (Mercer Mill Road) is located approximately 3,600 feet east of US 701. Both of these adjacent intersections were recently transformed from normal full-movement crossovers to directional crossovers (no left turns onto NC 87 permitted) as part of a safety project (W-5002).

The intersection of US 701 and NC 242 is located approximately 1,060 feet south of NC 87 Bypass.

6. Existing Bicycle Accommodations/Sidewalks

There are no bike routes within the project area, and neither special bicycle accommodations nor sidewalks exist within the project area.

B. Utilities

Overhead power lines exist on both sides of US 701. A waterline exists on the west side of US 701 north of NC 87. South of NC 87, the water line is on both sides of US 701 and runs along the south side of NC 87 east of US 701. A sewer line runs along the east side of US 701 to approximately 850 feet south of NC 87. Fiber-optic telephone and cable television lines run on both sides of US 701 through the project area.

C. Airports

Elizabethtown Airport (Curtis L. Brown, Jr. Field) is a public airport located approximately two miles east of the subject intersection. No navigation aids or other aviation facilities are located in the immediate project area.

D. School Bus Usage

20 school buses travel through the subject intersection twice daily. East Bladen Middle School is located on US 701 approximately 0.5 mile north of NC 87 Bypass.

E. Traffic Data

1. Predicted Traffic Volumes

The 2006 Average Daily Traffic (ADT) ranged from 3,800 to 6,900 vehicles per day (vpd) on NC 87 Bypass and from 5,500 to 9,400 vpd on US 701. The projected 2030 ADT is estimated to be between 6,400 and 11,100 vpd along NC 87 Bypass and between 7,800 to 13,700 vpd along US 701. Figures 3 and 4 present the 2006 and 2030 traffic volumes throughout the project area.

2. Level of Service Without Proposed Project

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

The intersection of NC 87 Bypass with US 701 operated at level of service D in the year 2006. By the year 2030, the existing intersection will operate at level of service E (capacity).

3. Level of Service With Proposed Project

A capacity analysis was performed for the proposed interchange for the year 2030. In 2030, the proposed interchange ramp terminals on NC 87 will operate at level of service A. The ramp terminals on US 701 will also operate at level of service A.

F. Accident Record

An accident study was conducted along existing facilities within the project area for the time period between January 1, 2003 and December 31, 2005. During this time period, 26 crashes were reported at the project intersection. Forty-six percent of the crashes (12 out of 26) were angle and left-turn accidents involving vehicles not stopping for the traffic signal. One fatal crash was reported.

An updated accident study was conducted along existing facilities within the project area for the time period between February 1, 2006 and January 31, 2009. During this time period, 13 crashes were reported at the project intersection. Approximately 54% percent (7 of the 13) of these crashes were angle accidents involving vehicles not stopping for the traffic signal.

NC 87 Bypass within the project area was constructed on new location and completed in 2001. Partial control of access exists along this facility. Access is only allowed from public roads, no direct driveway access is permitted onto the bypass. The US 701 intersection is the only signalized intersection along the portion of the bypass that was constructed on new location. The lack of driveways and signals and the design of the bypass seem to lead drivers to expect this to be a free flowing roadway. In both time periods, all of the angle accidents occurring at this intersection were due to a driver failing to stop for the signal.

Table 2 below compares the crash rates of the NC 87 Bypass intersection with US 701 with the statewide average and the critical rate.

Table 2
Accident Rates Comparison

	Total Accident Rate (ACC/100MVM)	**Fatal Accident Rate (ACC/100MVM)**
NC 87/US 701 Intersection (1/03 to 12/05)	169.45	6.52
NC 87/US 701 Intersection (2/06 to 1/09)	100.52	0.00
2003-2005 Statewide Average Four-Lane Rural NC Routes	123.91	0.56
2005-2007 Statewide Average Four-Lane Rural NC Routes	133.47	1.12
2003-2005 Critical Rate*	170.74	3.78
2005-2007 Critical Rate*	186.39	6.03

ACC/100MVM - Accidents per 100 million vehicle miles

* The critical rate is a statistically derived number that can be used to identify high accident roadway segments. (The critical rate is a 90% confidence level that something else than chance is causing the accidents.)

The table above shows the total accident rate in this location for the time period from 2003 to 2005 was higher than the statewide average and near the critical rate. The table also shows the fatal accident rate for this intersection for 2003-2005 was over six times the statewide average and twice the critical rate for this same time period. Table 2 also shows the 2006-2009 total and fatal accident rates were lower than the 2005-2007 statewide average and critical rate (2005-2007 are the latest statewide rates available). The project purpose and need was developed based on the 2003-2005 accident data.

The subject project was added to the STIP in 2005. As an interim measure, "Be Prepared to Stop" signs with actuated flashers were installed in 2005 at this intersection. Although the number of total accidents reduced for the 2006-2009 time period compared to the 2003-2005 period, the percentage of angle accidents increased from over 46% to approximately 54%. The angle accidents occurred because a driver failed to stop for the signal. Almost all of the accidents involved at least one of the vehicles traveling 50 mph or faster, making the potential for a serious accident greater.

G. Adjacent Projects

Several projects are included in the approved STIP for Bladen County. Information for other projects in the vicinity of the project intersection is listed below.

TIP Project R-2561 – NC 87 from US 74-76 in Columbus County to NC 87 Elizabethtown Bypass in Bladen County. This project involves widening existing NC 87 to a multi-lane facility. Right of way acquisition is scheduled for state fiscal year 2013 and construction is scheduled to begin after fiscal year 2015 in the 2009-2015 STIP.

TIP Project B-4436 – Replace Bridge No. 31 carrying SR 1700 (Mercer Mill Road) over Browns Creek. Right of way acquisition for this project is scheduled for federal fiscal year 2012 and construction is scheduled in federal fiscal year 2013 in the 2009-2015 STIP.

TIP Project W-5002 – NC 87 at SR 1700 (Mercer Mill Road) and NC 87 at SR 1145 (Martin Luther King, Jr. Road). These intersections are located on either side of the US 701 intersection. This project involved converting existing full-movement crossovers to directional crossovers at each intersection. Project construction was completed fall of 2009.

III. PROPOSED IMPROVEMENTS

A. Roadway

The project involves construction of an interchange at the intersection of US 701 and NC 87 Bypass. NC 87 will be carried over US 701 on a bridge. US 701 will be relocated to the east in order to allow traffic to be maintained at the existing intersection. US 701 will be widened to either a three-lane roadway or a two-lane roadway with a 17.5-foot raised median

from approximately 1,800 feet south of the existing NC 242 intersection to north of Browns Creek. Turn lanes will be provided on US 701 at the proposed interchange ramps and the relocated NC 242 intersection. NC 242 will be relocated to intersect US 701 approximately 800 feet south of its current location.

Figure 5 shows the proposed roadway typical section for US 701 in the project area. Figures 6 and 7 show the proposed typical section for proposed bridges on NC 87 and US 701.

B. Structures

It is anticipated the only major structures required for the project will be the bridges to carry NC 87 Bypass over US 701 at the interchange and a new bridge to replace existing Bridge Number 3 carrying US 701 over Browns Creek. It is anticipated that no other major drainage structures will be required for the project. Table 3 below describes the proposed bridge structures. Figures 6 and 7 present the proposed typical sections on these bridges.

Table 3
Proposed Bridge Structures

Carries/Crosses	Clear Roadway Width	Length
NC 87/US 701 (dual bridges)	46 feet	200 feet
US 701/Browns Creek	44 feet	70 feet

C. Right of Way and Access Control

A variable amount of additional right of way will be required for the proposed project. The right of way previously purchased for construction of an interchange did not account for the eastern relocation of US 701. This adjustment was needed to maintain traffic on US 701 during construction. Full control of access is proposed along NC 87 Bypass and for approximately 1,800 feet along US 701 both north and south of the proposed interchange ramps.

D. Speed Limit

It is anticipated the speed limit along NC 87 Bypass and US 701 within the project area will remain 55 mph and 45 mph, respectively. The actual speed limits for the project area will be determined during final design.

E. Design Speed

The proposed design speed for the NC 87 Bypass is 60 mph. US 701 has a proposed design speed of 50 mph.

F. Anticipated Design Exceptions

No design exceptions are anticipated to be required for this project.

G. Intersections

All intersections along US 701 within the project limits, including the proposed interchange ramp terminals, will initially be unsignalized. By the year 2030, it is anticipated the ramp terminals on US 701 will require signalization. All other intersections are expected to remain unsignalized. NC 242 will be relocated to intersect US 701 approximately 800 feet south of its current location. The proposed NC 242/US 701 intersection will be stop sign controlled.

H. Railroad Crossings

There are no railroad crossings within the project area.

I. Bicycle Accommodations/Sidewalks

As discussed in Section II-A-6, there are no bicycle routes within the project area. The proposed 8-foot outside shoulders on the proposed bridge over Browns Creek will accommodate pedestrians and bicycles.

The proposed four-foot wide paved shoulders to be provided along US 701 within the project study area will accommodate bicycles.

J. Utilities

The proposed project will likely impact the power lines located on both sides of US 701, due to the proposed relocation of US 701 to the east with each alternative. Utilities along the project will be relocated prior to construction. Care will be taken to prevent damage to water lines and fiber optic cables in the area.

K. Maintenance of Traffic

Traffic will be maintained at all times during construction of the proposed project. Lane closures may be necessary during project construction, but will not be permitted during periods of peak traffic volumes.

IV. ALTERNATIVES TO THE PROPOSED ACTION

A. Initial Alternatives Studied

Several alternatives to constructing an interchange, including the "no-build" alternative, were initially considered for the project. Several interchange alternatives were also considered. Two interchange alternatives (see Section IV-B) were selected for detailed study.

1. Countermeasure Alternatives

Countermeasure alternatives can include warning lights, rumble strips, additional lanes, turn lanes, etc. Flashers with warning signs reading "Be Prepared to Stop" were installed on NC 87. (These were not installed on US 701.) It is possible the warning signs have helped some of the traffic issues at this intersection. The 2006-2009 accident rate was lower than the 2003-2005 accident rate. However, the percentage of accidents involving drivers failing to stop for the traffic signal increased between 2006 and 2009. The lack of driveways and signals and the design of the bypass seem to lead drivers to expect this to be a free flowing roadway. Many of the vehicles involved in these accidents were travelling faster than 50 mph. These high speeds make the potential for a serious accident much greater than if these accidents were occurring on a lower speed facility. An interchange would reduce the likelihood of serious accidents even more. For this reason, other alternatives are recommended.

2. Directional Crossover

Converting the existing full movement crossover into a directional crossover (superstreet) would require traffic on US 701 wishing to cross or turn left onto NC 87 to turn right and travel several hundred feet to make a left turn or u-turn. Due to the amount of traffic at this intersection, traffic signals would probably still be required, however. This configuration would provide improvements compared to the existing condition, but the required traffic signals may still violate driver's expectations on NC 87. For this reason, a directional crossover is not recommended.

3. Interchange Alternatives

Four interchange alternatives were initially considered for this project. Each of the four alternatives relocates US 701 east of its existing location in order to allow traffic to be maintained at the existing intersection. Each alternative also constructs an overpass on NC 87 Bypass. The grade of US 701 would become too steep to construct an overpass on US 701. Table 4 presents a comparison of the preliminary interchange alternatives.

Table 4
Preliminary Interchange Alternative Comparison

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Residential Relocatees	6	6	6	5
Business Relocatees	0	0	1	1
Wetlands Affected (Acres)	1.39	0.89	2.02	1.85
Stream Impacts (Linear Feet)	1,349	1,192	2,222	1,510
Forested Areas Affected (Acres)	28.23	29.40	30.71	23.51
Farmland Affected (Acres)	17.29	21.14	18.14	11.52
Right of Way Cost Estimate	$1,155,000	$1,335,000	$2,550,000	$2,195,000
Construction Cost Estimate	$15,400,000	$16,200,000	$17,900,000	$15,600,000
Wetland/Stream Mitigation Cost	$1,094,000	$925,000	$1,759,000	$1,262,000
Total Cost	$17,649,000	$18,460,000	$22,209,000	$19,057,000

Alternatives 3 and 4 have the most impacts on wetlands, streams, homes and businesses. Alternatives 1 and 2 take the same number of homes and businesses, but Alternative 2 impacts the least number of wetlands and streams.

The merger team concurred on the selection of Alternatives 2 and 4 for detailed study. Alternatives 1 and 3 were dropped from further consideration due to their anticipated impacts to wetlands and streams. Alternative 4 was carried forward, although it has higher stream impacts than Alternative 1, because it has operational and safety advantages over the other alternatives (see Section IV-C).

Alternative 1 is a partial cloverleaf interchange with loops and ramps only in the northwest and southeast quadrants of the interchange. NC 242 is relocated approximately 1,000 feet south of its existing location.

Alternative 3 is a diamond interchange. NC 242 is relocated approximately 1,000 feet south of its existing location. Alternatives 2 and 4 are described in Section IV-B.

4. "No-Build" Alternative

The "no-build" alternative avoids impacts to the project area. However, this alternative does not address the purpose and need of the project. For these reasons, this alternative was eliminated from further consideration.

B. Alternatives Studied in Detail

Alternatives 2 and 4 were selected for detailed study.

US 701 at Browns Creek would be relocated to the east with all of the interchange alternatives initially studied. Following the selection of detailed study alternatives, versions of the detailed study alternatives which would replace the existing bridge in its current location instead of relocating US 701 at Browns Creek were considered. Not relocating US 701 at Browns Creek would affect approximately 568 feet less streams than relocating US 701, but would affect 0.46 acre more wetlands. The cost of the two Browns Creek options are essentially the same, and each option would affect the same number of homes. The decision was made to relocate US 701 to the east of its existing location at Browns Creek because doing so would affect less wetlands and may provide an opportunity for restoring wetlands at the existing crossing.

Alternative 2 is a partial cloverleaf interchange, with loops and ramps in the northwest and southeast quadrants. NC 242 would be relocated to the north a few hundred feet to tie into the southeast ramp in order to avoid wetlands.

Alternative 4 is also a partial cloverleaf interchange, but with loops and ramps in the northeast and southwest quadrants (see Figure 2).

These two alternatives were presented to the public at a citizens informational workshop held on August 27, 2009 (see Section VI). However, adjustments were later made to Alternative 4 to further reduce environmental impacts. The radius of each loop ramp was reduced to avoid streams, a wetland, and a business. NC 242 was shifted north to avoid wetlands.

Table 5 presents a comparison of these alternatives.

Table 5
Interchange Alternative Comparison

	Alternative 2	Alternative 4
Residential Relocatees	6	6
Business Relocatees	0	0
Wetlands Affected (Acres)	1.09	1.44
Stream Impacts (Linear Feet)	1,295	1,529
Right of Way Cost	$1,335,000	$1,043,000
Construction Cost	$16,200,000	$15,600,000
Wetland/Stream Mitigation Cost	$1,027,000	$1,216,000
Total Cost	$18,562,000	$17,859,000

C. Recommended Alternative

Alternative 4 was selected as the recommended alternative for the proposed project. Alternative 4 is a partial cloverleaf interchange with loops and ramps in the northeast and southwest quadrants of the interchange.

Although Alternative 4 will affect more wetlands and streams than Alternative 2, Alternative 2 does not fully meet the purpose and need of the project because specific components of the alternative do not meet AASHTO design standards related to safety. This could potentially lead to safety and operational issues. The concern is that with Alternative 2, entrance ramp traffic will conflict with traffic wishing to turn right at the adjacent intersections. Alternative 4 provides sufficient distance to meet design standards between the NC 87 entrance ramps and the downstream at-grade intersections of NC 87 with SR 1700 and SR 1145.

Drivers merging onto NC 87 will require sufficient time and distance to react to traffic slowing to turn at the adjacent intersections. The Alternative 2 entrance ramp in the northwest quadrant of the interchange only provides approximately 103 feet of distance between the end of the taper for the ramp and the beginning of the taper for the turn lane for the nearby intersection. At 60 MPH, 103 feet provides a driver with only 1.2 seconds of reaction time. The design value typically used for reaction time is 2.5 seconds. The Alternative 2 on ramp in the southeast quadrant would provide 3.7 seconds of reaction time. The alignment of the ramps for Alternative 2 cannot be modified in order to provide sufficient distance between the ramp taper and the nearby intersections.

In contrast, the Alternative 4 entrance ramp in the northeast quadrant would provide approximately 1,636 feet between the ramp taper and the turn lane taper, which would provide 18.6 seconds of reaction time. The Alternative 4 entrance ramp in the southwest quadrant would provide 21.6 seconds of reaction time. Alternative 4 was selected due to the increased reaction time and the operational and safety advantages provided.

At the August 2009 citizens informational workshop, a majority of the attendees preferred Alternative 4. Following the informational workshop, changes were made to this alternative based on comments heard at the workshop. A retaining wall was added to avoid a business in the southwest quadrant of the interchange. NC 242 was also shifted to avoid wetland impacts, and to provide for a full movement intersection outside the controlled access area for the interchange.

V. PROBABLE ENVIRONMENTAL EFFECTS OF PROPOSED ACTION

A. Cultural Resources

The proposed project is subject to Section 106 of the National Historic Preservation Act of 1966, as amended. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally-funded, licensed, or permitted) on properties listed on or eligible for

inclusion in the National Register of Historic Places and to afford the Advisory Council a reasonable opportunity to comment on such undertakings.

1. Historic Architectural Resources

NCDOT architectural historians surveyed the Area of Potential Effects (APE) of the proposed project. Seven properties over fifty years old were found within the project APE, but based on the historical information available and the photographs of each property, none of the properties are considered eligible for the National Register and no further evaluation of them is necessary. Within this APE, there are no properties less than fifty years old which are considered to meet Criteria Consideration G, nor are there any National Register-listed or Study Listed properties. The State Historic Preservation Office (HPO) concurred with this finding on December 5, 2006.

All properties greater than 50 years of age located in the APE have been considered, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project. Therefore, the project will not impact any properties listed on or eligible for the National Register of Historic Places. The concurrence form is included in Appendix A.

2. Archaeological Resources

According to a letter from the State Historic Preservation Office dated March 28, 2006 (refer to Appendix A), there are no known archaeological sites within the proposed project area. Based on the HPO's knowledge of the area, it is unlikely that any archaeological resources that may be eligible for listing on the National Register of Historic Places will be affected by the project. Their recommendation was that no archaeological investigation be conducted in connection with this project. Therefore, no archaeological investigations have been conducted for the project and it is anticipated the project will not impact any archaeological sites listed on or eligible for the National Register of Historic Places.

B. Section 4(f)/Section 6(f) Resources

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

This project will not impact any resources protected by Section 4(f) of the USDOT Act of 1966, as amended.

Section 6(f) of the Land and Water Conservation Fund Act of 1965 stipulates that property acquired or developed with the assistance of the Fund may not be converted to a use other than public recreation unless suitable replacement property is provided. No properties

acquired or developed with the assistance of the Land and Water Conservation Fund exist in the project area.

C. Natural Resources

1. Biotic Resources

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

a. Terrestrial Communities

Three terrestrial communities were identified in the project area: bottomland hardwood forest, mixed pine/hardwood forest, and maintained/disturbed. A brief description of each community type follows.

Bottomland Hardwood Forest (Blackwater subtype)

This community is located adjacent to the banks and on the floodplain of Browns Creek. Most of the area is jurisdictional wetland but the fringes are non-wetland. The plant community within this area is diverse. Shrub and tree species are prevalent including sweetgum, red maple, bald cypress, black willow, brookside alder, Chinese privet, river birch, and ironwood. Vines and herbaceous species present include greenbrier, trumpet creeper, various sedges, grape vine, and netted chainfern.

Mixed Pine/Hardwood Forest

This community is the result of past disturbance and does not match a 'natural' community type. Dominant species include loblolly pine, sweetgum, water oak, red maple, Japanese honeysuckle, grape, and low bush blueberry. The mixed pine-hardwood community is located in the southern end of the project area.

Maintained/Disturbed

This community encompasses various types of habitats that have recently been or are currently impacted by human disturbance. These areas include impervious surfaces (i.e., parking lots), roadside shoulders, maintained lawns, and utility easements. Herbaceous species within these communities include fescue, ryegrass, goldenrod, dogfennel, dandelion, poison ivy, and blackberry. In wetter areas, different species of sedge and smartweed are also expected. Shrubs, saplings, and trees from surrounding habitats may also be present in these communities.

b. Terrestrial Wildlife

Many faunal species are highly adaptive and may utilize all biotic communities previously discussed. Those species or evidence thereof that were actually observed are indicated with an asterisk (*). Maintained roadside, agricultural field, and residential communities adjacent to forested tracts provide foraging and cover areas that support early successional species. Forested areas provide forage and cover for wildlife dependent on mature forests with mast producing hardwoods. Many opportunistic species use both habitats to satisfy nutritional requirements and shelter. Mammals expected in this area include the white-tailed deer*, gray fox, raccoon*, and the Virginia opossum. Reptiles expected in this area include yellow-bellied slider, painted turtle, common musk turtle, cottonmouth, five-lined skink*, broad-head skink, and the redbelly watersnake.

Bird species observed in and around the study area include Carolina wren, red-shouldered hawk, red-bellied woodpecker, pileated woodpecker, blue jay*, tufted titmouse, and the fish crow.

c. Aquatic Communities

Browns Creek, an unnamed tributary to Browns Creek, and ten other unnamed perennial streams are the only permanent aquatic communities within the project area. Fish species likely to occur within this system include redfin pickerel, bluegill, golden shiner, mud sunfish, and flier. These fish feed on a variety of living and organic matter including algae, insects, worms, crustaceans, snails, and other fish. Two intermittent streams are also located in the project area. Mosquito fish, algae, insects, worms, crustaceans, and snails likely occur in these systems.

Other aquatic species likely to be found here include several of the previously mentioned reptile and mammal species, as well as amphibians. Amphibians expected in the study area include eastern mud salamander, marbled salamander, southern leopard frog, and southern cricket frog.

d. Invasive Species

Two plant species listed on the Invasive Exotic Plant List for North Carolina were observed within the project area. Chinese privet (Severe Threat) and Japanese honeysuckle (Threat) are listed as threats to habitat and natural areas. NCDOT Best Management Practices for the Management of Invasive Plant Species will be followed for this project.

e. Summary of Anticipated Effects

Terrestrial Communities

Terrestrial communities in the project area may be impacted by project construction as a result of grading and paving in portions of the study area. Table 6 on the next page presents the anticipated effects of the project on terrestrial communities within the project study area.

Table 6
Anticipated Effects on Terrestrial Communities

Community	Area (acres)
Maintained/Disturbed	15.1
Mixed Pine/Hardwood Forest	23.7
Bottomland Hardwood Forest	13.1

Aquatic Communities

Roadway construction in and adjacent to water resources may result in water quality impacts. Clearing and grubbing activities near the water will result in soil erosion which may lead to increased sedimentation and turbidity in streams.

Removal of streamside vegetation will have a negative effect on water quality. The vegetation typically shades the water's surface from sunlight, thus moderating water temperature. Streambank vegetation also stabilizes streambanks and reduces sedimentation by trapping soil particles.

Construction activities adjacent to water resources increase the potential for toxic compounds (gas, oil, and highway spills) to be carried into nearby water resources via precipitation, sheet flow, and subsurface drainage.

In order to minimize impacts to water resources, NCDOT Best Management Practices for the Protection of Surface Waters will be strictly enforced during the entire life of the project.

2. Soils

The Bladen County Soil Survey identifies 12 soil types within the study area (Table 7).

Table 7
Soils Within the Project Area

Soil Series	Map Unit	Hydric	Drainage Class
Johnston mucky loam	JO	Yes	Very poorly drained
Wagram fine sand	WaB	Yes	Well drained
Wagram-Urban land complex	WbB	No	Well drained
Dystrochrepts, steep	DyF	No	Moderately well drained
Udorthents, loamy	Ud	No	Well drained
Gritney fine sandy loam	GrB	No	Moderately well drained
Norfolk loamy fine sand	NoB	Yes	Well drained
Wakulla sand	WgB	No	Somewhat excessively drained
Norfolk loamy fine sand	NoA	Yes	Well drained
Ocilla loamy fine sand	Oc	Yes	Somewhat poorly drained
Woodington loamy sand	Wo	Yes	Poorly drained
Paxville sandy loam	Pp	Yes	Very poorly drained

3. Waters of the United States

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

a. Streams, Rivers, Impoundments

The project is within the Cape Fear River basin (sub-basin 03-06-16, HUC 03030005). Fourteen jurisdictional streams, Browns Creek, an unnamed tributary to Browns Creek, and twelve unnamed streams were identified in the study area (Table 10). Each stream has a best usage classification of C and an Index Number of 18-45 by the NC Division of Water Quality. The location of each water resource is shown in Figure 8. The physical characteristics of these streams are provided in Table 8.

Table 8
Physical Characteristics of Water Resources in the Project Area

Stream Name	Bank Height (ft)	Bankfull Width (ft)	Water Depth (ft)	Channel Substrate	Flow	Clarity	Classification
Brown's Creek (SA 1)	2-4	35	3	Sand	Medium	Medium	Perennial
SA 2	2-3	8	1	Sand, Silt	Slow	Medium	Perennial
SA 3	5	3	1	Sand, Silt	Slow	Medium	Perennial
SA 4	5	4	1	Sand, Silt	Slow	Medium	Intermittent
SA 5	1	2	1	Sand, Silt	Slow	Medium	Perennial
SA 6	2	5	1	Sand, Silt	Slow	Medium	Perennial
SA 7	2	3	1	Sand, Silt	Slow	Medium	Perennial
SA 8	3	4	1	Sand, Silt	Slow	Medium	Perennial
SA 9	1	3	1	Sand, Riprap	Slow	Medium	Intermittent
SA 10	2	3	2	Sand, Silt	Slow	Medium	Perennial
SA 11	2	3	2	Sand, Silt	Slow	Medium	Perennial
Ut to Brown's Creek (SA 12)	3	5	2	Sand, Silt	Slow	Medium	Perennial
SA 13	1	4	1	Sand, Silt	Slow	Medium	Perennial
SA 14	1	3	1	Sand, Silt	Slow	Medium	Perennial

No waters classified as High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), or Outstanding Resource Waters (ORW) occur within one mile of the project area. Browns Creek is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. Browns Creek was included on the 2006 and the 2008 lists, but is not listed on the draft 2010 303(d) list of impaired waters.

Benthic monitoring information is not available for this watershed.

b. Wetlands

Potential wetland communities were investigated pursuant to the 1987 "Corps of Engineers Wetland Delineation Manual". Fifteen wetlands were identified within the project area (Figure 8). Wetland classification and quality rating data are presented in Table 9. All wetlands in the study area are within the Cape Fear River Basin (HUC 03030005). Wetland sites A, B, E, F, G, and J are located within the bottomland hardwood terrestrial community. Wetland sites C, H, I, K, L, and M are located within the maintained/disturbed community.

Table 9
Jurisdictional Characteristics of Wetlands in the Project Area

Map ID	Cowardin Classification	Classification	DWQ Wetland Rating	Area (ac)
WA	PFO1C	Riverine	84	1.6
WB	PFO1C	Riverine	84	0.1
WC	PEM1J	Non-Riverine	17	0.1
WE	PFO1C	Riverine	51	0.37
WF	PFO1C	Non-Riverine	38	0.4
WG	PFO1C	Non-Riverine	33	0.09
WH	PEM1J	Non-Riverine	41	9.1
WI	PEM1J	Non-Riverine	41	10.3
WJ	PFO1C	Riverine	73	0.82
WK	PEM1J	Non-Riverine	38	0.08
WL	PEM1J	Non-Riverine	35	0.43
WM	PEM1J	Non-Riverine	44	0.06
WN	PEM1J	Non-Riverine	40	0.04
WO	PFO1C	Riverine	47	0.2
WP	PFO1C	Riverine	56	0.1

c. Summary of Anticipated Effects

Construction of the proposed project will likely impact streams by pipe installation and/or existing pipe lengthening. Construction activities are likely to alter and/or interrupt stream flows and water levels at each aquatic site. Anticipated impacts are shown on Tables 10 and 11.

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

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

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

Table 10 presents the estimated impacts to surface waters. Table 11 presents the estimated impacts to wetlands within the study area.

Table 10
Project Effects on Surface Waters in Project Area

Map ID	Classification	Alt. 2 Impacts (ft)	Alt. 4 Impacts (ft)
Brown's Creek (SA 1)	Perennial	0	0
SA 2	Perennial	580	995
SA 3	Perennial	250	242
SA 4	Perennial	0	20
SA 5	Intermittent	0	118
SA 6	Perennial	0	42
SA 7	Perennial	0	0
SA 8	Perennial	0	0
SA 9	Intermittent	0	0
SA 10	Perennial	0	58
SA 11	Perennial	300	0
Ut to Brown's Creek (SA 12)	Perennial	61	0
SA 13	Perennial	0	54
SA 14	Perennial	104	0
Total =		**1,295**	**1,529**

Table 11
Project Effects on Wetlands in Project Area

Map ID	Cowardin Classification	Classification	DWQ Wetland Rating	Alt. 2 Impacts (acres)	Alt. 4 Impacts (acres)
WA	PFO1C	Riverine	84	0.00	0.00
WB	PFO1C	Riverine	84	0.07	0.07
WC	PEM1J	Non-Riverine	17	0.04	0.00
WE	PFO1C	Riverine	51	0.26	0.00
WF	PFO1C	Non-Riverine	38	0.00	0.26
WG	PFO1C	Non-Riverine	33	0.00	0.09
WH	PEM1J	Non-Riverine	41	0.31	0.36
WI	PEM1J	Non-Riverine	41	0.00	0.00
WJ	PFO1C	Riverine	73	0.00	0.62
WK	PEM1J	Non-Riverine	38	0.08	0.00
WL	PEM1J	Non-Riverine	35	0.13	0.00
WM	PEM1J	Non-Riverine	44	0.00	0.00
WN	PEM1J	Non-Riverine	40	0.00	0.00
WO	PFO1C	Riverine	47	0.20	0.00
WP	PFO1C	Riverine	56	0.00	0.04
Total =				**1.09**	**1.44**

d. Anticipated Permit Requirements

It is anticipated a Section 404 Individual Permit will be required for this project. The Corps of Engineers will determine the applicable permit required to authorize project construction.

A North Carolina Division of Water Quality Section 401 Water Quality Individual Certification will be required prior to issuance of the Section 404 permit. Other required 401 certifications may include a GC 3366 for temporary construction access and dewatering. A state stormwater permit may also be required. No moratorium has been recommended for this project. No streams in Bladen County are subject to buffer rule protection by the NC Division of Water Quality. No water body in the project area has been designated as a Navigable Water under Section 10 of the Rivers and Harbors Act.

e. Avoidance, Minimization and Mitigation

Due to the location of wetlands and streams in the project area, total avoidance of wetlands and streams is not possible.

Best Management Practices will be used during construction in order to minimize the project's effects on wetlands and streams. The following measures will be implemented:

- The maximum slope (3 to 1) will be used through wetland areas.
- US 701 was relocated to the east to avoid wetlands.
- The radius of each loop ramp was reduced to avoid streams, a wetland (wetland WI (reduced ~0.27 ac)), and a business.
- NC 242 was shifted north to avoid wetlands (wetland WJ (reduced 0.10 ac)).
- NCDOT will investigate reducing impacts to wetlands WF and WO, and streams SA 6, SA 7, SA 10, SA 13 and SA 14 during final design.

NCDOT will investigate potential on-site stream and wetland mitigation opportunities. If on-site mitigation is not feasible, mitigation will be provided by North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP), in accordance with the July 22, 2003 Memorandum of Agreement between NCDOT and the US Army Corps of Engineers.

4. Rare and Protected Species

a. Federally-Protected Species

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 31, 2008, the United States Fish and Wildlife Service (USFWS) lists six federally-protected species for Bladen County. These species are listed in Table 12.

Table 12
Federally-Protected Species for Bladen County

Scientific Name	Common Name	Habitat	Federal Status	Biological Conclusion
Alligator mississippiensis	American alligator	Yes	T (S/A)	N/A
Picoides borealis	Red-cockaded woodpecker	No	E	No Effect
Schwalbea americana	American chaffseed	No	E	No Effect
Acipenser brevirostrum	Shortnose sturgeon	No	E	No Effect
Lindera melissafolia	Pondberry	Yes	E	No Effect
Lysimachia asperulaefolia	Rough-leaved loosestrife	No	E	No Effect

- "T (S/A)" denotes Threatened due to similarity of appearance (a species that is threatened due to similarity of appearance with another listed species and is listed for its protection).
- "E" denotes Endangered (a species that is in danger of extinction throughout all or a significant portion of its range).

The American Alligator is listed as threatened due to similarity of appearance (T(S/A)). T(S/A) species are not subject to Section 7 consultation and a biological conclusion for this species is not required. Potential habitat for American alligator exists within the study area. No survey is required for this species.

No suitable habitat for the red-cockaded woodpecker, shortnose sturgeon, rough-leaved loosestrife or American chaffseed was found within the project area. The NC Natural Heritage Program (NHP) database of rare species and unique habitats, updated February 2008, showed no occurrences of these species within one mile of the project. In regard to the shortnose sturgeon, correspondence with the NC Division of Marine Fisheries indicated that shortnose sturgeon does not occur in Browns Creek or nearby. Therefore, project construction will have "no effect" on the red-cockaded woodpecker, shortnose sturgeon, rough-leaved loosestrife, or American chaffseed.

Wetlands and small ponds that are suitable habitat for pondberry are present in the project area. Field surveys conducted March 3, 2007 found no individuals within the project area. In addition, a search of the NHP database, updated February 2008, shows no occurrences of this species within one mile of the project area. A second set of field surveys conducted April 13, 2009 found no individuals within the project area. Therefore, it may be concluded that the proposed project will have "no effect" on pondberry.

The bald eagle (*Haliaeetus leucocephalus*) was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered Species effective August 8, 2007. The bald eagle remains federally-protected under the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d). The Eagle Act prohibits take of bald and golden eagles and provides a statutory definition of "take" that includes "disturb".

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within one mile of open water. Surveys conducted on May 10, 2007 found no nesting or foraging habitat within 660 feet of the project limits.

b. Federal Candidate Species

As of January 31, 2008, the US Fish and Wildlife Service lists no candidate species for Bladen County.

D. Floodplains

Bladen County is a participant in the National Flood Insurance Program, administered by the Federal Emergency Management Agency (FEMA). Based on the most current information available from the NC Floodplain Mapping Program (Figure 9), Browns Creek is in a regulated 100-year flood zone, included in a limited detailed flood study and has a designated non-encroachment width which is regulated as a floodway.

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT'S Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

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

E. Relocation of Homes and Businesses

Both alternatives will require the relocation of six residences. All of these homes are minority owned or occupied. No businesses will be impacted.

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

F. Minority/Low-Income Populations

Executive Order 12898 requires each federal agency, to the greatest extent allowed by law, to administer and implement its programs, policies and activities that affect human health or the environment so as to identify and avoid "disproportionately high and adverse" effects on minority and low-income populations.

According to the 2000 Census, the percentage of minorities in the project study area was higher than the county average. In the project study area, 57.7% of residents identified themselves as racially Black or African-American, 41.2% as racially White, and 1.0% as racially Hispanic, compared with 38.0%, 57.2% and 3.6%, respectively, for Bladen County.

As discussed in Section V-E, all of the homes to be relocated by the project are minority-owned or occupied. Newsletters announcing the three citizens informational workshops for the project were mailed to property owners and the workshops were advertised in local newspapers. Alternatives 2 and 4 were presented to the public at the August 2009 workshop. None of these attendees objected to the proposed project, although objections were raised by other area property owners (see Section VI-A). Residents to be relocated also did not express concerns they were being disproportionately impacted by the project. Questions from these individuals were related to the property appraisal and relocation processes.

Although this project will impact minorities, the primary benefit of this project to the community is improving the safety of this facility. Demographic information shows the majority of the residents in the immediate project area are minority. These minority residents potentially drive through the NC 87 Bypass/US 701 intersection on a daily basis. During the 2003-2005 time period, 73% of the total number of accidents involved minorities. Approximately 28% of the people injured in accidents were minority. Sixty-nine percent of accidents at this intersection involved minorities during the 2006-2009 time period. Although the percentage of accidents involving minorities reduced during this period, the percentage of those injured who were minority increased to 71%.

As previously discussed in Section IV-A, it was determined that only an interchange would fully support the purpose and need of the project. Four interchange alternatives were studied. All the interchange alternatives investigated impacted a similar number of relocatees. Due to the proximity of the homes affected to the existing NC 87/US 701 intersection, avoiding all of the homes is not possible with construction of an interchange. Although these homes cannot be avoided, efforts were made to minimize the impacts of the project on surrounding properties. The radius of each proposed loop ramp was reduced as a minimization measure.

Based on public involvement conducted and minimization efforts, this project is being implemented in accordance with Executive Order 12898.

G. Land Use/Zoning

1. Existing Land Use and Zoning

Within the study area, the land is mostly wooded. Less than ten single-family homes lie north of the project intersection. Two businesses lie in the southwest quadrant, and a farm field lies in the southeast quadrant of the project intersection. The surrounding area has commercial parcels, businesses, warehouses, a school and a few small neighborhoods.

The project is located within Elizabethtown's Extra Territorial Jurisdiction and subject to Elizabethtown's zoning ordinances. Land adjacent to the proposed interchange is classified on the August 2005 Elizabethtown Zoning Map. Parcels to the northeast, southeast, and southwest

of the project area are zoned B-C/Bypass Commercial on the August 2005 Elizabethtown Zoning Map. Several homes are located in the immediate northeast area of the project intersection, in the area zoned Bypass Commercial. Parcels to the northwest are zoned B-C/ Bypass Commercial and R-20 Low Density Residential. At the present time, the land surrounding the proposed project is largely undeveloped. However, development is beginning to occur, with the recently constructed State Employees Credit Union branch southwest of the intersection.

2. Future Land Use

According to the 1999 Bladen County Comprehensive Land Use Plan, the future land use map within this plan identifies a large swath of land (shown adjacent to the NC 87 Bypass) as a high density urban growth area. This high density urban growth area stretches from the town of Dublin (along NC 87) to the area surrounding Elizabethtown on the south side of the Cape Fear River (including the project area) and then further to the southeast along NC 87. Local planners and land development companies have noted the potential for development on the vacant parcels in the vicinity of the subject intersection.

In 2002, a draft Strategic Plan was presented to the Elizabethtown Town Council. One recommendation in the plan was the creation of a bypass corridor overlay district. According to the Strategic Plan, the purpose of the bypass corridor overlay district is to preserve the natural environment while encouraging responsible commercial development by possibly outlining standards to govern ingress and egress, signing, parking, and landscaping. This overlay district is not included in the currently adopted Zoning Ordinance.

H. Indirect/Cumulative Effects

Project construction is expected to result in minimal indirect and cumulative growth-related effects. It is expected that growth will occur in the area irrespective of the proposed project. Development activity is already occurring in the vicinity due to Elizabethtown's planning efforts to direct new growth along the NC 87 Bypass. Land is available, access is good and there is a high level of visibility at the existing intersection. In addition, the intersection's proximity to downtown Elizabethtown and the adjacent Bladen County Industrial Park is a factor in the ongoing modest rate of development.

I. Prime and Important Farmland

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

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

Form NRCS-CPA-106 has been completed according to FHWA guidelines. Since Alternatives 2 and 4 received a total point value of less than 60 points for part VI, and therefore cannot score a total of 160 points or higher (which would require NRCS evaluation), this site falls below the NRCS minimum criteria and will not be evaluated further for farmland impacts. This project will not have a substantial impact on farmland.

J. Traffic Noise Analysis

A traffic noise analysis was performed to determine the effect of the proposed improvements on noise levels in the immediate project area. The 72 dBA and 67 dBA predicted noise contours are less than 77 feet and 119.4 feet from the centerline of the proposed roadway, respectively. The noise transmission reduction provided to the interior of the structures located within the project limits should be sufficient to moderate any intrusive traffic noise. The project will not substantially increase traffic volumes due to the scope of the project. Based on past project experience, the project's impact on traffic noise will be limited.

K. Air Quality Analysis

The project is located in Bladen County, which has been determined to comply with National Ambient Air Quality Standards. 40 CFR Part 51 is not applicable, because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

Mobile source air toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. For the project alternatives, the amount of MSATs emitted would be proportional to the vehicle miles traveled (VMT). Because the estimated VMT for the no-build alternative and each of the project alternatives is nearly the same, it is expected there would be no appreciable difference in overall MSAT emissions among the alternatives. Emissions will likely be lower than present levels in the design year as a result of EPA's national control programs, which are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020.

The proposed ramps contemplated as part of the project alternatives will have the effect of moving some traffic closer to nearby homes and businesses; therefore, there may be localized areas where ambient concentrations of MSATs could be higher for the build alternatives than the no-build alternative. The localized increases in MSAT concentrations would likely be most pronounced along each of the interchange ramps and/or loops and along any temporary detours. However, the magnitude and the duration of these potential increases compared to the no-build alternative cannot be accurately quantified due to the inherent deficiencies of current models.

During construction of the proposed project, all materials resulting from clearing and grubbing, demolition or other operations will be removed from the project and burned or otherwise disposed of by the contractor. Any burning will be performed in accordance with applicable local ordinances and regulations of the North Carolina State Implementation Plan for Air Quality in compliance with 15 NCAC 2D.0520. Care will be taken to insure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance.

Also during construction, measures will be taken to reduce the dust generated by construction when the control of dust is required for the protection and comfort of motorists or area residents. This evaluation completes the assessment requirements for air quality of the 1990 Clean Air Act Amendments and the NEPA process, and no additional reports are necessary.

L. Hazardous Materials

Two potentially contaminated properties were found in the project area. The Sampson-Bladen Oil Company property, with an active fleet fueling facility, is located 320 feet south of the US 701/NC 242 intersection. The former Bladen County Landfill is located primarily in the northeast quadrant of the project intersection. NC 87 Bypass bisects the southernmost landfill parcel 0.3 mile east of the project intersection. This landfill was closed in April 1994. Assessments of soil and groundwater beneath these sites will be conducted prior to right of way acquisition if right of way is required from either of these properties.

No properties containing underground storage tanks were found in the project area. There is the possibility unregulated underground storage tanks, such as farm tanks or home heating oil tanks, may exist in the proposed right of way. Any unregulated tanks will be identified during right of way acquisition.

VI. COMMENTS AND COORDINATION

A. Citizens Informational Workshops

Three citizens informational workshops have been held for the project. The workshops held on August 15 and October 10, 2006 were combined workshops for this project and TIP Project R-2561. Project R-2561 involves widening NC 87 from the Elizabethtown Bypass to US 74-76 in Columbus County (see Section II-G). The third workshop was held on August 27, 2009.

Property owners in the area were notified about each meeting with informational flyers distributed by mail and advertisements in the local paper. An aerial photograph delineating the study area was displayed and informational handouts were available to workshop participants at the 2006 workshops. The detailed study alternatives were presented to the public at the 2009 workshop.

Fifty citizens attended the August 15, 2006 workshop (held in the Elizabethtown Town Hall), and 68 people attended the October 10, 2006 workshop (held in the Acme-Delco Elementary School). Eight comment sheets about the subject project were received from local citizens from both 2006 workshops. 28 citizens attended the August 27, 2009 workshop. Six comment sheets about the subject project were received from local citizens for the August 2009 workshop.

Several property owners attending the August 2009 workshop objected to the proposed project, due to the amount of property which would be required. None of these property owners

who objected would be relocated by the project. A comment was received that the proposed project is not needed and would not improve safety. There were attendees who agreed with construction of the project. Most of those attending the workshop who expressed a preference preferred Alternative 4.

B. Agency Coordination

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

U.S. Department of the Army – Corps of Engineers
U.S. Department of the Interior – Fish and Wildlife Service*
N.C. Department of Administration – State Clearinghouse*
N.C. Department of Cultural Resources*
N.C. Department of Environment and Natural Resources, Division of Environmental Health*
N.C. Department of Environment and Natural Resources, Natural Heritage Program*
N.C. Department of Environment and Natural Resources, Division of Forest Resources
N.C. Department of Environment and Natural Resources, Division of Parks and Recreation
N.C. Department of Environment and Natural Resources, Division of Soil and Water Conservation
N.C. Department of Environment and Natural Resources, Division of Water Quality*
N.C. Department of Public Instruction – School Planning
N.C. Wildlife Resources Commission*
Bladen County
Town of Elizabethtown*

C. NEPA/404 Merger Process

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

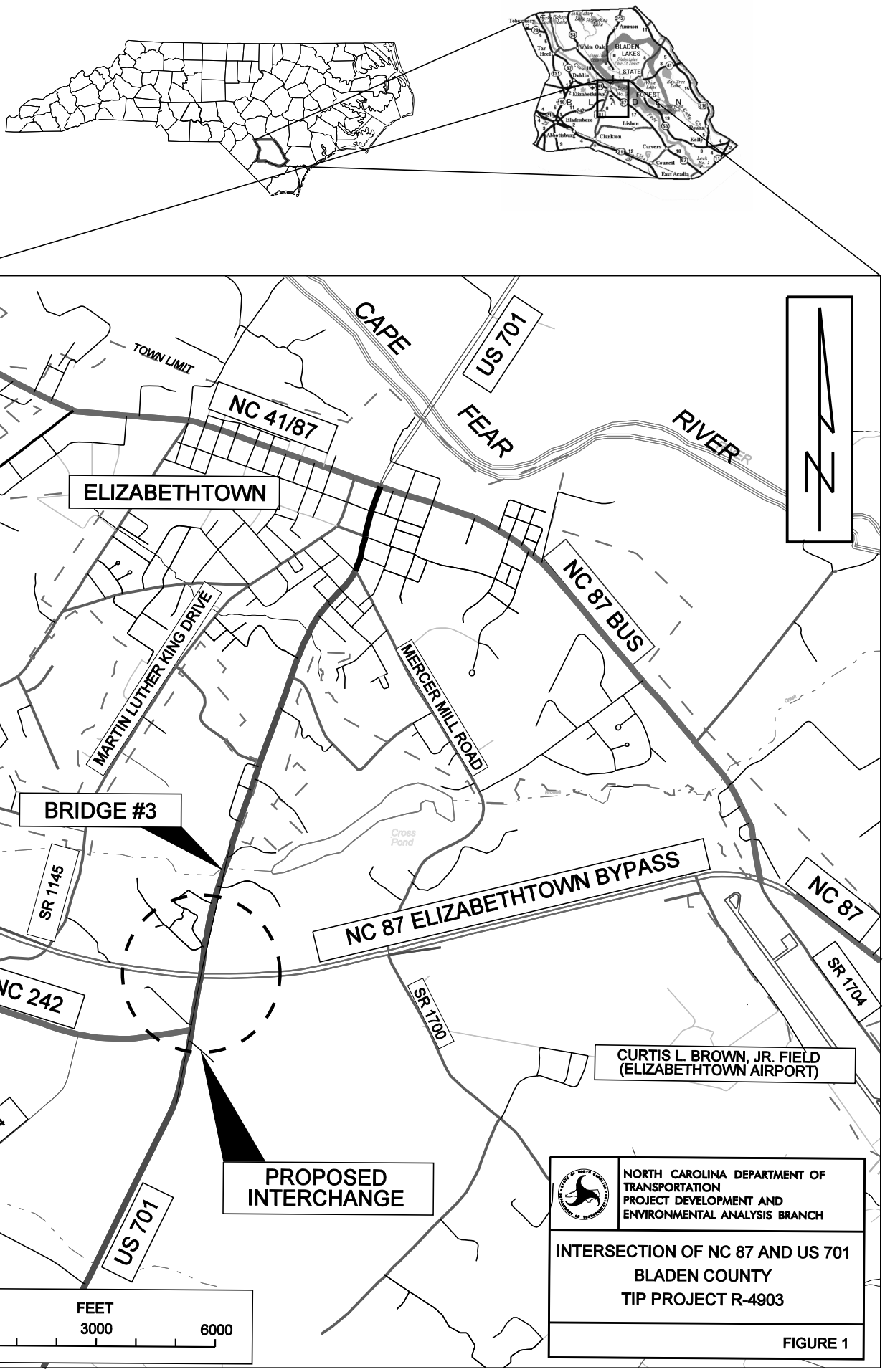
Representatives of the Federal Highway Administration, the US Army Corps of Engineers and NCDOT served as co-chairs for the merger team. The participating agencies on the NEPA/404 merger team for this project are listed below.

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

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

VII. BASIS FOR CATEGORICAL EXCLUSION

Based on the studies performed for the proposed project, it is concluded that the project will not result in significant social, economic, or environmental impacts, and that the categorical exclusion classification, as defined in 40 CFR 1508.4 and 23 CFR 771.117, is appropriate.


TOWN LIMIT
CAPE FEAR RIVER
US 701
NC 41/87
ELIZABETHTOWN
NC 87 BUS
MARTIN LUTHER KING DRIVE
MERCER MILL ROAD
BRIDGE #3
SR 1145
NC 87 ELIZABETHTOWN BYPASS
NC 87
SR 1704
NC 242
SR 1700
CURTIS L. BROWN, JR. FIELD
(ELIZABETHTOWN AIRPORT)
SR 1144
US 701
PROPOSED
INTERCHANGE
FEET
0
3000
6000
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH
INTERSECTION OF NC 87 AND US 701
BLADEN COUNTY
TIP PROJECT R-4903
FIGURE 1

N

SR 1145
(MARTIN LUTHER KING DRIVE)

BROWNS CREEK

BROWNS CREEK

SR 1785
(LANDFILL ROAD)

TIP PROJECT W-5002
(NOT A PART
OF THIS STUDY)

MUNICIPAL SOLID
WASTE LANDFILL
(CLOSED)

SR 1700
(MERCER MILL ROAD)

MCDOWELL STREET

GRAY MOSS LANE

TO DUBLIN

87

701

242

BLUEBERRY HILL

TO RIEGELWOOD

87

SR 1145
(MARTIN LUTHER KING DRIVE)

TIP PROJECT W-5002
(NOT A PART
OF THIS STUDY)

BIG LEE STORE

SR 1700
(MERCER MILL ROAD)

MUNICIPAL SOLID
WASTE LANDFILL
(CLOSED)

STATE EMPLOYEES'
CREDIT UNION

242

HESS OIL
DISTRIBUTION STATION

SR 1144 (BALDWIN
BRANCH CHURCH ROAD)

701

LEGEND

- PROPOSED PAVEMENT
- PROPOSED RIGHT OF WAY
- POTENTIALLY CONTAMINATED SITES
- EXISTING RIGHT OF WAY
- WETLANDS (DELINEATED)
- STREAMS

PRELIMINARY DESIGN
SUBJECT TO CHANGE

0 500 1000
FEET

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

NC 87
PROPOSED US 701 INTERCHANGE
BLADEN COUNTY
TIP PROJECT R-4903

RECOMMENDED ALTERNATIVE FIGURE 2

R-4903
2006 TRAFFIC VOLUMES

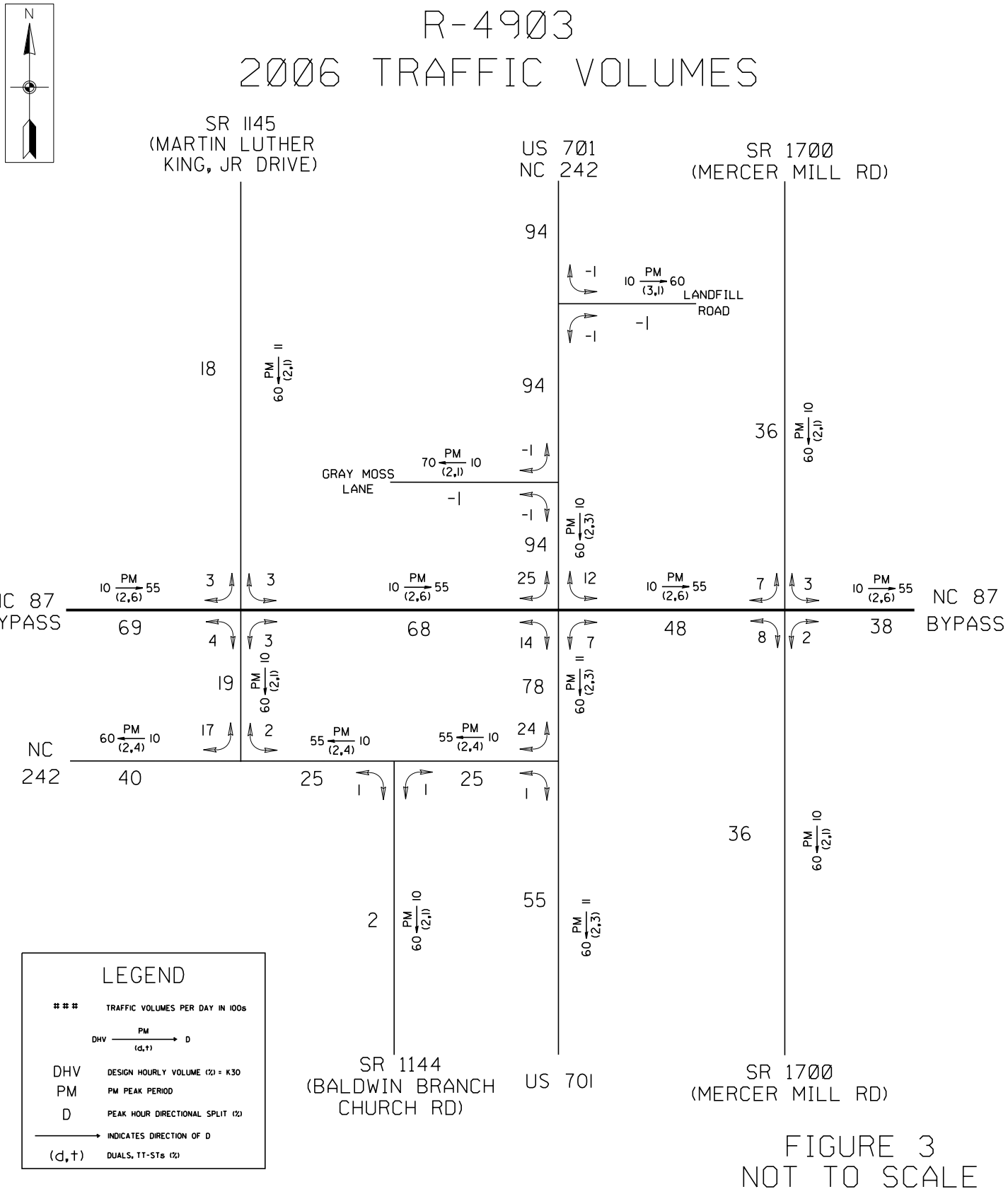
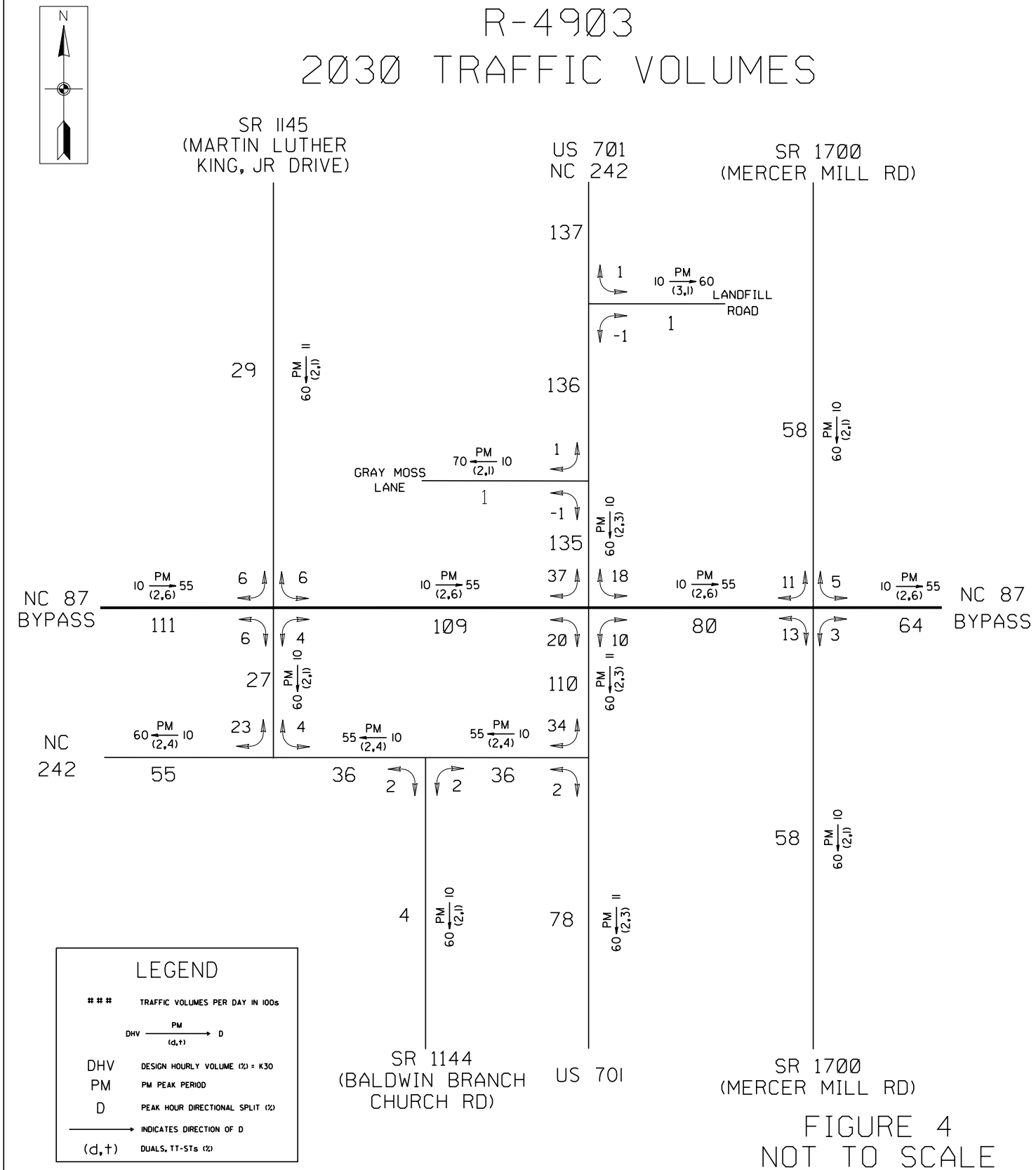


FIGURE 3
NOT TO SCALE

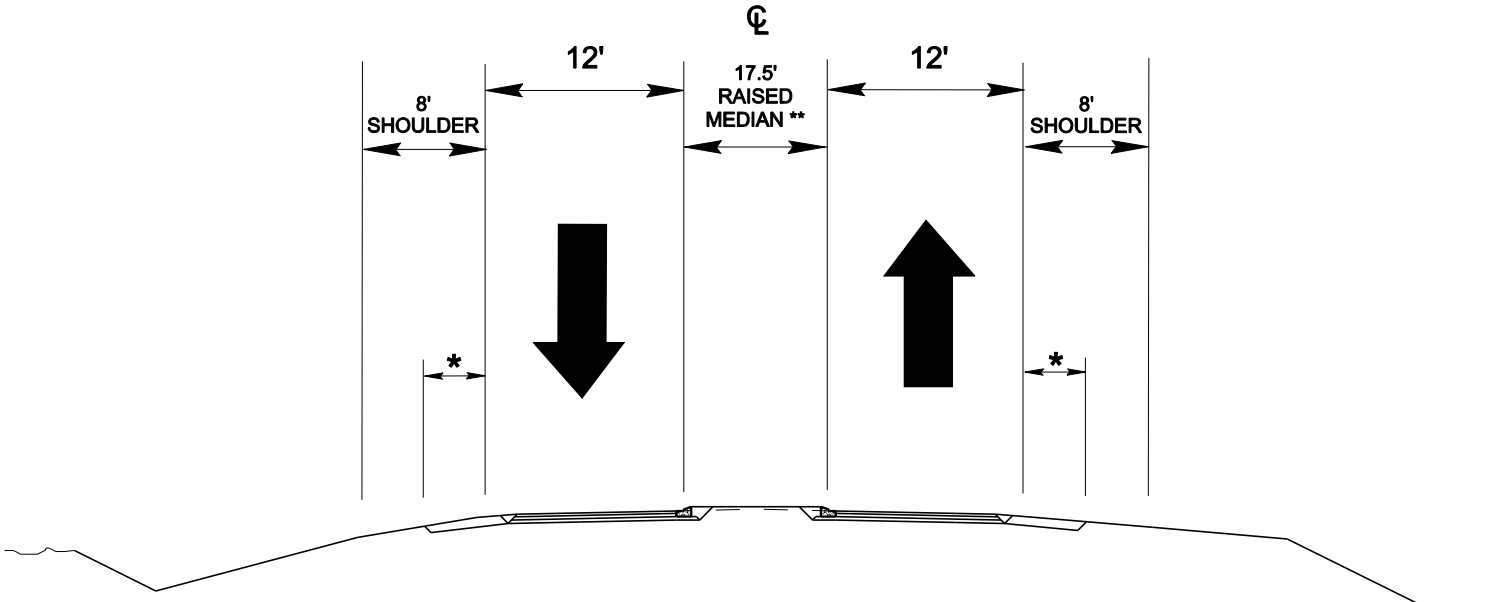
R-4903
2030 TRAFFIC VOLUMES



LEGEND

###	TRAFFIC VOLUMES PER DAY IN 100s
DHV PM (d,t) D	
DHV	DESIGN HOURLY VOLUME (%) = K30
PM	PM PEAK PERIOD
D	PEAK HOUR DIRECTIONAL SPLIT (%)
→	INDICATES DIRECTION OF D
(d,t)	DUALS, TT-STs (%)

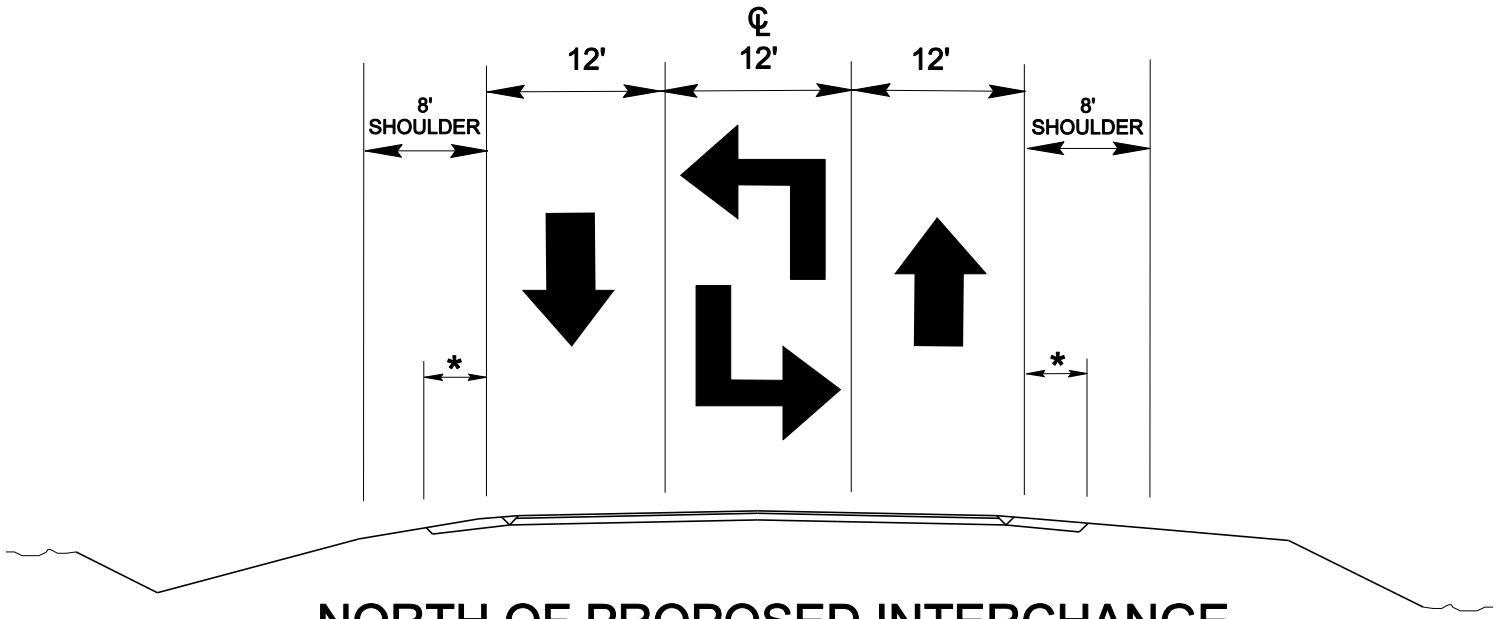
FIGURE 4
NOT TO SCALE



FROM NC 242 TO NORTHERN INTERCHANGE RAMPS

*4' PAVED SHOULDER

**5.5' RAISED ISLAND WITH LEFT TURN LANE



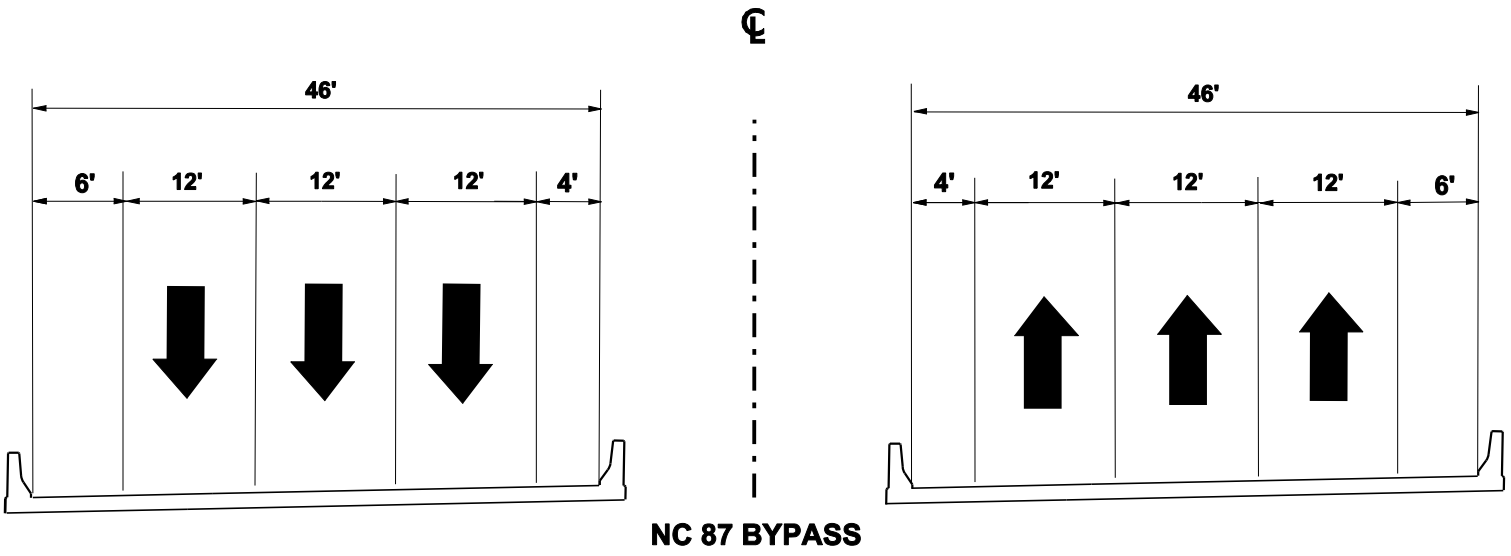
NORTH OF PROPOSED INTERCHANGE

*4' PAVED SHOULDER

R-4903
PROPOSED ROADWAY TYPICAL SECTIONS FOR US 701

NOT TO SCALE

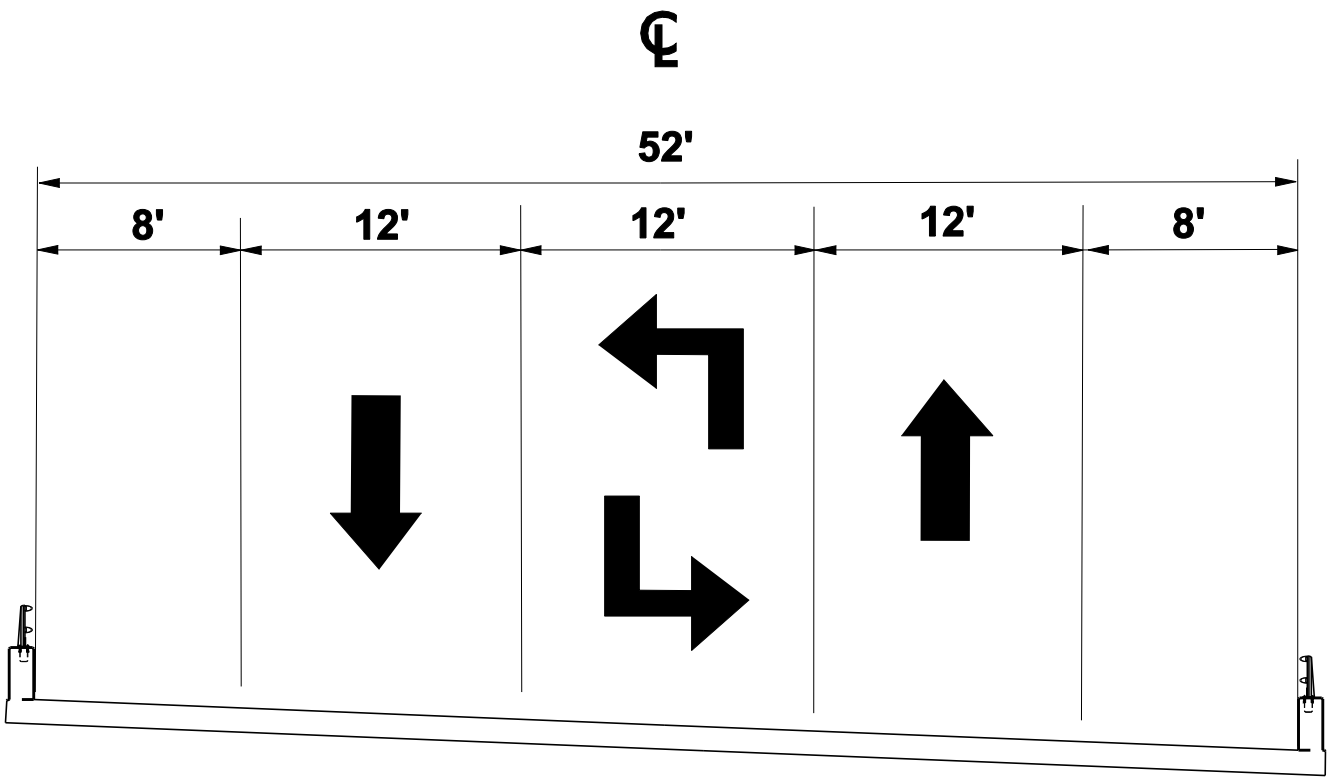
FIGURE 5



R-4903
PROPOSED BRIDGE TYPICAL SECTION FOR NC 87 BYPASS

NOT TO SCALE

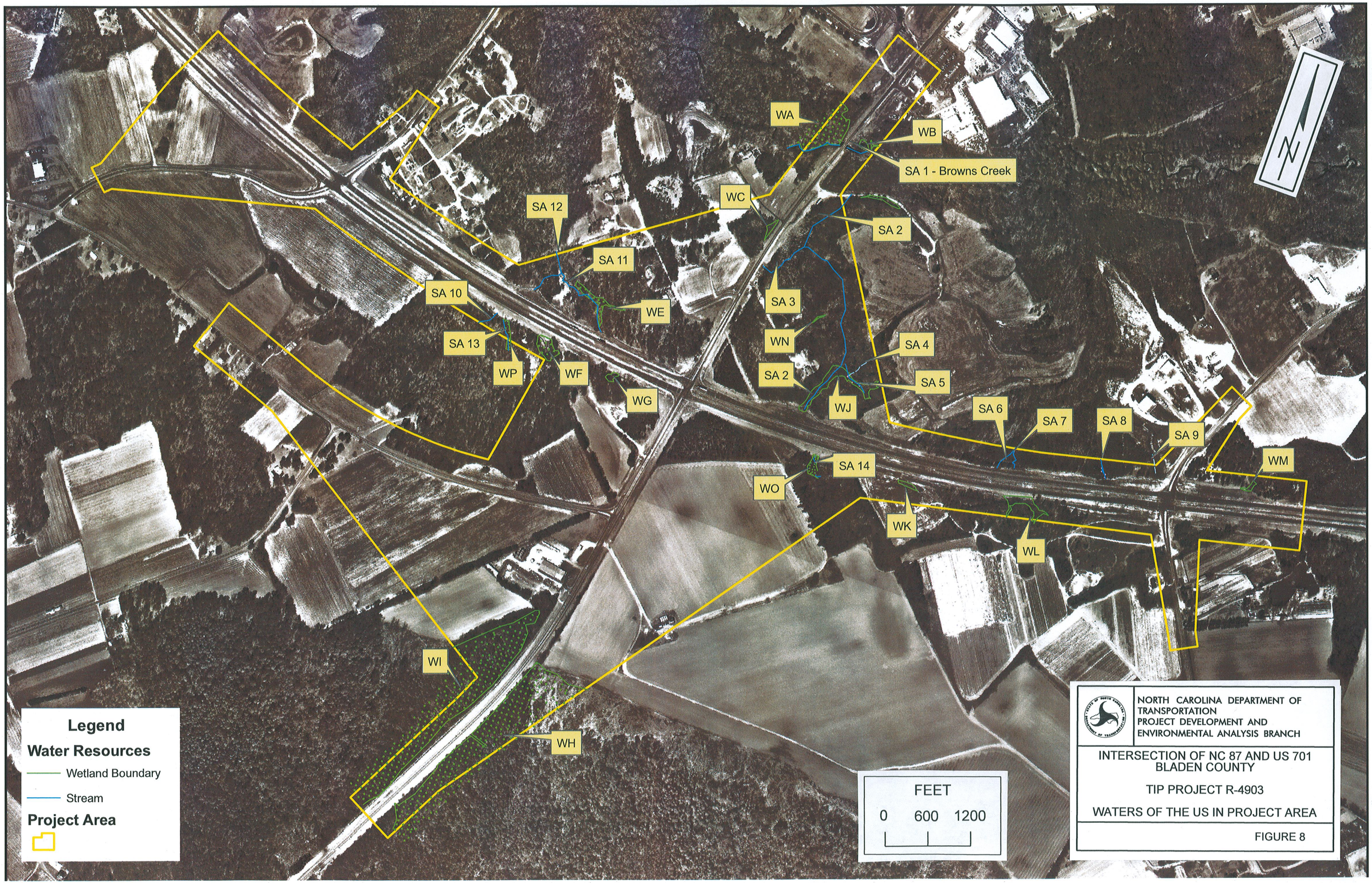
FIGURE 6

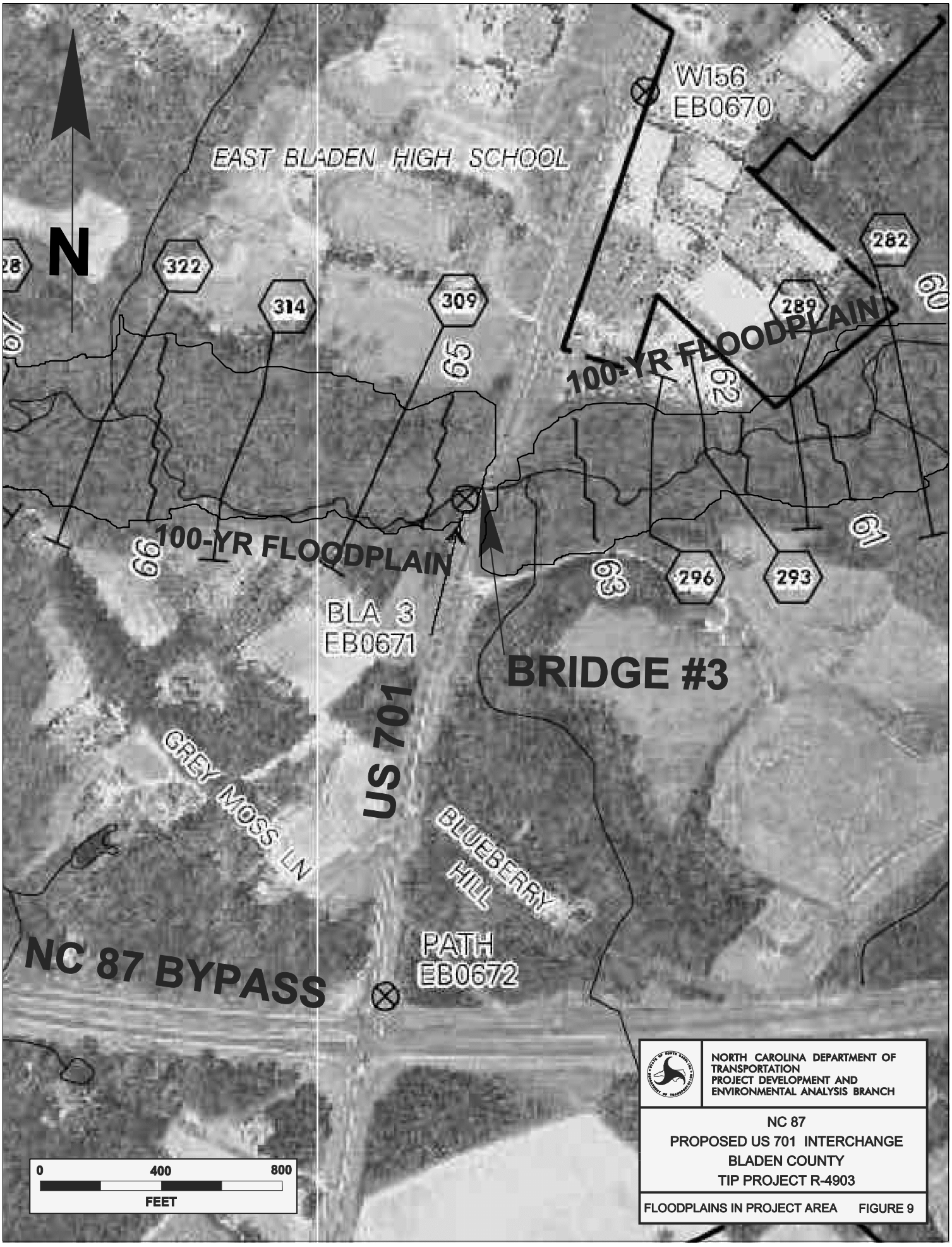


R-4903
PROPOSED BRIDGE TYPICAL SECTION FOR US 701

NOT TO SCALE

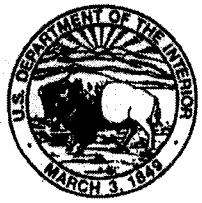
FIGURE 7


WA
WB
SA 1 - Browns Creek
WC
SA 12
SA 2
SA 11
SA 10
SA 3
WE
WN
SA 13
SA 4
WP
WF
SA 2
SA 5
WG
WJ
SA 6
SA 7
SA 8
SA 9
WM
SA 14
WO
WK
WL
WI
WH
Legend
Water Resources
Wetland Boundary
Stream
Project Area
FEET
0
600
1200
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH
INTERSECTION OF NC 87 AND US 701
BLADEN COUNTY
TIP PROJECT R-4903
WATERS OF THE US IN PROJECT AREA
FIGURE 8


N
W156
EB0670
EAST BLADEN HIGH SCHOOL
322
314
309
289
282
100-YR FLOODPLAIN
100-YR FLOODPLAIN
296
293
BLA 3
EB0671
BRIDGE #3
US 701
GREY MOSS LN
BLUEBERRY HILL
PATH
EB0672
NC 87 BYPASS
0
400
800
FEET
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH
NC 87
PROPOSED US 701 INTERCHANGE
BLADEN COUNTY
TIP PROJECT R-4903
FLOODPLAINS IN PROJECT AREA
FIGURE 9

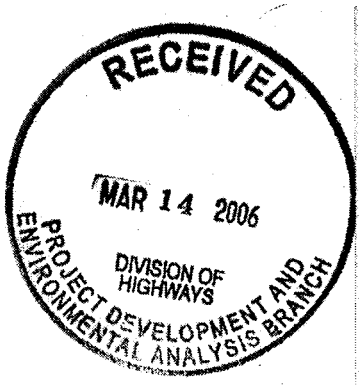
APPENDIX A

COMMENTS RECEIVED



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726
March 7, 2006



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

Dear Dr. Thorpe:

This letter is in response to your request for comments from the U.S. Fish and Wildlife Service (Service) on the potential environmental effects of the proposed interchange at NC 87 and US 701 in Bladen County, North Carolina (TIP No. R-4903). These comments provide scoping information in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661-667d) and section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

The Service does not have any specific comments or concerns for this project. However, we reserve the right to review any federal permits that may be required for this project, at the public notice stage. Therefore, it is important that resource agency coordination occur early in the planning process in order to resolve any conflicts that may arise and minimize delays in project implementation. We recommend that the environmental documentation for this project include the following in sufficient detail to facilitate a thorough review of the action:

1. A clearly defined and detailed purpose and need for the proposed project, supported by tabular data, if available, and including a discussion of the project's independent utility;

2. A description of the proposed action with an analysis of all alternatives being considered, including the upgrading of existing roads and a "no action" alternative;

3. A description of the fish and wildlife resources, and their habitats, within the project impact area that may be directly or indirectly affected;

4. The extent and acreage of waters of the U.S., including wetlands, that are to be impacted by filling, dredging, clearing, ditching, or draining. Acres of wetland impact should be differentiated by habitat type based on the wetland classification scheme of the National Wetlands Inventory (NWI). Wetland boundaries should be determined by using the 1987 Corps of Engineers Wetlands Delineation Manual and verified by the U.S. Army Corps of Engineers;

5. The anticipated environmental impacts, both temporary and permanent, that would be likely to occur as a direct result of the proposed project. The assessment should also include the extent to which the proposed project would result in secondary impacts to natural resources, and how this and similar projects contribute to cumulative adverse effects;

6. Design features and construction techniques which would be employed to avoid or minimize impacts to fish and wildlife resources, both direct and indirect, and including fragmentation and direct loss of habitat;

7. Design features, construction techniques, or any other mitigation measures which would be employed at wetland crossings and stream channel relocations to avoid or minimize impacts to waters of the US; and,

8. If unavoidable wetland or stream impacts are proposed, project planning should include a compensatory mitigation plan for offsetting the unavoidable impacts.

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

Although the North Carolina Natural Heritage Program (NCNHP) database does not indicate any known occurrences of listed species near the project vicinity, use of the NCNHP data should not be substituted for actual field surveys if suitable habitat occurs near the project site. The NCNHP database only indicates the presence of known occurrences of listed species and does not necessarily mean that such species are not present. It may simply mean that the area has not been surveyed. If suitable habitat occurs within the project vicinity for any listed species, surveys should be conducted to determine presence or absence of the species.

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

The Service appreciates the opportunity to comment on this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520, ext. 32.

Sincerely,

Pete Benjamin
Ecological Services Supervisor

cc: Richard Spencer, USACE, Wilmington, NC
Nicole Thomson, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC
John Sullivan, FHwA, Raleigh, NC

North Carolina
Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

February 28, 2006

Ms. Kim Gillespie
NC Department of Transportation
Project Development & Environmental
1548 Mail Service Center
Raleigh NC 27699-1548

Dear Ms. Gillespie:

Subject: Scoping - Proposal for interchange construction at NC 87 and US 701 in Bladen County. TIP #R-4903

The N. C. State Clearinghouse has received the above project for intergovernmental review. This project has been assigned State Application Number 06-E-4220-0261. Please use this number with all inquiries or correspondence with this office.

Review of this project should be completed on or before 03/28/2006. Should you have any questions, please call (919)807-2425.

Sincerely,

Chrys Baggett

Ms. Chrys Baggett
Environmental Policy Act Coordinator

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 Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

April 3, 2006

Ms. Kim Gillespie
NC Department of Transportation
Project Development & Environmental
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Ms. Gillespie:

Re: SCH File # 06-E-4220-0261; Scoping; Proposal for interchange construction at NC 87 and US 701 in Bladen County. TIP #R-4903

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,

Chrys Baggett /SJG

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region N

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

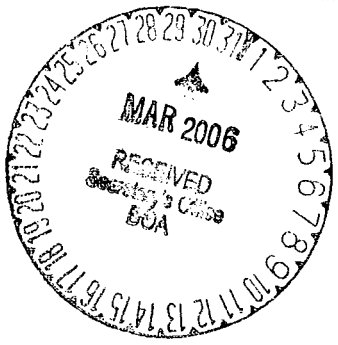
Location Address:
116 West Jones Street
Raleigh, North Carolina

NCDENR

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
Environmental Review Coordinator

SUBJECT: 06-0261 Scoping, Improvements to Intersection of NC 87 and US 701 in Bladen County

DATE: March 29, 2006

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

Thank you for the opportunity to review.

Attachments

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

One NorthCarolina Naturally

North Carolina
Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

April 19, 2006

Ms. Kim Gillespie
NC Department of Transportation
Project Development & Environmental
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Ms. Gillespie:

Re: SCH File # 06-E-4220-0261; Scoping; Proposal for interchange construction at NC 87 and US 701 in Bladen County. TIP #R-4903

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 **additional** 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,

Chrys Baggett /SIG

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region N

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

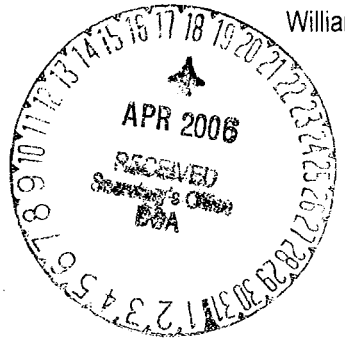
Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail Chrys.Baggett@ncmail.net

Location Address:
116 West Jones Street
Raleigh, North Carolina

NCDENR
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
Project Review Coordinator

SUBJECT: 06-0261 Interchange Construction at NC 87 and US 70, Bladen County

DATE: April 18, 2006

The attached comments were received by this office after the response due date. These comments should be forwarded to the applicant and made a part of our previous comment package.

Thank you for the opportunity to respond.

Attachment

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

North Carolina Department of Cultural Resources

State Historic Preservation Office

Peter B. Sandbeck, Administrator

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

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

March 28, 2006

MEMORANDUM

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

FROM: Peter Sandbeck RSB for Peter Sandbeck

SUBJECT: Division 6, Intersection of NC 87 and US 701, R-4903, Bladen County, ER 06-0619

Thank you for your letter of February 23, 2006, concerning the above project.

We have conducted a search of our maps and files and located the following structure of historical or architectural importance within the general area of this project:

- Trinity Methodist Church, NW corner of Broad and Lower Sts., listed in the National Register in 1989.

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

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

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

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

cc: Mary Pope Furr

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

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Inter-Agency Project Review Response

Project Number
06-0261
County
Bladen

Project Name **NC DOT** Type of Project **Proposal for interchange construction at NC 87 & US 70.**

Comments provided by:

☐ Regional Program Person

☒ Regional Supervisor for Public Water Supply Section

☐ Central Office program person

Name **Debra Benoy-Fayetteville RO** Date **03/17/06**

Telephone number: _____

Program within Division of Environmental Health:

☐ Public Water Supply

☐ Other, Name of Program: _____

Response (check all applicable):

☐ No objection to project as proposed

☐ No comment

☐ Insufficient information to complete review

☐ Comments attached

☒ See comments below

Any Water line ~~must~~ re location requires an Authorization to Construct from PWS

Return to:
Public Water Supply Section
Environmental Review Coordinator
for the
Division of Environmental Health

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Project Number
06-0261
County
Bladen

Inter-Agency Project Review Response

Project Name **NC DOT** Type of Project **Proposal for interchange construction at NC 87 & US 70.**

☐ The applicant should be advised that plans and specifications for all water system improvements must be approved by the Division of Environmental Health prior to the award of a contract or the initiation of construction (as required by 15A NCAC 18C .0300et. seq.). For information, contact the Public Water Supply Section, (919) 733-2321.

☐ This project will be classified as a non-community public water supply and must comply with state and federal drinking water monitoring requirements. For more information the applicant should contact the Public Water Supply Section, (919) 733-2321.

☐ If this project is constructed as proposed, we will recommend closure of _____ feet of adjacent waters to the harvest of shellfish. For information regarding the shellfish sanitation program, the applicant should contact the Shellfish Sanitation Section at (252) 726-6827.

☐ The soil disposal area(s) proposed for this project may produce a mosquito breeding problem. For information concerning appropriate mosquito control measures, the applicant should contact the Public Health Pest Management Section at (919) 733-6407.

☐ The applicant should be advised that prior to the removal or demolition of dilapidated structures, a extensive rodent control program may be necessary in order to prevent the migration of the rodents to adjacent areas. For information concerning rodent control, contact the local health department or the Public Health Pest Management Section at (919) 733-6407.

☐ The applicant should be advised to contact the local health department regarding their requirements for septic tank installations (as required under 15A NCAC 18A. 1900 et. sep.). For information concerning septic tank and other on-site waste disposal methods, contact the On-Site Wastewater Section at (919) 733-2895.

☐ The applicant should be advised to contact the local health department regarding the sanitary facilities required for this project.

☐ If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Environmental Health, Public Water Supply Section, Technical Services Branch, 1634 Mail Service Center, Raleigh, North Carolina 27699-1634, (919) 733-2321.

☒ For Regional and Central Office comments, see the reverse side of this form.

Jim McRight	**PWSS**	**03/17/06**
Reviewer	Section/Branch	Date

NCDENR

North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross, Secretary

March 6, 2006

MEMORANDUM

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

FROM: Harry LeGrand, Natural Heritage Program

SUBJECT: Proposed Interchange Construction – Intersection of NC 87 and US 701; Elizabethtown, Bladen County

REFERENCE: TIP Project R-4903

The Natural Heritage Program has no record of rare species, significant natural communities, or priority natural areas at the site nor within a mile of the project area. Although our maps do not show records of such natural heritage elements in the project area, it does not necessarily mean that they are not present. It may simply mean that the area has not been surveyed. The use of Natural Heritage Program data should not be substituted for actual field surveys, particularly if the project area contains suitable habitat for rare species, significant natural communities, or priority natural areas.

You may wish to check the Natural Heritage Program database website at <www.ncsparks.net/nhp/search.html> for a listing of rare plants and animals and significant natural communities in the county and on the topographic quad map. Please do not hesitate to contact me at 919-715-8697 if you have questions or need further information.

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-733-4984 • FAX: 919-715-3060 • Internet: www.enr.state.nc.us

Michael F. Easley, Governor
William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources
Alan W. Klimek, P.E. Director
Division of Water Quality

March 17, 2006

MEMORANDUM

To: Melba McGee, Environmental Coordinator

From: Nicole Thomson, NC Division of Water Quality, Transportation Permitting Unit

Subject: Scoping comments on proposed improvements to Intersection of NC 87 and US 701 in Bladen County, Federal Aid Project No. NHF-87(15), State Project No. WBS 40226.1.1, TIP R-4903.

This office has reviewed the referenced document dated February 6, 2006. 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. Preliminary analysis of the project reveals the potential for multiple impacts to perennial streams and jurisdictional wetlands in the project area. More specifically, impacts to:

Stream Name	River Basin	Stream Classification(s)	Stream Index Number
UT Browns Creek	Cape Fear	C;303(d)	18-45

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

Project Specific Comments:

1. UT to Browns Creek is class C;303(d) waters of the State. UT to Browns Creek is on the 303(d) list for impaired use for aquatic life due to urban runoff from storm sewers . DWQ is very concerned with sediment and erosion impacts that could result from this project. DWQ recommends that the most protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to UT to Northeast Creek. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ *Stormwater Best Management Practices.*

General Project Comments:

1. The environmental document should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

Transportation Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
2321 Crabtree Boulevard, Suite 250, Raleigh, North Carolina 27604
Phone: 919-733-1786 / FAX 919-733-6893 / Internet: http://h2o.enr.state.nc.us/ncwetlands

2. Environmental assessment alternatives should consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives should include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ *Stormwater Best Management Practices*, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.

3. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.

4. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.

5. DWQ is very concerned with sediment and erosion impacts that could result from this project. NC DOT should address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.

6. If a bridge is being replaced with a hydraulic conveyance other than another bridge, DWQ believes the use of a Nationwide Permit may be required. Please contact the US Army Corp of Engineers to determine the required permit(s).

7. If the old bridge is removed, no discharge of bridge material into surface waters is allowed unless otherwise authorized by the US ACOE. Strict adherence to the Corps of Engineers guidelines for bridge demolition will be a condition of the 401 Water Quality Certification.

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

9. Whenever possible, the DWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allow for human and wildlife passage beneath the structure, do not block fish passage and do not block navigation by canoeists and boaters.

10. Bridge deck drains should not discharge directly into the stream. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NC DWQ *Stormwater Best Management Practices.*

11. If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured

concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.

12. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas should be seeded or mulched to stabilize the soil and appropriate native woody species should be planted. When using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.

13. Placement of culverts and other structures in waters, streams, and wetlands shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.

14. If multiple pipes or barrels are required, they should be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

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

16. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250.

17. All work in or adjacent to stream waters should be conducted in a dry work area unless otherwise approved by NC DWQ. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures should be used to prevent excavation in flowing water.

18. Sediment and erosion control measures should not be placed in wetlands and streams.

19. Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas could precipitate compensatory mitigation.

20. While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent

inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.

21. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

22. In most cases, the DWQ prefers the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed and restored to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. Tall fescue should not be used in riparian areas.

23. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.

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

cc: Richard Spencer, US Army Corps of Engineers, Wilmington Field Office
Clarence Coleman, Federal Highway Administration, 310 New Bern Ave., Raleigh, NC 27601
Terry R. Gibson, PE, Division 6 Engineer, PO Box 1150, Fayetteville, NC 28302
James J. Rerko, Division 6 Environmental Officer, PO Box 1150, Fayetteville, NC 28302
Chris Militscher, Environmental Protection Agency
Travis Wilson, NC Wildlife Resources Commission
Gary Jordan, US Fish and Wildlife Service
William Gilmore, Ecosystem Enhancement Program
File Copy

State of North Carolina
NCDENR Department of Environment and Natural Resources

Reviewing Office: Fayetteville RO

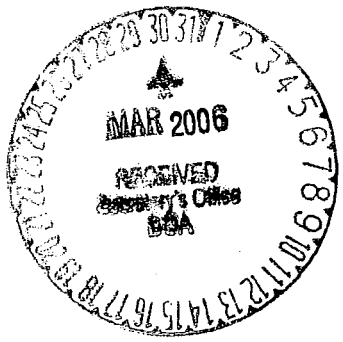
Project Number: 06-0361 Due Date: 03/23/06

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

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

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory Time Limit)
☐	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
☐	NPDES-permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection preapplication conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90 - 120 days (N/A)
☐	Water Use Permit	Preapplication technical conference usually necessary	30 days (N/A)
☐	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
☐	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Preapplication conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
☐	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100, 2Q.0300, 2H.0600)	N/A	60 days
☑	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
☑	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-733-0820.		
☐	Complex Source Permit required under 15 A NCAC 2D.0800		
☑	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) at least 30 days before beginning activity. A fee of $50 for the first acre or any part of an acre.		20 days (30 days)
☐	The Sedimentation Pollution Control Act of 1973 must be addressed with respect to the referenced Local Ordinance.		30 days
☑	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.		
☐	Mining Permit	On-site inspection usual. Surety bond filed with DENR. Bond amount varies with type mine and number of acres of affected land. Any are mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
☐	North Carolina Burning permit	On-site inspection by N.C. Division of Forest Resources if permit exceeds 4 days	1 day (N/A)
☐	Special Ground Clearance Burning Permit-22 counties in coastal N.C. with organic soils.	On-site inspection by N.C. Division of Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
☐	Oil Refining Facilities	N/A	90 - 120 days (N/A)

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory Time Limit)
☐	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to DENR approved plans. May also require permit under mosquito control program, and a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of $200.00 must accompany the application. An additional processing fee based on a percentage or the total project cost will be required upon completion.	30 days (60 days)
☐	Permit to drill exploratory oil or gas well	File surety bond of $5,000 with DENR running to State of N.C. conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DENR rules and regulations.	10 days (N/A)
☐	Geophysical Exploration Permit	Application filed with DENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days (N/A)
☐	State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15 - 20 days (N/A)
☑	401 Water Quality Certification	N/A	55 days (130 days)
☐	CAMA Permit for MAJOR development	$250.00 fee must accompany application	60 days (130 days)
☐	CAMA Permit for MINOR development	$50.00 fee must accompany application	22 days (25 days)
☐	Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, N.C. 27611		
☐	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
☐	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
☐	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
*	Other comments (attach additional pages as necessary, being certain to cite comment authority)		



REGIONAL OFFICES

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

☐ **Asheville Regional Office**
59 Woodfin Place
Asheville, N.C. 28801
(828) 251-6208

☐ **Mooresville Regional Office**
919 North Main Street
Mooresville, N.C. 28115
(704) 663-1699

☐ **Wilmington Regional Office**
127 Cardinal Drive Extension
Wilmington, N.C. 28405
(910) 395-3900

☒ **Fayetteville Regional Office**
225 Green Street, Suite 714
Fayetteville, N.C. 28301
(910) 486-1541

☐ **Raleigh Regional Office**
3800 Barrett Drive, P.O. Box 27687
Raleigh, N.C. 27611
(919) 571-4700

☐ **Winston-Salem Regional Office**
585 Waughtown Street
Winston-Salem, N.C. 27107
(336) 771-4600

☐ **Washington Regional Office**
943 Washington Square Mall
Washington, N.C. 27889
(252) 946-6481

North Carolina Wildlife Resources Commission

MEMORANDUM Richard B. Hamilton, Executive Director

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

FROM: Travis Wilson, Highway Project Coordinator
Habitat Conservation Program

DATE: March 21, 2006

SUBJECT: Response to the start of study notification from the N. C. Department of Transportation (NCDOT) regarding fish and wildlife concerns for the interchange construction at NC 87 and US 701in Bladen County, North Carolina. TIP No. R-4903, SCH Project No. 06-0261.

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

We do not have any specific concerns at this time. To help facilitate document preparation and the review process, our general informational needs are outlined below:

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

The Natural Heritage Program
N. C. Division of Parks and Recreation
1615 Mail Service Center
Raleigh, N. C. 27699-1615
(919) 733-7795
WWW.ncsparks.net/nhp

and,

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

2. Description of any streams or wetlands affected by the project. The need for channelizing or relocating portions of streams crossed and the extent of such activities.

3. Cover type maps showing wetland acreages impacted by the project. Wetland acreages should include all project-related areas that may undergo hydrologic change as a result of ditching, other drainage, or filling for project construction. Wetland identification may be accomplished through coordination with the U. S. Army Corps of Engineers (COE). If the COE is not consulted, the person delineating wetlands should be identified and criteria listed.

4. Cover type maps showing acreages of upland wildlife habitat impacted by the proposed project. Potential borrow sites should be included.

5. The extent to which the project will result in loss, degradation, or fragmentation of wildlife habitat (wetlands or uplands).

6. Mitigation for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses.

7. A cumulative impact assessment section which analyzes the environmental effects of highway construction and quantifies the contribution of this individual project to environmental degradation.

8. A discussion of the probable impacts on natural resources which will result from secondary development facilitated by the improved road access.

9. If construction of this facility is to be coordinated with other state, municipal, or private development projects, a description of these projects should be included in the environmental document, and all project sponsors should be identified.

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

TOWN OF
ELIZABETHTOWN

805 West Broad Street
Post Office Box 716
Elizabethtown, N.C. 28337

(910) 862-2066
Fax (910) 862-7117
www.elizabethtownnc.org
towncouncil@elizabethtownnc.org

March 27, 2006

Mr. Gregory J. Thorpe, Ph.D., Director
Project Development and Environmental Analysis Branch
NCDOT
1548 Mail Service Center
Raleigh, NC 27699-1548

Re.: Bladen County, Intersection of NC 87 and US 701, NCDOT Division 6, WBS Element 40226.1.1, Federal Aid Project NHF-87(15), TIP Project R-4903

Mr. Thorpe,

In reference to your February 23, 2006 correspondence, no permits or approvals are required by the Town of Elizabethtown concerning the above-referenced project.

The NC DOT has been very good in the past about sharing information about projects in and around Elizabethtown with town officials, and we simply request this same professional courtesy on this project.

We look forward to the construction of this project in fiscal year 2012.

Sincerely,

Kenneth R. Kornegay

Kenneth R. Kornegay
Mayor

cc: David B. Bone, Town Manager
Robert Crumpler, PE, DOT District 3 Engineer
Kenneth Clark, PE, DOT County Maintenance Engineer

APPENDIX B

NCDOT RELOCATION ASSISTANCE PROGRAM/ RELOCATION REPORTS

DIVISION OF HIGHWAYS RELOCATION PROGRAMS

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

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

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

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

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

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

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

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

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

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

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

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:	40226.1.1	COUNTY	Bladen	Alternate 2 of 4 Alternate
T.I.P. NO.:	R-4903			
DESCRIPTION OF PROJECT:	Proposed Interchange @ NC 87 Bypass & US 701			

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	2	4	6	5
Businesses	0	0	0	0
Farms	0	0	0	0
Non-Profit	0	0	0	0

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
	X	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? **18-24 Months**

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	2	2	2	0

VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Owners		Tenants		For Sale		For Rent	
0-20M	0	$ 0-150	0	0-20M	0	$ 0-150	0
20-40M	0	150-250	0	20-40M	1	150-250	0
40-70M	0	250-400	2	40-70M	4	250-400	0
70-100M	1	400-600	2	70-100M	8	400-600	2
100 UP	1	600 UP	0	100 UP	30	600 UP	18
TOTAL	2		4		43		20

REMARKS (Respond by number)

6. & 14. MLS, Local Realtors, Newspapers, etc.
8. As mandated by law.
11. Bladen Co.

[signature]	4-3-09	Am Simpson	4-6-09
R.M. Abbott, Jr. Right of Way Agent	Date	Relocation Coordinator	Date

FRM15-E

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:	40226.1.1	COUNTY	Bladen	Alternate 4 of 4 Alternate
T.I.P. NO.:	R-4903		MAY 2010 REVISION OF ALT 4	
DESCRIPTION OF PROJECT:	Proposed Interchange @ NC 87 Bypass & US 701			

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	1	4	5	5
Businesses	0	0	0	0
Farms	0	0	0	0
Non-Profit	0	0	0	0

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.	
	X	1.	Will special relocation services be necessary?
	X	2.	Will schools or churches be affected by displacement?
X		3.	Will business services still be available after project?
	X	4.	Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5.	Will relocation cause a housing shortage?
		6.	Source for available housing (list).
	X	7.	Will additional housing programs be needed?
X		8.	Should Last Resort Housing be considered?
	X	9.	Are there large, disabled, elderly, etc. families?
	X	10.	Will public housing be needed for project?
X		11.	Is public housing available?
X		12.	Is it felt there will be adequate DSS housing housing available during relocation period?
	X	13.	Will there be a problem of housing within financial means?
X		14.	Are suitable business sites available (list source).
		15.	Number months estimated to complete RELOCATION? **18-24 Months**

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	2	2	1	0

VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Owners		Tenants		For Sale		For Rent	
0-20M	0	$ 0-150	0	0-20M	0	$ 0-150	0
20-40M	0	150-250	0	20-40M	2	150-250	0
40-70M	0	250-400	2	40-70M	6	250-400	0
70-100M	1	400-600	2	70-100M	8	400-600	5
100 UP	0	600 UP	0	100 UP	40	600 UP	20
TOTAL	1		4		56		25

REMARKS (Respond by Number)

3. No businesses are being affected.

6., 12., & 14. MLS, Local Realtors, Newspapers, etc.

8. As mandated by law.

11. Bladen Co.

14. No business relocations, so no need for suitable sites, although they are available.

7-1-10		7/2/10	
R.M. Abbott, Jr. Right of Way Agent	Date	Relocation Coordinator	Date

FRM15-E

APPENDIX C

NEPA/SECTION 404 MERGER PROCESS CONCURRENCE FORMS

NEPA/404 MERGER TEAM MEETING AGREEMENT

Concurrence Point No. 1: Purpose and Need

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

Federal Aid Project Number:	NHF-87(15)
State Project Number:	WBS Element 40226.1.1
TIP Project Number:	R-4903
TIP Description:	Interchange Construction at the NC 87 Bypass/US 701 intersection, Bladen County

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

Purpose and Need of Proposed Project

The purpose of the proposed project is to improve the safety and capacity of the NC 87 Bypass/ US 701 intersection.

NAME	AGENCY
	NCWRC
Gary Jordan	USFWS
	DWQ
	USEPA
Renee Gledhill-Earley	SHPO/DCR
	FHWA
Kin Gillespie	NC DOT
	USACE

NEPA/404 MERGER TEAM MEETING AGREEMENT

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

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

Federal Aid Project Number:	NHF-87(15)
State Project Number:	WBS Element 40226.1.1
TIP Project Number:	R-4903
TIP Description:	Interchange Construction at the NC 87 Bypass/US 701 intersection, Bladen County

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

___	Alternative 1
✓	Alternative 2
___	Alternative 3
✓	Alternative 4

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

NAME	AGENCY
[signature]	NCWRC
Gary Jordan	USFWS
[signature]	DWQ
[signature]	USEPA
Renee Gledhill-Earley	SHPO/DCR
[signature]	FHWA
Kim Gillespie	NC DOT
[signature]	USACE

NEPA/404 MERGER TEAM MEETING AGREEMENT

Concurrence Point No. 2A: Bridging Decisions

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

Federal Aid Project Number:	NHF-87(15)
State Project Number:	WBS Element 40226.1.1
TIP Project Number:	R-4903
TIP Description:	Interchange Construction at the NC 87 Bypass/US 701 intersection, Bladen County

Bridging Decisions: The merger team concurred on the following minimum bridge length and culvert replacement for the project:

Bridge #3, which is 46.9 feet long, will be replaced with a new structure 55 feet long.

The project team has *unconditionally* concurred on this date of April 21, 2009.

NAME	AGENCY
	NCWRC
Gary Jordan	USFWS
Rob Ridings	DWQ
	USEPA
Renee Gledhill-Early	SHPO/DCR
	FHWA
Kim Gillespie	NC DOT
	USACE

Section 404/NEPA Interagency Agreement

Concurrence Point No. 3: Least Environmentally Damaging Practicable Alternative

Federal Aid Project Number:	NHF-87(15)
State Project Number:	WBS Element 40226.1.1
TIP Project Number:	R-4903
TIP Description:	Interchange Construction at the NC 87 Bypass/US 701 intersection, Bladen County

Least Environmentally Damaging Practicable Alternative: The alternative marked with a check has been selected by the merger team as the least damaging practicable alternative (LEDPA) for the proposed interchange construction at the NC 87 Bypass/US 701 intersection. Alternatives with a line drawn through the alternative name have been dropped from further consideration.

☐ ~~Alternative 2~~ ☑ Alternative 4

The project team has unconditionally concurred on this date of July 13, 2010 on the LEDPA for the interchange construction at the NC 87 Bypass/US 701 intersection, as shown on the attached figure and as described above.

Concurring Agencies

NAME	AGENCY
Gary Jordan	USFWS
Robert Ridings	DWQ
[signature]	FHWA
[signature]	USACE
Allyn K. Gillespie	NCDOT
Renee Gledhill-Earley	DCR/SHPO
[signature]	USEPA
[signature]	NCWRC
[signature]	NCDMF

Section 404/NEPA Interagency Agreement

Concurrence Point No. 3: Least Environmentally Damaging Practicable Alternative

Federal Aid Project Number:	NHF-87(15)
State Project Number:	WBS Element 40226.1.1
TIP Project Number:	R-4903
TIP Description:	Interchange Construction at the NC 87 Bypass/US 701 intersection, Bladen County

Least Environmentally Damaging Practicable Alternative: The alternative marked with a check has been selected by the merger team as the least damaging practicable alternative (LEDPA) for the proposed interchange construction at the NC 87 Bypass/US 701 intersection. Alternatives with a line drawn through the alternative name have been dropped from further consideration.

☐ ~~Alternative 2~~ ☑ Alternative 4

The project team has unconditionally concurred on this date of July 13, 2010 on the LEDPA for the interchange construction at the NC 87 Bypass/US 701 intersection, as shown on the attached figure and as described above.

Concurring Agencies

NAME	AGENCY
Gary Jordan	USFWS
Robert Ridings	DWQ
Randall Vann	FHWA
[signature]	USACE
Allyn K Gillespie	NCDOT
Renee Gledhill-Earley	DCR/SHPO
[signature]	USEPA
[signature]	NCWRC
Ron Sechler	NOAA Fisheries

Section 404/NEPA Merger Project Team Meeting Agreement
Concurrence Point 4A– Avoidance and Minimization Measures

Project Title: Interchange Construction at the NC 87 Bypass/US 701 intersection, Bladen County, TIP Project R-4903, Federal-Aid Project NHF-87(15), WBS Element 40226.1.1

404 Avoidance and Minimization Measures

The preliminary design for the project will only affect 6 of the wetland sites and 7 of the streams for Alternative 4.

In an effort to avoid and minimize impacts to jurisdictional wetlands and streams associated with the LEDPA, NCDOT has proposed to implement one or more of the following measures:

- The maximum slope (3 to 1) will be used through wetland areas.
- US 701 was relocated to the east to avoid wetlands. WJ
- The radius of each loop ramp was reduced to avoid streams, a wetland (wetland WI (reduced ~0.27 ac)), and a business.
- NC 242 was shifted north to avoid wetlands (wetland WJ (reduced 0.10 ac)). WI

Additional Avoidance and Minimization Measures

NCDOT will investigate reducing impacts to wetlands WF & WD, and streams SA6, SA7, SA10, SA13 and SA14 during final design.

The Section 404/NEPA Merger Project Team concurred on the 13th day of July 2010 with the Avoidance/Minimization measures listed above for TIP Project R-4903.

Name	Agency
Gary Jordan	USFWS
Allison Rin Gillespie	NCDOT
Robert Ridings	DWQ
[illegible]	USACE
Richard [illegible]	FHWA
Renee Gledhill-Earley	HPO/SHPO
Chris A. Z[illegible]	USEPA
[illegible]	NCWRC
[illegible]	NCDMF

The Section 404/NEPA Merger Project Team concurred on the 13th day of July 2010 with the Avoidance/Minimization measures listed above for TIP Project R-4903.

Name	Agency
Gary Jordan	USFWS
Allyson Dixon (Gillespie)	NCDOT
Robert Ridings	DWQ
[illegible]	USACE
Rick [illegible]	FHWA
Renee Gledhill-Earley	NCR/SHPO
[illegible]	USEPA
[illegible]	NCWRC
Ian Sechler	NOAA Fisheries