

**ADMINISTRATIVE ACTION
FINAL ENVIRONMENTAL IMPACT STATEMENT**

**United States Department of Transportation
Federal Highway Administration
and**

North Carolina Department of Transportation

**US 1 from Sandhill Road (SR 1971) to Marston Road (SR 1001)
Richmond County**

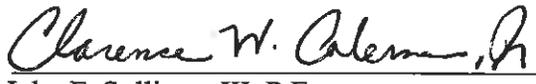
**Federal-Aid Project Number NHF-1(1)
State Project No. 8.T580501
WBS No. 34437.1.1
T.I.P. Project R-2501**

Documentation prepared pursuant to the National Environmental Policy Act
42 U.S.C. 4332(2)(c)

12/21/11
DATE

FOR 
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This report documents the need for transportation improvements along US 1 in Richmond County, North Carolina, and the planning process leading to the selection of the detailed study corridors. Existing and projected conditions in the study area are described and alternatives are evaluated in terms of environmental consequences, socioeconomic impacts, compatibility with local planning goals, and public opinion. A Draft Environmental Impact Statement was approved on June 30, 1999, and a Supplemental Draft Environmental Impact Statement was approved on April 27, 2001. These documents evaluated the No-Build and numerous Build Alternatives for the construction of a four-lane, controlled access bypass on a new location and the multi-lane widening of US 1 in the study area. All alternatives were evaluated with respect to costs, social and economic impacts and environmental consequences. A Preferred Alternative is designated.

**US 1 FROM SANDHILL ROAD (SR 1971) TO MARSTON ROAD (SR 1001)
RICHMOND COUNTY**

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FINAL ENVIRONMENTAL IMPACT STATEMENT

DECEMBER 2011

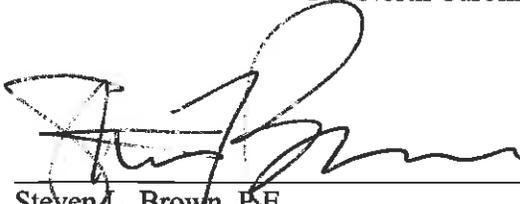
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US 1
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Richmond County
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SUMMARY

1. FEDERAL HIGHWAY ADMINISTRATION

This is a Federal Highway Administration (FHWA) Administrative Action Final Environmental Impact Statement.

2. CONTACTS

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3. PROPOSED ACTION

3.1. DESCRIPTION OF PROPOSED ACTION

The proposed project will improve US 1 from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) in Marston, a distance of about 19 miles (see Figures 1.1 and 1.2). Approximately 14 miles will be on new location, and about five miles of existing US 1 will be widened. From Sandhill Road (SR 1971) to about one and a half miles north of Fox Road (SR 1606), US 1 is proposed to be a four-lane, median divided roadway with full control of access along the new location part and partial control of access on the widening part. A five-lane section with no control of access is proposed along existing US 1 from about one and a half miles north of Fox Road (SR 1606) to Marston Road (SR 1001). Interchanges are planned at the US 74 Bypass, Airport Road (SR 1966), US 74 Business, and Wiregrass Road (SR 1640)/ County Home Road (SR 1624).

Project R-2501 is split into five parts – Sections A, BA, BB, BC, and C.

- Section A will improve existing US 1 from the South Carolina state line to south of Osborne Road (SR 1104) (approximately five miles). This section will be a future project and has not been studied as a part of this Environmental Impact Statement.
- Section BA will be on new location from south of Osborne Road (SR 1104) to US 74 Bypass (approximately five miles).
- Section BB will be on new location from US 74 Bypass to US 74 Business (approximately four miles).
- Section BC will be on new location from US 74 Business to just north of Fox Road (SR 1606) and follow existing US 1 from just north of Fox Road (SR 1606) to approximately one and a half miles north of Fox Road (SR 1606) (approximately six miles).
- Section C will improve existing US 1 from approximately one and a half miles north of Fox Road (SR 1606) to Marston Road (SR 1001) (approximately four miles).

US 1 is included in the North Carolina Department of Transportation's (NCDOT) *Strategic Highway Corridors Vision Plan*, adopted by the North Carolina Board of Transportation September 2, 2004. The primary purpose of this vision plan is to provide a network of high-speed, safe, reliable highways throughout North Carolina. These corridors are important routes for mobility, connectivity to activity centers and interstates, interstate relief, evacuation, and the national or statewide highway system. This portion of the US 1 improvements is identified as Project Number R-2501 in the NCDOT *2012-2020 State Transportation Improvement Program* (TIP). Right of way acquisition is scheduled to begin in fiscal year (FY) 2012 and construction in FY 2014 for Section C of the project.

3.2. PURPOSE OF PROPOSED ACTION

This project will: reduce travel time; reduce congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets; and improve mobility on the designated US 1 Strategic Highway Corridor.

4. ALTERNATIVES

The **No-Build Alternative** is an alternative for which no additional traffic lanes or the construction of a new facility are proposed. The No-Build Alternative typically includes short-term minor restoration activities designed to continue operation of the existing roadway. The No-Build Alternative would not meet the purpose of the project or satisfy the projected transportation needs. Furthermore, it is not consistent with the goals of the Rockingham-Hamlet Thoroughfare Plan or the NCDOT Transportation Improvement Program. As discussed in Section 1.2, *Summary of Need for Proposed Action*, parts of US 1 currently operate at LOS E, and traffic congestion will continue to get worse. In future peak hours, the average speed through this 18.6-mile corridor is expected to be less than 40 mph, and the travel time is expected to exceed 28 minutes (see Table 1-7). These conditions are not consistent with the long-term vision of the US 1 strategic highway corridor as a future freeway with high mobility, full control of access, speeds of at least 55 mph, and a minimum four-lane divided facility.

The No-Build Alternative would not meet the purpose of the project or satisfy the projected transportation needs. Furthermore, it is not consistent with the goals of the Rockingham-Hamlet Thoroughfare Plan or the NCDOT Transportation Improvement Program. Current traffic congestion is causing parts of US 1 to operate at an unacceptable level of service during peak hours, and traffic congestion will continue to get worse. In the future, the average speed from about Marston Road (SR 1001) to Sandhill Road (SR 1971) is expected to be less than 40 mph, and the travel time is expected to exceed 28 minutes. The No-Build Alternative is not a reasonable or feasible alternative and was eliminated from further study.

The **Transportation System Management (TSM) Alternative** includes those activities that maximize the efficiency of the existing system. This alternative includes such options as fringe parking, ridesharing, high-occupancy vehicle (HOV) lanes on existing roadways, and traffic signal timing optimization. Upon review of the project area, these options have very little or no application within the project's study limits. Without the bypass facility, the reconstruction and rehabilitation of the existing system would not adequately address future transportation demand and meet the project need without major relocations and associated costs. For these reasons, the TSM Alternative was not considered to be reasonable or feasible.

The **Mass Transit Alternative** includes the option of providing bus or rail service to decrease congestion. It can provide high-capacity, energy-efficient movement in densely traveled corridors. It also serves high and medium density areas by offering a low-cost option for auto owners who do not wish to drive, and an essential service to those without access to an automobile. A limitation of mass transit lies in its inability to serve different trip purposes. Due to the low employment density and the lack of a highly concentrated employment area, mass transit would not adequately serve the study area. The purpose of the project is to improve travel times, reduce congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets, and improve mobility on the designated US 1 Strategic Highway Corridor. Mass transit alternatives would not meet this purpose since it would only serve local traffic and not through traffic. Therefore, the Mass Transit Alternative was eliminated from further consideration.

4.1. BUILD ALTERNATIVES

Improvements to the Existing Facility

Improvements to existing US 1 were examined as an alternative to the proposed construction of a bypass facility on new alignment. These improvements would include providing additional travel lanes along US 1, including downtown Rockingham and the Rockingham Historic District. Improving existing US 1 would severely disrupt the economic and historic character of the downtown area, remove on-street parking, and relocate or acquire property from many homes and businesses. This alternative is not consistent with local and statewide long-range plans to provide a fully controlled, bypass facility around Rockingham. Traffic congestion on parts of US 1 are currently at capacity and will continue to deteriorate in the future. Widening the existing facility will not meet the purpose of the project since it would not reduce travel time, congestion, or improve mobility. Therefore, this alternative was not considered as a reasonable and feasible alternative.

Improve NC 177

Improving NC 177 to serve as an alternate route for traffic was considered as an alternative to the construction of a US 1 Bypass in a supplemental Draft Environmental Impact Statement (SDEIS, April 2001). Two options were examined: widening NC 177 to a multi-lane facility from its intersection with US 1 north of Rockingham to the South Carolina state line; and widening NC 177 to a multi-lane facility north and south of Hamlet with a bypass of Hamlet on new location that would include an interchange with US 74 Business west of Hamlet.

Based on the number of potential residential and business relocations, social impacts to the town of Hamlet and its neighboring communities, and the potential economic impacts to existing highway-related businesses including those in the Hamlet business district, widening NC 177 through Hamlet was not considered to be a reasonable or feasible alternative.

Widening NC 177 while providing a bypass of Hamlet on new location would also require a number of residential relocations, some of which are located within the city limits of Hamlet. Due to the additional length of this alternative as well as potential relocation and wetland impacts, this alternative was eliminated from further study.

Preliminary Corridors

Nineteen segments best suited for roadway development were identified early in the planning process for this project. Factors that influenced the identification of the segments included the locations of existing development, community facilities, historic architectural and archaeological sites, natural resources (wetlands, water resources, rare and protected species), floodplains, and recorded hazardous waste generators and sites. These 19 segments were then linked together in various combinations to form 27 preliminary alternative corridors.

Each segment was evaluated based on impacts to the community, economy, and natural resources. Construction costs and the number of water crossings requiring a structure were also considered. Based on the results of this evaluation, nine of the 19 segments were eliminated from further consideration or modified. Of the 27 alternative corridors, 23 of them included one or more of the eliminated segments – resulting in the elimination of all but four of the alternative corridors.

Detailed Study Alternatives

Four corridor alternatives were studied in detailed. These are Alternative Corridor Nos. 7, 14, 21, and 24.

Alternative 7 – This corridor begins south of Osborne Road (SR 1104) and passes north of the Loch Haven Golf Course and south of the Richmond County Airport. It intersects US 74 Business near Pineleigh Avenue (SR 1670). After intersecting with US 74 Business, the alignment continues northeast and intersects Wiregrass Road (SR 1640) near Washington Street Extension (SR 1643) where it then follows the existing alignment of US 1. From the intersection with US 1, the remaining portion of Alternative Corridor No. 7 consists of widening existing US 1 to either a four-lane divided expressway or a five-lane facility to its northern terminus at Marston Road (SR 1001). This corridor is approximately 19.2 miles in length.

Alternative 14 - This corridor alignment is identical to Corridor No. 7 with the exception that the proposed alignment, after crossing Osborne Road (SR 1104) near the southern terminus of the project, would take a more easterly route and pass south, rather than north, of the Loch Haven Golf Course before continuing northeast to intersect with US 74 Bypass in the same location as Corridor No. 7. Corridor No. 14 is approximately 19.1 miles in length.

Alternative 21 (Preferred) – The alignment for this alternative follows the same alignment as Alternative Corridor No. 7 until its intersection with US 74 Business. At this point, the alignment travels northeast to cross over both Wiregrass Road (SR 1640) and County Home Road (SR 1624) near the location of their intersection and just west of Richmond Primary School.

After crossing County Home Road (SR 1624), the alignment for Corridor No. 21 remains on new location before turning north and intersecting US 1 north of Fox Road (SR 1606). Corridor No. 21 is approximately 19.3 miles in length.

Alternative 24 – The alignment for Corridor No. 24 is identical to Corridor No. 21 with the only difference being that this alternative travels south of Loch Haven Golf Course rather than north of the golf course. Corridor No. 24 is approximately 19.1 miles in length.

5. SELECTION OF THE PREFERRED ALTERNATIVE

Based on the analyses presented in the DEIS, the comments received from circulation of the DEIS, Public Hearing comments, and the analyses in the SDEIS, Alternative 21 was chosen by the Section 404 / NEPA Merger Project Team on February 15, 2001 as the Least Environmentally Damaging Practicable Alternative (LEDPA) for the US 1 Bypass and Improvement Project. Alternatives 14 and 24 were eliminated from further consideration since they have more impacts to the natural environment than Alternatives 7 and 21. Alternative 7 was eliminated from further consideration since it has more relocations than Alternative 21.

During the development of the Final Environmental Impact Statement (FEIS), several revisions were made to the preferred alternative. These include an interchange revision at the US 74 Bypass, a proposed new interchange with Wiregrass Road (SR 1640) / County Home Road (SR 1624), and a proposed corridor expansion east of County Home Road (SR 1624).

The original preferred alternative included a full cloverleaf interchange with the US 74 Bypass. The interchange configuration was modified to increase the ramp design speeds, reduce the interchange area, and reduce environmental impacts. A four-level interchange design was proposed and shifted southward within the project corridor. This modified interchange design reduced the total interchange area by 40 acres. It reduced wetland impacts by nearly nine acres, pond impacts by three acres, and stream impacts by 2,100 feet. It was presented for public comment during a July 2007 Citizens Informational Workshop (CIW).

In August 2007, public officials requested an interchange near Wiregrass Road (SR 1640) and County Home Road (SR 1624) to help with future emergency, industrial, and general access.

After further evaluation, NCDOT included an interchange at this location to improve connectivity between NC 177, US 74 Business, and US 1 near Rockingham. The public was notified of this additional interchange in a July 2008 project newsletter and given the opportunity to respond with questions or comments about the interchange.

East of County Home Road (SR 1624), the project crosses Falling Creek and the McDonalds Pond Restoration site. The 127 acre restoration site was constructed in 2005 and is protected by a conservation easement managed by the NC Ecosystem Enhancement Program (EEP). The preferred alternative was formally established and selected in 2001, prior to construction of the EEP site. To minimize impacts to the restoration site, the project corridor was expanded, and the proposed alignment was shifted to the south to cross a narrower part of the stream system. The alignment shift was included in a September 2011 re-evaluation of the DEIS and SDEIS.

6. SUMMARY OF IMPACTS

A summary of the potential impacts of the preferred alternative is presented in the following table.

Impacts	Preferred Alternative
Length (miles)	--
Along New Location	14.0
Along Existing US 1	5.3
Total	19.3
Interchanges	4
Grade Separations	5
Relocations	--
Residential	97
Business	8
Non Profit	0
Farms	0
Total	105
Acreage Required	--
Undisturbed / Forested Land	483.5
Agricultural Land	76.0
Maintained / Disturbed Land	310.9
Successional Land	91.4
Total	961.8
Prime/Statewide Important Farmland (acres)	345.2
Water Resource Impacts	--
Stream Crossings	16
Stream Impacts (feet)	3,717
Open Water Impacts (acres)	2.6
Wetland Impacts (acres)	40.5
Floodplain Impacts (acres)	9.8
Endangered Species	--
Michaux's sumac	May Affect, Not Likely to Adversely Affect
Red-cockaded woodpecker	No Effect
Rough-leaved loosestrife	No Effect
Shortnose sturgeon	No Effect
Historic Property Impacts	0
Archaeological Sites	0
Section 4(f) Resources (Parks, Recreation Areas, Wildlife Management Areas)	1
Noise Impacts	167*
Hazardous Material Sites (excluding USTs)	0
Costs (in millions \$)	--
Right of Way and Utilities	\$43.18
Construction	\$212.51
Wetland Mitigation	\$2.85
Stream Mitigation Cost	\$1.90
Total	\$260.44

* Noise impacts to 167 receivers include 165 residences, one business, and one campground.

7. ACTIONS REQUIRED BY OTHER FEDERAL AND STATE AGENCIES

The McDonalds Pond Restoration site is protected by a conservation easement managed by the NC Ecosystem Enhancement Program (EEP). The proposed crossing at this site requires agreement from EEP and environmental regulatory agencies in converting the conservation easement to transportation use and revising the available mitigation credits for other projects.

The proposed crossings at Baggetts Creek (downstream of US 1), UT to Speeds Creek, Solomons Creek (at US 74 Bypass), South Prong Falling Creek, Falling Creek, and Chock Creek are located within flood hazard zones designated as zone AE. Coordination with the NC Flood Mapping Program (FMP) will occur in the final design phase of the project to ensure compliance with applicable floodplain management ordinances.

The proposed project is anticipated to be processed with a Section 404 Individual Permit. The US Army Corps of Engineers holds the final discretion as to what permit or permits will be required to authorize project construction.

In addition to the Section 404 permit, other required authorizations include a corresponding Section 401 Water Quality Certification from the NC Division of Water Quality.

8. SECTION 4(f)

Section 4(f) of the Department of Transportation Act of 1966 protects parkland, historic resources, publicly owned recreation areas and wildlife refuges. Such land can only be used for a highway project if there is "no other feasible and prudent alternative." No public parks are within the preferred corridor. However, the NC Wildlife Resources Commission (NCWRC) recently acquired a large parcel near the southern project limit at US 1 and Osborne Road (SR 1104) as part of the Pee Dee River Game Land. The site is subject to Section 4(f) of the DOT Act of 1966. The current design includes widening improvements along existing US 1 and Osborne Road (SR 1104), impacting approximately 2.4 acres of property. The design in this area transitions from the existing alignment to new alignment, shifting to the east and away from the game land. The land to be impacted serves as a buffer between the existing highway corridor and a large open land complex (20 acres) managed for wildlife with emphasis on dove and other small game species. FHWA considers the impacts from the project to this 4(f) protected site to be minimal. FHWA anticipates making a 4(f) "de minimis" determination [23 CFR 774.17(5) (2)] after concurrence from NCWRC that the project will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f). The concurrence from NCWRC and FHWA's "de minimis" determination will follow circulation of the FEIS and opportunity for public review and comment.

Project Commitments
US 1
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Richmond County
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PROJECT COMMITMENTS

Commitments Developed Through Project Development and Design

Division 8 / Roadway Design Unit / Hydraulics Unit

Slopes in wetland areas will be constructed at a ratio of 3:1 to meet constructability requirements in the sandy soil conditions.

The proposed crossings at Baggetts Creek (downstream of US 1), UT to Speeds Creek, Solomons Creek (at US 74 Bypass), South Prong Falling Creek, Falling Creek, and Chock Creek are located within flood hazard zones designated as zone AE. The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program to determine the status of the project with regard to applicability of NCDOT's Memorandum of Agreement of approval of a Conditional Letter of Map Revision and subsequent final Letter of Map Revision.

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

Project Development and Environmental Analysis Branch/Division 8/Roadway Design Unit

East of County Home Road (SR 1624), the project crosses Falling Creek (at Structure 8) and the McDonalds Pond wetland mitigation site. This mitigation site is protected by a conservation easement managed by the NC Ecosystem Enhancement Program. This requires agreement from EEP and environmental regulatory agencies in converting the conservation easement to transportation use and revising the available mitigation credits for other projects.

NCDOT proposes a 10-foot by 11-foot box culvert for wildlife passage east of E.V. Hogan Road (SR 1700), near Standridge Place. The proposed bridge over Falling Creek will also be of sufficient length to allow wildlife passage. NCDOT will coordinate with NC Wildlife Resources Commission and US Fish and Wildlife Service in developing the crossing designs.

An archaeologically significant cemetery, site 31RH360, is located on the Cameron Plantation property. Although it is not eligible for the National Register, part of it could potentially be impacted by the project. If disturbance of the cemetery is unavoidable, the affected burial sites will be moved under the regulations stipulated by NCGS 65.

A Highway Traffic Noise / Construction Noise Analysis for this project found noise abatement measures are needed in some locations. A detailed study of potential mitigation measures for two noise sensitive areas that meet preliminary feasibility and reasonableness criteria will be conducted during the final project design.

Part of the Pee Dee River Game Land is located within the project study area at the southern terminus and is subject to Section 4(f) of the DOT Act of 1966. The expected impacts are approximately 2.4 acres of property that serves as a buffer between the existing highway corridor and a large open land complex (20 acres) managed for wildlife. The Federal Highway Administration (FHWA) considers the impacts from the project to this 4(f) protected site to be minimal. FHWA anticipates making a 4(f) “de minimis” determination [23 CFR 774.17(5) (2)] after concurrence from North Carolina Wildlife Resources Commission (NCWRC) that the project will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f). The concurrence from NCWRC and FHWA’s “de minimis” determination will follow circulation of the FEIS and opportunity for public review and comment.

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US 1
From Sandhill Road (SR 1971) to Marston Road (SR 1001)
Richmond County
Federal-Aid Project No. NHF-1(1)
State Project No. 8.T580501
WBS No. 34437.1.1
T.I.P. No. R-2501

1.0 PURPOSE OF AND NEED FOR THE ACTION

This Final Environmental Impact Statement (FEIS) has been prepared in accordance with the requirements set forth in the National Environmental Policy Act (NEPA) of 1969, as amended, and the North Carolina (State) Environmental Policy Act (SEPA). This EIS is an informational document intended for use by both decision makers and the public. As such, it represents a disclosure of relevant environmental information concerning the proposed action.

The content of this FEIS conforms with the requirements of the Council on Environmental Quality (CEQ) guidelines, which provide direction regarding implementation of the procedural provisions of NEPA, and the Federal Highway Administration's (FHWA) *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (Technical Advisory T6640.8A, October 1987).

This section of the document presents a general description of the proposed project and documents the purpose of and need for the project through an evaluation of current and projected traffic demand and the adequacy of the existing and proposed transportation system within the study area.

1.1 Proposed Action

The proposed project will improve US 1 from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) in Marston, a distance of about 19 miles (see Figures 1.1 and 1.2). Approximately 14 miles will be on new location, and about five miles of existing US 1 will be widened. From Sandhill Road (SR 1971) to about one and a half miles north of Fox Road (SR 1606), US 1 is proposed to be a four-lane, median divided roadway with full control of access along the new location part and partial control of access on the widening part. A five-lane section with no control of access is proposed along existing US 1 from about one and a half miles north of Fox Road (SR 1606) to Marston Road (SR 1001). Interchanges are planned at the US 74 Bypass, Airport Road (SR 1966), US 74 Business, and Wiregrass Road (SR 1640)/ County Home Road (SR 1624).

Project R-2501 is split into five parts – Sections A, BA, BB, BC, and C.

- Section A will improve existing US 1 from the South Carolina state line to south of Osborne Road (SR 1104) (approximately five miles). This section will be a future project and has not been studied as a part of this Environmental Impact Statement.
- Section BA will be on new location from south of Osborne Road (SR 1104) to US 74 Bypass (approximately five miles).

- Section BB will be on new location from US 74 Bypass to US 74 Business (approximately four miles).
- Section BC will be on new location from US 74 Business to just north of Fox Road (SR 1606) and follow existing US 1 from just north of Fox Road (SR 1606) to approximately one and a half miles north of Fox Road (SR 1606) (approximately six miles).
- Section C will improve existing US 1 from approximately one and a half miles north of Fox Road (SR 1606) to Marston Road (SR 1001) (approximately four miles).

US 1 is included in the North Carolina Department of Transportation's (NCDOT) *Strategic Highway Corridors Vision Plan*, adopted by the North Carolina Board of Transportation September 2, 2004. The primary purpose of this vision plan is to provide a network of high-speed, safe, reliable highways throughout North Carolina. These corridors are important routes for mobility, connectivity to activity centers and interstates, interstate relief, evacuation, and the national or statewide highway system. This portion of the US 1 improvements is identified as Project Number R-2501 in the NCDOT *2012-2020 State Transportation Improvement Program* (TIP). Right of way acquisition is scheduled to begin in fiscal year (FY) 2012 and construction in FY 2014 for Section C of the project.

1.2 Summary of Need for Proposed Action

US 1 serves as an important north-south corridor in the Piedmont region between the South Carolina state line and two major interstates, I-40 and I-85. This part of US 1 is located along Strategic Highway Corridor 34 and is an important route for mobility and connectivity between I-73/ I-74 in Rockingham and I-40 in Raleigh. Construction of a US 1 Bypass east of Rockingham, in addition to improvements to existing US 1, have been identified as primary goals in local planning documents.

In the project vicinity, approximately 12 miles of US 1 exists as a two-lane rural highway with speed limits ranging from 50 to 55 miles per hour (mph). On each side of Rockingham, approximately five miles of US 1 exists as four or five lanes with 35 to 50 mph speed limits. The remaining 1.5-mile portion of US 1 is a two-lane urban street that passes through the Rockingham Central Business District and has 20 to 35 mph speed limits, multiple intersections, and traffic signals.

Some two-lane portions of US 1 near the downtown area currently operate at or near their traffic carrying capacity. In the future, traffic operations will continue to deteriorate on the two-lane sections of US 1 near the downtown area due to low travel speeds, numerous access points, and traffic signals. A more efficient travel route is needed to reduce US 1 through traffic in downtown and improve mobility along the US 1 corridor. See Section 1.8, *Capacity, Safety, and Roadway Deficiencies* for more information on levels of service and existing / future No-Build conditions.

These conditions are not consistent with the long-term vision of the US 1 strategic highway corridor. The vision plan designates this portion of US 1 as a future freeway with high mobility, full control of access, speeds of at least 55 mph, and a minimum four-lane divided facility.

1.3 Purpose of Proposed Action

This project will: reduce travel time; reduce congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets; and improve mobility on the designated US 1 Strategic Highway Corridor.

1.4 Project Status

1.4.1 Project Setting

The proposed project is located in the south central Piedmont region of North Carolina in Richmond County (see Figure 1.1). Richmond County is bordered by Montgomery and Moore counties to the north, Scotland County to the east, Anson County to the west, and South Carolina to the south. The cities of Rockingham and Hamlet are the largest municipalities and are the locations of the major employment centers within the county.

The US 1 project study area (see Figure 1.2) includes the municipalities of Rockingham and Hamlet. It is in close proximity to such notable landmarks as the Richmond County Airport, the Rockingham Speedway and the Rockingham Dragway.

1.4.2 Project History

Planning, engineering, and environmental studies initially began for TIP R-2501 in 1994. Three Citizens Informational Workshops (CIW) were held between January 1996 and December 1998, and in June 1999 the Draft Environmental Impact Statement (DEIS) was approved by the FHWA. The DEIS identified four build alternatives, or corridors. A corridor public hearing was held in September 1999. In February 2001, the Least Environmentally Damaging Practicable Alternative (LEDPA), or preferred corridor, was selected primarily based on fewer impacts to streams and wetlands, and a fewer number of relocations.

A Supplemental Draft Environmental Impact Statement (SDEIS) was prepared to document changes that had occurred since approval of the DEIS, to document the extension of the project from north of Fox Road to Marston Road, and to evaluate the improvement of NC 177 from US 1 north of Rockingham to the South Carolina state line as an alternative to the proposed improvements to US 1. The SDEIS was approved by FHWA in April 2001. An informal public hearing was held in June 2002 to solicit comments from the public regarding the widening of existing US 1 from about 1.5 miles north of Fox Road (SR 1606) to Marston Road (SR 1001). After evaluating the comments received at the hearing, NCDOT selected a five-lane section for the widening as the preferred route.

A re-evaluation of the DEIS and SDEIS was conducted in December 2007 and again in September 2011. The purpose of these documents was to reexamine the existing human, physical, and natural environments within the project study area and determine if there have been significant changes since the approval of the DEIS and SDEIS. Both re-evaluations concluded there have not been significant changes and that no additional supplemental or updated documents are required.

During the development of the Final EIS (FEIS), several revisions were made to the preferred alternative. These include an interchange revision at the US 74 Bypass, a proposed new interchange with Wiregrass Road (SR 1640) / County Home Road (SR 1624), and a proposed corridor expansion east of County Home Road (SR 1624). These changes have resulted in additional environmental and design studies, coordination with resource agencies, avoidance and minimization alternatives, and public involvement. The additional efforts have delayed the development of the FEIS.

See Section 2.7, *Preferred Alternative* for more information regarding changes to the preferred alignment.

1.5 System Linkage

1.5.1 Existing Road Network

Major roadways in Richmond County other than US 1 include US 74 Bypass, US 74 Business, US 220 and NC 177. US 74 is a strategic east-west corridor of vital importance as it connects the state's largest port (Wilmington) with its largest city (Charlotte). US 74 is also important to tourism as it links the southern Piedmont region with the southeastern beaches of North Carolina. US 220 provides a strategic north-south corridor through the central part of the state as it links US 74, US 64 and I-40 / I-85. The future I-73 and I-74 corridors have been designated to follow portions of the US 74 Bypass and the proposed US 220 Bypass around Rockingham. NC 177 is an alternate north-south highway that provides access to Hamlet and into South Carolina from US 1 at the northern limits of the study area.

1.5.2 Modal Interrelationships

Richmond County does not have established intermodal transportation facilities and is therefore, primarily dependent upon the existing highway system to meet transportation needs.

Until recently, public transportation in Richmond County was only available to the elderly and / or indigent via van service on an as needed, on call basis. However, because of a recent grant approved by NCDOT that provides funding for additional services including passenger van and passenger bus service, public transportation is now available to anyone in Richmond County. The Area of Richmond Transportation (ART) is an in-county service provided for a fee through the Richmond Interagency Transportation, Inc. Monday through Friday from 6:00 a.m. to 6:00 p.m., and Saturdays from 5:00 a.m. to 5:30 p.m.

Railroads are an important transportation feature in Richmond County. Hamlet serves as a major hub for CSX Transportation, which maintains several lines, yards and terminal facilities in downtown Hamlet just east of NC 177. There are two CSX railroad corridors that cross the US 1 Bypass study area. One corridor generally runs parallel to Airport Road (SR 1966) while the other corridor roughly follows existing US 74 Business from Rockingham to Hamlet. Another CSX line that extends northeast from Hamlet borders the US 1 Bypass study area by running parallel along NC 177 and US 1 into Moore County. Hamlet is currently served by Amtrak's Silver Service / Palmetto route, which runs between New York and Miami.

The Richmond County Airport is located southeast of Rockingham along Airport Road (SR 1966). It is a general aviation facility with two runways – one paved and one grass. All alternatives include a proposed interchange at Airport Road (SR 1966), which would provide easy and quick access to the airport. The closest international airport is Charlotte-Douglas International located in Charlotte approximately 70 miles from the City of Rockingham.

1.6 Transportation Demand

1.6.1 Transportation Plan

Thoroughfare Plan for the Cities of Rockingham and Hamlet (1998)

This plan was developed by the Statewide Planning Branch of the North Carolina Department of Transportation in cooperation with the Cities of Rockingham and Hamlet, and the Federal Highway Administration. According to the plan, the US 1 Bypass should be constructed as a multi-lane, controlled access facility in order to relieve traffic congestion along existing US 1 through Rockingham and provide north-south traffic circulation throughout the area.

1.6.2 NCDOT Transportation Improvement Program (TIP)

Other major projects in the vicinity of US 1 and included in the 2012-2018 NCDOT TIP are listed in Table 1-1 and shown on Figure 1.3.

Table 1-1: 2012-2020 NCDOT TIP Projects Related to R-2501

TIP No.	Description	Schedule
R-3421	US 220 Bypass, I-73 / 74 Corridor, Rockingham Bypass. Four lanes divided on new location. (10.5 miles)	Right of way acquisition is under way and construction is to begin in FY 2013.
R-2502	US 1, Marston Road (SR 1001) to existing four lanes in Moore County. Widen to multi-lanes (8.3 miles).	Under Construction.
B-4615	Steele Street (SR 1419), Hitchcock Creek, Replace Bridge No. 46	Right of way acquisition to begin in FY 2012. Construction in FY 2013.

1.6.3 I-73 Corridor Selection

The DEIS (Page 1-2) states that the “segment of the R-2501 project from the US 74 Bypass southward into South Carolina along US 1 will be the probable routing of the I-73 Corridor.” It also states (Page 2-3) that “US 1 south of the US 74 Bypass (R-512) would need to be improved to a freeway to handle the proposed I-73.” In 2008, FHWA and the South Carolina Department of Transportation (SCDOT) selected a preferred I-73 corridor (see Figure 1.4). Within North Carolina, the preferred location of the I-73 corridor was coordinated with the NCDOT. This corridor joins US 74 Bypass (Future I-74) at NC 38, approximately 4.5 miles east of the proposed US 1 Bypass interchange. In the Rockingham area, I-73 has been designated to follow I-74 along the US 74 Bypass and US 220 Bypass (TIP Project R-3421). I-73 does not have a direct influence on the US 1 Bypass project as previously indicated in the DEIS.

1.7 Land Use Planning

1.7.1 Population Trends

According to the Census Bureau, Richmond County had a total population of 46,564 in 2000, the 52nd most populous county in North Carolina (Table 1-2). The County experienced a 4.6 percent growth between 1990 and 2000. The City of Rockingham had a 2000 Census population of 9,672, a growth of 2.9 percent; and the City of Hamlet had a 2000 Census population of 6,018, a negative growth of 2.9 percent.

Table 1-2: Geographic Population Comparison

Item	Rockingham	Hamlet	Richmond County	North Carolina
2000 Census Pop.	9,672	6,018	46,564	8,049,313
Percent Change, 1990 to 2000	2.9%	-2.9%	4.6%	21.4%

Source: U.S. Census Bureau

Richmond County experienced an average annual growth rate of 4.6 percent from 1990 to 2000. Future projections indicate that population growth rate will slowly decrease for the County (Table 1-3).

Table 1-3: Projected Population Growth

Year	Richmond County	North Carolina
2010 Population	46,926	9,539,095
2000-2010 Population Growth	362 (0.8%)	1,489,782 (18.5%)
2020 Population	46,770	11,004,303
2010-2020 Population Growth	-156 (-0.3%)	1,465,208 (15.4%)
2030 Population	46,428	12,352,728
2020-2030 Population Growth	-342 (-0.7%)	1,348,425 (12.3%)

Source: North Carolina Office of State Budget and Management

1.7.2 Land Use Plan and Zoning

Land use planning in the project's study area is managed by Richmond County, Rockingham, and Hamlet.

Information on existing and future land use in Richmond County is provided in the "Strategic Land Use Plan" Richmond County, North Carolina, July 2000. This document represents the County's most recent comprehensive land use plan. The plan sets goals ranging from preserving and protecting the rural nature of the county to protecting the county's environmental and heritage resources. It also outlines goals for developing transportation services to meet current and future needs and demands. The US 1 Bypass is mentioned as a proposed project.

In July 2002, the City of Rockingham published a land use plan entitled, “Shaping Our Future: 2012.” Goals for the City’s plan are similar to those included in the County plan. The City plan also calls for the continued support of the US 1 Bypass project.

The three local jurisdictions within the study area (Richmond County, Rockingham, and Hamlet) all have adopted and are implementing zoning and development standards in the project study area. All zoning ordinances establish zoning districts and standards that regulate land use, subdivision development, floodplain and watershed areas, landscaping, parking, telecommunications, historic, and vegetation.

Land use within the cities of Rockingham and Hamlet are regulated through zoning ordinances. A countywide zoning ordinance was approved in July 2003.

1.7.3 Economic Development Plan

Richmond County Civic Index Report 2010

The Richmond County Civic Index Report 2010 presents recommendations relating to education, development and implementation of a strong internal and external marketing and public relations, beautification of the county, and creating a business incubator to encourage and help local entrepreneurs.

City of Rockingham: Economic Development Strategy

The City of Rockingham has established an “Economic Development Strategy” that recognizes five strategies in conjunction with the goals outlined in the Rockingham land use document, “Shaping Our Future: 2012”. They include recruitment and marketing, community infrastructure, incentives and governmental support, quality of life, and diversification.

In addition to these two economic development plans, Richmond County is considered a TIER 1 County by the North Carolina Department of Commerce. This designation allows the County to offer businesses the greatest possible financial incentives in North Carolina including: property tax reimbursements, training assistance, an industrial development fund, a community development block grant, industrial revenue bonds, a job development investment grant, the One North Carolina Fund, and a rail industrial access program.

1.7.4 Parks and Recreation Plan

City of Rockingham Parks and Recreation Improvement Plan

This plan, adopted in February 2005, assesses the City’s recreation facilities and provides recommendations for improvements to the parks and recreation services.

1.8 Capacity, Safety, and Roadway Deficiencies

1.8.1 Existing Roadway Characteristics

Existing US 1 has numerous at-grade intersections and no control of access. The geometrics and cross section (i.e. number of lanes, lane widths, right of way widths, etc.) vary throughout the US 1 corridor. There are also a wide range of land use types along the roadway. The future I-73

and I-74 corridors have been designated to follow portions of the US 74 Bypass and the proposed US 220 Bypass around Rockingham.

US 1 exists as a two-lane rural highway with speed limits ranging from 50 to 55 mph for a length of approximately 12 miles in the project area (see Table 1-4). The two-lane portions are located between Sandhill Road (SR 1971) and US 74 Bypass south of Rockingham and between Wiregrass Road (SR 1640) and Marston Road (SR 1001) to the north. US 1 exists as a four-lane or five-lane road with 45 to 50 mph speed limits for a length of approximately five miles. The four and five-lane portions are located between US 74 Bypass and US 74 Business south of downtown and between Richmond Road (SR 1423) and Wiregrass Road (SR 1640) north of downtown. The remaining 1.5-mile portion of US 1 is a two-lane urban street that passes through the Rockingham Central Business District and has 20 to 35 mph speed limits. For three city blocks, US 1 exists as two-lane, one-way pairs following Franklin Street (SR 1561) and East Washington Street (SR 1643). Eight traffic signals are located along US 1 in the project vicinity, and six are within this 1.5-mile segment in Rockingham. All other intersections have stop signs on the cross streets except at US 220 where southbound US 1 is controlled by a stop sign.

Table 1-4: US 1 Existing Roadway Characteristics

Location Along US 1	Typical Section	Speed Limit (mph)	Length (miles)
North of Sandhill Road (SR 1971) to Mizpah Road (SR 1108)	Two-Lane Rural	55	3.9
Mizpah Road (SR 1108) to US 74 Bypass	Two-Lane Rural	50	0.6
US 74 Bypass to Eason Drive (SR 1136)	Five-Lane	50	0.8
Eason Drive (SR 1136) to Airport Road (SR 1966)	Four-Lane Divided	50	0.9
Airport Road (SR 1966) to US 74 Business	Four-Lane Undivided	35	0.4
US 74 Business to Franklin Street (SR 1561)	Two-Lane Urban	35	0.3
Franklin Street (SR 1561) to Rockingham Road (SR 1648)	Two-Lane Urban	20	0.2
Rockingham Road (SR 1648) to Richmond Road (SR 1423)	Two-Lane Urban	20 - 35	1.0
Richmond Road (SR 1423) to Roberdel Road (SR 1424)	Four-Lane Undivided	45	0.5
Roberdel Road (SR 1424) to Wiregrass Road (SR 1640)	Four-Lane/ Five-Lane	45	2.6
Wiregrass Road (SR 1640) to Fox Road (SR 1606)	Two-Lane Rural	55	2.2
Fox Road (SR 1606) to Marston Road (SR 1001)	Two-Lane Rural	55	5.1

Low travel speeds, traffic signals, multiple access points, on-street parking, and other urban characteristics in Rockingham limit the traffic carrying capacity of US 1. These result in poor levels of service (LOS) on US 1 as well as connecting roadways (currently LOS E on some two-lane portions of existing US 1 in the downtown area).

The LOS is a “qualitative measure that characterizes operational conditions within a traffic stream and their perception by motorists and passengers. The descriptions of individual levels of service characterize these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with LOS A representing the best operating conditions and LOS F the worst. These levels of service are defined in the Highway Capacity Manual, Special Report 209, Third Edition, 2000, Transportation Research Board. These are described as follows:

- Level of Service "A" describes completely free-flow conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway and driver preferences. The ability to maneuver within the traffic stream is high. Minor disruptions to flow are easily absorbed at this level without causing significant delays or queuing.
- Level of Service "B" is also indicative of free flow, although the presence of other vehicles begins to be noticeable. Average travel speeds are somewhat diminished from LOS "A". Minor disruptions are still easily absorbed at this level, although local deterioration in LOS will be more obvious.
- Level of Service "C" represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream, and to select an operating speed, is now clearly affected by the presence of other vehicles. Minor disruptions may be expected to cause serious local deterioration in service, and queues may form behind any significant traffic disruption. Severe or long-term disruptions may cause the facility to operate at LOS "F".
- Level of Service "D" borders on unstable flow. Speeds and ability to maneuver are severely restricted because of traffic congestion. Only the most minor of disruptions can be absorbed without the formation of extensive queues and the deterioration of service to LOS "F".
- Level of Service "E" represents operations at or near capacity, and is quite unstable. Disruptions cannot be damped or dissipated, and any disruption, no matter how minor, will cause queues to form and service to deteriorate to LOS "F".
- Level of Service "F" represents forced or breakdown flow. It occurs at a point where vehicles arrive either at a rate greater than that at which they are discharged or at a point on a planned facility where forecasted demand exceeds the computed capacity. While operations at such points (and on immediate down-stream sections) will appear to be at capacity or better, queues will form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing short spurts of movement followed by stoppages.

In urban areas, LOS D is generally considered acceptable, while in rural areas LOS C is considered acceptable. The methodologies and procedures documented in the Highway Capacity Manual 2000 were used to calculate levels of service for two-lane roadways, multi-lane roadways, freeway segments, ramp junctions, intersections, and urban streets. The analysis procedures depend upon traffic and geometric conditions of the facility such as peak hour traffic volumes, percentage of heavy vehicles, design speed, lane and shoulder widths, grades, and directional distributions.

1.8.2 2007 No-Build Traffic Conditions

Average daily traffic (ADT) volumes in the year 2007 along US 1 for the No-Build condition vary between 3,200 vehicles per day (vpd) at Sandhill Road (SR 1971) to 14,400 vpd north of US 74 Bypass.

The US 1 interchange with US 74 Bypass and the intersection with US 74 Business were the most congested areas. Traffic along US 1 at US 74 Bypass varied from 8,000 to 14,400 vpd, while US 74 Bypass experienced between 11,400 and 14,400 vpd. Traffic along US 1 at US 74 Business ranged from 7,000 vpd north of the intersection in downtown Rockingham to 12,400 vpd south of it. US 74 Business traffic ranged from 11,000 to 18,000 vpd.

For more information on 2007 No-Build traffic conditions, see the January, 2008 *Revised Traffic Forecast Technical Report* available from NCDOT's project file.

1.8.3 Year 2035 No-Build Traffic Projections

Average daily traffic volumes in the year 2035 along US 1 for the No-Build condition vary between 4,600 vpd south of Sandhill Road (SR 1971) to 22,400 vpd south of US 220. Table 1-5 compares 2007 traffic volumes with 2011 and 2035 No-Build traffic volumes.

Table 1-5: US 1 No-Build Traffic Volumes (vpd)

Location Along US 1	2007	2011	2035
North of Sandhill Road (SR 1971) to Mizpah Road (SR 1108)	5,000	5,400	7,600
Mizpah Road (SR 1108) to US 74 Bypass	8,000	8,800	13,500
US 74 Bypass to Eason Drive (SR 1136)	8,000	8,800	13,500
Eason Drive (SR 1136) to Airport Road (SR 1966)	13,800	15,100	22,400
Airport Road (SR 1966) to US 74 Business	12,400	13,000	16,600
US 74 Business to Franklin Street (SR 1561)	7,000	7,200	8,000
Franklin Street (SR 1561) to Rockingham Road (SR 1648)	5,800	6,100	7,800
Rockingham Road (SR 1648) to Richmond Road (SR 1423)	12,000	12,500	15,200
Richmond Road (SR 1423) to Roberdel Road (SR 1424)	11,000	11,700	15,400
Roberdel Road (SR 1424) to Wiregrass Road (SR 1640)	10,800	11,400	14,600
Wiregrass Road (SR 1640) to Fox Road (SR 1606)	5,400	6,000	10,400
Fox Road (SR 1606) to Marston Road (SR 1001)	5,000	5,700	10,000

The US 1 interchange with US 74 Bypass and the intersection with US 74 Business were projected to remain the most congested areas. Traffic along US 1 at US 74 Bypass is expected to vary from 13,500 to 15,000 vpd, while US 74 Bypass is projected to be between 29,000 and 31,900 vpd. Traffic along US 1 at US 74 Business is expected to be 8,000 vpd north of the intersection in downtown Rockingham and 16,600 south of it. US 74 Business traffic is projected to range from 10,000 to 14,000 vpd.

For more information on 2035 No-Build traffic conditions, see the January, 2008 *Revised Traffic Forecast Technical Report* available from NCDOT's project file.

1.8.4 Existing and Future No-Build Capacity Analysis

According to the DEIS (Page 1-1), "Existing [2000] traffic data indicates some sections along US 1, especially in downtown Rockingham, currently experience either level of service [LOS] D or E during peak traffic hours. When special events are held at the North Carolina Motor Speedway or when area-wide traffic increases during the summer, traffic levels of service may actually be lower.... By 2020, the majority of sections along US 1, with the exception of the four-lane, non-divided sections, will experience LOS E or worse during peak hours."¹

The results from the DEIS show more than six miles of US 1 would operate at LOS E by the year 2020. These were two-lane sections from Mizpah Road (SR 1108) south of Rockingham to Wiregrass Road (SR 1640) to the north. Since the DEIS was approved, the US 74 Bypass was constructed and approximately four miles of US 1 were widened from two-lanes to multi-lanes. The future I-73 and I-74 corridors have now been designated to follow US 74 Bypass and US 220 around Rockingham (see Section 1.6.3, *I-73 Corridor Selection* and Figure 1.4).

In 2008, NCDOT updated the existing (2007) and future (2035) traffic forecast for the no-build condition and the preferred alternative (see Figures 1.5a-b and Figures 1.6a-b). The updated forecast accounted for more recent socio-economic conditions, traffic pattern changes, and other roadway improvements. According to the updated forecast, the projected 2035 traffic volumes along parts of existing US 1 near downtown were as much as 15% to 20% lower than the original 2020 forecast.

An updated traffic analysis was conducted using estimated 2011 and 2035 traffic volumes to compare with the original analysis performed for the DEIS. Table 1-6 compares previous traffic volumes and associated LOS with more recent data. According to the updated results, some two-lane portions of US 1 near the downtown area currently operate at LOS D or E conditions. Intersection delays at the US 74 Business and Richmond Road (SR 1423) traffic signals reach LOS E. In between these intersections, US 1 is characterized by urban street conditions with low speed limits, multiple traffic signals, numerous access points, and on-street parking. During peak hours, the average travel speeds in Rockingham are estimated to range from 13 to 23 mph.

¹ The speedway held its last NASCAR race in 2004 and the number of other events held there has declined. The facility was auctioned off in early October 2007 to a local investor who holds "lower-tiered" racing events there. However, the loss of the speedway as a traffic generator does not alter the overall principle of the purpose and need of the project.

By the year 2035, traffic conditions will continue to deteriorate in these locations. Intersection delays at the US 74 Business and Richmond Road (SR 1423) traffic signals will operate at LOS E or LOS F. During peak hours, the average travel speeds in Rockingham are estimated to range from 13 to 17 mph. South of Rockingham, between Mizpah Road (SR 1108) and US 74 Bypass, US 1 will reach LOS E.

Travel times and average speeds are indicators of traffic mobility along the US 1 corridor. Using current and future peak hour delays and average speeds, travel times were calculated to measure the efficiency of travel along US 1 within the limits of the project. Travel times and average speeds for morning peak hour conditions were used because intersection delays at traffic signals in Rockingham were highest during these times (see results in Table 1-7). Currently, the 18.6-mile trip from north of Sandhill Road (SR 1971) to Marston Road (SR 1001) is estimated to take 27 minutes at an average speed of 41 mph. By the year 2035, this trip is estimated to take more than 28 minutes at an average speed of 39 mph.

These conditions are not consistent with the long-term vision of the US 1 strategic highway corridor. The vision plan designates this portion of US 1 as a future freeway with high mobility, full control of access, speeds of at least 55 mph, and a minimum four-lane divided facility.

Table 1-6: Existing and Future No-Build Traffic Conditions

Roadway Segment	Typical Section	DEIS ¹				Updated ²			
		2000		2020		2011		2035	
		PHV	LOS	PHV	LOS	PHV	LOS	PHV	LOS
Sandhill Road (SR 1971) to Mizpah Road (SR 1108)	Two-Lane Rural	378	C	754	D	602	C	848	D
Mizpah Road (SR 1108) to US 74 Bypass	Two-Lane Rural	774	D	1,720	E	980	D	1,500	E
US 74 Bypass to Eason Drive (SR 1136)	Former Two-Lane/ Current Five-Lane	774	D	1,720	E	980	A	1,500	A
Eason Drive (SR 1136) to Airport Road (SR 1966)	Former Two-Lane/ Current Four-Lane	934	D	1,811	E	1,678	A	2,489	B
US 220 to US 74 Business	Four-Lane Undivided	1,189	B	1,690	B	n/a ³	n/a ³	n/a ³	n/a ³
Airport Road (SR 1966) to US 74 Business	Four-Lane Undivided	n/a ³	n/a ³	n/a ³	n/a ³	1,444	A	1,845	B
US 74 Business to Franklin Street (SR 1561)	Two-Lane Urban	736	E	1,144	E	802	E	892	E
Washington Street (SR 1561) to Richmond Road (SR 1423)	Two-Lane Urban	1,221	D	2,012	E	1,389	C	1,686	D
Richmond Road (SR 1423) to Roberdel Road (SR 1424)	Four-Lane Undivided	1,268	B	1,928	C	1,300	A	1,711	A
Roberdel Road (SR 1424) to Wiregrass Road (SR 1640)	Former Two-Lane/ Current Four-Lane	1,046	D	1,579	E	1,267	A	1,622	A
Wiregrass Road (SR 1640) to north of Fox Road (SR 1606)	Two-Lane Rural	600	C	1,006	D	667	C	1,164	D

PHV = Two-way Peak Hour Volume; LOS = Level of Service

¹ The PHV and LOS shown for 2000 and 2020 are as reported in the 1999 DEIS.

² The PHV and LOS shown for 2011 and 2035 were calculated based on the 2008 traffic forecast data.

³ The 2000 and 2020 LOS between US 220 and US 74 Business were reported in the 1999 DEIS. The 2011 and 2035 LOS results were calculated between Airport Road (1966) and US 74 Business because US 220 intersects US 1 between Eason Drive (SR 1136) and Airport Road (SR 1966). Where these segments overlap area, PHV and LOS results are not available (n/a).

Table 1-7: 2011 and 2035 Travel Times and Levels of Service for No-Build Traffic Conditions

US 1 Roadway Segment	Typical Section	Length (miles)	2011 Traffic Conditions				2035 Traffic Conditions			
			Average Daily Traffic (vpd)	Travel Time (min)	Average Speed (mph)	Level of Service LOS	Average Daily Traffic (vpd)	Travel Time (min)	Average Speed (mph)	Level of Service LOS
North of Sandhill Road (SR 1971) to Mizpah Road (SR 1108)	Two-Lane Rural	3.9	5,400	4.8	48	C	7,600	4.9	47	D
Mizpah Road (SR 1108) to US 74 Bypass	Two-Lane Rural	0.6	8,800	1.1	42	D	13,500	1.2	44	E
US 74 Bypass to Eason Drive (SR 1136)	Five-Lane	0.8	8,800	0.9	51	A	13,500	0.9	51	A
Eason Drive (SR 1136) to Airport Road (SR 1966)	Four-Lane Divided	0.9	15,100	1.1	51	A	22,400	1.0	52	B
Airport Road (SR 1966) to US 74 Business	Four-Lane Undivided	0.4	13,000	0.6	41	A	16,600	0.6	41	B
US 74 Business to Franklin Street (SR 1561)	Two-Lane Urban	0.3	7,200	1.7	13	E	8,000	1.6	13	E
Franklin Street (SR 1561) to Rockingham Road (SR 1648)	Two-Lane Urban	0.2	6,100	0.8	16	D	7,800	0.9	15	D
Rockingham Road (SR 1648) to Richmond Road (SR 1423)	Two-Lane Urban	1.0	12,500	2.6	23	C	15,200	3.4	17	D
Richmond Road (SR 1423) to Roberdel Road (SR 1424)	Four-Lane Undivided	0.5	11,700	0.6	47	A	15,400	0.6	47	A
Roberdel Road (SR 1424) to Wiregrass Road (SR 1640)	Four-Lane/ Five-Lane	2.6	11,400	3.7	47	A	14,600	3.8	47	A
Wiregrass Road (SR 1640) to Fox Road (SR 1606)	Two-Lane Rural	2.2	6,000	2.7	48	C	10,400	2.9	46	D
Fox Road (SR 1606) to Marston Road (SR 1001)	Two-Lane Rural	5.1	5,700	6.3	48	C	10,000	6.7	46	D
Total		18.6		27.0	41			28.7	39	

1.8.5 Crash Analysis

A traffic accident analysis of US 1 from Sandhill Road (SR 1971) to Marston Road (SR 1001) was conducted for the period between July 1, 2004 and June 30, 2007. This analysis indicates that 277 accidents (two involving fatalities) and approximately \$1,328,360 in property damage were recorded. The segment of US 1 with the highest accident frequency occurs through the downtown area between Airport Road (SR 1966) and McDonald Church Road (SR 1475) with 159 accidents. The total number of accidents by accident type is summarized in Table 1-8.

Table 1-8: Accident Data Summary (July 1, 2004 to June 30, 2007)

Rate	Crashes	Crashes per 100MVM	Statewide Rate ¹	Critical Rate ²
Total	277	199.93	220.00	241.08
Fatal	2	1.44	2.17	4.59
Non-Fatal Injury	124	89.50	81.74	94.73

¹ 2003-2005 statewide crash rate for 2-lane undivided US routes in North Carolina

² Based on the statewide crash rate (95% level of confidence).

A comparison of accident rates indicates the total and non-fatal accident rates for the US 1 study area do not exceed the 2003-2005 statewide average rates for similar US routes. The fatal accident rate for US 1 is below the statewide average. The non-fatal accident rate for US 1 is higher than the statewide average.

A more detailed review of accident data reveals that angle accidents and rear end (slow or stop) accidents resulted in the highest percentage of accident types (23.47% and 22.74% respectively). These types of accidents are usually typical of two-lane facilities with numerous cross streets and driveways without the additional capacity to avoid either slow moving or stopped vehicles.

The construction of a US 1 Bypass would provide motorists with an alternate travel route thereby reducing through traffic along existing US 1 and likely lowering the overall accident rate along the existing facility. Accident rates are typically lower on controlled access facilities as compared to other roadway types.

2.0 ALTERNATIVES

2.1 No-Build Alternative

As the name implies, the No-Build Alternative is an alternative for which no additional traffic lanes or the construction of a new facility are proposed. The No-Build Alternative typically includes short-term minor restoration activities designed to continue operation of the existing roadway. Examples of these activities include safety and maintenance improvements such as patching and resurfacing roads, re-grading shoulders, and maintaining ditches.

The advantages of the No-Build Alternative include: no additional right of way requirements requiring acquisition of residential or commercial property, no disturbances of the natural environment such as wetlands and wildlife habitat, and no construction-related costs.

Disadvantages of the No-Build Alternative include: deterioration of through traffic service to unacceptable levels of service, increased through and truck traffic along US 1 in downtown, and lower average travel speeds and travel times during peak hours.

The No-Build Alternative would not meet the purpose of the project or satisfy the projected transportation needs. Furthermore, it is not consistent with the goals of the Rockingham-Hamlet Thoroughfare Plan or the NCDOT Transportation Improvement Program. As discussed in Section 1.2, *Summary of Need for Proposed Action*, parts of US 1 currently operate at LOS E, and traffic congestion will continue to get worse. In future peak hours, the average speed through this 18.6-mile corridor is expected to be less than 40 mph, and the travel time is expected to exceed 28 minutes (see Table 1-7). These conditions are not consistent with the long-term vision of the US 1 strategic highway corridor as a future freeway with high mobility, full control of access, speeds of at least 55 mph, and a minimum four-lane divided facility. See Section 1.8.1, *Existing Roadway Characteristics* for additional information regarding LOS, speeds, and travel times. Based on this evaluation, the No-Build Alternative is not a reasonable or feasible alternative and was eliminated from further study.

2.2 Transportation System Management Alternatives

The Transportation System Management (TSM) Alternative includes those activities that maximize the efficiency of the existing system. This alternative includes such options as fringe parking, ridesharing, high-occupancy vehicle (HOV) lanes on existing roadways, and traffic signal timing optimization. Upon review of the project area, these options have very little or no application within the project's study limits. However, Special Events Management (i.e. temporary traffic management methods) may be useful during Rockingham Speedway and Dragway events. Without the bypass facility, the reconstruction and rehabilitation of the existing system would not adequately address future transportation demand and meet the project need without major relocations and associated costs. For these reasons, the TSM Alternative was not considered to be reasonable or feasible.

2.3 Mass Transit Alternatives

The Mass Transit Alternative includes the option of providing bus or rail service to decrease congestion. A major advantage of mass transit is that it can provide high-capacity, energy-efficient movement in densely traveled corridors. It also serves high and medium density areas by offering a low-cost option for auto owners who do not wish to drive, and an essential service to those without access to an automobile, such as school children, senior citizens, single auto families, and others who may be economically or physically disadvantaged.

A limitation of mass transit lies in its inability to serve different trip purposes. Due to the low employment density and the lack of a highly concentrated employment area, mass transit would not adequately serve the study area. Also, for other trip purposes such as shopping, social, and recreational trips, transit is not attractive because trip purposes are less frequent and less predictable to serve with scheduled bus service on fixed routes. Furthermore, most bus routes are designed primarily to capture work trips during peak periods in an effort to maximize revenue and reduce congestion.

The purpose of the project is to improve travel times, reduce congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets, and improve mobility on the designated US 1 Strategic Highway Corridor. Mass transit alternatives would not meet this purpose since it would only serve local traffic and not through traffic. In addition, the nonexistence of major employers along US 1 that could generate home-based work trips for the study area, mass transit is not a viable alternative to reduce congestion and delay. Typically, mass transit is considered a viable alternative to roadway construction in urban areas. According to the North Carolina Office of State Budget and Management, the estimated population of Richmond County in 2010 is 46,630. Given the rural character of the area, a mass transit system would not adequately serve the purpose and need for the project. Therefore, for reasons discussed above, the Mass Transit Alternative was eliminated from further consideration.

2.4 Build Alternatives

2.4.1 Logical Termini / Independent Utility

The intersection of US 1 near Sandhill Road (SR 1971) was selected as a logical southern terminus since this intersection represents the closest, most common point that bypass alternatives could tie back into existing US 1. Traffic volumes south of this intersection are lower. Also, the area south of Sandhill Road (SR 1971) becomes rural with less residential and commercial development along US 1.

At the northern end of the project, the initial intent of the study was to connect the bypass facility back to existing US 1 as soon as possible in order to minimize impacts and costs. Factors that influenced the number of options or opportunities to meet this goal included:

- limitations on the location of a proposed interchange at existing US 74 Business;
- development along US 1 including Richmond County Senior High, the Pine Lakes community and Richmond Pines Country Club Golf Course;
- residential development along Wiregrass Road (SR 1640);
- the location of the Rockingham Speedway and Rockingham Dragway at NC 177.

At Marston Road (SR 1001), the project joins with the southern limit of TIP Project R-2502, which is under construction to widen US 1 from two lanes to four lanes.

2.4.2 Design Features

Roadway geometry was developed for the proposed project using year 2035 traffic projections and specific design criteria approved by the NCDOT and the FHWA (see Tables 2-1 and 2-2). Alternatives for the US 1 Bypass were designed for a Level of Service C or better. Based on traffic projections and design criteria established for the proposed bypass, a four-lane divided, fully controlled access facility with a 70-foot median width was determined to be adequate for projected needs within the study area.

2.4.2.1 Design Criteria

Table 2-1: New Location Design Criteria

Criteria	Four-Lane Freeway
Type of Facility	Freeway
Type of Terrain	Rolling
Number of Lanes	Four-Lane Divided
Design Vehicle	WB 50
Design Speed	70 mph
Horizontal Alignment:	
Minimum Radius	1,630 ft
Maximum Super Elevation Rate	0.10 ft / ft
Vertical Alignment:	
Maximum Grade	4%
Minimum Sight Stopping Distance	730 ft
Desirable Crest Vertical "K" Factor	247
Desirable Sag Vertical "K" Factor	181
Pavement Width	24 ft each direction (12 ft standard lane width)
Median Width	Varies from 22 ft to 70 ft
Shoulder Widths:	
Outside	15 ft with guardrail; 12 ft without
Median	12 ft
Paved Shoulder Widths:	
Outside	10 ft
Inside	4 ft
Right of Way:	
Width	Varies
Control of Access	Full

Table 2-2: Widening Design Criteria

Criteria	Four-Lane Widening	Five-Lane Widening
Type of Facility	Arterial	Arterial
Type of Terrain	Rolling	Rolling
Number of Lanes	Four-Lane Divided	Five-Lane Undivided
Design Vehicle	WB 50	WB 50
Design Speed	60 mph	50 mph
Horizontal Alignment:		
Minimum Radius	1,090 ft	694 ft
Maximum Super Elevation Rate	0.10 ft / ft	0.10 ft / ft
Vertical Alignment:		
Maximum Grade	4%	5%
Minimum Sight Stopping Distance	570 ft	425 ft
Desirable Crest Vertical “K” Factor	151	84
Desirable Sag Vertical “K” Factor	136	96
Pavement Width	24 ft each direction (12 ft standard lane width)	24 ft each direction with a 16 ft median lane
Median Width	23 ft	N/A
Shoulder Widths:		
Outside	15 ft with guardrail; 12 ft without	10 ft with guardrail; 13 ft without
Median	N/A	N/A
Paved Shoulder Widths:		
Outside	4 ft	4 ft
Inside	N/A	N/A
Right of Way:		
Width	Varies	Varies
Control of Access	Partial	None

2.4.2.2 Roadway Typical Sections

Four-Lane Freeway on New Location

The portion of the proposed US 1 project on new location will be a four-lane divided freeway with a median width that varies from 22 feet to 70 feet. Where the project crosses the wetland systems at Watery Branch (Structure 4) and South Prong Falling Creek (Structure 7), the median width is reduced to 46 feet. At Falling Creek (Structure 8), the median width is reduced to 22 feet within the limits of the McDonalds Pond Restoration Site conservation easement. The proposed right of way width will vary, and the design speed will be 70 mph (see Figure 2.1). It will be a fully controlled access facility.

Four-Lane Widening of Existing US 1

The existing two-lane US 1 roadway will be widened to a four-lane divided roadway with a 23-foot median width. The design speed will be 60 mph, and the proposed right of way will vary (see Figure 2.1). This section of the project will have partial control of access.

Five-Lane Widening of Existing US 1

The five-lane widening of existing US 1 will include a shoulder section with a 60 mph design speed and a curb and gutter section with a 50 mph design speed. There will be two travel lanes in each direction with a center turn lane. The proposed right of way will vary (see Figure 2.1). This section of the project will have no control of access.

2.4.3 Evaluation of Preliminary Alternatives

2.4.3.1 Improvements to the Existing Facility

Improvements to existing US 1 were examined as an alternative to the proposed construction of a bypass facility on new alignment. These improvements would include providing additional travel lanes along US 1 through downtown Rockingham and the Rockingham Historic District. Improving existing US 1 would severely disrupt the economic and historic character of the downtown area as these improvements would require the relocation of several businesses and would likely impact those properties adjacent to the existing road that are either listed on or eligible for the National Register of Historic Places. Improving US 1 would also result in the removal of on-street parking through downtown, which for some businesses may provide the only means of access.

Outside the downtown area, upgrading existing US 1 to a multi-lane facility would result in either the relocation and/or right of way acquisition of many homes and businesses located adjacent to US 1. Potential impacts would also include increased noise impacts.

This alternative is not consistent with local and statewide long-range plans to provide a fully controlled, bypass facility around Rockingham. Portions of US 1 are currently at capacity and will continue to deteriorate in the future (see Section 1.8, *Capacity, Safety, and Roadway Deficiencies*). Widening the existing facility will not meet the purpose of the project since it would not reduce travel time, congestion, or improve mobility. Therefore, based on these factors and the potential impacts to residences, businesses and the Rockingham Historic District, this alternative was not considered as a reasonable and feasible alternative.

2.4.3.2 Improve NC 177

Improving NC 177 to serve as an alternate route for traffic was considered as an alternative to the construction of a US 1 Bypass in a supplemental Draft Environmental Impact Statement (SDEIS, April 2001). Two options were examined: widening NC 177 to a multi-lane facility from its intersection with US 1 north of Rockingham to the South Carolina state line; and widening NC 177 to a multi-lane facility north and south of Hamlet with a bypass of Hamlet on new location that would include an interchange with US 74 Business west of Hamlet.

NC 177 is a three-lane, rural roadway with one travel lane in each direction and a center turn lane from the intersection at US 1 to the intersection of Fox Road (SR 1606). NC 177 becomes a two-lane highway at Fox Road and continues south with two lanes to Pine Street in Hamlet. It then transitions back to a three-lane facility with a center turn lane at Pine Street and continues to US 74. NC 177 is a two-lane highway from US 74 south to the South Carolina line. NC 177 generally runs parallel to the CSX railroad that travels from South Carolina through Richmond

County and the City of Hamlet, and into Moore County. The location of the CSX railroad restricts the possibility of widening NC 177 to the east.

Widening NC 177 through Hamlet would result in nearly 100 residential and business acquisitions and relocations, including those located in the community of Dobbins Heights. Also, unlike a new location alternative, it is not reasonable to acquire full control of access on a widening alternative, thus limiting the effectiveness of the facility to operate as a bypass. Improvements to NC 177 through Hamlet would severely disrupt the overall character of this area and could result in disproportionate adverse impacts to the minority community of Dobbins Heights. Other land use concerns include potential economic impacts to the Pine Hills Industrial Park located just north of Dobbins Heights, potential adverse impacts associated with Hamlet City Park, and impacts to the Hamlet Housing Authority development located just east of NC 177 near Winona Avenue.

Based on the number of potential residential and business relocations, social impacts to the town of Hamlet and its neighboring communities, and the potential economic impacts to existing highway-related businesses including those in the Hamlet business district, widening NC 177 through Hamlet was not considered to be a reasonable or feasible alternative.

Widening NC 177 while providing a bypass of Hamlet on new location would also require a number of residential relocations, some of which are located within the city limits of Hamlet. Based on National Wetland Inventory (NWI) mapping, this alternative would cross a jurisdictional wetland associated with a small tributary of Marks Creek and is estimated to impact approximately 21.6 acres (8.75 hectares) of wetlands. Due to the additional length of this alternative as well as potential relocation and wetland impacts, this alternative was eliminated from further study.

For more information on the development and analysis of improving NC 177 as an alternative to a US 1 Bypass on new location, see the SDEIS (April 2001).

2.4.3.3 Development of Preliminary Corridors

Nineteen segments best suited for roadway development were identified early in the planning process for this project. Factors that influenced the identification of the segments included the locations of existing development, community facilities, historic architectural and archaeological sites, natural resources (wetlands, water resources, rare and protected species), floodplains, and recorded hazardous waste generators and sites. These 19 segments were then linked together to form 27 preliminary alternative corridors.

Details of the development and locations of the 19 segments may be found in the TIP R-2501 Phase I Location and Environmental Study (February 1997) and the DEIS (June 1999).

2.4.3.4 Preliminary Corridors Eliminated from Further Study

The segments that comprise the preliminary corridors were reviewed to determine which segments should be modified, eliminated or carried forward for detailed analysis. Each segment was evaluated based on impacts to the community, economy, and natural resources.

Construction costs and the number of water crossings requiring a structure were also considered. Based on the results of this evaluation, nine of the 19 segments were eliminated from further consideration or modified. Of the 27 alternative corridors, 23 of them included one or more of the eliminated segments – resulting in the elimination of all but four of the alternative corridors.

For more information on the evaluation and elimination of the segments and alternative corridors, see the TIP R-2501 Phase I Location and Environmental Study (February 1997) and the DEIS (June 1999).

2.4.3.5 Corridors Carried Forward for Detailed Study

The remaining four preliminary alternative corridors – Corridor Nos. 7, 14, 21, and 24 – were recommended for further study.

2.4.4 Description of Detailed Study Alternatives

The detailed study alternatives are shown in Figures 2.2a and 2.2b and a description of each is below.

Alternative 7 – This corridor begins south of Osborne Road (SR 1140) and passes north of the Loch Haven Golf Course and south of the Richmond County Airport. It intersects US 74 Business near Pineleigh Avenue (SR 1670). After intersecting with US 74 Business, the alignment continues northeast and intersects Wiregrass Road (SR 1640) near Washington Street Extension (SR 1643) where it then follows the existing alignment of US 1. From the intersection with US 1, the remaining portion of Alternative Corridor No. 7 consists of widening existing US 1 to either a four-lane divided expressway or a five-lane facility to its northern terminus at Marston Road (SR 1001). This corridor is approximately 19.2 miles in length.

Alternative 14 – This corridor alignment is identical to Corridor No. 7 with the exception that the proposed alignment, after crossing Osborne Road (SR 1104) near the southern terminus of the project, would take a more easterly route and pass south, rather than north, of the Loch Haven Golf Course before continuing northeast to intersect with US 74 Bypass in the same location as Corridor No. 7. Corridor No. 14 is approximately 19.1 miles in length.

Alternative 21 (Preferred) – The alignment for this alternative follows the same alignment as Alternative Corridor No. 7 until its intersection with US 74 Business. At this point, the alignment travels northeast to cross over both Wiregrass Road (SR 1640) and County Home Road (SR 1624) near the location of their intersection and just west of Richmond Primary School.

After crossing County Home Road (SR 1624), the alignment for Corridor No. 21 remains on new location before turning north and intersecting US 1 west of Fox Road (SR 1606). Corridor No. 21 is approximately 19.3 miles in length.

Alternative 24 – The alignment for Corridor No. 24 is identical to Corridor No. 21 with the only difference being that this alternative travels south of Loch Haven Golf Course rather than north of the golf course. Corridor No. 24 is approximately 19.1 miles in length.

A comparison of the impacts associated with each Alternative as given in the DEIS (June 1999) is shown in Table 2-3. These impacts do not account for the extension of existing US 1 that was analyzed in the SDEIS (April 2001).

Table 2-3: DEIS Summary of Impacts – Studied Alternatives

Impacts	Alternatives			
	7	14	21	24
Lengths (miles)	--	--	--	--
Along New Location	12.2	12.2	14.0	13.9
Along Existing US 1	3.3	3.3	1.6	1.6
Total	15.5	15.5	15.6	15.5
Interchanges	3	3	3	3
Grade Separations	4	4	5	5
Relocations	--	--	--	--
Residential	115	111	71	67
Business	6	6	17	17
Non Profit	0	0	0	0
Farms	1	1	1	1
Total	122	118	89	85
Acreage Required	--	--	--	--
Undisturbed Land	560	587	647	674
Agricultural Land	22	7	22	7
Developed Land	227	225	181	179
Total	809	819	850	860
Prime / Statewide Important Farmland (acres)	228	216	248	236
Water Resource Impacts	--	--	--	--
Stream Crossings	15	15	10	10
Stream Impacts (feet)	6,872	6,548	3,783	3,459
Open Water Impacts (acres)	7	7	3	3
Wetland Impacts (acres)	55.3	61.6	55.5	61.8
Floodplain Impacts (acres)	21.2	18.5	24.5	24.8
Historic Property Impacts	0	0	0	0
Park Impacts	0	0	0	0
Noise Impacts	5	5	0	0
Hazardous Material Sites (excluding USTs)	0	0	0	0
Costs (in millions \$)	--	--	--	--
Right of Way	\$25.22	\$24.70	\$21.67	\$21.15
Utilities	\$1.08	\$1.08	\$1.18	\$1.18
Construction	\$124.75	\$124.55	\$139.25	\$139.05
Wetland Mitigation	\$1.67	\$1.78	\$1.90	\$2.01
Stream Mitigation Cost	\$1.72	\$1.64	\$0.95	\$0.86
Total	\$154.44	\$153.75	\$164.95	\$164.25

Table 2-4 presents impacts associated with the preferred alternative (Alternative 21) as given in the SDEIS compared with impacts associated with the most recent preliminary design of the preferred alternative as described in this FEIS (see Section 2.7, *Preferred Alternative*).

Table 2-4: SDEIS Summary of Impacts – Preferred Alternative

Impacts	Preferred Alternative (Documented in DEIS & SDEIS)			Recommended Alternative (FEIS)
	Corridor 21 (DEIS)	US 1 Extension (SDEIS)	Corridor 21 & US 1 Extension Total	Corridor 21 & US 1 Extension Total
Lengths (miles)	--	--	--	--
Along New Location	14.0	--	14.0	14.0
Along Existing US 1	1.6	3.7	5.3	5.3
Total	15.6	3.7	19.3	19.3
Interchanges	3	0	3	4
Grade Separations	5	0	5	5
Relocations	--	--	--	--
Residential	71	2	73	97
Business	17	0	17	8
Non Profit	0	1	1	0
Farms	1	0	1	0
Total	89	3	92	105
Acreage Required	--	--	--	--
Undisturbed / Forested Land	647	8.13	655.1	483.5
Agricultural Land	22	0	22.0	76.0
Maintained / Disturbed Land	181	13.71	194.7	310.9
Successional Land	--	--	--	91.4
Total	850	21.84	871.8	961.8
Prime/Statewide Important Farmland (acres)	248	0.68	248.7	345.2
Water Resource Impacts	--	--	--	--
Stream Crossings	10	0	10	16
Stream Impacts (feet)	3,783	0	3,783	3,717
Open Water Impacts (acres)	3	0	3	2.6
Wetland Impacts (acres)	55.5	0.2	55.7	40.5
Floodplain Impacts (acres)	24.5	0	24.5	9.8
Historic Property Impacts	0	0	0	0
Archaeological Sites	0	0	0	0
Section 4(f) Resources (Parks, Recreation Areas, Wildlife Management Areas)	0	0	0	1
Noise Impacts	0	0	0	167*
Hazardous Material Sites (excluding USTs)	0	0	0	0
Costs (in millions \$)	--	--	--	--
Right of Way & Utilities	\$22.85	\$2.07	\$24.92	\$43.18
Construction	\$139.25	\$10.90	\$150.15	\$212.515
Wetland Mitigation	\$1.90	\$0.01	\$1.91	\$2.85
Stream Mitigation Cost	\$0.95	\$0.00	\$0.95	\$1.90
Total	\$164.95	\$12.98	\$177.93	\$260.44

* Noise impacts to 167 receivers include 165 residences, one business, and one campground.

2.5 Traffic Operation Analyses

A traffic capacity analysis was completed by the firm Qk4 in December 2004 following the approval of the R-2501 Supplemental Draft Environmental Impact Statement. Future traffic operations were evaluated for the year 2025. Updated traffic forecasts were prepared for NCDOT by Stantec Consulting in January 2008 and October 2008 (refer to the Appendix). These forecasts addressed more recent growth estimates, related transportation improvements, new interchange considerations, and refinements to the preferred alignment design. The forecasts considered volumes for the initial phased construction from US 74 Bypass to Marston Road (SR 1001) and for the ultimate construction from Sandhill Road (SR 1971) to Marston Road (SR 1001).

A revised analysis was performed in 2011 in the US 1 Richmond County Traffic Capacity Analysis report and is incorporated by reference in this FEIS. This traffic capacity analysis presents future year traffic operations for the year 2035. It includes the analysis of basic freeway segments, ramp junctions, freeway weaving, signalized intersections, and unsignalized intersections.

2.5.1 Year 2035 Build Traffic Projections

Future year 2035 traffic volumes along the proposed US 1 Bypass are estimated to range from 3,800 vehicles per day (vpd) south of US 74 Bypass to 13,800 vpd north of NC 177. Throughout most of the project, average daily traffic includes 6% dual-tire trucks and 19% tractor-trailer semi-trucks (see Figure 2.4).

2.5.2 Year 2035 Build Capacity Analysis

Overall, the proposed improvements will enable traffic to operate at an acceptable level of service through the design year. All freeway segments would operate at LOS A. All merging, diverging, and weaving movements at interchanges would operate at LOS B or better. All but one intersection within the project area would operate at an overall LOS D.

Freeway Segments

Four basic freeway segments were evaluated for the US 1 Bypass. These are located from:

- North of Osborne Road (SR 1104) to US 74 Bypass
- Airport Road (SR 1966) to US 74 Business
- US 74 Business to Wiregrass Road (SR 1640) / County Home Road (SR 1624)
- Wiregrass Road (SR 1640) / County Home Road (SR 1624) to South of Fox Road (SR 1606) / US 1 Business

All the freeway segments are expected to operate at LOS A in the year 2035.

Interchanges

Four interchanges are proposed along the US 1 Bypass. These are located at:

- US 74 Bypass
- Airport Road (SR 1966)
- US 74 Business
- Wiregrass Road (SR 1640) / County Home Road (SR 1624)

Traffic operations at ramp junctions were evaluated to consider the effects of merging, diverging, and weaving movements on the freeway.

At the US 74 Bypass interchange, an ultimate four way interchange is proposed with flyover ramps between the two freeways. All merging and diverging movements would operate at LOS B or better. Weaving movements would operate at level of service A.

At Airport Road (SR 1966), a partial clover interchange is proposed with ramps and loops located on the southwest side. All merging and diverging movements would operate at LOS A. At US 74 Business, a partial clover interchange is proposed with ramps and loops located on the north side. All merging and diverging movements would operate at LOS A. At Wiregrass Road (SR 1640) / County Home Road (SR 1624), a partial clover interchange is proposed with ramps and loops located in the northeast and southwest quadrants. All merging and diverging movements would operate at LOS A.

Signalized and Unsignalized Intersections

Traffic operations at intersections in the project area have been evaluated at the following locations:

- US 1 Business/ Osborne Road (SR 1104)
- Airport Road (SR 1966)
- US 74 Business
- Wiregrass Road (SR 1640)/ County Home Road (SR 1624)
- US 1 Business/ Fox Road (SR 1606)
- Cognac Road (SR 1605)
- NC 177
- Beaverdam Church Road (SR 1486)
- Marston Road (SR 1001)

The proposed intersection with US 1 Business/ Osborne Road (SR 1104) would be unsignalized. The intersection approaches would operate at LOS B.

At Airport Road (SR 1966), the US 1 Bypass ramps would intersect in two locations and would be unsignalized. The approaches at both intersections would operate at LOS B or better.

At US 74 Business, the US 1 Bypass ramps would intersect in two locations and are proposed with signals to operate with an acceptable level of service in the design year. The intersection with Southbound US 1 Ramp A would operate overall at LOS B. The intersection with northbound US 1 Ramp D would operate overall at LOS C or better.

At Wiregrass Road (SR 1640)/ County Home Road (SR 1624), the US 1 Bypass ramps would intersect in two locations and are proposed with signals to operate with an acceptable level of service. The intersection with Southbound US 1 Ramp A would operate overall at LOS C. The intersection with northbound US 1 Ramp C would operate overall at LOS D or better.

The proposed intersection with US 1 Business/ Fox Road (SR 1606) would operate at an overall LOS D if a traffic signal is proposed. The proposed intersections with Cognac Road (SR 1605), NC 177, Beaverdam Church Road (SR 1486), and Marston Road (SR 1001) would be unsignalized. The approaches at these intersections would operate at LOS C or better.

Using future morning peak hour conditions, travel times were calculated to measure the efficiency of travel with the proposed US 1 improvements (see results in Table 2-5). The proposed 19.3-mile trip from north of Sandhill Road (SR 1971) to Marston Road (SR 1001) is estimated to take 18 minutes at an average speed of 64 mph. This reduces US 1 travel time by more than 10 minutes and increases average speeds by 25 mph. These proposed conditions meet the long-term strategic highway corridor vision for high mobility, controlled access, and speeds of at least 55mph.

Table 2-5: 2035 Travel Times and Levels of Service for US 1 Widening and Bypass

US 1 Roadway Segment	Typical Section	Length (miles)	2035 Traffic Conditions			
			Average Daily Traffic (vpd)	Travel Time (min)	Average Speed (mph)	Level of Service LOS
North of Sandhill Road (SR 1971) to US 74 Bypass	Four-Lane Expressway	4.7	3,800	4.3	65	A
US 74 Bypass to Airport Road (SR 1966)	Four-Lane Freeway	1.3	8,800	1.2	65	A
Airport Road (SR 1966) to US 74 Business	Four-Lane Freeway	2.5	8,000	2.3	65	A
US 74 Business to north of Wiregrass Road (SR 1640)	Four-Lane Expressway	1.6	8,600	1.0	65	A
Wiregrass Road (SR 1640) to Fox Road (SR 1606)	Four-Lane Expressway	4.1	12,800	3.8	65	A
Fox Road (SR 1606) to Marston Road (SR 1001)	Four-Lane/ Five-Lane	5.1	12,800	5.4	57	A
Total		19.3		18.0	64	

2.6 Costs

The total project cost is estimated to be \$260,440,000. This includes \$43,180,000 for right of way acquisition and utilities, \$212,510,000 for construction, and \$1,900,000 for mitigation.

2.7 Preferred Alternative

Based on the analyses presented in the DEIS, the comments received from circulation of the DEIS, Public Hearing comments, and the analyses in the SDEIS, Alternative 21 was chosen by the Section 404 / NEPA Merger Project Team on February 15, 2001 as the Least Environmentally Damaging Practicable Alternative (LEDPA) for the US 1 Bypass and Improvement Project. (See Section 404 / NEPA Merger Agreement for Concurrence Point Nos. 2 and 3 dated February 15, 2001, in Appendix A.4). Alternatives 14 and 24 were eliminated from further consideration since they have more impacts to the natural environment than Alternatives 7 and 21. Alternative 7 was eliminated from further consideration since it has more relocations than Alternative 21. See Figure 2.5 for the preferred alternative.

During the development of the FEIS, several revisions were made to the preferred alternative. These include an interchange revision at the US 74 Bypass, a proposed new interchange with Wiregrass Road (SR 1640) / County Home Road (SR 1624), and a proposed corridor expansion east of County Home Road (SR 1624).

The original preferred alternative included a full cloverleaf interchange with the US 74 Bypass. The interchange configuration was modified to increase the ramp design speeds, reduce the interchange area, and reduce environmental impacts. A four-level interchange design was proposed and shifted southward within the project corridor (see Figure 2.5b). This modified interchange design reduced the total interchange area by 40 acres. It reduced wetland impacts by nearly nine acres, pond impacts by three acres, and stream impacts by 2,100 feet. It was presented for public comment during a July 2007 Citizens Informational Workshop (CIW).

In August 2007, public officials requested an interchange near Wiregrass Road (SR 1640) and County Home Road (SR 1624) to help with future emergency, industrial, and general access. After further evaluation, NCDOT included an interchange at this location to improve connectivity between NC 177, US 74 Business, and US 1 near Rockingham (see Figure 2.5d). The public was notified of this additional interchange in a July 2008 project newsletter and given the opportunity to respond with questions or comments about the interchange.

See Section 7.2, *Coordination and Public Involvement* for a summary of public involvement efforts regarding the selection of the preferred alignment and subsequent revisions as described above.

East of County Home Road (SR 1624), the project crosses Falling Creek and the McDonalds Pond Restoration site (see Figure 2.5e). The 127 acre restoration site was constructed in 2005 and is protected by a conservation easement managed by the NC Ecosystem Enhancement Program (EEP). The preferred alternative was formally established and selected in 2001, prior to construction of the EEP site. To minimize impacts to the restoration site, the project corridor

was expanded, and the proposed alignment was shifted to the south to provide a bridge across a narrower part of the stream system (see Figure 2.6). The alignment shift was included in a September 2011 re-evaluation of the DEIS and SDEIS.

Interchanges are proposed at US 74 Bypass, Airport Road (SR 1966), US 74 Business, and Wiregrass Road (SR 1640) / County Home Road (SR 1642). At-grade intersections are proposed at US 1 south of Rockingham, Osborne Road (SR 1104), and US 1 / Fox Road (SR 1606) north of Rockingham. Grade separations are proposed at Sandhill Road (SR 1971), Hamer Mill Road (SR 1105), Hylan Avenue (SR 1909), and at the CSX Railroad (two locations).

The impacts associated with Alternative 21 are shown in Table 2-6. The impacts presented in Table 2-6 reflect the latest preliminary design of the project and include the impacts from Alternative Corridor No. 21, as described in the DEIS (June 1999), combined with the extension of the corridor to include the additional 3.7 miles of widening as evaluated in the SDEIS. The impacts have been revised to reflect the US 74 Bypass interchange reconfiguration, the additional interchange at Wiregrass Road (SR 1640) / County Home Road (SR 1104), and the realignment at Falling Creek and the McDonalds Pond Restoration site.

Table 2-6: Summary of Impacts – Preferred Alternative

Impacts	Preferred Alternative
Lengths (miles)	--
Along New Location	14.0
Along Existing US 1	5.3
Total	19.3
Interchanges	4
Grade Separations	5
Relocations	--
Residential	97
Business	8
Non Profit	0
Farms	0
Total	105
Acreage Required	--
Undisturbed / Forested Land	483.5
Agricultural Land	76.0
Maintained/Disturbed Land	310.9
Successional Land	91.4
Total	961.8
Prime/Statewide Important Farmland (acres)	345.2
Water Resource Impacts	--
Stream Crossings	16
Stream Impacts (feet)	3,717
Open Water Impacts (acres)	2.6
Wetland Impacts (acres)	40.5
Floodplain Impacts (acres)	9.8
Endangered Species	
Michaux's sumac	May Affect, Not Likely to Adversely Affect
Red-cockaded woodpecker	No Effect
Rough-leaved loosestrife	No Effect
Shortnose sturgeon	No Effect
Historic Property Impacts	0
Archaeological Sites	0
Section 4(f) Resources (Parks, Recreation Areas, Wildlife Management Areas)	1
Noise Impacts	167*
Hazardous Material Sites (excluding USTs)	0
Costs (in millions \$)	--
Right of Way and Utilities	\$43.18
Construction	\$212.515
Wetland Mitigation	\$2.85
Stream Mitigation Cost	\$1.90
Total	\$260.44

* Noise impacts to 167 receivers include 165 residences, one business, and one campground.

2.7.1 Structures and Drainage Recommendations for the Preferred Alternative

Based on a preliminary hydraulic study and a review of stream crossings, nine stream crossings require structures that are greater than 60 inches wide. All other crossings can be contained in smaller pipes or culverts. The proposed structure locations are shown on Figure 2.5. Preliminary sizes are shown in Table 2-7.

Table 2-7: Preliminary Structures for Major Stream Crossings

Structure No.	Stream	Existing Structure	Preliminary Structure
1	Baggetts Creek	1 Span, 31' Bridge	(3) 10' x 8' x 350' RCBC*
2	Baggetts Creek	(2) 10' x 6' RCBC*	Retain Existing
3	Unnamed Tributary to Speeds Creek	---	(3) 10' x 8' x 250' RCBC*
4	Watery Branch	---	(2) 9' x 7' x 240' RCBC*
5	Solomons Creek	---	(1) 7' x 6' x 1,340' RCBC*
6	Solomons Creek	(3) 9' x 5' RCBC*	(3) 9' x 5' x 50' RCBC* Extension
7	South Prong Falling Creek	---	Dual 450' x 38' Bridges
8	Falling Creek	---	Single 250' x 90' Bridge
9	Chock Creek	(3) 9' x 9' RCBC*	(3) 9' x 9' x 85' RCBC* Extension

RCBC* – Reinforced Concrete Box Culvert

3.0 AFFECTED ENVIRONMENT

3.1 Human Characteristics

A Demographic Area was identified in order to analyze population, and housing characteristics using the 1990 and 2000 US Census data (see Figure 3.1). Its boundary corresponds with the 2000 US Census Bureau boundary of:

- Census Tract 9701 / Block Group 2;
- Census Tract 9706 / Block Group 1;
- Census Tract 9708 / Block Groups 3 and 5;
- Census Tract 9709 / Block Groups 3, 5, and 6;
- Census Tract 9710 / Block Groups 1-2;
- Census Tract 9711 / Block Group 1.

3.1.1 Population Characteristics

Table 3-1 presents demographic data gathered from the 1990 and 2000 US Census for the Demographic Area, Rockingham, Hamlet, Richmond County, and North Carolina.

Table 3-1: Demographic Overview

Population Growth, 1990-2000										
	Demographic Area		Rockingham		Hamlet		Richmond County		North Carolina	
1990 Population	11,670		9,399		6,196		44,518		6,628,637	
2000 Population	14,167		9,672		6,018		46,564		8,049,313	
Difference	2,497		273		-178		2,046		1,420,676	
% Change	21.4%		2.9%		-2.9%		4.6%		21.4%	
Population by Race, 2000										
Race	Demographic Area		Rockingham		Hamlet		Richmond County		North Carolina	
	Pop.	%	Pop.	%	Pop.	%	Pop.	%	Pop.	%
White	8,538	60.3%	6,243	64.5%	3,677	61.1%	29,522	63.4%	5,647,155	70.2%
African American	4,684	33.1%	2,882	29.8%	2,073	34.4%	14,160	30.4%	1,723,301	21.4%
American Indian / Alaska Native	335	2.4%	100	1.0%	95	1.6%	748	1.6%	95,333	1.2%
Hispanic	349	2.5%	203	2.1%	76	1.3%	1,319	2.8%	378,963	4.7%
Total *	13,906	98.3%	9,428	97.4%	5,921	98.4%	45,749	98.2%	7,844,752	97.5%
Population by Age, 2000										
Age	Demographic Area		Rockingham		Hamlet		Richmond County		North Carolina	
	Pop.	%	Pop.	%	Pop.	%	Pop.	%	Pop.	%
19 Years & Under	4,223	29.8%	2,699	27.9%	1,713	28.5%	13,490	29.0%	2,193,360	27.2%
20-64 Years	8,251	58.2%	5,283	54.6%	3,314	55.1%	26,725	57.4%	4,886,905	60.7%
65 or More Years	1,693	12.0%	1,690	17.5%	991	16.5%	6,349	13.6%	969,048	12.0%

Source: 1990 and 2000 US Census

* Note: Race population and percentages do not equal population totals due to other racial groups not shown here.

Within the Demographic Area, the population increased between 1990 to 2000 substantially more than the other local areas. The population race percentages compare relatively evenly between the Demographic Area and the other local areas.

3.1.2 Economic Characteristics

Since the late 1800's, Richmond County's economy has been largely centered around manufacturing. Recent employment statistics show the County's largest employers are Richmond County Schools, Perdue Products Incorporated (manufacturing), and First Health of the Carolinas, Inc.

Table 3-2 gives economic and housing characteristics based on demographic data for the Demographic Area, Rockingham, Hamlet, Richmond County, and North Carolina.

Table 3-2: Economic and Housing Characteristics

	Demographic Area	Rockingham	Hamlet	Richmond County	North Carolina
Households Receiving Public Assistance	2.8%	2.1%	2.4%	4.4%	2.8%
Median Household Income	\$30,714	\$26,574	\$29,013	\$28,830	\$39,184
Median Home Value	\$59,807	\$52,300	\$64,000	\$54,100	\$95,800
Income Below Poverty Level	17.7%	20.4%	22.2%	19.6%	12.3%

According to the 2000 US Census, the Demographic Area has the highest median household income and the lowest income below poverty level among the sampled group, excluding the State of North Carolina. Overall, the data shown in Table 3-2 indicates the Demographic Area compares favorably with the other local geographic areas in all four categories.

3.1.2.1 Employment

According to employment statistics from the North Carolina Employment Security Commission, employment in Richmond County decreased by nearly 16 percent (almost 3,000 jobs) between 2000 and 2009 (see Table 3-3). During that time, Richmond County suffered a 37 percent loss in the manufacturing sector. Approximately 1,780 manufacturing employees lost their jobs – about 980 in the textile industry alone. The largest number of jobs within the County in 2009 was in the Government sector with 3,184; followed by manufacturing (about 3,000 jobs) and healthcare and social services (close to 2,200 jobs). Gains in the health care & social assistance sector were likely indicative of the presence of two hospitals and ancillary medical activities within the County.

Table 3-3: Employment by Sector – Richmond County, 2000-2009

Sector	Employment		Change 2000-2009	
	2000	2009	Number	Percentage
Agriculture, Forestry, Fishing & Hunting	212	195	-17	-8.0%
Mining	139	123	-16	-11.5%
Utilities	105	143	38	36.2%
Construction	1,183	574	-609	-51.2%
Manufacturing	4,767	2,987	-1,780	-37.3%
Wholesale Trade	271	162	-109	-40.2%
Retail Trade	2,207	1,891	-316	-14.3%
Transportation & Warehousing	305	126	-179	-58.7%
Information	165	133	-32	-19.4%
Finance & Insurance	527	258	-269	-51.0%
Real Estate & Rental & Leasing	121	99	-22	-18.2%
Professional & Technical Services	161	131	-30	-18.6%
Management of Companies & Enterprises	*	*	N/A	N/A
Administrative and Waste Services	306	288	-18	-5.9%
Educational Services	1,639	1,755	116	7.1%
Health Care & Social Services	2,072	2,177	105	5.1%
Arts, Entertainment, & Recreation	78	82	4	5.1%
Accommodation & Food Services	813	1,018	205	25.2%
Other Services, Ex. Public Administration	291	280	-11	-3.8%
Unclassified	*	17	N/A	N/A
Government	3,175	3,184	9	0.3%
Total**	18,537	15,623	-2,914	-15.7%

Source: The Employment Security Commission of North Carolina

* Indicates disclosure suppression

** Total includes data for * sectors

In 2000, Richmond County's unemployment rate was 5.4 percent, the lowest rate of this decade. By 2002 it had almost doubled to 10.5 percent. For the next five years, it declined steadily each year to 7.5 percent in 2007. In 2008, unemployment rose to 9.3 percent and continued to rise to 13.3 percent in 2009. To date, the unemployment rate in 2010 is averaging approximately 13.5 percent (July 2010).

3.1.3 Community Facilities and Services

Community facilities located within the project study area include: schools, churches, cemeteries, parks and recreational facilities, and emergency services. The nearest hospital, Richmond Memorial Hospital, is located on Long Drive (SR 1646) within the City of Rockingham.

3.1.3.1 Parks and Recreation Facilities

Several parks and recreational facilities are located within the project study area (see Figure 3.2). These facilities include:

- **Rockingham Speedway** - hosted NASCAR events from its opening in 1965 to 2004. It reopened in 2008 and hosts several racing events including the ARCA / REMAX Carolina 500.
- **Rockingham Dragway** – a 0.25-mile International Hot Rod Association (IHRA) drag strip that hosts, among other events, two major IHRA events a season.
- **Sandhills Game Land** - The game land totals 58,713 acres, and offers activities including hunting, fishing, hiking, biking, horseback riding, and nature observation.
- **Pee Dee River Game Land** - This game land covers more than 6,800 acres in Anson, Montgomery, Stanly, and Richmond counties.
- **Hinson Lake** - A 216-acre wildlife conservation that offers fishing, canoeing, hiking, picnicking, and wildlife observation.
- **Lock Haven Golf Course** - An 18-hole golf course located on Loch Haven Road (SR 2001).
- **Richmond Pines Golf and Country Club** - An 18-hole golf course located on the south side of US 1 approximately five miles west of NC 177 north of Rockingham.

The Rockingham Recreation Complex is a planned recreational area that will be located near the intersection of Old Aberdeen Road (SR 1426) and Richmond Road (SR 1423), northeast of downtown Rockingham. A Master Plan initiated by the City of Rockingham's Parks and Recreation Department (September 2009) shows the complex will consist of five soccer/football fields, 11 baseball complexes, an 18-hole disc golf course, an activity center, walking trails and other community activities.

3.1.3.2 Greenways

No greenway facilities are located within the project study area.

3.1.3.3 Schools

There are 18 public schools in Richmond County in addition to the Richmond Community College. The public schools consist of 11 elementary or primary schools, five middle schools, one senior high school and one special education school. Ashley Chapel Elementary, Richmond Senior High and Richmond Primary School, located along County Home Road (SR 1624) east of Wiregrass Road (SR 1640), are the only schools located within the immediate US 1 Bypass study area (see Figure 3.2).

3.1.4 Community Cohesion

3.1.4.1 Neighborhoods

The majority of the project study area passes through undeveloped and rural residential / agricultural land uses with few defined neighborhoods. In the areas where there are more homes

closer together, the homes are generally located along secondary roads on lots of one acre or more. There does not appear to be much social structure in these areas. Based on aerial photography, there is one example of suburban neighborhood development (i.e. closely spaced homes, one or two entry / exit points, cul-de-sacs, etc.) located along Pineleigh Avenue (SR 1670) near the proposed interchange with US 74 Business.

3.2 Land Use and Transportation Planning

3.2.1 Land Use Plans

There are three local governments implementing land use planning and zoning in the project study area: Richmond County, Rockingham, and Hamlet.

Richmond County Strategic Land Use Plan (2000)

The Richmond County Strategic Land Use Plan recommends strategies for land use development. The plan was created by local citizens and officials in order to establish land use-related goals, objectives, and strategies through 2010. The plan generally calls for the preservation of the county's agricultural and natural resources, heritage, and small town / rural way of life through the use of smart growth practices.

Richmond County Zoning Ordinance (2003)

A zoning ordinance was established by Richmond County in 2003 that attempts to control the intensity and location of land uses.

City of Rockingham Unified Development Ordinance (2004)

This document establishes rules and regulations for land development within the City of Rockingham and its extra-territorial jurisdiction (ETJ). Ordinances relate to zoning, watershed protection, flood protection, historic preservation, and several other development related issues.

Shaping Our Future: 2012 (2002)

The City of Rockingham published a land use plan with goals similar to the County's land use development plan. In addition to other goals, the plan calls for continual support of the US 1 Bypass project.

City of Hamlet Ordinance (1992)

The plan establishes the rules and regulations for land development within the City of Hamlet and throughout its ETJ, to ensure that proper measures are taken to control the intensity and location of development.

Richmond 2010 (2004)

In October 2004, Richmond 2010 was presented to stakeholders and interested members of the community as a new comprehensive strategic plan for the county. Seven specific areas of interests were to be addressed. Richmond 2010 represents the target date for completion of the goals and recommendations of the report.

3.2.1.1 Existing Land Use

Land uses within the study area primarily include agriculture, industrial, institutional, recreational and single-family residential (see Figure 3.3). Most of the commercial activity in the study area is clustered along US 74 Business. Existing land use within the study area, south and west of Airport Road (SR 1966), can be categorized as predominantly rural residential and agricultural. The majority of residential uses occur along Mizpah Road (SR 1108), Sandhill Road (SR 1971), Battley Dairy Road (SR 1900), Loch Haven Road (SR 2001), Hamer Mill Road (SR 1105) and Stokes Road (SR 1992). A large, privately-owned recreational area (Loch Haven Golf Course) is located along Loch Haven Road (SR 2001), south of Stokes Road (SR 1992) and east of Sandhill Road (SR 1971).

Land uses within the study area along Airport Road (SR 1966) include predominantly industrial uses, scattered residences, and the Richmond County Airport. Between Airport Road (SR 1966) and south of existing US 74 Business, land uses within the study area consist primarily of single-family residential and a mixture of commercial and industrial uses. The types of residential uses range from scattered single-family homes of various ages to newer homes in planned subdivisions.

Commercial uses in the study area are primarily concentrated along existing US 74 Business and include restaurants, small to medium size shopping centers, and larger stores located on individual sites. Most of the new commercial development in Richmond County has occurred along US 74 Business between the cities of Rockingham and Hamlet. Located just north of US 74 Business and west of Wiregrass Road (SR 1640) is a large institutional land use, Richmond Community College.

Existing land use within the study area north of US 74 Business is predominantly agricultural and rural residential with most of the residences occurring along existing US 1, Wiregrass Road (SR 1640), County Home Road (SR 1624), or along side streets. The majority of these residences represent either scattered single-family homes of various ages or mobile homes located either in trailer parks or on individual lots. Residential uses in the study area also include the Pine Lakes community located just west of the privately owned Richmond Pines Country Club Golf Course. Additional homes are being planned for construction on the east side of the golf course.

Just north of US 1 and the Rockingham Dragway is a portion of the Sandhills Game Land Management Area. The portion of the game lands within the study area are owned by the Federal Department of Defense and managed by the N.C. Wildlife Resources Commission through a long-term cooperative license agreement. The public has free access to the area and permitted uses include hunting and fishing. However, there are no facilities such as picnic areas or public campgrounds.

3.2.1.2 Zoning Characteristics

Richmond County

Zoning throughout the Richmond County portion of the study area includes primarily low-intensity uses, including rural residential, agricultural residential, and conservation. Small

segments are zoned for higher intensity usage, including industrial and highway commercial purposes. Industrial zoning is located throughout the county, with considerable units along the US 74 Bypass west of Rockingham, south of the intersection of US 1 and NC 177, along the railroad tracks east of Hamlet, and the Richmond County Industrial Park south of Hamlet. A highway commercial overlay zone buffers US 1 and several other major regional roadways (US 74, US 74 Bypass, US 220, NC 381, NC 38, and NC 177).

Rockingham

Zoning in Rockingham is a broad mix of residential, commercial, and industrial zoning districts. The majority of the land is zoned for residential purposes, including large areas of high density residential scattered throughout the central portions of the ETJ and low / medium density residential throughout the northeastern portion of the ETJ.

Commercial zoning exists primarily along major highways and in clusters throughout the ETJ, including along US 74 Business, US 1, the central business district in downtown Rockingham, and around the US 1 / US 74 interchange. Industrial development is concentrated in areas, including the Rockingham West Business Park northwest of the city, west of downtown along US 1, and in the vicinity of Airport Road and the railroad tracks south of the city.

Hamlet

Zoning throughout Hamlet and its ETJ is primarily residential in nature, with smaller quantities for commercial and industrial uses. High density residential zoning is concentrated around the central portions of the town, with low density residential zoning classifications in the western portion of Hamlet. Commercial zoning is concentrated around the central business district and along US 74 Business north of the City. Industrial zoning is concentrated along the railroad tracks east and west of the downtown area, as well as the area east of the NC 177 / US 74 Bypass intersection.

3.2.1.3 Future Land Use

Future land use in the project study area is guided by local zoning ordinances. See Figure 3.4 for zoning.

3.2.2 Transportation Plans

3.2.2.1 Highway Plans

Thoroughfare Plan for the Cities of Rockingham – Hamlet (1998)

This plan was developed by the Transportation Planning Branch of the North Carolina Department of Transportation in cooperation with the Cities of Rockingham and Hamlet, and the Federal Highway Administration. According to the plan, the US 1 Bypass should be constructed as a multi-lane, controlled access facility in order to relieve traffic congestion along existing US 1 through Rockingham and provide for the north-south movement of traffic throughout the area.

3.2.2.2 Transit Plans

There are no local transit plans.

3.2.2.3 Bicycle / Pedestrian Plans

According to NCDOT's Richmond County Bicycle Map, bicycle route 21 (the Outer Loop) utilizes Osborne Road (SR 1104) near the southern terminus of the proposed project. Bicycle route 22 (the North-South route) uses County Home Road (SR 1624) and Wiregrass Road (SR 1640).

3.3 Physical Environmental Characteristics

3.3.1 Noise Characteristics

A noise analysis was conducted for the preferred alternative in order to determine existing noise levels, evaluate future noise levels, determine impacted areas, and examine whether noise mitigation is feasible. This analysis is described in detail in the *Highway Traffic Noise/Construction Noise Analysis* (March, 2011) and is incorporated by reference in this FEIS.

The noise analysis presented in the DEIS was completed in 1999. It considered potential impacts at five noise sensitive sites along the preferred corridor, representing 25 residences, a golf course, and a church. Noise levels were predicted using the STAMINA 2.0/OPTIMA noise model, and no impacts were predicted with the project. The NCDOT Traffic Noise Abatement Policy in effect at that time of the initial analysis expired in September 2004. Since that time, state and federal traffic noise policies and regulations have substantially changed.

In 2011, an updated traffic noise analysis was conducted following NCDOT's Traffic Noise Abatement Policy, effective July 13, 2011. The 2011 analysis used more refined designs, updated traffic volumes, and the latest version of FHWA's Traffic Noise Model (TNM) Version 2.5. For more information, see the September 2011 re-evaluation of the DEIS and SDEIS.

Noise is basically defined as unwanted sound. It is emitted from many sources including airplanes, factories, railroads, commercial businesses, and highway vehicles. Roadway vehicle noise (traffic noise) consists of three primary parts: tire noise, engine noise, and exhaust noise. Of these sources, tire noise is typically the most offensive at unimpeded travel speeds.

The magnitude of noise is usually described by a ratio of its sound pressure to a reference sound pressure, which is usually 20 micro-Pascals (20 μ Pa). Since the range of sound pressure ratios varies greatly – over many orders of magnitude, a base-10 logarithmic scale is used to express sound levels in dimensionless units of decibels (dB). The commonly accepted limits of human hearing to detect sound magnitudes are between the threshold of hearing at zero decibels and the threshold of pain at 140 decibels.

Sound frequencies are represented in units of Hertz (Hz), which correspond to the number of vibrations per second of a given tone. A cumulative 'sound level' is equivalent to ten times the

base-10 logarithm of the ratio of the sum of the sound pressures of all frequencies to the reference sound pressure. To simplify the mathematical process of determining sound levels, sound frequencies are grouped into ranges, or ‘bands.’ Sound levels are then calculated by adding the cumulative sound pressure levels within each band – which are typically defined as either one ‘octave’ or ‘1/3 octave’ of the sound frequency spectrum.

The commonly accepted limitation of human hearing to detect sound frequencies is between 20 Hz and 20,000 Hz, and human hearing is most sensitive to the frequencies between 1,000 Hz and 6,000 Hz. Although people are generally not as sensitive to lower-frequency sounds as they are to higher frequencies, most people lose the ability to hear high-frequency sounds as they age. To accommodate varying receiver sensitivities, frequency sound levels are commonly adjusted, or ‘filtered’, before being logarithmically added and reported as a single ‘sound level’ magnitude of that filtering scale. The A-weighted decibel filtering scale applies numerical adjustments to sound frequencies to emphasize the frequencies at which human hearing is sensitive, and to minimize the frequencies to which human hearing is not as sensitive.

The A-weighted scale is commonly used in highway traffic noise studies because the typical frequency spectrum of traffic noise is higher in magnitude at the frequencies at which human hearing is most sensitive (1,000 Hz to 6,000 Hz).

Over time, particularly if the noises occur at predicted intervals and are expected, individuals tend to accept the noises that intrude into their lives, i.e., regularly scheduled trains or subways in a city. Attempts have been made to regulate many of these types of noises including airplane noise, factory noise, railroad noise, and highway noise. In relation to highway traffic noise, methods of analysis and control have developed rapidly over the past few years.

3.3.1.1 Noise Abatement Criteria

The Federal Highway Administration (FHWA) has developed Noise Abatement Criteria (NAC) and procedures to be used in the planning and design of highways. The purpose of 23 CFR, Part 772 is:

“...to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways approved pursuant to Title 23 United States Code (U.S.C.).”

The abatement criteria and procedures are set forth in Title 23 CFR Part 772, which also states:

“...in determining and abating traffic noise impacts, primary consideration is to be given to exterior areas. Abatement will usually be necessary only where frequent human use occurs and a lowered noise level would be of benefit.”

A summary of the NAC for various land uses is presented in Table N2 in Appendix F. The Leq, or equivalent sound level, is the equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as a time-varying sound level during the same period. With regard to traffic noise, fluctuating sound levels of traffic noise are represented in terms of

Leq, the steady, or ‘equivalent’, noise level with the same energy. See this project’s *Highway Traffic Noise/Construction Noise Analysis* (March, 2011) for a summary of the NAC for various land uses.

The North Carolina Department of Transportation Traffic Noise Abatement Policy dated July 2011 established official policy on highway noise. This policy sets guidelines for noise wall sound barrier construction, as well as general criteria and specific factors that determine feasibility and reasonableness of noise abatement measures on all major highway projects.

The two categories of traffic noise impacts are defined as 1) those that “approach” or exceed the FHWA Noise Abatement Criteria (NAC), and 2) those that represent a “substantial increase” over existing noise levels as defined by NCDOT. An impact that represents a “substantial increase” occurs when the predicted design year hourly equivalent noise level [Leq(h)] exceeds the existing year noise level by 10 to 15 dB(A) or more as shown in the bottom section of Table N2 in Appendix F.

3.3.1.2 Existing Noise

Existing and background noise measurements were taken in the vicinity of the project to determine existing noise levels for the identified land uses. The purpose of this noise level information was to quantify the existing acoustic environment and to provide a baseline for assessing the impact of noise level increases. There are five traffic noise measurement sites and ten background noise measurement sites. The noise measurement locations are presented in Figure 4.1 and Table N3 in Appendix F.

The traffic noise measurement sites are located along existing US 1 at the southern end of the proposed project (Site 1), US 74 Bypass (Site 4), Airport Road (SR 1966) (Site 6), US 74 Business (Site 10), and existing US 1 north of Fox Road (SR 1606) (Site 15). The existing Leq(h) traffic noise levels in the project area, as measured at 50 feet from the edge of pavement, range from 60 to 70 dB(A).

The background ambient noise levels were measured at ten different locations (Sites 2, 3, 5, 7 - 9, and 11-14). The noise measurement sites are located throughout the project area within or near the preferred corridor to represent the receivers in the area. The measured ambient noise levels range from 33 dB(A) to 48 dB(A). It was observed that at Sites 3, 7, 9, 11 and 14, the surrounding areas were relatively quiet. The measured background noise levels were 36 dB(A), 36 dB(A), 39 dB(A), 34 dB(A) and 33 dB(A), respectively. The measured background noise levels were used as a baseline for assessing the impact of noise level increases.

3.3.2 Air Quality

An air quality analysis was conducted for the preferred alternative in 1999 and updated in 2011 to include a qualitative assessment of potential Mobile Source Air Toxics (MSAT) emissions. The air quality analysis is described in detail in the *Air Quality Analysis Technical Memorandum* (1999) and the *Air Quality Analysis Update* (2011) and is incorporated by reference in this FEIS.

3.3.2.1 Background and National Ambient Air Quality Standards

Air pollution originates from various sources. Emissions from industry and internal combustion engines are the most prevalent sources. The impact resulting from highway construction ranges from intensifying existing air pollution problems to improving the ambient air quality. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing highway facility.

Federal standards, known as National Ambient Air Quality Standards (NAAQS), are required to set levels that protect human health. The U.S. Environmental Protection Agency (EPA) has established NAAQS for seven air pollutants. These are carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), Ozone (O₃), particulate matter less than 10 microns in diameter (PM-10), particulate matter less than 2.5 microns in diameter (PM-2.5) and lead (Pb). The main pollutants that are significant from transportation sources are carbon monoxide, ozone, and particulate matter.

The State of North Carolina has adopted these standards, with some minor differences. In accordance with the Federal 1990 Clean Air Act Amendments, all areas within the state are designated as attainment or non-attainment with respect to the NAAQS. Areas that meet the NAAQS are designated as attainment.

The project is located in Richmond County, which has been determined to comply with the National Ambient Air Quality Standards. The proposed project is located in an attainment area; therefore, 40 CFR Parts 51 and 93 are not applicable.

Carbon Monoxide

Automobiles are considered to be the major source of CO in the project area and can be analyzed with a project level analysis. For these reasons, most of the analysis presented herein is concerned with determining expected carbon monoxide levels in the vicinity of the project due to traffic flow. In order to determine the ambient CO concentration at a receptor near a highway, two concentration components must be used: local and background. The local concentration is defined as the CO emissions from cars operating on highways in the near vicinity (i.e., distances within 400 feet) of the receptor location. The background concentration is defined by the North Carolina Department of Environment, Health and Natural Resources as "the concentration of a pollutant at a point that is the result of emissions outside the local vicinity; that is, the concentration at the upwind edge of the local sources."

Ozone & Nitrogen Dioxide

Automobiles are regarded as sources of hydrocarbons and nitrogen oxides. Hydrocarbons and nitrogen oxides emitted from cars are carried into the atmosphere where they react with sunlight to form ozone (O₃) and nitrogen dioxide (NO₂). Automotive emissions of HC and NO_x are expected to decrease in the future due to the continued installation and maintenance of pollution control devices on new cars. However, regarding area-wide emissions, these technological improvements maybe offset by the increasing number of cars on the transportation facilities of the area.

The photochemical reactions that form ozone and nitrogen dioxide require several hours to occur. For this reason, the peak levels of ozone generally occur ten to twenty kilometers downwind of the source of hydrocarbon emissions. Urban areas as a whole are regarded as sources of hydrocarbons, not individual streets and highways. The emissions of all sources in an urban area mix in the atmosphere, and, in the presence of sunlight, this mixture reacts to form ozone, nitrogen dioxide, and other photochemical oxidants. The best example of this type of air pollution is the smog that forms in Los Angeles, California.

Particulate Matter & Sulfur

Automobiles are not regarded as significant sources of particulate matter (PM) and sulfur dioxide (SO₂). Nationwide, highway sources account for less than seven percent of particulate matter emissions and less than two percent of sulfur dioxide emissions. Particulate matter and sulfur dioxide emissions are predominantly the result of non-highway sources (e.g., industrial, commercial, and agricultural). Because emissions of particulate matter and sulfur dioxide from automobiles are very low, there is no reason to suspect that traffic on the project will cause air quality standards for particulate matter and sulfur dioxide to exceed the NAAQS.

Lead

Lead (Pb) is predominantly the result of non-highway sources (e.g., industrial, commercial, and agricultural). Automobiles without catalytic converters can burn regular gasoline. The burning of regular gasoline emits lead as a result of regular gasoline containing tetraethyl lead, which is added by refineries to increase the octane rating of the fuel. Newer cars with Catalytic converters burn unleaded gasoline, thereby eliminating lead emissions. Also, the United States Environmental Protection Agency (EPA) has required the reduction in the lead content of leaded gasoline. The overall average lead content of gasoline in 1974 was approximately 0.53 gram per liter. By 1989, this composite average had dropped to 0.003 gram per liter. The Clean Air Act Amendments of 1990 made the sale, supply, or transport of leaded gasoline or lead additives unlawful after December 31, 1995. Because of these reasons, it is not expected that traffic on the proposed project will cause the NAAQS for lead to be exceeded.

3.3.2.2 Mobile Source Air Toxics (MSATs)

Background

In addition to the criteria air pollutants for which there are NAAQS, EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

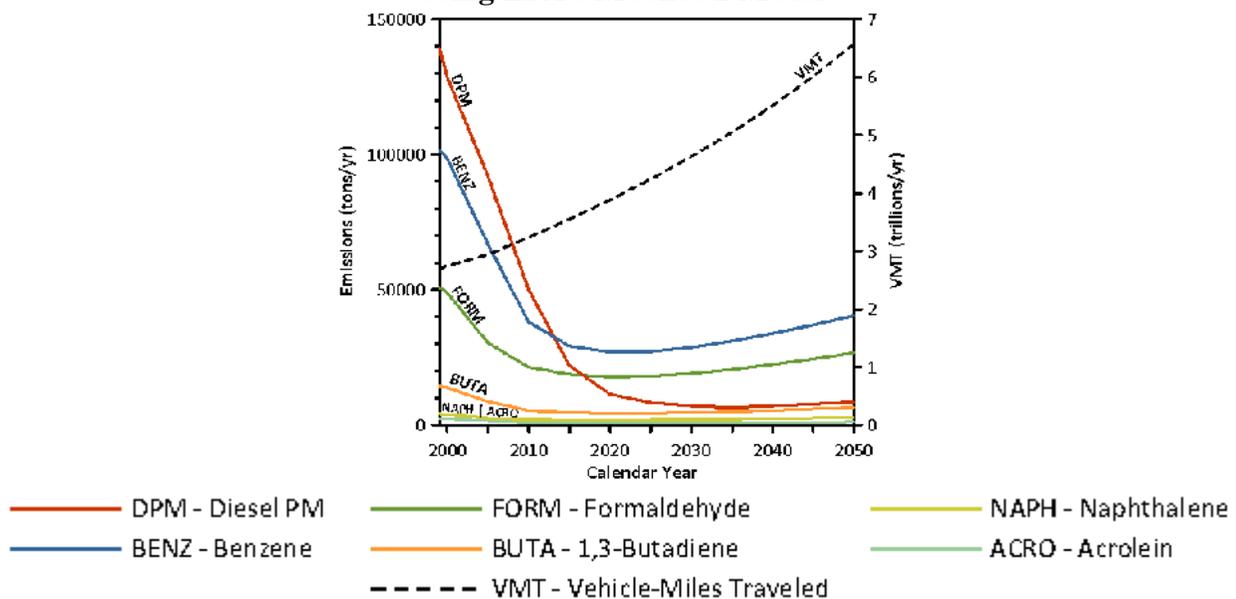
Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430,

February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (<http://www.epa.gov/ncea/iris/index.html>). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (<http://www.epa.gov/ttn/atw/nata1999/>). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles traveled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in Exhibit 1.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of the National Environmental Policy Act (NEPA).

**Exhibit 1: National MSAT Emission Trends 1999 - 2050
for Vehicles Operating on Roadways
Using EPA's Mobile6.2 Model**



Note:

- (1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
 - (2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors
- Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, we are duly expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

The National Environmental Policy Act (NEPA) requires, to the fullest extent possible, that the policies, regulations, and laws of the Federal Government be interpreted and administered in accordance with its environmental protection goals. The NEPA also requires Federal agencies to use an interdisciplinary approach in planning and decision-making for any action that adversely impacts the environment. The NEPA requires and FHWA is committed to the examination and avoidance of potential impacts to the natural and human environment when considering approval of proposed transportation projects. In addition to evaluating the potential environmental effects, we must also take into account the need for safe and efficient transportation in reaching a decision that is in the best overall public interest. The FHWA policies and procedures for implementing NEPA is prescribed by regulation in 23 CFR § 771.

The FHWA developed a tiered approach for analyzing MSAT in NEPA documents, depending on specific project circumstances. The FHWA has identified three levels of analysis:

1. No analysis for projects with no potential for meaningful MSAT effects;
2. Qualitative analysis for projects with low potential MSAT effects; or
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

For projects warranting MSAT analysis, the seven priority MSAT should be analyzed.

Incomplete/ Unavailable Information for MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, <http://www.epa.gov/ncea/iris/index.html>). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in

Appendix D of FHWA's Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, <http://pubs.healtheffects.org/view.php?id=282>) or in the future as vehicle emissions substantially decrease (HEI, <http://pubs.healtheffects.org/view.php?id=306>).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

Emissions

The results produced by the EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Dispersion

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in an NCHRP study (http://www.epa.gov/scram001/dispersion_alt.htm#hyroad), which documents poor model performance at ten sites across the country - three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections.

Exposure Levels and Health Effects

Such poor model performance is less difficult to manage for demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI

(<http://pubs.healtheffects.org/view.php?id=282>). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (<http://www.epa.gov/risk/basicinformation.htm#g>) and the HEI (<http://pubs.healtheffects.org/getfile.php?u=395>) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source.

The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

3.3.3 Farmlands

The Farmland Protection Policy Act (FPPA) of 1981 (7 CFR 568) is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. It assures that – to the greatest extent possible – Federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built up land.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to non-agricultural use and are completed by a Federal agency or with assistance from a Federal agency. Based on information provided by the NRCS, soils within the study area that are considered to be farmland are shown in Figure 3.5.

Prime farmland is defined as "that land best suited for producing food, feed, fiber, forage, and oil seed crops". These soils are favorable for all major crops common to the country, have a favorable growing season, and receive the moisture needed to produce high yields on an average of eight out of every ten years. Farmland of statewide and local importance is defined as "soils important for agriculture as determined by the appropriate state or local government agency."

Coordination with the NRCS was initiated by submitting Form AD 1006 - "Farmland Conversion Impact Rating." The NRCS responded by completing this form and providing a relative value of farmland that may be converted by each alternative analyzed in the DEIS (see form in Appendix D).

The North Carolina Agricultural Development and Farmland Preservation Trust Fund's Agricultural District Program encourages the preservation and protection of farmland from non-farm development. This is in recognition of the importance of agriculture to the economic and social well-being of North Carolina. In Chapter 106, Article 61 of the North Carolina General Statutes, the North Carolina General Assembly authorized counties to undertake a series of programs to encourage the preservation of farmland. As a result, counties throughout the state of North Carolina have begun to adopt Voluntary Agricultural District Ordinances (VAD) and Enhanced Voluntary Agricultural District Ordinances (EVAD). Richmond County has recently adopted a VAD ordinance. However, according to a representative of the North Carolina Cooperative Extension, Richmond County Center, no VADs have been established at the time of this document.

3.3.4 Utilities and Railroads

3.3.4.1 Electric Power Transmission

The study area contains one major power substation and approximately seven major power lines. Progress Energy provides electric power in the study area. The right of way widths of the transmission lines vary from 50 to 150 feet.

3.3.4.2 Sewer Facilities

The cities of Rockingham and Hamlet provide sewer service for residences and businesses within their respective jurisdictions. Rockingham's wastewater treatment plant is located on Byrd Drive and discharges its effluent into Hitchcock Creek. Hamlet's plant is located on Freeman Mill Road (SR 1812) and discharges into Marks Creek. Areas outside of these service areas are serviced by private individual septic tanks.

3.3.4.3 Water Distribution System

Residents in Richmond County are served by one of three water supply systems: the Rockingham Public Works Department, the Hamlet Public Services Department or Richmond County's Water Department. Water supply sources include Hitchcock Creek, Marks Creek, Ledbetter Lake, Hamlet City Lake, Blewett Lake, Falling Creek and the Pee Dee River. None of the sources are located within the project's area of potential effect. Residents outside of the three service areas obtain their water from private wells.

3.3.4.4 Natural Gas

Natural gas service in Richmond County is provided by North Carolina Natural Gas Corporation. There is a major gas pipeline that crosses the study area just south of the Richmond County Airport and continues through the study area crossing existing US 1 west of Cognac Road (SR 1605).

3.3.5 Visual Quality

The majority of the landscape in and along the preferred alternative may be characterized as rural residential, agricultural and undeveloped land. Modest-sized homes on large lots are mixed with older large farmhouses. Residential development is most prevalent in the area between Airport Road (SR 1966) and US 74 Business. The topography is generally flat with some rolling hills, which provide for scenic vistas of considerable distances in some areas. Open fields and pastures are common, as are pine forests that are so widespread in this area of North Carolina.

3.3.6 Hazardous Materials

Staff from NCDOT's GeoEnvironmental Section conducted a field reconnaissance survey along the corridor for the preferred alternative in November 2007 and completed a GeoEnvironmental Impact Evaluation in December 2007. Eight possible underground storage tank (UST) facilities and four active or former automotive repair facilities were identified along the corridor. These sites are listed in Table 3-4 and shown on Figure 3.6. No hazardous waste sites or landfills were identified. The GeoEnvironmental Section conducted an additional field visit in May 2010 to survey the expanded study area discussed in Section 2.7, *Preferred Alternative*. No additional hazardous materials sites were observed; therefore, it was determined the conclusions from the December 2007 GeoEnvironmental Impact Evaluation were still applicable. The GeoEnvironmental Section will provide soil and groundwater assessments on each of the identified sites before right of way acquisition.

Table 3-4: Hazardous Waste Sites

Map ID	Site	Site Address
1	Callahan Enterprises, Inc.	874 East US 74 Business Rockingham, NC
2	Big K Oil Company	Vacant Lot East US 74 Business Rockingham, NC
3	Abandoned Gas Station	East US 74 Business Rockingham, NC
4	Big K Oil Company	Vacant Lot East US 74 Business Rockingham, NC
5	NCDOT	East US 74 Business Rockingham, NC
6	Former Store	Approximately 1826 US 1 Rockingham, NC
7	EHS Racing & Chuck's Trucks	1975 North US 1 Rockingham, NC
8	Guranos Performance Autos	2015 North US 1 Rockingham, NC
9	Sandhills Pressure Washing	2050 North US 1 Rockingham, NC
10	House of Prayer Church of Deliverance For All Peoples	2068 North US 1 Rockingham, NC
11	Speedway 66 Service	2210 North US 1 Rockingham, NC
12	Emily's Sandbox	2259 North US 1 Rockingham, NC

3.3.7 Mineral Resources

Richmond County is located in the south central Piedmont region of North Carolina. The mineral resource common in the area is sand and gravel, a dimension stone produced from granite, agrillite, quartzite, marble, and sandstone. These mineral resources are most commonly used for concrete aggregate, asphaltic concrete, and fill.

3.3.8 Floodplains / Floodways

Richmond County is a current participant in the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA). There are four crossings (Structures 3, 6, 8, and 9) within a designated flood hazard zone where a limited detailed flood study having a regulated 100-year non-encroachment width regulated as a floodway has been completed. At Structure 2, a limited detailed flood study has been completed just downstream of the structure. Structure 7 is within a designated flood hazard zone where a detailed flood study having a regulated 100-year floodway has been completed. FEMA involvement for the project is summarized in Table 3-5. The limits of the 100-year floodplain are shown on Figure 3.7.

Table 3-5: FEMA Floodplain Involvement

Structure No.	Stream	FEMA Flood Zone
2	Baggetts Creek	AE (Downstream)
3	Unnamed Tributary to Speeds Creek	AE
6	Solomons Creek	AE
7	South Prong Falling Creek	AE
8	Falling Creek	AE
9	Chock Creek	AE

Zone AE is the flood insurance rate zone that corresponds to the floodplains that are determined in the Flood Insurance Study by detailed methods of analysis. In most instances, Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

3.3.9 Protected Lands

3.3.9.1 Wild and Scenic Rivers

The National Wild and Scenic Rivers Act was adopted by Congress in 1968 (Public Law 90-542; 16 USC 1271) to preserve certain rivers with outstanding natural, cultural, or recreational features in a free-flowing condition. Under this Act, rivers are classified as Wild, Scenic, or Recreational. "Wild" rivers are defined as rivers free of impoundments, inaccessible except by trail, and having primitive shorelines and unpolluted waters. "Scenic" rivers are similar to "Wild" rivers, except that they are accessible by roads in some places. "Recreational" rivers are readily accessible by road or railroad and may have some development along their shorelines. These rivers may have undergone impoundment or diversion in the past.

In 1971, North Carolina also passed a Natural and Scenic Rivers Act. Currently, there are four rivers in the State Natural and Scenic River System: New River, Lumber River, Horse Pasture River, and Linville River. There are no rivers or sections of rivers that are federally designated or state designated as wild, scenic, or recreational within or near the study area.

3.3.9.2 State / National Forests

There are no state or national forests in the study area.

3.3.9.3 Game Lands and Preservation Areas

The Sandhills Game Land totals 58,713 acres, and extends through the counties of Richmond, Hoke, Moore, and Scotland. The game land offers activities including hunting, fishing, hiking, biking, horseback riding, and nature observation. The proposed project area is located to the southwest of the Sandhills Game Land (see Figure 3.2).

Part of the Pee Dee River Game Land is located within the project study area at the southern terminus (see Figure 2.5a and Figure 3.2). This game land covers more than 6,800 acres in Anson, Montgomery, Stanly, and Richmond counties. Primary purposes of the Pee Dee River Game Land include wildlife and timber management and public recreational opportunities for hunting, fishing, and observing nature. The NC Wildlife Resources Commission (NCWRC) recently acquired a large parcel near the southern project limit at US 1 and Osborne Road (SR 1104) as part of the Pee Dee River Game Land. The parcel is approximately 1,659 acres and was purchased using funding from the Clean Water Management Trust Fund (CWMTF), Natural Heritage Program, and North American Wetland Conservation Act (NAWCA). The land within the study area serves as a buffer between the existing highway corridor and a large open land complex (20 acres) managed for wildlife with emphasis on dove and other small game species. Approximately 10 acres of the land is planted annually to provide supplemental food and hunting opportunities for local sportsmen.

Hinson Lake is a 216-acre wildlife conservation that offers fishing, canoeing, hiking, picnicking, and wildlife observation (see Figure 3.2). The lake is located outside of the project study area, south of East Washington Street (SR 1643) and just east of downtown Rockingham.

3.4 Cultural Resources

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

Impacts to cultural resources may be found in Section 4.1.4, *Cultural Resources*.

3.4.1 Historic Architectural Resources

Pursuant to Section 4(f) of the Department of Transportation Act of 1966, Section 106 of the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation's regulations, Protection of Historic Properties (36 CFR 800), a Phase I Architectural Reconnaissance Survey (April 1995) and a Phase II (Intensive Level) Architectural Survey and Evaluations of Eligibility (September 1998) were conducted for the proposed project. These surveys were conducted within the project's Area of Potential Effect (APE), as defined by modern construction, topographical features and sight lines. These reports identified properties listed on the National Register of Historic Places and properties that could be considered eligible for the National Register within the APE. The Phase II report listed one National Register Listed property (the Covington Plantation House) and three properties considered eligible for the National Register (William Diggs House, St. Paul United Methodist Church, and the Flowers-Hamer House).

In December 2007, NCDOT historians reviewed the proposed project for potential historic architectural resources because it had been more than 10 years since the Phase II (Intensive Level) Architectural Survey and Evaluations of Eligibility (September 1998). During that review, historians confirmed there were no other properties eligible for the National Register and further consultation with SHPO was not necessary (see letter dated December 18, 2007 in Appendix A.2). The APE established in the Phase II report, and reviewed again in December 2007, included the expanded study areas at the Wiregrass Road (SR 1640) / County Home Road (SR 1624) intersection and the McDonalds Pond Restoration site east of County Home Road (SR 1624). In June 2010 NCDOT reviewed the expanded study area at the McDonalds Pond Restoration site and determined additional studies were not necessary since the area had been included in the previous APE (see correspondence in Appendix A.2).

See Figure 3.8 for the locations of historic properties.

3.4.2 Archaeological Resources

Initial archaeological investigations and findings are documented in the Archaeological Survey Report prepared by the Wake Forest University Archeology Laboratories in December 2001. This report resulted in the identification and assessment of 55 potential sites located within or near the preferred alternative. Forty-eight of the sites were found to lack archaeological significance. Three of the remaining seven sites are located well outside the project limits and were not assessed. Four prehistoric sites – 31RH376, 31RH401, 31RH403, and 31RH408 – located within or near the preferred alignment were determined to be eligible for inclusion on the National Register of Historic Places.

The four prehistoric sites contain Archaic period components and two of the sites also contain Woodland period components as evidenced by prehistoric ceramic artifacts. Two of the significant sites, 31RH376 and 31RH408, seem to contain prominent Late Archaic components and preserved archaeological contexts and artifacts representing isolated prehistoric activity areas have been identified. These activity areas appear to represent Late Archaic lithic manufacturing localities.

In 2007, personnel from SHPO, the North Carolina Office of State Archaeology, and NCDOT met to do reconnaissance and limited subsurface testing for these four sites. It was established during this meeting that no components associated with sites 31RH376, 31RH401, and 31RH403 are within the APE of the preferred alternative. NCDOT recommended a finding of “no impacts” for these three sites and a concurrence from the HPO was obtained (see Appendix A.2 for the concurrence letter dated November 27, 2007). Furthermore, it was found that site 31RH408 is well outside the APE and no further action regarding this site is necessary.

In 2011, NCDOT conducted archaeological investigations within the expanded study area east of County Home Road (SR 1624). Twenty-six sites were identified but only one was determined to be eligible for the National Register of Historic Properties. Subsequently, SHPO determined the site is not eligible for the National Register of Historic Properties. See Appendix A.2 for correspondences dated May 2, 2011 and May 20, 2011.

3.5 Natural Environmental Characteristics

All work was conducted as per the NCDOT Natural Resource Technical Report/Investigation Protocols dated June 1, 2009. Field work was conducted during the spring, summer, and fall of 2007, fall 2008, and spring 2010. Jurisdictional areas identified in the study area will be re-verified by the U.S. Army Corps of Engineers (USACE) and the North Carolina Division of Water Quality (NCDWQ). Documentation of this jurisdictional determination will be forwarded to NCDOT.

3.5.1 Soils / Topography / Geology

The study area is located in the Sand Hills eco-region of the Coastal Plain physiographic region of North Carolina (see Figure 3.9). Topography in the project vicinity is characterized as broad, nearly level to gently sloping uplands that are dissected by a network of streams. Elevations within the study area range from approximately 150 ft to 440 ft above mean sea level (MSL). Land use in the project vicinity is dominated by agricultural and forested areas, interspersed with rural and suburban residential development, and some commercial development. Impervious surfaces cover less than five percent of the project area.

The Richmond County Soil Survey identifies 12 soil types within the study area (Table 3-6).

Table 3-6: Soils In The Study Area

Soil Series	Mapping Unit	Drainage Class	Hydric Status
Ailey loamy sand, 0-8% slopes	AcB	Well Drained	Hydric*
Ailey loamy sand, 8-15% slopes	AcC	Well Drained	Hydric*
Ailey gravelly loamy sand, 8-15% slopes	AgC	Well Drained	Hydric*
Candor and Wakulla soils, 8-15% slopes	CaC	Somewhat Excessively Drained	Hydric*
Chewacla loam, 0-2% slopes, frequently flooded	ChA	Somewhat Poorly Drained	Hydric*
Johnston mucky loam, 0-2% slopes, frequently flooded	JmA	Very Poorly Drained	Hydric
Norfolk loamy sand, 2-6% slopes	NoB	Well Drained	Hydric*
Pelion loamy sand, 2-8% slopes	PoB	Moderately Well Drained	Hydric*
Pelion loamy sand, 8-15% slopes	PoC	Moderately Well Drained	Hydric*
Udorthents, loamy	Ud	Moderately Well Drained or Well Drained	Nonhydric
Uwharrie loam, 15-25% slopes	UwD	Well Drained	Nonhydric
Wakulla and Candor soils, 0-8% slopes	WcB	Somewhat Excessively Drained	Nonhydric

*- Soils which are primarily nonhydric, but which contain hydric inclusions

3.5.2 Biotic Communities and Wildlife

3.5.2.1 Terrestrial Communities and Wildlife

Nine terrestrial communities were identified in the study area: Mesic Mixed Hardwood Forest (Coastal Plain Subtype), Mesic Pine Flatwoods, Pine/Scrub Oak Sandhill, Coastal Plain Bottomland Hardwoods (Blackwater Subtype), Streamhead Pocosin, Pine Forest, Agricultural Land, Maintained/Disturbed, and Successional. Figure 3.9 shows the location and extent of these terrestrial communities in the study area. A brief description of each community type follows. Scientific names of all species identified are included in Appendix B of the *Natural Resources Technical Report*, which can be found in NDOT's project file. North Carolina Wetland Assessment Method (NCWAM) wetland types occurring within each community are noted when relevant.

Mesic Mixed Hardwood Forest (Coastal Plain Subtype)

The Mesic Mixed Hardwood Forest (Coastal Plain Subtype) community is found within the study area along lower slopes, ravines, and occasionally upland flats, on acidic soils. The community is dominated by white oak, tuliptree, red maple, sweetgum, and eastern red cedar, with an occasional American beech. Pines, mostly loblolly, may be present, but represent less than 20 percent of the canopy coverage. The understory varies in density and includes saplings of the canopy species, flowering dogwood, American holly, sourwood, and red bay, with an occasional coastal sweet-pepperbush. Groundcover consists of vines such as Japanese honeysuckle, common greenbrier, and poison ivy, with other herbaceous species such as Christmas fern, cane, and various sedges. NCWAM wetland type Headwater Forest occurs within this community throughout the study area.

Mesic Pine Flatwoods

The Mesic Pine Flatwoods community is found within the study area along either flat or rolling sandy soils, neither excessively drained nor with a significant seasonal high water table. Vegetation within the community consists of a closed to open canopy of longleaf pine or sometimes loblolly pine. The understory varies from sparse (in frequently burned sites) to dense (in unburned sites) and includes southern red oak, water oak, blackjack oak, post oak, turkey oak, and sweetgum. Groundcover consists of primarily wiregrass (in frequently burned sites), but may also include other herbaceous species such as bracken fern, little bluestem, and muscadine. NCWAM wetland types Headwater Forest and Riverine Swamp Forest occur as inclusions within this community throughout the study area. These wetland types were not broken into separate communities in the terrestrial community mapping due to their small size.

Pine / Scrub Oak Sandhill

The Pine / Scrub Oak Sandhill community is found within the study area along rolling to more steeply sloping sandy, well-drained soils. The community consists of an open canopy of longleaf pine, with an understory dominated by scrub oaks, including turkey oak, blackjack oak, sand post oak, and bluejack oak. Sassafras, persimmon, and flowering dogwood also occur in smaller numbers. Groundcover is generally dominated by wiregrass, but may also include other herbaceous species such as little bluestem, tread-softly, sandhill thistle, and goldenrod.

Coastal Plain Bottomland Hardwoods (Blackwater Subtype)

The Coastal Plain Bottomland Hardwoods (Blackwater Subtype) community is found within the study area along abandoned or relict natural levee deposits, point bar ridges, and other relatively high parts of the floodplain, away from the channel, and on sandy bottomland mineral soils. The community is dominated by willow oak, water oak, red maple, loblolly pine, and sweetgum, with an occasional Atlantic white cedar. The understory varies in density and includes saplings of the canopy species, red bay, sweetbay, American holly, Chinese privet, ti-ti, and coastal sweet-pepperbush. Groundcover consists of cane and vines such as common greenbrier, poison ivy, and muscadine. NCWAM wetland types Headwater Forest, Bottomland Hardwood Forest, Riverine Swamp Forest, and Non-Tidal Freshwater Marsh occur within the community throughout the study area.

Streamhead Pocosin

The Streamhead Pocosin community is found within the study area along headwaters of small streams, on flat bottoms, and sometimes extending up adjacent seepage slopes on wet, acidic soils. The community is characterized by a dense shrub layer dominated by species such as ti-ti, fetterbush, inkberry, gallberry, red bay, coastal sweet-pepperbush, swamp doghobble, and blue huckleberry. The canopy consists of scattered to fairly dense trees, primarily red maple, tuliptree, swamp tupelo, sweetbay, sweetgum, loblolly pine, and pond pine. Groundcover is generally sparse, but may include netted chainfern, cinnamon fern, and various sedges. NCWAM wetland types Headwater Forest and Riverine Swamp Forest occur within this community throughout the study area.

Pine Forest

The Pine Forest community is found within the study area along interstream uplands and is characterized by predominance (greater than 80 percent cover) of pines in the canopy. Many pine stands are silvicultural plantings managed for timber or pulpwood production. Other pine stands represent natural pine woodland communities or seral stages resulting from old-field succession or from timber management. In addition to a dominance of loblolly pine and longleaf pine, common hardwood species present may include sweetgum, red maple, and tuliptree. The understory varies in density depending on the age of the stand and includes saplings of the canopy species, flowering dogwood, and eastern red cedar. Vines such as Japanese honeysuckle, common greenbrier, and kudzu are typical, and blackberry may also be present. NCWAM wetland types Headwater Forest and Riverine Swamp Forest occur as inclusions within this community throughout the study area. These wetland types were not broken into separate communities in the terrestrial community mapping due to their small size.

Agricultural Land

Agricultural Land is used for the cultivation of row crops and field crops as well as for grazing pasture. The primary use noted for the areas identified within the study area was pasture which was dominated by grass and herb mixes such as fescue, wild onion, clover, common dandelion, and goldenrod.

Maintained / Disturbed

Maintained / Disturbed areas occupy a large percentage of land within the study area, especially along the existing roads. This category includes areas with disturbed vegetation and / or soils with man-made structures including buildings, roadways, parking lots, maintained yards, and

similar areas where other human activities dominate. Wide maintained roadside rights of way, maintained road frontages, private home sites, residential communities, and commercial complexes are included in this category. Ornamental trees, shrubs, and grasses intermix with native pines, hardwoods, and occasionally invasive weeds in an anthropogenic landscape setting. Disturbed areas may include red maple, willow oak, loblolly pine, longleaf pine, crape myrtle, Bradford pear, dog-fennel, Japanese honeysuckle, common dandelion, goldenrod, blackberry, and fescue. NCWAM wetland types Headwater Forest and Non-Tidal Freshwater Marsh occur within this community throughout the study area.

Successional

The Successional land within the study area includes early successional areas and fallow agricultural areas that are dominated by a mixture of ornamental and successional species. Areas that are in an early successional state include dog-fennel, broomsedge, Japanese honeysuckle, poison ivy, common dandelion, goldenrod, multiflora rose, blackberry, wild onion, and fescue. NCWAM wetland type Headwater Forest occurs within this community throughout the study area.

Terrestrial Wildlife

Terrestrial communities in the study area are comprised of both natural and disturbed habitats that may support a diversity of wildlife species (those species actually observed are indicated with *). Mammal species that commonly exploit forested habitats and stream corridors found within the study area include species such as eastern gray squirrel*, eastern fox squirrel*, Virginia opossum*, eastern red bat*, eastern cottontail*, raccoon*, beaver*, gray fox*, and white-tailed deer*. Birds commonly found in agricultural and other maintained or disturbed areas within the study area include turkey vulture*, mourning dove*, Canada goose*, American robin*, northern mockingbird*, European starling*, chipping sparrow*, red-winged blackbird*, and American crow*. Birds that typically inhabit forested areas found within the study area include many of these species as well as wild turkey*, red-headed woodpecker*, red-bellied woodpecker, red-shouldered hawk*, red-tailed hawk*, eastern screech owl, barred owl*, Carolina wren*, brown thrasher, brown-headed nuthatch*, and pine warbler*. Species that may generally be observed in or near aquatic habitats within the study area include mallard*, wood duck*, great blue heron*, belted kingfisher*, and prothonotary warbler*. Reptile and amphibian species that may use terrestrial communities located in the study area include eastern box turtle*, Carolina anole*, five-lined skink*, black racer*, rat snake*, copperhead*, eastern garter snake, southern toad*, common gray treefrog, pine woods treefrog, spring peeper, red salamander*, and dwarf salamander.

3.5.2.2 Aquatic Communities

Aquatic communities in the study area include both intermittent and perennial Piedmont streams, as well as still water ponds. Perennial streams in the study area could support dusky shiner, bluegill, eastern mosquitofish, creek chubsucker, spotted sucker, bluehead chub, sandhills chub, dollar sunfish, redbreast sunfish, pirate perch, yellow perch, and redbreast pickerel. The larger perennial streams within the study area would be expected to support populations of game fish such as white catfish, yellow bullhead, largemouth bass, and several sunfish and perch species including redbreast sunfish, pumpkinseed, bluegill, and yellow perch. Ponds in the study area may support populations of bluegill and largemouth bass, as well as other species.

Streams within the study area provide riparian and benthic habitat for amphibians, aquatic reptiles, crustaceans and various aquatic invertebrates. Aquatic reptiles expected within the study area include snapping turtle, eastern mud turtle, and northern water snake. Aquatic amphibians expected within the study area include bullfrog*, green frog*, and southern leopard frog*. Crustaceans may include various species of crayfish*, while various benthic macroinvertebrates such as stonefly* and caddisfly* populate the streams.

3.5.2.3 Invasive Species

Five species from the NCDOT Invasive Exotic Plant List for North Carolina were found to occur in the study area. The species identified were Bradford pear (Watch List), Chinese privet (Threat), multiflora rose (Threat), kudzu (Threat), and Japanese honeysuckle (Moderate Threat). NCDOT will follow the NCDOT's Best Management Practices (BMPs) for the management of invasive plant species.

3.5.3 Water Resources

Water resources in the study area are located within the Yadkin-Pee Dee River Basin (US Geological Survey [USGS] Hydrologic Unit 03040201). A small portion of the northernmost extent of the study area is located within the Lumber River Basin (USGS Hydrologic Unit 03040204); however no jurisdictional features were observed within this particular drainage area.

3.5.3.1 Surface Waters

3.5.3.1.1 Streams

Twenty-four streams were identified in the study area (see Table 3-7). The location of each water resource is shown in Figure 3.10. The physical characteristics of these streams are provided in Table 3-8.

Table 3-7: Water Resources in the Study Area

Stream Name	Map ID*	DWQ Index Number	Best Usage Classification
UT to Baggetts Creek	S1	13-40-3-2	C
UT to Baggetts Creek	S2	13-40-3-2	C
Baggetts Creek	S3	13-40-3-2	C
UT to Baggetts Creek	S4	13-40-3-2	C
UT to Baggetts Creek	S5	13-40-3-2	C
UT to Speeds Creek	S6	13-40-3	C
UT to Speeds Creek	S7	13-40-3	C
UT to Solomons Creek	S8	13-40	C
UT to Solomons Creek	S9	13-40	C
Solomons Creek	S10	13-40	C
UT to Solomons Creek	S11	13-40	C
UT to Beaverdam Branch	S12	13-39-12-11-6	C
UT to South Prong Falling Creek	S13	13-39-12-11	C
UT to South Prong Falling Creek	S14	13-39-12-11	C
UT to Falling Creek	S15	13-39-12-(1)	WS-III
UT to Falling Creek	S16	13-39-12-(1)	WS-III
UT to Falling Creek	S17	13-39-12-(1)	WS-III
UT to Chock Creek	S18	13-39-6	WS-III
UT to Chock Creek	S19	13-39-6	WS-III
Chock Creek	S20	13-39-6	WS-III
UT to Chock Creek	S21	13-39-6	WS-III
Falling Creek	S22	13-39-12-(1)	WS-III
UT to Falling Creek	S23	13-39-12-(1)	WS-III
UT to Falling Creek	S24	13-39-12-(1)	WS-III

Table 3-8: Physical Characteristics of Water Resources in the Study Area

Map ID	Bank Height (ft)	Bankfull Width (ft)	Water Depth (in)	Channel Substrate	Velocity	Clarity
S1	2	6	8	Sand, Gravel	Moderate	Clear
S2	1	2	1	Sand	Moderate	Clear
S3	5	20	18	Sand, Gravel	Slow	Slightly Turbid
S4	1.5	3	3	Sand, Gravel	Moderate	Clear
S5	2	7	10	Sand, Gravel	Moderate	Clear
S6	1	2	1	Sand	Moderate	Clear
S7	1	2	1	Sand	Moderate	Clear
S8	0.5	1	1	Sand	Moderate	Clear
S9	1	5	4	Sand, Gravel	Moderate	Clear
S10	3	10	14	Sand, Gravel	Slow	Slightly Turbid
S11	1	5	4	Sand, Gravel	Moderate	Clear
S12	1	5	3	Sand	Moderate	Clear
S13	1	4	3	Sand, Gravel	Moderate	Clear
S14	1	6	5	Sand	Moderate	Clear
S15	1	4	3	Sand	Moderate	Clear
S16	1	5	3	Sand	Moderate	Clear
S17	0.5	2	1	Sand	Moderate	Clear
S18	1	5	4	Sand, Gravel	Moderate	Clear
S19	0.5	4	2	Sand	Moderate	Clear
S20	3	9	14	Sand, Gravel	Moderate	Clear
S21	1	4	2	Sand	Moderate	Clear
S22	1.5	8	6	Sand, Gravel	Moderate	Clear
S23	1	4	4	Sand, Gravel	Moderate	Clear
S24	0.5	3	2	Sand	Moderate	Clear

3.5.3.1.2 Ponds

Twelve ponds are located within the study area (see Table 3-9). All ponds within the study area consist of impounded stream systems with connections to other jurisdictional features.

Table 3-9: Ponds in the Study Area

Map ID	Connected to Surface Water*	Area (ac)
P0	S4A	0.67
P1	W11	4.52
P2	S9	2.92
P3	W21	1.82
P4	S11	4.86
P5	S11	3.52
P6	W21	0.86
P7	W37	14.52
P8	S17	1.33
P9	S20	1.56
P10	UT to Chock Creek	0.31
P11	W54	0.17

* - Map ID from Table 3-7 and Table 3-11 shown for connectivity to surface water feature (stream or wetland), if present

3.5.4 Jurisdictional Issues

3.5.4.1 Streams

Twenty-four jurisdictional streams were identified in the study area (see Table 3-10). The location of these streams is depicted on Figure 3.10. See the January, 2011 *Natural Resources Technical Report Update* for this project in NCDOT's project file for the USACE Stream Quality Assessment Worksheets and NCDWQ Stream Identification Forms. The physical characteristics and water quality designations of each jurisdictional stream are detailed in Section 3.5.3.1.1, *Streams*. All jurisdictional streams in the study area have been designated as Warm water streams for the purposes of stream mitigation. A field meeting was held with representatives from the USACE on June 7, 2011 to review jurisdictional determinations, and the USACE issued the final jurisdictional determinations on August 17, 2011.

Table 3-10: Jurisdictional Characteristics of Water Resources Within the Study Area

Map ID	Length (ft)	Classification	River Basin Buffer*
S1	3,250	Perennial/Intermittent	Not Subject
S2	379	Intermittent	Not Subject
S3	1,555	Perennial	Not Subject
S4	434	Intermittent	Not Subject
S5	960	Perennial	Not Subject
S6	656	Intermittent	Not Subject
S7	726	Intermittent	Not Subject
S8*	62	Intermittent	Not Subject
S9*	2,853	Perennial	Not Subject
S10*	2,967	Perennial	Not Subject
S11*	1,146	Perennial	Not Subject
S12	374	Intermittent	Not Subject
S13	1,704	Perennial/Intermittent	Not Subject
S14	647	Intermittent	Not Subject**
S15*	796	Intermittent	Not Subject**
S16	1,606	Perennial/Intermittent	Not Subject**
S17	307	Intermittent	Not Subject**
S18	358	Intermittent	Not Subject**
S19	1,174	Intermittent	Not Subject**
S20	656	Perennial	Not Subject**
S21	401	Intermittent	Not Subject**
S22	1,247	Perennial	Not Subject**
S23	729	Perennial	Not Subject**
S24	370	Intermittent	Not Subject**

* Note: Previous delineation does not extend to new project study area boundary. Per NCDOT Project Engineer, jurisdictional lines not extended for this study.

** NA – See Section 3.5.4.3, *NC River Basin Buffer Rules*

3.5.4.2 Wetlands

Fifty-five jurisdictional wetlands were identified in the study area (Figure 3.10). Wetland classification, quality rating data, and NCWAM wetland type are presented in Table 3-11. All wetlands in the study area are within the Yadkin-Pee Dee River Basin (U.S. Geological Survey [USGS] Hydrologic Units 03050103 and 03040105). See the January, 2011 *Natural Resources Technical Report Update* for this project in NCDOT’s project file for the USACE Routine Wetland Determination Forms and NCDWQ Wetland Rating Worksheets for each site. Descriptions of the natural communities at each wetland site are presented in Section 3.5.2, *Biotic Communities and Wildlife*. Palustrine forested (PFO) wetlands within the study area are located primarily within the Mesic Mixed Hardwood Forest (Coastal Plain Subtype), Mesic Pine Flatwoods, Coastal Plain Bottomland Hardwoods (Blackwater Subtype), Streamhead Pocosin,

and Pine Forest terrestrial communities. Palustrine scrub / shrub (PSS) wetlands within the study area are located primarily in the Streamhead Pocosin, Agricultural Land, Maintained / Disturbed, and Successional terrestrial communities. Palustrine emergent (PEM) wetlands within the study area are located primarily in the Maintained / Disturbed terrestrial community.

Table 3-11: Jurisdictional Characteristics of Wetlands Within the Study Area

Map ID	Cowardin Classification	Hydrologic Classification	NCDWQ Wetland Rating	NCWAM Wetland Type	Area (ac.)
W1a	PFO1	Riparian	25	Headwater Forest	0.91
W1	PFO1	Riparian	46	Headwater Forest	3.93
W2	PFO1	Riparian	25	Headwater Forest	0.39
W3	PFO1	Riparian	58	Bottomland Hardwood / Headwater Forest	8.78
W4	PFO1/PSS1	Riparian	30	Headwater Forest	0.25
W5	PFO1	Riparian	15	Headwater Forest	0.01
W6	PFO1	Riparian	17	Headwater Forest	0.14
W7	PFO1/PSS1	Riparian	46	Headwater Forest	0.19
W8	PSS1	Riparian	17	Headwater Forest	0.11
W9	PFO1/PSS1	Riparian	25	Bottomland Hardwood / Headwater Forest	3.56
W10	PFO1	Riparian	15	Headwater Forest	0.16
W11	PFO1/PSS1	Riparian	36	Riverine Swamp Forest	7.98
W12	PFO1	Riparian	19	Headwater Forest	0.59
W13*	PFO1	Riparian	21	Headwater Forest	0.17
W14	PFO1	Riparian	74	Riverine Swamp / Bottomland Hardwood / Headwater Forest	20.71
W15*	PFO1	Riparian	30	Headwater Forest	7.63
W16*	PFO1	Riparian	24	Headwater Forest	0.09
W17*	PFO1	Riparian	36	Headwater Forest	0.74
W18	PFO1	Riparian	65	Bottomland Hardwood / Headwater Forest	11.28
W19*	PFO1	Riparian	59	Bottomland Hardwood / Headwater Forest	10.69
W20*	PFO1	Riparian	52	Riverine Swamp Forest	0.91

Map ID	Cowardin Classification	Hydrologic Classification	NCDWQ Wetland Rating	NCWAM Wetland Type	Area (ac.)
W21*	PFO1	Riparian	68	Riverine Swamp / Headwater Forest	39.88
W22	PFO1	Riparian	55	Headwater Forest	4.63
W23	PFO1	Riparian	39	Headwater Forest	0.47
W24	PFO1	Riparian	49	Riverine Swamp / Headwater Forest	13.31
W25	PSS1/PEM1	Riparian	38	Headwater Forest	0.12
W26	PFO1	Riparian	67	Riverine Swamp / Bottomland Hardwood Forest	42.62
W27	PFO1	Riparian	28	Riverine Swamp / Headwater Forest	1.47
W28	PSS1	Riparian	15	Non-Tidal Freshwater Marsh	0.26
W29	PSS3	Riparian	41	Headwater Forest	1.27
W30	PSS3	Riparian	19	Headwater Forest	2.05
W31	PSS3	Riparian	19	Headwater Forest	0.30
W32*	PFO1	Riparian	58	Headwater Forest	2.03
W33	PFO1	Riparian	40	Headwater Forest	0.73
W34*	PFO1	Riparian	40	Headwater Forest	0.38
W35	PFO1	Riparian	30	Headwater Forest	0.77
W36	PFO1	Riparian	30	Headwater Forest	0.26
W37	PFO1	Riparian	56	Non-Tidal Freshwater Marsh / Riverine Swamp / Bottomland Hardwood / Headwater Forest	23.82
W38	PFO1	Riparian	46	Headwater Forest	5.84
W39	PFO1	Riparian	38	Headwater Forest	0.43
W40	PSS3	Riparian	25	Riverine Swamp / Headwater Forest	1.23
W41	PFO1	Riparian	28	Headwater Forest	0.22
W42	PFO1	Riparian	41	Headwater Forest	3.50
W43	PFO1	Riparian	11	Headwater Forest	1.19
W44	PFO1	Riparian	11	Headwater Forest	1.18
W45	PFO1	Riparian	11	Headwater Forest	0.38
W46	PFO1	Riparian	13	Headwater Forest	0.61
W47	PFO1	Riparian	59	Headwater Forest	4.13
W48	PFO1	Riparian	47	Headwater Forest	3.07

Map ID	Cowardin Classification	Hydrologic Classification	NCDWQ Wetland Rating	NCWAM Wetland Type	Area (ac.)
W49	PFO1/PSS5	Riparian	68	Non-Tidal Freshwater Marsh / Bottomland Hardwood Forest	4.29
W50	PFO1	Riparian	68	Bottomland Hardwood / Headwater Forest	4.29
W51	PFO1	Riparian	30	Headwater Forest	0.80
W52	PFO1	Riparian	32	Headwater Forest	2.49
W53	PFO1	Riparian	56	Headwater Forest	0.36
W54	PFO1	Riparian	34	Riverine Swamp / Headwater Forest	0.29

* Total corridor acreage areas are estimates due to wetland lines not extended to the corridor

3.5.4.3 NC River Basin Buffer Rules

The proposed project is located in the Yadkin-Pee Dee and Lumber River Basins. The Yadkin-Pee Dee and Lumber River Basins do not have River Basin Buffer Rules in effect at this time. As shown in Table 3-10, no streams in the study area are subject to river basin buffer rules.

3.5.4.4 Protected Species

As of September 1, 2010 the US Fish and Wildlife Service (USFWS) lists four federally protected species for Richmond County (see Table 3-12). Carolina heelsplitter, historically known from several locations within the Catawba and Pee Dee River systems in North Carolina, has recently been removed from this list by the USFWS. A brief description of each species' habitat requirements follows. Habitat requirements for each species are based on the current best available information as per referenced literature and USFWS correspondence. A Biological Conclusion for each species rendered based on survey results in the study area is provided in Section 4.1.5.2.4, *Endangered Species Act Protected Species*.

Table 3-12: Federally Protected Species Listed for Richmond County

Scientific Name	Common Name	Federal Status*	Habitat Present	Biological Conclusion
<i>Rhus michauxii</i>	Michaux's sumac	E	Yes	May Affect, not Likely to Adversely Affect
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	Yes	No Effect
<i>Lysimachia asperulaefolia</i>	Rough-leaved loosestrife	E	Yes	No Effect
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	No	No Effect

* E – Endangered

Michaux's sumac (*Rhus michauxii*)

USFWS optimal survey window: May-October

Habitat Description: Michaux's sumac, endemic to the inner Coastal Plain and lower Piedmont, grows in sandy or rocky, open, upland woods on acidic or circumneutral, well-drained sands or sandy loam soils with low cation exchange capacities. The species is also found on sandy or submesic loamy swales and depressions in the fall line Sandhills region as well as in openings along the rim of Carolina bays; maintained railroad, roadside, power line, and utility rights-of-way; areas where forest canopies have been opened up by blow-downs and / or storm damage; small wildlife food plots; abandoned building sites; under sparse to moderately dense pine or pine / hardwood canopies; and in and along edges of other artificially maintained clearings undergoing natural succession. In the Sandhills region, it occurs on sandy, acidic soils. The plant is shade intolerant and, therefore, grows best where disturbance (*e.g.*, mowing, clearing, grazing, periodic fire) maintains its open habitat.

Red-cockaded woodpecker (*Picoides borealis*)

USFWS optimal survey window: year round; November-early March (optimal)

Habitat Description: The red-cockaded woodpecker (RCW) typically occupies open, mature stands of southern pines, particularly longleaf pine, for foraging and nesting / roosting habitat. The RCW excavates cavities for nesting and roosting in living pine trees, aged 60 years or older, and which are contiguous with pine stands at least 30 years of age to provide foraging habitat. Dense stands of pines, or stands that have a dense hardwood understory are avoided. The foraging range of the RCW is normally no more than 0.5 mile.

Rough-leaved loosestrife (*Lysimachia asperulaefolia*)

USFWS optimal survey window: mid May-June

Habitat Description: Rough-leaved loosestrife, endemic to the Coastal Plain and Sandhills of North and South Carolina, generally occurs in the ecotones or edges between longleaf pine uplands and pond pine pocosins in dense shrub and vine growth on moist to seasonally saturated sands and on shallow organic soils overlaying sand (spodosolic soils). Occurrences are found in such disturbed habitats as roadside depressions, maintained power and utility line rights-of-way, firebreaks, and trails. The species prefers full sunlight, is shade intolerant, and requires areas of disturbance (*e.g.*, clearing, mowing, periodic burning) where the overstory is minimal. It can, however, persist vegetatively for many years in overgrown, fire-suppressed areas. Blaney, Gilead, Johnston, Kalmia, Leon, Mandarin, Murville, Torhunta, and Vancluse are some of the soil series that occurrences have been found on.

Shortnose sturgeon (*Acipenser brevirostrum*)

USFWS optimal survey window: surveys not required; assume presence in appropriate waters

Habitat Description: Shortnose sturgeons occur in most major river systems along the eastern seaboard of the United States. The species prefers the nearshore marine, estuarine, and riverine habitat of large river systems. It is an anadromous species that migrates to faster-moving freshwater areas to spawn in the spring, but spends most of its life within close proximity of the river's mouth. Large freshwater rivers that are unobstructed by dams or pollutants are imperative to successful reproduction.

Distribution information by river / waterbody is lacking for the rivers of North Carolina; however, records are known from most coastal counties.

Habitat for the bald eagle consists primarily of mature forest in proximity to large bodies of open water for foraging. Large dominate trees are utilized for nesting sites, typically within one mile of open water. Minor suitable habitat for this species occurs within the study corridor. Aerial surveys of the minor suitable habitat (ponds within the corridor) were completed during October 2004. No new areas of suitable habitat or species occurrences were documented during the October 2004 aerial surveys. A desktop-GIS assessment of the project study area, as well as the area within a 1.13-mile radius (one mile plus 660 feet) of the project limits, was performed on February 24, 2009 using 2008 color aerials and 1998 color infrared (color IR) aerials. Water bodies large enough or sufficiently open to be considered potential feeding sources were identified. Since there was no foraging habitat within the review area, a survey of the project study area and the area within 660 feet of the project limits was not conducted. Additionally, a review of the NCNHP database on January 12, 2011 revealed no known occurrences of this species within one mile of the study area. Due to the lack of habitat, known occurrences, and minimal impact anticipated for this project, it has been determined that this project will not affect this species.

As of September 1, 2010, the USFWS does not list any Candidate species for Richmond County. A review of NCNHP records, updated January 12, 2011, indicates no occurrence of Candidate species within one mile of the study area.

3.5.4.5 Essential Fish Habitat

No designated Essential Fish Habitat occurs within the study area. No benthic or fish monitoring data have been collected within 1.0 mile upstream or downstream of the study area.

3.5.4.6 Areas of Environmental Concern

There are no Outstanding Resource Waters (ORW), High Quality Waters (HQW), or Water Supply (WS-I or WS-II) Waters within one mile downstream of the study area. There are no streams within the study area, or within one mile downstream of the study area, that are listed on the 2010 final 303(d) list due to sedimentation or turbidity. The study area north of County Home Road (SR 1624) lies within the Falling Creek (WS-III) and Hitchcock Creek (WS-III) protected water supply watersheds. There are no critical water supply watershed areas within one mile of the project area.

3.5.4.7 Anadromous Fish Habitat

There are no waters designated North Carolina Wildlife Resources Commission (NCWRC) trout waters, anadromous fish waters, or primary nursery areas present in the study area.

3.5.4.8 Coastal Area Management Act Areas of Environmental Concern

The project county is not under the jurisdiction of the Coastal Area Management Act.

3.5.4.9 Construction Moratoria

There are no construction moratoria in effect for waters located within the study area.

3.5.4.10 Rivers and Harbors Act Section 10 Navigable Waters

No streams within the study area have been designated by the USACE as navigable Waters under Section 10 of the Rivers and Harbors Act.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Direct Impacts

This section evaluates the specific impacts, beneficial and adverse, associated with the construction of the proposed US 1 Bypass and improvements to existing US 1. The environmental consequences of the proposed project will include those impacts on the economic, social, cultural, physical and natural environment as described in Section 3.0, *Affected Environment*. This section will also address the relationship between short-term impacts and the maintenance and enhancement of long-term productivity, and the irreversible and irretrievable commitment of resources.

4.1.1 Human Environment

The construction of the US 1 Bypass and improvements to existing US 1 will result in both social and economic changes in the study area. The impacts that were addressed include changes in neighborhood and community cohesion, travel patterns and accessibility, impacts on community facilities (e.g. schools, churches, businesses, recreation areas, and emergency services), highway safety, and impacts on general social groups such as elderly, handicapped, non-drivers, transit-dependent, and minority and ethnic groups.

4.1.1.1 Community

Construction of a new highway on new location can impact community cohesion in several ways including: splitting neighborhoods, isolating portions of a neighborhood or minority group, generating new development, changing property values, or separating residents from community facilities.

Impacts on community cohesion are expected to be minimal since the preferred alignment crosses through predominately rural residential or vacant agricultural land uses. The preferred alternative will cross Hamer Mill Road (SR 1105) just north of Loch Haven Road (SR 2001) near the community known locally as Ellerbe Grove. Impacts to the Ellerbe Grove community will be minor since the majority of residences within the community and associated community facilities are located well south of the proposed project. Impacts to this community should also be minimal since the project will be constructed to cross under both Sandhill Road (SR 1971) and Hamer Mill Road (SR 1105), and access along these roads will be maintained.

4.1.1.2 Relocations

The number of residential, business, church and nonprofit displacements for the preferred alternative was determined by reviewing current tax maps, aerial maps and by conducting site visits. A summary of relocation impacts is presented in Table 4-1. Detailed information is provided in the US 1 Improvements EIS Relocation Reports (April 2011) included in Appendix C.

Table 4-1: Number of Relocations for Preferred Alternative

Type of Displacement	Number of Displacements
Residential	97
Business	8
Farm	0
Non-Profit	0
Total	105
Minority-Owned Displacements	
Residential	12
Business	0
Total	12

Source: US 1 Improvements EIS Relocation (2011), appended by reference.

It is the policy of NCDOT to ensure that comparable replacement housing is available for those relocated, prior to construction of state and/or federally assisted projects. Furthermore, the NCDOT has three programs to minimize the inconvenience of relocation including relocation assistance, relocation moving payments, and relocation replacement housing payments or rent supplement.

The preferred alternative impacts 97 residences and 8 business units, for a total of 105 relocations. No farms or non-profit organizations will be relocated. Of these 105, there are 12 minority-owned residential units in various locations or neighborhoods along the proposed project. No minority-owned business units are expected to be affected. In addition, no churches or schools are impacted.

With 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, in general, provides for payment of actual moving expenses encountered in relocation. Where a displacement will force an owner or tenant to purchase or rent property of higher cost or to lose a favorable financing arrangement (in cases of ownership), the Relocation Replacement Housing Payments or Rent Supplement Program will compensate owners and 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 the North Carolina Relocation Assistance Act (GS-133-5 through 133-18). This 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 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 that meets decent, safe, and sanitary standards. The displacees are given a 90-day written notice after NCDOT purchases the property. Relocation of displaced persons will be offered in areas not generally less desirable in regard to public utilities and commercial facilities.

Rent and sale prices of replacement housing will be within the financial budget 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) purchases of replacement housing; 2) rental of replacement housing, either private or public; 3) moving existing owner-occupant housing to another site (if practicable). The relocation officer will also supply information concerning other state or 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 displaced persons 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 payments, and incidental purchase expenses, except under the Last Resort Housing Provision.

A displaced tenant may be eligible to receive a payment 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 a given threshold.

It is a policy of the State that no person will be displaced by the NCDOT's federally-assisted construction projects unless and until comparable or adequate 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 purpose 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 is unavailable within the displacee's financial means, and the replacement payment exceeds the federal and state legal limitation. The purpose of the program is to allow broad latitudes in methods of implementation by the state so that decent, safe, and sanitary replacement housing can be provided. The Last Resort Housing Program may be necessary if the opportunity for relocation within the area is inadequate.

4.1.1.3 Community Facilities and Services

Impacts on community facilities due to the construction of the US 1 Bypass and improvements to existing US 1 are expected to be minor. There are no schools, churches, parks, or fire stations anticipated to be displaced. Access to and from these facilities should be improved - resulting in shorter travel times and delay. Construction of the project will allow law enforcement officials

and emergency personnel to respond faster and more efficiently to emergency situations in the area.

Travel patterns will be affected by the proposed project due to the construction of interchanges and intersections, several road relocations and crossings, and some road closures or cul-de-sacs. The preferred alternative will cross several secondary roads which will either be closed on either side of the US 1 Bypass or continue to operate with grade separations (bridging), or by realigning them.

In terms of overall travel patterns and accessibility, the construction of the US 1 Bypass on new alignment can be expected to have more effect on existing US 1 and along those roads where interchanges are proposed. Through traffic and truck traffic along existing US 1 through downtown Rockingham will be reduced with construction of the bypass. Increases in traffic volumes are likely to occur at Airport Road (SR 1966) and existing US 74 Business for those commuters desiring to access the bypass facility.

Access to the Richmond County Airport will be greatly improved with the construction of an interchange at Airport Road (SR 1966). However, the major concern of the Federal Aviation Administration is the effect that the proposed alignment would have on the approach to Runway 31 (See letter Appendix A.1). A flight path analysis was conducted for the approach to Runway 31 which recommended that the proposed design provide adequate clearance (45.51 feet) between the roadway profile and the 34:1 runway approach slope and is outside the runway protection zone. Because the interchange on Airport Road (SR 1966) is proposed as a two quadrant, partial cloverleaf on the south side of Airport Road (SR 1966), it is not located within the approach to Runway 31.

4.1.1.4 Environmental Justice

The project will not disproportionately impact minority or low-income populations.

Title VI of the Civil Rights Act of 1964, protects individuals from discrimination on the grounds of race, age, color, religion, disability, sex, and national origin. Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” provides that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations. Special populations may include the elderly, children, the disabled, low-income areas, American Indians and other minority groups. Executive Order 12898 requires that Environmental Justice principles be incorporated into all transportation studies, programs, policies and activities. The three environmental principles are: 1) to ensure the full and fair participation of all potentially affected communities in the transportation decision-making process; 2) to avoid, minimize or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority or low-income populations; 3) to fully evaluate the benefits and burdens of transportation programs, policies, and activities, upon low-income and minority populations.

Based on census information and field reviews, attempts were made to identify those communities or areas with the potential to experience disproportionately high and adverse human and / or environmental impacts from the project. The preferred corridor was selected, in part, because it would avoid impacts to the Ashley Chapel / Mizpah Road community.

Population statistics for Richmond County indicate that the minority population percentage for the study area is approximately equivalent to Richmond County's minority population percentage. Age characteristics for 2000 indicate that the study area has a lower elderly population (65 or older) than Richmond County.

The project's public involvement process has provided early and continued involvement of the citizens who may be affected by the proposed action. The public involvement program is discussed in detail in Section 7.2, *Coordination and Public Involvement*. Executive Order 12898 defines low-income as "a person whose median household income is at or below the Department of Health and Human Services' poverty guidelines." Further clarification into the meaning of low-income from the US Department of Transportation suggests that "low-income means a person whose household income is at or below the census defined poverty level."

As discussed in Section 3.1.2, *Economic Characteristics*, the percentage of households with incomes below the poverty level in the Demographic Area is 17.7 percent compared to 19.6 percent for Richmond County. In addition, the number of households receiving public assistance is lower than the County's, and median household incomes and median home values are higher.

Based on the relocation reports, the preferred corridor will not have a disproportionately high or adverse effect on minority and low-income populations in the study area. Project specific impacts on minority and low-income residents are identified in the project's relocation report located in Appendix C. As shown by Table 4-1 in Section 4.1.1.2, *Relocations*, it is estimated that about 11 percent of the residential relocations associated with the project would consist of minorities.

The approximate incomes of the residential displacements, as provided by the relocation report, are shown in Table 4-2. The table indicates that the preferred alternative will displace residents in all income levels. Households with incomes between \$25,000 and \$35,000 would have more relocations than the other income ranges. According to the US Department of Health and Human Services' 2011 poverty guidelines, the poverty guideline for a four-person family is \$22,350. The 2010 poverty level as defined by the US Census Bureau is almost the same at \$22,314 for a family of four. Twenty six (approximately 27 percent) of the 97 residential relocations have an income of less than \$25,000.

Table 4-2: Approximate Income Level of Residential Relocations (Households)

Income	Residential Relocations
\$ 0 to \$15,000	11
\$15,000 to \$25,000	15
\$25,000 to \$35,000	38
\$35,000 to \$50,000	25
Over \$50,000	8
TOTAL	97

The involvement of citizens who may be affected by the project has been an important part of the planning process. Public involvement opportunities were initiated at the beginning of the project and have included newsletters and workshops. Public involvement opportunities are summarized in Section 7.2, *Coordination and Public Involvement*.

4.1.1.5 Economics

The proposed US 1 Bypass and improvements to existing US 1 will have an overall positive impact on the local area's economy by providing better access to businesses and industries in Richmond County, increasing construction employment opportunities, and generating additional income from potential new development. However, due to a portion of the project being constructed as a fully-controlled access facility, most of the new development will likely occur only at interchange locations. Regional impacts on the economy include increased government revenues created from transportation.

There are specific local impacts, both positive and negative, that are likely to occur as a result of the proposed project. These would include:

- Improved accessibility within the study area could attract new residents and businesses to Richmond County.
- Properties located near interchanges for the proposed improvements may increase in value, particularly for businesses requiring large volumes of traffic or highly accessible locations. Such increases in property values and new businesses could also result in greater local property tax revenues.
- A temporary negative impact would include access disruption during construction. While the proposed improvement and adjacent service roads are under construction, residents may have to change established daily routes until the project is completed.

The residential and business relocations will not have a substantial impact on employment in the study area. Based on the relocation reports, there are adequate replacement housing, as well as, business opportunities available for any displaced resident or business within the study area. No housing shortage would be caused by the proposed project.

4.1.1.6 Safety

According to NCDOT 2005-2007 Three Year Crash Rates, total accident rates in North Carolina for a rural, two-lane undivided highway are approximately eight times more than those rates determined for a four-lane or more divided, fully-controlled access facility (175.41 and 21.96, respectively) and more than six times higher for a four-lane or more divided, partially-controlled access facility (133.47). Therefore, construction of the Preferred Alternative should create a safer highway facility with fewer accidents and less fatalities.

4.1.2 Land Use and Transportation Planning

4.1.2.1 Land Use Plans

Land use planning in Richmond County is regulated by zoning ordinances enacted in the cities of Rockingham, Hamlet, and Richmond County. Rockingham's most recent land use plan was adopted in 2002. Richmond County's strategic land use plan was written in 2000. The project is consistent with local planning efforts.

4.1.2.2 Transportation Plans

This project is consistent with the Thoroughfare Plan for the Cities of Rockingham – Hamlet (1998).

4.1.3 Physical Environment

4.1.3.1 Noise

Traffic noise emission is composed of several variables, including the number, types, and travel speeds of the vehicles, as well as the geometry of the roadway(s) on which the vehicles travel. Additionally, variables such as weather and intervening topography affect the transmission of traffic noise from the vehicle(s) to noise sensitive receivers.

Preliminary project designs, aerial photography, and vertical elevation contour mapping were used to model the proposed roadway, receivers, and the topography of the US 1 project study area. According to FHWA guidance, the predictions are based upon the proposed roadway alignment design and traffic conditions for the year 2035 that result in the loudest predicted hourly-equivalent traffic noise levels for each receiver. Table N4 summarizes the loudest hour equivalent noise levels for existing conditions in the year 2007 and build conditions in the year 2035 (see Appendix F). Table N4 also shows the noise level increases between existing and future conditions as well as predicted traffic noise impacts.

4.1.3.1.1 Traffic Noise Impacts and Noise Contours

Traffic noise impacts occur when the predicted traffic noise levels either: 1) approach or exceed the FHWA noise abatement criteria or 2) substantially exceed the existing noise levels. "Approach" means within one dB(A) of the NAC value shown on Table N2 (see Appendix F). The NCDOT definition of substantial increase is shown in the lower portion of Table N2. Consideration for noise abatement measures must be given to receivers that fall in either category.

In accordance with the NCDOT’s Traffic Noise Abatement Policy (July 13, 2011), the Federal/State governments are not responsible for providing noise abatement measures for new development for which building permits are issued within noise-impacted area of a proposed highway after the Date of Public Knowledge. The “Date of Public Knowledge” of the location and potential noise impacts of a proposed highway project will be the approval date of the final environmental document, e.g. Categorical Exclusion (CE), State or Federal Finding of No Significant Impact (FONSI) or State or Federal Record of Decision (ROD). For development occurring after this public knowledge date, local governing bodies are responsible to ensure that noise compatible designs are utilized along the proposed facility.

The number of receivers in each activity category predicted to become impacted by future noise is shown in Table 4-3 below and Table N5 in Appendix F. These are noted in terms of those receivers expected to experience traffic noise impacts by approaching or exceeding the FHWA noise abatement criteria, a substantial increase in noise levels, or by both.

Table 4-3: Traffic Noise Impact Summary ¹

Location	Approximate # of Impacted Receivers Approaching or Exceeding FHWA NAC ²							Substantial Noise Level Increase ³	Impacts Due to Both Criteria ⁴	Total Impacts Per 23 CFR 772 ⁵
	A	B	C	D	E	F	G			
R-2501BA: North of Sandhill Road (SR 1971) to US 74 Bypass	--	3	--	--	--	--	--	5	--	8
R-2501BB: US 74 Bypass to US 74 Business	--	8	--	--	--	--	--	107	6	109
R-2501BC: US 74 Business to North of Fox Road (SR 1606)	--	5	--	--	--	--	--	26	4	27
R-2501C: North of Fox Road (SR 1606) to Marston Road (SR 1001)	--	22	1	--	--	--	--	--	--	23
Totals	--	38	1	--	--	--	--	138	10	167

1. This table presents the number of build-condition traffic noise impacts as predicted for the proposed project.
2. Predicted traffic noise level impact due to approaching or exceeding NAC.
3. Predicted “substantial increase” traffic noise level impact.
4. Predicted traffic noise level impact due to exceeding NAC *and* “substantial increase” in build-condition noise levels.
5. The total number of predicted impacts is not duplicated if receivers are predicted to be impacted by more than one criterion.

Under Title 23 CFR Part 772, 165 residences, one business, and one campground are predicted to be impacted due to highway traffic noise generated by the proposed project. See Figures 3.1-3.29 in this project’s *Highway Traffic Noise/Construction Noise Analysis* (March, 2011) for

the receiver locations and potentially impacted receivers in the year 2035. Receivers located within the right of way limits are not included in the TNM analysis. Of the 167 impacted receivers, 128 are predicted to have noise levels below the Noise Abatement Criteria and are impacted due to a substantial increase in the noise levels. Those receivers are generally located in quiet areas, with the measured existing ambient background noise levels below 50 dB(A), as shown in Tables N3 and N4 (see Appendix F). The project area is located between the City of Rockingham and City of Hamlet where it is sparsely populated and the development is mainly rural.

The results of the noise study show that the proposed US 1 corridor improvement will increase noise levels at noise sensitive properties in the immediate vicinity of the roadway. The predicted changes in noise levels for this project range from negative 10 (-10) dB(A) to 32 dB(A) (see Table N4 in Appendix F). For reference purposes, an increase of three decibels is considered barely perceivable, and an increase of ten decibels is considered to double the loudness.

Table N5 in Appendix F provides contour information for the proposed project. This information should assist local authorities in exercising land use control over the remaining undeveloped lands adjacent to the roadway within local jurisdiction. For example, with the proper information on noise, the local authorities can prevent further development of incompatible activities and land uses with the predicted noise levels of an adjacent highway.

4.1.3.1.2 Traffic Noise Abatement Measures

If traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures for reducing or eliminating the noise impacts must be considered. Consideration for noise abatement measures must be given to all impacted receivers. The following discussion addresses the applicability of these measures to the proposed project.

Noise Barriers

Highway noise barriers are primarily constructed as earth berms or solid-mass walls adjacent to limited-access freeways that are in close proximity to noise-sensitive land use(s). To be effective, a noise barrier must be long enough and tall enough to shield the impacted receiver(s). Generally, the noise wall length must be eight times the distance from the barrier to the receiver.

The NCDOT traffic noise level reduction design goal is eight dB(A) for the most severely impacted receivers; however, a noise wall will be considered feasible if it is predicted to reduce traffic noise levels by at least five dB(A). Assessed at a planning cost of \$15.00 per square foot, a noise wall must not exceed a cost of \$35,000 + \$500 for every decibel of noise level increase per benefited receiver [one that is predicted to receive at least five dB(A) noise level reduction]. In addition to constructability, other factors considered for noise wall feasibility and reasonableness assessment were the social, economic, and environmental effects. See Table N8 in Appendix F and this project's *Highway Traffic Noise/Construction Noise Analysis* (March, 2011) for more details about the barrier analysis.

Noise barriers were primarily investigated in seven noise sensitive areas (Areas 1 through 7) in the vicinity of the US 1 project (refer to Figure 4.1). All preliminarily feasible noise wall alignments and configurations were examined in each noise sensitive area for the potential benefit of the future year predicted traffic noise impacts. Through a sound barrier reasonableness assessment, it was determined two barriers (Barriers 2 and 4) would meet NCDOT's Noise Abatement Policy criteria for being reasonable and feasible and will provide for a total of 39 benefited receivers from the proposed noise abatement (see Figure 4.2).

Preliminary consideration for noise abatement measures was given to the impacted receivers. Based upon the available project design, the *Highway Traffic Noise/Construction Noise Analysis* recommends a detailed study of potential mitigation measures for noise sensitive areas that meet preliminary feasibility and reasonableness criteria. The study should be conducted during the final project design.

See Table N8 in Appendix F and this project's *Highway Traffic Noise/Construction Noise Analysis* (March, 2011) for more details about the sound barrier reasonableness assessment.

Parallel Barriers

Parallel barriers are two barriers which face each other on opposite sides of a roadway. If the barrier surfaces are hard, smooth, and nonporous, as with concrete or masonry surfaces, the barriers can reflect noise back and forth between each other and be less effective. Research has shown that reflective parallel barriers should have a width to height ratio (W:H) of at least 10:1 to avoid a noticeable decrease in performance. According to FHWA guidance, a noticeable decrease in a barrier's performance is considered loss of least three dB(A) in noise abatement at a receiver.

Barriers 2 and 4 are considered to be parallel barriers. Barrier 2 has an average height of 12 feet, and Barrier 4 has an average height of 11 feet. They are separated by approximately 150 feet. The computed increase in noise levels from reflection ranges from zero to 0.4 dB(A). These results confirm that noise reflection should not have a noticeable effect on the performance of these barriers.

Other Locations Considered

Noise barriers were also considered in seven other locations where impacted receivers are more widely dispersed. In five of the seven locations, it was determined noise barriers would not meet NCDOT feasibility criteria of providing at least a five dB(A) traffic noise level reduction.

The other two locations are located along US 74 Business and the proposed widening portion of existing US 1. Barrier walls in these two locations would not be feasible due to having to maintain access to businesses and residences. See this project's *Highway Traffic Noise/Construction Noise Analysis* (March, 2011) for more details.

Highway Alignment Selection

Highway alignment selection involves the horizontal or vertical orientation of the proposed improvements in such a way as to minimize impacts and costs. The selection of alternative alignments for noise abatement purposes must consider the balance between noise impacts and other engineering and environmental parameters. For noise abatement, horizontal alignment selection is primarily a matter of constructing the proposed roadway at a sufficient distance from noise sensitive areas. The selected alignment has been located to minimize impacts to residences, businesses, historic properties, and recreational areas.

Traffic System Management Measures

Traffic system management (TSM) measures, which limit vehicle type, speed, volume and time of operations, are often effective noise abatement measures. Past project experience has shown that a reduction in the speed limit of 10 mph would result in a noise level reduction of approximately one to two dB(A). The project is primarily located in unincorporated Richmond County with small portions of the project also located in the City of Hamlet. Reducing the speed limit would not be appropriate for the functional classification for this project.

Other Mitigation Measures Considered

The acquisition of property in order to provide buffer zones to minimize noise impacts is not considered to be a feasible noise mitigation measure. The cost to acquire impacted receivers for buffer zones would exceed the abatement threshold per benefited receiver. The use of buffer zones to minimize impacts to future sensitive areas is not recommended because this could be accomplished through land use controls and noise contour limits (see Table N5 in Appendix F).

The use of vegetation for noise mitigation is not considered reasonable for projects such as this one due to the substantial amount of right of way necessary to make vegetative barriers effective. FHWA research has shown that a vegetative barrier should be approximately 100 feet wide to provide a three dB(A) reduction in noise levels. No public or non-profit institutions are impacted by this project.

4.1.3.2 Air Quality

4.1.3.2.1 National Ambient Air Quality Standards

The project is located in Richmond County, which has been determined to comply with the National Ambient Air Quality Standards. The proposed project is located in an attainment area; therefore, 40 CFR Parts 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

4.1.3.2.2 Construction Air Quality Impacts

During construction of the proposed project, all materials resulting from clearing and grubbing, demolition or other operations will be removed from the project, burned or otherwise disposed of by the Contractor. Any burning will be done in accordance with applicable local laws and

ordinances and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520. Care will be taken to insure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance. Also during construction, measures will be taken to reduce the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents. This evaluation completes the assessment requirements for air quality of the 1990 Clean Air Act Amendments and the NEPA process, and no additional reports are necessary.

4.1.3.2.3 Mobile Source Air Toxics (MSATs) Impacts

Under all Build Alternatives in the design year, it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No Build Alternative. This is due to the reduced VMT associated with more direct routing, and due to EPA's MSAT reduction programs.

Qualitative Assessment for Potential MSAT Emissions

Projects with low potential for MSAT include those that improve operations of highway, transit or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions. Examples of these types of projects are minor widening projects; new interchanges, such as those that replace a signalized intersection on a surface street; or projects where design year traffic is projected to be less than 140,000 to 150,000 annual average daily traffic (AADT). For these projects, a qualitative assessment of emissions projections should be conducted.

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives. Although a qualitative analysis cannot identify and measure health impacts from MSATs, it can give a basis for identifying and comparing the potential differences among MSAT emissions—if any—from the various alternatives.

For each alternative in the EIS, the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the No Build Alternative is likely higher than for the Build Alternatives, and higher levels of regional MSATs are not expected from any of the Build Alternatives compared to the No Build. In addition, the VMT under each of the Build Alternatives would be nearly the same, and it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent from 1999 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

Because of the specific characteristics of the project alternatives, under each alternative there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced along the new location roadway sections. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations.

In summary, under all Build Alternatives in the design year, it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No Build Alternative. This is due to the reduced VMT associated with more direct routing, and due to EPA's MSAT reduction programs.

4.1.3.3 Farmland

In accordance with the Federal Farmland Protection Policy Act (FPPA) and North Carolina Executive Order 96, the impact of the proposed project on prime, unique and statewide / local important farmlands was determined (see Figure 3.5). As required by the FPPA, Farmland Conversion Impact Rating Forms (US Department of Agriculture Form AD-1006) were completed and processed for each alternative analyzed in the DEIS (see Appendix D).

In order to determine the overall impact on farmlands, the Natural Resource Conservation Service (NRCS) assigns ratings based on a relative value of the farmland that would be converted by the proposed project. For those sites receiving a total score of less than 160, minimal consideration for protection is given. Sites receiving a rating of 160 or more should be provided with the maximum consideration for protection including avoidance, if possible. Based upon the site assessments shown on the Farmland Conversion Impact Rating Form AD 1006, the preferred alternative has a total corridor assessment score below 160. Therefore, no mitigation for farmland loss is required for the project.

No Voluntary Agricultural Districts (VAD) are within the study area for the preferred alternative.

4.1.3.4 Utility

The construction phase of the project will require expending energy resources to construct the preferred alternative. However, the energy required will be recovered over the life of the facility by providing a more efficient transportation system. Since freeways do not have stop signs or traffic signals, energy savings in terms of less fuel consumption will be accomplished due to fewer delays. With full control of access, no driveways are allowed thus keeping speeds higher and more uniform, and resulting in less congestion and less fuel consumption.

4.1.3.5 Visual

The construction of a new roadway will result in some visual impacts on adjacent areas. Residents and businesses will inevitably perceive the highway as more of an intrusion due to the increased dimensions of the facility and resulting traffic volumes. The disturbed areas outside the construction limits of the new facility can be replanted; however, this type of mitigation becomes less feasible and less effective the closer the highway encroaches upon a residence.

The preferred alternative traverses mostly forested, undeveloped land with a few scattered rural, residential neighborhoods. Minimal to moderate visual impacts are expected to occur for the few residents along the corridor.

The most obvious visual impacts to local residents will occur near the interchanges with existing US 74 Business and with the US 74 Bypass. To a lesser extent, interchanges and overpasses with secondary roads will constitute some impact, but the locations for these features will not intrude on major communities.

The visual qualities of adversely affected areas can be mitigated by:

- Minimizing cut and fill slopes;
- Aligning the roadway to follow the existing ground line wherever possible; and
- Planning landscape planting and natural re-vegetation on the cut and fill slopes.

4.1.3.6 Hazardous Materials

Staff from NCDOT's GeoEnvironmental Section conducted a field reconnaissance survey along the corridor for the preferred alternative in November 2007 and completed a GeoEnvironmental Impact Evaluation in December 2007. Eight possible underground storage tank (UST) facilities and four active or former automotive repair facilities were identified along the corridor. No hazardous waste sites or landfills were identified. The GeoEnvironmental Section conducted an additional field visit in May 2010 to survey the expanded study area discussed in Section 2.7, *Preferred Alternative*. No additional hazardous materials sites were observed; therefore, it was determined the conclusions from the December 2007 GeoEnvironmental Impact Evaluation were still applicable. The GeoEnvironmental Section will provide soil and groundwater assessments on each of the identified sites before right of way acquisition. Low to negligible monetary and scheduling impacts resulting from the 12 identified sites are anticipated.

4.1.3.7 Floodplain / Floodway

The proposed crossings at Baggetts Creek (downstream of US 1), UT to Speeds Creek, Solomons Creek (at US 74 Bypass), South Prong Falling Creek, Falling Creek, and Chock Creek are located within flood hazard zones designated as zone AE. The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP) to determine the status of the project with regard to applicability of NCDOT's Memorandum of Agreement of 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 Federal Emergency Management Agency (FEMA) regulated streams. Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

4.1.3.8 Protected Lands

4.1.3.8.1 Wild and Scenic Rivers

There are no rivers or sections of rivers within the study area that are designated wild, scenic, or recreational under the National Wild and Scenic Rivers Act or the State Natural and Scenic Rivers Act.

4.1.3.8.2 State / National Forests

There is no state or national forest in the study area.

4.1.3.8.3 Game Lands and Preservation Areas

There are two game lands in the vicinity of the project area: Sandhills Game Land and the Pee Dee River Game Land. The preferred corridor is located outside of the boundary for the Sandhill Game Land and will not affect it.

Part of the Pee Dee River Game Land is located within the project study area at the southern terminus (see Section 3.3.9.3, *Game Lands and Preservation Areas*, Figure 2.5a, and Figure 3.2). The current design includes widening improvements along existing US 1 and Osborne Road (SR 1104), impacting approximately 2.4 acres of property. The land to be impacted serves as a buffer between the existing highway corridor and land managed for wildlife. See Section 4.1.6, *Section 4(f) and 6(f) Statements* for more information regarding Section 4(f) use of this property.

4.1.4 Cultural Resources

4.1.4.1 Historic Architectural Resources

The potential effect of the proposed US 1 Bypass and improvements to existing US 1 on the historic architecture in the project area was evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended.

The Phase II (Intensive Level) Architectural Survey and Evaluations of Eligibility (September 1998) identified one National Register property (Covington Plantation House) and three other resources considered to be eligible for the National Register (Williams Diggs House, St. Paul United Methodist Church, and Flowers-Hamer House). All of the properties except the St. Paul United Methodist Church are located outside the project's Area of Potential Effect (APE). The State Historic Preservation Office (SHPO) has concurred with the determination by FHWA that the project would have no effect on the St. Paul United Methodist Church (see SHPO letter in Appendix A.2). During a 2007 review of the project, NCDOT historians determined there were no additional properties eligible for the National Register and further consultation with SHPO was not necessary (see Section 3.4.1, *Historic Architectural Resources*). The APE established in the Phase II report, and reviewed in December 2007, included the expanded study areas at the Wiregrass Road (SR 1640) / County Home Road (SR 1624) intersection and the McDonalds Pond Restoration site east of County Home Road (SR 1624). Based on this, NCDOT historians determined in June 2010 no additional studies were necessary at the restoration site (see correspondence in Appendix A.2).

4.1.4.2 Archaeological Resources

The Archaeological Survey Report (December 2001) identified four significant archaeological sites, 31RH376, 31RH401, 31RH403 and 31RH408, as being eligible for the National Register of Historic Places. In 2007, personnel from the North Carolina State Historic Preservation Office, the North Carolina Office of State Archaeology, and NCDOT met to do reconnaissance and limited subsurface testing for these four sites. It was established during this meeting that no components associated with sites 31RH376, 31RH401, and 31RH403 are within the APE of the preferred alternative. NCDOT recommended a finding of “no impacts” for these three sites and a concurrence from the HPO was obtained (see Appendix A.2 for the concurrence letter dated November 27, 2007). Furthermore, it was found that site 31RH408 is well outside the limits of the proposed project and no further action regarding this site is necessary.

The Archaeological Survey Report (December 2001) also lists a cemetery, site 31RH360, on the Cameron Plantation property as archaeologically significant. Although it is not eligible for the National Register, part of it could potentially be impacted by the project. If disturbance of the cemetery is unavoidable, the affected burial sites will be moved under the regulations stipulated by NCGS 65.

In 2011, NCDOT conducted archaeological investigations within the expanded study area east of County Home Road (SR 1624). Twenty-six sites were identified but only one was determined to be eligible for the National Register of Historic Properties. Subsequently, SHPO determined the site is not eligible for the National Register of Historic Properties. See Appendix A.2 for correspondences dated May 2, 2011 and May 20, 2011.

4.1.5 Natural Environmental Impacts

4.1.5.1 Terrestrial Community and Wildlife

Terrestrial communities within the study area will be impacted by project construction as a result of grading and paving portions of the study area. Table 4-4 includes community data presented in the context of total coverage for each community type within the study area. This table also presents the amount of acreage required (within the preliminary right of way) according to a land type. The reader should note the “undisturbed / forested” land type is a combination of the successional community and all other communities with the exception of agricultural and maintained / disturbed.

Table 4-4: Terrestrial Communities

Terrestrial Communities Within the Study Area	
Community	Study Area Coverage (ac) ¹
Mesic Mixed Hardwood Forest (Coastal Plain Subtype)	48.7
Mesic Pine Flatwoods	484.6
Pine / Scrub Oak Sandhill	263.3
Coastal Plain Bottomland Hardwoods (Blackwater Subtype)	169.5
Streamhead Pocosin	118.9
Pine Forest	1,213.3
Agricultural Land	185.0
Maintained / Disturbed	836.2
Successional	431.8
Total Within Study Area:	3,751.3
Area Within Preliminary Right of Way	
Land Type	Impacted Area (ac) ²
Undisturbed / Forested ³	483.5
Agricultural Land	76.0
Maintained / Disturbed	310.9
Successional	91.4
Total Within Preliminary Right of Way	961.8

¹ Study area includes open water area (36.2 ac) and impervious surfaces (roads) (87.3 ac) not included in this terrestrial community assessment.

² Impacted areas were calculated based on preliminary right of way limits.

³ “Undisturbed / Forested” areas include all terrestrial communities within the preliminary right of way with the exception of agricultural land, maintained / disturbed, and successional.

4.1.5.2 Jurisdictional Issues

4.1.5.2.1 Clean Water Act Waters of the United States

Twenty-four jurisdictional streams were identified in the study area (see Table 3-10). The location of these streams is depicted on Figure 3.10. See the January, 2011 *Natural Resources Technical Report Update* for this project in NCDOT’s project file for the USACE Stream Quality Assessment Worksheets and NCDWQ Stream Identification Forms. The physical characteristics and water quality designations of each jurisdictional stream are detailed in Section 3.5.3.1.1, *Streams*. All jurisdictional streams in the study area have been designated as Warm water streams for the purposes of stream mitigation. The need for compensatory mitigation for streams within the proposed right of way limits of the preferred alternative is noted in Table 4-5.

Fifty-five jurisdictional wetlands were identified in the study area (Figure 3.10). Wetland classification, quality rating data, and NCWAM wetland type are presented in Table 3-11. All wetlands in the study area are within the Yadkin-Pee Dee River Basin (U.S. Geological Survey [USGS] Hydrologic Units 03050103 and 03040105). See the January, 2011 *Natural Resources Technical Report Update* for this project in NCDOT’s project file for the USACE Routine Wetland Determination Forms and NCDWQ Wetland Rating Worksheets for each site. Descriptions of the natural communities at each wetland site are presented in Section 3.5.2, *Biotic Communities and Wildlife*.

Twelve ponds are located within the study area. All ponds within the study area consist of impounded stream systems with connections to other jurisdictional features.

Impacts to jurisdictional areas as presented in Tables 4-5, 4-6, and 4-7 include all areas which fall within 25 feet of the slope-stake footprints of preliminary roadway improvements. Total impacts to jurisdictional areas are presented in Table 4-8.

Table 4-5: Jurisdictional Stream Impacts Within the Study Area

Map ID	Length (ft)	Classification	Compensatory Mitigation Required	Projected Impacts (ft)
S1	3,250	Perennial/Intermittent	Yes	451
S2	379	Intermittent	Yes	69
S3	1,555	Perennial	Yes	429
S4	434	Intermittent	No	43
S5	960	Perennial	Yes	187
S6	656	Intermittent	Yes	0
S7	726	Intermittent	N/A**	0
S8*	62	Intermittent	N/A**	0
S9*	2,853	Perennial	Yes	523
S10*	2,967	Perennial	Yes	1,323
S11*	1,146	Perennial	N/A**	0
S12	374	Intermittent	N/A**	0
S13	1,704	Perennial/Intermittent	Yes	353
S14	647	Intermittent	Yes	76
S15*	796	Intermittent	N/A**	0
S16	1,606	Perennial/Intermittent	N/A**	0
S17	307	Intermittent	N/A**	0
S18	358	Intermittent	N/A**	0
S19	1,174	Intermittent	Yes	176
S20	656	Perennial	Yes	87
S21	401	Intermittent	N/A**	0
S22	1,247	Perennial	Yes	0
S23	729	Perennial	Yes	0
S24	370	Intermittent	N/A**	0

* Note: Previous delineation does not extend to new project study area boundary. Per NCDOT Project Engineer, jurisdictional lines not extended for this study.

** N/A –Compensatory mitigation requirements were not determined for jurisdictional features located outside of the proposed right of way limits of the preferred alternative.

Table 4-6: Jurisdictional Wetland Impacts Within the Study Area

Map ID	Cowardin Classification	Hydrologic Classification	NCWAM Wetland Type	Area (ac)	Projected Impacts (ac)
W1a	PFO1	Riparian	Headwater Forest	0.91	0.00
W1	PFO1	Riparian	Headwater Forest	3.93	0.29
W2	PFO1	Riparian	Headwater Forest	0.39	0.00
W3	PFO1	Riparian	Bottomland Hardwood / Headwater Forest	8.78	0.11
W4	PFO1/PSS1	Riparian	Headwater Forest	0.25	0.00
W5	PFO1	Riparian	Headwater Forest	0.01	0.00
W6	PFO1	Riparian	Headwater Forest	0.14	0.00
W7	PFO1/PSS1	Riparian	Headwater Forest	0.19	0.00
W8	PSS1	Riparian	Headwater Forest	0.11	0.00
W9	PFO1/PSS1	Riparian	Bottomland Hardwood / Headwater Forest	3.56	0.71
W10	PFO1	Riparian	Headwater Forest	0.16	0.00
W11	PFO1/PSS1	Riparian	Riverine Swamp Forest	7.98	0.76
W12	PFO1	Riparian	Headwater Forest	0.59	0.00
W13*	PFO1	Riparian	Headwater Forest	0.17	0.00
W14	PFO1	Riparian	Riverine Swamp / Bottomland Hardwood / Headwater Forest	20.71	2.96
W15*	PFO1	Riparian	Headwater Forest	7.63	0.00
W16*	PFO1	Riparian	Headwater Forest	0.09	0.00
W17*	PFO1	Riparian	Headwater Forest	0.74	0.00
W18	PFO1	Riparian	Bottomland Hardwood / Headwater Forest	11.28	5.26
W19*	PFO1	Riparian	Bottomland Hardwood / Headwater Forest	10.69	2.12
W20*	PFO1	Riparian	Riverine Swamp Forest	0.91	0.87
W21*	PFO1	Riparian	Riverine Swamp / Headwater Forest	39.88	8.03
W22	PFO1	Riparian	Headwater Forest	4.63	1.34
W23	PFO1	Riparian	Headwater Forest	0.47	0.00
W24	PFO1	Riparian	Riverine Swamp / Headwater Forest	13.31	2.46

Map ID	Cowardin Classification	Hydrologic Classification	NCWAM Wetland Type	Area (ac)	Projected Impacts (ac)
W25	PSS1/PEM1	Riparian	Headwater Forest	0.12	0.00
W26	PFO1	Riparian	Riverine Swamp / Bottomland Hardwood Forest	42.62	7.6
W27	PFO1	Riparian	Riverine Swamp / Headwater Forest	1.47	0.00
W28	PSS1	Riparian	Non-Tidal Freshwater Marsh	0.26	0.00
W29	PSS3	Riparian	Headwater Forest	1.27	0.56
W30	PSS3	Riparian	Headwater Forest	2.05	0.77
W31	PSS3	Riparian	Headwater Forest	0.30	0.00
W32*	PFO1	Riparian	Headwater Forest	2.03	0.00
W33	PFO1	Riparian	Headwater Forest	0.73	0.00
W34*	PFO1	Riparian	Headwater Forest	0.38	0.00
W35	PFO1	Riparian	Headwater Forest	0.77	0.00
W36	PFO1	Riparian	Headwater Forest	0.26	0.00
W37	PFO1	Riparian	Non-Tidal Freshwater Marsh / Riverine Swamp / Bottomland Hardwood / Headwater Forest	23.82	5.00
W38	PFO1	Riparian	Headwater Forest	5.84	0.00
W39	PFO1	Riparian	Headwater Forest	0.43	0.00
W40	PSS3	Riparian	Riverine Swamp / Headwater Forest	1.23	0.00
W41	PFO1	Riparian	Headwater Forest	0.22	0.00
W42	PFO1	Riparian	Headwater Forest	3.50	0.00
W43	PFO1	Riparian	Headwater Forest	1.19	0.00
W44	PFO1	Riparian	Headwater Forest	1.18	0.00
W45	PFO1	Riparian	Headwater Forest	0.38	0.00
W46	PFO1	Riparian	Headwater Forest	0.61	0.00
W47	PFO1	Riparian	Headwater Forest	4.13	0.00
W48	PFO1	Riparian	Headwater Forest	3.07	0.14
W49	PFO1/PSS5	Riparian	Non-Tidal Freshwater Marsh / Bottomland Hardwood Forest	4.29	0.17
W50	PFO1	Riparian	Bottomland Hardwood / Headwater Forest	4.29	0.67

Map ID	Cowardin Classification	Hydrologic Classification	NCWAM Wetland Type	Area (ac)	Projected Impacts (ac)
W51	PFO1	Riparian	Headwater Forest	0.80	0.00
W52	PFO1	Riparian	Headwater Forest	2.49	0.25
W53	PFO1	Riparian	Headwater Forest	0.36	0.00
W54	PFO1	Riparian	Riverine Swamp / Headwater Forest	0.29	0.00

* Total corridor acreage areas are estimates due to wetland lines not extended to the corridor

Table 4-7: Jurisdictional Pond Impacts Within the Study Area

Map ID	Connected to Surface Water*	Area (ac)	Projected Impacts (ac)
P0	S4A	0.67	0.00
P1	W11	4.52	2.00
P2	S9	2.92	0.54
P3	W21	1.82	0.00
P4	S11	4.86	0.00
P5	S11	3.52	0.00
P6	W21	0.86	0.00
P7	W37	14.52	0.00
P8	S17	1.33	0.00
P9	S20	1.56	0.00
P10	UT to Chock Creek	0.31	0.05
P11	W54	0.17	0.00

* - Map ID from Table 3-7 and Table 3-11 shown for connectivity to surface water feature (stream or wetland), if present

Table 4-8: Total Impacts to Jurisdictional Areas

Jurisdictional Resources	Total Projected Impacts
Streams	3,717 feet
Wetlands	40.07 acres
Ponds	2.59 acres

⁴Projected Impacts: Projected impacts occur within 25 feet of the slope-stake footprint of roadway designs.

4.1.5.2.2 Clean Water Act Permits

The proposed project is anticipated to be processed with a Section 404 Individual Permit. The USACE holds the final discretion as to what permit or permits will be required to authorize project construction.

In addition to the Section 404 permit, other required authorizations include a corresponding Section 401 Water Quality Certification for the NCDWQ. A Section 401 Water Quality Certification is typically handled as a joint permit application to both the USACE and NCDWQ.

Other required Section 401 certifications may include a GC 3688 for temporary construction access and dewatering.

4.1.5.2.3 Stream and Wetland Avoidance, Minimization, and Compensatory Mitigation

The NCDOT will attempt to avoid and minimize impacts to streams and wetlands to the greatest extent practicable during project design. No “Critical Watershed Area” will be impacted by the project.

The NCDOT will investigate potential on-site stream and wetland mitigation opportunities once a final determination of impacts has been calculated (see Section 3.5.4.1, *Streams*). If on-site mitigation is not feasible, mitigation will be provided by North Carolina Department of Environment and Natural Resources (NCDENR) Ecosystem Enhancement Program (EEP). In accordance with EEP’s July 2010 In-Lieu Fee Instrument signed by the USACE and the NCDENR on July 28, 2010, the EEP will be requested to provide off-site mitigation to satisfy the federal Clean Water Act compensatory mitigation requirements for this project.

Avoidance and minimization efforts have been incorporated in the preliminary design. Where possible, these include shifting the alignment to avoid water resources, crossing streams perpendicularly, or crossing the narrowest areas of wetland systems. These efforts have resulted in the avoidance of:

- 13 of 24 streams in the corridor
- 36 of the 55 wetland sites
- seven of 10 ponds

Specific areas are described as follows, and the proposed stream crossing structures are described in Table 2-7.

- Structure 1 - Osborne Road (SR 1104) / Baggetts Creek - S3, W3, W9 – The proposed alignment reduces wetland impacts by crossing stream S3 between two large wetlands W3 and W9.
- Structure 3 – UT to Speeds Creek - W11, P1 – The alignment was located to avoid stream S6 and to cross a narrower portion of W11.
- Structure 4 – Watery Branch - Wetland W14 - The median is to be reduced to 46 feet for minimization.
- US 74 Bypass Interchange – W18, W19, W21, P2, P3, and P4 – The greatest areas of avoidance / minimization are in this interchange. As presented in the November 2004 interagency field meeting package, a larger full clover interchange design was planned, resulting in impacts of 25.2 acres of wetlands and 3.5 acres of ponds. The proposed bypass was shifted southward and the interchange footprint was compressed using directional ramps. The impacts were reduced to 15.4 acres of wetlands and 0.5 acre of ponds.
- Structure 7 – South Prong Falling Creek (US 74 Business) – W26 – The alignment is located between residential neighborhoods and crosses the smallest portion of wetland W24. Dual 450-foot bridges with equalizer pipes are proposed over part of the floodway

for South Prong Falling Creek. On-site mitigation opportunities will be pursued where NCDOT is controlling access to properties between US 74 Business and the wetland areas. The proposed median width is 46 feet within the wetland limits.

- **Structure 8 –Falling Creek – W27** – The alignment is located along the south side of the project corridor to avoid wetlands W32 and W33 just to the west. It crosses a narrower portion of W27. The alignment has been shifted to the south of the original LEDPA alignment to cross a portion of the McDonalds Pond EEP site where braided streams have narrowed. A 250-foot bridge is proposed at the crossing, and the median width has been reduced to 22 feet within the limits of the EEP conservation easement.
- **Structure 9 –Chock Creek – S20, P9, W49, W50** – The proposed widening is planned on the north side, away from P9 and W49. W49 is the highest quality wetland along the US 1 widening portion of the project. This location is in an area where the grade is being changed to flatten the vertical curvature. Culvert extensions are planned on each side of the existing culvert. Shifting the alignment further north will result in greater impacts to W50.

4.1.5.2.4 Endangered Species Act Protected Species

As of September 1, 2010 the US Fish and Wildlife Service (USFWS) lists four federally protected species for Richmond County (see Table 3-12). A Biological Conclusion for each species rendered based on survey results in the study area is provided below. See Section 3.5.4.4, *Protected Species* for descriptions of the species' habitats.

Michaux's sumac (*Rhus michauxii*)

USFWS optimal survey window: May-October

Biological Conclusion: May Affect, not Likely to Adversely Affect

Potential habitat is present within the study area along the roadside margins and utility rights of ways. Areas identified as potentially suitable habitat were systematically surveyed along overlapping transects by ESI biologists from October 29 to October 30, 2007. Potentially suitable habitat within the expansion area south of McDonalds Pond was also systematically surveyed along overlapping transects by ESI biologists from October 28 to October 29, 2009. No individuals of Michaux's sumac were observed. A review of NCNHP records, updated January 12, 2011, indicates two element occurrences for Michaux's sumac within one mile of the study area. The occurrences are both located near the northern terminus of the study area, adjacent to US 1 on the south side, between Stroman Road and the NC Highway 177 split outside the study area. The first occurrence is located approximately 100 feet south of the study area, near the intersection of US 1 and Old Country Lane. The second occurrence is located approximately 900 feet east of the study area terminus, near the intersection of US 1 and Dawkins Road (SR 1483).

Red-cockaded woodpecker (*Picoides borealis*)

USFWS optimal survey window: year round; November-early March (optimal)

Biological Conclusion: **No Effect**²

Potentially suitable habitat, including nesting and/or foraging habitat, exists in the study corridor. No evidence of nesting cavities was found during the original 1998 NRTR surveys. Aerial surveys were conducted in October 2004 to verify and update the original survey results. Pedestrian surveys of previously determined suitable habitat and the half mile nesting survey areas were conducted during August 2004, August 2007, and July 2008. No new areas of suitable habitat or species occurrences were identified during the aerial or pedestrian surveys conducted in 2004, 2007, or 2008. Foraging habitat also exists within the project extension study area and the half mile nesting survey area for the RCW. However, the habitat does occur in patches and these patches are small and isolated. These patches of habitat are surrounded by either maintained disturbed areas or forested habitat unsuitable for this species due to the dense understory, the age of the pines being less than 25 yrs old, the predominance of hardwoods, or the amount of tree harvesting that is being done. Pine trees of suitable age for nest cavities are present within the half mile survey area, but are scattered. A review of NCNHP records, updated January 12, 2011, indicates one element occurrence for RCW within one mile of the study area. This element occurrence includes all of the Sandhills Game Land properties in eastern Richmond, northern and eastern Scotland, and southwestern Moore Counties. Four clusters within this occurrence are located within one mile of the study area, near the northern project terminus. Two of these clusters are active and are located approximately 4,900 feet south-southwest and 4,300 feet east, respectively, of the intersection of US 1 and Marston Road (SR 1001). The other two clusters are inactive and are located approximately 6,700 feet west-northwest and 4,600 feet north, respectively, of the intersection of US 1 and Marston Road (SR 1001).³ According to the USFWS, if no foraging habitat for an active or inactive cluster is affected by the project, then there will be no effect on the species. The foraging habitat for an active or inactive cluster is defined as extending 0.5 mile (2,640 feet) from a cluster center (or half the distance between cluster centers if cluster centers are less than 0.5 mile apart). The distances to the center of each cluster is greater than 0.5 mile (2,640 feet); therefore, there will be no effect on the species.

Rough-leaved loosestrife (*Lysimachia asperulaefolia*)

USFWS optimal survey window: mid May-June

Biological Conclusion: **No Effect**

Potential habitat, consisting of longleaf pine savanna / pocosin ecotones is present within the study area. ESI visited all previously determined areas of potential habitat for this species. Areas identified as potentially suitable habitat were systematically surveyed along overlapping transects by ESI biologists from October 29 to October 30, 2007. Potentially suitable habitat within the expansion area south of McDonalds Pond was also systematically surveyed along overlapping transects by ESI biologists from October 28 to October 29, 2009. No individuals of

² A biological conclusion of “Not Likely to Adversely Affect” was given for the red-cockaded woodpecker in the 1999 DEIS. However, subsequent field surveys conducted in 2007 and 2010 found no evidence of nesting cavities within the study area. Based on these findings, the biological conclusion was changed to “No Effect.” For more information, see the September 2011 re-evaluation of the DEIS and SDEIS.

³ Distances are measured from the intersection of US 1 and Marston Road (SR 1001) to the centers of the clusters.

rough-leaved loosestrife were observed. A review of NCNHP records, updated January 12, 2011, indicates no documented occurrences of rough-leaved loosestrife within one mile of the study area.

Shortnose sturgeon (*Acipenser brevirostrum*)

USFWS optimal survey window: surveys not required; assume presence in appropriate waters

Biological Conclusion: No Effect

The streams within the project study area do not provide shortnose sturgeon habitat due either to being blocked by downstream impediments, or judged to not be sufficiently large or deep enough to allow shortnose sturgeon passage. In addition, this biological conclusion was confirmed with Rich Carpenter at the North Carolina Division of Marine Fisheries via e-mail correspondence. A review of NCNHP records, updated January 12, 2011, indicates no documented occurrences of shortnose sturgeon within one mile of the study area.

4.1.6 Section 4(f) and 6(f) Statements

Section 4(f) of the Department of Transportation Act of 1966 protects parkland, historic resources, publicly owned recreation areas and wildlife refuges. Such land can only be used for a highway project if there is "no other feasible and prudent alternative". Section 6(f) of the Land and Water Conservation Act ensures that parkland will be replaced for those areas that are converted to highway use.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) amendment to the Section 4(f) requirements allows the US Department of Transportation (USDOT) to determine that certain uses of Section 4(f) land will have no adverse effect on the protected resource. When this is the case, and the responsible official(s) with jurisdiction over the resource agrees in writing, compliance with Section 4(f) is greatly simplified.

The NC Wildlife Resources Commission (NCWRC) recently acquired a large parcel near the southern project limit at US 1 and Osborne Road (SR 1104) as part of the Pee Dee River Game Land (see Figure 2.5a and Figure 3.2). The site is subject to Section 4(f) of the DOT Act of 1966. Primary purposes of the Pee Dee River Game Land include wildlife and timber management and public recreational opportunities for hunting, fishing, and observing nature. The current design includes widening improvements along existing US 1 and Osborne Road (SR 1104), impacting approximately 2.4 acres of property. The design in this area transitions from the existing alignment to new alignment, shifting to the east and away from the game land. The land to be impacted serves as a buffer between the existing highway corridor and a large open land complex (20 acres) managed for wildlife with emphasis on dove and other small game species. Approximately 10 acres of the land is planted annually to provide supplemental food and hunting opportunities for local sportsmen. The parcel is approximately 1,659 acres and was purchased using funding from the Clean Water Management Trust Fund (CWMTF), Natural Heritage Program, and North American Wetland Conservation Act (NAWCA). The project is being planned and designed to minimize harm to the game land. FHWA considers the impacts from the project to this 4(f) protected site to be minimal. FHWA anticipates making a 4(f) "de minimis" determination [23 CFR 774.17(5) (2)] after concurrence from NCWRC that the project will not adversely affect the features, attributes, or activities qualifying the property for

protection under Section 4(f). The concurrence from NCWRC and FHWA's "de minimis" determination will follow circulation of the FEIS and opportunity for public review and comment.

There are no Section 6(f) impacts associated with this project.

4.1.7 Construction

The construction of the proposed US 1 Bypass and improvements to existing US 1 will result in temporary environmental impacts; however, impacts can be minimized by careful adherence to established construction methods. All construction will be in accordance with NCDOT "Standard Specifications for Roads and Structures" and NCDOT "Best Management Practices for Protection of Surface Waters".

4.1.7.1 Energy

The construction phase of the project will require expending energy resources to construct the preferred alternative. However, the energy required will be recovered over the life of the facility by providing a more efficient transportation system. Since freeways do not have stop signs or traffic signals, energy savings in terms of less fuel consumption will be accomplished due to fewer delays. With full control of access along the new location part, no driveways are allowed, thus keeping speeds higher and more uniform. This will result in less congestion and less fuel consumption.

4.1.7.2 Lighting

Temporary impacts from construction lighting may occur along the preferred alternative. Most construction is anticipated to occur during the day time. If construction at night is necessary, it will be limited to the extent practicable to minimize lighting impacts on adjacent residences.

4.1.7.3 Visual

Temporary visual impacts will occur due to the presence of construction equipment within construction and staging areas.

4.1.7.4 Noise

Construction noise represents a short-term impact on existing noise levels. The duration and level of noise differs with each phase of construction. Typically the first two phases, ground clearing and excavation, generate the highest noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers, and portable generators reach noise levels of 67 dBA to 98 dBA at 50 feet. Construction equipment noise compliance falls under the EPA's "Noise Control Program" (Part 204 of Title 40, CFR). However, air compressors are the only piece of equipment currently regulated by the EPA.

Small residential areas currently exist in several areas adjacent to the preferred alternative. Haul trucks and equipment carriers accessing the project may increase noise levels when passing

through these residential areas. The contractor will make every effort to minimize unnecessary noise and comply with all local ordinances.

4.1.7.5 Air Quality

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

4.1.7.6 Utilities

Construction of the preferred alternative will require some adjustment, relocation, or modification to existing public utilities. Any disruptions to utility service during construction will be minimized by phased adjustments to the utility lines. All modifications, adjustments, or relocations will be coordinated with the affected utility companies.

4.1.7.7 Water Quality

The contractor will exercise every reasonable precaution throughout the construction of the project to prevent water quality impacts to rivers, streams, and water impoundments. Pollutants, such as chemicals, fuels, lubricants, bitumens, and other harmful waste, will not be discharged into adjacent rivers, streams, impoundments or ditches. NCDOT's "Best Management Practices for Protection of Surface Waters" will be implemented, as applicable.

4.1.7.8 Erosion Control

Temporary impacts from construction activities may include erosion resulting in the discharge of sediments in adjacent waters. The contractor will be required to adhere to NCDOT's "Best Management Practices for Protection of Surface Waters" and implement the Sedimentation and Erosion Control plans to prevent the discharge of sediments into adjacent waters, to the maximum extent possible.

4.1.7.9 Geodetic Markers

There are approximately 18 North Carolina Geodetic Survey control monuments located within the corridor of the preferred alternative. There will most likely be impacts to some of these.

4.1.7.10 Borrow and Disposal Sites

It is anticipated some borrow material will be needed for this project. In accordance with the NCDOT "Standard Specifications for Roads and Structures", Section 230, Borrow Excavation, borrow sources will be furnished by the Contractor except where otherwise indicated by the plans or special provisions. Prior to the approval of any borrow sources developed for use on this project, the Contractor will be required to furnish to the NCDOT, a certification for the State Historic Preservation Officer (SHPO) certifying that the removal of the borrow material from the borrow source will have no effect on any known district, site building, structure, or object that is included or eligible for inclusion in the National Register of Historic Places. Additionally, the NCDOT and its contractors will not excavate, fill, or perform land clearing activities within Waters of the U.S. or any areas under the jurisdiction of the Department of the Army, Corps of Engineers (COE), except as authorized by the COE.

To ensure that all borrow and waste activities occur on high ground, except as authorized by permit, the NCDOT shall require its contractors to identify all areas to be used to borrow materials, or to dispose of dredge, fill, or waste material. Documentation of the location and characteristics of all borrow and disposal sites associated with the project will be available to the COE on request. In addition, the NCDOT and its contractors will not excavate, fill or perform land clearing activities on any borrow or waste site until the site is investigated by a qualified biologist and a determination that such activities will have no effect on any federally protected species. Documentation of the site investigation will be available upon request.

4.1.7.11 Traffic Maintenance and Detour Accessibility

Several local secondary roads will be rerouted to avoid construction activities resulting in temporary inconveniences to local residents. Appropriate signing will be installed to assist road users with the changes. Advance notice will be made to the public to alert them of new traffic restrictions and the proposed work. The contractor will conduct work in a safe and efficient manner that will create a minimum amount of inconvenience to roadway users.

4.1.7.12 Bridge Demolition

Bridge No. 26, Osborne Road (SR 1104) over Baggett's Creek, is located near the southern terminus of the proposed project and will be demolished. The part of Osborne Road (SR 1104) where Bridge No. 26 is located is being realigned as a result of the US 1 Bypass.

No temporary fill is expected to result from removal of the existing bridge. NCDOT's Best Management Practices for Construction and Maintenance Activities must be applied for the removal of this bridge.

4.1.8 Irreversible and Irretrievable Commitment of Resources

The proposed project will require certain irreversible and irretrievable commitments of resources. Land within the proposed right of way will be committed to transportation use and other existing uses such as businesses, residences, biotic communities, forested land, and wetlands will be permanently lost. Noise levels within close proximity of the new roadway will

increase. In addition to these impacted resources, the construction of the new facility will include a commitment of economic resources, manpower, and materials from Richmond County.

Construction of the proposed highway improvements will provide a critical segment of the US 1 Intrastate corridor. This corridor will enhance access and encourage local and regional economic development throughout the study area. The highway improvements will also reduce the number of accidents, decrease the time spent on travel, and reduce fuel consumption.

In summary, the project's irretrievable commitment of resources is balanced by the beneficial effects of maintaining and improving the community's economic base and improving local and regional transportation service.

4.1.9 Short-Term Impacts Versus Long-Term Benefits

The short-term adverse impacts of the project will occur primarily during the construction period. These impacts include increased noise and air pollution, increased erosion and siltation of streams and ponds, displacement of natural habitats and some disruption of utilities and traffic. However, no adverse long-term effects are expected from the construction activities.

A long-term effect will be the loss of tax base due to the land purchased by the state for right of way. The few homes and businesses acquired can be adequately relocated in the community. The increased value of land along the corridor resulting from improved access should more than offset the value of land lost in right-of-way acquisition.

The proposed US 1 Bypass and improvements to existing US 1 will have positive long-term effects on the intrastate corridor through North Carolina and through Richmond County by decreasing travel time, saving energy, improving traffic safety, improving traffic operations on the existing roadway network, providing a bypass of the historic downtown district in Rockingham for large trucks and through traffic, and providing a missing link in the US 1 Intrastate corridor.

Good land use planning and zoning control by local communities will ensure development along the proposed improvement will be compatible with the highway facility and existing land use.

4.2 Indirect and Cumulative Effects

As required by the Council of Environmental Quality (CEQ) regulations (CFR Regulations, Title 40, Section 1502.16), a discussion of both the direct and indirect effects of the proposed action must be addressed in this document. Direct effects are those effects that are caused by the action and occur at the same time and place. Direct effects are those effects that are primarily discussed throughout the Environmental Consequences section of this document.

Indirect or secondary effects are those effects, "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." Examples of indirect effects may include growth inducing effects and other effects related to induced changes in land use patterns, population density or growth rate, and related effects on air, noise, water and other natural systems, including ecosystems.

Cumulative effect is the "impact on the environment which results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." Cumulative impacts can result from individually minor actions but collectively represent a significant impact over a longer period of time.

Refer to NCDOT's Qualitative Indirect and Cumulative Effects document (October 3, 2005) for more details of the analysis of indirect and cumulative effects associated with this project.⁴

4.2.1 ICE Study Area Boundary

The North Carolina DOT's and North Carolina Department of Environment and Natural Resources (NCDENR) Guidance for Assessing Indirect and Cumulative Impacts of Transportation Projects in North Carolina indicates that the development effects of a new or improved roadway facility are most often found up to one mile around an interchange, and up to two to five miles along major feeder roadways to the interchange. Based upon these assumptions, and the fact that TIP Project R-2501 includes the widening of an existing facility and the construction of a fully controlled bypass on new location, it was determined that the potential for growth impact as a result of TIP Project R-2501 will most likely occur within a two-mile radius of the project alignment (see Figure 4.3). After performing a field survey of local conditions, interviewing local officials, and using professional judgment, this area was deemed sufficient to encompass the majority of potential indirect and cumulative effects resulting from TIP Project R-2501.

This two-mile radius, referred to as the Growth Impact Study Area (GISA), is the area within which the project has the potential to induce land use changes. Although the GISA was the focus of data collection and analysis activities for this study, it is not necessarily the extent to which the growth impact is expected to occur. More specific areas within the GISA that are likely to experience land use changes as a result of the roadway improvements will be identified later in this report.

4.2.2 Timeframe for Analysis

According to the NCDOT "Guidance for Assessing Indirect and Cumulative Impacts of Transportation Projects in North Carolina", the time frame should be short enough in duration to anticipate reasonably foreseeable events, but should be long enough in duration to capture the development and relocation effects that may only transpire over the course of several business cycles. Most indirect / cumulative effects studies set a time horizon equal to the planning design life of a project (from conception to completion), usually 20 to 25 years. This is also the time horizon used in most MPO and county-level planning forecasts.

⁴ The Qualitative Indirect and Cumulative Effects (ICE) document for this project was completed in October 2005, before the preferred alignment was revised to include a reconfigured interchange at US 74 Bypass and an interchange at Wiregrass Road (SR 1640) / County Home Road (SR 1624). The ICE study area included these two areas; therefore, they were accounted for in the 2005 document. A review of the ICE for consistency with recent conditions was conducted. Though the overall conclusions of the ICE analysis have not changed, the appropriate information in Section 4.2, *Indirect and Cumulative Effects* has been updated accordingly.

In evaluating the timeframe for which impacts may occur as a result of highway improvements, Mark Hansen and Robert Cervero found that models which measure impacts within four to five years of road improvements best capture variation in travel demand. Cervero goes on to note that “a time lag of more than five years from project announcement to new development is not uncommon. The time between when capacity is actually added and when induced development occurs is likely shorter, on the order of two to three years.”

4.2.3 Inventory of Notable Features

Numerous state and federally protected species, several natural communities, a 303(d) impaired stream (Marks Creek), wetlands, three water supply watersheds (Falling Creek, Marks Creek, and Hitchcock Creek), 14 potential hazardous materials sites, three National Register Districts (the Hannah Pickett Mill #1 site, the Covington Plantation House, and the Main Street commercial district in Hamlet), and a high-quality water body (Marks Creek) are all located within the GISA of TIP Project R-2501. Additionally, a CSX rail line, the Sandhills and Pee Dee Game Lands, the North Carolina Speedway and associated straight track, two golf courses, and the Rockingham–Hamlet Airport are located within the GISA of TIP Project R-2501.

4.2.3.1 Water Resources

In terms of federal environmental regulations, in 1972, the National Pollutant Discharge Elimination System (NPDES) program was established under the authority of the Clean Water Act. Phase I of the NPDES stormwater program was established in 1990. It requires NPDES permit coverage for large or medium municipalities with populations of 100,000 or more. In North Carolina, there are six Phase I communities. The Phase II program extends permit coverage to smaller (< 100,000 pop.) communities and public entities that own or operate a municipal separate storm sewer system (MS4) by requiring them to apply for and obtain an NPDES permit for stormwater discharges. Federal law requires communities and public entities that own or operate an MS4, and that meet either of the following two conditions, to obtain an NPDES Phase II stormwater permit:

- 1) The MS4 is located in an urbanized area as determined by the latest Decennial Census of the Bureau of the Census. If the MS4 is not located entirely within an urbanized area, only the portion that is within the urbanized area is regulated.
- 2) The community or public entity is designated by the NPDES permitting authority. In the state of North Carolina, the NPDES permitting authority is the Environmental Management Commission (EMC).

Based upon North Carolina Division of Water Quality (NCDWQ) data, neither Richmond County nor Rockingham is considered a Phase I or Phase II county/urbanized area, and therefore does not fall under the jurisdiction of these regulations.

In terms of State environmental regulations, the North Carolina Division of Land Resources' Sediment and Erosion Control Act requires that any development disturbing more than one acre of land within the State of North Carolina to submit a Sedimentation and Erosion Control Plan to the Division of Land Resources. Local governments may review and enforce the plan within

their jurisdiction, but the plan has to be as strict as the program administered by the Division of Land Resources. Site disturbances of less than one acre require the use of Best Management Practices (BMPs), but not a site plan. According to the NCDOT report entitled “Best Management Practices for Protection of Surface Waters” (March 1997), BMPs include activities, practices, and procedures undertaken to prevent or reduce water pollution. This includes things such as: on-site detention areas, vegetative buffers, culverts, and erosion control mechanisms.

Floodplains are distributed throughout the GISA of TIP Project R-2501, with major floodplain areas located along Marks Creek, the McKinney Lake area, Falling Creek, and Chock Creek. The City of Rockingham Unified Development Ordinance and the Richmond County Floodplain Damage Protection Ordinance limit the type and intensity of development within designated floodplains, while at the same time establishing construction guidelines within the floodplain. Furthermore, it requires a 20- foot buffer, or a buffer of five times the width of the stream at top of bank (whichever is greater), in areas along streams without designated floodplains. These ordinances should serve to limit the amount and intensity of development within floodplains, and thereby help protect the water quality within the GISA. Also, according to Hamlet officials, the City of Hamlet does not have their own floodplain protection ordinance, but follows the guidelines established by the Richmond County Floodplain Damage Protection Ordinance.

Water Supply Watersheds

Geographic Information Systems (GIS) data obtained from the NCDOT and NCDWQ indicates the presence of three water supply watersheds within the GISA. Falling Creek is located east of Rockingham in the central portion of the GISA and is classified as a WS-III water supply watershed. The majority of the critical area for that watershed is located within the GISA north of County Home Road. Hitchcock Creek, encompassing much of the eastern portion of the GISA, is considered a WS-III water supply watershed. Additionally, a limited portion of the Marks Creek WS-II water supply watershed (including the critical area) is located east of Dobbins Heights along the eastern boundary of the GISA. The designation of Marks Creek as a Class II water supply watershed qualifies it as a high quality water body.

NCDWQ, working under the direction of the United States Environmental Protection Agency (EPA), has been delegated the responsibility of protecting the state’s surface and ground water resources. In order to accomplish this task, a number of environmental regulations have been created. These environmental regulations exist for each river basin, and separate regulations exist for the water supply watersheds. The following is a summary of the water supply watershed regulations with regard to TIP Project R-2501:

Marks Creek Water Supply Watershed (Class II)

- Development within the protected area is restricted to one dwelling unit per acre or 12% built-upon area for the low density option and one dwelling unit per acre or 12-30% built-upon area for the high density option (required to control the 1” storm event).
- Development within the critical area of these watersheds is restricted to one dwelling unit per two acres or 6% built-upon area for the low density option and one dwelling unit per two acres or 6-24% built-upon area for the high density option. The critical area is the area adjacent to a water supply intake or reservoir where risk associated with pollution is greater than from the remaining portions of the watershed.

Hitchcock Creek & Falling Creek Water Supply Watersheds (Class III)

- Development within the protected area is restricted to two dwelling units per acre or 24% built-upon area for the low density option and two dwelling units per acre or 24-50% built-upon area for the high density option (required to control the 1” storm event).
- Development within the critical area of these watersheds is restricted to one dwelling unit per acre or 12% built-upon area for the low density option and one dwelling unit per acre or 12-30% built-upon area for the high density option. The critical area is the area adjacent to a water supply intake or reservoir where risk associated with pollution is greater than from the remaining portions of the watershed.

Furthermore, the Rockingham Unified Development Ordinance states that portions of watersheds that fall within the ETJ or corporate limits of the city of Rockingham require a minimum 100-foot vegetative buffer for all new development that exceeds the low density option. Otherwise, a 30-foot vegetative buffer will be required for all perennial waters indicated on the most recent versions of United States Geological Survey (USGS) 7.5 minute quadrangle maps.

The GISA of TIP Project R-2501 encompasses portions of two different river basins, the Yadkin-Pee Dee River Basin and the Lumber River Basin. The Yadkin-Pee Dee River Basin covers the majority of the GISA with the exception of a small portion near the Richmond / Scotland County Line. Two sub-basins of the Lumber River comprise the remainder of the GISA and are confined to an area south of US 1 and east of NC 177. According to NCDWQ Basinwide plans for these river basins, the following information was retrieved:

- The Yadkin-Pee Dee River Basin portion of the GISA is totally comprised of sub-basin 03-07-16. Water quality throughout the basin generally received a ‘good-fair’ rating. Despite this, according to the sub-basin report, most water bodies have some notable water quality impacts. Most of these problems are associated with the Hamlet wastewater treatment facility and non-point sources of pollution such as swine farming and urban run-off. Marks Creek and Hitchcock Creek are two of 55 watersheds within the Yadkin – Pee Dee River basin that have been identified by the North Carolina Wetlands Restoration Program (NCWRP) as areas with the greatest need and opportunity for wetland and stream restoration efforts.
- The GISA contains a portion of sub-basin 03-07-55 within the Lumber River Basin. According to the sub-basin report, water quality monitoring generally produced a bio-classification rating of ‘good’ or ‘good-fair’. In order to prevent aquatic habitat degradation as a result of increasing development pressure, the sub-basin report recommended that protection measures be put in place immediately. Furthermore, all waters within the sub-basin are considered impaired due to the presence of mercury and are subject to a fish consumption advisory.
- The eastern edge of the GISA contains a small portion of sub-basin 03-07-50 of the Lumber River Basin. According to the sub-basin report, water quality monitoring generally produced a bio-classification of ‘excellent’ or ‘good’ throughout the sub-basin. In order to prevent aquatic habitat degradation as a result of increasing development pressure, the sub-basin report recommended that protection measures be put in place immediately. Furthermore, all waters within the sub-basin are considered impaired due to the presence of mercury and are subject to a fish consumption advisory.

303(d) Waters

The 303(d) list is a product of the Clean Water Act, which requires states to identify those waters that do not meet water quality standards or those that have impaired uses. If control strategies for point and non-point source pollution exist for impaired waters, they may be excluded from the 303(d) list. The NCDOT GIS data reveals Marks Creek as the only 303(d) water body within the GISA of TIP Project R-2501. A search of DWQ's 2010 Final 303(d) List reveals that Marks Creek is included due to impaired biological integrity. Marks Creek falls within sub-basin 03-07-16 of the Yadkin-Pee Dee River Basin with urban runoff from storm sewers listed as a potential source of the impairment. According to DWQ's report on the Lumber River Basin, all waters within sub-basins 03-07-50 and 03-07-55 are considered impaired on an evaluated basis and are subject to a fish consumption advisory.

Wetlands

According to National Wetlands Inventory GIS information, wetland areas are scattered throughout the entire GISA of TIP Project R-2501. Concentrations of wetlands exist along the entire length of Marks Creek, Chock Creek and its tributaries, McKinney Lake and its tributaries, and the southwestern portion of the GISA near Osborne Road. Other than direct impacts to wetlands, the overall scattered nature and expected concentration of development within specific areas of the GISA should limit any potential indirect impacts to wetlands within the GISA.

4.2.4 Activities That Cause Effects

4.2.4.1 Previous Report Conclusions

1998 Natural Systems Report

- Although potential indirect impacts to the foraging habitat of the red-cockaded woodpecker are unresolved, no other federally or state-protected species should be indirectly impacted by this project.
- Despite suffering from limited direct impacts, water quality within the area should not be indirectly affected by TIP Project R-2501.

1999 Draft Environmental Impact Statement (DEIS)

The 1999 DEIS for TIP Project R-2501 concludes the following:

- A biological conclusion of "no effect" was rendered for all state or federally protected species with the exception of the red-cockaded woodpecker.
- The red-cockaded woodpecker received a biological conclusion of "not likely to adversely affect". An additional investigation for the red-cockaded woodpecker may be required for a pine tree observed in an area northeast of the intersection of US 1 and Fox Road (SR 1606).
- No properties included on or eligible for the National Register of Historic Places within the TIP R-2501 project area will be affected by this project. No Section 6(f) or Section

4(f) properties would be impacted by this project. Furthermore, it is anticipated that any hazardous materials sites will be avoided or would not pose enough concern to interfere with the project.

- Cumulative impacts associated with the project include the movement of people, commerce, and businesses out of Rockingham and into surrounding portions of Richmond County as regional access increases.

1999 Red-Cockaded Woodpecker Survey

The 1999 red-cockaded woodpecker survey for TIP Project R-2501 determined the biological conclusion of “not likely to adversely affect”. The biological conclusion has since been updated to “no effect.”

2001 Supplemental Draft Environmental Impact Statement (SDEIS)

The 2001 SDEIS documents changes that have occurred to TIP Project R-2501, including the extension of the proposed project from Fox Road (SR 1606) to Marston Road (SR 1001) and the evaluation of a new preliminary alternative. The 2001 SDEIS concludes the following:

- The preferred alternative has the potential to adversely affect local water quality through increased stormwater runoff; however, due to the lack of proposed stream crossings and the limited number of streams along the corridor, it is likely that water quality impacts will be minimal.
- The proposed project will have an overall positive impact on the economy throughout the area by providing improved access to businesses, the creation of temporary construction jobs, and jobs resulting from new commercial or industrial development.

4.2.4.2 Recent Development Activity

The October 2005 Qualitative ICE document reported commercial and industrial development had been occurring at specific locations within the GISA of TIP Project R-2501. Commercial development was expanding southward from Rockingham along US 74 Business in the form of big-box retail centers, restaurants, offices, and shopping plazas. A smaller amount of commercial growth had also occurred along the Hamlet portion of US 74 Business. At the time, there had been several developers interested in property, or holding property, in the vicinity of the proposed US 74 Business interchange with TIP Project R-2501.

According to the 2005 ICE document, industrial development within the GISA had also been confined to specific locations and was also occurring on a relatively limited scale. At that time, construction of industrial facilities was ongoing at the Pine Hills Industrial Park [intersection of County Home Road (SR 1624) and NC 177] and just outside of the GISA at the Richmond County Industrial Park (west of the intersection of NC 38 and US 74). Several other companies were exploring the possibility of locating within these industrial parks. Local officials indicated the area fronting the project corridor between the Airport Road (SR 1966) and US 74 Bypass interchanges would be prime industrial land. At the time, local officials indicated that much of the growth and industrial development interest was likely a result of the US 74 Bypass, the proposed US 1 Bypass (TIP Project R-2501), and the proposed I-73 / 74 corridor.

Residential development activity was reported in the 2005 ICE document to be minimal throughout the GISA of TIP Project R-2501. Only scattered single-family residences (mostly manufactured houses) had recently been constructed in rural areas and restricted subdivisions throughout the GISA. At the time, a residential subdivision containing 69 units had been approved along Battley Dairy Road (SR 1900), southeast of the proposed Airport Road (SR 1966) interchange. Local officials had indicated that several subdivisions (greater than 60 units) had been approved, or were currently under construction, along McDonald Church Road (SR 1475) north of the existing US 1 corridor. The 2005 ICE document also indicated that, according to local officials, northeastern Rockingham (north of the GISA) has been the focus of most of the recent residential growth.

Local officials have more recently (as of the time of this FEIS) said the development described above has stopped. They do not anticipate any considerable development to occur in Rockingham or Richmond County in the foreseeable future.

4.2.5 Potential Indirect and Cumulative Effects for Analysis

The North Carolina DOT, in their April 2001 handbook titled “*Guidance for Assessing Indirect and Cumulative Impacts of Transportation Projects in North Carolina*,” outlines a set of factors that needs to be evaluated to determine whether or not a more detailed indirect and cumulative impact analysis (ICI) may be necessary for specific projects. The following is an assessment of those factors as they relate to TIP Project R-2501.

Conflict with local plan:

TIP Project R-2501 is in agreement with “The Thoroughfare Plan for the Cities of Rockingham – Hamlet” which calls for a freeway / expressway bypass between the cities of Rockingham and Hamlet. TIP Project R-2501 includes full-access control and a median along its entire length, limiting growth to areas surrounding the interchanges and along feeder roadways to those interchanges. This appears to be consistent with local zoning and land use plans, which call for a mix of low density residential and agricultural uses throughout most of the GISA, and commercial or industrial land uses near the proposed interchanges.

Explicit economic development purpose:

While there is no explicit economic development purpose for this project, local officials see TIP Project R-2501 as a potential catalyst for economic development. They are hoping that the combined effects of TIP Project R-2501, the US 74 Bypass, and the future I-73 / I-74 corridor, will spur industrial and commercial development. The purpose of this project is to reduce travel time; reduce congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets; and improve mobility on the designated US 1 Strategic Highway Corridor.

Planned to serve specific development:

TIP Project R-2501 does not appear to be designed to serve a specific development.

Likely to stimulate land development having complementary (to highway-related travel) functions:

The assessment of this factor partially involves an evaluation of a subset of factors commonly used to determine the potential for growth resulting from transportation projects including:

- Distance to a major urban center
- Traffic volumes on intersecting roadways
- Presence of frontage roads
- Availability of water / sewer

TIP Project R-2501 is primarily located within rural Richmond County (with a short section within the incorporated limits of the City of Hamlet) in south-central North Carolina. The project is located in close proximity to the urban centers of Rockingham and Hamlet, and is located approximately 50 miles west of the nearest major urban center, Fayetteville, North Carolina.

There are no frontage roads proposed as part of TIP Project R-2501.

Richmond County provides water along several major roads throughout the GISA and has excess capacity at their water treatment facility. Rockingham provides water and sewer services throughout most of the city, its ETJ, and some portions of surrounding Richmond County. Local officials indicated that they have excess capacity at their sewer treatment facility, and can provide additional water capacity by utilizing the Richmond County system. The City of Hamlet provides water and sewer service within the city, its ETJ, the Town of Dobbins Heights, and small portions of Richmond County. Hamlet officials indicated that their existing treatment facilities were operating under capacity with room for expansion. All three utility providers indicated a willingness to expand their existing systems if development opportunities existed and the extensions were feasible. Based upon this information, utilities could become available in areas surrounding Hamlet and Rockingham, but a lack of sewer will probably continue to exist in the eastern and western portions of the GISA.

Likely to influence intraregional land development location decisions:

TIP Project R-2501 has a low-moderate likelihood of influencing intraregional land development depending upon the location within the GISA. Lack of a market for development, a depressed economy, and limited availability of public utilities will likely limit the amount of development within the majority of the GISA. Some portions of the GISA, particularly near the proposed interchanges and connecting roadways, are much more likely to be influenced by TIP Project R-2501. When TIP Project R-2501 is combined with the US 74 Bypass and the proposed I-73 / I-74 corridor, the improved regional transportation network could generate new interest in development within the GISA, particularly for industrial (distribution-related) uses.

Notable features present in GISA:

There are a number of notable features within the GISA of TIP Project R-2501. See Section 4.2.3, *Inventory of Notable Features* for more information.

4.2.6 Potential for Land Use Change

To further evaluate whether indirect and cumulative impacts would likely result from TIP Project R-2501, an analysis of a set of quantitative factors was completed. This analysis helps to determine the potential for land use changes as a result of the project. Table 4-9 indicates the results of this rating analysis:

Table 4-9: Potential For Land Use Change, 2000-2020

Rating	Change in Accessibility	Change in Property Values	Forecasted Growth	Land Supply vs. Land Demand	Water/ Sewer Availability	Market For Development	Public Policy
Strong	> 10 min. travel time savings	> 50% increase in property values	> 3% annual pop. Growth	< 10-year supply of land	Existing service available	Development activity abundant	Less stringent; no growth management
^	X						
“							
“					X		X
“		X		X		X	
“			X				
Weak	< 2 min. travel time savings	No property value increase	0-1% annual pop. Growth	> 20-year supply of land	No service available now or in future	Development activity lacking	More stringent; growth management

TIP Project R-2501 proposes to construct a 15-mile, fully-controlled, four-lane bypass of Rockingham on new location and widen approximately 4 miles of existing US 1 to a four or five-lane facility northeast of Rockingham. The project will divert traffic from downtown Rockingham, eliminate traffic signals and turning motions, and control access to an improved facility capable of sustaining higher vehicular speeds. Based upon these characteristics and the length of the project, it is likely that a substantial travel time savings (greater than 10 minutes) would be experienced as a result of this project. The greatest travel time savings would likely be recognized by workers commuting between Rockingham and Southern Pines or tourists traveling to or from Southern Pines.

Property values could experience localized increases along the bypass portion of the project, especially in the vicinity of proposed interchanges. However, since the majority of TIP Project R-2501 involves the construction of a fully-controlled facility in a low-growth, rural area, it is likely that property values will experience minimal increases throughout most of the GISA.

The population of the Demographic Area grew at approximately 0.4% annually between 1990 and 2000, while Richmond County is projected to experience a 0.2% annual growth rate between 2000 and 2020. These factors, coupled with the stagnant economy, lack of development pressure, and large amount of developable land, likely indicate that there is a greater than 20-year supply of land available for development within the GISA of TIP Project R-2501.

According to Richmond County officials, water service exists along several major roads throughout the unincorporated portions of the county. The water distribution system in Richmond County is currently operating under capacity and could be expanded in the future, if necessary. Sewer service is virtually non-existent in Richmond County, with the exception of some sewer service provided in the ETJ's of Rockingham and Hamlet. Sewer and water service within Rockingham is provided by the city and extends into its ETJ in some instances. Rockingham officials indicated that sewage treatment facilities are operating under capacity and water supplies can be expanded by purchasing additional water from Richmond County. Hamlet officials indicated that water and sewer services were provided throughout most of the city, with utility lines extending into their ETJ and the Town of Dobbins Heights. Furthermore, they indicated that both treatment facilities were currently operating under capacity. Officials from all three governing bodies indicated a willingness to extend existing utility lines to new developments if feasible.

Development throughout the majority of the GISA is stagnant. The most recent development (four to five years ago) was related to industrial uses in several business parks, commercial activity along US 74 Business, and residential development along McDonald Church Road (SR 1475) and Battley Dairy Road (SR 1900).

Growth management strategies in the form of zoning ordinances and land use plans are in place for Richmond County and all municipalities encompassed by the GISA. Consequently, it is likely that such policies will be able to control the amount and intensity of potential growth resulting from this project.

4.2.7 Endangered Species

Potential suitable habitat for the red-cockaded woodpecker exists in the study area, however, no evidence of nesting cavities was found in the most recent survey. Suitable habitat for the Carolina heelsplitter, Michaux's sumac, and the Rough-leaved loosestrife exist in the study corridor.

Continued development in the study area could impact habitat, further reducing the available habitat. Therefore, decreased available habitat is expected to result from indirect and cumulative effects.

4.2.8 Floodplains

The preferred alternative will impact 100-year floodplains associated with streams within the study area. Nearly all stream crossings will be perpendicular, which will minimize impacts to associated floodplains. All culverts designed for the project will be sized to ensure that no increases to the extent and level of flood hazard risk would result from such encroachments.

4.2.9 Water Quality

Indirect effects to water quality resulting from the proposed project are expected to result from the increased area of impervious surface created by the roadway itself. As development is shifted to the bypass corridor and interchanges, cumulative effects are caused by an increase in

impervious surface coverage, resulting in the potential for increased non-point sources of pollution and increased stormwater runoff rates. The streams in the vicinity of the corridor could then suffer from a decrease in overall water quality.

4.2.10 Summary of Indirect and Cumulative Effects

4.2.10.1 Indirect Effects

The creation of the US 1 Bypass around Rockingham and Hamlet should increase capacity, relieve downtown traffic congestion, and improve regional traffic flow throughout the project area. With respect to estimating any potential indirect effects relating to this project, the findings indicate that TIP Project R-2501 has a low to moderate potential to indirectly cause land use changes or accelerate growth and development throughout the GISA.

TIP Project R-2501 generally bisects low-growth, rural portions of Richmond County. Most of this land is unlikely to experience development due to limitations such as environmental restrictions (wetlands, floodplains, and water supply watersheds), lack of utilities (limited availability of water and sewer for most of the GISA), and the presence of state and privately owned lands (State game lands and timberland properties). These limitations, combined with the general lack of a market for extensive development, seem to indicate that growth related to TIP Project R-2501 will be constrained throughout most of the GISA. Any induced growth would predominantly be in the form of land use conversion from lower intensity uses (agricultural, vacant, and forest) to higher intensity uses (industrial, highway-oriented commercial, and residential), as well as an acceleration of already approved development.

Most potential development would likely occur in close proximity to the interchanges [US 74 Bypass, Airport Road (SR 1966), US 74 Business, and Wiregrass Road (SR 1640) / County Home Road (SR 1624)] of the proposed bypass portion of the project. Industrial development resulting from the project would likely be focused in specific areas within the GISA (or just outside of it), most notably the Pine Hills Industrial Park, the Richmond County Industrial Park, along the Airport Road (SR 1966) corridor, or in close proximity to one of the interchanges. Due to the controlled access nature of the majority of this project, commercial development would likely be limited to areas near the interchanges or continue developing along the US 74 Business corridor. This commercial development would likely include big box retailers, restaurants, office space, and other smaller retail outlets.

Typical highway commercial development could occur at one of the several key intersections along the widening portion of the project (in the vicinity of the US 1 / US 1 Bypass and US 1 / NC 177 intersections). Scattered residential development could occur in one of the several existing manufactured housing subdivisions throughout the GISA, in the McDonald Church Road (SR 1475) area, or along feeder roads near one of the proposed interchanges. Despite these development trends there should be minimal other induced development within the GISA of TIP Project R-2501.

4.2.10.2 Cumulative Effects

TIP Project R-2501 involves the construction of a new location bypass around Rockingham and Hamlet, as well as the widening of an existing segment of US 1 northeast of Rockingham where the majority of the area is relatively rural. TIP Project R-2501 will provide a connection to the future I-73 / I-74 via US 74 Bypass, which is to be part of future I-73 / I-74. An adjacent project, TIP Project R-2502, involves widening US 1 to multi-lanes from Marston Road (SR 1001) to the Richmond / Moore County line [see Section 1.6.2, *NCDOT Transportation Improvement Program (TIP)* and Figure 1.3]. Another nearby project, TIP Project R-3421, will extend the US 74 Bypass (future I-73 / I-74 Corridor) on new location to the US 220 Bypass north of Rockingham. These connections should help improve the overall flow of traffic and goods throughout the region.

Other than the roadway improvement projects described above, there has not been much, if any, development (residential, commercial, or otherwise) or infrastructure improvements in the past four to five years according to local officials. There are also no current projects of these types ongoing or planned in the foreseeable future.

The vast majority of land within the GISA is rural and contains minimal utility and transportation infrastructure. Land is generally being utilized for agriculture, forestry, conservation (the Pee Dee and Sandhills Game Lands), and low density residential purposes. Population growth has been relatively stagnant, the economy has been suffering through substantial job losses, and utilities are lacking throughout most of the GISA. Despite these facts, when TIP Project R-2501 is coupled with other roadway projects in the area, most notably the future I-73 / I-74 facility, specific areas within the GISA will become more attractive for development. That growth should predominantly take the form of commercial and/or industrial facilities and will likely be concentrated around the many highway interchanges and along the roads that feed into them.

Furthermore, existing land planning and development policies, the large amount of rural and conservational lands, the general lack of utilities (except in built-up areas), low population growth, and a stagnant economy should limit the potential of any induced growth to further degrade the water quality of the area.

Climate Change/ Greenhouse Gas Emissions

The issue of greenhouse gas emissions and their effects on global climate is an important national and global issue, in which FHWA is actively engaged. FHWA has been working with other Federal agencies, including the United States Environmental Protection Agency (USEPA) and the Department of Energy, to evaluate effective approaches consistent with our national goals. However, no national approach has yet been set in law or regulations, nor has the USEPA established criteria or thresholds for greenhouse gas emissions. Because a national strategy to address greenhouse gas emissions from transportation – and all other sectors – is still being developed, FHWA believes it is premature to implement policies that attempt to incorporate consideration of greenhouse gas emissions into transportation planning.

From a NEPA perspective, it is analytically problematic to conduct a project-level cumulative effects analysis of greenhouse gas emissions on a problem that is global in nature. It is technically unfeasible to accurately model how negligible increases or decreases in carbon dioxide (CO₂) emissions at a project scale would add or subtract to the carbon emissions from around the world. Given the level of uncertainty involved, the results of such an analysis would not be likely to inform decision-making at the project level, while adding considerable administrative burdens to the NEPA process. The scope of any such analysis, with any results being purely speculative, goes far beyond the disclosure of impacts needed to make sound transportation decisions. FHWA believes this approach meets the stated purpose of NEPA, in accord and with CEQ regulations, to concentrate on the analyses of issues that can truly be meaningful to the project decisions, rather than simply amassing data.

5.0 LIST OF PREPARERS

The principal participants in the preparation of the Final Environmental Impact Statement for the improvements for US 1 are listed below.

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BA, Environmental Studies
Responsible for natural resource investigations,
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document preparation. Eight years experience.

6.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE STATEMENT ARE SENT

A Draft EIS was approved for the project on June 30, 1999, and A Supplemental Draft EIS was approved on April 27, 2001. A Reevaluation Draft was approved on December 6, 2007 and distributed to appropriate federal, state, and local agencies. Distribution lists associated with the DEIS and Supplemental are included in Section 7.1, *Agency Coordination*. The document was also made available to the public.

The agencies listed below will receive a copy of the Final EIS.

Federal Agencies

- Advisory Council of Historic Preservation
- Department of Agriculture
- Department of the Army, Wilmington District, Corps of Engineers
- Department of Commerce
- Department of Health and Human Services
- Department of Housing and Urban Development
- Department of Interior, Fish and Wildlife Service
- Department of Transportation, Federal Aviation Administration
- Environmental Protection Agency
- Federal Emergency Management Agency
- General Services Administration

State Agencies

- Department of Administration, State Clearinghouse
- Department of Cultural Resources, State Historic Preservation Office
- Department of Environment and Natural Resources, Division of Air Quality
- Department of Environment and Natural Resources, Division of Forest Resources
- Department of Environment and Natural Resources, Division of Parks and Recreation
- Department of Environment and Natural Resources, Division of Water Quality
- North Carolina Department of Public Instruction
- Wildlife Resources Commission

Local Governments

- Richmond County
- City of Hamlet
- City of Rockingham

Other Local Organizations

- Lumber River Rural Planning Organization

Public Review Locations

- Rockingham City Hall
- Richmond County Public Library
- NCDOT, Division 8 Office

7.0 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

7.1 Agency Coordination

7.1.1 Scoping and Coordination Conducted Prior to Publication of the 1999 DEIS

In October of 1994, a memorandum was sent out to solicit scoping comments from the different agencies related to the project by December 1994. Concurrence on the purpose and need for this project was provided in the NCDOT memorandum dated October 2, 1997, entitled "Integration of the Section 404 and NEPA process – A Team Approach for Transportation Projects in North Carolina." A letter dated November 23, 1998, from the Department of the Army, Corps of Engineers (Wilmington District) reaffirmed their concurrence on the purpose and need for the US 1 project. A formal Notice of Intent to prepare an Environmental Impact Statement for the project was published in the Federal Register on August 15, 1997. At that time, the project was referred to as Federal-aid Project NHF-1(1), R-2501, Richmond County – Improvements and / or relocation of US 1 from Sandhill Road (SR 1971) south of Rockingham to Indian Lake Road (SR 1479) north of Marston. The scoping comments request was sent to the following agencies, municipalities, and organizations.

Federal Agencies

- Department of Agriculture – Forest Service*
- Department of Agriculture – Natural Resources Conservation Service*
- U.S. Army Corps of Engineers*
- U.S. Department of Interior – U.S. Fish and Wildlife Service
- U.S. Department of Transportation – Federal Aviation Administration
- U.S. Forest Service
- U.S. Geological Survey
- U.S. National Park Service

State Agencies

- Department of Cultural Resources, State Historic Preservation Office
- Department of Environment, Health, and Natural Resources – Legislative & Intergovernmental Affairs*
- Department of Environment, Health, and Natural Resources – Division of Environmental Management*
- Department of Environment, Health and Natural Resources – Division of Forest Resources*
- Department of Environment, Health and Natural Resources – Division of Land Resources*
- Department of Environment, Health, and Natural Resources – Division of Soil and Water Conservation*
- Department of Environment and Natural Resources – Division of Parks and Recreation*
- Department of Public Instruction

- North Carolina State Clearinghouse*
- North Carolina Wildlife Resources Commission*

Municipalities and Local Government Organizations

- Chairman, Richmond County Board of Commissioners
- Region H Planning Agency
- Town of Hamlet
- Town of Rockingham

Agencies who responded are marked with an asterisk (*). These responses are included in Appendices A.1-A.3.

7.1.2 Summary of Agency Comments on the 1999 DEIS

The 1999 DEIS was circulated to federal and state environmental review and regulatory agencies as well as local governments to solicit comments. The following agencies and municipalities were provided a copy of the DEIS:

Federal Agencies

- U.S. Department of Agriculture*
- U.S. Department of the Army, Wilmington District, Corps of Engineers*
- U.S. Department of the Interior*
- U.S. Department of Transportation – Federal Aviation Administration*
- U.S. Environmental Protection Agency*

State Agencies

- North Carolina Department of Administration, Clearinghouse
- North Carolina Department of Environment and Natural Resources
- North Carolina Department of Natural Resources – Division of Forest Resources*
- North Carolina Department of Natural Resources – Division of Parks and Recreation
- North Carolina Department of Natural Resources – Division of Water Quality*
- North Carolina Wildlife Resources Commission*

Municipalities and Local Government Organizations

- Richmond County
- Town of Hamlet
- Town of Rockingham

An asterisk indicates a comment was received from the agency or municipality. The full set of comment letters on the Draft Environmental Impact Statement from federal and state agencies are provided in Appendices A.1-A.3. Substantive comments from the agencies are quoted below, followed by a response.

U.S. Department of the Army, Wilmington District, Corps of Engineers

In a letter dated January 3, 2000, (see Appendix A.1), the Army Corps of Engineers offered the following comments:

1. **Comment:** “[F]lood plain involvement is noted on page 3-37 of the ... DEIS. We also note the discussion of impacts on page 4-34 and commend your agency’s intention to coordinate any potential floodway modification with the local community and the Federal Emergency Management Agency. We also recommend coordination with the affected jurisdictions on all flood plain involvement to ensure compliance with their flood plain ordinances.”

Response: During the preparation of the final hydraulic designs the NCDOT Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP) to determine the status of the project with regard to applicability of NCDOT’s Memorandum of Agreement of approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

2. **Comment:** “Page S-5 – This section states that based on interagency comments, several corridor segments were eliminated which resulted in the reduction of the twenty-seven alternatives to four build alternatives. The interagency comments should be referenced and provided in the Appendix of the DEIS.”

Response: These interagency comments are referenced in Appendices A.1-A.3 of this FEIS.

3. **Comment:** “Page S-11 – This section only lists three environmental commitments. It is suggested that NCDOT supplement this section with additional environmental commitments.”

Response: Additional environmental commitments have been included in the summary of this FEIS.

4. **Comment:** “Page 1-4 – The logical terminus selected for the southern terminus of the project is SR 1971. These termini conflict with the descriptions of the final build alternative corridors on page 2-18. In addition, this conflicts with the southern terminus shown in Figure 2-2. The terminus at both ends of the proposed project must be clearly defined in the DEIS.”

Response: The build alternative description and southern terminus have been adjusted to indicate the project begins north of SR 1971.

5. **Comment:** “Section 2.0, *Alternatives* – A project team meeting was held on October 28, 1999, to discuss the DEIS and a preferred alternative. During this meeting, the project team concurred that Alternative 21 is the Least Environmentally Damaging Preferred Alternative (LEDPA). Confirmation of the project team concurrence on the LEDPA will be provided in separate correspondence.”

Response: At a project team meeting held on February 15, 2001, the Corps of Engineers provided written concurrence that Alternative 21 is the LEDPA.

6. **Comment:** “A Department of the Army (DA) permit authorization... will be required for the discharge of excavated or fill material in waters of the United States or any adjacent wetlands in conjunction with the project, including disposal of construction debris. Under our mitigation policy, impacts to wetlands should first be avoided or minimized. We will then consider compensatory mitigation for unavoidable impacts. When final plans are completed, including the extent and location of any work in wetlands, or regulatory division would appreciate the opportunity to review these plans for project-specific determinations of DA permit requirements.”

Response: These comments are noted. All practicable measures are included in the proposed design to avoid and minimize of jurisdictional waters. These are documented as part of Concurrence Point 4A. NCDOT will provide final design plans to the Corps of Engineers for review during the permit application process. Mitigation plans will also be developed during the permit application process.

U. S. Department of the Interior

In a letter dated September 22, 1999, (see Appendix A.1), the Department of Interior offered the following comments:

1. **Comment:** Any FWS concurrence on a selected alternative is contingent upon the NCDOT presenting a detailed mitigation plan for agency discussion and approval prior to application for any Department of the Army (DOA) Section 404 permit for this project.”

Response: A detailed mitigation plan will be submitted by NCDOT prior to a Section 404 permit application for this project.

2. **Comment:** [The FWS conditionally concurs with a determination of “Not Likely To Adversely Affect” for the red-cockaded woodpecker (*Picoides borealis*) but withholds final concurrence until NCDOT has had the opportunity to survey a potential nest tree and provide FWS with a final report of their findings. The tree was unable to be surveyed due to unspecified potential hazards.]

Response: Aerial surveys were conducted in October 2004 to verify and update the original survey results. Pedestrian surveys of previously determined suitable habitat were conducted during August 2004 and 2007. No new areas of suitable habitat or species occurrences were identified during the aerial or pedestrian surveys conducted in 2004 and 2007. A review of NCNHP records, updated November 17, 2008, indicates two documented occurrences of RCW within 1.0 mile of the study area. The occurrences are both located at the northern terminus of the project area, approximately one mile south and one mile north-northwest, respectively, of the intersection of US 1 and Sneads Grove Road. Based on USFWS policy, the project will have no effect on the red-cockaded woodpecker (see Section 4.1.5.2.4, Endangered Species Act Protected Species).

United States Department of Agriculture (USDA), Natural Resources Conservation Service

In a letter dated August 13, 1999, (see Appendix A.1), the Natural Resources Conservation Service offered the following comments:

1. **Comment:** “The Natural Resources Conservation Service does not have any comments at this time.”

Response: No response is necessary.

U.S. Department of Transportation, Federal Aviation Administration (FAA)

In a letter dated September 23, 1999, (see Appendix A.1), the Federal Aviation Administration offered the following comments:

1. **Comment:** “A review of the DEIS has resulted in no comments.”

Response: No response is necessary.

U.S. Environmental Protection Agency

In a letter dated September 22, 1999, (see Appendix A.1), the U.S. Environmental Protection Agency offered the following comments:

1. **Comment:** “The project study area has been defined too narrowly to be able to consider any roadways for improvements other than to US 1 (NC 177). EPA was hoping for a more deliberate consideration of this option (NC 177), where environmental data, traffic measurements, level of service predictions, costs and land use information could be used to compare this option to those that were carried forth.”

Response: A Supplemental Draft EIS (SDEIS) was prepared and approved on April 27, 2001. The SDEIS studied improvements to NC177. The conclusions of the SDEIS were that improvements to NC177 would not meet the purpose and need for the US1 Bypass project. US EPA provided comments on the SDEIS (September 4, 2001).

2. **Comment:** “All decisions on this project cannot be made and the impacts cannot be fully defined until the divergence point for I-73 is made known.”

Response: In 2007, FHWA and SCDOT selected a preferred I-73 corridor. This corridor joins US 74 Bypass (Future I-74) at NC 38, approximately 4.5 miles east of the proposed US 1 Bypass interchange.

3. **Comment:** “It is noted in the noise impacts analysis that no receptors would substantially exceed FHWA criteria. Receptor 2, residences at Sturdivant Road and receptor 11, Sierra

Christian Center, would approach the 10 dBA increase criterion. EPA considers these increases significant and they should receive consideration for noise abatement.”

Response: Consideration for noise abatement for specific sites has been addressed in this document.

4. **Comment:** “EPA notes in the assessment of water quality impacts, that there does not appear any need to alter watercourses as a result of the project. There should be clarification of the stream impacts data. The text indicates there would be either 16 or 17 perennial streams intersected but Table 4.10 indicates that there would be 10 or 15 stream crossings.”

Response: The number of stream crossings referred to in the text is based on the overall corridor width whereas the number of stream crossings referred to in Table 4.10 were based on a functional design within the corridor. Based on more detailed preliminary designs, the project crosses 16 streams. These include six perennial streams, six intermittent streams, and four stream channels contained within larger wetland systems.

5. **Comment:** “Where temporary construction access in wetlands and floodplains is necessary, EPA urges utilization of temporary board roads, instead of fill roads. This could be considered a construction phase best management practice.”

Response: All construction will be in accordance with NCDOT’s “Standard Specifications for Roads and Structures” and “Best Management Practices for Protection of Surface Waters.”

6. **Comment:** “EPA notes that NCDOT believes there to be few opportunities for compensatory mitigation in the project vicinity and some more distant candidate sites in other counties are identified. Such identifications are commendable, however, EPA recommends the first priority for mitigation after the project area should be pursuit of sites within the Yadkin / Pee Dee River Basin.”

Response: During the development of the detailed mitigation plans for the project, NCDOT will try to pursue sites within the same river basin as the priority location. On site mitigation opportunities will be explored. In addition, the McDonalds Pond Mitigation Site at Falling Creek is likely available for this project as well.

7. **Comment:** “Based on the indicated location of interchanges, two appear to be problematic regarding wetlands. The wetlands impacted at the interchange with old US 74, and the high quality wetlands associated with Chock Creek where the bypass would merge with existing US 1 north of Rockingham. Impacts to palustrine forested wetlands should receive further avoidance including at these interchanges.”

Response: The preliminary interchange configuration at the US 74 Bypass has been substantially reduced to lessen wetland impacts as compared to the concept evaluated in the DEIS. A longer bridge is proposed over South Prong Falling Creek near US 74 Business (Structure 7) to span the floodway and more wetlands. Widening at Chock Creek is proposed to the north side, away from the high quality wetlands at Gibson Pond. A relatively minor extension of the culvert is proposed on the Gibson Pond wetland side of the roadway.

8. **Comment:** “Accordingly, EPA rates this project EC-2, meaning that we have identified environmental concerns which should be mitigated to fully protect the environment. The document quality rating of “2” indicates that additional documentation should be developed on ways to reduce anticipated impacts including further consideration of interchange positioning and design to reduce impacts to natural resources.”

Response: NCDOT has developed the preliminary design to avoid wetlands where possible and to cross unavoidable wetlands in the narrowest locations. The interchanges have been designed to locate ramps and loops outside of high quality wetlands where possible and to minimize the overall footprints. Further avoidance and minimization measures are described in Section 7.1.4, *NEPA/ Section 404 Merger Process*.

North Carolina Department of Environment and Natural Resources (DENR), Division of Forest Resources

In letters dated September 10, 1999, September 20, 1999 & September 27, 1999, (see Appendix A.2), the Division of Forest Resources offered the following comments:

1. **Comment:** “Overall the DEIS fails to address the issues and concerns the North Carolina Division of Forest Resources submitted in our December 1, 1994 scoping letter response. While it can be argued that the issues are addressed within the context of other topics we are concerned that the DEIS does not directly address forestry issues. We consider the permanent loss of 560-687 acres of forestland a major impact.”

Response: The preliminary impacts to forested areas identified early in the project (1994) included all possible alternative segments under study during the Phase I study. Refinements during the environmental study, and the elimination of some of the early segments, have reduced some of the impacts. The preferred alternative was selected to be the least environmentally damaging practicable alternative. Primary factors in this selection included natural habitats, jurisdictional water resources, and socio-economic issues. Additional studies of forested communities have been completed for this FEIS. Based on more refined preliminary designs, the forest land impacts have been reduced to approximately 480 acres as described in Section 4.1.5.1, *Terrestrial Community and Wildlife*.

2. **Comment:** “The three plant communities described in Section 4.11 and summarized in Table 4.1 are inadequate. They do not provide enough information to evaluate the four alternatives potential impacts. Our policy emphasizes avoidance to lessen impacts to forest resources based on the value and / or uniqueness of the habitat impacted. The summary places all timber types under one broad classification. A detailed classification system that includes number of acres impacted by all timber types should be provided. Loblolly and longleaf pine timber types should be differentiated.”

Response: More detailed descriptions and impacts to the forested communities are described in Section 4.1.5.1, *Terrestrial Community and Wildlife*.

3. **Comment:** “We believe Alternatives 7 and 14 will adversely impact our District headquarters building located on the northern side of US 1 between SR 1640 and SR 1475. This site is an emergency response facility for wildfire suppression. It is not identified as such in Figure 3.3.”

Response: The Division of Forest Resources’ District headquarters building is located more than a mile west of the proposed bypass and will not be impacted with the selection of Alternative Corridor 21.

4. **Comment:** “We have good reason to believe the widening of US 1 in H2 segment will be asymmetrical on the north side of the existing roadway. This will increase the chances for adverse impact to our facility. There are more residences and a golf course on the south side of the highway. In the build alternatives section, the statement “Assuming the existing US 1 will be widened to the north ...” implies widening to the north is preferred to minimize number of relocations or noise level problems. Alignment design in this segment needs to be clarified.”

Response: The statement was written in context of minimizing and abating noise impacts for those residences adjacent to US 1 and not in terms of other impacts. However, the preferred alternative will not follow this portion of existing US 1.

5. **Comment:** Our office building is approximately 135 feet from the existing roadway pavement. Our parking lot is about 115 from the pavement. Based on Figure 2.5 we estimate the widening will require at least 115 feet from the existing pavement. This would leave a distance of only 20 feet from the ROW to our building. It will directly impact the parking area. If Alternatives 7 or 14 are selected the impacts created by this situation needs to be mitigated. Noise levels, safe access for tractor plow units, and potential relocation of office should be discussed.

Response: As described in the responses above, the preferred corridor is located more than a mile away from the District headquarters and will not result in any impacts to this facility.

6. **Comment:** “Access from our facility to the highway is imperative if Alternatives 7 or 14 are selected. A crossover wide enough to accommodate our tractor plow hauling units is required. In addition we are concerned that a four-lane highway with a design speed of 60 mph will make entry by our truck tractors unsafe and difficult. These units require a lot of highway to get up to speed. An acceleration lane may be needed.”

Response: See previous responses.

7. **Comment:** “Direct impacts to permanent loss of timber resources is not addressed in the DEIS. We encourage all woody products be utilized during clearing operations. What is DOT doing to encourage use of this resource so it isn’t wasted?”

Response: According to NCDOT’s Standard Specifications, all timber cut during the clearing operations becomes the property of the Contractor. The contractor has the opportunity to sell merchantable timber and wood products, dispose of them off site, or burn them according to applicable ordinances.

8. **Comment:** “North Carolina Division of Forest Resources has not been asked to participate in the interagency team meetings. We would like to be included at the next one.”

Response: The Division of Forest Resources will be invited to participate in a future interagency team meeting.

North Carolina Department of Environment and Natural Resources (DENR), Division of Water Quality

In a letter dated September 23, 1999, (see Appendix A.2), the Division of Water Quality offered the following comments:

1. **Comment:** “The model projections presented for level-of-service on page 1-1 indicate a no build service level of D or E in downtown Rockingham. Has this model factored in the completion of the US 220 Bypass and US 74 Bypass also planned for the area? Justification for the level-of-service needs to incorporate all other planned improvements in the area. Please identify the model assumptions used for projecting traffic flows in future document iterations.”

Response: On page 1-18 of the DEIS, a reference is made to the report, “Traffic Forecasts for US 1, Proposed Rockingham Bypass from South Carolina Border to NC 177,” (NCDOT, December 1994), which documents the various assumptions used as a basis for the traffic projections. When the forecasts were prepared, the proposed US 74 Bypass around Rockingham and Hamlet was also included.

2. **Comment:** “On page 1-2, the document states, “The segment of the R-2501 project from the US 74 Bypass southward into South Carolina along US 1 will be the probable routing of the I-73 Corridor.” We were unaware that the corridor for I-73 had already been selected by DOT. The aforementioned statement assumes that the alternative for the I-73 corridor has already been selected; to our knowledge, it has not been selected. Moreover, if part of the justification for this project is the construction of I-73 on the existing US 1 route, then this project lacks independent utility and the two projects need to be conjoined so that the full breadth and depth of impacts can be viewed holistically.”

Response: This project does have independent utility by functioning as a bypass of downtown Rockingham. As previously discussed, the preferred I-73 corridor joins US 74 Bypass (Future I-74) at NC 38, approximately 4.5 miles east of the proposed US 1 Bypass interchange. I-73 does not have a direct influence on the US 1 Bypass project.

3. **Comment:** “On page 2-3, the document justifies the exclusion of the upgrade existing alternative because” ... US 1 south of the US 74 Bypass (R-512) would need to be improved to a freeway to handle the proposed I-73.” Again, the question of independent utility must be raised. It is obvious that construction of this project is dependent upon future decisions for the I-73 corridor. Therefore, to plan and construct this project separate from the other is inappropriate. Decisions made on this project will undoubtedly reduce the ability to plan the other project appropriately.”

Response: As documented on page 1-10 of the DEIS, “the importance of the US 1 corridor was documented in 1989 when the North Carolina Legislature established the State Highway Trust Fund, which designated the *Intrastate System* throughout North Carolina. This system is defined as “the network of major, multilane arterial highways composed of those projects listed in General Statutes 136-179.” The purpose of the Intrastate System is “to provide high-speed, safe travel service throughout the state. It connects major population centers both inside and outside the state and provides safe, convenient, through-travel for motorists. It is designed to support statewide growth and development objectives and to connect to major highways of adjoining states. All segments of the routes shall have at least four travel lanes and, when warranted, shall have vertical separation or interchanges at crossings, more than four travel lanes, or bypasses. Access to a route in the Intrastate System is determined by travel service and economic considerations.” One of the projects funded in G.S. 136-179 was the US 1 Corridor, or the completion of the four-lanes of US 1 from the South Carolina state line to the Virginia state line.”

4. **Comment:** “On page 2-3, the document states, “The “Improve Existing Facility” Alternative is not consistent with local and statewide long-range plans to provide a fully controlled, bypass facility (freeway) around Rockingham.” The DWQ would agree that the upgrade of existing facilities would not ever meet this project purpose. In fact, no alternative that involves an upgrade of existing facilities could meet this objective. Therefore, it is logical to conclude that the purpose of this project, as well as other bypass projects in the Rockingham vicinity, is to build a “new location” facility. Thus, the statement that the purpose of the project is to construct a new location facility needs to be added to the purpose and need statement.”

Response: The purpose and need for the project is to alleviate truck and through traffic in downtown Rockingham either by improving the existing US 1 facility or constructing a facility on new alignment. Since the presence of the Rockingham Historic District and the substantial potential residential and commercial relocations preclude the ability to widen existing US 1 to a multilane facility through Rockingham without major impacts, the need, which was identified as early as 1972 in the Thoroughfare Plan, for a major thoroughfare bypass of US 1 was established.

5. **Comment:** “The document dismisses the upgrade of existing NC 177 for many of the same reasons as listed in comment D above. The document needs to consider other alternatives that combine use of existing facilities with new location segments to complete the project. Appropriate “Avoidance and Minimization” cannot truly occur unless the use of existing facilities, in whole or part, are considered in the alternative development and analysis stage. Existing SR roads that could be used, in whole or part, to meet the project purpose include: 1) SR 1971, 2) SR 1108, 3) NC 177, and 4) SR 1624.”

Response: Based on the project’s purpose and need, it was not practicable nor feasible to consider improving existing, two-lane, rural collector roads such as SR 1971, SR 1108, NC 177, and SR 1624 with adjacent residences and businesses to a fully-controlled, four-lane, divided bypass facility (freeway) without destroying the character along these roads and possibly throughout the county.

6. **Comment:** “Consideration of existing and other alternatives need to avoid the Watershed Critical Area. For crossings over waters classified as WS III, DOT needs to employ emergency spill catch basins. Moreover, DOT needs to consider bridging, at a minimum, Beaver Dam Creek, which presently has an “Excellent” water quality classification. Other systems that may require special protection can be assessed with an infield site visit.”

Response: The location of the Critical Watershed Area was identified early in the planning process for this project. None of the four proposed build alternatives will adversely impact the Critical Watershed Area. Beaverdam Creek is not located within any of the proposed alternative corridors. Falling Creek, Chock Creek, and their tributaries are classified as WS III waters. A bridge is proposed at the crossing with Falling Creek (Structure 8) and a culvert extension is proposed at Chock Creek (Structure 9). Hazardous spill catch basins are not recommended for this project.

North Carolina Wildlife Resources Commission

In a letter dated September 22, 1999, (see Appendix A.2), the Wildlife Resources Commission offered the following comments:

1. **Comment:** “We remain concerned over possible impacts to the Sandhills Game Land and McKinney Lake Fish Hatchery properties. We request maps showing the location of the preferred alternative in relation to these parcels be included in the FEIS.”

Response: All of the base maps used in the DEIS and FEIS show the location of the McKinney Lake Fish Hatchery and boundaries for the Sandhills Game Land. The McKinney Lake Fish Hatchery is more than 5 miles away from the preferred Corridor. The proposed US 1 widening ends south of the Sandhills Game Land.

7.1.3 Summary of Agency Comments on the 2000 Supplemental DEIS

The 2001 Supplemental DEIS was circulated to federal and state environmental review and regulatory agencies as well as local governments to solicit comments. The following agencies and municipalities were provided a copy of the Supplemental DEIS:

Federal Agencies

- U.S. Department of Agriculture
- U.S. Department of Commerce
- U.S. Department of Defense, Department of the Army, Corps of Engineers*
- U.S. Department of Health and Human Resources
- U.S. Department of Housing and Urban Development
- U.S. Department of the Interior*
- U.S. Environmental Protection Agency*
- U.S. Federal Emergency Management Agency
- U.S. General Services Administration
- Federal Aviation Administration*

State Agencies

- N.C. Department of Administration, Clearinghouse
- N.C. Department of Environmental and Natural Resources – Division of Water Quality*

Local Agencies

- Town of Hamlet
- Town of Rockingham
- Richmond County

An asterisk indicates a comment was received from the agency or municipality. The full set of comment letters on the Supplemental Draft Environmental Impact Statement from federal and state agencies are provided in Appendices A.1-A.3. Substantive comments from the agencies are quoted below, followed by a response.

U.S. Department of the Interior

In a letter dated July 17, 2001, (see Appendix A.1), the Department of the Interior offered the following comments:

1. **Comment:** “A review of the SDEIS has resulted in no comments.”

Response: No response is necessary.

U.S. Environmental Protection Agency

In a letter dated September 4, 2001, (see Appendix A.1), the U.S. Environmental Protection Agency offered the following comments:

1. **Comment:** “EPA commented earlier on the project termini, noting that the northern terminus was not a proven destination for a large percentage of the traffic. NCDOT has responded that concern by addressing in this supplement a small connecting segment between two larger US 1 improvement projects. While SR 1001 may not be a destination in the normal sense, the project now addresses traffic demand on NASCAR race days and facilitates thru-traffic mobility.”

Response: No response is necessary.

2. **Comment:** “One of the purposes of this supplement is to document changes since the Draft EIS was issued. It is unclear from the discussion of traffic and level of service whether there has been any update of actual US 1 traffic count data since 1994 or redefined present use. If the year 2000 data presented are from predictive models, the 1994 data on actual traffic are quite old. The safety analysis incorporates actual data up through 1997. As EPA pointed out in the comments on the Draft EIS, substantial increases in present traffic volumes would bolster the need for the project.”

Response: Since the publication of the DEIS and SDEIS, additional traffic analysis has been performed. In 2008, NCDOT updated the existing and future traffic forecast for the no-build condition and the preferred alternative. The 2035 traffic volumes are expected to be lower in some areas near downtown Rockingham. However, an updated traffic capacity analysis confirms the findings of the earlier analysis that two-lane portions of US 1 in the downtown area currently operate at level of service D or E and will continue to do so in the future.

3. **Comment:** “EPA is pleased to see the consideration of NC 177 as an alternative to the proposed project. A reasonable configuration on partial new alignment bypassing the central business district of Hamlet was evaluated. The analysis acknowledges that both US 1 and NC 177 appear to have similar function from Wallace, South Carolina to the north end of the project area, and that NC 177 likely is utilized by some traffic wishing to bypass Rockingham. The predicted design year traffic data show that the NC 177 alternative would not attract enough traffic to alleviate congestion in Rockingham.”

Response: No response is necessary.

4. **Comment:** “The impacts of the 3.7 mile project extension are assessed in the Supplement. Impacts are minor to the natural environment and likewise to the human environment except for those persons impacted by the relocation of 2 residences, one business and a non-profit facility. The non-profit and business should have been identified.”

Response: No response is necessary.

5. **Comment:** “NCDOT has done an adequate job considering the additional alternative although it is difficult to compare this option to the preferred alternative. EPA maintains its support for Alternative 21. However, EPA is maintaining its EC-2 rating for this project as modified, meaning that we have identified environmental concerns which should be mitigated to fully protect the environment. The document quality rating of “2” indicates that additional documentation should be developed on ways to reduce anticipated impacts including further consideration of interchange positioning and design to reduce impacts to natural resources.”

Response: NCDOT has developed the preliminary design to avoid wetlands where possible and to cross unavoidable wetlands in the narrowest locations. The interchanges have been designed to locate ramps and loops outside of high quality wetlands where possible and to minimize the overall footprints. Since the approval of the SDEIS, coordination with the EPA during the Section 404 Merger Process (particularly Concurrence Point 2A/ 4A) has confirmed that impacts from the selected alternative have been avoided and minimized to the extent practicable. Further avoidance and minimization measures are described in Section 7.1.4, *NEPA/ Section 404 Merger Process*.

U.S. Department of Transportation, Federal Aviation Administration (FAA)

In a letter dated June 29, 2001, (see Appendix A.1), the Federal Aviation Administration offered the following comments:

1. **Comment:** “Our review of the SDEIS has resulted in no comments.”

Response: No response is necessary.

Department of the Army, Wilmington District, Corps of Engineers

In a letter dated July 17, 2001, (see Appendix A.1), the Corps of Engineers offered the following comments:

1. **Comment:** “Our comments involve impacts to flood plains and jurisdictional resources that include waters, wetlands, and U.S. Army Corps of Engineers projects. The proposed roadway improvements would not cross any Corps-constructed flood control or navigation project.

Response: No response is necessary.

2. **Comment:** “Previously provided comments on this project by letter dated January 3, 2000, and those comments cover the additional considered improvements outlined in the Supplemental Draft EIS.”

Response: No response is necessary.

3. **Comment:** “Based on the information contained within the Supplemental NEPA document, we do not object to NCDOT’s identified preferred alternative of widening US 1 on existing alignment from Fox Road (SR 1606) to Marston Road (SR 1001). Furthermore, we still concur with alternative Corridor No. 21 from Sandhill Road (SR 1971) to Fox Road (SR 1606) as the Least Environmentally Damaging Practicable Alternative for the US 1 project as agreed to at the February 10, 1999 Project Team Concurrence Meeting.”

Response: No response is necessary.

4. **Comment:** “We agree that the NC 177 alternative can be dropped from further consideration since it would not satisfy the identified purpose and need for the project. This conclusion is supported by NCDOT’s stated traffic projections, which indicates that sufficient traffic would not be diverted from downtown Rockingham, alleviating existing congestion.”

Response: No response is necessary.

5. **Comment:** “We agree that the extended improvement of US 1 from Fox Road to Marston Road should be added to the original US 1 road project. We believe that Marston Road would better represent a logical terminus for this project.”

Response: No response is necessary.

- 6. Comment:** “Minimization of impacts to waters of the United States for the entire US 1 highway project from Sandhill Road to Marston Road should be further pursued during final design. A project team meeting should be scheduled to address minimization strategy that should be implemented during the design phase of the project. Furthermore, a compensatory mitigation plan needs to be developed to address unavoidable impacts to wetlands and perennial streams.”

Response: Minimization of impacts to waters has been addressed in Concurrence Point 4A during coordination meetings with the Merger Team. A compensatory mitigation plan will be developed during the preparation of the Section 404 permit application to address unavoidable impacts to wetlands and perennial streams. See Section 4.1.5.2.3, *Stream and Wetland Avoidance, Minimization, and Compensatory Mitigation* and Section 7.1.4, *NEPA / Section 404 Merger Process* for more information.

North Carolina Department of Environmental and Natural Resources, Division of Water Quality

In a letter dated June 8, 2001, (see Appendix A.2), the Division of Water Quality offered the following comments:

- 1. Comment:** “Including the widening section [SR 1606 to SR 1001] and its environmental impacts makes perfect sense rather than treating it as a separate project. The table provided clear documentation of the impacts.”

Response: No response is necessary.

- 2. Comment:** “The evaluation of NC 177 as a possible preliminary alternative is well documented. It is clear that improving existing facility or trying to utilize two segments of NC 177 outside the Hamlet city limits would not provide a transportation solution preferable to the proposed US 1 Bypass.”

Response: No response is necessary.

7.1.4 NEPA / Section 404 Merger Process

The NEPA/ Section 404 Merger Process is a method of integrating the project development and permitting processes. Partners include the USACE, NCDENR (DWQ, DCM), FHWA, NCDOT, other stakeholder agencies, and local units of government. The Merger Process provides a forum for appropriate agency representatives to discuss and reach consensus on ways to meet the regulatory requirements of Section 404 of the Clean Water Act during the NEPA decision-making phase of transportation projects.

In this process, a series of steps or concurrence points have been established that will provide a uniform progression of the project and a better understanding of specific issues as they develop.

Consensus on each step or concurrence point must be achieved by the Merger Team prior to proceeding to the next stage of the project. The Merger Team is established by NCDOT and FHWA in conjunction with the U.S. Army Corps of Engineers (USACOE) at the beginning of the planning stage. The Merger Team meets to review, discuss, and reach consensus on each concurrence point of the project.

Concurrence Point 1 - Purpose of and Need and Study Area Defined

The first step in this process is Concurrence Point 1, the Purpose of and Need and Study Area defined. Concurrence on the purpose and need for this project was confirmed in a letter dated November 23, 1998 from the Department of the Army, Corps of Engineers (Wilmington District). In this letter, the Corps of Engineers also noted their prior concurrence with the purpose and need on October 2, 1997 (see Appendix A.4).

Concurrence Point 2 – Detailed Study Alternatives Carried Forward

Concurrence Point 2 is the development of detailed study alternatives (that meet the purpose and need of the project) to be carried forward for evaluation. A Merger Team meeting was held on September 16, 1998, to discuss refinement of the reasonable and feasible alternatives. Corridor Segments M and N were eliminated because of their potential adverse environmental impacts and as a result of NCDOT's decision to reconsider widening of existing US 1 from its northern project terminus south to a point where a logical connection could be made to a four-lane controlled access facility on new location. Corridor B was eliminated because of environmental justice concerns. The elimination of these corridors resulted in four build alternatives remaining as "reasonable and feasible" from the original twenty-seven alternatives. These alternatives (Alternate 7, 14, 21 and 24) were presented and evaluated in the Draft Environmental Impact Statement (DEIS), which was approved by the Federal Highway Administration (FHWA) on June 30, 1999.

Following the DEIS, EPA requested information regarding NC 177 as a bypass alternative. Documentation was provided to both EPA and the Corps of Engineers concerning the feasibility of utilizing NC 177 as a bypass alternative. Based on comments received from EPA and the Corps of Engineers, the additional documentation satisfied their concerns that improvements to NC 177 would not satisfy the project's purpose and need; and therefore, was not a reasonable and feasible alternative. The Merger Team concurred in writing on February 15, 2001 with the detailed study alternatives carried forward (see Appendix A.4).

Concurrence Point 3 – Least Environmentally Damaging Practicable Alternative (LEDPA)

Concurrence Point 3 is the selection of the Least Environmentally Damaging Practicable Alternative (LEDPA) for the project. The Merger Team reviewed the detailed studies for the No-Build alternative, the Improve Existing Facilities alternative, and the four build alternatives presented in the DEIS as well as comments from the formal Corridor Public Hearing. Alternatives 14 and 24 were eliminated from further consideration since they have more impacts to the natural environment than Alternatives 7 and 21. Alternative 7 was eliminated from further consideration since it has more relocations than Alternative 21. The Merger Team verbally concluded on October 28, 1999, that Alternative No. 21 was the LEDPA.

The Merger Team concurred in writing on February 15, 2001 with the "Alternative Corridor No. 21" as the LEDPA (see Appendix A.4).

Concurrence Points 2A/ 4A – Bridging Decisions and Alignment Review / Avoidance and Minimization

Concurrence Point 2A documents bridging decisions and an alignment review of the proposed alternatives. Bridge locations, approximate lengths, and alignments are reviewed at major stream crossings and wetland areas. Concurrence Point 4A confirms that impacts from the selected alternative have been avoided and minimized to the extent practicable. These concurrence points have been combined for the preferred alternative.

A Merger Team field meeting was held November 10, 2004. At that meeting the team reviewed six of nine proposed major crossings. Most of the crossings can be accommodated with box culverts. The South Prong Falling Creek crossing between the CSX Railroad and US 74 Business will require a bridge. Smaller culverts were requested between Wiregrass Road and Fox Road for wildlife passage. Bridging decisions were postponed until more detailed design studies were completed.

The Merger Team reviewed the proposed stream crossings during meetings on November 10, 2004, September 18, 2008, November 12, 2008, and August 20, 2009. The Team agreed with culverts proposed at seven of nine major stream crossings (Structures 1, 2, 3, 4, 5, 6, and 9). Bridges are proposed at Structures 7 and 8. At South Prong Falling Creek (Structure 7), NCDOT proposes 450-foot dual bridges, equalizer pipes for wetland connectivity, on-site mitigation, and a 46-foot median width in the wetland limits. At Falling Creek (Structure 8), a bridge length decision was postponed because the team did not agree with NCDOT's recommended bridge length at the crossing within the McDonalds Pond Restoration Site.

Three potential wildlife crossing areas were considered from Wiregrass Road (SR 1640) to Fox Road (SR 1606). The first area, between County Home Road (SR 1624) and Falling Creek, is not recommended because it does not include sufficient fill or protection from timber removal or development. In the second area, along Falling Creek, the proposed bridge is of sufficient length to include upland wildlife corridor within the EEP conservation easement. At the third area, northeast of Falling Creek, NCDOT proposes a 10-foot by 11-foot box culvert for wildlife passage east of E.V. Hogan Road (SR 1700), near Standridge Place.

A field meeting was held on July 21, 2010 to review additional options considered at Falling Creek and McDonalds Pond Restoration Site. NCDOT proposed an alignment shift approximately 800 feet south of the preferred alignment (outside of the LEDPA study area) with a 250-foot bridge to cross a narrower portion of the stream system. Merger Team members were willing to support this recommendation or the original preferred alignment with 480-foot dual bridges with two conditions. The median should be reduced to a maximum width of 30 feet within the conservation easement, and the EEP representatives should be consulted for input.

In February 2011, NCDOT provided the Merger Team with additional information to compare wetland impacts and costs for various median widths on both alignments. These were compared

using median widths of 70 feet, 46 feet, 30 feet, and 22 feet for the original preferred alignment (with 480 foot bridge) and the southern realignment (with 250 foot bridge). NCDOT prefers not to reduce the median width below 46 feet for a freeway facility. A 30-foot wide median (with cable guiderail) would not provide adequate positive barrier protection required for a freeway median of less than 46 feet in width. However, to minimize impacts to the McDonald's Pond Mitigation Site and the relatively low projected future traffic for proposed US 1 Bypass, NCDOT agreed to include a 22-foot hard median with a concrete median barrier across the mitigation site.

7.2 Coordination and Public Involvement

A public involvement program was developed to provide interested persons or organizations an opportunity to participate in the planning process for the US 1 Bypass project. The public involvement program includes nine newsletters, project information handouts, four citizens informational workshop, four public officials meetings, group meetings, and combined Steering Committee / Interagency meetings (see Appendix E).

In addition to the other public involvement efforts, a formal Corridor Public Hearing was held in September 1999, and an informal Public Hearing was held in June 2002. In accordance with 23 U.S.C. 128, the NCDOT certifies that public hearings for the subject project were held and the social, economic, and environmental impacts, consistency with local community planning goals and objectives, and comments from individuals have been considered in the selection of the recommended alternative for the project. The transcript of the formal Corridor Public Hearing and the post informal Public Hearing meeting minutes are available from NCDOT's project file. A Public Hearing certification letter was sent to FHWA in May 2011.

7.2.1 Notice of Intent

A formal Notice of Intent to prepare an Environmental Impact Statement to improve and / or relocate US 1 in Richmond County was published in the *Federal Register* on August 15, 1997. The notice described the project, and invited comments and questions concerning the project.

7.2.2 Mailing List

A master mailing list was assembled and continuously updated during the course of the study. The purpose of the list was to provide information to the public regarding progress of the project and for notification of the workshops and public meetings.

7.2.3 Project Newsletters

A series of nine project newsletters were distributed during the project study. The newsletters provided information about the study process, discussed major developments during the course of the study, and notified recipients of upcoming meetings. Copies of the newsletters are provided in Appendix E.

7.2.4 Public Meeting Summaries

January 10, 1996

A public officials meeting was held on January 10, 1996 at the Leath Memorial Library in Rockingham. The meeting was held to present to the public officials the preliminary corridors being considered for the US 1 Bypass of Rockingham. Officials from the City of Rockingham, City of Hamlet, Pee Dee Council of Governments, and Richmond County were in attendance. Concerns were expressed regarding the proposed crossing and interchange at existing US 74. It was requested that the interchange be constructed at a mutually agreeable location between the cities of Rockingham and Hamlet.

In response to the concerns over the location of the proposed US 1 interchange with US 74 Business, it is proposed to be located approximately half way between Rockingham and Hamlet.

Following the public officials meeting, a citizen's informational workshop was held to present the corridors to the public and to obtain their comments. Approximately 60 people attended the workshop. Several residents asked questions regarding right of way acquisition for the US 74 Bypass (R-512). Representatives of the Rockingham Speedway expressed concern over the adequacy of a five-lane section between the speedway and the Rockingham Dragway. Speedway officials indicated they would prefer a new facility to the north of existing US 1 with access provided to both the speedway and the dragway. A number of property owners along US 74 indicated they would be willing to cooperate if their property was needed for the bypass or interchange.

In response to the concerns expressed by representatives of the Rockingham Speedway, realigning US 1 to the north of its current location in this area and providing improved access to the speedway and dragway would further impact the natural and human environments and is outside the scope of this project.

July 2, 1996

A combined Steering Committee/Interagency meeting was held on July 2, 1996. The purpose of the meeting was to present the findings from an evaluation of the preliminary alternative corridors and to solicit comments for determining reasonable and feasible alternatives. The Steering Committee indicated there would be local opposition to Segment G, which proposes an alternate location to a site agreed to by the cities of Rockingham and Hamlet for an US 74 interchange. Segment G was eliminated by the Steering Committee from further study. Representatives of the NC Wildlife Resources Commission (WRC) recommended that any alignment within Segment N be shifted south to minimize encroachment on the Sandhills Game Land Management Area. Those in attendance concluded that a more detailed evaluation of the corridor segments was necessary to determine if additional segments or alternatives could be eliminated. The two major areas in which the alternative segments were evaluated in further detail include:

- 1) Reducing the area of impact from a corridor width of 1,000 to 300 feet (300 to 90 meters), which reflects more of a true construction impact width.
- 2) Due to substantial impacts associated with Segment O, the NCDOT recommended committing to constructing a fully-controlled access facility for the entire project with frontage roads along the existing section of US 1 (north).

September 18, 1996

A meeting with the NCDOT PDEA and FHWA was held on September 18, 1996 to discuss the potential for eliminating additional corridors or corridor segments from further study. Based on the revised information, Segments H-1 and O were eliminated from future consideration.

December 16, 1996

A meeting was held on December 16, 1996 at 1:30 P.M. in the conference room of the Rockingham Speedway. The purpose of the meeting was to present the two alternative segments (M & N) to the officials of the Rockingham Speedway and the Rockingham Dragway. The reasonable and feasible alternatives along with a copy of a matrix evaluation of alternative corridor segments and a comparison of preliminary alternative corridors were discussed. Conceptual interchange layouts for segments M and N were presented. Officials from both the Rockingham Speedway and the Rockingham Dragway were in favor of segment N (northern alignment).

April 16, 1997

A meeting was held on April 16, 1997 at 10:00 A.M. in the City of Rockingham's Council's Chambers. The purpose of the meeting was to discuss potential impacts of the proposed US 1 Bypass / Existing US 74 interchange on a 50 acre parcel being considered for development located on the north side of US 74 east of Clemmer Road. Overlays of the four conceptual interchanges (B to H, B to I, F to H and F to I) were placed on a 1:5000 metric aerial to show possible impacts. The H segment impacts the 50 acre parcel while the I segment seems to have minor impacts. The four interchanges would be studied in the next phase before a preferred alignment is chosen.

October 7, 1997

A Public Officials meeting was held on October 7, 1997 at 3:00 P.M. at the Leath Memorial Library in Rockingham. The purpose of the meeting was to present to the public officials the reasonable and feasible corridors for the US 1 Bypass of Rockingham/Hamlet that were developed during Phase I. Highlights of the meeting were:

- The original twenty-seven alternatives have been reduced to nine alternatives for Phase II.
- Phase II is underway with the threatened and endangered species surveys completed except for RCWs.
- Wetlands are currently being delineated and should be completed in November.
- Historical architectural study is also underway.
- Impacts for the nine alternatives will be evaluated and documented in a Draft Environmental Impact Statement (DEIS).
- After the public hearing and circulation of the DEIS, the Steering Committee will select a preferred alternative which will be documented in the FEIS.

- The bypass will be a four lane divided controlled access freeway.
- Mr. John Scism was there concerning I-73's route into South Carolina.

Attendance at this meeting was low and there were no major comments.

A Citizens Informational Workshop was held on October 7, 1997 at 5:00 P.M. to 8:00 P.M. at the Leath Memorial Library in Rockingham. The purpose of the meeting was to present the corridors being considered for the US 1 Bypass of Rockingham/Hamlet and to receive comments from the public. The majority of comments received from the public were in opposition to the new location corridors especially Corridors B, H, H2, and N. A number of specific comments were received expressing concern over the impacts to the churches, cemeteries and school located in the Ashley Chapel / Mizpah Road Community. A few verbal comments were expressed over the potential impacts to the Trailwood subdivision located between Airport Road (SR 1966) and US 74. One resident commented that his family had already been relocated by another project and did not want to be relocated again. Attendance at the workshop was very good (200 to 250 people).

The preferred corridor was selected, in part, due to public opposition to corridors proposed in or near the Ashley Chapel / Mizpah Road Community and Trailwood subdivision.

October 9, 1997

A meeting was held on October 9, 1997 at 12:00 noon at the Richmond County School Board offices on US 74 in Hamlet. The purpose of the meeting was to discuss potential impacts of the US 1 Bypass of Rockingham / Hamlet on two sites that the School Board had options to purchase for future schools. One of the sites under consideration by the School Board adjoined one of the possible corridors.

March 2, 1998

A small group meeting was held on March 2, 1998 at the Richmond County Courthouse in downtown Rockingham. The meeting was held at the request of a small group of citizens that were in favor of utilizing the existing road system (widening US 1) as opposed to constructing a new, limited-access highway. The group of citizens expressed an organized opposition to a four-lane divided highway on new location and recommended improvements to existing US 1 without major widening. Several petitions in opposition to the Bypass were signed and presented at the meeting.

An alternative that would improve existing US 1 was considered but determined not to be prudent. See Section 2.4.3.1, *Improvements to the Existing Facility* for more information.

June 22, 1998

A Community Informational Meeting was held on June 22, 1998 at 7:00 P.M. at the Ashley Chapel Community Center in Rockingham. The purpose of the meeting was to provide a brief history of the project, present the corridors being considered for the US 1 Bypass of Rockingham / Hamlet and to receive comments from the communities located along Mizpah Road and Hamer Mill Road. The majority of comments received at this meeting focused on the history of the Ashley Chapel / Mizpah Road community and the need to preserve its community facilities, churches and cemeteries. Attendance at the meeting was very good (approx. 100 people).

The preferred corridor was selected, in part, due to public opposition to corridors proposed in or near the Ashley Chapel / Mizpah Road Community.

August 26, 1998

An informal small group meeting with members of the Ashley Chapel community was held on Wednesday, August 26, 1998 at 6:00 P.M. at the home of Mr. John Patterson in Rockingham. The purpose of the meeting was to receive comments from the community regarding the Community Informational Meeting held at the Ashley Chapel Community Center on June 22, 1998. Highlights of the meeting were:

1. It was emphasized that the Mizpah Road community was an older, established community with a great deal of historical and emotional connections. Concerns over the potential US 74 Bypass / Proposed US 1 Bypass interchange impacts to the Poplar Springs Baptist Church and nearby cemeteries were expressed.
2. Forty two comment sheets from concerned residents regarding the US 1 Bypass project were presented. Of this total, 4 respondees simply wrote that they did not agree with the project, six responses were blank other than the commenter's name and address, one respondee wrote "none", and the remaining respondees indicated they were opposed to the construction of the US 1 Bypass project (Corridor B) through their community.

The preferred corridor was selected, in part, due to public opposition to corridors proposed in or near the Ashley Chapel / Mizpah Road Community.

September 14, 1998

A Team Meeting (formerly Steering Committee / Agencies) was held on Monday, September 14, 1998 at 3:00 P.M. in the Roadway Design Conference Room of the Century Center building. The purpose of the meeting was to discuss further refinement of the reasonable and feasible alternatives. Highlights of the meeting were as follows:

- The status of the project including the completion of the Phase I Location and Environmental Study, selection of the Reasonable and Feasible Alternatives Corridors, progress of the wetland delineation and GPS effort and the results of the Ashley Chapel community meetings were discussed. Handouts were distributed to the attendees documenting environmental justice issues and the results of some preliminary comparisons between alternative corridor segments.
- New alignment Corridor Segments M and N were requested to be eliminated as reasonable and feasible alternatives because of their potential adverse environmental impacts and as a result of NCDOT's decision to reconsider widening of existing US 1 from its northern project terminus south to a point where a logical connection could be made to a four-lane controlled access facility on new alignment. This widening would be consistent with NCDOT's TIP project, R-2502, which proposes to widen US 1 from SR 1001 to the Moore County line as a multi-lane facility. Verbal agreement was reached to eliminate Corridor Segments M and N.
- The elimination of Corridor B because of environmental justice concerns was discussed. Corridor B crosses and runs along the fringes of one of Richmond County's oldest and

largest minority communities, Ashley Chapel. The construction of the proposed project using Corridor B and its associated interchange with the US 74 Bypass would result in direct impacts to the Poplar Springs Baptist Church and Cemetery, secondary impacts to the Ashley Chapel Elementary School and the Ashley Chapel Community Center and approximately 110 residential relocations. In addition, based on initial surveys, Corridor B would have more wetlands and stream channel impacts than Corridors ACEF and ADEF, respectively. A decision to eliminate Corridor B was reached on condition that the final wetland estimates do not overwhelmingly contradict the preliminary estimates.

- A comparison of environmental issues between Corridor Segments H-H2 vs. I-J-K was presented. Although it was apparent that Segments H-H2 would have significantly more stream channel impacts (5,207 meters vs. 2,032 meters) than Segments I-J-K, it was estimated that Segments H-H2 would impact only 6 more hectares of wetlands. As a result, Segments H-H2 will continue to be evaluated in the environmental document.
- Consideration to processing the multi-lane widening section of US 1 in front of the Rockingham Speedway as a separate EA was discussed.

September 29, 1998

A Community Informational Meeting was held on September 29, 1998 at 6:00 P.M. at the Pistol Ridge community off Hatcher Road south of the Richmond County Airport. The purpose of the meeting was to discuss concerns regarding the potential impacts of Corridor E and its associated interchange with the US 74 Bypass on the Pistol Ridge town recreation site. Highlights of the meeting were:

- A brief history and overview of the US 1 Bypass project including the recent elimination of Corridor Segments B, M and N was presented.
- It was questioned why Corridor Segment B had been eliminated prior to the Pistol Ridge meeting.
- Corridor B was eliminated because of the significant number of residential relocations (110) and wetlands (99.1 hectares) associated with it compared to alternative corridor segments C-E or D-E.
- Several statements were made regarding the sentimental and emotional importance of the Pistol Ridge property to the community.
- A typical freeway to freeway interchange was shown for the US 1 Bypass / US 74 Bypass interchange. The interchange as shown would not impact the Pistol Ridge site. NCDOT / Presnell stated that they would try to avoid impacting the Pistol Ridge site.
- Presnell (QK4) was provided with a petition of approximately 310 signatures requesting NCDOT to consider not routing the US 1 Bypass through the area known as Pistol Ridge.

The preferred corridor and proposed interchange with US 74 Bypass have been located to minimize property impacts.

December 1, 1998

A Public Officials Meeting was held on Tuesday, December 1, 1998 at 2:00 P.M. at the Leath Memorial Library in Rockingham. The purpose of the meeting was to inform local officials of the current status of the project and to discuss the corridor segments that were eliminated since the last Public Officials Meeting. A brief overview of the project and a discussion of the

elimination of corridor segments B, M and N were presented. Other issues that were discussed included the widening of existing US 1 from SR 1001 in Marston to either Fox Road or Wiregrass Road and the possibility of doing the section from just short of Gibson's Pond to the north as a separate environmental document. Also discussed was the urgency to nail down the proposed US 74 / US 1 Bypass interchange location in order to preserve necessary ROW.

A Public Workshop was held on Tuesday, December 1, 1998 from 4:00 P.M. to 7:00 P.M. at the Leath Memorial Library in Rockingham. The purpose of the workshop was to inform the general public as to the current status of the project and to discuss those corridor segments that had been eliminated since the last public meeting. The format for the workshop was informal with handouts being provided and aerial maps on display. Approximately 200 people were in attendance at the meeting. At the meeting, five comments were received in opposition to Corridor Segment "H" versus Segment "J", one comment was in opposition to Corridor Segment O and one comment was in favor of moving the location of the intersection associated with Segment L.

June 1, 1999

At the June 1, 1999 meeting of the Richmond County Board of Education, NCDOT officials discussed the US 1 Bypass in relation to the new school under construction on County Home Road. The School Board was given a briefing on the status of the project, including the alternatives being considered. The Board was advised that the DEIS would be released shortly.

June 1999

The Draft Environmental Impact Statement (DEIS) was completed and submitted for review by agencies and the public in June 1999. Agency and public comments on this document focused on the location of the preferred corridor alternative in relation to the new school site, the proposed typical section for the existing US 1 north section, concurrence on the red-cockaded woodpecker, and potential wetland impacts. Agency comment letters on the DEIS are contained in Appendices A.1-A.3 of this FEIS.

September, 14, 1999

A Prehearing Open House was held on Tuesday, September 14, 1999 from 4:00 PM to 6:00 PM in the Hugh A. Lee Building Auditorium. The open house was held to answer questions on a "one-on-one" basis about the alternative corridors for the proposed bypass.

Following the Prehearing Open House, a Corridor Public Hearing was held at 7:00 PM. The purpose of the hearing was to explain the proposed corridor locations, right-of-way requirements and procedures, and relocation advisory assistance. The hearing was officiated by Mr. C.B. Goode, Jr. with NCDOT. Those that registered to speak were given the opportunity to comment and ask questions after the presentation.

October 18, 1999

A Post-Hearing Review meeting was held on Monday, October 18, 1999 at NCDOT's Roadway Design Conference Room. The purpose of the meeting was to review all comments received, both verbally and written, that were made as a direct result of the Corridor Public Hearing held on September 14, 1999 and to make recommendations for a preferred alternative to be included in the FEIS.

October 28, 1999

An Interagency Team Meeting was held on Thursday, October 28, 1999 at 10:00 AM at NCDOT's PDEA Branch. The purpose of the meeting was to present to the agencies the "recommended alternative" as selected from the post-hearing review meeting and to gain consensus on a "Least Environmentally Damaging Practicable Alternative (LEDPA)". Based on the Public Hearing and information presented at the meeting, Alternative 21 was recommended as the LEDPA.

April 5, 2001

NCDOT officials met with the Richmond County School Board on Friday, April 5, 2001 to discuss the primary school located on County Home Road and its relationship to the US 1 Bypass.

April 2001

A Supplemental Draft Environmental Impact Statement (SDEIS) was completed and submitted for review by agencies and the public in April 2001. The purpose of the SDEIS was to: 1) document those changes for the proposed US 1 improvements from Sandhill Road (SR 1971) to north of Fox Road (SR 1606) that have occurred since approval of the DEIS; 2) identify those impacts as a result of extending the proposed project from north of Fox Road (SR 1606) to Marston Road (SR 1001); and 3) evaluate an additional preliminary alternative, the improvement of NC 177 from its juncture with existing US 1 north to the South Carolina state line, as an alternative to the US 1 Bypass. Agency comment letters on the SDEIS are included in Appendices A.1-A.3.

June 24, 2002

An informal Public Hearing was held on June 24, 2002 from 4:00 PM to 7:00 PM at the Richmond Senior High School Cafeteria in Rockingham. The purpose of the hearing was to solicit comments from the public on the location and design of the proposed widening of US 1 from northeast of Fox Road (SR 1606) to southwest of Marston Road (SR 1001). Maps depicting the two widening alternatives for R-2501C, a five-lane roadway and a four-lane divided roadway, were presented at the hearing. A map depicting the NCDOT "Preferred Corridor" for the US 1 Rockingham Bypass (R-2501B) was also on display. Approximately 60 persons were in attendance at the hearing.

July 19, 2007

A Citizens Informational Workshop for project R-2501 was held on July 19, 2007 from 4:00 pm to 7:00 pm at the Leath Memorial Library in Rockingham. The purpose of the meeting was to present the recommended corridor for the US 1 bypass of Rockingham / Hamlet and to obtain comments from the public regarding any issues that were not present during the previous project studies. The US 74 Bypass interchange reconfiguration (discussed in Section 2.7, *Preferred Alternative*) was presented to the public at this meeting. The week of July 3rd about 1,100 newsletters advertising the workshop were distributed. The format of the workshop was informal with handouts provided and aerial maps on display. About 116 people attended the workshop. Public comments and questions focused on these issues:

- Effects on individual properties, property values and noise levels
- Process for right of way acquisition
- Design suggestions at several road crossings
- Questions about the project endpoints and the project's need
- Suggestion for a new interchange near County Home Road and Wiregrass Road
- Opposition to the preferred corridor because of its close proximity to the Richmond Primary School (presented in a petition with over 2,000 signatures)

August 29, 2007

This workshop was followed by an August 29, 2007 meeting to receive input from public officials. Rockingham, Hamlet, and Richmond County representatives expressed these ideas:

- Request for an improved connection between Hylan Avenue and US 74 Business (to be addressed by a future NCDOT road improvement - TIP Project U-3807).
- Request for an interchange near County Home Road and Wiregrass Road to help with future emergency, industrial, and general access.
- Questions about the project's economic impact on businesses along US 74 in Hamlet and in downtown Rockingham.
- Questions about future speed limits in the areas of US 1 to be widened.

Subsequent to this meeting, NCDOT revised the preferred alternative to include an interchange near Wiregrass Road and County Home Road. The public was notified of this additional interchange in a July 2008 project newsletter (see Appendix E). Five individuals responded with questions or comments about the interchange. All five responses were concerning effects on individual properties.

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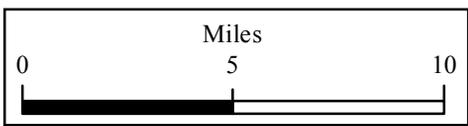
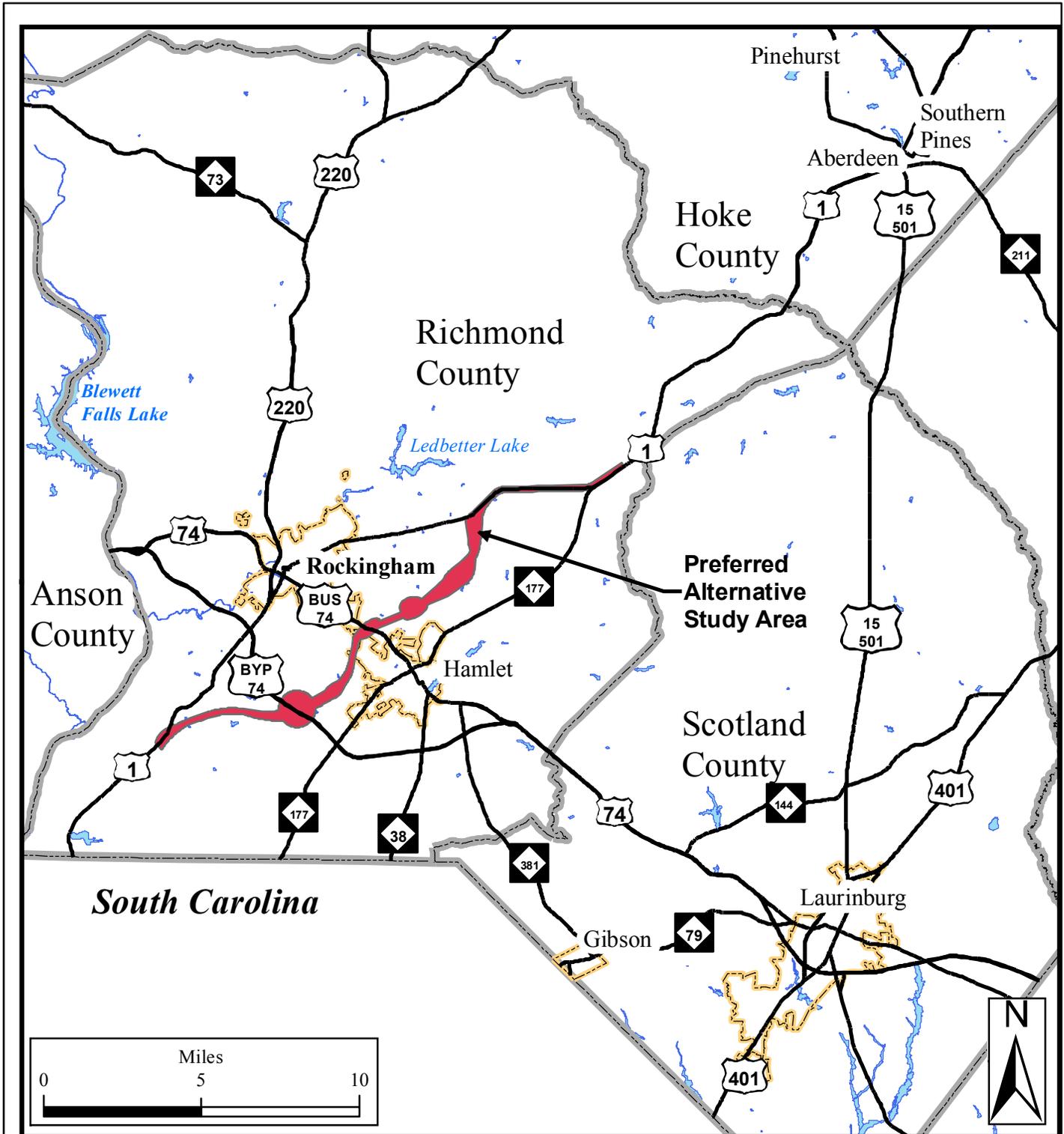
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FIGURES



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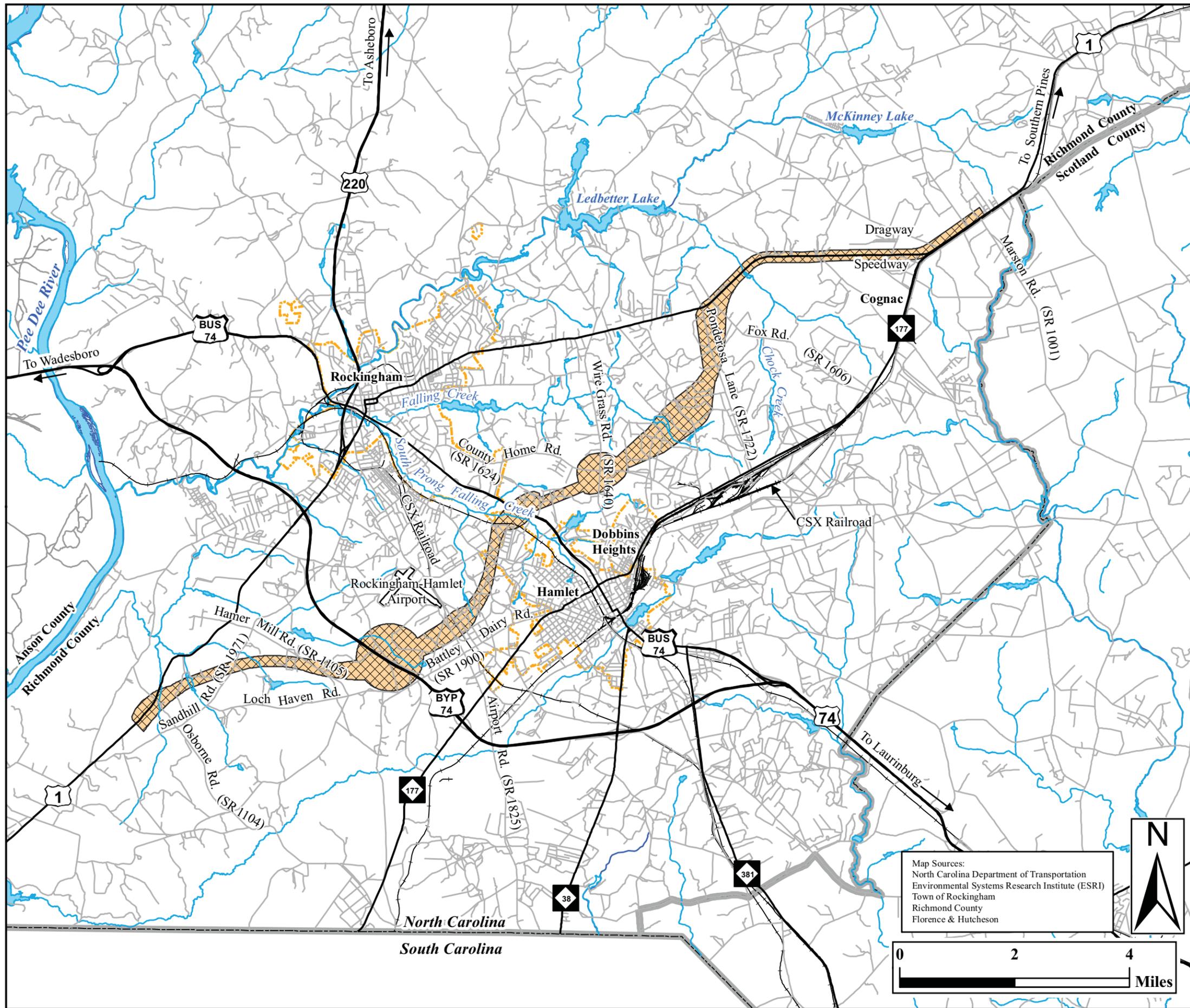
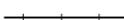
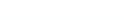
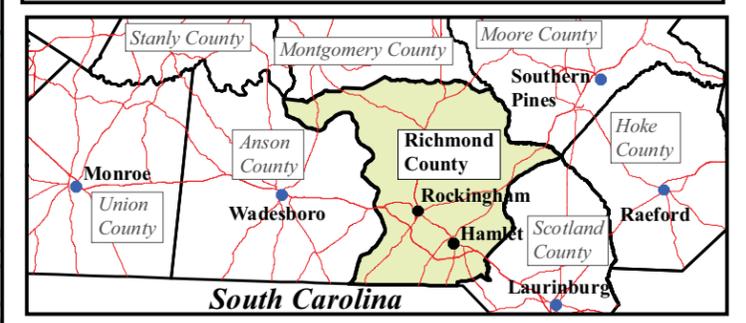
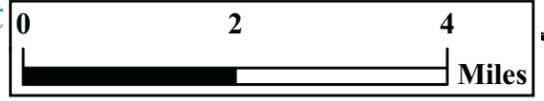


Figure 1.2 - Project Study Area

-  Roads
-  Major Roads
-  Railroads
-  Municipal Boundary
-  County Boundary
-  Streams & Creeks
-  Water Bodies
-  Preferred Alternative Study Area



Map Sources:
 North Carolina Department of Transportation
 Environmental Systems Research Institute (ESRI)
 Town of Rockingham
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 Florence & Hutcheson





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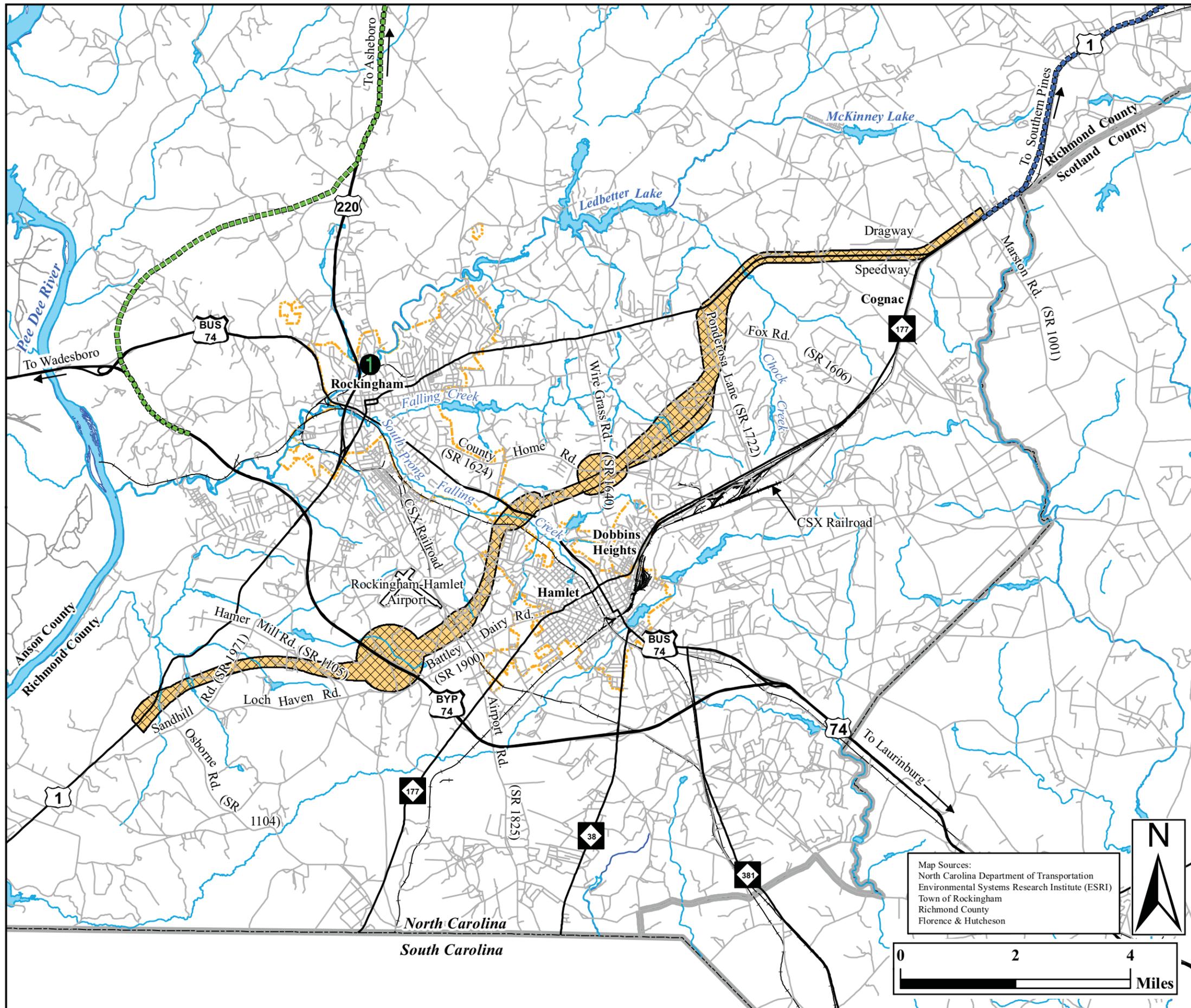
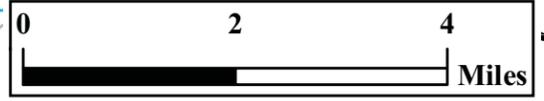


Figure 1.3 - Other TIP Projects

- Major Roads
- Roads
- Railroads
- Municipal Boundary
- Streams & Creeks
- Water Bodies
- NCDOT TIP R-3421
- NCDOT TIP R-2502
- NCDOT TIP B-4615
- Preferred Alternative Study Area

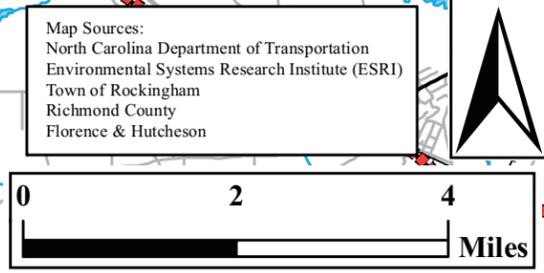
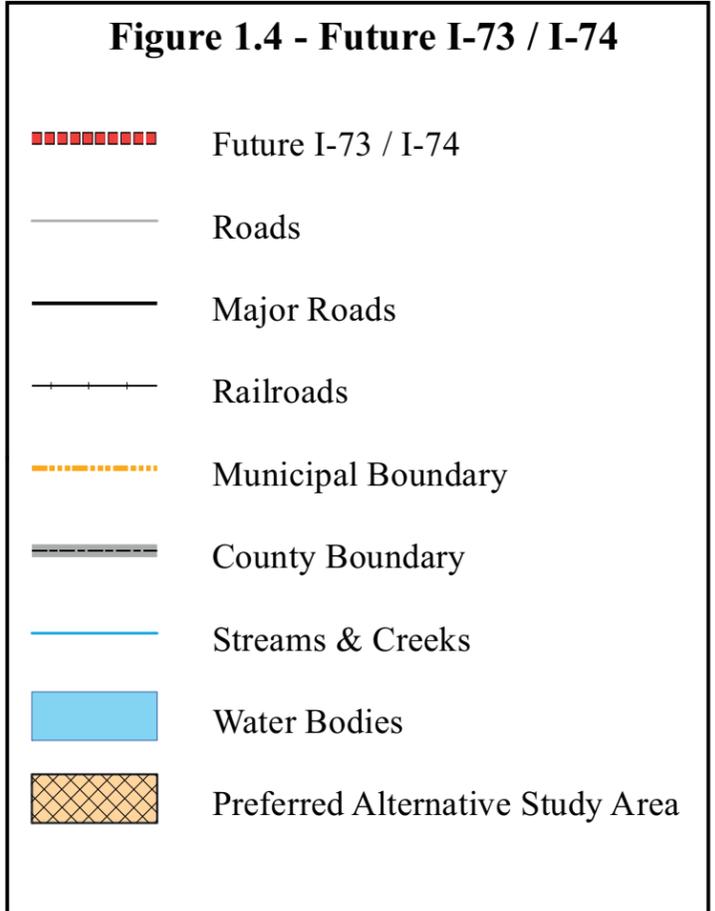
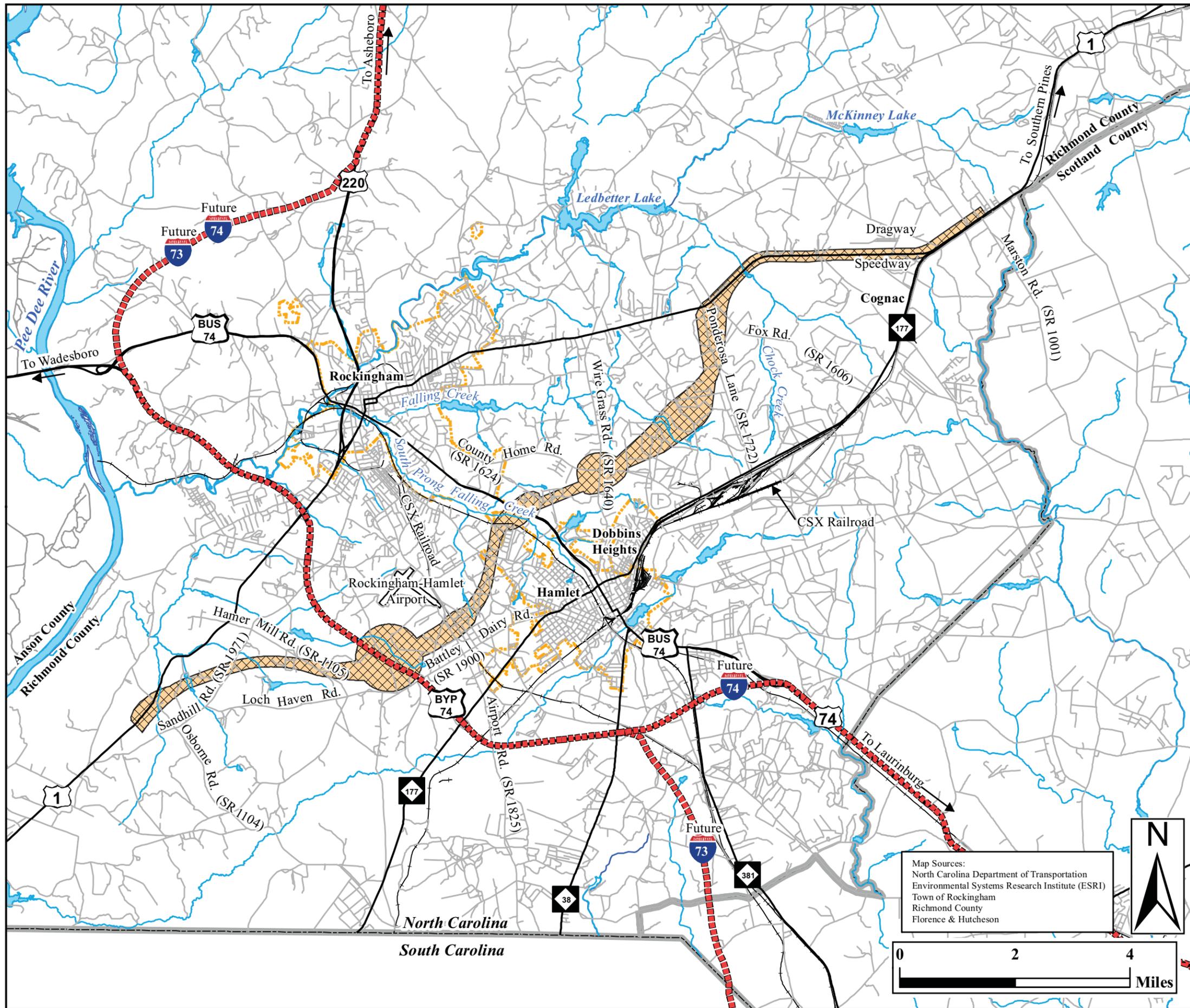


Map Sources:
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 Environmental Systems Research Institute (ESRI)
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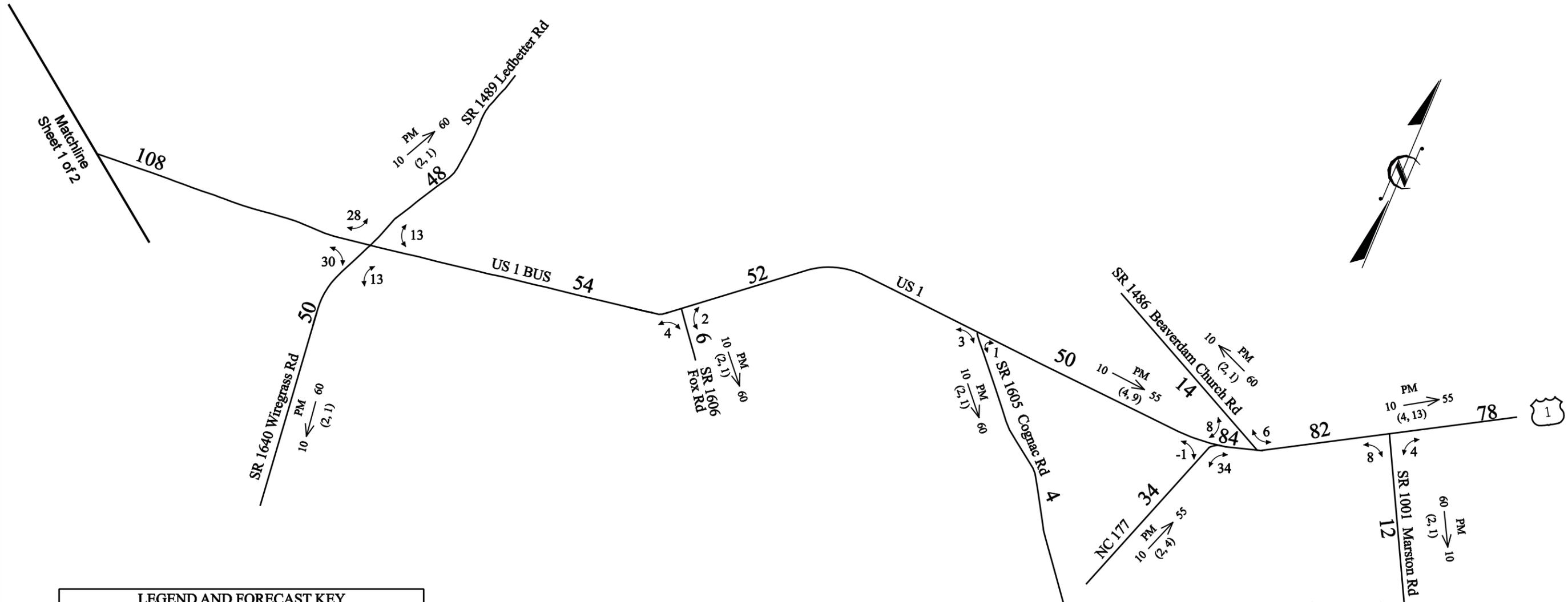


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Figure 1.4

Figure 1.5b - 2007 No Build Traffic Forecast



LEGEND AND FORECAST KEY

AM / PM
 K → DIR %
 (DUAL, TTST)

AM / PM = Time of Peak
 K = 30th Highest Hourly Volume Factor
 DIR % = % of Flow in Peak Direction
 DUAL = % DUAL
 TTST = % TTST
 -1 = Less than 100
 XXX = Annual Average Daily Traffic in Hundreds

Drawing Not to Scale

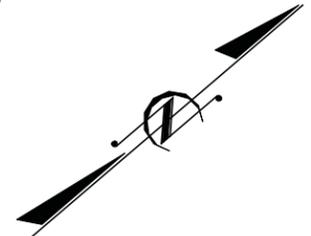
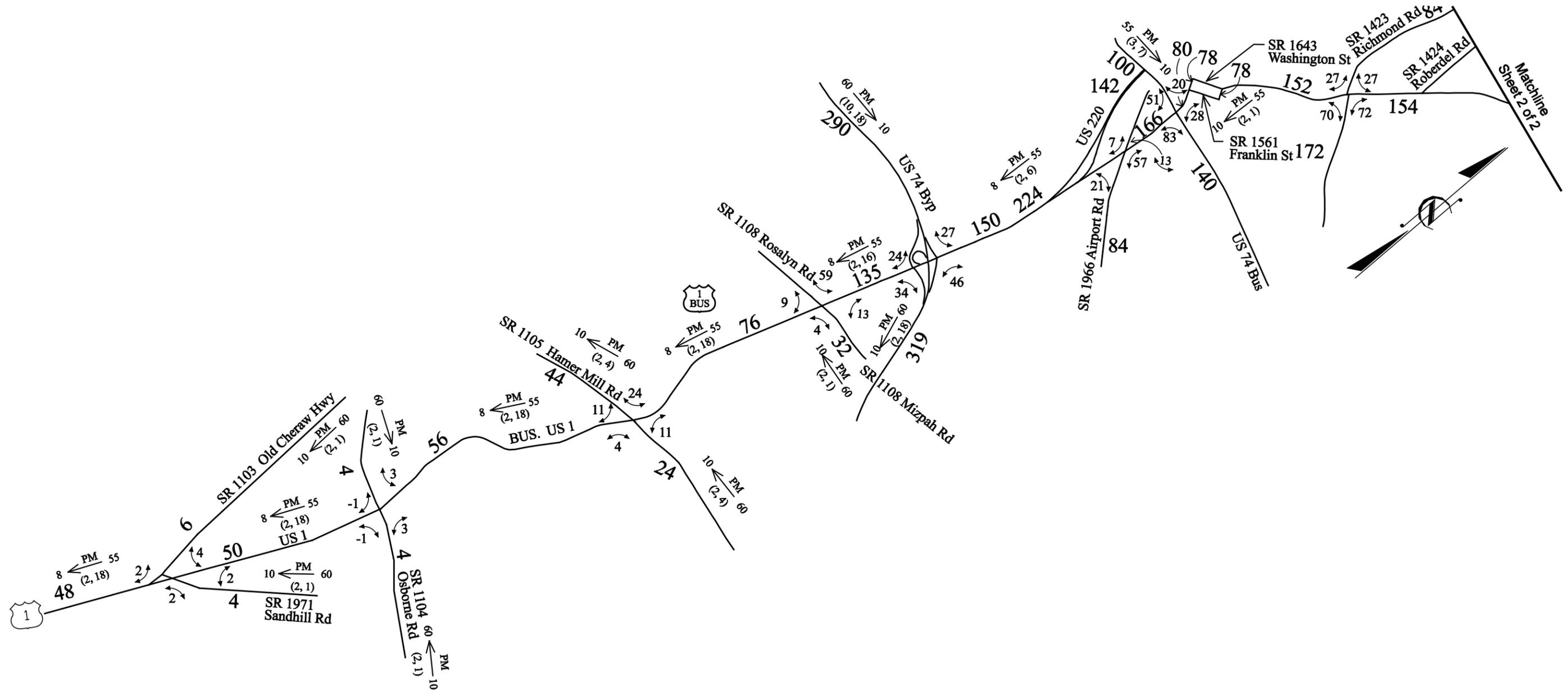
ESTIMATED ADT
 ADT Count In 100s



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Figure 1.6a - 2035 No Build Traffic Forecast



LEGEND AND FORECAST KEY
 AM / PM
 K → DIR %
 (DUAL, TTST)

AM / PM = Time of Peak
 K = 30th Highest Hourly Volume Factor
 DIR % = % of Flow in Peak Direction
 DUAL = % DUAL
 TTST = % TTST
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 XXX = Annual Average Daily Traffic in Hundreds

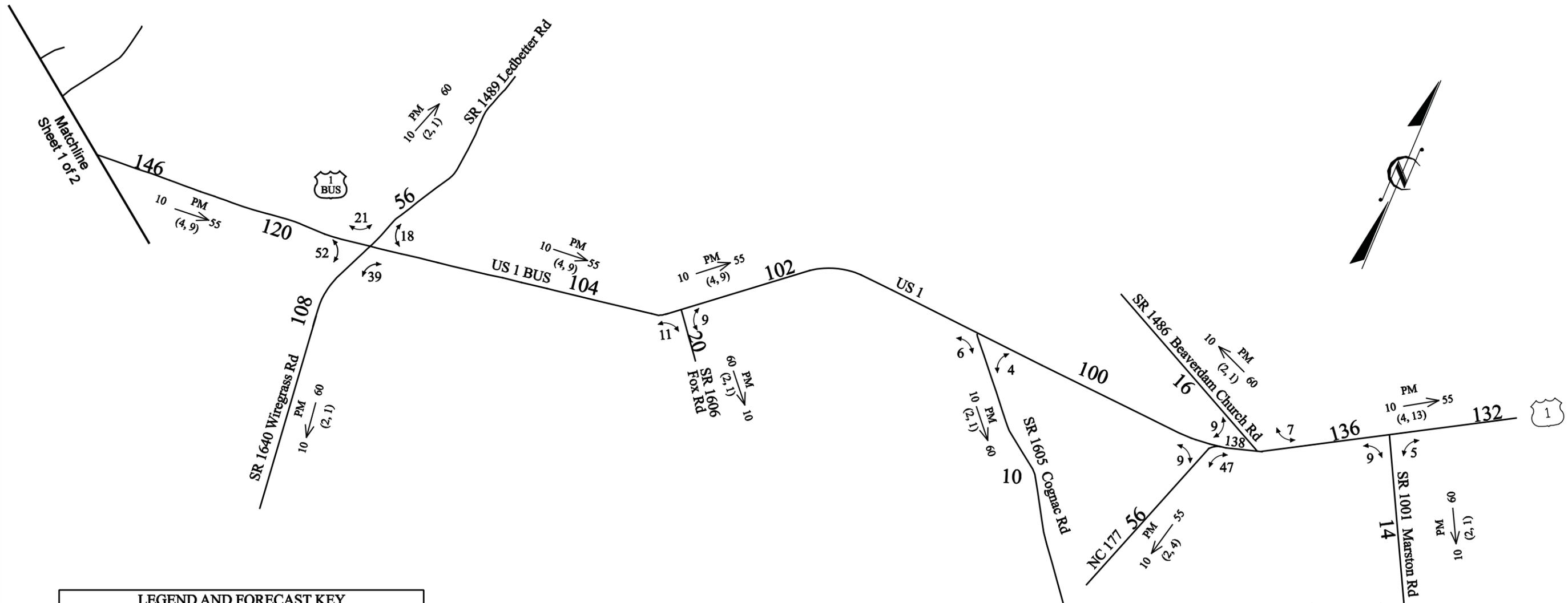
Drawing Not to Scale
ESTIMATED ADT
 ADT Count In 100s



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Figure 1.6b - 2035 No Build Traffic Forecast



LEGEND AND FORECAST KEY

AM / PM
 K → DIR %
 (DUAL, TTST)

AM / PM = Time of Peak
 K = 30th Highest Hourly Volume Factor
 DIR % = % of Flow in Peak Direction
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 TTST = % TTST
 -1 = Less than 100
 XXX = Annual Average Daily Traffic in Hundreds

Drawing Not to Scale

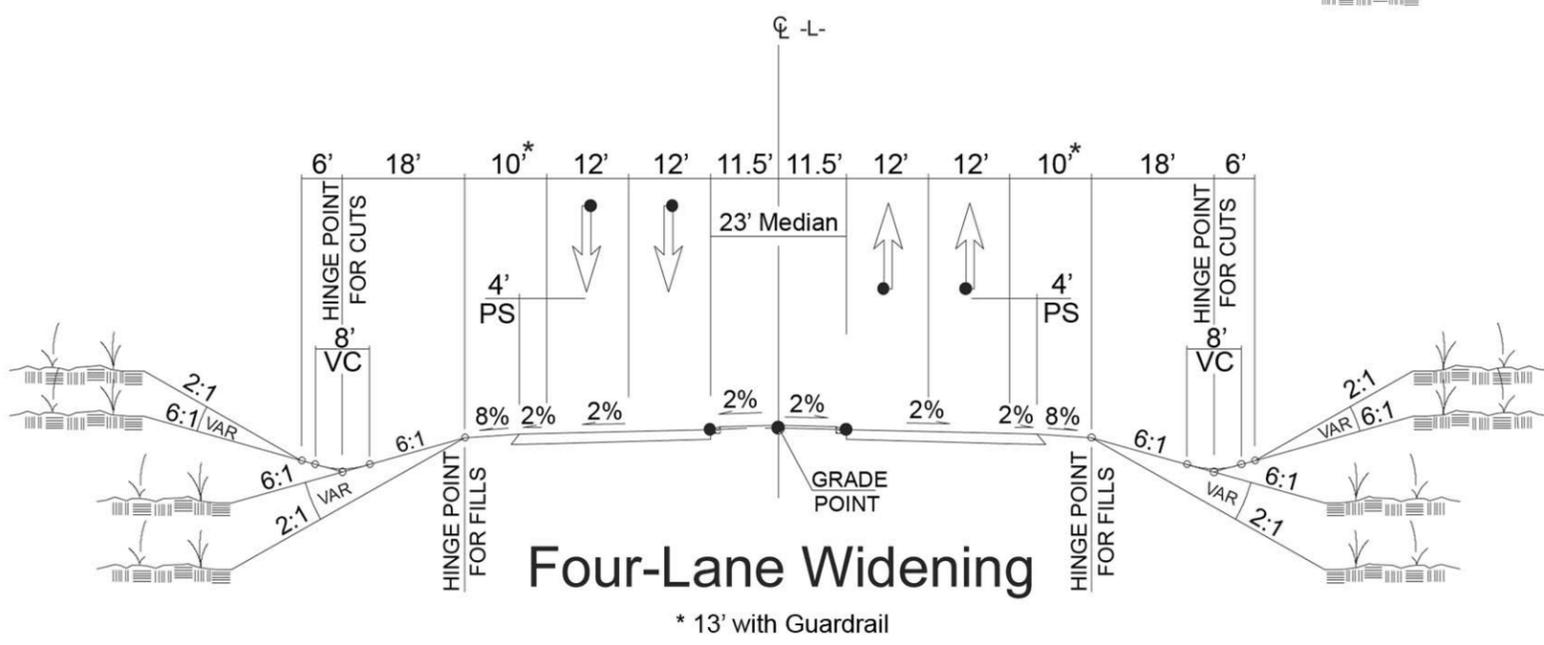
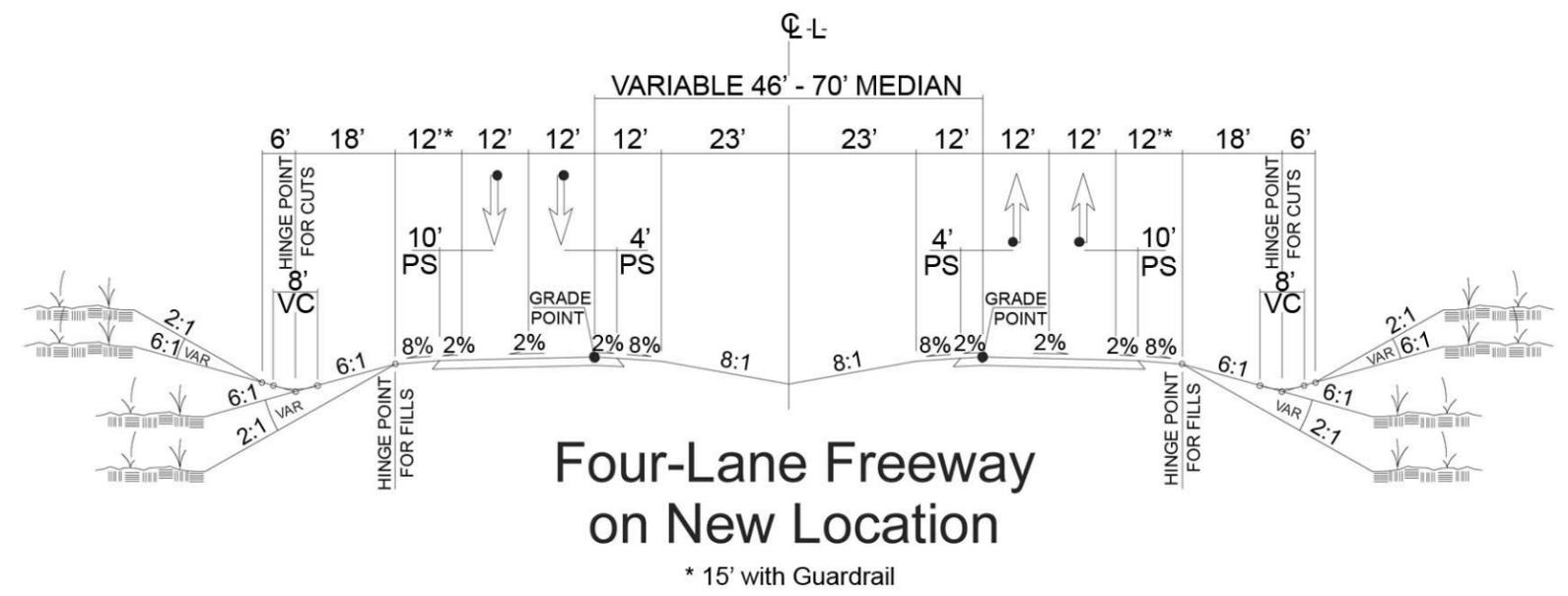
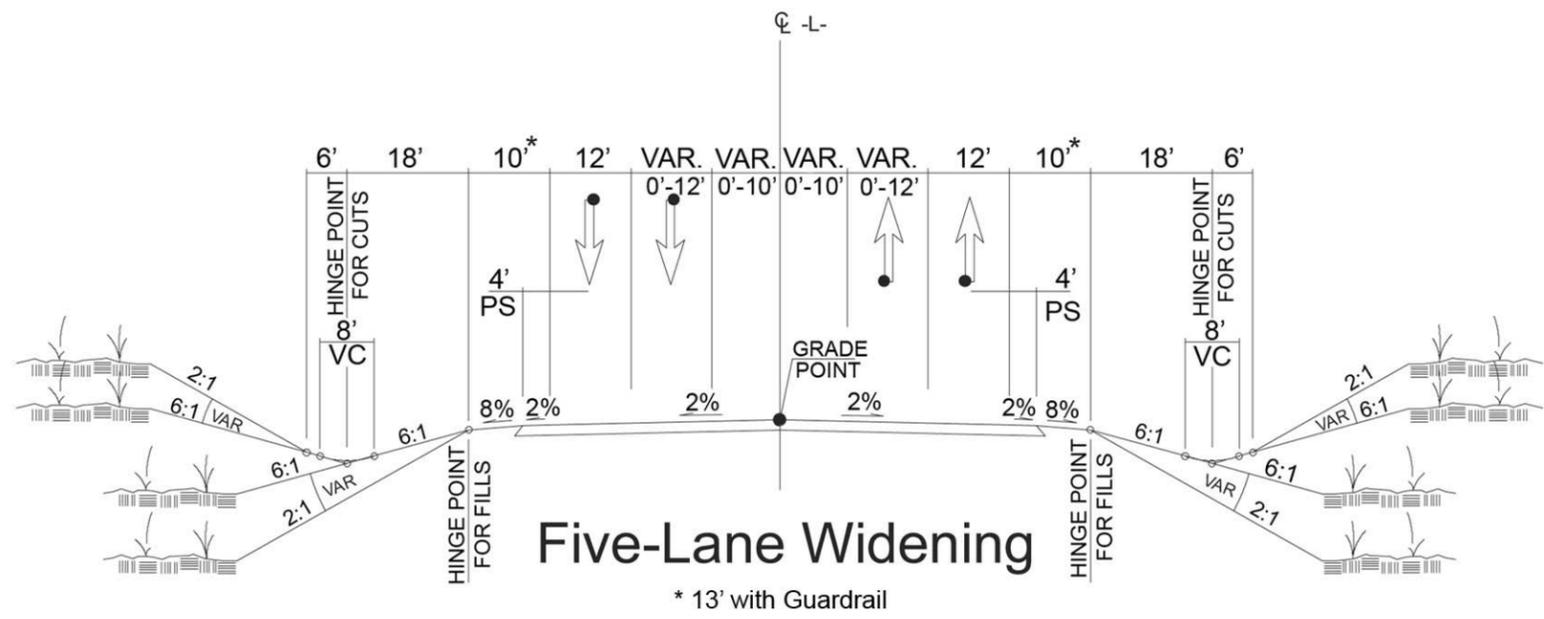
ESTIMATED ADT
 ADT Count In 100s



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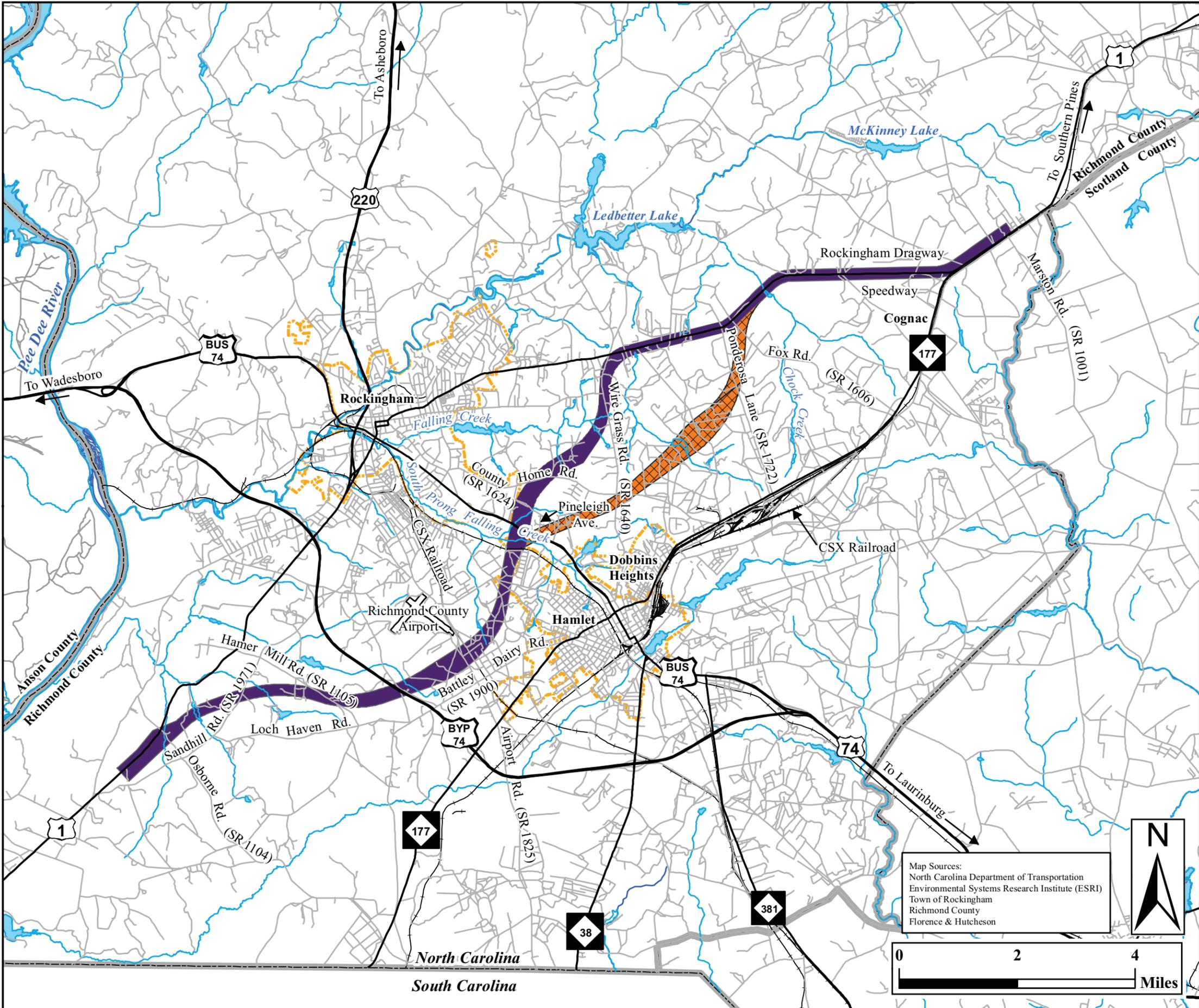
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Figure 2.1 - Roadway Typical Sections



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	Figure 2.1

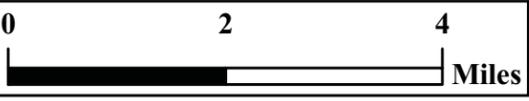
Figure 2.2.a - Build Alternatives 7 & 21



-  Roads
-  Major Roads
-  Railroads
-  Municipal Boundary
-  County Boundary
-  Streams & Creeks
-  Water Bodies
-  Alternative Corridor 7
-  Alternative Corridor 21



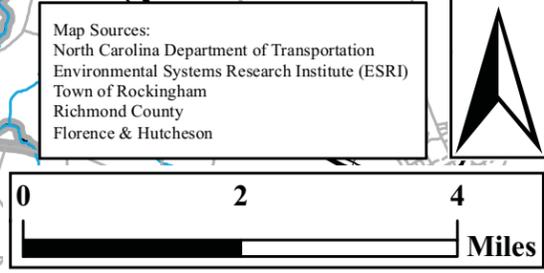
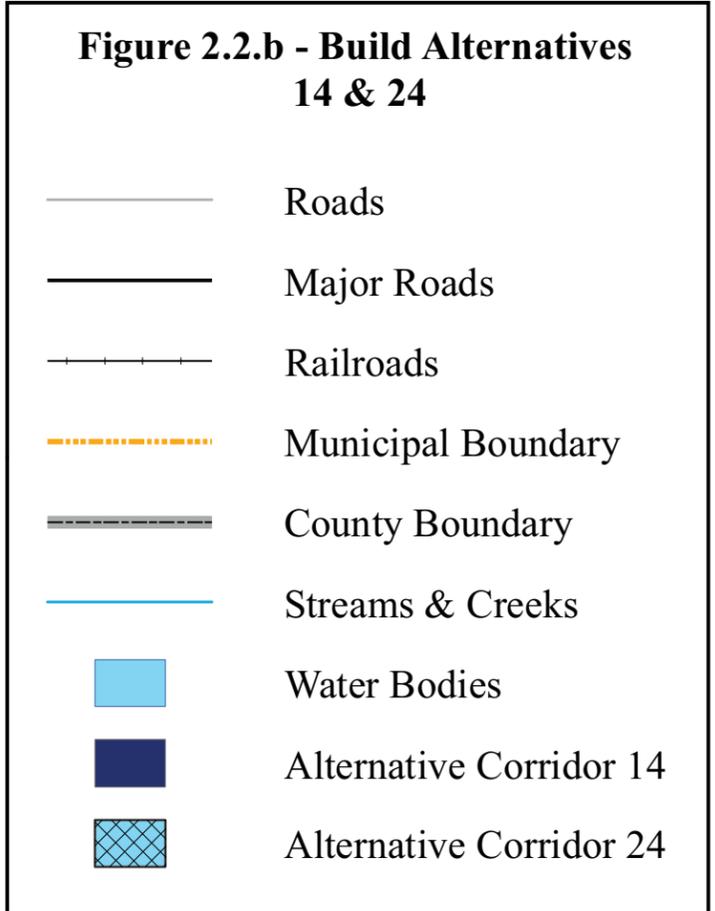
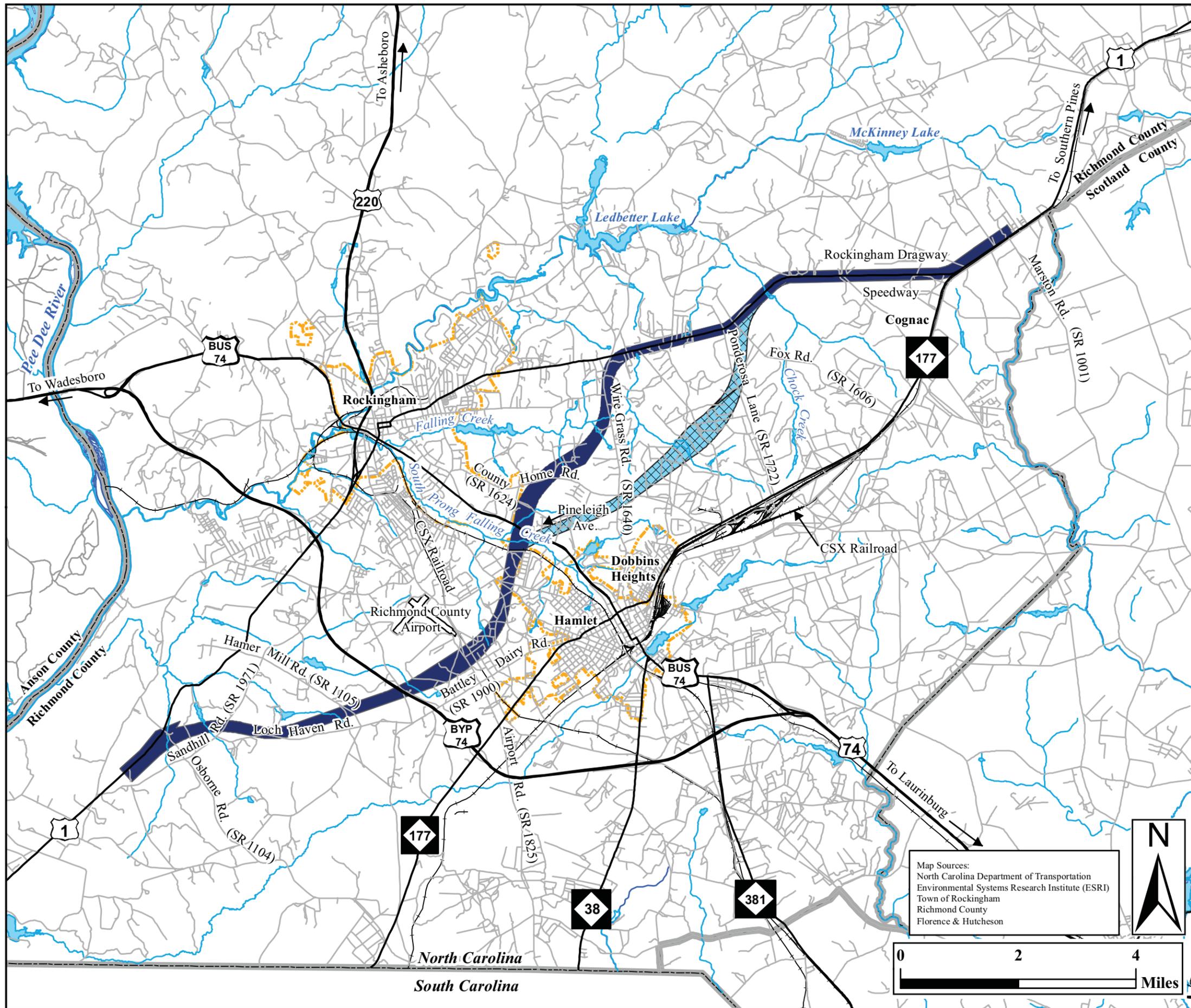
Map Sources:
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Figure 2.2.a



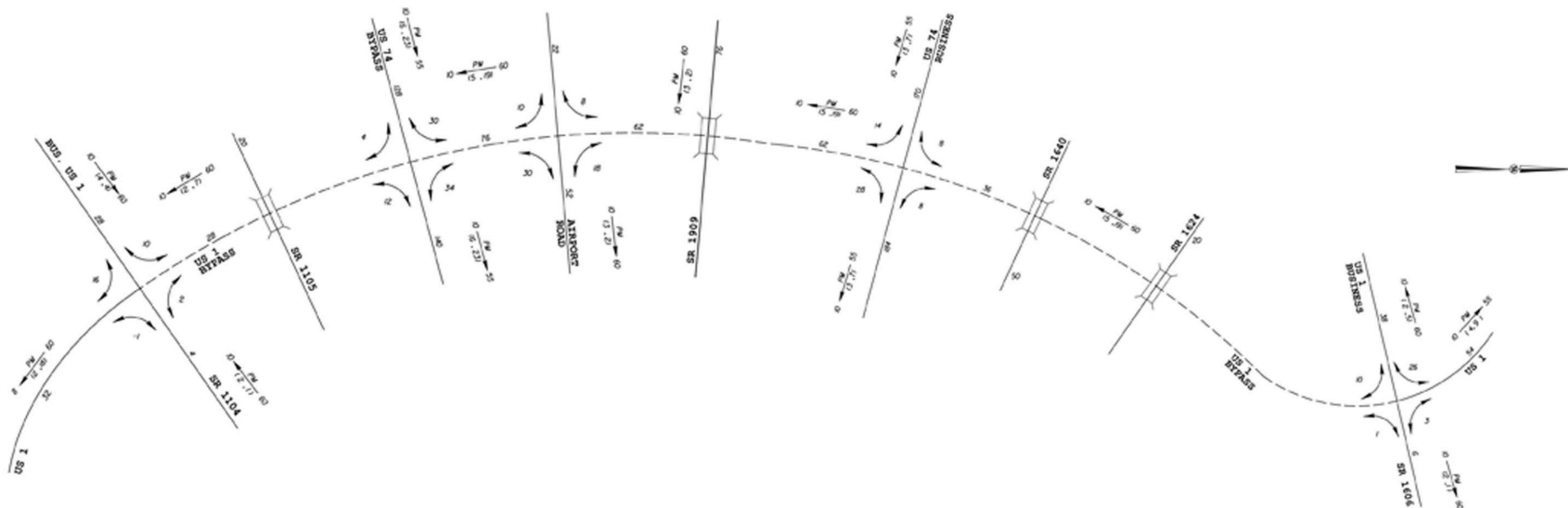
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Figure 2.2.b

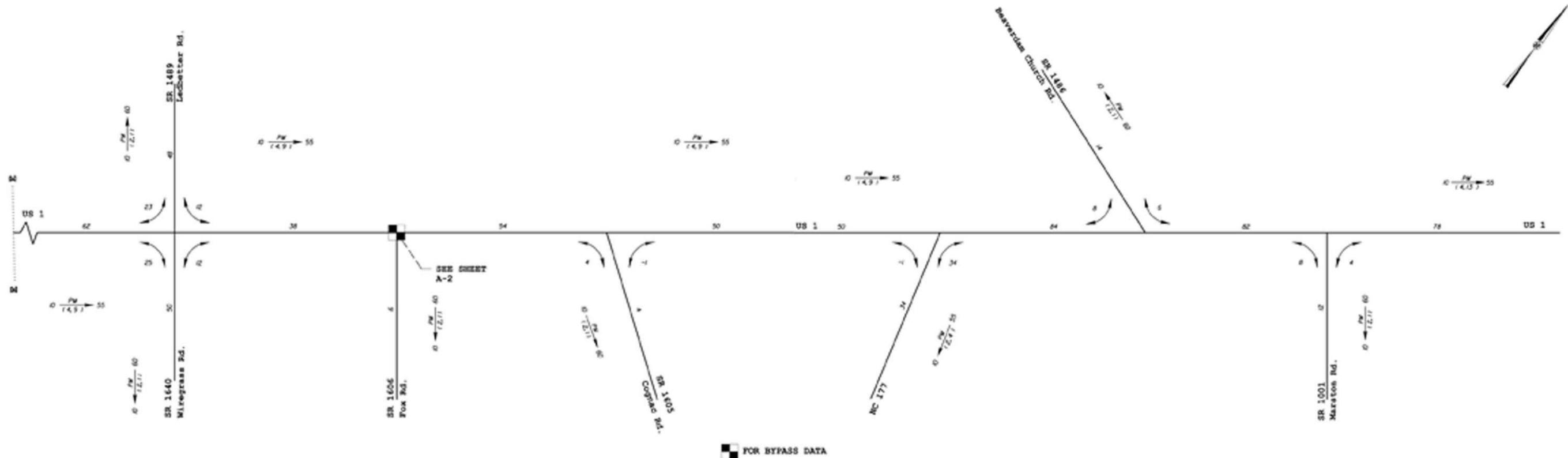
Figure 2.3a - 2007 Existing Build Traffic Forecast



LEGEND AND FORECAST KEY
 $K = \frac{AM/PM}{(DUAL, TTST)} \rightarrow DIR \%$
 AM/PM = Time of Peak
 K = 30th Highest Hourly Volume Factor
 DIR % = % of Flow in Peak Direction
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Sheet 1 of 2	Figure 2.3a

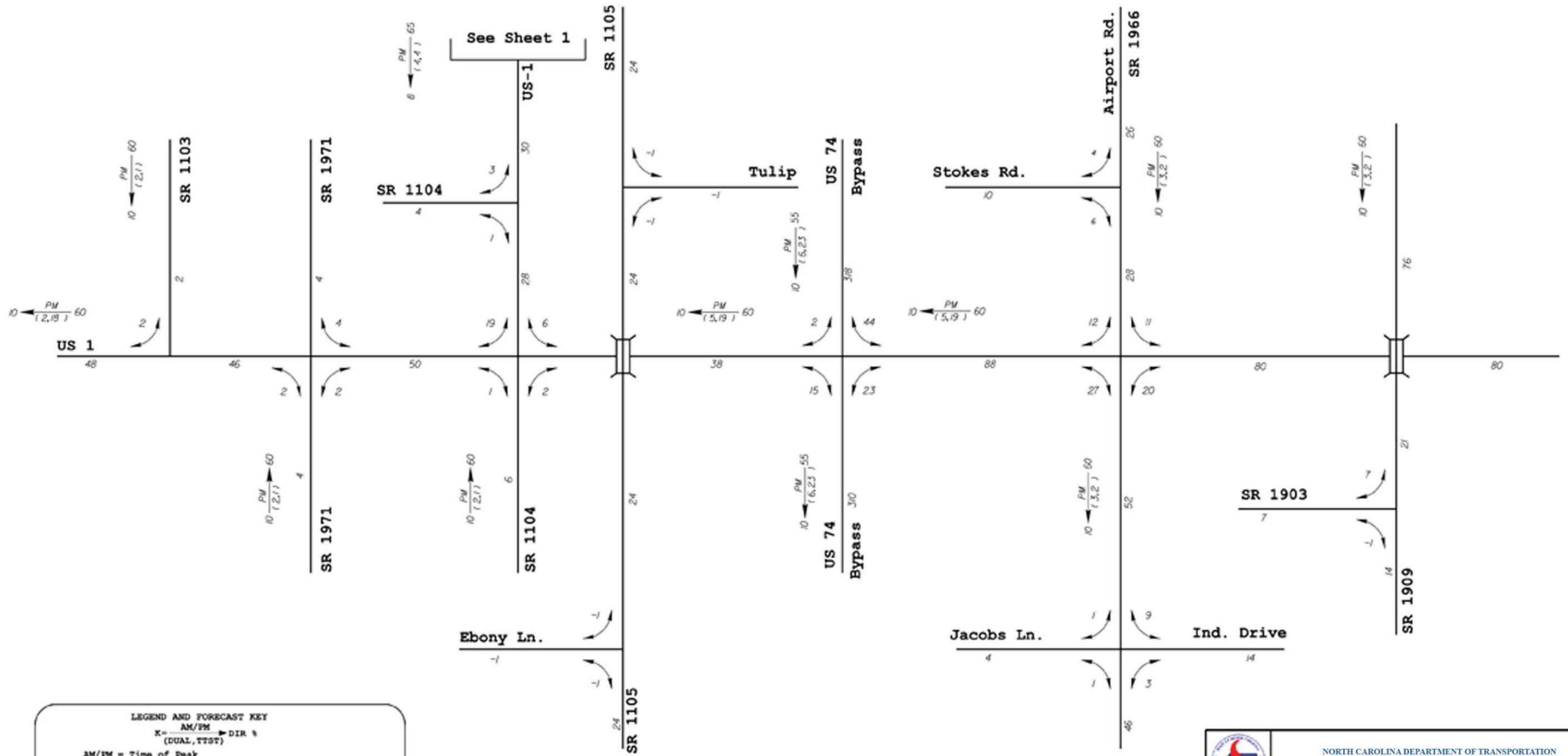
Figure 2.3b - 2007 Existing Build Traffic Forecast



LEGEND AND FORECAST KEY
 $K = \frac{AM/FM}{(DUAL, TTST)} \rightarrow DIR \%$
 AM/FM = Time of Peak
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Figure 2.4a - 2035 Build Traffic Forecast



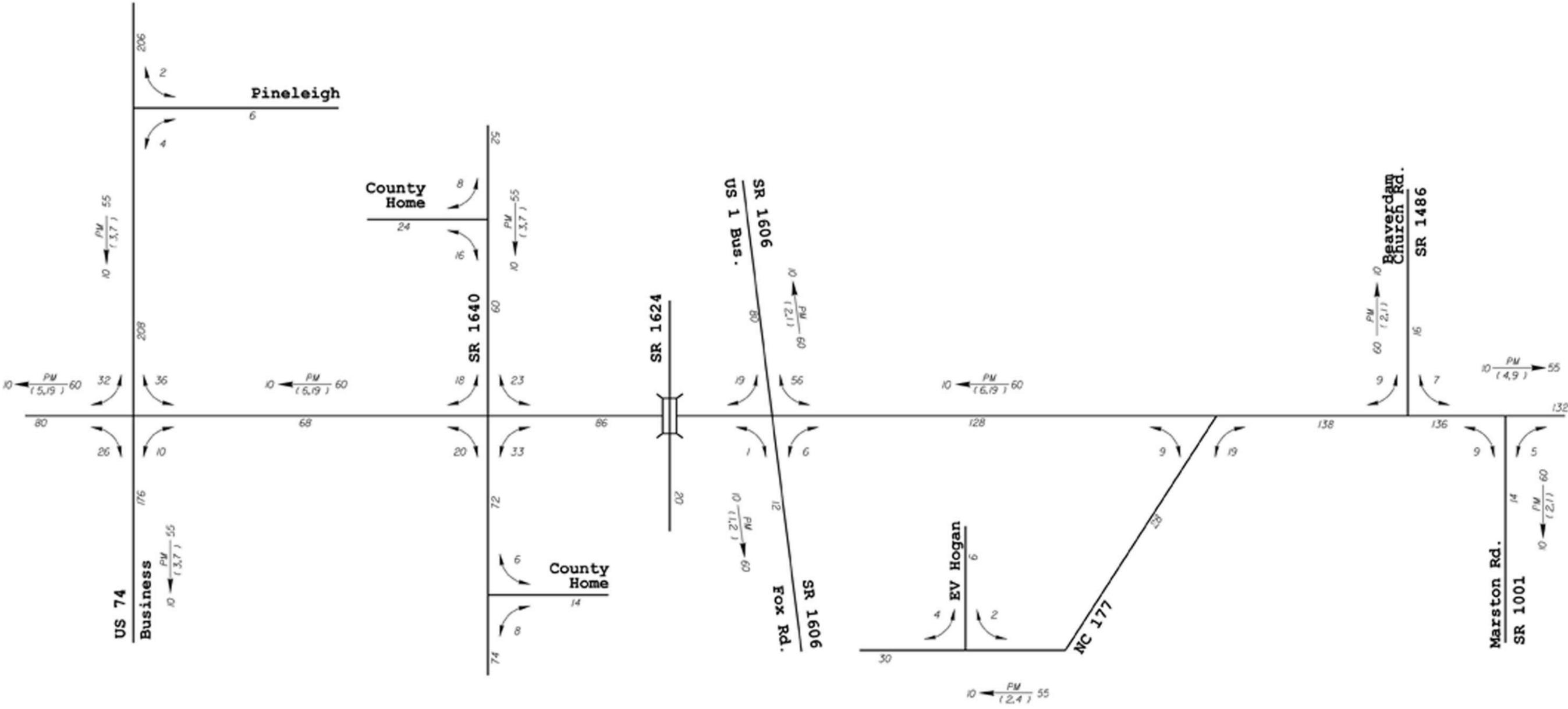
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 $K = \frac{AM/PM}{(DUAL, TTST)} \rightarrow DIR \%$
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Sheet 1 of 2 Figure 2.4a

Figure 2.4b - 2035 Build Traffic Forecast



LEGEND AND FORECAST KEY
 K = AM/FM → DIR %
 (DUAL, TTST)
 AM/FM = Time of Peak
 K = 30th Highest Hourly Volume Factor
 DIR % = % of Flow in Peak Direction
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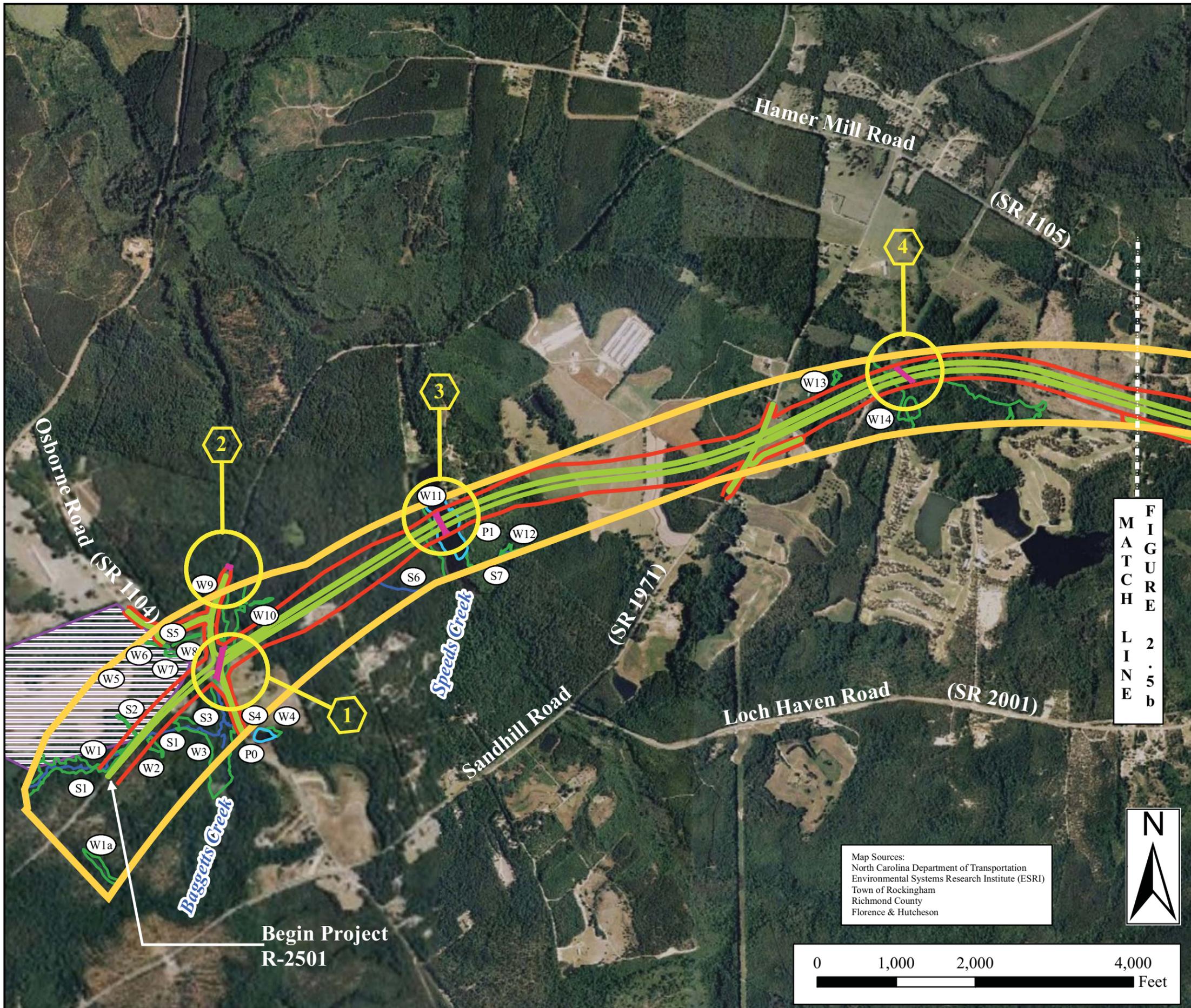
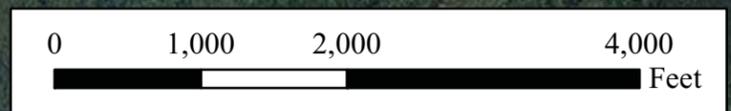


FIGURE 2.5b
MATCH LINE

Map Sources:
 North Carolina Department of Transportation
 Environmental Systems Research Institute (ESRI)
 Town of Rockingham
 Richmond County
 Florence & Hutcheson



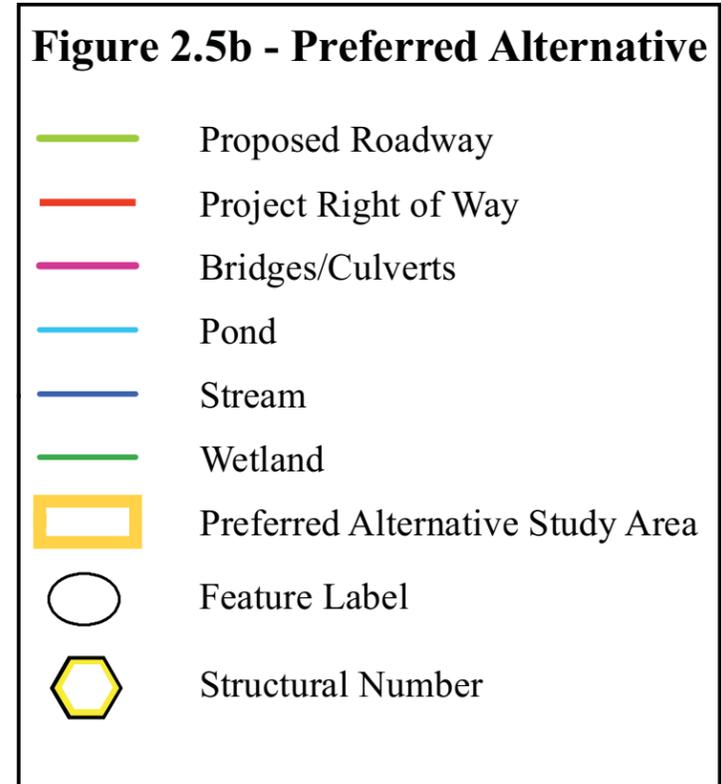
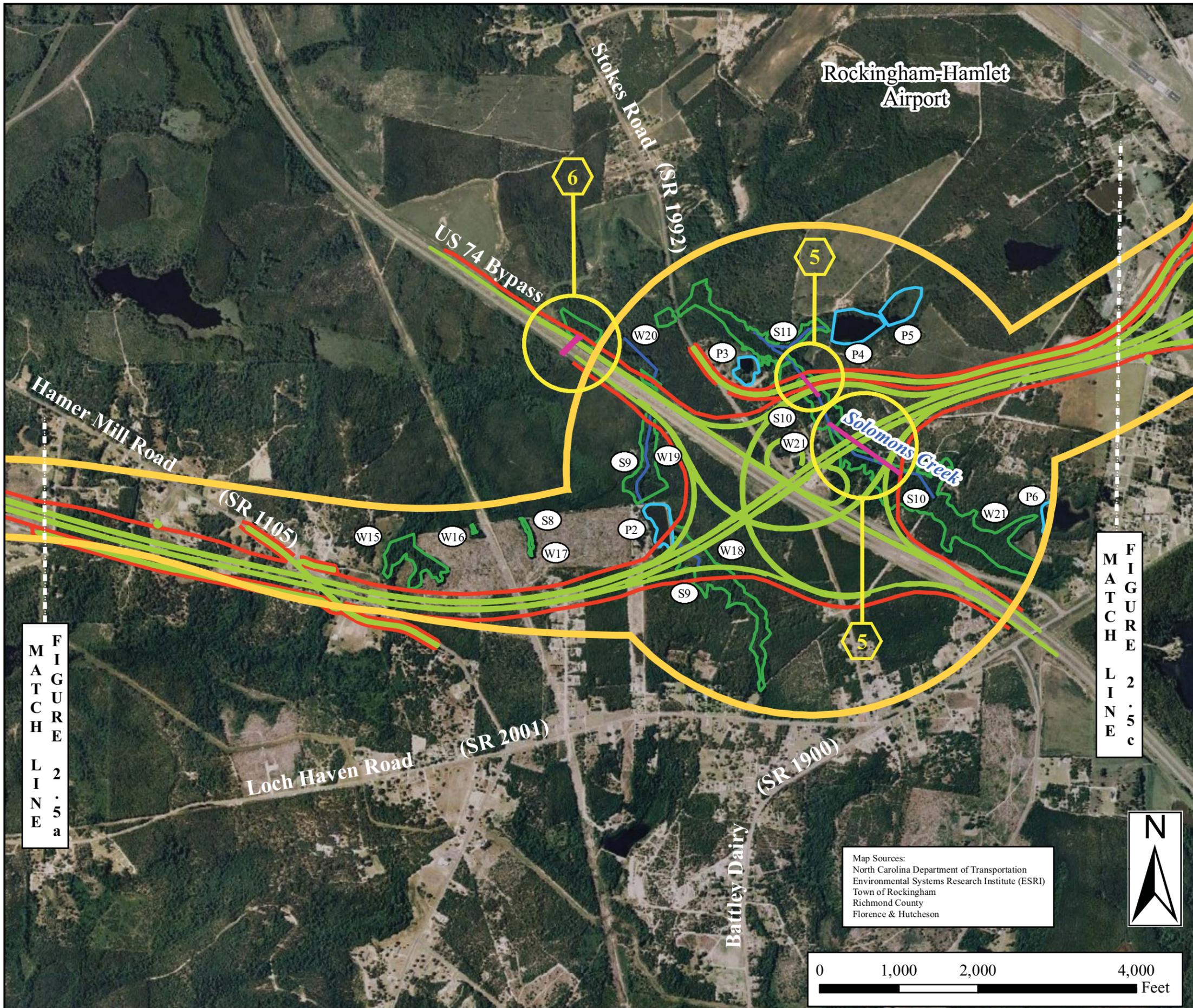
Begin Project
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Figure 2.5a



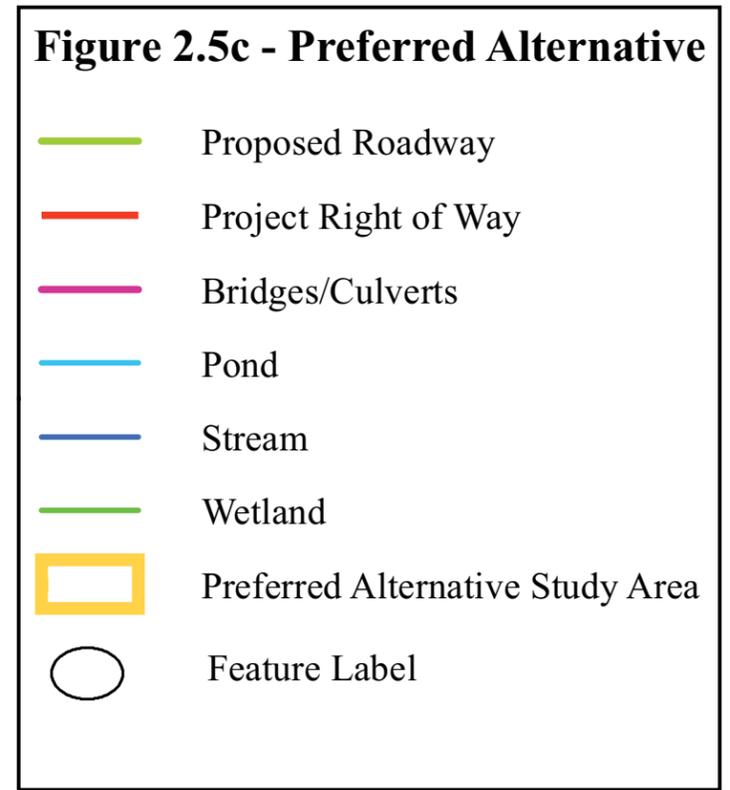


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Figure 2.5b





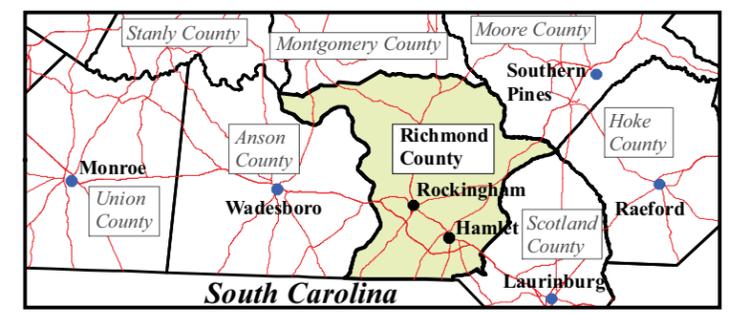
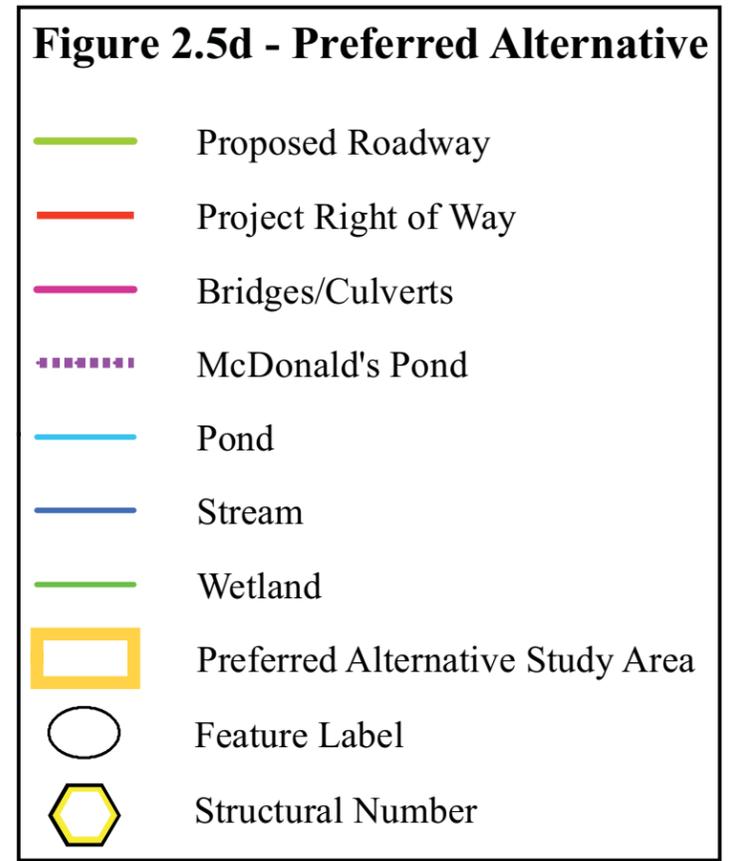
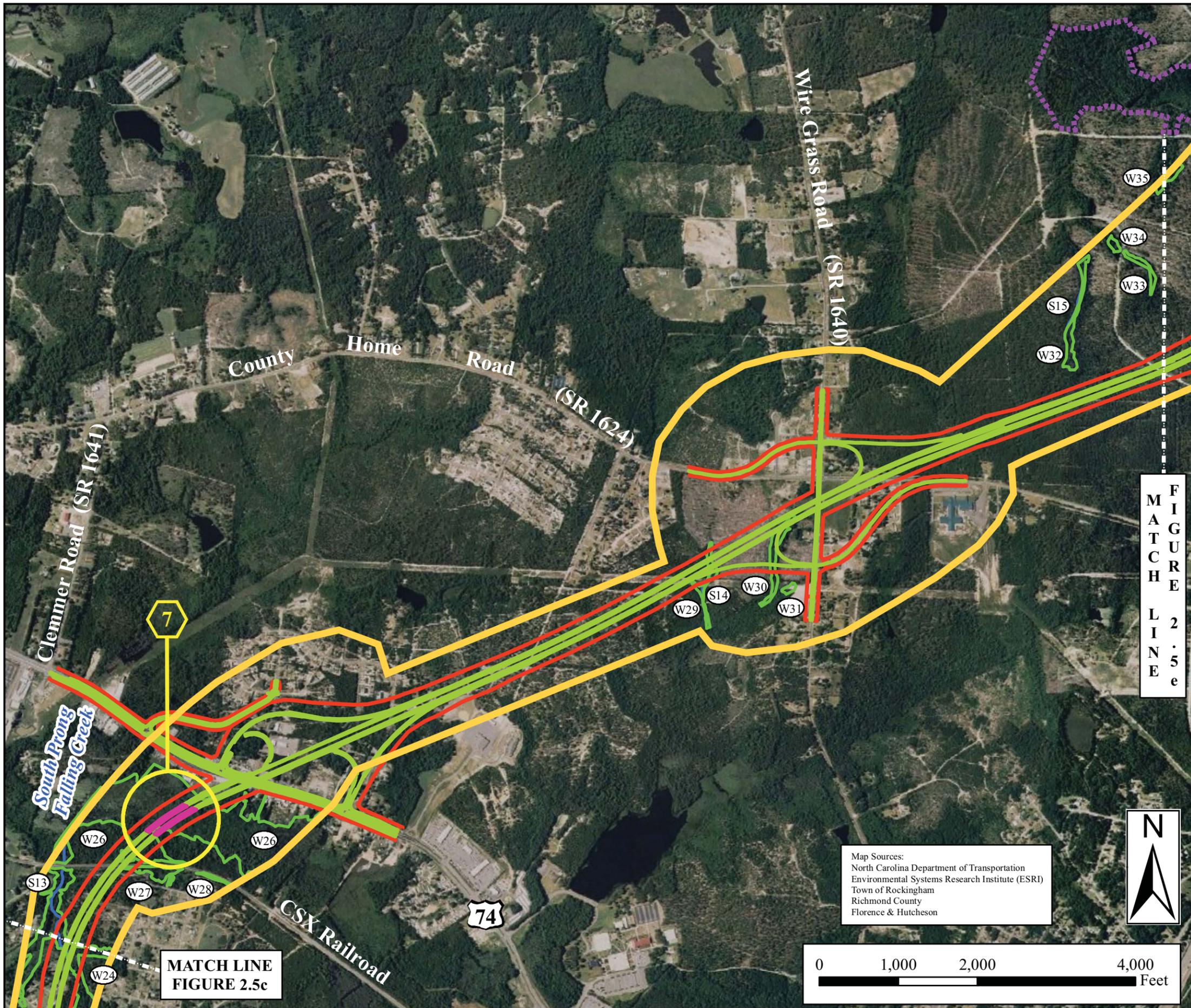
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Richmond County

Figure 2.5c

Map Sources:
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Environmental Systems Research Institute (ESRI)
Town of Rockingham
Richmond County
Florence & Hutcheson





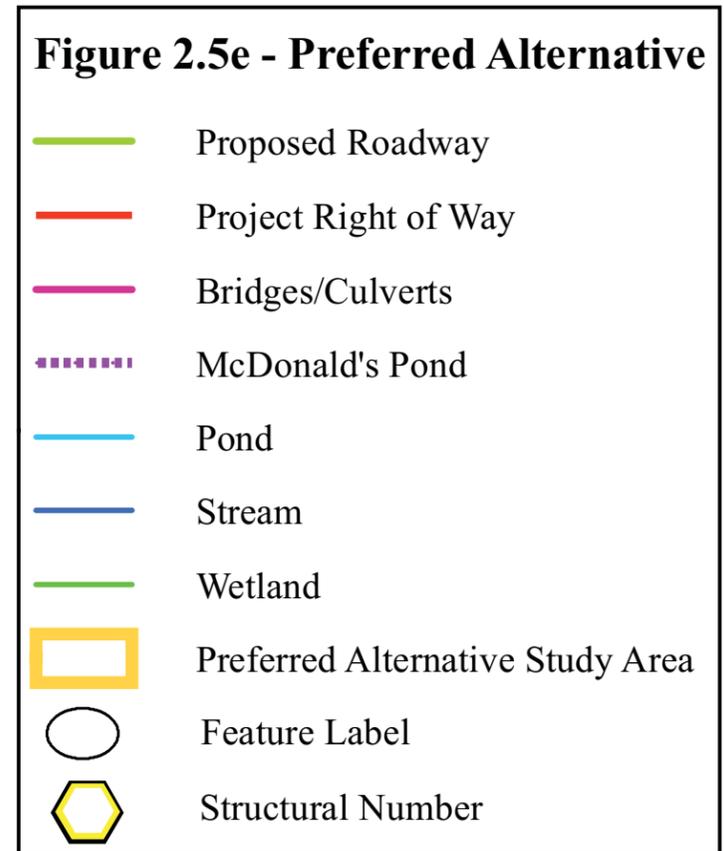
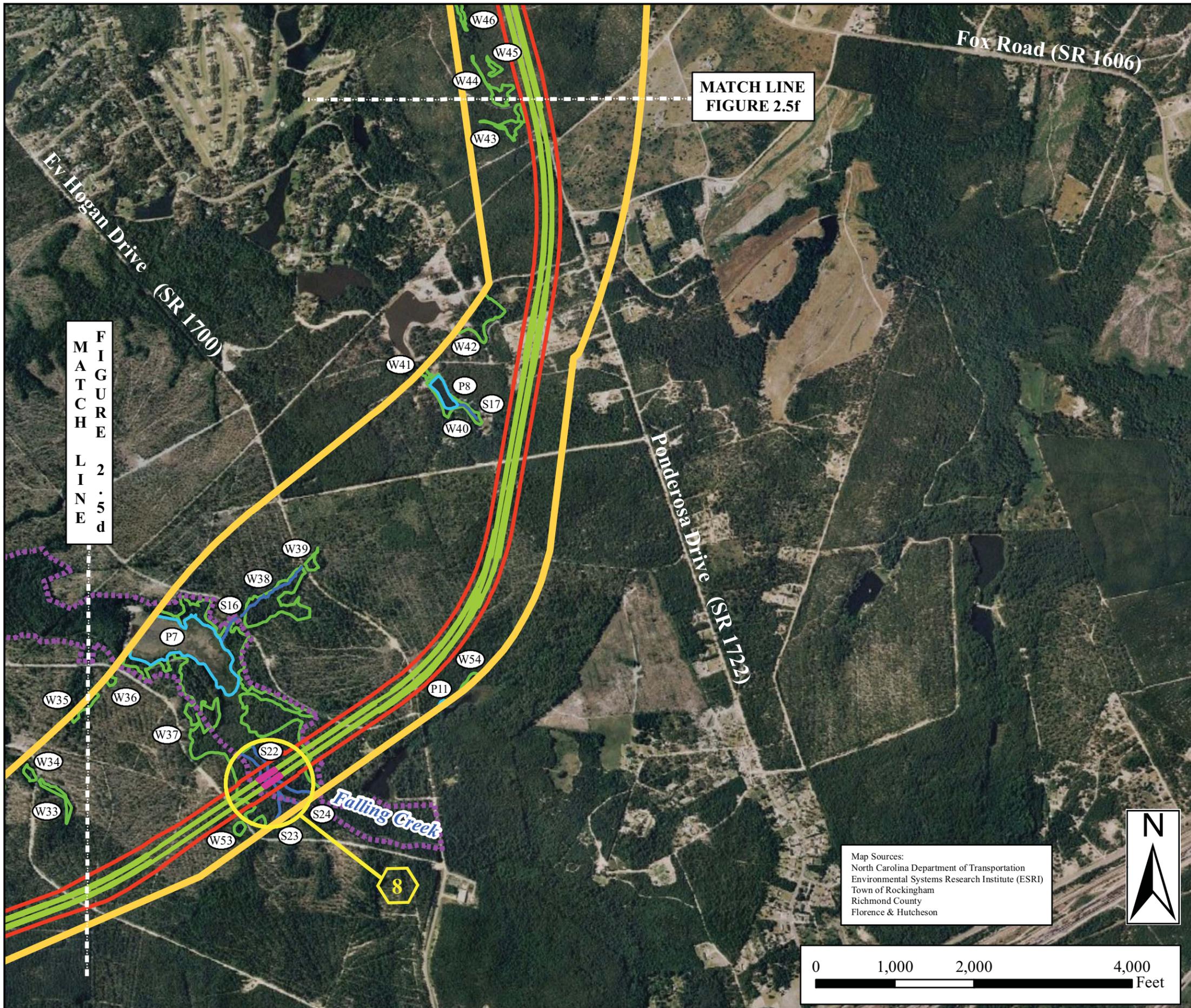
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Figure 2.5d

FIGURE 2.5d

MATCH LINE
 FIGURE 2.5c



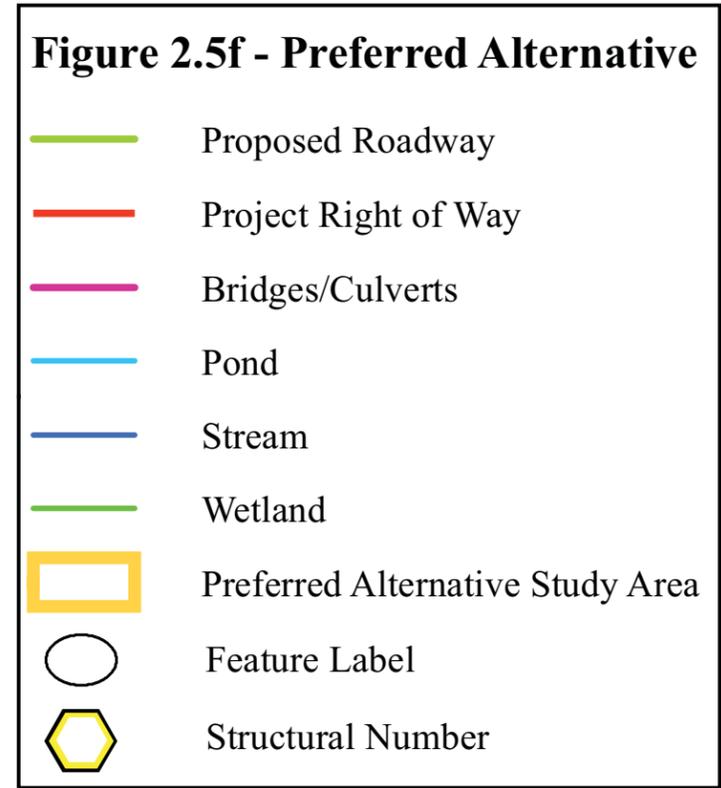
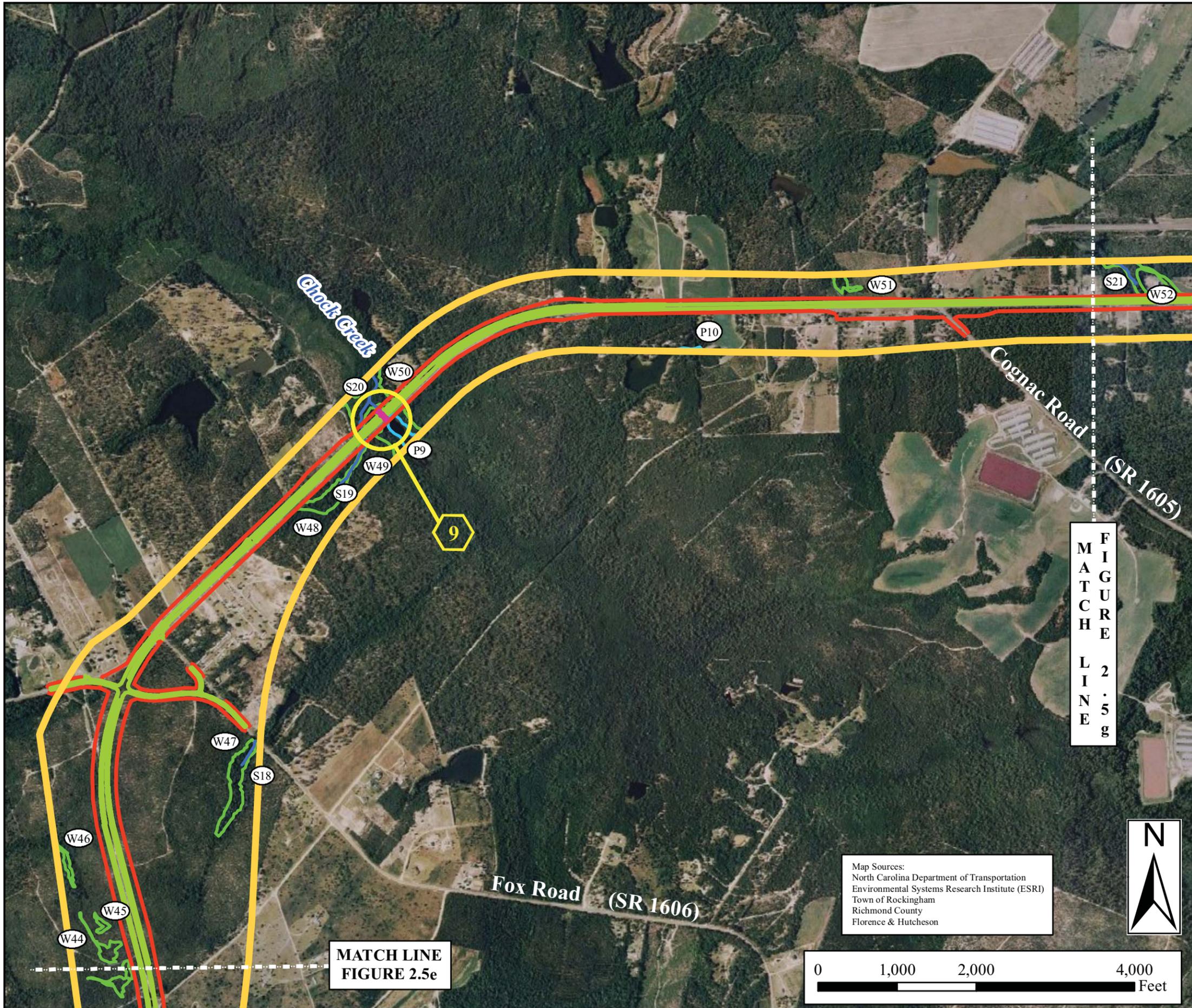
Map Sources:
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 Richmond County
 Florence & Hutcheson



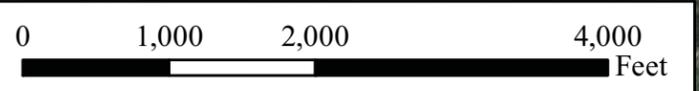
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Figure 2.5e



Map Sources:
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 Richmond County
 Florence & Hutcheson

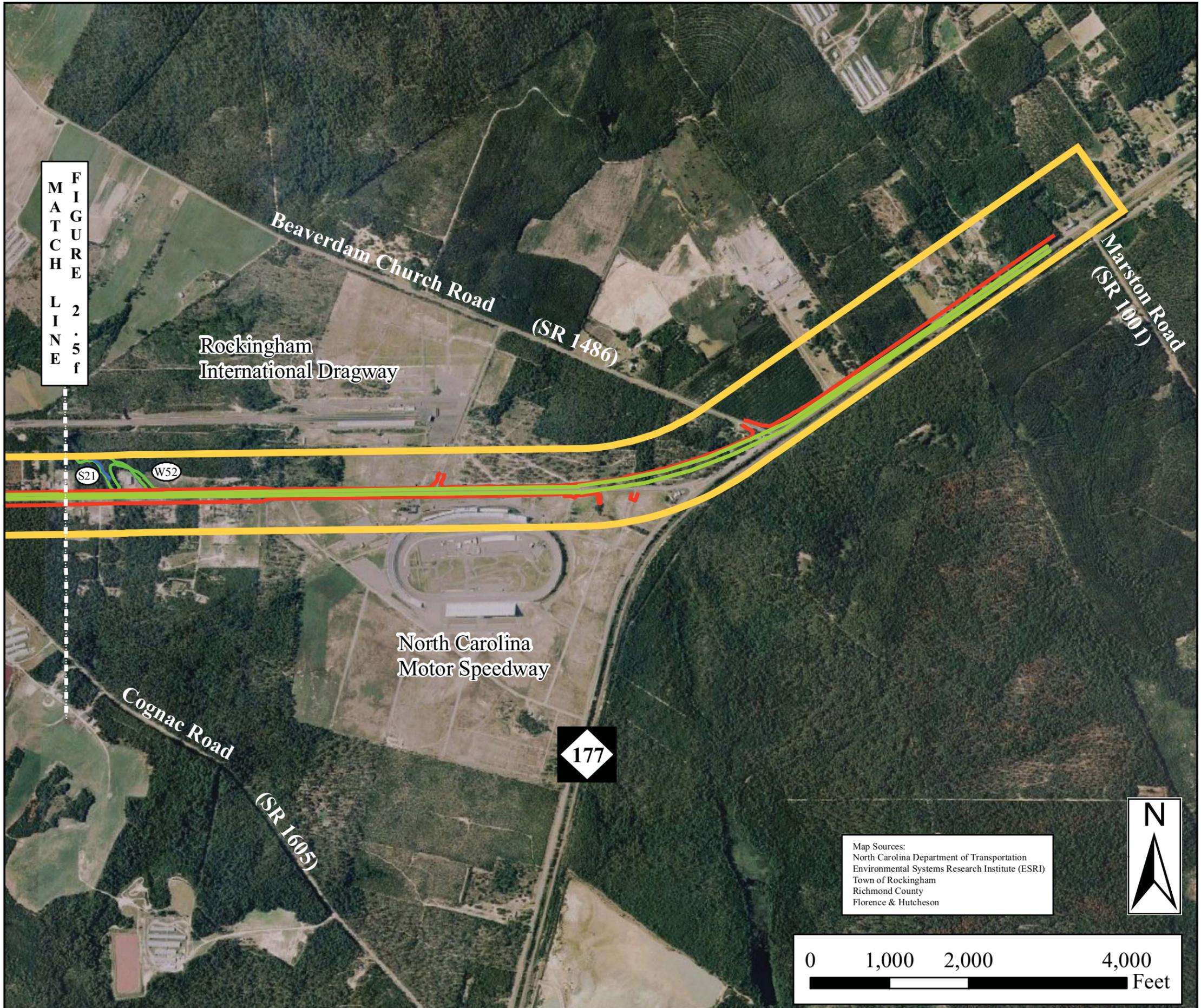


MATCH LINE
 FIGURE 2.5e

FIGURE
 MATCH
 LINE
 25g

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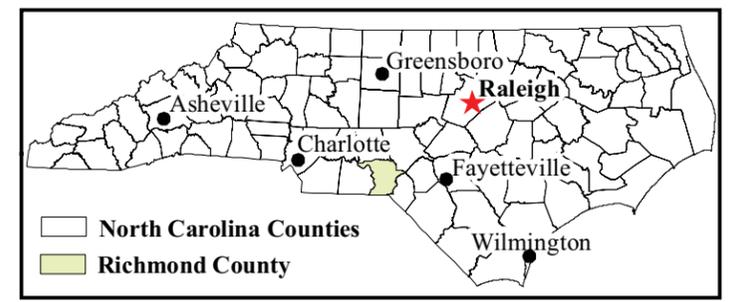
MATCH LINE 2 of 5

Map Sources:
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 Town of Rockingham
 Richmond County
 Florence & Hutcheson



Figure 2.5g - Preferred Alternative

- Proposed Roadway
- Project Right of Way
- Bridges/Culverts
- Pond
- Stream
- Wetland
- Preferred Alternative Study Area
- Feature Label



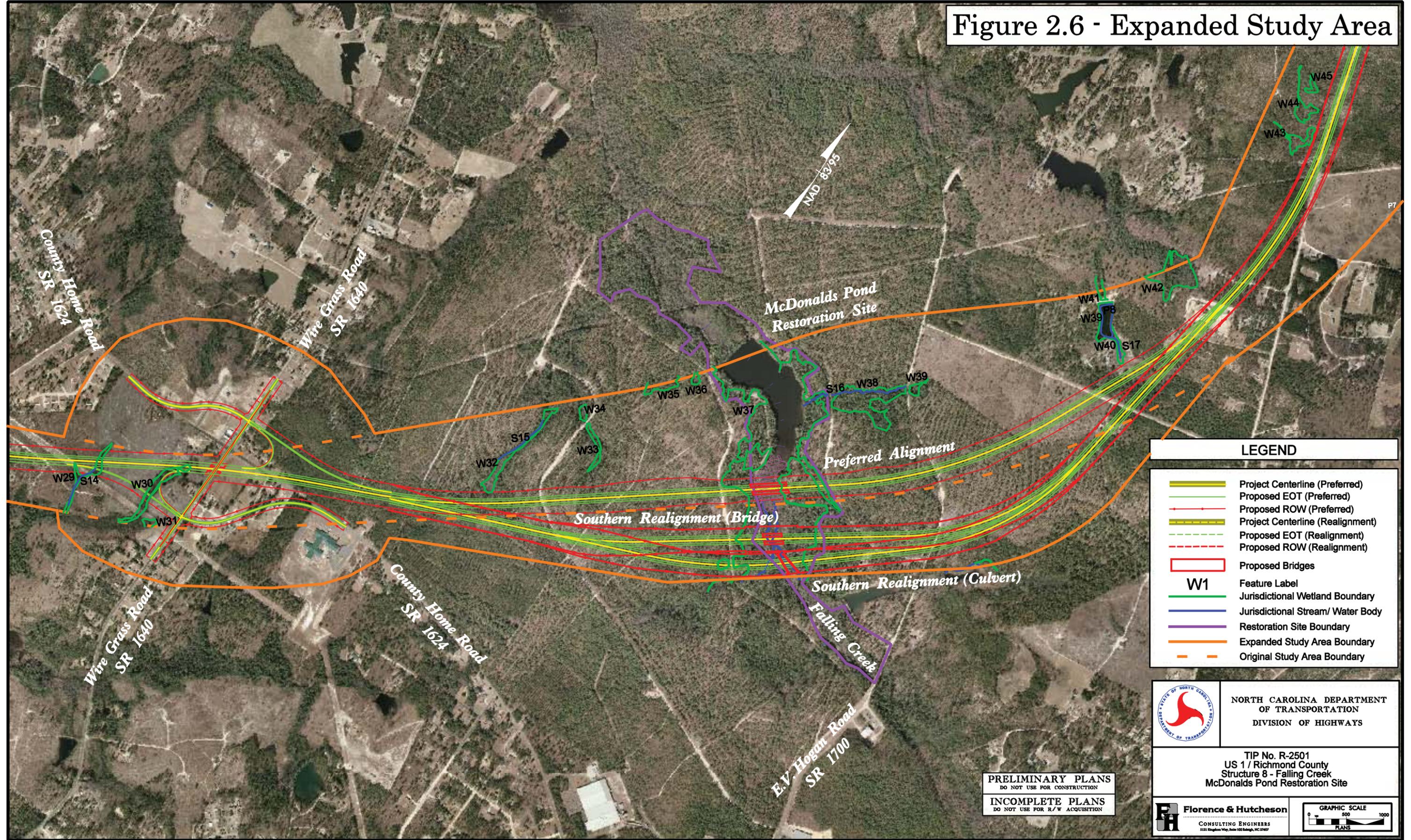
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 US 1, Rockingham, N.C.
 Richmond County

Figure 2.5g

Figure 2.6 - Expanded Study Area



LEGEND	
	Project Centerline (Preferred)
	Proposed EOT (Preferred)
	Proposed ROW (Preferred)
	Project Centerline (Realignment)
	Proposed EOT (Realignment)
	Proposed ROW (Realignment)
	Proposed Bridges
W1	Feature Label
	Jurisdictional Wetland Boundary
	Jurisdictional Stream/ Water Body
	Restoration Site Boundary
	Expanded Study Area Boundary
	Original Study Area Boundary

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS
	TIP No. R-2501 US 1 / Richmond County Structure 8 - Falling Creek McDonalds Pond Restoration Site

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

	Florence & Hutcheson CONSULTING ENGINEERS 5121 Raleigh Way, Suite 100 Raleigh, NC 27607	GRAPHIC SCALE 0 500 1000 FEET PLANS
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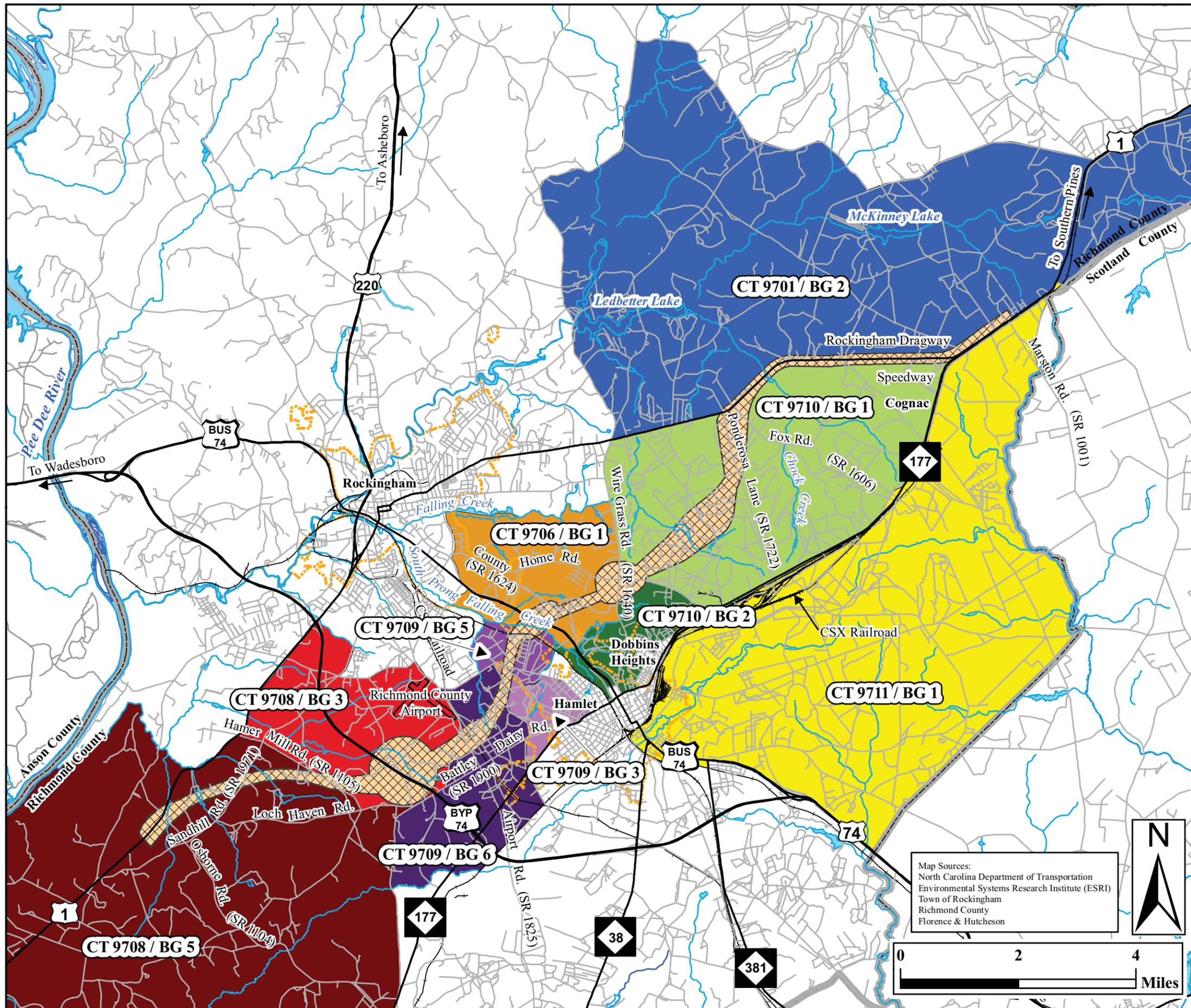
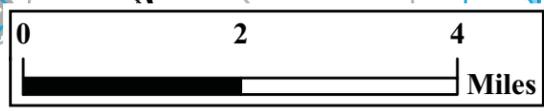


Figure 3.1 - Demographic Area

- Roads
- Major Roads
- Railroads
- Municipal Boundary
- County Boundary
- Streams & Creeks
- Water Bodies
- Preferred Alternative Study Area
- Census Tract 9701 / Block Group 2
- Census Tract 9706 / Block Group 1
- Census Tract 9708 / Block Group 3
- Census Tract 9708 / Block Group 5
- Census Tract 9709 / Block Group 3
- Census Tract 9709 / Block Group 5
- Census Tract 9709 / Block Group 6
- Census Tract 9710 / Block Group 1
- Census Tract 9710 / Block Group 2
- Census Tract 9711 / Block Group 1



Map Sources:
 North Carolina Department of Transportation
 Environmental Systems Research Institute (ESRI)
 Town of Rockingham
 Richmond County
 Florence & Hutcheson





NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 PROJECT DEVELOPMENT AND
 ENVIRONMENTAL ANALYSIS BRANCH

T.I.P. R-2501

Final Environmental Impact Statement
 US 1, Rockingham, N.C.
 Richmond County

Figure 3.1

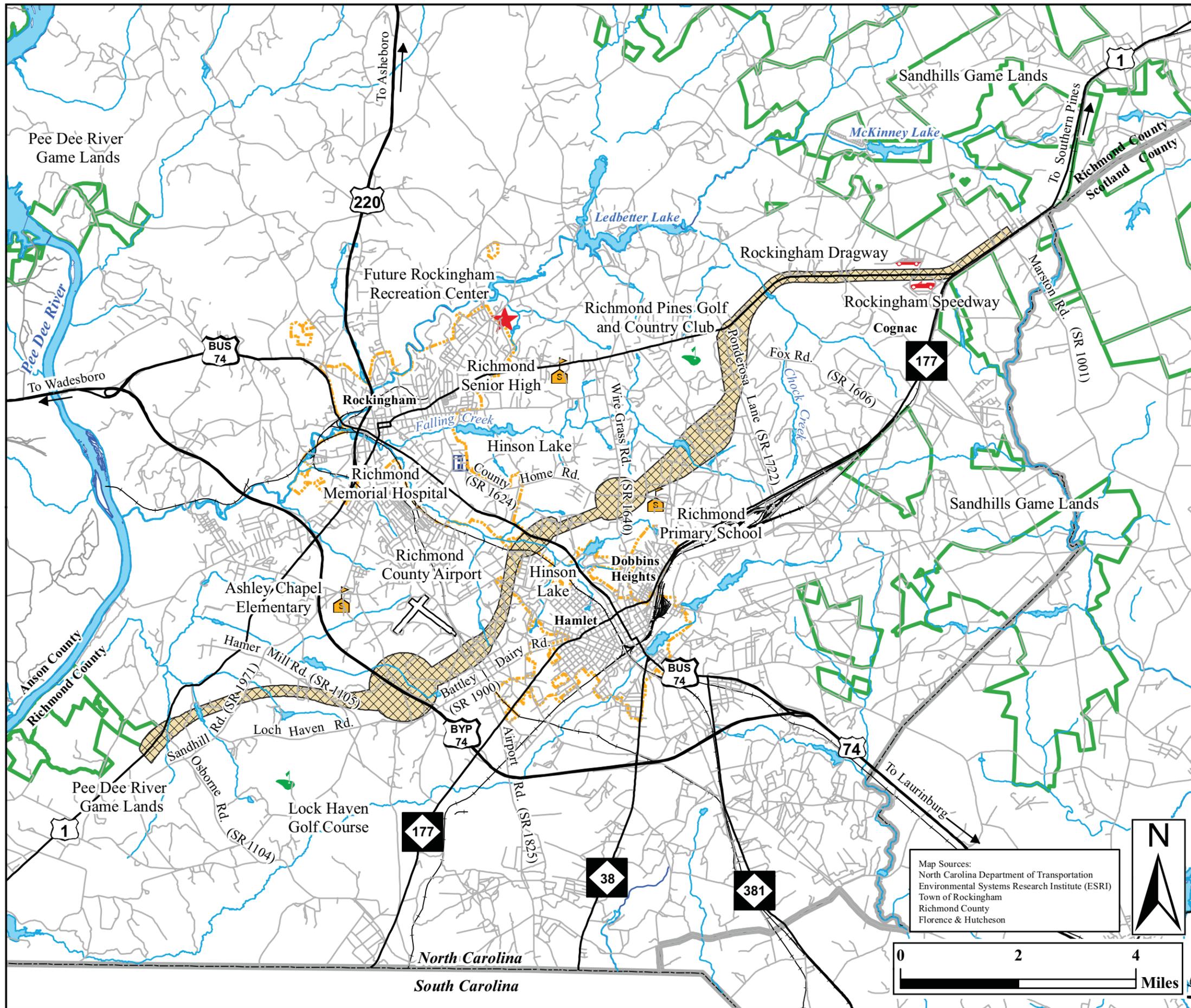


Figure 3.2 - Community Facilities and Services

- Roads
- Major Roads
- Railroads
- Municipal Boundary
- County Boundary
- Streams & Creeks
- Water Bodies
- Preferred Alternative Study Area
- Gamelands
- Schools
- Richmond Memorial Hospital
- Future Rockingham Recreation Complex
- Golf Courses
- Recreation Facilities



Map Sources:
 North Carolina Department of Transportation
 Environmental Systems Research Institute (ESRI)
 Town of Rockingham
 Richmond County
 Florence & Hutcheson

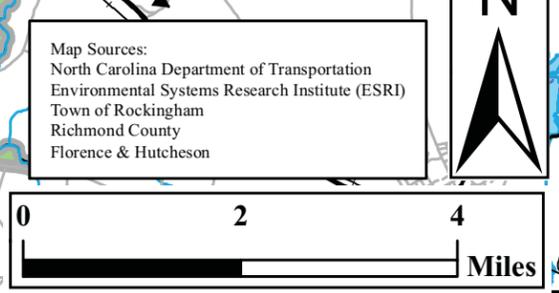
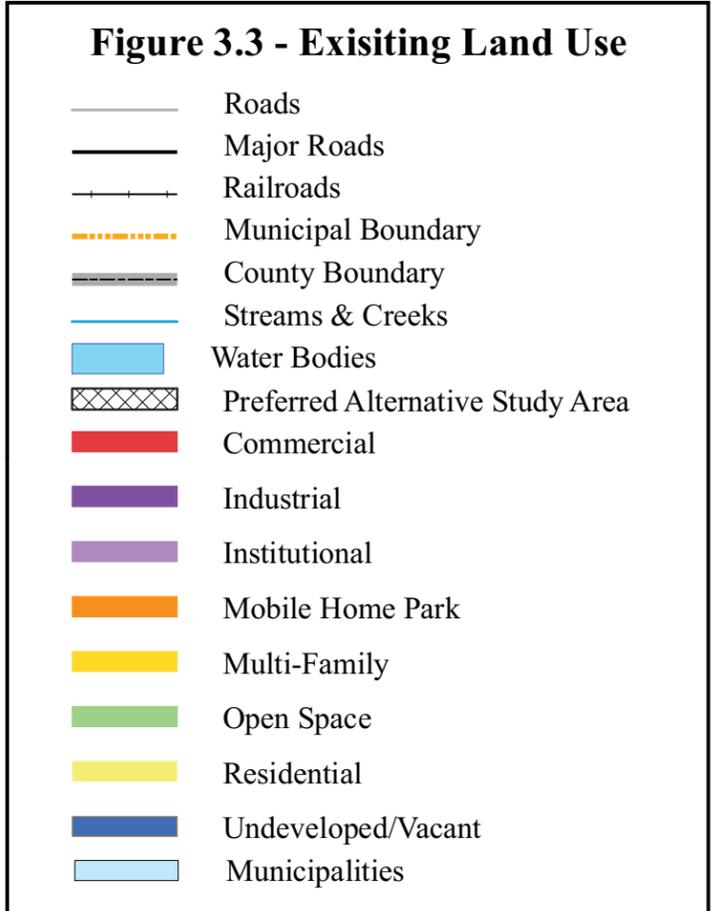
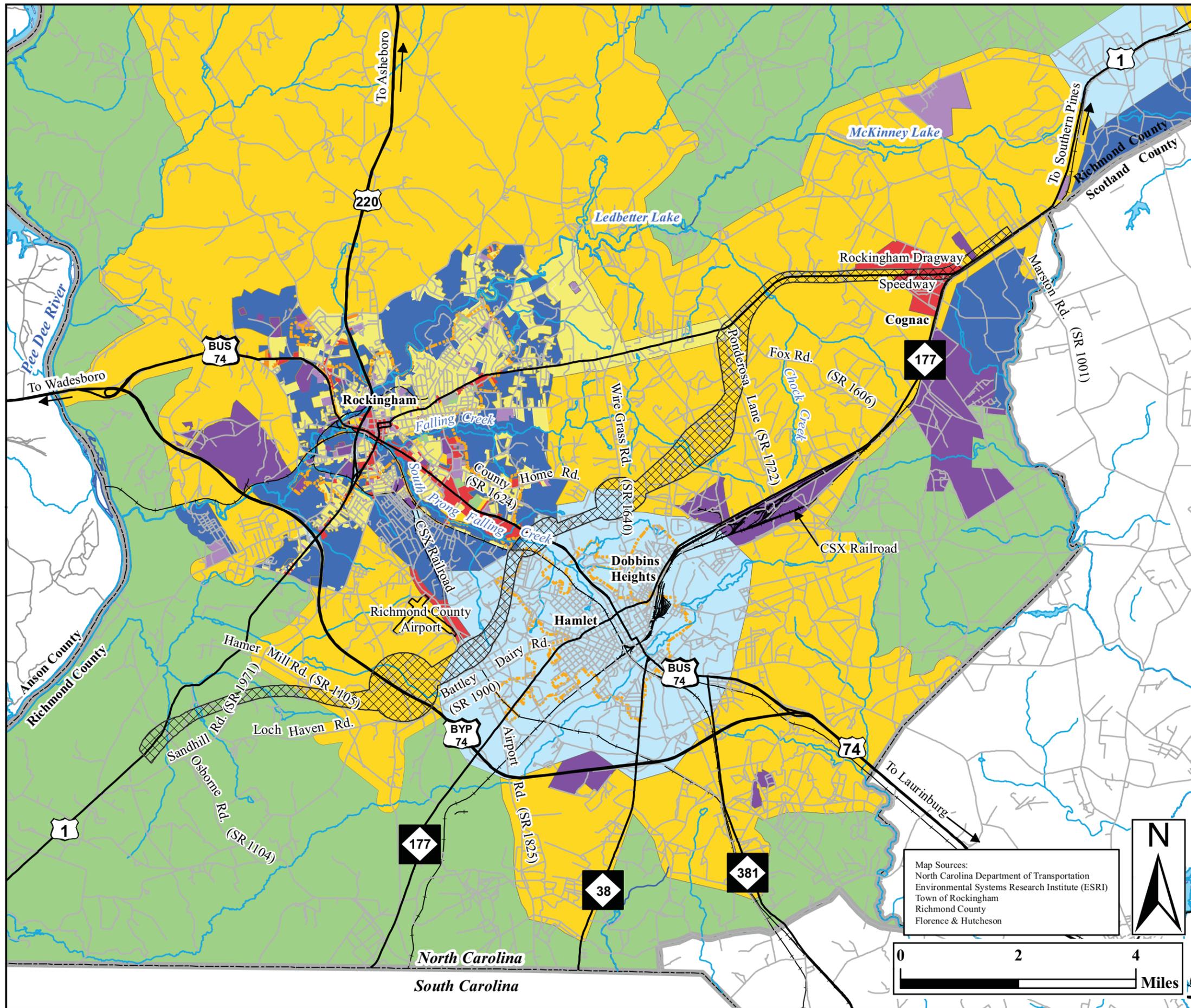




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PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

T.I.P. R-2501

Final Environmental Impact Statement
 US 1, Rockingham, N.C.
 Richmond County

Figure 3.3

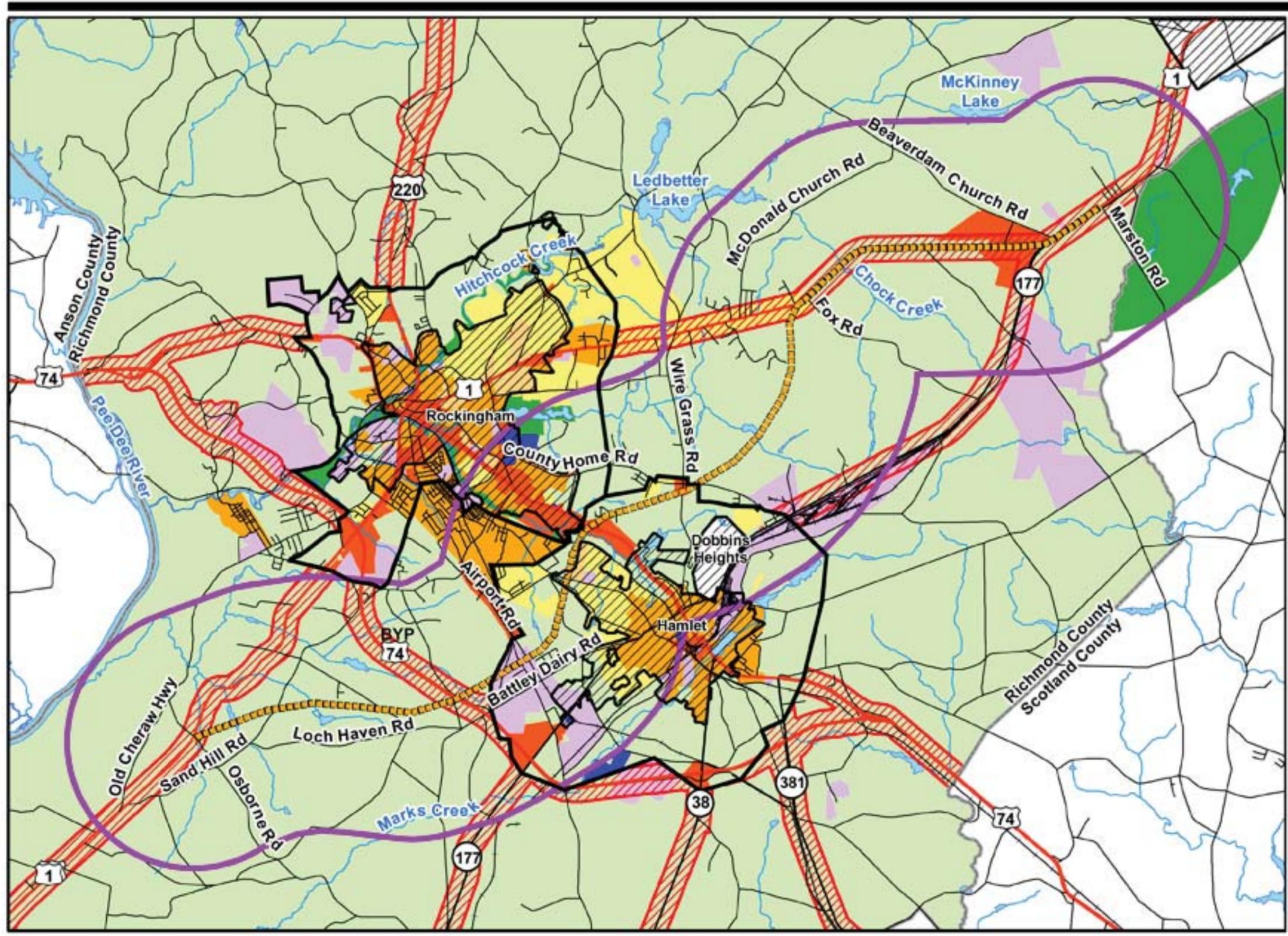


Figure 3.4 - Zoning

- Growth Impact Study Area
- TIP Project R-2501
- US Route
- State Route
- Secondary Road
- Railroads
- Streams & Creeks
- Water Bodies
- County Boundary
- Municipalities
- ETJ Boundary

Zoning Classification

- Commercial
- Conservation/Open Space
- High Density Residential
- Industrial
- Low Density Residential
- Medium Density Residential
- Office/Institutional
- Rural Residential
- Conservation
- Richmond County Highway Commercial Overlay

0 1 2 4 Miles

MAP SOURCES:
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI)
 RICHMOND COUNTY
 SCOTLAND COUNTY
 INTB NORTH CAROLINA, P.C.



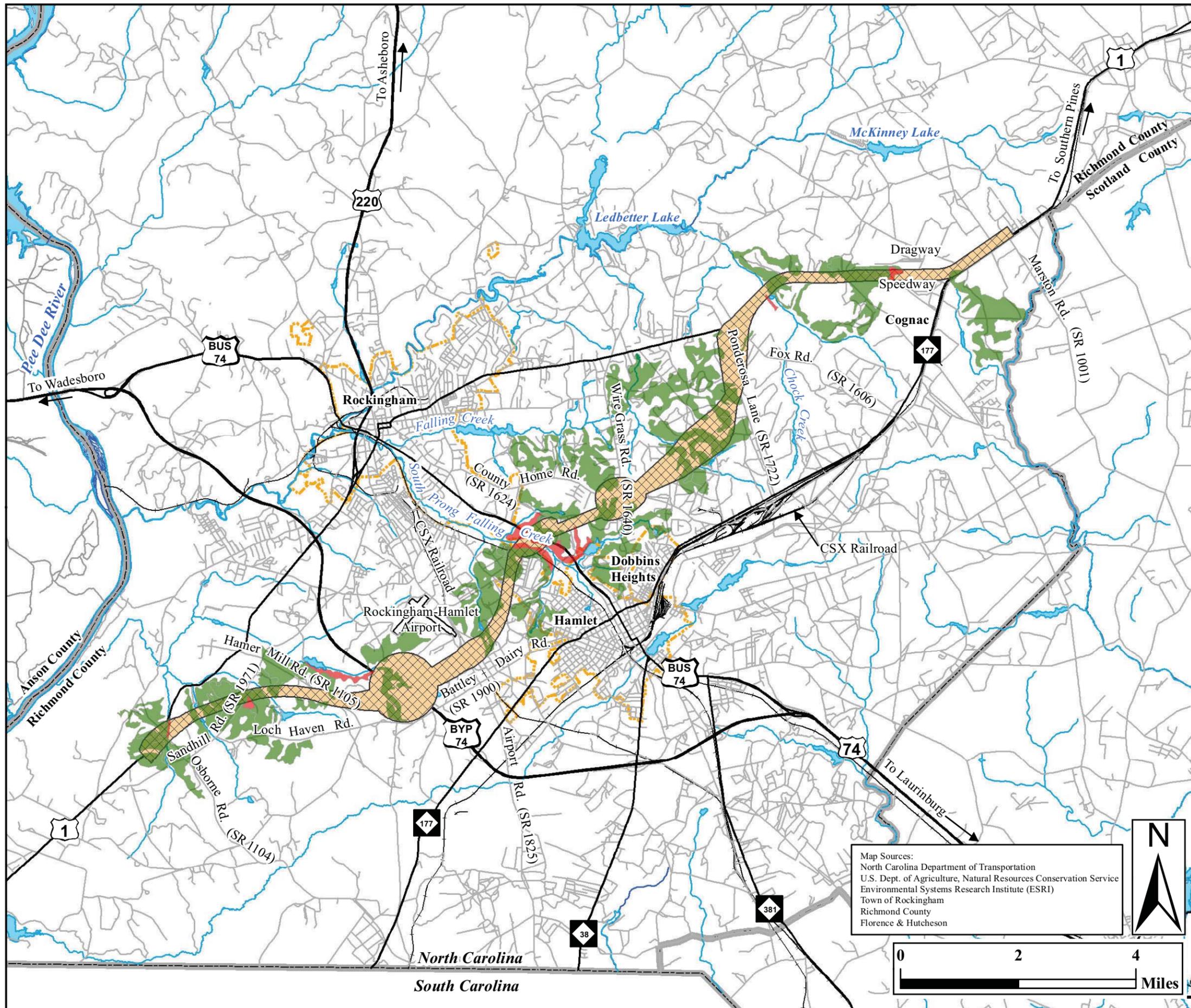


Figure 3.5 - Farmlands

- Roads
- Major Roads
- Railroads
- Municipal Boundary
- County Boundary
- Streams & Creeks
- Water Bodies
- Prime Farmlands
- Farmlands of Statewide Importance
- Preferred Alternative Study Area



Map Sources:
 North Carolina Department of Transportation
 U.S. Dept. of Agriculture, Natural Resources Conservation Service
 Environmental Systems Research Institute (ESRI)
 Town of Rockingham
 Richmond County
 Florence & Hutcheson

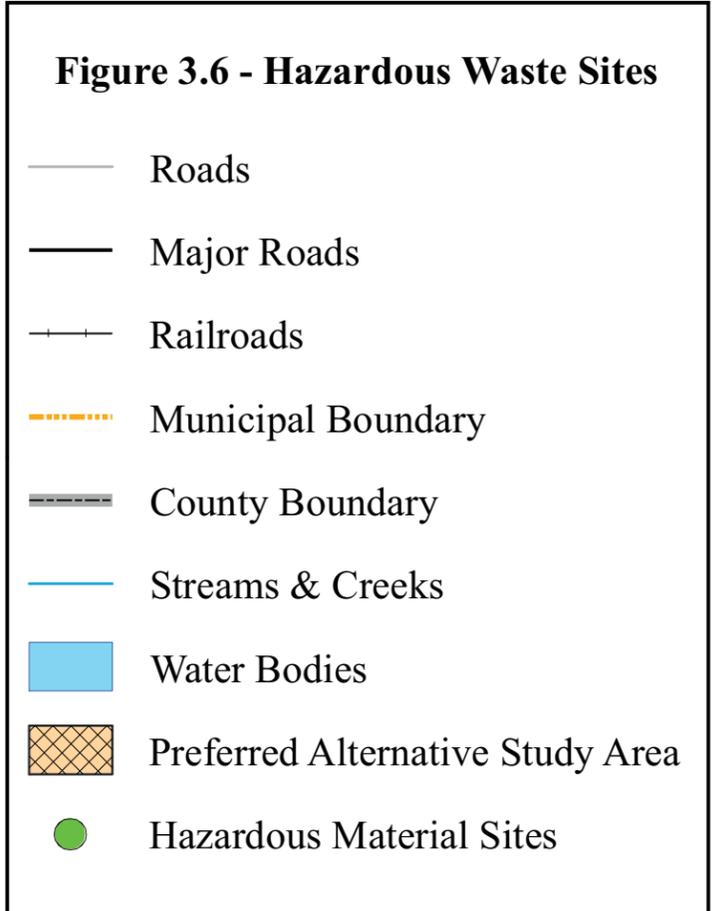
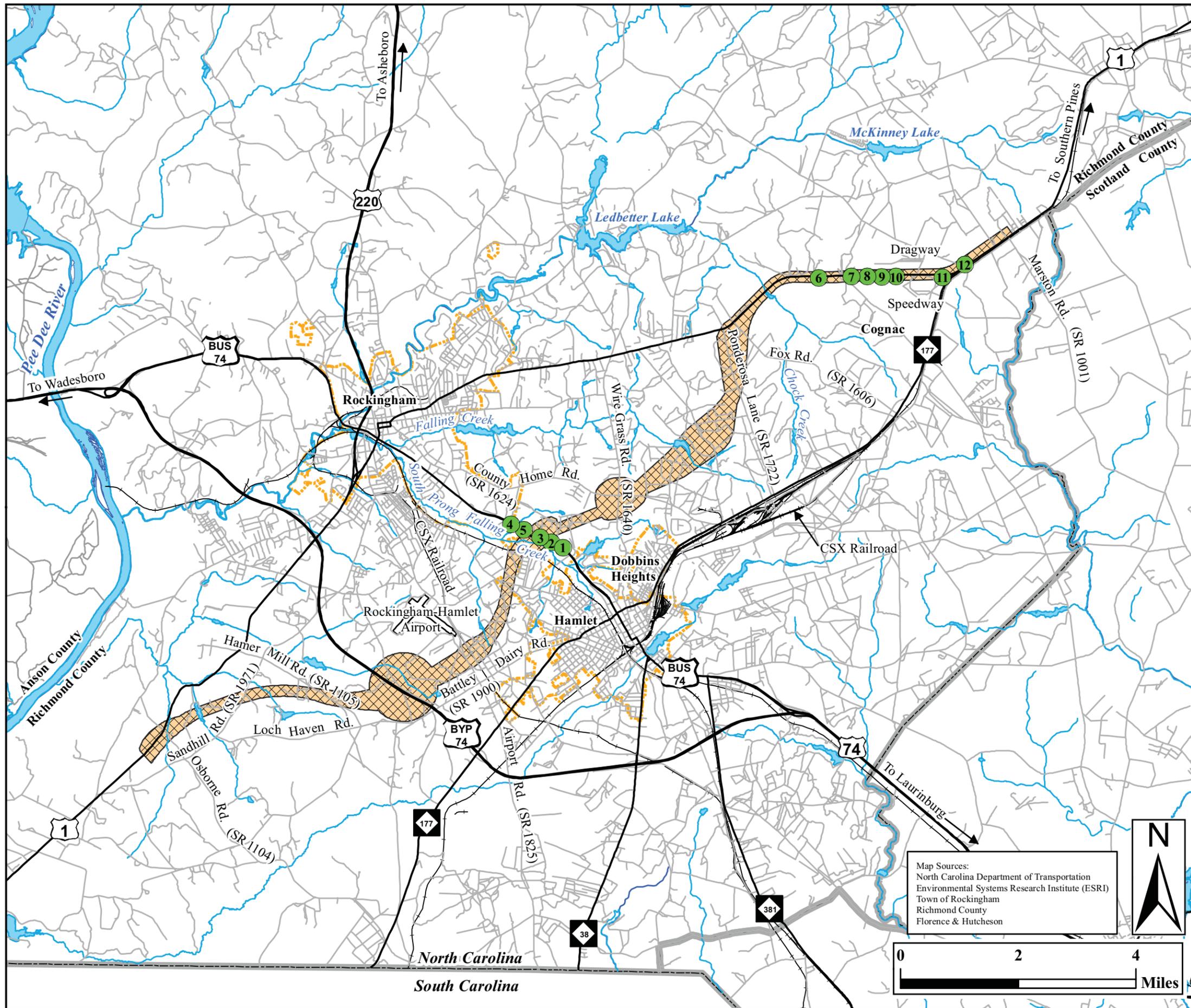




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T.I.P. R-2501
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 US 1, Rockingham, N.C.
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Figure 3.5



Map Sources:
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 Environmental Systems Research Institute (ESRI)
 Town of Rockingham
 Richmond County
 Florence & Hutcheson

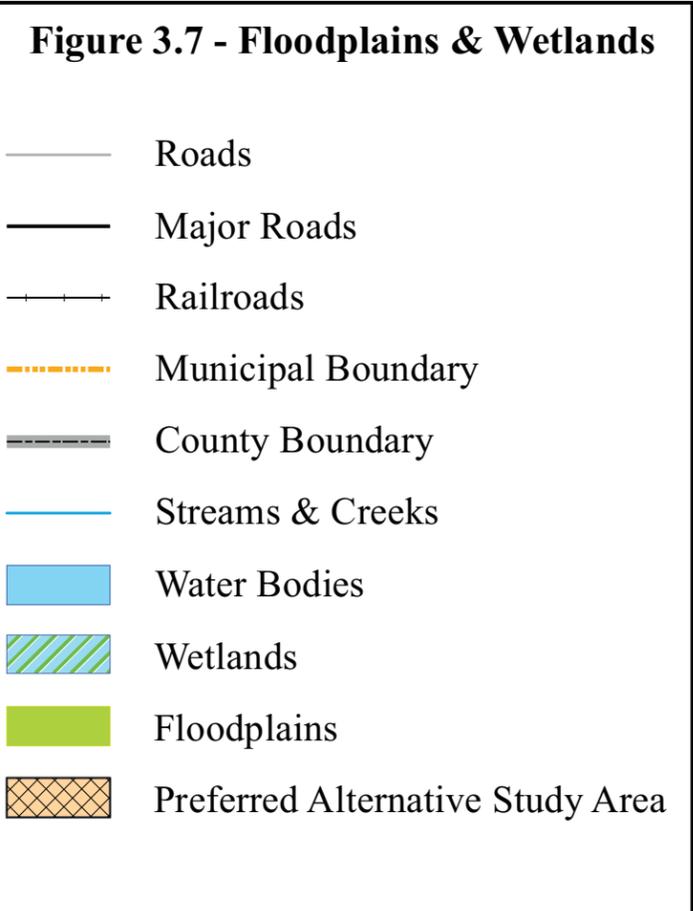
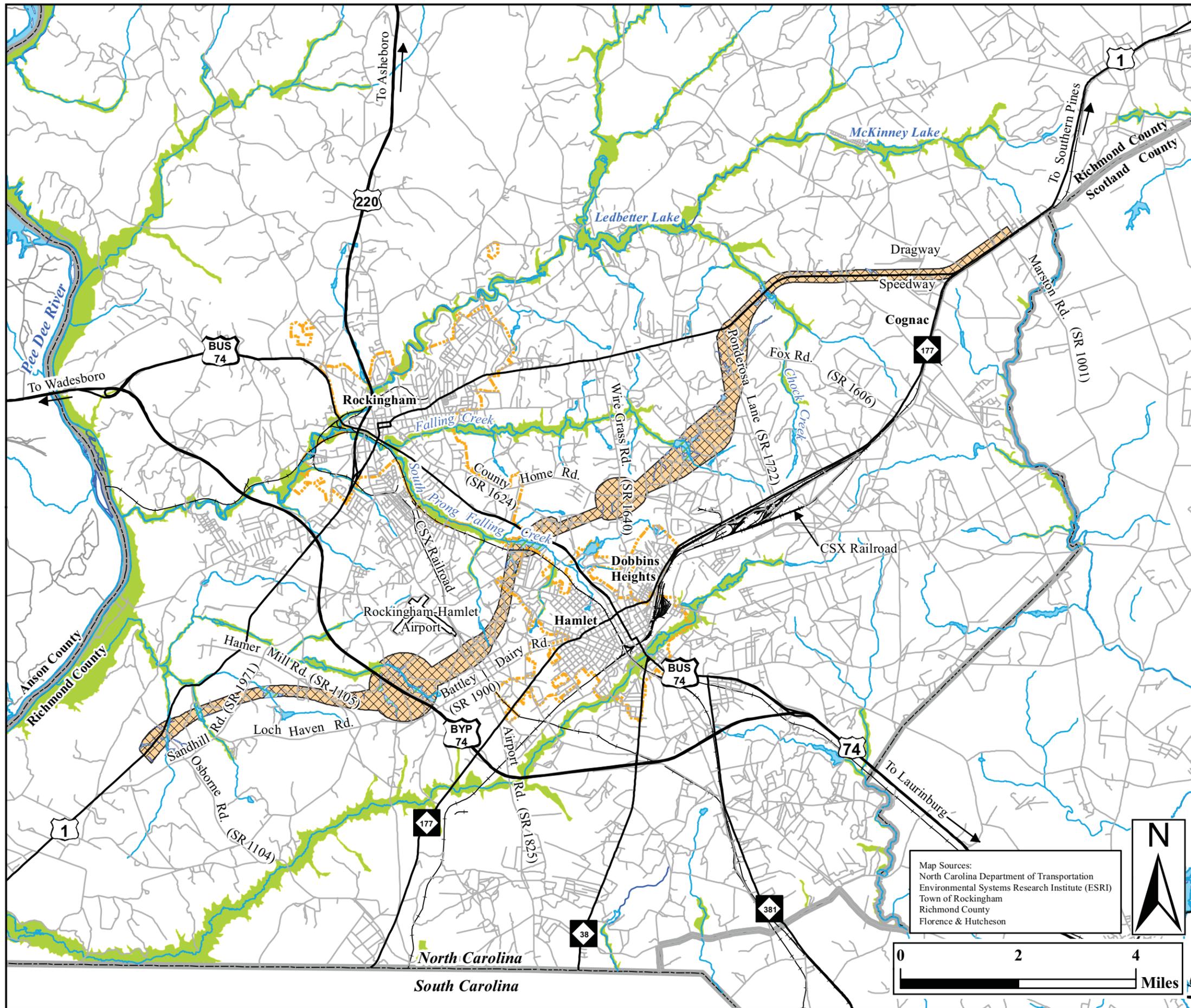


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PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

T.I.P. R-2501

Final Environmental Impact Statement
 US 1, Rockingham, N.C.
 Richmond County

Figure 3.6



Map Sources:
 North Carolina Department of Transportation
 Environmental Systems Research Institute (ESRI)
 Town of Rockingham
 Richmond County
 Florence & Hutcheson



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PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

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Final Environmental Impact Statement
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Figure 3.7

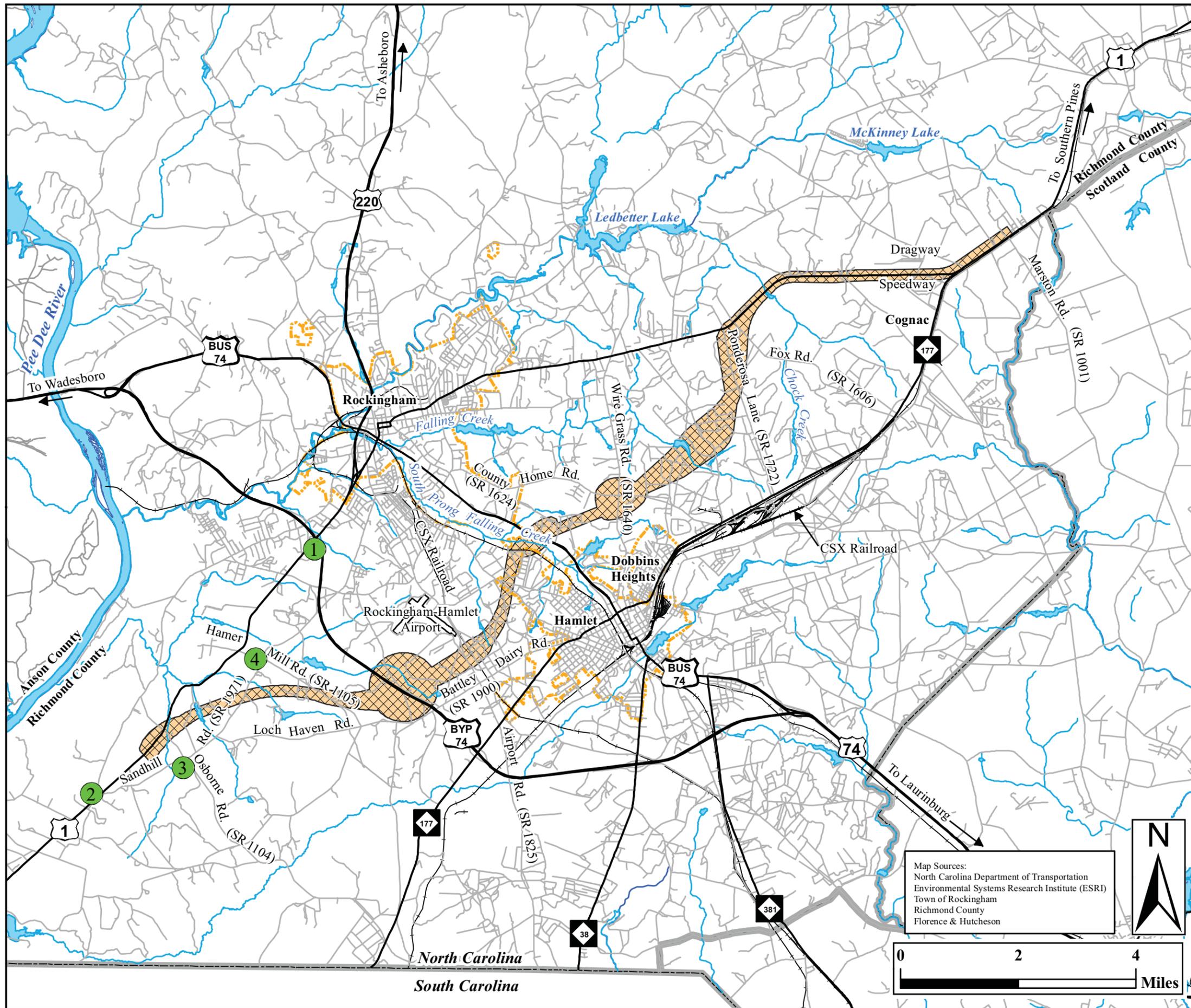


Figure 3.8 - Cultural Resources

-  Roads
-  Major Roads
-  Railroads
-  Municipal Boundary
-  County Boundary
-  Streams & Creeks
-  Water Bodies
-  Preferred Alternative Study Area
-  1 Covington Plantation House
-  2 William Diggs House
-  3 St. Paul United Methodist Church
-  4 Flowers - Hamer House



Map Sources:
 North Carolina Department of Transportation
 Environmental Systems Research Institute (ESRI)
 Town of Rockingham
 Richmond County
 Florence & Hutcheson



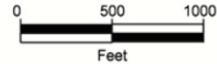
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 Richmond County



- Study Area Boundary*
- Open Water*
- Mesic Mixed Hardwood Forest*
- Mesic Pine Flatwoods*
- Pine/Scrub Oak Sandhill*
- Coastal Plain Bottomland Hardwoods*
- Streamhead Pocosin*
- Pine Forest*
- Agricultural Land*
- Maintained/Disturbed*
- Successional*
- Impervious Surface*

*Location and extent is approximate.



Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for, and is not suitable for legal or engineering purposes.

Match Line
Figure 3.9B

Project:	ET06021.00
Date:	Jan 2011
Drwn/Chkd:	AJS/JB
Figure:	3.9a

Natural Communities Map
US Highway 1 Rockingham Bypass
 Richmond County, North Carolina
 T.I.P. No. R-2501

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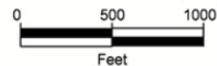
Match Line
Figure 3.9A

Match Line
Figure 3.9C



- Study Area Boundary*
- Open Water*
- Mesic Mixed Hardwood Forest*
- Mesic Pine Flatwoods*
- Pine/Scrub Oak Sandhill*
- Coastal Plain Bottomland Hardwoods*
- Streamhead Pocosin*
- Pine Forest*
- Agricultural Land*
- Maintained/Disturbed*
- Successional*
- Impervious Surface*

*Location and extent is approximate.



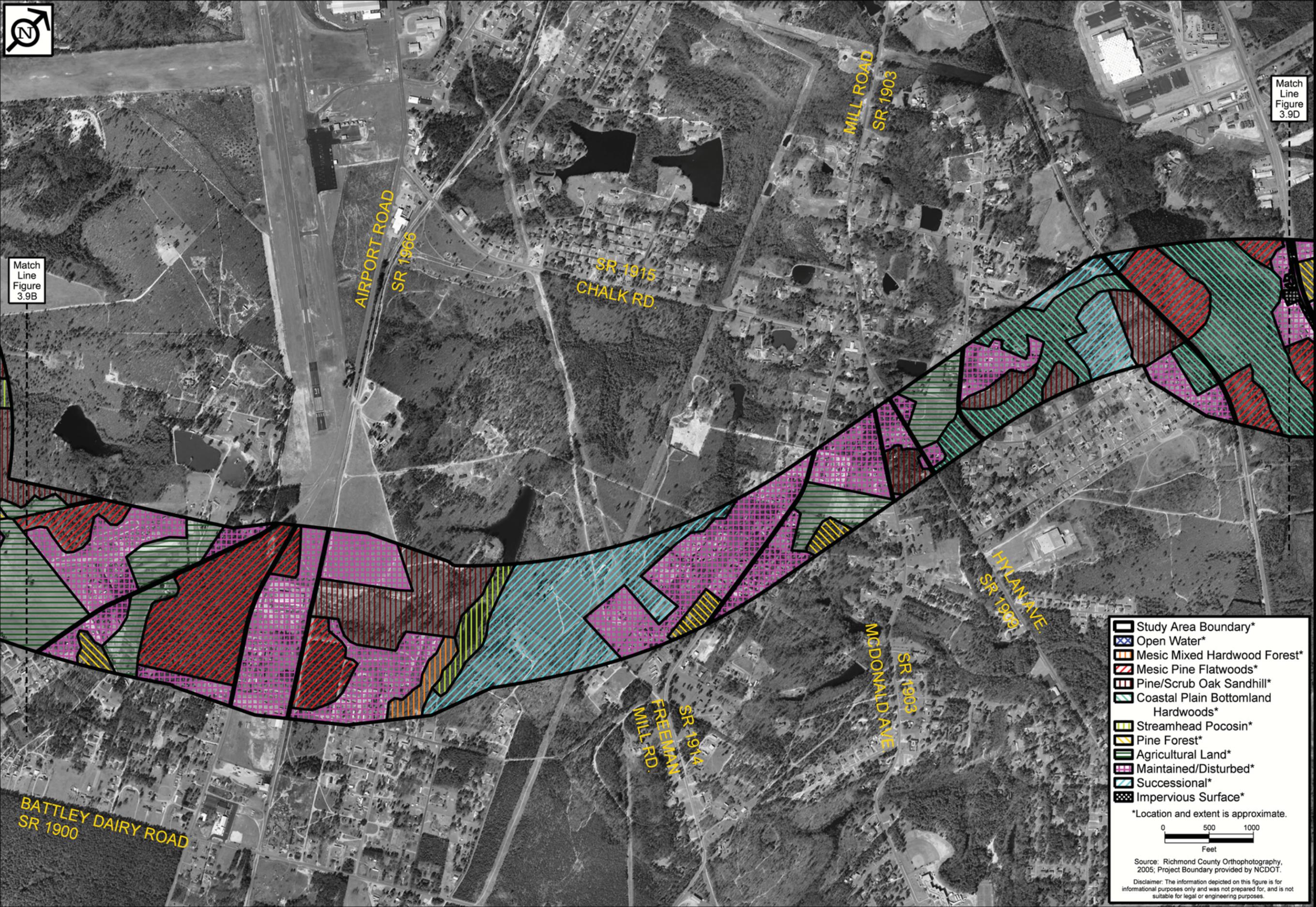
Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

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Project: ET06021.00
Date: Jan 2011
Drwn/Chkd: AJS/JB
Figure: 3.9b

Natural Communities Map
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Match Line
Figure
3.9B

Match Line
Figure
3.9D

	Study Area Boundary*
	Open Water*
	Mesic Mixed Hardwood Forest*
	Mesic Pine Flatwoods*
	Pine/Scrub Oak Sandhill*
	Coastal Plain Bottomland Hardwoods*
	Streamhead Pocosin*
	Pine Forest*
	Agricultural Land*
	Maintained/Disturbed*
	Successional*
	Impervious Surface*

*Location and extent is approximate.

0 500 1000
Feet

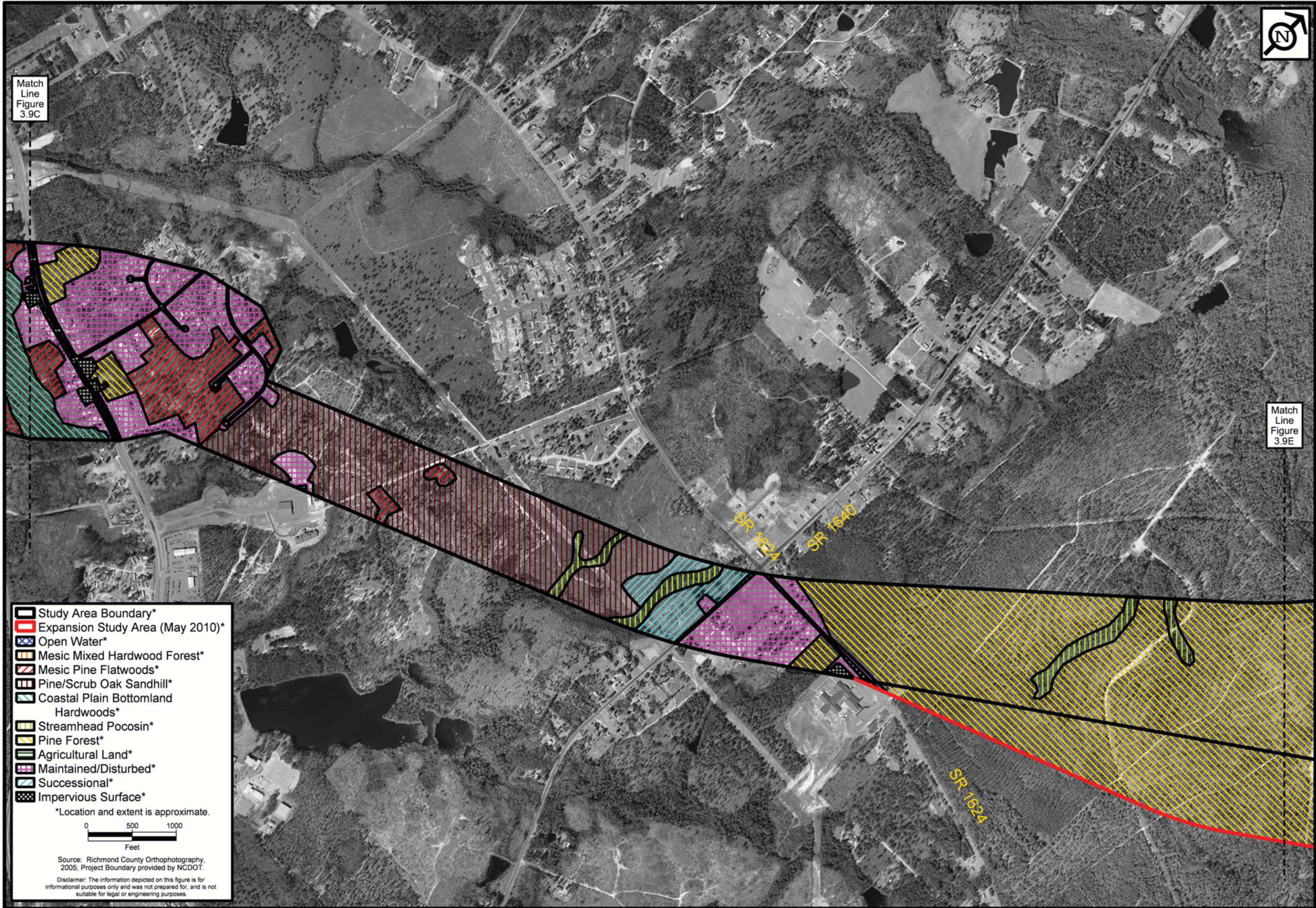
Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for, and is not suitable for legal or engineering purposes.

Project: ET06021.00
Date: Jan 2011
Drawn/Chkd: AJS/JB
Figure: 3.9c

Natural Communities Map
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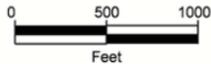


Match Line
Figure
3.9C

Match Line
Figure
3.9E

- Study Area Boundary*
- Expansion Study Area (May 2010)*
- Open Water*
- Mesic Mixed Hardwood Forest*
- Mesic Pine Flatwoods*
- Pine/Scrub Oak Sandhill*
- Coastal Plain Bottomland Hardwoods*
- Streamhead Pocosin*
- Pine Forest*
- Agricultural Land*
- Maintained/Disturbed*
- Successional*
- Impervious Surface*

*Location and extent is approximate.



Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

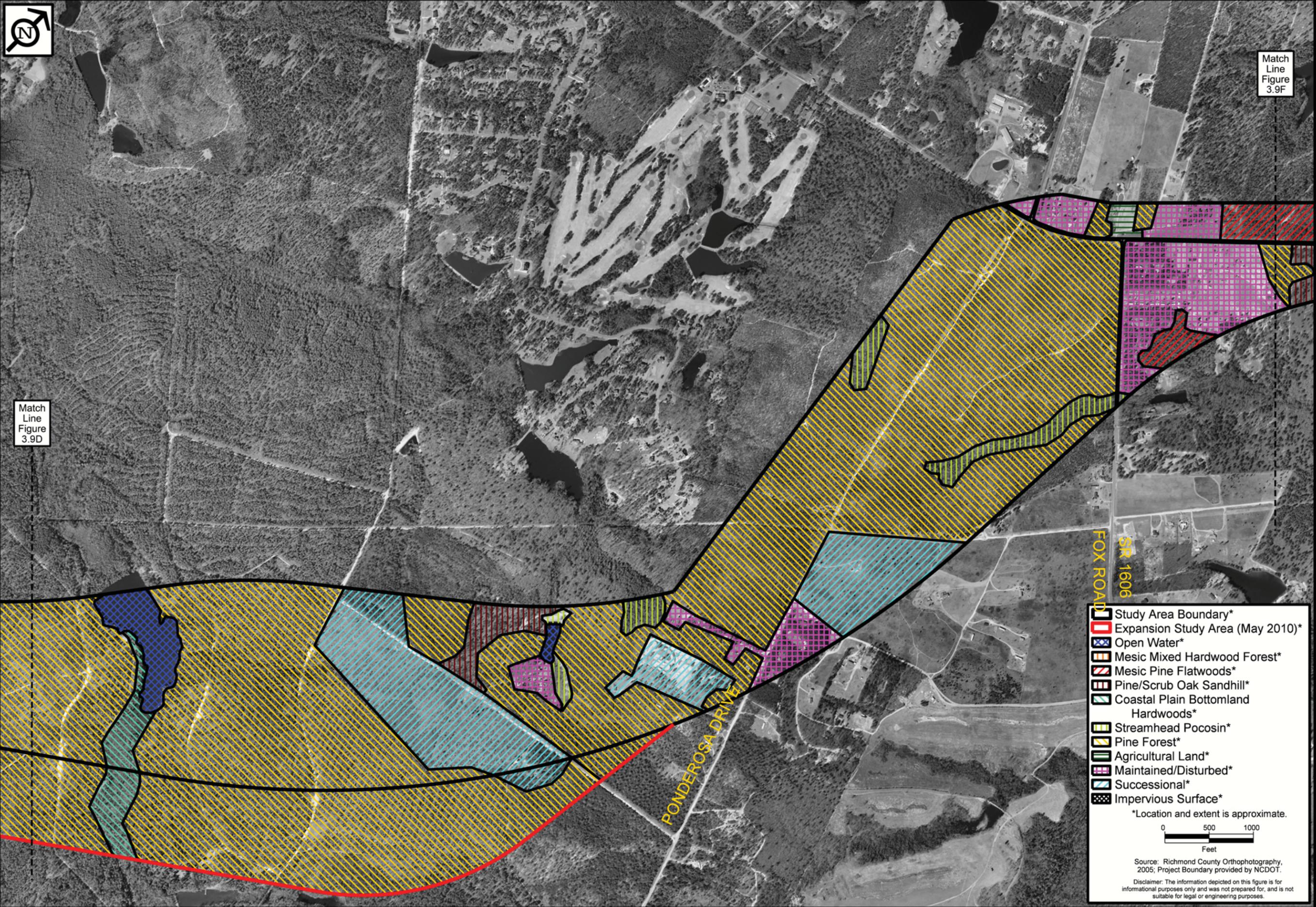
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Project:	ET06021.00
Date:	Jan 2011
Drwn/Chkd:	KT/JB
Figure:	3.9d

Natural Communities Map
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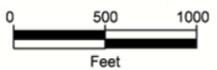


Match Line
Figure
3.9F

Match Line
Figure
3.9D

-  Study Area Boundary*
-  Expansion Study Area (May 2010)*
-  Open Water*
-  Mesic Mixed Hardwood Forest*
-  Mesic Pine Flatwoods*
-  Pine/Scrub Oak Sandhill*
-  Coastal Plain Bottomland
Hardwoods*
-  Streamhead Pocosin*
-  Pine Forest*
-  Agricultural Land*
-  Maintained/Disturbed*
-  Successional*
-  Impervious Surface*

*Location and extent is approximate.



Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

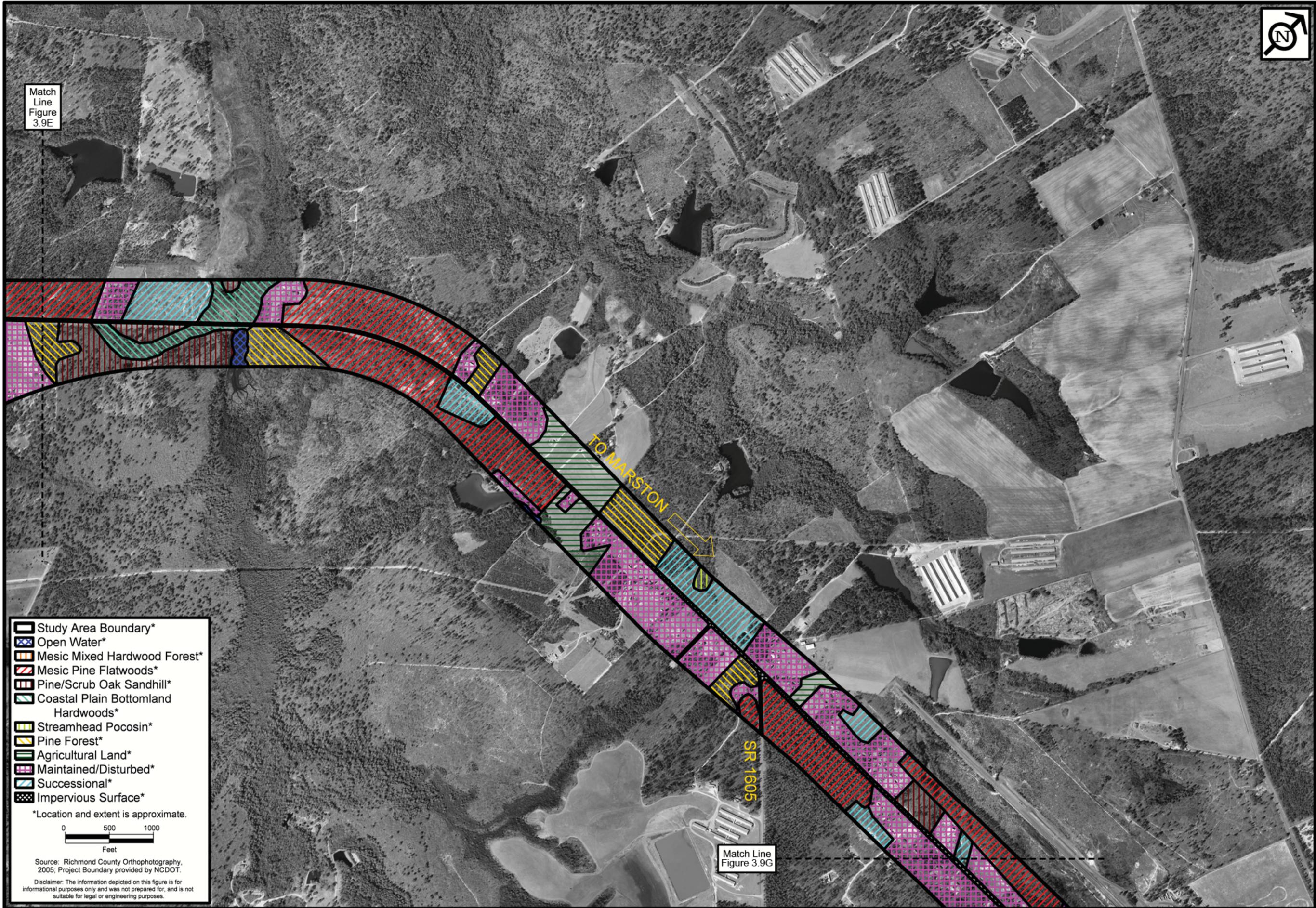
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Project: ET06021.00
Date: Jan 2011
Drwn/Chkd: KT/JB
Figure: 3.9e

Natural Communities Map
US Highway 1 Rockingham Bypass
Richmond County, North Carolina
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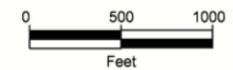


Match Line
Figure
3.9E



- Study Area Boundary*
- Open Water*
- Mesic Mixed Hardwood Forest*
- Mesic Pine Flatwoods*
- Pine/Scrub Oak Sandhill*
- Coastal Plain Bottomland Hardwoods*
- Streamhead Pocosin*
- Pine Forest*
- Agricultural Land*
- Maintained/Disturbed*
- Successional*
- Impervious Surface*

*Location and extent is approximate.



Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

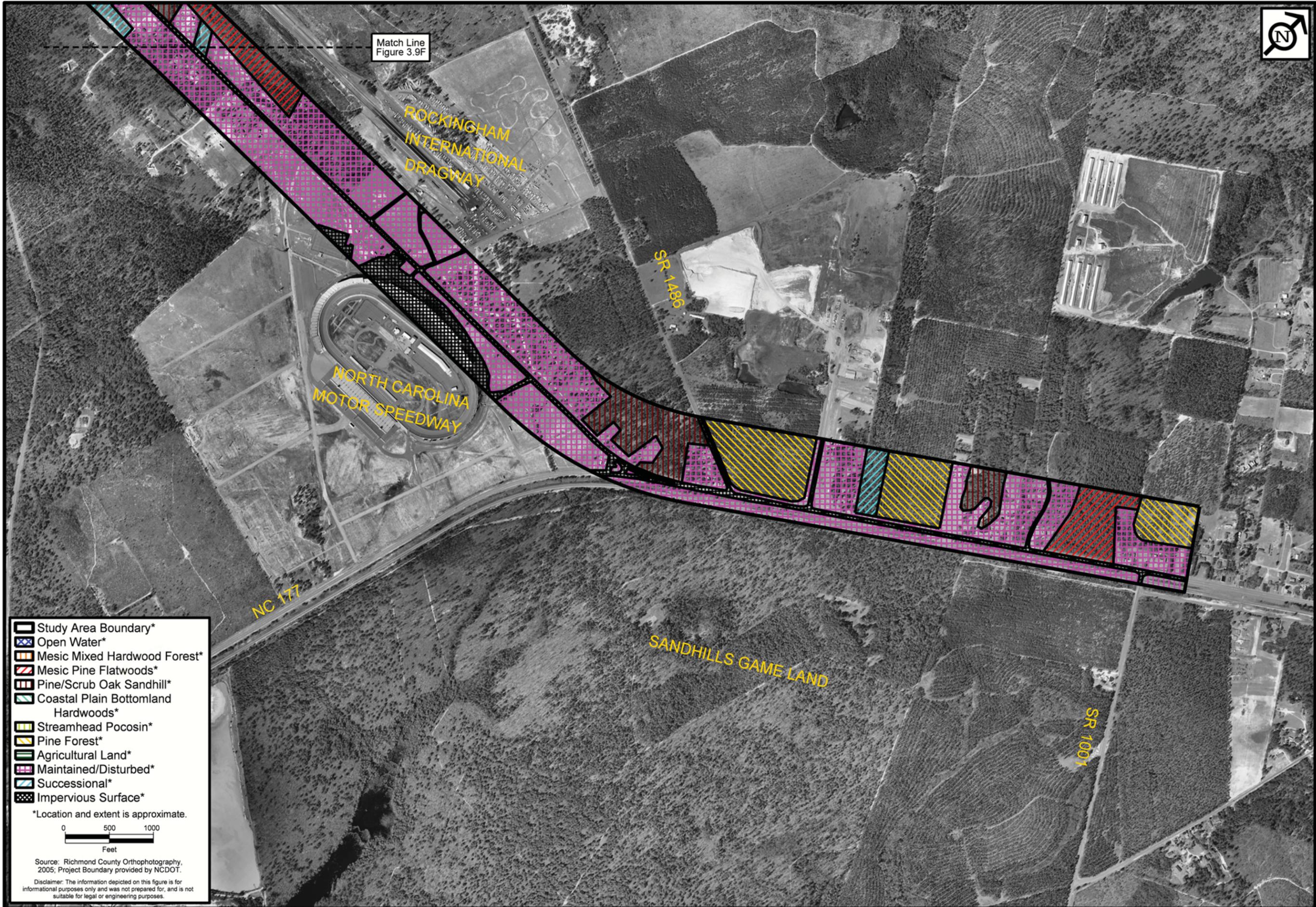
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Match Line
Figure 3.9G

Project:	ET06021.00
Date:	Jan 2011
Drwn/Chkd:	AJS/JB
Figure:	3.9f

Natural Communities Map
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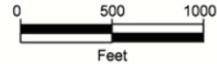


Match Line
Figure 3.9F



- Study Area Boundary*
- Open Water*
- Mesic Mixed Hardwood Forest*
- Mesic Pine Flatwoods*
- Pine/Scrub Oak Sandhill*
- Coastal Plain Bottomland Hardwoods*
- Streamhead Pocosin*
- Pine Forest*
- Agricultural Land*
- Maintained/Disturbed*
- Successional*
- Impervious Surface*

*Location and extent is approximate.



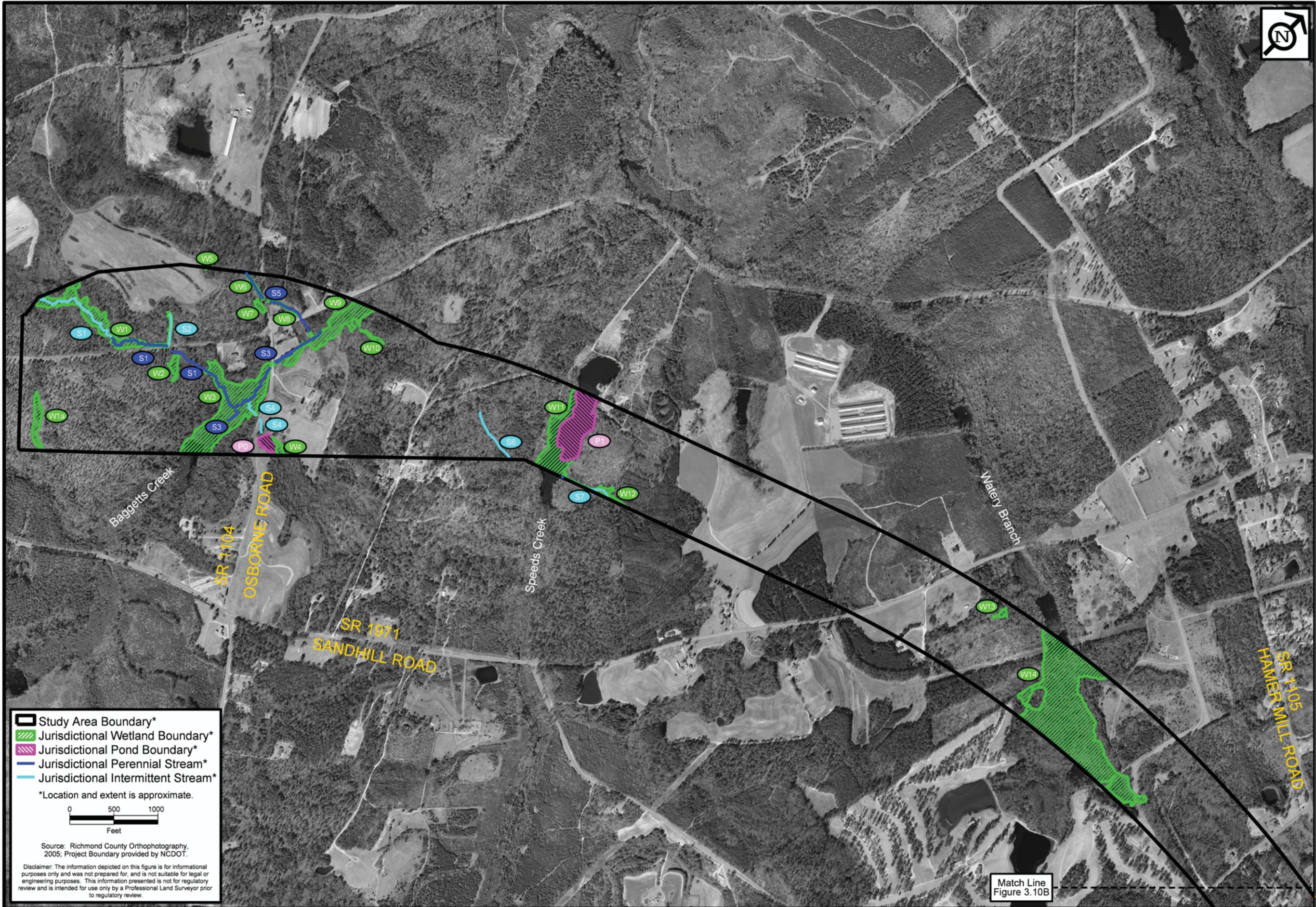
Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

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Project:	ET06021.00
Date:	Jan 2011
Drwn/Chkd:	AJS/JB
Figure:	3.9g

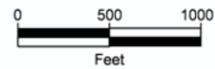
Natural Communities Map
US Highway 1 Rockingham Bypass
 Richmond County, North Carolina
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- Study Area Boundary*
- Jurisdictional Wetland Boundary*
- Jurisdictional Pond Boundary*
- Jurisdictional Perennial Stream*
- Jurisdictional Intermittent Stream*

*Location and extent is approximate.



Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

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Match Line
Figure 3.10B

Project:	ET06021.00
Date:	Jan 2011
Drwn/Chkd:	EW/PP
Figure:	3.10a

General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
 Richmond County, North Carolina
 T.I.P. No. R-2501

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Match Line
Figure 3.10A



Project:	ET06021.00
Date:	Jan 2011
Drwn/Chkd:	EW/PP
Figure:	3.10b

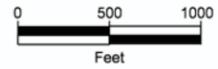
Note: Previous delineation does not extend to new project study area boundary. Per NCDOT Project Engineer, jurisdictional lines not extended for this study.

Pipe extension within additional study area

Match Line
Figure 3.10C

- Study Area Boundary*
- Jurisdictional Wetland Boundary*
- Jurisdictional Pond Boundary*
- Jurisdictional Perennial Stream*
- Jurisdictional Intermittent Stream*

*Location and extent is approximate.



Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

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General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
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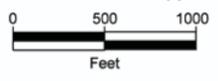
Match Line Figure 3.10B

Match Line Figure 3.10D



-  Study Area Boundary*
-  Jurisdictional Wetland Boundary*
-  Jurisdictional Pond Boundary*
-  Jurisdictional Perennial Stream*
-  Jurisdictional Intermittent Stream*

*Location and extent is approximate.



Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

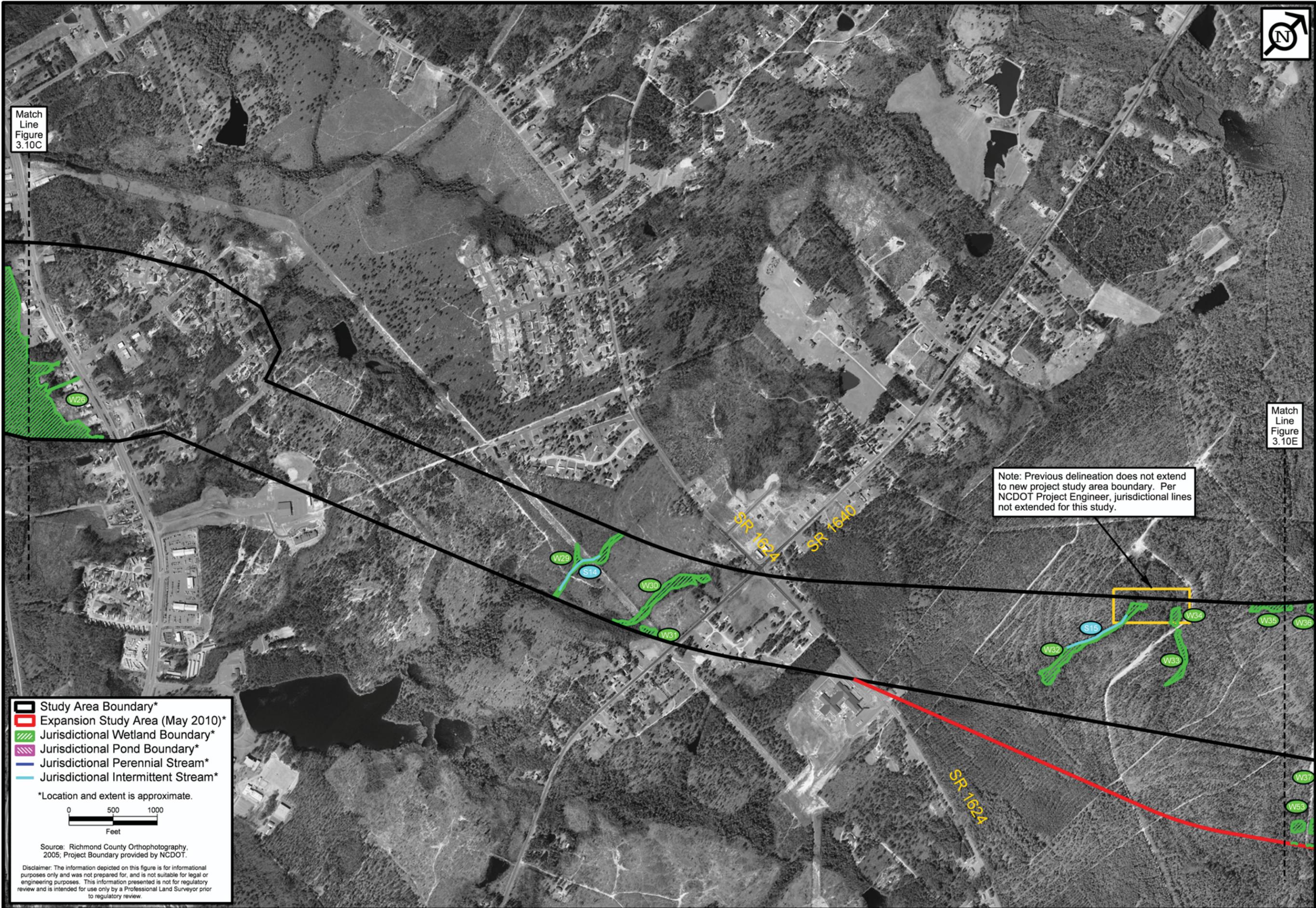
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Project:	ET06021.00
Date:	Jan 2011
Drwn/Chkd:	EW/PP
Figure:	3.10c

General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
 Richmond County, North Carolina
 T.I.P. No. R-2501

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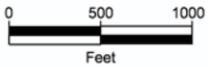
Match Line
Figure
3.10C

Match Line
Figure
3.10E

Note: Previous delineation does not extend to new project study area boundary. Per NCDOT Project Engineer, jurisdictional lines not extended for this study.

- Study Area Boundary*
- Expansion Study Area (May 2010)*
- Jurisdictional Wetland Boundary*
- Jurisdictional Pond Boundary*
- Jurisdictional Perennial Stream*
- Jurisdictional Intermittent Stream*

*Location and extent is approximate.



Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.

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Project:	ET06021.00
Date:	Jan 2011
Drwn/Chkd:	EW/PP
Figure:	3.10d

General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
 Richmond County, North Carolina
 T.I.P. No. R-2501

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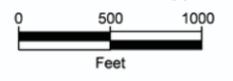


Match Line
Figure
3.10D

Match Line
Figure
3.10F

- Study Area Boundary*
- Expansion Study Area (May 2010)*
- Jurisdictional Wetland Boundary*
- Jurisdictional Pond Boundary*
- Jurisdictional Perennial Stream*
- Jurisdictional Intermittent Stream*

*Location and extent is approximate.



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Project:	ET06021.00
Date:	Jan 2011
Drwn/Chkd:	EW/PP
Figure:	3.10c

General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
 Richmond County, North Carolina
 T.I.P. No. R-2501

ENVIRONMENTAL SERVICES, INC.
 524 S. New Hope Road
 Raleigh, North Carolina 27610
 (919) 212-1780
 (919) 212-1707 FAX
www.environmentalservicesinc.com



Match Line
Figure
3.10E

Match Line
Figure 3.10G

Study Area Boundary*
 Jurisdictional Wetland Boundary*
 Jurisdictional Pond Boundary*
 Jurisdictional Perennial Stream*
 Jurisdictional Intermittent Stream*
 *Location and extent is approximate.

0 500 1000
 Feet

Source: Richmond County Orthophotography, 2005; Project Boundary provided by NCDOT.
 Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for, and is not suitable for legal or engineering purposes. This information presented is not for regulatory review and is intended for use only by a Professional Land Surveyor prior to regulatory review.

Project:	ET06021.00
Date:	Jan 2011
Drwn/Chkd:	EW/PP
Figure:	3.10f

General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
 Richmond County, North Carolina
 T.I.P. No. R-2501

ENVIRONMENTAL SERVICES, INC.
 524 S. New Hope Road
 Raleigh, North Carolina 27610
 (919) 212-1780
 (919) 212-1707 FAX
www.environmentalservicesinc.com



Match Line
Figure 3.10F

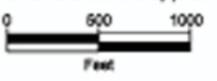


Project: ET06021.00
Date: Jan 2011
Drwn/Chkd: EW/PP
Figure: 3.10g

General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
Richmond County, North Carolina
T.I.P. No. R-2501

- Study Area Boundary*
- Jurisdictional Wetland Boundary*
- Jurisdictional Pond Boundary*
- Jurisdictional Perennial Stream*
- Jurisdictional Intermittent Stream*

*Location and extent is approximate.



Source: Richmond County Orthophotography, 2006, Project Boundary provided by NCDOT.

Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for, and is not suitable for legal or engineering purposes. This information presented is not for regulatory review and is intended for use only by a Professional Land Surveyor prior to regulatory review.

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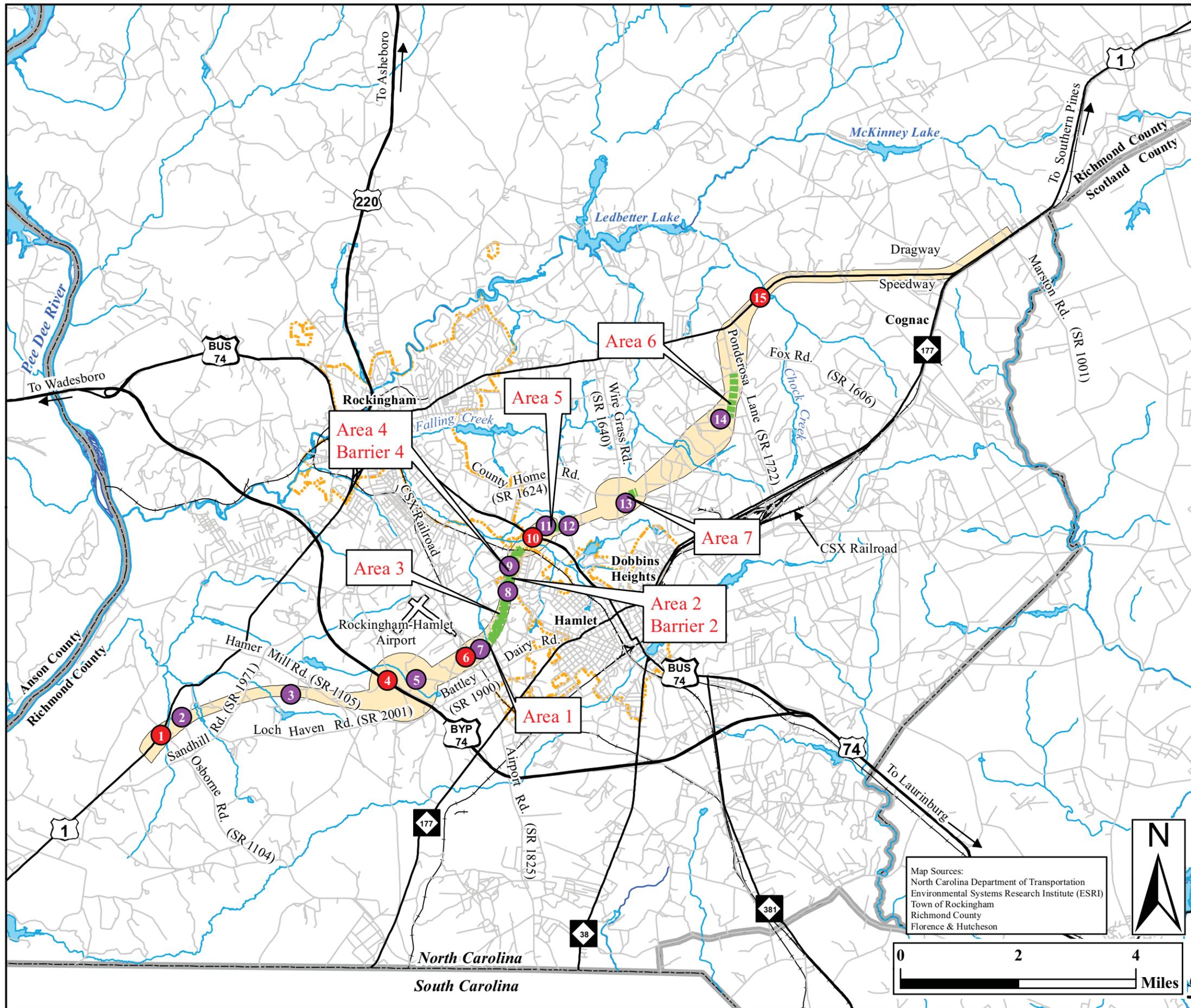


Figure 4.1 - Noise Measurement Locations

- Roads
- Major Roads
- Railroads
- Municipal Boundary
- County Boundary
- Noise Sensitive Area
- Streams & Creeks
- Water Bodies
- Preferred Alternative Study Area
- Ambient Noise Measurement Locations
- Traffic Noise Measurement Locations



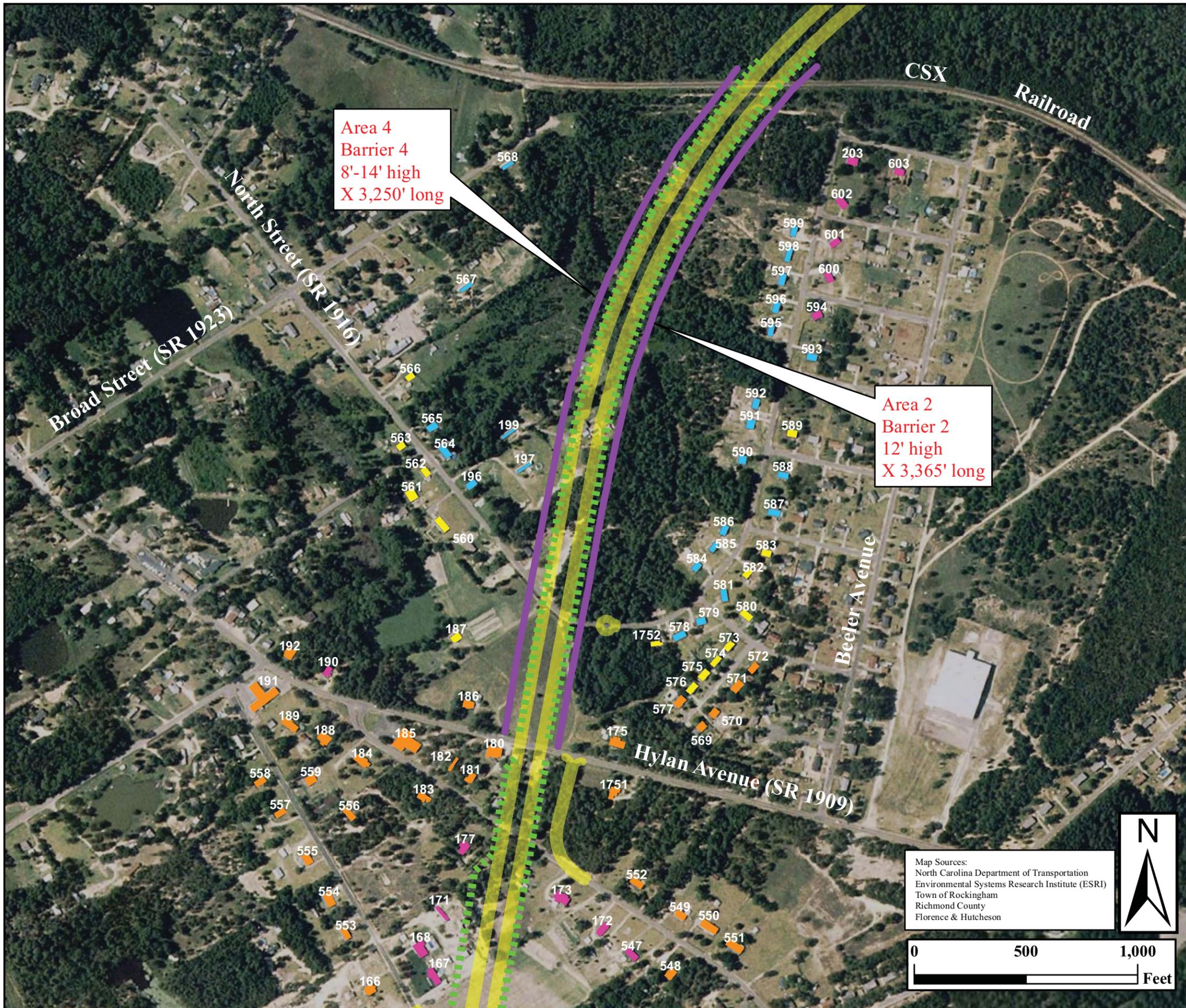
Map Sources:
 North Carolina Department of Transportation
 Environmental Systems Research Institute (ESRI)
 Town of Rockingham
 Richmond County
 Florence & Hutcheson



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

TIP No. R-2501

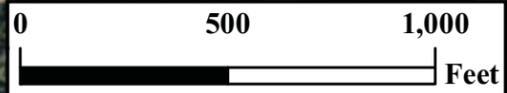
Highway Traffic Noise / Construction Noise Analysis
US 1 Corridor Improvements
Richmond County



Area 4
Barrier 4
8'-14' high
X 3,250' long

Area 2
Barrier 2
12' high
X 3,365' long

Map Sources:
North Carolina Department of Transportation
Environmental Systems Research Institute (ESRI)
Town of Rockingham
Richmond County
Florence & Hutcheson



**Figure 4.2 -
Potential Barrier Locations**

-  Noise Sensitive Area
-  Potential Barrier Locations
-  Proposed Roadway
-  Receiver
-  Impacted Receiver
-  Benefited & Impacted Receiver
-  Benefited & Non-Impacted Receiver

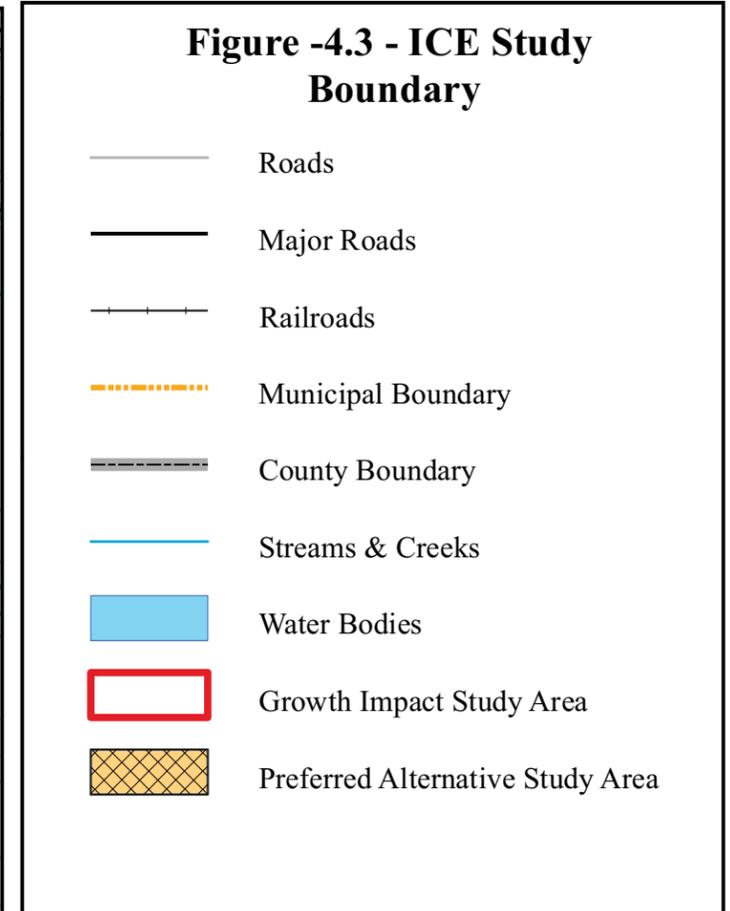
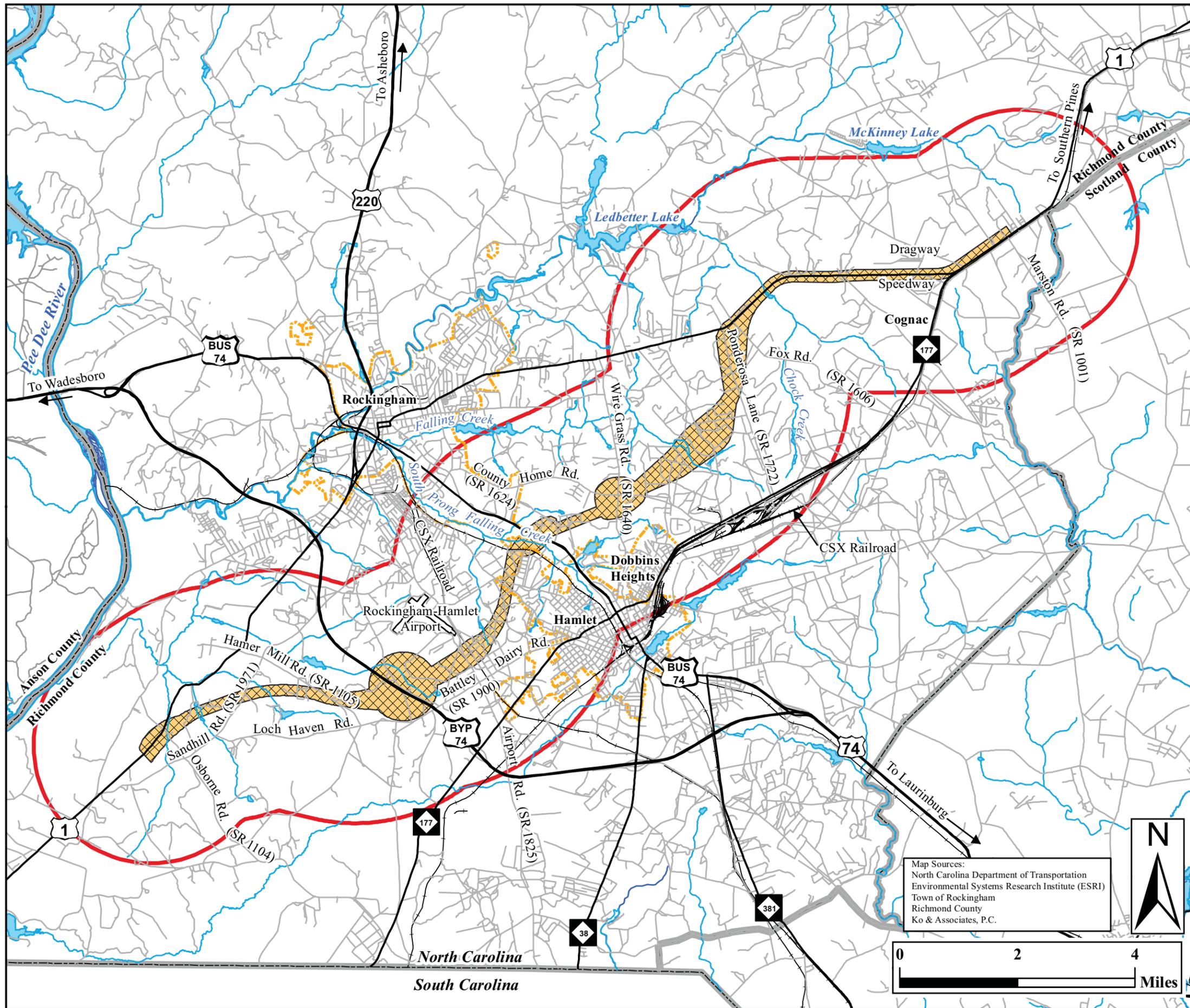


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

TIP No. R-2501

Highway Traffic Noise / Construction Noise Analysis
US 1 Corridor Improvements
Richmond County

Figure 4.2



Map Sources:
 North Carolina Department of Transportation
 Environmental Systems Research Institute (ESRI)
 Town of Rockingham
 Richmond County
 Ko & Associates, P.C.





NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 PROJECT DEVELOPMENT AND
 ENVIRONMENTAL ANALYSIS BRANCH

T.I.P. R-2501
 Final Environmental Impact Statement
 US 1, Rockingham, N.C.
 Richmond County

Appendix A.1

CORRESPONDENCE WITH FEDERAL AGENCIES

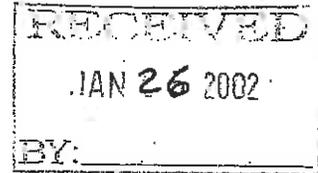
94600P2



United States Department of the Interior

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

January 22, 2002



Mr. Drew Joyner, P.E., Project Manager
NCDOT
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Joyner:

Thank you for your letter of January 11, 2002, requesting comments or concurrence from the U.S. Fish and Wildlife Service (Service) on the biological assessment for the Carolina heelsplitter (*Lasmigona decorata*) in selected streams in Richmond County, North Carolina (TIP Nos. R-2231, R-2501, R-3303, and R-3421). This report is provided 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 of 1973, as amended (16 U.S.C. 1531-1543).

Representatives of the North Carolina Department of Transportation (NCDOT), the Service, the North Carolina Wildlife Resources Commission (NCWRC), and a NCDOT consultant surveyed various locations along the following watersheds in Richmond County: Mountain Creek, Cartledge Creek, Hitchcock Creek, Solomans Creek, and Marks Creek, as well as the main stem of the Pee Dee River. All surveys were conducted at various times during June, July, August, September, October, November, and December 2001. Several of the surveys were carried out in portions of the Pee Dee in Anson County.

The Service considers this report to be an accurate representation of the survey and results for the the Carolina heelsplitter, and its habitat. Based on the information provided, the Service can concur that construction activities carried out in conjunction with the referenced TIP projects are "Not Likely to Adversely Affect" the Carolina heelsplitter.

Note, however, that this concurrence applies only to the referenced species based on our current knowledge to date. Should additional information become available relative to the referenced species, additional surveys may be required.

The Service appreciates the opportunity to comment on this document. Please advise us of any changes in project plans. If you have any questions regarding these comments, contact Tom McCartney at (919) 856-4520 (Ext. 32).

Sincerely,



Garland B. Pardue, Ph.D.
Ecological Services Supervisor

cc: COE, Wilmington, NC (Richard K. Spencer)

FWS/R4:TMcCartney:TM:01/18/02:919/856-4520 extension 32:\carollas.mig



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890
July 17, 2001

RECEIVED
JUL 26 2001

IN REPLY REFER TO

Planning Services Section

RECEIVED
JUL 20 2001
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

Mr. William D. Gilmore, P.E., Manager
Project Development and Environmental
Analysis Branch
North Carolina Division of Highways
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

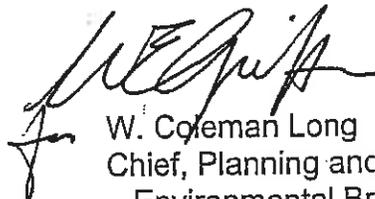
Dear Mr. Gilmore:

This letter is in response to your letter of May 16, 2001, requesting our comments on the "Federal Supplemental Draft Environmental Impact Statement for US 1, From Sandhill Road (SR 1971) to Marston Road (SR 1001), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, T.I.P. No. R-2501" (Regulatory Division Action ID 199500459).

Our comments involve impacts to flood plains and jurisdictional resources that include waters, wetlands, and U.S. Army Corps of Engineers projects. The proposed roadway improvements would not cross any Corps-constructed flood control or navigation project. Enclosed are our comments on the other issues.

We appreciate the opportunity to comment on this project. If we can be of further assistance, please contact us.

Sincerely,



W. Coleman Long
Chief, Planning and
Environmental Branch

Enclosure

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

"Federal Supplemental Draft Environmental Impact Statement for US 1, From Sandhill Road (SR 1971) to Marston Road (SR 1001), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, T.I.P. No. R-2501" (Regulatory Division Action ID 199500459)

1. FLOOD PLAINS: POC - Mr. Bobby L. Willis, Planning Services Section, at (910) 251-4728

We previously provided comments on this project by letter dated January 3, 2000, and those comments cover the additional considered improvements outlined in the Supplemental Draft EIS.

2. WATERS AND WETLANDS: POC - Mr. Richard Spencer, Wilmington Field Office, Regulatory Division, at (910) 251-4172

a. Based on the information contained within the Supplemental NEPA document, we do not object to NCDOT's identified preferred alternative of widening US 1 on existing alignment from Fox Road (SR 1606) to Marston Road (SR 1001). Furthermore, we still concur with alternative Corridor No. 21 from Sandhill Road (SR 1971) to Fox Road (SR 1606) as the Least Environmentally Damaging Practicable Alternative for the US 1 project as agreed to at the February 10, 1999 Project Team Concurrence Meeting.

b. We agree that the NC 177 alternative can be dropped from further consideration since it would not satisfy the identified purpose and need for the project. This conclusion is supported by NCDOT's stated traffic projections, which indicates that sufficient traffic would not be diverted from downtown Rockingham, alleviating existing congestion.

c. We agree that the extended improvement of US 1 from Fox Road to Marston Road should be added to the original US 1 road project. We believe that Marston Road would better represent a logical terminus for this project.

d. Minimization of impacts to waters of the United States for the entire US 1 highway project from Sandhill Road to Marston Road should be further pursued during final design. A project team meeting should be scheduled to address minimization strategy that should be implemented during the design phase of the project. Furthermore, a compensatory mitigation plan needs to be developed to address unavoidable impacts to wetlands and perennial streams.

This concludes our comments on the proposed project and supplements our previous comments of January 3, 2000. If you have any questions related to U.S. Department of the Army permits, please contact Mr. Spencer.

D. Jayner



United States Department of the Interior

OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE

Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

July 17, 2001



ER 01/475

Mr. William D. Gilmore, P. E., Manager
Project Development and Environmental Analysis Branch
N. C. Division of Highways
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Gilmore:

The Department of the Interior (Department) has no comment on the Supplemental Draft Environmental Impact Statement (SDEIS) for US 1, From Sandhill Road (SR 1971) to Marston Road (SR 1001), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8T58051, T.I.P. NO. R-2501.

Thank you for the opportunity to review the SDEIS.

Sincerely,

Michael T. Cheyik

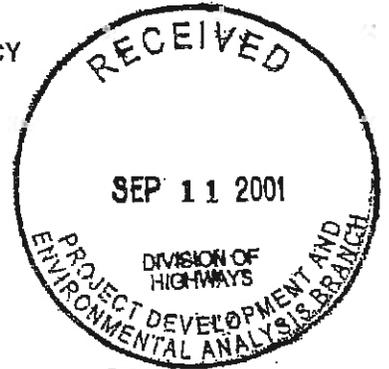
for

Gregory L. Hogue
Acting Regional Environmental Officer



Drew Sykes

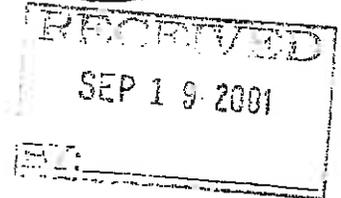
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960



September 4, 2001

4EAD/OEA

Mr. William D. Gilmore, P.E., Manager
Project Development & Environmental Analysis Branch
Division of Highways
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548



SEP 11 2001

Subject: US 1 From Sandhill Road to Marston Road, Richmond County, NC
Supplemental Draft Environmental Impact Statement; T.I.P. No. R-2501
FHW-E40780-NC; CEQ No. 010282

Dear Mr. Gilmore:

The Environmental Protection Agency (EPA) is providing comments on the Supplemental Draft Environmental Impact Statement in accordance with Section 102(2)(C) of the National Environmental Policy Act and Section 309 of the Clean Air Act. The purpose of this supplement is to document changes which have occurred to the original project since publication of the 1999 Draft EIS; consider proposed improvements to an additional 3.7 mile segment north and east of Rockingham; and consider an alternative not addressed in the original Draft EIS. EPA wishes to offer the following comments on the supplemental information provided by this document.

PROJECT PURPOSE AND NEED

EPA commented earlier on the project termini, noting that the northern terminus was not a proven destination for a large percentage of the traffic. NCDOT has responded to that concern by addressing in this supplement a small connecting segment between two larger US 1 improvement projects. While SR 1001 may not be a destination in the normal sense, the project now addresses traffic demand on NASCAR race days and facilitates thru-traffic mobility.

One of the purposes of this supplement is to document changes since the Draft EIS was issued. It is unclear from the discussion of traffic and level of service whether there has been any update of actual US 1 traffic count data since 1994 or redefined present use. If the year 2000 data presented are from predictive models, the 1994 data on actual traffic are quite old. The safety analysis incorporates actual data up through 1997. As EPA pointed out in comments on the Draft EIS, substantial increases in present traffic volumes would bolster the need for the project.

ALTERNATIVES

EPA is pleased to see the consideration of NC 177 as an alternative to the proposed project. A reasonable configuration on partial new alignment bypassing the central business district of Hamlet was evaluated. The analysis acknowledges that both US 1 and NC 177 appear to have similar function from Wallace, South Carolina to the north end of the project area, and that NC177 likely is utilized by some traffic wishing to bypass Rockingham. The predicted design year traffic data show that the NC177 alternative would not attract enough traffic to alleviate congestion in Rockingham. The model shows 60% greater traffic on US 1 compared to NC 177 with or without the US 1 bypass Alternative in place. At least this amount of additional US 1 traffic would be needed to justify Alternative 21, if selected. With the location of Alternative 21 between Rockingham and Hamlet, thru-traffic likely would use it and thereby alleviate future congestion in Hamlet.

The Supplement provides a cursory comparison of environmental impacts of the NC 177 alternative. Two important criteria, wetlands loss and residential/business/non-profit relocations are addressed, and on this basis this alternative is similar to the preferred alternative. While the data are not tabulated for easy comparison, the NC 177 Alternative would result in 13 relocations more than the 89 expected for Alternative 21, and 2 acres less of wetlands loss than the 55.5 acres for Alternative 21.

Potential impacts to the additional 3.7 mile segment have been documented with this roadway widening now included as an extension of all original bypass alternatives considered. We wish to note that there is no discussion of any alternative to widening of this segment except that the NC 177 alternative would now be such an alternative.

ENVIRONMENTAL CONSEQUENCES

The impacts of the 3.7 mile project extension are assessed in the Supplement. Impacts are minor to the natural environment and likewise to the human environment except for those persons impacted by the relocation of 2 residences, one business and a non-profit facility. The non-profit and business should have been identified.

SUMMARY

NCDOT has done an adequate job considering the additional alternative although it is difficult to compare this option to the preferred alternative. EPA maintains its support for Alternative 21. However, EPA is maintaining its EC-2 rating for this project as modified, meaning that we have identified environmental concerns which should be mitigated to fully protect the environment. The document quality rating of "2" indicates that additional

documentation should be developed on ways to reduce anticipated impacts including further consideration of interchange positioning and design to reduce impacts to natural resources.

Thank you for the opportunity to review this Supplemental Draft EIS. The primary contact for this review will continue to be Mr. Ted Bisterfeld, who can be reached at 404/562-9621.

Sincerely,

A handwritten signature in cursive script that reads "Heinz J. Mueller".

Heinz J. Mueller
Chief, Office of Environmental Assessment

cc: Nicholas Graf, FHWA Raleigh
Garland Pardue, USFWS Raleigh
Melba McGee, NCDENR

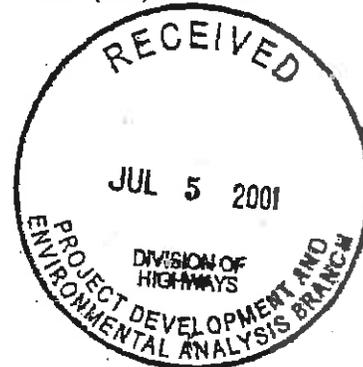
94600P2 - DEIS Comments



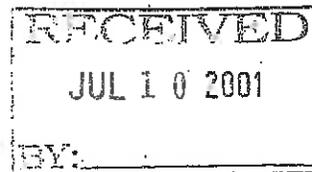
U.S. Department
of Transportation
Federal Aviation
Administration

Airports District Office, FAA
Campus Building
1701 Columbia Avenue, Suite 2-260
College Park, Georgia 30337-2747
(404) 305-7150 FAX: (404) 305-7155

June 29, 2001



Mr. William D. Gilmore, P.E.
Manager
Project Development and Environmental Analysis Branch
N.C. Division of Highways
P.O. Box 25201
Raleigh, NC 27611



Dear Mr. Gilmore:

The Federal Aviation Administration (FAA) appreciates the opportunity to review the Supplemental Draft Environmental Impact Statement (SDEIS) for U.S. 1 in Richmond County, North Carolina. The project is identified as Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, T.I.P. No. R-2501.

Our review of the SDEIS has resulted in no comments. If you have questions please contact me on (404) 305-7152.

Sincerely,

Donna M. Meyer
Environmental Program Specialist

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

Sam Nunn Atlanta Federal Center

61 Forsyth Street, S.W.

Atlanta, Georgia 30303 - 8960



Colonel James W. DeLony
District Engineer
ATTN: Mr. David L. Timpy
Wilmington Regulatory Field Office
Wilmington District, Corps of Engineers
P.O. Box 1890
Wilmington, North Carolina 28402-1890

MAR 01 2000

SUBJ: North Carolina Department of Transportation: U.S. 1, Richmond County, NC
TIP No. R-2501; Action ID No. 199500459

Dear Colonel DeLony:

This is in response to the above referenced public notice, dated February 10, 2000, concerning the proposed alternatives for the widening and relocation of U.S. 1 from Sandhills Road to north of Fox Road, Richmond County, North Carolina. The public notice outlines the four alternatives which were identified in the draft Environmental Impact Statement (DEIS).

As we stated previously in letters dated May 30, 1997 and September 22, 1999, and a December 20, 1999 electronic message to North Carolina Department of Transportation (NCDOT), it is not clear to the U.S. Environmental Protection Agency (EPA) that any of the four alternatives presented are preferable to the upgrading of NC 177. It is possible that the upgrading of NC 177 may have considerably less environmental impacts than the four alternatives identified. Of the build alternatives considered fully, EPA believes that Alternative 21 has the most merit. However, EPA contends that the DEIS should have included NC 177 as a bypass alternative. EPA indicated a willingness to concur on a LEDPA if further information were presented in the FEIS on NC 177. However, no further information was provided. We believe that the improvement of NC 177 as a bypass was rejected without adequate justification.

Thank you for the opportunity to comment on this project. If you have any questions or comments, please contact Kathy Matthews, of my staff, at (404) 562-9373.

Sincerely,

A handwritten signature in cursive script, appearing to read "William L. Cox".

William L. Cox, Chief
Wetlands Section

cc: Ted Bisterfeld, EAD
USFWS, Raleigh
NCDOT, Raleigh
NCDWQ, Raleigh
NCWRC, Raleigh



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890



January 3, 2000

IN REPLY REFER TO

Planning Services Section

Mr. William D. Gilmore, P.E., Manager
Project Development
and Environmental Analysis Branch
North Carolina Division of Highways
Post Office Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Gilmore:

This letter is in response to your correspondence of July 28, 1999, requesting our comments on the "Federal Draft Environmental Impact Statement for US 1, From Sandhills Road (SR 1971) to North of Fox Road (SR 1606), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, T.I.P. No. R-2501" (Regulatory Division Action ID 199500459).

Our comments involve impacts to flood plains and jurisdictional resources that include waters, wetlands, and U.S. Army Corps of Engineers projects. The proposed roadway improvements would not cross any Corps-constructed flood control or navigation project. Enclosed are our comments on the other issues.

We appreciate the opportunity to comment on this project. If we can be of further assistance, please contact us.

Sincerely,

W. Coleman Long
Chief, Planning and
Environmental Branch

Enclosure

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

"Federal Draft Environmental Impact Statement for US 1, From Sandhills Road (SR1971) to North of Fox Road (SR 1606), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, T.I.P. No. R-2501" (Regulatory Division Action ID 199500459)

1. FLOOD PLAINS: POC - Mr. Bobby L. Willis, Planning Services Section, at (910) 251-4728

The proposed roadway improvement is located in Richmond County and partially within the jurisdictional limits of the city of Hamlet, both of which are participants in the National Flood Insurance Program. Based on a review of Panels 175, 160, 180, and 125 of the September 1989 Richmond County, North Carolina and Incorporated Areas Flood Insurance Rate Map, one or more of the alternate proposed improvements appear to cross or possibly impact the flood plain of the following approximately mapped streams: Speeds Creek, North Prong Falling River, Chock Creek, and Solomons Creek. In addition, all alternatives appear to cross South Prong Falling Creek, a detailed study stream with 100-year elevations determined and a floodway defined.

This flood plain involvement is noted on page 3-37 of the Federal Draft Environmental Statement (DEIS). We also note the discussion of impacts on page 4-34 and commend your agency's intention to coordinate any potential floodway modification with the local community and the Federal Emergency Management Agency. We also recommend coordination with the affected jurisdictions on all flood plain involvement to ensure compliance with their flood plain ordinances.

2. WATERS AND WETLANDS: POC – Mr. Dave Timpy, Wilmington Field Office, Regulatory Division, at (910) 251-4634

Reference North Carolina Department of Transportation (NCDOT) letter dated July 28, 1999, requesting comments on the DEIS for the above referenced project. Our comments on this document are as follows:

a. Page S-5. This section states that based on interagency comments, several corridor segments were eliminated which resulted in the reduction of the twenty-seven alternatives to four build alternatives. The interagency comments should be referenced and provided in the Appendix of the DEIS.

b. Page S-11. This section only lists three environmental commitments. It is suggested that NCDOT supplement this section with additional environmental commitments.

2. WATERS AND WETLANDS: (Continued)

c. Page 1-4. The logical terminus selected for the southern terminus of the project is SR 1971. These termini conflicts with the descriptions of the final build alternative corridors on page 2-18. In addition, this conflicts with the southern terminus shown in Figure 2-2. The terminus at both ends of the proposed project must be clearly defined in the DEIS.

d. Section 2.0. Alternatives. A project team meeting was held on October 28, 1999, to discuss the DEIS and a preferred alternative. During this meeting, the project team concurred that Alternative Corridor 21 is the Least Environmentally Damaging Preferred Alternative (LEDPA). Confirmation of the project team concurrence on the LEDPA will provided in separate correspondence.

A Department of the Army (DA) permit authorization, pursuant to Section 404 of the Clean Water Act of 1977, as amended, will be required for the discharge of excavated or fill material in waters of the United States or any adjacent wetlands in conjunction with this project, including disposal of construction debris. Under our mitigation policy, impacts to wetlands should first be avoided or minimized. We will then consider compensatory mitigation for unavoidable impacts. When final plans are completed, including the extent and location of any work in wetlands, our regulatory division would appreciate the opportunity to review these plans for project-specific determinations of DA permit requirements.

Should you have any questions concerning DA permits, please contact Mr. Timpy.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 4
 ATLANTA FEDERAL CENTER
 61 FORSYTH STREET
 ATLANTA, GEORGIA 30303-8960

September 22, 1999



4EAD/OEA

Mr. William D. Gilmore, P.E.
 Manager, Planning and Environmental Branch
 Division of Highways
 North Carolina Department of Transportation
 P.O. Box 25201
 Raleigh, NC 27611

RECEIVED

OCT 09 1999

PRESNELL ASSOC.,

Subject: US 1 From Sandhill Road to North of Fox Road, Richmond County, NC
 Draft Environmental Impact Statement; T.I.P. No. R-2501
 CEQ No. 99029; D-FHW-E40780

Dear Mr. Gilmore:

The Environmental Protection Agency (EPA) is providing comments on the Draft Environmental Impact Statement in accordance with Section 102(2)(C) of the National Environmental Policy Act and Section 309 of the Clean Air Act. The proposed project would be a US 1 bypass, approximately 15 miles long, east of Rockingham with connections to the US 220 bypass that is to serve as the Interstate 73/I74 corridor through Rockingham.

PROJECT PURPOSE AND NEED

As with other improvement projects, EPA would like the termini for such projects to be more carefully considered especially when the North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) are planning concurrently adjoining TIP listed segments of US 1. We note TIP R-2502, from the northern terminus in the vicinity of Marston north to the Moore County line and where planning for yet another improvement project has recently been concluded. Environmental reviews should be conducted on segments between termini which are proven destinations for a large percentage of traffic.

ALTERNATIVES

In our letter of May 30, 1997, EPA made the point that NC 177 appears to already be functioning as a Rockingham bypass, and improvements to this road should be further evaluated as an alternative. Like US 1, this road runs from Wallace, SC to Marston, NC. The project study area has been defined too narrowly to be able to consider any roadways for improvements

other than to US 1. The reasons in the Draft EIS for dropping improvements to NC 177 are: that it would not be consistent with local and statewide plans; it would result in community disruptions, with several residential and business relocations; and local officials felt it would not remove all truck traffic from the central business district. EPA was hoping for a more deliberate consideration of this option, where environmental data, traffic measurements, level service predictions, costs and land use information could be used to compare this option to those that were carried forth. The need for a project should be based largely on moving traffic not on mandated design configurations. If the relocation impacts for NC 177 are indicative of the extent of other impacts, this alternative merits further consideration.

All decisions on this project cannot be made and the impacts cannot be fully defined until the divergence point for the I-73 is made known. The EIS indicates that the Improve Existing US 1 alternative outside the downtown area, alone, would involve relocations (approximately 70 residences and 20 businesses) approaching those for the new alignment alternatives. Given the estimated low traffic volumes of 6,900 ADT in 2020 in the presently rural segment south of proposed I-73/74, we believe this segment could remain as a 2-lane roadway. The indication of parallel placement of the I-73 route into South Carolina makes consideration of any 4-lane for these segments of US 1 less supportable. Accordingly, segments A, B C and D of the proposed project and the separate interchange with the proposed interstate could possibly be deleted.

ENVIRONMENTAL CONSEQUENCES

Information about existing land use reveals that this project area is not heavily developed and is predominately agricultural and rural residential. While it is stated that the project is consistent with land planning efforts, EPA believes that the project would greatly change the land uses outside the Rockingham business area.

It is noted in the noise impacts analysis that no receptors would substantially exceed FHWA criteria. Receptor 2, residences at Sturdivant Road and receptor 11, Sierra Christian Center, would approach the 10 dBA increase criterion. EPA considers these increases significant and they should receive consideration for noise abatement.

The analysis of the potential residential relocations indicates that these impacts would be shared across all socio-economic strata. Alternatives 7 and 14, would pose the greatest disruptions but selection of either Alternative 21 or 24 would result in approximately 60% fewer impacts than the other two alternatives.

EPA notes in the assessment of water quality impacts, that there does not appear to be any need to alter watercourses as a result of the project. There should be clarification of the stream impacts data. The text indicates there would be either 16 or 17 perennial streams intersected but Table 4.10 indicates that there would be 10 or 15 stream crossings.

EPA notes favorably the effort to avoid wetland resources by selecting improvements to

existing roadways where possible. Roadway design, whether on existing or new alignment, would benefit from the use of bridge structure rather than the use of culverts. Apparently, the minimization of wetland losses will be addressed later in corridor development. We further note that NCDOT believes there to be few opportunities for compensatory mitigation in the project vicinity and some more distant candidate sites in other counties are identified. Such identifications are commendable, however, EPA recommends the first priority for mitigation after the project area should be pursuit of sites within the Yadkin/Pee Dee River basin.

Based on the indicated locations of interchanges, two appear to be problematic regarding wetlands. The wetlands impacted at the interchange with old US 74, and the high quality wetlands associated with Chock Creek where the bypass would merge with existing US 1 north of Rockingham. Impacts to palustrine forested wetlands should receive further avoidance including at these interchanges.

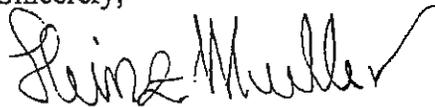
Where temporary construction access in wetlands or floodplains is necessary, EPA urges utilization of temporary board roads instead of fill roads. This could be considered a construction phase best management practice.

SUMMARY

A range of alternatives have been considered for this project however the improving NC 177 as a bypass was rejected without adequate justification. The traffic projections outside the business area and the planning for I-73/74 bring into question the need for some of the improvements to US 1 south of Rockingham. Of the build alternatives considered fully, EPA believes Alternative 21 has the most merit. Accordingly, EPA rates this project EC-2, meaning that we have identified environmental concerns which should be mitigated to fully protect the environment. The document quality rating of "2" indicates that additional documentation should be developed on ways to reduce anticipated impacts including further consideration of interchange positioning and design to reduce impacts to natural resources.

Thank you for the opportunity to review this Draft EIS. The primary contact for this review is Mr. Ted Bisterfeld, who can be reached at 404/562-9621.

Sincerely,



Heinz J. Mueller
Chief, Office of Environmental Assessment

cc: Roy Shelton, FHWA Raleigh
John Hefner, USFWS Raleigh
Melba McGee, NCDENR



U.S. Department
of Transportation
**Federal Aviation
Administration**

Atlanta Airports District Office
1701 Columbia Ave., Campus Bldg.
Atlanta, GA 30337-2747
Phone: (404) 305-7150 Fax: (404) 305-7155

September 23, 1999

Mr. William D. Gilmore, P.E.
Manager
Project Development and Environmental Analysis Branch
N.C. Division of Highways
P.O. Box 25201
Raleigh, NC 27611

Dear Mr. Gilmore:

The Federal Aviation Administration (FAA) appreciates the opportunity to review the Draft Environmental Impact Statement (DEIS) for U.S. 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606) in Richmond County, North Carolina. The project is identified as Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, T.I.P. No. R-2501.

Our review of the DEIS has resulted in no comments. It appears the concerns we provided to you on April 11, 1996, by Mr. Thomas M. Roberts of our office have been adequately addressed in the document.

If you have questions please contact me at (404) 305-7152.

Sincerely,

Donna M. Meyer
Environmental Program Specialist
Atlanta District Office

RECEIVED

OCT 09 1999

PRESNELL ASSOC.,





United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240



ER-99/684



SEP 22 1999

Mr. Nicholas L. Graf, P.E.
Division Administrator
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

RECEIVED

OCT 09 1999

PRESNELL ASSOC.,

Dear Mr. Graf:

This is in response to the request for the Department of the Interior's comments on the Draft Environmental Impact Statement (DEIS) for US-1 (from Sandhill Road to North of Fox Road), Richmond County, North Carolina.

Section 4(f) Comments

The Concurrence Form for Assessment of Effects of May 6, 1999, indicates that the proposed project will not impact St. Paul United Methodist Church, the Covington Plantation, the William Diggs House or Flower-Hamer House. Therefore, no Section 4(f) resources will be impacted by the proposed project. However, if project plans change and some historic properties are affected, a Section 4(f) Evaluation should be prepared and circulated for public review and comment.

Environmental Statement Comments

In general, the subject document presents a thorough discussion of the purpose and need for the project, project alternatives, existing environmental conditions without the project, potential impacts of the project on environmental resources, the need for Federal permits and agency oversight, and the need for avoidance and minimization of impacts on waters and wetlands in the United States, with mitigation for the remaining unavoidable impacts.

We note specifically that the estimated wetland impacts for the four alternatives range from 55.3 acres to 61.8 acres, and stream impacts range from 3,459 linear feet to 6,872 linear feet. Based on this information, presented in Table 4.10 on page 4-48, the U.S. Fish and Wildlife Service (FWS) would recommend adoption of Alternative Corridor 21 because it has a small amount of acres of wetland impact (55.5 acres vs. 55.3 acres for Alternative Corridor 7) and only 3,783 linear feet of stream impacts, which is less than one-half of the stream impacts of Alternative Corridor 7.

However, any FWS concurrence on a selected alternative is contingent upon the North Carolina Department of Transportation (NCDOT) presenting a detailed mitigation plan for agency discussion and approval prior to application for any Department of the Army (DOA) Section 404 permit for this project. On pages 4-31 to

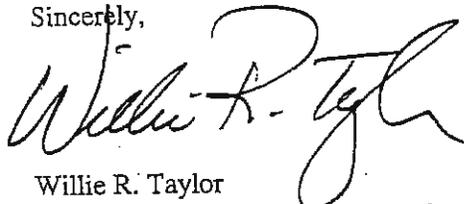
The DEIS, pages 3-75 to 3-80 and pages 4-35 to 4-37, presents a detailed discussion of the four federally-protected species in the project area. The Service concurs with the "No Effect" determinations for the shortnose sturgeon (*Acipenser brevirostrum*), Michaux's sumac (*Rhus michauxii*), and rough-leaved loosestrife (*Lysimachia asperulaefolia*). An extensive survey for the red-cockaded woodpecker (*Picoides borealis*) led to a determination of "Not Likely To Adversely Affect." This was based on the fact that a potential nest tree was unable to be conclusively surveyed due to unspecified potential hazards at the time. The FWS conditionally concurs with this determination but will withhold final concurrence until the NCDOT has had the opportunity to survey the tree and provide the FWS with a final report of their follow-up findings.

Summary Comments

The Department of the Interior has no objection to the approval of the proposed project by the Department of Transportation, providing that all feasible designs and construction techniques are used to avoid and minimize impacts to waters and wetlands, and the implementation of a comprehensive plan of compensatory mitigation for all unavoidable wetland losses.

We appreciate the opportunity to provide these comments.

Sincerely,



Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

cc:

Mr. William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
Post Office Box 25201
Raleigh, North Carolina 27611



United States
Department of
Agriculture

August 13, 1999

Natural
Resources
Conservation
Service

4405 Bland Rd.
Suite 205
Raleigh, NC 27609

(919) 873-2134

Mr. William D. Gilmore, P. E., Manager
Project Development & Environmental
Analysis Branch
N. C. Division of Highways
P. O. Box 25201
Raleigh, NC 27611

Dear Mr. Gilmore:

Thank you for the opportunity to provide comments on US 1, from Sandhills Road (SR 1971) to North of Fox Road (SR 1606), Richmond County, Federal Aid Project No. NHF-1 (1), State Project No. 8.T5850501, T. I. P. No. R-2501.

The Natural Resources Conservation Service does not have any comments at this time.

Sincerely,

Mary T. Kollstedt
State Conservationist



RECEIVED
OCT 08 1999
PRESNELL ASSOC



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

March 3, 1998

IN REPLY REFER TO

Regulatory Division

Action ID No. 199500459, Improvements to US 1, Rockingham, Richmond County,
TIP R-2501.

Mr. H. Franklin Vick, P.E., Manager
Planning and Environmental Branch
Division of Highways
North Carolina Department of Transportation
Post Office Box 25201
Raleigh, North Carolina 27611-5201



Dear Mr. Vick:

Please reference your letter dated January 27, 1998, requesting our involvement as a cooperating agency in the preparation of an Environmental Impact Statement (EIS) for the proposed relocation of US 1 around Rockingham, Richmond County, North Carolina. We agree to accept cooperating agency status and are pleased that the Corps and other resource agencies will be involved in the early coordination for this project.

As you are aware, this project was described in a "Phase I Location and Environmental Study" that was completed in February, 1997. Although there was coordination with the Corps of Engineers and several resource agencies during the development of this document, we feel that project planning should proceed under the integrated NEPA/Section 404 process. Accordingly, the North Carolina Department of Transportation should convene the project team as soon as possible to reach consensus on the purpose and need and to discuss the development of appropriate alternatives that will be described in the draft EIS.

Thank you for the opportunity to comment during this phase of planning for these projects. Questions or comments may be addressed to me in the Wilmington Regulatory Field Office at (910) 251-4725.

Sincerely,

Scott McLendon
Regulatory Project Manager



United States Department of the Interior

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



October 16, 1997

Mr. Roy C. Shelton
Federal Highway Administration
310 New Bern Avenue
Suite 410
Raleigh, NC 27601

Dear Mr. Shelton:

On September 11, 1997, the Federal Highway Administration (FHWA) published in the Federal Register a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the proposed US 1 Widening and Bypass of Rockingham Project, Richmond County, North Carolina. This provides comments of the U.S. Fish and Wildlife Service (Service) regarding potential environmental impacts of the project. This report provides scoping information and is provided 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). This report also serves as initial scoping comments to federal and state resource agencies for use in their permitting and/or certification processes for this project.

The NOI indicates that the North Carolina Department of Transportation (NCDOT) proposes to improve and/or relocate US 1 from Sandhills Road (SR 1971) south of Rockingham to Indian Lake Road (SR 1479) north of Marston. The total distance would be approximately 22 miles.

Purpose and Need

The Service considers the purpose and need statement to be an important aspect of the planning process required by the National Environmental Policy Act (NEPA). The NOI states that the project is needed to reduce overall travel time in Richmond County, reduce through and truck traffic congestion in downtown Rockingham, and improve traffic safety along US 1. These are worthy goals and should be fully developed in the planning process.

The purpose and need should not be expressed in a manner which limits the preferred alternative to a single option. Specifically, purpose and need should not be expressed as the benefits to be derived from a given alternative. Similarly, any legislative mandate should not be specifically given as a project purpose. The problems, such as travel delays and safety concerns, that led to a particular law are valid needs, but not the law itself. Overall, this section should lead to the development of a range of alternatives which are both reasonable and feasible.

Analysis of Alternatives

The Service believes that the analysis of alternatives is a logical extension of the purpose and need statement. There should be a complete analysis of a limited number of reasonable and feasible alternatives along with a consideration of the "no action" alternative. The NOI indicates that the FHWA will consider the upgrading of existing roads. The Service supports such upgrading and prefers that highways on new location be minimized. New highway corridors produce a direct loss of habitat, fragment other habitats, and may open up areas along the new corridor to a wide range of secondary development.

Wetlands and Waterways

Generally, the Service recommends that wetland impacts be avoided and minimized to the maximum extent practical as outlined in the Clean Water Act Section 404(b)(1) Guidelines. Regarding avoidance and minimization of impacts, we generally recommend that proposed highway projects be aligned along or adjacent to existing roadways, utility corridors, or previously developed areas. Areas exhibiting high biodiversity or ecological value important to the watershed and/or region should be avoided. Crossings of streams and associated wetland systems should use existing crossings and/or occur on structure wherever feasible. Where bridging is not feasible, culvert structures that maintain natural water flows and circulation regimes without scouring or impeding fish and wildlife passage should be employed. Highway shoulder and median widths should be reduced through wetland areas. Roadway embankments and fill areas should be stabilized by using appropriate erosion control devices and/or techniques. Wherever appropriate, construction in sensitive areas should occur outside the seasons of fish spawning and migratory bird nesting.

We reserve the right to review any required federal or state permits at the time of public notice issuance. Resource agency coordination should occur early in the planning process to resolve land use conflicts and minimize delays.

In addition to the above guidance, we recommend that the environmental documentation for this project include the following (the level of detail should be commensurate with the degree of environmental impacts):

1. A description of the fishery and wildlife resources within the action area of the proposed project which may be directly or indirectly affected;
2. The extent and acreage of waters of the U.S., including wetlands, that are to be impacted by filling, dredging, clearing, ditching, and/or draining. Wetland impact acreages should be differentiated by habitat type based on the wetland classification scheme of the National Wetlands Inventory. 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;
3. 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;
4. Design features and/or construction techniques which would be employed to avoid or minimize the fragmentation or direct loss of wildlife habitat value;
5. Design features, construction techniques, and/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 United States; and,
6. If unavoidable wetland impacts are proposed, we recommend that every effort be made to identify compensatory mitigation sites in advance. Project planning should include a detailed compensatory mitigation plan for offsetting unavoidable wetland impacts. Opportunities to protect mitigation areas in perpetuity, preferably via conservation easement, should be explored at the outset.

Federally Protected Species

The attached pages identify the federally-listed endangered and threatened species, and species of federal concern that are known to occur in Richmond County. At the present time four species protected by the ESA have been reported in Richmond County. These are the: shortnose sturgeon (*Acipenser brevirostrum*); red-cockaded woodpecker (*Picoides borealis*); rough-leaved loosestrife

(*Lysimachia asperulaefolia*); and, Michaux's sumac (*Rhus michauxii*). The shortnose sturgeon, an anadromous fish, is under the jurisdiction of the National Marine Fisheries Service and that agency should be contacted regarding project impacts on this species.

Habitat requirements for the federally-listed species in the project area should be compared with the available habitat at the project site. If suitable habitat is present within the action area of the project, field surveys for the species should be performed. Environmental documentation should include survey methodologies and results. In addition to this guidance, the following information should be included in the environmental document regarding protected species. The level of detail should be commensurate with the degree of environmental impacts:

1. A map and description of the specific area used in the analysis of direct, indirect, and cumulative impacts;
2. A description of the biology and status of the listed species and the habitat of the species that may be affected by the action, including the results of an onsite inspections;
3. An analysis of the "effects of the action" on the listed species and associated habitat which includes consideration of:
 - a. The environmental baseline which is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species and its habitat;
 - b. The impacts of past and present federal, state, and private activities in the project area and cumulative effects area;
 - c. The direct and indirect impacts of the proposed action. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur;
 - d. The impacts of interrelated actions (those that are part of a larger action and depend on the larger action for their justification) and interdependent actions (those that have no independent utility apart from the action under consideration); and,

- e. The cumulative impacts of future state and private activities (not requiring federal agency involvement) that will be considered as part of future Section 7 consultation;
4. A description of the manner in which the action may affect any listed species or associated habitat including project proposals to reduce/eliminate adverse effects. Direct mortality, injury, harassment, the loss of habitat, and/or the degradation of habitat are all ways in which listed species may be adversely affected;
5. A summary of evaluation criteria to be used as a measurement of potential effects. Criteria may include post-project population size, long-term population viability, habitat quality, and/or habitat quantity; and,
6. Based on evaluation criteria, a determination of whether the project is not likely to adversely affect or may affect threatened and endangered species.

Candidate species are those plant and animal species for which the Service has sufficient information on their biological status and threats to their survival to propose them as endangered or threatened under the ESA. Although candidate species receive no statutory protection under the ESA, federal agencies are required to informally confer with the Service on actions likely to jeopardize the continued existence of these species or that may destroy or modify proposed critical habitat.

Federal species of concern (FSC) include those species for which the Service does not have enough scientific information to support a listing proposal or species which do not warrant listing at the present time. These species receive no statutory protection under the ESA, but could become candidates in the future if additional scientific information becomes available indicating that they are endangered or threatened. Formal listing places the species under the full protection of the ESA, and necessitates a new survey if its status in the project area is unknown. Therefore, it would be prudent for the NCDOT to avoid any adverse impacts to candidate species or their habitat. The North Carolina Natural Heritage Program should be contacted for information on species under State protection.

The Service appreciates the opportunity to comment on this project. Please continue to advise us of the progress made in the planning process, including your official determination of the impacts of this project. If you have any questions regarding these comments, please contact Howard Hall at 919-856-4520, ext. 27.

Sincerely,

Ken Graham

for John M. Hefner
Field Supervisor

Attachment

FWS/R4:HHall:10/17/97:WP:A:ricr2501.o97

Terence Martin, Office of Environmental Policy and Compliance,
Department of the Interior, Washington, DC
Frank McBride, NCWRC, Northside, NC
John Dorney, NC Division of Water Quality, Raleigh, NC
Mike Street, NC Division of Marine Fisheries, Morehead City, NC
Scott McLendon, USA Corps of Engineers, Wilmington, NC
Nicholas Graf, FHWA, Raleigh, NC
Charles Bruton, NCDOT, Raleigh, NC
Dan Smalley, BFA, Washington, DC
Jim Lee, OEPC, Atlanta, GA
Dave Fleming, AES/HC (Region 4), Atlanta, GA

Federally-Listed, Candidate and Federal Species of Concern
(revised May 1, 1997)

RICHMOND COUNTY

COMMON NAME	SCIENTIFIC NAME	STATUS
Vertebrates		
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	Endangered
Bachman's sparrow	<i>Aimophila aestivalis</i>	FSC
Rafinesque's big-eared bat	<i>Corynorhinus (=Plecotus) rafinesquii</i>	FSC**
Southern hognose snake	<i>Heterodon simus</i>	FSC*
Robust redhorse	<i>Moxostoma robustum</i>	FSC
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Northern pine snake	<i>Pituophis melanoleucus melanoleucus</i>	FSC
Invertebrates		
Arogos skipper	<i>Atrytone arogos arogos</i>	FSC**
Vascular Plants		
Georgia indigo-bush	<i>Amorpha georgiana var. georgiana</i>	FSC*
Sandhills milkvetch	<i>Astragalus michauxii</i>	FSC
White wicky	<i>Kalmia cuneata</i>	FSC
Sandhills bog lily	<i>Lilium iridollae</i>	FSC*
Bog spicebush	<i>Lindera subcoriacea</i>	FSC
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	Endangered
Conferva pondweed	<i>Potamogeton confervoides</i>	FSC
Michaux's sumac	<i>Rhus michauxii</i>	Endangered
Pickering's dawnflower	<i>Stylisma pickeringii var. pickeringii</i>	FSC
Carolina asphodel	<i>Tofieldia glabra</i>	FSC
Roughleaf yellow-eyed grass	<i>Xyris scabrifolia</i>	FSC

Federally-Listed, Candidate and Federal Species of Concern
(revised May 1, 1997)

KEY:

<u>Status</u>	<u>Definition</u>
Endangered	A taxon "in danger of extinction throughout all or a significant portion of its range."
Threatened	A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."
Proposed	A taxon proposed for official listing as endangered or threatened.
Candidate	A taxon under consideration for official listing for which there is sufficient information to support listing.
FSC	A Federal species of concern, species which may or may not be listed in the future (formerly C2 candidate species, or species under consideration for listing for which there is insufficient information to support listing.).
T(S/A)	Threatened due to similarity of appearance (e.g., American alligator) - species which are threatened due to similarity of appearance with other rare species and are listed to protect these species. These species are not biologically endangered or threatened and are not subject to Section 7 consultation.
EXP	A taxon that is listed as experimental (either essential or non-essential). Experimental, non-essential endangered species (e.g., red wolf) are treated as threatened on public lands for consultation purposes, and as species proposed for listing on private lands.

Species with 1,2,3, or 4 asterisks behind them indicate historic, obscure, or incidental records.

- * Historic record, the species was last observed in the county over 20 years ago.
- ** Obscure record, the date and/or location of the species observation is uncertain.
- *** Incidental/migrant record, the species was observed outside of its normal range or habitat.
- **** Historic, obscure and incidental record.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

May 30, 1997



4EAD/OEA

Mr. H. Franklin Vick
Chief, Planning and Environmental Branch
Division of Highways
North Carolina Department of Transportation
Post Office Box 25201
Raleigh, North Carolina 27611

Subject: U.S. 1 From SR 1971 to SR 1479 Richmond County, NC
TIP project No. R-2501

Dear Mr. Vick:

EPA Region 4 is offering comments on the report "Phase 1 Location and Environmental Study", dated February 1997. The project is for improvements to US 1 at Rockingham and Hamlet, NC., for a distance of approximately 22 miles. The report describes the development and initial evaluation of potential alternatives including the no-build option, widening the existing highway, and bypass corridors on new alignment. These comments are being offered in accordance with the coordination objectives of the Highway Project NEPA/Section 404 Process Integration.

PURPOSE AND NEED

The document says the proposed improvement is a key element in the state's effort to multi-lane the entire length of US 1. Other purposes are indicated to be for better safety, reducing congestion, and assisting area economic development.

We note the analysis and data (Table 2.1) on existing and future peak hour traffic. This makes sense since so many highways are only heavily utilized during morning and evening job commuting periods. It is interesting to note that the two 4-lane segments of US 1 have A-rated level of service based on 1994 data. With the relatively low present traffic counts at the project's start and end points, through-traffic does not appear to be a significant contributor to the downtown Rockingham congestion. Therefore, smaller capacity transportation improvements than a new 4-lane freeway should be considered to meet the project objectives.

ALTERNATIVES

The dismissal of the options of improving the present alignment seems to us to be premature because only the US 1

corridor was considered. We believe improvements to NC 177 should be considered with improvements to US 1 since NC 177 appears to be a logical bypass of the Rockingham municipality. This route may be serving this purpose now. NC 177 may have significant industrial and commercial truck traffic based on the presence of parallel heavy rail, making this a prime alternative for meeting the purpose of reducing truck traffic through downtown Rockingham. Further, an evaluation of the potential benefits of traffic system management (signalization, one-way streets in congested sections) on both existing routes should be incorporated into the evaluation.

A determination is appropriate whether NC 177 should be one of the reasonable and feasible alternatives for detailed environmental analysis documentation. The present document does not provide enough environmental information about this corridor, nor the present types and quantity of traffic along this route, for assessing its impact and utility as a Rockingham bypass component. With the inclusion of this alternative, we believe the analysis would be greatly improved.

Thank you for providing the Phase 1 report for review. Ted Bisterfeld (tel. 404/562-9621) will be the primary point of contact for this project.

Sincerely,



Heinz J. Mueller
Chief, Office of Environmental Assessment



U.S. Department
of Transportation
Federal Aviation
Administration

Atlanta Airports District Office
Campus Building
1701 Columbia Ave., Suite 2-260
College Park, GA 30337-2747
(404) 305-7154 FAX: (404) 305-7155

April 11, 1996

Mr. Ronald C. Smith, PE
Regional Manager
7508 East Independence Blvd.
Suite 102
Charlotte, NC 28227

Dear Mr. Smith

We have considered the effects of the preliminary information transmitted in your letter of March 12, 1996, proposing two corridors for US 1 bypass around the City of Rockingham on the Rockingham-Hamlet Airport. Of the two corridors under study, it is our preliminary opinion corridor B would have less impact to the airport. The following is our preliminary reasons of concern with the corridor E alignment:

1. The possibility of any alignment within corridor E may need airport property.
2. The alignment is within the approach to runway 31.
3. The possibility of a interchange (with Airport Road) within the runway 31 approach.
4. The corridor alignment is much closer to airport, especially the approach to runway 31 that the possibility of effecting the airport is much greater with corridor E.

We do suggest that we be kept informed until the alignment for the US-1 bypass is determined. Also, we request that the North Carolina Aviation Division be coordinated with if you have not already done so.

We will be expecting additional information on the bypass alignment in the future.

Sincerely,


Thomas M. Roberts
Program Manager

RECEIVED
APR 13 1996
FELSNELL ASSOC.,



U.S. Department
of Transportation
**Federal Aviation
Administration**

NOV 07 1994

Airports District Office
1660 Phoenix Parkway, Suite 101
Atlanta, GA 30349
(404) 994-5306 FAX: (404) 994-5349

770



Mr. H. Franklin Vick, P.E.
Manager, Planning and Environmental Branch
Division of Highways, North Carolina DOT
P.O. Box 25201
Raleigh, NC 27611-5201

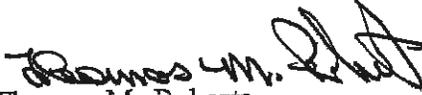
Dear Mr. Vick:

We do not have any specific input, at this time, concerning the environmental process for the widening of U.S. 1 and the proposed bypass highway in Richmond County.

We would like to have an opportunity to review the proposed alignment of the bypass highway, since the study area includes the Richmond-Hamlet Airport, so that we can determine if the airport environs will be impacted.

We appreciate the opportunity to comment on this proposed project.

Sincerely,


Thomas M. Roberts
Program Manager

PARTNERS IN CREATING TOMORROW'S AIRPORTS



United States Department of the Interior



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

November 29, 1994

Mr. H. Franklin Vick
Planning and Environmental Branch
N.C. Division of Highways
P.O. Box 25201
Raleigh, NC 27611

Subject: Scoping comments on the proposed US 1 widening with a bypass of Rockingham, Richmond County, North Carolina, TIP No. R-2501.

Dear Mr. Vick:

This responds to your letter of October 28, 1994 requesting information from the U. S. Fish and Wildlife Service (Service) on evaluating the potential environmental impacts of the above-referenced project. This report provides scoping information and is provided in accordance with provisions of the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d) and Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543).

Preliminary planning by the North Carolina Department of Transportation (NCDOT) calls for widening US Highway 1 with a bypass of Rockingham. Several alternatives will be investigated and evaluated including the improvement of the existing US 1 and the bypass. Control of access is expected for the proposed bypass with no control of access for the widening of the existing facility. The length of the proposed project is approximately 22 miles.

The Service's review of any environmental document would be greatly facilitated if it contained the following information:

1. A description of the fishery and wildlife resources within existing and required additional right-of-way and any areas, such as borrow areas, which may be affected directly or indirectly by the proposed project.
2. A list of the wetland types which will be impacted. Wetland types should follow the wetland classification scheme of the National Wetlands Inventory. This list should also give the acreage of each wetland type to be affected by the project as determined by the Federal Manual for Identifying and Delineating Jurisdictional Wetlands.
3. Engineering techniques which will be employed for designing and constructing any wetland crossings and/or relocated stream channels along with the linear feet of any water courses to be relocated.
4. The cover types of upland areas and the acreage of each type which would be impacted by the proposed project.
5. Mitigation measures which will be employed to avoid, eliminate, reduce, or compensate for upland and wetlands habitat impacts associated with the project. These measures should include plans for replacing unavoidable wetland losses.

6. The environmental impacts which are likely to occur after construction as a direct result of the proposed project (secondary impacts) and an assessment of the extent to which the proposed project will add to similar environmental impacts produced by other, completed projects in the area (cumulative impacts).

The attached page identifies the Federally-listed endangered, threatened, and candidate species which occur in Richmond County. The section of the environmental document regarding protected species must contain the following information:

1. A review of the literature and other information;
2. A description of any listed species or critical habitat that may be affected by the action;
3. An analysis of the "effect of the action", as defined by CFR 402.02, on the species and habitat including consideration of direct, indirect, cumulative effects, and the results of related studies;
4. A description of the manner in which the action may affect any species or critical habitat;
5. Summary of evaluation criteria used as a measure of potential effects; and
6. Determination statement based on evaluation criteria.

Candidate species refer to any species being considered by the Service for listing as endangered or threatened but not yet the subject of a proposed rule. These species are not legally protected under the Act or subject to its provisions, including Section 7, until formally proposed or listed as threatened or endangered. New data could result in the formal listing of a candidate species. This change would place the species under the full protection of the Endangered Species Act, and necessitate a new survey if its status in the project corridor is unknown. Therefore, it would be prudent for the project to avoid any adverse impact to candidate species or their habitat. The North Carolina Natural Heritage Program should be contacted for information on species under State protection.

The Service appreciates the opportunity to comment on this project. Please continue to advise us of the progress of this project, including your official determination of the impacts of this project. If our office can supply any additional information or clarification, please contact Howard Hall, the biologist reviewing this project, at 919-856-4520 (ext. 27).

Sincerely yours,



L.K. "Mike" Gantt
Supervisor

REVISED SEPTEMBER 26, 1994

Richmond County

Bald eagle (Haliaeetus leucocephalus) - E
Red-cockaded woodpecker (Picoides borealis) - E
Shortnose sturgeon (Acipenser brevirostrum) - E
Rough-leaved loosestrife (Lysimachia asperulaefolia) - E*
Michaux's sumac (Rhus michauxii) - E

The shortnose sturgeon is under the jurisdiction of the National Marine Fisheries Service and should be contacted concerning your agency's responsibilities under Section 7 of the Endangered species Act. Their address is:

National Marine Fisheries Service
U.S. Department of commerce
9450 Koger Boulevard
Duval Building
St. Petersburg, Florida 33702

There are species which, although not now listed or officially proposed for listing as endangered or threatened, are under status review by the Service. These "Candidate"(C1 and C2) species are not legally protected under the Act, and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as threatened or endangered. We are providing the below list of candidate species which may occur within the project area for the purpose of giving you advance notification. These species may be listed in the future, at which time they will be protected under the Act. In the meantime, we would appreciate anything you might do for them.

Bachman's sparrow (Aimophila aestivalis) - C2
Northern pine snake (Pituophis melanoleucus melanoleucus) - C2
White-wicky (Kalmia cuneata) - C2
Georgia leadplant (Amorpha georgiana georgiana) - C2*
Sandhills milkvetch (Astragalus michauxii) - C2
Nestronia (Nestronia umbellula) - C2
Conferva pondweed (Potamogeton confervoides) - C2*
Pickering's morning glory (Stylisma pickeringii var. pickeringii) - C2
Smooth bog-asphodel (Tofieldia glabra) - C2*

*Indicates no specimen in at least 20 years from this county.



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890



IN REPLY REFER TO

December 29, 1994

Planning Division

Mr. H. Franklin Vick, P.E., Manager
Planning and Environmental Branch
Division of Highways
North Carolina Department of Transportation
Post Office Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Vick:

This is in response to your letter of October 28, 1994, requesting our comments on the "Federal Environmental Impact Statement for the proposed US 1 widening with a Bypass of Rockingham in Richmond County, State Project No. 8.T580501, Federal-Aid No. NHF-1(1), TIP No. R-2501" (Regulatory Branch Action I.D. No. 199500459).

Our comments involve impacts to U.S. Army Corps of Engineers' projects, flood plains, and other jurisdictional resources, primarily waters and wetlands. The proposed roadway does not cross any Corps-constructed flood control or navigation project. Enclosed are our comments on the other issues.

We appreciate the opportunity to comment on this project. If we can be of further assistance, please contact us.

Sincerely,

Dwaine H. Hood for
Wilbert V. Paynes
Acting Chief, Planning Division

Enclosure

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

"Federal Environmental Impact Statement for the proposed US 1 widening with a Bypass of Rockingham in Richmond County, State Project No. 8.T580501, Federal-Aid No. NHF-1(1), TIP No. R-2501" (Regulatory Branch Action I.D. No. 199500459)

1. FLOOD PLAINS: POC - Bobby L. Willis, Plan Formulation and Flood Plain Services Branch, at (910) 251-4728

This project area is located in Richmond County and portions of the jurisdiction of the cities of Rockingham and Hamlet, all of which participate in the National Flood Insurance Program. From a review of the September 1989 Richmond County, North Carolina, and Incorporated Areas Flood Insurance Rate Map, the following approximate study streams are located within the study area: Black, Jeanies, and Beaverdam Branches; Speeds, Baggetts, Soloman, and Chock Creeks; portions of North Prong and South Prong Falling Creek; and a tributary to South Prong Falling Creek. Also located within the study area are the detail study portions of Falling Creek and both North and South Prong Falling Creek. The detail study stream reaches have 100-year flood elevations determined and floodways defined. For the detail study streams, certifications will be required indicating that the new structures will cause no rise in the 100-year natural water surface elevations. If changes in the floodway are required, these changes should be coordinated with the county and/or respective city for modification to the flood insurance map and report. We also suggest coordination with the communities for compliance with their flood plain ordinances.

2. WATERS AND WETLANDS: POC - Michael Taylor, Wilmington Field Office, Regulatory Branch, at (910) 251-4634

Section 404 of the Clean Water Act of 1977, as amended, regulates the discharge of excavated and/or fill material into waters of the United States. The Corps of Engineers must assess the impacts of such activities on the aquatic environment prior to issuing Department of the Army permits. Authorization of aquatic fill activities requires that the project be water dependant and/or that no practicable alternatives are available. Our initial review emphasis for North Carolina Department of Transportation projects will focus on the impact to the aquatic environment in accordance with Section 404 requirements. In most cases, the alternative resulting in the least amount of adverse impacts to waters and/or wetlands will be the preferred alternative. However, if degradation to other aspects of the natural environment (e.g., habitat of endangered species) is considered to be of greater concern, an alternative resulting in greater aquatic losses may be chosen as preferred. In all cases, and in accordance with the Memorandum of Agreement between the U.S. Environmental Protection Agency and the Corps, the sequencing process of avoidance, minimization, and mitigation of unavoidable wetland fills will be satisfied prior to the final permit decision.

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

"Federal Environmental Impact Statement for the proposed US 1 widening with a Bypass of Rockingham in Richmond County, State Project No. 8.T580501, Federal-Aid No. NHF-1(1), TIP No. R-2501" (Regulatory Branch Action I.D. No. 199500459)

2. WATERS AND WETLANDS: (continued)

Permits for work within wetlands or other special aquatic sites are available only if the proposed work is the least environmentally damaging, practicable alternative. Please furnish information regarding any other alternatives, including upland alternatives, to the work for which you have applied and provide justification that your selected plan is the least damaging to water or wetland areas.

It is necessary for you to have taken all appropriate and practical steps to minimize wetland losses. Please indicate all that you have done, especially regarding development and modification of plans and proposed construction techniques, to minimize adverse impacts.

When preliminary work in selecting potential alternatives is complete and the wetlands have been identified, our Regulatory Branch would appreciate the opportunity to review that information for a project-specific determination of Department of the Army permit requirements. Should you have any questions, please contact Mr. Taylor.



United States
Department of
Agriculture

Forest
Service

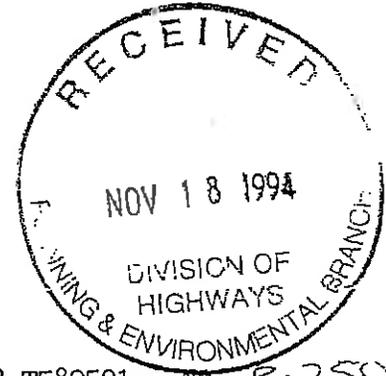
National Forests
in North Carolina

United States Federal
Courthouse Building
100 Otis Street
P.O. Box 2750
Asheville, NC 28802

File Code: 2730

Date: November 8, 1994

State of North Carolina
Department of Transportation
Division of Highways
Attn: H. Franklin Vick
P.O. Box 25201
Raleigh, NC 27611-5201



Dear Mr. Vick:

Thank you for the opportunity to comment on State Project 8.T580501. NO 2-2501
National Forest System land will be impacted by this project.

Sincerely,

MARY A. NOEL
Lands and Recreation Staff Officer

Appendix A.2

CORRESPONDENCE WITH STATE AGENCIES



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

October 11, 2011

MEMORANDUM TO: William P. Parsons
NC Wildlife Resources Commission

FROM: Steve Brown, PE, Project Planning Engineer
Project Development & Environmental Analysis Branch 

SUBJECT: **R-2501**, Richmond County, N.C., US 1 Improvements from Sandhill Road (SR 1971) to Marston Road (SR 1001)

This follows our recent e-mail correspondence from May 25 and September 2, 2011 regarding the proposed US 1 improvements near the Pee Dee River Game Land in Richmond County. TIP Project R-2501 extends from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) in Marston, a distance of about 19 miles. At the Pee Dee River Game Land, the current design proposes to widen US 1 and Osborne Road, impacting approximately 2.4 acres of the property along the road frontage.

Your May 25, 2011 e-mail correspondence indicated that the proposed widening should have a minimal effect on the property. It may remove a buffer between the existing highway and a large open land complex (20 acres) managed for wildlife with emphasis on dove and other small game species that also includes hunting opportunities for local sportsmen. Since the primary purposes of the Game Land are for wildlife and timber management and public recreational opportunities for hunting, fishing, and observing nature, the site is subject to Section 4(f) of the DOT Act of 1966. Section 4(f) protects the use and function of publicly owned parks, recreation areas, wildlife/waterfowl refuges and historic properties. A transportation plan can only use land from a 4(f) resource when there are no other feasible or prudent alternatives and when the planning minimizes all possible harm to the resource.

This is to request your concurrence that the project will have a minimal impact on the Game Land and will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f). If you have any questions or need any additional information, please contact me at 919-707-6014 or at slbrown@ncdot.gov.

SB/mlr

Attachments

cc: Travis Wilson, NC Wildlife Resources Commission
Mark Reep, P.E., Florence & Hutcheson, Inc.
Felix Davila, P.E., Federal Highway Administration

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-707-6000
FAX: 919-707-6052

WEBSITE: WWW.NCDOT.ORG/DOH/PRECONSTRUCT/PE/

LOCATION:
CENTURY CENTER BUILDING A
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

From: Wilson, Travis W.
Sent: Friday, September 02, 2011 11:04 AM
To: Brown, Steve L
Cc: Mark Reep
Subject: RE: R-2501 Pee Dee River Game Land

Sorry for the delayed response, my computer has been out of commission for a couple of weeks. The area described as buffer is not a separate designation. "Buffer" is being used to describe one of the functions not land use or designation. The uses of this area are the same as the uses of the remaining lands in this tract. Hope this answers your question if not let me know.

Travis W. Wilson
Eastern Region Highway Project Coordinator
Habitat Conservation Program
NC Wildlife Resources Commission
1142 I-85 Service Rd.
Creedmoor, NC 27522
Phone: 919-528-9886 ext. 6
Fax: 919-528-9839
Travis.Wilson@ncwildlife.org

From: Brown, Steve L
Sent: Wednesday, August 17, 2011 9:23 AM
To: Wilson, Travis W.
Cc: Mark Reep
Subject: RE: R-2501 Pee Dee River Game Land

Travis:

We are working through our 4(f) analysis on the Pee Dee River Game Land and I have a few follow up questions for Mr. Parsons:

Based on the description of the whole parcel, it appears that it could be classified as a multiple use property (hunting, fishing, observing nature, wildlife management, timber management) for 4(f) purposes. You described a buffer area and hunting area adjacent to the proposed project that would be affected.

Is this buffer area/ hunting area a separate, distinct and definable area within the parcel as a whole? And if so, is hunting/wildlife management its main function? Does this portion have any other functions?

I appreciate your help with this issue,

Steve L. Brown, P.E., Project Planning Engineer
North Carolina Department of Transportation
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548

From: Parsons, William P
Sent: Wednesday, May 25, 2011 8:56 AM
To: Wilson, Travis W.
Cc: Warburton, Gordon S; Beverly, W. Eli
Subject: RE: R-2501 Pee Dee River Game Land

Travis,

The widening of US 1 will have a minimum effect on Pee Dee River Game Lands. Based on the photo provided by you the widening may remove a buffer that exist between the existing highway corridor and a large open land complex(20 acres) managed for wildlife with emphasis on dove and other small game species. Approximately 10 acres is planted annually to provide supplemental food and hunting opportunities for local sportsman. The highway project as proposed may reduce the number of acres that can be safely hunted. The parcel (Diggs Tract) is approximately 1659 acres and was purchased using funding from CWMTF, Natural Heritage and North American Wetland Conservation Act (NAWCA). NAWCA provided \$1,000,000 of federal funding for the project.

The parcel is owned by NCWRC and is part of the Pee Dee River Game Lands. Primary purposes include wildlife and timber management, recreational opportunities for the public including hunting, fishing and observing nature. A boating access will be built in the near future to allow public access to the Pee Dee River.

There has not been a management plan prepared to date. When completed the plan will include management recommendations for wildlife including species of concern such as the timber rattler which is found on the tract. There are designated natural areas found on the property. Large wetlands along the Pee Dee River are used extensively by waterfowl and hunters.

Hope this provides the information you need. Let me know if you need additional information.

From: Wilson, Travis W.
Sent: Monday, May 16, 2011 4:29 PM
To: Parsons, William P
Cc: Warburton, Gordon S; Beverly, W. Eli
Subject: R-2501 Pee Dee River Game Land

Bill as we discussed over the phone NCDOT will be widening US 1 in Richmond County in the vicinity of Pee Dee River Game Land. In the attached photo you can see where the widening will impact the tract that abuts US 1 south of Rockingham. Since this project will be constructed with Federal Highway funds NCDOT is conducting a 4(f) evaluation of this impact. NCDOT will need to determine 1) if the parcel qualifies as a 4f property and 2) determine what impact the project will have on the 4(f) property. This evaluation is supplemental to the NEPA process, our past involvement still applies, and does not directly affect right of negotiations. Below is a list of informational needs NCDOT will evaluate.

- Parcel owner? WRC or Progress
- If WRC owned: what were the funding sources for the purchase? Some funding sources such as federal grants may be applicable to determining if 4(f) applies
- Land use: What activities is the parcel utilized for
- Management Plan: Aside from use, specifically for 4(f) it's important to document management activities outlined for T&E species or migratory birds.

Let me know if you have any questions.

Travis W. Wilson
Eastern Region Highway Project Coordinator
Habitat Conservation Program
NC Wildlife Resources Commission
1142 I-85 Service Rd.
Creedmoor, NC 27522
Phone: 919-528-9886 ext. 6
Fax: 919-528-9839
Travis.Wilson@ncwildlife.org



**North Carolina Department of Cultural Resources
State Historic Preservation Office**

Claudia Brown, Acting Administrator

Beverly Eaves Perdue, Governor
Linda A. Carlisle, Secretary
Jeffrey J. Crow, Deputy Secretary
May 20, 2011

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

MEMORANDUM

TO: Matt Wilkerson
Office of Human Environment
NCDOT Division of Highways

FROM: Claudia Brown *PSH for Claudia Brown*

SUBJECT: Archaeological Survey and Evaluation of the US 1 Rockingham Bypass Addendum Expanded Corridor between SR 1722 Falling Creek Crossing, R-2501, Richmond County, ER 94-7984

Thank you for your letter of May 2, 2011, transmitting the above report. The report authors note that 26 archaeological resources (31RH536-31RH560, and 31RH568&568**) were evaluated during the project. Of these 26 sites, one (31RH547&547**) was recommended as eligible for listing in the National Register of Historic Places.

For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur with the report authors that archaeological resources (31RH536-31RH546, 31RH548-31RH560, and 31RH568&568**) are not eligible for inclusion in the National Register of Historic Places. These properties do not retain the level of integrity nor do they possess the potential to yield significant new information pertaining to either the prehistory or history of North Carolina.

However, we do not concur with the report authors that archaeological site 31RH547&547** is eligible for inclusion in the National Register of Historic Places. This site does not retain the level of integrity, artifact content, nor evidence of intact artifact bearing soil; consequently, it is our opinion that this site does possess the potential to yield significant new information pertaining to either the prehistory or history of North Carolina.

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 considerations. If you have any questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919.807.6579. In all future communication concerning this project, please cite the above referenced tracking number.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

May 2, 2011

Claudia Brown
State Historic Preservation Office
4617 Mail Service Center
Raleigh, North Carolina 27699

Dear Ms. Brown,

Re: Re: Archaeological Survey and Evaluation of the US 1 Rockingham Bypass Addendum Expanded Corridor Between SR 1640 and SR 1722 Falling Creek Crossing, Richmond County, North Carolina. NCDOT Divisions 8; TIP No. R-2501; ER 94-7984; Federal Aid No. NHF-1(1).

Enclosed please find two bound copies of the manuscript reporting the results of Environmental Services, Inc.'s (ESI) investigations on behalf of NCDOT regarding the above referenced project, along with copies of the associated site forms. The above report details the intensive archaeological survey for the proposed expanded study corridor for the realignment of US 1 in at the Falling Creek crossing encompassing an area of roughly 405 acres (164 hectares). Twenty-six archaeological resources were documented during the course of field investigations, of which, twenty-five are recommended as ineligible for the National Register of Historic Places (NRHP). One archaeological resource, site 31RH547/547**, is recommended eligible for listing on the NRHP under criterion [D] of 36CFR60.4; avoidance is recommended for this site. For the remainder of the proposed study corridor a finding of "no historic properties affected" for archaeological resources is considered appropriate.

While NCDOT's archaeology group is in agreement with the recommendations made by ESI concerning the identification and NRHP eligibility of archaeological resources, the views and opinions expressed with regards to the evaluation of survey methodologies are not necessarily shared by NCDOT's archaeology group. This project is being coordinated by the Federal Highway Administration (FHWA); copies of this documentation are being sent to FHWA for their records. Thank you for your assistance in this matter. Should you have any questions concerning this project, please contact Shane C. Petersen at (919) 707-6083.

Sincerely,

Matt Wilkerson
Archaeology Supervisor
Human Environment Unit

Cc John Sullivan, FHWA
Steve Brown, NCDOT

Enclosures (site forms and 2 copies of report)

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PDEA - HUMAN ENVIRONMENT UNIT
1598 MAIL SERVICE CENTER
RALEIGH, NC 27699-1598

TELEPHONE: 919-707-6000
FAX: 919-212-5785
WEBSITE: WWW.NCDOT.ORG

LOCATION:
PDEA - HUMAN ENVIRONMENT UNIT
CENTURY CENTER, BLDG B
1020 Birch Ridge Drive
Raleigh, NC 27610



RECEIVED
JAN 22 2008

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

HISTORIC PRESERVATION OFFICE

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

January 17, 2008

Mr. Peter Sandbeck
Administrator and Deputy State Historic Preservation Officer
Historic Preservation Office
Dept. of Cultural Resources
4617 Mail Service Center
Raleigh, North Carolina 27699-4617

Ref
ER 94-7984
A - CONCUR w/letter,
NC. JJM
BSS
3-14-08

Dear Mr. Sandbeck:

Due 2/5/08

Subject: Consultation with NC OSA regarding impacts to previously identified cemetery at site 31RH360 associated with TIP No. R-2501 Improvements to US 1, Rockingham Bypass, Richmond County, Federal Aid No. NHF-1(1), ER 94-7984, ~~ER 02-8709~~, State Project No. 8.T580501, Division 8.

This letter is intended to serve as a follow-up to the field investigations undertaken by NCDOT archaeologists Shane Petersen and Brian Overton, as well as John Mintz of the North Carolina Office of State Archaeology (OSA). These investigations, undertaken on December 7, 2007, were oriented towards the relocation and general assessment of the historic-period cemetery at site 31RH360. Site 31RH360 was initially identified by Wake Forest University in 2000 while completing the initial corridor-level archaeological survey for the above-listed project on behalf on NCDOT. The site was defined as a multi-component resource composed of a 19th-20th-century farmstead complex and a widely dispersed scatter of pre-Columbian materials associated with the Archaic through Middle Woodland periods. At that time, Wake Forest University archaeologists recommended the whole site as ineligible for listing on the National Register of Historic places (NRHP). However, a small family cemetery was identified through the survey in the northern portion of the site. The survey report described the conditions and features of the cemetery, including up to eight suspected burials, but failed to record the exact location of the cemetery and define its boundaries.

The 2007 revisit of the site was undertaken to relocate the cemetery within the archaeological site boundaries, assess the potential impacts to the cemetery from the currently proposed alignment of the Rockingham Bypass, and make a recommendation as to the treatment of the cemetery based on those conditions. Three cemetery features (grave markers) were mapped via Global Positioning Satellite (GPS) systems and imported into preliminary planning maps for the proposed project to illustrate the results. The "core" cemetery area was delineated based upon the presence of markers, depressions, ornamental flowers, and cypress tree stumps, an area roughly 100 feet (30.48 meters) in diameter. An outer cemetery area, with a diameter of roughly 160 feet (48.77 meters) was defined around the core area through the observation of the

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
HUMAN ENVIRONMENT UNIT
1583 MAIL SERVICE CENTER
RALEIGH NC 27699-1583

TELEPHONE: 919-715-1500
FAX: 919-715-1522
WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING
2728 CAPITAL BOULEVARD, SUITE 168
RALEIGH, NC 27604

JAN 22 2008

vegetational change between hardwoods and underbrush surrounded by the evergreens of a pine plantation.

Comparisons between the preliminary plans generated for the realignment of US 1 in Richmond County and the GPS location of the cemetery place the resource outside the proposed highway alignment, but well within the associated earth-moving activities (cut-lines). Direct evidence for three burials was observed and indications for at least five more burials (without obvious markers) were present, as noted in the original survey report. Further archaeological investigation of this resource is not considered necessary. Nothing observed at the cemetery location on December 7th is considered to change the recommendation of "not eligible" for the NRHP and the original recommendation to move the burials under the regulations stipulated by NCSG 65 (should it become necessary and disturbance of the cemetery prove inevitable) are reiterated here.

se find attached a map of the cemetery location as established through GPS and a completed copy of the North Carolina Cemetery Survey form. Should any further questions concerning this project or the above referenced meeting please contact Shane Petersen at (919) 715-1557.

Sincerely,



Matt Wilkerson, Archaeology Supervisor
Human Environment Unit

HPO Concurrence: Renee Hedrick-Easley Date: 3-17-08
Deputy State Historic Preservation Officer

OSA Reviewer: John Mintz Date: 3/14/08

Cc: John Mintz, OSA
Jennifer Fuller, P.E., NCDOT
John Sullivan, FHWA

Enclosures: Map illustrating the cemetery location within site 31RH360; North Carolina Cemetery Survey Form



RECEIVED
NOV 23 2007

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

November 27, 2007

ER 94 - 7984

Mr. Peter Sandbeck
Administrator and Deputy State Historic Preservation Officer
Historic Preservation Office
Dept. of Cultural Resources
4617 Mail Service Center
Raleigh, North Carolina 27699-4617

A - 12/6/07
nm

Due 12/13/07

Dear Mr. Sandbeck:

Subject: Consultation with NC OSA regarding impacts to NRHP-eligible sites associated with TIP No. R-2501 Improvements to US 1, Rockingham Bypass, Richmond County, (Federal Aid No. NHF-1(1), ER 94-7984, ER 02-8709, Division 8.

This letter is intended to serve as a summary of the agreements made in reference to the above referenced consultation. On November 19, 2007 Shane Petersen and Brian Overton of North Carolina Department of Transportation's (NCDOT) Human Environment Unit met with John Mintz of the North Carolina Office of State Archaeology (OSA) to outline the results of site relocation efforts for 31RH376, 31RH401, and 31RH403 in association with the proposed Rockingham Bypass. Through reconnaissance and limited subsurface testing at the recorded site locations, it was established that no components associated with these National Register of Historic Places-eligible (NRHP) sites extended inside the proposed APE for improvements and new alignments for US 1. Reconnaissance efforts and subsurface tests were mapped via Global Positioning Satellite (GPS) systems and imported into preliminary planning maps for the proposed project to illustrate the results. It is NCDOT's recommendation that a finding of "no impacts" applies to the project with regards to these archaeological resources. Verbal concurrence was reached with regards to these recommendations. Further archaeological reconnaissance (with the assistance of OSA staff if possible) will be conducted at site 31RH360, to relocate the cemetery mentioned in the original survey report. However, this site and its components (including the cemetery) have already been determined not eligible for the NRHP. Further investigations relate solely to the cemetery status under North Carolina General Statutes. Additionally, as illustrated in the attached map, the remaining NRHP-eligible site associated with the Rockingham Bypass, 31RH408, is well outside the limits of the proposed project. These proposed actions and conclusions are consistent with North Carolina State Historic Preservation Office (NCSHPO) correspondence dated 02-28-02.

Please find attached a copy of the generalized map of the proposed Rockingham Bypass alignment in relation to the locations of archaeological resources identified in the survey. Should

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
HUMAN ENVIRONMENT UNIT
1583 MAIL SERVICE CENTER
RALEIGH NC 27699-1583

TELEPHONE: 919-715-1500
FAX: 919-715-1522

WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING
2728 CAPITAL BOULEVARD, SUITE 168
RALEIGH, NC 27604

NOV 29 2007

any further questions concerning this project or the above referenced meeting, please contact Shane Petersen at (919) 715-1557.

Sincerely,



Matt Wilkerson, Archaeology Supervisor
Human Environment Unit

HPO Concurrence: Renee Medhill-Easley Date: 12-10-07
Deputy State Historic Preservation Officer

OSA Reviewer: John Mintz Date: 12/6/07

Cc: John Mintz, OSA
Jennifer Fuller, P.E., NCDOT
John Sullivan, FHWA

Enclosure: Map illustrating current alignment in relation to site locations.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
HUMAN ENVIRONMENT UNIT
1583 MAIL SERVICE CENTER
RALEIGH NC 27699-1583

TELEPHONE: 919-715-1500
FAX: 919-715-1522

WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING
2728 CAPITAL BOULEVARD, SUITE 168
RALEIGH, NC 27604

be: DOT w/ attachments
OSA
11/11

Page 2

William D. Gilmore

February 28, 2002

If affected, the Cameron Plantation site (31Rh360**) includes a cemetery that should be avoided or moved in compliance with state laws.

If affected, site 31RH405 should be monitored for a possible grave.

We appreciate the information included in the report about several sites nearby, but outside of the corridor as proposed currently. Sites 31RH366 and 31RH374 are assessed as not eligible. These will not be affected by the project as proposed currently. Sites 31RH388, 31RH389, and 31RH 411** remain unassessed. They should not be affected by the project as proposed currently. Should plans change and if any of sites 31RH388, 31RH389, and 31RH 411** are impacted by the project or subsequent permits, assessment will be necessary.

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

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

DB:kgc

cc: FHwA

Mr. David Timpy, ACOE, Wilmington

Dr. J. Ned Woodall, Wake Forest University Archaeology Laboratories



Michael F. Easley
Governor
William G. Ross, Jr., Secretary
Department of Environment and Natural Resources
Kerr T. Stevens
Division of Water Quality

June 8, 2001

JUN 19 2001

MEMORANDUM

To: William D. Gilmore, P.E., Manager
NCDOT Project Development & Environmental Analysis Branch

Through: John Dorney, NC Division of Water Quality *JPD*

From: Cynthia F. Van Der Wiele, NCDOT Coordinator *cidw*

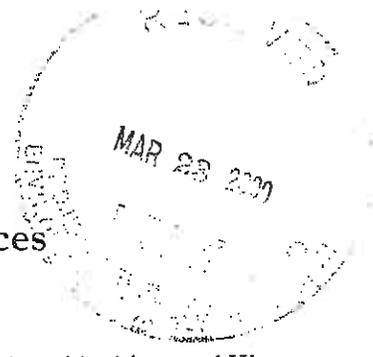
Subject: Federal Supplemental Draft Environmental Impact Statement for US 1, from Sandhills Road (SR 1971) to Marston Road (SR 1001), Richmond Co., F.A. Project No. NHF-1(1), State Project No. 8.T580501, TIP Project No. R-2501

This office has reviewed the referenced document which was prepared in order to detail changes that have occurred since the DEIS was approved in June 1999. These changes include the extension of the proposed project to include the widening section from north of Fox Road (SR 1606) to Marston Road (SR 1001), and an evaluation of the feasibility of improving NC 177 from US 1 north to the South Carolina state line. The Division of Water Quality (DWQ) offers the following comments based on review of the aforementioned document:

1. Including the widening section [SR 1606 to SR 1001] and its environmental impacts makes perfect sense rather than treating it as a separate project. The table provided clear documentation of the impacts.
2. The evaluation of NC 177 as a possible preliminary alternative is well documented. It is clear that improving the existing facility, or trying to utilize two segments of NC 177 outside the Hamlet city limits would not provide a transportation solution preferable to the proposed US 1 Bypass.

The NCDWQ appreciates the efforts that went into exploring this additional alternative and for the opportunity to provide comments on your project. Should you have any questions or require any additional information, please contact Cynthia Van Der Wiele at 919.733.5715

cc: USACE Wilmington Field Office
Marella Buncick, USFWS, Asheville Field Office
MaryEllen Haggard, NCWRC
File Copy



North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

March 20, 2000

MEMORANDUM

TO: Doug Huggett
Inland 404 Coordinator
NCDENR

FROM: David Brook (handwritten signature)
Deputy State Historic Preservation Officer

SUBJECT: 404 Project Review, Widening of US 1, SC Line to NC 177, R-2501, ACOE No.
199500459, Richmond County, ER 99-7867 (ref. ER 94-7984)

We have reviewed a Scope of Work and Technical Proposal prepared by the applicant to conduct an archaeological survey of the preferred alternative and complete development of an historical background report for the above referenced undertaking. Our concurrence with the proposed action was outlined in a memorandum dated June 10, 1999, to William Gilmore. We also indicated we looked forward to the completion of the work and an opportunity to review the results.

We have not received the results of the archaeological survey of the preferred alternative or a completed historical background report. Without an opportunity to review the results of the archaeological survey, we cannot comment on the potential effects of the permit. Upon receipt of additional information from the Department of Transportation, we will gladly continue our review and advise the Army Corps of Engineers concerning potential effects on historic properties that may be eligible for listing in the National Register of Historic Places.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the regulations of the Advisory Council on Historic Preservation 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.

cc: William Gilmore
Wilmington, ACOE

Table with 4 columns: Location, Mailing Address, Telephone/Fax, and an unlabeled column. Rows include ADMINISTRATION, ARCHAEOLOGY, RESTORATION, and UNIVERSITY & PLANNING.



North Carolina
Department of Administration

James B. Hunt, Jr., Governor

Katie G. Dorsett, Secretary

September 29, 1999

8.7580501

Mr. David Smith
N.C. Department of Transportation
Project Mgt. Branch
Transportation Building
Raleigh, NC 27611

Dear Mr. Smith:

Re: SCH File # 00-E-4220-0079; Draft Environmental Impact Statement Proposed Improvements to US 1 from Sandhill Road (SR 1971) to North of Fox Rd. (SR 1606) in Richmond County; TIP #R-2501

The above referenced project has been reviewed through the State Clearinghouse Intergovernmental Review Process. Attached to this letter are comments made by agencies reviewing this document.

Should you have any questions, please do not hesitate to call me at (919) 807-2425.

Sincerely,

Chrys Baggett

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region H

PROJECT FILE.
() GENERAL CORRESPONDENCE
() PUBLIC HEARING
() FILE WITH ESTIMATES.
()

RECEIVED
OCT 09 1999
PRESNELL ASSOC.,

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES



MEMORANDUM

JAMES B. HUNT JR.
GOVERNOR

WAYNE McDEVITT
SECRETARY

TO: Chyrs Baggett
State Clearinghouse

FROM: Melba McGee *mw*
Project Review Coordinator

RE: DEIS for US 1 Rockingham By-pass from SR 1971 to
SR.1606 on New Location in Richmond County

DATE: September 27, 1999

The Department of Environment and Natural Resources has reviewed the proposed DEIS. The attached comments reflect specific concerns of our divisions that should be addressed and recognized in the final environmental impact statement. In order to avoid delays in the review, it is recommended that the Department of Transportation discuss these issues with our agencies prior to submitting the FEIS for state review.

Thank you for the opportunity to respond.

Attachments

RECEIVED

SEP 28 1999

N.C. STATE CLEARINGHOUSE

RECEIVED

OCT 09 1999

PRESNELL ASSOC.

State of North Carolina
Department of Environment
and Natural Resources
Division of Water Quality



James B. Hunt, Jr., Governor
Bill Holman, Secretary
Kerr T. Stevenis, Director

September 23, 1999

MEMORANDUM

To: Melba McGee
Through: John Dorne *[Signature]*
From: John Hennessy
Subject: Comments on the EA for the construction of the US 1 Bypass around Rockingham in Richmond County (R-2501), Federal Aid Project No. NFF-1(1), State Project No. 8.T580501, TIP Project No. R-2501, DENR Project Number 00E-0079.

This office has reviewed the referenced document. The Division of Water Quality (DWQ) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. It is our understanding that the project has the potential to impact between 55 and 61 acres of wetlands and between 3800 to 6900 linear feet of streams. The DWQ offers the following comments based on review of the aforementioned document:

- A) The model projections presented for level-of-service on page 1-1 indicate a no build service level of D or E in downtown Rockingham. Has this model factored in the completion of the US 220 Bypass and US 74 Bypass also planned for the area? Justification for the level-of-service needs to incorporate all other planned improvements in the area. Please identify the model assumptions used for projecting traffic flows in future document iterations.
- B) On page 1-2, the document states, "The segment of the R-2501 project from the US 74 Bypass southward into South Carolina along US 1 will be the probable routing of the I-73 Corridor." We were unaware that the corridor for I-73 had already been selected by DOT. The aforementioned statement assumes that the alternative for the I-73 corridor has already been selected; to our knowledge, it has not been selected. Moreover, if part of the justification for this project is the construction of I-73 on the existing US 1 route, then this project lacks independent utility and the two projects need to be conjoined so that the full breath and depth of impacts can be viewed holistically.
- C) On page 2-3, the document justifies the exclusion of the upgrade existing alternative because "... US 1 south of the US 74 Bypass (R-512) would need to be improved to a freeway to handle the proposed I-73." Again, the question of independent utility must be raised. It is obvious that construction of this project is dependent upon future decisions for the I-73 corridor. Therefore, to plan and construct this project separate from the other is inappropriate. Decisions made on this project will undoubtedly reduce the ability to plan the other project appropriately.

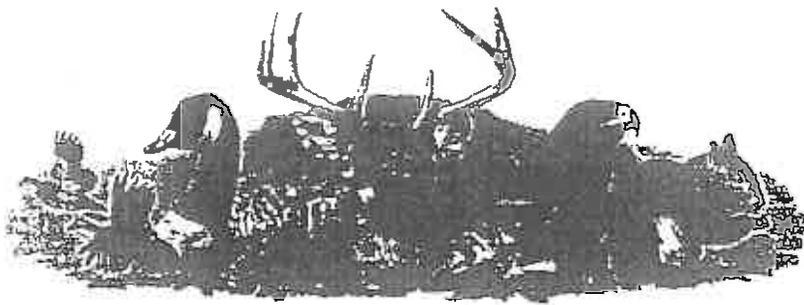
- D) On page 2-3, the document states, "The "Improve Existing Facility" Alternative is not consistent with local and statewide long-range plans to provide a fully controlled, bypass facility (freeway) around Rockingham." The DWQ would agree that the upgrade of existing facilities would not ever meet this project purpose. In fact, no alternative that involves an upgrade of existing facilities could meet this objective. Therefore, it is logical to conclude that the purpose of this project, as well as other bypass projects in the Rockingham vicinity, is to build a "new location" facility. Thus, the statement that the purpose of the project is to construct a new location facility needs to be added to the purpose and need statement.
- U) The document dismisses the upgrade of existing NC 177 for many of the same reasons as listed in comment D above. The document needs to consider other alternatives that combine use of existing facilities with new location segments to complete the project. Appropriate "Avoidance and Minimization" cannot truly occur unless the use of existing facilities, in whole or part, are considered in the alternative development and analysis stage. Existing SR roads that could be used, in whole or part, to meet the project purpose include: 1) SR 1971, 2) SR 1108, 3) NC 177, and 4) SR 1624.
- F) Consideration of existing and other alternatives need to avoid the Watershed Critical Area. For crossings over waters classified as WS III, DOT needs to employ emergency spill catch basins. Moreover, DOT needs to consider bridging, at a minimum, Beaver Dan Creek which presently has an "Excellent" water quality classification. Other systems that may require special protection can be assessed with an infield site visit.
- G) 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. Based on the impacts described in the document, wetland mitigation may be required for this project. Should the impacts to jurisdictional wetlands exceed 1.0 acres, mitigation may be required in accordance with NCDWQ Wetland Rules (15A NCAC 2H.0506 (h)(2)).
- II) In accordance with the NCDWQ Wetlands Rules (15A NCAC 2H.0506(b)(6)), 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. In accordance with the NCDWQ Wetlands Rules (15A NCAC 2H.0506 (h)(3)), the Wetland Restoration Program may be available for use as stream mitigation.
- J) Where streams must be crossed, the DWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, DOT should not install the bridge bents in the creek, to the maximum extent practicable.
- J) Sediment and erosion control measures should not be placed in wetlands.
- K) Borrow/waste areas should avoid wetlands to the maximum extent practicable. Impacts to wetlands in borrow/waste areas could precipitate compensatory mitigation.
- L) The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater should not be permitted to discharge directly into the creek. Instead, stormwater should be designed to drain to a properly designed stormwater detention facility/apparatus.
- M) There should be a discussion on mitigation plans for unavoidable impacts. If mitigation is required, it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. While the NCDWQ realizes that this may not always be practical,

it should be noted that for projects requiring mitigation, appropriate mitigation plans will be required in conjunction with the issuance of a 401 Water Quality Certification.

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

The NCDWQ appreciates the opportunity to provide comments on your project. Should you have any questions or require any additional information, please contact John Hennessy at (919) 733-5694.

cc: Dave Timpy, Corps of Engineers
Tom McCartney, USFWS
David Cox, NCWRC
Ken Averitte, NCDWQ Regional Office
Personal Files
Central Files



North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391
Charles R. Fullwood, Executive Director

MEMORANDUM

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

FROM: David Cox, Highway Project Coordinator
Habitat Conservation Program *David Cox*

DATE: September 22, 1999

SUBJECT: North Carolina Department of Transportation (NCDOT) Draft Environmental Impact Statement (DEIS) for US 1 improvements, from Sandhill Road (SR 1971) to south of Fox Road (SR 1606), Richmond County, North Carolina. TIP No. R-2501. SCH Project No. 00-E-0079.

Staff biologists with the N. C. Wildlife Resources Commission have reviewed the subject DEIS and are familiar with habitat values in the project area. The purpose of this review was to assess project impacts to fish and wildlife resources. Our comments are provided in accordance with certain provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

NCDOT proposes to improve US 1 to a multi-lane highway from SR 1971 to just south of SR 1606. The proposed facility will be a four-lane, median divided freeway with full control of access along segments on new location and will be a four-lane, median divided expressway along segments of existing US 1. The project length is approximately 15.5 miles, 13 miles on new location. A range of alternative alignments are under consideration, which meet the stated project purpose and need to varying degrees. Adverse effects on wildlife and fishery resources vary with each alternative.

We have reviewed the DEIS for this project and have found the document adequately describes the environmental impacts of each build alternative. In a project of this scope, we feel that a NCDOT must clearly show that impacts to wetlands and important wildlife and fishery habitat have been minimized to the maximum extent possible. During preparation of the Final

September 22, 1999

EIS for this project, NCDOT should include specific design information that demonstrates avoidance and minimization of wetland and stream impacts.

After reviewing the information contained in the DEIS, we could support alternatives 21 or 24 provided that impacts to wetlands, streams, and wildlife habitat is minimized. These alternatives minimize social impacts and substantially reduce stream channel impacts. Wetland impacts are not significantly different from alternatives 7 and 14. NCDOT should be prepared to increase bridge lengths at hydraulic crossings and to construct bridges at high quality wetland crossings. Stream crossings should be designed to eliminate the need for channel realignment. In areas of high quality, contiguous wildlife habitat, wildlife underpasses may be necessary.

We concur that the Draft Environmental Impact Statement sufficiently describes the expected impacts of each alternative on the natural and human environment. However, we remain concerned over possible impacts to the Sand Hills Gameland and McKinney Lake Fish Hatchery properties. We request maps showing the location of the preferred alternative in relation to these parcels be included in the FEIS.

Thank you for the opportunity to comment on this DEIS. If we can be of any further assistance please call me at (919) 528-9886.

cc: Tom McCartney, U.S. Fish and Wildlife Service, Raleigh
John Hennessy, DWQ, Raleigh
Dave Timpy, USACOE, Wilmington

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

September 20, 1999



JAMES B. HUNT JR.
GOVERNOR

WAYNE McDEVITT
SECRETARY

DR. PHILIP K. MCKNELLY
DIRECTOR

MEMORANDUM

TO: Melba McGee
FROM: Stephen Hall *SH*
SUBJECT: DEIS - US 1 Bypass, Rockingham
REFERENCE: 00-E-0079

The Natural Heritage Program database contains records for the following rare species from Segments H and H2 of the proposed Bypass:

- White wicky (*Kalmia cuneata*), state listed as Endangered and a Federal Species of Concern -- recorded from a powerline corridor south of Mount Calvert Church on SR 1624.
- Sandhills bog lily (*Lilium iridollae*), state listed as Threatened and a Federal Species of Concern -- recorded on the north side of US 1, to the northwest of the junction with Ponderosa Drive.
- Sandhills chub (*Semotilus lumbee*), state listed as Special Concern -- recorded from Falling Creek east of SR 1640.
- Northern pine snake (*Pituophis melanoleucus*), state listed as Threatened and a Federal Species of Concern -- recorded from along US 1 west of the junction with SR 1475.
- Conferva pondweed (*Potamogeton confervoides*), a candidate for state listing a Federal Species of Concern -- historically recorded from the vicinity of Falling Creek at the SR 1640 bridge crossing.
- Giant peatmoss (*Sphagnum torreyanum*), a candidate for state listing -- recorded from the vicinity of Falling Creek at the SR 1640 bridge crossing
- Chapman's yellow-eyed grass (*Xyris chapmanii*), a candidate for state listing -- recorded from a powerline corridor south of Mount Calvert Church on SR 1624

Melba McGee

Page 2

September 20, 1999

- Bog oatgrass (*Danthonia epilis*), considered significantly rare in North Carolina - historically recorded from the vicinity of Falling Creek at the SR 1640 bridge crossing
- Swaying bulrush (*Schoenoplectus subterminalis*), considered significantly rare in North Carolina - recorded from the vicinity of Falling Creek at the SR 1640 bridge crossing
- Azure sage (*Salvia azurea*), considered significantly rare in North Carolina - historically recorded from the vicinity of Falling Creek at the SR 1640 bridge crossing

Due to the presence of these species, the Division supports selection of Segments I, J, and K over H and H2.

In addition to the rare species associated with Segments H and H2, the following species have been recorded from the vicinity of Chock Creek at the US 1 bridge crossing:

- Southern white beaksedge (*Rhynchospora macra*), state listed as Endangered
- Pinewoods darter (*Etheostoma mariae*), state listed as Special Concern
- Silvery sedge (*Carex canescens*), a candidate for state listing
- Swaying bulrush (*Schoenoplectus subterminalis*)

In order to avoid or minimize impacts to the species at this location, the Division recommends that (1) all best management practices be followed for the control of erosion and sedimentation; (2) all concrete used in bridge construction be fully cured before coming into contact with the water; (3) alignments be selected that avoid the populations of rare plants; (4) consultation be held with the Plant Protection Program to determine whether transplantation should be used to mitigate unavoidable impacts.

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

Project Number: 00E-0079 Due Date: 9-17-99

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

PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/> Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/> NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit- whichever is later.	90-120 days (N/A)
<input type="checkbox"/> Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
<input type="checkbox"/> Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
<input type="checkbox"/> Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/> Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100, 2Q.0300, 2H.0600)	N/A	60 days
<input type="checkbox"/> Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900		
<input type="checkbox"/> 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.	N/A	60 days (90 days)
<input type="checkbox"/> Complex Source Permit required under 15 A NCAC 2D.0800		
<input checked="" type="checkbox"/> The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (land Quality Sect.) At least 30 days before beginning activity. A fee of \$30 for the first acre and \$2000 for each additional acre or part must accompany the plan.		20 days (30 days)
<input type="checkbox"/> The Sedimentation Pollution control Act of 1973 must be addressed with respect to the referenced Local Ordinance.		(30 days)
<input type="checkbox"/> Mining Permit	On-site inspection usual. Surety bond filed with ENR. Bond amount varies with type mine and number of acres of affected land. Any 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)
<input type="checkbox"/> North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
<input type="checkbox"/> Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
<input type="checkbox"/> Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/> Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage of the total project cost will be required	30 days (60 days)

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

- | | |
|--|---|
| <input type="checkbox"/> Asheville Regional Office
59 Woodfin Place
Asheville, NC 28801
(704) 251-6208 | <input checked="" type="checkbox"/> Fayetteville Regional Office
Suite 714 Wachovia Building
Fayetteville, NC 28301
(919) 486-1541 |
| <input type="checkbox"/> Mooresville Regional Office
919 North Main Street, P.O. Box 950
Mooresville, NC 28115
(704) 663-1699 | <input type="checkbox"/> Raleigh Regional Office
3800 Barrett Drive, Suite 101
Raleigh, NC 27609
(919) 571-4700 |
| <input type="checkbox"/> Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
919) 946-6481 | <input type="checkbox"/> Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
(919) 395-3900 |
| <input type="checkbox"/> Winston-Salem Regional Office
585 Woughtown St.
Winston-Salem, NC 27107
(910) 771-4600 | |

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF FOREST RESOURCES

2411 Old US 70 West
Clayton, NC 27520
September 10, 1999



JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

STANFORD M. ADAMS
DIRECTOR

MEMORANDUM

TO: Melba McGee, Office of Legislative Affairs

FROM: Bill Pickens, NC Division Forest Resources *Bill*

SUBJECT: DOT DEIS For US 1 Rockingham By-pass from SR 1971 to SR1606 on New Location in Richmond County

PROJECT #: 00-0079 and TIP # R-2501

The North Carolina Division of Forest Resources has reviewed the referenced DEIS to evaluate the impacts to forest resources as a result of the project. Our comments on are listed below.

1. Overall the DEIS fails to address the issues and concerns the North Carolina Division of Forest Resources submitted in our December 1, 1994 scoping letter response. While it can be argued that the issues are addressed within the context of other topics we are concerned that the DEIS does not directly address forestry issues. We consider the permanent loss of 560 -687 acres of forestland a major impact.
2. The three plant communities described in Section 4.11 and summarized in Table 4.1 are inadequate. They do not provide enough information to evaluate the four alternatives potential impacts. Our policy emphasizes avoidance to lessen impacts to forest resources based on the value and/or uniqueness of the habitat impacted. The summary places all timber types under one broad classification. A detailed classification system that includes number of acres impacted by all timber types should be provided. Loblolly and longleaf pine timber types should be differentiated.
3. The need for more detail for impacts to forest resources is suggested in Section 4.1 which states "natural/undisturbed use communities constitutes the largest land use impacts by the proposed project" and in Section 4.11.1 "The greatest impacts will be within the pine and pine/hardwood communities". A breakdown of the number acres impacted by the classifications described in Section 3.3.1 is not provided in Section 4 , Environmental Consequences.



4. We believe Alternatives 7 and 14 will adversely impact our District headquarters building located on the northern side of US 1 between SR 1640 and SR 1475. This site is an emergency response facility for wildfire suppression. It is not identified as such in Figure 3.3.
5. We have good reason to believe the widening of US 1 in H2 segment will be asymmetrical on the north side of the existing roadway. This will increase the chances for adverse impact to our facility. There are more residences and a golf course on the south side of the highway. In section 4.8.2, page 4-21 the statement " Assuming the existing US 1 will be widened to the north ..." implies widening to the north is preferred to minimize number of relocations or noise level problems. Alignment design in this segment needs to be clarified.
6. Our office building is approximately 135 feet from the existing roadway pavement. Our parking lot is about 115 feet from the pavement. Based on Figure 2.5 we estimate the widening will require at least 115 feet from the existing pavement. This would leave a distance of only 20 feet from the ROW to our building. It will directly impact the parking area. If Alternatives 7 or 14 are selected the impacts created by this situation needs to be mitigated. Noise levels, safe access for tractor plow units, and potential relocation of office should be discussed.
7. Access from our facility to the highway is imperative if Alternatives 7 or 14 are selected. A crossover wide enough to accommodate our tractor plow hauling units is required. In addition we are concerned that a four-lane highway with a design speed of 60 mph will make entry by our truck tractors unsafe and difficult. These units require a lot of highway to get up to speed. An acceleration lane may be needed.
8. Direct impacts to permanent loss of timber resources is not addressed in the DEIS. We encourage all woody products be utilized during clearing operations. What is DOT doing to encourage use of this resource so it isn't wasted?
9. North Carolina Division of Forest Resources has not been asked to participate in the interagency team meetings. We would like to be included at the next one.
10. At this time we would select Alternatives 21 or 24 as our preferred route, since they would not impact our facility. However, these routes impact high value plantations in segments J and K. All the alternatives will impact longleaf pine sites on the southern end of the corridor. Again we need more information prior to determining a preferred route.

We appreciate the opportunity to comment on the proposed project, and encourage the impact on our forestland be considered during the planning process. I can be contacted at 919-553-6178 if you have any questions.

cc: Warren Boyette
Dave Andres
Dan Smith

REQUEST FOR CULTURAL RESOURCES REVIEW FORM

MEMORANDUM TO: Drew Joyner, Human Environment Unit
1598 Mail Service Center, Raleigh, NC 27699-1598

ATTENTION: Matt Wilkerson, Archaeology Supervisor
Mary Pope Furr, Historic Architecture Supervisor

FROM: Steve Brown, Project Planning Engineer
1548 Mail Service Center, Raleigh, NC 27699-1548

SUBJECT: Request for Additional Cultural Resources Review of Expanded Study Area

DATE: March 18, 2010

PROJECT INFORMATION

<i>Project No:</i>	R-2501	<i>County:</i>	Richmond
<i>WBS No:</i>	34437.1.1	<i>Document:</i>	Final EIS (FEIS)
<i>F.A. No:</i>	NHF-1(1)	<i>Funding:</i>	<input type="checkbox"/> State <input checked="" type="checkbox"/> Federal
<i>USGS Quad:</i>	Rockingham & Hamlet		

Project Description:

The proposed project consists of the widening and/or relocation of US 1 in Richmond County from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) north of Rockingham.

Purpose & Need:

This project will: reduce travel time; alleviate congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets; provide a safer more efficient highway; and improve mobility on the designated US 1 Strategic Highway Corridor.

SCHEDULING AND CONTACT INFORMATION

<i>Date Needed:</i>	June 18, 2009		
<i>Engineer:</i>	Steve Brown	<i>Tel</i>	(919) 733-7844 x 235
		<i>Email</i>	slbrown@ncdot.gov

DESIGN INFORMATION

<i>Project Length:</i>	19 miles		
<i>Exist. R/W:</i>	Varies	<i>Proposed R/W:</i>	Varies
<i>Exist. Speed Limit:</i>	Varies 45 to 55 mph	<i>Proposed Speed Limit:</i>	Varies 45 to 65 mph
<i>Exist. X-Section:</i>	Two-lane, shoulder section		
<i>Detour Route:</i>	N/A		
<i>Structure Type:</i>	N/A	<i>Year Built:</i>	N/A

PERMIT & SPECIAL INFORMATION

Federal (USACE) Permit Required: YES NO
Permit Locations shown on map submitted: YES NO N/A (No Permits)
Type of Permit: Number of Permits:
Easements Required: YES NO
Temporary or Permanent: Temporary Permanent
Easements shown on map submitted: YES NO N/A (No Easements)
USFS Property: YES NO
USFS Rating: LOW MODERATE HIGH RATING SHEET ATTACHED
New signalization: Unknown
Offsite facilities required: Unknown

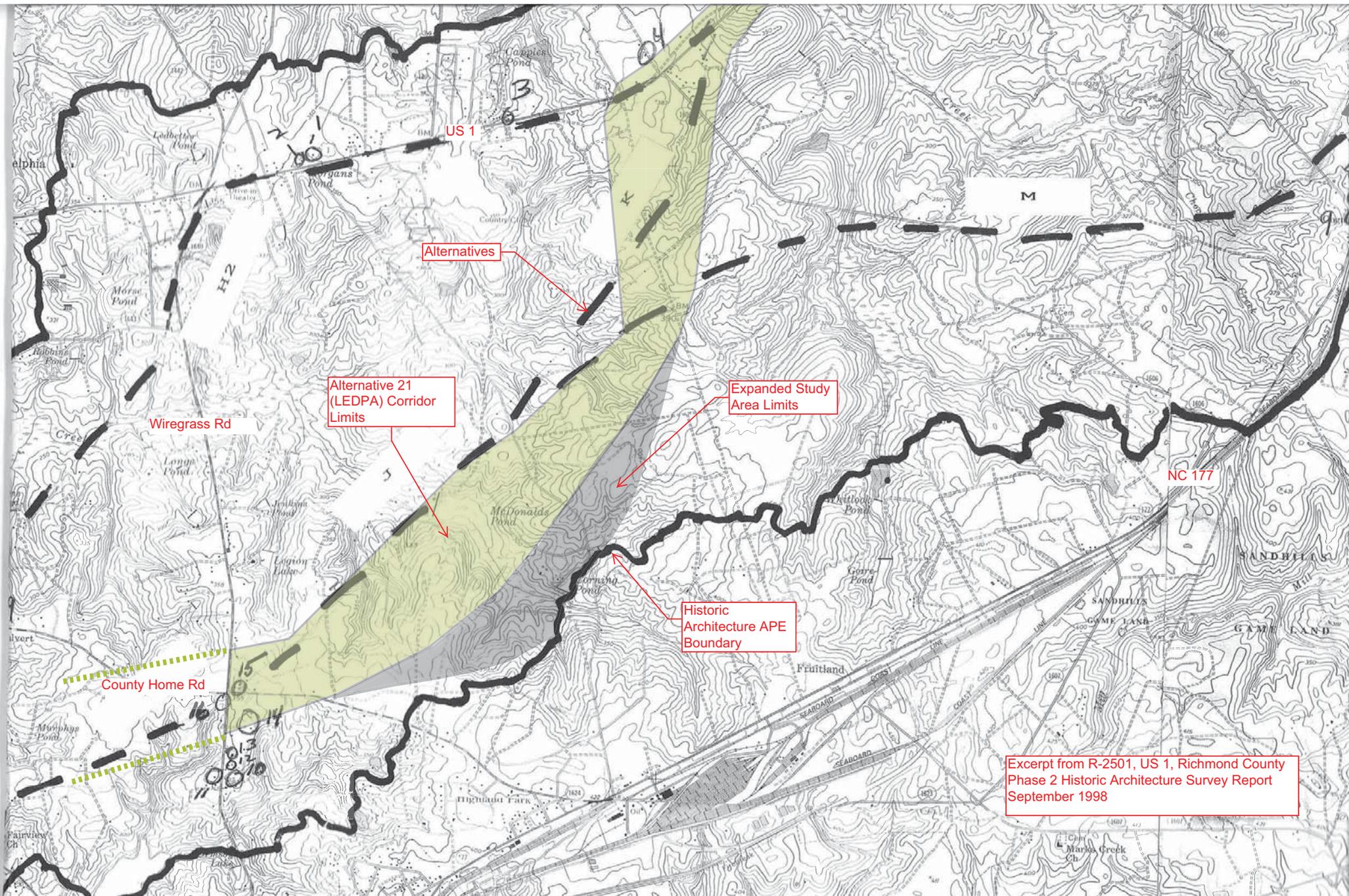
ATTACHMENTS

Vicinity Map USGS Quad Map Design Plans Photos
 Agency Input Letters NCDOT Input Letters Scoping Meeting Minutes
 Aerial Photograph with Study Area, Project Termini, and Y-Lines indicated
 Other: See maps and concurrence forms describing cultural resources.

SUPPLEMENTAL INFORMATION

Archaeology: Attached for information are:
-Summary of findings in excerpts from the preliminary Final EIS
-11/27/07 archaeology concurrence form
-Map of known archaeological sites requiring further consideration
Historic Architecture: Attached for information are:
-Quad map of APE showing expanded study area
-Summary of findings in excerpts from the preliminary Final EIS
-12/18/07 historic architecture memo and concurrence form
Note: The project study area has expanded between Wiregrass Road (SR 1640) and Ponderosa Lane (SR 1722) as shown on the attached maps. This is to consider a potential new crossing of Falling Creek.

**SUBMIT (2) COPIES OF THIS FORM AND ATTACHMENTS TO
NCDOT HUMAN ENVIRONMENT UNIT**



Alternatives

Alternative 21
(LEDPA) Corridor
Limits

Expanded Study
Area Limits

Historic
Architecture APE
Boundary

Wiregrass Rd

County Home Rd

Excerpt from R-2501, US 1, Richmond County
Phase 2 Historic Architecture Survey Report
September 1998

US 1

M

NC 177

SANDHILLS

GAME LAND

GAME LAND

Marka Creek
Ch

Reep, Mark

From: Brown, Steve L [slbrown@ncdot.gov]
Sent: Thursday, July 14, 2011 11:53 AM
To: Reep, Mark
Subject: FW: R-2501

Mark:

See below for Mary Pope Furr's response to the additional study area at McDonald's Pond...

-----Original Message-----

From: Furr, Mary Pope
Sent: Tuesday, June 29, 2010 11:01 AM
To: Brown, Steve L
Subject: R-2501

Steve, I'm not sure if I've already discussed this with you, but I've looked over your request for additional survey for R-2501 (April 2010) and I don't see a need for Historic Architecture to conduct any more work. The expanded area was surveyed in the original APE and no NR-eligible structures or landscapes were identified. In addition, I've checked the HPO's maps and GIS and found nothing that is potentially eligible. Therefore, I believe that there are no historic structures within the expanded area near Falling Creek.

Mary Pope Furr, Architectural Historian, NCDOT
1598 MSC, Raleigh, NC 27699-1598
(919)431-1616

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

December 18, 2007

Memorandum

To: Ms. Jennifer Fuller, Consultant Engineer
Project Development & Environmental Analysis Branch

From: Sarah Woodard David
Historic Architecture Group

Subject: Concurrence Form
R-2501, US Highway 1 Bypass

Attached is a copy of the Concurrence Form for Properties not Eligible for the National Register of Historic Places concerning the above referenced project. In December, NCDOT historians reviewed the APE for this project because the earlier historic architecture survey was conducted in the 1990s and the corridor had been narrowed since the original survey work. During that review, historians determined that no significant changes had occurred to the area's historic architecture. Therefore, with one exception, the earlier architectural survey remains accurate.

The one exception is located near the proposed bypass's southern end where historians documented a farm that had not been surveyed previously. This property is identified on the attached map and form as Property 1. The attached form indicates that the farm is not eligible for the National Register.

Earlier determinations of effects (no effect, no adverse effect, or adverse effect) regarding this project remain valid, and because this newly-identified property has been determined not eligible for the National Register, it is not necessary to discuss this project's effects with the State Historic Preservation Office again.

Please let me know if the scope of this project changes.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
OFFICE OF HUMAN ENVIRONMENT
1583 MAIL SERVICE CENTER
RALEIGH NC 27699-1583

TELEPHONE: 919-715-1500
FAX: 919-715-1522

WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING
2728 CAPITAL BOULEVARD, SUITE 168
RALEIGH, NC 27604

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

Project Description: **US Highway 1 Bypass**

On **December 18, 2007** representatives of the

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

Reviewed the subject project at

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

All parties present agreed

- There are no properties over fifty years old within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the properties identified as 4 are considered not eligible for the National Register and no further evaluation of them is necessary.
- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties affected by this project. *(Attach any notes or documents as needed)*

Signed:

Seaword Rand
Representative, NCDOT

Dec. 18, 2007
Date

FHWA, for the Division Administrator, or other Federal Agency

Date

Representative, HPO

Date

Renee Medkiff-Easley
State Historic Preservation Officer

12-18-07
Date



North Carolina Department of Cultural Resources

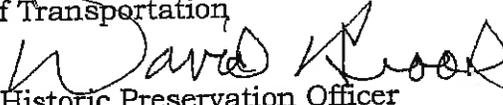
James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

June 10, 1999

MEMORANDUM

TO: William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook 
Deputy State Historic Preservation Officer

SUBJECT: Widening of US 1, South Carolina line to
NC 177, R-2501, State Project 8.T580501,
Federal Aid NHF-1(1), ER 99-9086

Thank you for your memorandum of May 26, 1999, concerning the above project.

We have reviewed the scope of work and technical proposal and concur with their recommendations. We look forward to completion of the background report and archaeological survey of the preferred alternative.

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.

DB:slw

cc: Nicholas Graf
Lee Novick

Federal Aid # NHF-1(1) TIP # R-2501 County RICHMOND

CONCURRENCE FORM
FOR
ASSESSMENT OF EFFECTS

Brief Project Description

WIDEN US 1 WITH A BYPASS OF ROCKINGHAM, RICHMOND
COUNTY. Segment AD & Segment AC

On MAY 6, 1999, representatives of the

- North Carolina Department of Transportation (NCDOT)
- Federal Highway Administration (FHWA)
- North Carolina State Historic Preservation Office (SHPO)
- Othe: _____

NE =

reviewed the subject project and agreed

- there are no effects on the National Register-listed property within the project's area of potential effect and listed on the reverse.
- there are no effects on the National Register-eligible properties located within the project's area of potential effect and listed on the reverse.
- _____ there is an effect on the National Register-listed property/properties within the project's area of potential effect. The property-properties and the effect(s) are listed on the reverse
- _____ there is an effect on the National Register-eligible property/properties within the project's area of potential effect. The property/properties and effect(s) are listed on the reverse.

Signed:

Mary Pope 5/10/99
Representative, NCDOT, Historic Architectural Resources Section Date

Felix Och 5/10/99
FHWA, for the Division Administrator, or other Federal Agency Date

Daniel A. Wood, Deputy 5/10/99
Representative, SHPO Date

Renee Medhill-Earley 5/10/99
State Historic Preservation Officer W. Wood representative Date

Federal Aid # NHF - 1(1) TIP # R-2501 County Richmond

Properties within area of potential effect for which there is no effect. Indicate if property is National Register-listed (NR) or determined eligible (DE).

St. Paul United Methodist Church (DE)

- * Covington Plantation (NR) outside APE
- * William Diggs House (DE) outside APE
- * Flowers-Hamer House (DE) outside APE

Properties within area of potential effect for which there is an effect. Indicate property status (NR or DE) and describe effect.

Reason(s) why effect is not adverse (if applicable).

Initialed: NCDOT MPA FHWA FQ SHPO WRS



North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

December 30, 1998

Nicholas L. Graf
Division Administrator
Federal Highway Administration
Department of Transportation
310 New Bern Avenue
Raleigh, N.C. 27601-1442

Re: US 1 Rockingham Bypass, Richmond County, R-
2501, Federal Aid Project No. NHF-1(1), State
Project No. 8.T580501, ER 99-7867



Dear Mr. Graf:

Thank you for your letter of December 2, 1998, transmitting the historic structures survey report by Mattson, Alexander & Associates concerning the above project.

The following property is listed in the National Register of Historic Places:

Covington Plantation (RH 6)

For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following properties are eligible for the National Register of Historic Places under the criterion cited:

William Diggs House, west side of SR 1103 at the junction of SR 1971, Diggs vicinity. This well-preserved, hip-roofed cottage with vernacular Italianate ornamentation is a rare survivor in Richmond County, and is eligible under Criterion C for architecture. We believe the proposed boundaries are appropriate for this property.

St. Paul United Methodist Church, east side of SR 1971 at the junction with SR 1104, Diggs vicinity. This church is a rare, intact example of the simple, classically-inspired, wooden churches built in rural Richmond County and the region during the nineteenth century, and is eligible under Criterion C for architecture. We believe the proposed boundaries are appropriate for this property.

Flowers-Hamer House, south side of SR 1105, roughly 0.2 mile west of the junction with SR 1971, Ellerbe Grove vicinity. This substantial, mid-nineteenth century dwelling is a rare example of Greek Revival domestic architecture in Richmond County, and is eligible under Criterion C for architecture. We believe the proposed boundaries are appropriate for this property.



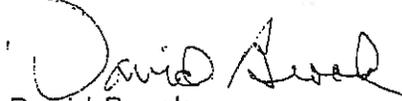
N. Graf
December 30, 1998, Page 2

The report meets our office's guidelines and those of the Secretary of the Interior.

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.

Sincerely,



David Brook
Deputy State Historic Preservation Officer

DB:slw

cc: W. D. Gilmore
B. Church
Mattson, Alexander & Associates



North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary
December 11, 1997

Division of Archives and History
Jeffrey J. Crow, Director

MEMORANDUM

TO: H. Franklin Vick, P.E., Manager
Planning and Environmental Branch
Division of Highways
Department of Transportation

FROM: David Brook 
Deputy State Historic Preservation Officer

SUBJECT: Widening of US 1, South Carolina line to
NC 177, R-2501, Richmond County, ER
94-7984, ER 98-8052

Thank you for your letter of November 5, 1997, concerning the above project.

We have reviewed the scope of work for the project and feel it adequately details requirements for the archaeological survey. Therefore, we concur with your proposal.

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.

DB:slw

cc: N. Graf
L. Novick



Federal Aid # NHF-1(1) TIP # R-2501 County Richmond

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

Brief Project Description Improvements to US 1 from SR 1971 (Sandhill Road) to SR 1479 (Indian Lake Road)

On Dec. 17, 1997, representatives of the

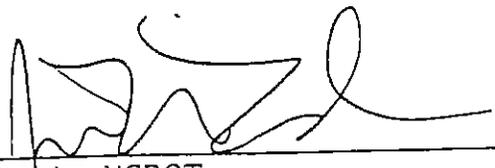
- North Carolina Department of Transportation (NCDOT)
- Federal Highway Administration (FHWA)
- North Carolina State Historic Preservation Office (SHPO)
- Other _____

reviewed the subject project at

- A scoping meeting
- Historic architectural resources photograph review session/consultation
- Other _____

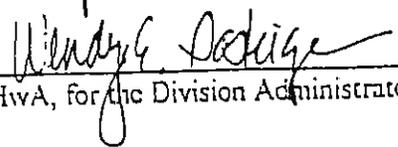
All parties present agreed

- there are no properties over fifty years old within the project's area of potential effects.
- there are no properties less than fifty years old which are considered to meet Criterion Consideration G within the project's area of potential effects.
- there are properties over fifty years old (list attached) within the project's area of potential effects, but based on the historical information available and the photographs of each property, properties identified as (see attached) are considered not eligible for National Register and no further evaluation of them is necessary.
- there are no National Register-listed properties within the project's area of potential effects.

Signed: 

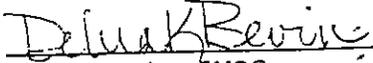
Representative, NCDOT

12/17/97
Date



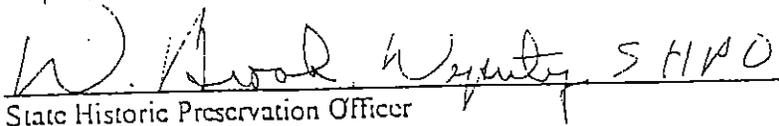
FHWA, for the Division Administrator, or other Federal Agency

12/17/97
Date



Representative, SHPO

12/17/97
Date



State Historic Preservation Officer

1/23/98
Date

U.S. 1, ROCKINGHAM BYPASS
RICHMOND COUNTY

PROPERTIES NOT ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER
AND THEREFORE NOT WORTHY OF FURTHER EVALUATION
(Keyed to Survey Map)

Number	Name	Reason Not Eligible
1.	House	Vinyl sided, gable front bungalow with replacement six-over-six windows and replacement porch balustrade; marginal integrity and no architectural or historical significance.
2.	House	Asbestos sided bungalow with clipped front gable roof, six-over-six windows, and clipped front gable porch supported by lattice piers; intact bungalow but no architectural or historical significance.
3.	Store	One story, frame, front gable roadside store with German siding, six-over-six windows, and an engaged canopy supported by metal poles; store has side wing with ca. 1955 picture window; deteriorated condition and no architectural or historical significance.
4.	House	Frame, front gable bungalow with shed roofed porch and porte cochere; porch supported by battered piers on brick pedestals; asbestos siding, rebuilt chimneys, and six-over-six windows; property includes agricultural fields but no historic outbuildings; marginal integrity and no architectural or historical significance.
5.	Marston Store	One story, frame commercial block with front gable section, flat roofed midsection (with parapet), and ruinous end bay; weatherboard siding, terra cotta tile roof; engaged front gable porch, bay window, and both six-over-six and six-over-nine windows; ruinous condition with a loss of integrity.
6.	Store	Ca. 1925, one story, brick commercial block with flat parapet, corbeled cornice, and decorative panel above entrance; replacement door flanked by storefront windows; poor condition, marginal integrity and no architectural or historical significance.
7.	House	Frame, front gable bungalow with weatherboard siding, hip roofed porch, side, shed roofed porch, open pier foundation, and replacement double hung

- windows; deteriorated condition with a loss of integrity; no architectural or historical significance.
8. House Frame, side gable bungalow with asbestos siding, exposed rafters, knee brackets, six-over-six windows, an inset porch; a rear, hip roofed porch, and a rebuilt foundation; intact dwelling but no special architectural or historical significance.
9. House Clipped front gable bungalow with vinyl siding, replacement six-over-six windows, hip roofed porch supported by battered piers resting on brick pedestals, and replacement door; loss of integrity and no architectural or historical significance.
10. House Frame, front gable bungalow with German siding, hip roofed porch supported by battered piers resting on brick pedestals; and three-over-one windows; house retains its integrity; but lacks architectural or historical significance.
11. House Frame, front gable bungalow with German siding, engaged porch supported by battered piers resting on brick pedestals; and four-over-one windows; house is in fair condition but the site is overgrown; house has no architectural or historical significance.
12. House Frame, front gable bungalow with German siding, wraparound porch supported by battered piers resting on brick pedestals; and three-over-one windows; house retains its integrity; but has no architectural or historical significance.
13. House Frame, cross gable bungalow with German siding, bracketed, front gable porch supported by battered piers resting on brick pedestals; and three-over-one windows; property includes a frame garage; house retains its integrity; but has no architectural or historical significance.
14. McRae House Frame, double pen house with vinyl siding, concrete block infilled foundation, hip roofed porch with replacement turned posts, wood and glass doors, and six-over-six windows; property includes an earlier, two room dwelling which appears moved to the site, a frame smokehouse, and a frame, side gable granary with a side shed; main house has been altered and both the house and outbuildings retain only marginal integrity; furthermore, the property does not include agricultural fields, and is surrounded by modern construction; the property has no architectural or historical significance.

15. House Frame, front gable bungalow with vinyl siding, front gable, screened porch, side wing, and three-over-one windows; dwelling is intact, but lacks architectural or historical significance.
16. House Frame, front gable bungalow with weatherboard siding, hip roofed porch with battered piers and brick pedestals, asymmetrical facade, and three-over-one windows; house is intact, but lacks architectural or historical significance.
17. House Substantial, brick bungalow with side gable roof, front gable dormer, and engaged porch and porte cochere supported by heavy, brick piers; a rear shed has replacement windows, and the gables and trim are vinyl sided; house retains its four-over-one windows; house has undergone some alteration and lacks architectural and historical significance.
18. House Cast stone, front gable bungalow with vinyl sided trim and gables and six-over-six windows; porch has been removed; loss of integrity and no special architectural or historical significance.
19. House Ca. 1930 rustic, log bungalow with front gable roof, six-over-six windows, and a brick-infilled, front gable porch with metal louvered windows; loss of integrity and no special architectural or historical significance.
20. House Frame, front gable bungalow which appears to be a duplex; house has German siding, six-over-six windows, and a front gable porch supported by replacement metal posts; loss of integrity and no special architectural or historical significance.
21. House Brick, side gable bungalow with exposed rafters, front exterior chimney, front gable entry porch, and replacement one-over-one windows; marginal integrity and no architectural or historical significance.
22. House Ca. 1940, rustic, log and frame cottage with inset porch and newer side wing; house has both six-over-six and one-over-one windows; marginal integrity and no architectural or historical significance.
23. House Frame, side gable bungalow with German siding, front gable, entry porch supported by box piers; and three-over-one windows; house retains its integrity; but lacks architectural or historical significance.
24. House Frame, front gable bungalow with aluminum siding, front gable projection and side gable porch

- supported by replacement metal posts; house retains its three-over-one windows; loss of integrity and lacks architectural or historical significance.
25. House Frame, front gable bungalow with vinyl siding, hip roofed porch with battered piers and brick pedestals, asymmetrical facade, and two-over-two windows; house is intact, but lacks architectural or historical significance.
26. House One and one-half story, side gable, Colonial Revival dwelling with side porch, front gable dormers, and a front gable entry porch supported by metal posts; house has both six-over-six and picture windows and may date to ca. 1950; intact, but lacks architectural or historical significance.
27. House One story, side gable, Colonial Revival cottage with a side porch and porte cochere and a front gable entry porch supported by metal posts; house has asbestos siding and six-over-six windows; house may date to ca. 1950; intact, but lacks architectural or historical significance.
28. House One story, single pile dwelling with gable roof, rear ell, rebuilt foundation and porch, vinyl siding, replacement windows (ca. 1955), and replacement door; loss of integrity and no architectural or historical significance.
29. House One story, cast stone, side gable dwelling with an entry porch and a side porch, both supported by metal posts, and three-over-one windows; house is intact but lacks architectural or historical significance.
30. House Frame, side gable bungalow with German siding, shed roofed porch supported by battered piers on brick pedestals, a shed roofed dormer; and both two-over-two and one-over-one windows; house is intact; but lacks architectural or historical significance.
31. House Frame, front gable bungalow with asbestos siding, an engaged porch supported by battered piers on brick pedestals, and six-over-six windows; house has been asbestos sided and lacks architectural or historical significance.
32. House Two story, frame, Dutch Colonial House with asbestos siding, round arched, entry porch, six-over-one windows, and side wing; house is intact, but lacks architectural or historical significance.

33. House Frame, front gable bungalow with aluminum siding, hip roofed porch supported by replacement metal posts, and three-over-one windows; marginal integrity and lacks architectural or historical significance.
34. House Frame, two room dwelling with German siding, shed roofed porch supported by box piers, hall and parlor plan, and six-over-six windows; house is in poor condition and lacks architectural or historical significance.
35. House Frame, front gable bungalow with German siding, screened porch with hip roof, and six-over-six windows; house in poor condition and lacks architectural or historical significance.
36. House Front gable, cast stone bungalow with front gable porch, supported by replacement metal posts set on cast stone pedestals, and six-over-six windows; house is in poor condition and lacks architectural or historical significance.
37. Store Front gable, frame store with a cross gable side wing; building has Craftsman style knee brackets, German siding, six-over-six windows; central door has been boarded over and portions of siding have been removed; poor condition and lacks architectural or historical significance.
38. House Brick, front gable bungalow with hip roofed, screened porch; intact dwelling but lacks historical or architectural significance.
39. House Vinyl sided, front gable bungalow with replacement six panelled door, six-over-six windows, and a hip roofed porch supported by box piers on brick pedestals; loss of integrity and lacks historical or architectural significance.
40. House Front gable, cast stone bungalow with hip roofed, screened porch, and six-over-six windows; marginal integrity and lacks architectural or historical significance.
41. House Front gable bungalow with German siding, exposed rafters, a front gable, screened porch, and six-over-six windows; house is intact but lacks historical or architectural significance.
42. House Tall, front gable bungalow with concrete block wall, six-over-six windows, and a front gable, screened porch; property includes a front gable garage/apartment with German siding, six-over-six

- windows, and a shed roofed dormer; property intact but lacks historical or architectural significance.
43. House Side gable cottage with German siding, front gable entry porch supported by box piers, side wing and side porch, replacement six over-six windows, and vinyl siding; loss of integrity and lacks historical and architectural significance.
44. House Side gable cottage with vinyl siding, front gable entry porch supported by columns, side wing and side porch, three-over-one windows, intact but may date to ca. 1950; lacks historical or architectural significance.
45. House Hip roofed bungalow with exposed rafters, asbestos siding, and three-over-one windows; hip roofed entry porch and hip roofed side porch, both supported by battered box piers; intact, but lacks any architectural or historical significance.
46. House Cast stone bungalow with front gable roof, shed roofed porch supported by brick piers on cast stone pedestals; ca. 1950 louvered windows; concrete block side wing addition; house may date to ca. 1950; marginal integrity and lacks any architectural or historical significance.
48. Store Ruinous, frame, front gable store with weatherboard siding, portions of which are missing, and six-over-six windows; loss of integrity through deterioration and lacks architectural or historical significance.
49. House Hip roofed cottage with center gable, wraparound porch (part of which has been enclosed), chamfered porch posts, asbestos siding, six-over-six windows, and interior rear chimneys; side wing addition and some ca. 1950 replacement windows; property includes several corrugated metal outbuildings; loss of integrity and no architectural or historical significance.
50. House Completely altered front gable bungalow; now used as a store, the building has a new stucco exterior, replacement porch columns and balustrade, replacement windows and entrance; loss of integrity and no architectural or historical significance.
51. House Heavily altered front gable bungalow, vinyl siding, replacement door, new six-over-six and one-over-one windows, side addition, rebuilt shed roofed porch and foundation; loss of integrity and no architectural or historical significance.

52. House Frame, side gable bungalow with German siding, screened, front gable porch and rear shed roofed porch; marginal integrity and lacks architectural or historical significance.
54. House Frame, two room dwelling with hip roofed porch supported by box piers, rear ell with enclosed porch and deck addition, ca. 1950 replacement windows, and asbestos siding; property includes a garage and granary; loss of integrity and no architectural or historical significance.
55. House Frame, one story, single pile dwelling with side gable roof, hip roofed porch, open pier foundation, six-over-six windows, and asymmetrical, three bay facade; ruinous condition; loss of integrity and no architectural or historical significance.
56. House Large, frame, cross gable bungalow with aluminum siding, garage addition, engaged, screened porch, and six-over-six windows; marginal integrity and no architectural or historical significance.
57. Gas Station Small, brick gas station oriented fronting on U.S. 1; vacant and in poor condition, the store has a terra cotta tile, cross gable roof; replacement, six panelled door capped by a fanlight; one six-over-six window with fanlight, other windows infilled; side garage and a concrete block rear addition; loss of integrity through alteration, addition, and deterioration.
58. House One story, hip roofed dwelling with center gable, German siding, six -over-six windows, replacement, front gable porch with turned posts, a rebuilt chimney and replacement, cast stone foundation; a hip roofed rear ell connected to main block by a hyphen, appears to date to the mid-nineteenth century with extensive twentieth century alterations; marginal integrity, no farmland or agricultural outbuildings, and no architectural or historical significance.
61. House ca. 1940, side gable cottage with front gable entry porch and three-over-one windows; intact but lacks architectural or historical significance.
62. House Large, aluminum sided, side gable bungalow with shed roofed porch supported by brick piers, shed roofed dormer, and paired six-over-six windows; intact but lacks architectural or historical significance.

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Parks & Recreation



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
Dr. Phillip K. McKnelly, Director

March 27, 1997

MEMORANDUM

TO: Byron E. Brady, DOT

FROM: Stephen Hall SH

SUBJECT: Environmental Study -- US 1, Sandhill Road to Indian Lake Road, Richmond County

REFERENCE: TIP Project no. R-2501

The Division has reviewed the Phase I Location and Environmental Study prepared for this project. The description of the natural communities found within the project area is inadequate. Only three natural communities are recognized in this report: "pine forest", "pine/mixed hardwood forest", and "hardwood forest" (p. 4-19). Under pine forest, stands that are dominated by longleaf pine or pond pine are not discriminated from stands dominated by loblolly (p. 4-20). A similar lack of discrimination is found among the other two habitat categories. This implies a real failure on the part of the consultants to distinguish between the undisturbed, native habitats found in this area -- many of which support populations of federally listed species -- and habitats that have been heavily altered and are unlikely to support populations of rare species.

We note that additional surveys will be needed to assess the potential for several federally and state listed species to occur within the project study area. Without a more precise description of the habitats found along the alternative alignments, we will have a difficult time evaluating the findings of these surveys. For example, we would have greater faith in the assessment of habitat suitability for rough-leaved loosestrife (*Lysimachia asperulifolia*), if ecotonal habitats between pocosins (which often contain pond pines) and longleaf pine habitats are distinguished from the junctions between loblolly stands and agricultural fields. It will simplify our review of this project if the terrestrial communities are described following Schafale and Weakley (1990) or some similarly detailed system of ecosystem classification.

RECEIVED

MAR 26 1997

ISWELL ASSOC.,



North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

March 25, 1997

MEMORANDUM

TO: H. Franklin Vick, P.E., Manager
Planning and Environmental Branch
Division of Highways
Department of Transportation

FROM: David Brook *David Brook*
Deputy State Historic Preservation Officer

SUBJECT: US 1 from SR 1971 to SR 1479, Richmond
County, R-2501, Federal Aid Project NHF-
1(1), State Project 8.T580501, ER 97-8615

Thank you for your letter of February 26, 1997, transmitting the Phase I Location and Environmental Study for the above project. We have reviewed the study and would like to comment.

We concur with the elimination of the "improve existing facilities" alternative because it would cause serious impacts to known historic properties. Until we have had an opportunity to review the results of the survey of historic architectural resources, we cannot comment on the alternates on new location.

The dearth of archaeological sites within the proposed study area results from an absence of systematic archaeological survey not being conducted in this region. We look forward to an opportunity to review the results of the archaeological survey of the preferred alternative.

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.

DB:slw

cc: N. Graf
B. Church
T. Padgett
Rockingham Historic Properties Commission



Create a file -

North Carolina Department of Cultural Resources

James B. Hunt, Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
William S. Price, Jr., Director

December 27, 1994

MEMORANDUM

TO: H. Franklin Vick, P.E., Manager
Planning and Environmental Branch
Division of Highways
Department of Transportation

FROM: David Brook *David Brook*
Deputy State Historic Preservation Officer

SUBJECT: Widen US 1 with a bypass of Rockingham, Richmond
County, R-2501, Federal-Aid NHF-1(1), State
8.T580501, CH 95-E-4220-0286

We have received information concerning the above project from the State Clearinghouse.

The following properties are within the general area of the project and are listed in the National Register of Historic Places:

Covington Plantation, US 1, southwest of junction with SR 1108
(former) U.S. Post Office and Federal Building, 125 South Hancock Street
Bank of Pee Dee Building, 201 East Washington Street
Rockingham Historic District
The Manufacturer's Building, 220 East Washington Street
H. C. Watson House, 526 Caroline Street
Hannah Pickett Mill, 300 King Edward Street
Richmond County Courthouse

The following property is included on the state study list:

Dr. R. J. Steele III House, 518 East Washington Street



We understand that the North Carolina Department of Transportation will conduct a survey of historic architectural resources within the project's area of potential effect.

We acknowledge the intention of NCDOT to conduct an archaeological survey for the above project. The proposed study area has a high probability for the presence of potentially significant archaeological resources. We recommend that a comprehensive survey be conducted by an experienced archaeologist to identify the presence and significance of archaeological remains that may be damaged or destroyed by the proposed project. Potential effects on unknown resources should be assessed prior to the initiation of construction activities.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 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.

DB:slw

cc: State Clearinghouse
N. Graf
B. Church
T. Padgett

State of North Carolina
Department of Environment,
Health and Natural Resources
Legislative & Intergovernmental Affairs



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
Henry M. Lancaster II, Director

MEMORANDUM

TO: Chrys Baggett
State Clearinghouse

FROM: Melba McGee *McGee*
Project Review Coordinator

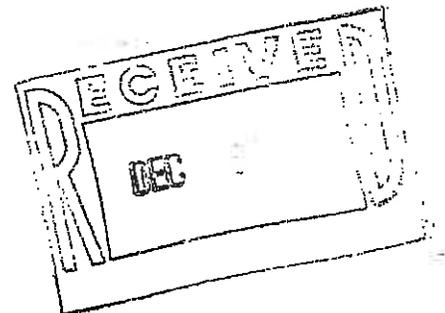
RE: 95-0286 Scoping Improvements US 1 and Rockingham
Bypass, Richmond County

DATE: December 12, 1994

The Department of Environment, Health, and Natural Resources has reviewed the proposed scoping notice. The attached comments list and describe information that is necessary for our divisions to evaluate the potential environmental impacts of the project. More specific comments will be provided during the environmental review.

Thank you for the opportunity to respond. The applicant is encouraged to notify our commenting divisions if additional assistance is needed.

attachments



State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Environmental Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
A. Preston Howard, Jr., P.E., Director



December 9, 1994

MEMORANDUM

TO: Melba McGee, Legislative Affairs
FROM: Monica Swihart, ^{WQ}Water Quality Planning
SUBJECT: Project Review #95-0286; Scoping Comments - NC DOT
US 1 Widening with a Bypass of Rockingham in Richmond
County, TIP No. R-2501

The Water Quality Section of the Division of Environmental Management requests that the following topics be discussed in the environmental documents prepared on the subject project:

- A. Identify the streams potentially impacted by the project. The stream classifications should be current.
- B. Identify the linear feet of stream channelizations/relocations. If the original stream banks were vegetated, it is requested that the channelized/relocated stream banks be revegetated.
- C. Number of stream crossings.
- D. Will permanent spill catch basins be utilized? DEM requests that these catch basins be placed at all water supply stream crossings. Identify the responsible party for maintenance.
- E. Identify the stormwater controls (permanent and temporary) to be employed.
- F. Please ensure that sediment and erosion and control measures are not placed in wetlands.
- G. Wetland Impacts
 - 1) Identify the federal manual used for identifying and delineating jurisdictional wetlands.
 - 2) Have wetlands been avoided as much as possible?
 - 3) Have wetland impacts been minimized?
 - 4) Discuss wetland impacts by plant communities affected.
 - 5) Discuss the quality of wetlands impacted.
 - 6) Summarize the total wetland impacts.
 - 7) List the 401 General Certification numbers requested from DEM.

Melba McGee
December 9, 1994
Page 2

- H. Will borrow locations be in wetlands? Borrow/waste areas should avoid wetlands to the maximum extent practicable. Prior to approval of any borrow/waste site in a wetland, the contractor shall obtain a 401 Certification from DEM.
- I. Did NCDOT utilize the existing road alignments as much as possible? Why not (if applicable)?
- J. To what extent can traffic congestion management techniques alleviate the traffic problems in the study area?
- K. Please provide a conceptual mitigation plan to help the environmental review. The mitigation plan may state the following:
 - 1. Compensatory mitigation will be considered only after wetland impacts have been avoided and minimized to the maximum extent possible.
 - 2. On-site, in-kind mitigation is the preferred method of mitigation. In-kind mitigation within the same watershed is preferred over out-of-kind mitigation.
 - 3. Mitigation should be in the following order: restoration, creation, enhancement, and lastly banking.

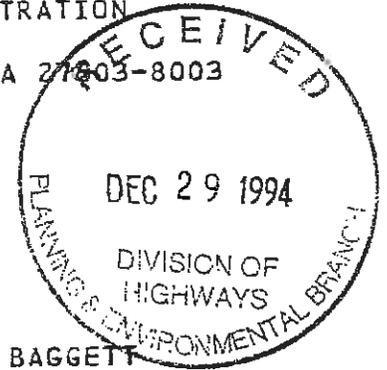
Please note that a 401 Water Quality Certification cannot be issued until the conditions of NCAC 15A: 01C.0402 (Limitations on Actions During NCEPA Process) are met. This regulation prevents DEM from issuing the 401 Certification until a FONSI or Record of Decision (ROD) has been issued by the Department requiring the document. If the 401 Certification application is submitted for review prior to issuance of the FONSI or ROD, it is recommended that the applicant state that the 401 will not be issued until the applicant informs DEM that the FONSI or ROD has been signed by the Department.

Written concurrence of 401 Water Quality Certification may be required for this project. Applications requesting coverage under our General Certification 14 or General Permit 31 will require written concurrence. Please be aware that 401 Certification may be denied if wetland impacts have not been avoided and minimized to the maximum extent practicable.

10787B.mem
cc: Eric Galamb

FM208

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
116 WEST JONES STREET
RALEIGH NORTH CAROLINA 27603-8003



12-27-94

INTERGOVERNMENTAL REVIEW COMMENTS

MAILED TO

FROM

N.C. DEPT. OF TRANSPORTATION
FRANK VICK
PLANNING & ENV. BRANCH
TRANSPORTATION BLDG./INTER-OFF

MRS. CHRYS BAGGETT
DIRECTOR
N C STATE CLEARINGHOUSE

PROJECT DESCRIPTION

SCOPING - PROPOSED WIDEING OF US 1 WITH A BYPASS OF ROCKINGHAM
IN RICHMOND COUNTY (TIP #R-2501)

SAI NO 95E42200286 PROGRAM TITLE - SCOPING

THE ABOVE PROJECT HAS BEEN SUBMITTED TO THE NORTH CAROLINA
INTERGOVERNMENTAL REVIEW PROCESS. AS A RESULT OF THE REVIEW THE FOLLOWING
S SUBMITTED () NO COMMENTS WERE RECEIVED

(X) COMMENTS ATTACHED

SHOULD YOU HAVE ANY QUESTIONS, PLEASE CALL THIS OFFICE (919) 733-7232.

C.C. REGION H

DIVISION OF PARKS AND RECREATION

November 29, 1994

Memorandum

TO: Melba McGee
FROM: Stephen Hall SH
SUBJECT: Scoping -- US 1 Widening and Bypass, Rockingham
REFERENCE: 95-0286

The Natural Heritage Program database contains records for several species of rare plants and animals from in or near the project study area. These include Michaux's sumac (Rhus michauxii), federally and state listed as Endangered, and white wicky (Kalmia cuneata), state listed as Endangered and a candidate for federal listing. We therefore strongly support the proposal to conduct a biological survey before any alignments are selected for review.

STATE OF NORTH CAROLINA
DIVISION OF ENVIRONMENTAL HEALTH

Inter-Agency Project Review Response

Project Number: 95-0286
County: Richmond

Project Name: NC DOT

Type of Project: FETS for proposed Rte 1 widening

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 .0300 et. seq.). For information, contact the Public Water Supply Section, (919) 733-2460.

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 Branch at (919) 726-6827.

The spoil 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) 726-8970.

The applicant should be advised that prior to the removal or demolition of dilapidate structures, an extensive rodent control program may be necessary in order to prevent the migration of the rodents to adjacent areas. The 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 the requirements for septic tank installations (as required under 15A NCAC 18A .1900 et. seq.). For information concerning septic tank and other on-site waste disposal methods, contact On-Site Wastewater Section at (919) 733-2895.

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

If existing water lines will be relocated during the construction, plans for the water relocation must be submitted to the Division of Environmental Health, Public Water Supply Section, Plan Review Branch, 1330 St. Mary's Street, Raleigh, North Carolina, (919) 733-2460.

[Signature]

Reviewer

EH/PWSS

Section/Branch

11/28/94

Date

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Forest Resources



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
Stanford M. Adams, Director

Griffiths Forestry Center
2411 Old US 70 West
Clayton, North Carolina 27520
November 22, 1994



MEMORANDUM

TO: Melba McGee, Policy Development

FROM: Don H. Robbins, Staff Forester *DHR*

SUBJECT: DOT EIS/Scoping for Proposed Widening/Bypass of US 1 at Rockingham in Richmond County

PROJECT: 95-0286 and TIP # R-2501

DUE DATE: 12-1-94

We have reviewed the above subject DOT scoping notice and have the following comments:

1. Widening of Highway US 1 north in front of our District 3, Rockingham office could mean relocation of our front office building. This would cause our Division great concern at this time.
2. The shaded bypass alternative area would be approximately 80% to 90% woodland impact. Much of this area would be forest industry pine plantation and private woodland. Three (3) wetland drainages would have to be crossed.
3. The bypass would decrease response time to wildfires, but it would impair suppression activities if fencing is put up along the highway.
4. The least impact on forestry woodland would be to add two lanes to the existing highway. However, this would necessitate relocating our office if the north side of the road was widened. We of course would rather see the widening done on the south side at this point.

Melba McGee
page 2
November 22, 1994

5. Since woodland will be involved here, the EIS should address the following in addition to the above:
- a. The total forest land acreage by types that would be taken out of forest production as a result of new right-of-way purchases and all construction activities.
 - b. The productivity of the forest soils as indicated by the soil series, that would be involved within the proposed project.
 - c. The impact upon existing greenways within the area of the proposed project.
 - d. The provisions that the contractor will take to sell any merchantable timber that is to be removed. This practice is encouraged to minimize the need for piling and burning during construction. If any burning is needed, the contractor should comply with all laws and regulations pertaining to debris burning.
 - e. The provisions that the contractor will take during the construction phase to prevent erosion, sedimentation and construction damage to forest land outside the right-of-way and construction limits. Trees outside the construction limits should be protected from construction activities to avoid:
 1. Skinning of tree trunks by machinery.
 2. Soil compaction and root exposure or injury by heavy equipment.
 3. Adding layers of fill dirt over the root systems of trees, a practice that impairs root aeration.
 4. Accidental spilling of petroleum products or other damaging substances over the root systems of trees.

We would hope that a route could be chosen that would have the least impact to forest and related resources in that area. Also we would hope that our D-3 office complex will not be impacted.

pc: Derryl Walden, Dan Smith, Warren Boyette - CO
Dave Andres - D3
File

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Soil and Water Conservation



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
C. Dewey Botts, Director

November 21, 1994

MEMORANDUM

TO: Melba McGee

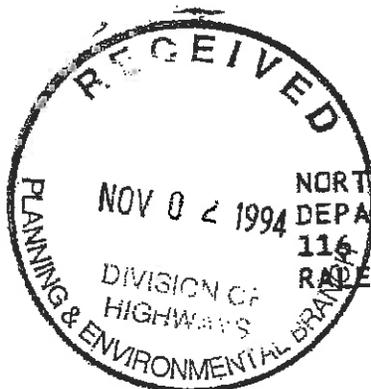
FROM: David Harrison *DH*

SUBJECT: Proposed Widening of US 1 with a By-Pass of Rockingham,
N.C. Project No. 95-0286.

The proposal involves construction of a by-pass for US 1 along with widening of the existing route. The Environmental Assessment should include an estimate of the amount of prime, unique, and statewide important farmland that will be impacted.

DH/tl

FM206



NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
116 WEST JONES STREET
RALEIGH NORTH CAROLINA 27603-8003

ACKNOWLEDGEMENT OF RECEIPT

MAILED TO:

N.C. DEPT. OF TRANSPORTATION
FRANK VICK
PLANNING & ENV. BRANCH
TRANSPORTATION BLDG./INTER-OFFICE

FROM:

MS. JEANETTE FURNEY
ADMINISTRATIVE ASSISTANT
STATE CLEARINGHOUSE

PROJECT DESCRIPTION:

SCOPING - PROPOSED WIDEING OF US 1 WITH A BYPASS OF ROCKINGHAM
IN RICHMOND COUNTY (TIP #R-2501)

TYPE - SCOPING

THE N.C. STATE CLEARINGHOUSE HAS RECEIVED THE ABOVE PROJECT FOR
INTERGOVERNMENTAL REVIEW. THIS PROJECT HAS BEEN ASSIGNED STATE
APPLICATION NUMBER 95E42200286. PLEASE USE THIS NUMBER WITH ALL
INQUIRIES OR CORRESPONDENCE WITH THIS OFFICE.
REVIEW OF THIS PROJECT SHOULD BE COMPLETED ON OR BEFORE 12/30/94.
SHOULD YOU HAVE ANY QUESTIONS PLEASE CALL (919) 733-7232.



State of North Carolina
 Department of Environment, Health, and Natural Resources
 Division of Land Resources



James G. Martin, Governor
 William W. Cobey, Jr., Secretary

PROJECT REVIEW COMMENTS

Charles H. Gardner
 Director

Project Number: 95-0286 County: RICHMOND

Project Name: ... OFF

Geodetic Survey

This project will impact geodetic survey markers. N.C. Geodetic Survey should be contacted prior to construction at P.O. Box 27687, Raleigh, N.C. 27611 (919) 733-3836. Intentional destruction of a geodetic monument is a violation of N.C. General Statute 102-4.

This project will have no impact on geodetic survey markers.

Other (comments attached) NO COMMENT

For more information contact the Geodetic Survey office at (919) 733-3836.

C. Wa. Pizanes
 Reviewer

11-4-94
 Date

Erosion and Sedimentation Control

No comment

This project will require approval of an erosion and sedimentation control plan prior to beginning any land-disturbing activity if more than one (1) acre will be disturbed.

If an environmental document is required to satisfy Environmental Policy Act (SEPA) requirements, the document must be submitted as part of the erosion and sedimentation control plan.

If any portion of the project is located within a High Quality Water Zone (HQW), as classified by the Division of Environmental Management, increased design standards for sediment and erosion control will apply.

The erosion and sedimentation control plan required for this project should be prepared by the Department of Transportation under the erosion control program delegation to the Division of Highways from the North Carolina Sedimentation Control Commission.

Other (comments attached)

For more information contact the Land Quality Section at (919) 733-4574.

David Ward
 Reviewer

11/4/94
 Date

Appendix A.3

CORRESPONDENCE WITH LOCAL AGENCIES AND ORGANIZATIONS



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

September 6, 2007

Mr. Kenneth R. Robinette, Chairman
Richmond County Board of Commissioners
Post Office Box 504
Rockingham, North Carolina 28380

SUBJECT: Resolution adopted by the Richmond County Board of Commissioners on August 6, 2007 concerning NCDOT T.I.P. Project R-2501, the proposed improvement of US 1 from Sandhill Road (SR1971) south of Rockingham to Marston Road (SR 1001) in Marston.

Dear Mr. Robinette,

Thank you for your letter of August 8, 2007. The letter included a resolution from the Richmond County Board of Commissioners requesting the Department consider plans for an interchange to the proposed Rockingham Bypass (R-2501) in the area of County Home Road and Wiregrass Road. Currently, the design provides an overpass (bridge) at both County Home Road and Wiregrass Road.

The Department will study an interchange at this location as well as other potential locations along the bypass that would be convenient to the Industrial Park located at E. V. Hogan Road. Other potential locations for an interchange access may have fewer impacts to existing infrastructure and cost less than an interchange at County Home Road.

Please contact me at (919) 733-7844, extension 244, or via e-mail at jmfuller@dot.state.nc.us if you have further questions.

Sincerely,

Jennifer Fuller, PE
Project Planning Engineer

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC



RICHMOND COUNTY BOARD OF COMMISSIONERS

RECEIVED

125 SOUTH HANCOCK STREET • P. O. BOX 504
ROCKINGHAM, NORTH CAROLINA 28380
TELEPHONE: (910) 997-8211
FAX: (910) 997-8208

Division of Highways

AUG 13 2007

Kenneth R. Robinette
Chairman
John B. Garner
Vice Chairman
Pamela N. Dillman
Jimmy L. Maske
Thad Ussery
J. C. Watkins
Paul Wilson, Jr.

Preconstruction
Project Development and
Environmental Analysis Branch

James E. Haynes
County Manager
Marian S. Savage
Clerk to the Board
R.M. Steagall, Jr.
Finance Officer

August 8, 2007

*Mr. Eric Midkiff
N. C. Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548*

Dear Mr. Midkiff:

Enclosed, please find a Resolution adopted by the Richmond County Board of Commissioners during the Regular Meeting of August 6, 2007 to request that the Department of Transportation consider plans for an interchange to the proposed U.S. Highway 1 upgrade in the area of County Home Road and Wiregrass Road. As described in the Resolution, this is a growing area of Richmond County, and the Board feels that an interchange in this section of the County would greatly enhance the potential for growth and economic development opportunities.

Thank you in advance for your consideration of the Board of Commissioners' request to include the County Home Road – Wiregrass Road Interchange in the D.O.T. plans for the U.S. Highway 1 upgrade for Richmond County.

Sincerely,

*Marian S. Savage, CMC
Clerk to the Board of Commissioners*

Enclosure

*Cc: DOT Board Member G. R. Kindley, Jr.
Board of Commissioners (7)*



RICHMOND COUNTY BOARD OF COMMISSIONERS

125 SOUTH HANCOCK STREET • P. O. BOX 504
ROCKINGHAM, NORTH CAROLINA 28380
TELEPHONE: (910) 997-8211
FAX: (910) 997-8208

Kenneth R. Robinette
Chairman
John B. Garner
Vice Chairman
Pamela N. Dillman
Jimmy L. Maske
Thad Ussery
J. C. Watkins
Paul Wilson, Jr.

James E. Haynes
County Manager
Marian S. Savage
Clerk to the Board
R.M. Steagall, Jr.
Finance Officer

RESOLUTION

WHEREAS, the North Carolina Department of Transportation is currently planning for an upgrade and reroute for portions of U.S. Highway 1; and

WHEREAS, U.S. 1 is one of the major road arteries in Richmond County, running from Maine to Florida; and

WHEREAS, some portions of the new U.S. 1 route are planned to be limited access; and

WHEREAS, Richmond County is growing along some of the corridors that will be served by the new U.S. 1 upgrade; and

WHEREAS, currently there are no plans for an interchange at the County Home Road and Wiregrass Road intersection; and

WHEREAS, this area is one of the high growth areas in Richmond County; and

WHEREAS, one of Richmond County's Industrial Parks is located near the intersection of U.S. 1, Wiregrass Road and County Home Road; and

WHEREAS, the Industrial Park and other industries located in this area have created and have the potential to create many more jobs in Richmond County; and

WHEREAS, an interchange in the County Home Road - Wiregrass Road area could have a positive influence on increased employment by those industries in the Industrial Park; and

WHEREAS, the accessibility by emergency vehicles to parts of the County will be greatly enhanced by access from the new U.S. Highway 1.

NOW, THEREFORE BE IT RESOLVED, that the Richmond County Board of Commissioners does hereby request that the North Carolina Department of Transportation give adequate consideration to adding an interchange to the proposed U.S. Highway 1 upgrade in the area of County Home Road and Wiregrass Road.

Adopted this 6th day of August, 2007.

ATTEST:


Marian S. Savage, CMC
Clerk to the Board of Commissioners


Kenneth R. Robinette, Chairman
Richmond County Board of Commissioners



94600 - Correspond
original - sc-1009



March 20, 1997

Mr. Frank Vick
N.C. Dept. of Transportation
P.O. Box 25201
Raleigh, NC 27611

Dear Mr. Vick:

After reviewing the proposed routes for the Highway US 1 Project, I would like to submit our thoughts to you for your consideration.

North Carolina Motor Speedway prefers Route 'N' which runs behind the Rockingham Dragway and to the North-Western side of the present Highway US 1. We feel proposed Route 'M' would cause severe ingress/egress problems and hinder parking at three of our main entrances on Highway 177.

As you know, North Carolina Motor Speedway annually attracts more than 260,000 people to Richmond County and the state of North Carolina. With the recent increased interest and tremendous growth our sport is experiencing, this road project could not be happening at a better time.

We appreciate the opportunity to submit our thoughts and feelings to you on this very important project, and if we can be of any assistance please feel free to contact me.

Sincerely,

Jo DeWitt Wilson
President & C.E.O



RICHMOND COUNTY BOARD OF COMMISSIONERS

125 SOUTH HANCOCK STREET • P.O. BOX 504
ROCKINGHAM, NORTH CAROLINA 28380
TELEPHONE: (910) 997-8200
FAX: (910) 997-8208

Thad Ussery
Chairman
J. Clyde Watkins
Vice Chairman
J. C. Lamm
R. Lynn McCaskill
Craig S. McNeill
Jimmy L. Maske
W.T. "Pete" Ussery

January 10, 1996

James E. Haynes
County Manager
John T. Page, Jr.
County Attorney
Roger K. Lowery
Finance Officer
Marian S. Savage
Clerk to the Board
F. Gwyn Voss
Interim Economic Developer

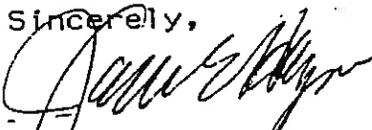
Sam Hunt, Secretary
N. C. Department of Transportation
Transportation Building
1 South Wilmington St.
Raleigh, N.C. 27611

RE: Rockingham-Hamlet Airport and US #1 By-pass

Dear Sir:

Richmond County has plans to expand the airport referenced above. Plans are presently being prepared for us by Hobbs, Upchurch & Associates, P.A. of Southern Pines. Our plans call for a lengthening of the East-West runway by 700 to 800 feet. The plans also show additional space needed for a "Clear Zone" necessary to meet FAA requirements. We are requesting that the Department of Transportation give this serious consideration during the planning of the US #1 By-pass.

Sincerely,



James E. Haynes
County Manager

cc: Mr. Will Pientl, Aviation Director, N.C. D.O.T.
Richmond County Board of Commissioners
G. R. Kindley, Mayor of Rockingham

JEH/se



City of Hamlet

OFFICE OF THE CITY MANAGER



October 22, 1997

RECEIVED

OCT 25 1997

PRESNELL ASSOC.

Mr. Ronald C. Smith
Presnell Associates, Inc.
Suite 102
7508 East Independence Blvd.
Charlotte, NC 28227

Re: Alternative Corridors
US 1 By-Pass Project
Tip No. R-2501

Dear Mr. Smith:

Thank you for meeting with the public officials on Tuesday, October 7th to discuss the current status of the US 1 By-Pass and the reasonable and feasible alternatives. The City of Hamlet would like to go on record as favoring Alternative No. 22 which includes corridor segments A, C, E, F, I, J, M, P, and Q. We believe this alternative will be the most advantageous to the future of the citizens of Hamlet.

Please let us know if you have any questions or need any additional information concerning our preference. Again, thank you for your assistance in this project and your consideration of our views.

Sincerely,

Lee Matthews
City Manager

cc: City Council

Appendix A.4

NEPA / 404 MERGER TEAM CORRESPONDENCE



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

March 15, 2011

MEMORANDUM TO: Merger Team Members

Ronnie Smith, USACE
Gary Jordan, USFWS
Felix Davila, FHWA
Travis Wilson, NCWRC
Chris Militscher, EPA

David Wainwright, NCDWQ
Brian Wrenn, NCDWQ
Derrick Weaver, NCDOT-PDEA
Janet Robertson, Lumber River RPO
Renee Gledhill-Earley, SHPO

FROM: Steve Brown, PE
Project Development and Environmental Analysis Branch

SUBJECT: **Concurrence Point 2A/ 4A Information**, US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, WBS No. 34437.1.1, T.I.P. No. R-2501.

This addresses comments raised during the R-2501 Concurrence Point 2A/ 4A field meeting held July 21, 2010 regarding the Falling Creek and McDonalds Pond Restoration Site crossing (Structure 8). Merger Team members made the following comments and requests for additional information:

- The original preferred alignment (with 480 foot bridge) or the southern alignment (with 250 foot bridge) are acceptable.
- A reduced median width of 30 feet is requested within the Ecosystem Enhancement Program (EEP) conservation easement for minimization. The resulting impact and cost reductions are also requested.
- EEP input is needed to help identify the alignment with the least impact to the site. Acreage calculations are requested for impacts to restoration, enhancement, and preservation areas within the conservation easement.

These issues are addressed below.

Median Width

Members of the Merger Team cited examples in coastal areas where NCDOT proposed a 30 foot median in high quality wetland areas. Project R-3403 widens US 17 in Craven County. It is being designed as an **expressway** with a 30-foot raised median and a 60 mph design speed throughout the entire project limits. Project R-2507A widens US 13/158 in Hertford and Gates

Counties. It is also an **expressway** facility with a 46-foot depressed median and a 60 mph design speed. In the area of the proposed bridge crossing of the Chowan River, the median width has been decreased from 46-feet to at 30-foot median to reduce the footprint of the river crossing. Due to the facility type and design speed, positive barrier protection is not warranted to prevent cross median head on crashes for R-3403 and R 2507A.

R-2501 is a proposed Strategic Highway Corridor and designated as a **freeway** with a 70 mph design speed. NCDOT's policy is to include positive barrier treatments for freeways with a median width of 70 feet or less to prevent cross median head on crashes. Reducing median width to 46-feet (with cable guiderail for positive barrier protection) for a freeway is generally considered by NCDOT to be a reasonable consideration for minimizing impacts. We would prefer not to reduce the median width below 46 feet for a freeway facility. A 30-foot wide median (with cable guiderail) is not preferred by NCDOT for this freeway facility because it would not provide adequate positive barrier protection required for a freeway median of less than 46 feet in width. Impacts associated with a 30-foot wide median are provided below for comparison purposes only.

At the McDonalds Pond crossing, a median width less than 46 feet would require two lines of steel beam guardrail placed along the median shoulder transitioned to a median concrete barrier to provide adequate positive (barrier) separation between the opposing travel lanes. The resulting median that meets freeway standards for positive barrier protection would be a 22-foot wide concrete median barrier. This type of median is not ideal for several reasons including: 1) A reduced median width introduces the likelihood for vehicles to crash into a barrier, 2) Concrete barrier has a high initial cost and is less forgiving in severe crashes, 3) A narrow median is more difficult to maintain and expensive to construct, and 4) Concrete barrier would be out of character for a rural new location freeway.

However, we recognize the high environmental significance of the McDonald's Pond Restoration Site and are willing to consider a reduced median width through this area. Due to the need to minimize impacts to the McDonald's Pond Mitigation Site and the relatively low projected future traffic for proposed US 1 Bypass, our design staff is willing to compromise and reduce the median width to a 22 foot hard median with a concrete median barrier across the mitigation site.

Wetland impacts and costs have been compared using median widths of 70 feet, 46 feet, 30 feet, and 22 feet for the original preferred alignment (with 480 foot bridge) and the southern realignment (with 250 foot bridge). These findings are presented below.

Structure Options	Wetland Impacts (acres) and Costs by Median Width			
	70 ft	46 ft	30 ft	22 ft
480' Bridges LEDPA Alignment				
Wetland Impacts	2.15	1.95	1.85	1.75
Mitigation Cost**	\$160,000	\$145,000	\$145,000	\$125,000
Construction Cost	\$6,200,000	\$6,120,000	\$6,115,000	\$7,220,000
Total (Construction & Mitigation)	\$6,360,000	\$6,265,000	\$6,260,000	\$7,345,000

** NOTE: Mitigation Costs are based on EEP Schedule of Fees, dated 7/1/10 for Lower Fee Hydrologic Units, and 2:1 mitigation ratio (www.nceep.net/pages/fee.htm). Wetland impacts were rounded to the nearest 0.25 acre for cost calculations in accordance with this schedule of fees.

Structure Options	Costs by Median Width			
	70 ft	46 ft	30 ft	22 ft
250' Bridges - Southern Realignment				
Wetland Impacts	5.80	5.40	5.15	5.00
Mitigation Cost	\$425,000	\$390,000	\$370,000	\$355,000
Construction Cost	\$4,750,000	\$4,680,000	\$4,680,000	\$5,260,000
Total (Construction & Mitigation)	\$5,175,000	\$5,070,000	\$5,050,000	\$5,615,000

Impacts within the EEP Conservation Easement

Impacts to this site have been coordinated with representatives from the EEP. Wetland restoration, enhancement, and preservation areas in the EEP conservation easement were calculated using median widths of 70 feet, 46 feet, 30 feet, and 22 feet for the original preferred alignment and the southern realignment within the proposed right of way limits. Figure 2 of the concurrence meeting information package dated 7/2/10 shows the location of both alternatives within the EEP easement. These total areas are summarized below. Note that they are different than the jurisdictional wetland impacts within the construction and clearing limits as presented in the table above.

**McDonald's Pond EEP Easement Areas
 Located Within Proposed Right of Way Limits**

LEDPA Alignment Category	Area Within Right of Way (acres) by Median Width			
	70 ft	46 ft	30 ft	22 ft
Wetland Restoration Area	0	0	0	0
Wetland Enhancement Area	2.70	2.33	2.08	1.96
Wetland Preservation Area	4.75	4.57	4.45	4.39
Upland Area	0	0	0	0
Total Area	7.45	6.90	6.53	6.35

Southern Realignment Category	Area Within Right of Way (acres) by Median Width			
	70 ft	46 ft	30 ft	22 ft
Wetland Restoration Area	0	0	0	0
Wetland Enhancement Area	0	0	0	0
Wetland Preservation Area	5.85	5.40	5.10	4.95
Upland Area	0.85	0.75	0.71	0.69
Total Area	6.70	6.15	5.81	5.64

Based on these findings, NCDOT recommends the southern bridge realignment option with a single 250-foot bridge and a 22-foot wide median with barrier within the limits of the EEP conservation easement.

We request your concurrence on the proposed stream crossing structures and minimization measures as summarized in the attached Concurrence Point 2A/ 4A form. If you have questions

R-2501 Concurrence Point 2A/ 4A Information
March 2011

or need other information, please contact me at slbrown@ncdot.gov (919-733-7844, ext. 235). You may also contact Mark Reep, of Florence & Hutcheson, at mreep@flohut.com (919-851-6066).

SLB/mlr

cc:

Eric Midkiff, NCDOT-PDEA
Mark Reep, Florence & Hutcheson

Roger Thomas, NCDOT-Roadway Design

**Section 404/NEPA Merger Project Team Meeting Agreement
Concurrence Point No. 2A/ 4A
Bridging Location and Alignment Review/
Avoidance and Minimization**

Project No./TIP No./Name/Description:

FA Project Number: NHF-1(1), State Project Number: 8.T580501, WBS Number: 34437.1.1,
TIP Project Number: R-2501, US 1 From Sandhill Road (SR 1971) to Marston Road (SR 1001),
Richmond County, North Carolina

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U.S. Army Corps of Engineers

Ronnie Smith

U.S. Environmental Protection Agency

Chris Militscher

U.S. Fish and Wildlife Service

Gary Jordan

N.C. Wildlife Resources Commission

Travis Wilson

N.C. Department of Environment and
Natural Resources – Division of Water Quality

Brian Wrenn/ David Wainwright

N.C. Department of Cultural Resources
Historic Preservation Office

Renee Gledhill-Earley

Federal Highway Administration

Felix Davila

N.C. Department of Transportation

Steve Brown

Concurrence Point 2A/4A

US 1

From Sandhill Road (SR 1971) to Marston Road (SR 1001)

Richmond County

Federal-Aid Project No. NHF-1(1)

State Project No. 8.T580501

TIP Project No. R-2501

Project Description: The proposed action consists of widening and/or the relocation of US 1 in Richmond County from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) north of Rockingham, a distance of approximately 19.2 miles. This portion of the US 1 project is identified as project number R-2501 in the 2009-2015 Transportation Improvement Program (T.I.P.). The TIP schedule for R-2501 shows right-of-way acquisition will begin in Fiscal Year (FY) 2011 and construction will start in FY 2013.

Of four alternatives considered in the Draft EIS, Alternative No. 21 was selected as the Least Environmentally Damaging Practicable Alternative (LEDPA) by the Project Team. A Supplemental Draft Environmental Impact Statement (SDEIS) proposed the extension of widening improvements from north of Fox Road (SR 1606) to Marston Road (SR 1001).

Bridging Location and Alignment Review: Preliminary Design Plans were provided to the Merger Team members and reviewed at meetings on November 10, 2004, September 18, 2008, November 12, 2008, August 20, 2009, and July 21, 2010. The proposed stream crossing structures will be constructed at the following locations:

Structure Number	Stream/ Wetland Crossing	Nearest Road Location	Proposed Structure
1	Baggetts Cr (S3, W3, W9)	Osborne Rd (SR 1104)	3@10'x8'x350' RCBC
3	UT to Speeds Cr (W11, P1)	East of Osborne Rd (SR 1104)	3@10'x8'x250' RCBC
4	Watery Br (W14)	East of Sandhill Rd (SR 1971)	2@9'x7'x240' RCBC
5	Solomons Cr (S10, W21)	US 74 Bypass Interchange	1@7'x6'x1,340' RCBC
6	Solomons Cr (S10A, W20A)	US 74 Bypass Interchange	Extend 3@9'x5'x50' RCBC & 4 pipes
7	South Prong Falling Cr (W26)	Between CSX Railroad & US 74	450'x38' Dual Bridge (wetland) 225'x38' Dual Bridge (railroad) 335'x38' Dual Bridge (US 74)
8	Falling Cr (W37)	East of County Home Rd (SR 1624)	250'x90' Single Bridge
9	Chock Cr (S20, P9, W49, W50)	East of Fox Rd (SR 1606)	Extend 3@9'x9'x85'

Avoidance and Minimization: Avoidance and minimization efforts have been incorporated in the preliminary design. Where possible, these include shifting the alignment to avoid water resources, crossing streams perpendicularly, or crossing the narrowest areas of wetland systems. These efforts have resulted in the avoidance of:

- 13 of 24 streams in the corridor (or 85% of stream length)
- 36 of the 55 wetland sites (84% of wetland areas)
- 7 of 10 ponds (93% of pond areas)

Specific areas are described as follows:

- Structure 1 - Osborne Road/ Baggetts Creek - S3, W3, W9 – The proposed alignment reduces wetland impacts by crossing stream S3 between two large wetlands W3 and W9.
- Structure 3 – UT to Speeds Creek - W11, P1 – The alignment was located to avoid stream S6 and to cross a narrower portion of W11.
- Structure 4 – Watery Branch - Wetland W14 - The median is to be reduced to 46 feet for minimization.
- US 74 Bypass Interchange – W18, W19, W21, P2, P3, and P4 – The greatest areas of avoidance/ minimization are in this interchange. As presented in the 11/2004 interagency field meeting package, a larger full clover interchange design was planned, resulting in impacts of 25.2 acres of wetlands and 3.5 acres of ponds. The proposed bypass was shifted southward and the interchange footprint was compressed using directional ramps. The impacts were reduced to 15.4 acres of wetlands and 0.5 acre of ponds.
- Structure 7 – South Prong Falling Creek (US 74) – W26 – The alignment is located between residential neighborhoods and crosses the smallest portion of wetland W24. Dual 450-foot bridges with equalizer pipes are proposed over part of the floodway for South Prong Falling Creek. On site mitigation opportunities will be pursued where NCDOT is controlling access to properties between US 74 Business and the wetland areas. The proposed median width is 46 feet within the wetland limits.
- Structure 8 –Falling Creek – W27 – The alignment is located along the south side of the project corridor to avoid wetlands W32 and W33 just to the west. It crosses a narrower portion of W27. The alignment has been shifted to the south of the original LEDPA alignment to cross a portion of the McDonalds Pond EEP site where braided streams have narrowed. A 250-foot bridge is proposed at the crossing, and the median width has been reduced to 22 feet within the limits of the EEP conservation easement.
- Structure 9 –Chock Creek – S20, P9, W49, W50 – The proposed widening is planned on the north side, away from P9 and W49. W49 is the highest quality wetland along the US 1 widening portion of the project. This location is in an area where the grade is being changed to flatten the vertical curvature. Culvert extensions are planned on each side of the existing culvert. Shifting the alignment further north will result in greater impacts to W50.

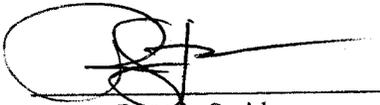
**Section 404/NEPA Merger Project Team Meeting Agreement
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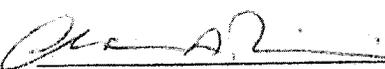
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U.S. Army Corps of Engineers


Ronnie Smith

8-8-11

U.S. Environmental Protection Agency


Chris Militscher

4/4/11

U.S. Fish and Wildlife Service

Gary Jordan

N.C. Wildlife Resources Commission

Travis Wilson

N.C. Department of Environment and
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**Section 404/NEPA Merger Project Team Meeting Agreement
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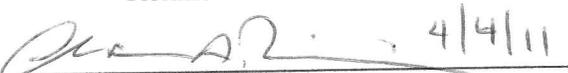
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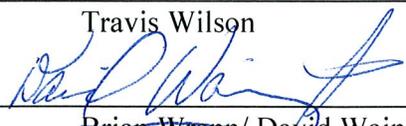
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Natural Resources – Division of Water Quality

 12/1/11

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Renee Gledhill-Earley

Federal Highway Administration

Eefix Davila

N.C. Department of Transportation

Steve Brown

3/15/11

Brown, Steve L

From: Gary_Jordan@fws.gov
Sent: Thursday, March 24, 2011 10:18 AM
To: Brown, Steve L
Cc: 'Brian.Wrenn@ncmail.net'; Wainwright, David; Weaver, Derrick G; 'Felix.Davila@dot.gov'; 'jfr@mail.lrcog.dst.nc.us'; 'Militscher.Chris@epamail.epa.gov'; 'Mark Reep <mreep@flohut.com/ (mreep%, " Gledhill-earley@fws.gov; Renee " <renee.gledhill-earley@ncdcr.gov/O=, " 'RonnieSmith/@fws.gov; USACOE' " <ronnie.d.smith@usace.army.mil/O=, " Wilson/@fws.gov; Travis_W. <travis.wilson@ncwildlife.org/@fws.gov
Subject: Re: R-2501 - US 1 - Rockingham Bypass - Concurrence Point 2A/4A Information
Attachments: R-2501 3.15.11 CP 2A-4A Letter.pdf

Steve,

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Gary Jordan
Fish and Wildlife Biologist
US Fish and Wildlife Service
PO Box 33726
Raleigh, NC 27636-3726

Phone (919) 856-4520 ext. 32
Fax (919) 856-4556
gary_jordan@fws.gov

"Brown, Steve L" <slbrown@ncdot.gov>

03/15/2011 05:00 PM

To "Ronnie Smith, USACOE" <ronnie.d.smith@usace.army.mil>, "Gary_Jordan@fws.gov" <Gary_Jordan@fws.gov>, "Militscher.Chris@epamail.epa.gov" <Militscher.Chris@epamail.epa.gov>, "Felix.Davila@dot.gov" <Felix.Davila@dot.gov>, "Wilson, Travis W." <travis.wilson@ncwildlife.org>, "Wainwright, David" <david.wainwright@ncdenr.gov>, "Brian.Wrenn@ncmail.net" <Brian.Wrenn@ncmail.net>, "Gledhill-earley, Renee" <renee.gledhill-earley@ncdcr.gov>, "jfr@mail.lrcog.dst.nc.us" <jfr@mail.lrcog.dst.nc.us>
cc "Weaver, Derrick G" <dweaver@ncdot.gov>, "Mark Reep <mreep@flohut.com> (<mreep@flohut.com>)" <mreep@flohut.com>
Subject R-2501 - US 1 - Rockingham Bypass - Concurrence Point 2A/4A Information

Merger Team:

Please review the attached latest information on the McDonald's Pond crossing and CP 2A/4A concurrence. The information is a follow-up to our last field meeting and hopefully addresses concerns that were raised during that discussion.

Please provide me with any comments on the attached at your earliest convenience...

Thanks,

Steve

Steve L. Brown, P.E.
Project Planning Engineer

North Carolina Department of Transportation
Project Development and Environmental Analysis Branch
1548 Mail Service Center
1 S. Wilmington Street
Raleigh, NC 27699-1548

slbrown@ncdot.gov
phone 919.733.7844 Ext. 235
fax 919.733.9794

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Brown, Steve L

From: Gary_Jordan@fws.gov
Sent: Wednesday, December 07, 2011 11:13 AM
To: Brown, Steve L
Cc: Wilson, Travis W.; Ronnie.D.Smith@usace.army.mil; Militischer.Chris@epamail.epa.gov; Felix.Davila@dot.gov; Wainwright, David
Subject: RE: R-2501 - US 1 - Rockingham Bypass - Concurrence Point 2A/4A Information

Steve,

I abstain on CP 2A/4A for the reasons cited below in my previous email.

Gary Jordan
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Fax (919) 856-4556
gary_jordan@fws.gov

"Brown, Steve L" <slbrown@ncdot.gov>

12/07/2011 10:48 AM

To "Gary_Jordan@fws.gov" <Gary_Jordan@fws.gov>

cc

Subject RE: R-2501 - US 1 - Rockingham Bypass - Concurrence Point 2A/4A Information

Gary:

Thanks for discussing this issue over the phone earlier this week and articulating your intention to abstain on CP 2A/4A on this project. For the record, could you please respond to this e-mail and state your intention to abstain from Concurrence on CP2A/4A? That will serve as written documentation for the Administrative Record.

For your information, the definition of abstention from our Merger Process guidance is as follows:

1. What are the Definitions of "concurrence", "non- concurrence", and "abstain" for the purposes of the Merger Process?

A. Concurrence - "I do not object to the proposed action based on the laws and regulations of my program and agency."

B. Non-concurrence - "I do not concur as the information is not adequate for this stage and/or concurrence could violate the laws and regulations of my program and agency."

C. Abstain - "I do not actively object, but I am not signing the concurrence form. The merger process may continue, and I agree not to revisit the concurrence point subject to the guidance on revisiting concurrence points" (documented on page 2 of the Merger Memorandum of Understanding).

Thank you again for your participation in this project.

Steve

Steve L. Brown, P.E.

Project Planning Engineer

North Carolina Department of Transportation
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548

PDEA - Century Center Building A
1020 Birch Ridge Drive
Raleigh, NC 27610
slbrown@ncdot.gov

Phone 919.707.6014
Fax 919.250.4224

From: Gary_Jordan@fws.gov [mailto:Gary_Jordan@fws.gov]
Sent: Thursday, March 24, 2011 10:27 AM
To: Brown, Steve L
Cc: 'Brian.Wrenn@ncmail.net'; Wainwright, David; Weaver, Derrick G; Felix.Davila@dot.gov; 'jfr@mail.lrcog.dst.nc.us'; 'Militscher.Chris@epamail.epa.gov'; mreep@flohut.com; Gledhill-earley, Renee; ronnie.d.smith@usace.army.mil; Wilson, Travis W.
Subject: Re: R-2501 - US 1 - Rockingham Bypass - Concurrence Point 2A/4A Information

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cc "Weaver, Derrick G" <dweaver@ncdot.gov>, "Mark Reep" <mreep@flohut.com> (<mreep@flohut.com>)" <mreep@flohut.com>

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Steve L. Brown, P.E.
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Brown, Steve L

From: Wilson, Travis W.
Sent: Thursday, March 24, 2011 10:44 AM
To: Gary_Jordan@fws.gov; Brown, Steve L
Cc: 'Brian.Wrenn@ncmail.net'; Wainwright, David; Weaver, Derrick G; Felix.Davila@dot.gov; 'jfr@mail.lrcog.dst.nc.us'; 'Militscher.Chris@epamail.epa.gov'; mreep@flohut.com; Gledhill-earley, Renee; ronnie.d.smith@usace.army.mil
Subject: RE: R-2501 - US 1 - Rockingham Bypass - Concurrence Point 2A/4A Information

There is really nothing I can add to what Gary has outlined below, therefore I concur with USFWS.

From: Gary_Jordan@fws.gov [mailto:Gary_Jordan@fws.gov]
Sent: Thursday, March 24, 2011 10:27 AM
To: Brown, Steve L
Cc: 'Brian.Wrenn@ncmail.net'; Wainwright, David; Weaver, Derrick G; Felix.Davila@dot.gov; 'jfr@mail.lrcog.dst.nc.us'; 'Militscher.Chris@epamail.epa.gov'; mreep@flohut.com; Gledhill-earley, Renee; ronnie.d.smith@usace.army.mil; Wilson, Travis W.
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cc: "Weaver, Derrick G" <dweaver@ncdot.gov>, "Mark Reep" <mreep@flohut.com> (<mreep@flohut.com>)

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Brown, Steve L

From: Wilson, Travis W.
Sent: Monday, December 05, 2011 3:55 PM
To: Brown, Steve L
Cc: gary_jordan@fws.gov; Chris Militscher (militscher.chris@epa.gov); Wainwright, David; Smith, Ronnie D SAW (Ronnie.D.Smith@usace.army.mil)
Subject: RE: R-2501 - US 1 - Rockingham Bypass - Concurrence Point 2A/4A Information

Steve, as we have discussed the crossing of McDonalds pond has been a point of emphasis on this project. The use of a single span bridge with a closed 22 foot median would have an adverse effect on the use of this area for wildlife passage. An open median is preferred in order to allow day-lighting and better promote some vegetative structure to develop under the bridge. Understanding that other resources benefit from the narrower median WRC does not object, but will abstain from this concurrence point. If you have any further questions let me know.

Travis W. Wilson
Eastern Region Highway Project Coordinator
Habitat Conservation Program
NC Wildlife Resources Commission
1142 I-85 Service Rd.
Creedmoor, NC 27522
Phone: 919-528-9886 ext. 6
Fax: 919-528-9839
Travis.Wilson@ncwildlife.org

From: Brown, Steve L
Sent: Monday, December 05, 2011 3:07 PM
To: Wilson, Travis W.
Subject: FW: R-2501 - US 1 - Rockingham Bypass - Concurrence Point 2A/4A Information

Resending...NCDOT's proposal and concurrence form for you....

Steve L. Brown, P.E.
Project Planning Engineer

North Carolina Department of Transportation
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1548 Mail Service Center
Raleigh, NC 27699-1548

PDEA - Century Center Building A
1020 Birch Ridge Drive
Raleigh, NC 27610

slbrown@ncdot.gov

Phone 919.707.6014

From: Brown, Steve L

Sent: Tuesday, March 15, 2011 5:01 PM

To: 'Ronnie Smith, USACOE'; 'Gary_Jordan@fws.gov'; 'Militscher.Chris@epamail.epa.gov'; 'Felix.Davila@dot.gov'; Wilson, Travis W.; 'David.Wainwright@ncdenr.gov'; 'Brian.Wrenn@ncmail.net'; Gledhill-earley, Renee; 'jfr@mail.lrcog.dst.nc.us'

Cc: Weaver, Derrick G; Mark Reep <mreep@flohut.com> (mreep@flohut.com)

Subject: R-2501 - US 1 - Rockingham Bypass - Concurrence Point 2A/4A Information

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

July 2, 2010

MEMORANDUM TO: Meeting Participants

Ronnie Smith, USACE
Gary Jordan, USFWS
Felix Davila, FHWA
Travis Wilson, NCWRC
Chris Militscher, EPA
Renee Gledhill-Earley, HPO
David Wainwright, NCDWQ
Brian Wrenn, NCDWQ
Janet Robertson, Lumber River RPO
Deanna Riffey, NCDOT-PDEA, NEU
Leilani Paugh, NCDOT-PDEA, NEU
John Olinger, NCDOT-Division 8
Drew Joyner, NCDOT-PDEA, HEU
Andrew Nottingham, NCDOT-Hydraulics

Steve Gurganus, NCDOT-PDEA, HEU
David Harris, NCDOT-Roadside Envir.
John Frye, NCDOT-Structures
Roger Thomas, NCDOT-Roadway Design
Brian Robinson, NCDOT-Roadway Design
Derrick Weaver, NCDOT-PDEA
Robert Memory, NCDOT, Utilities
Doumit Ishak, NCDOT, TPB
Eric Midkiff, NCDOT-PDEA
Anne Burroughs, NCDOT-PDEA, NEU
Dennis Herman, NCDOT-PDEA, NEU
Paul Petitgout, ESI
Mark Reep, Ko/ Florence & Hutcheson
Brian Wiles, Ko/ Florence & Hutcheson

FROM: Steve Brown, PE
Project Development and Environmental Analysis Branch

SUBJECT: **Concurrence Point 2A/ 4A Field Meeting** US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, WBS No. 34437.1.1, T.I.P. No. R-2501.

Attached is the information package for the R-2501 Concurrence Point 2A/ 4A field meeting scheduled for **Wednesday July 21, 2010**. This package responds to comments from the CP 2A/4A meeting held on August 20, 2009. We will meet at **10:00am** at the **NCDOT District Office conference room** located near US 74 at **219 Clemmer Road, Rockingham, phone 910-582-7075**. In the office, we will discuss additional options considered at the Falling Creek and McDonalds Pond Restoration Site crossing (Structure 8). Afterward, we will travel to the project site (off NC 177 and E V Hogan Drive). We will have several vans available. If you have questions or need other information, please contact me at slbrown@ncdot.gov (919-733-7844, ext. 235). You may also contact Mark Reep, of Ko/ Florence & Hutcheson, at mreep@flohut.com (919-851-6066). We look forward to seeing you on July 21.

SLB/mlr

R-2501 - US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606)
Richmond County, Division 8
NEPA Merger 01 Concurrence Pt. 2A/ 4A Meeting

An R-2501 Concurrence Point 2A/ 4A meeting was held August 20, 2009. This followed a September 18, 2008 Concurrence Point 2A / 4A merger team meeting and a November 12, 2008 field review. During the field review, merger team members requested additional information at the following locations:

Structure 7 – South Prong Falling Creek (W26)

Structure 8 - Falling Creek (W37) at McDonalds Pond Restoration Site

Potential Wildlife Crossings – From Wiregrass Road (SR 1640) to Fox Road (SR 1606)

At the August 20 meeting, merger team members confirmed their agreement with culverts proposed at seven of nine major stream crossings (Structures 1, 2, 3, 4, 5, 6, and 9). Bridges are proposed at Structures 7 and 8.

At South Prong Falling Creek (Structure 7), the main stem of the system receives a high quality classification (using NCWAM) as a riverine swamp forest. The secondary stem also receives a high rating as a bottomland hardwood wetland but is not as hydraulically important to the main stem. Potential mitigation may be provided along properties between US 74 Business and the wetland system. NCDOT proposes 450 foot dual bridges, equalizer pipes for wetland connectivity, and on-site mitigation. The merger team members agree with NCDOT's recommendation.

At Falling Creek (Structure 8), the project crosses the 127 acre McDonalds Pond Restoration Site, constructed by the Ecosystem Enhancement Program (EEP) in 2005. It should be noted here that the Least Environmentally Damaging Preferred Alternative for this project was formally established and selected in 2001, prior to construction of the EEP site. This site exhibits wetland restoration, enhancement, and preservation opportunities. According to the third year's monitoring report, the site is meeting established success criteria. Credits are available for stream and riparian restoration, enhancement, and preservation. Based on input from the USACE, a current accounting of credits issued and available for this site is as follows:

- 2,710 linear feet (lf) of Stream Restoration
- 770 lf of Stream Enhancement
- 5,800 lf of Stream Preservation
- 15.96 acres (ac) of Riparian Restoration
- 4.20 ac of Riparian Enhancement
- 4.50 ac of Riparian Preservation

NCDOT proposed the 120 foot bridge length with 36 inch equalizer pipes on each side of the stream crossing for wetland connectivity. A 60 inch pipe was also proposed for upland wildlife passage at this site. Because of the high quality of this wetland system, the agency representatives do not support a 120 foot bridge across the system. Several expressed concerns that a shorter bridge would change the braiding of the stream system and have indirect and cumulative impacts upstream and downstream. The agency representatives favor at least a 480 foot bridge that spans the braided stream system, sewer easement, and allows wildlife passage. Approximately 25 feet of dry ground is preferred by NCWRC and USFWS for wildlife passage at this location. **The merger team did not concur with a bridge length at this site. NCDOT did not agree with spending the additional money to span the system and elected to elevate the decision to the Merger Management Team. However, in an attempt to resolve the concerns without elevating the decision, NCDOT explored another Falling Creek crossing location.**

**R-2501 - US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606)
 Richmond County, Division 8
 NEPA Merger 01 Concurrence Pt. 2A/ 4A Meeting (Cont.)**

Project/Crossing Highlights

NCDOT requested concurrence on CP 2A/4A, Bridging Decision and Alignment Review and Avoidance and Minimization for 9 major wetland and stream crossings. The merger team concurred with 8 of the 9 major wetland and stream crossing recommendations (“NCDOT Preferred”). NCDOT proposed a 120-foot bridge at Structure #8, Falling Creek (W37) at the McDonalds Pond EEP Restoration Site. During the 11/12/08, field review meeting, all of the resource and permitting agencies requested a longer bridge (approximately 480 feet) to span the entire High Quality EEP enhancement site. The information concerning bridge costs and impacts is contained in the August 20, 2009 meeting concurrence package.

Studied Alternates

Original NCDOT Proposed: Culvert or 120’ Bridges, 70’ median
Agency Preferred: 480’ Bridges
NCDOT Current Proposed: 250’ Bridges, Southern Realignment

An alignment shift approximately 800 feet south of the preferred alignment (outside of the project study area) has been considered to cross a narrower portion of the stream system. The stream system narrows from nearly 330 feet in width to less than 130 feet. However, the wetland system is much wider at this southern location. A comparison of structure options is presented as follows:

Structure Option	Wetland Impact (acres) (3:1 slopes)	Stream Impact (linear feet) (3:1 slopes)	Mitigation Cost**	Construction Cost	Total Cost (Construction & Mitigation)
250' x 10' x 8' (2) Box Culvert LEDPA Alignment	4.85	350	\$530,000	\$3,950,000	\$4,480,000
120' Bridges LEDPA Alignment	4.45	0	\$320,000	\$4,000,000	\$4,320,000
480' Bridges LEDPA Alignment	2.15	0	\$155,000	\$6,000,000	\$6,155,000
250' Bridges Southern Realignment - Proposed	5.80	0	\$416,000	\$4,700,000	\$5,116,000
284' x 10' x 8' (1) & 265' x 10' x 8' (1) Box Culvert Southern Realignment	6.25	1,095	\$1,019,000	\$3,900,000	\$4,919,000

** NOTE: Mitigation Costs are based on EEP Schedule of Fees, effective 7/1/09 for Lower Fee Hydrologic Units, and 2:1 mitigation ratio (www.nceep.net/pages/fee.htm)

Agency Issue Summary

USFWS, EPA, NCWRC, USACE, and NCDWQ have submitted issue briefs to NCDOT presenting their objections to the original proposed 120-foot bridges at this crossing. The following table summarizes the comments, the agencies that presented them and NCDOT’s response.

Comment/Objection	Agency(s)	NCDOT Response
Bridge costs presented for Structures 7 and 8 are not consistent between the alternatives. The differences have not been adequately explained or documented.	EPA NCDWQ	The construction costs for each bridge option were calculated to include earthwork, pavement, and structure costs. Since other alignment options have been investigated at Structure 8, more detailed costs are itemized in the attachments.
Total project costs for R-2501 have not been updated or provided to the Merger team.	EPA	The total project costs have been computed to include bridges and culverts at major stream crossings. These are compared using the various structures considered at Structure 8. The costs are summarized in the attachments.
It appears that the dual 2-lane, 480-foot bridges are separated by an approximate 65-foot median. There is no discussion concerning the need to separate these dual bridges (or the USACE suggested northern alignment) by 65 feet and thereby causing greater wetland fill impacts and involving constructability issues.	EPA	A 70-foot median is proposed throughout the project, except at Structure 4 (Watery Branch), where the median width was reduced to 46 feet in the vicinity of the wetland system. A 70 foot median is the desirable median width for a new location rural freeway. A 46-foot median width is the minimum for a rural freeway when there are existing right of way and terrain constraints.
A 120-foot bridge at Structure 8 would not span the existing sewer easement pipe. The fill slope lines would appear to cover more than 250 feet of the sewer line and 10 to 20 feet of fill would cover the sewer pipe and several maintenance access ports and would eventually require relocation in the existing EEP mitigation site. This potential additional direct impact to jurisdictional wetlands is neither discussed nor detailed in the concurrence package.	EPA	The NCDOT Utilities Unit has performed a cursory review of this site to estimate the proposed impacts to the sewer line. Two new manholes would need to be constructed just outside of the proposed control of access fence. A new ductile iron pipe would need to be installed connecting to each of the new manholes and placed parallel to the existing 8" sewer line. While the trench is being dug to install the ductile iron pipe, ditch blocks would be used to minimize impacts during construction. The majority of the impacts associated with the installation of the sewer line will be within our construction limits. Additional wetland impacts (outside of the original construction limits plus 25-feet) for the placement of the new manholes and sewer line are 0.04 acres. The total cost associated with the installation of the new sewer line is approximately \$40,000.

R-2501 - US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606)
Richmond County, Division 8
NEPA Merger 01 Concurrence Pt. 2A/ 4A Meeting (Cont.)

Comment/Objection	Agency(s)	NCDOT Response
NCWAM was performed on Structure 7 South Fork Falling Creek (a larger wetland site) but not on Structure 8 McDonald's Pond EEP Mitigation Site.	EPA	According to the NCWAM, the characteristics of this site would rate "high."
There appears to be multiple 'fill slope lines' (dashed f-lines) on this figure with no explanation for the different lines.	EPA	The two sets of construction slope lines illustrated the estimated limits with 2:1 slopes (inside lines) and 3:1 slopes (outside lines). The attached maps have been revised to show 3:1 slopes.
As with Structure 4 at Watery Branch, NCDOT has mischaracterized EPA's request to reduce the median width through jurisdictional wetlands. NCDOT cites that the median is to be reduced to 46 feet for minimization purposes. EPA does not believe that this standard median width for a 4-lane facility is demonstrating minimization or avoidance.	EPA	As indicated above, a 70-foot median width is the desirable design standard for this freeway facility. A reduction to 46-feet is a reasonable consideration for minimizing impacts to the wetlands. Reducing the median width below 46-feet would require a concrete median barrier to provide positive separation between the proposed travel lanes, which would be out of character for this rural, new location freeway. Furthermore the introduction of the median barrier would likely increase the number of side swipe crashes (vehicle to barrier) due to the 10-foot offset between the edge of travel and the proposed rigid barrier. A 46-foot median will allow motorists to have at minimum of 19-feet from the edge of travel lane to the proposed flexible cable barrier. Design guidelines recommend barrier placement as far away as possible.
Comment/Objection	Agency(s)	NCDOT Response
The Merger concurrence package does not detail the uniqueness and high quality of the McDonalds Pond EEP Mitigation Site. Structure 8 would be constructed within an exceptional quality wetland system that is characterized by a highly braided stream system. The wetlands are excellent wildlife habitat with great diversity in micro-topography, being characterized by many vegetated hummocks. The highly braided	EPA USACE NCWRC NCDWQ USFWS	A description of the characteristics and habitat data of this site is provided in the attached excerpts from the McDonalds Pond Restoration Site 2008 Annual Monitoring Report (Year 3). In response to the Merger Team's concerns, NCDOT is evaluating two realignment concepts to the south of this high quality wetland system. When completed, the natural systems technical report will contain a more detailed assessment of habitat in this system.

R-2501 - US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606)
Richmond County, Division 8
NEPA Merger 01 Concurrence Pt. 2A/ 4A Meeting (Cont.)

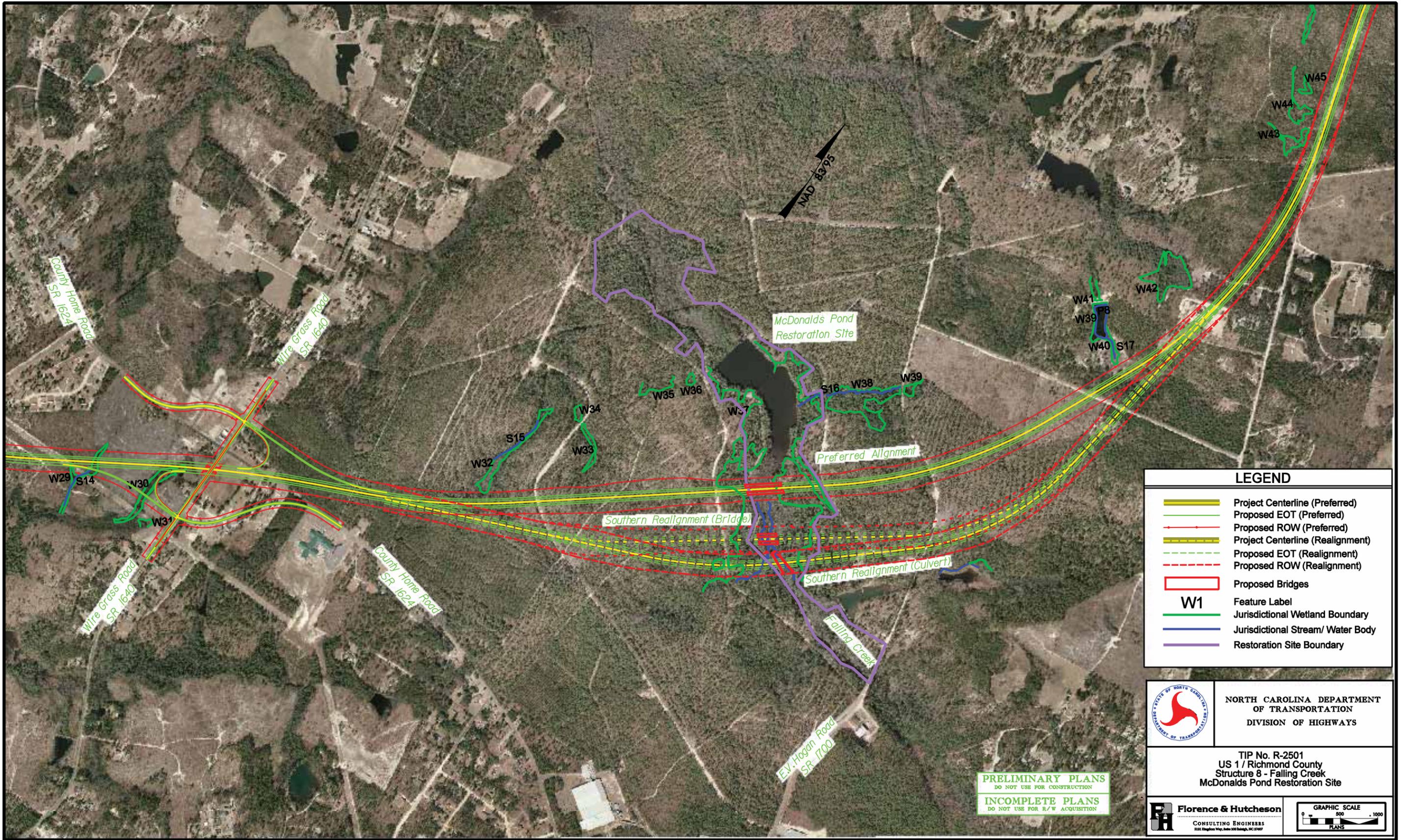
<p>channel system is key to the high quality of the wetland system. USACE requests qualitative and quantitative habitat data from the impact area and McDonald's Pond site.</p>		
Comment/Objection	Agency(s)	NCDOT Response
<p>NCDOT has not formally acknowledged that a 480-foot Structure 8 would no longer necessitate the construction of a wildlife passage at Falling Creek (220 feet by 60-inch concrete pipe): \$40,000.</p>	<p>EPA</p>	<p>NCDOT acknowledges that a 480-foot bridge would allow for wildlife passage. This would eliminate the need for a \$40,000 pipe culvert for wildlife passage. The resulting costs would be \$1.187 million for the 120-foot bridge and pipe as compared to \$4.267 million for the 480-foot bridge.</p>
<p>NCDOT has failed to demonstrate that impacts to the high quality waters and wetlands on the site have been avoided and minimized. DWQ staff believes that the installation of the shorter bridge with additional culverts to provide hydraulic passage does not demonstrate sufficient avoidance and minimization measures as it would lead to additional fill impacts associated with culvert(s) installation and slope fill as well as impacts which may be incurred due to aligning the stream(s) with the culvert(s).</p>	<p>USACE NCDWQ</p>	<p>The preferred corridor was selected prior to the construction of the McDonalds Pond Restoration Site. The restoration site cannot be avoided; however, the alignment can be shifted further south to cross a narrower portion of the conservation easement and avoid the higher quality wetlands and braided system. Minimization may include reducing the median width to 46 feet in this location.</p>
<p>NCDOT has not proposed reasonable avoidance and minimization measures for the R-2501 new location project (e.g., Reduced median widths, restricted distances between dual bridges, reduced shoulders widths, steeper side slopes, bridging high quality wetland systems, horizontal alignment shifts, etc.).</p>	<p>EPA</p>	<p>Site specific avoidance and minimization measures throughout the project are itemized on the attachments. These have been addressed through alignment location, bridging, or median width reduction at selected locations. Shoulder width reductions are not appropriate for this freeway facility. For constructability and maintenance in sandy soils, 3:1 maximum slopes are recommended for this project instead of 2:1 slopes.</p>

R-2501 - US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606)
Richmond County, Division 8
NEPA Merger 01 Concurrence Pt. 2A/ 4A Meeting (Cont.)

Comment/Objection	Agency(s)	NCDOT Response
<p>The proposed crossing bisects the site near the mid portion and will alter the hydrologic pathways. Placing compacted roadfill in a restored braided scrub/shrub wetland could have significant effects upon the mitigation site as a whole. NCWRC recommended NCDOT construct a bridge spanning the lower elevation wetlands associated with the braided stream channels plus a minimal distance upslope (approximately 25 feet) to provide wildlife connectivity and permeability within this conservation easement and the Falling Creek watershed. Failure to require NCDOT to bridge the entire crossing will not only cause channelization of the restoration area and downstream waters, damage wildlife corridors, but may undermine the NC EEP program and its usefulness to applicants as an in-lieu-fee program.</p>	<p>USACE NCWRC</p>	<p>NCDOT's proposed bridge will be designed to span one stream portion of the braided stream system and pipes will be used to carry the flow in the braided stream channels that are not spanned by the proposed bridge. This will maintain the hydrologic connectivity of the braided stream system up and downstream of the bridge without causing channelization of the restoration area and downstream areas. The pipes will be adequately designed to maintain the normal low flow in the braided channels as well as high flows across the site. Due to the low gradient and flat nature of the site during high flows the water will rise and spread out evenly over the wetland area since multiple hydraulic openings will be used across the width of the site.</p>
<p>USACE requests comparative costs for the two bridges. These should include the cost of protective measures to assure that the utility line would not drain the mitigation site and assure that the utility line is not "floating" out of the ground due to saturated conditions.</p>	<p>USACE</p>	<p>Additional costs are itemized in the attachment to show the potential utility line costs for each bridge option. Comments in regards to impacts and cost for the installation of the sewer line are noted above in the response to EPA. The proposed 20-foot roadway embankment will keep the sewer pipe from "floating" out of the ground.</p>
<p>The costs should also include compensatory mitigation costs (direct, indirect, secondary and cumulative effects to Waters of US) for the project and the EEP site. Mitigation costs between the two bridge lengths are not included in the concurrence meeting package. Higher ratios would be requested for the</p>	<p>USACE EPA</p>	<p>Potential mitigation costs associated with the Structure 8 alternatives were estimated using current rates available from the EEP for restoring similar wetlands and streams, assuming a 2:1 mitigation ratio. These costs are reflected in the attached estimates.</p>

R-2501 - US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606)
Richmond County, Division 8
NEPA Merger 01 Concurrence Pt. 2A/ 4A Meeting (Cont.)

temporal loss, as the site is already in the ground and meeting success criteria.		
Comment/Objection	Agency(s)	NCDOT Response
NCDWQ staff is concerned that the construction of the shorter bridge span may not accommodate the required hydraulic conveyance for this type of natural system and may create a “bottleneck” effect. This could lead to ponding on both sides of the bridge as well as a modification to the type of wetland/stream system which currently exists.	NCDWQ	The proposed bridges and equalizer pipes provide adequate hydraulic conveyance for this crossing. This will maintain the hydrologic connectivity of the braided stream system up and downstream of the bridge. It will also maintain the normal low flow in the braided channels as well as high flows across the site. During high flows the water will rise and spread out evenly over the wetland area through multiple hydraulic openings. Upstream from the EEP mitigation site Falling Creek passes through a 60 inch corrugated metal pipe at SR 1700 (E.V. Hogan Drive). Downstream from the site at SR 1640 (Wiregrass Road) the stream passes through a triple 8 foot by 6 foot box culvert.
NCDWQ staff is concerned about the amount of fill that would be required if the 120’ bridge spans were constructed. The soils in the area seem unsuitable for construction and would require the excavation of the existing soils in the area directly under the road and possibly to the toe of the fill slopes. New fill would be required to stabilize the area, further increasing the costs of the road. The merger team was only provided with the cost of various bridge lengths, therefore, it is unknown whether the costs associated with soil suitability/constructability were evaluated by NCDOT.	NCDWQ	Earthwork costs have been considered for the structure options, and these are reflected in the attached estimates. The costs also include all major construction items, including removal of unsuitable material, within the areas being compared.



LEGEND	
	Project Centerline (Preferred)
	Proposed EOT (Preferred)
	Proposed ROW (Preferred)
	Project Centerline (Realignment)
	Proposed EOT (Realignment)
	Proposed ROW (Realignment)
	Proposed Bridges
W1	Feature Label
	Jurisdictional Wetland Boundary
	Jurisdictional Stream/ Water Body
	Restoration Site Boundary

	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS</p>
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TIP No. R-2501
US 1 / Richmond County
Structure 8 - Falling Creek
McDonalds Pond Restoration Site

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

	<p>Florence & Hutcheson CONSULTING ENGINEERS 5321 Douglas Way, Suite 200 Raleigh, NC 27607</p>	<p>GRAPHIC SCALE 0 500 1,000 PLANS</p>
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EcoScience Corporation

Raleigh, North Carolina

REVISIONS

INTERNATIONAL PAPER

C. DWG:



PROJECT:

MCDONALDS POND RESTORATION SITE

EEP Project No. 004020-2

RICHMOND COUNTY, NORTH CAROLINA

TITLE:

STREAM MONITORING PLAN VIEW

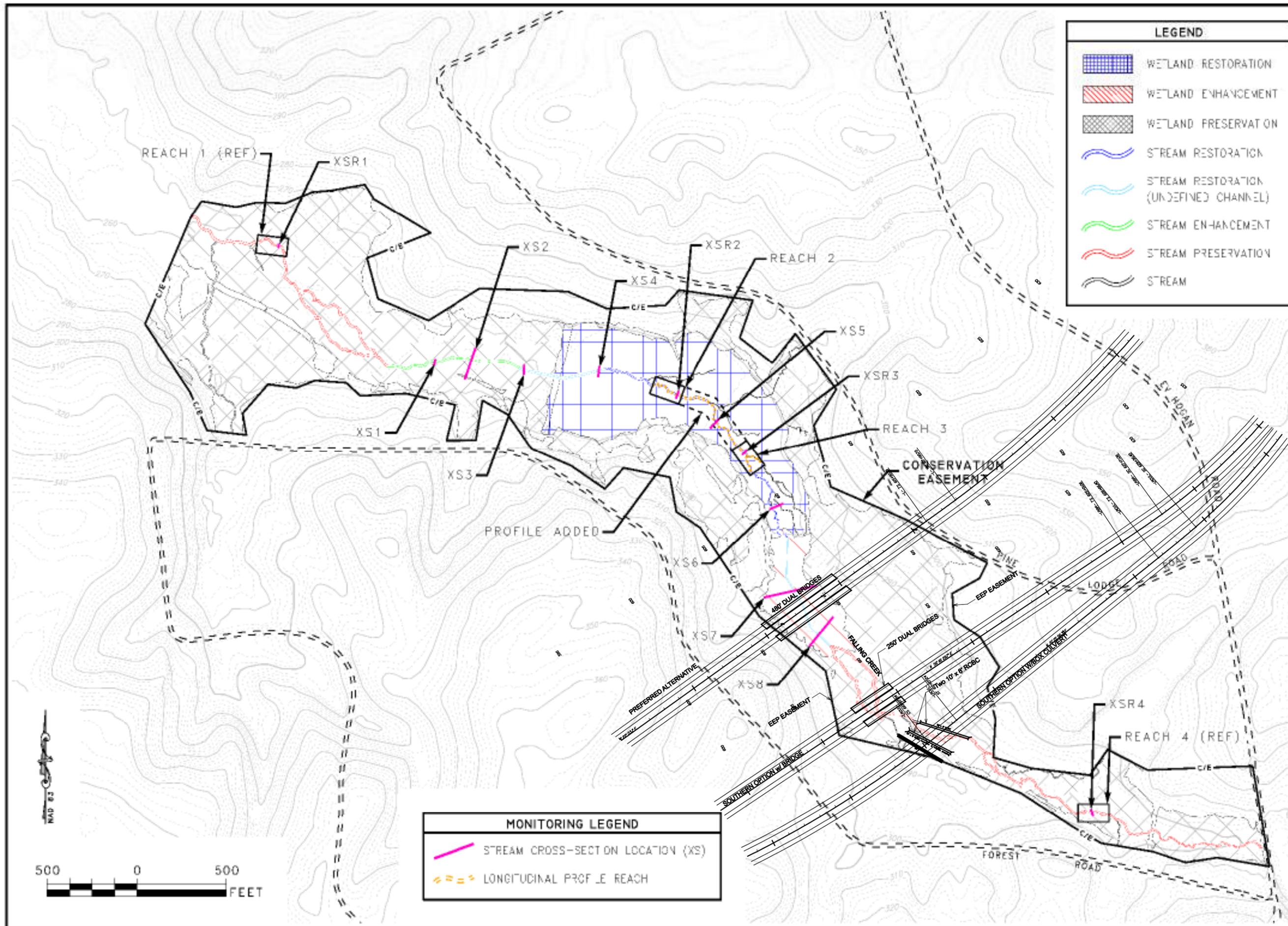
DATE: FEB 2008

SCALE: 1" = 500'

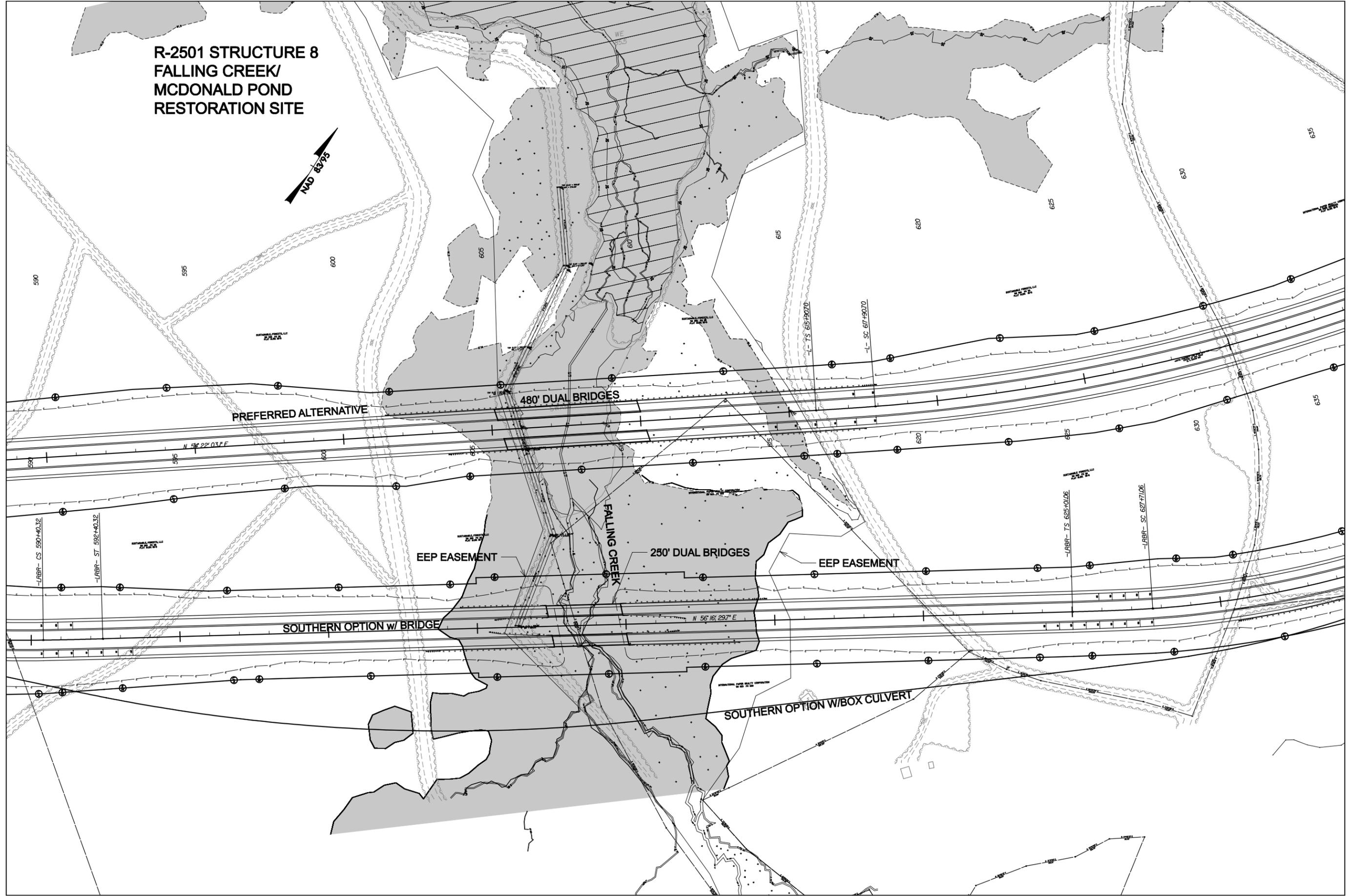
PROJECT NO.: 07-330.00

FIGURE

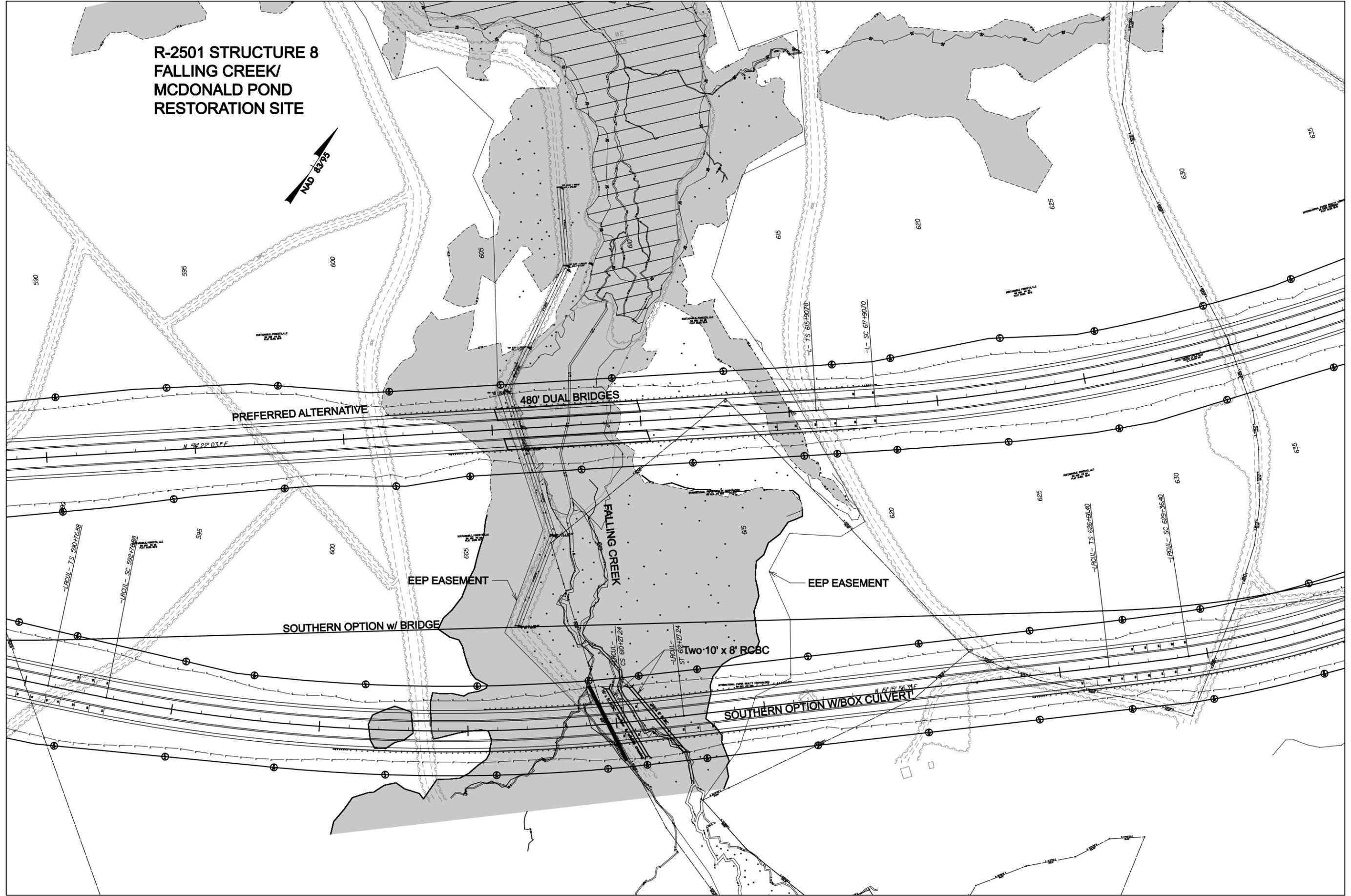
2



R-2501 STRUCTURE 8
FALLING CREEK/
MCDONALD POND
RESTORATION SITE



R-2501 STRUCTURE 8
FALLING CREEK/
MCDONALD POND
RESTORATION SITE



Preliminary Costs for TIP Project R-2501

	US 1 S. - US 74 Byp. R-2501BA	US 74 Byp. - US 74 Bus. R-2501BB	US 74 Bus. - N. of SR 1606 (Fox Rd.) R-2501BC 120' Bridge (Falling Creek)	US 74 Bus. - N. of SR 1606 (Fox Rd.) R-2501BC 480' Bridge (Falling Creek)	US 74 Bus. - N. of SR 1606 (Fox Rd.) R-2501BC 250' Bridge (Falling Creek Realignment)	US 74 Bus. - N. of SR 1606 (Fox Rd.) R-2501BC 10'x8' (2) Culverts (Falling Creek Realignment)	N. of SR 1606 (Fox Rd.) to SR 1001 (Marston Rd.) R-2501C *
Construction Costs	\$63,600,000	\$76,100,000	\$59,400,000	\$61,400,000	\$60,100,000	\$59,300,000	\$12,200,000
Right of Way/ Utility Costs	\$8,510,000	\$9,220,000	\$22,710,000	\$22,710,000	\$22,710,000	\$22,710,000	\$2,735,000
Mitigation Costs **							
Streams (\$260/foot)	\$886,000	\$872,000	\$177,000	\$177,000	\$177,000	\$746,000	\$0
Riparian Wetlands (\$35,853/acre)	<u>\$876,000</u>	<u>\$1,456,000</u>	<u>\$485,000</u>	<u>\$320,000</u>	<u>\$582,000</u>	<u>\$614,000</u>	<u>\$18,000</u>
	\$1,762,000	\$2,328,000	\$662,000	\$497,000	\$759,000	\$1,360,000	\$18,000
Total Costs	\$73,872,000	\$87,648,000	\$82,772,000	\$84,607,000	\$83,569,000	\$83,370,000	\$14,953,000

NOTES: * 2009-2015 TIP Project Costs are used for R-2501C

** NOTE: Mitigation Costs are based on EEP Schedule of Fees, effective 7/1/09 for Lower Fee Hydrologic Units, and 2:1 mitigation ratio (www.nceep.net/pages/fee.htm)

Preliminary Mitigation Costs for TIP Project R-2501

	US 1 S. - US 74 Byp. R-2501BA	US 74 Byp. - US 74 Bus. R-2501BB	US 74 Bus. - N. of SR 1606 (Fox Rd.) R-2501BC 120' Bridge (Falling Creek)	US 74 Bus. - N. of SR 1606 (Fox Rd.) R-2501BC 480' Bridge (Falling Creek)	US 74 Bus. - N. of SR 1606 (Fox Rd.) R-2501BC 250' Bridge (Falling Creek Realignment)	US 74 Bus. - N. of SR 1606 (Fox Rd.) R-2501BC 10'x8' (2) Culverts (Falling Creek Realignment)	N. of SR 1606 (Fox Rd.) to SR 1001 (Marston Rd.) R-2501C *
Stream ID	S1-S9	S10-S13	S14-S20	S14-S20	S14-S20	S14-S20	S21
Stream Impacts (feet)	1,702	1,676	339	339	339	1,434	0
Wetland ID	W1-W19	W20-W28	W-29-W-50	W-29-W-50	W-29-W-50	W-29-W-50	W-51-W-52
Wetland Impacts (acres)	12.21	20.30	6.76	4.46	8.11	8.56	0.25
Mitigation Costs **							
Streams (\$260/foot)	\$886,000	\$872,000	\$177,000	\$177,000	\$177,000	\$746,000	\$0
Riparian Wetlands (\$35,853/acre)	\$876,000	\$1,456,000	\$485,000	\$320,000	\$582,000	\$614,000	\$18,000
Total Mitigation Costs	\$1,762,000	\$2,328,000	\$662,000	\$497,000	\$759,000	\$1,360,000	\$18,000

** NOTE: Mitigation Costs are based on EEP Schedule of Fees, effective 7/1/09 for Lower Fee Hydrologic Units, and 2:1 mitigation ratio (www.nceep.net/pages/fee.htm)

North Carolina Department of Transportation
Preliminary Estimate

TIP No. **R-2501B** **Prel.** County: Richmond
 Route US 1 Bypass
 Comparison of Bridge and Culvert Costs
 for Site 8

Prepared By: B. Wiles (Ko/F&H) 5/17/2010
 Requested By: Brian Robinson 5/26/2010
 Priced By: Jon Weathersbee, PE 5/26/2010

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
SITE 8 -L- 600+00 to 615+00							
Culvert							
			Excavation	16,600	CY	\$ 8.00	\$ 132,800.00
			Borrow	163,500	CY	\$ 6.00	\$ 981,000.00
			Soil Stabilization Fabric	29,650	SY	\$ 1.50	\$ 44,475.00
			Class B Rip Rap	20,014	TONS	\$ 36.00	\$ 720,504.00
			-L- pavement	8,000	SY	\$ 45.00	\$ 360,000.00
			10' paved shoulder	3,333	SY	\$ 45.00	\$ 150,000.00
			4' paved shoulder	1,333	SY	\$ 45.00	\$ 60,000.00
			2 @ 36" RCP, 250' L, 23' Fill	500	LF	\$ 54.00	\$ 27,000.00
			Double RCBC 10'x8' 85^, 250' L, 20' Fill	250	LF	\$ 2,300.00	\$ 575,000.00
			Sewer Relocation	1	LS	\$ 40,000.00	\$ 40,000.00
			Wildlife Passage (60" pipe)	250	LF	\$ 140.00	\$ 35,000.00
			Misc. & Mob (10% Preliminary)	1	LS	\$ 299,221.00	\$ 299,221.00
Contract Cost							\$ 3,425,000.00
E. & C. 15%							\$ 525,000.00
Construction Cost							\$ 3,950,000.00

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
SITE 8 -L- 600+00 to 615+00							
Bridge (120 LF)							
			Excavation	16,600	CY	\$ 8.00	\$ 132,800.00
			Borrow	145,500	CY	\$ 6.00	\$ 873,000.00
			Soil Stabilization Fabric	24,650	SY	\$ 1.50	\$ 36,975.00
			Class B Rip Rap	16,639	TONS	\$ 36.00	\$ 598,995.00
			-L- pavement	7,360	SY	\$ 45.00	\$ 331,200.00
			10' paved shoulder	3,067	SY	\$ 45.00	\$ 138,000.00
			4' paved shoulder	1,227	SY	\$ 45.00	\$ 55,200.00
			2 @ 36" RCP, 250' L, 20' Fill	500	LF	\$ 54.00	\$ 27,000.00
			New Dual Str 2 @ 38'W x 120'L	9,120	SF	\$ 95.00	\$ 866,400.00
			Sewer Relocation	1	LS	\$ 40,000.00	\$ 40,000.00
			Wildlife Passage (60" pipe)	250	LF	\$ 140.00	\$ 35,000.00
			Misc. & Mob (10% Preliminary)	1	LS	\$ 340,430.00	\$ 340,430.00
Contract Cost							\$ 3,475,000.00
E. & C. 15%							\$ 525,000.00
Construction Cost							\$ 4,000,000.00

North Carolina Department of Transportation
Preliminary Estimate

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			SITE 8 -L- 600+00 to 615+00				
			Bridge (480 LF)				
			Excavation	16,600	CY	\$ 8.00	\$ 132,800.00
			Borrow	72,000	CY	\$ 6.00	\$ 432,000.00
			Soil Stabilization Fabric	10,250	SY	\$ 1.50	\$ 15,375.00
			Class B Rip Rap	6,919	TONS	\$ 36.00	\$ 249,075.00
			-L- pavement	5,440	SY	\$ 45.00	\$ 244,800.00
			10' paved shoulder	2,267	SY	\$ 45.00	\$ 102,000.00
			4' paved shoulder	907	SY	\$ 45.00	\$ 40,800.00
			New Dual Str 2 @ 38'W x 480'L	36,480	SF	\$ 95.00	\$ 3,465,600.00
			Sewer Relocation	1	LS	\$ 40,000.00	\$ 40,000.00
			Misc. & Mob (10% Preliminary)	1	LS	\$ 477,550.00	\$ 477,550.00

Contract Cost \$ 5,200,000.00

E. & C. 15% \$ 800,000.00

Construction Cost \$ 6,000,000.00

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			SITE 8 -LRBR- 600+00 to 621+00				
			Bridge (250 LF) (Southern Alignment)				
			Excavation	26,600	CY	\$ 8.00	\$ 212,800.00
			Borrow	61,200	CY	\$ 6.00	\$ 367,200.00
			Soil Stabilization Fabric	20,400	SY	\$ 1.50	\$ 30,600.00
			Class B Rip Rap	13,770	TONS	\$ 36.00	\$ 495,720.00
			-L- pavement	9,867	SY	\$ 45.00	\$ 444,000.00
			10' paved shoulder	4,111	SY	\$ 45.00	\$ 185,000.00
			4' paved shoulder	1,644	SY	\$ 45.00	\$ 74,000.00
			2 @ 36" RCP, 230' L, 15' Fill	460	LF	\$ 54.00	\$ 24,840.00
			New Dual Str 2 @ 38'W x 250'L	19,000	SF	\$ 95.00	\$ 1,805,000.00
			Sewer Relocation	1	LS	\$ 40,000.00	\$ 40,000.00
			Misc. & Mob (10% Preliminary)	1	LS	\$ 395,840.00	\$ 395,840.00

Contract Cost \$ 4,075,000.00

E. & C. 15% \$ 625,000.00

Construction Cost \$ 4,700,000.00

North Carolina Department of Transportation
Preliminary Estimate

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			SITE 8 -LRCUL- 600+00 to 622+50				
			Culvert (Southern Alignment)				
			Excavation	25,900	CY	\$ 8.00	\$ 207,200.00
			Borrow	92,000	CY	\$ 6.00	\$ 552,000.00
			Soil Stabilization Fabric	23,667	SY	\$ 1.50	\$ 35,500.50
			Class B Rip Rap	15,975	TONS	\$ 36.00	\$ 575,108.10
			-L- pavement	12,000	SY	\$ 45.00	\$ 540,000.00
			10' paved shoulder	5,000	SY	\$ 45.00	\$ 225,000.00
			4' paved shoulder	2,000	SY	\$ 45.00	\$ 90,000.00
			2 @ 36" RCP, 230' L, 15' Fill	460	LF	\$ 54.00	\$ 24,840.00
			Single RCBC 10'x8' 56^, 284' L, 10' Fill	284	LF	\$ 1,350.00	\$ 383,400.00
			Single RCBC 10'x8' 65^, 265' L, 10' Fill (Overflow & Wildlife Passage)	265	LF	\$ 1,350.00	\$ 357,750.00
			60" RCP	272	LF	\$ 140.00	\$ 38,080.00
			Sewer Relocation	1	LS	\$ 40,000.00	\$ 40,000.00
			Misc. & Mob (10% Preliminary)	1	LS	\$ 311,121.40	\$ 311,121.40

Contract Cost	\$ 3,380,000.00
E. & C. 15%	\$ 520,000.00
Construction Cost	\$ 3,900,000.00

Avoidance & Minimization

- **Avoids 11 of 21 streams in the corridor (90% of stream length)**
- **Avoids 35 of the 52 wetlands (93% of wetland areas)**
- **Avoids 7 of 10 ponds (83% of pond areas)**
- **Structure 1 - Osborne Road/ Baggetts Creek - S3, W3, W9**
Alignment reduces wetland impacts by crossing stream S3 between two large wetlands W3 and W9
- **Structure 3 – UT to Speeds Creek - W11, P1**
Alignment avoids stream S6 and crosses a narrower portion of W11
- **Structure 4 – Watery Branch – W14**
Median width reduced from 70 to 46 feet in wetland area

Avoidance & Minimization

- **US 74 Bypass Interchange – W18, W19, W21, P2, P3, and P4**
 - Initial full clover interchange impacted 25.2 acres of wetlands, 3.5 acres of ponds, and 3,940 feet of stream
 - Alignment was shifted southward and the interchange footprint was compressed using directional ramps
 - Impacts were reduced to 16.2 acres of wetlands, 0.5 acre of ponds, and 1,850 feet of stream
- **Structure 7 – South Prong Falling Creek (US 74) – W26**
 - Alignment between residential neighborhoods
 - Crosses the smallest portion of wetland W24
 - Bridge is proposed over South Prong Falling Creek instead of a large box culvert as initially planned

Avoidance & Minimization

- **Structure 8 –Falling Creek – W27**
 - Alignment is along the south side of the corridor to avoid pond P7 and wetlands W32 and W33
 - Alignment crosses a narrower portion of W27

- **Structure 9 –Chock Creek – S20, P9, W49, W50**
 - Widens to the north side away from P9 and W49
 - W49 is the highest quality wetland along the US 1 widening portion
 - Culvert extensions are planned
 - Shifting the alignment further north results in greater impacts to W50

**MCDONALDS POND RESTORATION SITE
2008 Annual Monitoring Report (Year 3)**

**Richmond County, North Carolina
EEP Project No. D04020-2
Design Firm: International Paper**



March 2009

**Prepared for: NCDENR – ECOSYSTEM ENHANCEMENT PROGRAM
1652 Mail Service Center
Raleigh, North Carolina 27699-1619**

**Prepared by: ECOSCIENCE: A DIVISION OF PBS&J
1101 Haynes Street, Suite 101
Raleigh, North Carolina 27604**



EXECUTIVE SUMMARY

Introduction

In response to a Request for Proposal (RFP, No. 16-D04016) issued in December of 2003, International Paper Company (IP) proposed the establishment of the McDonalds Pond Restoration Site (hereafter referred to as the “Site”) located in Richmond County, approximately two (2) miles northeast of the town of Hamlet and three (3) miles east of the town of Rockingham. In order to provide stream channel restoration and riverine wetland restoration, IP has removed the McDonalds Pond Dam (Dam) located on Falling Creek.

The Site comprises approximately 128 acres, and includes the 17.7 acre McDonalds Pond (a.k.a Shepards Lake), portions of Falling Creek, numerous headwater tributaries and over 80 acres of forested riparian wetlands, seepage wetlands, and marsh wetlands.

The Dam was removed in a manner to minimize potential impacts to water resources both upstream and downstream of the dam. Gradual dewatering and phased dam removal were undertaken to avoid introducing sediments and pollutants into the receiving Falling Creek reaches downstream. Heavy equipment operated from or within the footprint of the former Dam during dam removal operations, thereby minimizing the impact to the adjacent intact forest and wetland soil. Dam removal began with the dewatering (lowering) of the pond in the fall of 2005, followed by the clearing of trees and small bushes from the former earthen dam in February 2006. Excavation activities continued for approximately two weeks until dam removal was complete in mid-March 2006.

Monitoring Plan

Monitoring activities began in March 2006 (Year 1), and will be performed for at least five-years or until success criteria are achieved. Post removal monitoring data will be compared to reference sites as well as biological baseline values collected in September 2004. Primary success criteria of the project include: 1) the successful classification of restored/enhanced reaches as functioning systems, 2) channel stability indicative of a stable stream system, 3) development of characteristic lotic aquatic communities, 4) establishment of wetland hydrology (as defined in the U.S. Army Corps of Engineers [USACE] Wetlands Delineation Manual) within the former pond footprint, and 5) vegetative success of 320 stems/acre after the third year of monitoring and 260 stems/acre after the fifth and final year of monitoring. The following monitoring report describes the results of monitoring activities completed during (2008) Year 3 monitoring.

Year 3 Monitoring Results (2008)

Stream Assessment

Restored and enhanced segments of Falling Creek have continued to establish braided, anastomosed, bifurcated, and single-threaded channels characteristic of the area. Restored and enhanced stream segments across the Site have further developed stream pattern, profile, and dimension similar to that of reference reaches. Cross-sections located within the former pond indicate that deposited pond sediment

continues to be transported downstream, as evidenced by increased bankfull areas. In addition, stream banks have further stabilized with native vegetation.

Aquatic community assemblages within the former pond have maintained characteristics of a natural lotic system. Fifty-eight percent (58%) of the macroinvertebrate samples taken in October 2008 (Year 3) from restored segments of Falling Creek (within the former pond) consisted of macroinvertebrate genera predominantly found in lotic systems. Genera predominantly found in lentic systems represented only eight percent (8%) of species collected within the former pond from the Year 3 sample.

North Carolina Division of Water Quality (NCDWQ) Habitat Assessment Forms (HAFs) were completed at multiple locations along the restored and enhanced segments of Falling Creek. The HAF scores indicate that the restored and enhanced stream segments continue to develop in-stream habitat characteristic of reference reaches.

Wetland Vegetation Assessment

Vegetation monitoring for Year 3 was performed based on the Carolina Vegetation Survey (CVS) Levels 1 and 2 at eight (8) 10 x 10 meter plots. Based on Year 3 monitoring, the average count of surviving planted species is 536 stems per acre. If volunteer species are included, the total survival increases to 3561 stems per acre. The Site exceeds the established success criteria of 320 stems/acre after the third year and is on track to exceed the success criteria of 260 stems/acre after the fifth and final year.

Wetland Hydrology Assessment

Even though extreme drought conditions occurred in the area, all four (4) on-Site groundwater gauges have registered water levels within the upper 12 inches of the soil surface for at least 28 consecutive days (Richmond County, NRCS) or 12.5 percent (12.5%) of the growing season. Therefore, wetland hydrology at the Site is meeting the required success criteria.

Summary

Following the third year of monitoring, restored streams within the former pond have continued to develop stable lotic conditions typical of reference systems. Pattern, profile, and dimension data obtained from channel surveys indicate that stream geomorphology continues to shift toward that of reference reaches. Stable single-threaded (E-channel) and braided (DA-channel) streams have continued to develop at the Site. Groundwater gauge data within the former pond indicates restored wetland hydrology (despite drought conditions) and closely resembles that of the upstream reference gauge. Vegetation surveys support the establishment of a Streamhead Pocosin/Atlantic White Cedar forest community with thriving planted and volunteer species. Stream, wetland vegetation, and wetland hydrology success criteria were met in Year 3 monitoring.

1.0 PROJECT BACKGROUND

1.1 Location and Setting

The North Carolina Ecosystem Enhancement Program (EEP) is currently developing stream and wetland restoration strategies for the Yadkin-Pee Dee River Basin, Cataloging Unit 03040201. As a part of this effort, International Paper (IP) was selected to complete the McDonalds Pond Restoration Project located in Richmond County. The McDonalds Pond Restoration Site (“hereafter referred to as the “Site”) is located approximately two (2) miles northeast of the town of Hamlet and three (3) miles east of the town of Rockingham between NC Route 1 and NC Route 177 (Figure 1, Appendix A).

1.2 Restoration Structure and Objectives

Falling Creek, the major drainage feature on-Site, was previously impounded by the McDonalds Pond Dam (Dam), constructed over 70 years ago. Approximately 3,700 linear feet of Falling Creek and tributaries were impacted by the construction of the pond dam including streams contained within the pond footprint, as well as stream sections located both up and downstream of the pond. In addition, approximately 17.7 acres of riverine wetland were inundated with the construction of the dam. Approximately 4.2 acres of the floodplain immediately upstream of the pond were impacted by the “backwater effect” (the backing-up of water), creating marsh wetlands with saturated conditions unsuitable for historic wetland communities. An eroded pond outfall channel located at the northern extent of the dam drained adjacent wetlands and redirected historic flows of the Falling Creek floodplain.

Stream restoration efforts were achieved through the removal of the Dam resulting in the restoration of 2,969 linear feet of stream. The former Dam was excavated to the approximate level of the pre-existing valley contours, allowing the stream unrestricted flow through the Site. Stream restoration efforts were designed to utilize passive stream channel restoration processes, allowing the channel to reestablish naturally following the removal of the dam. Stream enhancement (Level I) was achieved through the removal of the dam and the filling of the northern outfall channel, which returned the historic hydrologic characteristics (stream volume and velocity) to 770 feet of impacted stream channel downstream of the former dam. Riverine wetland restoration was accomplished within the former 17.7 acre pond footprint through the excavation of the Dam and the establishment of native Streamhead Pocosin and Atlantic White Cedar forest communities. Additionally, the Site includes the preservation of 5,800 linear feet of stream, 77.8 acres of wetland, and 25.6 acres of upland/wetland ecotone buffer.

1.3 Project Objectives

The primary project goals include 1) the restoration of a stable, meandering stream channel through the areas impacted by the Dam, 2) the restoration of historic lotic aquatic communities that represent the Site’s natural range in variation, 3) the restoration of historic wetland conditions within the pond footprint, and 4) the restoration of natural wetland plant communities within their historic locations.

Additional potential benefits of the project include the restoration of wildlife functions associated with a riparian corridor and stable stream and the enhancement of water quality function in the on-Site, upstream, and downstream segments of Falling Creek and tributaries.

The specific goals of this project are to:

- Restore approximately 2,969 linear feet of historic stream course, flow volumes, and patterns through the marsh wetlands, McDonalds Pond footprint, and immediately downstream of the existing dam.
- Enhance an additional approximate 770 linear feet of Falling Creek downstream of the restored stream channel extending into the gas line easement.
- Protect the headwaters of Falling Creek that are located within the Site through preservation of approximately 5,800 linear feet of Falling Creek and associated tributaries.
- Restore approximately 17.7 acres of forested riverine wetlands within the McDonalds Pond footprint.
- Enhance 4.2 acres of forested riverine wetlands within the marsh wetlands located at the head of McDonalds Pond.
- Preserve 77.8 acres of forested riverine wetlands adjacent to Falling Creek and associated tributaries.
- Restore and enhance habitat for vegetation and wildlife species, characteristic of Streamhead Pocosin and Atlantic White Cedar Forest (Schafale and Weakley 1990).
- Enhance the function and value of the Falling Creek wetland community through the preservation of 25.6 acres of buffer along the Falling Creek stream/wetland complex.

Table 1. Summary of Stream and Wetland Mitigation Units					
Restoration Activities	Linear feet	Acres	Mitigation Ratios	Percentage of Mitigation Units	Mitigation Units
Stream Restoration	1,784	N/A	1:1	75	1,784
Stream Restoration (undefined channel)	1,185	N/A	1:1		1,185
Stream Enhancement (Level I)	770	N/A	1:1.5		513
Stream Preservation	5,800	N/A	1:5	25	1,160
Total Stream Mitigation Units (SMUs) Provided					4,642
Total SMUs Under Contract					4,364
Wetlands Restoration	N/A	17.7	1:1	75	17.7
Wetland Enhancement	N/A	4.2	1:2	25	2.1
Wetlands Preservation	N/A	19	1:5		3.8
Total Wetland Mitigation Units (WMUs) Provided					23.6
Total WMUs Under Contract					23.4

1.4 Project History and Background

Activity Report	Scheduled Completion	Data Collection Complete	Actual Completion or Delivery
Restoration Plan	*NA	July 2005	August 2005
Final Design (90%)	*NA	July 2005	August 2005
Construction	*NA	N/A	March 2006
Temporary S&E mix applied to entire project area	*NA	N/A	March 2006
Bare Root Seedling Installation	*NA	N/A	March 2006
Mitigation Plan	*NA	June 2006	July 2006
Final Report	*NA	Oct 2006	Oct 2006
Year 1 Vegetation Monitoring	Dec 2006	Oct 2006	Dec 2006
Year 1 Stream Monitoring	Dec 2006	Oct 2006	Dec 2006
Year 2 Vegetation Monitoring	Dec 2007	Oct 2007	February 2008
Year 2 Stream Monitoring	Dec 2007	Oct 2007	February 2008
Year 3 Vegetation Monitoring	Dec 2008	Oct 2008	Dec 2008
Year 3 Stream Monitoring	Dec 2008	Oct 2008	Dec 2008

*NA – Scheduled completion dates unknown due to unanticipated project delays.

Designer International Paper	6400 Poplar Avenue Memphis, TN 38197 (901) 419-1854
Construction Contractor Environmental Repair, Inc.	28723 Marston Road Marston, NC 28363 (910) 280-6043
Planting Contractor Garcia Forest Service, Inc.	PO BOX 789 Rockingham, NC 28379 (910) 997-5011
Seeding Contactor Environmental Repair, Inc.	28723 Marston Road Marston, NC 28363 (910) 280-6043
Nursery Stock Suppliers International Paper	6726 Highway 169 Bellville, GA 30414 (912) 739-4613 Route 1, Box 1097: County Road #3 Shellman, GA 39886 (229) 679-5640

Table 3. Project Contacts (Cont.)	
Nursery Stock Suppliers International Paper North Carolina Division of Forest Resources	5594 Highway 38 South Blenheim, SC 29516 (843) 528-3203 726 Claridge Nursery Road Goldsboro, NC 27530 (919) 731-7988
Monitoring Performers EcoScience: a Division of PBS&J	1101 Haynes Street, Suite 101 Raleigh, NC 27604 (919) 828-3433
Stream Monitoring POC	Jens Geratz
Vegetation Monitoring POC	Jens Geratz

Table 4. Project Background	
Project County	Richmond
Drainage Area	2.5 square miles
Impervious cover estimate (%)	<5 percent
Stream Order	3rd order
Physiographic Region	Southeastern Plains
Ecoregion (Griffith and Omernik)	Sandhills
Rosgen Classification of As-built	DA5/E5
Cowardin Classification	Stream (R2UB2)
Dominant soil types	Johnston (JmA) Ailey (AcB, AcC) Candor-Wakulla Complex (CaC, WcB)
Reference Site ID	Falling Creek
USGS HUC for Project and Reference	03040201
NCDWQ Sub-basin for Project and Reference	03-07-16
NCDWQ classification for Project and Reference	WSIII
Any portion of any project segment 303d listed?	No
Any portion of any project segment upstream of a 303d listed segment?	Yes
Reasons for 303d listing or stressor	Aquatic weeds
Percent of project easement fenced	NA



North Carolina Department of Environment and Natural Resources
Division of Water Quality

Beverly Eaves Perdue
Governor

Coleen H. Sullins
Director

Dee Freeman
Secretary

September 3, 2009

MEMORANDUM

To: Steve Brown, Project Engineer, NCDOT

Through: Brian Wrenn, Supervisor, Transportation Permitting Unit, NCDWQ

From: Polly Lespinasse, Mooresville Regional Office, NCDWQ

SUBJECT: Elevation of R-2501, US 1 from Sandhill Road (SR 1971) to Marston Road (SR 1001), Richmond County

The merger team met on three (3) separate occasions, to discuss bridging decisions (Concurrence Point 2A) and avoidance and minimization (Concurrence Point 4A) for the above referenced project. The first meeting was September 18, 2008. The merger team agreed at that time to have an on-site meeting to look at the impact areas and proposed structure locations due to the amount of time that had elapsed since the original site evaluations. The field meeting to evaluate these sites was held on November 12, 2008. The merger team visited several structure locations and concurred with NCDOT recommendations on seven (7) of the nine (9) proposed structures. Additionally, the merger team recommended that NCDOT staff further evaluate bridging alternatives at Structures 7 and 8 prior to achieving concurrence on CP2A/4A.

On August 20, 2009, the merger team reconvened to discuss NCDOT's recommendations for bridges at Structures 7 and 8. The merger team concurred with NCDOT's recommendation to provide a 450' bridge on South Prong Falling Creek and Wetland 26 (W26), also known as Structure 7. However, the merger team could not reach concurrence on the proposed structure at Falling Creek at the McDonalds Pond Restoration Site and Wetland 37 (W37), also known as Structure 8. Due to the team's inability to reach concurrence on **all** bridging alternatives, the merger team decided not to sign a "partial" concurrence form. **NCDOT has decided to elevate the selection of the bridging alternative at Structure 8 only to the Merger Management Team for resolution.** NCDOT has requested that the merger team members prepare and submit a brief stating their position. The information below represents NCDWQ's position on the project.

NCDOT prefers the construction of 120' bridges over Falling Creek and W37 (Structure 8). NCDWQ prefers the construction of 480' bridges over Falling Creek and W37 (Structure 8).

DWQ staff has thoroughly reviewed all of the documentation associated with the project and offers the following:

- Falling Creek and W37 are part of an Ecosystem Enhancement Program (EEP) mitigation site. The site consists of restoration, enhancement and preservation of streams and wetlands. The stream, which runs throughout the mitigation area, is highly braided and very stable.

Mooresville Regional Office
Location: 610 East Center Ave., Suite 301 Mooresville, NC 28115
Phone: (704) 663-1699 \ Fax: (704) 663-6040 \ Customer Service: 1-877-623-6748
Internet: www.ncwaterquality.org

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According to NCDOT staff, the wetland rates as “high” for all parameters defined by the NCWAM manual. The wetland area appears to be very successful with the proliferation of well-established native species and very limited invasive species present. The area also contains unique microtopography throughout, which provides many types of habitat for different aquatic and non-aquatic species. Due to the highly successful nature of the wetland and stream system, NCDWQ recommends limited impacts to preserve as much of the existing nature of the site as possible. As any impact in the area will compromise a portion of the integrity of the system, NCDWQ staff believes it is our responsibility to support an alternative that will reduce that amount of impact and preserve as much of an intact system as possible.

- As stated above, the existing stream system is highly braided. NCDOT stated that the construction of 120' bridges over the mitigation site **will not** span all the braided portions of the stream. NCDOT is proposing two (2) 36 " equalizer pipes in the bridge fill slopes, on both sides of the bridge, for wetland connectivity. Based on this information, NCDWQ staff is concerned that the construction of the shorter bridge span may not accommodate the required hydraulic conveyance for this type of natural system and may create a “bottleneck” effect. This could lead to ponding on both sides of the bridge as well as a modification to the type of wetland/stream system which currently exists. NCDOT staff proposed for discussion, during the August 20, 2009, merger team meeting, the installation of culverts adjacent to the bridge to provide hydraulic passage for the braided stream. DWQ staff believes that the installation of the shorter bridge with additional culverts to provide hydraulic passage does not demonstrate sufficient avoidance and minimization measures as it would lead to additional fill impacts associated with culvert(s) installation and slope fill as well as impacts which may be incurred due to aligning the stream(s) with the culvert(s).
- NCDWQ staff is concerned about the amount of fill that would be required if the 120' bridge spans were constructed. Based on the existing site conditions, the soils in the area seem unsuitable (field observations indicated they are spongy and unconsolidated for a depth of at least three feet) for construction and would require the excavation of the existing soils in the area directly under the road and possibly to the toe of the fill slopes. In addition to the excavation and “wasting” of these soils, new fill would be required to stabilize the area, further increasing the costs of the road. The merger team was only provided with the cost of various bridge lengths, therefore, it is unknown whether the costs associated with soil suitability/constructability were evaluated by NCDOT.
- NCDOT staff stated during the merger team meeting that bridge costs for this project were consistent and based on a standard cost per foot amount. Based on the information provided in the merger packet, NCDWQ staff is unable to determine cost per foot for bridge construction. For example, at Structure 7, the 245' bridge costs \$12,292,800 for a per foot cost of \$50,174. The cost for a 450' bridge is \$14,165,000 for a per foot cost of \$31,477. Similarly, at Structure 8 the cost of a 120' bridge is \$1,147,000 for a per foot cost of \$9,588. The cost for a 480' bridge is \$4,267,000 for a per foot cost of \$8,889. In addition, the cost to construct bridges at Structure 8 is considerably less than the cost to construct bridges at Structure 7. NCDWQ would recommend that NCDOT please clarify how the bridge costs were determined.

Based on the information outlined above, NCDWQ staff supports the construction of 480' bridges at Structure 8.

If you have any questions or require additional information, you may contact Polly Lespinasse (704) 235-2190 or Brian Wrenn (919) 733-5715. Thank you.



◊ North Carolina Wildlife Resources Commission ◊

Gordon Myers, Executive Director

MEMORANDUM

TO: Steve Brown, P.E., Project Planning Engineer
Project Development and Environmental Analysis, NCDOT

FROM: Travis Wilson, Highway Project Coordinator
Habitat Conservation Program

DATE: August 31, 2009

SUBJECT: Section 404/NEPA Merger 01 elevation issue brief for R-2501

- 1. Project Name and brief description:** TIP No.: R-2501, US 1, from Sandhill Road to Marston Road, Richmond County.
- 2. Last Concurrence Point:** CP 3 Least Environmentally Damaging Practicable Alternative (LEDPA).
Date of Concurrence: Date of Concurrence Point 3, February 15, 2001. A meeting was held on August 20, 2009 for concurrence points 2a and 4a.
- 3. Explain what is being proposed and your position including what you object to.** NCDOT requests concurrence on CP 2A Bridging Decision and CP 4A Avoidance and Minimization for 9 major wetland and stream crossings. WRC concurs with the NCDOT preferred recommendation at all sites with the exception of Structure #8 at the McDonalds Pond EEP mitigation site where NCDOT is proposing a 120-foot bridge. During the 11/12/08, field review meeting, WRC requested a longer bridge spanning the majority of the mitigation site to retain intactness throughout the conservation area once the highway project is constructed.
- 4. Explain the reasons for your potential non-concurrence. Please include any data or information that would substantiate and support your position.** R-2501 is a new location section of US 1; completion of this facility will bisect a constructed compensatory mitigation site. The mitigation site, known as the McDonalds Pond Restoration Site, provides both wetland and stream mitigation credits for EEP. This

system is comprised of restoration, enhancement, and preservation credits and in its fourth year of monitoring exhibits exceptional quality habitat, hydrology, and water quality functions at the impact location. Bisecting this area will not only directly impact jurisdictional resources within a protected conservation easement but will have farther reaching secondary impacts throughout the system. The majority of habitat at the crossing is comprised of a broad braided channel wetland/stream system with excellent micotopography providing a multitude of vegetated hummocks. Outside of the braided system elevation begins to rise rapidly, and although wetlands are present, upland characteristics are more dominant. After conducting a site visit as well as reviewing the surrounding landscape we recommended NCDOT construct a bridge spanning the lower elevation wetlands associated with the braided stream channels plus a minimal distance upslope (approximately 25 feet) to provide wildlife connectivity and permeability within this conservation easement and the Falling Creek watershed. WRC's recommendation of a 480 foot bridge would be the minimum bridge length to accomplish this.

5. **List any relevant laws or regulations that you believe would be violated or jeopardized if the proposed action were implemented and explain the basis for violation.** The mission of the North Carolina Wildlife Resources Commission is to protect, preserve, and manage the fish and wildlife resources of the state. The selection of a 480 foot bridge at this location would best conform to our mission.
6. **What alternative course of action do you recommend?** NCDOT should concur with the construction of the 480 foot bridge.

MEMORANDUM FOR: North Carolina Department of Transportation, Mr. Steve Brown, Project Planning Engineer, PDEA Branch

SUBJECT: Section 404/NEPA Merger 01 Elevation Issue Brief

1. Project Name and Brief Description: Action ID SAW-1995-00459, TIP- R-2501, US 1 from Sandhill Road (SR1971) to Marston Road (SR1001), Richmond County, NC.

2. Last Concurrence Point: CP 3, LEDPA; Date of Concurrence: 2001

3. Proposal and Position: At Structure 8, NCDOT proposes to build a 120 foot (ft) bridge and a 220 foot by 60 foot concrete pipe (wildlife crossing). DWQ, FWS, EPA and WRC (resource agencies) preferred a 480 foot bridge. I would have signed concurrence for the 480 ft bridge.

4. Reasons for Non-concurrence: Of the nine major stream crossings for this phase of US 1, the Merger Team agreed to culverts at seven and the FEMA minimum size bridge at another. In reference to the issues raised by the resource agencies in the attached Briefing Papers, I agree that the issues raised are valid and need to be considered in our decision. On November 2, 2005, a NWP 27 was issued by Mickey Sugg to impact 0.2 acres of wetlands for the purposes of restoring the 127.86 acre NC EEP mitigation site known as McDonald's Pond (SAW-2005-00233). The Conservation Easement was filed July 14, 2005 in Richmond County. The site has been partially debited but has 2,710 linear feet (lf) of Stream Restoration, 770 lf of Stream Enhancement, 5,800 lf of Stream Preservation, 15.96 acres (ac) of Riparian Restoration, 4.20 ac of Riparian Enhancement and 4.50 ac of Riparian Preservation still available. In March 2009, Ecoscience on behalf of NC EEP published the *2008 Monitoring Report (Year 3)*. Based on the information in the report, the site is meeting established success criteria. The McDonald's Pond site was reviewed by the Corps through the permit process and for compliance with the MOA/MOU as a whole without the encumbrance of a new road. Given the type and quality of the existing site, if a 120 ft bridge were to be approved, the validity and efficacy of the entire mitigation site would have to be evaluated by the Corps. The resource agencies indicate that based on the quality of the habitat, the limited development in the area and the existing Conservation Easement, they cannot support the 120 ft bridge proposed by NC DOT. I failed to concur based on the high quality of the site, the lack of effective comparative information between the two alternatives and that the site is currently under a Conservation Easement and actively being debited. Furthermore, the proposed crossing bisects the site near the mid portion and will alter the hydrologic pathways that have been established. Placing compacted roadfill in a restored braided scrub/shrub wetland with potential compressible muck/soil could have significant effects upon the mitigation site as a whole. Failure to require NC DOT to bridge the entire crossing will not only cause channelization of the restoration area and downstream waters, damage wildlife corridors, but may undermine the NC EEP program and its usefulness to applicants as an in-lieu-fee program.

Notwithstanding the impacts to the compensatory mitigation site and the issues that have been raised above, we also believe that NCDOT has failed to demonstrate that impacts to the high quality waters and wetlands that presently exist on the site have been avoided and minimized to the maximum extent practicable and thus the project may not be in compliance with the 404(b)(1) Guidelines.

Information requested:

- ◆ Comparative cost for the two bridges.
 - The cost information provided by NC DOT did not include cost for relocation of the existing utility line that would be required for the 120 ft bridge. The cost analysis should include the cost of protective measure that would be needed to assure that the utility line would not act as a sump that would artificially drain the mitigation site. Furthermore, the cost analysis should also include measure to prevent the utility line from “floating” out of the ground due to saturated conditions.
 - Neither cost included compensatory mitigation costs. The 120 ft bridge would require compensatory mitigation for direct, indirect, secondary and cumulative effects to WOUS, both for the project and the EEP site. In addition, higher ratios would be requested for the temporal loss, as the site is already in the ground and meeting success criteria.
- ◆ Qualitative and quantitative habitat data from the impact area and McDonald’s Pond site.

5. Potentially Violated Laws/Regulations: Section 404(b)(1) of the Clean Water Act.

6. Alternative Course of Action: NCDOT should agree to build a bridge that spans the entire crossing.

/s/
Kimberly Garvey
Regulatory Project Manager

SECTION 404/NEPA MERGER 01 ISSUE BRIEF: 9/3/09

Submitted by: Christopher A. Militscher, REM, CHMM
Merger Team Representative
USEPA Raleigh Office

Kathy Mathews, Life Scientist
USEPA Wetlands Section

THRU: Heinz J. Mueller, Chief
NEPA Program Office
USEPA Region 4

Thomas C. Welborn, Chief
Wetlands, Coastal Protection Branch
USEPA Region 4

To: Steve L. Brown, P.E., Project Planning Engineer
Planning Development and Environmental Analysis Branch
NCDOT

1. Project Name and Brief Description: TIP No.: R-2501, US 1, from Sandhill Road to Marston Road, Richmond County. Pipeline Merger project that includes 19.2 miles of widening and new location, multi-lane, median-divided facility.
2. Last Concurrence Point (signed): CP 3 Least Environmentally Damaging Practicable Alternative (LEDPA). Date of Concurrence Point 3 Meeting: **2/15/01**
3. Proposal and Position: NCDOT requests concurrence on CP 2A/4A, Bridging Decision and Alignment Review and Avoidance and Minimization for 9 major wetland and stream crossings. EPA concurs with 8 of the 9 major wetland and stream crossing recommendations ("NCDOT Preferred"). NCDOT is proposing a 120-foot bridge at Structure #8, Falling Creek (W37) at the McDonalds Pond EEP Restoration Site. During the 11/12/08, field review meeting, all of the resource and permitting agencies requested a longer bridge (Approximately 480 feet) to span the entire High Quality EEP enhancement and preservation site. The information concerning bridge costs and impacts that is contained in the August 20, 2009, meeting concurrence package does not appear to be accurate or complete.
4. Reasons for Non-concurrence: FHWA and NCDOT have not demonstrated appropriate avoidance and minimization to jurisdictional wetlands and streams consistent with Section 404(b)(1) of the Clean Water Act. Alternative 21 (the LEDPA) of the proposed new location project impacts approximately 5,627 linear feet of streams, 48.9 acres of wetlands, and 36.2 acres of jurisdictional ponds (based upon slope stakes + 10 feet). The information concerning bridge costs and impacts does not appear to be accurate or complete.

- A. Bridge costs between the 120-foot NCDOT preferred bridge and the 480-foot or 500-foot bridge preferred by USACE, NCDWQ, USFWS, NCWRC and EPA are not fully detailed. Total project costs for R-2501 have not been updated or provided to the Merger team.
- B. Mitigation costs between the two bridge lengths are not included in the concurrence meeting package.
- C. A vertical profile was provided for Structure 7 at South Fork Falling Creek but was not included for Structure 8 at McDonald's Pond EEP Mitigation Site (i.e., Wetland #37, Falling Creek).
- D. There was no legend, scale, or north arrow shown on the figure entitled "R-2501 Structure 8 Falling Creek/McDonald's Pond Restoration Site". From this design figure, it appears that the dual 2-lane, 480-foot bridges are separated by an approximate 65-foot median. There is no discussion concerning the need to separate these dual bridges by 65 feet and thereby causing greater wetland fill impacts.
- E. Similarly, this figure depicting the USACE suggested northern alignment and 525-foot dual bridges shows a distance between the two bridges of approximately 65 feet. There is no information in the concurrence meeting package that explains the need for the dual bridges to be spaced this far apart (i.e., Constructability issues).
- F. As identified during the field meeting and as subsequently questioned by USACE's Tom Steffens, a 120-foot bridge at Structure 8 would not span the existing sewer easement pipe. The fill slope lines shown in this figure would appear to cover more than 250 feet of the sewer line (EPA calculates that the Right of Way – ROW is approximately 290 feet according to this design figure).
- G. EPA and USACE's Steffens estimate that between 10 to 20 feet of fill would cover the sewer pipe and several maintenance access ports and would eventually require relocation in the existing EEP mitigation site. This potential additional direct impact to jurisdictional wetlands is neither discussed nor detailed in the concurrence package.
- H. NCWAM was performed on Structure 7 South Fork Falling Creek (a larger wetland site) but not on Structure 8 McDonald's Pond EEP Mitigation Site.
- I. There appears to be multiple 'fill slope lines' (dashed f-lines) on this figure with no explanation for the different lines.
- J. As with Structure 4 at Watery Branch, NCDOT has mischaracterized EPA's request to reduce the median width through jurisdictional wetlands. NCDOT cites that the median is to be reduced to 46 feet for minimization purposes. EPA does not believe that this standard median width for a 4-lane facility is demonstrating minimization or avoidance.
- K. The bridge costs are confusing and not consistent: The difference between a 450-foot bridge (NCDOT preferred that meets the FEMA requirements) and the 830-foot bridge (Agency preferred) or **380 feet** at Structure 7 is **\$2,376,000**. The cost difference at Structure 8 between a 120-foot bridge (NCDOT preferred) and 480-foot bridge (Agency preferred) or **360 feet** is $\$4,267,000 - \$1,147,000 =$ **\$3,120,000**. The differences have not been adequately explained or documented.

The Merger concurrence package does not detail the uniqueness and very high quality nature of the McDonalds Pond EEP Mitigation Site. This site has been characterized by other agencies as being exceptional quality, especially as it relates to wildlife habitat. NCDOT has not fully examined the indirect impact of constricting this braided stream, vegetated hummock system with a 120-foot bridge. NCDOT has not formally acknowledged that a 480-foot Structure 8 would no longer necessitate the construction of a wildlife passage at Falling Creek (220 feet by 60-inch concrete pipe): \$40,000. NCDOT has not proposed reasonable avoidance and minimization measures for the R-2501 new location project (e.g., Reduced median widths, restricted distances between dual bridges, reduced shoulders widths, steeper side slopes, bridging high quality wetland systems, horizontal alignment shifts, etc.).

5. Potentially Violated Laws/Regulations: Section 404(b)(1) of the Clean Water Act.

6. Alternative Course of Action: NCDOT needs to provide full and accurate information to the Merger team and NCDOT and FHWA should concur with USACE, NCDWQ, USFWS, NCWRC and EPA on a 480-foot structure at the McDonalds Pond EEP Mitigation Site.

Section 404/NEPA Merger 01 Issue Brief – August 24, 2009

Submitted by: Gary Jordan, USFWS

1. **Project Name and brief description:** R-2501, US 1 from Sandhill Rd. (SR 1971) to Marston Rd. (SR 1001), Richmond County
2. **Last Concurrence Point and Date:** CP 3 on February 15, 2001
CP 2A/4A meeting held on August 20, 2009 but no concurrence reached
3. **Explain what is being proposed and your position including what you object to.**

Of nine major stream crossings, NCDOT proposes culverts at seven. The USFWS concurs with the seven culverts. For Structure 7, NCDOT proposes a 450' bridge over South Prong Falling Creek. The USFWS concurs with the 450' bridge. However, for Structure 8, NCDOT proposes a 120' bridge over Falling Creek at the McDonalds Pond Restoration Site. The USFWS does not concur with a 120' bridge for Structure 8, but prefers the 480' bridge option.

4. **Explain the reasons for your potential non-concurrence. Please include any data or information that would substantiate and support your position.**

The R-2501 preferred alternative bisects the EEP site known as McDonalds Pond Restoration Site. The site is a combination of restoration, enhancement and preservation of both stream and wetlands. It is in its fourth year of monitoring, and has been shown to be an exemplary site. The road alignment bisects the site within portions of the wetland enhancement and preservation areas. Structure 8 lies within a wetland enhancement area.

Structure 8 would be constructed within an exceptional quality wetland system that is characterized by a highly braided stream system. The wetlands are excellent wildlife habitat with great diversity in micro-topography, being characterized by many vegetated hummocks. The highly braided channel system is key to the high quality of the wetland system. The braided system is approximately 500' wide where the road will bisect. If a mere 120' bridge is placed in this location with causeway filling the remainder, the 500' wide braided system through this high quality wetland would likely be necked down to a single deeper channel, thus significantly impacting the character and quality of this exceptional wetland system.

NCDOT opposes a 480' bridge at this location because it believes that an increased cost of approximately 3 million dollars is unreasonable to save an additional 2.3 acres of wetlands (4.45 acres of wetland impact with a 120' bridge as opposed to 2.15 acres with a 480' bridge). However, these are only the direct and jurisdictional impacts. Necking a 500' wide braided channel wetland system down to 120' will most likely cause many indirect and/or secondary wetland effects downstream and possibly upstream of the bridge. Though these indirect or secondary wetland impacts are not jurisdictional, they are real nonetheless. Constructing a 480' bridge will help maintain the high quality of the wetlands that lie outside of the project footprint.

5. List any relevant laws or regulations that you believe would be violated or jeopardized if the proposed action were implemented and explain the basis for violation.

The USFWS believes that Section 404(b)(1) of the Clean Water Act would be violated if NCDOT does not further minimize impacts to the high quality wetland system and braided stream system at Structure 8.

The Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-667d) provides the basic authority for the USFWS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It also requires Federal agencies that construct, license or permit (e.g. Section 404) water resource development projects to first consult with the Service and State fish and wildlife agencies regarding the impacts on fish and wildlife resources and measures to mitigate these impacts. Specifically, the USFWS provides comments and recommendations to the U.S. Army Corps of Engineers for the issuance of Section 404 Clean Water Act permits.

6. What alternative course of action do you recommend?

NCDOT should concur with the resource agencies on the Merger Team to construct a 480' bridge for Structure 8. An additional benefit to constructing the longer bridge is that the 220' x 60" concrete pipe located near Structure 8 would no longer be necessary.

Merger 01 Process

Issue Briefing Format (Felix Davila - 9/22/09)

1. Project name and brief description: US-1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606), Richmond County, Federal-Aid Project No. NHF-1(1), TIP No. R-2501, State Project No. 8T580501.

2. Last Concurrence Point Achieved: CP 3 (LEDPA)

- **2/15/01** – Reached CP 3 Concurrence

Concurrence Point Meetings Dates: CP 2A/ 4A

- **09/18/08** – Team met and agree that they needed a field visit
- **11/12/08** – Team Field Meeting agreed on structure type and length at seven (7) of the nine (9) sites. Additional information and/or discussion were requested for Structure 7(South Prong Falling Creek)(W-26) & Structure 8 (Falling Creek)(W37).
- **08/20/09** – Concurrence Point 2A/4A Meeting attended by Ron Lucas in place of Felix Davila Concurrence on Structure 7 was agreed. Concurrence not reached in Structure 8. It was agreed to elevate issue.

3. Proposal and Position:

- Structure 8 crosses the EEP's Mc Donald's Pond Restoration Site (W37). During the November 2008 field meeting, resource agency representatives preferred bridges that would span the braided stream system, sewer easement, and allow wildlife passage. At the 11/12/08 field meeting resource agencies suggested to NCDOT to investigate moving the alignment to the north.
- NCDOT investigated shifting the alignment to the north and presented the information on the 08/20/09 meeting. NCDOT found that there is not an advantage to the wetland system in shifting the alignment north since it would impact other wetland systems outside the EEP area. NCDOT proposes a 120 foot bridge length with 36 inch equilibrium pipes on each side of the stream crossing for wetland connectivity. A 60 inch pipe is also proposed for upland wildlife passage at this site.
- Because of the high quality of this wetland system, the agency representatives do not support a 120 foot bridge across the system. Several expressed concerns that a shorter bridge would change the braiding of the stream system and have indirect and cumulative impacts upstream and downstream.
- The Merger team did not concur with the proposed bridge length of 120 foot at this site. NCDOT and FHWA(represented by Ron Lucas at the meeting) do not agree with spending the additional money to span the system.

4. Reasons for non-Concurrence:

- NCDOT and FHWA (represented by Ron Lucas at the meeting) do not agree with spending the additional money to span the system. Particularly Ron Lucas (personal communication) commented, he did not hear any compelling reason at the 8/20/09 meeting to justify, that it was a reasonable public expenditure to increase the bridge length to either 450 or 560 foot bridge

5. List any relevant laws or regulations that you believe would be violated or jeopardized if the proposed action were implemented and explain the basis for violation.

- FHWA (as the sole federal funding Agency) and NCDOT have authority under 23 CFR 775(a) & (b) to make determinations of what represents a reasonable public expenditure when weighed against other social, economic, and environmental values, and the benefit realized is commensurate with the proposed expenditure. Copy of the relevant portion of the law or regulation is attached.

6. What alternative course of action do you recommend?

FHWA supports the selection of the proposed bridge length of 120 foot at this site and have determined it is a reasonable expenditure of public funds. We believe, FHWA (as the sole federal funding Agency) and NCDOT (as the sole state funding agency) have sole authority of determining what is a reasonable expenditure of public funds, to minimize environmental impacts. So after considering any new and compelling argument to be presented at the elevation meeting FHWA and NCDOT will make a determination of what is a reasonable expenditure of public funds to minimize environmental impacts at the EEP's Mc Donald's Pond Restoration Site (W37).

7. Attachment: 23 CFR 775(a) & (b)

§ 777.5 Federal participation.

(a) Those measures which the FHWA and a State DOT find appropriate and necessary to mitigate adverse environmental impacts to wetlands and natural habitats are eligible for Federal participation where the impacts are the result of projects funded pursuant to title 23, U.S. Code. The justification for the cost of proposed mitigation measures should be considered in the same context as any other public expenditure; that is, the proposed mitigation represents a reasonable public expenditure when weighed against other social, economic, and environmental values, and the benefit realized is commensurate with the proposed expenditure. Mitigation measures shall give like consideration to traffic needs, safety, durability, and economy of maintenance of the highway.

(b) It is FHWA policy to permit, consistent with the limits set forth in this part, the expenditure of title 23, U.S. Code, funds for activities required for the planning, design, construction, monitoring, and establishment of wetlands and natural habitat mitigation projects, and acquisition of land or interests therein.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

September 24, 2009

EUGENE A. CONTI, JR.
SECRETARY

MEMORANDUM TO: Meeting Participants

Kim Garvey, USACE
Gary Jordan, USFWS
Kathy Matthews, EPA
Ron Lucas, FHWA
Travis Wilson, NCWRC
Chris Militscher, EPA
Polly Lespinasse, NCDWQ
Janet Robertson, Lumber River RPO
Deanna Riffey, NCDOT-PD&EA, NEU
John Olinger, NCDOT-Division 8
Art King, NCDOT-Division 8
Deanna Riffey, NCDOT-PD&EA, NEU

Leilani Paugh, NCDOT-PD&EA, NEU
Ashley Cox, NCDOT-PD&EA, NEU
Elizabeth Lusk, NCDOT-PD&EA, NEU
Dennis Herman, NCDOT-PDEA, NEU
Andrew Nottingham, NCDOT-Hydraulics
Mark Staley, NCDOT-Roadside Envir.
Roger Thomas, NCDOT-Roadway Design
Derrick Weaver, NCDOT-PDEA
Eric Midkiff, NCDOT-PDEA
Paul Petitgout, ESI
Mark Reep, Ko & Associates, P.C.

FROM: Steve Brown, PE
Project Development and Environmental Analysis Branch

SUBJECT: Summary of August 20, 2009 Merger Team Meeting for R-2501

US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, WBS No. 34437.1.1, T.I.P. No. R-2501.

An R-2501 Concurrence Point 2A/ 4A meeting was held August 20, 2009. This followed a November 12, 2008 field review where merger team members requested additional information for the following areas:

- Structure 7 – South Prong Falling Creek (W26)
- Structure 8 - Falling Creek (W37) at McDonalds Pond Restoration Site
- Potential Wildlife Crossings – From Wiregrass Road (SR 1640) to Fox Road (SR 1606)

This information is described in detail in the information package provided prior to the meeting. The following is a summary of issues discussed during the meeting.

- Merger team members confirmed their agreement with culverts proposed at seven of nine major stream crossings (Structures 1, 2, 3, 4, 5, 6, and 9). Bridges are proposed at Structures 7 and 8.

Structure 7 – South Prong Falling Creek (W26)

- During the November 2008 field review, NCDOT proposed 245 foot bridges for the minimum hydraulic opening. Agency representatives requested 830 foot bridges to span more of the wetland system. After the field review, NCDOT conducted additional hydraulic modeling and determined that 450 foot bridges are needed to meet FEMA floodway requirements. NCDOT proposes 450 foot bridges at this crossing. Equalizer pipes are also proposed on each side of the bridge to maintain connectivity within the wetland system.
- Using the NC Wetland Assessment Method, the main stem of the system receives a high quality classification as a riverine swamp forest. The secondary stem also receives a high rating as a bottomland hardwood wetland but is not as hydraulically important to the main stem. Potential mitigation may be provided along properties between US 74 Business and the wetland system. The proposed interchange design at US 74 Business will require full control of access from a number of properties on the southwest side, that join the wetland system. NCDOT will pursue these areas for on-site mitigation.
- Several team members noted that the maturity of the vegetation in the wetland system adds to the system's importance. Chris Militscher, of EPA, noted that the bridge placement should be considered so that it spans as much of the system as possible. Polly Lespinasse, of NCDWQ, prefers 560 foot bridges to span the system. A longer bridge will require moving the low point in the roadway off the bridge and closer to US 74. This will likely raise the roadway grade, offsetting the benefits of wetland reduction. Representatives from EPA, NCWRC, USFWS, FHWA, and COE agreed with 450 foot bridges at this site with equalizer pipes and on-site mitigation. **After further discussion, all team members agreed with NCDOT's recommendation of 450 foot bridges with equalizer pipes and on-site mitigation.**

Structure 8 - Falling Creek (W37) at McDonalds Pond Restoration Site

- Structure 8 crosses the EEP's McDonalds Pond Restoration Site. During the November 2008 field meeting, resource agency representatives preferred bridges that would span the braided stream system, sewer easement, and allow wildlife passage. Approximately 25 feet of dry ground is preferred by NCWRC and USFWS for wildlife passage at this location.
- There is not an advantage to the wetland system in shifting the alignment north since it would impact other wetland systems outside the EEP area. NCDOT proposes the 120 foot bridge length with 36 inch equilibrium pipes on each side of the stream crossing for wetland connectivity. A 60 inch pipe is also proposed for upland wildlife passage at this site.
- Because of the high quality of this wetland system, the agency representatives do not support a 120 foot bridge across the system. Several expressed concerns that a shorter bridge would change the braiding of the stream system and have indirect and cumulative impacts upstream and downstream. Several agency representatives indicated that the 480 foot bridge evaluated and presented as an alternative for this crossing is the minimum bridge length that they would consider concurring with at this crossing.

- **The merger team did not concur with a bridge length at this site. NCDOT does not agree with spending the additional money to span the system and elected to elevate the decision to the Merger Management Team.** Agency representatives were requested to submit briefs in writing to Steve Brown, of NCDOT, by September 3, 2009. Steve will forward this information to the Merger Management Team. The project is on the agenda for the October 15, 2009 Merger Management Team meeting.

Potential Wildlife Crossings – From Wiregrass Road (SR 1640) to Fox Road (SR 1606)

- At Area 1, east of County Home Road, NCDOT does not recommend a structure for wildlife passage due to the limited fill and lack of protection from timber removal or development. At Area 2, near Falling Creek, NCDOT proposes a 60 inch pipe to be included near the proposed bridge for use as an upland wildlife corridor within the EEP conservation easement. At Area 3, northeast of Falling Creek, NCDOT proposes a 10 foot x 11 foot box culvert for wildlife passage.
- **At Areas 1 and 3, USFWS and NCWRC agree with NCDOT's recommendations.** At Area 2, these agencies prefer wildlife passage to be accommodated by a longer bridge within the McDonalds Pond Restoration Site. **Area 2 wildlife provisions will be reviewed as part of the structure recommendations for Structure 8 at Falling Creek.**

CORRECTIONS & OMISSIONS: This summary is the writer's interpretation of the events, discussions, and transactions that took place during the meeting. If there are any additions and/or corrections please inform the writer in writing within seven (7) days.

SLB/mlr



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

July 30, 2009

EUGENE A. CONTI, JR.
SECRETARY

MEMORANDUM TO: Meeting Participants

Richard Spencer, USACE
Kim Garvey, USACE
Gary Jordan, USFWS
Kathy Matthews, EPA
Felix Davila, FHWA
Travis Wilson, NCWRC
Chris Militscher, EPA
Renee Gledhill-Earley, HPO
Polly Lespinasse, NCDWQ
Janet Robertson, Lumber River RPO
Deanna Riffey, NCDOT-PDEA, NEU
Leilani Paugh, NCDOT-PDEA, NEU
John Olinger, NCDOT-Division 8
Drew Joyner, NCDOT-PDEA, HEU
Andrew Nottingham, NCDOT-Hydraulics
Steve Gurganus, NCDOT-PDEA, HEU

David Harris, NCDOT-Roadside Envir.
John Frye, NCDOT-Structures
Roger Thomas, NCDOT-Roadway Design
Derrick Weaver, NCDOT-PDEA
Robert Memory, NCDOT, Utilities
Doumit Ishak, NCDOT, TPB
Eric Midkiff, NCDOT-PDEA
Anne Burroughs, NCDOT-PDEA, NEU
Dennis Herman, NCDOT-PDEA, NEU
Mike Stanley, NCDOT, TIP
Brian Robinson, NCDOT-Roadway Design
Sterling Ragland, NCDOT-Roadway Design
Paul Petitgout, ESI
Mark Reep, Ko & Associates, P.C.
Brian Wiles, Ko & Associates, P.C.

FROM: Steve Brown, PE
Project Development and Environmental Analysis Branch

SUBJECT: Concurrence Point 2A/ 4A Meeting

US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, WBS No. 34437.1.1, T.I.P. No. R-2501.

Attached is the meeting information package for the R-2501 Concurrence Point 2A/ 4A meeting scheduled for August 20, 2009. This package responds to additional information requested during the November 12, 2008 field review meeting. A summary of the field review is included in the package for your review. Please refer to the package of information provide to merger team members at the first CP 2A/4A meeting held on September 18, 2008 for background and complete CP 2A/4A information.

If you have questions or need other information, please contact me at slbrown@ncdot.gov (919-733-7844, ext. 235). We look forward to seeing you on August 20.

SLB/mlr

US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606)
 Richmond County, T.I.P. No. R-2501
 August 20, 2009 Concurrence Pt. 2A/ 4A Meeting

Meeting Purpose

This meeting is to discuss the US 1 Bypass structure recommendations for concurrence on CP 2A/ 4A (Bridging Decisions/ Avoidance and Minimization).

Background

The Final EIS is in progress. A 9/18/08 Concurrence Point 2A / 4A merger team meeting and 11/12/08 field review were held. The resource agencies asked for additional bridging and impact information prior to reaching concurrence. Wildlife passage considerations were also requested.

Of nine major stream crossings, the merger team agrees with culverts at seven. Bridges have been considered at Structures 7 and 8, and the agencies prefer long bridges across the wetland systems. Additional information was requested for the following areas:

- Structure 7 – South Prong Falling Creek (W26)
- Structure 8 - Falling Creek (W37) at McDonalds Pond Restoration Site
- Potential Wildlife Crossings – From Wiregrass Road (SR 1640) to Fox Road (SR 1606)

Structure 7 – South Prong Falling Creek (W26)

Six bridge lengths were examined (245 feet, 450 feet, 560 feet, 830 feet, 1100 feet, and 2,360 feet). Costs include bridging a railroad on one side and US 74 Business on the other. Wetland impacts were recalculated using 3:1 construction slopes. The 245 foot bridges provide the minimum hydraulic opening, but have been determined not to meet FEMA floodway requirements. Based on more detailed hydraulic modeling, 450 foot bridges span more of the floodway and meet FEMA floodway requirements. The agencies prefer 830 foot bridges (\$2.3 million more than the minimum length to avoid 3.5 acres of wetlands). **NCDOT proposes 450 foot bridges that would meet FEMA floodway requirements.** Bridge Comparisons are as follows:

Bridge Option	Cost	Wetland Impact (acres) (3:1 slopes)
245' – Minimum Hydraulic Opening (Eliminated due to FEMA floodway impacts)	\$12,292,800	9.60
450' - NCDOT Preferred (meets FEMA requirements)	\$14,165,000	7.60
560' - Spans Floodway	\$14,679,000	6.60
830' - Agency Preferred	\$16,541,000	4.10
1,100' - Maximum Between Other 2 Bridges	\$18,403,000	2.00
2,360' – Spans Railroad, Wetlands & US 74 Bus.	\$22,889,500	0.00

The wetlands in the area of this crossing were re-evaluated based on updated criteria by NCDOT. Results of the analysis will be discussed at this meeting. Additionally, analysis of the surrounding properties indicates that there is potential for wetland mitigation in

the immediate area of this crossing. Wetland mitigation will be pursued in this area by NCDOT.

Structure 8 - Falling Creek (W37) at McDonalds Pond Restoration Site

The Ecosystem Enhancement Program (EEP) constructed the McDonalds Pond Restoration Site in the project corridor in 2005, and it is in its third year of monitoring. Approximately 3.5 acres of wetland restoration and 14.5 acres of preservation have been debited. The proposed alignment crosses the wetland enhancement and wetland preservation areas. Richard Spencer, of the USACOE, requested information for shifting the bypass north across a narrower part of wetland W37 (in the wetland restoration area). He requested bridging the braided stream system. NCWRC & USFWS also mentioned wildlife passage benefits. Preference for bridges that would at least span the braided stream system (using approximately 500 foot long bridges) within the EEP restoration site has been expressed in the field by resource agencies.

There is not an advantage to the wetland system in shifting the alignment north. Additionally, this alignment would impact other wetland systems outside the EEP area. **NCDOT proposes the 120 foot bridge length.** A 36" equilibrium pipe is proposed on each side of the stream crossing for wetland connectivity. Wetland impacts were recalculated using 3:1 construction slopes. Bridge Comparisons are as follows:

Structure Option	Cost	Wetland Impact (acres) (3:1 slopes)
220' x 10' x 8' (2) Box Culvert	\$772,000	4.85
120' Bridges (NCDOT Preferred)	\$1,147,000	4.45
480' Bridges	\$4,267,000	2.15
550' Bridges	\$4,879,000	1.75
525' Bridges – Northern Realignment	\$4,660,000	2.00

A southward alignment shift of approximately 100 feet was considered to further reduce wetland impacts by approximately 0.3 acre. However it is not recommended since it would move the alignment outside of the project corridor where all environmental resources may not have been fully evaluated.

Potential Wildlife Crossings – From Wiregrass Road (SR 1640) to Fox Road (SR 1606)

NCWRC and USFWS requested wildlife passage structures to help reduce isolation, inbreeding, or decline in animal populations. Elliptical pipes were requested for wildlife crossings at two locations between Wiregrass Road (SR 1640) and Fox Road (SR 1606) (Areas 1 and 3). Bridges at Falling Creek would also allow wildlife passage.

At Area 1, east of County Home Road, a 60" x 220' pipe was considered for potential wildlife passage. A grade change would be required in this location to include a pipe crossing. NCDOT environmental specialists do not believe this is the best location for

wildlife passage due to the limited fill. There is also no protection from timber removal or development. **NCDOT does not propose a wildlife crossing at Area 1.**

At Area 2, near Falling Creek, NCDOT environmental specialists agree that wildlife passage would be beneficial. **NCDOT proposes a 60" pipe to be included near the proposed bridge for use as an upland wildlife corridor within the EEP conservation easement.**

At Area 3, northeast of Falling Creek, a 10' x 11' x 230' long box culvert has been considered for wildlife passage. An arch culvert requires a bedrock footing and is not suitable for this area. NCDOT environmental specialists agree with a crossing in this location. **NCDOT proposes a box culvert at Area 3.**

Crossing Option	Cost	Location
220' x 60" Concrete Pipe (Not Recommended)	\$40,000	Area 1 East of Wiregrass Rd
120' Bridges (NCDOT Preferred) Plus a 220' x 60" Concrete Pipe	\$1,147,000 \$ 40,000	Area 2 Falling Creek
230' x 10' x 11' Box Culvert (NCDOT Preferred)	\$375,000	Area 3 East of E.V. Hogan Rd.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

July 30, 2009

EUGENE A. CONTI, JR.
SECRETARY

MEMORANDUM TO: Meeting Participants

Richard Spencer, USACE
Gary Jordan, USFWS
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Sterling Ragland, NCDOT-Roadway Design
Tim Gardiner, NCDOT-PDEA, HEU
Paul Petitgout, ESI
Mark Reep, Ko & Associates, P.C.
Brian Wiles, Ko & Associates, P.C.

FROM: Steve Brown, PE
Project Development and Environmental Analysis Branch

SUBJECT: Summary of November 12, 2008 Field Review for R-2501

US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, WBS No. 34437.1.1, T.I.P. No. R-2501.

An R-2501 Concurrence Point 2A/ 4A field review was held November 12, 2008. Meeting participants met at Rockingham Speedway before traveling to the project site. The following proposed structure locations were visited.

- Structure 3 – UT to Speeds Creek (Pond P1)
- Structure 4 – Watery Branch (Wetland W14)
- Structure 7 – South Prong Falling Creek (W26)
- Structure 9 – Chock Creek (S20, P9, W49, W50)
- Structure 8 - Falling Creek (W37) and potential wildlife crossings

The following is a summary of issues discussed during the field review.

Structure 3 – UT to Speeds Creek (Pond P1)

- A culvert is acceptable.
- Chris Militscher asked for restoration to be considered upstream of the pond.
- Richard Spencer commented that NCDOT confirm the historic determination at the former mill site on this property. The area of potential effects for historic and archaeological resources approximates the corridor boundary for the preferred alternative. In 2001, an archaeological survey identified four non-significant prehistoric sites in the vicinity of the pond. In December 2007, the farm 1000 feet east of Speeds Creek was investigated and determined not eligible for the National Register. This former mill site is located to the north side of the pond and is outside of the area of potential effects.

Structure 4 – Watery Branch (Wetland W14)

- A culvert is acceptable along with the use of 3:1 construction slopes.
- The median is to be reduced to 46 feet for minimization.

Structure 5 – Solomons Creek (Stream S10, W21)

- This site was not visited since the landowner did not respond to a previous request for property access.
- Chris Militscher questioned the magnitude of the US 74 Bypass/ US 1 Bypass interchange and asked for information comparing the original design cost and impact with the current design.
- He also asked for consideration of further minimizing the interchange footprint. He cited a Design-Build interchange revision at US 311 and US 220 (R-2606B); however, John Olinger commented that the redesign was allowed due to low traffic volumes for a particular travel movement.

Structure 7 – South Prong Falling Creek (W26)

- Costs and wetland impacts were reviewed for 245', 560', 830', and 1100' dual bridges. The agency representatives requested the 830' bridges (\$4.2 million more than the minimum bridge to avoid 4.4 acres of wetlands).
- Bridge design, cost, and constructability information will be provided to the Division 8 and Highway Design management before agreeing to a bridge length. Follow-up information will be provided to the agencies.

Structure 8 - Falling Creek (W37)

- The Ecosystem Enhancement Program (EEP) constructed the McDonalds Pond Restoration Site in the project corridor around 2005, and it is in its third year of monitoring. The proposed alignment crosses through the wetland enhancement area and wetland preservation area of this conservation easement. Approximately 3.5 acres of wetland restoration and 14.5 acres of preservation have been debited from the site, but this debited portion is relatively small portion of the total credits available.
- Richard Spencer requested information for shifting bypass a few hundred feet north across a narrower part of wetland W37 (in the wetland restoration area), and bridging the braided stream system. This may result in a shorter bridge. If the alignment shift is not acceptable, then he requested bridging the braided system using the proposed alignment. Ko & Associates requested mapping from PBS&J showing the stream system within the McDonalds Pond site.
- Travis Wilson and Gary Jordan requested a bridge of sufficient length to allow wildlife passage outside of the sewer easement on one side and the outer stream channel on the

other side. This would allow transportation access to the sewer line to be outside of the wildlife passage area.

Structure 9 – Chock Creek (S20, P9, W49, W50)

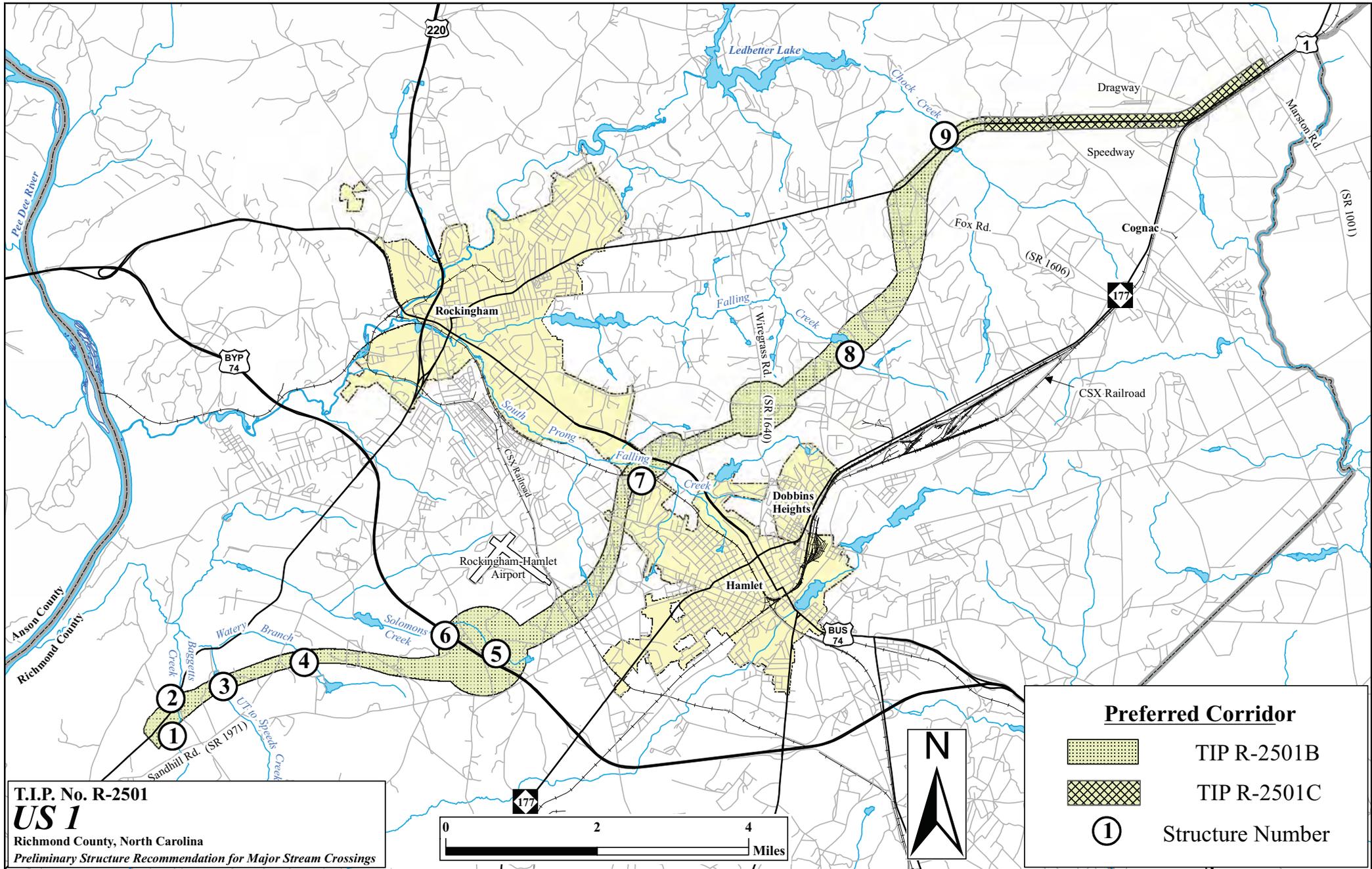
- A culvert is acceptable according to the proposed design.

Wildlife crossing areas

- Travis Wilson and Gary Jordan requested elliptical pipes for wildlife passage at the potential crossing areas 1 and 3 between County Home Road and Fox Road.
- Crossing 1, near Richmond Primary School, can be a smaller pipe with approximate dimensions of 4 x 5 feet, with extended headwalls, a median junction box to allow light, and substrate.
- Crossing 3 near Standridge Place is in a higher fill section, and they requested the largest reasonable size pipe with substrate (10 feet or more) that may allow deer passage. This could be located in a way to combine drainage with wildlife passage. They requested consideration of aluminum box culverts if possible.

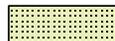
CORRECTIONS & OMISSIONS: This summary is the writer's interpretation of the events, discussions, and transactions that took place during the meeting. If there are any additions and/or corrections please inform the writer in writing within seven (7) days.

SLB/mlr

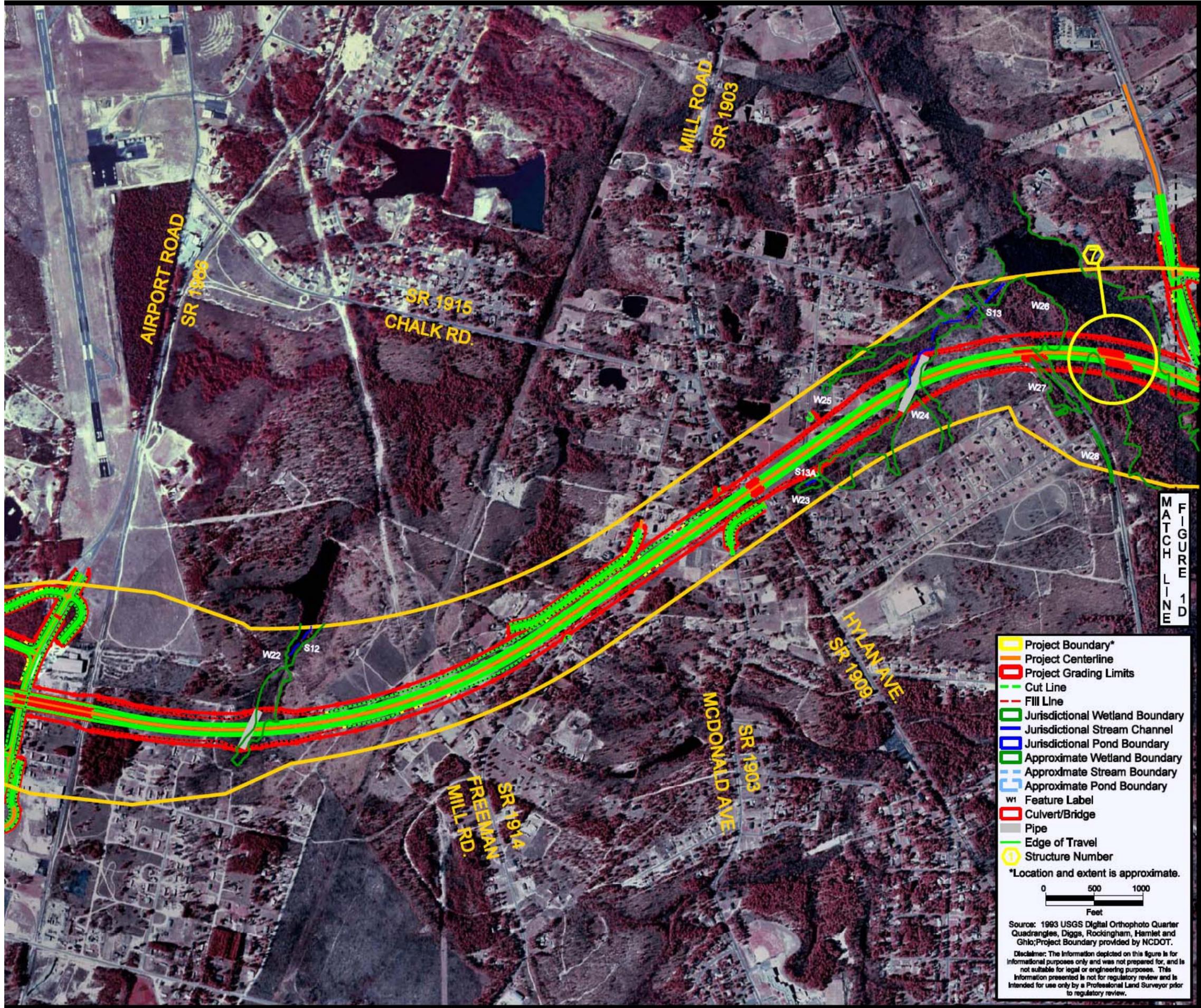


T.I.P. No. R-2501
US 1
 Richmond County, North Carolina
 Preliminary Structure Recommendation for Major Stream Crossings

Preferred Corridor

-  TIP R-2501B
-  TIP R-2501C
-  Structure Number





Project: ET06021.00
 Date: Aug 2008
 Drwn/Chkd: EW/PP
 Figure: 1C

General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
 Richmond County, North Carolina
 T.I.P. No. R-2501

ENVIRONMENTAL SERVICES, INC.
 524 S. New Hope Road
 Raleigh, North Carolina 27610
 (919) 212-1760
 (919) 212-1707 FAX
 www.environmentalservicesinc.com

M A T C H L I N E

- ▬ Project Boundary*
- ▬ Project Centerline
- ▬ Project Grading Limits
- ▬ Cut Line
- ▬ Fill Line
- Jurisdictional Wetland Boundary
- Jurisdictional Stream Channel
- Jurisdictional Pond Boundary
- Approximate Wetland Boundary
- Approximate Stream Boundary
- Approximate Pond Boundary
- w Feature Label
- Culvert/Bridge
- Pipe
- ▬ Edge of Travel
- Structure Number

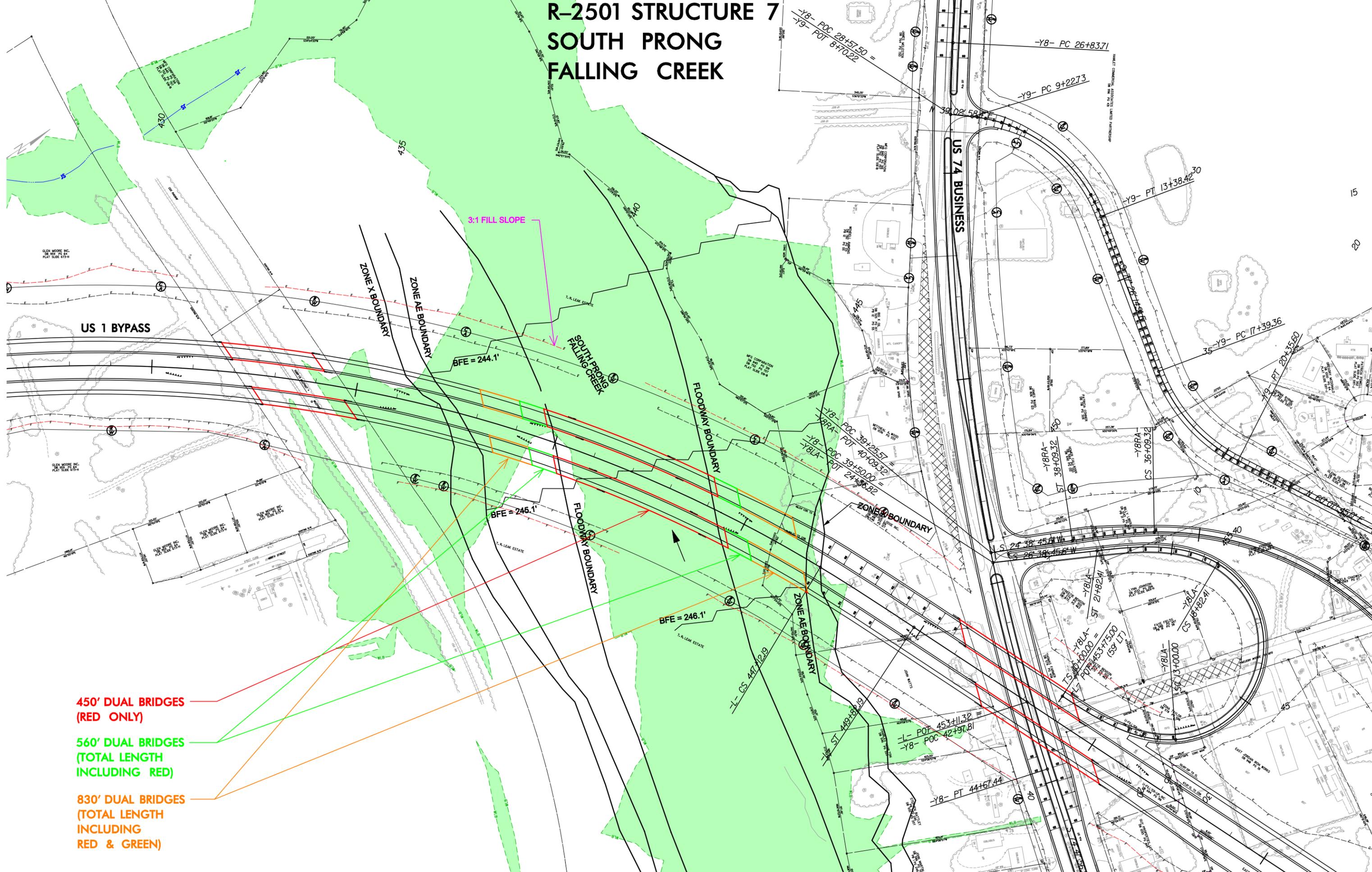
*Location and extent is approximate.

0 500 1000
Feet

Source: 1993 USGS Digital Orthophoto Quarter
 Quadrangles, Diggs, Rockingham, Hamlet and
 Ghio; Project Boundary provided by NCDOT.

Disclaimer: The information depicted on this figure is for
 informational purposes only and was not prepared for, and is
 not suitable for legal or engineering purposes. This
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 to regulatory review.

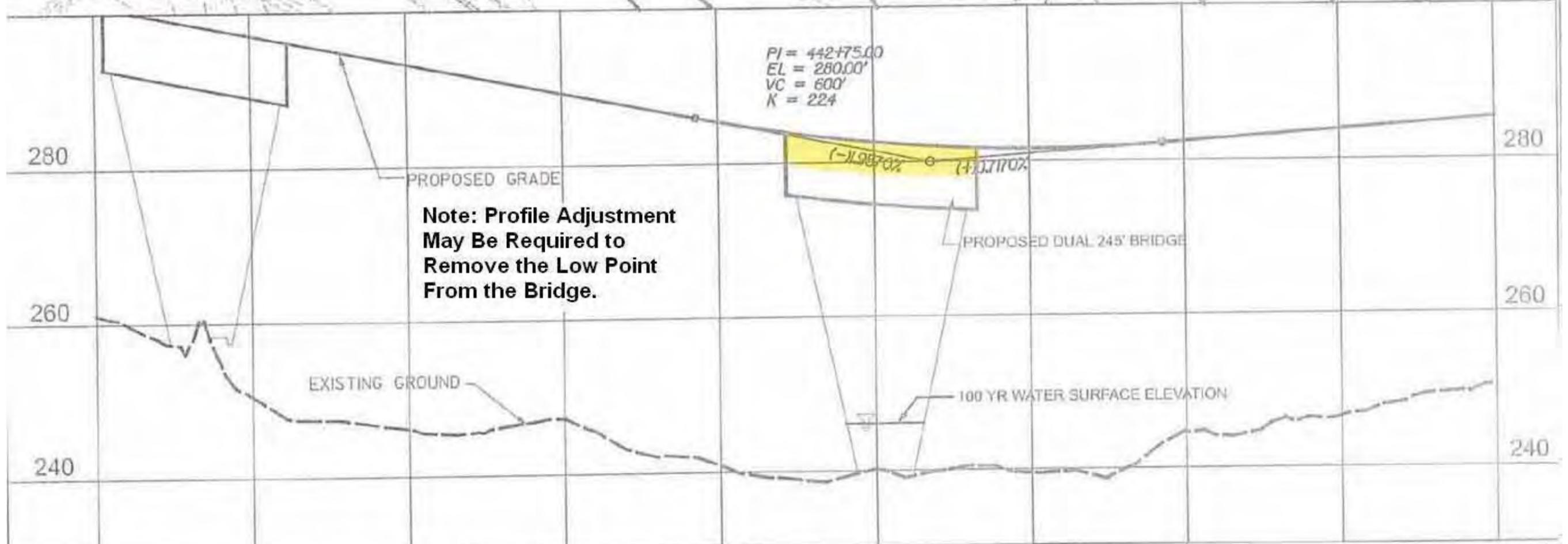
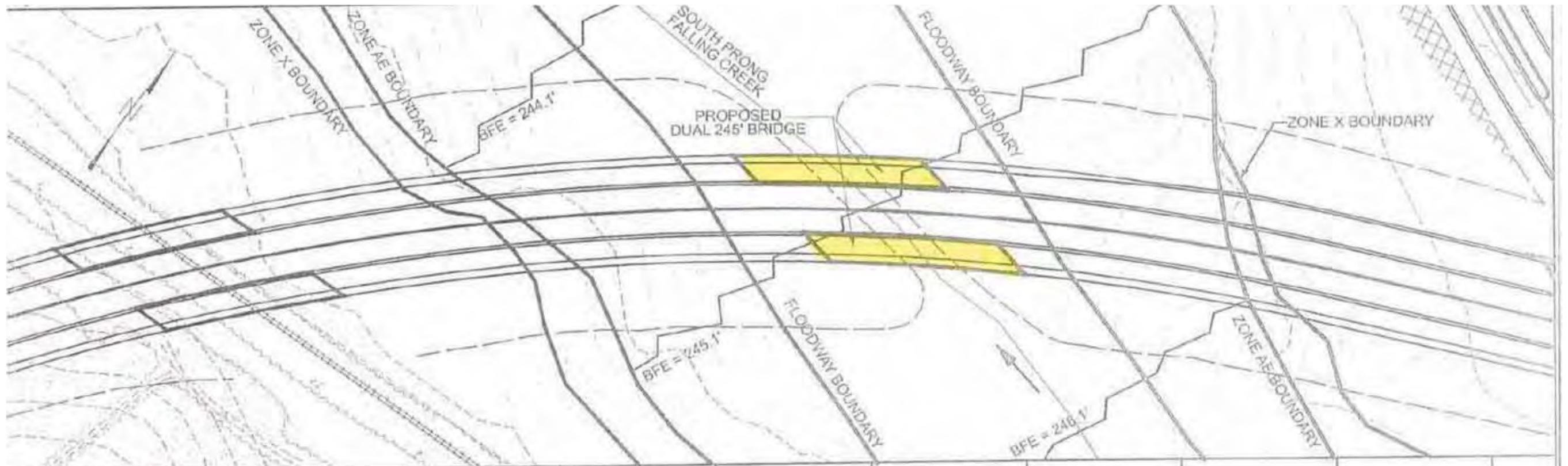
R-2501 STRUCTURE 7 SOUTH PRONG FALLING CREEK



450' DUAL BRIDGES
(RED ONLY)

560' DUAL BRIDGES
(TOTAL LENGTH
INCLUDING RED)

830' DUAL BRIDGES
(TOTAL LENGTH
INCLUDING
RED & GREEN)

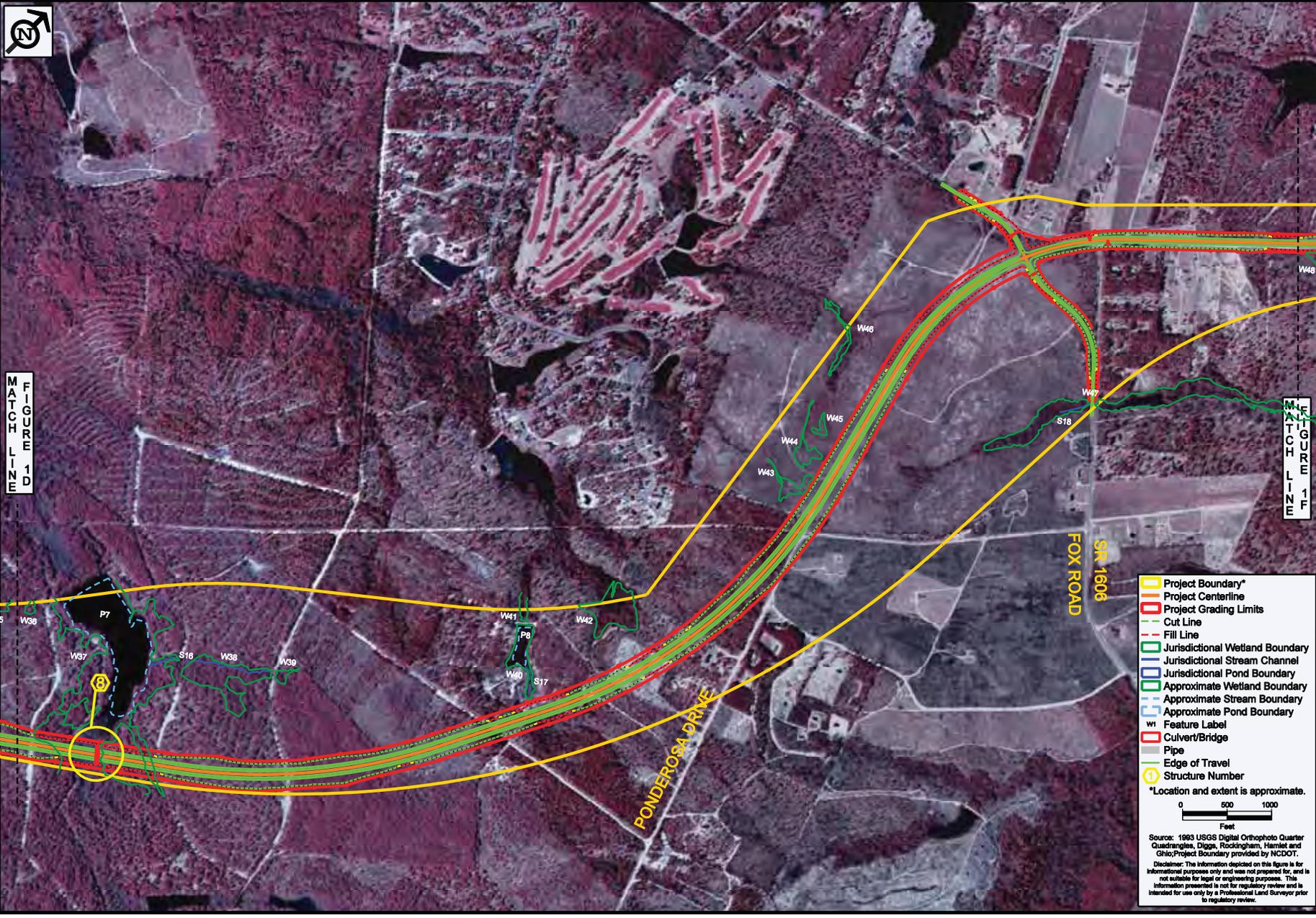


SCALE:
 1" = 200' HORIZ
 1" = 20' VERT.

R-2501, US 1 BYPASS
 RICHMOND COUNTY
 IMPROVEMENTS TO US 1 FROM SR 1971
 (SANDHILL ROAD) TO SR 1001 (MARSTON ROAD)

SITE 7
 DUAL 245' BRIDGE

BY: KO & ASSOCIATES, PC
 DATE: OCTOBER 2007



MATCHLINE

MATCHLINE

	Project Boundary*
	Project Centerline
	Project Grading Limits
	Cut Line
	Fill Line
	Jurisdictional Wetland Boundary
	Jurisdictional Stream Channel
	Jurisdictional Pond Boundary
	Approximate Wetland Boundary
	Approximate Stream Boundary
	Approximate Pond Boundary
	Feature Label
	Culvert/Bridge
	Pipe
	Edge of Travel
	Structure Number

*Location and extent is approximate.

Feet

Source: 1983 USGS Digital Orthophoto Quarter Quadrangles, Diggs, Rockingham, Hamlet and Ghio; Project Boundary provided by NCDOT.

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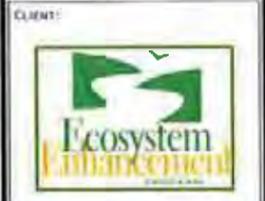
Project: ET06021.00
 Date: Aug 2008
 Dwn/Chtd: E/WPPP
 Figure: 1E

General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
 Richmond County, North Carolina
 T.I.P. No. R-2501

ENVIRONMENTAL SERVICES, INC.
 224 S. New Hope Road
 Raleigh, North Carolina 27610
 (919) 212-1107 FAX
 www.environmentalservicesinc.com

REVISIONS

INTERNATIONAL PAPER



PROJECT:

MCDONALDS POND RESTORATION SITE

EEP Project No. D04020-2
RICHMOND COUNTY, NORTH CAROLINA

TITLE:

STREAM MONITORING PLAN VIEW

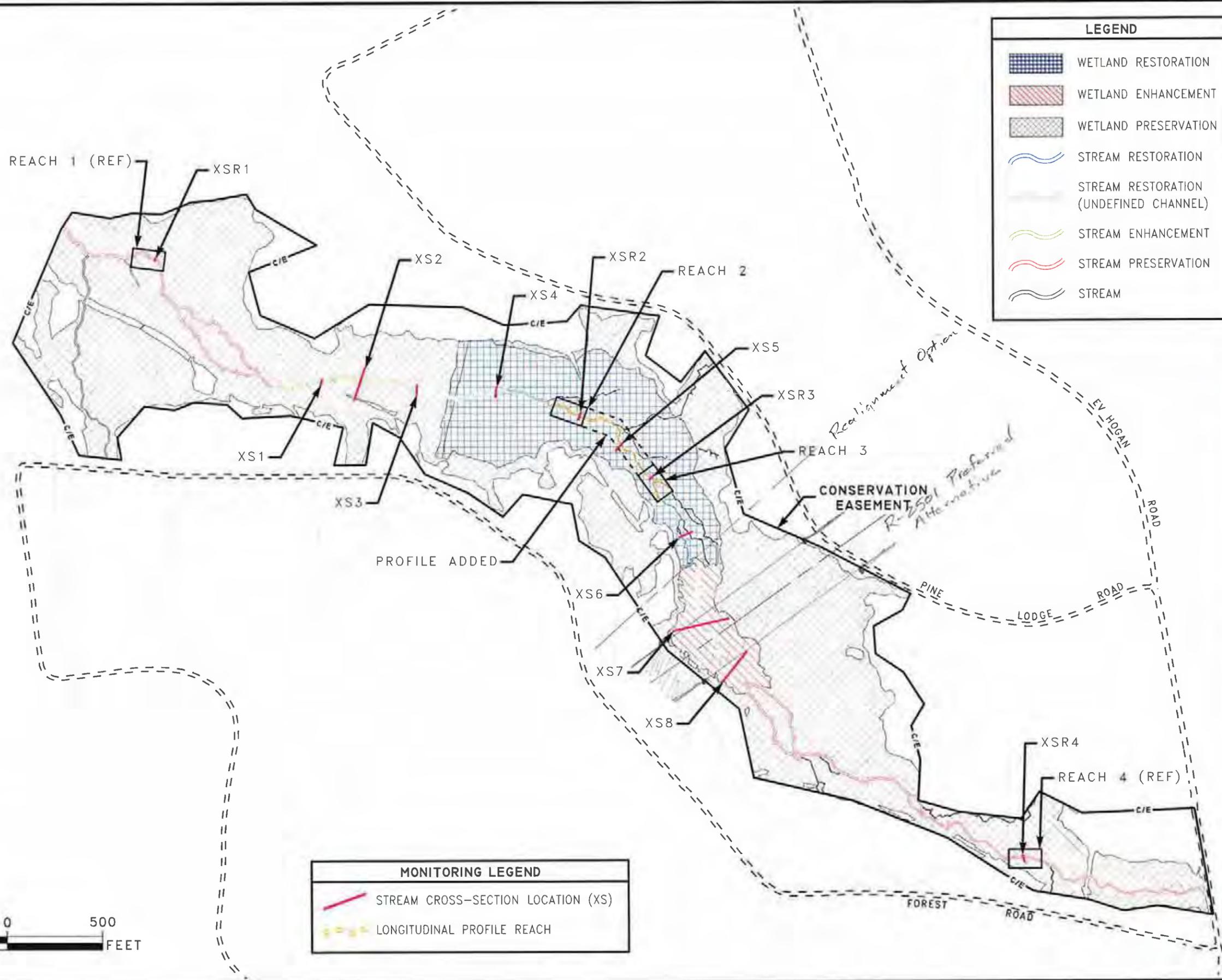
DWN BY:	DATE:
DGJ	FEB 2008
CKD BY:	SCALE:
JWG	1" = 500'
ESC PROJECT No.: 07-330.00	

FIGURE

2

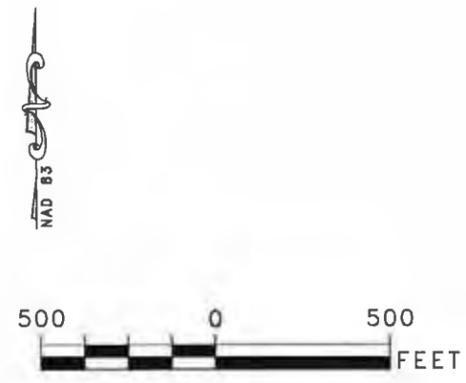
LEGEND

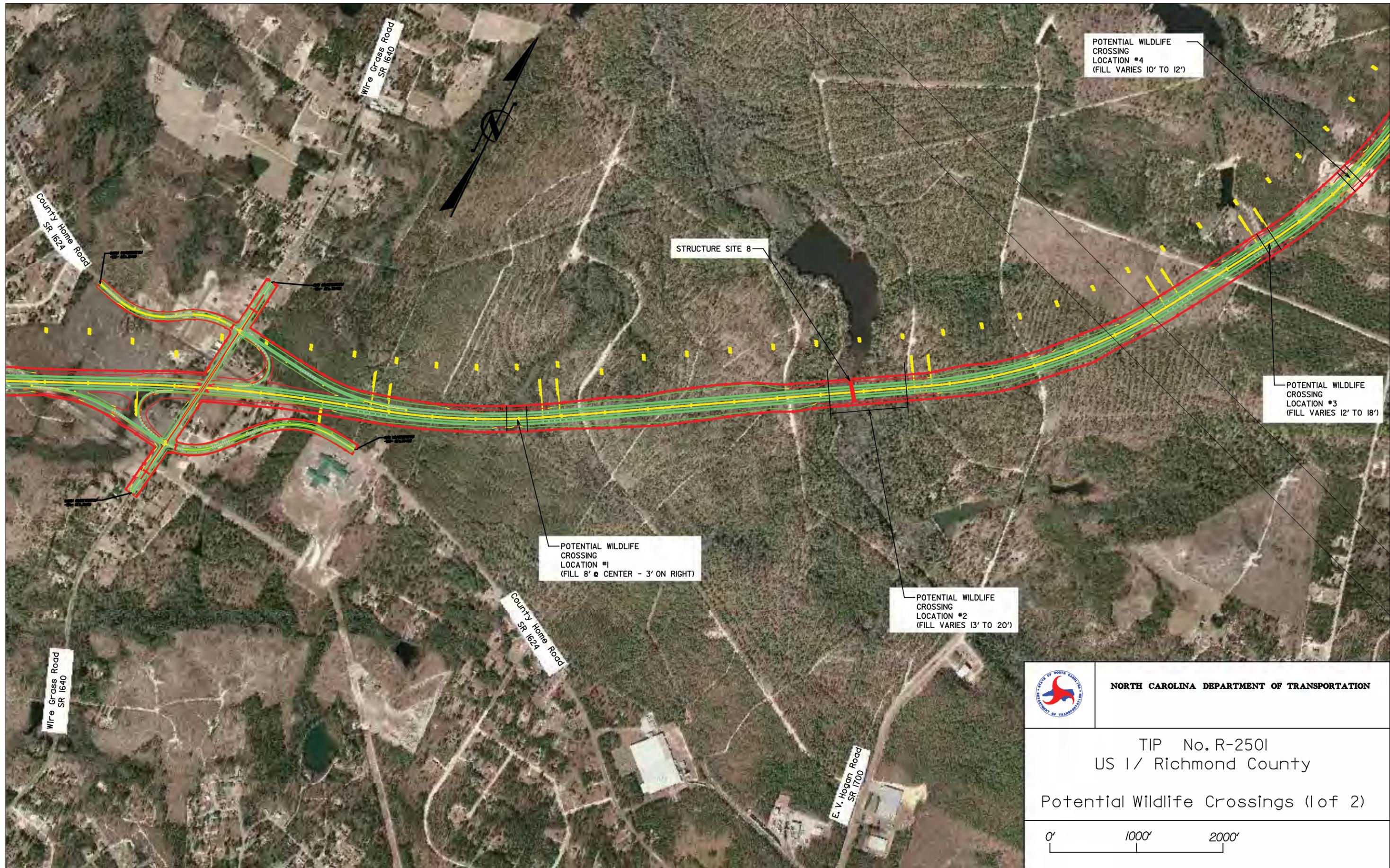
-  WETLAND RESTORATION
-  WETLAND ENHANCEMENT
-  WETLAND PRESERVATION
-  STREAM RESTORATION
-  STREAM RESTORATION (UNDEFINED CHANNEL)
-  STREAM ENHANCEMENT
-  STREAM PRESERVATION
-  STREAM



MONITORING LEGEND

-  STREAM CROSS-SECTION LOCATION (XS)
-  LONGITUDINAL PROFILE REACH





POTENTIAL WILDLIFE
CROSSING
LOCATION #4
(FILL VARIES 10' TO 12')

STRUCTURE SITE 8

POTENTIAL WILDLIFE
CROSSING
LOCATION #3
(FILL VARIES 12' TO 18')

POTENTIAL WILDLIFE
CROSSING
LOCATION #1
(FILL 8' @ CENTER - 3' ON RIGHT)

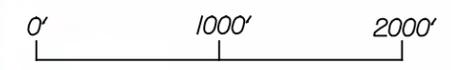
POTENTIAL WILDLIFE
CROSSING
LOCATION #2
(FILL VARIES 13' TO 20')



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

TIP No. R-2501
US 1 / Richmond County

Potential Wildlife Crossings (1 of 2)





STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

November 6, 2008

MEMORANDUM TO: Meeting Participants

Richard Spencer, USACE
Gary Jordan, USFWS
Kathy Matthews, EPA
Felix Davila, FHWA
Travis Wilson, NCWRC
Chris Militscher, EPA
Renee Gledhill-Earley, HPO
Polly Lespinasse, NCDWQ
Janet Robertson, Lumber River RPO
Deanna Riffey, NCDOT-PD&EA, NEU
John Olinger, NCDOT-Division 8
Drew Joyner, NCDOT-PDEA, HEU
Andrew Nottingham, NCDOT-Hydraulics
Steve Gurganus, NCDOT-PDEA, HEU
David Harris, NCDOT-Roadside Envir.
John Frye, NCDOT-Structures

Roger Thomas, NCDOT-Roadway Design
Derrick Weaver, NCDOT-PDEA
Robert Memory, NCDOT, Utilities
Doumit Ishak, NCDOT, TPB
Eric Midkiff, NCDOT-PDEA
Anne Burroughs, NCDOT-PDEA, NEU
Mike Stanley, NCDOT, TIP
Brian Robinson, NCDOT-Roadway Design
Sterling Ragland, NCDOT-Roadway Design
Tim Gardiner, NCDOT-PDEA, HEU
Paul Petitgout, ESI
Mark Reep, Ko & Associates, P.C.
Clay Oliver, Ko & Associates, P.C.
Brian Wiles, Ko & Associates, P.C.
Stacey Bailey, Ko & Associates, P.C.

FROM: Steven Brown, PE
Project Development and Environmental Analysis Branch

US 1 from Sandhill Road (SR 1971) to North of Fox Road (SR 1606), Richmond County, Federal-Aid Project No. NHF-1(1), State Project No. 8.T580501, WBS No. 34437.1.1, T.I.P. No. R-2501.

This provides further information for our Project R-2501 Concurrence Point 2A/ 4A field review scheduled for Wednesday **November 12, 2008**. We will meet at **9:00am** at the main office of the **Rockingham Speedway (2152 North US Highway 1, Rockingham)** just south of NC 177. During the field review, we will visit proposed structure locations and potential wildlife crossings that were discussed during the September 18 concurrence meeting. Excerpts from the concurrence meeting presentation are attached for your information. Some details have been added to show additional bridge length comparisons and wildlife crossing areas. Please plan to bring your lunch and boots.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

We will have several vans for traveling to the project site. We plan to leave for the project area around 9:15 and travel to the southern project limit near US 1 and Osborne Road (SR 1104). We will work our way northward visiting the following structures:

- Structure 3 – UT to Speeds Creek (Pond P1)
- Structure 4 – Watery Branch (Wetland W14)
- Structure 5 – Solomons Creek (Stream S10, W21)
- Structure 7 – South Prong Falling Creek (W26)
- Structure 9 – Chock Creek (S20, P9, W49, W50)
- Structure 8 - Falling Creek (W37) and 4 potential wildlife crossings

Structure 8 and the potential wildlife crossing areas will be left for the end of the day.

If you have questions or need other information, please contact Mark Reep, of Ko & Associates, at mreep@koassociates.com (919-851-6066) or me at slbrown@ncdot.gov (919-733-7844, ext. 235). We look forward to seeing you next week on November 12.

SLB/mlr

T.I.P. No. R-2501

US 1

Richmond County, North Carolina



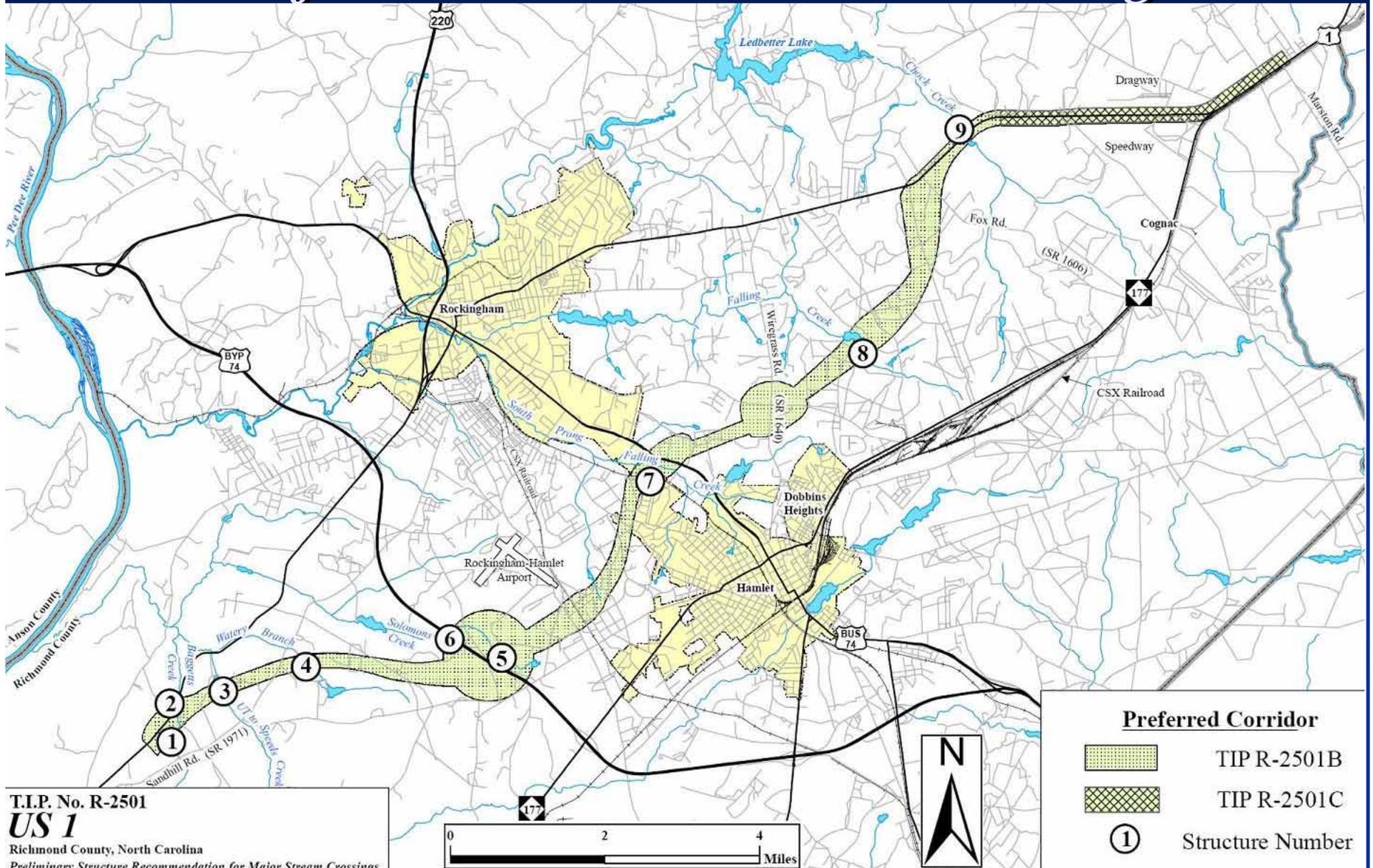
Concurrence Pt. 2A/ 4A

Field Meeting

November 12, 2008

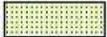
**US 1 Improvements
Sandhill Road (SR 1971) to
Marston Road (SR 1001)**

Major Stream/Wetland Crossings



T.I.P. No. R-2501
US 1
 Richmond County, North Carolina
 Preliminary Structure Recommendation for Major Stream Crossings

Preferred Corridor

-  TIP R-2501B
-  TIP R-2501C
-  Structure Number

Structure 3 - US 1
Driveway Access

Structures 1 & 2 - Baggetts Creek S3, W3, W9
Structure 3 - UT to Speeds Creek W11

Structure 3: 34°52'5.77"N, 79°49'36.15"W

Structure 3

Structure 2: 34°51'59.80"N, 79°50'8.38"W

Structure 1: 34°51'47.81"N, 79°50'9.73"W

Google

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Structure 4 – Watery Branch W14

Structure 4

Structure 4: 34°52'24.91"N, 79°48'25.89"W

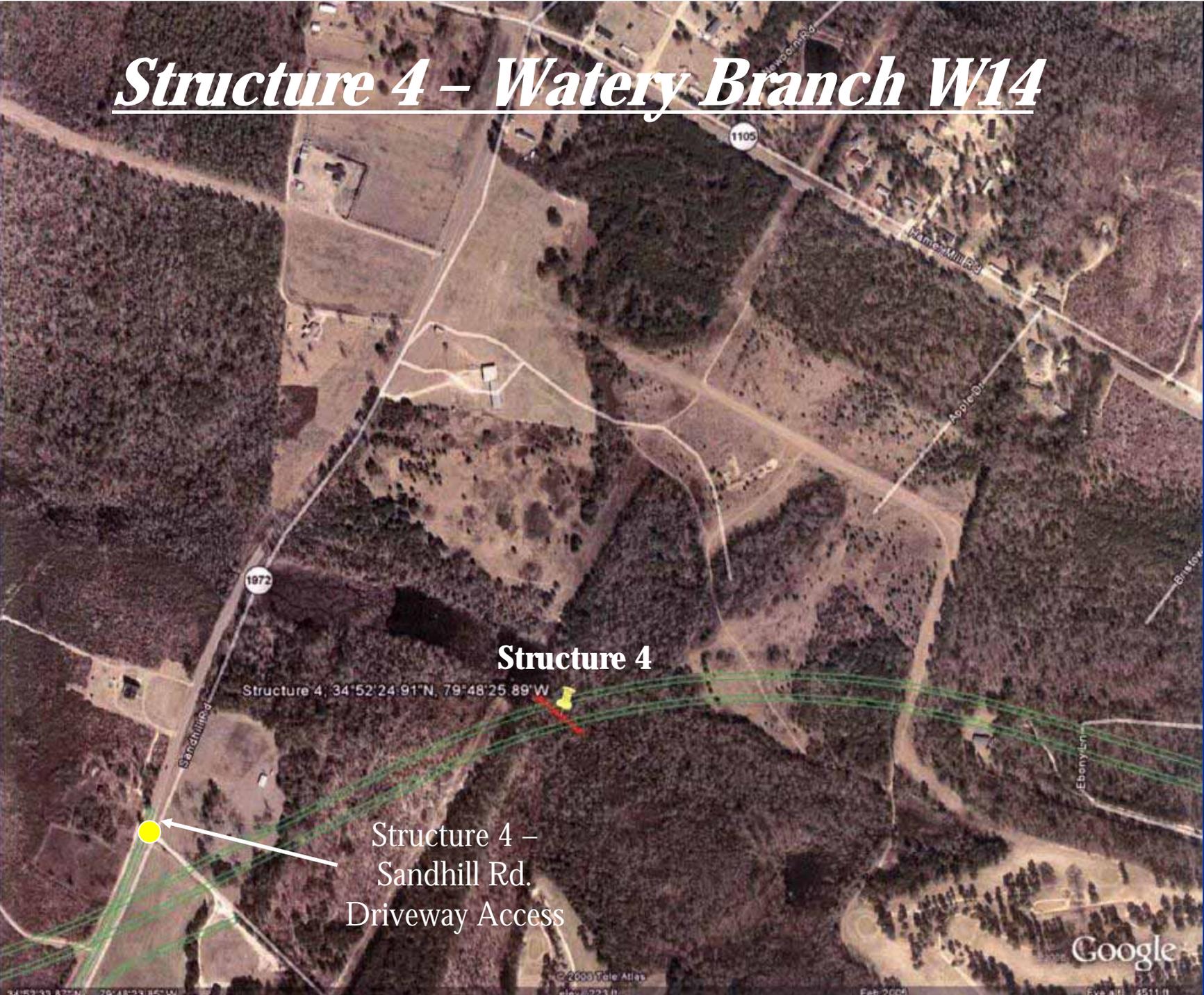
Structure 4 –
Sandhill Rd.
Driveway Access

Google

© 2000 Tele Atlas
City 2231 II

Feb 2000

Eye Alt: 4511 ft



Structure 5 – Solomons Creek S10, W21
Structure 6 – Solomons Creek S10A, W20A

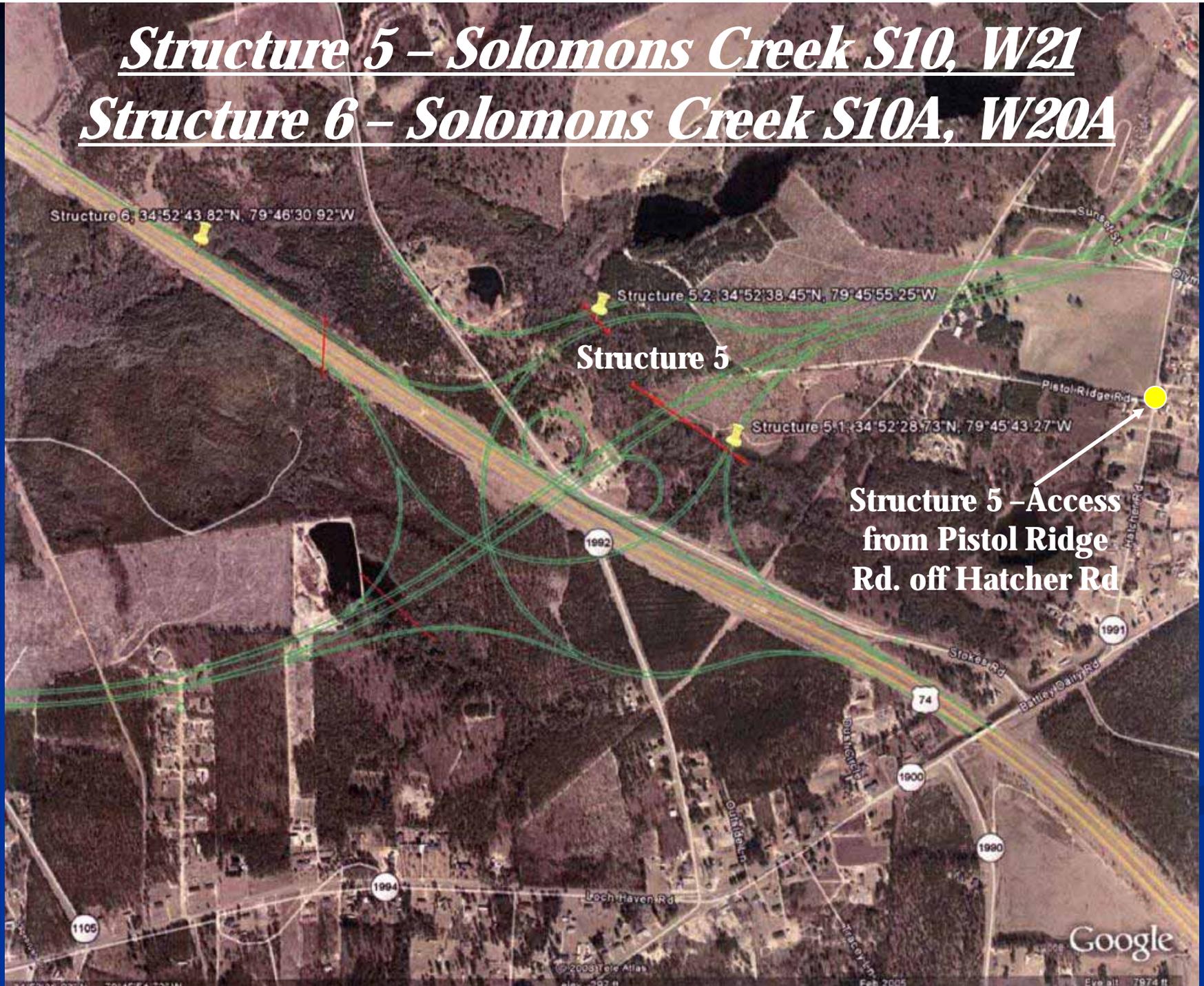
Structure 6, 34°52'43.82"N, 79°46'30.92"W

Structure 5.2, 34°52'38.45"N, 79°45'55.25"W

Structure 5

Structure 5.1, 34°52'28.73"N, 79°45'43.27"W

**Structure 5 – Access
from Pistol Ridge
Rd. off Hatcher Rd**



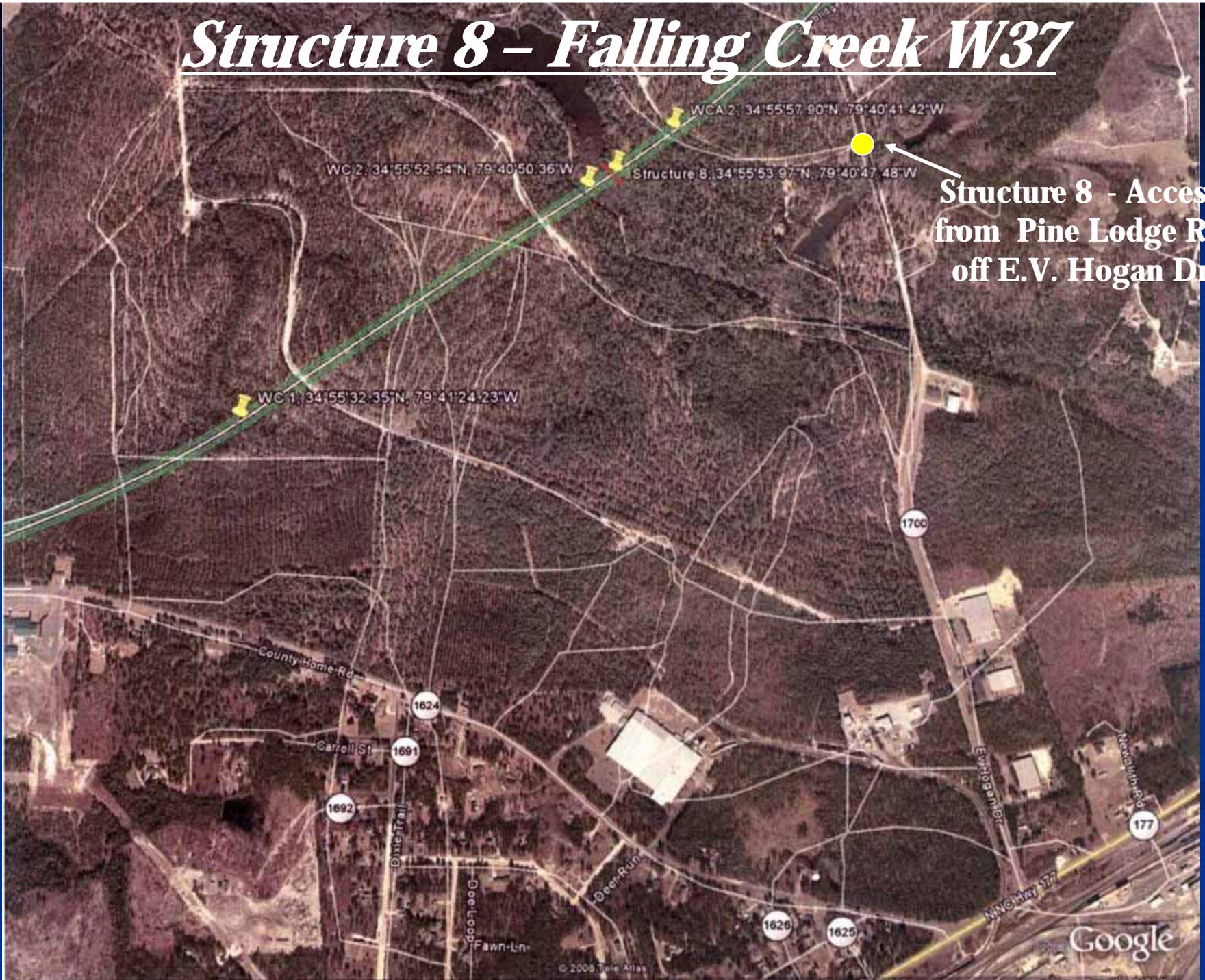
Structure 7 – South Prong Falling Creek W26

**Structure 7 – US 74
Bus. From Former
Revel's BarBQ
Driveway Access**

Structure 7: 34°54'36.58"N, 79°43'41.66"W

Structure 7

Structure 8 – Falling Creek W37



WC 2: 34°55'52.54"N, 79°40'50.36"W

WCA 2: 34°55'57.80"N, 79°40'41.42"W

Structure 8: 34°55'53.97"N, 79°40'47.48"W

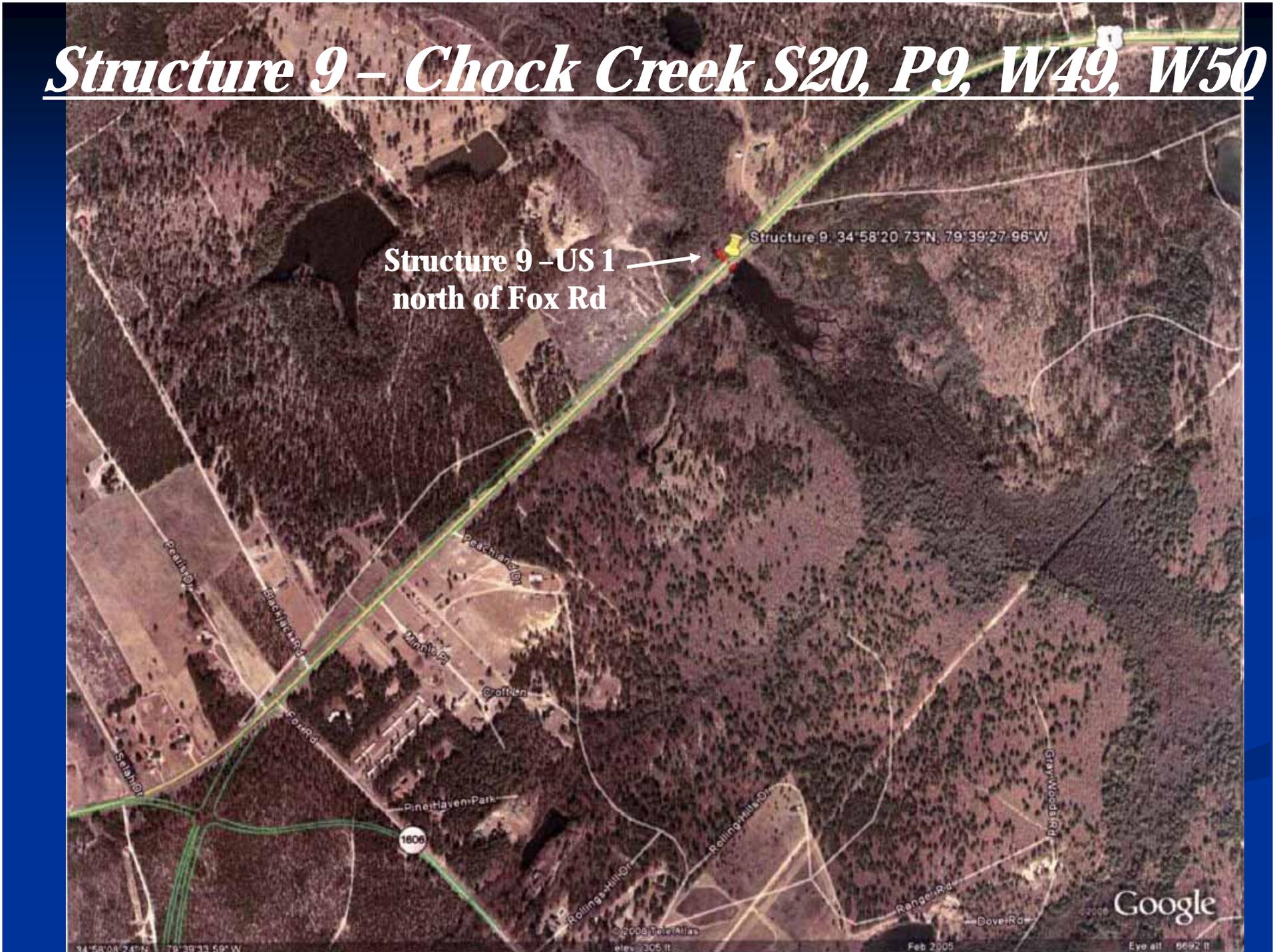
WC 1: 34°55'32.35"N, 79°41'24.23"W

**Structure 8 - Access
from Pine Lodge Rd
off E.V. Hogan Dr**

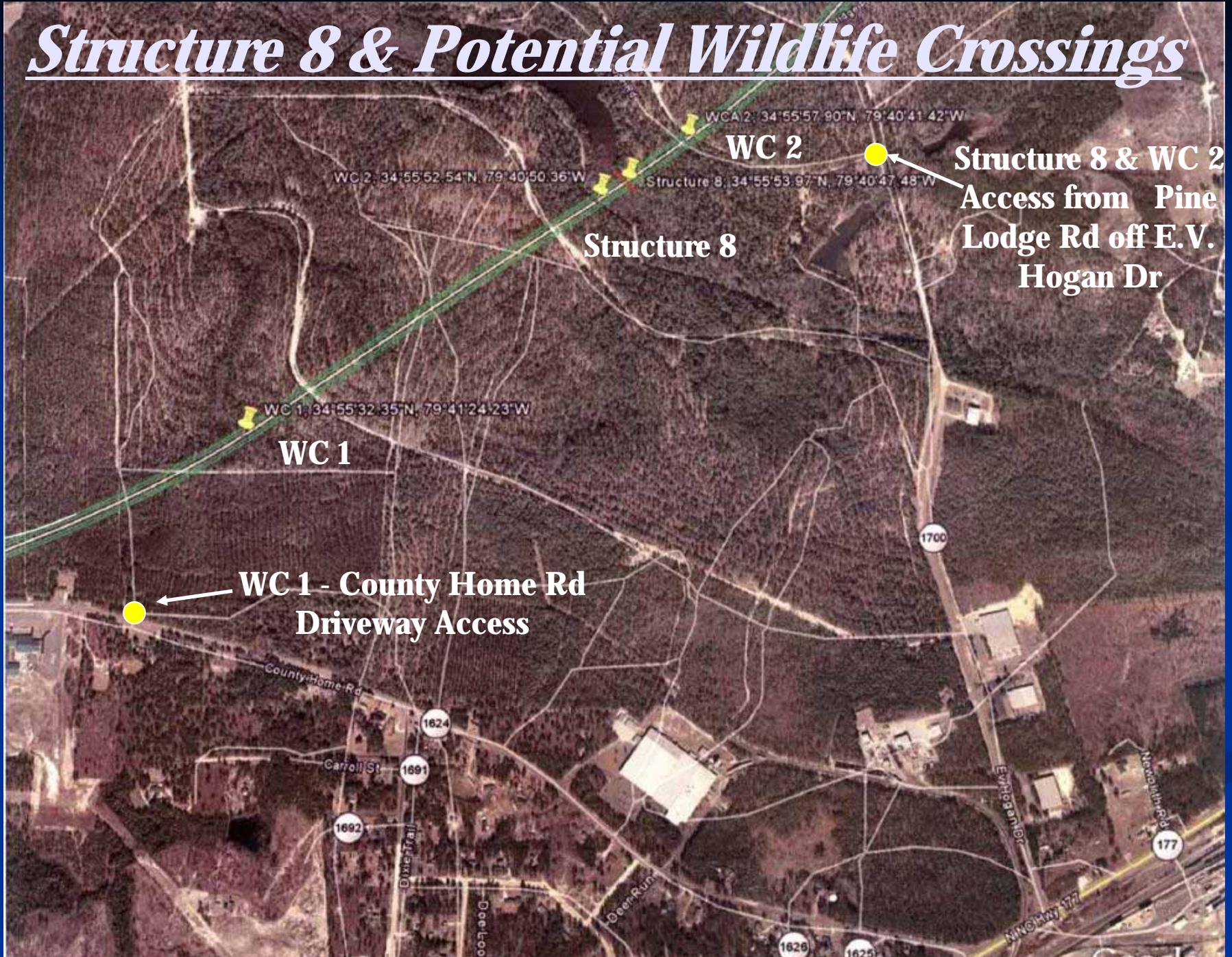
Structure 9 – Chock Creek S20, P9, W49, W50

Structure 9 – US 1
north of Fox Rd

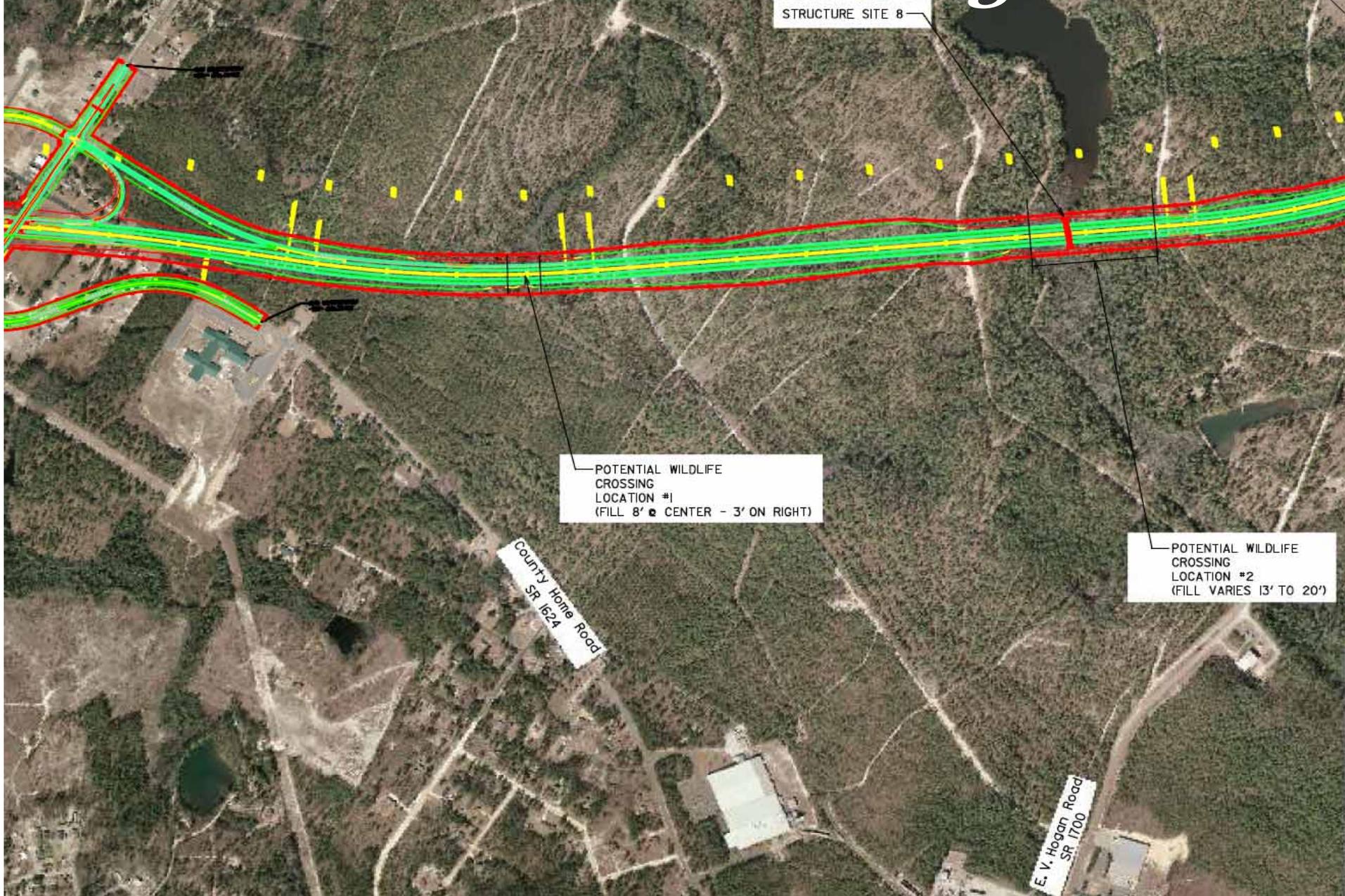
Structure 9: 34°58'20.73"N, 79°39'27.96"W



Structure 8 & Potential Wildlife Crossings



Potential Wildlife Crossing Areas



Potential Wildlife Crossing Areas

WC 4: 34°56'44.58"N, 79°40'3.95"W

WC 4 - Access from
Ponderosa Dr
Driveway

WC 3: 34°56'33.50"N, 79°40'9.02"W

WC 3 - Access from
Standridge Pl (near
Watson's Box #173)

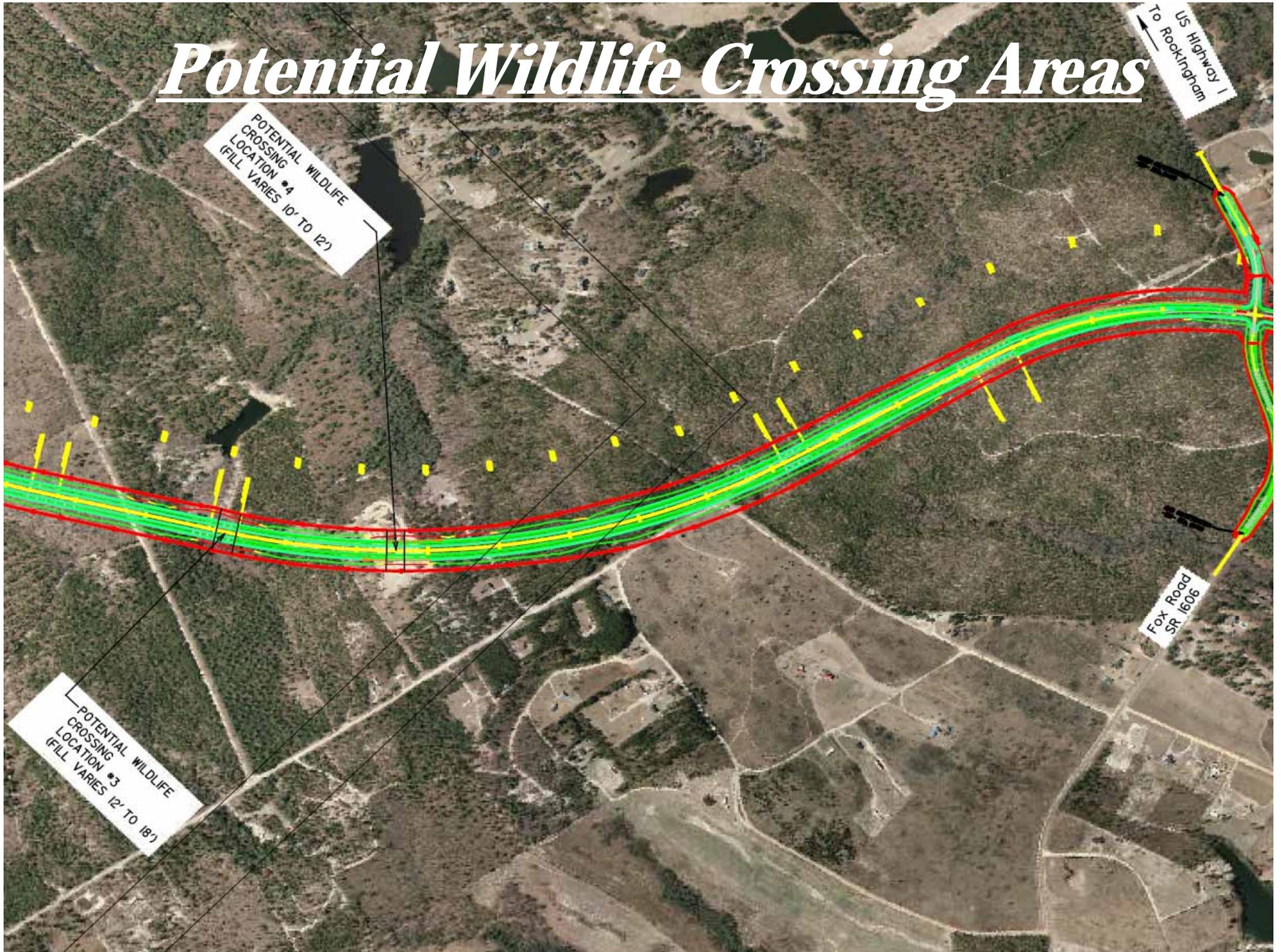
Google

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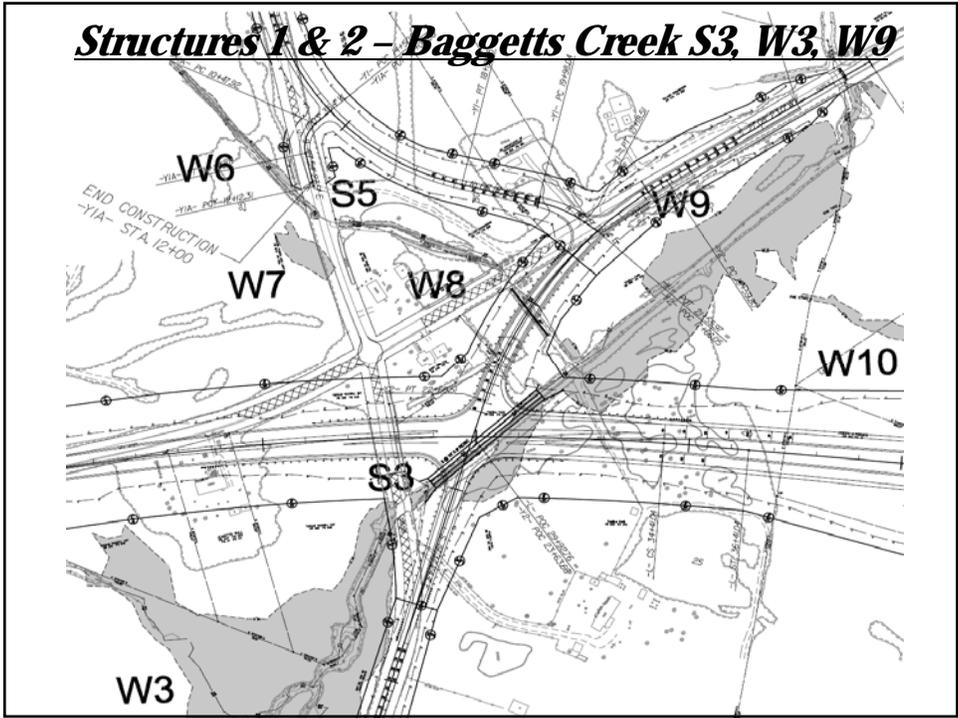
Feb. 2005

File #11 4692 ft

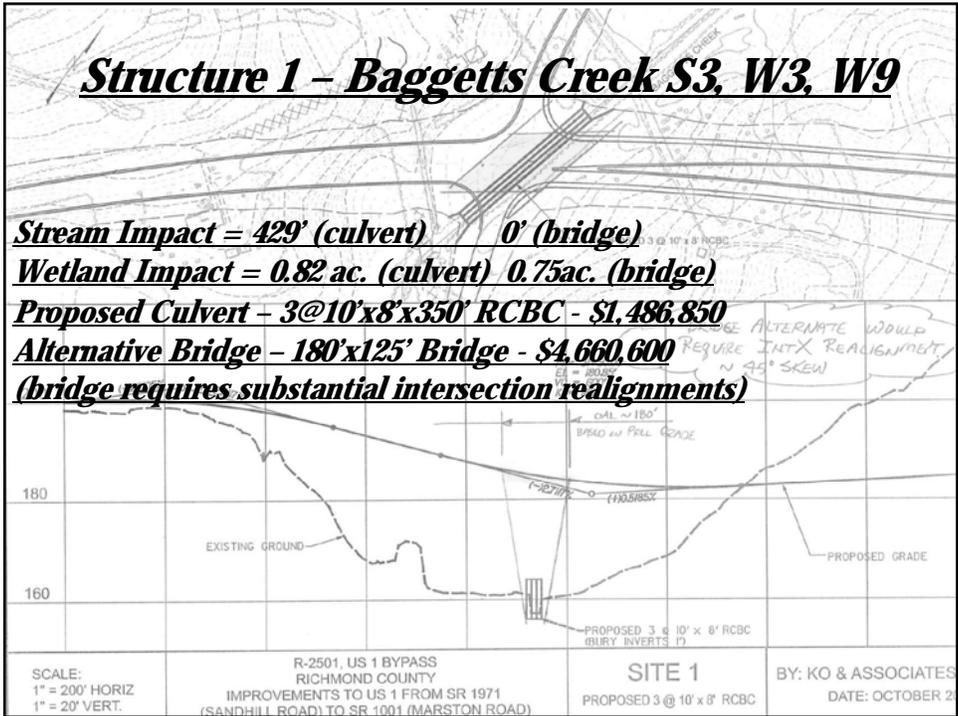
Potential Wildlife Crossing Areas

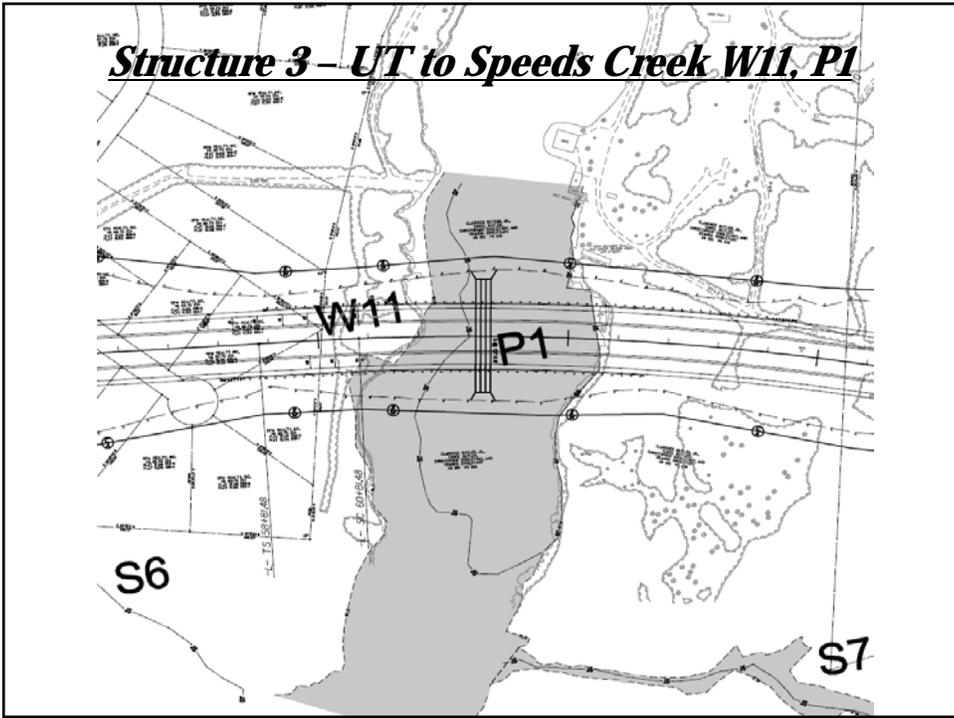
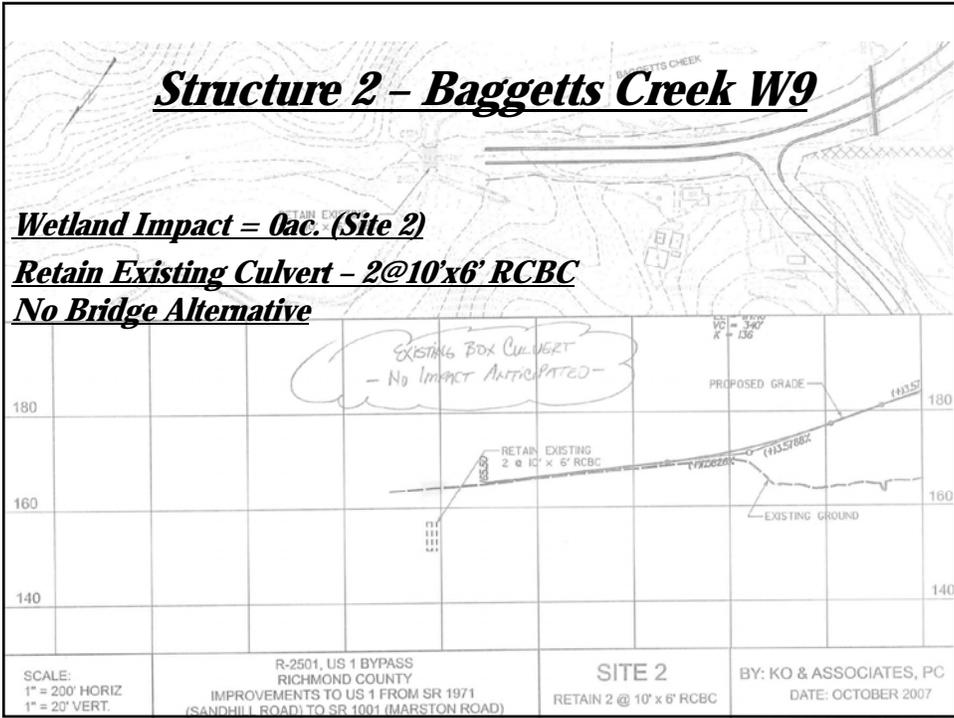


Structures 1 & 2 - Baggetts Creek S3, W3, W9



Structure 1 - Baggetts Creek S3, W3, W9





Structure 3 - UT to Speeds Creek W11, P1

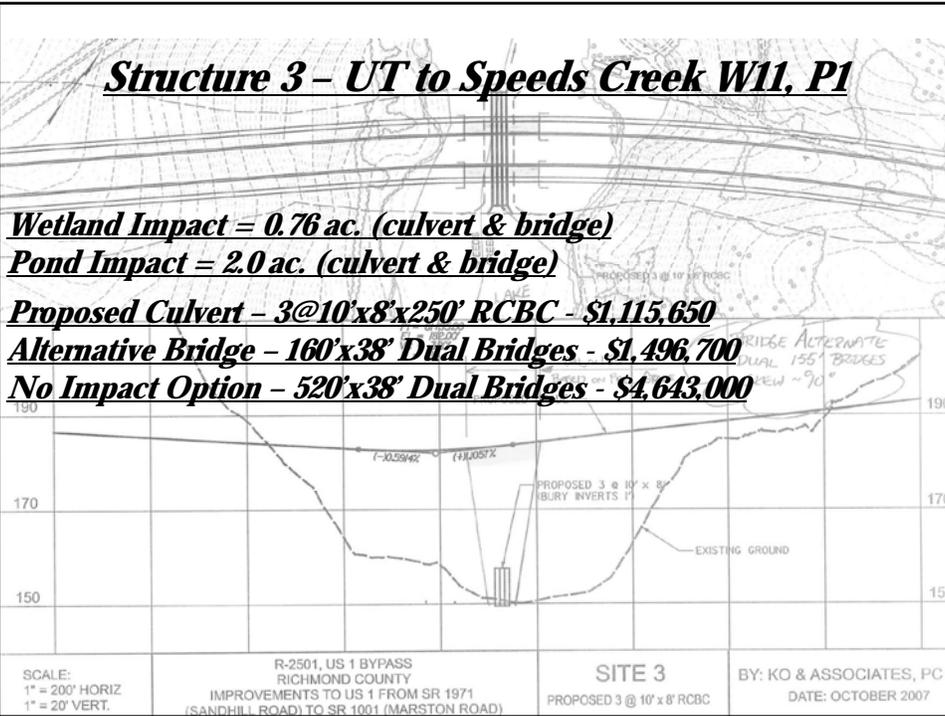
Wetland Impact = 0.76 ac. (culvert & bridge)

Pond Impact = 2.0 ac. (culvert & bridge)

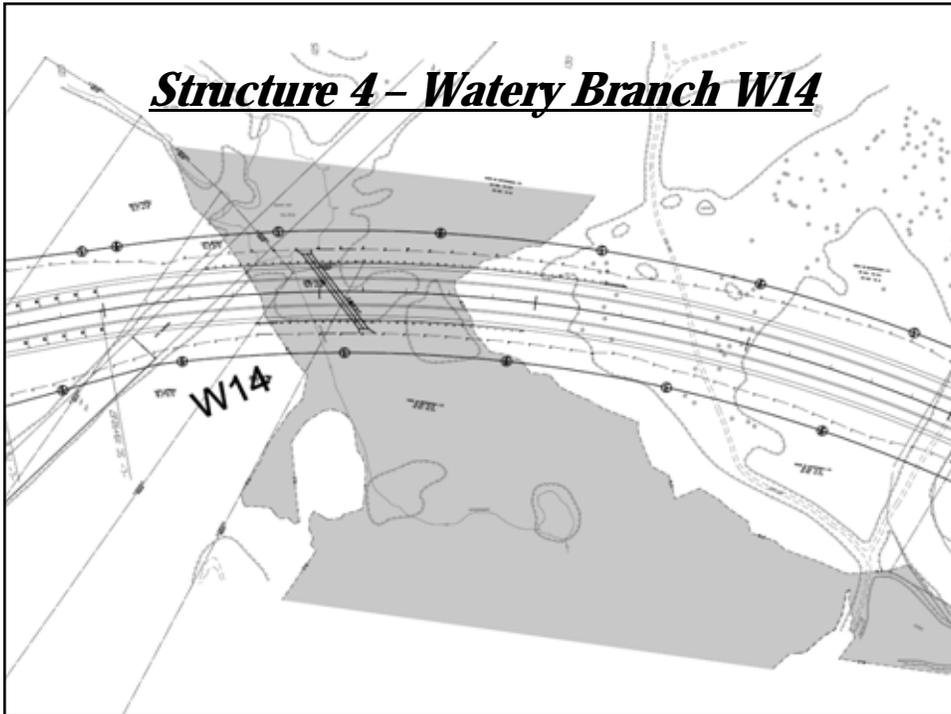
Proposed Culvert - 3@10'x8'x250' RCBC - \$1,115,650

Alternative Bridge - 160'x38' Dual Bridges - \$1,496,700

No Impact Option - 520'x38' Dual Bridges - \$4,643,000



Structure 4 - Watery Branch W14



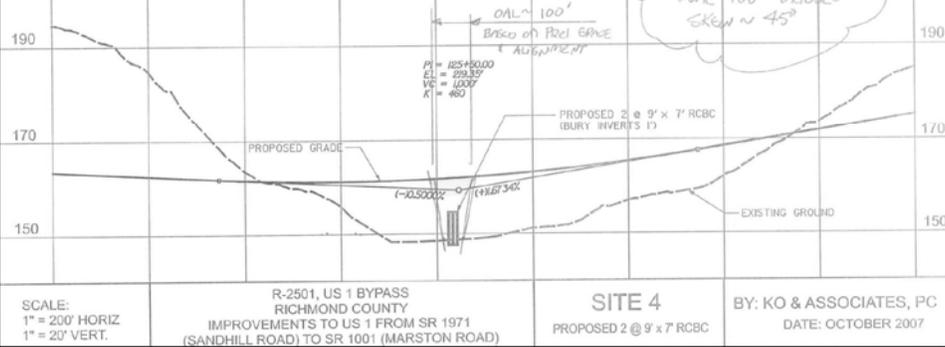
Structure 4 – Watery Branch W14

Wetland Impact = 2.96ac. (culvert) 2.67ac. (bridge)

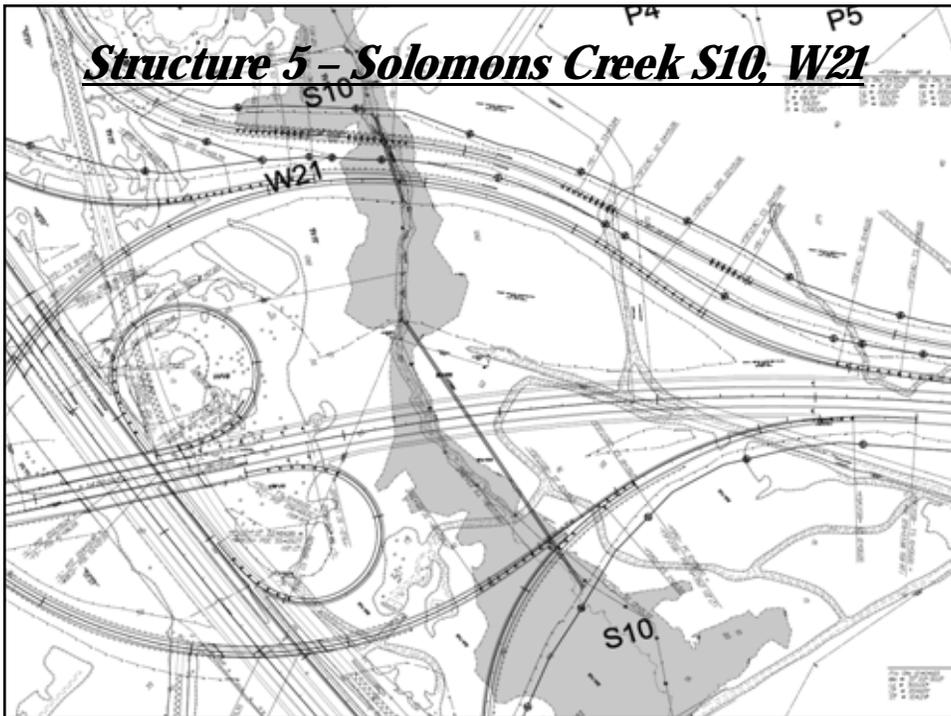
Proposed Culvert – 2@9'x7'x240' RCBC – \$717,500

Alternative Bridge – 100'x38' Dual Bridges – \$1,004,700

No Impact Option – 515'x38' Dual Bridges – \$4,632,000



Structure 5 – Solomons Creek S10, W21



Structure 5 – Solomons Creek S10, W21

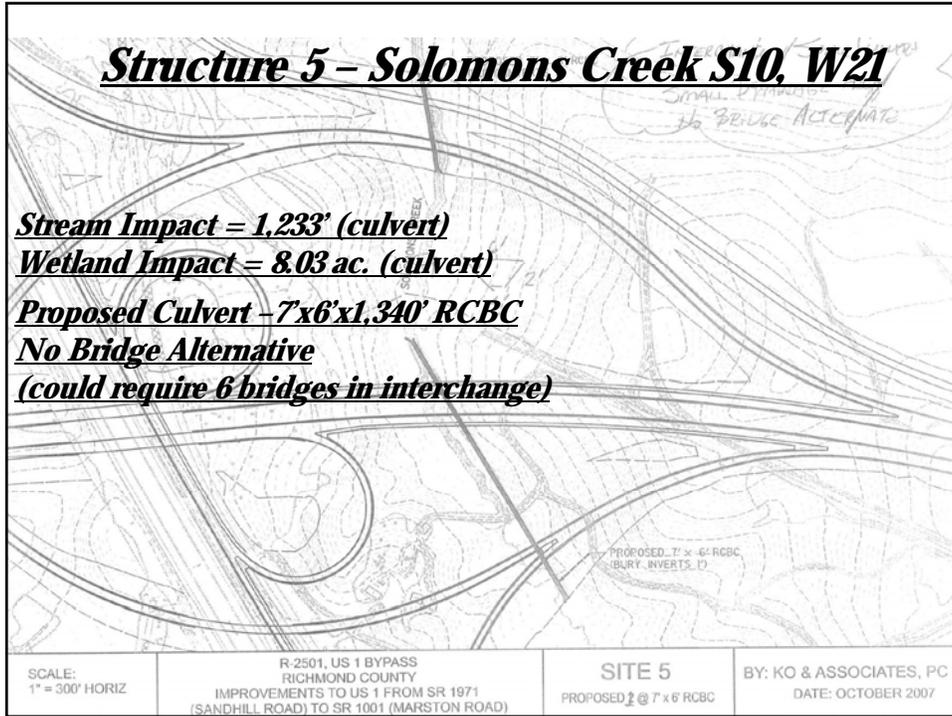
Stream Impact = 1,233' (culvert)

Wetland Impact = 8.03 ac. (culvert)

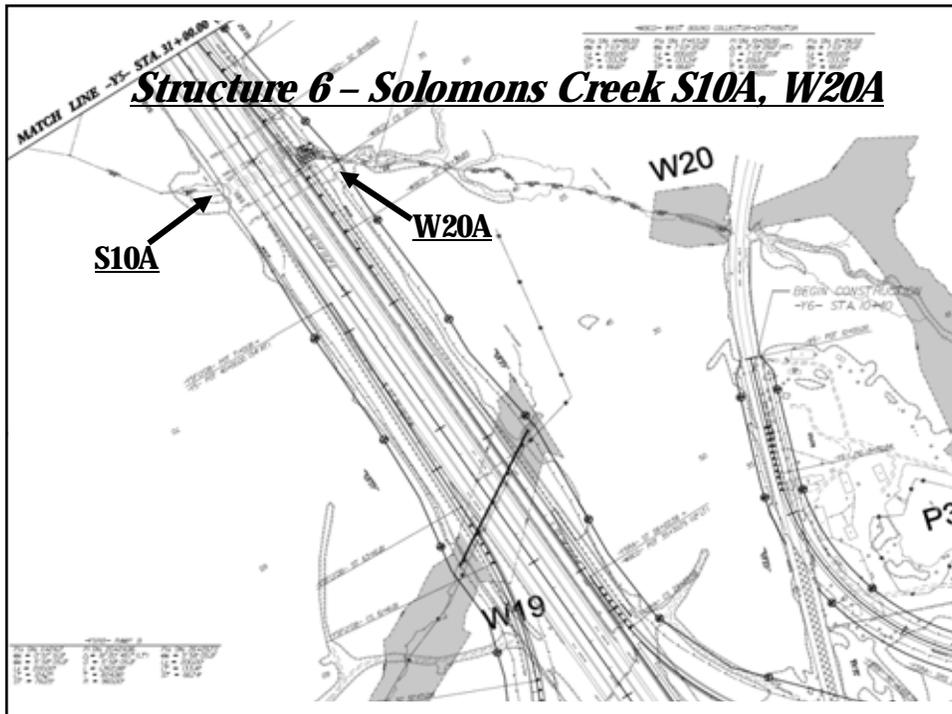
Proposed Culvert – 7'x6'x1,340' RCBC

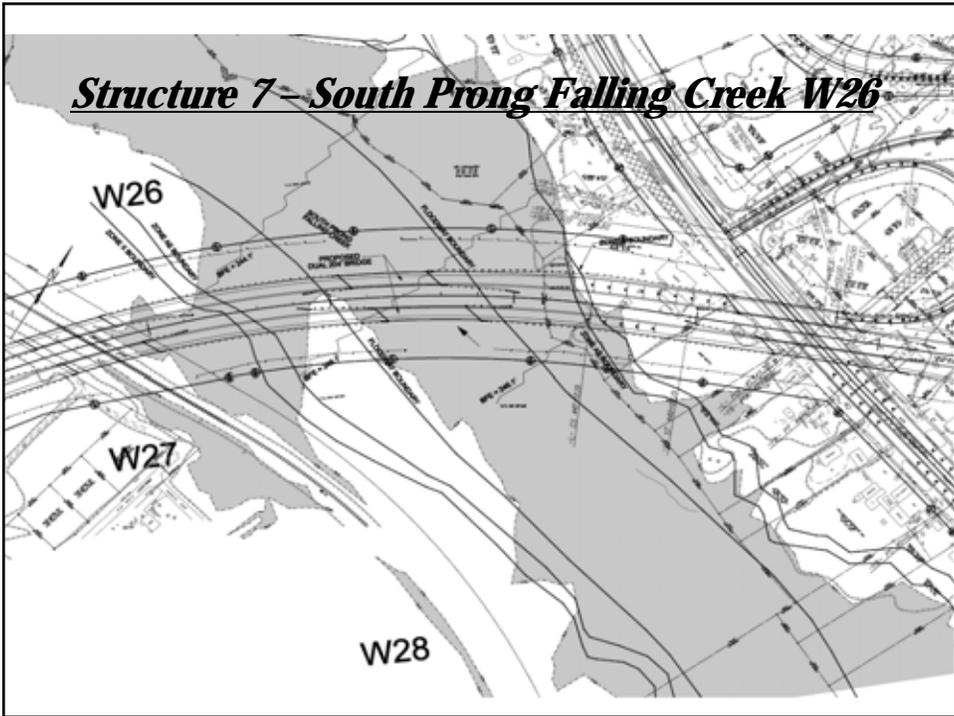
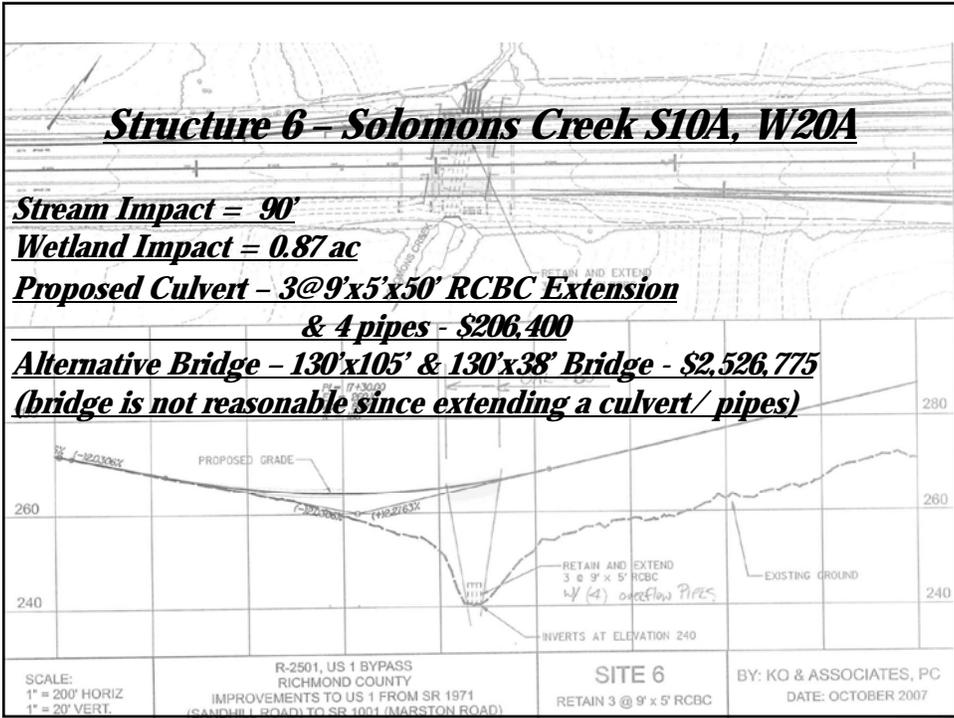
No Bridge Alternative

(could require 6 bridges in interchange)



Structure 6 – Solomons Creek S10A, W20A

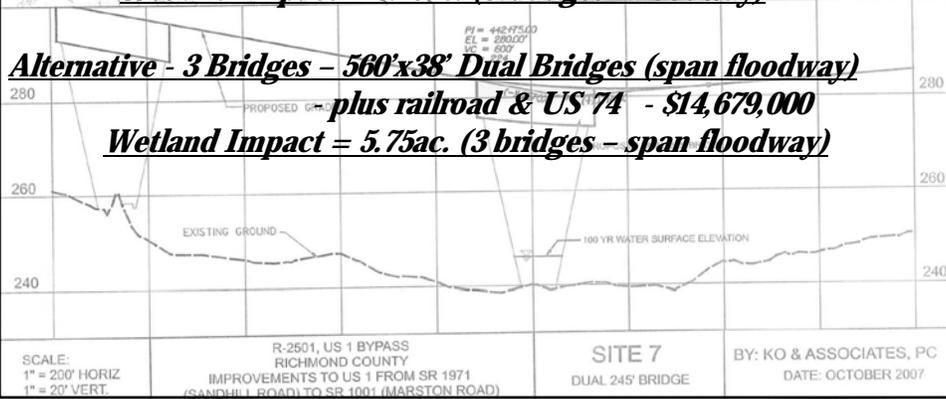




Structure 7 – South Prong Falling Creek W26

Proposed - 3 Bridges – 245'x38' Dual Bridges (floodway)
- plus railroad & US 74 - \$12,292,800
Wetland Impact = 8.18ac. (3 bridges - floodway)

Alternative - 3 Bridges – 560'x38' Dual Bridges (span floodway)
- plus railroad & US 74 - \$14,679,000
Wetland Impact = 5.75ac. (3 bridges – span floodway)



SCALE:
1" = 200' HORIZ
1" = 20' VERT.

R-2501, US 1 BYPASS
RICHMOND COUNTY
IMPROVEMENTS TO US 1 FROM SR 1971
(SANDHILL ROAD) TO SR 1001 (MARSTON ROAD)

SITE 7
DUAL 245' BRIDGE

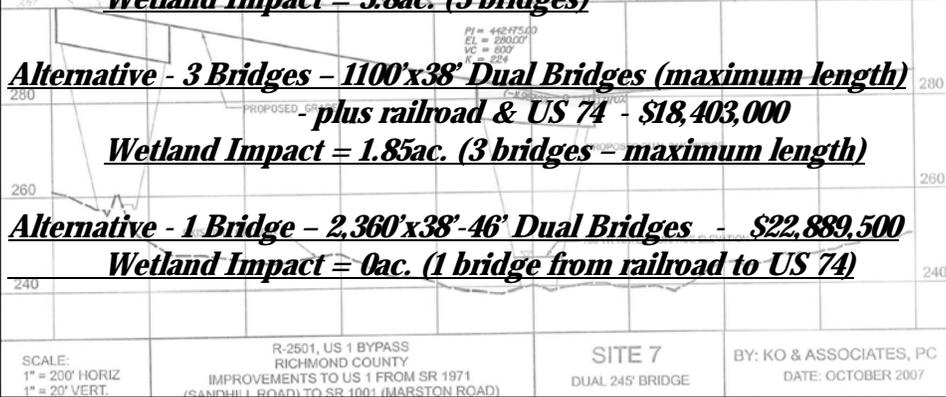
BY: KO & ASSOCIATES, PC
DATE: OCTOBER 2007

Structure 7 – South Prong Falling Creek W26

Alternative - 3 Bridges – 830'x38' Dual Bridges
- plus railroad & US 74 - \$16,541,000
Wetland Impact = 3.8ac. (3 bridges)

Alternative - 3 Bridges – 1100'x38' Dual Bridges (maximum length)
- plus railroad & US 74 - \$18,403,000
Wetland Impact = 1.85ac. (3 bridges – maximum length)

Alternative - 1 Bridge – 2,360'x38' 46' Dual Bridges - \$22,889,500
Wetland Impact = 0ac. (1 bridge from railroad to US 74)

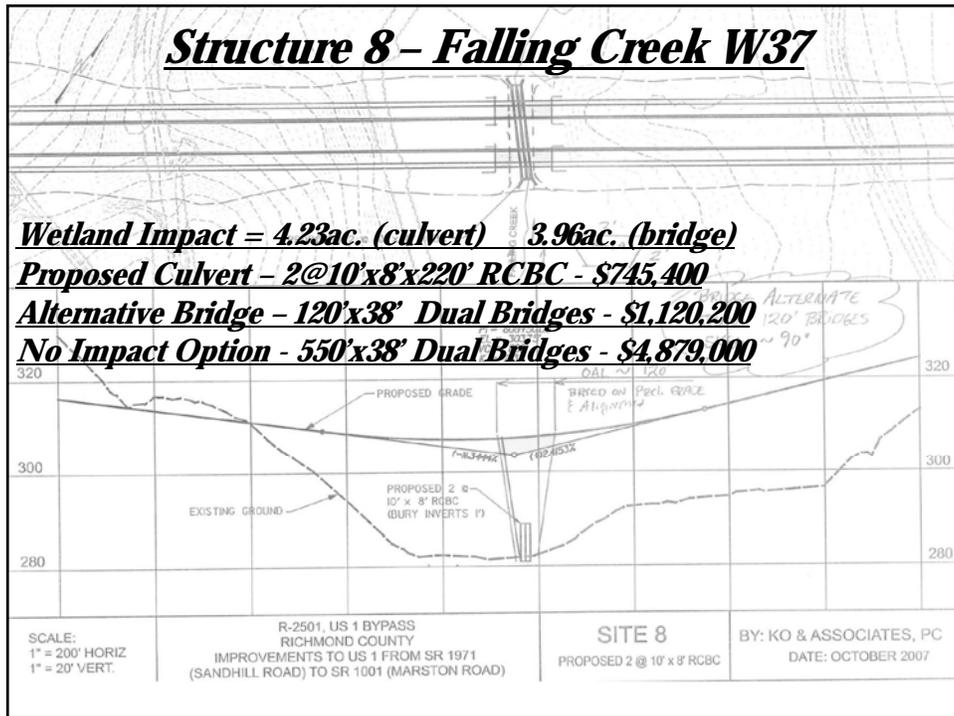
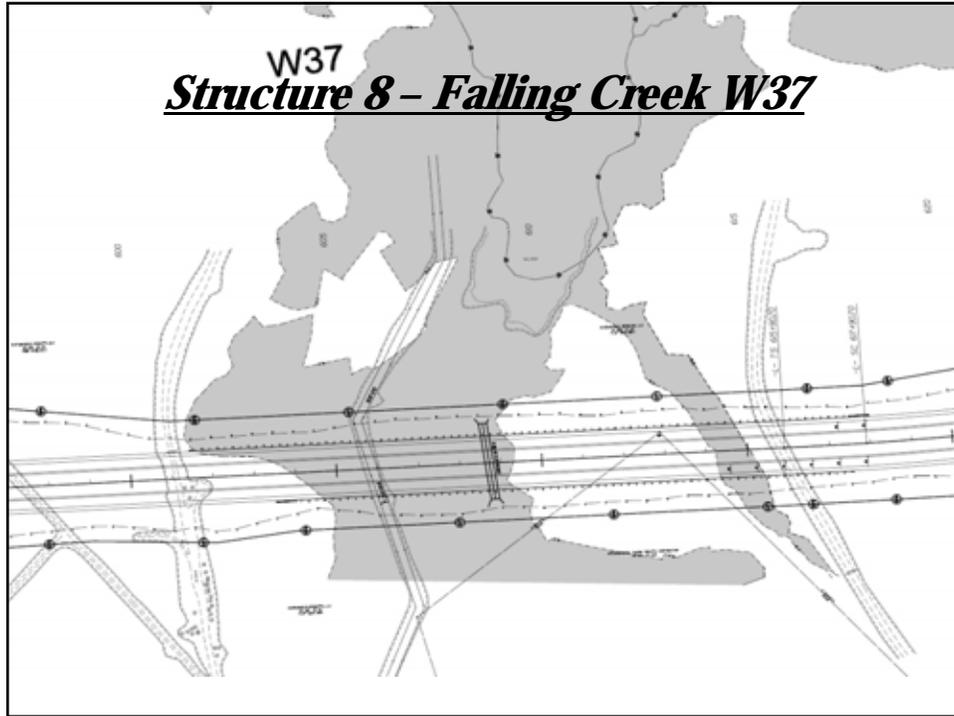


SCALE:
1" = 200' HORIZ
1" = 20' VERT.

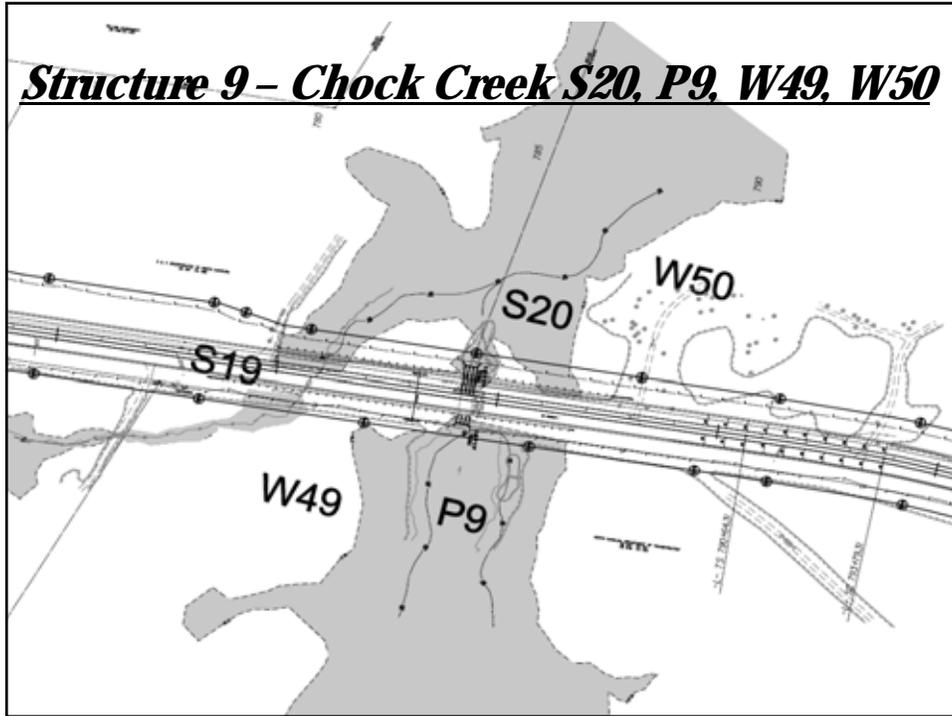
R-2501, US 1 BYPASS
RICHMOND COUNTY
IMPROVEMENTS TO US 1 FROM SR 1971
(SANDHILL ROAD) TO SR 1001 (MARSTON ROAD)

SITE 7
DUAL 245' BRIDGE

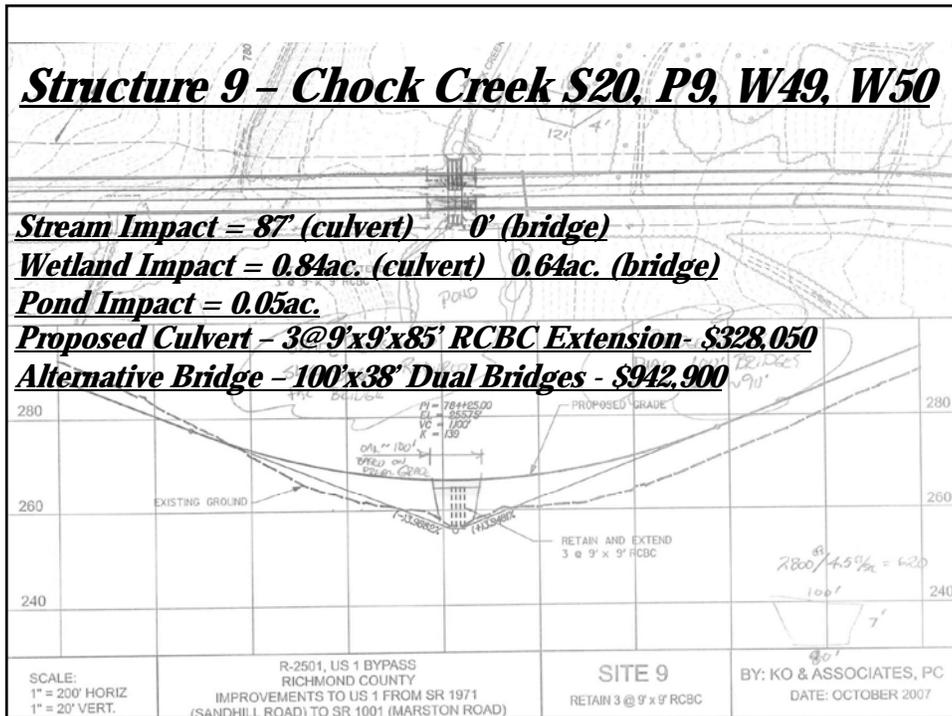
BY: KO & ASSOCIATES, PC
DATE: OCTOBER 2007



Structure 9 - Chock Creek S20, P9, W49, W50



Structure 9 - Chock Creek S20, P9, W49, W50





STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

August 25, 2008

MEMORANDUM TO: Concurrence Meeting Participants

FROM: Derrick Weaver, PE
Project Development and Environmental Analysis Branch

SUBJECT: US 1 From Sandhill Road (SR 1971) to Marston Road
(SR 1001) in Richmond County, Federal-Aid Project No.
NHF-1(1), State Project No. 8.T580501, WBS Project No.
34437.1.1, TIP Project No. R-2501
Concurrence Point 2A/ 4A Meeting

Attached is the meeting information package for the R-2501 Concurrence Point 2A/ 4A meeting scheduled for September 18, 2008. This package describes the proposed improvements to US 1 from Sandhill Road (SR 1971) to Marston Road (SR 1001) in Richmond County.

If you have any questions or need additional information, please contact me at (919) 733-7844, extension 215 or by email at dweaver@ncdot.gov. We look forward to meeting with you on September 18.

DW/mlr

Attachment

cc Eric Midkiff, NCDOT-PDEA, w/out attachment

US 1
From Sandhill Road (SR 1971) to Marston Road (SR 1001)
Richmond County
Federal-Aid Project No. NHF-1(1)
State Project No. 8.T580501
TIP Project No. R-2501

NEPA/Section 404 Merger 01 Process
Concurrence Point 2A/4A Meeting
September 18, 2008

Introduction

The purpose of this meeting is for the Merger Team to discuss issues pertaining to Concurrence Points 2A (Bridging Decisions) and 4A (Avoidance and Minimization) so that concurrence can be reached. The issues being reviewed at this meeting include:

- Possible bridge locations and lengths
- Impacts to jurisdictional areas (streams, wetlands and other surface waters), threatened and endangered species, and cultural resources; and
- Avoidance and minimization

Project Background

The proposed action, shown in Figure 1, consists of widening and/or the relocation of US 1 in Richmond County from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) north of Rockingham, a distance of approximately 19.2 miles. This portion of the US 1 project is identified as project number R-2501 in the 2009-2015 Transportation Improvement Program (T.I.P.). The TIP schedule for R-2501 shows right-of-way acquisition will begin in Fiscal Year (FY) 2011 and construction will start in FY 2013.

In 1972, a thoroughfare plan was developed for Richmond County with the assistance of the North Carolina Department of Transportation (NCDOT). The plan identified the need for the construction of a major US 1 arterial link from east of Rockingham to a point just south of Hoffman. A portion of the environmental studies, which began in 1994, was accomplished when the Phase I Route Location and Environmental Study for the US 1 Rockingham Bypass (T.I.P. No. R-2501) was completed in February 1997.

A Draft Environmental Impact Statement (DEIS) evaluating alternatives for improving US 1 from Sandhill Road (SR 1971) to north of Fox Road (SR 1606) was approved on June 30, 1999. Following the publication of the DEIS, a Corridor Public Hearing was held on September 14, 1999, to present the “reasonable and feasible” alternatives to the public. On October 28, 1999, Alternative No. 21 was selected as the Least Environmentally Damaging Practicable Alternative (LEDPA) by the Project Team.

A Supplemental Draft Environmental Impact Statement (SDEIS) was approved on April 27, 2001, documenting the changes that had occurred for the proposed US 1 Bypass improvements since the approval of the DEIS. These changes included the extension of the proposed project from north of Fox Road (SR 1606) to Marston Road (SR 1001) and an additional preliminary alternative, to improve NC 177 from US 1 north to the South Carolina state line, as requested by the Environmental Protection Agency (EPA).

A new interchange is being considered in the vicinity of Wiregrass and County Home Roads (SR 1640/ SR 1624). Following a Citizens Informational Workshop in July 2007, Richmond County officials requested an interchange in this area to help with emergency, industrial, and general access.

Overview of Interagency Coordination and Concurrence Points

January 27, 2005 – Wildlife Crossings Meeting

- One 8' x 12' RCBC and three additional structures were tentatively proposed for wildlife crossings (4' x 6' RCBC or largest possible size) between Wiregrass Road (SR 1640) and existing US 1.

November 10, 2004 – Project Team Meeting

- The team reviewed hydraulic recommendations and proposed typical section to determine if the box culvert will be utilized or if a new structure is required for the wetlands and streams associated with Gibson's Pond (Stream and Wetland S19, S20, W49, and W50). Representatives from the Corps of Engineers and Fish and Wildlife Service noted benefits of constructing a new bridge beside the existing culvert (Stream S20).
- A culvert is recommended at Wetland W37. Several small box culverts were suggested between Wiregrass Road and existing US 1 for small wildlife.
- The team reviewed hydraulic requirements and structure recommendations concerning the wetland area between CSX Railroad and US 74 Business, and discussed comparing costs of one long bridge versus three bridges (Wetland W26).
- The construction and layout of the interchange dictated the requirements at the US 74 Bypass/US 1 Interchange area (Wetland W18, W19, and W21).
- A culvert was recommended at the area of the Loch Haven Golf Course (Wetland W14).
- The Corps of Engineers indicated they would like to see what is being proposed at the beginning of the project area at Osborne Road (Stream and Wetland S1, S2, S3, W2, W8, and W9).

June 24, 2002 – Public Hearing

- NCDOT gathered comments regarding the widening of existing US 1 between Fox Road (SR 1606) and Marston Road (SR 1001) with R-2501C.
- After evaluating the comments, NCDOT selected a five-lane section.

April 27, 2001 – Approval of Supplemental Draft Environmental Impact Statement (SDEIS)

- A Supplemental Draft Environmental Impact Statement (SDEIS) approved by the FHWA.
- The SDEIS documented the extension of the proposed project from north of Fox Road (SR 1606) to Marston Road (SR 1001).

February 15, 2001 – Project Team Meeting

- The team reached concurrence on the detailed study alternatives and the Least Environmentally Damaging Practicable Alternative (LEDPA).

October 28, 1999 – Verbal Approval of the Least Environmentally Damaging Practicable Alternative (LEDPA)

- An Interagency Team Meeting was held to present to the agencies the “Recommended Alternative” as selected from the Post-Hearing Review Meeting and to gain consensus on a “Least Environmentally Damaging Practicable Alternative (LEDPA).”
- It was confirmed that the project is following the NEPA/404 Merger Process and that concurrence was received from the Corps of Engineers on November 23, 1998.
- It was established that the Division of Forest Resources District Headquarters along US 1 north would not be impacted by a five-lane shoulder section along US 1 as opposed to a four-lane divided highway and Corridor No. 21 being selected as the recommended build alternative.
- A consensus was reached to recommend Corridor No. 21 as the “Least Environmentally Damaging Practicable Alternative (LEDPA).”

October 25, 1999 – Post Hearing Meeting

- The Post Hearing Meeting Committee reviewed all comments made after the Corridor Public Hearing (held on September 14, 1999), and made recommendations for a “Preferred Alternative” to be included in the FEIS.
- The Committee recommended Corridor No. 21 as the “Preferred Alternative” with a five-lane shoulder section from the US 1 Bypass to the five-lane curb and gutter section near the N.C. Motor Speedway.

September 14, 1999 – Corridor Public Hearing

- NCDOT gathered comments on the selection of a preferred corridor.
- Alternative Corridor No. 21 was chosen as the “Selected Alternative.”

June 30, 1999 – Approval of Draft Environmental Impact Statement (DEIS)

- The Draft Environmental Impact Statement (DEIS) approved by the FHWA.
- The DEIS identifies four build alternatives; Alternatives 7, 14, 21 and 24, to be evaluated further for potential impacts.

November 23, 1998 – US Army Corps of Engineers Concurrence with Detailed Study Alternatives and Purpose and Need

- The Corps of Engineers concurred with the elimination of Segments B, M, N, and O from further consideration.
- The agreement reaffirms earlier concurrence (October 2, 1997) on the Purpose and Need.

September 16, 1998 – Project Team Meeting

- Corridor Segments M, and N were eliminated because of potential adverse environmental impacts; Segment B was eliminated due to environmental justice concerns.
- NCDOT decided to reconsider widening existing US 1 from its northern project terminus south to a point where a logical connection could be made to a four-lane controlled access facility on new location.

October 7, 1997 – Public Officials Meeting

- The original 27 Alternatives were reduced to 9 Alternatives.

October 2, 1997 – Concurrence on the Purpose and Need

- A memorandum titled “Integration of the Section 404 and NEPA Process – A Team Approach for Transportation Projects in North Carolina” was provided to NCDOT to concur on the purpose and need for the project.

February 1997 – Completion of the Phase I Route Location and Environmental Study

- A Phase I Route Location and Environmental Study was completed for the US 1 Bypass.

Purpose and Need

US 1 serves as an important north-south corridor in the Piedmont region between the South Carolina state line and two major interstates, I-40 and I-85. Construction of a US 1 bypass east of Rockingham, in addition to improvements to existing US 1 have been identified as primary goals in local planning documents.

Existing traffic data indicates some sections along US 1, especially in downtown Rockingham, currently experience either Level of Service D or E during peak traffic hours. By 2020, the majority of sections along US 1, with the exception of the four-lane, non-divided sections, will experience LOS E or worse during peak hours.

The proposed improvement and/or relocation of US 1 will improve travel in Richmond County by reducing overall travel time, reducing through and truck traffic congestion in downtown Rockingham, and improving traffic safety along US 1.

Operational Characteristics

The improvements to existing US 1 begin at Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) north of Rockingham, a distance of approximately 19.2 miles. The new location portion of the project is proposed as a fully controlled access facility. Interchanges are located at Wiregrass Road (SR 1640)/County Home Road (SR 1624), US 74 Bypass, Airport Road (SR 1966), and US 74 Business.

The “Preferred Alternative” design elements include:

- *Four-lane freeway* – 70 mph design speed, controlled access, 70-foot median, estimated 330 foot minimum right-of-way.
- *Four-lane widening* – 60 mph design speed, uncontrolled access, 23-foot median, estimated right-of-way varies from 100 to 200 feet
- *Five-lane widening* – 60 mph design speed (with shoulders), 50 mph design speed (with curb and gutter), uncontrolled access, continuous center turn lane; estimated right-of-way varies from 100 to 200 feet.

Preferred Alternative Summary (Alternative 21)

	Alternative 21
Project Length	19.2
Interchanges	4
Grade Separations	3
Railroad (Grade Separation)	2
Historic Properties	0
Archaeological Sites	4
Federal Listed Species Present Within Corridor	0
100 Year Floodplain and Floodway Crossings	5
Prime Farmlands (acres)	248.7
Potential Residential Relocations	102
Potential Business or Other Relocations	16
Hazardous Materials Sites	0
Stream Crossings	10
Delineated Surface Water Impacts (acre)	3
Wetland Impacts (acre)	39.19
Water Supply Watersheds	3 (Hitchcock Creek, Falling Creek, & Chock Creek)
Length in Critical Area (miles)	0
Wildlife Refuges and Gamelands	No
On-site Restoration Potential	TBD
Impacted Noise Receptors	0
TIP Cost Estimate (R-2501 B&C)	
Prior Year & Mitigation Cost Estimate	\$16.654 (million)
Right of Way Cost Estimate	\$9.895 (million)
Construction Cost Estimate	<u>\$204.000 (million)</u>
Total Cost Estimate	\$230.549 (million)

Summary of Public Involvement

Four Citizens Informational Workshops have been held on the following dates: July 19, 2007, December 1, 1998, October 7, 1997, and January 10, 1996. Approximately 60 -250 individuals attended to comment and voice their concerns on the corridors being considered for the US 1 Bypass. Two Public Hearings were held on June 24, 2002, and September 14, 1999. The following is a summary of comments received:

- Concerns about the impacts to individual properties, neighborhoods, safety and community facilities.
- Support for widening existing US 1 instead of a roadway on new location.
- Interests in advanced right-of-way acquisitions at the US 74 Bus. Interchange and a new interchange at Wiregrass Road (SR 1640)/County Home Road (SR 1624).

Project Commitments

The commitments recommended for the proposed improvements are:

1. Slopes in wetland areas will be constructed at a ratio of 2:1, where possible, to minimize impacts.
2. No borrow or waste areas or pits will be permitted in wetland areas under the jurisdiction of the U.S. Army Corps of Engineers.
3. Further archaeological investigations will be conducted at an ineligible site (31RH360) to identify and relocate a cemetery within the proposed right of way and construction limits. These investigations relate solely to the cemetery status under NC General Statutes.
4. NCDOT will continue to consider wildlife crossings at four locations near County Home Road (SR 1624). NCDOT will work with NCWRC and USFWS.

Bridging and Alignment Review (Concurrence Point 2A)

Concurrence Point 2A consists of the identification of potential impacts to jurisdictional areas including streams, wetlands and other surface waters based on the preliminary design within the LEDPA. Concurrence Point 2A also includes a discussion of NCDOT hydraulic requirements and potential bridging locations being proposed at major stream crossings and wetland areas.

Based on a preliminary hydraulic study and a recent review of stream crossings, nine stream crossings require structures that are greater than 60 inches wide. All other crossings can be contained in smaller pipes or culverts. The proposed structure locations are shown on Figures 1 and 1A - 1G.

Impacts to the streams, wetlands, and ponds are displayed in Tables 1a, 1b, 2a, 2b, and 3. Based on the preliminary design of the project, an impact analysis was conducted to determine the amount of each jurisdictional area or resource that would be impacted by construction of the project. These areas have been surveyed and mapped using GPS and are shown in Figures 1A – 1G. These figures are large-scale aerial maps that depict the locations of wetlands, streams and ponds along with the proposed roadway alignment within the LEDPA corridor. The impact area

is defined as the slope stakes plus a 25-foot clearing area. The overall impacts are summarized as follows.

Summary of Jurisdictional Impacts to Streams, Wetlands, and Ponds

Jurisdictional Resource	Total Amount in Corridor	Amount Impacted	Amount Avoided in Corridor	Percent of Resource Avoided
Streams (S1-S21) (linear feet)	22,840	3,627	19,213	90.1%
Wetlands (W1-W52) (acres)	247.3	39.1	207.2	93.6%
Ponds (Pond 1- Pond 10) (acres)	36.2	2.6	33.6	83.4%

Avoidance and Minimization (Concurrence Point 4A)

The purpose of Concurrence Point 4A is to review the preliminary design for the LEDPA and discuss issues such as minor alignment shifts, horizontal and vertical alignment, slopes and construction techniques. Avoidance and minimization has been incorporated into the preliminary design of the project through careful placement of the right of way within the corridor limits using such factors as design criteria adherence, avoidance of community features and facilities, avoidance and minimization of impacts to natural resources, and avoidance and minimization of impacts on cultural resources.

Archaeological Resources

Of 55 archaeological sites identified in the December 2001 Archaeological Survey Report, four National Register eligible sites (31RH376, 401, 403, and 408) are in the vicinity of the preferred alternative. After further investigation, it was determined that none of the eligible components of these sites are within the area of potential effect for the project. The Historic Preservation Office concurs with a finding of no impact determination regarding archaeological resources.

Further archaeological investigations will be conducted at an ineligible site (31RH360) to identify and relocate a cemetery within the proposed right of way and construction limits. These investigations relate solely to the cemetery status under NC General Statutes.

Threatened and Endangered Species

Table 4 describes the federally protected species findings within the project area.

Table 1a - Jurisdictional Stream Impacts

Site ID	Stream Name	Structure Number	Type of Proposed Structure	Size of Proposed Structure (L x W) (Feet)	Net Cost	Characteristics	Sub-Basin	Stream Index Number	Best Usage Classification	Perennial/Intermittent	Approx Width (ft)	NCDWQ Rating	Total Linear Ft w/in Corridor	Linear Ft Impacted w/in Slope Stakes	Mechanized Clearing Impacts (25 Linear ft. Outside Slope Stakes)	Total Linear Ft Impacted (Stakes + 25 ft)	Total Linear Ft Avoided/Minimized w/in Corridor *	Percent Stream Avoided/Minimized w/in Corridor *
S1	UT to Baggetts Creek	--	RCBC	4' x 5' Existing 50' Extended (Upstream) 65' Extended (Downstream)	--	wetland/floodplain present	03-07-16	13-40-3-2	C	Perennial/Intermittent	6.0-10.0	30.5	3,249.75	243.00	208.00	451.00	2,798.75	86.1%
S2	UT to Baggetts Creek	--	--	--	--	small wetland/floodplain present	03-07-16	13-40-3-2	C	Intermittent	0.0-5.0	21.00	379.47	44.00	25.00	69.00	310.47	81.8%
S3	Baggetts Creek	1	RCBC	350' x 10' x 8' (3)	\$1,486,850	wetland/floodplain present; benthos	03-07-16	13-40-3-2	C	Perennial	20.0-25.0	37.50	1,555.08	368.00	61.00	429.00	1,126.08	72.4%
S4	UT to Baggetts Creek	--	--	--	--	wetland/floodplain below SR 1104	03-07-16	13-40-3-2	C	Intermittent	0.0-5.0	26.50	261.98	15.00	28.00	43.00	218.98	83.6%
S5	UT to Baggetts Creek	--	--	--	--	stream previously channelized	03-07-16	13-40-3-2	C	Intermittent	6.0-10.0	26.00	959.76	131.00	56.00	187.00	772.76	80.5%
S6	UT to Speeds Creek	--	--	--	--	no wetland present along channel	03-07-16	13-40-3	C	Intermittent	0.0-5.0	19.50	655.63	0.00	0.00	0.00	655.63	100.0%
S7	UT to Speeds Creek	--	--	--	--	wetland/floodplain present	03-07-16	13-40-3	C	Intermittent	0.0-5.0	19.00	726.30	0.00	0.00	0.00	726.30	100.0%
S8	UT to Solomons Creek	--	--	--	--	wetland/floodplain present; portions of channel are braided	03-07-16	13-40	C	Intermittent	0.0-5.0	20.00	62.21	0.00	0.00	0.00	62.21	100.0%
S9	UT to Solomons Creek	--	--	--	--	wetland/floodplain present; pond present in channel; portions of channel braided	03-07-16	13-40	C	Perennial	0.0-5.0	37.50	2,852.60	523.00	0.00	523.00	2,329.60	81.7%
S10	Solomons Creek	5	RCBC	1,340 x 7' x 6' (1)	Not Computed	wetland/floodplain present; portions of channel are braided	03-07-16	13-40	C	Perennial	6.0-10.0	31.50	2,967.16	1,070.00	163.00	1,233.00	1,734.16	58.4%
	Solomons Creek	6	RCBC	50' x 9' x 5' (3) & Overflow Pipes (4)	\$206,400	wetland/floodplain present; portions of channel are braided	03-07-16	13-40	C	Perennial	(To Be Confirmed Prior to Concurrence Meeting)							
S11	UT to Solomons Creek	--	--	--	--	wetland/floodplain present below dam for upstream pond	03-07-16	13-40	C	Intermittent	0.0-5.0	24.00	1,145.74	0.00	0.00	0.00	1,145.74	100.0%
S12	UT to Beaverdam Branch	--	--	--	--	wetland/floodplain adjacent; portions of channel braided	03-07-16	13-39-12-11-6	C	Intermittent	0.0-5.0	20.75	373.96	0.00	0.00	0.00	373.96	100.0%
S13a	UT to South Prong Falling Creek	--	--	--	--	adjacent; braided channel; amphibians; upstream portion is intermittent	03-07-16	18-31-19-5	C	Intermittent	0.0-5.0	23.25	139.97	0.00	0.00	0.00	139.97	100.0%
S13	UT to South Prong Falling Creek	--	--	--	--	wetland/floodplain adjacent; braided channel; amphibians; upstream portion is intermittent	03-07-16	18-31-19-5	C	Intermittent	0.0-5.0	23.25	1,564.47	321.00	32.00	353.00	1,211.47	77.4%
S14	UT to South Prong Falling Creek	--	--	--	--	wetland/floodplain adjacent; portions of channel incised; amphibians	03-07-16	13-39-12-11	C	Intermittent	5.0-10.0	20.00	647.40	47.00	29.00	76.00	571.40	88.3%
S15	UT to Falling Creek	--	--	--	--	wetland/floodplain adjacent; portions of channel braided; amphibians	03-07-16	13-39-12(1)	WS-III	Intermittent	0.0-5.0	19.00	796.40	0.00	0.00	0.00	796.40	100.0%
S16	UT to Falling Creek	--	--	--	--	wetland; floodplain adjacent; amphibians	03-07-16	13-39-12(1)	WS-III	Intermittent	0.0-5.0	19.50	1,606.28	0.00	0.00	0.00	1,606.28	100.0%
S17	UT to Falling Creek	--	--	--	--	wetland adjacent; stream feeds small pond	03-07-16	13-39-12(1)	WS-III	Intermittent	0.0-5.0	19.50	306.65	0.00	0.00	0.00	306.65	100.0%
S18	UT to Chock Creek	--	--	--	--	wetland/floodplain adjacent; amphibians	03-07-16	13-39-6	WS-III	Intermittent	0.0-5.0	25.50	358.20	0.00	0.00	0.00	358.20	100.0%
S19	UT to Chock Creek	--	--	--	--	wetland/floodplain adjacent	03-07-16	13-39-6	WS-III	Intermittent	0.0-5.0	19.50	1,173.96	121.00	55.00	176.00	997.96	85.0%
S20	Chock Creek	9	RCBC	85' x 9' x 9' (3) Extend Existing	\$328,050	wetland/floodplain adjacent; outlet for Gibson Pond; amphibians	03-07-16	13-39-6	WS-III	Perennial	5.0-10.0	34.00	655.70	62.00	25.00	87.00	568.70	86.7%
S21	UT to Chock Creek	--	--	--	--	wetland/floodplain adjacent	03-07-16	13-39-6	WS-III	Intermittent	0.0-5.0	20.50	401.33	0.00	0.00	0.00	401.33	100.0%
TOTALS:													22,839.99	2,945.00	682.00	3,627.00	19,212.99	90.1%

Note: The NCDWQ Rating method was not in use when the field work was completed for this project.

* = Linear Feet Avoided/Minimized assumes impact area extends to 25-ft beyond slope stakes.

Table 1b - Jurisdictional Stream Impacts (Alternative Bridges)

Site ID	Stream Name	Structure Number	Type of Proposed Structure	Size of Proposed Structure (L x W) (Feet)	Net Cost	Characteristics	Sub-Basin	Stream Index Number	Best Usage Classification	Perennial/ Intermittent	Approx Width (ft)	NCDWQ Rating	Total Linear Ft w/in Corridor	Linear Ft Impacted w/in Slope Stakes	Mechanized Clearing Impacts (25 Linear ft. Outside Slope Stakes)	Total Linear Ft Impacted (Stakes + 25 ft)	Total Linear Ft Avoided/Minimized w/in Corridor *	Percent Stream Avoided/Minimized w/in Corridor *
S3	Baggetts Creek	1	Single Bridge	180' x 125' Severe Skew with Stream. Intersection Realignment Required.	\$4,660,600	wetland/floodplain present; benthos	03-07-16	13-40-3-2	C	Perennial	20.0-25.0	37.50	1,555.08	0.00	0.00	0.00	1,555.08	100.0%
S10	Solomons Creek	5	No Bridge	No Bridge Alternate (Interchange Areas w/Multiple Small Culverts).	Not Computed	wetland/floodplain present; portions of channel are braided	03-07-16	13-40	C	Perennial	6.0-10.0	31.50	2,967.16	1,070.00	163.00	1,233.00	1,734.16	58.4%
	Solomons Creek	6	Dual Bridges	130' x 105' (1) 130' x 38' (2) (Not Reasonable Unless Existing Culvert Needs Replacement).	\$2,526,775	(To Be Confirmed Prior to Concurrence Meeting)												
S20	Chock Creek	9	Dual Bridges	100' x 38' Skew 90 (Grade Revision to Shift Sag Off Bridge).	\$942,900	wetland/floodplain adjacent; outlet for Gibson Pond; amphibians	03-07-16	13-39-6	WS-III	Perennial	5.0-10.0	34.00	655.70	0.00	0.00	0.00	655.70	100.0%

Table 2a - Wetlands Impacts

SITE ID	Stream Name	Structure Number	Type of Proposed Structure	Size of Proposed Structure (L x W) (Feet)	Net Cost	Community Type	Sub-Basin	Cowardin Classification	Isolated/Contiguous	Riverine/Non-Riverine	NCDWQ Rating	Total Acreage w/in Corridor	Acreage Impacted w/in Slope Stakes	Mechanized Clearing Impacts (25 linear ft. outside slope stakes)	Total Acreage Impacted (Stakes + 25 ft)	Total Acreage Avoided/Minimized w/in Corridor **	Percent Wetlands Avoided/Minimized within Corridor
W0	--	--	--	--	--	Headwater Forest	03-07-16	PFO	Contiguous	Non-Riverine	25	0.91	0.00	0.00	0.00	0.91	100.0%
W1	--	--	--	--	--	Bottomland Hardwood	03-07-16	PFO	Contiguous	Riverine	46	3.93	0.09	0.20	0.29	3.64	92.6%
W2	--	--	--	--	--	Bottomland Hardwood	03-07-16	PFO	Contiguous	Non-Riverine	25	0.39	0.00	0.00	0.00	0.39	100.0%
W3	--	--	--	--	--	Swamp Forest	03-07-16	PFO	Contiguous	Riverine	58	8.78	0.01	0.10	0.11	8.67	98.7%
W4	--	--	--	--	--	Bottomland Hardwood - Scrub-Shrub	03-07-16	PFO/PSS	Contiguous	Non-Riverine	30	0.25	0.00	0.00	0.00	0.25	100.0%
W5	--	--	--	--	--	Bottomland Hardwood	03-07-16	PFO	Isolated	Non-Riverine	15	0.01	0.00	0.00	0.00	0.01	100.0%
W6	--	--	--	--	--	Bottomland Hardwood	03-07-16	PFO	Contiguous	Riverine	17	0.14	0.00	0.00	0.00	0.14	100.0%
W7	--	--	--	--	--	Hardwood Forest - Scrub-Shrub	03-07-16	PFO/PSS	Contiguous	Non-Riverine	46	0.19	0.00	0.00	0.00	0.19	100.0%
W8	--	--	--	--	--	Scrub-Shrub	03-07-16	PSS	Contiguous	Riverine	17	0.11	0.00	0.00	0.00	0.11	100.0%
W9	Baggetts Creek	2	RCBC	10' x 6' (2) Retain Existing	Not Computed	Bottomland Hardwood	03-07-16	PFO/PSS	Contiguous	Riverine	25	3.56	0.54	0.17	0.71	2.85	80.1%
W10	--	--	--	--	--	Bottomland Hardwood	03-07-16	PFO	Isolated	Non-Riverine	15	0.16	0.00	0.00	0.00	0.16	100.0%
W11	UT to Speeds Creek	3	RCBC	250' x 10' x 8' (3)	\$1,115,650	Hardwood Forest - Scrub-Shrub	03-07-16	PFO/PSS	Contiguous	Riverine	42	7.98	0.63	0.13	0.76	7.22	90.5%
W12	--	--	--	--	--	Bottomland Hardwood	03-07-16	PFO	Contiguous	Riverine	19	0.59	0.00	0.00	0.00	0.59	100.0%
W13	--	--	--	--	--	Bottomland Hardwood	03-07-16	PFO	Isolated	Non-Riverine	21	0.17	0.00	0.00	0.00	0.17	100.0%
W14	Watery Branch	4	RCBC	240' x 9' x 7' (2)	\$717,500	Swamp Forest	03-07-16	PFO	Contiguous	Riverine	74	20.71	2.31	0.65	2.96	17.75	85.7%
W15*	--	--	--	--	--	Hardwood Forest - Swamp Forest	03-07-16	PFO	Contiguous	Non-Riverine	63	7.63	0.00	0.00	0.00	7.63	100.0%
W16	--	--	--	--	--	Streamhead Pocosin	03-07-16	PFO	Contiguous	Non-Riverine	24	0.09	0.00	0.00	0.00	0.09	100.0%
W17*	--	--	--	--	--	Streamhead Pocosin	03-07-16	PFO	Contiguous	Non-Riverine	36	0.74	0.00	0.00	0.00	0.74	100.0%
W18	--	--	--	--	--	Swamp Forest	03-07-16	PFO	Contiguous	Riverine	65	11.28	4.91	0.35	5.26	6.02	53.4%
W19*	--	--	--	--	--	Swamp Forest	03-07-16	PFO	Contiguous	Riverine	59	10.69	1.91	0.21	2.12	8.57	80.2%
W20	--	--	--	--	--	Streamhead Pocosin	03-07-16	PFO	Contiguous	Riverine	52	0.91	0.00	0.00	0.00	0.91	100.0%
W21*	--	--	--	--	--	Streamhead Pocosin	03-07-16	PFO	Contiguous	Riverine	56	39.88	6.97	1.06	8.03	31.85	79.9%
W22	--	--	--	--	--	Streamhead Pocosin	03-07-16	PFO	Contiguous	Riverine	55	4.63	1.16	0.18	1.34	3.29	71.1%
W23	--	--	--	--	--	Bottomland Hardwood	03-07-16	PFO	Contiguous	Non-Riverine	39	0.47	0.00	0.00	0.00	0.47	100.0%
W24	--	--	--	--	--	Swamp Forest	03-07-16	PFO	Contiguous	Riverine	49	13.31	2.08	0.38	2.46	10.85	81.5%
W25	--	--	--	--	--	Scrub-Shrub - Old Pond	03-07-16	PSS/PEM	Contiguous	Non-Riverine	38	0.12	0.00	0.00	0.00	0.12	100.0%
W26	South Prong Falling Creek	7	Dual Bridges	245' x 38' (2) Over Wetlands 225' x 38' Over Railroad 335' x 38' Over US 74	\$12,292,800	Swamp Forest	03-07-16	PFO	Contiguous	Riverine	58	42.62	7.00	1.18	8.18	34.44	80.8%
W27	--	--	--	--	--	Bottomland Hardwood	03-07-16	PFO	Contiguous	Non-Riverine	28	1.47	0.00	0.00	0.00	1.46	99.8%
W28	--	--	--	--	--	Maintained/Disturbed Land	03-07-16	PSS	Contiguous	Non-Riverine	15	0.26	0.00	0.00	0.00	0.26	100.0%

Table 2a - Wetland Impacts (Continued)

SITE ID	Stream Name	Structure Number	Type of Proposed Structure	Size of Proposed Structure (L x W) (Feet)	Net Cost	Community Type	Sub-Basin	Cowardin Classification	Isolated/Contiguous	Riverine/Non-Riverine	NCDWQ Rating	Total Acreage w/in Corridor	Acreage Impacted w/in Slope Stakes	Mechanized Clearing Impacts (25 Linear ft. Outside Slope Stakes)	Total Acreage Impacted (Stakes + 25 ft)	Total Acreage Avoided/Minimized w/in Corridor **	Percent Wetlands Avoided/Minimized within Corridor
W29*	--	--	--	--	--	Streamhead Pocosin	03-07-16	PSS	Contiguous	Riverine	34	1.27	0.43	0.13	0.56	0.71	55.8%
W30	--	--	--	--	--	Streamhead Pocosin	03-07-16	PSS	Contiguous	Riverine	34	2.05	0.67	0.10	0.77	1.28	62.4%
W31*	--	--	--	--	--	Streamhead Pocosin - Maintained Powerline	03-07-16	PSS	Contiguous	Non-Riverine	27	0.30	0.00	0.00	0.00	0.30	100.0%
W32	--	--	--	--	--	Streamhead Pocosin	03-07-16	PFO	Contiguous	Non-Riverine	58	2.03	0.00	0.00	0.00	2.03	100.0%
W33	--	--	--	--	--	Streamhead Pocosin	03-07-16	PFO	Isolated	Non-Riverine	40	0.73	0.00	0.00	0.00	0.73	100.0%
W34	--	--	--	--	--	Streamhead Pocosin	03-07-16	PFO	Isolated	Non-Riverine	40	0.38	0.00	0.00	0.00	0.38	100.0%
W35	--	--	--	--	--	Mixed Pine/Hardwood	03-07-16	PFO	Isolated	Non-Riverine	30	0.77	0.00	0.00	0.00	0.77	100.0%
W36	--	--	--	--	--	Mixed Pine/Hardwood	03-07-16	PFO	Isolated	Non-Riverine	30	0.26	0.00	0.00	0.00	0.26	100.0%
W37	Falling Creek	8	RCBC	220' x 10' x 8' (2)	\$745,400	Swamp Forest	03-07-16	PFO	Contiguous	Non-Riverine	53	23.82	3.42	0.81	4.23	19.59	82.2%
W38	--	--	--	--	--	Streamhead Pocosin	03-07-16	PFO	Contiguous	Riverine	46	5.84	0.00	0.00	0.00	5.84	100.0%
W39	--	--	--	--	--	Streamhead Pocosin	03-07-16	PFO	Contiguous	Non-Riverine	38	0.43	0.00	0.00	0.00	0.43	100.0%
W40	--	--	--	--	--	Mixed Pine/Hardwood	03-07-16	PSS	Contiguous	Non-Riverine	25	1.23	0.00	0.00	0.00	1.23	100.0%
W41	--	--	--	--	--	Mixed Pine/Hardwood	03-07-16	PFO	Contiguous	Non-Riverine	28	0.22	0.00	0.00	0.00	0.22	100.0%
W42	--	--	--	--	--	Mixed Pine/Hardwood	03-07-16	PFO	Contiguous	Non-Riverine	41	3.50	0.00	0.00	0.00	3.50	100.0%
W43	--	--	--	--	--	Pine Forest - Scrub-Shrub	03-07-16	PSS	Isolated	Non-Riverine	11	1.19	0.00	0.00	0.00	1.19	100.0%
W44	--	--	--	--	--	Pine Forest - Scrub-Shrub	03-07-16	PSS	Isolated	Non-Riverine	11	1.18	0.00	0.00	0.00	1.18	100.0%
W45	--	--	--	--	--	Pine Forest - Scrub-Shrub	03-07-16	PSS	Isolated	Non-Riverine	11	0.38	0.00	0.00	0.00	0.38	100.0%
W46	--	--	--	--	--	Mixed Pine/Hardwood	03-07-16	PFO	Isolated	Non-Riverine	13	0.61	0.00	0.00	0.00	0.61	100.0%
W47	--	--	--	--	--	Small Stream Swamp	03-07-16	PFO	Contiguous	Riverine	55	4.13	0.00	0.00	0.00	4.13	100.0%
W48	--	--	--	--	--	Bottomland Forest	03-07-16	PFO	Contiguous	Riverine	47	3.07	0.05	0.09	0.14	2.93	95.4%
W49	--	--	--	--	--	Swamp Forest - Scrub-Shrub Pond Fringe	03-07-16	PFO/PSS	Contiguous	Riverine	83	4.29	0.06	0.11	0.17	4.12	96.0%
W50	--	--	--	--	--	Swamp Forest	03-07-16	PFO	Contiguous	Riverine	68	4.29	0.46	0.21	0.67	3.62	84.4%
W51	--	--	--	--	--	Mixed Pine/Hardwood	03-07-16	PFO	Contiguous	Non-Riverine	30	0.80	0.00	0.00	0.00	0.80	100.0%
W52	--	--	--	--	--	Mixed Pine/Hardwood	03-07-16	PFO	Contiguous	Riverine	32	2.49	0.05	0.20	0.25	2.24	90.5%
TOTALS:												247.26	33.64	6.37	39.19	207.23	93.6%

Palustrine Forested (PFO) Characterized by woody vegetation over 20 feet (6 meters) in height (i.e. swamps or bottomlands).
Palustrine Scrub-Shrub (PSS) Characterized by woody vegetation less than 20 feet (6 meters) tall.
Palustrine Emergent (PEM) Characterized by erect, herbaceous vegetation present for most of the growing season (i.e. marshes, wet meadows, fens, sloughs, or potholes).
Palustrine Unconsolidated Bottom (PUB) Includes all wetland and deepwater habitats with at least 25 % cover of particles smaller than stones, and less than 30% vegetative cover creating a lack of large stable surfaces for plant and animal attachment.

Note: Only representative wetland systems within the original corridors were rated using the NCDWQ Rating Form
 * = Total corridor acreage areas are estimates due to wetland lines not extended to the corridor. Actual impact areas are not estimated.
 ** = Acreage Avoided/Minimized assumes impact area extends to 25-ft beyond slope stakes.

Table 2b - Wetland Impacts (Alternative Bridges)

SITE ID	Stream Name	Structure Number	Type of Proposed Structure	Size of Proposed Structure (L x W) (Feet)	Net Cost	Community Type	Sub-Basin	Cowardin Classification	Isolated/Contiguous	Riverine/Non-Riverine	NCDWQ Rating	Total Acreage w/in Corridor	Acreage Impacted w/in Slope Stakes	Mechanized Clearing Impacts (25 Linear ft. Outside Slope Stakes)	Total Acreage Impacted (Stakes + 25 ft)	Total Acreage Avoided/Minimized w/in Corridor **	Percent Wetlands Avoided/Minimized within Corridor
W9	Baggetts Creek	2	No Bridge Alternate	--	Not Computed	Bottomland Hardwood	03-07-16	PFO/PSS	Contiguous	Riverine	25	3.56	0.54	0.17	0.71	2.85	80.1%
W11	UT to Speeds Creek	3	Dual Bridges	160' x 38'	\$1,496,700	Hardwood Forest - Scrub-Shrub	03-07-16	PFO/PSS	Contiguous	Riverine	42	7.98	0.63	0.13	0.76	7.22	90.5%
W14	Watery Branch	4	Dual Bridges	100' x 38'	\$1,004,700	Swamp Forest	03-07-16	PFO	Contiguous	Riverine	74	20.71	2.07	0.60	2.67	18.04	87.1%
W26	South Prong Falling Creek	7	Dual Bridges	2,360' x 38'-46'	\$22,889,500	Swamp Forest	03-07-16	PFO	Contiguous	Riverine	58	42.62	0.00	0.00	0.00	42.62	100.0%
W37	Falling Creek	8	Dual Bridges	120' x 38'	\$1,120,200	Swamp Forest	03-07-16	PFO	Contiguous	Non-Riverine	53	23.82	3.20	0.76	3.96	19.86	83.4%

Table 3 - Pond Impacts

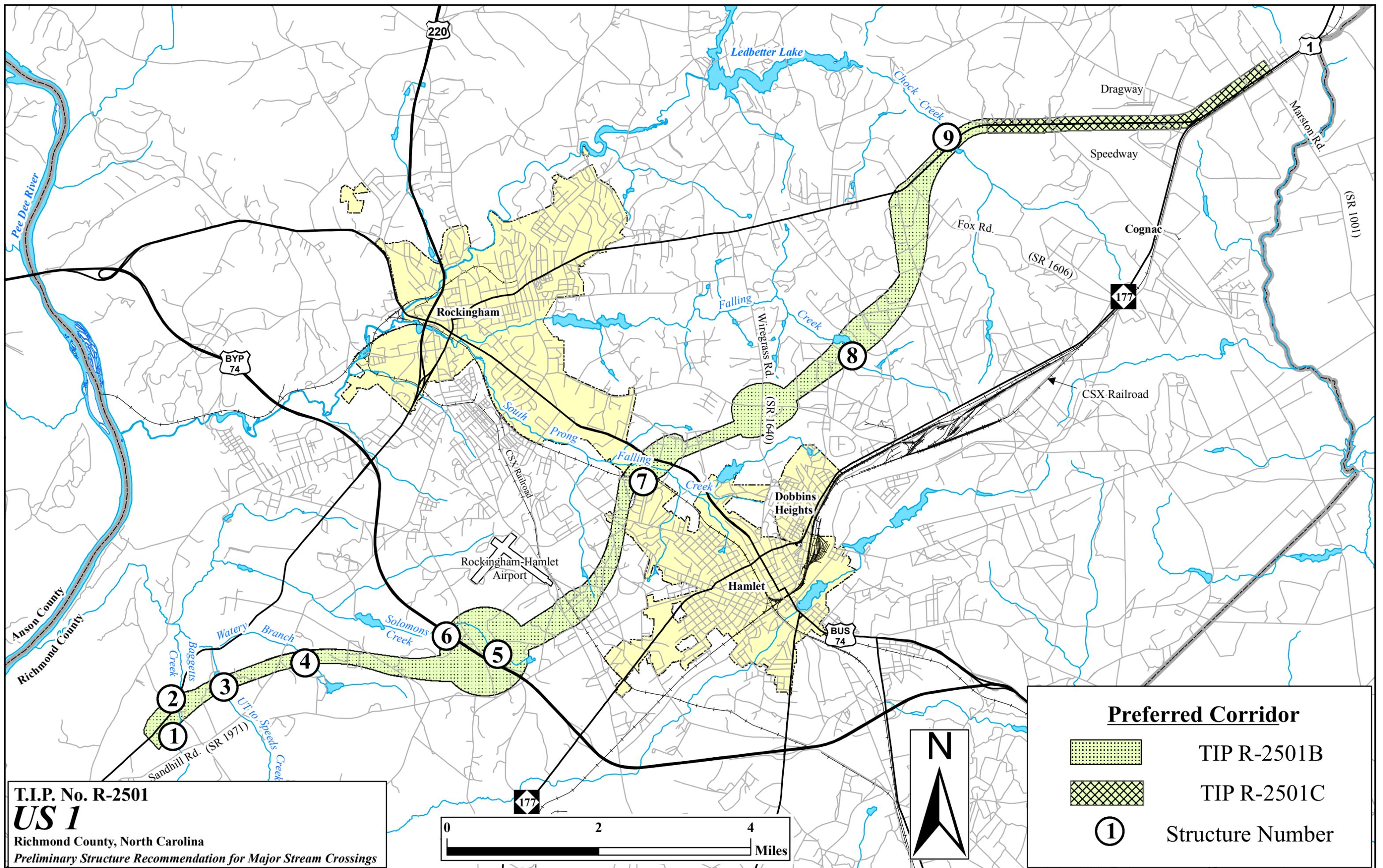
SITE ID	Sub-Basin	Type*	Total Acreage w/in Corridor	Acreage Impacted w/in Slope Stakes	Mechanized Clearing Impacts (25 Liner ft. Outside Slope Stakes)	Total Acreage Impacted (Stakes + 25 ft)	Total Acreage Avoided/Minimized w/in Corridor	Percent of Jurisdictional Waters (Ponds) Avoided/Minimized w/in Corridor
Pond 1	03-07-16	PUB	4.52	1.71	0.29	2.00	2.52	55.8%
Pond 2	03-07-16	PUB	2.92	0.38	0.16	0.54	2.38	81.5%
Pond 3	03-07-16	PUB	1.82	0.00	0.00	0.00	1.82	100.0%
Pond 4	03-07-16	PUB	4.86	0.00	0.00	0.00	4.86	100.0%
Pond 5	03-07-16	PUB	3.52	0.00	0.00	0.00	3.52	100.0%
Pond 6	03-07-16	PUB	0.86	0.00	0.00	0.00	0.86	100.0%
Pond 7	03-07-16	PUB	14.52	0.00	0.00	0.00	14.52	100.0%
Pond 8	03-07-16	PUB	1.33	0.00	0.00	0.00	1.33	100.0%
Pond 9	03-07-16	PUB	1.56	0.00	0.05	0.05	1.51	96.8%
Pond 10	03-07-16	PUB	0.31	0.00	0.00	0.00	0.31	100.0%
			36.22	2.09	0.50	2.59	33.63	83.4%

* Palustrine Unconsolidated Bottom (PUB) = Includes all wetland and deep water habitats with at least 25 percent cover of particles smaller than stones, and less than 30 percent vegetative cover creating a lack of large stable surfaces for plant and animal attachment

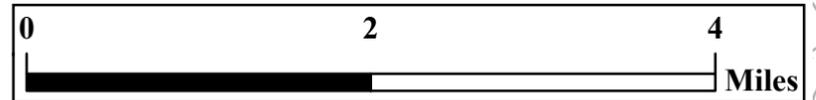
Table 4 - Endangered Species

Common Name (Scientific Name)	Federal Status	Habitat and Species Occurrence
Bald eagle (<i>Haliaeetus leucocephalus</i>)	BGPA	Due to documented occurrences of bald eagles on the Pee Dee River. Minor suitable habitat for this species occurs within the study corridor. No bald eagles were discovered during surveys completed in 2007.
Red-cockaded woodpecker (<i>Picoides borealis</i>)	E	Potentially suitable habitat, including nesting and/or foraging habitat, exists in the study corridor. No evidence of nesting cavities was found during the original surveys. Aerial surveys were conducted in 2007 that verified and updated the original survey results.
Shortnose sturgeon (<i>Acipenser brevirostrum</i>)	E	Suitable habitat does not exist within the study corridor.
Carolina heelsplitter (<i>Lasmigonia decorata</i>)	E	Suitable habitat may exist within the study corridor. No surveys have been completed at this time. Habitat evaluations and field surveys to be completed by NCDOT in the future.
Michaux's sumac (<i>Rhus michauxii</i>)	E	Suitable habitat exists within the study corridor. No individuals were observed during field surveys of potential habitat within the study corridor.
Rough-leaved loosestrife (<i>Lysimachia asperulaefolia</i>)	E	Suitable habitat exists within the study corridor. No individuals were observed during field surveys of potential habitat within the study corridor.

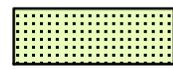
* Federally Protected Species taken from <http://nc-es.fws.gov/es/countyfr.html> (USFWS, January 31, 2008).

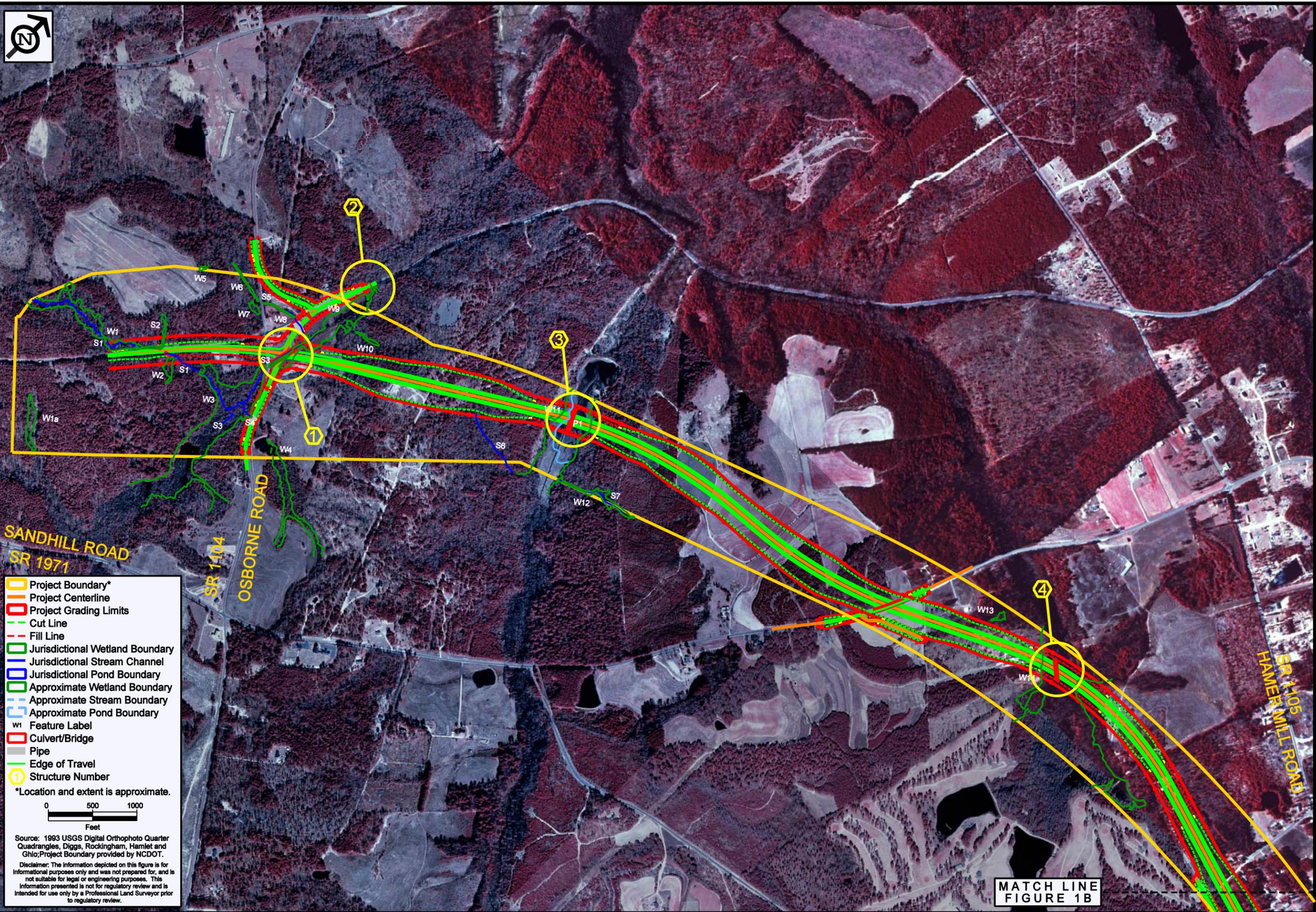


T.I.P. No. R-2501
US 1
 Richmond County, North Carolina
 Preliminary Structure Recommendation for Major Stream Crossings



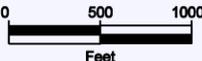
Preferred Corridor

-  TIP R-2501B
-  TIP R-2501C
-  Structure Number



- Project Boundary*
- Project Centerline
- Project Grading Limits
- Cut Line
- Fill Line
- Jurisdictional Wetland Boundary
- Jurisdictional Stream Channel
- Jurisdictional Pond Boundary
- Approximate Wetland Boundary
- Approximate Stream Boundary
- Approximate Pond Boundary
- Feature Label
- Culvert/Bridge
- Pipe
- Edge of Travel
- Structure Number

*Location and extent is approximate.



Source: 1993 USGS Digital Orthophoto Quarter Quadrangles, Diggs, Rockingham, Hamlet and Ghio; Project Boundary provided by NCDOT.

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Project:	ET06021.00
Date:	Aug 2008
Drwn/Chkd:	EW/PP
Figure:	1A

General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
 Richmond County, North Carolina
 T.I.P. No. R-2501

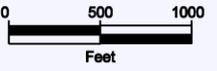
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MATCH LINE
FIGURE 1A



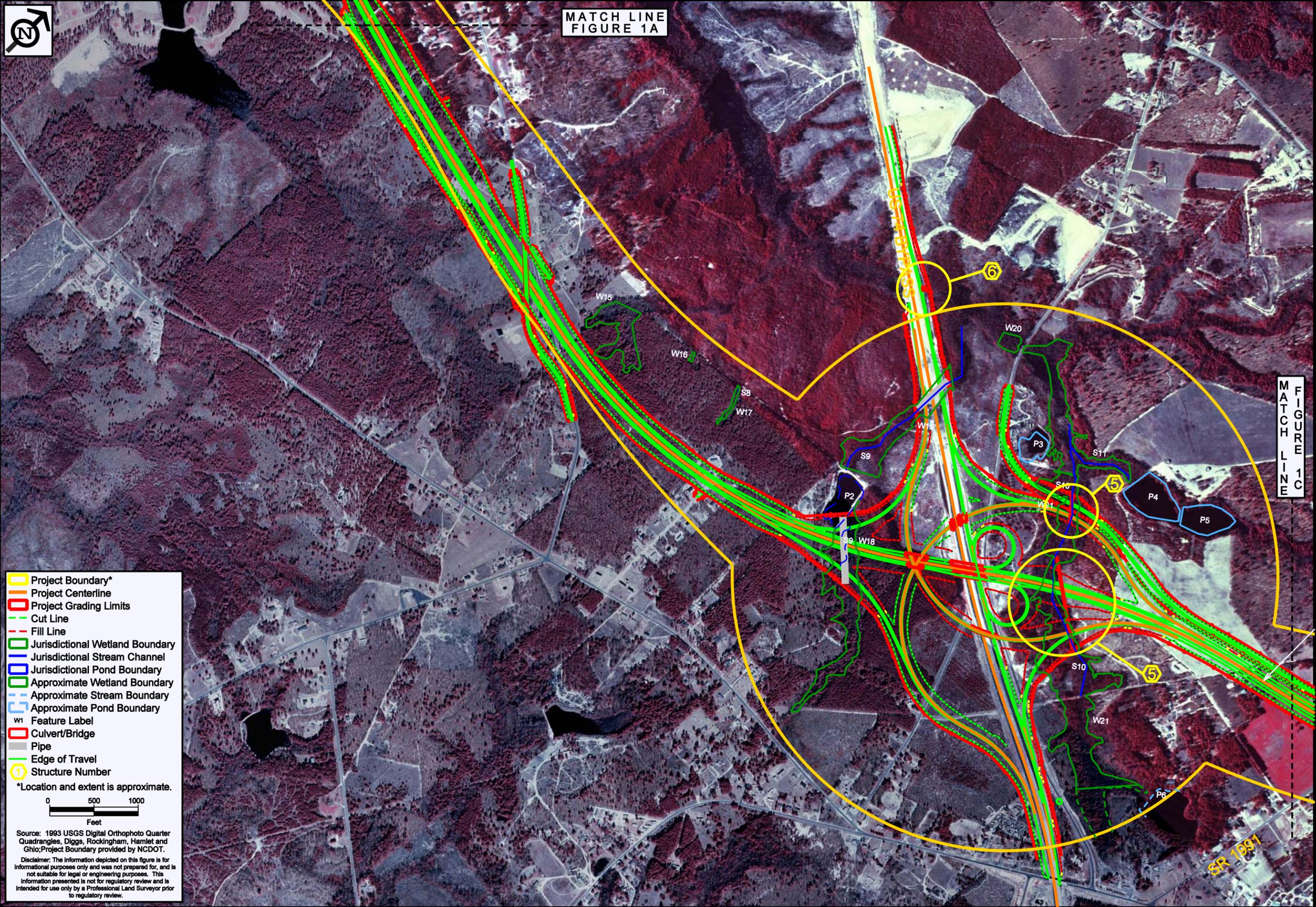
- Project Boundary*
- Project Centerline
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- Jurisdictional Wetland Boundary
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MATCH LINE
FIGURE 1C

Project:	ET06021.00
Date:	Aug2008
Drwn/Chkd:	EW/PP
Figure:	1B

General Jurisdictional Areas
Proposed US 1 Rockingham Bypass
 Richmond County, North Carolina
 T.I.P. No. R-2501

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MATCHLINE
FIGURE 1B

MATCHLINE
FIGURE 1D

End Project R-2501BA
Begin Project R-2501BB

BATTLE DAIRY ROAD
SR 1900

AIRPORT ROAD
SR 1906

SR 1915
CHALK RD.

MILL ROAD
SR 1903

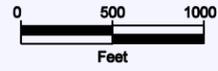
FREEMAN
MILL RD.
SR 1914

MCDONALD AVE.
SR 1903

HYLAN AVE.
SR 1909

- Project Boundary*
- Project Centerline
- Project Grading Limits
- Cut Line
- Fill Line
- Jurisdictional Wetland Boundary
- Jurisdictional Stream Channel
- Jurisdictional Pond Boundary
- Approximate Wetland Boundary
- Approximate Stream Boundary
- Approximate Pond Boundary
- Feature Label
- Culvert/Bridge
- Pipe
- Edge of Travel
- Structure Number

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Project:	ET06021.00
Date:	Aug 2008
Drwn/Chkd:	EW/PP
Figure:	1C

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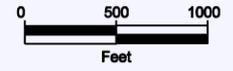


MATCHLINE
FIGURE 1C

MATCHLINE
FIGURE 1E

- Project Boundary*
- Project Centerline
- Project Grading Limits
- Cut Line
- Fill Line
- Jurisdictional Wetland Boundary
- Jurisdictional Stream Channel
- Jurisdictional Pond Boundary
- Approximate Wetland Boundary
- Approximate Stream Boundary
- Approximate Pond Boundary
- W1 Feature Label
- Culvert/Bridge
- Pipe
- Edge of Travel
- Structure Number

*Location and extent is approximate.



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Project:	ET06021.00
Date:	Aug 2008
Drawn/Chkd:	EW/PP
Figure:	1D

General Jurisdictional Areas
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 Richmond County, North Carolina
 T.I.P. No. R-2501

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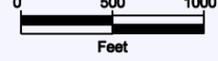


MATCH LINE

MATCH LINE

- Project Boundary*
- Project Centerline
- Project Grading Limits
- Cut Line
- Fill Line
- Jurisdictional Wetland Boundary
- Jurisdictional Stream Channel
- Jurisdictional Pond Boundary
- Approximate Wetland Boundary
- Approximate Stream Boundary
- Approximate Pond Boundary
- Feature Label
- Culvert/Bridge
- Pipe
- Edge of Travel
- Structure Number

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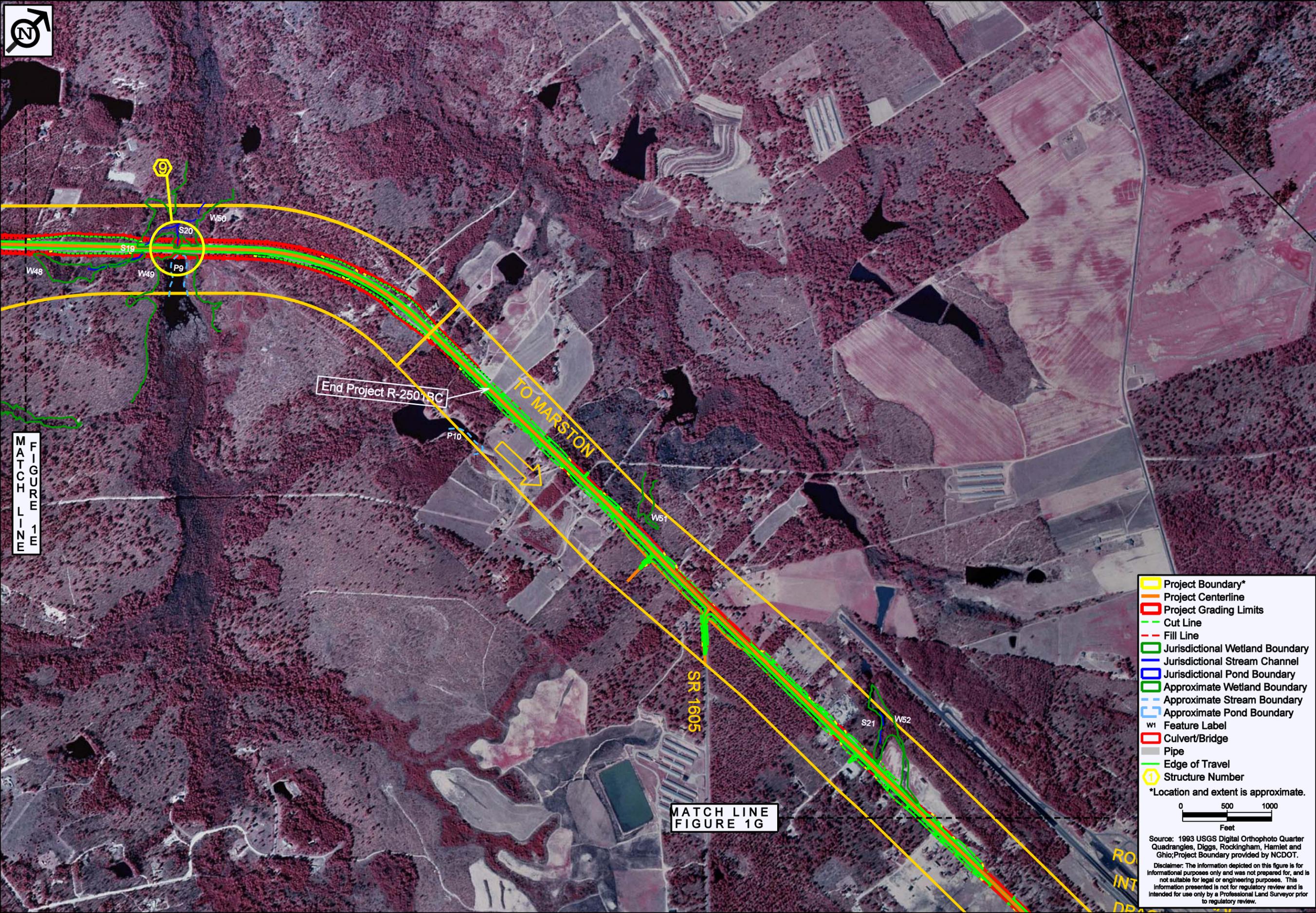
Source: 1993 USGS Digital Orthophoto Quarter Quadrangles, Diggs, Rockingham, Hamlet and Ghio; Project Boundary provided by NCDOT.

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Project:	ET06021.00
Date:	Aug 2008
Drwn/Chkd:	EW/PP
Figure:	1E

General Jurisdictional Areas
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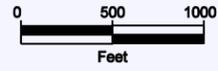


MATCH LINE
FIGURE 1E

MATCH LINE
FIGURE 1G

- Project Boundary*
- Project Centerline
- Project Grading Limits
- Cut Line
- Fill Line
- Jurisdictional Wetland Boundary
- Jurisdictional Stream Channel
- Jurisdictional Pond Boundary
- Approximate Wetland Boundary
- Approximate Stream Boundary
- Approximate Pond Boundary
- w1 Feature Label
- Culvert/Bridge
- Pipe
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- Structure Number

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Project:	ET06021.00
Date:	Aug 2008
Drwn/Chkd:	EW/PP
Figure:	1F

General Jurisdictional Areas
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MATCH LINE
FIGURE 1F

ROCKINGHAM
INTERNATIONAL
DRAGWAY

NORTH CAROLINA
MOTOR SPEEDWAY

SR 1486

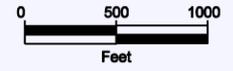
SANDHILLS GAME LAND

SR 1001

NC 177

- Project Boundary*
- Project Centerline
- Project Grading Limits
- Cut Line
- Fill Line
- Jurisdictional Wetland Boundary
- Jurisdictional Stream Channel
- Jurisdictional Pond Boundary
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Project:	ET06021.00
Date:	Aug 2008
Drwn/Chkd:	EW/PP
Figure:	1G

General Jurisdictional Areas
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Engineering
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MEETING MINUTES

Project: US 1 Rockingham Bypass - TIP R-2501
Qk4 Project No. 94600P2

Purpose: Wildlife Crossings Meeting

Place: PDEA Conference Room (470) – Transportation Building

Meeting Date: January 27, 2005

Prepared By: Richard L. Modlin

In Attendance: Roger Thomas – NCDOT Roadway Design
Derrick Weaver -- NCDOT PD&EA
Drew Joyner – NCDOT PD&EA
Felix Davila - FHWA
Travis Wilson - NCWNC
Gary Jordan - USFWS
Kevin Markham - ESI
Jim Smith - Qk4
Richard Modlin - Qk4

A Wildlife Crossing Meeting was held on January 27, 2005 at the Transportation Building. The purpose of the meeting was to discuss possible locations, benefits, impact and feasibility of wildlife crossings. Following are highlights from the meeting:

The primary focus is on the contiguous upland forested section along Section BC.

There are three existing dirt roads (in the vicinity of W37), which were first noted as potential crossing locations, although there could be possible ATV conflicts.

Locations were targeted for the crossings.

Tentatively proposed are one 8'x12' RCBC and three additional structures for crossings (4' x 6' RCBC or largest possible size).

Q4 will investigate the potential crossings and advise NCDOT.

Size of structure relative to the length was discussed.

For deer, the minimum dimensions should be a height of 8' and width of 12', although the intent is for all wildlife to utilize the structure.

The monocultural characteristic of the area does not lend itself particularly well to establishing crossings.

USFWS would like to see a "dry box" (or additional culvert) alongside the proposed RCBC location (-L- Station 282 + 14.50).

MEETING MINUTES



There are two NCDOT projects involving construction of wildlife crossings with documentation of pre- and post-construction conditions, so as to provide some idea of the effectiveness achieved.

Schedule for R-2501

Plan is to get everything back in June, 2005 including review by hydro, geotechnical and congestion management.

Qk4 to submit a final EIS draft to NCDOT by March 30, 2005, that will include:

- Updated census information
- 2A/4A documentation
- Updated traffic survey
- Any design changes resulting from NCDOT review of the preliminary design

Qk4 to submit to Roger Thomas two sets of scroll plans and profiles for BA, BB & BC for forwarding to geotechnical unit. A 2-3 month turnaround (from geotech) is anticipated.

Qk4 will review the proposed crossing locations and advise as to what can reasonably be installed. Based on the proposed locations, ESI will evaluate benefit of the proposed wildlife crossings and advise NCDOT. This task will be included in their supplemental agreement currently in progress.

If there are any additions or corrections to these minutes, please e-mail them to Richard L. Modlin with Qk4 at rmodlin@qk4.com.

c: Attendees (*via e-mail*)

END OF MEMORANDUM

RLM/rlm

file: U-4006 -- Meeting Minutes



Engineering
Construction
Planning

MEETING MINUTES

Project: US 1 Rockingham Bypass, Richmond County, Federal Aid No. NHF-1(1), State Project No. 8.T580501, WBS No. 34437.1.1, TIP Project No. R-2501, Qk4 Project No. 94600P2

Purpose: 2A/4A Merger Team Field Meeting

Place: North Carolina Speedway
Rockingham, Richmond County

Meeting Date: November 10, 2004

Prepared By: Jim Smith (November 11, 2004)

In Attendance: Kristina Solberg, NCDOT, PDEA
Derrick Weaver, NCDOT, PDEA
Drew Joyner, NCDOT, TIP Program Manager
Rex Badgett, NCDOT, Division 8
Gary Jordan, US Fish and Wildlife Service
Beth Barnes, NCDENR, DWQ
Richard Spencer, USACE, Wilmington District
Chris Militscher, USEPA
Clarence Coleman, FHWA
Travis Wilson, NC Wildlife Resources Commission
Paul Petitgout, Environmental Services, Inc.
Josh Witherspoon, Environmental Services, Inc.
Jim Smith, Qk4

A 2A/4A Merger Team Field Meeting was held on Wednesday, November 10, 2004 for the proposed US 1 Rockingham Bypass in Richmond County. The meeting convened at the North Carolina Speedway with introductions of the merger team members. The purpose of the meeting was to review potential impacts to jurisdictional areas, including wetlands, streams, and other surface waters and impacts to threatened and endangered species. Possible bridge locations and avoidance and minimization issues were also discussed.

Outlined below is a list of those sites visited by the merger team during the field review and a brief summary of key issues discussed at each site:



Engineering
Construction
Planning

MEETING MINUTES

1) Wetlands and stream (W49, W50, S19 and S20) associated with Gibson's Pond (identified as P9 on Figure 1F on ESI jurisdictional maps)

- Qk4 will review hydraulic recommendations and proposed typical section to determine if the existing roadway and box culvert will be utilized or if a new structure will be required.
- DWQ indicated there would be some stormwater issues if this section of US 1 were proposed as a five-lane curb and gutter section.
- If new structure is required, it will most likely consist of a single span bridge.
- COE indicated that there would be some credits for mitigation by constructing a new bridge.
- Stream (S20), located just west of Gibson's Pond, is being accommodated by an existing 18" pipe and would not require bridging.
- FWS indicated that they would prefer to see the existing culvert remain and a new bridge constructed for the widening section.

2) McDonalds Pond (identified as P7 and W37 on Figure 1E)

- Preferred alignment crosses south of McDonalds Pond.
- There are no streams associated with W37. Culvert(s) were recommended.
- Due to this area being relatively undeveloped, FWS and WRC recommended several small box culverts be placed between Wiregrass Road (SR 1640) and existing US 1 to allow for small wildlife passages. The size of the culverts will be determined primarily by vertical alignment and not hydraulics.
- It was recommended that an additional meeting be held to review possible culvert locations similar to the Fayetteville Outer Loop project.

3) Wetland area between CSX Railroad and US 74 Business (identified as W26 on Figure 1D)

- Qk4 will review hydraulic requirements and verify structure recommendations. It appears that bridges will be required over both CSX railroad and US 74 Business. Need to determine how much area would remain between the two bridges.
- Need to prepare a cost estimate and comparison between constructing one structure versus a combination of structures.
- FWS and COE indicated this area was inordinately wet due to beaver activity.
- Because of its appearance and likelihood to support waterfowl, it was recommended that a bridge be constructed over the wetlands located between the railroad and US 74 Business.

4) US 74 Bypass/US 1 Interchange area (identified as W18, W19 and W21 on Figure 1C)

- This area will be dictated by what is required due to the construction and layout of the interchange. No recommendations were made.



Engineering
Construction
Planning

MEETING MINUTES

5) Loch Haven Golf Course (identified as W14 on Figure 1B)

- A culvert was recommended for this area.

6) Beginning of project at Osborne Road (identified as S1, S2, S3, W2, W8, W9 on Figure 1A)

- This area was not reviewed in the field due to time constraints. However, COE indicated they would like to see what is being proposed in these areas. Based on a qualitative description by ESI this area will more than likely require culverts.

Additional Items

- Qk4 will complete preliminary design and submit plans to Roadway.
- Qk4 will determine specific hydraulic requirements and costs associated with each bridging decision.

Section 404/NEPA Merger Project Team Meeting Agreement
Concurrence Point No. 2

Alternatives To Be Studied In Detail In The DEIS

And

Concurrence Point No. 3

Least Environmentally Damaging Practicable Alternative

DEC 12 2003

US 1

T.I.P. No.: R-2501

NCDOT Project No.: 8.T580501

Project Description: The proposed action consists of the widening and/or relocation of US 1 in Richmond County from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) north of Rockingham, a distance of approximately 31 kilometers (19.2 miles). The segment of the R-2501 project from the US 74 Bypass southward into South Carolina along US 1 will be the probable routing of the I-73 Corridor.

The proposed project from Sandhill Road (SR 1971) to Fox Road (SR 1606) north of Rockingham will consist of a four-lane divided freeway with full access control. Interchanges for this section of the project are being planned at the US 74 Bypass, Airport Road (SR 1966) and US 74. From north of Fox Road (SR 1606) to the project terminus at Marston Road (SR 1001) the project will consist of widening the existing roadway to either a four-lane divided facility or a five-lane section.

Purpose of and Need for Action: The purpose of the US 1 Bypass and improvements to existing US 1 is to improve travel conditions in Richmond County. The proposed project will reduce overall travel time and alleviate traffic congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets. The construction of the US 1 project will provide a safer, more efficient facility for local and through traffic.

Concurrence on the purpose and need for the project was provided in the NCDOT memorandum dated October 2, 1997 entitled, "Integration of the Section 404 and NEPA Process - A Team Approach for Transportation Projects in North Carolina." A letter dated November 23, 1998 from the Department of the Army, Corps of Engineers (Wilmington District) reaffirmed their concurrence on the purpose and need for the US 1 project (see attached letter).

Development of Reasonable/Feasible Alternatives: In February 1997, the Phase I Route Location and Environmental Study for the US 1 Rockingham Bypass was completed. The purpose of the Phase I study was to provide sufficient documentation in terms of social and environmental impacts to allow the

selection of those alternatives which could be considered both reasonable and feasible for construction of the proposed action. A Project Team meeting was held on September 16, 1998 (see attached minutes) to discuss refinement of the reasonable and feasible alternatives presented in the Phase I document. As a result of this meeting, Corridor Segments M and N were eliminated because of their potential adverse environmental impacts and as a result of NCDOT's decision to reconsider widening of existing US 1 from its northern project terminus south to a point where a logical connection could be made to a four-lane controlled access facility on new location. Corridor B was eliminated because of environmental justice concerns. The elimination of these corridors resulted in four build alternatives remaining as "reasonable and feasible" from the original twenty-seven alternatives. These alternatives (Alternate 7, 14, 21 and 24) were presented and evaluated in the Draft Environmental Impact Statement (DEIS). A figure showing these alternatives is attached. Although concurrence is implied in the November 23, 1998 Corps of Engineers' letter, this form will reaffirm concurrence with the "alternatives to be studied in detail" in the Draft Environmental Impact Statement (Concurrence Point No. 2).

The DEIS, which was approved by the Federal Highway Administration (FHWA) on June 30, 1999, evaluated three basic alternatives in detail: the No-Build alternative, the "Improve Existing Facilities" alternative, and the Bypass alternative. The Bypass alternative consisted of three primary corridors located between Rockingham and Hamlet with several crossover corridors. Following detailed evaluations, the "Improve Existing Facilities" alternative, the No-Build alternative and twenty-three bypass alternatives were eliminated from further consideration. Four (4) bypass alternatives (Alternates 7, 14, 21 and 24) were identified as final build alternates and were further evaluated in the DEIS.

A summary of the evaluation process and the reasons for the elimination of the No-Build alternative, the "Improve Existing Facilities" alternative and three of the final build alternates is listed as follows:

Elimination of the No-Build Alternative:

The No-Build Alternative would not satisfy projected US 1 transportation needs and is not consistent with the goals of the Rockingham-Hamlet Thoroughfare Plan or the NCDOT Transportation Improvement Program, Transportation 2001. Based on this evaluation, the No-Build Alternative is not a reasonable or feasible alternative and was eliminated from further study. The No-Build Alternative provides a do-nothing condition for qualitative comparison to the build alternatives, but is typically not an effective alternative.

Elimination of "Improve Existing Facilities" Alternative:

The "Improve Existing Facilities" Alternative is not consistent with local and statewide long-range plans to provide a fully controlled, bypass facility (freeway) around Rockingham. Widening of the existing

facility would not alleviate through or truck traffic congestion within the downtown area. Therefore, based on these factors and the potential impacts to residences, businesses and the Rockingham Historic District, the "Improve Existing Facilities" Alternative was not considered as a reasonable and feasible alternative.

Elimination of Alternates 7, 14 and 24:

Alternatives 14 and 24 were eliminated from further consideration since they have more impacts to the natural environment than Alternatives 7 and 21. Alternative 7 was eliminated from further consideration since it has more relocations than Alternative 21. Therefore, Alternates 7, 14 and 24 were eliminated from further consideration and Alternate 21 remains as the Least Environmentally Damaging Practicable Alternative for the project.

Least Environmentally Damaging Practicable Alternative: Following review of the detailed studies for the No-Build Alternative, the Improve Existing Facilities alternative, and the four build alternates presented in the Draft Environmental Impact Statement and a formal Corridor Public Hearing, the Section 404/NEPA Merger Project Team verbally concluded on October 28, 1999 that **Alternative No. 21** was the Least Environmentally Damaging Practicable Alternative (see attached minutes). Alternative No. 21 includes the construction of a four-lane divided freeway on new location along the route described below.

Alternative Corridor 21 begins south of Rockingham near Sandhill Road (SR 1971) then follows a route north of the Loch Haven Golf Course, continues south of the Rockingham-Hamlet Airport, crosses US 74 east of Pineleigh Avenue (SR 1670) and continues northeasterly and ties back to existing US 1 at Fox Road. Interchanges are planned at the US 74 Bypass, Airport Road (SR 1966) and at US 74. Grade separations are planned at Sandhill Road (SR 1971), Hamer Mill Road (SR 1105), Hylan Avenue (SR 1901), Wiregrass Road (SR 1640) and County Home Road (SR 1624). At-grade intersections are planned at existing US 1 South, existing US 1 North, Fox Road (SR 1606), Cognac Road (SR 1605), NC 177 and Beaverdam Church Road (SR 1486).

Shortly after the team meeting, it was disclosed through a memorandum from Mr. Ted Bisterfeld of the Office of Environmental Assessment, that a representative of the U.S. Environmental Protection Agency (EPA) had not been able to participate in the meeting. Although EPA expressed their belief that Alternative Corridor No. 21 had the most merit of any of the build alternatives considered, EPA was reluctant to concur on a LEDPA without further information regarding NC 177 as a bypass alternative.

Further coordination with the Section 404/NEPA Merger Project Team was achieved by providing subsequent documentation to both EPA and the Corps of Engineers concerning the feasibility of utilizing NC 177 as a bypass alternative. NC 177 Alternatives, including those on new alignment, were evaluated

and will be presented in a Supplemental Draft Environmental Impact Statement. Based on comments received from EPA and the Corps of Engineers, the additional documentation satisfied their concerns that improvements to NC 177 would not satisfy the project's purpose and need and; therefore, was not a reasonable and feasible alternative.

The Section 404/NEPA Merger Project Team concurred on February 15, 2001 with the "alternatives to be studied in detail" in the Draft Environmental Impact Statement (Concurrence Point No. 2) and that "Alternative Corridor No. 21" is the Least Environmentally Damaging and Practicable Alternative for the US 1 project (Concurrence Point No. 3).

U.S. Army Corps of Engineers

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

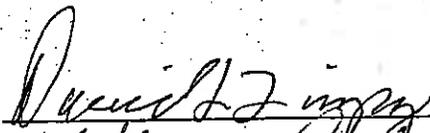
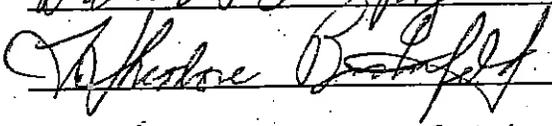
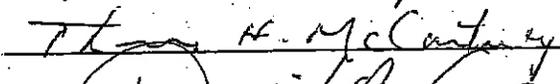
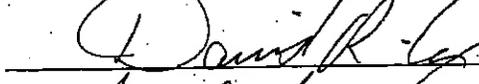
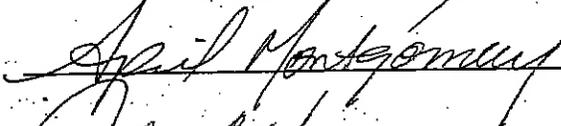
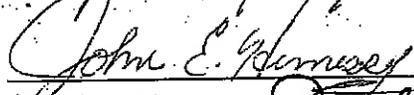
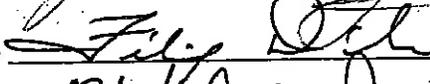
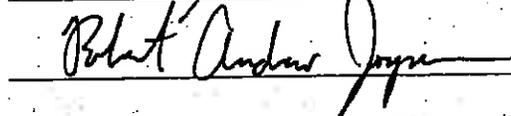
N.C. Wildlife Resources Commission

N.C. Department of Cultural Resources

N.C. DENR -
Division of Water Quality

Federal Highway Administration

N.C. Department of Transportation

Engineering
Architecture
Planning
Landscape Architecture
Environmental Science
Land Acquisition

PRESNELL ASSOCIATES INC

Date: November 1, 1999
To: File
From: Ron Smith
File: 94600P2 Meeting Minutes
Subject: US 1 Rockingham Bypass, Richmond County, State Project No. 8.T580501, Federal Aid No. NHF-1 (1), TIP No. R-2501

Introduction

An Interagency Team Meeting for the above-referenced project was held on Thursday, October 28, 1999 at 10:00 am in Room 470 of the NCDOT Project Development and Environmental Analysis Branch. The purpose of the meeting was to present to the agencies the "recommended alternative" as selected from the post-hearing review meeting and to gain consensus on a "Least Environmentally Damaging Practicable Alternative (LEDPA)." Those persons in attendance are listed as follows:

Bill Rosser	NCDOT Division 8
Tim Johnson	NCDOT Division 8
Roy Shelton	FWHA (Raleigh)
Bill Pickens	NC Division of Forest Resources
Dave Timpy	US Army Corps of Engineers (USACOE)
David Cox	NC Wildlife Resources Commission
John Hennessey	NC Division of Water Quality
Tom McCartney	US Fish and Wildlife Service (FWS)
Roger Thomas	NCDOT Roadway Design
Jay Bissett	NCDOT Project Development and Environmental Analysis
Tom Kendig	NCDOT Project Development & Environmental Analysis
Ron Smith	Presnell Associates, Inc.
Jim Smith	Presnell Associates, Inc.

Mr. Tom Kendig initiated the meeting by giving a brief introduction and history of the project. Mr. Kendig indicated that the Public Hearing was held on September 14, 1999. Mr. Kendig then introduced Ron Smith of Presnell Associates, who gave a brief description and comparison of the four proposed build alternatives in terms of relocations, wetland impacts, stream crossing impacts and costs. Mr. Smith was asked to summarize the major comments received at the public hearing, which included potential impacts at the proposed K-3 school site along County Home Road (SR 1624), the proposed typical section (5-lane shoulder section vs. 4-lane divided facility with median) along existing US 1 north

of Wiregrass Road, and existing traffic concerns at the intersection of Wiregrass Road and US 1. Mr. Kendig indicated that Corridor No. 21 was selected as the “preferred alternative” by the post-hearing review committee. The meeting was then opened to general comments and questions.

Mr. John Hennessey of DWQ questioned whether or not this project was following the NEPA/404 Merger Process and if so had the project received concurrence in regards to the development of reasonable/feasible alternatives (Concurrence Point Number 2). Mr. Kendig indicated that the project was following the NEPA/404 Merger process and that the project had received concurrence based on a letter transmitted by the Corps of Engineers to NCDOT on November 23, 1998. Mr. Hennessey indicated that the majority of his comments on the DEIS could then be ignored since many of the issues dealt primarily with selection of the reasonable/feasible alternatives.

Mr. Tom McCartney reiterated that FWS would continue to withhold final concurrence on the determination of “Not Likely To Adversely Affect” for the red-cockaded woodpecker until NCDOT had the opportunity to complete the survey of a potential nesting tree and provide FWS with a final report. Since the survey tree is located in an area that is common to all four build alternatives, final concurrence on the RCW would not affect the selection of the LEDPA.

Mr. Bill Pickens of the Division of Forest Resources commented that the DEIS failed to identify the location of their District headquarters building on US 1 north, which serves as an emergency response facility. Mr. Pickens was concerned that the DEIS does not provide a detailed breakdown of different timber types that would be impacted by the project. Mr. Smith indicated that such a breakdown is not normally provided at this stage of the project. Mr. Pickens was also concerned that widening existing US 1 to the north would adversely affect their District headquarters building and that access to and from their facility by their heavy equipment would be difficult on a four-lane divided highway. Mr. Kendig informed Mr. Pickens that NCDOT would be looking at a five-lane should section along existing US 1 as opposed to a four-lane divided highway and that Corridor No. 21, which would not impact the Division headquarters building, was selected by the post-hearing review committee as the recommended build alternative.

Mr. David Cox of the NC Wildlife Resources Commission expressed concerns over potential impacts to the Sandhills Gamelands and the McKinney Lake Fish Hatchery. It was explained to Mr. Cox that at one time one of the new location alternatives (Segment N) did come close to the Gamelands but was eliminated earlier in the planning stages. Neither the Gamelands or the Fish Hatchery would be impacted by any of the build alternatives.

Mr. Hennessey asked about the location and potential impacts to the Critical Watershed Area. Mr. Smith indicated that the Critical Water Supply Area had been identified early in the process and Corridors H and H2 are located over 400 meters (1310

94600P2 – Meeting Minutes

November 1, 1999

Page 3

feet) from the outside fringes of the critical area. Mr. Hennessey also expressed concern over potential impacts to Beaverdam Branch, which may have been confused with Beaverdam Creek. Beaverdam Creek has an “Excellent” BMAN rating but is located north of Ledbetter Lake outside of the study area.

Mr. Dave Timpy of the Corps of Engineers was asked to comment on the quality of the wetlands in each of the corridors. Mr. Timpy indicated that wetlands in the US 1 Bypass study area were very typical of the type of wetlands found in the US 220 Bypass.

Based on the comments received from circulation of the DEIS and from the Public Hearing and information presented at the interagency meeting a consensus was reached as to the recommendation of Corridor No. 21 as being the “Least Environmentally Damaging Practical Alternative (LEDPA)” for TIP Project No. R-2501.

END OF MEMORANDUM

RCS/efs

file: 94600P2-Meeting Minutes

Attendees

Louisville



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS

P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

November 23, 1998

IN REPLY REFER TO

Regulatory Division

Action ID No. 199500459, TIP R-2501, Improvements to US 1, Rockingham, Richmond County, North Carolina.

Mr. William D. Gilmore, P.E., Manager
Planning and Environmental Branch
Division of Highways
North Carolina Department of Transportation
Post Office Box 25201
Raleigh, North Carolina 27611-5201



Dear Mr. Gilmore:

Reference the September 14, 1998, project team meeting regarding the proposed relocation of US 1 around Rockingham, Richmond County, North Carolina. The purpose of the meeting was to discuss the project's status and proposed alternatives.

The alternative corridors presented by NCDOT were initially recommended for detailed study in the "Phase I Location and Environmental Study" dated February 1997. This study recommended ten alternative corridors (including the no-build alternative) to be studied in a comparable level of detail in the Phase II level effort. The corridor segments discussed during the referenced meeting include Segments B, M, N, and O.

NCDOT advised that environmental justice issues exist along Segment B. Due to the magnitude of these issues, NCDOT requested concurrence from the project team to eliminate Segment B from further consideration. The estimated wetland impacts along Alternative Corridor B are approximately 99 acres and are the lowest among the alternative corridors under consideration. Based on the environmental justice issues and higher wetland impacts of the other alternative corridors, we concur with the decision to eliminate Segment B from further consideration.

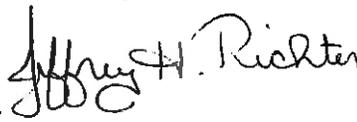
Additionally, NCDOT requested concurrence on adding Segment O and elimination of two new location Segments M and N. Segment O would widen the eastern portion of US 1 and starts where Segment L ends on US 1 and continues along US 1 to NC 177. According to the Phase I study, this Segment was eliminated due to "the local and statewide goals to provide a fully controlled access facility for the entire project". Based on the reduction of wetland impacts of Segment O versus the new location segments (M and N), we concur with elimination of Segments M and N and adding Segment O.

During the meeting, we informed NCDOT that we have not concurred on the purpose and need for the subject project. Subsequently, through telephone conversations with Mr. Jay Bissette, NCDOT, it was learned that concurrence on purpose and need for the subject project was provided in our memorandum dated 2 October 1997, subject: "Integration of the Section 404 and NEPA process- A Team Approach for Transportation Projects in North Carolina." This letter reaffirms our earlier concurrence on the purpose and need for the subject project.

It is our understanding that the remaining seven alternative corridors, including the no-build alternative, will be evaluated in detail and included in the draft Environmental Impact Statement (EIS). The decision on whether to prepare a draft EIS or environmental assessment will be discussed at the next project team meeting.

Should you have any questions, please contact me, Wilmington Field Office, Regulatory Division, at telephone (910) 251-4634.

Sincerely,


for Dave Timpy
Regulatory Project Manager
Wilmington Field Office

Copies Furnished:

Mr. Larry Hardy
National Marine Fisheries Service
Pivers Island
Beaufort, North Carolina 28516

Mr. John Hefner, Field Supervisor
U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. John Dorney
Division of Water Quality
North Carolina Department of
Environment and Natural Resources
4401 Reedy Creek Road
Raleigh, North Carolina 27607

Mr. David Cox
Highway Coordinator
North Carolina Wildlife Resources Commission
1141 I-85 Service Road
Raleigh, North Carolina 27522

Mrs. Kathy Matthews
Wetlands Section, Region IV
Water Management Division
U. S. Environmental Protection Agency
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303

PRESNELL ASSOCIATES INC

Date: September 16, 1998

To: File

From: Ron Smith 

File: 94600P2 Team Meeting Minutes

Subject: **US 1 Rockingham Bypass, Richmond County, State Project No. 8.T580501,
Federal Aid No. NHF-1 (1), TIP No. R-2501**

A Team Meeting for the above-referenced project was held on Monday, September 14, 1998 at 3:00 p.m. in the Roadway Design Conference Room of the Century Center building. The purpose of the meeting was to discuss further refinement of the reasonable and feasible alternatives. Those persons in attendance are included on the attached Sign-In sheet. Highlights of the meeting were as follows:

- Mr. Jay Bissett opened the meeting by giving a brief overview of the project and introducing Mr. Tom Kendig and Ms. Aileen Mayhew as the new project managers for R-2501. Each attendee was asked to introduce themselves and then, Mr. Bissett turned the meeting over to Mr. Ron Smith of Presnell Associates.
- Mr. Smith informed the attendees as to the status of the project including the completion of the Phase I Location and Environmental Study, selection of the Reasonable and Feasible Alternatives Corridors, progress of the wetland delineation and GPS effort and the results of the Ashley Chapel community meetings. Handouts were distributed to the attendees documenting environmental justice issues the results of some preliminary comparisons between alternative corridor segments.
- Mr. Bissett emphasized that primarily because of the opposition received from the public to date on this project, it would be in NCDOT's best interest to modify or eliminate any potential segments or corridors that would meet severe opposition.
- New alignment Corridor Segments M and N were requested to be eliminated as reasonable and feasible alternatives because of their potential adverse environmental impacts and as a result of NCDOT's decision to reconsider widening of existing US 1 from its northern project terminus south to a point where a logical connection could be made to a four-lane controlled access facility on new alignment. This widening would be consistent with NCDOT's TIP project, R-2502,

which proposes to widen US 1 from SR 1001 to the Moore County line as a multi-lane facility. Verbal agreement was reached to eliminate Corridor Segments M and N.

- Mr. Bissett asked that consideration be given to the elimination of Corridor B because of environmental justice concerns. Corridor B crosses and runs along the fringes of one of Richmond County's oldest and largest minority communities, Ashley Chapel. The construction of the proposed project using Corridor B and its associated interchange with the US 74 Bypass would result in direct impacts to the Poplar Springs Baptist Church and Cemetery, secondary impacts to the Ashley Chapel Elementary School and the Ashley Chapel Community Center and approximately 110 residential relocations. In addition, based on using a third of ESI's estimates, Corridor B would have more wetlands and stream channel impacts than Corridors ACEF and ADEF, respectively. A decision to eliminate Corridor B was reached on condition that the final wetland estimates do not overwhelmingly contradict the preliminary estimates.
- Mr. Dicky Harmon of ESI was asked to make a comparison of environmental issues between Corridor Segments H-H2 vs. I-J-K. Although it was apparent that Segments H-H2 would have significantly more stream channel impacts (5,207 meters vs. 2,032 meters) than Segments I-J-K, it was estimated that Segments H-H2 would impact only 6 more hectares of wetlands. As a result, Segments H-H2 will continue to be evaluated in the environmental document.
- Mr. Bissett stated that NCDOT may request to consider processing the multi-lane widening section of US 1 in front of the NC Motor Speedway as a separate EA.

END OF MEMORANDUM

file: 94600P2 - Meeting Minutes

cc: Ms. Aileen Mayhew
Louisville

Post-It Fax Note 7671

To RON Smith

Co./Dept. Presnell

Phone #

Fax # 704.568.1024

US 1
 TEAM MEETING
 TIP NO. R-2501

Date 9/15 # of pages 1

From Tom KENDIG

Co. NCDOT

Phone # 733 7844 588

Fax # 263

SEPTEMBER 14, 1998

✓	DAVE Timpy	CORPS OF ENGINEERS 251-4634
✓	Scott McLendon	" " " 251-4725
✓	David Cox	N.C.WRC (919) 528-9886
✓	Cyndi Bell	DWR 733-1786
✓	Debbie Bevin	SHPO 733-6545
	Renee Glidill-Early	SHPO 733-4763
	Ron Smith	Presnell 714-532-9544
	Aileen Mathew	NCDOT - P & E 733-7844 x228
✓	FELIX DAVILA	FHWA 856-4350 x 108
	Tom KENDIG	NCDOT P & E 919 733 7844 EXT 263
✓	DEWAYNE SYLES	NCDOT (RDU) (919) 250-4016
	JOHN ALFORD	NCDOT - ROADWAY DESIGN 919-250-4016
✓	JAY BISSSETT	NCDOT P & E 919-733-7842
✓	Bill Rossen	Division 8 910-944-2344
	TIM JOHNSON	Div. 8 " "
✓	TOM McARTNEY	USEWS 919-816-4520 EXT-32
	Dicky Harmon	ESI 833-0034
	Steve Cahoon	ESI 833-0034
	Jim Smith	Presnell

US 1 ROCKINGHAM BYPASS

T.I.P. No. R-2501

State Project No. 8.T580501

Federal Aid No. NHF-1(1)

Team Meeting

Agenda

September 14, 1998

- I. Introduction
- II. Status of Project
- III. Discussion of Impacts
 - A. Elimination of Segments M & N
 - B. Segment O
 - C. Corridor AB vs. Corridors ACEF & ADEF
 - D. Alternative Corridor HH2LOPQ vs Corridor IJKLOPQ (wetlands)
- IV. Other Issues
- V. Questions or Comments
- VI. Adjournment

COMPARISON OF IMPACTS*

A-B vs A-C-E-F vs A-D-E-F

	Segments A-B	Segments A-C-E-F	Segments A-D-E-F
FLOODPLAINS	285.0 meters (935.1 ft)	90.0 meters (295.3 ft)	99.0 meters (324.8 ft)
WETLANDS	40.1 hectares (99.1 acres)	33.3 hectares (82.3 acres)	35.7 hectares (88.2 acres)
OPEN WATER AREAS	1.2 hectares (3.0 acres)	1.6 hectares (4.0 acres)	1.1 hectares (2.6 acres)
STREAM CHANNELS	3,897.6 meters (12,788.1 ft)	3,008.6 meters (9,871.2 ft)	3,484.9 meters (11,433.8 ft)
STREAM CROSSINGS	5	4	4
RELOCATIONS			
- business	6	1	1
- residential	110	53	47
- church	1	0	0
- cemetery	1	0	0
GASLINE CROSSINGS	0	2	2
POT. HAZARD WASTE SITES	7	6	5
P/U FARMLANDS	76.8 hectares (189.8 acres)	102.1 hectares (252.3 acres)	105.6 hectares (260.9 acres)
CONST. COST (\$1,000)	\$16,850	\$18,950	\$18,650

* * - based on 90 meter (300 ft) corridor width.

US1 ROCKINGHAM BYPASS (TIP NO. R-2501)

Environmental Justice Issues

- Corridor B

Ashley Chapel/Mispah Road Community is considered to be the hub of Richmond County's largest predominately black community with over 2,000 residents. It is estimated that a significant portion of the community is also elderly. Several residents have expressed opposition to the proposed corridor.

Potential impacts to Poplar Springs Baptist Church and Ashley Chapel Cemetery due to interchange location with US 74 Bypass.

Possible change in travel patterns and accessibility, especially vehicular and pedestrian travel to Ashley Chapel Elementary School and the Ashley Chapel Family Resources Center, which provides many programs for community's youth and adults. Richmond County School Board has just approved funding for making improvements to the school.

Approximately 1.2 million dollars has been spent in the community on development block grant projects.

Approximately 59% (65 residents) of the estimated total residential displacements (109 residents) in Corridor A-B are considered to be minority.

- Corridor C

Ellerbe Grove Community is not as established as the Ashley Chapel Community. Residences are not as concentrated and are spread out more along Hamer Mill Road (SR 1105) and Ellerbe Grove Church Road, which is considered to be outside the US 1 Bypass study area. Community limits are harder to distinguish and no community facilities will be directly affected. Some minor disruptions in travel patterns may occur.

Approximately 15% (8 residences) of the estimated total residential displacements (53 residents) in Corridor A-C-E-F are considered to be minority.

COMPARISON OF IMPACTS*

H-H2-L vs I-J-K-L

	Segments H-H2-L	Segments I-J-K-L
FLOODPLAINS	303 meters (994.1 ft)	315 meters (1033.5 ft)
STREAM CROSSINGS	5	5
RELOCATIONS		
- business	9	11
- residential	90	27
- church	0	0
- cemetery	0	0
GASLINE CROSSINGS	0	2
POT. HAZARD WASTE SITES	2	0
P/U FARMLANDS	45.6 hectares (112.7 acres)	74.2 hectares (183.3 acres)
CONST. COST (\$1,000)	\$14,200	\$15,600

* - based on 90 meter (300 ft) corridor width.

Appendix B

DRAFT ENVIRONMENTAL IMPACT STATEMENT AND SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT REEVALUATION

Richmond County
US 1 Corridor Improvements
WBS No. 34437.1.1
State Project No. 8.T580501
T.I.P. No. R-2501

**DRAFT ENVIRONMENTAL IMPACT STATEMENT AND
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
REEVALUATION**

**U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**



APPROVED:

11/26/07
Date

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12/6/07
Date

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

Richmond County
US 1 Corridor Improvements
WBS No. 34437.1.1
State Project No. 8.T580501
T.I.P. No. R-2501

**DRAFT ENVIRONMENTAL IMPACT STATEMENT AND
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
REEVALUATION**

November 2007

DOCUMENTATION PREPARED BY KO & ASSOCIATES, P.C.

11/26/07
Date

Mark L. Reep
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**FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH**

11/26/07
Date

Jennifer M. Fuller
Jennifer M. Fuller, P.E., Project Planning Engineer
Project Development and Environmental Analysis Branch

Draft Environmental Impact Statement and Supplemental Environmental Impact Statement Reevaluation

**Richmond County
US 1 Corridor Improvements
WBS No. 34437.1.1
State Project 8.T580501**

T.I.P. No. R-2501

The following is a reevaluation of the Draft Environmental Impact Statement (DEIS) and the Supplemental Draft Environmental Impact Statement (SDEIS) for the proposed US 1 improvement near Rockingham and Hamlet in Richmond County. This memorandum describes the methodology used and the results of the reevaluation, performed in accordance with the Federal Highway Administration (FHWA) Technical Advisory T 6640.8A and National Environmental Policy Act (NEPA) regulations as cited in 23 CFR 771.129 (a).

Background

The proposed action will improve the US 1 corridor in Richmond County by providing a route for through traffic around the downtown area of Rockingham instead of through the central business district, reducing traffic congestion. US 1 is included in the North Carolina Department of Transportation's (NCDOT) *Strategic Highway Corridors Vision Plan*, adopted by the North Carolina Board of Transportation September 2, 2004. This portion of the US 1 improvements is identified as Project Number R-2501 in the NCDOT *2007-2013 State Transportation Improvement Program (TIP)*.

The proposed project will improve US 1 from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) in Marston, a distance of about 19 miles. Approximately 14 miles will be on new location, and about five miles of existing US 1 will be widened. From Sandhill Road to about one and a half miles north of Fox Road (SR 1606), US 1 is proposed to be a four-lane, median divided roadway with full control of access along the new location part and no control of access on the widening part. A five-lane section with no control of access is proposed along existing US 1 from about one and a half miles north of Fox Road to Marston Road. Interchanges are planned at the US 74 Bypass, Airport Road (SR 1966), and US 74 Business.

Planning, engineering, and environmental studies initially began for TIP R-2501 in 1994. Three Citizens Informational Workshops (CIW) were held between January 1996 and December 1998, and in June 1999 the DEIS was approved by the FHWA. The DEIS identified four build alternatives, or corridors. A corridor public hearing was held in September 1999. Between October 1999 and January 2000, NCDOT selected the Least Environmentally Damaging Practicable Alternative (LEDPA), or preferred corridor, primarily based on fewer impacts to streams and wetlands, and a fewer number of relocations. A SDEIS was prepared to document changes that had occurred since

approval of the DEIS, to document the extension of the project from north of Fox Road to Marston Road, and to evaluate the improvement of NC 177 from US 1 north of Rockingham to the South Carolina state line as an alternative to the proposed improvements to US 1. The SDEIS was approved by FHWA in April 2001. An Informal Public Hearing was held in June 2002 to solicit comments from the public regarding the widening of existing US 1. After evaluating the comments received at the hearing, NCDOT selected a five-lane section for the widening as the preferred route. Additional environmental studies, coordination with resource agencies, and a change in staff has contributed to the delay between the approval of the SDEIS and now.

A fourth CIW was held in Rockingham on July 19, 2007 to update the public on the progress of the project. The current schedule calls for the Final EIS (FEIS) to be approved by FHWA in June 2008 with the Record of Decision to follow in October of the same year. Right of way acquisition is slated to begin in 2010 with construction to begin in 2012.

Findings

The reevaluation addresses changes in the proposed project and study area that have occurred since completion of the DEIS and SDEIS. It reviews the following:

- Need for the Project
- Selected Alternative
- Affected Environment
- Environmental Impacts
- Proposed Mitigation

Need for the Project

Currently, sections along US 1, especially in downtown Rockingham, are congested during morning and evening rush hours. When special events are held at the Dragway or Speedway or when traffic increases during the summer, traffic congestion worsens. Without this project, current traffic congestion will continue to get worse on the majority of sections along US 1. This project will: reduce travel time; alleviate congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets; provide a safer more efficient highway; and improve mobility on the designated US 1 Strategic Highway Corridor.

The speedway held its last NASCAR race in 2004 and the number of other events held there has declined. The facility was auctioned off in early October 2007 to a local investor who plans to hold "lower-tiered" racing events there. However, the loss of the speedway as a traffic generator does not alter the overall principle of the purpose and need of the project. Preliminary traffic data still suggests a need for the project.

Selected Alternative

No substantial change has occurred in the preferred corridor that warrants review under this reevaluation. The corridor boundaries have not been substantially altered from those presented in the DEIS and SDEIS. The preliminary design is generally confined to those boundaries except in some areas where adjacent service roads or intersections may need to be extended. As the design phase of this project has progressed, the preliminary designs have become more detailed. Limits of improvements to intersecting roadways along the widening portion have been identified. Some roadways that cross the corridor will not have over/underpasses. These roadways will be realigned or ended in a cul-de-sac.

Coordination with the United States Fish and Wildlife Service (USFWS) concerning wildlife crossings has occurred since the approval of the SDEIS. USFWS has requested adequately sized reinforced concrete box culverts (usually eight feet high and 12 feet wide) to accommodate safe wildlife passage at sites along the corridor that are likely to be along natural wildlife trails. Specific crossing locations will be investigated and presented in the FEIS.

An interchange in the vicinity of Wiregrass Road (SR 1640) and County Home Road (SR 1624) is being considered to improve access to Pine Hills Industrial Park along EV Hogan Drive (SR 1700), emergency services vehicles, and future employment centers south of the proposed corridor. Further study on this interchange will be included in the FEIS.

Affected Environment

Human Environment

Based on demographic data and economic indicators, accompanied by information from local officials, conditions in the human environment have not changed significantly since the approval of the DEIS and SDEIS. US Census Bureau data from the 2000 census indicates the overall population growth is stagnant and recent projections suggest the population of Richmond County will decline between 2010 and 2030. The percentages of the population by race are comparable to those presented from the 1990 census, and the percentage of the population over the age of 65 is within one percent of that reported in the DEIS. When asked if and how the human environment has changed since the approval of the DEIS and SDEIS, local planners pointed out there has been little change in development trends, land use, and economic development in the past eight years. There have been no significant residential, commercial, or industrial developments in proximity to the preferred corridor. Local officials have been aware of the preferred corridor and have taken its location into consideration during land use planning. Economic conditions have not changed significantly either. Efforts to attract new industries to replace the loss of manufacturing jobs have been somewhat successful, but these successes have offset the losses.

The current listing of sites on the National Register of Historic Places does not include any newly listed structures within the preferred corridor. The preferred corridor does not include any eligible or listed structures as reported in the DEIS or SDEIS. The proposed design has been developed to avoid and minimize effects on archaeological sites. No public parks or recreation areas have been developed within the preferred corridor. Therefore, no Section 4(f) or 6(f) resources are within the corridor.

Physical Environment

It is unlikely the physical environment has changed significantly since the DEIS and SDEIS were approved. Locations, quantities, and characteristics of prime and important farmlands, water resources, floodplains/floodways, and hydrology/drainage will be confirmed and verified in the FEIS due in the spring of 2008.

An updated noise analysis and hazardous materials review will be included in the FEIS. An air quality analysis is not needed for this project since it is located in an attainment area.

Natural Environment

An updated *Natural Resources Technical Report (NRTR)* is being prepared for the FEIS, and the preliminary findings suggest the characteristics of the natural environment have not experienced significant change in the last eight years. The locations of jurisdictional waters and wetlands were confirmed in 2004 and were determined to be consistent with the findings in the DEIS and SDEIS. Four federally protected species listed as endangered in Richmond County were presented in the DEIS: shortnose sturgeon (*Acipenser brevirostrum*), red-cockaded woodpecker (*Picoides borealis*), Michaux's sumac (*Rhus michauxii*), and rough-leaved loosestrife (*Lysimachia asperulaefolia*). The biological conclusion given in the original NRTR for each of these species, with the exception of the red-cockaded woodpecker, is "no effect." A biological conclusion of "not likely to adversely affect" was given for the red-cockaded woodpecker. A full investigation into this species was not completed. A completed survey for the red-cockaded woodpecker will be included in the updated NRTR. In addition to the four federally protected species, the US Fish and Wildlife Service currently lists the Carolina heelsplitter (*Lasmigona decorate*) as endangered, and the Bald eagle (*Haliaeetus leucocephalus*) as threatened in Richmond County (May 10, 2007).

Environmental Impacts

According to information from local officials, population statistics, and economic indicators, the community characteristics of the project area have not changed significantly. It is unlikely this project will have substantially more impacts to land uses, the social structure of the community, or the economy than what is documented in the DEIS and SDEIS. Since there has been little growth in population or development, the number of residential and business relocations is expected to remain about the same.

Characteristics that define the physical environment such as water resources, floodplains/floodways, and hydrology generally take a long time to change. Impacts to

the physical environment are not anticipated to differ much from the impacts described in the DEIS and SDEIS.

The natural environment has likely experienced some change since the original NRTR, but as stated above, the preliminary findings of the updated NRTR do not suggest these changes are significant enough to warrant selecting a different preferred alternative.

Proposed Mitigation

The following information/documents are being updated for the FEIS and will include mitigation when necessary:

- Natural Resource Technical Report
- archaeological survey
- hydraulic location report
- traffic forecast
- traffic capacity analysis
- noise analysis
- Historical Architecture Survey Report
- hazardous materials review

Conclusion

A review of the existing conditions compared with those documented in the DEIS and SDEIS indicates there has been little change in the human, physical, and natural environments in the project area. Since there have not been any significant changes, it is unlikely the impacts associated with the preferred corridor will be any greater than what has already been anticipated. There are no indicators in the existing conditions or likely impacts that suggest another supplemental document or new DEIS is warranted for this project.

US 1 from Sandhill Road (SR 1971) to Marston Road (SR 1001)
Richmond County

Federal-Aid Project Number NHF-1(1)
State Project No. 8.T580501
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T.I.P. Project R-2501

**DRAFT ENVIRONMENTAL IMPACT STATEMENT AND
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
REEVALUATION**

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS



APPROVED:

9/8/11
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Project Development and Environmental Analysis Branch

9/15/11
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Federal Highway Administration

US 1 from Sandhill Road (SR 1971) to Marston Road (SR 1001)
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**DRAFT ENVIRONMENTAL IMPACT STATEMENT AND
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
REEVALUATION**

September 2011

DOCUMENTATION PREPARED BY FLORENCE & HUTCHESON, INC.

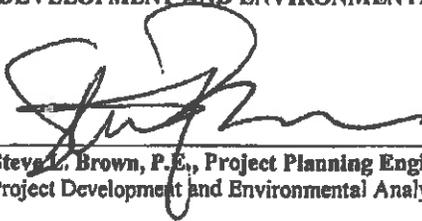
9/8/2011
Date



Mark L. Reep, P.E., Project Manager
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FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

9/3/2011
Date



Steve L. Brown, P.E., Project Planning Engineer
Project Development and Environmental Analysis Branch

Draft Environmental Impact Statement and Supplemental Environmental Impact Statement Reevaluation

**US 1 from Sandhill Road (SR 1971) to Marston Road (SR 1001)
Richmond County**

**Federal-Aid Project Number NHF-1(1)
State Project No. 8.T580501
WBS No. 34437.1.1
T.I.P. Project R-2501**

The following is a reevaluation of the Draft Environmental Impact Statement (DEIS) and the Supplemental Draft Environmental Impact Statement (SDEIS) for the proposed US 1 improvements near Rockingham and Hamlet in Richmond County. This memorandum describes the methodology used and the results of the reevaluation, performed in accordance with the Federal Highway Administration (FHWA) Technical Advisory T 6640.8A and National Environmental Policy Act (NEPA) regulations as cited in 23 CFR 771.129 (a).

Background

The proposed action will improve the US 1 corridor in Richmond County by providing a route for through traffic around the downtown area of Rockingham instead of through the central business district, reducing traffic congestion. US 1 is included in the North Carolina Department of Transportation's (NCDOT) *Strategic Highway Corridors Vision Plan*, adopted by the North Carolina Board of Transportation September 2, 2004. This portion of the US 1 improvements is identified as Project Number R-2501 in the NCDOT *2012-2020 State Transportation Improvement Program (TIP)*.

The proposed project will improve US 1 from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) in Marston, a distance of about 19 miles (see Figure 1.2). Approximately 14 miles will be on new location, and about five miles of existing US 1 will be widened. From Sandhill Road to about one and a half miles north of Fox Road (SR 1606), US 1 is proposed to be a four-lane, median divided roadway with full control of access along the new location part and no control of access on the widening part. A five-lane section with no control of access is proposed along existing US 1 from about one and a half miles north of Fox Road to Marston Road. Interchanges are proposed at US 74 Bypass, Airport Road (SR 1966), US 74 Business, and Wiregrass Road (SR 1640) / County Home Road (SR 1642). At-grade intersections are proposed at US 1 south of Rockingham, Osborne Road (SR 1104), and US 1 / Fox Road (SR 1606) north of Rockingham. Grade separations are proposed at Sandhill Road (SR 1971), Hamer Mill Road (SR 1105), Hylan Avenue (SR 1909), and at the CSX Railroad (two locations).

Planning, engineering, and environmental studies initially began for TIP Project R-2501 in 1994. Three Citizens Informational Workshops (CIW) were held between January 1996 and December 1998, and in June 1999 the DEIS was approved by the FHWA. The DEIS identified four build alternatives, or corridors. A corridor public hearing was held

in September 1999. In February 2001, the Least Environmentally Damaging Practicable Alternative (LEDPA), or preferred corridor, was selected primarily based on fewer impacts to streams and wetlands, and a fewer number of relocations. A SDEIS was prepared to document changes that had occurred since approval of the DEIS, to document the extension of the project from north of Fox Road to Marston Road, and to evaluate the improvement of NC 177 from US 1 north of Rockingham to the South Carolina state line as an alternative to the proposed improvements to US 1. The SDEIS was approved by FHWA in April 2001. An Informal Public Hearing was held in June 2002 to solicit comments from the public regarding the extension of US 1 widening improvements from north of Fox Road to Marston Road. After evaluating the comments received at the hearing, NCDOT selected a five-lane section for the widening as the preferred route. Additional environmental and design studies, coordination with resource agencies, and avoidance and minimization alternatives have contributed to the delay between the approval of the SDEIS and now.

A fourth CIW was held in Rockingham on July 19, 2007 to update the public on the progress of the project. In December 2007, a Reevaluation of the DEIS and SDEIS was completed. It concluded that there have been no substantial changes in the project need, selected alternative, affected environment, or impacts to warrant a supplemental document or new DEIS for the project. The current schedule calls for the Final EIS (FEIS) to be approved in 2011 and a Record of Decision to follow in 2012. Right of way acquisition is slated to begin in 2012 with construction to begin in 2014.

Findings

The reevaluation addresses changes in the proposed project and study area that have occurred since completion of the DEIS and SDEIS. It reviews the following:

- Need for the Project
- Selected Alternative
- Affected Environment and Environmental Impacts
- Avoidance, Minimization, and Mitigation

Need for the Project

This part of US 1 is located along Strategic Highway Corridor 34 and is an important route for mobility and connectivity between future I-73/ I-74 in Rockingham and I-40 in Raleigh. Construction of a US 1 Bypass east of Rockingham, in addition to improvements to existing US 1, have been identified as primary goals in local planning documents. In the project vicinity, approximately 12 miles of US 1 exists as a two-lane rural highway with speed limits ranging from 50 to 55 miles per hour (mph). On each side of Rockingham, approximately 5 miles of US 1 exists as four or five lanes with 35 to 50 mph speed limits. The remaining 1.5-mile portion of US 1 is a two-lane urban street that passes through the Rockingham Central Business District and has 20 to 35 mph speed limits, multiple intersections, and traffic signals.

According to the DEIS (Page 1-1), "Existing traffic data indicates some sections along US 1, especially in downtown Rockingham, currently experience either level of service [LOS] D or E during peak traffic hours. When special events are held at the North Carolina Motor Speedway or when area-wide traffic increases during the summer, traffic levels of service may actually be lower.... By 2020, the majority of sections along US 1, with the exception of the four-lane, non-divided sections, will experience LOS E or worse during peak hours." The speedway held its last NASCAR race in 2004 and the number of other events held there has declined. The facility was auctioned off in early October 2007 to a local investor who holds "lower-tiered" racing events there. However, the loss of the speedway as a traffic generator does not alter the overall principle of the purpose and need of the project.

In 2008, NCDOT updated the existing and future traffic forecast for the no-build condition and the preferred alternative. In some locations near downtown Rockingham, the projected 2035 year traffic volumes are expected to be 15% to 20% lower than the original 2020 year forecast. However, an updated traffic capacity analysis confirms that two-lane portions of US 1 near the downtown area currently operate at LOS D and LOS E (see traffic capacity results in Table 1). In the future, traffic operations will continue to deteriorate on the two-lane sections of US 1 near the downtown area due to low travel speeds, numerous access points, and traffic signals.

Using current and future peak hour delays and average speeds, travel times were calculated to measure the efficiency of travel along US 1 within the limits of the project (see results in Table 2). Currently, the 18.6-mile trip from north of Sandhill Road (SR 1971) to Marston Road (SR 1001) is estimated to take 27 minutes at an average speed of 41 mph. By the year 2035, this trip is estimated to take more than 28 minutes at an average speed of 39 mph. A more efficient travel route is needed to reduce US 1 through traffic in downtown and improve mobility along the US 1 corridor. With the US 1 improvements in place, the proposed 19.3-mile trip is estimated to take 18 minutes at an average speed of 64 mph (see results in Table 3). This reduces US 1 travel time by more than 10 minutes and increases average speeds by 25 mph. These proposed conditions meet the long-term strategic highway corridor vision for high mobility, controlled access, and speeds of at least 55mph. The project will: reduce travel time; reduce congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets; and improve mobility on the designated US 1 Strategic Highway Corridor.

Table 1: Existing and Future No-Build Traffic Conditions

Roadway Segment	Typical Section	DEIS ¹						Updated ²					
		2000			2020			2011			2035		
		PHV	LOS	PHV	LOS	PHV	LOS	PHV	LOS	PHV	LOS	PHV	LOS
Sandhill Road (SR 1971) to Mizpah Road (SR 1108)	Two-Lane Rural	378	C	754	D	602	C	848	D				
Mizpah Road (SR 1108) to US 74 Bypass	Two-Lane Rural	774	D	1,720	E	980	D	1,500	E				
US 74 Bypass to Eason Drive (SR 1136)	Former Two-Lane/ Current Five-Lane	774	D	1,720	E	980	A	1,500	A				
Eason Drive (SR 1136) to Airport Road (SR 1966)	Former Two-Lane/ Current Four-Lane	934	D	1,811	E	1,678	A	2,489	B				
US 220 to US 74 Business	Four-Lane Undivided	1,189	B	1,690	B	n/a ³	n/a ³	n/a ³	n/a ³				
Airport Road (SR 1966) to US 74 Business	Four-Lane Undivided	n/a ³	n/a ³	n/a ³	n/a ³	1,444	A	1,845	B				
US 74 Business to Franklin Street (SR 1561)	Two-Lane Urban	736	E	1,144	E	802	E	892	E				
Washington Street (SR 1561) to Richmond Road (SR 1423)	Two-Lane Urban	1,221	D	2,012	E	1,389	C	1,686	D				
Richmond Road (SR 1423) to Roberdel Road (SR 1424)	Four-Lane Undivided	1,268	B	1,928	C	1,300	A	1,711	A				
Roberdel Road (SR 1424) to Wiregrass Road (SR 1640)	Former Two-Lane/ Current Four-Lane	1,046	D	1,579	E	1,267	A	1,622	A				
Wiregrass Road (SR 1640) to north of Fox Road (SR 1606)	Two-Lane Rural	600	C	1,006	D	667	C	1,164	D				

PHV = Two-way Peak Hour Volume; LOS = Level of Service

¹ The PHV and LOS shown for 2000 and 2020 are as reported in the 1999 DEIS.

² The PHV and LOS shown for 2011 and 2035 were calculated based on the 2008 traffic forecast data.

³ The 2000 and 2020 LOS between US 220 and US 74 Business were reported in the 1999 DEIS. The 2011 and 2035 LOS results were calculated between Airport Road (1966) and US 74 Business because US 220 intersects US 1 between Eason Drive (SR 1136) and Airport Road (SR 1966). Where these segments overlap area, PHV and LOS results are not available (n/a).

Table 2: 2011 and 2035 Travel Times and Levels of Service for No-Build Traffic Conditions

US 1 Roadway Segment	Typical Section	Length (miles)	2011 Traffic Conditions				2035 Traffic Conditions			
			Average Daily Traffic (vpd)	Travel Time (min)	Average Speed (mph)	Level of Service LOS	Average Daily Traffic (vpd)	Travel Time (min)	Average Speed (mph)	Level of Service LOS
North of Sandhill Road (SR 1971) to Mizpah Road (SR 1108)	Two-Lane Rural	3.9	5,400	4.8	48	C	7,600	4.9	47	D
Mizpah Road (SR 1108) to US 74 Bypass	Two-Lane Rural	0.6	8,800	1.1	42	D	13,500	1.2	44	E
US 74 Bypass to Eason Drive (SR 1136)	Five-Lane	0.8	8,800	0.9	51	A	13,500	0.9	51	A
Eason Drive (SR 1136) to Airport Road (SR 1966)	Four-Lane Divided	0.9	15,100	1.1	51	A	22,400	1.0	52	B
Airport Road (SR 1966) to US 74 Business	Four-Lane Undivided	0.4	13,000	0.6	41	A	16,600	0.6	41	B
US 74 Business to Franklin Street (SR 1561)	Two-Lane Urban	0.3	7,200	1.7	13	E	8,000	1.6	13	E
Franklin Street (SR 1561) to Rockingham Road (SR 1648)	Two-Lane Urban	0.2	6,100	0.8	16	D	7,800	0.9	15	D
Rockingham Road (SR 1648) to Richmond Road (SR 1423)	Two-Lane Urban	1.0	12,500	2.6	23	C	15,200	3.4	17	D
Richmond Road (SR 1423) to Roberdel Road (SR 1424)	Four-Lane Undivided	0.5	11,700	0.6	47	A	15,400	0.6	47	A
Roberdel Road (SR 1424) to Wiregrass Road (SR 1640)	Four-Lane/ Five-Lane	2.6	11,400	3.7	47	A	14,600	3.8	47	A
Wiregrass Road (SR 1640) to Fox Road (SR 1606)	Two-Lane Rural	2.2	6,000	2.7	48	C	10,400	2.9	46	D
Fox Road (SR 1606) to Marston Road (SR 1001)	Two-Lane Rural	5.1	5,700	6.3	48	C	10,000	6.7	46	D
Total		18.6		27.0	41			28.7	39	

Table 3: 2035 Travel Times and Levels of Service for US 1 Widening and Bypass

US 1 Roadway Segment	Typical Section	Length (miles)	2035 Traffic Conditions			
			Average Daily Traffic (vpd)	Travel Time (min)	Average Speed (mph)	Level of Service LOS
North of Sandhill Road (SR 1971) to US 74 Bypass	Four-Lane Expressway	4.7	3,800	4.3	65	A
US 74 Bypass to Airport Road (SR 1966)	Four-Lane Freeway	1.3	8,800	1.2	65	A
Airport Road (SR 1966) to US 74 Business	Four-Lane Freeway	2.5	8,000	2.3	65	A
US 74 Business to north of Wiregrass Road (SR 1640)	Four-Lane Expressway	1.6	8,600	1.0	65	A
Wiregrass Road (SR 1640) to Fox Road (SR 1606)	Four-Lane Expressway	4.1	12,800	3.8	65	A
Fox Road (SR 1606) to Marston Road (SR 1001)	Four-Lane/ Five-Lane	5.1	12,800	5.4	57	A
Total		19.3		18.0	64	

Selected Alternative

No substantial change has occurred in the preferred corridor that was presented in the DEIS and SDEIS. The corridor boundaries have not been substantially altered. The preliminary design is generally confined to those boundaries except where adjacent service roads and interchanges were extended and where the alignment was shifted east of County Home Road (SR 1624) to minimize stream and wetland impacts at the McDonalds Pond Restoration site. Some roadways that cross the corridor will not have over/underpasses. These roadways will be realigned or ended in a cul-de-sac.

Based on the analyses presented in the DEIS, the comments received from circulation of the DEIS, Public Hearing comments, and the analyses in the SDEIS, Alternative 21 was chosen by the Section 404 / NEPA Merger Project Team on February 15, 2001 as the LEDPA for the US 1 Bypass and Improvement Project. Alternatives 14 and 24 were eliminated from further consideration since they have more impacts to the natural environment than Alternatives 7 and 21. Alternative 7 was eliminated from further consideration since it has more relocations than Alternative 21. See Figures 2.2a - 2.2b for the build alternatives.

During the development of the Final EIS, several revisions were made to the preferred alternative. These include an interchange revision at the US 74 Bypass, a proposed new interchange with Wiregrass Road (SR 1640) / County Home Road (SR 1624), and a proposed corridor expansion east of County Home Road (SR 1624).

The original preferred alternative included a full cloverleaf interchange with the US 74 Bypass. The interchange configuration was modified to increase the ramp design speeds, reduce the interchange area, and reduce environmental impacts. A four-level interchange design was proposed and shifted southward within the project corridor. This modified interchange design reduced the total interchange area by 40 acres. It reduced wetland impacts by nearly nine acres, pond impacts by three acres, and stream impacts by 2,100 feet. It was presented for public comment during the July 2007 CIW.

In August 2007, public officials requested an interchange near Wiregrass Road (SR 1640) and County Home Road (SR 1624) to help with future emergency, industrial, and general access. After further evaluation, NCDOT included an interchange at this location to improve connectivity between NC 177, US 74 Business, and US 1 near Rockingham. The public was notified of this additional interchange in a July 2008 project newsletter. Five individuals responded with questions or comments about the interchange.

East of County Home Road (SR 1624), the project crosses Falling Creek and the McDonalds Pond Restoration site. The 127 acre restoration site was constructed in 2005 and is protected by a conservation easement managed by the NC Ecosystem Enhancement Program (EEP). The preferred alternative was formally established and selected in 2001, prior to construction of the EEP site. To minimize impacts to the restoration site, the project corridor was expanded, and the proposed alignment was shifted to the south to provide a bridge across a narrower part of the stream system (see Figures 2.5 and 2.6).

I-73 Corridor Selection

The DEIS (Page 1-2) states that the “segment of the R-2501 project from the US 74 Bypass southward into South Carolina along US 1 will be the probable routing of the I-73 Corridor.” It also states (Page 2-3) that “US 1 south of the US 74 Bypass (R-512) would need to be improved to a freeway to handle the proposed I-73.” In 2007, FHWA and SCDOT selected a preferred I-73 corridor. This corridor joins US 74 Bypass (Future I-74) at NC 38, approximately 4.5 miles east of the proposed US 1 Bypass interchange. I-73 does not have a direct influence on the US 1 Bypass project as previously indicated in the DEIS. However, when the US 1 Bypass is combined with the US 74 Bypass and the proposed I-73 / I-74 corridor, the improved regional transportation network could generate new interest in development within the area. That growth should predominantly take the form of commercial and/or industrial (distribution-related) facilities and will likely be concentrated around the many highway interchanges and along the roads that feed into them.

Affected Environment and Environmental Impacts

Changes in the affected environment since the DEIS and the SDEIS were approved are discussed in the following section. Table 4 compares impacts between Alternative Corridor No. 21 evaluated in the DEIS, the additional US 1 widening evaluated in the SDEIS, and the current recommended design for the project.

Table 4: Summary of Impacts

Impacts	Preferred Alternative (Documented in DEIS & SDEIS)			Recommended Alternative (FEIS)
	Corridor 21 (DEIS)	US 1 Extension (SDEIS)	Corridor 21 & US 1 Extension Total	Corridor 21 & US 1 Extension Total
Lengths (miles)	--	--	--	--
Along New Location	14.0	--	14.0	14.0
Along Existing US 1	1.6	3.7	5.3	5.3
Total	15.6	3.7	19.3	19.3
Interchanges	3	0	3	4
Grade Separations	5	0	5	5
Relocations	--	--	--	--
Residential	71	2	73	97
Business	17	0	17	8
Non Profit	0	1	1	0
Farms	1	0	1	0
Total	89	3	92	105
Water Resource Impacts	--	--	--	--
Stream Crossings	10	0	10	16
Stream Impacts (feet)	3,783	0	3,783	3,717
Open Water Impacts (acres)	3	0	3	2.6
Wetland Impacts (acres)	55.5	0.2	55.7	40.5
Endangered Species	Biological Conclusions ¹			
Shortnose sturgeon	No Effect			No Effect
Red-cockaded woodpecker	Not Likely to Adversely Affect			No Effect
Michaux's sumac	No Effect			May Affect/ Not Likely to Adversely Affect
Rough-leaved loosestrife	No Effect			No Effect
Historic Property Impacts	0	0	0	0
Archaeological Sites	0	0	0	0
Section 4(f) Resources (Parks, Recreation Areas, Wildlife Management Areas)	0	0	0	1
Noise Impacts	0	0	0	167
Hazardous Material Sites (excluding USTs)	0	0	0	0
Costs (in millions \$)	--	--	--	--
Right of Way & Utilities	\$22.85	\$2.07	\$24.92	\$43.18
Construction	\$139.25	\$10.90	\$150.15	\$212.515
Wetland Mitigation	\$1.90	\$0.01	\$1.91	\$2.85
Stream Mitigation Cost	\$0.95	\$0.00	\$0.95	\$1.90
Total	\$164.95	\$12.98	\$177.93	\$260.44

¹ The biological conclusions for federally protected species are described on Page 12 of the Reevaluation.

Human Environment

Based on demographic data and economic indicators, accompanied by information from local officials, conditions in the human environment have not changed significantly since the approval of the DEIS and SDEIS. US Census Bureau data from the 2000 census indicates the overall population growth is stagnant and recent projections suggest the population of Richmond County will decline between 2010 and 2030. The percentages of the population by race are comparable to those presented from the 1990 census, and the percentage of the population over the age of 65 is within one percent of that reported in the DEIS. There has been little change in development trends, land use, and economic development in the past ten years. There have been no significant residential, commercial, or industrial developments in proximity to the preferred corridor. Local officials have been aware of the preferred corridor and have taken its location into consideration during land use planning. Economic conditions have not changed significantly either. Efforts to attract new industries to replace the loss of manufacturing jobs have been somewhat successful, but these successes have offset the losses.

Relocations

A total of 92 relocations (73 residences, 17 businesses, one non-profit, and one farm) were documented in the DEIS and SDEIS. With the current design, 105 relocations (97 residences and 8 businesses) are anticipated. Of these, 12 are minority-owned residences in various locations or neighborhoods along the proposed US 1 Bypass. No minority-owned businesses are anticipated. The net increase of 13 relocations can be attributed to a more refined roadway design, extended service roads, interchange adjustments, and the construction or demolition of adjacent buildings since the original studies.

Historic Architectural Resources

The DEIS identified one property eligible for the National Register of Historic Places within the Area of Potential Effect (APE) of the project (St. Paul United Methodist Church). The SHPO concurred with the determination that the project would have no effect on the property. During subsequent reviews of the expanded project study areas in 2007 and 2010, no additional properties within the APE were determined to be eligible for the National Register.

Archaeological Resources

The DEIS recommended an archaeological survey to be conducted for the preferred alternative. It also concluded that no eligible National Register sites requiring preservation in place were anticipated within the APE. Following the SDEIS, an Archaeological Survey Report (December 2001) identified four archaeological sites as being eligible for the National Register of Historic Places. After further investigations in 2007, FHWA and NCDOT determined the sites are outside of the APE, and the SHPO concurred that the project would not impact the sites. The 2001 Archaeological Survey Report also identified a cemetery associated with a former plantation property as archaeologically significant, but not eligible for the National Register. Part of it could

potentially be impacted by the project. If disturbance of the cemetery is unavoidable, the affected burial sites will be moved under the regulations stipulated by NCGS 65. In 2011, NCDOT conducted archaeological investigations within the expanded study area east of County Home Road (SR 1624). Twenty-six sites were identified but only one was determined to be eligible for the National Register of Historic Properties. This eligible site is located outside of the APE. The project will not have an effect on any archaeological sites eligible for the National Register.

Section 4(f) and 6(f) Resources

No public parks have been developed within the preferred corridor. However, the NC Wildlife Resources Commission (NCWRC) recently acquired a large parcel near the southern project limit at US 1 and Osborne Road (SR 1104) as part of the Pee Dee River Game Land (see Figure 2.5). The site is subject to Section 4(f) of the DOT Act of 1966. Primary purposes of the Pee Dee River Game Land include wildlife and timber management and public recreational opportunities for hunting, fishing, and observing nature. The current design includes widening improvements along existing US 1 and Osborne Road, impacting approximately 2.4 acres of the Game Land. The land to be impacted serves as a buffer between the existing highway corridor and a large open land complex (20 acres) managed for wildlife with emphasis on dove and other small game species. Approximately 10 acres of the land is planted annually to provide supplemental food and hunting opportunities for local sportsmen. The parcel is approximately 1,659 acres and was purchased using funding from the Clean Water Management Trust Fund (CWMTF), Natural Heritage Program, and North American Wetland Conservation Act (NAWCA). The project is likely to have a minimal (de minimis) impact on the Game Land, and coordination is underway with the NCWRC to reach concurrence on the impact finding.

Section 6(f) of the Land and Water Conservation Act ensures that parkland will be replaced for those areas that are converted to highway use. There are no Section 6(f) impacts associated with this project.

Physical Environment

The physical environment has not changed significantly since the DEIS and SDEIS were approved. Locations, quantities, and characteristics of prime and important farmlands, water resources, floodplains/floodways, and hydrology/drainage are consistent with those previously evaluated.

Traffic Noise

The noise analysis presented in the DEIS was completed in 1999. It considered potential impacts at five noise sensitive sites along the preferred corridor, representing 25 residences, a golf course, and a church. Noise levels were predicted using the STAMINA 2.0/OPTIMA noise model, and no impacts were predicted with the project. The NCDOT Traffic Noise Abatement Policy in effect at that time of the initial analysis expired in September 2004. Since that time, state and federal traffic noise policies and

regulations have substantially changed.

In 2011, an updated traffic noise analysis was conducted following NCDOT's Traffic Noise Abatement Policy, effective July 13, 2011. The 2011 analysis used more refined designs, updated traffic volumes, and the latest version of FHWA's Traffic Noise Model (TNM) Version 2.5. The updated analysis considered the noise level effects on all noise sensitive resources in the project area. These represent more than 410 residences, businesses, recreation areas, and other institutions. Impacts are predicted at 167 properties. These include 39 properties where future noise levels are expected to approach or exceed FHWA's noise abatement criteria and 128 properties where future noise levels are expected to meet the definition of a substantial increase above existing levels. Noise barriers were primarily investigated in seven noise sensitive areas for the potential benefit of the future year predicted traffic noise impacts. Two barriers (Barriers 2 and 4) would meet NCDOT's Noise Abatement Policy criteria for being reasonable and feasible (see Figures 4.1 and 4.2).

Air Quality

The air quality analysis presented in the DEIS reported that the project is within an attainment area for the National Ambient Air Quality Standards (NAAQS). Predicted carbon monoxide emissions did not exceed the NAAQS; therefore, the project was determined not to adversely affect air quality. In 2011, the potential effects on air quality were updated. Richmond County is currently an attainment area; therefore, the Environmental Protection Agency's (EPA) general air quality conformity rules in 40 CFR Parts 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area. The project was also reviewed for potential effects relating to Mobile Source Air Toxics (MSATs). Based on a qualitative analysis, in the design year, it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No Build Alternative. This is due to the reduced vehicle miles traveled associated with more direct routing, and due to EPA's MSAT reduction programs.

Hazardous Materials Sites

The DEIS and SDEIS identified a total of 12 facilities along the preferred alternative with potential underground or aboveground storage tanks or other regulated materials. No hazardous waste sites or landfills were identified. In 2007 and 2010, NCDOT conducted additional field reconnaissance surveys along the preferred alternative to identify hazardous materials sites. No hazardous waste sites or landfills were identified. Eight facilities with possible underground storage tanks (UST) and four active or inactive automotive repair facilities were identified within the project area.

Natural Environment

An updated *Natural Resources Technical Report (NRTR)* was prepared in February 2011. The findings suggest the characteristics of the natural environment have not experienced a significant change in the last ten years.

Water Resources

The locations of jurisdictional waters and wetlands were confirmed in 2004 and 2011. As shown in Table 1, the impacts to streams, open waters, and wetlands with the current project design are comparable to or lower than those previously documented in the DEIS and SDEIS. The proposed alignment has been selected to avoid and minimize impacts to the extent practicable. There are six additional stream crossings, but the stream impacts have been reduced by approximately 65 linear feet. Open water impacts have been reduced by 0.4 acre. Wetland impacts have been reduced by 15.2 acres.

Federally Protected Species

Four federally protected species in Richmond County were presented in the DEIS: shortnose sturgeon (*Acipenser brevirostrum*), red-cockaded woodpecker (*Picoides borealis*), Michaux's sumac (*Rhus michauxii*), and rough-leaved loosestrife (*Lysimachia asperulaefolia*). The biological conclusion given in the original document for each of these species, except the red-cockaded woodpecker, is "no effect." A biological conclusion of "not likely to adversely affect" was given for the red-cockaded woodpecker, subject to results of future investigations. Subsequent field surveys were conducted between 2007 and 2010 in all potential areas of suitable habitat. The biological conclusion for Michaux's sumac changed to "may affect/ not likely to adversely affect." No individual plants were found within the project study area; however, two populations exist within 0.2 mile of the northern project limit. The biological conclusion for the red-cockaded woodpecker changed to "no effect." No evidence of nesting cavities was found within the study area. Small, isolated patches of foraging habitat are surrounded by disturbed or unsuitable forested habitat. One occurrence of the species, made up of two active and two inactive clusters, is located more than 0.8 mile from the northern project limit. The project is outside of a 0.5 mile foraging partition around these clusters and will have no effect on the red-cockaded woodpecker.

Avoidance, Minimization, and Mitigation

The project has been developed to avoid and minimize environmental impacts to the greatest extent practicable during project design. The following sections describe the avoidance and minimization measures that have been included in the project.

The NEPA/ Section 404 Merger Process is a method of integrating the project development and permitting processes. Partners include the USACE, NCDENR (DWQ, DCM), FHWA, NCDOT, other stakeholder agencies, and local units of government. The Merger Process provides a forum for appropriate agency representatives to discuss and reach consensus on ways to meet the regulatory requirements of Section 404 of the Clean Water Act during the NEPA decision-making phase of transportation projects. In this process, a series of steps or concurrence points have been established that will provide a uniform progression of the project and a better understanding of specific issues as they

develop. Consensus on each step or concurrence point must be achieved by the Merger Team prior to proceeding to the next stage of the project.

Concurrence Point 1 - Purpose of and Need and Study Area Defined

The first step in this process is Concurrence Point 1, the Purpose of and Need and Study Area defined. Concurrence on the purpose and need for this project was confirmed in a letter dated November 23, 1998 from the Department of the Army, Corps of Engineers (Wilmington District). In this letter, the Corps of Engineers also noted their prior concurrence with the purpose and need on October 2, 1997 (see correspondence in the Appendix).

Concurrence Point 2 – Detailed Study Alternatives Carried Forward

Concurrence Point 2 is the development of detailed study alternatives (that meet the purpose and need of the project) to be carried forward for evaluation. Alternatives 7, 14, 21 and 24 were presented and evaluated in the DEIS. Following the DEIS, EPA requested information regarding NC 177 as a bypass alternative. After further study, FHWA and NCDOT determined that improvements to NC 177 would not satisfy the project's purpose and need; and therefore, was not a reasonable and feasible alternative. The Merger Team concurred in writing on February 15, 2001 with the detailed study alternatives carried forward.

Concurrence Point 3 – Least Environmentally Damaging Practicable Alternative (LEDPA)

Concurrence Point 3 is the selection of the Least Environmentally Damaging Practicable Alternative (LEDPA) for the project. The Merger Team reviewed the detailed studies for the No-Build alternative, the Improve Existing Facilities alternative, and the four build alternatives presented in the DEIS as well as comments from the formal Corridor Public Hearing. The Merger Team concurred in writing on February 15, 2001 with the "Alternative Corridor No. 21" as the LEDPA.

Concurrence Points 2A/ 4A – Bridging Decisions and Alignment Review/ Avoidance and Minimization

Concurrence Point 2A documents bridging decisions and an alignment review of the proposed alternatives. Bridge locations, approximate lengths, and alignments are reviewed at major stream crossings and wetland areas. Concurrence Point 4A confirms that impacts from the selected alternative have been avoided and minimized to the extent practicable. These concurrence points have been combined for the preferred alternative.

The Merger Team reviewed the proposed stream crossings during meetings on November 10, 2004, September 18, 2008, November 12, 2008, August 20, 2009, and July 21, 2010. The Team agreed with culverts proposed at seven of nine major stream crossings (Structures 1, 2, 3, 4, 5, 6, and 9). Bridges are proposed at Structures 7 and 8 (see Figure 2.5). At South Prong Falling Creek (Structure 7), NCDOT proposes 450-foot dual bridges, equalizer pipes for wetland connectivity, on-site mitigation, and a 46-foot median width in the wetland limits. At Falling Creek (Structure 8), NCDOT proposes to shift the alignment approximately 800 feet south of the original preferred alignment and include dual 250-foot bridges to cross a narrower portion of the stream system. A

46-foot median width is proposed within the EEP conservation easement. NCDOT is currently coordinating with the Merger Team to reach concurrence on the median width within the EEP site.

Avoidance and minimization efforts have been incorporated in the preliminary design. Where possible, these include shifting the alignment to avoid water resources, crossing streams perpendicularly, or crossing the narrowest areas of wetland systems. These efforts have resulted in the avoidance of:

- 13 of 24 streams in the corridor
- 36 of the 55 wetland sites
- 7 of 10 ponds

Bridges are proposed to minimize impacts at two of the largest wetland system crossings. The median width along the US 1 Bypass has decreased from 70 feet to 46 feet within the limits of three wetland systems to further reduce impacts. Specific areas are described as follows, and the proposed stream crossing structures are described in Table 5.

Table 5: Stream Crossing Structures

Structure Number	Stream/ Wetland Crossing	Nearest Road Location	Proposed Structure
1	Baggetts Cr (S3, W3, W9)	Osborne Rd (SR 1104)	3@10'x8'x350' RCBC
3	UT to Speeds Cr (W11, P1)	East of Osborne Rd (SR 1104)	3@10'x8'x250' RCBC
4	Watery Br (W14)	East of Sandhill Rd (SR 1971)	2@9'x7'x240' RCBC
5	Solomons Cr (S10, W21)	US 74 Bypass Interchange	1@7'x6'x1,340' RCBC
6	Solomons Cr (S10A, W20A)	US 74 Bypass Interchange	Extend 3@9'x5'x50' RCBC & 4 pipes
7	South Prong Falling Cr (W26)	Between CSX Railroad & US 74	450'x38' Dual Bridges (wetland) 225'x38' Dual Bridges (railroad) 335'x38' Dual Bridges (US 74)
8	Falling Cr (W37)	East of County Home Rd (SR 1624)	250'x38' Dual Bridges
9	Chock Cr (S20, P9, W49, W50)	East of Fox Rd (SR 1606)	Extend 3@9'x9'x85'

- Structure 1 - Osborne Road/ Baggetts Creek - S3, W3, W9 – The proposed alignment reduces wetland impacts by crossing stream S3 between two large wetlands W3 and W9.
- Structure 3 – UT to Speeds Creek - W11, P1 – The alignment was located to avoid stream S6 and to cross a narrower portion of W11.
- Structure 4 – Watery Branch - Wetland W14 - The median width was reduced from 70 feet to 46 feet for minimization.

- US 74 Bypass Interchange – W18, W19, W21, P2, P3, and P4 – The greatest areas of avoidance/ minimization are in this interchange. As presented in the 11/2004 interagency field meeting package, a larger full clover interchange design was planned, resulting in impacts of 25.2 acres of wetlands and 3.5 acres of ponds. The proposed bypass was shifted southward and the interchange footprint was compressed using directional ramps. The impacts were reduced to 15.4 acres of wetlands and 0.5 acre of ponds.
- Structure 7 – South Prong Falling Creek (US 74) – W26 – The alignment is located between residential neighborhoods and crosses the smallest portion of wetland W24. Dual 450-foot bridges with equalizer pipes are proposed over part of the floodway for South Prong Falling Creek. On site mitigation opportunities will be pursued where NCDOT is controlling access to properties between US 74 Business and the wetland areas. The proposed median width was reduced from 70 feet to 46 feet within the wetland limits.
- Structure 8 –Falling Creek – W27 – The alignment is located along the south side of the project corridor to avoid wetlands W32 and W33 just to the west. It crosses a narrower portion of W27. The alignment has been shifted to the south of the original LEDPA alignment to cross a portion of the McDonalds Pond EEP site where braided streams have narrowed. A 250-foot bridge is proposed at the crossing, and the median width has been reduced from 70 feet to 46 feet within the limits of the EEP conservation easement.
- Structure 9 –Chock Creek – S20, P9, W49, W50 – The proposed widening is planned on the north side, away from P9 and W49. W49 is the highest quality wetland along the US 1 widening portion of the project. This location is in an area where the grade is being changed to flatten the vertical curvature. Culvert extensions are planned on each side of the existing culvert. Shifting the alignment further north will result in greater impacts to W50.

Wildlife Crossings

Three potential wildlife crossing areas were considered from Wiregrass Road (SR 1640) to Fox Road (SR 1606). The first area, between County Home Road (SR 1624) and Falling Creek, is not recommended because it does not include sufficient fill or protection from timber removal or development. In the second area, along Falling Creek, the proposed bridge is of sufficient length to include upland wildlife corridor within the EEP conservation easement. At the third area, northeast of Falling Creek, NCDOT proposes a 10-foot by 11-foot box culvert for wildlife passage east of E.V. Hogan Road (SR 1700), near Standridge Place. NCDOT will coordinate with NC Wildlife Resources Commission (NCWRC) and US Fish and Wildlife Service (USFWS) in developing the crossing designs.

Mitigation

The NCDOT will investigate potential on-site stream and wetland mitigation opportunities once a final determination of impacts has been calculated. If on-site mitigation is not feasible, mitigation will be provided by the EEP. In accordance with EEP's July 2010 In-Lieu Fee Instrument signed by the U.S. Army Corps of Engineers and the North Carolina Department of Environment and Natural Resources on July 28, 2010, the EEP will be requested to provide off-site mitigation to satisfy the federal Clean Water Act compensatory mitigation requirements for this project.

The McDonalds Pond Restoration Site is protected by a conservation easement managed by the EEP. This requires agreement from EEP and environmental regulatory agencies in converting the conservation easement to transportation use and revising the available mitigation credits for other projects.

Conclusion

A review of the existing conditions compared with those documented in the DEIS and SDEIS indicates there has been little change in the human, physical, and natural environments in the project area. Since there have not been any significant changes, it is unlikely the impacts associated with the preferred corridor will be substantially greater than what has already been anticipated. There are no indicators in the existing conditions or likely impacts that suggest another supplemental document or new DEIS is warranted for this project.

Appendix C

RELOCATION REPORTS

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

X E.I.S. CORRIDOR DESIGN

WBS ELEMENT:	34437.1.1	COUNTY	Richmond	Alternate	N/A	of	N/A	Alternate
T.I.P. No.:	R-2501	SECTION BA FROM OSBORNE RD. SR-1104) TO US-74 BYPASS						
DESCRIPTION OF PROJECT:	US-1 from Sandhill Rd (SR-1071) to Marston Rd. (SR-1001) Richmond County							

ESTIMATED DISPLACEDS					INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP	
Residential	18	0	18	3	0	3	8	5	2	
Businesses	0	0	0	0	VALUE OF DWELLING			DSS DWELLING AVAILABLE		
Farms	0	0	0	0	Owners		Tenants		For Sale	
Non-Profit	0	0	0	0	0-20M	2	\$ 0-150	0	0-20M	5
ANSWER ALL QUESTIONS					\$ 0-150	0	20-40M	6	150-250	3
Yes	No	<i>Explain all "YES" answers.</i>			40-70M	10	250-400	0	40-70M	35
	X	1. Will special relocation services be necessary?			70-100M	3	400-600	0	70-100M	42
	X	2. Will schools or churches be affected by displacement?			100 UP	2	600 UP	0	100 UP	86
X		3. Will business services still be available after project?			TOTAL	18	0	0	174	26
	X	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.			REMARKS (Respond by Number)					
	X	5. Will relocation cause a housing shortage?			3. No permanent business relocation 6. Realtors, MLS service, newspapers and private real estate market. 8. As required by law. 11. Section 8 housing in Rockingham, Hamlet and Richmond County 12. There are no government programs competing for housing 14. Same as number 6 above. Residential displacees include 2 single wide and 5 doublewide Mobile homes.					
	X	6. Source for available housing (list).								
	X	7. Will additional housing programs be needed?								
X		8. Should Last Resort Housing be considered?								
	X	9. Are there large, disabled, elderly, etc. families?								
	X	10. Will public housing be needed for project?								
X		11. Is public housing available?								
X		12. Is it felt there will be adequate DSS housing available during relocation period?								
	X	13. Will there be a problem of housing within financial means?								
X		14. Are suitable business sites available (list source).								
		15. Number months estimated to complete RELOCATION?								
		12-24 months								

	4/21/11		4/25/11
Right of Way Agent	Date	Relocation Coordinator	Date

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

X E.I.S. CORRIDOR DESIGN

WBS ELEMENT:	34437.1.1	COUNTY	Richmond	Alternate	N/A	of	N/A	Alternate
T.I.P. No.:	R-2501	SECTION BB FROM US-74 BYPASS TO US-74 BUSINESS						
DESCRIPTION OF PROJECT:	US-1 from Sandhill Rd (SR-1071) to Marston Rd. (SR-1001) Richmond County							

ESTIMATED DISPLACEDS					INCOME LEVEL							
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP			
Residential	41	12	53	6	11	5	24	10	3			
Businesses	6	0	6	0	VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent	
Non-Profit	0	0	0	0	0-20M	4	\$ 0-150	7	0-20M	5	\$ 0-150	2
					20-40M	3	150-250	2	20-40M	6	150-250	3
					40-70M	21	250-400	3	40-70M	35	250-400	7
					70-100M	10	400-600	0	70-100M	42	400-600	8
					100 UP	3	600 UP	0	100 UP	86	600 UP	6
					TOTAL	41		12		174		26

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Will special relocation services be necessary?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Will schools or churches be affected by displacement?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Will business services still be available after project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Will relocation cause a housing shortage?
<input type="checkbox"/>	<input type="checkbox"/>	6. Source for available housing (list).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Will additional housing programs be needed?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Should Last Resort Housing be considered?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Are there large, disabled, elderly, etc. families?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Will public housing be needed for project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Is public housing available?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Is it felt there will be adequate DSS housing available during relocation period?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Will there be a problem of housing within financial means?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 24-36 months

REMARKS (Respond by number)			
3. The loss of the businesses involved will not affect the overall Business environment of the community.			
4. Yatco Machine - Small 2-4 employees. Don's Locksmith - Small 2-4 employees Graceland Utility Buildings - Small 2-4 employees National Housing Sales - Small 4-6 employees E-Z Rentals - Small 8-10 employees Progress Energy Maintenance Office - Small 6-10 employees			
6. Realtors, MLS service, newspapers and private real estate market.			
8. As required by law.			
11. Section 8 housing in Rockingham, Hamlet and Richmond County			
12. There are no government programs competing for housing.			
14. Same as number 6 above.			
Residential displacees include 11 singlewide and 11 doublewide Mobile homes.			

<p>_____ Right of Way Agent</p>	<p>4/21/11 _____ Date</p>	<p>_____ Relocation Coordinator</p>	<p>4/25/11 _____ Date</p>
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EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

X E.I.S. CORRIDOR DESIGN

WBS ELEMENT:	34437.1.1	COUNTY	Richmond	Alternate	N/A	of	N/A	Alternate
T.I.P. No.:	R-2501	SECTION BC FROM US-74 BUSINESS TO NORTH OF FOX RD (SR-1606)						
DESCRIPTION OF PROJECT: US-1 from Sandhill Rd (SR-1071) to Marston Rd. (SR-1001) Richmond County								

ESTIMATED DISPLACEES					INCOME LEVEL							
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP			
Residential	16	5	21	3	0	7	4	7	3			
Businesses	1	0	1	0	VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent	
Non-Profit	0	0	0	0	0-20M	1	\$ 0-150	0	0-20M	5	\$ 0-150	2
					20-40M	1	150-250	5	20-40M	6	150-250	3
					40-70M	4	250-400	0	40-70M	35	250-400	7
					70-100M	7	400-600	0	70-100M	42	400-600	8
					100 UP	3	600 UP	0	100 UP	86	600 UP	6
					TOTAL	16		5		174		26

ANSWER ALL QUESTIONS		
Yes	No	Explain all "YES" answers.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Will special relocation services be necessary?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Will schools or churches be affected by displacement?
<input type="checkbox"/>	<input type="checkbox"/>	3. Will business services still be available after project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Will relocation cause a housing shortage?
<input type="checkbox"/>	<input type="checkbox"/>	6. Source for available housing (list).
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Will additional housing programs be needed?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Should Last Resort Housing be considered?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Are there large, disabled, elderly, etc. families?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Will public housing be needed for project?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Is public housing available?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. Is it felt there will be adequate DSS housing available during relocation period?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Will there be a problem of housing within financial means?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Are suitable business sites available (list source).
<input type="checkbox"/>	<input type="checkbox"/>	15. Number months estimated to complete RELOCATION? 12-20 months

REMARKS (Respond by number)							
3. The loss of the business involved will not affect the overall Business environment of the community.							
4. Shiv's Corner Store - Small 4-6 employees							
6. Realtors, MLS service, newspapers and private real estate market.							
8. As required by law.							
11. Section 8 housing in Rockingham, Hamlet and Richmond County.							
12. There are no government programs competing for housing.							
14. Same as number 6 above.							
Residential displacees include 6 singlewide and 1 doublewide Mobile homes							

<p>_____ Date</p>		<p>_____ Date</p>
Right of Way Agent		Relocation Coordinator

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

X E.I.S. CORRIDOR DESIGN

WBS ELEMENT:	34437.1.1	COUNTY	Richmond	Alternate	N/A	of	N/A	Alternate
T.I.P. No.:	R-2501	SECTION C FROM NORTH OF FOX ROAD (SR-1606) TO MARSTON ROAD (SR-1001)						
DESCRIPTION OF PROJECT: US-1 from Sandhill Rd (SR-1071) to Marston Rd. (SR-1001) Richmond County								

ESTIMATED DISPLACEDS					INCOME LEVEL							
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP			
Residential	4	1	5	0	0	0	2	3	0			
Businesses	1	0	1	0	VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent	
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	5	\$ 0-150	2
					20-40M	0	150-250	0	20-40M	6	150-250	3
					40-70M	1	250-400	1	40-70M	35	250-400	7
					70-100M	3	400-600	0	70-100M	42	400-600	8
					100 UP	0	600 UP	0	100 UP	86	600 UP	6
					TOTAL	4		1		174		26

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

REMARKS (Respond by number)							
3. The loss of the business involved will not affect the Overall business environment of the community.							
4. This & That store - Small 1-3 employees.							
6. Realtors, MLS service, newspapers and private real estate Market.							
8. As required by law.							
11. Section 8 housing in Rockingham, Hamlet and Richmond Count.							
12. There are no government programs competing for housing.							
14. Same as number 6 above.							
Residential displacees include one doublewide mobile home							

 _____ Date		 _____ Date
Right of Way Agent		Relocation Coordinator

Appendix D

FARMLANDS RATING SHEETS



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

4405 Bland Road,
Suite 205
Raleigh, NC 27609
(919) 873-2171
(919) 873-2181 (FAX)
milton.cortes@nc.usda.gov



Subject: Farmland Conversion Impact Rating form AD1006

Date: April 12, 1999

To: Presnell Associates Inc.
Ronald C. Smith, PE
Project Manager
7508 East Independence Boulevard, Suite 102
Charlotte, N.C. 28227

File Code: 310-11-11

Enclosed is (are) the Farmland Conversion Impact Rating form (s) (form AD-1006) for the following projects:

1) US-1 R-2501, State Project No. 8t580501, sites A-C , A-D , E , F-H , F-I , L ; Richmond, NC.

In addition, I have enclosed other material submitted for evaluation.

I have completed the parts of this form for which NRCS has responsibility (Parts II, IV & V).

Remember that you may send your AD1006 to any Resource Soil Scientist shown on the attached map according to the project location as well as our office. This may expedite the evaluation process.

In addition, you may access the current Important Farmland List of NC in the Internet. The list can be accessed at <http://www.mo14.nc.nrcs.usda.gov/>. Then click on "Important Farmlands of NC". Be sure to read the introduction in order to get the farmland codes.

If you have any question please feel free to call.

Milton Cortés
Assistant State Soil Scientist

RECEIVED
APR 14 1999
PRESNELL ASSOC.,

FARMLAND CONVERSION IMPACT RATING

Sheet 1 of 2

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request	03-19-99
Name of Project US-1-STATE PROJECT No. 8.T580501		Federal Agency Involved	FHWA
Proposed Land Use Highway		County And State	Richmond Co., NC
PART II (To be completed by SCS)		Date Request Received By SCS	

Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form).		YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	ACRES IRRIGATED NONE	AVERAGE FARM SIZE 84 acres
Major Crop(s) Corn	Farmable Land in Gov't Jurisdiction Acres: 259,792 % 84.6	Amount Of Farmland As Defined in FPPA Acres: 139,817 % 45.6		Date Land Evaluation Returned by SCS 4/6/99	
Name Of Land Evaluation System Used Richmond LE	Name Of Local Site Assessment NONE				

PART III (To be completed by Federal Agency)	Alternative Site Rating			
	Site A-C	Site A-D	Site E	Site F-H
A. Total Acres To Be Converted Directly	182.5	185.2	277.0	118.2
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	182.5	185.2	277.0	118.2

PART IV (To be completed by SCS) Land Evaluation Information	Site A-C	Site A-D	Site E	Site F-H
A. Total Acres Prime And Unique Farmland	11.5	2.98	-0-	39
B. Total Acres Statewide and Local Important Farmland	67.7	64.01	53.5	52.16
C. Percentage of Farmland In County Or Local Govt. Unit To Be Converted	0.057	0.048	0.038	0.065
D. Percentage of Farmland In Govt. Jurisdiction With Same Or Higher Value	54.6	54.6	45.6	45.6

PART V (To be completed by SCS) Land Evaluation Criterion	Site A-C	Site A-D	Site E	Site F-H
Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	30.2	27.80	36.19	37.93

PART VI (To be completed by Federal Agency)	Maximum Points	Site A-C	Site A-D	Site E	Site F-H
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))					
1. Area in Nonurban use		13	13	5	5
2. Perimeter in Nonurban Use		9	9	5	5
3. Percent Of Site Being Farmed		6	0	6	0
4. Protection Provided By State And Local Government		0	0	0	0
5. Distance From Urban Builtup Area		NA	NA	NA	NA
6. Distance To Urban Support Services		NA	NA	NA	NA
7. Size Of Present Farm Unit Compared To Average		9	9	10	10
8. Creation Of Nonfarmable Farmland		5	0	5	0
9. Availability Of Farm Support Services		4	4	4	4
10. On-Farm Investments		2	1	6	1
11. Effects Of Conversion On Farm Support Services		1	1	1	1
12. Compatibility With Existing Agricultural Use		4	4	4	4
TOTAL SITE ASSESSMENT POINTS	160	53	41	46	30

PART VII (To be completed by Federal Agency)	Maximum Points	Site A-C	Site A-D	Site E	Site F-H
Relative Value Of Farmland (From Part VI)	100	30.2	27.80	36.19	37.93
Total Site Assessment (From Part VI above or a local site assessment)	160	53	41	46	30
TOTAL POINTS (Total of above 2 lines)	260	83.2	68.80	82.19	67.93

Site Selected:	Date of Selection:	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Reason For Selection:		

FARMLAND CONVERSION IMPACT RATING

SHEET 2 of 2

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request	03-19-99
Name of Project US-STATE PROJECT No. 8.		Federal Agency Involved	FHWA
Proposed Land Use Highway		County And State	Richmond, North Carolina
PART II (To be completed by SCS)		Date Request Received By SCS	

Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form).	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	ACRES IRRIGATED NONE	AVERAGE FARM SIZE 84 acres
Major Crop(s) Corn	Farmable Land in Gov't Jurisdiction Acres: 259,792 % 84.6		Amount Of Farmland As Defined in FPPA Acres: 139,817 % 45.6	
Name Of Land Evaluation System Used Richmond LE	Name Of Local Site Assessment NONE		Date Land Evaluation Returned by SCS 4/6/99	

PART III (To be completed by Federal Agency)	Alternative Site Rating			
	Site F-I	Site L	Site	Site
A. Total Acres To Be Converted Directly	251.1	10.6		
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	251.1	10.6		

PART IV (To be completed by SCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	23.23	-0-		
B. Total Acres Statewide and Local Important Farmland	87.79	4.16		
C. Percentage of Farmland In County Or Local Govt. Unit To Be Converted	0.079	0.003		
D. Percentage of Farmland In Govt. Jurisdiction With Same Or Higher Value	54.6	54.6		

PART V (To be completed by SCS) Land Evaluation Criterion				
Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	33.25	25.97		

PART VI (To be completed by Federal Agency)		Maximum Points			
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))					
1. Area in Nonurban use		10	15		
2. Perimeter in Nonurban Use		10	10		
3. Percent Of Site Being Farmed		0	0		
4. Protection Provided By State And Local Government		0	0		
5. Distance From Urban Builtup Area		NA	NA		
6. Distance To Urban Support Services		NA	NA		
7. Size Of Present Farm Unit Compared To Average		9	9		
8. Creation Of Nonfarmable Farmland		5	0		
9. Availability Of Farm Support Services		4	4		
10. On-Farm Investments		0	0		
11. Effects Of Conversion On Farm Support Services		1	0		
12. Compatibility With Existing Agricultural Use		4	4		
TOTAL SITE ASSESSMENT POINTS	160	43	42		

PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part VI)	100	33.25	25.97		
Total Site Assessment (From Part VI above or a local site assessment)	160	43	42		
TOTAL POINTS (Total of above 2 lines)	260	76.25	67.97		

Site Selected:	Date of Selection:	Was A Local Site Assessment Used?
		Yes <input type="checkbox"/> No <input type="checkbox"/>

Reason For Selection:

Appendix E

PUBLIC INVOLVEMENT

HOW CAN YOU HELP?

We want your comments and encourage you to *get involved* in the planning process of this project. If you have comments, questions or suggestions, please take a moment to call, e-mail, or write and mail them to us. Our contact information is below. If you would like to receive future project updates and information about public meetings, contact us so we can add your address to our *mailing list*. *Your input helps* guide our planners and engineers to design a roadway facility that will blend into and become an important part of your community.

CONTACT INFORMATION

Inquiries regarding T.I.P. R-2501 may be directed to the following:

Derrick Weaver, P.E.
 Project Development & Environmental Analysis Branch
 North Carolina Department of Transportation
 1548 Mail Service Center
 Raleigh, NC 27699-1548
 Phone: 919-733-7844, ext. 215 or Email: dweaver@ncdot.gov

Or:

Mark L. Reep, P.E., Project Manager
 Ko & Associates, P.C.
 5121 Kingdom Way, Suite 100
 Raleigh, NC 27607
 Phone toll-free: 866-851-6066, ext. 138 or Email: mreep@koassociates.com

For inquiries regarding other NCDOT projects visit www.ncdot.org or call **1-877 DOT 4YOU**



5121 Kingdom Way, Suite 100
 Raleigh, NC 27607



T.I.P. No. R-2501

US 1

Richmond County, North Carolina

North Carolina Department of Transportation

NEWSLETTER

Ko & Associates, P.C.

Project Schedule

Environmental, Traffic,
 & Design Studies for
 Additional Interchange
Summer 2008

Interagency Meetings
Fall 2008

Final Environmental
 Impact Statement (EIS)
Spring 2009

Record of Decision
 (ROD)
Fall 2009

Public Hearing
Winter 2009

Right of Way Acquisition
2011

Construction
2013

Why Do We Need This Project?

- To improve travel in Richmond County by reducing overall travel time
- To reduce through and truck traffic congestion in downtown Rockingham
- To improve traffic safety along US 1

CITIZENS PROVIDE COMMENTS

A Citizens Informational Workshop was held in Rockingham on July 19, 2007. Citizens met with NCDOT officials to give their comments and suggestions about the project. Public comments and questions focused on these issues:

- Effects on individual properties, property values and noise levels
- Process for right of way acquisition
- Design suggestions at several road crossings
- Questions about the project endpoints and the project's need
- Suggestion for a new interchange near County Home Road and Wiregrass Road
- Opposition to the preferred corridor because of its close proximity to the Richmond Primary School (presented in a petition with over 2,000 signatures)

This workshop was followed by an August 29, 2007 meeting to receive input from public officials. Rockingham, Hamlet, and Richmond County representatives expressed these ideas:

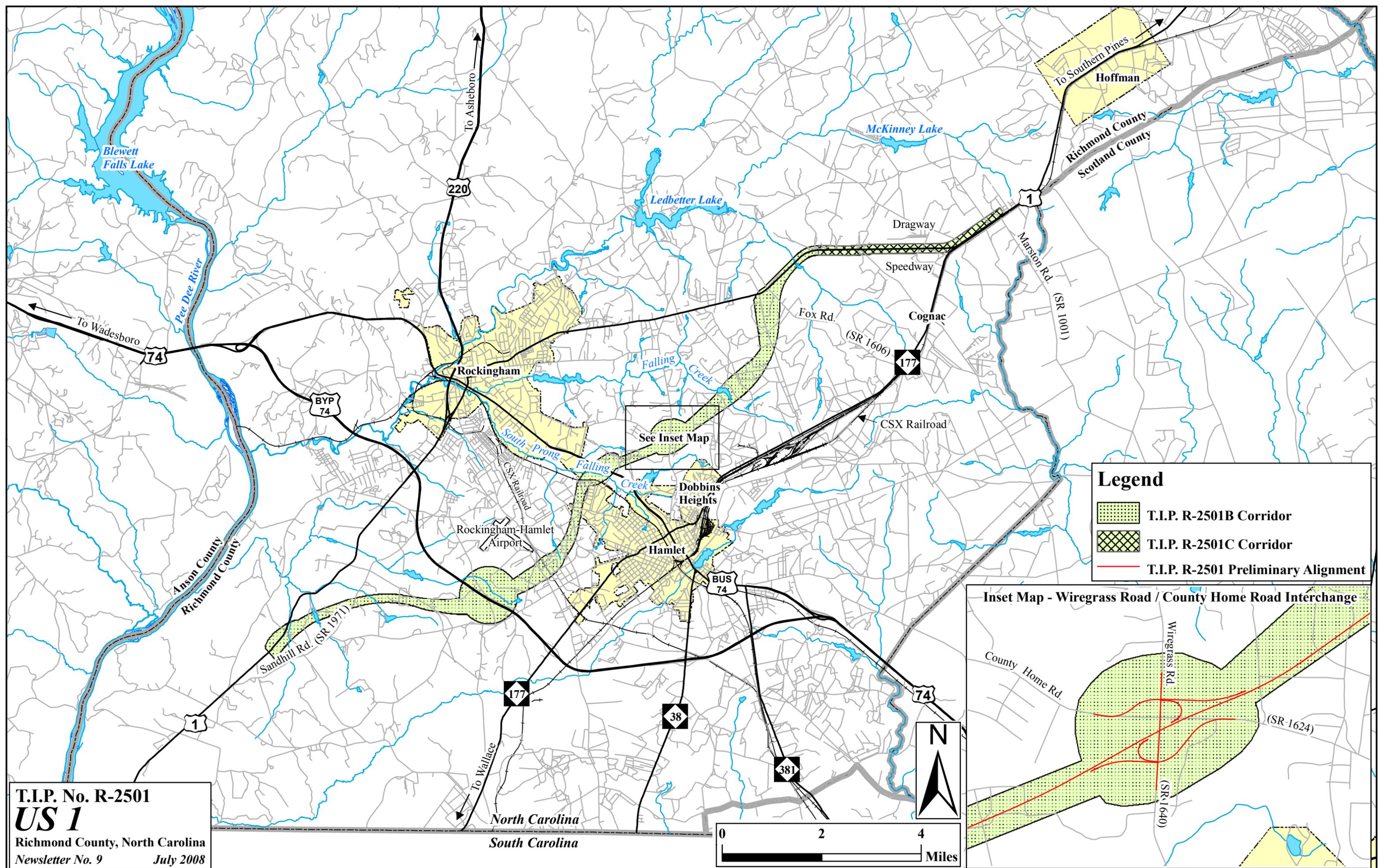
- Request for an improved connection between Hylan Avenue and US 74 Business (to be addressed by a future NCDOT road improvement - TIP Project U-3807).
- Request for an interchange near County Home Road and Wiregrass Road to help with future emergency, industrial, and general access.
- Questions about the project's economic impact on businesses along US 74 in Hamlet and in downtown Rockingham.
- Questions about future speed limits in the areas of US 1 to be widened.

WHAT'S NEW?

Planning and design studies are underway for an interchange at County Home Road and Wiregrass Road for improved accessibility. The Department is developing an interchange with safe access to the Richmond Primary School. Traffic conditions, social and economic factors, property impacts, and environmental issues are being considered. Environmental surveys will be focused on this area during the early part of summer. NCDOT continues to study ideas that reduce the project's impact on nearby properties (see the figure on the next page).

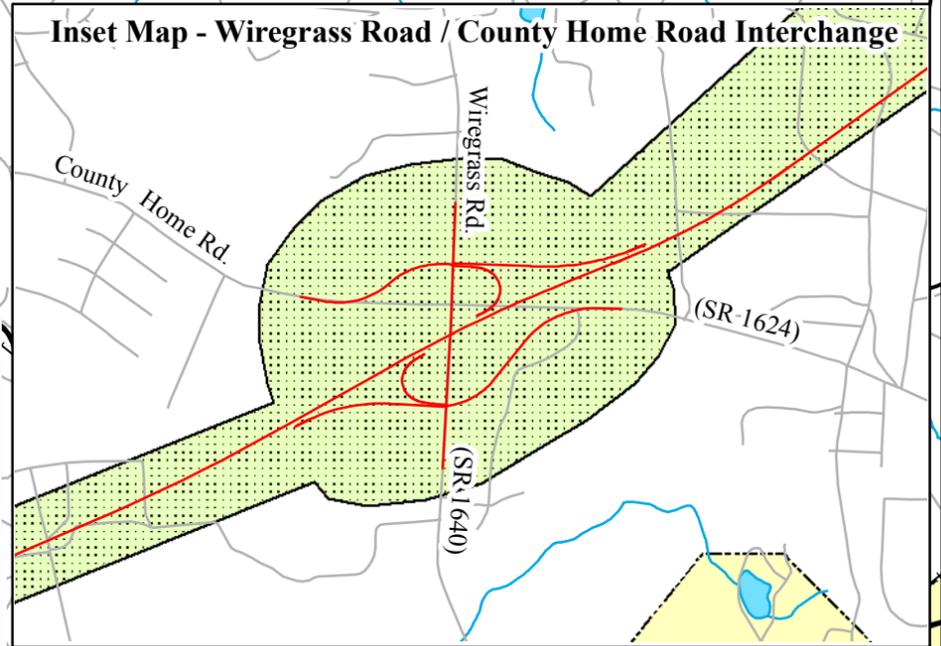
WHAT HAPPENS NEXT?

Meetings with various state and federal agencies are planned this summer and fall to develop ways to lessen impacts to the environment. The EIS will be finalized in the spring of 2009 with a public hearing to follow in the summer. The ROD will be completed in the fall of 2009. Right of way acquisition is scheduled for 2011, and construction is to begin in 2013.

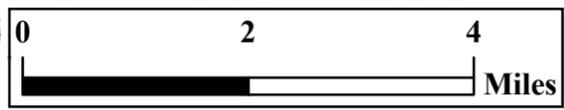


Legend

-  T.I.P. R-2501B Corridor
-  T.I.P. R-2501C Corridor
-  T.I.P. R-2501 Preliminary Alignment



T.I.P. No. R-2501
US 1
 Richmond County, North Carolina
 Newsletter No. 9 July 2008



See Inset Map

North Carolina
 South Carolina

PROPOSED IMPROVEMENTS TO US 1 FROM SANDHILL RD. (SR 1971) SOUTH OF ROCKINGHAM TO MARSTON RD. (SR 1001) IN MARTSON, (TIP NO. R-2501)

CITIZENS INFORMATIONAL WORKSHOP

JULY 19, 2007

Welcome to the fourth workshop on the proposed improvements to US 1 in Richmond County.

PROJECT DESCRIPTION AND HISTORY

During the 1990s, the N.C. Department of Transportation (NCDOT) began the planning, engineering and environmental studies for the proposed improvements of US 1 from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) in Marston, a distance of about 22 miles. As part of the planning and design process, three informational workshops were held on: January 10, 1996, October 6, 1997 and December 1, 1998. The planning and design staff reviewed all comments received from the public as a result of these workshops, and completed a Draft Environmental Impact Statement (EIS) in June 1999, which identified Alternative 21 as the preferred route from Sandhill Road to north of Fox Road. A four-lane divided highway is proposed for this bypass of Rockingham and Hamlet. An Informal Public Hearing was held June 24, 2002, to solicit comments from the public regarding the widening of existing US 1 from about 1.5 miles north of Fox Road to Marston Road. After evaluating the comments received at the hearing, NCDOT selected a five-lane section for the widening as the preferred route. Now, more studies are required to complete the Final EIS and Record of Decision (FEIS/ROD) for the preferred route. This project includes two segments:

R-2501B: A bypass of Rockingham/Hamlet with a four-lane, median-divided section from Sandhill Road to about 1.5 miles north of Fox Road (SR 1606), and;

R-2501C: Widening of existing US 1 with a five-lane section from 1.5 miles north of Fox Road to Marston Road near the Rockingham Dragway and the North Carolina Speedway.

WHAT HAPPENS NEXT

NCDOT is revisiting the information presented in the environmental impact statements. More detailed planning, engineering, and environmental studies will concentrate on the preferred route to identify and evaluate any issues that were not present during the previous studies.

WORKSHOP AGENDA

The agenda for this evening's workshop is informal. Aerial photographs of the preferred route are on display. Representatives of NCDOT and Ko & Associates are here and ready to discuss your concerns, receive comments and answer questions.

TENTATIVE PROJECT SCHEDULE

- Environmental, Traffic & Design Studies: Fall 2007
- Reevaluation of Supplemental EIS: December 2007
- Final EIS / Record of Decision (ROD): June / October 2008
- Public Hearing: October 2008
- Right of Way Acquisition Begins: 2010
- Construction Begins: 2012

MAILING LIST

A mailing list of public officials, neighborhood organizations, civic groups, and interested persons has been developed. This list is used to send newsletters and meeting notices to interested parties. If you or your organization would like to be included on the mailing list or your address has changed, please fill out the enclosed form and mail it to:

Mark L. Reep
Ko & Associates, P.C.
1011 Schaub Dr., Suite 202
Raleigh, NC 27606

Send e-mail requests or comments to the following address: mreep@koassociates.com.

If there are any topics or issues you would like more information on and want available at the upcoming Citizens Informational Workshop, please include them in the comments section of the enclosed form and mail / e-mail them to the address above. The Citizens Informational Workshop will be held Thursday, July 19, 2007 from 4:00 pm to 7:00 pm at Leath Memorial Library in Rockingham.

INQUIRIES

Inquiries regarding T.I.P. Project No. R-2501 may be directed to the following:

Jennifer Fuller, PE, Project Manager
Project Development & Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548
Phone: 919-733-7844, ext. 244 or Email: jmf Fuller@dot.state.nc.us

Or:

Mark L. Reep, P.E., Project Manager
Ko & Associates, P.C.
1011 Schaub Dr., Suite 202
Raleigh, NC 27606
Phone: 919-851-6066, ext. 138 or Email: mreep@koassociates.com



1011 Schaub Drive, Suite 202
Raleigh, NC 27606



T.I.P. No. R-2501

US 1

Richmond County, North Carolina

North Carolina Department of Transportation

NEWSLETTER

Ko & Associates, P.C.

Newsletter No. 8

July 2007

Upcoming Events

Citizens Informational
Workshop
July 19, 2007

Environmental, Traffic,
& Design Studies
Fall 2007

Reevaluation of
Supplemental EIS
December 2007

Final EIS / Record of
Decision (ROD)
June / October 2008

Right of Way Acquisition
2010
Construction
2012

THE FINAL EIS IS UNDER WAY

The original planning, engineering, and environmental studies for the proposed improvements of US 1 from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) in Marston, a distance of about 22 miles, began in the 1990s. A Draft Environmental Impact Statement was completed in June 1999. Now, more studies are required to complete the Final Environmental Impact Statement and Record of Decision (FEIS/ROD) for the preferred route. This project includes two segments:

- R-2501B, a bypass of Rockingham/Hamlet with a four-lane, median-divided section from Sandhill Road to about 1.5 miles north of Fox Road (SR 1606), and;
- R-2501C, the widening of existing US 1 with a five-lane section from 1.5 miles north of Fox Road to Marston Road near the Rockingham Dragway and the North Carolina Speedway.

WHY DO WE NEED THIS PROJECT?

Currently, sections along US 1, especially in downtown Rockingham, are congested during morning and evening rush hours. When special events are held at the Dragway or Speedway or when traffic increases during the summer, traffic congestion worsens. Without this project, current traffic congestion will continue to get worse on the majority of sections along US 1. This project will help to alleviate traffic congestion and improve safety by providing an alternate route for through traffic.

A PREFERRED ROUTE HAS BEEN SELECTED

In 1999, Alternative 21 was selected as the preferred route from Sandhill Road to north of Fox Road (see the enclosed map). A four-lane divided highway is proposed for this bypass of Rockingham and Hamlet. An Informal Public Hearing was held on June 24, 2002, to solicit comments from the public regarding the widening of existing US 1 from about 1.5 miles north of Fox Road to Marston Road. After evaluating the comments received at the hearing, NCDOT selected a five-lane section for the widening as the preferred route.

WHAT HAPPENS NEXT?

NCDOT is revisiting the information presented in the environmental impact statements. More detailed planning, engineering, and environmental studies will concentrate on the preferred route to identify and evaluate any issues that were not present during the previous studies. *You can help* identify these issues by attending the next **Citizens Informational Workshop** to be held **Thursday, July 19, 2007 from 4:00 pm to 7:00 pm** at the **Leath Memorial Library** in Rockingham. At the workshop, NCDOT representatives will present the planned improvements, answer questions, and receive public input on the project.

**We're Coming to
Rockingham**

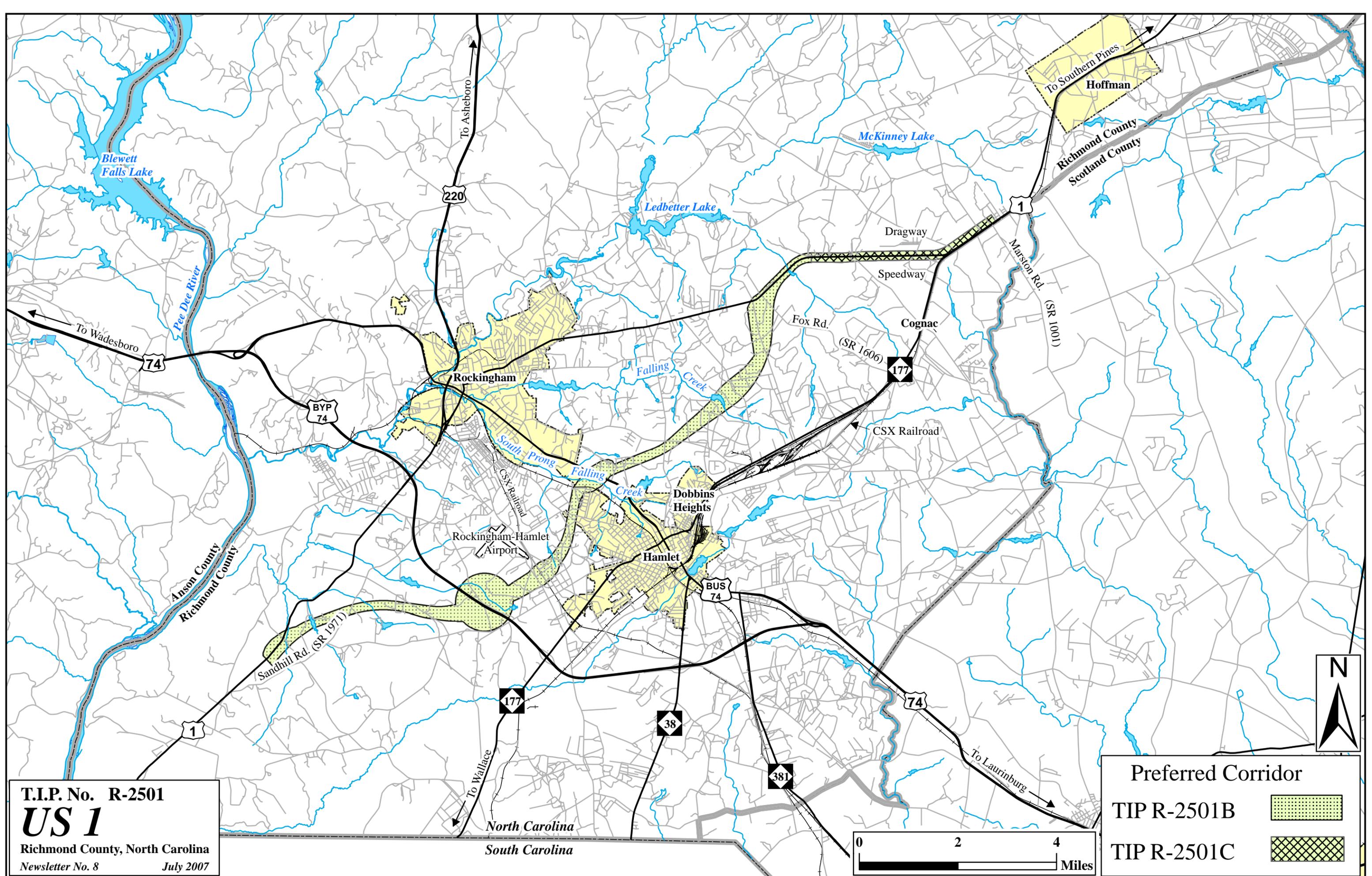
Citizens Informational
Workshop #4

Thursday, July 19, 2007

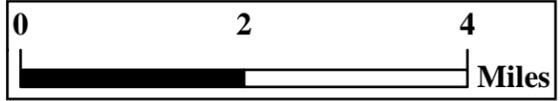
4:00 PM to 7:00 PM

Location

*Leath Memorial Library
412 East Franklin Street
Rockingham, NC 28379*



T.I.P. No. R-2501
US 1
 Richmond County, North Carolina
 Newsletter No. 8 July 2007



Preferred Corridor

TIP R-2501B

TIP R-2501C



North Carolina
 South Carolina

To Laurinburg

To Wallace

Marston Rd. (SR 1001)

Fox Rd. (SR 1606)

Sandhill Rd. (SR 1971)

Rockingham-Hamlet Airport

CSX Railroad

Dragway
 Speedway

To Southern Pines
 Hoffman

Richmond County
 Scotland County

To Asheboro

To Wadesboro

Anson County
 Richmond County

Blewett Falls Lake

Pee Dee River

Ledbetter Lake

McKinney Lake

Falling Creek

South Prong
 Falling Creek

Rockingham

Dobbins Heights

Hamlet

Cognac

1

BYP 74

220

1

177

177

38

381

74

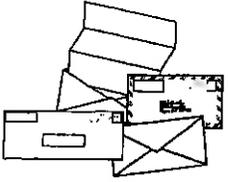
BUS 74

WIDENING OF US 1 FROM NORTHEAST OF FOX ROAD TO SOUTHWEST OF MARSTON ROAD

NEAR ROCKINGHAM

**PROJECT 8.T580501
TIP NO. R-2501C
RICHMOND COUNTY**

**COMBINED PUBLIC HEARING
RICHMOND SENIOR HIGH SCHOOL CAFETERIA
JUNE 24, 2002**



WHAT IS DONE WITH THE INPUT?

A post-hearing meeting will be conducted after the comment period has ended. This meeting will be attended by NCDOT staff representing Planning, Design, Traffic, Division, Right of Way, Public Involvement & Community Studies and others who play a role in the development of a project. When appropriate, representatives from the Federal Highway Administration and local governmental officials also attend.

All spoken and written issues are discussed at this meeting. Most issues are resolved at the post hearing meeting. The Department of Transportation considers safety, costs, traffic service, social impacts and public comments in making decisions. Complex issues may require additional study and may be reviewed by higher management, Board of Transportation Members and/or the Secretary of Transportation.

Minutes of the post-hearing meeting are prepared and this summary is available to the public. You may request this document on the attached comment sheet.

STATE-FEDERAL RELATIONSHIP

This proposed project is a Federal-Aid Highway Project and thus will be constructed under the State-Federal Aid Highway Program. Financing of this project will be 80% Federal Funds and 20% State Funds. The Board of Transportation is responsible for the selection and scheduling of projects on the Federal Aid System, their location, design and maintenance cost after construction. The Federal Highway Administration is responsible for the review and approval of the previously mentioned activities to ensure that each Federal Aid Project is designed, constructed and maintained to Federal Aid Standards.

NEED FOR THE PROJECT

US 1 is an important north-south corridor in the Piedmont region between the South Carolina state line and two major interstates, I-40 and I-85. Construction of a US 1 Bypass east of Rockingham, in addition to improvements to existing US 1, have long been identified as primary goals by local officials. Some sections of US 1, especially in downtown Rockingham, are congested during peak commuting hours in the morning and afternoon. When special events are held at the North Carolina Motor Speedway, congestion worsens. Traffic on this section of US 1 in the area of the Speedway is projected to range from 7,280 vehicles per day to 11,020 vehicles per day in the year 2020.

Accident data along this section of US 1 indicates the total accident rate for the section of US 1 near the Speedway is less than the statewide average for all US routes, with most accidents resulting from slowed or stopped traffic. Multi-laning this section of US 1 with provisions for left turn lanes should reduce the number of these types of accidents.

PURPOSE OF PROJECT

The widening of existing US 1 from northeast of Fox Road (SR 1606) to southwest of Marston Road (SR 1001) near the North Carolina Motor Speedway is an extension of the US 1 new location bypass of Rockingham (TIP Project No. R-2501). The purpose of the proposed US 1 Bypass and associated improvements is to increase capacity, reduce overall travel time and improve safety along US 1 through this area, as well as to alleviate traffic congestion in downtown Rockingham.

PURPOSE OF PUBLIC HEARING

Today's hearing is one step in the Department of Transportation's procedure for making you, the public, a part of the planning process. The Department of Transportation is soliciting your views on the location and design of the proposed widening of US 1 from northeast of Fox Road (SR 1606) to southwest of Marston Road (SR 1001) in Richmond County.

The Department of Transportation's planning and environmental studies on the above project are presented in the environmental document – Supplemental Draft Environmental Impact Statement. Copies of this report and today's hearing map are available for public review at the NCDOT Division 8, District 3 Office located at 219 Clemmer Road in Rockingham and at the City of Rockingham Offices located at 311 East Franklin Street in Rockingham. The map showing corridors for the US 1 Bypass (R-2501) project and the Draft Environmental Impact Statement are also available for review at today's hearing.

YOUR PARTICIPATION

Several representatives of the North Carolina Department of Transportation are present at this meeting. Any of these people will be happy to talk with you, explain the design to you and answer your questions. Now that the opportunity is here, you are encouraged to participate by voicing your comments to Department of Transportation representatives at this meeting, by writing them on the comment sheet and leaving it with one of the representatives, by mailing them during the 15 days following the Public Hearing or by recording your statements on the tape recorder available.

Those wishing to submit written material may do so to:

Ms. Ann Steedly, PE
Public Involvement and Community Studies
NCDOT
1583 Mail Service Center
Raleigh, NC 27699-1583
FAX: (919) 250-4208
email: asteedly@dot.state.nc.us

Everyone present is urged to participate in the proceedings. It is important, however, that **THE OPINIONS OF ALL INDIVIDUALS BE RESPECTED REGARDLESS OF HOW DIVERGENT THEY MAY BE FROM YOUR OWN**. Accordingly, debates, as such, are out of place at public hearings. Also, the public hearing is not to be used as a **POPULAR REFERENDUM** to determine the alignment by a majority vote of those present.

The purpose of the proposed US 1 Bypass and associated improvements, including the widening of US 1 near the Speedway, is to increase capacity, reduce overall travel time and improve safety along US 1 through this area, as well as to alleviate traffic congestion in downtown Rockingham.

PROJECT DESCRIPTION

The proposed project involves widening US 1 from northeast of Fox Road (SR 1606) to southwest of Marston Road (SR 1001). The proposed project is 3.7 miles in length and would widen the existing two-lane facility to either a four-lane divided roadway or a five-lane roadway. The proposed four-lane alternative would incorporate a 17.5-foot wide raised grassed median including curb-and-gutter on the inside lanes along the median. The proposed five-lane alternative would incorporate a shared center turn lane. For both alternatives, curb and gutter along the outside lane is proposed in the immediate vicinity of the Speedway, with breakdown shoulders proposed on the remainder of the widening. Both alternatives involve widening along the existing roadway with the road being shifted in a few locations (near Cognac Road and near NC 177), to straighten out curves and realign intersections. Cross-sections and detailed descriptions of the shoulder and curb-and-gutter sections for both the five-lane and four-lane alternatives are shown on the following pages of this handout. Additional right of way and the relocation of homes will be required for the proposed project. Although the posted speed limit has not been finalized at this time, it is projected to be 45 miles per hour through the curb-and-gutter section in the immediate vicinity of the Speedway and 55 miles per hour for the remaining shoulder sections.

The project is tentatively scheduled to start the right-of-way acquisition process in Fiscal Year 2005 (between July 1, 2004 and June 30, 2005) and to begin construction in Fiscal Year 2008.

PROPOSED PROJECT INFORMATION

Length: 6.0 Kilometers (3.7 Miles)

Typical Section: Four-Lane Alternative

Northeast (NE) of Fox Rd at Future US 1 Bypass to about 800' NE of Dobson Rd
AND from approximately NC 177 to just southwest of Marston Rd

Two Lanes each direction	-	Shoulders	-	Median
2 - 3.6m (~12') Wide Lanes		1.2m (~4') Wide Paved		5.3 m (~17.5') Wide
		2.8m (~6') Wide Grass		(Includes curbs)

About 800' northeast of Dobson Rd to approximately NC 177

Two Lanes each direction	-	Gutter	-	Berm	-	Median
2 - 3.6m (~12') Wide Lanes		0.6m (~2') Wide		3.0m (~10') Wide		5.3 m (~17.5') Wide
				(Includes curb)		(Includes curbs)

Five-Lane Alternative

Northeast (NE) of Fox Rd at Future US 1 Bypass to about 800' NE of Dobson Rd
AND from approximately NC 177 to just southwest of Marston Rd

Five Lanes	-	Shoulders
5 - 3.6m (~12') Wide Lanes		1.2m (~4') Wide Paved
		2.8m (~6') Wide Grass

About 800' northeast of Dobson Rd to approximately NC 177

Five Lanes	-	Gutter	-	Berm
5 - 3.6m (~12') Wide Lanes		0.6m (~2') Wide		3.0m (~10') Wide
				(Includes curb)

Right of Way: Variable – From Approximately 100' to Approximately 650' (where curves are straightened)

Relocates:

Residences:	2
Businesses:	0
Total:	2

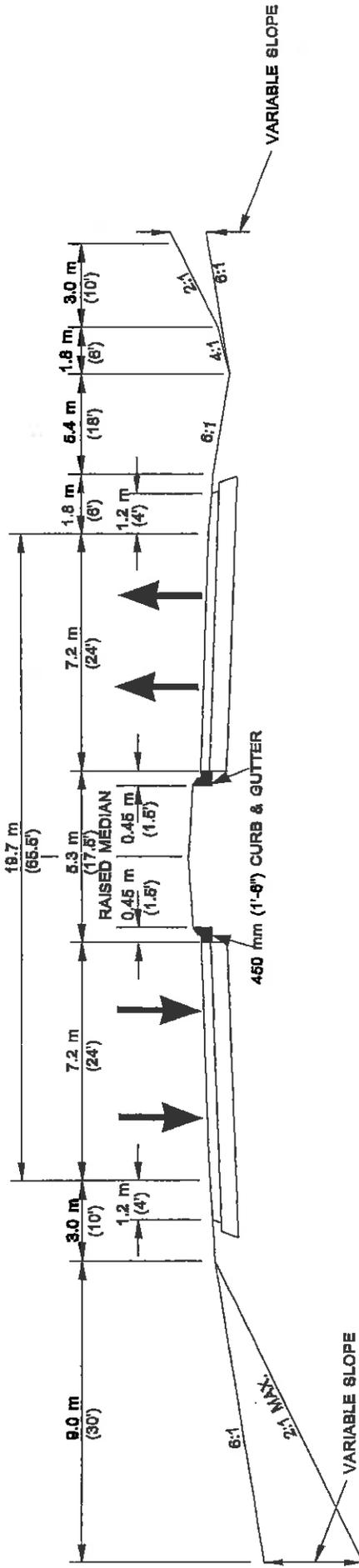
Estimated Cost:

Roadway Cost:	\$ 10,900,000
Right of Way Cost:	\$ 2,070,600
Total:	\$ 12,970,600

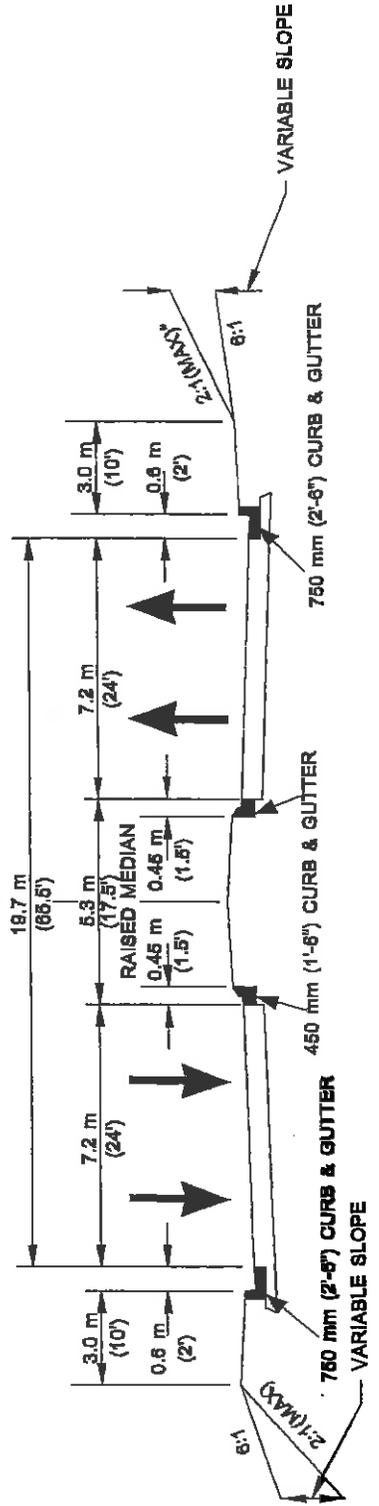
Tentative Schedule: Right of Way – Fiscal Year 2005
Construction – Fiscal Year 2008

4-LANE DIVIDED ALTERNATIVE

PROPOSED US 1 SHOULDER SECTION

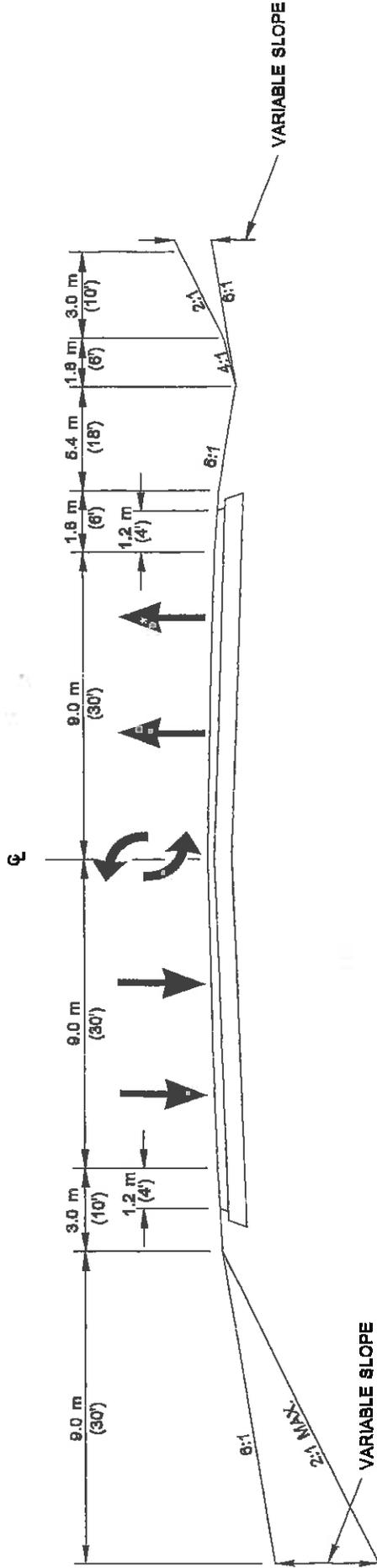


PROPOSED US 1 CURB & GUTTER SECTION

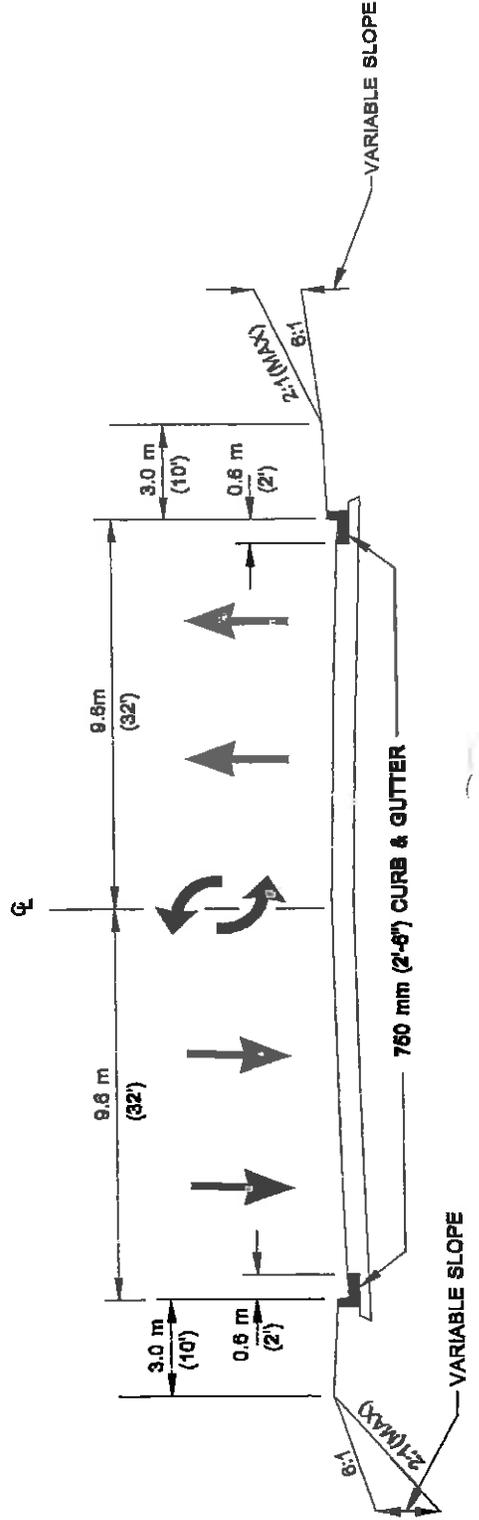


5-LANE ALTERNATIVE

PROPOSED US 1 SHOULDER SECTION



PROPOSED US 1 CURB & GUTTER SECTION



INQUIRIES

Written inquiries regarding the public hearing may be directed to:

Ann Steedly, P. E., Public Hearing Officer
Public Involvement and Community Studies
North Carolina Dept. of Transportation
1583 Mail Service Center
Raleigh, NC 27699-1583


7520 East Independence Blvd.
Suite 120
Charlotte, North Carolina 28227

ADDRESS CORRECTION REQUESTED

Mr. Dewayne Sykes, PE
Assistant State Roadway Design Engineer
NCDOT - Roadway Design
1582 Mail Service Center
Raleigh, NC 27699-1582

MAILING LIST

A mailing list of public officials, neighborhood organizations, civic groups, and interested persons has been developed. This list is used to send newsletters and meeting notices to interested parties. If you or your organization would like to be included on the mailing list, please send a written request to Ronald C. Smith at Qk4 (formerly Presnell Associates, Inc.), 7520 East Independence Boulevard, Suite 120, Charlotte, North Carolina 28227. Send e-mail requests, comments or questions to the following address: rsmith@qk4.com.



T.I.P. No. R-2501



Richmond County, North Carolina

Newsletter No. 7

North Carolina Department of Transportation

NEWSLETTER

June 2002

R-2501C INFORMAL PUBLIC HEARING

The North Carolina Department of Transportation (NCDOT) will hold an Informal Public Hearing on Monday June 24, 2002 to review alternatives for Section C of the proposed US 1 improvements in Richmond County (see map on page 2). Section C extends from north of Fox Road (SR 1606) to Marston Road (SR 1001). The Informal Public Hearing will be held between the hours of 4:00 PM and 7:00 PM in the Cafeteria of Richmond Senior High School located at 838 US 1 North, Rockingham, North Carolina. Interested individuals are invited to attend this informal hearing at their convenience any time during the above-stated hours. NCDOT representatives will be available to answer questions and receive comments related to the proposed project.

Section C is an extension of TIP Project R-2501. TIP Project R-2501 is the improvement of US 1 from Sandhill Road (SR 1001) south of Rockingham to Marston Road (SR 1001) including a bypass of Rockingham/Hamlet on new location. A Draft Environmental Impact Statement was completed for R-2501 in June 1999. A corridor public hearing was held in September 1999.

Two widening alternatives for R-2501C, a five-lane roadway and a four-lane divided roadway, were examined and presented in the Supplemental Draft Environmental Impact Statement (SDEIS) approved on April 27, 2001. This hearing is to solicit comments from the local community on the widening alternatives. A map depicting the NCDOT "Preferred Corridor" for the US 1 Rockingham Bypass (R-2501B) will also be presented at the hearing.

SUMMARY OF PROJECT NEED

US 1 is an important north-south corridor in the Piedmont region between the South Carolina state line and two major interstates, I-40 and I-85. Construction of a US 1 bypass east of Rockingham, in addition to improvements to existing US 1 has long been identified as a primary goal by local officials.

Existing traffic data indicates some sections along US 1, especially in downtown Rockingham, are congested during peak traffic hours. When special events are being held at the

North Carolina Motor Speedway or when areawide traffic increases during the summer, congestion worsens. By 2020, the majority of US 1 will be congested during peak hours.

The purpose of the proposed US 1 Bypass and improvements is to reduce overall travel time and alleviate traffic congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets. A multilane roadway will provide a safer, more efficient facility for local and through traffic.

DESCRIPTION OF ALTERNATIVES

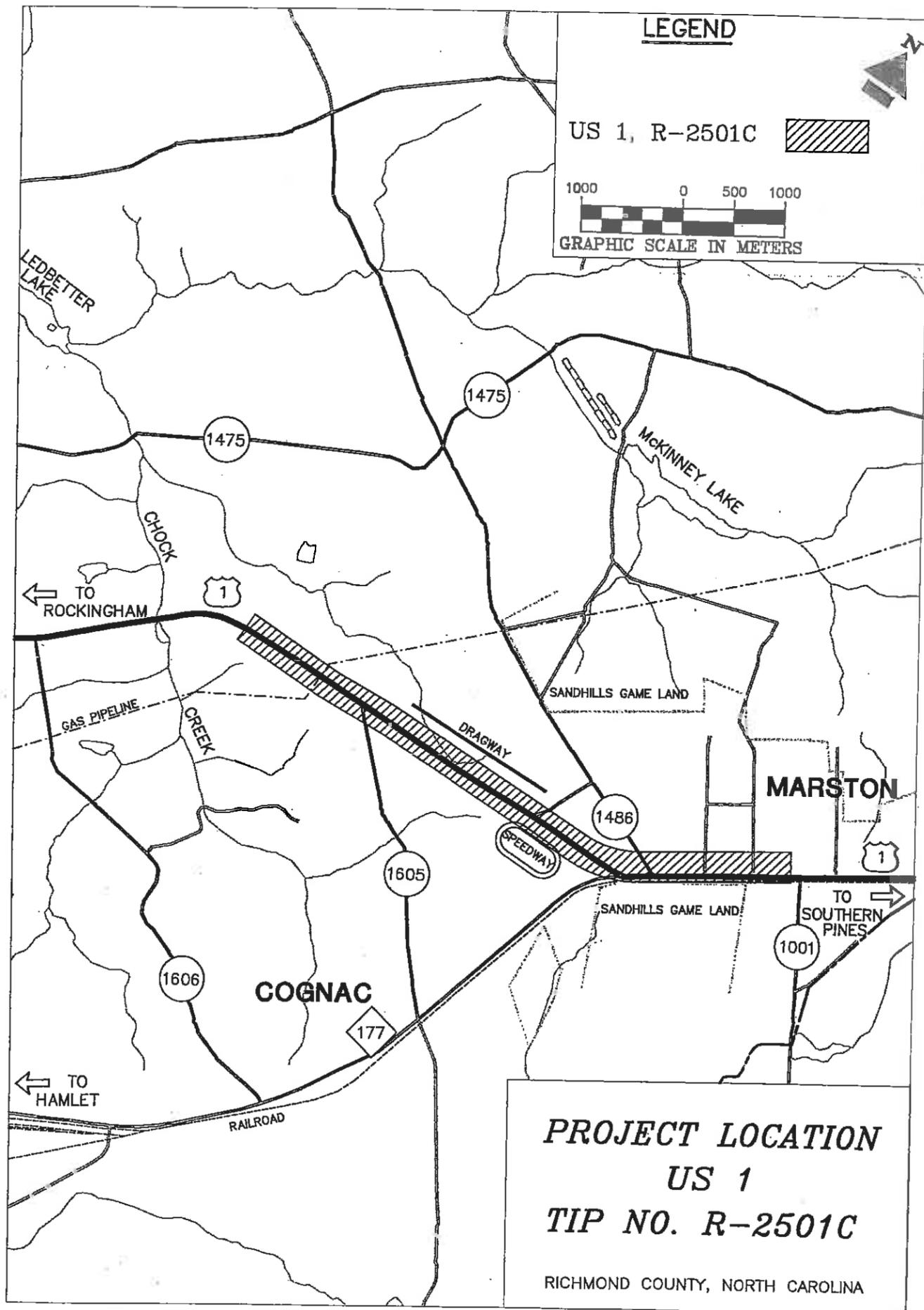
Two widening alternatives for the R-2501C section of US 1 were presented in the Supplemental Draft Environmental Impact Statement (SDEIS). The four-lane divided roadway would consist of two lanes in each direction separated by a raised 5.3 meter (17.5 foot) median, while the five-lane section would consist of two lanes in each direction with a center turn lane. The design speed would be 100 kilometers/hour (60 mph) for the shoulder sections and 80 kilometers/hour (50 mph) for the curb and gutter sections. The proposed right-of-way width will vary from the existing 30 meters (100 feet) to approximately 60 meters (200 feet). Symmetrical and non-symmetrical widening with shoulders is proposed. Within the North Carolina Motor Speedway area, curb and gutter is proposed.

SUMMARY OF IMPACTS

The impacts of widening US 1 from north of Fox Road (SR 1606) to Marston Road (SR 1001) either as a four-lane divided roadway or as a five-lane roadway are shown on the summary table on page 3.

PROJECT SCHEDULE

Preliminary roadway design for the bypass corridor will be developed and presented to the public at a Design Public Hearing tentatively scheduled for early 2003. Based on NCDOT's 2002-2008 Transportation Improvement Program (TIP), right-of-way acquisition is scheduled to begin in fiscal year 2004, with construction to begin after fiscal year 2006.



Summary of Impacts: US 1, R-2501C	
Impacts	
Length	6 km (3.7 mi)
Intersections	4
Grade Separations	0
Relocations	
Residential	2
Business	0
Non Profit	1
Farms	0
Total	3
Acreage Required	
Undisturbed Land	3.29 ha (8.13 ac)
Agricultural Land	0 ha (0 ac)
Developed Land	5.55 ha (13.71 ac)
Total	8.84 ha (21.84 ac)
Prime/Statewide Important Farmland	0.28 ha (0.68 ac)
Stream Crossings	0
Stream Impacts	0
Open Water Impacts	0
Wetland Impacts	0.1 ha (0.2 ac)
Floodplain Impacts	0
Historic Property Impacts	0
Park Impacts	0
Noise Impacts	0
Hazardous Material Sites (excluding USTs)	0
Right-of-Way Cost	\$1,670,600
Utility Cost	\$400,000
Construction Cost	\$10,900,000
Wetland Mitigation Cost	\$6,500
Total	\$12,977,100



NEWSLETTER

Newsletter No. 6

January 2000

DESCRIPTION OF PREFERRED ALTERNATIVE

CORRIDOR SELECTED

A Corridor Public Hearing for the US 1 Bypass/Improvements was held on September 14, 1999. After evaluating the comments received from federal, state and local agencies on the Draft Environmental Impact Statement (DEIS) and comments received from the Corridor Public Hearing, **Alternative Corridor No. 21** was selected as the Preferred Alternative (See map on page 2). Alternative Corridors 21 and 24 have the least number of relocations and stream impacts with Alternative Corridor 21 having the least amount of wetland impacts of the two.

SUMMARY OF PROJECT NEED

US 1 serves as an important north-south corridor in the Piedmont region between the South Carolina state line and two major interstates, I-40 and I-85. Construction of a US 1 bypass east of Rockingham, in addition to improvements to existing US 1, has long been identified as a primary goal by local officials.

Existing traffic data indicates some sections along US 1, especially in downtown Rockingham, are heavily congested during peak traffic hours. When special events are being held at the North Carolina Motor Speedway or when areawide traffic increases during the summer, traffic congestion worsens. By 2020, the majority of sections along US 1 will experience congestion during peak hours.

The purpose of the US 1 Bypass and improvements to existing US 1 is to improve travel conditions in Richmond County. This will reduce overall travel time and alleviate traffic congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets. A multilane roadway will provide a safer, more efficient facility for local and through traffic.

Under this project, NCDOT proposes to construct a four-lane divided facility on new location and widen existing US 1 to a five-lane shoulder section. Alternative Corridor 21 begins south of Rockingham near Sandhill Road (SR 1971) then follows a route north of the Loch Haven Golf Course, continues south of the Rockingham-Hamlet Airport, crosses US 74 east of Pineleigh Avenue (SR 1670) and continues northeasterly and ties back to existing US 1 at Fox Road.

SUMMARY OF IMPACTS

Four alternatives were evaluated in the DEIS for traffic operations; costs; and social, economic and environmental impacts. All four alternatives satisfy the purpose and need for the proposed project; however, Alternative Corridor No. 21 was selected as the least environmentally damaging practicable alternative or LEDPA. Estimated impacts and costs associated with the alternatives are summarized in the table on page 3. During preliminary design, impacts to the proposed school on County Home Road will be minimized.

PROJECT SCHEDULE

Preliminary roadway design will be developed for the preferred alternative. These plans will be presented to the public at a Design Public Hearing to be held in the last quarter of this year. Based on NCDOT's current T.I.P., right-of-way acquisition is scheduled to begin in fiscal year 2004, with construction to begin after fiscal year 2006.

PROJECT SCHEDULE

Final Environmental Impact Statement: October 2000

Design Public Hearing: 4th Quarter 2000

Right of Way Acquisition Begins: 2004

Construction Begins: After 2006

Summary of Impacts: US 1 Bypass/Widening

Impacts	Alternatives			
	(Sections)			
	7 (C, E, F, H, H2, L)	14 (D, E, F, H, H2, L)	Preferred Alternative 21 (C, E, F, I, J, K, L)	24 (D, E, F, I, J, K, L)
Lengths				
Along New Location	19.7 km (12.2 mi)	19.6 km (12.2 mi)	22.5 km (14 mi)	22.3 km (13.9 mi)
Along Existing US 1	5.3 km (3.3 mi)	5.3 km (3.3 mi)	2.5 km (1.6 mi)	2.5 km (1.6 mi)
Total	25 km (15.5 mi)	24.9 km (15.5 mi)	25 km (15.6 mi)	24.8 km (15.5 mi)
Interchanges	3	3	3	3
Grade Separations	4	4	5	5
Relocations				
Residential	115	111	71	67
Business	6	6	17	17
Non Profit	0	0	0	0
Farms	1	1	1	1
Total	122	118	89	85
Acreage Required				
Undisturbed Land	227 ha (560 ac)	238 ha (587 ac)	262 ha (647 ac)	273 ha (674 ac)
Agricultural Land	8 ha (22 ac)	3 ha (7 ac)	9 ha (22 ac)	3 ha (7 ac)
Developed Land	92 ha (227 ac)	91 ha (225 ac)	73 ha (181 ac)	72 ha (179 ac)
Total	327 ha (809 ac)	332 ha (819 ac)	344 ha (850 ac)	348 ha (860 ac)
Prime/Statewide Important Farmland	92 ha (228 ac)	87 ha (216 ac)	100 ha (248 ac)	95 ha (236 ac)
Stream Crossings	15	15	10	10
Stream Impacts	2,095 m (6,872 LF)	1,996 m (6,548 LF)	1,153 m (3,783 LF)	1,054 m (3,459 LF)
Open Water Impacts	3 ha (7 ac)	3 ha (7 ac)	1 ha (3 ac)	1 ha (3 ac)
Wetland Impacts	22.4 ha (55.3 ac)	24.9 ha (61.6 ac)	22.5 ha (55.5 ac)	25.0 ha (61.8 ac)
Floodplain Impacts	8.6 ha (21.2 ac)	7.5 ha (18.5 ac)	11.1 ha (24.5 ac)	10.1 ha (24.8 ac)
Historic Property Impacts	0	0	0	0
Park Impacts	0	0	0	0
Noise Impacts	5	5	0	0
Hazardous Material Sites	0	0	0	0
Right-of-Way Cost (millions \$)	\$25.22	\$24.70	\$21.67	\$21.15
Utility Cost (millions \$)	\$1.08	\$1.08	\$1.18	\$1.18
Construction Cost (millions \$)	\$124.75	\$124.55	\$139.25	\$139.05
Wetland Mitigation Cost (millions \$)	\$1.67	\$1.78	\$1.90	\$2.01
Stream Mitigation Cost (millions \$)	\$1.72	\$1.64	\$0.95	\$0.86
Total (millions \$)	\$154.44	\$153.75	\$164.95	\$164.25

INQUIRIES

Written inquiries regarding T.I.P. Project No. R-2501 may be directed to the following:

Thomas R. Kendig, AICP
Project Manager
Project Development & Environmental Analysis
Branch
North Carolina Dept. of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Ronald C. Smith, P.E.
Assistant Vice President/Regional Manager
Presnell Associates, Inc.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

PRESNELL ASSOCIATES, INC.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

MAILING LIST

A mailing list of public officials, neighborhood organizations, civic groups, and interested persons has been developed. This list is used to send newsletters and meeting notices to interested parties. If you or your organization would like to be included on the mailing list, please send a written request to Ronald C. Smith at Presnell Associates, Inc., 7508 East Independence Boulevard, Suite 102, Charlotte, North Carolina 28227. Send e-mail requests, comments or questions to the following SMTP address: rsmith@presnellgroup.com.

ADDRESS CORRECTION REQUESTED

US 1

ROCKINGHAM BYPASS

**FROM SANDHILL ROAD TO NORTH
OF FOX ROAD**

Project No. 8.T580501

TIP No. R-2501

Richmond County

Corridor Public Hearing

Richmond Community College

September 14, 1999

PURPOSE OF PROJECT

US 1 serves as an important north-south corridor in North Carolina. Current and projected traffic volumes show an unacceptable level of service along some portions of existing US 1, especially in downtown Rockingham. Total accident rates for US 1 are higher than the statewide average for similar roadways. Construction of a US 1 Bypass will provide additional north-south capacity in this area, provide a safer facility, and reduce congestion in downtown Rockingham.

PURPOSE OF PUBLIC HEARING

Tonight's hearing is one step in the Department of Transportation's procedure for including the public as a part of the project's development process. The Department of Transportation is soliciting your views on the location for the proposed US 1 Bypass of Rockingham from Sandhill Road to north of Fox Road.

The Department of Transportation's views of the above are set forth in the Draft Environmental Impact Statement. Copies of this report have been and are available at the Department of Transportation's District Office in Rockingham and the Rockingham Municipal Building.

YOUR PARTICIPATION

Now that the opportunity is here you are urged to participate by making your comments and/or questions a part of the Official Public Hearing Transcript. This may be done by having them recorded here tonight, writing them on the comment sheet and leaving it with a Department of Transportation representative here tonight or by submitting them in writing during the 15 day period following tonight's hearing to the following address:

Mr. Carl Goode, P. E.
Manager of Citizens Participation
P. O. Box 25201
Raleigh, NC 27611

Everyone present is urged to participate in the proceedings. It is important, however, that **THE OPINIONS OF ALL INDIVIDUALS BE RESPECTED REGARDLESS OF HOW DIVERGENT THEY MAY BE FROM YOUR OWN.** Accordingly, debates, as such, are out of place at public hearings. Also, the public hearing is not to be used as a **POPULAR REFERENDUM** to determine the alignment by a majority vote of those present.

WHAT IS DONE WITH THE INPUT?

A post hearing meeting will be held after the comment period has ended. This meeting will be attended by DOT staffs representing Planning, Design, Citizens Participation, and others who play a role in the development of a project. When

It is proposed to construct a 12 to 14 mile four lane divided freeway with full access control on new location and a 1.5 to 3 mile expressway upgrade of portions of existing US 1 to form a bypass of Rockingham. The freeway portion would have two lanes in each direction separated by a 70-foot median on a minimum right of way width of 350 feet. The upgrade of US 1 portion will have two lanes in each direction separated by a 46-foot median on a minimum of 180 feet of right of way. This portion will have partial control of access. The project begins just north of SR 1971, Sandhill Road south of Rockingham and ends north of SR 1606, Fox Road north of Rockingham.

Tonight's public hearing will present several alternate corridors for this project. Each corridor is approximately 1000 feet wide, which is about three times wider than the proposed right of way. This is to allow room for design changes so to minimize impacts to property and the environment.

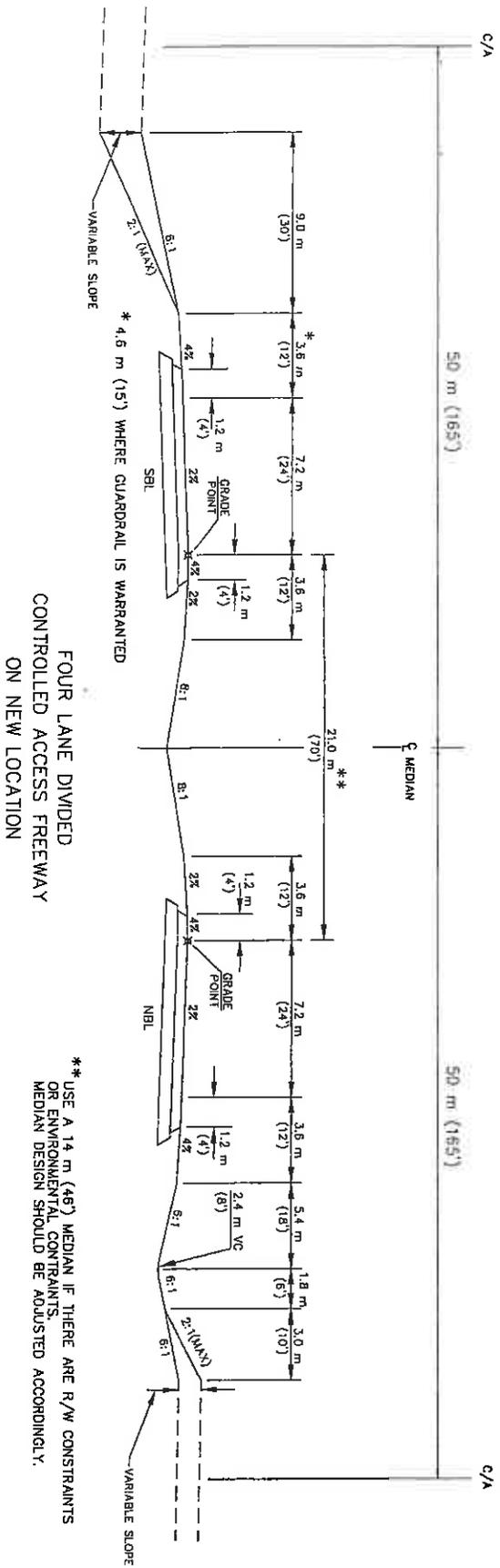
Following tonight's public hearing, a Preferred Alternate will be selected according to the procedures above. This selection will be based on a number of factors, including costs, safety, traffic service, impacts to properties and homes, impacts to the environment, and comments received from the public and environmental agencies. After the selection is made, a Final Environmental Impact Statement will be prepared and approved, a Record of Decision will be issued, and a Design Public Hearing will be held during which the actual footprint of the roadway will be presented for comments.

Tentative Schedule:

Begin Right of Way acquisition – 2004

Begin Construction – after 2006

Schedules are subject to change.



NOT TO SCALE

US 1 BYPASS
TYPICAL SECTION

US 1, PYP NO. R-2601
 DRAFT ENVIRONMENTAL IMPACT STATEMENT
 RICHMOND COUNTY, NORTH CAROLINA

COMMENT SHEET

US 1 Bypass of Rockingham

Corridor Public Hearing

R-2501

Project 8.T580501

Richmond County

September 14, 1999

NAME: _____

ADDRESS: _____

COMMENTS AND/OR QUESTIONS:

Comments may be mailed to:

C. B. Goode, Jr., P. E.

Manager of Citizens Participation

P. O. Box 25201

Raleigh, NC 27611 Phone: (919) 250-4092 Fax: (919) 250-4208

E-mail: goode@doh.dot.state.nc.us

**DRAFT ENVIRONMENTAL IMPACT STATEMENT
APPROVED**

The Draft Environmental Impact Statement (DEIS) was approved on June 30, 1999 and has been distributed to Federal and State agencies for review and comment. The DEIS covers the project from Sandhill Road (SR 1971) south of Rockingham to north of Fox Road (SR 1606) (See map on page 2). A copy of the DEIS and an aerial map showing the proposed corridors are available for public review at the North Carolina Department of Transportation's (NCDOT's) District Office, 219 Clemmer Road in Rockingham and at the Rockingham Municipal Building, 311 East Franklin Street. Copies of the DEIS are also available for review at the Thomas H. Leath Memorial Library, 412 E. Franklin Street.

SUMMARY OF PROJECT NEED

US 1 serves as an important north-south corridor in the Piedmont region between the South Carolina state line and two major states, I-40 and I-85. Construction of a US 1 bypass east of Rockingham, in addition to improvements to existing US 1, has been identified as a primary goal by local officials.

Existing traffic data indicates some sections along US 1, especially in downtown Rockingham, are heavily congested during peak traffic hours. When special events are being held at the North Carolina Motor Speedway or when areawide traffic increases during the summer, traffic congestion worsens. By 2020, the majority of sections along US 1 will experience congestion during peak hours.

The purpose of the US 1 Bypass and improvements to existing US 1 is to improve travel conditions in Richmond County. This will reduce overall travel time and alleviate traffic congestion in downtown Rockingham by diverting through traffic and truck traffic from local streets. A multilane roadway will provide a safer, more efficient facility for local and through traffic.

DESCRIPTION OF ALTERNATIVES

Under this project, NCDOT proposes to construct a four-lane divided facility. Four alternative corridors were selected for detailed evaluation in the DEIS. Alternative 7 follows a route north of the Loch Haven Golf Course, continues south of the Rockingham-Hamlet Airport, crosses US 74 east of Clemmer Road (SR 1641) and ties back to existing US 1 east of Wire Grass Road (SR 1640). Alternative 14 passes south of the Loch Haven Golf

Course before continuing on the same alignment as Alternative 7. Alternative 21 follows the same alignment as Alternative 7 except it intersects US 74 east of Pineleigh Avenue (SR 1670) and continues northeasterly and ties back to existing US 1 at Fox Road. Alternative 24 follows the alignment of Alternative 14 to US 74 and then follows Alternative 21 to existing US 1. (See map on page 2)

CORRIDOR PUBLIC HEARING

As a part of the public hearing process, the NCDOT will hold two public meetings on September 14, 1999.

A **Prehearing Open House** will be held between 4:00 PM and 6:00 PM in the Hugh Lee Building Auditorium on the Richmond Community College campus in Hamlet. Representatives from NCDOT and Presnell Associates will answer questions about the alternative corridors for the proposed bypass. There will be no formal presentations at the open house. An opportunity to register to speak at the public hearing will be provided at this meeting and prior to the public hearing.

The **Corridor Public Hearing** will convene at 7:00 PM in the same location and will be open for statements, questions, and/or comments. The hearing will consist of an explanation of the proposed corridor locations, right of way requirements and procedures, and relocation advisory assistance. Additional material may be submitted for a period of 15 days following the date of the hearing to: C. B. Goode, Jr., P.E., P.O. Box 25201, Raleigh, NC 27611.

SUMMARY OF IMPACTS

The proposed alternatives were evaluated in the DEIS for traffic operations; costs; and social, economic and environmental impacts. All four alternatives will satisfy the purpose and need for the proposed project. Estimated impacts and costs associated with the alternatives are summarized in the table on page 3.

PROJECT SCHEDULE

A Corridor Public Hearing for the US 1 Bypass/Improvements will be held on September 14, 1999. After evaluating the comments received from federal, state and local agencies on the DEIS and comments received from the Corridor Public Hearing, one alternative corridor will be selected and announced. The reasons for selecting the Preferred Alternative will be documented in a final environmental document. Based on NCDOT's current T.I.P., right-of-way acquisition is scheduled to begin in fiscal year 2003, with construction to begin after fiscal year 2006.

Summary of Impacts: US 1 Bypass/Widening

Impacts	Alternatives			
	(Sections)			
	7 (C, E, F, H, H2, L)	14 (D, E, F, H, H2, L)	21 (C, E, F, I, J, K, L)	24 (D, E, F, I, J, K, L)
Lengths				
Along New Location	19.7 km (12.2 mi)	19.6 km (12.2 mi)	22.5 km (14 mi)	22.3 km (13.9 mi)
Along Existing US 1	5.3 km (3.3 mi)	5.3 km (3.3 mi)	2.5 km (1.6 mi)	2.5 km (1.6 mi)
Total	25 km (15.5 mi)	24.9 km (15.5 mi)	25 km (15.6 mi)	24.8 km (15.5 mi)
Interchanges	3	3	3	3
Grade Separations	4	4	5	5
Relocations				
Residential	115	111	71	67
Business	6	6	17	17
Non Profit	0	0	0	0
Farms	1	1	1	1
Total	122	118	89	85
Acreage Required				
Undisturbed Land	227 ha (560 ac)	238 ha (587 ac)	262 ha (647 ac)	273 ha (674 ac)
Agricultural Land	8 ha (22 ac)	3 ha (7 ac)	9 ha (22 ac)	3 ha (7 ac)
Developed Land	92 ha (227 ac)	91 ha (225 ac)	73 ha (181 ac)	72 ha (179 ac)
Total	327 ha (809 ac)	332 ha (819 ac)	344 ha (850 ac)	348 ha (860 ac)
Prime/Statewide Important Farmland	92 ha (228 ac)	87 ha (216 ac)	100 ha (248 ac)	95 ha (236 ac)
Stream Crossings	15	15	10	10
Stream Impacts	2,095 m (6,872 LF)	1,996 m (6,548 LF)	1,153 m (3,783 LF)	1,054 m (3,459 LF)
Open Water Impacts	3 ha (7 ac)	3 ha (7 ac)	1 ha (3 ac)	1 ha (3 ac)
Wetland Impacts	22.4 ha (55.3 ac)	24.9 ha (61.6 ac)	22.5 ha (55.5 ac)	25.0 ha (61.8 ac)
Floodplain Impacts	8.6 ha (21.2 ac)	7.5 ha (18.5 ac)	11.1 ha (24.5 ac)	10.1 ha (24.8 ac)
Historic Property Impacts	0	0	0	0
Park Impacts	0	0	0	0
Noise Impacts	5	5	0	0
Hazardous Material Sites (excluding USTs)	0	0	0	0
Right-of-Way Cost (millions \$)	\$25.22	\$24.70	\$21.67	\$21.15
Utility Cost (millions \$)	\$1.08	\$1.08	\$1.18	\$1.18
Construction Cost (millions \$)	\$124.75	\$124.55	\$139.25	\$139.05
Wetland Mitigation Cost (millions \$)	\$1.67	\$1.78	\$1.90	\$2.01
Stream Mitigation Cost (millions \$)	\$1.72	\$1.64	\$0.95	\$0.86
Total (millions \$)	\$154.44	\$153.75	\$164.95	\$164.25

INQUIRIES

Written inquiries regarding T.I.P. Project No. R-2501 may be directed to the following:

Thomas R. Kendig, AICP
Project Manager
Project Development & Environmental Analysis Branch
North Carolina Dept. of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Ronald C. Smith, P.E.
Presnell Associates, Inc.
7508 East Independence Blvd., Suite 102
Charlotte, North Carolina 28227

MAILING LIST

A mailing list of public officials, neighborhood organizations, civic groups, and interested persons has been developed. This list is used to send newsletters and meeting notices to interested parties. If you or your organization would like to be included on the mailing list, please send a written request to Ronald C. Smith at Presnell Associates, Inc., 7508 East Independence Boulevard, Suite 102, Charlotte, North Carolina 28227. Send e-mail requests or comments to the following SMTP address: rsmith@presnellgroup.com.

PROJECT SCHEDULE
Draft Environmental Impact Statement Completed: June 1999
Final Environmental Impact Statement: October 2000
Right of Way Acquisition Begins: 2003
Construction Begins: After 2006

NOTICE

Prehearing Open House

DATE: September 14, 1999
TIME: 4:00 p.m. to 6:00 p.m.
PLACE: Hugh Lee Building Auditorium
Richmond Community College, Hamlet

Corridor Public Hearing

DATE: September 14, 1999
TIME: 7:00 p.m.
PLACE: Hugh Lee Building Auditorium
Richmond Community College, Hamlet

PRESNELL ASSOCIATES, INC.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

ADDRESS CORRECTION REQUESTED

**PROPOSED IMPROVEMENTS TO
US 1 (TIP NO. R-2501) FROM
SANDHILL RD. (SR 1971) TO
MARSTON RD. (SR 1001)**

CITIZENS INFORMATIONAL WORKSHOP

DECEMBER 1, 1998

Welcome to the third US 1 (R-2501) citizens' informational workshop.

Project Description

The proposed US 1 bypass of Rockingham/Hamlet would consist of constructing a multilane facility on new location starting at US 1 south of Rockingham near Sandhill Road (SR 1971) and extending northeasterly to US 1 either near Wire Grass Road (SR 1640) or Fox Road (SR 1606). From either of these two points, the remaining portion of the project would consist of widening existing US 1 to Marston Road (SR 1001) in Marston. The length of the proposed project is approximately 20 miles.

As a result of the public involvement process and extensive environmental studies, three corridor segments have been eliminated from further study. Segments M and N (new location segments) were eliminated because of adverse environmental impacts when compared to Segment O. Segment B was eliminated because of the potential impacts to a church, cemetery and more residences and businesses than Segment E. These segments, in addition to the corridors still being considered, are shown on the attached map.

Purpose Of Workshop

- To present the corridors being considered for the US 1 bypass of Rockingham/Hamlet.
- To discuss concerns, receive comments and answer questions on any aspect of the study.

Agenda

The agenda for this evening's meeting is informal. Aerial photographs of the corridors being considered for the US 1 bypass of Rockingham/Hamlet are on display. Representatives of NCDOT and Presnell Associates, Inc. are here and ready to discuss your concerns, receive comments and answer questions.

**PROJECT SCHEDULE
(Tentative)**

Draft Environmental Impact Statement: June 1999

Final Environmental Impact Statement: July 2000

Right of Way Acquisition Begins: 2003

Construction Begins: After 2006

COMMENT SHEET

Citizens Informational Workshop

DECEMBER 1, 1998

Proposed Improvements to US 1 (TIP No. R-2501) from
Sandhill Road (SR 1971) to Marston Road (SR 1001)

NAME: _____

ADDRESS: _____

CITY, STATE, ZIP CODE: _____

COMMENTS AND/OR QUESTIONS: _____

COMMENTS SHOULD BE ADDRESSED TO:

Aileen S. Mayhew
Project Manager, Planning and Environmental Branch
N.C. Department of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

Or:

Ronald C. Smith, P.E.
Presnell Associates, Inc.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

Please add my name to the US 1 (T.I.P. No. R-2501) mailing list

Name: _____

Address: _____

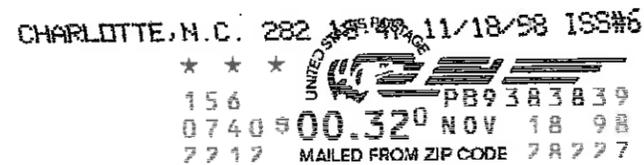
City, State, Zip Code: _____

Organization or Affiliation: _____

Comments: _____

Clip and Mail to Presnell Associates, Inc.

PRESNELL ASSOCIATES, INC.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227



Mr. Roger Thomas
 Roadway Design
 NCDOT
 1000 Birch Ridge Drive
 P.O. Box 25201
 Raleigh, NC 27610

T.I.P. No. R-2501

US 1

Rockingham • Hamlet • Richmond County

NO. 4/November 1998

PROJECT STATUS

This is the fourth in a series of newsletters prepared as part of the Rockingham/Hamlet Bypass study. The study is being conducted to identify the best route for the widening and/or relocation of US 1 from Sandhill Road (SR 1971) south of Rockingham to Marston Road (SR 1001) in Marston, a distance of approximately 22 miles.

Extensive field investigations to identify threatened and endangered plant and animal species and historic architectural properties have been completed. Also, wetlands have been identified for the reasonable and feasible corridors. Surveyors used Global Position Survey (GPS) equipment to accurately locate the wetlands.

Community meetings have been held to discuss impacts to specific areas within the corridors and receive input from the citizens in those areas. As a result of these meetings and extensive environmental studies, three corridor segments have been eliminated from further study. These segments are shown on the enclosed map.

North Carolina Department of Transportation

NEWSLETTER

Please share this with others

CITIZENS INFORMATIONAL WORKSHOP

The Third Citizens Informational Workshop is scheduled for Tuesday, December 1, 1998 from 4:00 p.m. to 7:00 p.m. in the Leath Memorial Library, 412 E. Franklin Street in Rockingham. The purpose of the workshop is to provide the public with information on the current corridors being considered and receive input. Representatives from the North Carolina Department of Transportation and Presnell Associates, Inc. will be available to answer questions on a one-to-one basis. This is a drop-in style meeting and no formal presentations will be made.

PROJECT SCHEDULE (Tentative)

- Draft Environmental Impact Statement: June 1999
- Final Environmental Impact Statement: July 2000
- Right of Way Acquisition Begins: 2003
- Construction Begins: After 2004

Call or Write with Your Concerns, Comments, or Questions

Add Your Name to the Mailing List

To submit comments or request additional information about this project call Presnell Associates at (704) 532-9544; or write to:

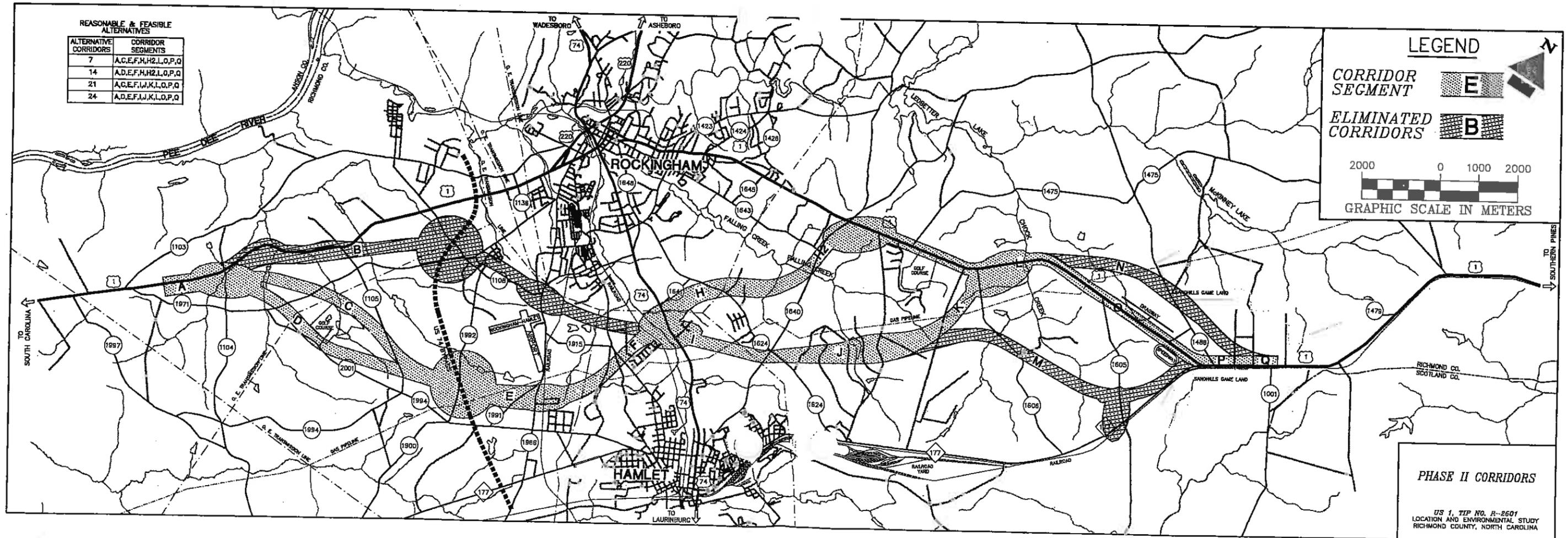
Aileen S. Mayhew, Project Manager
Planning & Environmental Branch
North Carolina Dept. of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Ronald C. Smith, P.E.
Presnell Associates, Inc.
7508 East Independence Blvd., Suite 102
Charlotte, North Carolina 28227

Organizations can also request small group meetings by contacting Presnell Associates.

A mailing list of public officials, neighborhood organizations, civic groups, and interested persons has been developed. This list is used to send newsletters and meeting notices to interested parties. If you or your organization would like to be included on the mailing list, please fill out the form on page 4 of this newsletter and return to Ronald C. Smith at Presnell Associates, Inc., 7508 East Independence Boulevard, Suite 102, Charlotte, North Carolina 28227. Send e-mail requests or comments to the following SMTP address: rsmith@presnellgroup.com.



**PROPOSED IMPROVEMENTS TO
US 1 (TIP NO. R-2501) FROM
SANDHILLS RD. (SR1971) TO
MARSTON ROAD (SR 1001)**

COMMUNITY MEETING

SEPTEMBER 29, 1998

Welcome to this community informational meeting.

Project Description

The proposed US 1 bypass of Rockingham/Hamlet would be a new freeway starting on US 1 south of Rockingham near Sandhills Road (SR 1971) and extending northeasterly to US 1 near Fox Road (SR 1606) and widening of existing US 1 to Marston Road (SR 1001) at Marston, a distance of approximately 20 miles. The corridors which are being considered are shown on the attached map.

Purpose Of Workshop

- To present the corridors being considered for the US 1 bypass of Rockingham/Hamlet.
- To discuss concerns, receive comments and answer questions on any aspect of the study.

Agenda

After a short presentation the meeting will be opened for comments and questions. On display are aerial photographs of the corridors being considered for the US 1 bypass of Rockingham/Hamlet. Representatives of NCDOT and Presnell Associates, Inc. are here and ready to discuss your concerns, receive comments and answer questions.

Comments

We are looking forward to your continued participation in the development of this project. A comment sheet is attached for you to complete this evening or to complete later and mail to Presnell Associates, Inc. You may also call or write at any time during the study with concerns, comments or questions. Call Presnell Associates, Inc. between 8:00 a.m. and 4:30 p.m., Monday through Friday at (704) 532-9544.

You may write to:

William D. Gilmore, P.E.
Manager,
Planning and Environmental Branch
N.C. Dept. of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Ronald C. Smith, P.E.
Project Manager
Presnell Associates, Inc.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

If you wish to be on the project mailing list, please so indicate on the sign-in sheet at the reception table.

COMMENTS SHEET

Community Meeting

SEPTEMBER 29, 1998

Proposed Improvements to US 1 (TIP No. R-2501) from
Sandhills Road (SR1971) to Marston Road (SR1001)

NAME: _____

ADDRESS: _____

CITY, STATE, ZIP CODE: _____

COMMENTS AND/OR QUESTIONS: _____

COMMENTS SHOULD BE ADDRESSED TO:

William D. Gilmore, P.E.
Manager, Planning and Environmental Branch
N.C. Department of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Ronald C. Smith, P.E.
Presnell Associates, Inc.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

**PROPOSED IMPROVEMENTS TO
US 1 (TIP NO. R-2501) FROM
SANDHILLS RD. (SR1971) TO
MARSTON ROAD (SR 1001)**

COMMUNITY MEETING

JUNE 22, 1998

Welcome to this community informational meeting.

Project Description

The proposed US 1 bypass of Rockingham/Hamlet would be a new freeway starting on US 1 south of Rockingham near Sandhills Road (SR 1971) and extending northeasterly to US 1 near Fox Road (SR 1606) and widening of existing US 1 to Marston Road (SR 1001) at Marston, a distance of approximately 20 miles. The corridors which are being considered are shown on the attached map.

Purpose Of Workshop

- To present the corridors being considered for the US 1 bypass of Rockingham/Hamlet.
- To discuss concerns, receive comments and answer questions on any aspect of the study.

Agenda

After a short presentation the meeting will be opened for comments and questions. On display are aerial photographs of the corridors being considered for the US 1 bypass of Rockingham/Hamlet. Representatives of NCDOT and Presnell Associates, Inc. are here and ready to discuss your concerns, receive comments and answer questions.

Comments

We are looking forward to your continued participation in the development of this project. A comment sheet is attached for you to complete this evening or to complete later and mail to Presnell Associates, Inc. You may also call or write at any time during the study with concerns, comments or questions. Call Presnell Associates, Inc. between 8:00 a.m. and 4:30 p.m., Monday through Friday at (704) 532-9544.

You may write to:

William D. Gilmore, P.E.
Manager,
Planning and Environmental Branch
N.C. Dept. of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Ronald C. Smith, P.E.
Project Manager
Presnell Associates, Inc.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

If you wish to be on the project mailing list, please so indicate on the sign-in sheet at the reception table.

COMMENTS SHEET

Community Meeting

JUNE 22, 1998

Proposed Improvements to US 1 (TIP No. R-2501) from
Sandhills Road (SR1971) to Marston Road (SR1001)

NAME: _____

ADDRESS: _____

CITY, STATE, ZIP CODE: _____

COMMENTS AND/OR QUESTIONS: _____

COMMENTS SHOULD BE ADDRESSED TO:

William D. Gilmore, P.E.
Manager, Planning and Environmental Branch
N.C. Department of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Ronald C. Smith, P.E.
Presnell Associates, Inc.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

**PROPOSED IMPROVEMENTS TO
US 1 (TIP NO. R-2501) FROM
SANDHILLS RD. (SR1971) TO
INDIAN LAKE RD. (SR1479)**

CITIZENS INFORMATIONAL WORKSHOP

OCTOBER 7, 1997

Welcome to the second US 1 (R-2501) citizens informational workshop.

Project Description

The proposed US 1 bypass of Rockingham/Hamlet would be a new freeway starting on US 1 south of Rockingham near Sandhills Road (SR 1971) and extending northeasterly to US 1 north of the North Carolina Motor Speedway near Marston Road (SR 1001) at Marston, a distance of approximately 20 miles. The corridors which are being considered are shown on the attached map.

Purpose Of Workshop

- To present the corridors being considered for the US 1 bypass of Rockingham/Hamlet.
- To discuss concerns, receive comments and answer questions on any aspect of the study.

Agenda

The agenda this evening is informal. On display are aerial photographs of the corridors being considered for the US 1 bypass of Rockingham/Hamlet. Representatives of NCDOT and Presnell Associates, Inc. are here and ready to discuss your concerns, receive comments and answer questions.

Comments

We are looking forward to your continued participation in the development of this project. A comment sheet is attached for you to complete this evening or to complete later and mail to Presnell Associates, Inc. You may also call or write at any time during the study with concerns, comments or questions. Call Presnell Associates, Inc. between 8:00 a.m. and 4:30 p.m., Monday through Friday at (704) 532-9544.

You may write to:

H. Franklin Vick, P.E.
Manager,
Planning and Environmental Branch
N.C. Dept. of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Ronald C. Smith, P.E.
Project Manager
Presnell Associates, Inc.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

If you wish to be on the project mailing list, please so indicate on the sign-in sheet at the reception table.

COMMENTS SHEET

Citizens Informational Workshop

OCTOBER 7, 1997

Proposed Improvements to US 1 (TIP No. R-2501) from
Sandhills Road (SR1971) to Indian Lake Road (SR1479)

NAME: _____

ADDRESS: _____

CITY, STATE, ZIP CODE: _____

COMMENTS AND/OR QUESTIONS: _____

COMMENTS SHOULD BE ADDRESSED TO:

H. Franklin Vick, P.E.
Manager, Planning and Environmental Branch
N.C. Department of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Ronald C. Smith, P.E.
Presnell Associates, Inc.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

T.I.P. No. R-2501

North Carolina Department of Transportation

US 1

NEWSLETTER

Rockingham • Hamlet • Richmond County

NO. 3/September 1997

Please share this with others

PROJECT STATUS

This is the third in a series of public information newsletters prepared as part of the Rockingham/Hamlet Bypass study. The study is being conducted to identify the best route for the widening and/or relocation of US 1 from Sandhill Road (SR 1971) south of Rockingham to Indian Lake Road (SR 1479) north of Marston, a distance of approximately 22 miles.

Extensive field investigations are underway for threatened and endangered plant and animal species. Studies are being done on historic architectural properties. These field investigations are being conducted on the reasonable and feasible alternative corridors developed during Phase 1. Wetland areas also are being delineated for these corridors.

CITIZENS INFORMATIONAL WORKSHOP

The Second Citizens Informational Workshop is scheduled for Tuesday, October 7, 1997 from 5:00 p.m. to 8:00 p.m. in the Wall Room of the Leath Memorial Public Library at 412

East Franklin Street in Rockingham. The purpose of the workshop is to provide the public with information on the Project Study and receive public input. Representatives from the North Carolina Department of Transportation and Presnell Associates, Inc. will be available to answer questions on a one-to-one basis. This is a drop-in style meeting and no formal presentations will be made.

PROJECT SCHEDULE (Tentative)

Phase 1 Completed: May 1997

Draft Environmental Impact Statement:
October 1998

Final Environmental Impact Statement:
June 1999

Record of Decision: January 2000

Right of Way Acquisition Begins: 2002

**Call or Write with Your Concerns,
Comments, Questions**

Submit comments or request additional information about this project by calling Presnell's staff at (704) 532-9544; or write to:

H. Franklin Vick, P.E., Manager
Planning & Environmental Branch
North Carolina Dept. of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Ronald C. Smith, P.E.
Presnell Associates, Inc.
7508 East Independence Blvd., Suite 102
Charlotte, North Carolina 28227

Organizations also can request small group meetings by contacting Presnell Associates.

PRESNELL ASSOCIATES, INC.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

Add Your Name to the Mailing List

A mailing list of public officials, neighborhood organizations, civic groups, and interested persons has been developed. This list is used to send newsletters and meeting notices to interested parties. If you or your organization would like to be included on the mailing list, contact Ronald C. Smith at Presnell Associates, Inc., 7508 East Independence Boulevard., Suite 102, Charlotte, North Carolina 28227.

**PROJECT SCHEDULE
(Tentative)**

Phase 1 Completed: May 1997
DEIS: October 1998
FEIS: June 1999
ROD: January 2000
Right of Way: Fiscal Year 2002

PHASE 1

Data Collection
Develop Project Constraints
Develop New Alternatives
1st Citizens Informational Workshop
Analyze Alternatives
Selection of Corridors for Detailed Study

PHASE 2

Engineering Studies
Detailed Field Studies
Environmental Analysis
Technical Reports
2nd Citizens Informational Workshop

PHASE 3

Draft Environmental Impact Statement (DEIS)
Pre-Hearing Open House/Workshop
Corridor Public Hearing

PHASE 4

Review Comments on the DEIS
Review Public Hearing Transcript
Selection of Preferred Alternative

PHASE 5

Final Environmental Impact Statement (FEIS)
Record of Decision (ROD)

Please add my name to the US 1 mailing list

Name: _____

Address: _____

City, State, Zip Code: _____

Organization or Affiliation: _____

Comments: _____

Clip and Mail to Presnell Associates, Inc.

PRESNELL ASSOCIATES, INC.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

T.I.P. No. R-2501

US 1

Rockingham • Hamlet • Richmond County

North Carolina Department of Transportation

NEWSLETTER

No. 2/May 1997

Please share this with others

PHASE 1 COMPLETE

This is the second in a series of public information newsletters prepared as part of the US 1 Rockingham Bypass study. A study is being conducted to identify the best route for the widening and/or relocation of US 1 from Sandhill Road (SR 1971) south of Rockingham to Indian Lake Road (SR 1479) north of Marston, a distance of approximately 22 miles.

During Phase 1, Alternative Corridors were developed. Potential impacts to wetlands, floodplains, businesses, residences, schools, parks, churches, cemeteries, protected species, hazardous material sites, farmlands, the Rockingham-Hamlet Airport, the North Carolina Motor Speedway and the Rockingham Dragway, were identified for each corridor. The construction cost for each Alternative Corridor was also developed. In January 1996 a Citizens Informational Workshop was held to present the corridors and obtain comments from the public. Based on comments from the workshop, a steering committee comprised of North Carolina Department of Transportation, Federal Highway Administration, City of

Rockingham, City of Hamlet, Richmond County and various State and Federal agencies, recommended further studies on the alternative corridors shown on the map inside this newsletter.

NEXT - PHASES 2 & 3

Phases 2 & 3 will consist of detailed field studies, environmental analysis, preparation of technical reports, and engineering studies for the corridors determined to be reasonable and feasible. The public will have additional opportunities to provide input during Phase 2 & 3 at public workshops and hearings. The alternatives under consideration will be evaluated and presented in a Draft Environmental Impact Statement (DEIS). In addition, preliminary designs will be prepared for each alignment to determine environmental impacts, and right of way and construction costs. After comments are received on the DEIS and from the public hearing, the project will proceed into Phase 4. The North Carolina Department of Transportation in conjunction with the Federal Highway Administration and local government representatives will select a Preferred Alternative.

**Call or Write with Your Concerns,
Comments, Questions**

Express your comments or concerns, or request additional information about the study by calling Presnell's staff at (704) 532-9544; or write to:

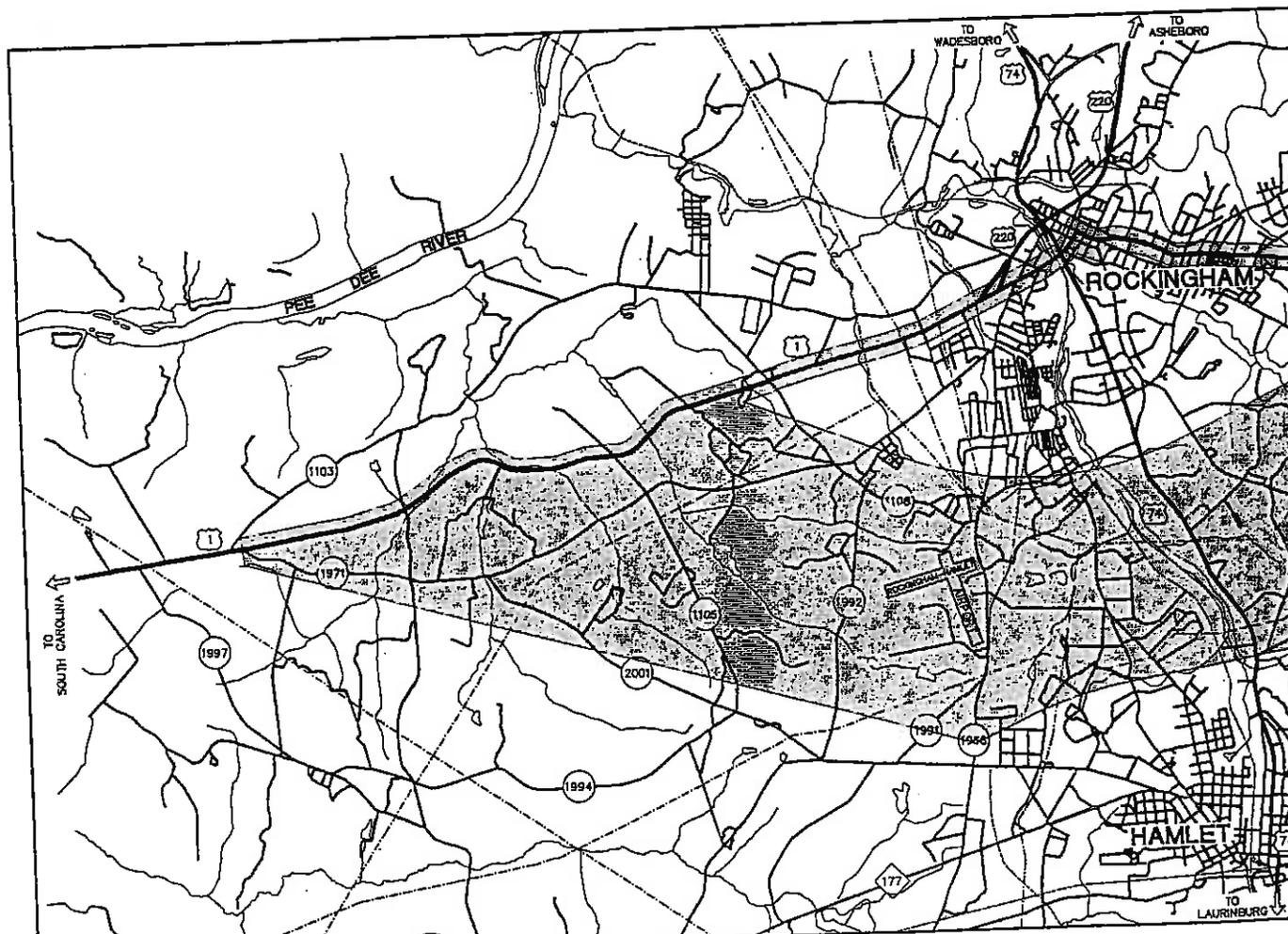
Mr. H. Franklin Vick, P.E., Manager
Planning & Environmental Branch
N. C. Department of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Mr. Ronald C. Smith, P.E.
Presnell Associates, Inc.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

Add Your Name to the Mailing List

A computerized mailing list of public officials, neighborhood organizations, civic groups, and interested persons has been developed. This list, which is being updated continually, is used to send newsletters and meeting notices to interested parties. If you or your organization are not already included on the mailing list, please complete and return the form at the top of the last page to Presnell Associates, Inc., 7508 East Independence Boulevard, Suite 102, Charlotte, North Carolina 28227. Also, your organization can request a small group meeting.



**SCHEDULE
(Tentative)**

Phase 1: July 1996
DEIS: April 1997
FEIS: May 1998
ROD: October 1998
Right of Way: Fiscal Year 2002

PHASE 1

Data Collection
Develop Project Constraints
Develop New Alternatives
1st Citizens Informational Workshop
Analyze Alternatives
Selection of Corridors for Detailed Study

PHASE 2

Engineering Studies
Detailed Field Studies
Environmental Analysis
Technical Reports

PHASE 3

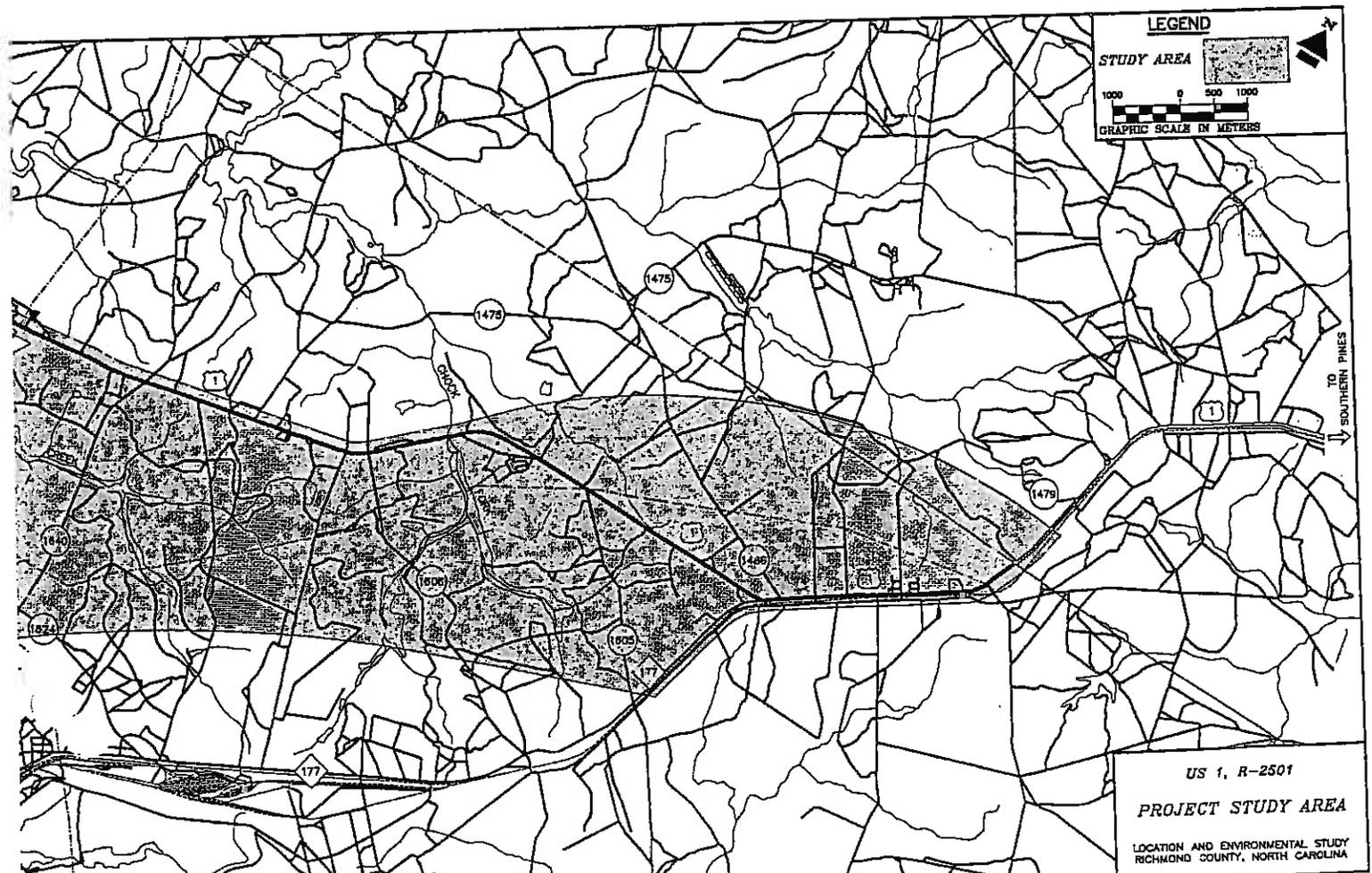
Draft Environmental Impact Statement (DEIS)
Pre-Hearing Open House/Workshop
Corridor/Design Public Hearing

PHASE 4

Review Comments on the DEIS
Review Public Hearing Transcript
Selection of Preferred Alternative

PHASE 5

Final Environmental Impact Statement (FEIS)
Record of Decision (ROD)



Please add my name to the US 1 mailing list

Name: _____

Address: _____

City, State, Zip Code: _____

Organization or Affiliation: _____

Comments: _____

Clip and Mail to Presnell Associates, Inc.

PRESNELL ASSOCIATES, INC.
7508 East Independence Blvd.
Suite 102
Charlotte, NC 28227

T.I.P. No. R-2501

US 1

NEWSLETTER

North Carolina Department of Transportation •
Rockingham • Hamlet • Richmond County

No. 1/December 1995

Please share this with others

STUDY UNDERWAY

This is the first in a series of newsletters prepared to identify the best route for the widening and/or relocation of US 1 from Sandhills Road (SR 1971) south of Rockingham to Indian Lake Road (SR 1479) north of Marston, a distance of approximately 22 miles.

Project Study Map Inside

An extensive data collection effort is underway to verify existing land uses and to identify future land use plans. Further actions include the preparation of a public involvement program.

A public involvement program has been developed to give interested persons or organizations an opportunity to participate in the planning process. Each comment will be reviewed carefully so that all viewpoints will be considered.

More information on how to become involved in the study is contained in this newsletter.

As consultant to the North Carolina Department of Transportation, the firm of Presnell Associates, Inc. will prepare an environmental document and the

combined location and preliminary design hearing map.

Presnell Associates, Inc. will be assisted in the study by a steering committee comprised of planning and transportation staff members from the North Carolina Department of Transportation, Federal Highway Administration, City of Rockingham, City of Hamlet, Richmond County and various State and Federal agencies.

CITIZENS INFORMATIONAL WORKSHOP

A Citizens Informational Workshop is scheduled for Wednesday, January 10, 1996 from 4:00 PM to 8:00 PM in the Calvin Little Room of the Leath Memorial Library at 412 East Franklin Street in Rockingham. The purpose of the workshop is to present the corridors being considered for the US 1 bypass of Rockingham/Hamlet and to obtain comments from the public. Representatives from the North Carolina Department of Transportation and Presnell Associates, Inc. will be available to answer questions on a one-to-one basis. This is a drop-in style meeting and no formal presentations will be made.

**Call or Write with Your Concerns,
Comments, Questions**

Express your comments or concerns, or request additional information about the study by calling Presnell's staff at (704) 532-9544; or write to:

Mr. H. Franklin Vick, P.E., Manager
Planning & Environmental Branch
N. C. Department of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611

or:

Mr. Ronald C. Smith, P.E.
Presnell Associates, Inc.
7508 East Independence Blvd.
Suite 102
Charlotte, North Carolina 28227

Add Your Name to the Mailing List

A computerized mailing list of public officials, neighborhood organizations, civic groups, and interested persons has been developed. This list, which is being updated continually, is used to send newsletters and meeting notices to interested parties. If you or your organization are not already included on the mailing list, please complete and return the form at the top of the last page to Presnell Associates, Inc., 7508 East Independence Boulevard, Suite 102, Charlotte, North Carolina 28227. Also, your organization can request a small group meeting.



**SCHEDULE
(Tentative)**

Phase 1: July 1996
DEIS: April 1997
FEIS: May 1998
ROD: October 1998
Right of Way: Fiscal Year 2002

PHASE 1

Data Collection
Develop Project Constraints
Develop New Alternatives
1st Citizens Informational Workshop
Analyze Alternatives
Selection of Corridors for Detailed Study

PHASE 2

Engineering Studies
Detailed Field Studies
Environmental Analysis
Technical Reports

PHASE 3

Draft Environmental Impact Statement (DEIS)
Pre-Hearing Open House/Workshop
Corridor/Design Public Hearing

PHASE 4

Review Comments on the DEIS
Review Public Hearing Transcript
Selection of Preferred Alternative

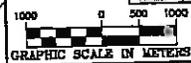
PHASE 5

Final Environmental Impact Statement (FEIS)
Record of Decision (ROD)



LEGEND

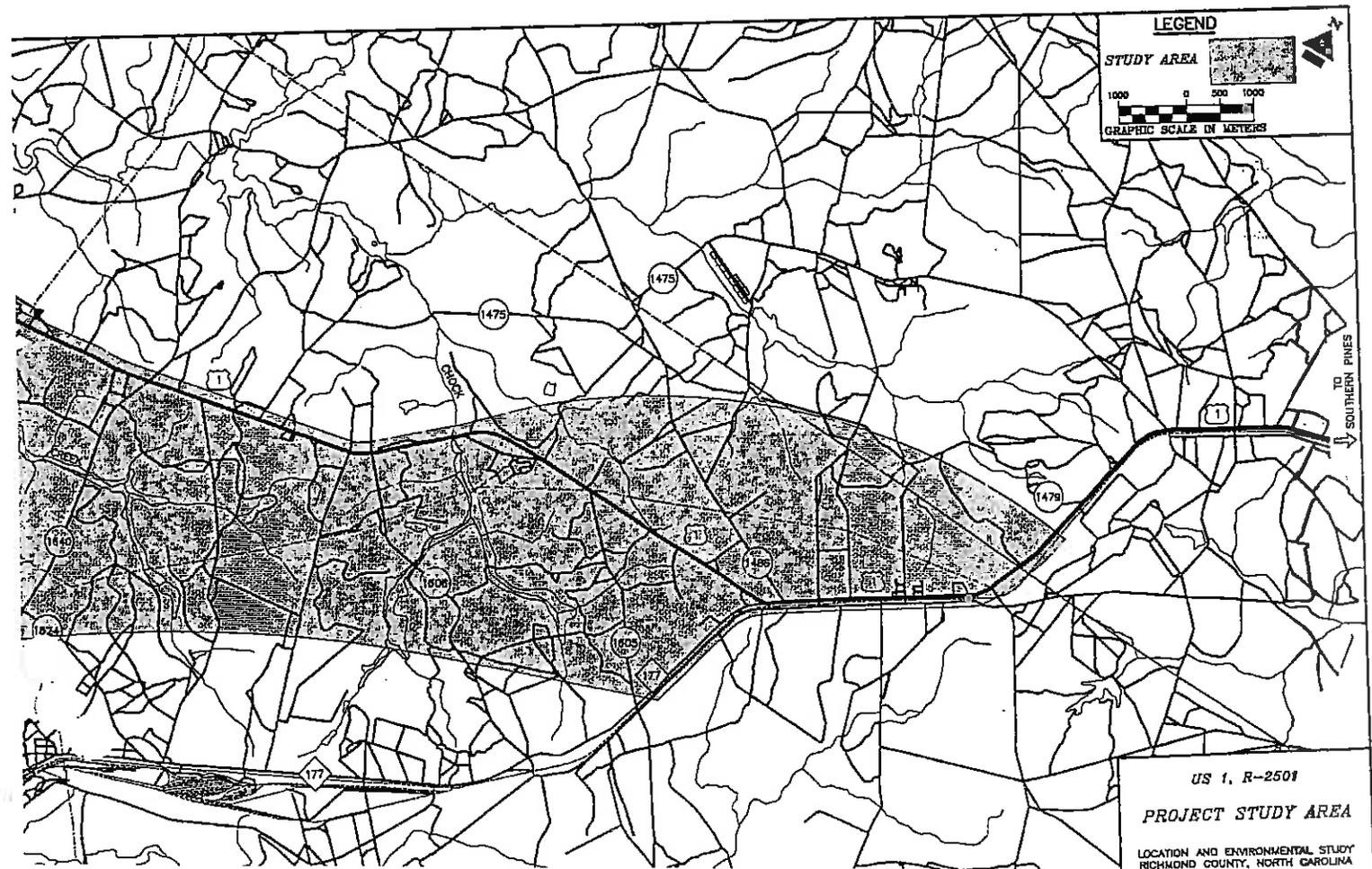
STUDY AREA



US 1, R-2501

PROJECT STUDY AREA

LOCATION AND ENVIRONMENTAL STUDY
RICHMOND COUNTY, NORTH CAROLINA



Please add my name to the US 1 mailing list

Name: _____

Address: _____

City, State, Zip Code: _____

Organization or Affiliation: _____

Comments: _____

Clip and Mail to Presnell Associates, Inc.

PRESNELL ASSOCIATES, INC.
7508 East Independence Blvd.
Suite 102
Charlotte, NC 28227

Appendix F

NOISE ANALYSIS RESULTS

Note: the *Highway Traffic Noise/Construction Noise Analysis* for this project was completed in March, 2011, prior to the release of NCDOT's updated Traffic Noise Abatement policy in July, 2011. Therefore, the results and documentation in that report were presented based on the previous Traffic Noise Abatement Policy from 2004. Since this Final Environmental Impact Statement (FEIS) was approved after July, 2011, discussions involving traffic noise impacts have been revised to reflect the most recent policy in this FEIS. The tables in Appendix F have also been revised accordingly. Applying the 2011 noise abatement criteria results in one less receiver being impacted than what is reported in the *Highway Traffic Noise/Construction Noise Analysis* for this project. Therefore, the results and data pertaining to traffic noise impacts in this FEIS differ from those documented in the March, 2011 noise analysis.

See the *Highway Traffic Noise/Construction Noise Analysis* (March, 2011) for:

Table N1: Hearing, Sounds Bombarding Us Daily

Table N6: 2007 Traffic Compilation

Table N7: 2035 Traffic Compilation

TABLE N2

Noise Abatement Criteria

			Noise Abatement Criteria Hourly A- Weighted Sound Level in Decibels(dBA)
Activity Category	Leq(h)		Description of Activity Category
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67	Exterior	Residential
C	67	Exterior	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E	72	Exterior	Hotels, motels, offices, restaurant/bars, and other developed lands, properties or activities not included in A-D or F
F	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	--	--	Undeveloped lands that are not permitted

Source: Title 23 Code of Federal Regulations (CFR) Part 772, U.S. Department of Transportation Federal Highway Administration.

**Criteria for Substantial Increase
Hourly A-Weighted Sound Level –Decibels (dBA)**

<u>Existing Noise level in Leq(h)</u>	<u>Increase in dBA from Existing Noise Levels to Future Noise Levels</u>
50 or less dBA	15 or more dBA
51 dBA	14 or more dBA
52 dBA	13 or more dBA
53 dBA	12 or more dBA
54 dBA	11 or more dBA
55 or more dBA	10 or more dBA

Source: North Carolina Department of Transportation Noise Abatement Policy.

TABLE N3
MEASURED NOISE LEVELS (Leq)
T.I.P. Project No. R-2501
US 1, Richmond County

Site	Location	Type of Ground Surface	Measured Noise Level (dBA)	Modeled Noise Level (dBA)
1*	Existing US 1 - south of Rockingham, beginning of project	Grass	62.1	64.1
2	A dirt road in a wooded area - south of US 1, north of Sandhill Rd and east of Osborne Rd.	Sandy Soil	47.0	36.8
3	Open scrub field adjacent to Loch Haven Golf course – Ebony Lane	Sandy Soil	35.5	33.9
4*	US 74 Bypass, north of the proposed US 74/US 1 Bypass interchange.	Grass	70.3	69.6
5	Nearby a dirt road - Pistol Ridge Road	Sandy Soil	47.9	45.9
6*	Airport Road	Grass	59.8	61.2
7	Open field – nearby Maggie Drive	Sandy Soil	35.8	35.5
8	Open field – McDonald Avenue	Grass	41.7	40.0
9	Residence – Sliver Run Drive	Grass	39.2	39.3
10*	US 74 Business – near Pineleigh Avenue	Sandy Soil	62.5	63.2
11	Residence – Pinewood Circle	Grass	34.3	43.8
12	Baseball field – near Hallelujah Deliverance Church	Sandy Soil	40.3	33.5
13	Residence – County Home Road and Wire Grass Road	Sandy Soil	40.8	41.7
14	Edge of a dirt road – Standridge Place	Sandy Soil	33.0	24.7
15*	Existing US 1 – north of Rockingham, end of project	Grass	62.0	63.6

* Traffic Noise Reading Sites

Note: The ambient noise level sites were measured at 50 feet from the edge of pavement of nearest lane of traffic. See Figure N3 for site locations and Appendix A for noise measurement data sheets.

**TABLE N4
TRAFFIC NOISE EXPOSURES
US 1 Corridor Improvements in Richmond County
T.I.P. Project No. R-2501**

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
R-2501BA: North of Sandhill Road (SR 1971) to US 74 Bypass											
2	----	Residential	B	1	49	58	66	9	15	----	----
4	----	Residential	B	1	65	58	66	-7	10	----	----
8	----	Residential	B	1	37	54	66	17	15	Sub'l Inc	Yes
9	----	Residential	B	1	39	49	66	10	15	----	----
10	----	Residential	B	1	52	46	66	-6	13	----	----
11	----	Residential	B	1	52	53	66	1	13	----	----
12	----	Residential	B	1	39	46	66	7	15	----	----
13	----	Residential	B	1	43	46	66	3	15	----	----
15	----	Residential	B	1	36	62	66	26	15	Sub'l Inc	Yes
16	----	Residential	B	1	38	58	66	20	15	Sub'l Inc	Yes
17	----	Residential	B	1	38	49	66	11	15	----	----
18	----	Residential	B	1	40	47	66	7	15	----	----
19	----	Residential	B	1	40	48	66	8	15	----	----
20	----	Residential	B	1	41	47	66	6	15	----	----
21	----	Residential	B	1	41	47	66	6	15	----	----
24	----	Residential	B	1	54	52	66	-2	11	----	----
25	----	Residential	B	1	59	58	66	-1	10	----	----
28	----	Residential	B	1	55	56	66	1	10	----	----
29	----	Residential	B	1	58	56	66	-2	10	----	----
30	----	Residential	B	1	59	55	66	-4	10	----	----
31	----	Residential	B	1	59	55	66	-4	10	----	----
32	----	Residential	B	1	47	48	66	1	15	----	----
33	----	Residential	B	1	47	50	66	3	15	----	----
34	----	Residential	B	1	49	51	66	2	15	----	----
35	----	Residential	B	1	49	52	66	3	15	----	----
38	----	Residential	B	1	46	52	66	6	15	----	----
40	----	Residential	B	1	45	47	66	2	15	----	----
45	----	Residential	B	1	52	55	66	3	13	----	----
48	----	Residential	B	1	42	60	66	18	15	Sub'l Inc	Yes

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
49	----	Residential	B	1	42	62	66	20	15	Sub'l Inc	Yes
51	----	Residential	B	1	54	63	66	9	11	----	----
52	----	Residential	B	1	65	70	66	5	10	Snd Lvl	Yes
53	----	Residential	B	1	67	73	66	6	10	Snd Lvl	Yes
54	----	Residential	B	1	69	75	66	6	10	Snd Lvl	Yes
55	----	Residential	B	1	58	63	66	5	10	----	----
56	----	Residential	B	1	60	64	66	4	10	----	----
59	----	Residential	B	1	54	59	66	5	11	----	----
64	----	Residential	B	1	65	62	66	-3	10	----	----
364	----	Residential	B	1	50	53	66	3	15	----	----
500	----	Residential	B	1	41	52	66	11	15	----	----
501	----	Residential	B	1	41	52	66	11	15	----	----
502	----	Residential	B	1	41	48	66	7	15	----	----
503	----	Residential	B	1	41	49	66	8	15	----	----
R-2501BB: US 74 Bypass to US 74 Business											
67	----	Residential	B	1	50	56	66	6	15	----	----
68	----	Residential	B	1	52	63	66	11	13	----	----
79	----	Residential	B	1	55	54	66	-1	10	----	----
80	----	Residential	B	1	54	53	66	-1	11	----	----
82	----	Commercial	E	----	54	62	71	8	11	----	----
86	----	Residential	B	1	50	63	66	13	15	----	----
87	----	Residential	B	1	59	64	66	5	10	----	----
88	----	Residential	B	1	57	62	66	5	10	----	----
89	----	Residential	B	1	58	63	66	5	10	----	----
90	----	Residential	B	1	52	60	66	8	13	----	----
91	----	Residential	B	1	47	59	66	12	15	----	----
92	----	Residential	B	1	51	59	66	8	14	----	----
93	----	Residential	B	1	55	60	66	5	10	----	----
94	----	Residential	B	1	48	59	66	11	15	----	----
95	----	Residential	B	1	46	58	66	12	15	----	----
96	----	Residential	B	1	45	57	66	12	15	----	----
97	----	Residential	B	1	44	57	66	13	15	----	----
98	----	Residential	B	1	44	56	66	12	15	----	----
99	----	Residential	B	1	43	55	66	12	15	----	----
100	----	Residential	B	1	44	52	66	8	15	----	----
101	----	Residential	B	1	46	55	66	9	13	----	----

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
102	----	Residential	B	1	46	53	66	7	15	----	----
103	----	Residential	B	1	47	55	66	8	15	----	----
104	----	Residential	B	1	47	54	66	7	15	----	----
106	----	Residential	B	1	50	56	66	6	15	----	----
107	----	Residential	B	1	59	62	66	3	10	----	----
108	----	Residential	B	1	58	62	66	4	10	----	----
109	----	Residential	B	1	58	62	66	4	10	----	----
110	----	Residential	B	1	58	62	66	4	10	----	----
111	----	Residential	B	1	50	54	66	4	15	----	----
112	----	Residential	B	1	46	52	66	6	15	----	----
113	----	Residential	B	1	50	54	66	4	15	----	----
114	----	Residential	B	1	55	58	66	3	10	----	----
115	----	Residential	B	1	60	65	66	5	10	----	----
116	----	Residential	B	1	62	67	66	5	10	Snd Lvl	Yes
117	----	Residential	B	1	56	59	66	3	10	----	----
118	----	Residential	B	1	58	59	66	1	10	----	----
119	----	Residential	B	1	54	55	66	1	11	----	----
120	1	Residential	B	1	36	59	66	23	15	Sub'l Inc	Yes
121	1	Residential	B	1	36	58	66	22	15	Sub'l Inc	Yes
122	1	Residential	B	1	36	58	66	22	15	Sub'l Inc	Yes
123	1	Residential	B	1	36	60	66	24	15	Sub'l Inc	Yes
124	1	Residential	B	1	36	59	66	23	15	Sub'l Inc	Yes
126	1	Residential	B	1	36	60	66	24	15	Sub'l Inc	Yes
128	1	Residential	B	1	36	57	66	21	15	Sub'l Inc	Yes
129	1	Residential	B	1	36	58	66	22	15	Sub'l Inc	Yes
130	1	Residential	B	1	36	58	66	22	15	Sub'l Inc	Yes
131	1	Residential	B	1	36	60	66	24	15	Sub'l Inc	Yes
132	1	Residential	B	1	36	68	66	32	15	Both	Yes
135	1	Residential	B	1	40	66	66	26	15	Both	Yes
138	3	Residential	B	1	36	63	66	27	15	Sub'l Inc	Yes
142	3	Residential	B	1	36	60	66	24	15	Sub'l Inc	Yes
143	3	Residential	B	1	37	62	66	25	15	Sub'l Inc	Yes
144	1	Residential	B	1	49	64	66	15	15	Sub'l Inc	Yes
147	3	Residential	B	1	39	68	66	29	15	Both	Yes
148	3	Residential	B	1	37	60	66	23	15	Sub'l Inc	Yes
149	3	Residential	B	1	38	64	66	26	15	Sub'l Inc	Yes
151	1	Residential	B	1	52	63	66	11	13	----	----

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
152	1	Residential	B	1	45	60	66	15	15	Sub'l Inc	Yes
155	1	Residential	B	1	47	62	66	15	15	Sub'l Inc	Yes
156	1	Residential	B	1	43	60	66	17	15	Sub'l Inc	Yes
162	3	Residential	B	1	50	63	66	13	15	----	----
163	3	Residential	B	1	47	59	66	12	15	----	----
165	3	Residential	B	1	40	54	66	14	15	----	----
166	3	Residential	B	1	50	59	66	9	15	----	----
167	3	Residential	B	1	48	67	66	19	15	Both	Yes
168	3	Residential	B	1	48	64	66	16	15	Sub'l Inc	Yes
171	3	Residential	B	1	44	66	66	22	15	Both	Yes
172	1	Residential	B	1	40	58	66	18	15	Sub'l Inc	Yes
173	1	Residential	B	1	42	63	66	21	15	Sub'l Inc	Yes
175	2	Residential	B	1	60	63	66	3	10	----	----
1751	1	Residential	B	1	60	64	66	4	15	----	----
1752	2	Residential	B	1	47	58	66	11	15	----	----
177	3	Residential	B	1	47	67	66	20	10	Both	Yes
180	3	Commercial	E	----	58	63	71	5	10	----	----
181	3	Residential	B	1	54	61	66	7	11	----	----
182	3	Residential	B	1	56	61	66	5	10	----	----
183	3	Residential	B	1	49	58	66	9	15	----	----
184	3	Residential	B	1	51	56	66	5	14	----	----
185	3	Commercial	E	----	55	59	71	4	10	----	----
186	4	Residential	B	1	59	62	66	3	10	----	----
187	4	Residential	B	1	48	58	66	10	15	----	----
188	3	Residential	B	1	53	57	66	4	12	----	----
189	3	Residential	B	1	52	57	66	5	13	----	----
190	4	Residential	B	1	65	66	66	1	10	Snd Lvl	Yes
191	3	Church	D	----	48	50	51	2	10	----	----
192	4	Residential	B	1	64	65	66	1	10	----	----
196	4	Residential	B	1	41	56	66	15	15	Sub'l Inc	Yes
197	4	Residential	B	1	40	58	66	18	15	Sub'l Inc	Yes
199	4	Residential	B	1	40	57	66	17	15	Sub'l Inc	Yes
203	2	Residential	B	1	41	59	66	18	15	Sub'l Inc	Yes
204	----	Residential	B	1	60	61	66	1	10	----	----
205	----	Residential	B	1	64	63	66	-1	10	----	----
206	----	Residential	B	1	63	62	66	-1	10	----	----
207	----	Residential	B	1	66	62	66	-4	10	----	----

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
208	----	Residential	B	1	66	61	66	-5	10	----	----
209	----	Residential	B	1	67	59	66	-8	10	----	----
210	----	Residential	B	1	61	60	66	-1	10	----	----
212	----	Residential	B	1	64	59	66	-5	10	----	----
213	----	Commercial	E	----	63	58	71	-5	10	----	----
214	----	Residential	B	1	67	57	66	-10	10	----	----
216	----	Residential	B	1	67	57	66	-10	10	----	----
219	----	Residential	B	1	67	57	66	-10	10	----	----
220	----	Residential	B	1	58	59	66	1	10	----	----
221	----	Residential	B	1	66	57	66	-9	10	----	----
222	----	Residential	B	1	59	59	66	0	10	----	----
223	----	Residential	B	1	59	59	66	0	10	----	----
224	----	Residential	B	1	62	60	66	-2	10	----	----
225	----	Residential	B	1	66	58	66	-8	10	----	----
226	----	Residential	B	1	51	58	66	7	14	----	----
235	----	Residential	B	1	57	59	66	2	10	----	----
236	----	Residential	B	1	62	60	66	-2	10	----	----
241	----	Commercial	E	----	66	59	71	-7	10	----	----
260	5	Residential	B	1	40	57	66	17	15	Sub'l Inc	Yes
262	5	Residential	B	1	39	59	66	20	15	Sub'l Inc	Yes
263	5	Residential	B	1	39	59	66	20	15	Sub'l Inc	Yes
264	5	Residential	B	1	35	55	66	20	15	Sub'l Inc	Yes
265	5	Residential	B	1	38	59	66	21	15	Sub'l Inc	Yes
266	5	Residential	B	1	39	59	66	20	15	Sub'l Inc	Yes
267	5	Residential	B	1	38	58	66	20	15	Sub'l Inc	Yes
268	5	Residential	B	1	34	53	66	19	15	Sub'l Inc	Yes
269	5	Residential	B	1	34	52	66	18	15	Sub'l Inc	Yes
270	5	Residential	B	1	36	54	66	18	15	Sub'l Inc	Yes
274	5	Residential	B	1	41	61	66	20	15	Sub'l Inc	Yes
293	----	Hotel	E	----	64	65	71	1	10	----	----
294	----	Commercial	E	----	62	63	71	1	10	----	----
295	----	Commercial	E	----	63	62	71	-1	10	----	----
296	----	Commercial	E	----	55	60	71	5	10	----	----
297	----	Commercial	E	----	57	61	71	4	10	----	----
298	----	Commercial	E	----	65	62	71	-3	10	----	----
300	----	Commercial	E	----	61	61	71	0	10	----	----
313	5	Residential	B	1	41	53	66	12	15	----	----

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
314	5	Residential	B	1	37	50	66	13	15	----	----
315	5	Residential	B	1	42	63	66	21	15	Sub'l Inc	Yes
316	5	Residential	B	1	39	54	66	15	15	Sub'l Inc	Yes
318	----	Church	D	----	33	37	51	4	15	----	----
506	1	Residential	B	1	37	56	66	19	15	Sub'l Inc	Yes
507	1	Residential	B	1	37	58	66	21	15	Sub'l Inc	Yes
511	1	Residential	B	1	37	55	66	18	15	Sub'l Inc	Yes
512	1	Residential	B	1	37	55	66	18	15	Sub'l Inc	Yes
513	1	Residential	B	1	36	54	66	18	15	Sub'l Inc	Yes
514	1	Residential	B	1	36	54	66	18	15	Sub'l Inc	Yes
516	1	Residential	B	1	36	54	66	18	15	Sub'l Inc	Yes
518	1	Residential	B	1	36	52	66	16	15	Sub'l Inc	Yes
519	1	Residential	B	1	36	52	66	16	15	Sub'l Inc	Yes
520	1	Residential	B	1	36	52	66	16	15	Sub'l Inc	Yes
523	1	Residential	B	1	36	55	66	19	15	Sub'l Inc	Yes
525	3	Residential	B	1	33	56	66	23	15	Sub'l Inc	Yes
527	1	Residential	B	1	36	54	66	18	15	Sub'l Inc	Yes
528	1	Residential	B	1	36	51	66	15	15	Sub'l Inc	Yes
530	1	Residential	B	1	54	61	66	7	11	----	----
531	1	Residential	B	1	51	58	66	7	14	----	----
532	1	Residential	B	1	45	53	66	8	15	----	----
533	1	Residential	B	1	44	52	66	8	15	----	----
534	1	Residential	B	1	39	51	66	12	15	----	----
535	1	Residential	B	1	37	56	66	19	15	Sub'l Inc	Yes
536	1	Residential	B	1	39	56	66	17	15	Sub'l Inc	Yes
537	1	Residential	B	1	47	57	66	10	15	----	----
538	1	Residential	B	1	47	58	66	11	15	----	----
539	1	Residential	B	1	56	63	66	7	10	----	----
540	1	Commercial	E	----	55	63	71	8	10	----	----
541	1	Residential	B	1	43	55	66	12	15	----	----
542	1	Residential	B	1	48	57	66	9	15	----	----
543	1	Residential	B	1	40	57	66	17	15	Sub'l Inc	Yes
544	1	Residential	B	1	40	58	66	18	15	Sub'l Inc	Yes
545	1	Residential	B	1	37	54	66	17	15	Sub'l Inc	Yes
546	1	Residential	B	1	38	56	66	18	15	Sub'l Inc	Yes
547	1	Residential	B	1	40	55	66	15	15	Sub'l Inc	Yes
548	1	Residential	B	1	40	53	66	13	15	----	----

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
549	1	Residential	B	1	44	54	66	10	15	----	----
550	1	Residential	B	1	44	52	66	8	15	----	----
551	1	Residential	B	1	43	51	66	8	15	----	----
552	1	Residential	B	1	45	57	66	12	15	----	----
553	3	Residential	B	1	52	60	66	8	13	----	----
554	3	Residential	B	1	54	61	66	7	11	----	----
555	3	Residential	B	1	56	62	66	6	10	----	----
556	3	Residential	B	1	48	56	66	8	15	----	----
557	3	Residential	B	1	59	63	66	4	10	----	----
558	3	Residential	B	1	58	62	66	4	10	----	----
559	3	Residential	B	1	49	56	66	7	15	----	----
560	4	Residential	B	1	42	56	66	14	15	----	----
561	4	Residential	B	1	42	55	66	13	15	----	----
562	4	Residential	B	1	41	55	66	14	15	----	----
563	4	Residential	B	1	40	54	66	14	15	----	----
564	4	Residential	B	1	40	56	66	16	15	Sub'l Inc	Yes
565	4	Residential	B	1	40	55	66	15	15	Sub'l Inc	Yes
566	4	Residential	B	1	40	54	66	14	15	----	----
567	4	Residential	B	1	40	55	66	15	15	Sub'l Inc	Yes
568	4	Residential	B	1	38	54	66	16	15	Sub'l Inc	Yes
569	2	Residential	B	1	51	57	66	6	14	----	----
570	2	Residential	B	1	49	55	66	6	15	----	----
571	2	Residential	B	1	46	53	66	7	15	----	----
572	2	Residential	B	1	45	53	66	8	15	----	----
573	2	Residential	B	1	42	56	66	14	15	----	----
574	2	Residential	B	1	42	56	66	14	15	----	----
575	2	Residential	B	1	45	57	66	12	15	----	----
576	2	Residential	B	1	46	57	66	11	15	----	----
577	2	Residential	B	1	49	58	66	9	15	----	----
578	2	Residential	B	1	41	56	66	15	15	Sub'l Inc	Yes
579	2	Residential	B	1	41	56	66	15	15	Sub'l Inc	Yes
580	2	Residential	B	1	43	54	66	11	15	----	----
581	2	Residential	B	1	40	55	66	15	15	Sub'l Inc	Yes
582	2	Residential	B	1	41	55	66	14	15	----	----
583	2	Residential	B	1	42	56	66	14	15	----	----
584	2	Residential	B	1	41	58	66	17	15	Sub'l Inc	Yes
585	2	Residential	B	1	40	58	66	18	15	Sub'l Inc	Yes

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
586	2	Residential	B	1	39	57	66	18	15	Sub'l Inc	Yes
587	2	Residential	B	1	41	56	66	15	15	Sub'l Inc	Yes
588	2	Residential	B	1	41	56	66	15	15	Sub'l Inc	Yes
589	2	Residential	B	1	41	55	66	14	15	----	----
590	2	Residential	B	1	40	58	66	18	15	Sub'l Inc	Yes
591	2	Residential	B	1	39	58	66	19	15	Sub'l Inc	Yes
592	2	Residential	B	1	39	58	66	19	15	Sub'l Inc	Yes
593	2	Residential	B	1	38	55	66	17	15	Sub'l Inc	Yes
594	2	Residential	B	1	40	56	66	16	15	Sub'l Inc	Yes
595	2	Residential	B	1	38	58	66	20	15	Sub'l Inc	Yes
596	2	Residential	B	1	39	58	66	19	15	Sub'l Inc	Yes
597	2	Residential	B	1	40	60	66	20	15	Sub'l Inc	Yes
598	2	Residential	B	1	41	61	66	20	15	Sub'l Inc	Yes
599	2	Residential	B	1	43	62	66	19	15	Sub'l Inc	Yes
600	2	Residential	B	1	43	58	66	15	15	Sub'l Inc	Yes
601	2	Residential	B	1	43	58	66	15	15	Sub'l Inc	Yes
602	2	Residential	B	1	43	59	66	16	15	Sub'l Inc	Yes
603	2	Residential	B	1	41	58	66	17	15	Sub'l Inc	Yes
604	5	Residential	B	1	34	51	66	17	15	Sub'l Inc	Yes
605	5	Residential	B	1	34	50	66	16	15	Sub'l Inc	Yes
606	5	Residential	B	1	34	50	66	16	15	Sub'l Inc	Yes
607	5	Residential	B	1	34	50	66	16	15	Sub'l Inc	Yes
608	5	Residential	B	1	34	52	66	18	15	Sub'l Inc	Yes
609	5	Residential	B	1	37	54	66	17	15	Sub'l Inc	Yes
610	5	Residential	B	1	35	53	66	18	15	Sub'l Inc	Yes
611	5	Residential	B	1	35	53	66	18	15	Sub'l Inc	Yes
612	5	Residential	B	1	40	52	66	12	15	----	----
613	5	Residential	B	1	42	57	66	15	15	Sub'l Inc	Yes
614	5	Residential	B	1	43	58	66	15	15	Sub'l Inc	Yes
615	5	Residential	B	1	41	57	66	16	15	Sub'l Inc	Yes
616	5	Residential	B	1	41	56	66	15	15	Sub'l Inc	Yes
617	5	Residential	B	1	41	56	66	15	15	Sub'l Inc	Yes
618	5	Residential	B	1	34	47	66	13	15	----	----
619	5	Residential	B	1	34	48	66	14	15	----	----
620	5	Residential	B	1	34	49	66	15	15	Sub'l Inc	Yes
623	5	Residential	B	1	40	50	66	10	15	----	----
624	5	Residential	B	1	37	47	66	10	15	----	----

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
625	5	Residential	B	1	34	45	66	11	15	----	----
626	5	Residential	B	1	34	45	66	11	15	----	----
627	5	Residential	B	1	45	63	66	18	15	Sub'l Inc	Yes
628	5	Residential	B	1	44	57	66	13	15	----	----
R-2501BC: US 74 Business to North of Fox Road (SR 1606)											
320	----	Residential	B	1	55	67	66	12	10	Both	Yes
322	----	Commercial	E	----	55	65	71	10	10	Sub'l Inc	Yes
325	7	Residential	B	1	49	64	66	15	15	Sub'l Inc	Yes
326	7	Residential	B	1	48	63	66	15	15	Sub'l Inc	Yes
327	7	Residential	B	1	41	60	66	19	15	Sub'l Inc	Yes
328	7	Residential	B	1	45	62	66	17	15	Sub'l Inc	Yes
331	7	Residential	B	1	44	62	66	18	15	Sub'l Inc	Yes
334	7	Residential	B	1	52	64	66	12	13	----	----
335	7	Residential	B	1	48	57	66	9	15	----	----
3351	7	School	D	----	36	46	51	10	15	----	----
336	----	Residential	B	1	33	43	66	10	15	----	----
337	----	Residential	B	1	33	40	66	7	15	----	----
341	6	Residential	B	1	33	62	66	29	15	Sub'l Inc	Yes
343	----	Residential	B	1	33	64	66	31	15	Sub'l Inc	Yes
344	6	Residential	B	1	33	64	66	31	15	Sub'l Inc	Yes
345	6	Residential	B	1	33	56	66	23	15	Sub'l Inc	Yes
346	----	Residential	B	1	61	61	66	0	10	----	----
347	----	Residential	B	1	58	61	66	3	10	----	----
348	----	Residential	B	1	55	64	66	9	10	----	----
349	----	Residential	B	1	54	63	66	9	11	----	----
350	----	Residential	B	1	53	57	66	4	12	----	----
351	----	Residential	B	1	49	57	66	8	15	----	----
352	----	Residential	B	1	52	55	66	3	13	----	----
353	----	Residential	B	1	48	55	66	7	15	----	----
354	----	Residential	B	1	49	51	66	2	15	----	----
355	----	Residential	B	1	45	48	66	3	15	----	----
356	----	Residential	B	1	53	62	66	9	12	----	----
357	----	Residential	B	1	56	67	66	11	10	Both	Yes
358	----	Residential	B	1	50	60	66	10	15	----	----
360	----	Residential	B	1	57	67	66	10	10	Both	Yes
361	----	Residential	B	1	54	64	66	10	11	----	----

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
362	----	Residential	B	1	52	56	66	4	13	----	----
363	----	Residential	B	1	51	60	66	9	14	----	----
368	----	Residential	B	1	63	72	66	9	10	Snd Lvl	Yes
629	6	Residential	B	1	33	56	66	23	15	Sub'l Inc	Yes
630	6	Residential	B	1	33	56	66	23	15	Sub'l Inc	Yes
631	6	Residential	B	1	33	54	66	21	15	Sub'l Inc	Yes
632	6	Residential	B	1	33	53	66	20	15	Sub'l Inc	Yes
637	----	Residential	B	1	49	59	66	10	15	----	----
701	----	Residential	B	1	50	63	66	13	15	----	----
703	----	Residential	B	1	46	58	66	12	15	----	----
704	----	Church	D	----	42	50	51	8	15	----	----
705	----	Residential	B	1	48	62	66	14	15	----	----
706	----	Residential	B	1	49	62	66	13	15	----	----
707	----	Residential	B	1	50	62	66	12	15	----	----
708	----	Residential	B	1	49	62	66	13	15	----	----
709	7	Residential	B	1	40	61	66	21	15	Sub'l Inc	Yes
710	7	Residential	B	1	38	59	66	21	15	Sub'l Inc	Yes
711	7	Residential	B	1	38	58	66	20	15	Sub'l Inc	Yes
713	----	Residential	B	1	47	51	66	4	15	----	----
714	----	Residential	B	1	51	58	66	7	14	----	----
715	----	Residential	B	1	44	61	66	17	15	Sub'l Inc	Yes
716	----	Residential	B	1	55	61	66	6	10	----	----
717	----	Residential	B	1	42	60	66	18	15	Sub'l Inc	Yes
718	----	Residential	B	1	41	57	66	16	15	Sub'l Inc	Yes
719	----	Residential	B	1	56	66	66	10	10	Both	Yes
720	----	Residential	B	1	56	65	66	9	10	----	----
721	----	Residential	B	1	51	63	66	12	14	----	----
722	----	Residential	B	1	51	63	66	12	14	----	----
723	----	Residential	B	1	50	63	66	13	15	----	----
724	----	Residential	B	1	48	62	66	14	15	----	----
804	----	Residential	B	1	33	49	66	16	15	Sub'l Inc	Yes
805	----	Residential	B	1	33	48	66	15	15	Sub'l Inc	Yes
R-2501C: North of Fox Road (SR 1606) to Marston Road (SR 1001)											
366	----	Residential	B	1	63	71	66	8	10	Snd Lvl	Yes
367	----	Residential	B	1	53	57	66	4	12	----	----
369	----	Residential	B	1	60	68	66	8	10	Snd Lvl	Yes

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
370	----	Residential	B	1	62	67	66	5	10	Snd Lvl	Yes
371	----	Residential	B	1	63	69	66	6	10	Snd Lvl	Yes
372	----	Residential	B	1	63	69	66	6	10	Snd Lvl	Yes
373	----	Residential	B	1	54	60	66	6	11	----	----
374	----	Residential	B	1	63	68	66	5	10	Snd Lvl	Yes
375	----	Residential	B	1	64	69	66	5	10	Snd Lvl	Yes
376	----	Residential	B	1	61	67	66	6	10	Snd Lvl	Yes
377	----	Residential	B	1	60	68	66	8	10	Snd Lvl	Yes
378	----	Residential	B	1	62	70	66	8	10	Snd Lvl	Yes
379	----	Residential	B	1	56	61	66	5	10	----	----
380	----	Residential	B	1	61	69	66	8	10	Snd Lvl	Yes
381	----	Residential	B	1	56	63	66	7	10	----	----
382	----	Residential	B	1	64	70	66	6	10	Snd Lvl	Yes
383	----	Residential	B	1	62	63	66	1	10	----	----
384	----	Residential	B	1	61	63	66	2	10	----	----
385	----	Residential	B	1	62	65	66	3	10	----	----
386	----	Community Services	C	----	62	65	66	3	10	----	----
387	----	Commercial	E	----	60	65	71	5	10	----	----
388	----	Commercial	E	----	63	68	71	5	10	----	----
389	----	Residential	B	1	63	65	66	2	10	----	----
390	----	Residential	B	1	62	65	66	3	10	----	----
391	----	Residential	B	1	58	64	66	6	10	----	----
392	----	Residential	B	1	56	63	66	7	10	----	----
393	----	Commercial	E	----	53	60	71	7	12	----	----
394	----	Residential	B	1	61	67	66	6	10	Snd Lvl	Yes
395	----	Residential	B	1	60	67	66	7	10	Snd Lvl	Yes
396	----	Residential	B	1	59	66	66	7	10	Snd Lvl	Yes
397	----	Commercial	E	----	60	68	71	8	10	----	----
398	----	Residential	B	1	61	70	66	9	10	Snd Lvl	Yes
399	----	Residential	B	1	58	65	66	7	10	----	----
400	----	Residential	B	1	61	69	66	8	10	Snd Lvl	Yes
401	----	Residential	B	1	51	57	66	6	14	----	----
402	----	Residential	B	1	52	58	66	6	13	----	----
404	----	Residential	B	1	51	57	66	6	14	----	----
405	----	Commercial	E	----	63	70	71	7	10	----	----
406	----	Residential	B	1	58	65	66	7	10	----	----
407	----	Residential	B	1	59	65	66	6	10	----	----

RECEIVER INFORMATION					EXISTING NOISE LEVEL (dBA)	PREDICTED NOISE LEVEL (dBA)	23 CFR PART 772 NOISE ABATEMENT CRITERIA (NAC) (dBA)	NOISE LEVEL INCREASE (dBA)	CRITERIA FOR SUBSTANTIAL INCREASE (dBA)	EQUAL/ EXCEEDS 23 CFR PART 772 NAC	TOTAL NOISE IMPACTS*
Location		LAND USE	CATEGORY	DWELLING UNITS							
ID #	Noise Sensitive Area										
408	----	Commercial	E	----	64	70	71	6	10	----	----
410	----	Community Services	C	----	53	60	66	7	12	----	----
411	----	Commercial	E	----	59	61	71	2	10	----	----
412	----	Residential	B	1	50	56	66	6	15	----	----
414	----	Residential	B	1	57	64	66	7	10	----	----
417	----	Residential	B	1	51	57	66	6	14	----	----
418	----	Residential	B	1	60	67	66	7	10	Snd Lvl	Yes
419	----	Residential	B	1	59	66	66	7	10	Snd Lvl	Yes
420	----	Residential	B	1	61	68	66	7	10	Snd Lvl	Yes
421	----	Residential	B	1	55	61	66	6	10	----	----
422	----	Residential	B	1	52	58	66	6	13	----	----
423	----	Residential	B	1	61	68	66	7	10	Snd Lvl	Yes
424	----	Residential	B	1	52	59	66	7	13	----	----
425	----	Residential	B	1	48	54	66	6	15	----	----
446	----	Residential	B	1	54	60	66	6	11	----	----
447	----	Residential	B	1	60	66	66	6	10	Snd Lvl	Yes
452	----	Residential	B	1	56	62	66	6	10	----	----
453	----	Campground	C	----	59	67	66	8	10	Snd Lvl	Yes

**TABLE N5
FHWA AND NCDOT NOISE ABATEMENT CRITERIA SUMMARY*
US 1 Corridor Improvements in Richmond County
T.I.P. Project No. R-2501**

ROADWAY	Leq NOISE LEVELS ¹			MAXIMUM ² CONTOUR DISTANCES (ft)	
	50 ft	100 ft	200 ft	66 dBA	71 dBA
US 1 Bypass - Near SR 1104 Osborne Rd	69.9	67.2	62.3	153	70
SR 1104 Osborne Rd	54	48.4	42.7	< 36	<36
SR 1104 Osborne Rd North	60.2	54.7	49.1	< 36	< 36
US 1 Bypass - SR 1104 Osborne Rd to US 74 Bypass	68.1	65.1	59.8	141	< 84
SR 1971 Sandhill Rd	52.9	47.4	41.9	< 36	< 36
SR 1105 Hamer Mill Rd	59.5	53.8	48	< 36	< 36
US 74 Bypass	77.6	74.6	69.4	337	216
US 1 Bypass - US 74 Bypass to SR 1966 Airport Rd	71.7	68.6	63.4	201	118
SR 1966 Airport Rd North	62	56.3	52.2	< 44	< 44
SR 1966 Airport Rd	64.6	58.9	54.8	58	< 44
US 1 Bypass - SR 1966 Airport Rd to US 74 Business	71.3	68.2	63	193	113
SR 1909 Hylan Ave	64.5	58.7	52.7	49	< 36
US 74 Business North	69.6	66.3	60.3	152	81
US 74 Business South	68.8	65.6	59.5	140	74
US 1 Bypass - US 74 Business to SR 1640 Wire Grass Rd	70.6	67.5	62.3	182	103
SR 1640 Wire Grass Rd North	64.7	59.3	53.9	50	< 36
SR 1640 Wire Grass Rd South	65.4	60	54.6	56	< 36
SR 1624 County Home Rd West	58.9	53	46.8	< 36	< 36
SR 1624 County Home Rd East	57	51.2	45.1	< 36	< 36
US 1 Bypass - SR 1640 Wire Grass Rd to SR 1606 Fox Rd	71.6	68.6	63.4	201	117
US 1 Business	68	64.9	58	91	< 37
SR 1606 Fox Rd	57.4	53	45.9	< 36	< 36
US 1 Bypass - SR 1606 Fox Rd to SR 1486 Beaverdam Ch. Rd	74	71.3	66.2	265	164
SR 1605 Cognac Rd	55.8	50	44	< 35	< 35
US 1 Bypass - SR 1486 Beaverdam Ch. Rd to NC 177	72.3	69.6	64.6	224	129
NC 177	61.1	56	50.6	< 57	< 57
SR 1486 Beaverdam Church Rd	57.5	51.6	45.5	< 36	< 36

DESCRIPTION	TOTAL NO. OF IMPACTED RECEIVERS	APPROXIMATE NO. OF IMPACTED RECEIVERS ACCORDING TO TITLE 23 CFR PART 772 / NCDOT POLICY						
		A	B	C	D	E	F	G
R-2501BA: North of Sandhill Rd (SR 1971) to US 74 Bypass	8	---	8	---	---	---	---	---
R-2501BB: US 74 Bypass to US 74 Business	109	---	109	---	---	---	---	---
R-2501BC: US 74 Business to North of Fox Rd (SR 1606)	27	---	26	---	---	1	---	---
R-2501C: North of Fox Rd (SR 1606) to Marston Rd (SR 1001)	23	---	22	1	---	---	---	---
Total	167	0	165	1	0	1	0	0

*See Appendix C for technical data

¹ 50 ft, 100 ft & 200 ft distances are measured from the outside edge of outer travel lane

² 71 dBA, 66 dBA and 56 dBA contour distances are measured from the centerline of pavement

TABLE N8
BARRIER ANALYSIS
US 1 Corridor Improvements in Richmond County
T.I.P. Project No. R-2501

Barrier 2

Length Approximately 3,365 feet

Location US 1 Bypass - East Side Between Hylan Avenue and US 74 Business

Receiver	Existing LAeq1h dBA	Calculated LAeq1h dBA	Increase dB	Type Impact	Front Row	Barrier Height 12 ft		
						Calculated LAeq1h dBA	Noise Reduction dBA	Benefited
175	60	63	3	----	Y	62	1	0
1752	60	64	4	----	Y	52	12	1
203	41	59	18	Sub'l Inc		56	3	0
569	51	57	6	----		54	3	0
570	49	55	6	----		53	2	0
571	46	53	7	----		50	3	0
572	45	53	8	----		49	4	0
573	42	56	14	----		50	6	1
574	42	56	14	----		51	5	1
575	45	57	12	----		52	5	1
576	46	57	11	----		52	5	1
577	49	58	9	----		54	4	0
578	41	56	15	Sub'l Inc	Y	48	8	1
579	41	56	15	Sub'l Inc	Y	48	8	1
580	43	54	11	----		49	5	1
581	40	55	15	Sub'l Inc		48	7	1
582	41	55	14	----		48	7	1
583	42	56	14	----		50	6	1
584	41	58	17	Sub'l Inc	Y	50	8	1
585	40	58	18	Sub'l Inc	Y	49	9	1
586	39	57	18	Sub'l Inc	Y	49	8	1
587	41	56	15	Sub'l Inc		50	6	1
588	41	56	15	Sub'l Inc		50	6	1
589	41	55	14	----		50	5	1
590	40	58	18	Sub'l Inc	Y	50	8	1
591	39	58	19	Sub'l Inc	Y	50	8	1
592	39	58	19	Sub'l Inc	Y	51	7	1
593	38	55	17	Sub'l Inc		50	5	1
594	40	56	16	Sub'l Inc		52	4	0
595	38	58	20	Sub'l Inc	Y	50	8	1
596	39	58	19	Sub'l Inc	Y	50	8	1
597	40	60	20	Sub'l Inc	Y	53	7	1
598	41	61	20	Sub'l Inc	Y	54	7	1
599	43	62	19	Sub'l Inc	Y	56	6	1
600	43	58	15	Sub'l Inc		54	4	0
601	43	58	15	Sub'l Inc		55	3	0
602	43	59	16	Sub'l Inc		56	3	0
603	41	58	17	Sub'l Inc		56	2	0

**TABLE N8
BARRIER ANALYSIS
US 1 Corridor Improvements in Richmond County
T.I.P. Project No. R-2501**

Barrier 4

Length Approximately 3,250 feet

Location US 1 Bypass - West Side Between Hylan Avenue and US 74 Business

Receiver	Existing LAeq1h dBA	Calculated LAeq1h dBA	Increase dB	Type Impact	Front Row	Barrier Height 8-14 ft		
						Calculated LAeq1h dBA	Noise Reduction dBA	Benefited
186	59	62	3	----	Y	60	2	0
187	48	58	10	----	Y	53	5	1
190	65	66	1	Snd Lvl		66	0	0
192	64	65	1	----		65	0	0
196	41	56	15	Sub'l Inc	Y	49	7	1
197	40	58	18	Sub'l Inc	Y	50	8	1
199	40	57	17	Sub'l Inc	Y	49	8	1
560	42	56	14	----	Y	50	6	1
561	42	55	13	----		49	6	1
562	41	55	14	----		49	6	1
563	40	54	14	----		48	6	1
564	40	56	16	Sub'l Inc		48	8	1
565	40	55	15	Sub'l Inc		49	6	1
566	40	54	14	----		49	5	1
567	40	55	15	Sub'l Inc		50	5	1
568	38	54	16	Sub'l Inc		49	5	1
								13

TABLE N9
NOISE BARRIER REASONABLENESS ASSESSMENT
US 1 Corridor Improvements in Richmond County
T.I.P. Project No. R-2501

Barrier Height (ft.)	Minimum Barrier Length (ft.)	Total Cost (C)	Total Predicted Impacts	No. of Potential Benefits (N)	Average Noise Level Increase (I)	Cost/ Benefitted Receiver V = C/N	Maximum Allowable Cost/ Benefit	Maximum Reasonable Cost	Reasonable Mitigation Possible?
Area 1 - Barriers 1A & 1B - US 1 Bypass - East Side Between Airport Road and Hylan Avenue									
8 to 10	2,645	\$354,390	38	6	16	\$59,065	\$43,000	\$258,000	No
12	4,030	\$725,400	38	12	16	\$60,450	\$43,000	\$516,000	No
Area 2 - Barrier 2 - US 1 Bypass - East Side Between Hylan Avenue and US 74 Business									
12	3,365	\$605,760	23	26	15	\$23,298	\$42,500	\$1,105,000	Yes
Area 3 - Barrier 3 - US 1 Bypass - West Side Between Airport Road and Hylan Avenue									
14	3,670	\$770,775	11	11	13	\$70,070	\$41,500	\$456,500	No
Area 4 - Barrier 4 - US 1 Bypass - West Side Between Hylan Avenue and US 74 Business									
8 to 14	3,250	\$534,638	7	13	13	\$41,126	\$41,500	\$539,500	Yes
Area 5 - Barrier 5 - US 1 Bypass - Northwest Side of US 74 Business Interchange									
12 to 24	3,610	\$1,005,915	28	14	15	\$71,851	\$42,500	\$595,000	No
Area 6 - Barrier 6 - US 1 Bypass - East Side Between E.V. Hogan Drive and Ponderosa Drive									
14-20	4,015	\$1,010,520	7	5	25	\$202,104	\$47,500	\$237,500	No
Area 7 - Barrier 7 - US 1 Bypass - Southeast Side of Wiregrass Road/ County Home Road Interchange									
14	1,625	\$341,042	6	3	16	\$113,681	\$43,000	\$129,000	No