US 221
Proposed Rutherfordton Bypass
From US 74 Bypass to SR 1366 (Roper Loop Road)
Rutherford County
State Project 8.1891001
WBS Element 34400.1.2
TIP Project R-2233B

ADMINISTRATIVE ACTION

STATE FINAL ENVIRONMENTAL IMPACT STATEMENT

N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

In Compliance with the North Carolina Environmental Policy Act

APPROVED:

5/26/11
Date

for Gregory J. Thorpe, Ph.D.
Manager,
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation

Additional Information regarding this action may be obtained by contacting:

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STATE FINAL ENVIRONMENTAL IMPACT STATEMENT

MAY 2011

Documentation Prepared by Project Development and Environmental Analysis Branch:

5/26/11
Date

James A. McInnis, Jr., P.E.
Project Engineer

NORTH CAROLINA PROFESSIONAL SEAL 20700 ENGINEER JAMES A. McINNIS, JR.
5/26/11

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Project Development and Environmental Analysis Branch/Roadway Design Unit

NCDOT will coordinate with local officials as the proposed project progresses regarding the status of local greenway plans and proposed walking trails.

NCDOT will continue to coordinate with the National Park Service and local agencies regarding the Overmountain Victory National Historic Trail.

Project Development and Environmental Analysis Branch-Natural Environment Unit

The project will be resurveyed for the federally-protected dwarf-flowered heartleaf prior to construction.

Dwarf-flowered heartleaf plants that will be impacted by the project will be transplanted to the Tate property conservation area.

Roadway Design Unit

2:1 side slopes will be used at all stream crossings, wetlands and at dwarf-flowered heartleaf sites along the project.

Structure Design Unit

A sidewalk and 42-inch hand rails will be provided on the south side of the proposed bridge carrying US 64 over the bypass, in order to accommodate the Overmountain Victory National Historic Trail.

Hydraulics Unit/Natural Environment Unit

Prior to the Concurrence Point 4B NEPA/404 merger team meeting, the merger team will review Streams 2UT1C and 1N to determine if additional minimization is feasible.

Hydraulics Unit

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP) for approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR) for each new crossing of a FEMA regulated stream.

Division 13 Construction

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

In the event that unanticipated archaeological discoveries, such as unmarked cemeteries, are made during construction, the NCDOT Archaeology Group will be notified and consulted immediately for any necessary resolution or coordination with the State Historic Preservation Office, prior to any additional construction work in that area.

Location and Surveys Unit/Roadway Design Unit

Unmarked graves are believed to be located behind the church building on the Mountain View Baptist Church property. The church is located on 2nd Street in Rutherfordton. Efforts will be made to locate these graves and avoid them if practicable during final surveys and design for the project.

Roadside Environmental Unit/Division 13 Construction

NCDOT's native seed mix will be used througout the project in riparian areas, where possible.

SUMMARY

S.1 Contact Information

The following person may be contacted for additional information concerning this State Final Environmental Impact Statement (SFEIS):

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

Telephone: (919) 707-6000

S.2 Description of Proposed Action

The proposed action involves constructing the US 221 Bypass of Rutherfordton, in Rutherford County. The proposed bypass will be constructed as a four-lane roadway with a 46-foot median. Portions of the bypass will be constructed on new location. Full control of access will be obtained for new location sections of the bypass. Partial control of access (one access per parcel with no other access) will be obtained for sections of the project along existing roadways. The proposed project is approximately 8.5 miles long.

This project is identified as project number R-2233B in the approved 2009-2015 State Transportation Improvement Program (STIP). The initial right of way acquisition and construction for the project are scheduled for state fiscal years 2014 and 2019, respectively, in the draft NCDOT 2011-2020 10-Year Work Program.

S.3 Purpose of Proposed Action

The purpose of the project is to reduce congestion, improve safety, and improve travel time for traffic using the US 221 corridor in the vicinity of Rutherfordton.

S.4 Alternatives Considered

Preliminary alternatives considered for the project included the following:

- No-Build Alternative
- Alternate Modes of Transportation
- Improve Existing Facility
- Construct Bypass

It was determined the No-Build Alternative and alternate modes of transportation would not fulfill the purpose and need for the project. Also, improving the existing facility through downtown Rutherfordton would have excessive impacts to the Downtown Rutherfordton Historic District. Therefore, these alternatives were eliminated from further consideration. Based on the initial evaluation, only the Bypass Alternative was determined to meet the goals of the proposed project.

A total of nine bypass alternatives were investigated for this project. Of these, four alternatives were selected for detailed study (see Section 2.3). These four alternatives are shown on Figure S-1. Table S-1 below presents a comparison of the detailed study alternatives.

Table S-1
Detailed Study Alternatives Comparison

	Alternatives			
	3	**4**	**6**	**US 74A**
Residential Relocatees	99	163	91	88
Business Relocatees	27	43	26	32
Wetlands Affected (Ac.) (Delineated)	0.8	0.6	1.3	0.7
Stream Impacts (Ft.)	12,063	8,734	13,113	9,200
Dwarf-Flowered Heartleaf Impacts (Sq Ft.)	371.5	172.3	371.5	371.5
Impacted Noise Receptors	9	0	0	2
Length New Location (Miles)	7.2	4.3	8.3	3.8
Total Length (Miles)	8.5	9.3	9.4	8.7
Total Cost (Million)	$223.0	$219.0	$234.0	$200.0

Impacts and costs based on field surveys and design at time of selection of the preferred alternative (February 2010).

S.5 Recommended Alternative

Alternative 3, described in Section 2.3.1.1 and shown on Figure S-1, is the recommended alternative for the proposed US 221 Rutherfordton Bypass. Alternative 3 was selected for this project for the following reasons (see Section 2.4.1):

- Alternative 3 would affect fewer homes and businesses than Alternative 4.

- Alternative 3 would affect less wetlands and streams than Alternative 6.

Although Alternative 3 would affect more wetlands and streams and relocate more homes than Alternative US 74A, Alternative 3 has the following advantages over Alternative US 74A:

- Alternative 3 provides a higher level of service than Alternative US 74A (level of service B versus D).

- Alternative 3 potentially provides increased safety.

- Alternative 3 will provide a lower travel time for motorists using US 221 in the project area than any of the other alternatives.

- Alternative 3 has less potential for indirect and cumulative impacts than Alternative US 74A. No access will be provided along Alternative 3 between US 74 Business-US 221A and US 64, while one access per property will be provided in this area with Alternative US 74A.

- Alternative US 74A will relocate 30 percent (9 of 30) of the businesses within the Town of Ruth and may require the relocation of the largest employer in Ruth. Alternative 3 will only affect five businesses within Ruth.

- Most comments from citizens and local officials after the public hearing have been in favor of Alternative 3.

S.6 Summary of Impacts

Anticipated impacts of the selected alternative are shown below.

Table S-2
Summary of Anticipated Impacts
of Selected Alternative (Alternative 3)

Residential Relocatees	122
Business Relocatees	27
Wetlands Affected (Acres) (Delineated)	0.76
Stream Impacts (Feet)	9,889
Dwarf-Flowered Heartleaf Impacts (Acres)	0.23
Forested Areas (Acres)	197
Impacted Noise Receptors	9
Length New Location (Miles)	7.2
Total Length (Miles)	8.5
Total Cost (Millions)	$203.9

Impacts based on current design and field surveys.

S.7 Unresolved Issues

There are no major outstanding issues related to this project. Coordination with the public, local officials and state and federal resource agencies will continue as this project progresses through final design, right of way and construction.

S.8 Actions Required by Other State and Federal Agencies

Due to expected project impacts on wetlands and jurisdictional streams, an individual Section 404 permit will likely be required. The Corps of Engineers will determine final permit requirements.

A NC Division of Water Quality Section 401 Major Water Quality Certification will be required prior to issuance of the Section 404 permit.

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

DETAILED STUDY ALTERNATIVES
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

SHEET 1 OF 2 FIGURE S-1

BEGIN PROJECT

US 74
SR 1004
US 221
SR 2200 (DAVENPORT RD.)
SR 2201 (THUNDER RD.)
SR 1005 (COXE RD.)
SR 2196 (DUNKARD CH RD.)
SR 2194 (POORS FORD RD.)
SR 2231 (PATE RD.)
SR 2193 (OLD STONECUTTER RD.)
SR 2169 (OAKLAND RD.)
SR 2203 (LAUREL HILL RD.)
SR 271
SR 223
PROPOSED LANDFILL
US 74A
US 74 BUS
US 74 BUS-US 221A
SPINDALE
MATCHLINE-SEE SHEET 2

LEGEND

- ALTERNATIVE 3 STUDY CORRIDOR
- ALTERNATIVE 4 STUDY CORRIDOR
- ALTERNATIVE 6 STUDY CORRIDOR
- US 74A BYPASS ALTERNATIVE STUDY CORRIDOR
- WETLANDS (DELINEATED)
- STREAMS (DELINEATED)
- HISTORIC PROPERTIES (NATIONAL REGISTER-LISTED & ELIGIBLE)
- OVERMOUNTAIN VICTORY NATIONAL HISTORIC TRAIL
- LAND & WATER CONSERVATION FUND PROPERTIES
- WATER SUPPLY WATERSHED

METERS
0 200 400 600 800 1000
0 1000 2000 3000
FEET

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

DETAILED STUDY ALTERNATIVES
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

SHEET 2 OF 2 FIGURE S-1

MATCHLINE-SEE SHEET 1

END PROJECT

GILBERT TOWN
HISTORIC DISTRICT
(NATIONAL REGISTER LISTED)

METERS
0 200 400 600 800 1000
0 1000 2000 3000
FEET

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 PROPOSED ACTION

The proposed project involves constructing the US 221 Rutherfordton Bypass in Rutherford County. The proposed bypass will be constructed as a four-lane median divided roadway, portions of which will be on new location. The bypass will be approximately 8.5 miles long. Figure 1-1 depicts the project area. This project is identified as Project R-2233B in the approved 2009-2015 North Carolina State Transportation Improvement Program.

1.1.1 Project Setting

US 221 is the primary north-south corridor east of I-26 serving the mountain region of North Carolina. Rutherfordton is located northwest of Forest City near the center of Rutherford County. Existing US 221 passes through downtown Rutherfordton. The alternatives studied for the proposed bypass start south of Rutherfordton on existing US 221 at the US 74 Bypass. All of the detailed study alternatives bypass downtown Rutherfordton to the east, crossing SR 2201 (Thunder Road), US 221A (Charlotte Road) and US 64 before tying back into existing US 221 south of SR 1367 (Thompson Road).

1.1.2 History of Project

A US 221 Bypass has been shown on the Rutherford County Thoroughfare Plan since at least 1976. The latest thoroughfare plan, the 1997 Rutherford County Urban Area Thoroughfare Plan, was jointly approved by local governments and NCDOT. Project development studies for the proposed bypass were initiated in 1999.

1.2 PURPOSE OF PROPOSED ACTION

The purpose of the proposed project is to reduce congestion, improve safety, and improve travel time for traffic using the US 221 corridor in the vicinity of Rutherfordton.

1.3 NEED FOR PROPOSED ACTION

1.3.1 Summary of Need for Proposed Action

The proposed project is intended to address the following deficiencies of existing US 221 in the vicinity of Rutherfordton:

- Capacity Deficiencies

By the year 2030, traffic volumes along existing US 221 are projected to range between 11,100 to 18,800 vehicles per day (see Figure 1-2). Portions of existing

US 221 will be operating at an unacceptable level of service (LOS E or F) in the year 2030 (see Figure 1-3).

- Excessive Travel Time

  In the year 2030, the approximately ten mile trip from US 74 south of Rutherfordton to SR 1366 (Roper Loop Road) north of Rutherfordton will take approximately 20 minutes, or double what the trip would take at 55 MPH with no stops.

- Substandard Roadway Geometry

  Portions of US 221 in the project area have narrow lanes and shoulders and vertical alignments which do not meet a 60 MPH design speed.

1.3.2 Traffic Carrying Capacity

US 221 is a two-lane highway. Shown below is a photograph of existing US 221.

Thunder Road and Existing US 221 Intersection (Looking North)

There is no control of access along US 221; numerous residential and commercial driveways tie into the existing facility. There are four signalized intersections along the subject section of US 221 and numerous unsignalized intersections.

1.3.2.1 Existing Traffic Volumes

Estimated average daily traffic (ADT) volumes in 2010 for US 221 in the vicinity of Rutherfordton range from 7,000 to 12,700 vehicles per day. Figure 1-2 shows estimated 2010 average daily traffic for the subject section of US 221.

1.3.2.2 Existing Levels of Service

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

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

Figure 1-3 presents the 2010 levels of service along existing US 221 in the vicinity of Rutherfordton. As Figure 1-3 shows, portions of existing US 221 operated at levels of service E or F in the year 2010.

1.3.2.3 Future Traffic Volumes

By the year 2030, traffic volumes along existing US 221 are projected to range between 11,100 to 18,800 vehicles per day. Projected 2030 traffic volumes are shown on Figure 1-2.

1.3.2.4 Future Levels of Service ("no-build")

Figure 1-3 presents the anticipated 2030 levels of service along existing US 221 in the vicinity of Rutherfordton. As Figure 1-3 shows, most portions of existing US 221 in the Rutherfordton area will operate at levels of service E or F in the year 2030.

1.3.3 Accident Data

Accident rates for the section of US 221 in the project area have been calculated and compared with statewide rates for two-lane undivided US routes. These rates are presented in Table 1-1 below.

Table 1-1
Accident Rates Comparison
Two-Lane Undivided US Routes

	Total Accident Rate (ACC/100MVM)	Fatal Accident Rate (ACC/100MVM)
US 221 (9/2007-8/2010)	158.77	0
Statewide Average (2005-2007)	159.45	2.06
Critical Rate* (2005-2007)	248.74	5.62

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

The 2007-2010 total and fatal accident rates for US 221 in the vicinity of Rutherfordton do not exceed the 2005-2007 statewide average or critical rate for similar facilities. The total accident rate for NCDOT Highway Division 13, which includes Rutherford, Buncombe, McDowell, Burke, Yancey, Mitchell and Madison counties, is 156.71 (ACC/100MVM). The total accident rate for this portion of US 221 is 158.77 (ACC/100MVM).

During the study period, 110 accidents occurred along US 221 in the project area. The most common types of accidents included rear-end collisions (34%) and frontal impact accidents (including angle, head-on and turning crashes) (29%).

Rear-end accidents occurring along this section of US 221 were primarily due to traffic slowing to make turns or stopped because of congestion and driver failure to reduce speed. The frontal impact accidents, on the other hand, may be related more to roadway characteristics (lane widths, median, horizontal curvature).

1.3.4 Travel Time

Existing US 221 passes through the center of downtown Rutherfordton. Speed limits on US 221 within Rutherfordton vary between 20 to 45 MPH. US 221 through Rutherfordton is the only portion of US 221 between the South Carolina State Line and I-40 with a speed limit lower than 55 MPH. In the year 2030, the approximately ten mile trip from US 74 south of Rutherfordton to SR 1366 (Roper Loop Road) north of Rutherfordton will take approximately 20 minutes, or roughly double what the trip would take at 55 MPH with no stops.

1.3.5 Roadway Geometry

Lane widths along US 221 in the project area vary from ten feet to twelve feet wide. Shoulder widths also vary. American Association of State Highway and Transportation Officials (AASHTO) guidelines generally recommend that lane widths of twelve feet be provided on rural highways. The guidelines also state that undesirable conditions (inadequate vehicle clearances) exist on surfaces less than 22 feet wide

carrying even moderate volumes of traffic. Studies have shown that rural highways with lane widths less than eleven feet wide tend to have higher accident rates than similar facilities with wider lanes. AASHTO guidelines also state that shoulder widths of six to eight feet are preferable. Table 1-2 below presents the existing typical sections along US 221 in the project area.

Table 1-2
US 221 Existing Typical Sections

Section	Section Length	No. Lanes/Width	Shoulder Width
US 74 to Rutherfordton City Limits	3.4 mi.	2/10’	4’ grassed
City Limits to Lynch St.	1.4 mi.	2/11’	4’-5’ grassed
Lynch St. to South of US 64	1.3 mi.	2/11’-12’	Curb and Gutter
South of US 64 to Rutherfordton City Limits	0.3 mi.	2/12’	8’-12’ grassed (2’ paved)
City Limits to SR 1529	4.6 mi.	2/12’	12’ gravel

The horizontal alignment of existing US 221 is good, and for the most part meets a 60 MPH design speed along sections of the roadway signed 55 MPH.

The vertical alignment of existing US 221 south of Rutherfordton does not meet a 60 MPH design speed. Many of the vertical curves along the roadway have a 40 or 45 MPH design speed. Several areas along US 221 have grades above six percent. These steep grades, however, are fairly short.

1.3.6 NC Strategic Highway Corridors/Intrastate System

US 221 from the South Carolina State Line to Linville has been designated part of the North Carolina Intrastate System. The Intrastate System was established by the North Carolina General Assembly in 1989. The purpose of the Intrastate System is to provide high-speed, safe travel service throughout the State by connecting major population centers both inside and outside the State with four-lane highways. The System is designed to support statewide growth and development objectives and to connect to major highways of adjoining states. US 221 connects Rutherfordton with Spartanburg, South Carolina to the south and Marion to the north.

US 221 in the project area is also designated a strategic highway corridor. This section of US 221 is a part of Strategic Corridor 12, which extends from Spartanburg, South Carolina to Boone using US 221 and NC 105. The strategic highway corridor vision for US 221 in the project area is that US 221 be improved to a boulevard. A boulevard is a facility with at least four lanes and a median, which may have signalized intersections and either partial (one driveway per parcel) or limited (access only from side roads) control of access.

US 221 is classified as a minor arterial south of Rutherfordton and a major arterial north of Rutherfordton in the North Carolina Functional Classification System.

2.0 ALTERNATIVES CONSIDERED

2.1 NO-BUILD ALTERNATIVE

The No-Build Alternative would make no improvements to existing US 221 through the year 2030, with the exception of regular maintenance such as patching, resurfacing, regrading shoulders and maintaining ditches.

The No-Build Alternative would incur neither right-of-way nor construction costs. There would be no impacts to streams, wetlands, or other natural and cultural resources, nor would there be any residential or business relocations.

However, the No-Build Alternative would not meet the purpose and need of the proposed project. Traffic capacity analyses indicate that by the design year (2030), US 221 will operate at LOS E except near the US 221/US 74 Business-US 221A intersection, where US 221 will operate at LOS F. The increase in traffic volumes would result in greater congestion and an increase in the number of accidents. The increased congestion would diminish the potential for economic growth and development within the study area.

2.2 PRELIMINARY STUDY ALTERNATIVES

2.2.1 Transportation Management Alternatives

In some cases, transportation management alternatives can be used to improve the overall operation of an existing roadway network. The management tools include Transportation Systems Management (TSM) and Travel Demand Management (TDM). The following provides a discussion of these tools and their applicability for this project.

2.2.1.1 Transportation Systems Management (TSM)

Transportation Systems Management consists of adding low-cost transportation improvements to increase the capacity of an existing facility. TSM strategies typically involve minor roadway improvements that improve the operational characteristics of a facility while minimizing capital outlay and inconvenience to motorists. There are two main types of TSM minor roadway improvements: operational and physical. Examples of these improvements are shown in Table 2-1 below.

Table 2-1
TSM Improvements

Operational Improvements	Physical Improvements
Traffic law enforcement	Addition of turn lanes
Turn prohibitions	Intersection realignment
Access control	Improved warning and information signs
Speed restrictions	New signals or stop signs
Signal coordination	Intersection geometric and signalization improvements
Signal phasing or timing changes	

TSM physical and operational roadway improvements typically are effective in solving site-specific capacity, safety and use problems in urban areas. As described below, most of these measures would not meet the purpose and need of the proposed project.

Turn Prohibitions and Turn Lanes: US 221 is a two-lane roadway. A median is needed to prohibit left-turning movements and additional right of way would be required to construct the median and relocate one lane. This improvement, while limiting left turns, would do little to improve the traffic carrying capacity of the existing roadway.

Traffic Signals: Only four of twenty-one intersections along US 221 are currently signalized. Signalizing other minor street intersections along US 221 would result in increased delay for US 221 traffic.

Intersection Geometric Improvements: Improving intersection geometry by realigning crossing roadways might improve safety at some intersections along existing US 221, but would do little to increase the traffic carrying capacity of US 221 in the project area.

Speed Restrictions and Law Enforcement: Operational measures such as speed restrictions and increased law enforcement are often useful in addressing some safety issues. The existing speed limit along most of US 221 is 45 mph. With the spacing between signalized intersections and the essentially straight alignment of the highway, drivers can achieve running speeds in excess of the speed limit. During peak hours, speed is controlled by the heavy traffic volume. Restrictions on speed would not improve the traffic carrying capacity of US 221.

Improved Signage: New and improved warning or informational signs would not be effective at solving the problems along existing US 221. Accident patterns for US 221

are indicative of congested conditions rather than motorist's unfamiliarity with the highway or prevailing conditions. Additional signs are unlikely to address this accident trend.

2.2.1.2 Travel Demand Management (TDM)

Travel Demand Management (TDM) strategies include staggered work hours, ridesharing and high occupancy vehicle (HOV) lanes.

Staggered work hours, flex-time or modified workweeks can be implemented by large employers along the corridor who experience congestion at the entrances to their businesses. Although the US 221 corridor does contain some large businesses, it is not expected that such adjustments to work schedules would significantly reduce peak hour traffic volumes within the study area.

Given the predominantly rural nature of the project area, public transportation or ridesharing are unlikely to result in substantial reductions in the amount of traffic along US 221 in the project area.

2.2.1.3 Alternate Modes of Transportation

Alternate modes of transportation would include bus or rail passenger service. No intercity bus service is provided to the Rutherfordton area, the nearest bus terminal is in Asheville.

There is no passenger rail service available in Rutherford County. The abandoned railroad that runs from Forest City to Rutherfordton has been put into a rail banking system and is currently used as a walking trail.

The Transit Administration of Rutherford County provides bus service between Forest City, Spindale and Rutherfordton. Given the predominantly rural nature of the project area, additional bus transit is unlikely to result in substantial reductions in the amount of traffic along US 221 in the project area.

2.2.2 Improve Existing US 221

Widening existing US 221 and constructing a one-way pair within downtown Rutherfordton was investigated as an alternative. This alternative was eliminated because of the potential impacts to the historic district in Rutherfordton.

2.2.3 Preliminary Bypass Alternatives

Constructing a US 221 bypass of Rutherfordton would meet the purpose and need of the proposed project. A bypass would reduce congestion, improve safety and improve travel time for traffic using the US 221 corridor in the vicinity of Rutherfordton.

Nine bypass alternatives were initially developed for the proposed project. Six of these alternatives were presented to the public at a citizens informational workshop held

on August 23, 2001. Of these, four alternatives were chosen for detailed study by the NEPA/404 merger team (see Section 2.3). Table 2-2 presents impacts of all of the preliminary bypass alternatives. The table includes estimates of impacts based on the total corridor area. Impact estimates were refined as studies progressed. The preliminary bypass alternatives are shown on Figure 2-1.

Table 2-2
Preliminary Alternatives Comparison

	Improve Exist.	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	West Byp.	US 74A Byp
Residential Relocatees	108	85	171	151	162	134	149	115	90
Business Relocatees	49	11	31	23	20	19	21	11	23
National Register Listed Properties	1 district	1	1	1	1	1	1	None	None
Wetlands Affected (ac.) (NWI)	1.6	1.2	2.2	1.8	2.1	2.0	1.3	2.4	1.5
Stream Impacts (ft.)	2,733	14,270	12,148	5,794	5,906	10,497	13,113	12,692	3,834
Length New Location (miles)	0.2	9.0	9.5	9.1	9.0	9.3	8.6	9.6	3.3
Total Length (miles)	12.3	12.8	12.3	11.6	12.8	10.9	9.4	12.8	11.6

Note: Impacts listed were based on best available information at time, not actual field surveys. Shaded cells indicate alternatives which were dropped from consideration prior to detailed environmental surveys.

The preliminary bypass alternatives which were dropped from consideration are described below. Alternatives which were carried forward for detailed study are described in Section 2.3.1.

Western Bypass Alternative

The Western Bypass Alternative would widen existing US 221 to four lanes with a median from US 74 Bypass to just south of SR 1191 (Mountain View Cemetery Road), then construct a bypass on new location around the western side of Rutherfordton, connecting with existing US 221 near SR 1355 (Mountain Creek Road) north of Rutherfordton. This alternative is approximately 13 miles long and was eliminated because it will not serve the towns of Spindale and Ruth as well as a bypass on the eastern side of Rutherfordton and it would divert the least amount of traffic from existing

US 221. Additionally, this alternative would affect a water supply watershed while other alternatives would not.

Alternative 1

Alternative 1 is located on the east side of Rutherfordton. Existing US 221 would be widened to four lanes with a median from US 74 Bypass to north of SR 2194 (Poors Ford Road). North of SR 2194, a bypass on new location would be built around the east side of Rutherfordton, connecting back with existing US 221 at SR 1376 (Lane Road), north of Rutherfordton. Alternative 1 would cross SR 2201 (Thunder Road), US 74 Business/US 221 Alternate, US 74 Alternate (Railroad Avenue), US 64 and SR 1520 (Rock Road). This alternative matches the alignment shown for the proposed Rutherfordton Bypass on the 1997 Rutherford County Thoroughfare Plan. Alternative 1 is approximately 13 miles long and was eliminated because it would impact a proposed county landfill, would impact the largest amount of streams and would also affect a property listed on the National Register of Historic Places.

Alternative 2

Alternative 2 is located on the east side of Rutherfordton. Existing US 221 would be widened to four lanes with a median from US 74 Bypass to near SR 2194 (Poors Ford Road), south of Rutherfordton. A bypass on new location would be built around the east side of Rutherfordton, connecting back with existing US 221 near SR 1536 (Old US 221) north of Rutherfordton. This alternative would tie into existing US 74 Alternate north of SR 2201 (Thunder Road) and follow the existing alignment of US 74 Alternate until north of US 74 Business/US 221Alternate. North of US 74 Business/US 221 Alternate, the alternative would continue on new location. This alternative is approximately 12 miles long and was eliminated because it would affect the most homes, would affect a large amount of streams and would potentially impact an industrial complex.

Alternative 5

Alternative 5 is located on the east side of Rutherfordton. Existing US 221 would be widened to four lanes with a median from US 74 Bypass to near SR 2194 (Poors Ford Road). A bypass on new location would be built around the east side of Rutherfordton connecting back with existing US 221 north of SR 1526 (Edwards Road). This alternative would cross US 74 Business/US 221 Alternate. North of US 74 Business/US 221A, the alternative turns eastward, crossing US 74A (Railroad Avenue) before turning northward. North of US 64, the alternative crosses SR 1520 (Rock Road) passing between the Broyhill furniture plant and Gilbert Town (a National Register-listed historic district) before tying back into existing US 221. This alternative was suggested by local officials at the citizens informational workshop for the project. The local officials suggested this alternative due to concerns Alternative 2 would affect an industrial site. NCDOT staff evaluated the alternative and presented it to the NEPA/404 merger team following the workshop. This alternative is approximately

11 miles long and was eliminated because it would potentially affect the Gilbert Town Historic District.

2.3 DETAILED STUDY ALTERNATIVES

Following the citizens informational workshop for the project, four of the preliminary bypass alternatives were selected for detailed study. These alternatives are listed below:

Alternative 3
Alternative 4
Alternative 6
US 74A Bypass

The NEPA/404 merger team concurred with the alternatives to be studied in detail at a meeting held on April 17, 2002. A copy of the concurrence form is included in Appendix C.

A comparison of the detailed study alternatives is presented in Table 2-3 below. These detailed study alternatives are shown on Figure 2-2 and described in Section 2.3.1. The typical sections of the detailed study alternatives are described in Section 2.3.2.2.

Table 2-3
Detailed Study Alternatives Comparison

	Alternatives			
	3	**4**	**6**	**US 74A**
Residential Relocatees	99	163	91	88
Business Relocatees	27	43	26	32
Wetlands Affected (Ac.) (Delineated)	0.8	0.6	1.3	0.7
Stream Impacts (Ft.)	12,063	8,734	13,113	9,200
Dwarf-Flowered Heartleaf Impacts (Sq Ft.)	371.5	172.3	371.5	371.5
Impacted Noise Receptors	9	0	0	2
Length New Location (Miles)	7.2	4.3	8.3	3.8
Total Length (Miles)	8.5	9.3	9.4	8.7
Total Cost (Million)	$223.0	$219.0	$234.0	$200.0

Impacts based on field surveys and design at time of selection of the preferred alternative (February 2010).

2.3.1 Description of Detailed Study Alternatives

2.3.1.1 Alternative 3 (Selected)

Alternative 3 would involve widening a portion of existing US 221 and constructing a bypass on the east side of Rutherfordton. Existing US 221 would be widened to four lanes with a median from US 74 Bypass to south of SR 2194 (Poors Ford Road). From south of SR 2194 to existing US 221 north of Rutherfordton, a bypass on new location would be built around the east side of Rutherfordton. This new location roadway would cross SR 2201 (Thunder Road), US 74 Business/US 221 Alternate and US 64 before connecting back with existing US 221 at SR 1536 (Old US 221) north of Rutherfordton. US 221 would then be widened from SR 1536 (Old US 221) to SR 1366 (Roper Loop Road). The total length of Alternative 3 is 8.5 miles.

Alternative 3 was selected as the recommended alternative for the proposed bypass. The NEPA/404 merger team concurred with the selection of this alternative at a merger team meeting held on February 17, 2010. Section 2.4.1 discusses the selection of Alternative 3.

2.3.1.2 Alternative 4

Alternative 4 would involve widening existing US 221 and constructing a "shallow" bypass of downtown Rutherfordton. Existing US 221 would be widened to four lanes with a median from US 74 Bypass to SR 2271 (Industrial Park Road), just south of downtown Rutherfordton. A bypass on new location would be constructed from SR 2271 extending around the east side of downtown Rutherfordton and connecting back with existing US 221 near the existing US 64 interchange. US 221 would then be widened from US 64 to SR 1366 (Roper Loop Road). The total length of Alternative 4 is 9.3 miles.

Although Alternative 4 would affect less wetlands and streams than any of the other alternatives, Alternative 4 would affect substantially more homes and businesses than any of the other alternatives. Alternative 4 would also not provide as high a level of service as some of the other alternatives because the majority of the project would involve widening existing US 221 with partial control of access. For these reasons, Alternative 4 was not selected for the project (see Section 2.4.1).

2.3.1.3 Alternative 6

Alternative 6 would involve widening existing US 221 and constructing a bypass on the east side of Rutherfordton. Existing US 221 would be widened to four lanes with a median from US 74 Bypass to south of SR 2194 (Poors Ford Road). From south of SR 2194 to existing US 221 north of Rutherfordton, a bypass on new location would be built around the east side of Rutherfordton. This roadway would cross SR 2201 (Thunder Road) and US 74 Business/US 221 Alternate. At US 74 Business/US 221 Alternate, Alternative 6 continues east of the Town of Ruth, crossing US 64 and SR 1520 (Rock Road) before tying into existing US 221 north of SR 1367 (Thompson Road). US 221 would then be widened from north of SR 1367 to SR 1366 (Roper Loop Road). The total length of Alternative 6 is 9.4 miles.

Alternative 6 would affect more wetlands and streams and would cost more than any of the other alternatives. For these reasons, Alternative 6 was not selected for the project (see Section 2.4.1).

2.3.1.4 US 74A Bypass Alternative

The US 74A bypass alternative would involve widening existing US 221 to four lanes with a median from US 74 Bypass to south of SR 2194 (Poors Ford Road). From south of SR 2194, a bypass on new location would be constructed connecting existing US 221 with existing US 74 Alternate (Railroad Avenue) at US 74 Business/US 221 Alternate. Existing US 74 Alternate would be widened to multi-lanes from US 74 Business/US 221 Alternate to north of US 64. North of US 64, the bypass would be extended on new location, connecting SR 1536 (Old US 221) and existing US 221. US 221 would then be widened to SR 1366 (Roper Loop Road). The total length of this alternative is 8.7 miles.

Alternative US 74A would cost less and affect less homes than any of the alternatives. This alternative would also have the second lowest stream and wetland impacts. However, Alternative US 74A would have a very detrimental effect on the Town of Ruth. Alternative US74A would relocate 30 percent (9 of 30) of the businesses within the Town of Ruth and may require the relocation of the largest employer in Ruth. For these reasons, Alternative US 74A was not selected for the project (see Section 2.4.1).

2.3.2 Design Criteria for Detailed Study Alternatives

2.3.2.1 Design Speed

A 70 MPH design speed is proposed for portions of the project on new location. A 60 MPH design speed is proposed for portions of the project which involve widening existing US 221. A 50 MPH design speed is proposed for portions of the US 74A Bypass Alternative along existing US 74A.

2.3.2.2 Typical Sections

Figure 2-3 shows the proposed typical sections for the bypass alternatives. The roadway typical section will be a four-lane roadway with a 46-foot median, with the exception of portions of the US 74A Alternative along existing US 74 Alternate. A 23-foot raised median and curb and gutter with a ten-foot berm is proposed for portions of the US 74A Alternative routed along existing US 74 Alternate. Twelve-foot lanes are proposed for all of the alternatives. Ten-foot grassed shoulders (four-foot paved) are proposed for portions of the project with a 46-foot median.

2.3.2.3 Structures

Table 2-4 below presents the proposed major hydraulic structures (72 inches or larger in diameter) for the detailed study alternatives. Figure 3-7 shows the location of these sites.

Table 2-4
Proposed Hydraulic Structures for Detailed Study Alternatives

Site No.	Stream	Alternative	Proposed Structures
1	B	3, 4, 6, & US 74A	Retain and Extend Existing 2 @ 5'x 6' RCBC
2	1C	3, 6, and US 74A	New 1 @ 72" RCP
3	2B	3, 6, and US 74A	New 1 @ 6'x 6' RCBC
4	3-2C Cleghorn Creek	4	Spanning Structure
5	2C, 3-2C Stonecutter Creek (also crosses SR 2201)	3, 6, and US 74A	Dual Bridges, 36' wide and 927' long
6	2-F	4	Retain and Extend Existing 2 @ 6'x 8' RCBC
7	2-G Cleghorn Creek	4	New 2 @ 9'x 9' RCBC
8	1J	3, 6, and US 74A	New 1 @ 6'x 7' RCBC
9	2-G Cleghorn Creek	4	New 2 @ 9'x 9' RCBC
11	3X	6	New 1 @ 6'x 7' RCBC
12	3G Hollands Creek	6	New 2 @ 9'x 10' RCBC
13	2K	3 & US 74A	New 2 @ 8'x 8' RCBC
14	3F Hollands Creek	4	Retain and Extend Existing 2 @ 7'x 7' RCBC

2.3.2.4 Proposed Right of Way and Access Control

A total right of way width of approximately 300 feet is proposed for new location portions of the proposed bypass. Right of way widths greater than 300 feet may be required in some areas with high fill slopes. Narrower right of way widths ranging from 115 feet to 250 feet are proposed for portions of the project which involve widening existing roads. Full control of access is proposed for new location portions of the project. Partial control of access (one access per parcel for properties with no other access) is proposed for portions of the project which involve widening existing roads.

2.3.3 Traffic Operations of Detailed Study Alternatives

2.3.3.1 2010/2030 Build Traffic Projections

Projected average daily traffic (ADT) volumes for the years 2010 and 2030 for the detailed study alternatives and the surrounding roadway network are shown on Figures 2-4 to 2-7.

2.3.3.2 2010/2030 Build Capacity Analysis

All of the detailed study alternatives would operate at an acceptable level of service in both 2010 and 2030. The levels of service for the different alternatives are shown on Figures 2-8 to 2-11.

2.3.4 Safety Effects of Detailed Study Alternatives

The construction of any of the detailed study alternatives would reduce the amount of traffic on existing US 221. This reduction in traffic volumes, in turn should reduce the total number of accidents occurring on the existing roadway. Existing US 221 would continue to have occurrences of accidents. However, the anticipated reduction in traffic volumes would be expected to have a corresponding reduction in the type of accidents generally associated with traffic congestion.

Reduction in traffic volumes and conflicts would likely reduce the total number of accidents occurring on both the urban and rural sections of the existing roadway, leading to the assumption that property damage and injury severity would be reduced.

Severe accidents associated with high-speeds anticipated on the proposed US 221 new location alternatives are expected to be minimal. The new location roadway would be a four-lane divided facility designed to accommodate high-speed traffic. The proposed 46-foot median would provide positive separation between opposing traffic, reducing the likelihood of head-on collisions. Therefore, the new location alternatives are expected to be safer at higher speeds than existing US 221 and would carry a greater volume of traffic.

2.3.5 Cost Estimates for Detailed Study Alternatives

Preliminary cost estimates for each detailed study alternative are presented in Table 2-5.

Table 2-5
Cost Estimates for Detailed Study Alternatives (Millions)

	Alt. 3 (Selected)	Alt. 4	Alt. 6	US 74A Alt.
Right of Way Acquisition	$49.0	$60.0	$45.0	$46.0
Utility Relocation	$1.7	$1.6	$2.0	$2.5
Wetland/Stream Mitigation	$6.0	$4.3	$7.0	$5.0
Construction	$166.0	$153.0	$180.0	$146.0
Total Cost	$223.0	$219.0	$234.0	$200.0

Costs at time of selection of the preferred alternative (February 2010).

2.4 SELECTED ALTERNATIVE (ALTERNATIVE 3)

2.4.1 Selection of Alternative 3

As discussed in Section 2.3.1, Alternative 3 was selected for the proposed bypass. The NEPA/404 merger team concurred with the selection of this alternative at a merger team meeting held on February 17, 2010. Alternative 3 was selected for this project for the following reasons:

- Alternative 3 would affect fewer homes and businesses than Alternative 4.
- Alternative 3 would affect less wetlands and streams than Alternative 6.

Although Alternative 3 would affect more wetlands and streams and relocate more homes than Alternative US 74A, Alternative 3 has the following advantages over Alternative US 74A:

- Alternative 3 provides a higher level of service than Alternative US 74A (level of service B versus D).

- Alternative 3 potentially provides increased safety. Full control of access facilities like Alternative 3 typically have lower accident rates than partial control of access facilities like Alternative US 74A.

- Alternative 3 will provide a lower travel time for motorists using US 221 in the project area than any of the other alternatives.

- Alternative 3 has less potential for indirect and cumulative impacts than Alternative US 74A. No access will be provided along Alternative 3 between US 74 Business-US 221A and US 64, while one access per property will be provided in this area with Alternative US 74A.

- Alternative US 74A will relocate 30 percent (9 of 30) of the businesses within the Town of Ruth and may require the relocation of the largest employer in Ruth. Alternative 3 will only affect five businesses within Ruth.

- Most comments from citizens and local officials after the public hearing have been in favor of Alternative 3.

The selection of Alternative 3 for the proposed bypass was announced to area residents by a newsletter sent out in March 2010.

2.4.2 Alternative 3 Design Changes

Following the selection of Alternative 3, changes were made to the design in an effort to reduce wetland and stream impacts and in response to comments from the Town of Rutherfordton.

A grade separation is now proposed between the bypass and Green Street, in response to a request from the Town of Rutherfordton. Previously, the project design proposed Green Street to be cul-de-saced on either side of the bypass. The proposed grade separation will provide connectivity between downtown Rutherfordton and the Railroad Avenue/Ruth area. Rutherfordton provides fire protection for the Town of Ruth. A grade separation at Green Street would reduce the effect of the bypass on emergency response time. This grade separation will not affect any additional wetlands or streams but will require the relocation of 17 additional homes.

A connector road is now proposed between SR 1520 (Rock Road) and US 64. Currently, Rock Road intersects US 64 across from US 74A (Railroad Avenue). The proposed bypass interchange with US 64 will require removing the connection between Rock Road and US 64. The Town of Rutherfordton asked that a connection between Rock Road and US 64 be provided. This connector road would require the relocation of six homes but would not affect any streams or wetlands.

The alignment of the proposed connection between SR 1536 (Old US 221) and SR 1520 (Rock Road) has been redesigned to avoid Holland's Creek (2K), an unnamed

tributary (UT2K) and a sewer lift station. This design change will reduce stream impacts by approximately 288 feet at this location.

2.4.3 Summary of Environmental Effects of Alternative 3

Table 2-6 presents the expected environmental effects of Alternative 3 as currently proposed.

Table 2-6
Alternative 3 Environmental Effects

Residential Relocatees	122
Business Relocatees	27
Business Employees Affected (Estimated)	102
Wetlands Affected (Acres) (Delineated)	0.76
Stream Impacts (Feet)	9,889
Dwarf-Flowered Heartleaf Impacts (Acres)	0.23
Forested Areas (Acres)	197
Prime/Important Farmland Affected (Acres)	87
Impacted Noise Receptors	9
Length New Location (Miles)	7.2
Total Length (Miles)	8.5
Total Cost (Millions)	$203.9

Impacts based on current design and field surveys.

3.0 AFFECTED ENVIRONMENT

3.1 COMMUNITY CHARACTERISTICS

The demographic area encompasses the towns of Ruth, Rutherfordton and Spindale. The project study area includes portions of all three towns.

3.1.1 Population Characteristics

Rutherford County's population grew at a relatively slow pace (10.5%) between 1990 and 2000. The demographic area grew somewhat more rapidly than the County (12.9%). The Town of Rutherfordton experienced 14.2% growth, while the Town of Spindale lost population (-0.4%), as did the Town of Ruth (-10%). According to the 2000 census, Rutherford County had a population of 62,899 in the year 2000. The Town of Rutherfordton had a population of 4,131 in 2000. The Town of Spindale had a population of 4,022 and the Town of Ruth had a population of 329 in 2000.

In comparison to North Carolina, Rutherford County and the demographic area have much higher percentages of Whites and lower percentages of other racial groups. The demographic area is 82.9% White, 14.9% African American, 1.1% Hispanic and less than 1% other races (American Indian, Asian, Pacific Islander, etc.). Rutherfordton, Ruth and Rutherford County have similar racial distributions. The Town of Spindale, on the other hand, is much more similar to the State's racial distribution, with a higher minority population.

Demographic assessment does not indicate the presence of a Limited English Proficiency (LEP) language group which exceeds the United States Department of Justice's "Safe Harbor" thresholds.

3.1.2 Economic Characteristics

In 2000, the median household income for the demographic area was $32,931. This is lower than the median household incomes for Rutherfordton ($37,941), but higher than the median household incomes for Spindale ($23,365), Ruth ($32,083) and Rutherford County ($31,122).

3.1.3 Employment

The services industry added the most jobs in Rutherford County between 1990 and 2000, with a total of nearly 1,800 more jobs in 2000 than in 1990. Much of this growth was driven by the health services industry. A total of nearly 2,000 jobs were lost in the manufacturing sector during the same timeframe, mainly due to the textile industry, which declined from 5,894 jobs in 1990 to 3,468 jobs in 2000.

3.1.4 Community Facilities and Services

There are a number of noteworthy public facilities within the demographic area, including:

- A Spindale sewer pump station on US 221 across from the Ultimate Textile plant
- A Rutherford County waste water treatment facility at Thunder Road and US 221
- An existing and proposed landfill at the end of Laurel Hill Drive between US 221 and US 74 Alternate (north of Thunder Road)
- A Veterans Administration out-patient clinic in a shopping center on Charlotte Road in Rutherfordton
- RS Middle School at Charlotte Road and Railroad Avenue
- Trinity School at US 64 and Deter Court
- RS Central High School at US 221 and Old US 221
- The Overmountain Victory National Historic Trail
- A walking path along the abandoned railroad parallel to Railroad Avenue/Rock Road/US 221
- Several churches are located throughout the demographic area

3.1.5 Community Cohesion

Other than the main streets of Rutherfordton and Spindale, land use throughout the area is predominantly single family residential with some scattered retail and industrial facilities located along major thoroughfares. Outside of the towns, land is mostly rural, with only sparse residential development and small commercial businesses at major intersections.

Most of the neighborhoods in Rutherfordton are older, established neighborhoods with no clear boundaries or subdivision names. However, there are some named communities or residential areas which appear to have a more cohesive nature.

Ellington Heights is an older subdivision located north of SR 2101 (Thunder Road) on the west side of US 74 Alternate. The area along SR 2203 (Laurel Hills Drive), which is located north and west of Ellington Heights, was identified as a cohesive, minority and low-income community. The community near Second Street in Rutherfordton was also identified as a minority and low-income community. The area along Collett Street and Green Street in Rutherfordton was identified as a cohesive middle-income community, as was the Thermal Valley subdivision, located north of Rutherfordton between existing US 221 and SR 1536 (Old US 221).

3.2 LAND USE AND TRANSPORTATION PLANNING

3.2.1 Land Use Plans

3.2.1.1 Existing Land Use

Rutherford County is predominantly rural. The towns of Rutherfordton and Spindale are two of the largest towns in the county. Existing land use in the project study area varies from undeveloped forested or agricultural land to intensively developed commercial or industrial uses. Most of the land in the study area is residential. Figure 3-1 presents the existing land use in Rutherford County.

3.2.1.2 Existing Zoning

Existing zoning for Rutherfordton designates the area surrounding the proposed project as R-2, (7,000 square-foot minimum residential lots), C-2, (highway-related commercial (along Railroad Avenue) and CI-1, industrial-related commercial (mainly along Industrial Park Road).

Existing zoning for Spindale designates the land along US 74 Alternate between Thunder Road and US 74 Business as R-10 and R-20 (numbers indicate minimum residential lot size). Land along US 74 Business is designated as G-C (General Commercial). A swath of land along Railroad Avenue is designated as HC-1 (Heavy Commercial/Industrial).

Rutherford County does not currently have countywide zoning.

3.2.1.3 Future Land Use

Rutherford County revised their *Draft Land Use Plan 1993-2003* in 2001. The plan is designed to be a practical guide for organized growth and development, and for the provision of community needs. Figure 3-2 shows future land use for Rutherford County.

The Town of Rutherfordton approved a master plan for the Town in 2006. Some of the goals of the plan were to create sidewalks and trails that connect neighborhoods and public spaces, encourage a creative and artistic downtown with shops and restaurants, and to preserve the significant history and heritage unique to the area. This plan made several recommendations for improving downtown Rutherfordton and for proposed land uses within the Town.

The Town of Rutherfordton also hired a consultant to prepare a corridor study for the proposed US 221 Bypass in 2006. The purpose of that study was to identify opportunities for development along existing roadway corridors leading from the bypass into downtown, determine appropriate future land uses and identify the Town's preferred alternative for the bypass. The land use recommendations from the Corridor Study were

made a part of the Town's master plan. Rutherfordton's Corridor Study recommended the US 74A Alternative (called Alternative 1 in the Town's study) for the proposed bypass. In 2009, the town council passed a resolution supporting Alternative 3 for the proposed bypass.

The Town of Spindale does not have a formal plan to date but there are several funded projects that involve paving walking trails, rebuilding sidewalks and landscaping that will enhance the surrounding communities.

3.2.2 Transportation Plans

3.2.2.1 Highway Plans

The 1997 Rutherford County Urban Area Thoroughfare Plan was adopted by the Town of Rutherfordton and NCDOT on September 9, 1997 and November 7, 1997, respectively (see Figure 3-3).

The approved 2009-2015 North Carolina State Transportation Improvement Program (STIP) identifies the proposed project as TIP Project R-2233B. This project is one of three transportation improvement projects within the study area. TIP Project R-2233A involves widening existing US 221 from the South Carolina State Line to US 74 Bypass. TIP Project R-2597 involves widening US 221 north of SR 1366 (Roper Loop Road) in Rutherford County to SR 1153 in McDowell County.

3.2.2.2 Transit Plans

There are currently no approved transit plans for the project area.

3.2.2.3 Bicycle/Pedestrian Plans

There are currently no approved bicycle/pedestrian plans for the project area, but one of the goals of the Rutherford County Comprehensive Arts, Parks and Recreation Plan is to promote biking on nature trails and in municipalities through the use of bike lanes. Rutherfordton's master plan shows several potential walking trails in the vicinity of downtown, including one trail which would be utilized for the Overmountain Victory National Historic Trail (OMVNHT). The OMVNHT follows the route of Revolutionary War soldiers through Virginia, Tennessee, North Carolina and South Carolina (see Section 3.4.3).

3.3 PHYSICAL ENVIRONMENT CHARACTERISTICS

3.3.1 Noise Characteristics

Noise is basically defined as unwanted sound. Highway noise, or traffic noise, is usually a composite of noises from engine exhaust, drivetrain and tire-roadway interaction.

The magnitude of noise is typically described by its sound pressure. Sound pressures described in decibels are called sound pressure levels and are often defined in terms of frequency-weighted scales (A, B, C and D). The A-weighted scale is used almost exclusively in traffic noise measurements because it places the most emphasis on the frequency range to which the human ear is most sensitive. Sound levels measured using A-weighted decibel scales are often expressed as dBA.

Noise measurement sites were selected to represent sensitive land uses within the study area. The existing Leq noise levels in the project area, measured 50 feet from the edge of pavement, ranged from 60 dBA to 67 dBA. A background noise level of 49 dBA was used for this study in areas where traffic noise was not the predominant source.

3.3.2 Air Quality

Air quality is defined according to criteria established by the US Environmental Protection Agency (USEPA). Under the Clean Air Act (CAA), these criteria, designated as the National Ambient Air Quality Standards (NAAQS), have been established for six air pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10}) and ozone (O_3). Motor vehicles are known to emit carbon monoxide (CO), nitrogen oxide (NO), hydrocarbons (HC), sulfur dioxide , particulate matter , and lead (Pb), listed in decreasing order of emission.

USEPA also regulates Mobile Source Air Toxics (MSATs), which are a subset of air toxics defined by the CAA. MSATs are compounds emitted from highway vehicles and non-road equipment.

All areas within North Carolina are designated as either attainment, non-attainment or unclassifiable with respect to each of the six pollutants under the NAAQS. Areas that have pollutant concentrations below the NAAQS are designated as attainment; while areas where the NAAQS are exceeded are designated as non-attainment. In non-attainment areas, a State Implementation Plan (SIP) is developed to bring the area into compliance with the NAAQS. Areas where available data are insufficient for classification are designated as unclassifiable. The proposed project is located in an attainment area.

3.3.3 Farmland

North Carolina Executive Order Number 96, *Preservation of Prime Agricultural and Forest Lands,* requires all state agencies to consider the impact of land acquisition and construction projects on prime farmland soils, as designated by the US Natural Resources Conservation Service (NRCS). These soils are determined based on criteria such as crop yield and level of input of economic resources.

Rutherford County adopted a Voluntary Farmland Preservation Program Ordinance in 2000. Property owners may enter into a conservation agreement with the County which prohibits non-farm use or development for at least 10 years. Participants may remove all or a portion of their land from the program by giving notice to the County Agricutural Advisory Board. The Ordinance also includes a provision that no state or local public agency may formally initiate any action to condemn any interest in qualifying farmland within a Voluntary Agricultural District until the agency has requested the Rutherford County Agricultural Advisory Board to hold a public hearing on the proposed condemnation.

Table 3-1 presents prime farmland soils in the project area. Figure 3-4 shows the location of the six most common soils within the project area.

Table 3-1
Project Study Area Prime Farmland Soils

Soil Name	Soil Symbol	Crop Yield
Cecil Sandy Clay Loam	CaB2	Cotton, corn, small grain, soybeans
Madison Clay Loam	MaC2	Corn, small grain, soybeans
Pacolet Sandy Clay Loam	PaC2	Cotton, corn, small grain, soybeans

3.3.4 Utilities

Electric power is supplied throughout Rutherford County by Duke Power, Rutherford Electric Membership Corporation and Forest City.

The two major water sources in the county are the Broad River (Class IV) and the Second Broad River (Class IV). There are two major water systems in Rutherford County, both of which rely on surface water treatment plants for water supply and production. The water treatment plants that serve the area are the Broad River Water Authority Plant and the Forest City Water Treatment Plant.

There are three major municipal sewer systems in Rutherford County. The systems serve Forest City, Spindale and Rutherfordton. The Rutherfordton Wastewater Treatment Facility is located near the intersection of US 221 and Oak Street. The

Spindale Wastewater Treatment Facility is located in the northeast section of town off Ecology Drive. The Forest City Riverside Drive Water Reclamation Facility is located on Riverside Drive in Forest City.

3.3.5 Hazardous Materials

Hazardous material sites are regulated by the Resource Conservation Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Hazardous materials are generally defined as material or a combination of materials that present a potential hazard to human health or the environment.

Geographic Information System (GIS) data was consulted to identify known sites of concern and a field reconnaissance was conducted along the project corridors in December 2008. A search of appropriate environmental agency databases and Sanborn Map data was also performed to assist in evaluating sites identified during the study.

The study revealed 14 sites which may contain USTs, a junkyard and eight automotive repair facilities within the current study corridors. GIS also identified one landfill in the project vicinity, the Rutherford County Landfill, located south of Rutherfordton between US 221 and US 74A on the north side of SR 2201 (Thunder Road).

GIS also identified one inactive Superfund site within the project corridor. The Superfund site is listed as Reeves Brothers and is west of Railroad Avenue, between Oak Street and Reeves Street. Reeves Brothers (now operating as Trelleborg) is an inactive Superfund site (ID# NC-D08367616). In 1974, a tanker truck overturned on the property, spilling 5,000 gallons of toluene. In 1979, 100 gallons of toluene were spilled on Oak Street. No documentation could be found from the NC Superfund Section indicating either of these spills was cleaned up. A ground water incident was also recorded with the NC Division of Water Quality for this site in January 2006 (Incident # 87678). No details regarding this incident were available. Based on the information available, it appears the soil and groundwater are likely contaminated with solvents.

A detailed field reconnaissance survey will be performed within the selected corridor (Alternative 3) prior to right of way acquisition. Table 3-2 lists potentially contaminated properties within the project study corridors. The locations of these sites are shown on Figure 3-5.

Table 3-2
Potentially Contaminated Properties in Project Corridors

Site #	Type	Location	Anticipated Contamination	Anticipated Severity
1	UST	500 S. Main St, Rutherfordton	Petroleum contaminated soils	Low
2	UST	100 Railroad Ave, Rutherfordton	Petroleum contaminated soils	Low
3	UST	201 Charlotte Rd, Rutherfordton	Petroleum contaminated soils	Low
4	UST	367 Railroad Ave, Rutherfordton	Petroleum contaminated soils	Low
5	UST	509 Railroad Ave, Rutherfordton	Petroleum contaminated soils	Low
6	UST	531 Railroad Ave, Rutherfordton	Petroleum contaminated soils	Low
7	UST	657 Railroad Ave, Rutherfordton	Petroleum contaminated soils	Low
8	Automotive	841 Railroad Ave, Rutherfordton	Petroleum-solvent contaminated soils	Low
9	Automotive	841 Railroad Ave, Rutherfordton	Petroleum-solvent contaminated soils	Low
10	Automotive	841 Railroad Ave, Rutherfordton	Petroleum-solvent contaminated soils	Low
11	UST	137 US 64, Rutherfordton	Petroleum contaminated soils	Low
12	Automotive	145 US 64, Rutherfordton	Petroleum-solvent contaminated soils	Low
13	Automotive	196 US 64, Rutherfordton	Petroleum-solvent contaminated soils	Low
14	UST	228 US 64, Rutherfordton	Petroleum contaminated soils	Low
15	UST	285 US 64, Rutherfordton	Petroleum contaminated soils	Low
16	Junk Yard	280 E. Mountain St, Rutherfordton	Chemical & petroleum contaminated soils	Low
17	Automotive	156 E. Mountain St, Rutherfordton	Petroleum-solvent contaminated soils	Low
18	UST	163 E. Mountain St, Rutherfordton	Petroleum contaminated soils	Low
19	UST	149 E. Mountain St, Rutherfordton	Petroleum contaminated soils	Low
20	UST	791 N. Main St, Rutherfordton	Petroleum contaminated soils	Low
21	Automotive	2042 Old US 221 N, Rutherfordton	Petroleum-solvent contaminated soils	Low
22	Automotive	869 US 221 N, Rutherfordton	Petroleum-solvent contaminated soils	Low
23	UST	923 US 221 N, Rutherfordton	Petroleum contaminated soils	Low
24	Industrial	751 Railroad Ave., Rutherfordton	Solvent contaminated soils	Low to Moderate

3.3.6 Floodplains/Floodways

Rutherford County and the Town of Rutherfordton are participants in the National Flood Insurance Program. All of the alternatives will cross floodplains. The floodplain areas in the vicinity of the stream crossings are rural.

3.3.7 Protected Lands

3.3.7.1 State/National Forests

No State or National Forest lands exist within the project area.

3.3.7.2 Game lands

No game lands exist in the project study area.

3.4 CULTURAL RESOURCES

3.4.1 Historic Architectural Resources

The proposed project is subject to North Carolina General Statute 121-12(a). Although no federal funds will be used for the construction of the proposed project, the project will require a permit from the US Army Corps of Engineers. Section 106 of the National Historic Preservation Act of 1966, as amended, applies to federal permit areas along the project. Surveys for historic architectural resources were conducted in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended.

A preliminary survey for Historic Architectural Resources was conducted by NCDOT in 1999. The survey consisted of a cursory field survey and limited historical background research. USGS maps were used as guides in the field to identify historic resources and evaluate their potential for National Register of Historic Places eligibility. During the survey, a total of 145 resources at least 50 years old were identified within the Area of Potenial Effects (APE). Of these resources, three are listed on the National Register and eight were evaluated and determined to be eligible for the National Register. The State Historic Preservation Office (HPO) concurred with these findings in a letter dated April 25, 2003 (see Appendix A). These resources are shown on Figure 3-6.

After the detailed study alternatives were identified, a more intensive survey of historic architectural resources was conducted for these alternatives.

Properties Listed on the National Register

Rutherfordton-Spindale Central High School

This property is located at the northwest corner of US 74A Business and US 74 Bypass in Rutherfordton. Constructed in 1924-1925, the Rutherfordton-Spindale Central High School ranks among the state's notable schools erected during the consolidation era of the 1920s. Architect, Hugh White, designed this handsome, red brick, Classical Revival building on a dramatic hilltop site. The prominent landscape architect, Earle Summer Draper, of Charlotte designed the grounds to emphasize the building's public presence. According to the 1992 National Register nomination, the school is significant in the areas of education and architecture.

Main Street Historic District (Rutherfordton)

This site is bounded by Third street (north), Washington street (west), Taylor street (east), and Court street (south).

The well-preserved historic district encompasses Rutherfordton's commercial core. The blocks of contiguous, red brick, commercial buildings reflect the town's rapid growth with the arrival of the railroad during the late nineteenth and early twentieth centuries. According to the 1995 National Register Nomination, the historic district is eligible for commerce, politics and government and architecture.

Gilbert Town

This site is located on both sides of SR 1520 (Rock Road) approximately 250 yards north of the SR 1539 (Gilbert Town Road) intersection. Gilbert Town was the first county seat in the 16 western counties of North Carolina. It is also associated with the Battle of Kings Mountain during the American Revolution. Both the British and American armies camped at this location within days of each other prior to the battle. Gilbert Town was added to the National Register of Historic Places in August 2006.

Properties Eligible for the National Register

Proposed Boundary Expansion of Main Street Historic District (Rutherfordton)

This site is bounded by North Main, Carnegie, North Washington, and Fernwood streets. It is recommended that the boundaries of the existing historic district be expanded to encompass nearby churches and residences that were built during the same period as the Main Street business district. The boundary expansion contains a notable collection of churches along the east side of North Main Street. Just north of the existing historic district, within the 400 block, the First Baptist and the First Methodist churches were built in the 1920s with handsome, red brick, Colonial Revival designs. St. John's Episcopal Church (ca. 1848) is located on the 600 block on North Main. This remarkably

well-preseved frame, gable front church has bold Greek Revival elements. Farther north, in the 900 block, stands St. Francis Episcopal Church (1898), an impressive, stone, Gothic Revival building.

Both North Main and North Washington streets feature a variety of nineteenth and early twentieth centurty domestic architecture. One example is the Queen Anne Greek Revival Carrier-McBrayer House located on the west side of the 400 block of North Main. The house was listed in the National Register in 1992. Other Queen Anne houses are present throughout the proposed expanded historic district. The neighborhood north of the business district also contains notable Colonial Revival and Tudor Revival houses and bungalows. The proposed expansion of Main Street Historic District was recommended as eligible for the National Register under Criterion A for community planning and development and Criterion C for architecture.

Dunkard's Creek Baptist Church

This church is located on the east side of US 221 near SR 2194. Constructed ca. 1900, Dunkard's Creek Baptist Church is a well-preserved one story, weatherboard church. A small cemetery associated with the church stands in a grove of trees just east of the church. This cemetery contains both marked and unmarked headstones that date primarily from the late nineteenth and early twentieth centuries. The Dunkard's Creek Baptist Church is recommended eligible for the National Register under Criterion C for architecture and meets Criterion Consideration A for religious properties.

Homer and Bertha Sparks House

This house is located on the east side of Railroad Avenue facing the railroad corridor. The Homer and Bertha Sparks House ranks among the town's finest remaining early twentieth century residences. The house blends Queen Anne and classically inspired elements. In addition to the house, the property also includes a 1907 brick smokehouse and a later, frame garage/storage shed. This property is recommended as eligible for the National Register under Criterion C for architecture.

Robert J. Norris House

This house is located on the southeast corner of Railroad Avenue and US 64 in Ruth. Built around the 1880s, the Robert J. Norris House is a traditional, two story, single pile dwelling which has a well-preserved main block decorated with late nineteenth century sawnwork. The property also includes two frame sheds that appear to be contemporary with the construction of the house. The Robert J. Norris House is considered eligible for the National Register under Criterion C for architecture.

Ruth Elementary School

This property is located on the south side of US 64, 0.2 mile east of US 221. This well-preserved school was constructed in 1929. The main facility is a one story, red

brick building with Colonial Revival details. The tree-shaded grounds also include a 1951 gymnasium and a ca. 1960 classroom building. The Ruth Elementary School is recommended eligible for the National Register under Criterion A for education.

Washington Geer House

This house is located on the north side of US 64 at SR 1539. Although now vacant and in disrepair, the house retains notable original features as well as elements added in the 1920s. The dwelling's traditional two story, single pile form is distinguished by the two tiered, engaged porch which appears to be original. The site also contains a frame corncrib that appears to be contemporary with the house and a twentieth-century frame shed. The Washington Geer House is recommended eligible for the National Register under Criterion C for architecture.

Gilboa United Methodist Church

This church is located on the east side of SR 1532, 0.3 mile south of SR 1533. Constructed in 1886 and expanded in 1925, Gilboa United Methodist Church is a substantially intact, one story, frame church. A small cemetery stands to the north of the church, just beyond the abandoned railroad bed. The cemetery includes approximately 200 headstones including many that date from the 1890s into the early twentieth century. The Gilboa United Methodist Church is recommended eligible for the National Register under Criterion C for architecture and meets Criterion Consideration A for religious properties.

This property was evaluated in the survey but is no longer within the project's APE.

Yelton's Flour Mill

This property is located on West Main Street in Spindale, just east of US 74 A. The Mill was built in 1915 and experienced several expansions up into the 1950's. The core of the complex is comprised of a four-story gable-roof structure which houses milling and ventilation equipment. It also includes wooden grain bins, grain silos, offices, shipping and storage rooms. Historic signage is also evident on the building's corrugated metal exterior sheathing. Three warehouse buildings with gable roofs, corrugated metal exterior sheathing and open brick pier foundations are also situated on the site. Yelton's Flour Mill is eligible for listing in the National Register under Criterion A for the development of late-nineteenth and early-twentieth century milling production methods and Criterion C for architecture.

3.4.2 Archaeological Resources

An intensive archaeological survey was conducted within the study corridor for Alternative 3 during 2010.

The archaeological Area of Potential Effect is considered the proposed construction limits of the project. The intensive archaeological survey covered all of the

proposed construction limits. Subsurface shovel testing was conducted in areas of high probability within the proposed construction limits. As a result of the Phase I archaeological survey along US 221 conducted in 2010, seven new archaeological sites were recorded within the project APE. These cultural resources are one multi-component (prehistoric and historic) artifact scatter (31RF196/196), five isolated finds of prehistoric lithic material (31RF197-31RF201) and one sparse prehistoric lithic scatter (31RF202). These archaeological resources are recommended as not eligible for listing on the National Register of Historic Places. The final archaeological report has been forwarded to the US Army Corps of Engineers and the HPO for review.

3.4.3 Overmountain Victory National Historic Trail

The Overmountain Victory National Historic Trail (OMVNHT) passes through the project area. The OMVNHT extends through portions of Virginia, Tennessee, North Carolina and South Carolina. The trail follows the route of patriot militia, who were pursuing a British army in September and October of 1780. The patriot army defeated the British at the battle of Kings Mountain on October 7, 1780. Both armies camped within a few days of each other at Gilbert Town (see Section 3.4.1) prior to the battle.

The OMVNHT is managed by the National Park Service. Three routes are designated for the trail: the primary historic route (the actual route of the Patriot army), the walking route used by reenactors every year and the commemorative motor route.

The one-mile portion of the Isothermal Rail-Trail between US 64 and SR 1520 (Rock Road) follows the primary historic route. In the project area, the commemorative motor route follows US 64 east of existing US 221 north of Rutherfordton, existing US 221 from US 64 through downtown Rutherfordton to NC 108 and NC 108 west of existing US 221. Figure 3-6 shows the route of the OMVNHT in the project area.

3.5 NATURAL ENVIRONMENT CHARACTERISTICS

3.5.1 Soils/Topography

The predominant soils within the project area are shown on Table 3-3 below.

Table 3-3
Project Study Area Predominant Soils

Soil Name	Soil Symbol	Development Suitability	Crop Yield	Slope	Prime Farmland?
Cecil Sandy Clay Loam	CaB2	Well suited for urban development and local roads/streets	Cotton, corn, small grain, soybeans	2-8%	All areas are prime farmland
Chewacla Loam	ChA	Unsuited for urban development and local roads/streets	Corn, soybeans, small grain, vegetables	0-2%	No; prone to flooding
Madison Clay Loam	MaC2	Suited for urban development and local roads/streets	Corn, small grain, soybeans	8-15%	Farmland of statewide importance
Madison Clay Loam	MaD2	Unsuited for urban development and local roads/streets	Poorly suited, because of erodability	15-25%	No; slope issues
Pacolet Sandy Clay Loam	PaC2	Suited for urban development and local roads/streets	Cotton, corn, small grain, soybeans	8-15%	Farmland of statewide importance
Pacolet Sandy Clay Loam	PaD2	Unsuited for urban development and local roads/streets	Poorly suited, because of erodability	15-25%	No; slope issues

3.5.2 Biotic Communities and Wildlife

3.5.2.1 Terrestrial Communities and Wildlife

3.5.2.1.1 Terrestrial Communities

Five plant communities occur within the study area: Mesic Mixed Hardwood Forest (Piedmont Subtype), Dry-Mesic Oak-Hickory Forest, Disturbed-Maintained Communities, Wetland Communities, and Pine Forest. Mesic Mixed Hardwood Forest

(Piedmont Subtype) and Dry Mesic Oak-Hickory Forest can be classified as natural communities.

Mesic Mixed Hardwood Forest (Piedmont Subtype)

Under natural conditions, these forests are uneven-aged, with old trees present. Rare severe natural disturbances allow less shade-tolerant species to become established and remain in the community. Disturbed areas have increased amounts of pine and "weedy" hardwood species.

Scattered throughout the study area, this plant community occurs in many of the wooded areas along drainageways. Most of these areas remain wooded due to their steep topography. However, some locations have historically been used as refuse dump sites, which creates some disturbance in growth of the herbaceous layer. The canopy of this forest type is dominated by species such as beech, red oak, tulip poplar, red maple and other mesophytic species. American sycamore and green ash are less-dominant canopy species that are found in this community.

Dry-Mesic Oak-History Forest

These forests typically occur on mid-slopes, low ridges, upland flats and other dry-mesic upland areas, especially on acidic soils. Under natural conditions, these forests are uneven-aged, with old trees present. Rare severe natural disturbances, such as wind storms, open canopy gaps and allow increased regeneration of less shade-tolerant species. Disturbed areas have increased amounts of pine and "weedy" hardwood species. Dominance of these species will depend on the amount of disturbance.

Within the study area, this plant community generally dominates the uplands. This forest can be found on side slopes, upland flats and some lower slopes where natural vegetation remains. This forest type is dominated by oaks and hickories, with white oak being the most prevelant. Other dominant species include red oak, black oak, mockernut hickory, pignut hickory and sweet pignut hickory. Virginia pine, tulip poplar and sweetgum are also common in disturbed areas.

Disturbed-Maintained Communities

This community includes five types of habitat that have recently been or are currently impacted by human disturbance, including regularly maintained roadside and railroad shoulders, pastures, utility rights of way, clearcuts and residential and commercial areas. The majority of these habitats are kept in a low-growing, early successional state.

The regularly maintained roadside and railroad shoulder is mowed frequently and is dominated by herbaceous vegetation. The pastures within the project area are dominated by tall fescue, red fescue and red clover. The edges of the pastures are

dominated by Japanese honeysuckle, blackberry, goldenrods, spotted joe-pye weed and an assortment of other mixed herbaceous species.

The clearcuts within the project area were created in the recent past. Young red maple, Virginia pine and sweetgum are the most common woody species present. Vines such as greenbrier and poison ivy may also be prominent.

Wetland Communities

In general, there are three kinds of wetlands present within the study area: forested wetlands, shrub-dominated wetlands and wetlands dominated by herbaceous vegetation. In nearly every case, there has been some form of disturbance within the wetlands, either through clearing of vegetaion, mowing, grazing, or dumping of solid waste. This disturbance may cause some wetlands to grade from one type into another.

The forested wetlands are located in seepage areas along drainageways. The dominant tree species include river birch, American sycamore, tulip poplar, sweetgum and red maple. Invasive exotics such as Chinese privet, multiflora rose and Japanese honeysuckle are frequently found in these wetland areas.

The two shrub-dominated wetlands within the study area are typically located along pond margins. These wetlands will more than likely become forested wetlands, if the vegetation is allowed to mature. These wetlands are dominated by black willow, tulip poplar, red maple, sweet gum and Chinese privet.

The wetlands dominated by emergent, or herbaceous vegetation are typically created by the clearing of wetlands that would otherwise be dominated by woody vegetation. These are the most common type of wetlands near pastures and other agricultural areas, and are maintained through grazing or mowing. They are dominated by orange jewelweed, soft rush, Nepal grass and sedges.

Pine Forest

Pine forests are located throughout the study area, including areas of planted pine and areas of naturally occurring pine. The plantations are generally dominated by white pine or Virginia pine and are generally greater than five years old. The stands of natural pine are typically dominated by white pine, and are more than ten years in age. The pine creates a dense overstory, blocking sunlight and allowing a sparse or absent understory and herbaceous layer. Understory species may inclue red maple, tulip poplar and sweetgum.

3.5.2.1.2 Terrestrial Wildlife

Species that prefer open areas for feeding and nesting can be found in the disturbed communities of the study area. The faunal species present in these disturbed habitats are mostly opportunistic and capable of surviving on a variety of resources. The

European starling and American robin are common birds that use these habitats to find insects, seeds or worms. Migratory birds that travel in large flocks like the bobolink, common grackle and red-wing blackbird commonly stop to feed or rest in agricultural areas.

Many species are highly adaptive and may utilize the edges of forests and clearings or prefer a mixture of habitat types. The Eastern cottontail prefers a mix of herbaceous and woody vegetation and may be found in the dense shrub vegetation or out in the roadside and residential areas. White-tailed deer will utilize the forested areas as well as the adjacent open areas. The black rat snake will come out of forested habitat to forage on rodents in open areas. Indigo bunting and common yellowthroat inhabit dense, shrubby vegetation along transitional areas. The blue jay, song sparrow, eastern towhee and Eastern bluebird can be seen utilizing edge habitat all year round.

Forested areas are important habitat for many wildlife species, providing crucial foraging, nesting, and/or denning areas. Neotropical migratory birds, in particular, are dependent on these areas. Species such as the Acadian flycatcher and the Louisiana waterthrush thrive in wooded riparian areas, while the black-and-white warbler, black-throated green warbler and the red-eyed vireo prefer the upland woods. Species such as the downy woodpecker, red-bellied woodpecker, Carolina chickadee and the tufted titmouse are found in wooded areas throughout the year.

In the leaf litter of the forested habitats, the northern short-tailed shrew and the white-footed mouse may be found. The gray squirrel is often observed foraging in wooded areas, both on the ground and in trees. The spring peeper and the five-lined skink can be found under forest litter and in brushy undergrowth. The eastern box turtle is a terrestrial turtle but will often be found near streams in hot, dry weather.

3.5.2.2 Aquatic Communities and Wildlife

3.5.2.2.1 Aquatic Communities

There are 103 streams and eleven ponds within the study area. No distinct areas containing significant amounts of aquatic vegetation were observed in the channels or ponds during the field assessment. A visual survey of the ponds and stream banks within the project study area was conducted to document the aquatic community.

3.5.2.2.2 Aquatic Wildlife

Fish species expected to occur in drainages within the project vicinity include rosyside dace, bluehead chub, fieryblack shiner, spottail shiner, yellowfin shiner and creek chub. Largemouth bass, bluegill and channel catfish are typical pond species in the area.

Mud salamanders, northern cricket frogs, and the four-toed salamander may be found in forested wetlands. Northern water snakes, snapping turtles and bullfrogs may be found near larger waterways, while nothern dusky salamanders are in smaller drainages.

Suitable aquatic habitat exists in the project vicinity to support several bird species, including wood duck, mallard, great blue heron, belted kingfisher and Canada goose.

3.5.3 Waters of the United States

Section 404 of the Clean Water Act requires regulation of discharges into "Waters of the United States." Although the principal administrative agency of the Clean Water Act is the US Environmental Protection Agency, the US Army Corps of Engineers (USACE) has major responsibility for implementing, permitting and enforcement of provisions of the Act. The USACE regulatory program is defined in 33 CFR 320-330.

3.5.3.1 Water Resources

The project study area is located within sub-basin (03-08-02) of the Broad River Basin, (NCDWQ 2002a) and is part of the USGS hydrologic unit for the Upper Broad River (HUC No. 03050105) (USGS 1987). A Best Usage Classification is assigned to waters of North Carolina based on existing or contemplated best usage of various streams or segments of streams in the basin. The unnamed tributaries present within the project area have not been individually classified; therefore they carry the same classification as their receiving streams.

3.5.3.1.1 Streams

One hundred and three streams are located within the project study area, all of which are jurisdictional. These streams range from intermittent to perennial and are listed in Table 3-4 and shown on Figure 3-7.

Table 3-4
Physical Characteristics of Streams within Study Area

Stream ID and Map Code*	Bank Height (feet)	Channel Width (feet)	Stability	Sinuosity	Substrate	Water Clarity	Stream Determination
B	6-8	2-4	Stable	Moderate	Sand	Slightly turbid	Perennial
1B	1-4	3-4	Stable	Weak	Sand	Clear	Perennial
UT1B	2-6	1-3	Stable	Weak	Bedrock, sand	Clear	Perennial
A	1-5	2-5	Moderately Stable	Moderate	Cobble, gravel, sand	Clear	Perennial
2ZZ	1-10	1-3	Unstable	Weak	Cobble, sand	Slightly turbid	Perennial
1C	1-2	6-10	Stable	Strong	Bedrock, sand	Slightly turbid	Perennial
UT1C	1-2	1-4	Stable	Strong	Bedrock, sand	Clear	Perennial
2UT1C	1-3	1-4	Stable	Strong	Bedrock, sand	Clear	Perennial
3UT1C	1-4	<1	Unstable	Weak	Sand, silt	Turbid	Perennial
UT2UT1C	1-4	1-2	Stable	Moderate	Sand	Slightly turbid	Perennial
2A	6-12	0.5-3	Stable	Strong	Bedrock, cobble, gravel	Clear	Perennial

Table 3-4 Continued

Stream ID and Map Code*	Bank Height (feet)	Channel Width (feet)	Stability	Sinuosity	Substrate	Water Clarity	Stream Determination
4UT2A	0.5	1	Stable	Weak	Gravel, sand	Clear	Perennial
UT2A	2-4	0.5-1	Stable	Weak	Gravel, sand	Clear	Perennial
2UT2A	3-4	0.5	Stable	Moderate	Gravel, sand	Clear	Perennial
3UT2A	2-4	1-2	Stable	Moderate	Cobble, sand	Clear	Perennial
5UT2A	2-3	1	Stable	Moderate	Gravel, sand	Clear	Perennial
2B upstream	4-5	0.5	Stable	Moderate	Cobble, sand	Clear	Perennial
2B downstream	6-10	1-3	Stable	Strong	Cobble, gravel, sand	Clear	Perennial
UT2B	4-6	2-3	Moderately Stable	Moderate	Cobble, gravel, sand	Clear	Perennial
2UT2B	3-5	0.5-1	Stable	Moderate	Cobble, sand	Clear	Perennial
UT1UT2B	2-3	1-2	Stable	Moderate	Cobble, sand	Slightly turbid	Perennial
1D	2-10	2-4	Unstable	Weak	Bedrock, clay	Slightly turbid	Perennial
UT1D	6-20	4-6	Unstable	Weak	Bedrock, clay	Clear	Perennial
1E	1-3	4-6	Stable	Moderate	Rock, cobble	Clear	Perennial
UT1E	1	4	Stable	Weak	Sand, gravel	Clear	Perennial
2C (Stonecutter Creek)	10-25	1-4	Stable	Strong	Boulder, rock	Clear	Perennial
UT2C	2-3	0.5-3	Stable	Weak	Bedrock, sand	Clear	Perennial
UTUT2C	1.5	0.5	Stable	Weak	Cobble, sand	Clear	Perennial
3A	0-1	1-4	Stable	Weak	Sand	Clear	Perennial
2F	1-10	3-6	Stable	Weak	Gravel, sand	Clear	Perennial
2G downstream	2-10	6-8	Stable	Weak	Gravel/sand	Clear	Perennial
2UT2G	4-9	3-5	Stable	Weak	Gravel, sand	Clear	Perennial
3-2C upstream (Stonecutter Creek)	2-4	8-20	Stable	Moderate	Bedrock, sand	Clear	Perennial
1J	1-6	8-15	Stable	Strong	Bedrock, gravel, sand	Clear	Perennial
UT1J	1-3	2-6	Stable	Moderate	Cobble, sand	Clear	Perennial
3-2C downstream (Stonecutter Creek)	2-8	20-30	Stable	Weak	Bedrock, sand	Clear	Perennial
2UT3-2C	0-1	12-16	Stable	Moderate	Bedrock, sand	Clear	Perennial
3UT3-2C	0-2	0-3	Stable	Weak	Sand	Clear	Intermittent becoming Perennial
3UT3-2C	6-14	2-16	Stable	Weak	Gravel, sand	Clear	Perennial
4UT3-2C	6-20	3-4	Stable	Weak	Cobble, gravel, sand	Clear	Perennial
UT4UT3-2C	1-4	1-3	Stable	Weak	Cobble, gravel, sand	Clear	Perennial
3E	12	1-8	Stable	Weak	Sand, silt	Clear	Perennial

Table 3-4 Continued

Stream ID and Map Code*	Bank Height (feet)	Channel Width (feet)	Stability	Sinuosity	Substrate	Water Clarity	Stream Determination
UT3E	1-9	3-6	Stable	Strong	Gravel, sand	Clear	Perennial
3D (North of US 74)	0-8	4-12	Stable	Moderate	Bedrock, gravel, sand	Clear	Perennial
3C upstream	0-2	1-4	Stable	Moderate	Sand	Clear	Intermittent becoming Perennial
3C downstream	2-6	4-10	Stable	Moderate	Bedrock, sand	Clear	Perennial
3UT3C	0-2	1-3	Stable	Moderate	Gravel, sand	Clear	Perennial
4UT3C	0-1	1-3	Stable	Moderate	Sand	Clear	Intermittent
3B	0-6	1-4	Stable	Moderate	Sand	Clear	Perennial
3D (South of US 74)	3-4	6-10	Stable	Moderate	Sand	Clear	Intermittent becoming Perennial
UT3D	0-6	1-8	Stable	Moderate	Gravel, sand	Clear	Perennial
1Y	2-4	4-6	Stable	Moderate	Clay, gravel	Clear	Perennial
UT1Y	1-2	1-2	Stable	Moderate	Cobble, sand	Clear	Perennial
2UT1Y	0-6	1-10	Stable	Weak	Silt	Clear	Perennial
3UT1Y	1-2	2-6	Stable	Strong	Gravel, sand	Clear	Perennial
2J	1-2	3	Stable	Weak	Silt	Clear	Perennial
1G	3-15	3	Unstable	Weak	Gravel, sand, silt	Clear	Perennial
UT1G	4	3-5	Moderately Stable	Weak	Cobble, gravel, sand	Clear	Perennial
2H	20	3-4	Moderately stable	Weak	Sand	Clear	Perennial
UT2H	20	4-6	Moderately Stable	Weak	Sand	Clear	Perennial
2G upstream (Cleghorn Creek)	3-10	20-35	Stable	Moderate	Rip rap, gravel, sand	Clear	Intermittent becoming Perennial
3UT2G	8-12	4	Unstable	Weak	Gravel, sand	Clear	Perennial
4UT2G	4-20	3-4	Unstable	Weak	Gravel, sand	Clear	Perennial
5UT2G	15	2-3	Unstable	Weak	Gravel, sand	Clear	Perennial
6UT2G	1-18	3-8	Unstable	Weak	Gravel, sand	Clear	Perennial
UT6UT2G	1-3	3	Unstable	Weak	Gravel, sand	Clear	Perennial
3-2UT6UT2G	2-6	1-4	Stable	Moderate	Sand, silt	Clear	Perennial
3-3UT6UT2G	2-4	1-4	Stable	Weak	Sand, silt	Clear	Perennial
3-4UT6UT2G	1-4	2-4	Stable	Weak	Sand, silt	Clear	Perennial
3-5UT6UT2G	1-2	1-2	Stable	Weak	Sand, silt	Clear	Perennial
3UTUT3F	2-3	4-8	Stable	Weak	Clay, silt	Turbid	Perennial
2UTUT3F	2-8	1-6	Stable	Weak	Silt	Clear	Perennial
3F (Hollands Creek)	6	6-15	Stable	Weak	Sand, silt	Clear	Perennial

Table 3-4 Continued

Stream ID and Map Code*	Bank Height (feet)	Channel Width (feet)	Stability	Sinuosity	Substrate	Water Clarity	Stream Determination
UTUT3F	2	3	Stable	Weak	Sand, silt	Clear	Perennial
UT3F	3-4	3-5	Moderately Stable	Weak	Gravel, sand	Clear	Perennial
2UTUT2K	0.5	1	Stable	Moderate	Sand	Clear	Perennial
UTUT2K	1-5	1-5	Stable	Weak	Sand, silt	Clear	Perennial
UT2K	1-5	1-3	Stable	Weak	Sand	Clear	Perennial
UT1HC	1-40	2-20	Stable	Weak	Gravel, sand	Clear	Perennial
UT3X	2-12	3-6	Stable	Strong	Gravel, sand	Clear	Perennial
UTUT3X	1-9	3-6	Moderately Stable	Weak	Gravel, sand	Clear	Perennial
3X	3-12	8-20	Stable	Weak	Mud	Clear	Perennial
3G (Hollands Creek)	5-10	10-15	Stable	Weak	Gravel, sand	Clear	Perennial
UT3G	3-6	3-4	Stable	Weak	Gravel, sand	Clear	Perennial
3UTUT3G	2-8	1-3	Stable	Weak	Sand, silt	Clear	Perennial
UTUT3G	1-3	1-2	Stable	Moderate	Sand, silt	Clear	Perennial
2UTUT3G	1-4	1-3	Stable	Weak	Sand, silt	Clear	Perennial
UT2UTUT3G	1-3	1-3	Stable	Weak	Sand, silt	Clear	Perennial
2UT1HC	1-2	1-3	Stable	Weak	Sand, silt	Clear	Perennial
UT3UT1HC	1-2	1-2	Stable	Weak	Sand	Clear	Perennial
3UT1HC	1-3	1-5	Stable	Weak	Sand	Clear	Perennial
3I	2-10	6-40	Stable	Weak	Sand, silt	Clear	Perennial
UTUT1HC	2	3	Stable	Low	Sand, silt	Slightly turbid	Perennial
UT1HC	2-25	2-10	Stable	Moderate	Sand, cobble	Clear	Perennial
1HC (Hollands Creek)	12	4-6	Moderately Stable	Moderate	Cobble, gravel, sand	Slightly turbid	Perennial
2K (Hollands Creek)	2-4	12-18	Stable	Weak	Silt	Clear	Perennial
2UT2K	3-4	5	Stable	None	Sand, silt	Slightly turbid	Perennial
3UT2K	3	6	Unstable	Low	Gravel. sand	Clear	Perennial
1K	1-2	4-6	Stable	Moderate	Sand, silt	Clear	Perennial
UT1K	0-3	0-1	Stable	Weak	Sand, silt	Clear	Perennial
3H	1-8	2-20	Stable	Weak	Clay, silt	Clear	Perennial
2UT1K	0-1	1-3	Stable	Weak	Sand, silt	Clear	Intermittent
3UT1K	0-1	1-3	Stable	Weak	Sand, silt	Clear	Intermittent
4UT1K	0-3	2-3	Stable	Weak	Sand, silt	Clear	Perennial
5UT1K	0-2	2-3	Stable	Weak	Sand, silt	Clear	Perennial

Table 3-4 Continued

Stream ID and Map Code*	Bank Height (feet)	Channel Width (feet)	Stability	Sinuosity	Substrate	Water Clarity	Stream Determination
UT3J	2-4	2-4	Moderately Stable	Low	Cobble, gravel, clay	Clear	Perennial
3J	1-5	2-4	Stable	Moderate	Bedrock, sand	Clear	Perennial
UT1N	2-8	1-6	Stable	Moderate	Sand	Clear	Perennial
1N	2-8	3-8	Stable	Low	Sand	Clear	Intermittent becoming Perennial
1M	1-3	2-4	Stable	Low	Sand	Clear	Intermittent becoming Perennial
3M	2-4	2-3	Unstable	Low	Sand, clay	Clear	Perennial
UT3M	1-4	3-4	Stable	Low	Sand	Clear	Perennial
2UT3K	3-20	2-4	Unstable	Moderate	Clay, silt	Clear	Perennial

*UT = Unnamed tributary;

All streams in the study area have been assigned a Best Usage Classification of C or WS-V. Stonecutter Creek, Cleghorn Creek and Hollands Creek are the major streams in the study area which have a Best Usage Classification of C, C and WS-V respectively. A Best Usage Classification of C indicates fresh waters designated for secondary recreation, fishing, aquatic life propagation and survival, wildlife and agriculture (15A NCAC 02B .0101I(1)). Secondary recreation is any activity involving human body contact with water on an infrequent or incidental basis. A Best Usage Classification of WS-V indicates waters protected as water supplies which generally drain to Class WS-IV waters or waters used by industry to supply employees with drinking water or waters formerly used as water supply. These waters are also protected for Class C uses.

3.5.3.1.2 Ponds

There are eleven isolated ponds throughout the study area, eight of which are jurisdictional. In most cases, the ponds are associated with agricultural or residential areas and are surrounded by grazed or mowed vegetation. These ponds are shown on Figure 3-7.

All but two of the ponds in the project area were either excavated or impounded. Pond 1B was historically created as a millpond; however this mill is no longer operational. One isolated, non-jurisdictional pond acts as a sediment basin for an adjacent industrial facility. Forested areas adjoin some ponds; however, most of these areas contain only canopy trees, as the understory has been removed by grazing livestock. Grazing livestock contribute to bank erosion and increased sedimentation in many ponds. Most ponds have a substrate of thick silt and sand, with some gravel present. The depths of the ponds in the study area are estimated to be 3 to 15 feet.

3.5.3.2 Wetlands

The field assessment of the project study area identified 45 areas meeting the federal criteria for wetlands. The wetland areas comprise approximately 5.2 acres of the

study area. The locations of these wetlands are shown in Figure 3-7. Table 3-5 lists information about the jursidictional wetlands within the study area, including the DWQ Wetland Rating score and the overall wetland quality of each wetland within each alternative study corridor.

Table 3-5
Wetlands in Project Study Area

Wetland	DWQ Wetland Rating Score	DWQ Overall Wetland Quality
BA	61	MEDIUM
B	9	LOW
AA	34	MEDIUM
A	44	MEDIUM
2UT1C	24	LOW
2A	47	MEDIUM
2A-C	24.5	LOW
2A-D	22	LOW
2A-E	34	MEDIUM
2A-F	42	MEDIUM
2A-G	38	MEDIUM
2A-H	42	MEDIUM
2A-I	21	LOW
UTUT2C	38	MEDIUM
UT2C	38	MEDIUM
UT1E	19	LOW
1E	43	MEDIUM
1E-B	43	MEDIUM
1EC	39	MEDIUM
1D	37	MEDIUM
2B	30	LOW
2B-B	36	MEDIUM
3A	47	MEDIUM
2UT3-2C	45	MEDIUM
3B	36	MEDIUM
2UT1YB	37	MEDIUM
2UT1Y	43	MEDIUM
3D	64	MEDIUM
UT3D	64	MEDIUM
2J	36	MEDIUM
3F	22	LOW
UTUT1HC	10	LOW
1HC	45	MEDIUM
1HCX	10	LOW
UT2K	43	MEDIUM
1F	43	MEDIUM
1I	45	MEDIUM
3UTIHC	13	LOW
1HC-B	37	MEDIUM
UT2KX	30	LOW
1KA	15	LOW
2UT1K	14	LOW
1KB	15	LOW
1KC	25	LOW
3M	19	LOW

3.5.4 Buffer Areas

There are no buffer regulations within the project limits.

3.5.5 Federally-Protected Species

Species with the federal classification of Endangered (E) or Threatened (T), or Officially Proposed (P) for such listing, are protected under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq*.)

As of September 22, 2010, the following federally-protected species are listed for Rutherford County.

Table 3-6
Federally-Protected Species Listed for Rutherford County

Common Name	Scientific Name	Federal Status*	Habitat
Indiana bat	*Myotis sodalis*	E	Yes (roosting)
Dwarf-flowered heartleaf	*Hexastylis naniflora*	T	Yes
Small whorled pogonia	*Isotria medeoloides*	T	Yes
White irisette	*Sisyrinchium dichotomum*	E	No
Rock gnome lichen	*Gymnoderma lineare*	E	No

*E (Endangered) – A taxon "in danger of extinction throughout all or a significant portion of its range."
T (Threatened) – A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

Indiana Bat

The Indiana bat closely resembles several other bat species including the little brown bat, gray bat, small-footed bat and northern long-eared bat. The Indiana bat is a migratory species of the eastern central portion of the United States. Small populations are known to occur in North Carolina.

During the winter months, Indiana bat occupy suitable hibernacula (caves and mines) that are primarily located in karst areas of the east central United States. Hibernacula have been designated as critical habitat for this species.

The presence of Indiana bat in a particular area within its geographic range appears to be at least partially related to availability of natural roost structures, primarily dead trees with loose, exfoliating bark.

Floodplain and riparian forests are considered primary, or optimal, roosting habitat. Upland forests, old fields and pastures with scattered trees are considered secondary habitat.

No hibernacula for Indiana bat are present within the project study area; however, appropriate roosting habitat is present. The closest hibernaculum for a small colony of

Indiana bat was discovered in 1999 in the Cheoah Ranger District of Nantahala National Forest in Graham County (USFWS 1999). This location is more than 100 miles west of the study area. No known occurrence of Indiana bat has been reported within the project vicinity.

Dwarf-flowered Heartleaf

Dwarf-flowered heartleaf is a low-growing, spicy-smelling, evergreen perennial herb that spreads via rhizomes. Leaves are heart-shaped, alternate, leathery, entire, and 1.6 to 2.4 inches long and wide (USFWS 2002a). Each leaf is supported by a long, thin petiole that rises directly from the subsurface rhizome. The solitary flowers are fleshy, firm, grow at the end of short stalks, and are often under forest litter and leaves near the base of the leaf petioles.

Dwarf-flowered heartleafs grow in acidic, sandy loam soils and along bluffs and nearby slopes, in boggy areas adjacent to creek-heads and streams, and along the slopes of hillsides and ravines. The species is usually found on Pacolet, Madison gravelly sandy loam, or Musella fine sandy loam soils.

This species is endemic to a nine-county area in the western upper Piedmont of the Carolinas. In North Carolina, occurrences have been recorded in Cleveland, Polk, Rutherford, McDowell, Lincoln, Catawba, Burke, Caldwell and Alexander counties. The species appears to be more common than originally thought, although most populations occur on private lands.

Suitable habitat is present within the study area and one previously undocumented population of dwarf-flowered heartleaf was identified within the project study area.

Small whorled pogonia

The small whorled pogonia is a perennial orchid with a stout, hollow stem. The leaves are elliptical in shape and measure up to 3 inches by 5 inches.

The habitat of the small whorled pogonia varies widely throughout its range, although there are a few common characteristics among the majority of sites. These include sparse to moderate ground cover; a relatively open understory; and proximity to features that create extensive, stable breaks in canopy, such as logging roads or streams. The pogonia can be found in mature forests as well as stands as young as 30 years old.

Field surveys conducted in 2003 found appropriate habitat for this species in several areas within the study area; however, no individuals of this species were located. No known recent occurrence of small whorled pogonia has been reported by the NC Natural Heritage Program in the project vicinity.

White Irisette

White irisette is a perennial herb with dichotomously branching stems 4 to 8 inches tall. Leaves at the base of the plant are pale to bluish green and grow to one-third to one-half the height of the plant.

This species prefers rich, basic soils weathered from amphibolite in clearings and along the edges of upland woods where the canopy is thin, and often where downslope runoff has removed much of the deep litter layer ordinarily present on these sites. White irisette is endemic to the upper Piedmont of the Carolinas, and is known to occur in Rutherford County (NCNHP 1992).

No habitat for this species is located within the study area, since no basic soils are present. No known recent occurrence of white irisette has been reported by the NC Natural Heritage Program in the project vicinty.

Rock gnome lichen

The rock gnome lichen is a squamose lichen in the reindeer moss family. The lichen can be identified by its fruiting bodies, which are borne singly or in clusters, are black in color, and are found at the tips of the squamules.

The rock gnome lichen is restricted to areas of high humidity. These high-humidity environments occur on high-elevation (4,000 feet) mountaintops and cliff faces that are frequently bathed in fog, or lower elevation (2,500 feet) deep gorges in the southern Appalachians. The rock gnome lichen primarily occurs on vertical rock faces where seepage water from forest soils above flows only at very wet times.

There is no suitable habitat present within the study area for the rock gnome lichen. Elevations within the study area only reach a maximum 1,100 feet, which does not provide suitable environmental conditions for this species. No known occurrence of the rock gnome lichen has been reported by the NC Natural Heritage Program within the project vicinty.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 COMMUNITY IMPACTS

4.1.1 Community Facilities & Services

All four detailed study alternatives are in close proximity to a public school at some point. There is an existing and proposed landfill located at the end of Laurel Hill Drive between US 221 and US 74 Alternate (north of Thunder Road). None of the alternatives will impact these facilities.

4.1.2 Relocation of Homes and Businesses

The number of homes and businesses which would be relocated by the detailed study alternatives are presented in Table 4-1 below. Information regarding the NCDOT Relocation Assistance Program and relocation reports are included in Appendix B.

Table 4-1
Anticipated Relocations
For Detailed Study Alternatives

Alternative	Residential Relocatees	Business Relocatees
3 (Selected)	99 (18)	27
4	163 (28)	43
6	91 (13)	26
US 74A	88 (8)	32

Numbers in parenthesis indicate minority-owned or occupied homes. None of the alternatives will affect minority-owned businesses.

Local officials have expressed concern that there is a shortage of comparable rental housing for moderate to low-income persons. Approximately 19% of the relocatees for the recommended alternative are tenants. The NCDOT Last Resort Housing Program (See Appendix B) will be used to provide replacement housing if comparable replacement housing is not available or is beyond the displacee's financial means.

4.1.3 Economic Effects

The new and improved access and mobility to be provided by this project are viewed as a potential positive economic effect. Rutherford County economic developers are promoting the project to industries throughout the region. Travel time savings for distributors traveling to and from I-85 in South Carolina and I-40 in North Carolina are

expected with the completion of the proposed project and other transportation projects in the area.

The effect of the proposed project on the value of properties near the project will vary, depending on the type of land use and zoning in the area. In residential areas, the value of properties adjacent to the bypass may decrease, while values of property adjacent to the bypass in commercial or undeveloped areas may increase. Additionally, the type of access provided to the properties will also affect their values.

4.1.4 Title VI Evaluation

Although demographic analysis does not reveal any notable minority or low-income populations, neighborhoods in the vicinity of Second Street and Laurel Hill Drive have been identified by local officials as being minority and low-income communities. Local representatives indicated that effects would be "weighted" similarly across all of the neighborhoods crossed by the project. At this time, adverse effects do not appear to be predominantly borne by a minority and/or low-income population, nor does it appear that the effects suffered by the minority and/or low-income populations are appreciably more severe than the effects suffered by the non-minority and/or non-low-income populations. The North Carolina Department of Transportation adheres to Title VI of the Civil Rights Act, which provides that no person in the United States shall, on the ground of race, color or national origin, be excluded in participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

4.2 LAND USE AND TRANSPORATION PLANNING

4.2.1 Land Use Plans

The proposed US 221 Rutherfordton Bypass is considered in the Revised 2001 Draft Rutherford County Land Use Plan. The proposed project is compatible with this land use plan. Two objectives of the Plan are to work with the NCDOT to upgrade and expand the current road systems to provide safe and efficient transportation, and to require all new public roads to meet NCDOT standards. One of the recommendations in the Plan is to insure the transporation plan coordinates with the land use plan and future land use regulations to enhance economic development and protect the character of the county.

4.2.2 Transportation Plans

The proposed US 221 Rutherfordton Bypass is included in the 1997 Rutherford County Urban Area Thoroughfare Plan as a proposed major thoroughfare. The primary objective of this plan is to reduce traffic congestion and improve safety by eliminating both existing and projected deficiencies in the thoroughfare system.

4.2.2.1 Compatibility with Highway Plans

The proposed project is compatible with the state and local transportation plans for the area. The project is included in the approved 2009-2015 North Carolina State Transportation Improvement Program (STIP) as Project Number R-2233B and was first included in the 1987-1995 STIP.

4.2.2.2 Compatibility with Transit Plans

No passenger rail service is available in Rutherford County; however freight rail service is available through CSX Transportation. Currently there are no transit plans in the project area.

4.2.2.3 Compatibility with Bicycle/Pedestrian Plans

As discussed in Section 3.2.2.3, no bicycle/pedestrian plans have been approved for the project area. Several possible walking trails were presented in Rutherfordton's Master Plan, however. NCDOT will coordinate further with local officials regarding implementation of these walking trails in order to insure the proposed bypass is compatible.

4.3 IMPACTS TO THE PHYSICAL ENVIRONMENT

4.3.1 Noise

Traffic noise impacts are determined from the current procedures for the abatement of highway traffic noise and construction noise found in Title 23 CFR 772 and the NCDOT Traffic Noise Abatement Policy, which also includes provisions for traffic noise abatement measures. When traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures must be considered for reducing or eliminating these impacts. A copy of the unabridged version of the full traffic noise analysis technical report can be viewed at the NCDOT Century Center Complex, 1000 Birch Ridge Drive, Raleigh.

4.3.1.1 Traffic Noise Impacts and Noise Contours

The maximum number of receptors in each project alternative predicted to be impacted by future traffic noise is shown in Table 4-2 below. The table includes those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria or by a substantial increase in exterior noise levels.

Table 4-2
Predicted Traffic Noise Impacts

Alternative	Traffic Noise Impacts			
	Residential	Churches/Schools	Businesses	Total
3 (Selected)	9	0	0	9
4	0	0	0	0
6	0	0	0	0
US74A	2	0	0	2

The predicted maximum extent of the 72 and 67 dBA noise level contours measured from the center of the proposed roadway are 104 feet and 160 feet, respectively.

4.3.1.2 Traffic Noise Abatement Measures

Measures for reducing or eliminating traffic noise impacts were considered for all impacted receptors in each alternative. The primary noise abatement measures evaluated include highway alignment changes, traffic system management measures, buffer acquisition and noise barriers. For each of these measures, benefits versus costs, engineering feasibility, effectiveness and practicability, land use issues, and other factors were included in the noise abatement considerations.

The cost of noise abatement is considered reasonable if it does not exceed $35,000 per benefited receptor plus an incremental increase of $500 per dBA average increase in the predicted exterior noise levels of the impacted receptors in the area.

Substantially changing the highway alignment to minimize noise impacts is not considered to be a viable option for this project due to engineering and/or environmental factors. Traffic system management measures are not considered viable for noise abatement due to the negative impact they would have on the capacity and level of service of the proposed roadway. Acquiring buffer zones for impacted receptors is not considered reasonable because the cost would exceed the NCDOT abatement cost threshold.

Noise barriers include three basic types: vegetative barriers, earthen berms and noise walls. These structures act to diffract, absorb and reflect highway traffic noise. For this project, the cost of these three types of noise barriers is expected to exceed the NCDOT abatement cost threshold. Therefore, noise barriers are not considered reasonable.

4.3.1.3 Summary

Based on the traffic noise analysis, traffic noise abatement is not recommended for this project because the cost of providing abatement exceeds the NCDOT abatement threshold. No noise abatement measures are proposed. This evaluation completes the

highway traffic noise requirements of Title 23 CFR Part 772. No additional noise analysis will be performed for this project unless warranted by a significant change in the project scope, vehicle capacity or alignment.

In accordance with NCDOT Traffic Noise Abatement Policy, the Federal/State governments are not responsible for providing noise abatement measures for new development for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the State Record of Decision (SROD). For development occurring after this date, local governing bodies are responsible to insure that noise compatible designs are utilized along the proposed facility.

4.3.2 Air Quality

Carbon Monoxide

Automobiles are considered the major source of carbon monoxide (CO) in the project area. This project is located in a CO attainment area; therefore, no CO microscale analysis was performed.

Ozone & Nitrogen Oxide

Automobiles are regarded as sources of hydrocarbons and nitrogen oxides. Urban areas as a whole are regarded as sources of hydrocarbons, not individual streets and highways.

Particulate Matter and Sulfur

Automobiles are not regarded as significant sources of particulate matter and sulfur dioxide. Because emissions of particulate matter and sulur dioxide from automobiles are very low, there is no reason to expect that traffic on this project will result in particulate matter and sulfur dioxide emissions which exceed the National Ambient Air Quality Standards.

Lead

Leaded gasoline is no longer available. The Clean Air Act Amendments of 1990 made the sale, supply or transport of leaded gasoline unlawful after December 31, 1995. For this reason, it is not expected that traffic on the proposed project will cause the National Ambient Air Quality Standard for lead to be exceeded.

Mobile Source Air Toxics

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 US Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed these 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 the Federal Highway Administration (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.

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.

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, and/or MOVES10 models, even if vehicle-miles travelled (VMT) increases by 145 %, a combined reduction of 72 % in the total annual emission rate for the priority MSAT is projected from 1999 to 2050.

NCDOT follows a tiered approach for analyzing MSAT in SEPA documents, depending on specific project circumstances. Three levels of analysis have been identified:

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 are analyzed. This project is included in Level 2 above, indicating a qualitative analysis is appropriate.

For both Build and No-Build alternatives in this air quality analysis, the amount of MSAT 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. 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. Consequently higher levels of MSAT are not expected from the Build Alternative compared to the No Build.

The additional travel lanes contemplated as part of the project alternatives will have the effect of moving some traffic closer to nearby homes, schools and businesses; therefore, under each alternative there may be localized areas where ambient concentrations of MSAT could be higher under certain Build Alternatives than the No-Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the proposed bypass sections that would be built. However, the magnitude and the duration of these potential increases, compared to the No-Build alternative, cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when a new highway is constructed, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No-Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

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 EPA continually assesses 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, 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 determination of health impacts. Each step in the process builds on the model predictions obtained in the previous step. All of the steps 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. The results produced by the EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the EPA's Draft MOVES2009 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.

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in an NCHRP study (www.epa.gov/scram001/dispersion_alt.htm#hyroad), which documents poor model performance at ten sites across the country. 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. 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 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.

The project is located in Rutherford County, which is in compliance with the National Ambient Air Quality Standards. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

4.3.3 Farmland

All of the proposed alternatives for the project will impact prime farmland. Alternatives 3, 6 and US 74A may affect a farm. Table 4-3 presents anticipated effects of the detailed study alternatives on prime farmland.

Table 4-3
Anticipated Prime Farmland Effects
of Detailed Study Alternatives

Alternative	Prime Farmland Soils Affected (Acres)*
3 (Selected)	362.16
4	205.34
6	363.01
US74A	226.76

*Prime farmland soils within alternative study corridors. Actual impacts will be less.

Table 4-3 above presents the amount of prime farmland soils within the study corridors for the current detailed study alternatives. Following selection of Alternative 3 as the preferred alternative for the project, the impacts on prime and important farmland soils of the proposed design for Alternative 3 was examined. It was determined that Alternative 3 would affect 87 acres of prime and important farmland soil, as determined by the Natural Resource Conservation Service.

Alternative 3 will also require right of way from five properties receiving present use value property tax deferments, based on agricultural or forestry use. Two of these properties are farmland preservation parcels, which the County considers the equivalent of Voluntary Agricultural Districts.

4.3.4 Utilities

The proposed project will require the relocation, adjustment, or modification to power lines, water lines, sewer lines, telephone poles and cable lines. NCDOT will coordinate with the utility companies and municipalities regarding utility relocations.

Table 4-4 below shows the cost associated with the relocation, adjustment or modification to these utilities for each detailed study alternative.

Table 4-4
Utility Relocation Costs
For Detailed Study Alternatives

Alternative	Cost
3 (Selected)	$1,687,850
4	$1,575,330
6	$2,025,775
US74A	$2,466,730

4.3.5 Hazardous Materials

Five to six known groundwater incidents could be impacted by the current alternative study corridors. None of the alternative study corridors will impact the Rutherford County landfill. Alternative 3 and Alternative US 74A may affect the Reeves Brothers property, which is an inactive superfund site. If property is required from this site, a site assessment will be performed to determine the actual levels of contamination.

4.3.6 Floodplain/Floodway

NCDOT will coordinate with the NC Floodplain Mapping Program (FMP) to determine whether the Memorandum of Agreement between NCDOT and FMP is applicable or if approval of a Conditional Letter of Map Revision (CLOMR) and a subsequent final Letter of Map Revision (LOMR) will be required for the project. If required, the Division Resident Engineer will submit sealed as-built construction plans to the Hydraulics Unit upon project completion certifying the project was built as shown on construction plans.

4.3.7 Protected Lands

4.3.7.1 State/National Forests

As discussed in Section 3.3.7.1, no State or National Forests are located in the project study area.

4.3.7.2 Game Lands and Preservation Areas

As discussed in Section 3.3.7.2, no game lands are present in the study area.

4.4 CULTURAL RESOURCES

4.4.1 Historic Architecture Resources

The proposed project is subject to North Carolina General Statute 121-12(a). This State law requires state agencies to take into account the effect of an agency undertaking on any district, site, building, structure, or object that is listed in the National Register of Historic Places.

Although no federal funds will be used for the construction of the proposed project, the project will require a permit from the US Army Corps of Engineers. Section 106 of the National Historic Preservation Act of 1966, as amended, applies to federal permit areas along the project. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally-funded, licensed, or permitted) on properties included on or eligible for inclusion on the National Register of Historic Places and afford the Advisory Council a reasonable opportunity to comment on such undertakings.

As described in Section 3.4.1, there are three properties within the Area of Potential Effects listed on the National Register of Historic Places and eight properties eligible for listing. The potential effect of the proposed project on historic architectural resources was evaluated in accordance with Section 106 of the National Historic Preservation Act and is shown in Table 4-5 below.

Table 4-5
Effects of Detailed Study Alternatives on Historic Properties

Historic Property	ALT. 3 (Selected)	ALT. 4	ALT. 6	US 74A ALT.
Rutherfordton-Spindale Central High School	No Adverse Effect	No Effect	No Adverse Effect	No Adverse Effect
Main Street Historic District	No Effect	No Effect	No Effect	No Effect
Gilbert Town	No Effect	No Effect	No Adverse Effect	No Effect
Main Street Historic District Expansion	No Effect	No Adverse Effect	No Effect	No Effect
Dunkard's Creek Baptist Church	No Effect	No Adverse Effect	No Effect	No Effect
Homer and Bertha Sparks House	No Effect	No Effect	No Effect	No Adverse Effect
Robert J. Norris House	No Adverse Effect	No Effect	No Effect	No Adverse Effect
Ruth Elementary School	Adverse Effect	Adverse Effect	No Effect	No Adverse Effect
Washington Geer House	No Effect	No Effect	No Adverse Effect	No Effect
Yelton's Flour Mill	No Effect	No Effect	No Effect	No Adverse Effect
***Gilboa United Methodist**	No Effect	No Effect	No Effect	No Effect

*This property was evaluated in the survey but is no longer within this project's APE.

The State Historic Preservation Office concurred with these effect determinations on June 6, 2008 (see Appendix A for a copy of the concurrence form).

4.4.2 Archaeological Resources

As discussed in Section 3.4.2, archaeological surveys were conducted for Alternative 3 following its selection as the corridor for the project. No archaeological

resources were recommended as eligible for listing on the National Register of Historic Places. The final archaeological report has been forwarded to the US Army Corps of Engineers and the HPO for review.

In the event that unanticipated archaeological discoveries, such as unmarked cemeteries, are made during construction, the NCDOT Archaeology Group will be notified and consulted immediately for any necessary resolution or coordination with the State Historic Preservation Office, prior to any additional construction work in that area.

4.4.3 Overmountain Victory National Historic Trail

The proposed bypass will cross the portion of US 64 which is designated a part of the commemorative motor route for the Overmountain Victory National Historic Trail (OMVNHT). Although there is no trail currently in place along Cleghorn Creek, the primary historic route of the OMVNHT crosses US 64 near US 74A (Railroad Avenue) and follows Cleghorn Creek toward Rutherfordton. With Alternatives 3, 4 and 6, an interchange will be constructed at US 64. With Alternative US74A, the existing at-grade intersection between US 64 and Railroad Avenue would be upgraded.

NCDOT has coordinated with the National Park Service and local agencies regarding how the proposed bypass can accommodate the OMVNHT. The selected alternative, Alternative 3, will carry US 64 over the proposed bypass on a bridge. A sidewalk and 42-inch hand rails will be provided on the south side of this bridge to allow pedestrians using the OMVNHT to cross the proposed bypass. NCDOT will continue to coordinate with the Park Service and local agencies regarding the OMVNHT.

4.5 NATURAL ENVIRONMENT

4.5.1 Soils/Topography

The properties of soils, including shrink-swell potential, erosion hazard, risk of corrosion, and suitability as road fill, can affect the engineering design of a roadway. Table 3-3 lists the major soil associations in Rutherford County. The three soil associations located in the project area, Cecil-Pacolet, Pacolet-Saw, and Pacolet-Bethlehem, range in suitability as road fill from well-suited to unsuited. This is an indication that the roadbed may need to be undercut in some areas, removing several inches of the soil, and replacing it with a more suitable soil. These soils generally have a high risk of corrosion for both uncoated steel and concrete. The shrink-swell potential of these soils range from low to high. In soils of high shrink-swell potential, surcharging the roadbed may be required. The expected soil limitations can be overcome through proper engineering design. Decisions regarding soil limitations and methods to overcome them will be determined during final design.

4.5.2 Biotic Communities and Wildlife

4.5.2.1 Terrestrial Communities and Wildlife

4.5.2.1.1 Terrestrial Communities

Project construction activities in or near terrestrial resources have the potential to impact the biological functions of these resources. Table 4-6 below presents anticipated impacts of the project alternatives on terrestrial communities.

Table 4-6
Effects of Detailed Study Alternatives on Terrestrial Communities

Alternative	Plant Community (acres)			
	Mesic Mixed Hardwood	Dry-Mesic Oak-Hickory	Disturbed/ Maintained	Pine Forests
3 (Selected)	13.9	171.0	310.5	17.7
4	4.2	98.4	147.6	8.5
6	15.2	234.2	324.9	22.0
74A	6.5	64.5	148.8	14.6

4.5.2.1.2 Terrestrial Wildlife

Project construction will result in the reduction of available habitat for terrestrial wildlife. However, due to the existing amount of urban and agricultural development in the project study area, wildlife habitat is already fragmented. Although some loss of disturbed habitat adjacent to existing road shoulders will result, these areas are of limited value to wildlife that may utilize them. Wildlife expected to utilize the project study area are generally acclimated to fragmented landscapes in this area. However, fragmentation and loss of forested habitat may impact other wildlife in the area by reducing potential nesting and foraging areas, as well as displacing animal populations. Futhermore, forested areas provide connectivity between populations, allowing for gene flow, as well as a means of safe travel from one foraging area to another.

4.5.2.2 Aquatic Communities and Wildlife

Water resource impacts may also result from the physical disturbance of the forested stream buffers that are adjacent to most of the streams within the study area. Removing streamside vegetation increases direct sunlight penetration, which ultimately elevates water temperatures within the stream. An increase in stream water temperatures often stresses or reduces the population of aquatic organisms.

Table 4-7 in Section 4.5.3.1 presents the anticipated impacts of the project alternatives on streams in the project area.

Disturbing stream buffers can also create unstable stream banks, further increasing downstream sedimentation. Shelter and food resources, both in the aquatic and terrestrial portions of these organisms' life cycles, will be affected by losses in the terrestrial communities. The loss of aquatic plants and animals will affect terrestrial fauna that rely on them as a food source. The removal of riparian buffer may also increase the amount of sediment released into the stream. Temporary and permanent impacts to aquatic organisms may result from this increased sedimentation.

4.5.3 Waters of the United States

4.5.3.1 Water Resources

Stormwater runoff from roadways carries silt, heavy metals, petroleum products, nitrogen and phosphorous. These materials can potentially degrade water quality and aquatic habitat integrity. The effects of water quality depend on the size of the waterways crossed, the number of such crossings and the season of construction.

Short-term impacts to water quality, such as sedimentation and turbidity, may result from construction-related activities. Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of erosion control measures and the use of Best Management Practices (BMPs). These measures include the use of dikes, berms, silt basins and other containment measures to control runoff. Disturbed sites will be revegetated after construction to help reduce erosion.

Table 4-7 lists the stream impacts for each alternative in the study area.

Table 4-7
Effects of Detailed Study Alternatives on Streams

	Alternative			
	3 (Selected)	**4**	**6**	**US74A**
Stream Impacts (Feet)	12,063	8,734	13,113	9,200

4.5.3.2 Wetlands

Table 3-5 lists the jurisdictional wetlands in the project area. There are no high quality wetlands in the project area. The wetland impacts of the project alternatives are shown in Table 4-8.

Table 4-8
Effects of Detailed Study Alternatives on Wetlands

	Alternatives			
	3 (Selected)	**4**	**6**	**US74A**
Wetlands Affected (Acres)	0.8	0.6	1.3	0.7

The concentration of overland flow into pipes can increase stormwater runoff. In addition to permanent alterations, temporary adverse impacts also may occur, such as temporary pond dewatering and stream diversion during the construction of bridges and culverts, and temporary clearing and filling associated with underground utility relocation and construction access.

Avoidance and Minimization

During the development of the detailed study alternatives, efforts were made to avoid and minimize impacts to wetlands and streams wherever practicable. Given the number of streams and wetlands in the project area, total avoidance of surface waters and wetlands by this project is not feasible.

The detailed study alternatives for the project were carried forward because they have lower impacts on wetlands and streams than other alternatives studied. Alignments within the study corridors for the detailed study alternatives have been developed which minimize impacts to wetlands and streams within the corridors.

Alternative 3 was selected as the least damaging practicable alternative for the project over two alternatives that affect less wetland and streams (Alternatives 4 and US 74A), because Alternative 3 has much less impacts on the community. Alternative 3 will affect fewer homes and businesses than Alternative 4 and fewer businesses in the Town of Ruth than Alternative US 74A. The NEPA/404 merger team concurred on the selection of Alternative 3 as the least damaging practicable alternative for the project (see Appendix C).

During development of Alternative 3, the following changes were made to the proposed design in order to minimize impacts to wetlands and streams:

- The design of the proposed interchange with existing US 221 south of Rutherfordton was changed from a diamond interchange to a half-cloverleaf interchange. No ramps are proposed in the northern quadrants of the interchange. Estimated impacts avoided or minimized: 375 feet of streams.

- Extending bridge over SR 2201 (Thunder Road) by approximately 500 feet to bridge Stonecutter Creek and an unnamed tributary to Stonecutter Creek (Stream 1E). Estimated impacts avoided or minimized: 1,111 feet of streams, 0.02 acre wetlands.

- 2:1 side slopes are proposed in jurisdictional areas.

- The design of the ramp in the northeast quadrant of the proposed US 64 interchange has been changed. The ramp will now more closely follow the alignment of the proposed loop. This change will reduce stream impacts at this location by approximately 243 feet. This change in the design was made prior to Concurrence Point 3.

- The alignment of the proposed connection between SR 1536 (Old US 221) and SR 1520 (Rock Road) has been changed to avoid Holland's Creek (2K) and an unnamed tributary (UT2K). This design change will reduce stream impacts by approximately 288 feet at this location.

The NEPA/404 merger team concurred on avoidance and minimization measures for the project at a meeting held on April 14, 2011 (See Appendix C).

Additional minimization measures will be considered as the project progresses.

Compensatory Mitigation

The purpose of compensatory mitigation is to replace the lost functions and values from a project's impacts to Waters of the United States, including wetlands.

It is expected wetland and stream mitigation will be required for the project. Final decisions regarding wetland and stream mitigation requirements will be made by the US Army Corps of Engineers and the NC Division of Water Quality. On-site mitigation will be used as much as possible. The Ecosystem Enhancement Program (EEP) will be used for remaining mitigation requirements beyond what can be satisfied by on-site mitigation.

4.5.4 Buffer Areas/Impaired Waters

There are no buffer regulations within the project limits and no impaired waters listed under Section 303(d) of the Clean Water Act.

4.5.5 Federally-Protected Species

Although this is a state-funded project, a permit will be required from the US Army Corps of Engineers due to project impacts on wetlands and streams. Section 7 of the Endangered Species Act will apply to permit areas of the project.

As discussed in Section 3.5.5, five federally protected species are listed for Rutherford County. Table 4-9 below presents the federally-protected species listed for Rutherford County and the biological conclusion for this project's likely effect on the species.

Table 4-9
Project Effects on Federally-Protected Species

Common Name	Scientific Name	Federal Status*	Biological Conclusion
Indiana bat	*Myotis sodalis*	E	No Effect
Dwarf-flowered heartleaf	*Hexastylis naniflora*	T	May Affect-Likely to Adversely Affect
Small whorled pogonia	*Isotria medeoloides*	T	No Effect
White irisette	*Sisyrinchium dichotomum*	E	No Effect
Rock gnome lichen	*Gymnoderma lineare*	E	No Effect

*E (Endangered) – A taxon "in danger of extinction throughout all or a significant portion of its range."
T (Threatened) – A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

Indiana Bat

BIOLOGICAL CONCLUSION: NO EFFECT

No hibernacula for Indiana bat are present within the project study area; however, appropriate roosting habitat is present. The closest hibernaculum for a small colony of Indiana bat was discovered in 1999 in the Cheoah Range District of Nantahala National Forest in Graham County (USFWS 1999). This location is more than 100 miles west of the study area. No known occurrence of Indiana bat has been reported within the project vicinity. Due to the presence of appropriate roosting habitat, but the absence of hibernacula, the proposed project will have "no effect" on the Indiana bat.

Dwarf-flowered Heartleaf

BIOLOGICAL CONCLUSION: MAY AFFECT/ LIKELY TO ADVERSELY AFFECT

Field surveys conducted in 2003 found suitable habitat and one previously undocumented population of dwarf-flowered heartleaf within the project study area. Due to the presence of this species within and immediately adjacent to the study area, it can be concluded that the proposed project may affect and is likely to have an adverse effect on this federally-listed threatened species.

A biological assessment was prepared for project impacts to dwarf-flowered heartleaf in December 2008. This biological assessment included the effects of the adjacent widening project south of the proposed bypass (TIP Project R-2233A). The US Fish and Wildlife Service reviewed NCDOT's biological assessment and issued a biological opininon regarding the project's effect on the federally-protected dwarf-flowered heartleaf on May 12, 2009. The Service's biological opinion is that the proposed project will not jeopardize the continued existence of the dwarf-flowered heartleaf.

The US Fish and Wildlife Service's biological opinion is based on NCDOT taking the following conservation measures for the proposed US 221 Rutherfordton Bypass:

- 1.5:1 or 2:1 slopes will be used at dwarf-flowered heartleaf sites. NCDOT has committed to using 2:1 slopes at these sites.

- Use NCDOT's native seed mix througout the corridor, where possible. NCDOT has committed to using the native seed mix in riparian areas, where possible.

- Resurvey the corridor for dwarf-flowered heartleaf prior to construction. NCDOT has committed to resurvey the corridor prior to construction.

- Obtain a conservation easement on the Tate property. This conservation easement was obtained as a part of TIP Project R-2233A.

- Transplant dwarf-flowered heartleaf that will be impacted to the conservation area. NCDOT has committed to transplanting dwarf-flowered heartleaf that would be impacted.

Small whorled pogonia

BIOLOGICAL CONCLUSION: NO EFFECT

Habitat for this species was found in several areas during field surveys conducted in 2003; however, no individuals of this species were located. No known recent occurrence of small whorled pogonia has been reported by the NC Natural Heritage Program within one mile of the project area. Due to the presence of appropriate habitat, but no occurrence of the species within the project area, it is unlikely that the proposed project will affect this federally-listed threatened species.

White Irisette

BIOLOGICAL CONCLUSION: NO EFFECT

No habitat for this species is located within the study area, since no basic soils are present. No known recent occurrence of white irisette has been reported by the NC Natural Heritage Program within one mile of the project area. The proposed project will have no effect on this federally-listed endangered species.

Rock gnome lichen

BIOLOGICAL CONCLUSION: NO EFFECT

There is no suitable habitat present within the study area for the rock gnome lichen. Elevations within the study area only reach a maximum of 1,100 feet, which does not provide suitable environmental conditions for this species. No known occurrence of

the rock gnome lichen has been reported by the NC Natural Heritage Program within one mile of the project area. The proposed project will have no effect on this federally-listed endangered species.

4.6 INDIRECT AND CUMULATIVE EFFECTS

The purpose of the proposed project is to reduce congestion and improve safety along US 221. The project will not directly serve as an economic development tool, although it could generate indirect land use development (particularly industrial) because of the improved access and mobility provided by the proposed project. However, as discussed previously, the area has lost a number of textile jobs and is not growing as fast as the rest of the State.

Development activity is minimal in the project study area. Most of the new residential development is taking place west of Rutherfordton along the US 64 corridor. Industrial development has been slow due to textile industry layoffs. Most of the retail development in the area is along US 74A in Forest City.

An Indirect and Cumulative Land Use Effects Screening Matrix (see Table 4-10) was developed which qualitatively assesses factors that influence land development decisions. It rates the influence of each category from high concern for indirect effects to less concern for indirect effects. The measures used to rate the effects from a high concern for indirect effects potential to less concern for indirect effects potential are also supported by documentation. Each characteristic is assessed individually and the results of the table are looked at comprehensively to determine the indirect and cumulative effects potential of the proposed project. The scope of the project and change in accessibility categories are given extra weight to determine if future growth in the area is related to the project modifications. Further examination of potential indirect and cumulative effects will be undertaken on projects that have more categories noted as moderate to high concern.

Table 4-10
Indirect Land Use Effect Screening Tool

Indirect Land Use Effects Screening Tool - R-2233B - Rutherfordton Bypass										
Rating	**Scope of Project**	**Change in Accessibility**	**Forecasted Population Growth**	**Forecasted Employment Growth**	**Available Land**	**Water/Sewer Availability**	**Market for Development**	**Public Policy**	**Notable Environmental Features**	**Result**
More Concern	Major New Location	> 10 minute travel time savings	> 3% annual population growth	Substantial # of New Jobs Expected	5000+ Acres of Land	All services existing / available	Development activity abundant	Less stringent; no growth management	Targeted or Threatened Resource	
⬆		X			X					
↑	X							X		Likely Indirect Scenario Assessment
↔						X				
↓			X				X		X	
⬇				X						
Less Concern	Very Limited Scope	No travel time savings	No population growth or decline	No new Jobs or Job Losses	Limited Land Avaialble	No service available now or in future	Development activity lacking	More stringent growth management	Features incorporated in local protection	

Despite relatively slow population and job growth, the scope of the project, change in accessibility, availability of land and less stringent growth management policies suggest that further evaluation of indirect and cumulative effects is warranted. Substantial time savings are anticipated with this new location bypass and more than 5,000 acres of land is available in the future land use study area. A land use scenario assessment was completed for the project due to the moderate to high concern for indirect and cumulative effects.

In order to qualitatively assess the type of development that might occur in the future land use study area both with and without the project, six probable development areas were examined. Development pressures and regulations, proximity to transportation infrastructure, availability of water and sewer service and proximity to population and employment centers were considered in this assessment.

Residential, commercial, industrial and mixed-use development are expected to continue at a slow pace in the future land use study area both with and without the project. Following recent trends, most residential units will likely be constructed in areas outside the future land use study area. Some infill residential development, as well as commercial and industrial development, is anticipated in the area of proposed interchanges, and less so along widening sections. While some land use change may occur as a result of the project, the densities and scale of development is not expected to change substantially unless the economy and development trends change. Detailed qualitative analysis of the probable development patterns in the future land use study area suggest that the project will have little to no effect on future storm water runoff or water quality in the watersheds the project passes through.

Alternatives 3 and 4 seem to have the most potential for indirect effects, although the indirect effects of these alternatives will be limited due to the current economy and development trends. Alternative US74A could result in more land use changes along existing US 74A (Railroad Avenue) because this alternative has a long section on existing alignment with partial control of access. Alternative 6 appears to have the least potential for indirect effects.

It is expected that growth accelerated by the project is consistent with adopted land use plans. Given the minimal indirect effects of the project, the project's contribution to cumulative effects resulting from current and planned development patterns should be minimal.

Two adjacent projects are proposed for US 221 on either end of the proposed project. These projects are shown on Figure 4-1. TIP Project R-2233A will widen existing US 221 from the South Carolina State Line to north of US 74. TIP Project R-2597 will widen existing US 221 from north of SR 1366 (Roper Loop Road) to SR 1153 in McDowell County.

Table 4-11 below presents the potential environmental effects of TIP Projects R-2233A and R-2597.

Table 4-11
Adjacent Project Effects

TIP Project R-2233A Effects	
Resource	**Project Effect**
Residential Relocations	105
Business Relocations	20
Wetlands Affected (Acres)	0.1
Streams Affected (Linear Feet)	3,700
Affect Federally-Protected Species?	Yes
TIP Project R-2597 Effects	
Resource	**Potential Project Effect**
Residential Relocations	20
Business Relocations	4
Wetlands Affected (Acres)	0.12
Streams Affected (Linear Feet)	2,413
Affect Federally-Protected Species?	No

A cumulative effect of these three projects is that they will improve mobility and reduce travel time along the US 221 corridor more than the proposed bypass by itself. This increased mobility may accelerate residential, commercial, industrial and mixed-use development in the Rutherfordton area. This development is consistent with locally adopted land use plans, however.

The biological assessment prepared for the federally-protected dwarf-flowered heartleaf considered impacts of both the subject project and Project R-2233A on the species.

It is believed that the cumulative effect of the subject project and adjacent projects will be limited to the sum of the three project's effects. It is not believed the projects will have a synergistic effect beyond the sum of their effects.

4.7 CONSTRUCTION IMPACTS

Construction of the proposed project may cause temporary adverse impacts to the local environment. Construction impacts are generally short-term in nature and can be controlled, minimized, or mitigated through the use of Best Management Practices and standard NCDOT procedures. The No-Build Alternative would not generate any construction impacts.

Potential construction-related impacts are briefly summarized below. Construction along the selected alternative, Alternative 3, is expected to be of shorter duration than construction along Alternatives 4 and US74A due to the requirement for maintaining traffic flow along existing US 74A and US 221.

4.7.1 Visual

Construction, staging and stockpiling operations will be visible from adjacent properties and will result in temporary visual impacts. The contractor will be required to remove all excess materials and equipment following project construction and to reseed any disturbed areas.

4.7.2 Noise

Heavy construction equipment generates noise and vibration. Noise generated by construction equipment, including trucks, bulldozers, concrete mixers and portable generators can reach noise levels of 67 dBA to 98 dBA at a distance of 50 feet. Although the detailed study alternatives traverse primarily low-density residential areas, neighboring communities will be temporarily impacted by construction noise. The duration and level of noise differs with each phase of construction. Typically ground clearing and excavation generate the highest noise levels.

NCDOT specifications require the contractor to limit noise levels to 80 dBA Leq in noise sensitive areas adjacent to the project. NCDOT may also monitor construction noise and require abatement where limits are exceeded. NCDOT also can limit work that produces objectionable noise during normal sleeping hours.

4.7.3 Air Quality

Temporary degradation of the air quality in the project area may result from construction of the project within any of the detailed study alternatives. The contractor will be responsible for controlling dust at the project site and at areas affected by the construction, including unpaved secondary roads, haul roads, access roads, disposal sites, borrow sources and production sites. Dust control measures may include the following:

- Minimizing exposed earth surface
- Temporary and permanent seeding and mulching
- Watering of working areas and haul roads during dry periods
- Covering, shielding or stabilizing material stockpiles
- Using covered haul trucks

Emissions from construction equipment are regulated. Burning of cleared materials will be conducted in accordance with applicable state and local laws, regulations and ordinances and the regulations of the North Carolina State Implementation Plan for Air Quality, in compliance with 15 NCAC 2D.0520.

4.7.4 Utilities

The proposed project will require some adjustment, relocation or modification to existing utilities. Any disruption to utility service during construction will be minimized

by phased adjustments to the utility line. All modifications, adjustments or relocations will be coordinated with the affected utility company.

4.7.5 Water Quality/Erosion Controls

Erosion and sedimentation caused by construction activities could affect drainage patterns and water quality. In accordance with the North Carolina Sedimentation Pollution Control Act (15A NCAC 4B.0001-.0027), an erosion and sedimentation control plan will be prepared for this project.

The erosion and sedimentation plan will be developed for the selected alternative in accordance with the NCDENR publication *Erosion and Sediment Control Planning and Design* and NCDOT's *Best Management Practices for Protection of Surface Waters*. These Best Management Practices include, but are not limited to the following:

- Use of berms, dikes, silt barriers and catch basins
- Revegetating or covering disturbed areas
- Conforming with proper clean-up practices

NCDOT standard specifications require proper handling and use of construction material. The contractor will be responsible for taking every reasonable precaution throughout construction of the project to prevent pollution of any water body. Pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage and other harmful wastes shall not be discharged into any body of water. Contractors will not be allowed to ford live streams with mechanical equipment unless construction is required in the streambed, such as stream rerouting, channel improvements or culvert construction.

Excavated materials will not be stockpiled or disposed of adjacent to or in areas where stormwater runoff may cause erosion of the material into surface waters. If material storage in these areas is unavoidable, the contractor must implement measures to prevent runoff. Contractors also must provide sanitary sewer facilities for employees during project construction.

4.7.6 Geodetic Markers

The proposed project could impact several geodetic survey markers. The NC Geodetic Survey will be contacted prior to construction in order to allow resetting of monuments which will be disturbed. Intentional destruction of a geodetic monument is a violation of NC General Statute 102-4.

4.7.7 Borrow and Disposal Sites

The contractor will be responsible for locating borrow and disposal sites for the project. Prior to approval by NCDOT of any proposed borrow source and the removal of any material, the contractor will have to provide certification from the State Historic Preservation Office that the removal of the borrow material from the borrow source will

have no effect on any property eligible for or listed on the National Register of Historic Places.

In addition, borrow sources will not be allowed in any area under the jurisdiction of the US Army Corps of Engineers until the contractor has obtained a permit for the borrow source. Waste materials, as well, may not be placed in wetlands or streams unless a permit is obtained from the US Army Corps of Engineers.

4.7.8 Traffic Maintenance & Detour Accessibility

Maintenance of traffic and sequencing of construction will be planned and scheduled so as to minimize construction-related traffic delays. Traffic will mostly be maintained on-site during project construction. Lane closures may be required at times and temporary detours may be needed for existing roadways crossing the proposed bypass, but it is not expected that temporary detours would result in unacceptable delay or congestion along detour routes.

4.7.9 Bridge Demolition

No existing bridge structures will be removed with any of the alternatives for the proposed bypass. It is unlikely any materials from existing structures will be dropped into Waters of the United States during project construction.

4.8 IRRETRIEVABLE & IRREVERSIBLE COMMITMENT OF RESOURCES

Construction of any of the detailed study alternatives would require certain irretrievable and irreversible commitments of natural resources, manpower, materials and fiscal resources. Lands within the proposed right of way will be converted from their present use to a transportation use. Use of the lands is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use.

Considerable amounts of fuel, labor and highway construction materials such as concrete, aggregate and bituminous material will be expended to build the proposed project. Additionally, large amounts of labor and natural resources will be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use would not have an adverse effect upon continued availability of these resources. Any construction will also require a substantial one-time expenditure of State funds that is not retrievable.

4.9 RELATIONSHIP BETWEEN LONG TERM & SHORT TERM USES/BENEFITS

The most disruptive local short-term impacts associated with the proposed project will occur during land acquisition and project construction. Most short-term

construction-related impacts will occur within or in close proximity to the proposed right of way.

Existing homes, farms and businesses within the selected alternative's right of way will be displaced. However, adequate replacement housing, land and space are available for homeowners, tenants and business owners to relocate within the study area. Improved access within the study area will contribute to long-term residential and business growth.

Short-term air quality impacts, such as dust due to earthwork, road improvements and exhaust from construction vehicles will occur during project construction. Short-term noise impacts will be unavoidable due to use of heavy equipment.

Implementation of the NCDOT *Best Management Practices for Protection of Surface Waters* will minimize potential water quality impacts. In addition, the NCDOT will consult with the appropriate Federal and State environmental resource and regulatory agencies to identify measures to minimize these impacts.

The local, short-term impacts and use of resources by the proposed action will be consistent with the maintenance and enhancement of long-term productivity. Construction of the proposed improvements will add a vital link to the long-range transportation system for the region. The project is consistent with long-range transportation goals and objectives of the NCDOT State Transportation Improvement Program, the Rutherford County Urban Area Thoroughfare Plan and the Draft Rutherford County Land Use Plan. It is anticipated the roadway will enhance long-term access opportunities in Rutherford County and will support local and regional commitments to transportation improvement and economic viability. Benefits of the proposed project will include decreased congestion on existing US 221, improved roadway safety on existing US 221 and improved high-speed regional travel along the US 221 intrastate corridor.

5.0 LIST OF PREPARERS

This Final State Environmental Impact Statement was prepared by the North Carolina Department of Transportation. The following personnel were involved in the preparation of this document.

NCDOT Project Development Unit

Name	Qualifications	Primary Responsibilities
Teresa Hart, PE	Project Development Unit Head; 24 Years Experience	Planning and environmental analysis
James McInnis, Jr., PE	Project Engineer; 19 Years Experience	Project Development Co-Project Manager

NCDOT Natural Environment Unit

Name	Qualifications	Primary Responsibilities
Tyler Stanton	Environmental Supervisor; 7 Years Experience	Natural resources investigations
Brett Feulner	Environmental Specialist; 7 Years Experience	Natural resources investigations

H.W. Lochner

Name	Qualifications	Primary Responsibilities
Ken Roeder, Ph.D.	Biologist, NC Licensed Soil Scientist; 22 Years Experience	Natural resources investigations
Heather Renninger	Biologist; 5 Years Experience	Natural resources investigations

NCDOT Human Environment Unit

Name	Qualifications	Primary Responsibilities
Gregory Smith, PE	Traffic Noise & Air Supervisor; 4 Years Experience	Traffic Noise and Air Quality Investigations
Ric Cox	Traffic Noise Engineer; 38 Years Experience	Traffic Noise Analysis
Bobby Dunn	Traffic Noise Engineer; 19 Years Experience	Air Quality Analysis
Mary Pope Furr	Historic Architecture Supervisor; 16 Years Experience	Historic Architecture Investigations
Steve Gurganus, AICP	Community Studies Team Leader; 13 Years Experience	Community Impact Data Collection and Analysis
Tristram Ford	Community Planner III, 5 Years Experience	Community Impact Data Collection and Analysis

HNTB

Name	Qualifications	Primary Responsibilities
Susan Fisher Paschal, AICP	Community Planner; 10 Years Experience	Community Impact Assessment, Indirect and Cumulative Effects Screening

NCDOT Roadway Design Unit

Name	Qualifications	Primary Responsibilities
Rekha Patel, PE	Project Engineer; 25 Years Experience	Roadway Design Co-Project Manager
Brian Robinson	Project Design Engineer; 16 Years Experience	Roadway Design Engineer
Sterling Ragland	Transportation Engineer; 19 Years Experience	Roadway Design Engineer

NCDOT Division 13

Name	Qualifications	Primary Responsibilities
Rick Tipton, PE	Division Construction Engineer; 20 Years Experience	Division Co-Project Manager

NCDOT Transportation Planning Branch

Name	Qualifications	Primary Responsibilities
Richard Tanner	Transportation Engineer; 7 Years Experience	Traffic Forecast

NCDOT Hydraulics Unit

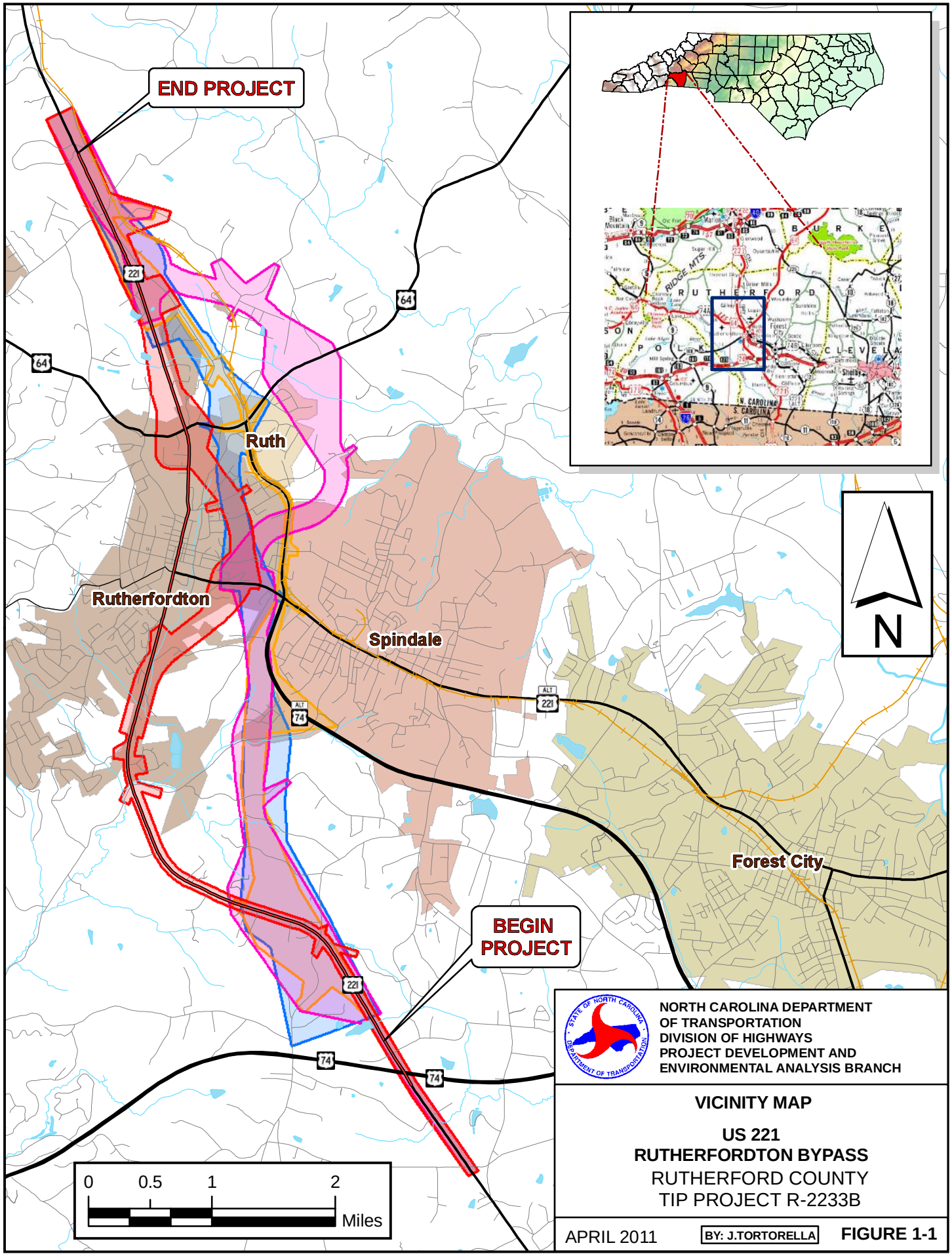
Name	Qualifications	Primary Responsibilities
John W. Twisdale, Jr., PE	Project Manager; 21 Years Experience	Hydraulic Design

NCDOT Traffic Engineering and Safety Systems Branch

Name	Qualifications	Primary Responsibilities
Benjetta Johnson, PE	Congestion Management Regional Engineer; 11 Years Experience	Review of Traffic Analysis Report

PBS&J

Name	Qualifications	Primary Responsibilities
Andrew Lelewski, PE	Civil Engineer; 11 Years Experience	Traffic Analysis Report

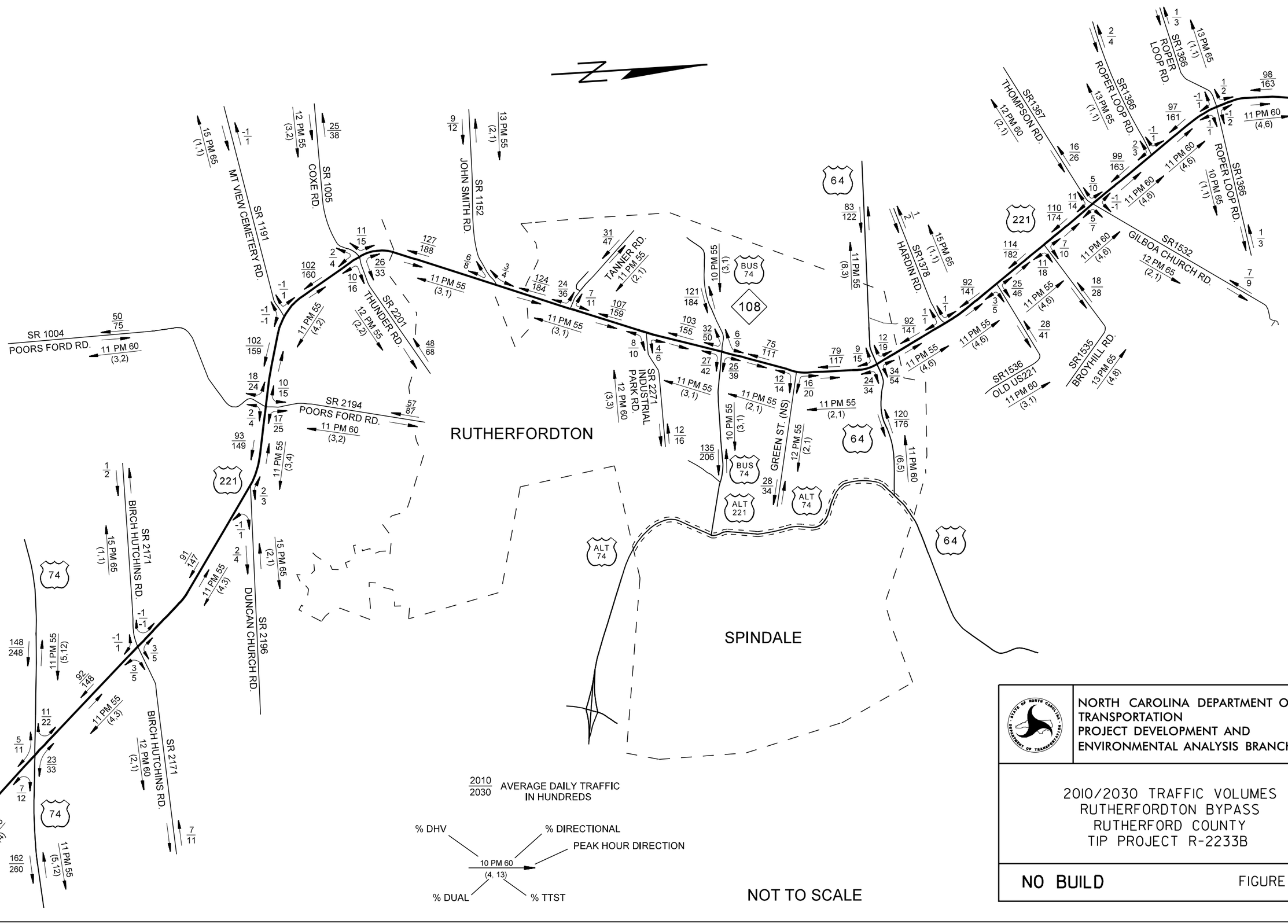


NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

VICINITY MAP

US 221
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2011 | BY: J.TORTORELLA | **FIGURE 1-1**

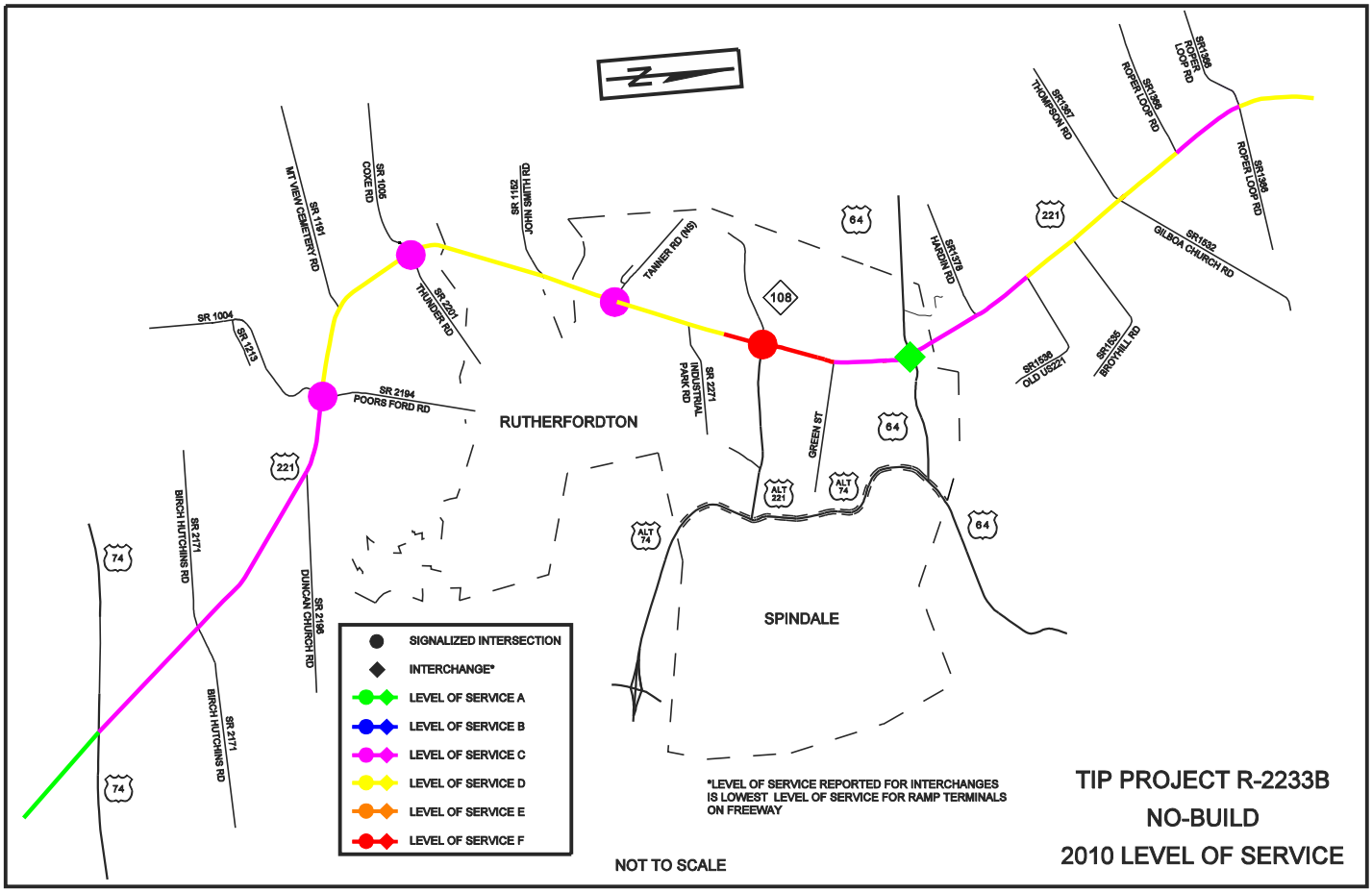


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

2010/2030 TRAFFIC VOLUMES
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

NO BUILD

FIGURE 1-2


SR 1191 MT VIEW CEMETERY RD
SR 1035 COXE RD
SR 1152 JOHN SMITH RD
TANNER RD (NS)
SR 2201 THUNDER RD
SR 1004
SR 1113
SR 2194 POORS FORD RD
RUTHERFORDTON
SR 2271 INDUSTRIAL PARK RD
GREEN ST
108
64
221
74
ALT 221
ALT 74
SR 1378 HARDIN RD
SR 1397 THOMPSON RD
SR 1399 ROPER LOOP RD
SR 1832 GILBOA CHURCH RD
SR 1535 BROYHILL RD
SR 1598 OLD US221
SR 2171 BIRCH HUTCHINS RD
SR 2196 DUNCAN CHURCH RD
SPINDALE
SIGNALIZED INTERSECTION
INTERCHANGE*
LEVEL OF SERVICE A
LEVEL OF SERVICE B
LEVEL OF SERVICE C
LEVEL OF SERVICE D
LEVEL OF SERVICE E
LEVEL OF SERVICE F
*LEVEL OF SERVICE REPORTED FOR INTERCHANGES IS LOWEST LEVEL OF SERVICE FOR RAMP TERMINALS ON FREEWAY
NOT TO SCALE
TIP PROJECT R-2233B
NO-BUILD
2010 LEVEL OF SERVICE

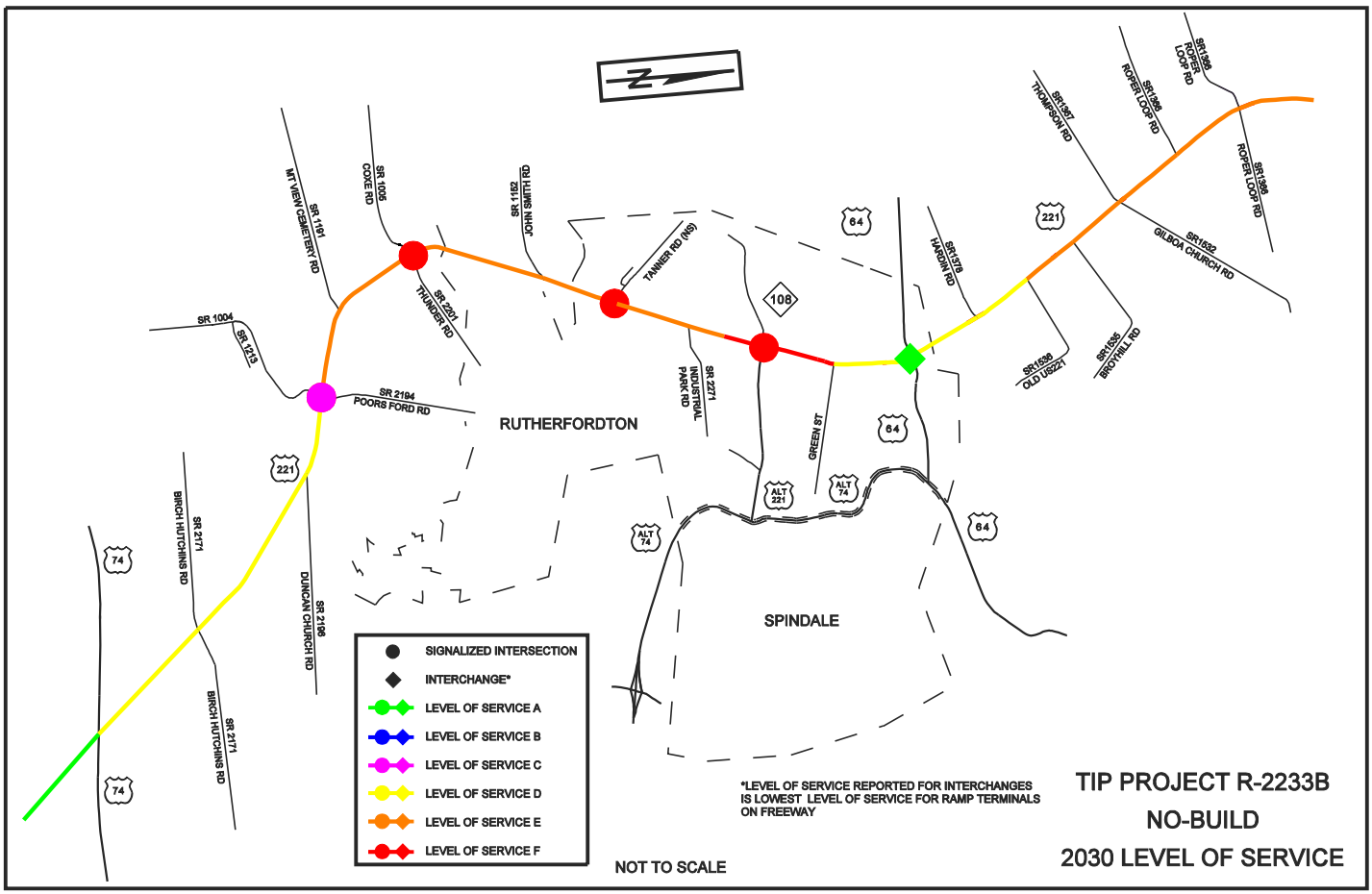
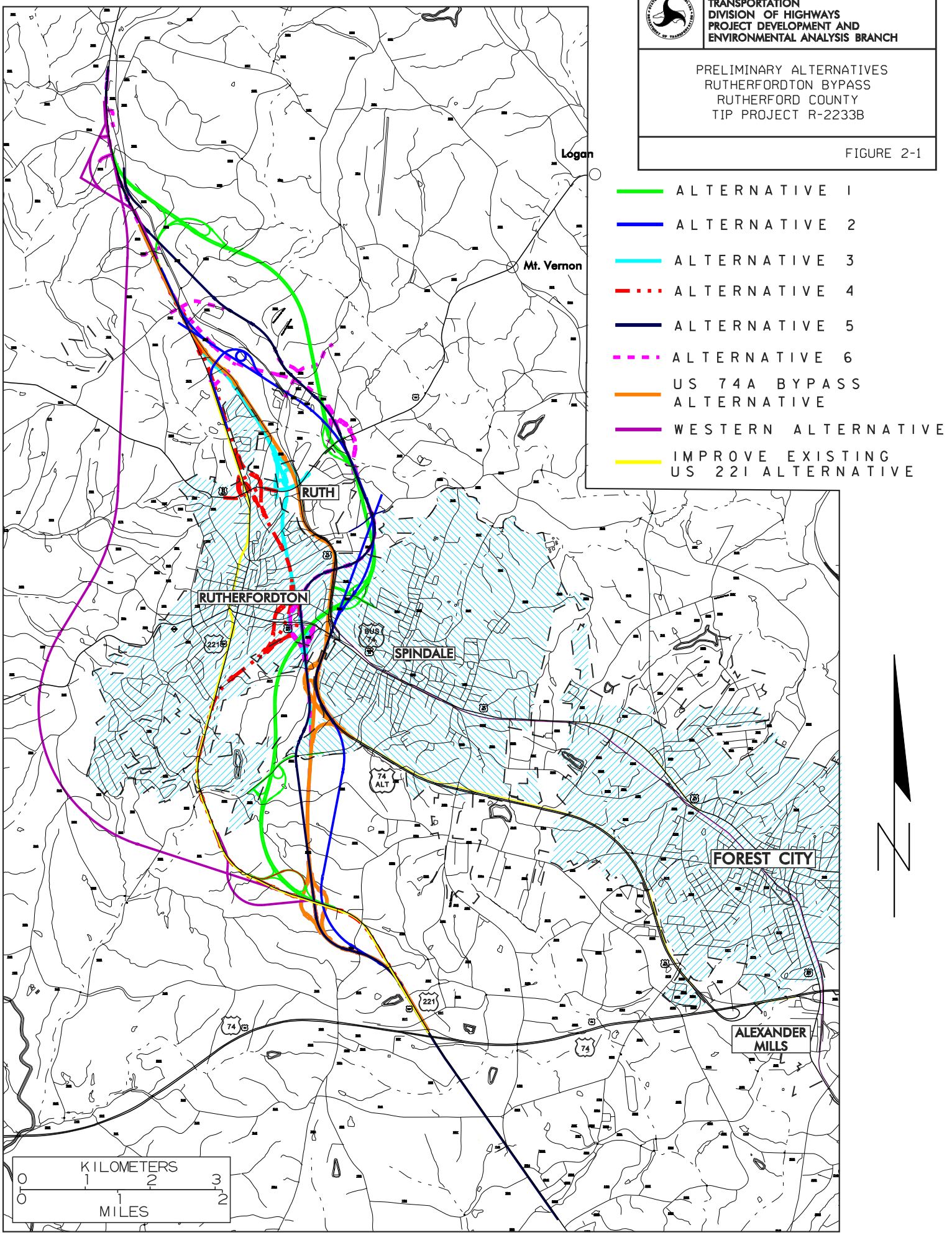

SR 1191 MT VIEW CEMETERY RD
SR 1035 COXE RD
SR 1152 JOHN SMITH RD
TANNER RD (NS)
SR 2201 THUNDER RD
SR 1004
SR 1113
SR 2194 POORS FORD RD
RUTHERFORDTON
SR 2271 INDUSTRIAL PARK RD
GREEN ST
108
64
221
74
ALT 221
ALT 74
SR 1378 HARDIN RD
SR 1397 THOMPSON RD
SR 1399 ROPER LOOP RD
SR 1832 GILBOA CHURCH RD
SR 1535 BROYHILL RD
SR 1598 OLD US221
SR 2171 BIRCH HUTCHINS RD
SR 2196 DUNCAN CHURCH RD
SPINDALE
SIGNALIZED INTERSECTION
INTERCHANGE*
LEVEL OF SERVICE A
LEVEL OF SERVICE B
LEVEL OF SERVICE C
LEVEL OF SERVICE D
LEVEL OF SERVICE E
LEVEL OF SERVICE F
*LEVEL OF SERVICE REPORTED FOR INTERCHANGES IS LOWEST LEVEL OF SERVICE FOR RAMP TERMINALS ON FREEWAY
NOT TO SCALE
TIP PROJECT R-2233B
NO-BUILD
2030 LEVEL OF SERVICE

FIGURE 1-3


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH
PRELIMINARY ALTERNATIVES
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B
FIGURE 2-1
ALTERNATIVE 1
ALTERNATIVE 2
ALTERNATIVE 3
ALTERNATIVE 4
ALTERNATIVE 5
ALTERNATIVE 6
US 74A BYPASS ALTERNATIVE
WESTERN ALTERNATIVE
IMPROVE EXISTING US 221 ALTERNATIVE
Logan
Mt. Vernon
RUTH
RUTHERFORDTON
SPINDALE
FOREST CITY
ALEXANDER MILLS
KILOMETERS
0 1 2 3
0 1 2
MILES
N

2A
2B
2F
2G
2H
2C
2D
2I
2J
2E
Rutherfordton
Spindale
Ruth
Forest City
74
221
64
ALT 74
ALT 221
BUSINESS 74
BEGIN PROJECT
TIP # R-2233B
END PROJECT
TIP # R-2233B
N
0 2,000 4,000 8,000
Feet

Legend

- Sheet Layout
- Alternative 3
- Alternative 4
- Alternative 6
- Alternative US 74A
- Historic Natl. Register Districts - (Restricted)
- Overmountain Victory National Historic Trail
- Delineated Streams
- Delineated Wetlands
- Ponds, Lakes, Rivers
- Water Supply Watershed

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

PROJECT LAYOUT
US 221
RUTHERFORDTON BYPASS

RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2011 | BY: J.TORTORELLA | FIGURE 2 - 2

Legend

- Alternative 3
- Alternative 4
- Alternative 6
- Alternative US74A
- Historic Natl. Register Districts - (Restricted)
- Overmountain Victory National Historic Trail
- Delineated Streams
- Delineated Wetland
- Ponds,Lakes,Rivers

SR 1148 (SHILOH RD.)

SR 1150 (LONG BRANCH RD.)

TO HENDERSONVILLE

74

BEGIN PROJECT
TIP # R-2233B

SR 2171
(BIRCH HUTCHINS RD.)

221

221

SR 2171

MATCHLINE SHEET 2B

SR 2197

HEXASTYLIS NANIFLORA
DWARF-FLOWERED HEARTLEAF

SR 2213
(BETHANY CHURCH RD.)

SR 2169
(OAKLAND RD.)

74

TO SHELBY

0 300 600 1,200
Feet

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

US 221
RUTHERFORDTON BYPASS

RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2011 BY: J.TORTORELLA **FIGURE 2 - 2 A**

74
SR 1149
SR 2194
(POORS FORD RD.)
AIRLIE DR.
HELIPORT DR.
ROSEY LN.
221
GREY STONE CIR.
MATCHLINE SHEET 2F
MATCHLINE SHEET 2A
MATCHLINE SHEET 2C
SR 1213 (TORRINGTON RD.)
TIMKEN PLANT
221
SR 2200 (DAVENPORT RD.)
SR 1004
(POORS FORD RD.)
SR 2196
(DUNCARD CHURCH RD.)
DUNKARD'S CREEK BAPTIST CHURCH
(NATIONAL REGISTER ELIGIBLE)

Legend

- Alternative 3
- Alternative 4
- Alternative 6
- Alternative US74A
- Historic Natl. Register Districts - (Restricted)
- Overmountain Victory National Historic Trail
- Delineated Streams
- Delineated Wetland
- Ponds,Lakes,Rivers

0 300 600 1,200
Feet

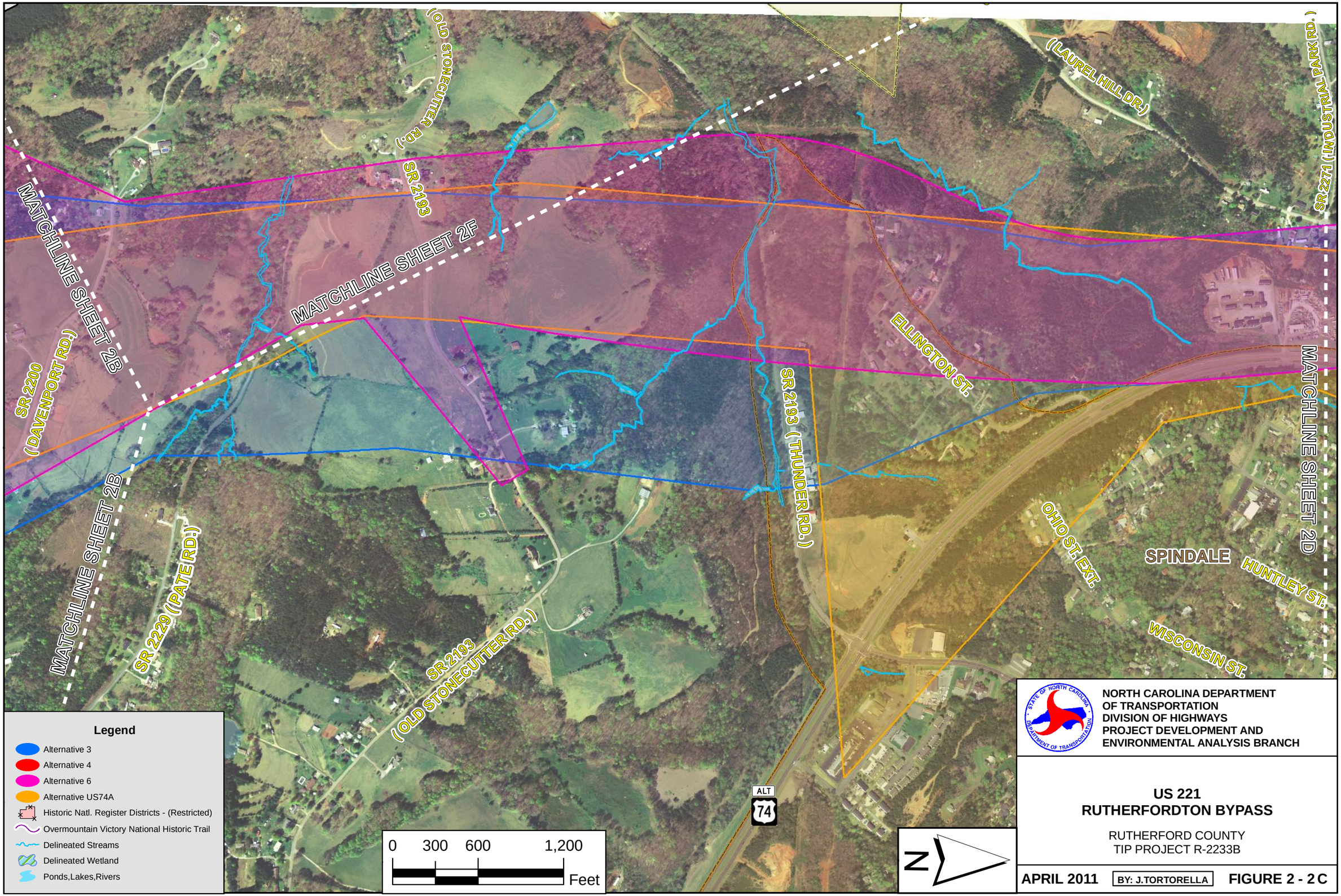
N

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

US 221
RUTHERFORDTON BYPASS

RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2011 | BY: J.TORTORELLA | FIGURE 2 - 2 B



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

US 221
RUTHERFORDTON BYPASS

RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2011 BY: J.TORTORELLA **FIGURE 2 - 2 C**

MATCHLINE SHEET 2G

MATCHLINE SHEET 2H

MATCHLINE SHEET 2C

MATCHLINE SHEET 2E

SR 2271

BUSINESS 74

ALT 221

E 2ND ST

GREEN ST

74

SR 2203
LAUREL HILL DR

COLLETT ST

74

ARNETT ST

RUTHERFORDTON

REEVES BROTHER'S (Hazardous Substance Disposal Sites)

YELTON ST

HEFFNER ST

RUTH

YELTON'S FLOUR MILL (NATIONAL REGISTER ELIGIBLE)

RUTHERFORDTON-SPINDALE CENTRAL HIGH SCHOOL (NATIONAL REGISTER LISTED)

HOMER & BERTHA SPARKS HOUSE (NATIONAL REGISTER ELIGIBLE)

BUSINESS 74

WESTWOOD ST

SR 1544
WEST ST

WHITESIDES RD

SR1538

SPINDALE

MORGAN ST

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

US 221
RUTHERFORD BYPASS

RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2008 BY: J.TORTORELLA **FIGURE 2 - 2 D**

Legend

- Alternative 3
- Alternative 4
- Alternative 6
- Alternative US74A
- Historic Natl. Register Districts - (Restricted)
- Overmountain Victory National Historic Trail
- Delineated Streams
- Delineated Wetland
- Ponds,Lakes,Rivers

N

0 300 600 1,200
Feet

FIGURE 2 - 2 D

N

74

64

MATCHLINE SHEET 2H

ROCK RD.

OVERMOUNTAIN VICTORY NATIONAL HISTORIC TRAIL

ROBERT J. NORRIS HOUSE (NATIONAL REGISTER ELIGIBLE)

SHADY WOODS LN

SR 1598 (LONG ST)

SR 1520 ROCK RD.

TANNER

NORFOLK SOUTHERN RAILWAY

BROYHILL PLANT

SR 1535 (BROYHILL RD)

RUTH

YOUNGS DR

MATCHLINE SHEET 2D

OVERMOUNTAIN VICTORY NATIONAL HISTORIC TRAIL

SR 1626 (DIMSDALE DR)

SR 1627

SR 1628

OVERMOUNTAIN VICTORY NATIONAL HISTORIC TRAIL

WORSHAM RD

SR 1520 (ROCK RD)

SR 1539 (OLD GILBERTTOWN RD)

GILBERT TOWN HISTORIC DISTRICT (NATIONAL REGISTER LISTED)

SR 1592 (SILVERS LAKE RD)

64

C

0 300 600 1,200 Feet

Legend

- Alternative 3
- Alternative 4
- Alternative 6
- Alternative US74A
- Historic Natl. Register Districts - (Restricted)
- Overmountain Victory National Historic Trail
- Delineated Streams
- Delineated Wetland
- Ponds,Lakes,Rivers

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

US 221
RUTHERFORDTON BYPASS

RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2011 | BY: J.TORTORELLA | FIGURE 2 - 2 E

N

SR 1191
MTN VIEW
CEMETERY RD

SR 1005
(COXE RD.)

SR 1152

221

RUTHERFORDTON

MATCHLINE SHEET 2B

SR 2193
(OLD STONECUTTER RD.)

SR 2193 (THUNDER RD.)

SR 2229 (PATE RD.)

MATCHLINE SHEET 2C

RUTHERFORD
COUNTY SOLID
WASTE FACILITY

(LAUREL HILL DR.)

SR 2203

221

MATCHLINE SHEET 2G

Legend

- Alternative 3
- Alternative 4
- Alternative 6
- Alternative US74A
- Historic Natl. Register Districts - (Restricted)
- Overmountain Victory National Historic Trail
- Delineated Streams
- Delineated Wetland
- Ponds,Lakes,Rivers

0 300 600 1,200
Feet

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

US 221
RUTHERFORDTON BYPASS

RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2008 BY: J.TORTORELLA **FIGURE 2 - 2 F**

N

CRESTVIEW ST.

TANNER ST.

221

S. MAIN ST.

MATCHLINE SHEET 2F

OVERMOUNTAIN VICTORY
NATIONAL HISTORIC TRAIL

MAIN STREET HISTORIC DISTRICT
(NATIONAL REGISTER LISTED)

PROPOSED
MAIN STREET HISTORIC DISTRICT EXPANSION
(NATIONAL REGISTER ELIGIBLE)

221

RUTHERFORDTON

S. MAIN ST.

221

N. MAIN ST.

N CLEGHORN ST.

SR 2271 (INDUSTRIAL PARK RD.)

MATCHLINE SHEET 2D

Legend

- Alternative 3
- Alternative 4
- Alternative 6
- Alternative US74A
- Historic Natl. Register Districts - (Restricted)
- Overmountain Victory National Historic Trail
- Delineated Streams
- Delineated Wetland
- Ponds,Lakes,Rivers

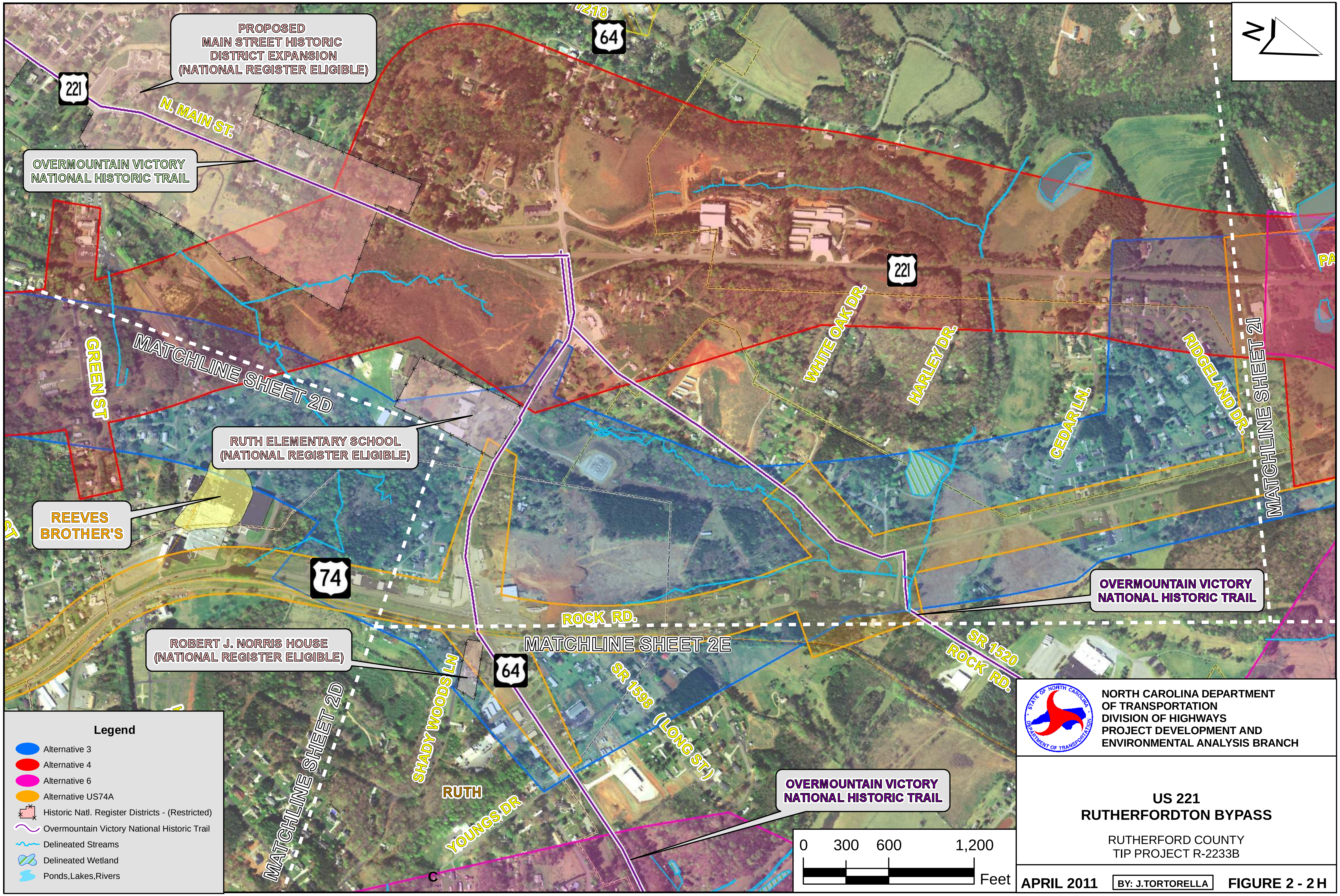
0 300 600 1,200 Feet

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

US 221
RUTHERFORDTON BYPASS

RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2011 BY: J.TORTORELLA **FIGURE 2 - 2G**


PROPOSED
MAIN STREET HISTORIC
DISTRICT EXPANSION
(NATIONAL REGISTER ELIGIBLE)
OVERMOUNTAIN VICTORY
NATIONAL HISTORIC TRAIL
221
N. MAIN ST.
64
221
GREEN ST
MATCHLINE SHEET 2D
WHITE OAK DR.
HARLEY DR.
RIDGELAND DR.
CEDAR LN.
MATCHLINE SHEET 2I
RUTH ELEMENTARY SCHOOL
(NATIONAL REGISTER ELIGIBLE)
REEVES
BROTHER'S
74
ROCK RD.
MATCHLINE SHEET 2E
OVERMOUNTAIN VICTORY
NATIONAL HISTORIC TRAIL
SR 1520
ROCK RD.
ROBERT J. NORRIS HOUSE
(NATIONAL REGISTER ELIGIBLE)
64
SR 1598
(LONG ST.)
SHADY WOODS LN
MATCHLINE SHEET 2D
RUTH
YOUNGS DR
OVERMOUNTAIN VICTORY
NATIONAL HISTORIC TRAIL
Legend
Alternative 3
Alternative 4
Alternative 6
Alternative US74A
Historic Natl. Register Districts - (Restricted)
Overmountain Victory National Historic Trail
Delineated Streams
Delineated Wetland
Ponds,Lakes,Rivers
0 300 600 1,200
Feet
NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH
US 221
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B
APRIL 2011
BY: J.TORTORELLA
FIGURE 2 - 2 H

MATCHLINE SHEET 2H

MATCHLINE SHEET 2J

SR 1378 (HARDIN RD.)

SR 1367 (THOMPSON RD.)

WATER SUPPLY WATERSHED

R - S CENTRAL HIGH SCHOOL

PATRIOT WAY

RIDGELAND DR.

CEDAR LN.

OLD US 221N HWY.

221

SR 1532 (GILBOA CHURCH RD.)

SR 1526 (GILMER EDWARDS RD.)

OVERMOUNTAIN VICTORY NATIONAL HISTORIC TRAIL

MATCHLINE SHEET 2E

SR 1520

NORFOLK SOUTHERN RAILWAY

BOYHILL PLANT

SR 1535 (BROYHILL RD)

MATCHLINE SHEET 2E

Legend

- Alternative 3
- Alternative 4
- Alternative 6
- Alternative US74A
- Historic Natl. Register Districts - (Restricted)
- Overmountain Victory National Historic Trail
- Delineated Streams
- Delineated Wetland
- Ponds,Lakes,Rivers

0 300 600 1,200 Feet

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

US 221
RUTHERFORDTON BYPASS

RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2011 BY: J.TORTORELLA **FIGURE 2 - 2 I**

WATER SUPPLY WATERSHED

MATCHLINE SHEET 21

ROPER LOOP RD.

WATER SUPPLY WATERSHED

END PROJECT
TIP # R-2233B

WENDOVER LN.

SR 1376 (LANE RD.)

221

NORFOLK SOUTHERN RAILWAY

SR 1532
(GILBOA CHURCH RD.)

SR 1526 (GILMER EDWARDS RD.)

GILBOA
UNITED METHODIST CHURCH
(NATIONAL REGISTER ELIGIBLE)

C

Legend

- Alternative 3
- Alternative 4
- Alternative 6
- Alternative US74A
- Historic Natl. Register Districts - (Restricted)
- Overmountain Victory National Historic Trail
- Delineated Streams
- Delineated Wetland
- Ponds,Lakes,Rivers

0 300 600 1,200
Feet

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

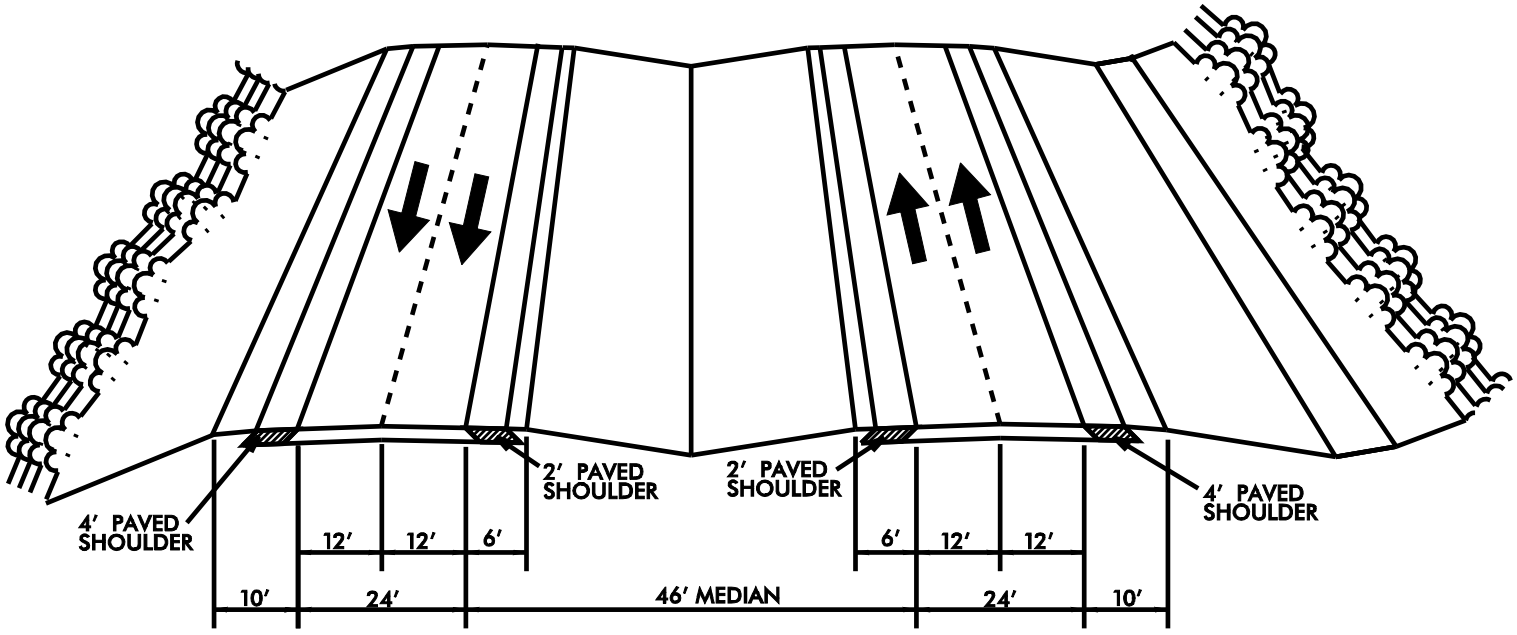
US 221
RUTHERFORDTON BYPASS

RUTHERFORD COUNTY
TIP PROJECT R-2233B

APRIL 2011 | BY: J.TORTORELLA | FIGURE 2 - 2J

TIP PROJECT R-2233B

PROPOSED TYPICAL SECTION
(ALTS. 3, 4, 6 AND
NEW LOCATION PORTIONS OF ALT. US74A)



NOT TO SCALE

PROPOSED TYPICAL SECTION
(ALT. US74A ALONG RAILROAD AVE.)

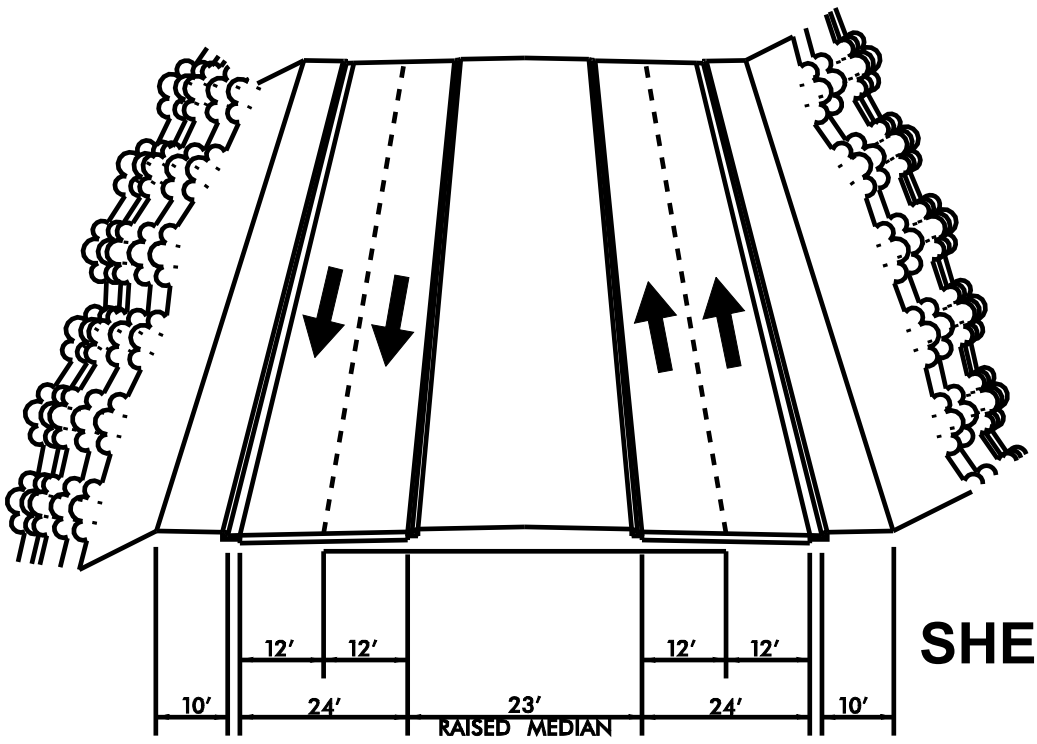
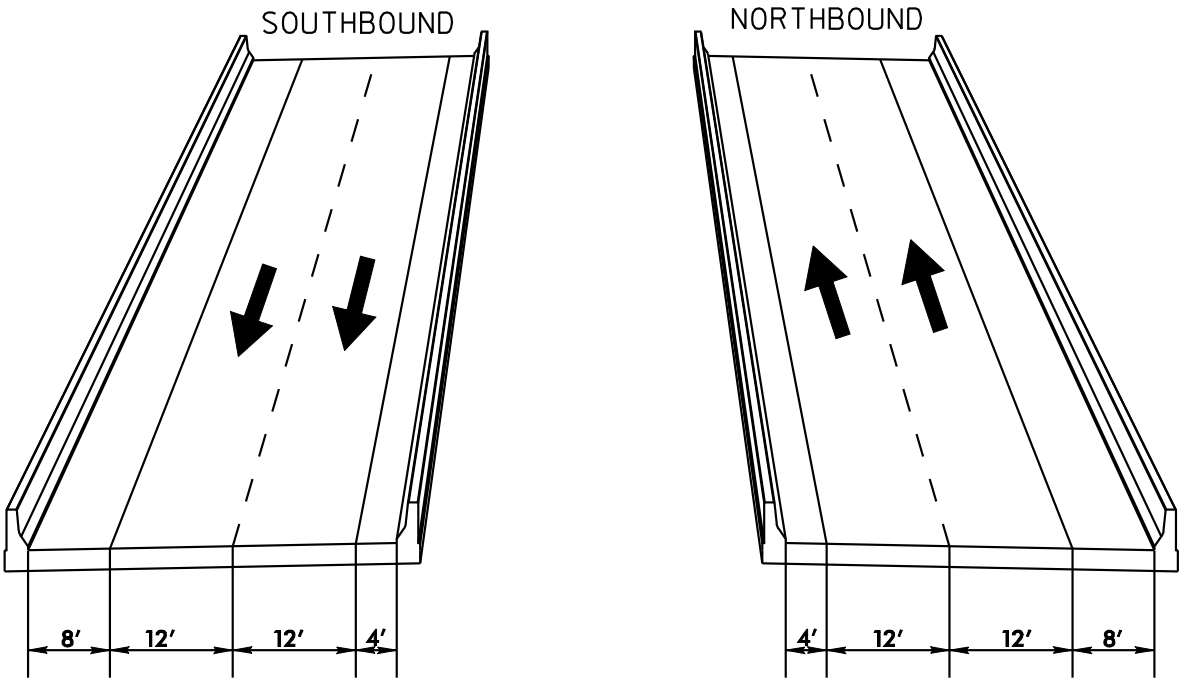


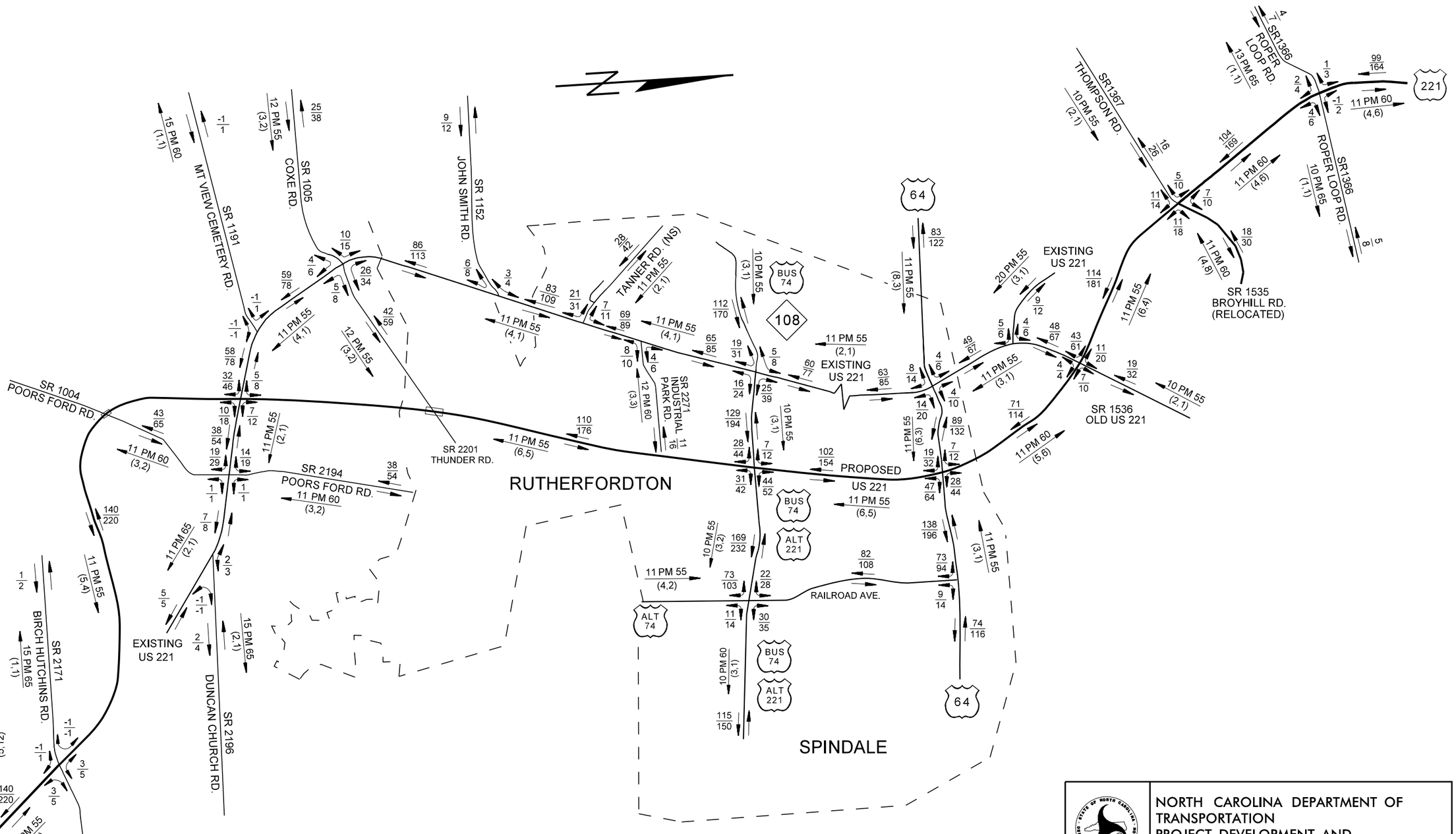
FIGURE 2-3

PROPOSED TYPICAL SECTION ON NEW BRIDGES



NOT TO SCALE

FIGURE 2-3



2010/2030 AVERAGE DAILY TRAFFIC IN HUNDREDS

% DHV | % DIRECTIONAL | PEAK HOUR DIRECTION

10 PM 60
(4, 13)

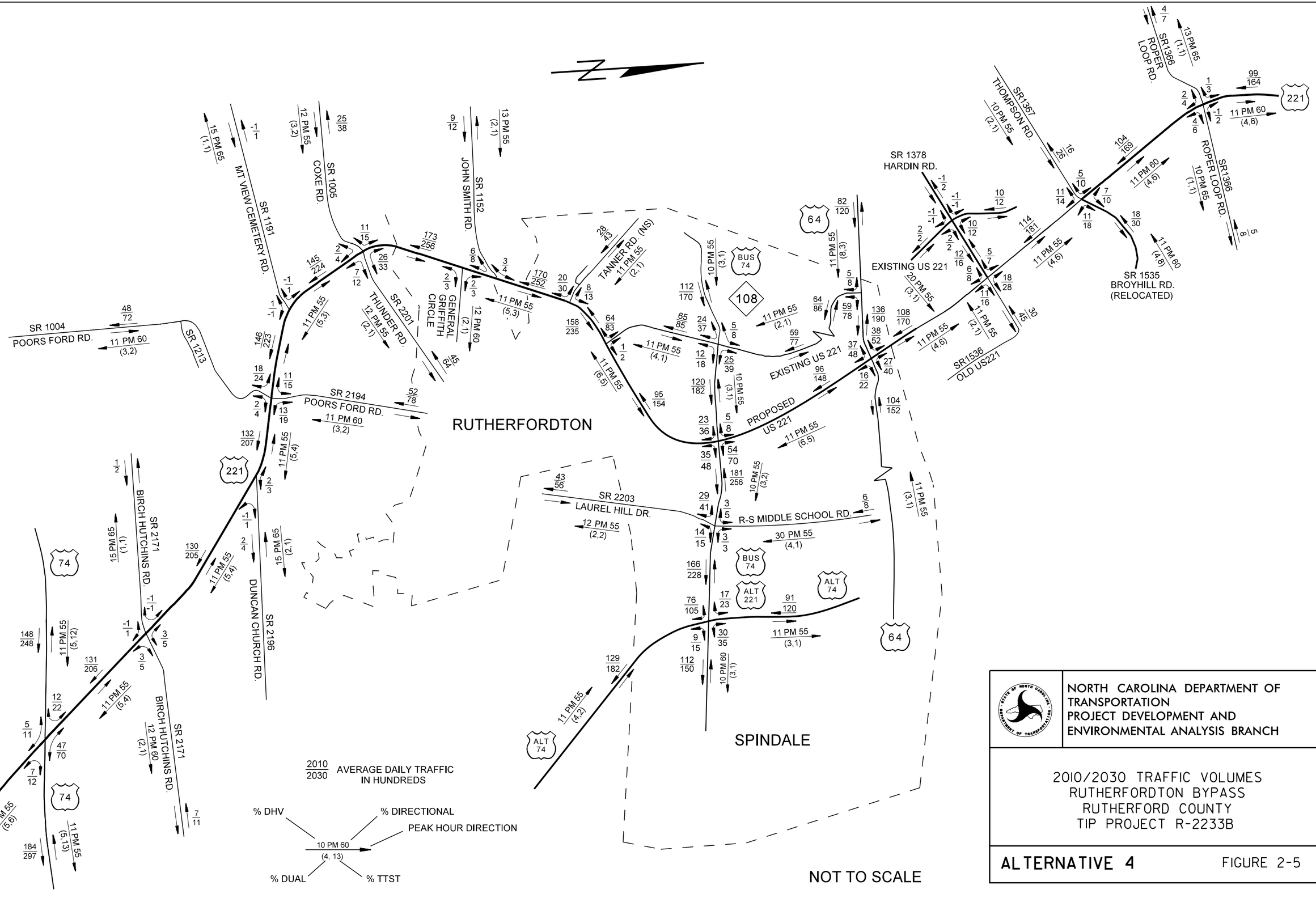
% DUAL | % TTST

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

2010/2030 TRAFFIC VOLUMES
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

ALTERNATIVE 3

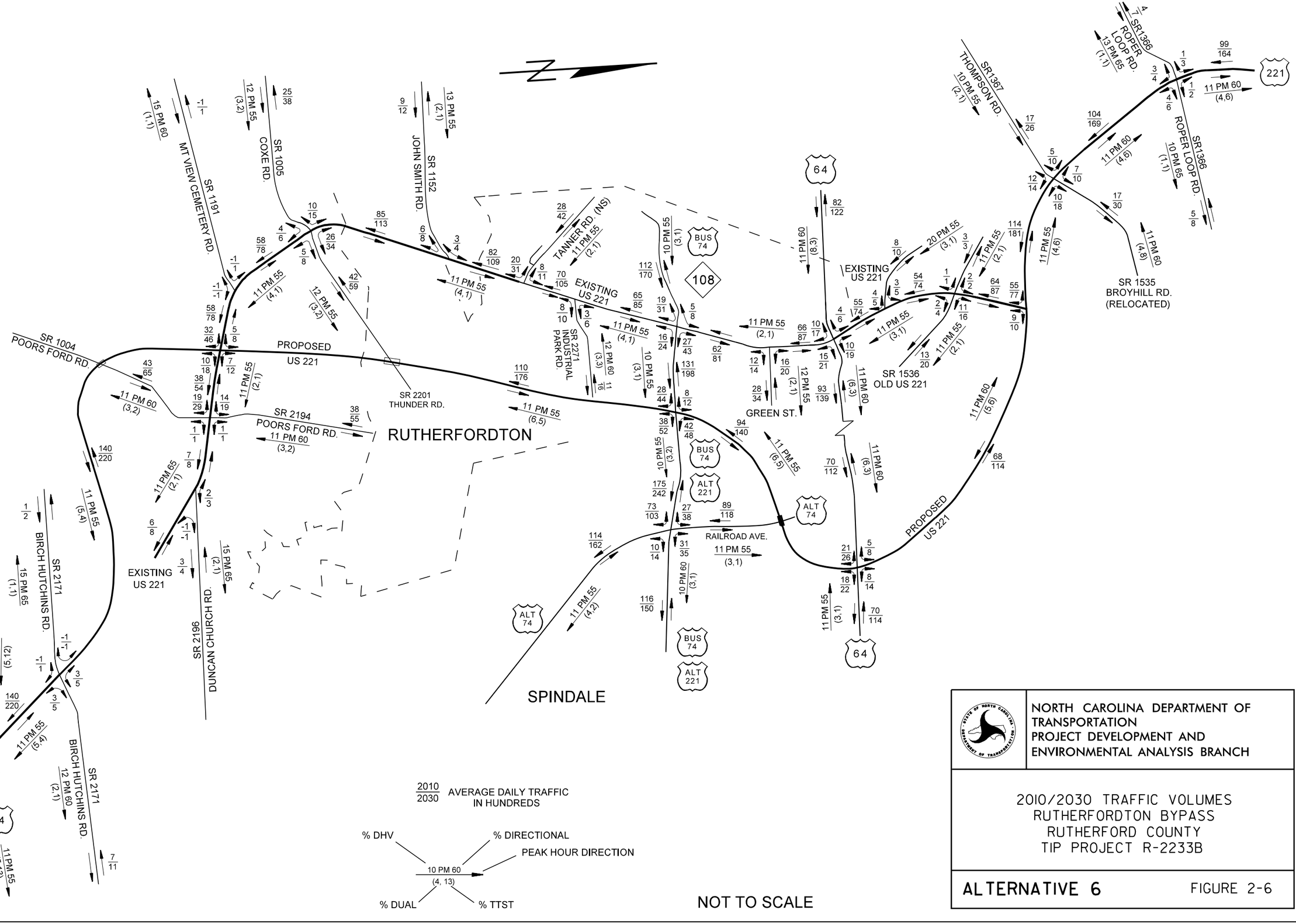
FIGURE 2-4



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

2010/2030 TRAFFIC VOLUMES
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

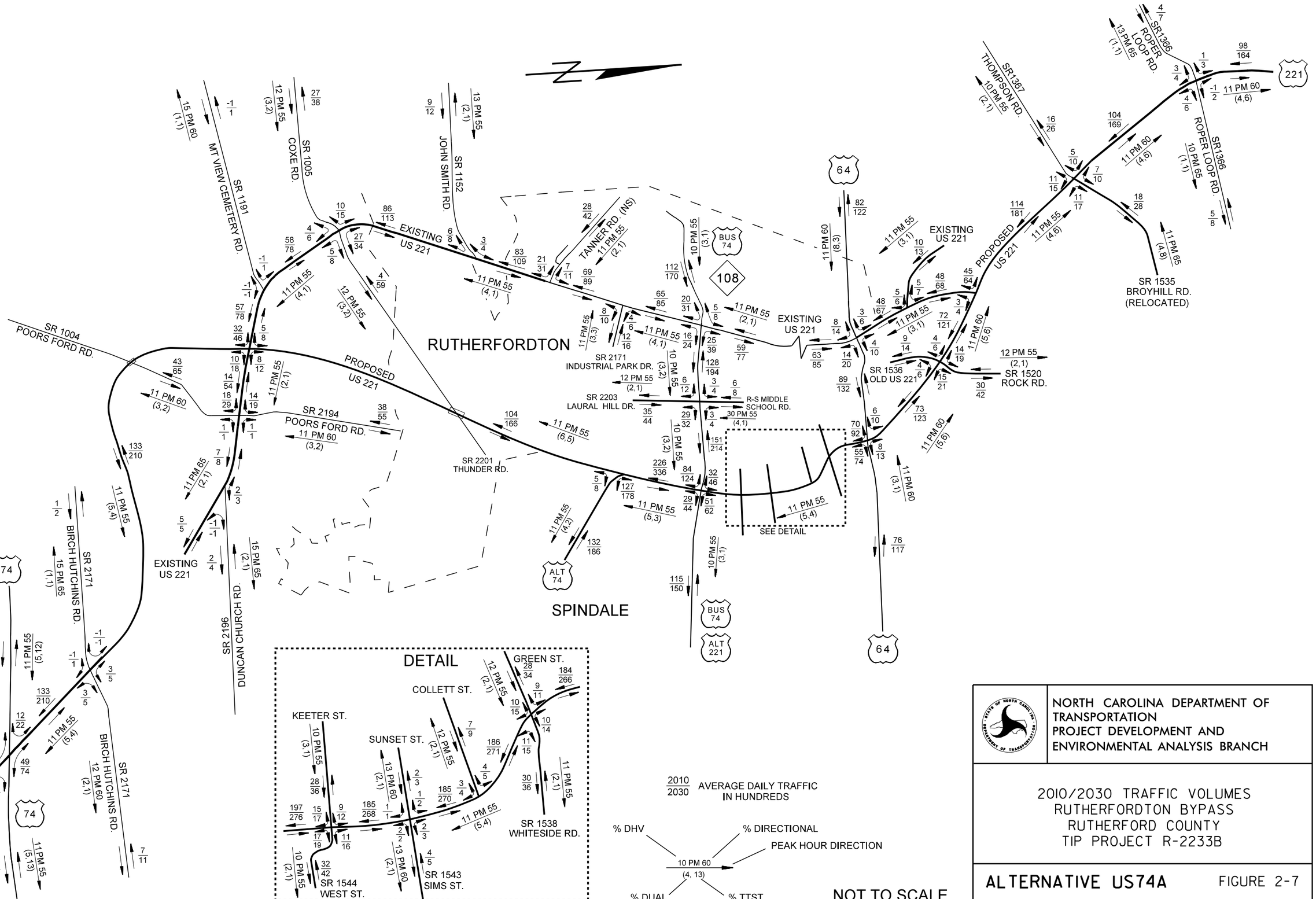
ALTERNATIVE 4 FIGURE 2-5



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

2010/2030 TRAFFIC VOLUMES
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

ALTERNATIVE 6 FIGURE 2-6

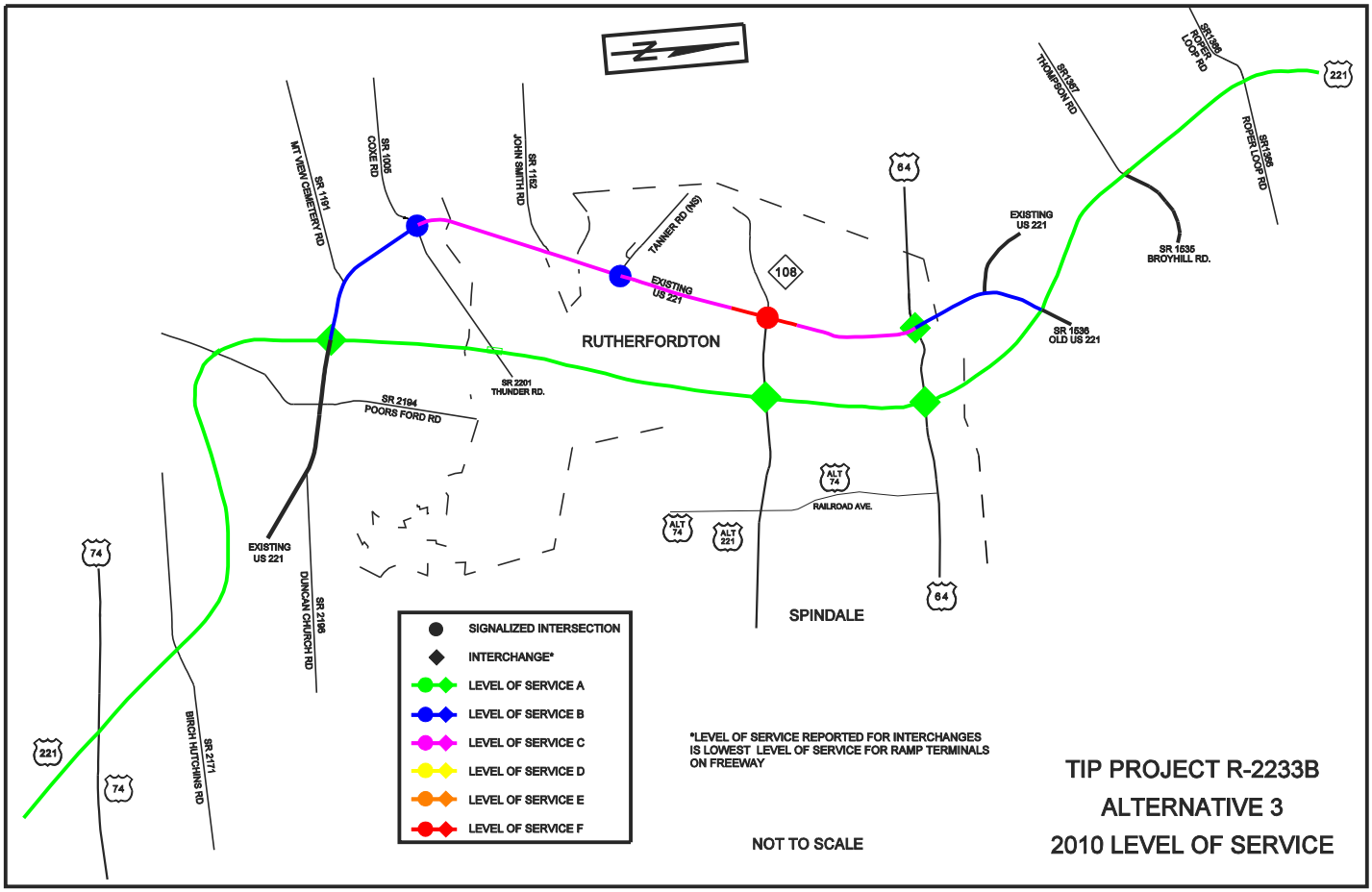


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

2010/2030 TRAFFIC VOLUMES
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

ALTERNATIVE US74A

FIGURE 2-7


N
SR 1191
MT VIEW CEMETERY RD
SR 1005
COXE RD
SR 1162
JOHN SMITH RD
TANNER RD (NB)
EXISTING
US 221
108
64
EXISTING
US 221
SR1387
THOMPSON RD
SR1388
ROPER
LOOP RD
SR1388
ROPER LOOP RD
221
SR 1535
BROYHILL RD.
SR 1536
OLD US 221
RUTHERFORDTON
SR 2201
THUNDER RD.
SR 2194
POORS FORD RD
ALT
74
RAILROAD AVE.
ALT
74
ALT
221
64
SPINDALE
EXISTING
US 221
74
SR 2166
DUNCAN CHURCH RD
221
74
SR 2171
BIRCH HUTCHINS RD
SIGNALIZED INTERSECTION
INTERCHANGE*
LEVEL OF SERVICE A
LEVEL OF SERVICE B
LEVEL OF SERVICE C
LEVEL OF SERVICE D
LEVEL OF SERVICE E
LEVEL OF SERVICE F
*LEVEL OF SERVICE REPORTED FOR INTERCHANGES
IS LOWEST LEVEL OF SERVICE FOR RAMP TERMINALS
ON FREEWAY
NOT TO SCALE
TIP PROJECT R-2233B
ALTERNATIVE 3
2010 LEVEL OF SERVICE

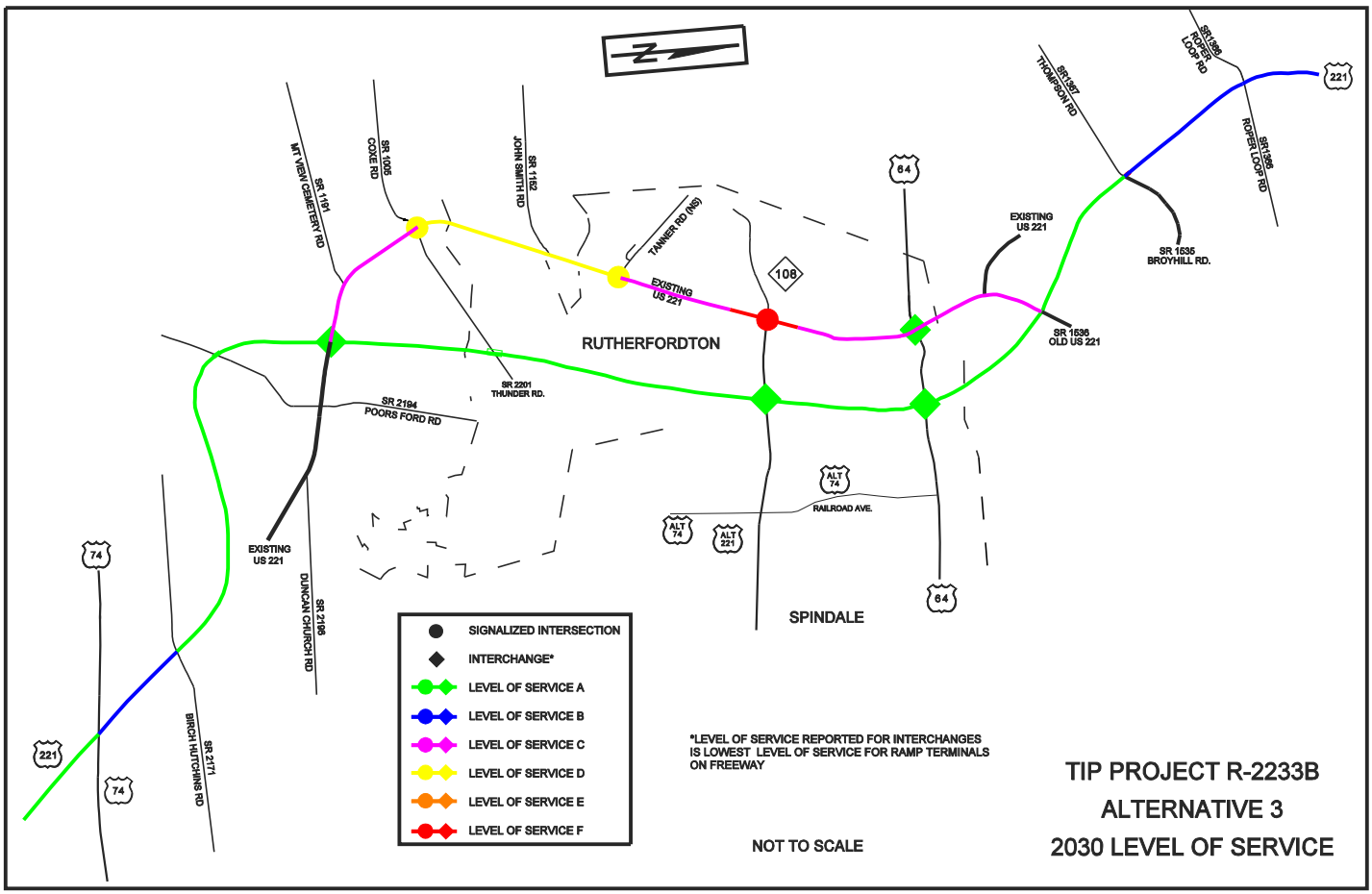
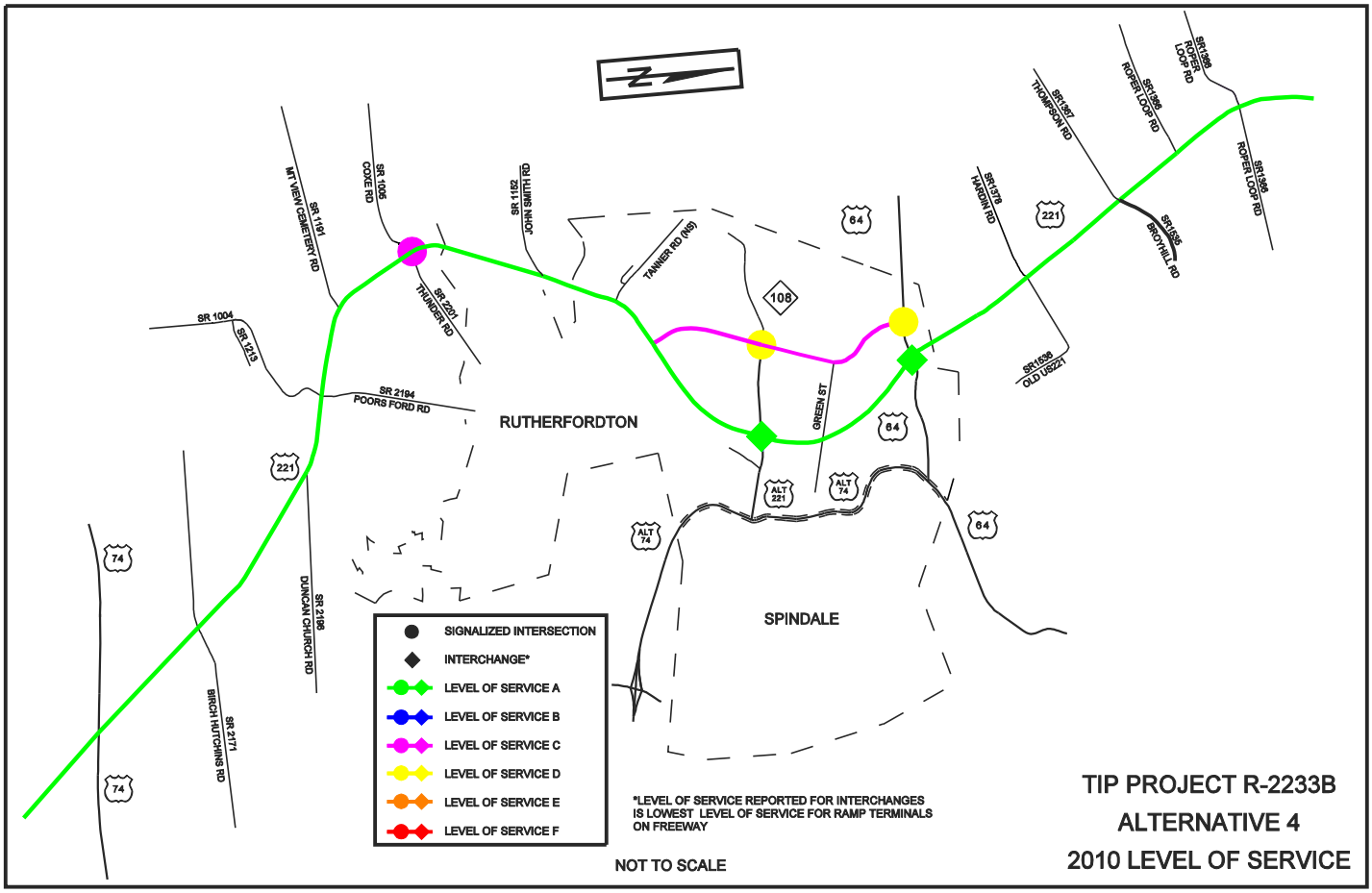

N
SR 1191
MT VIEW CEMETERY RD
SR 1005
COXE RD
SR 1162
JOHN SMITH RD
TANNER RD (NB)
EXISTING
US 221
108
64
EXISTING
US 221
SR1387
THOMPSON RD
SR1388
ROPER
LOOP RD
SR1388
ROPER LOOP RD
221
SR 1535
BROYHILL RD.
SR 1536
OLD US 221
RUTHERFORDTON
SR 2201
THUNDER RD.
SR 2194
POORS FORD RD
ALT
74
RAILROAD AVE.
ALT
74
ALT
221
64
SPINDALE
EXISTING
US 221
74
SR 2166
DUNCAN CHURCH RD
221
74
SR 2171
BIRCH HUTCHINS RD
SIGNALIZED INTERSECTION
INTERCHANGE*
LEVEL OF SERVICE A
LEVEL OF SERVICE B
LEVEL OF SERVICE C
LEVEL OF SERVICE D
LEVEL OF SERVICE E
LEVEL OF SERVICE F
*LEVEL OF SERVICE REPORTED FOR INTERCHANGES
IS LOWEST LEVEL OF SERVICE FOR RAMP TERMINALS
ON FREEWAY
NOT TO SCALE
TIP PROJECT R-2233B
ALTERNATIVE 3
2030 LEVEL OF SERVICE

FIGURE 2-8


RUTHERFORDTON
SPINDALE
SR 1004
SR 1113
SR 2194
POORS FORD RD
SR 1191
MT VIEW CEMETERY RD
SR 1035
COXE RD
SR 2201
THUNDER RD
SR 1152
JOHN SMITH RD
TANNER RD (NS)
SR 1378
HARDIN RD
SR 1567
THOMPSON RD
SR 1569
ROPER LOOP RD
SR 1595
BROYHILL RD
SR 1535
OLD US221
GREEN ST
SR 2196
DUNCAN CHURCH RD
SR 2171
BIRCH HUTCHINS RD
64
221
74
108
ALT 74
ALT 221
SIGNALIZED INTERSECTION
INTERCHANGE*
LEVEL OF SERVICE A
LEVEL OF SERVICE B
LEVEL OF SERVICE C
LEVEL OF SERVICE D
LEVEL OF SERVICE E
LEVEL OF SERVICE F
*LEVEL OF SERVICE REPORTED FOR INTERCHANGES IS LOWEST LEVEL OF SERVICE FOR RAMP TERMINALS ON FREEWAY
NOT TO SCALE
TIP PROJECT R-2233B
ALTERNATIVE 4
2010 LEVEL OF SERVICE

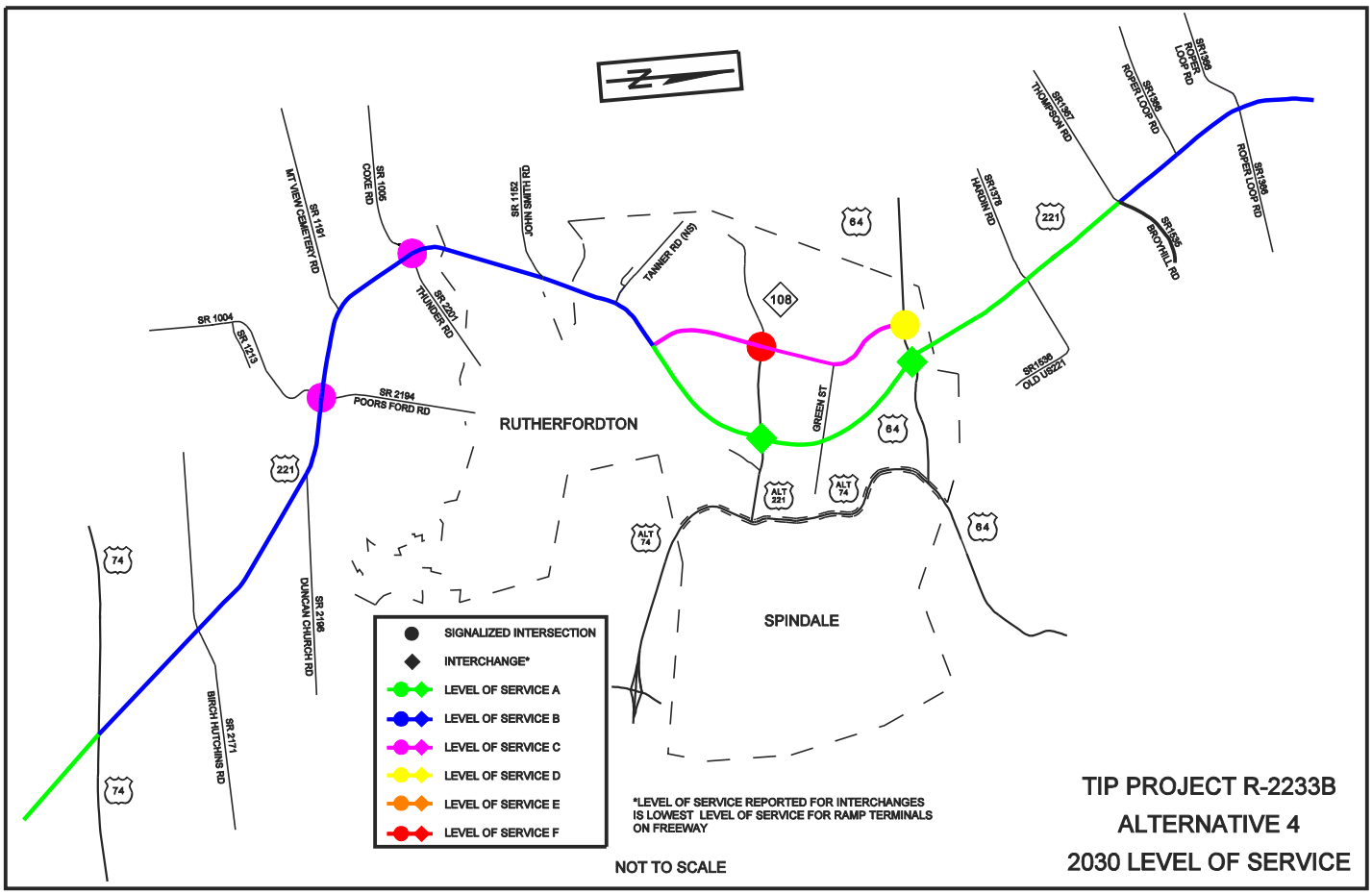
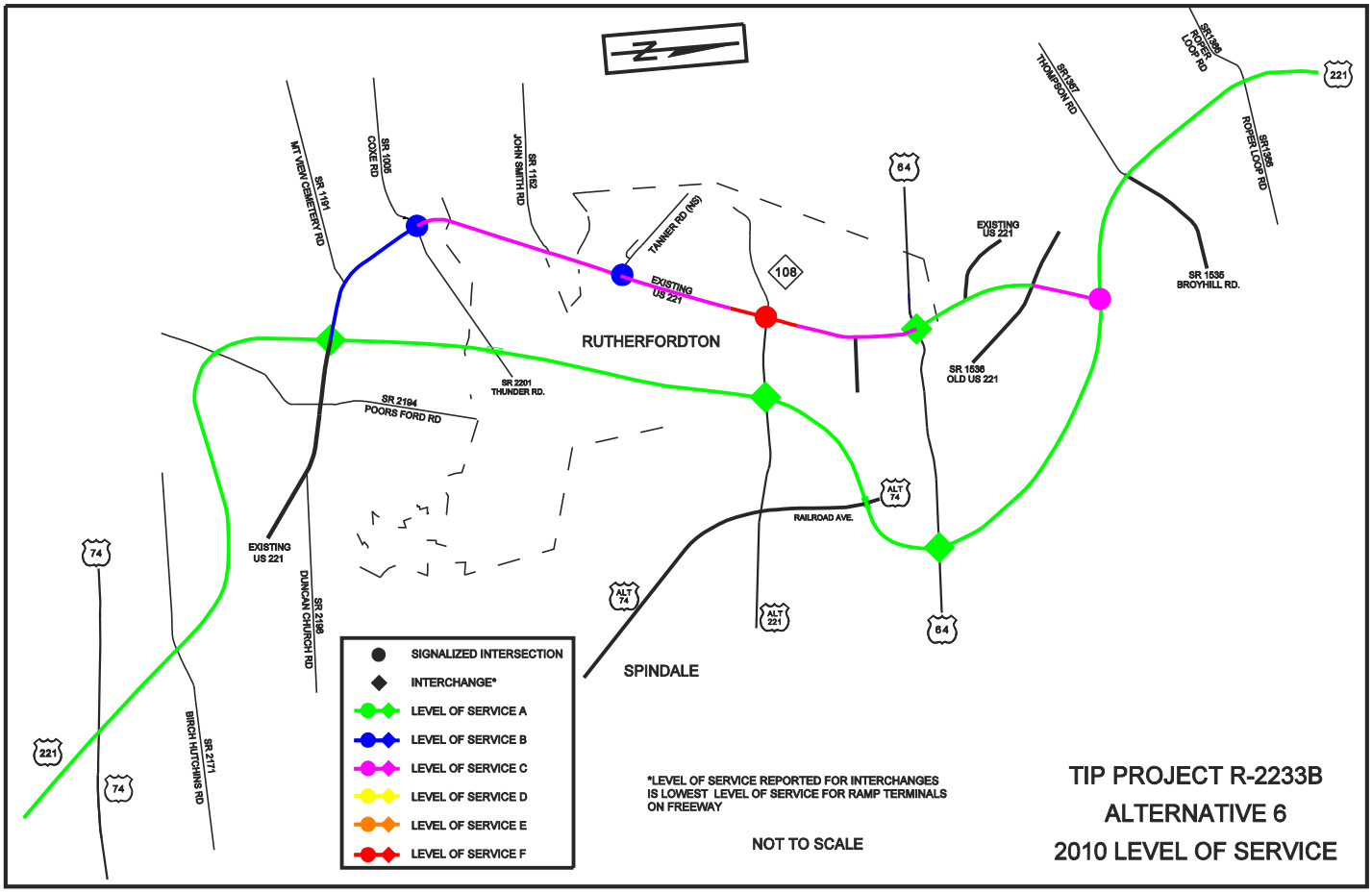

RUTHERFORDTON
SPINDALE
SR 1004
SR 1113
SR 2194
POORS FORD RD
SR 1191
MT VIEW CEMETERY RD
SR 1035
COXE RD
SR 2201
THUNDER RD
SR 1152
JOHN SMITH RD
TANNER RD (NS)
SR 1378
HARDIN RD
SR 1567
THOMPSON RD
SR 1569
ROPER LOOP RD
SR 1595
BROYHILL RD
SR 1535
OLD US221
GREEN ST
SR 2196
DUNCAN CHURCH RD
SR 2171
BIRCH HUTCHINS RD
64
221
74
108
ALT 74
ALT 221
SIGNALIZED INTERSECTION
INTERCHANGE*
LEVEL OF SERVICE A
LEVEL OF SERVICE B
LEVEL OF SERVICE C
LEVEL OF SERVICE D
LEVEL OF SERVICE E
LEVEL OF SERVICE F
*LEVEL OF SERVICE REPORTED FOR INTERCHANGES IS LOWEST LEVEL OF SERVICE FOR RAMP TERMINALS ON FREEWAY
NOT TO SCALE
TIP PROJECT R-2233B
ALTERNATIVE 4
2030 LEVEL OF SERVICE

FIGURE 2-9


RUTHERFORDTON
SPINDALE
SR 1191 MT VIEW CEMETERY RD
SR 1005 COXE RD
SR 1162 JOHN SMITH RD
TANNER RD (NB)
EXISTING US 221
SR 2201 THUNDER RD.
SR 2194 POORS FORD RD
SR 1536 OLD US 221
SR 1535 BROYHILL RD.
SR1567 THOMPSON RD
SR1568 ROPER LOOP RD
SR1568 ROPER LOOP RD
RAILROAD AVE.
SR 2198 DUNCAN CHURCH RD
SR 2171 BIRCH HUTCHINS RD
108
64
74
221
ALT 74
ALT 221
SIGNALIZED INTERSECTION
INTERCHANGE*
LEVEL OF SERVICE A
LEVEL OF SERVICE B
LEVEL OF SERVICE C
LEVEL OF SERVICE D
LEVEL OF SERVICE E
LEVEL OF SERVICE F
*LEVEL OF SERVICE REPORTED FOR INTERCHANGES IS LOWEST LEVEL OF SERVICE FOR RAMP TERMINALS ON FREEWAY
NOT TO SCALE
TIP PROJECT R-2233B
ALTERNATIVE 6
2010 LEVEL OF SERVICE

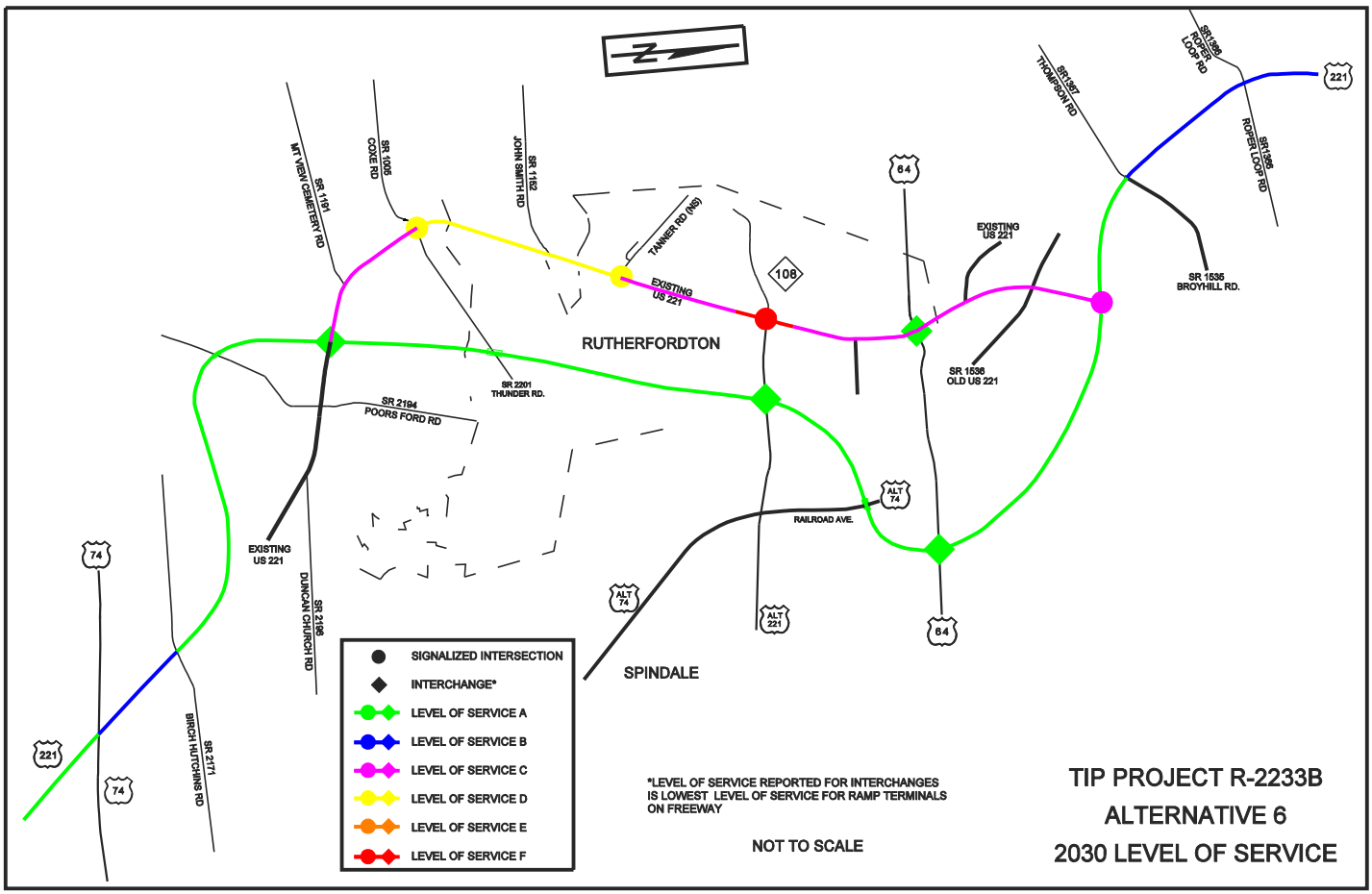
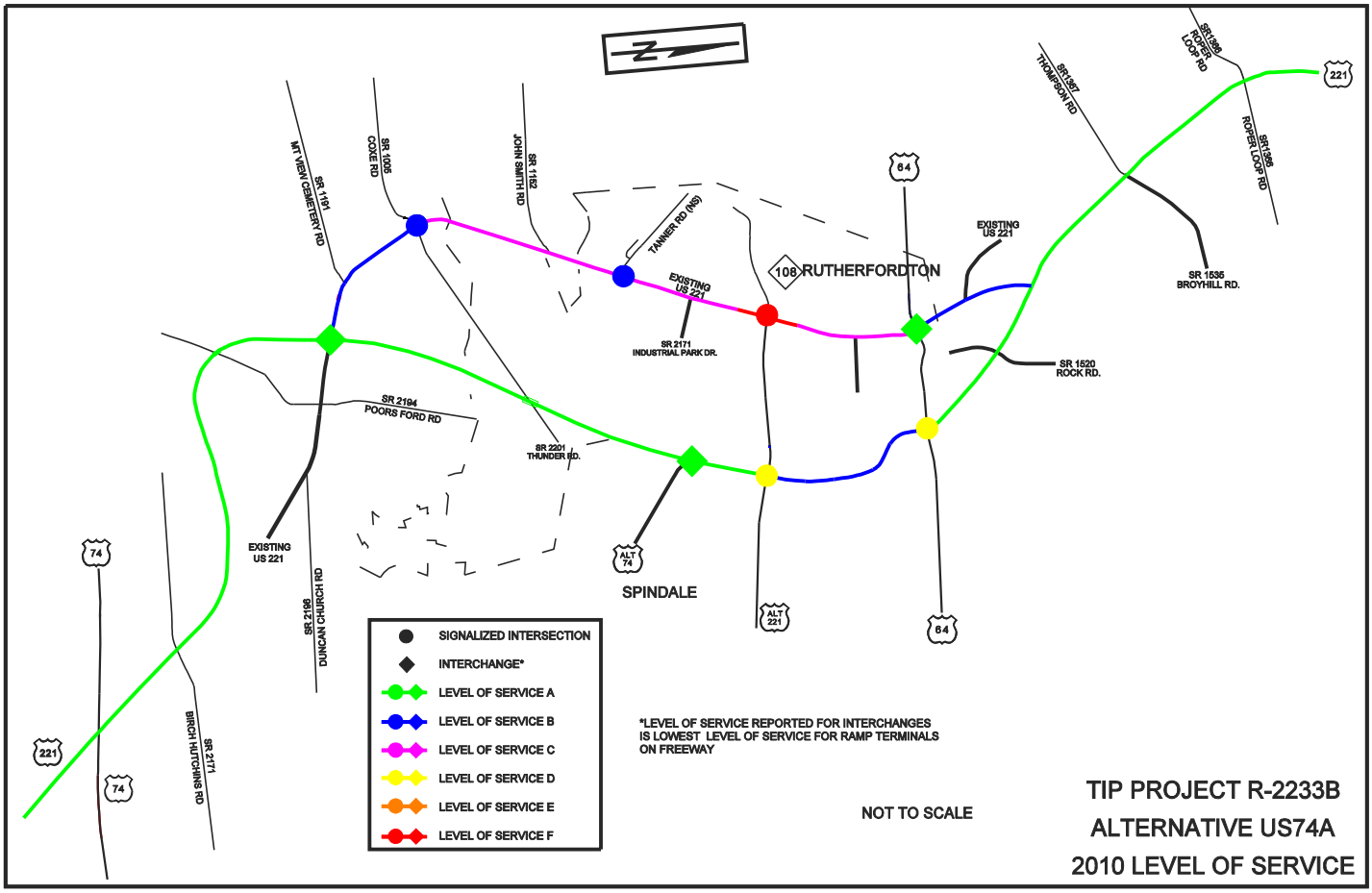

RUTHERFORDTON
SPINDALE
SR 1191 MT VIEW CEMETERY RD
SR 1005 COXE RD
SR 1162 JOHN SMITH RD
TANNER RD (NB)
EXISTING US 221
SR 2201 THUNDER RD.
SR 2194 POORS FORD RD
SR 1536 OLD US 221
SR 1535 BROYHILL RD.
SR1567 THOMPSON RD
SR1568 ROPER LOOP RD
SR1568 ROPER LOOP RD
RAILROAD AVE.
SR 2198 DUNCAN CHURCH RD
SR 2171 BIRCH HUTCHINS RD
108
64
74
221
ALT 74
ALT 221
SIGNALIZED INTERSECTION
INTERCHANGE*
LEVEL OF SERVICE A
LEVEL OF SERVICE B
LEVEL OF SERVICE C
LEVEL OF SERVICE D
LEVEL OF SERVICE E
LEVEL OF SERVICE F
*LEVEL OF SERVICE REPORTED FOR INTERCHANGES IS LOWEST LEVEL OF SERVICE FOR RAMP TERMINALS ON FREEWAY
NOT TO SCALE
TIP PROJECT R-2233B
ALTERNATIVE 6
2030 LEVEL OF SERVICE

FIGURE 2-10


SR 1191
MT VIEW CEMETERY RD
SR 1005
COXE RD
SR 1162
JOHN SMITH RD
TANNER RD (NB)
EXISTING US 221
SR 2171
INDUSTRIAL PARK DR.
108
RUTHERFORDTON
64
EXISTING US 221
SR1367
THOMPSON RD
SR1368
ROPER LOOP RD
SR1368
ROPER LOOP RD
221
SR 1535
BROYHILL RD.
SR 1520
ROCK RD.
SR 2194
POORS FORD RD
SR 2201
THUNDER RD.
EXISTING US 221
SR 2196
DUNCAN CHURCH RD
ALT 74
SPINDALE
ALT 221
64
74
221
74
SR 2171
BIRCH HUTCHINS RD
SIGNALIZED INTERSECTION
INTERCHANGE*
LEVEL OF SERVICE A
LEVEL OF SERVICE B
LEVEL OF SERVICE C
LEVEL OF SERVICE D
LEVEL OF SERVICE E
LEVEL OF SERVICE F
*LEVEL OF SERVICE REPORTED FOR INTERCHANGES IS LOWEST LEVEL OF SERVICE FOR RAMP TERMINALS ON FREEWAY
NOT TO SCALE
TIP PROJECT R-2233B
ALTERNATIVE US74A
2010 LEVEL OF SERVICE

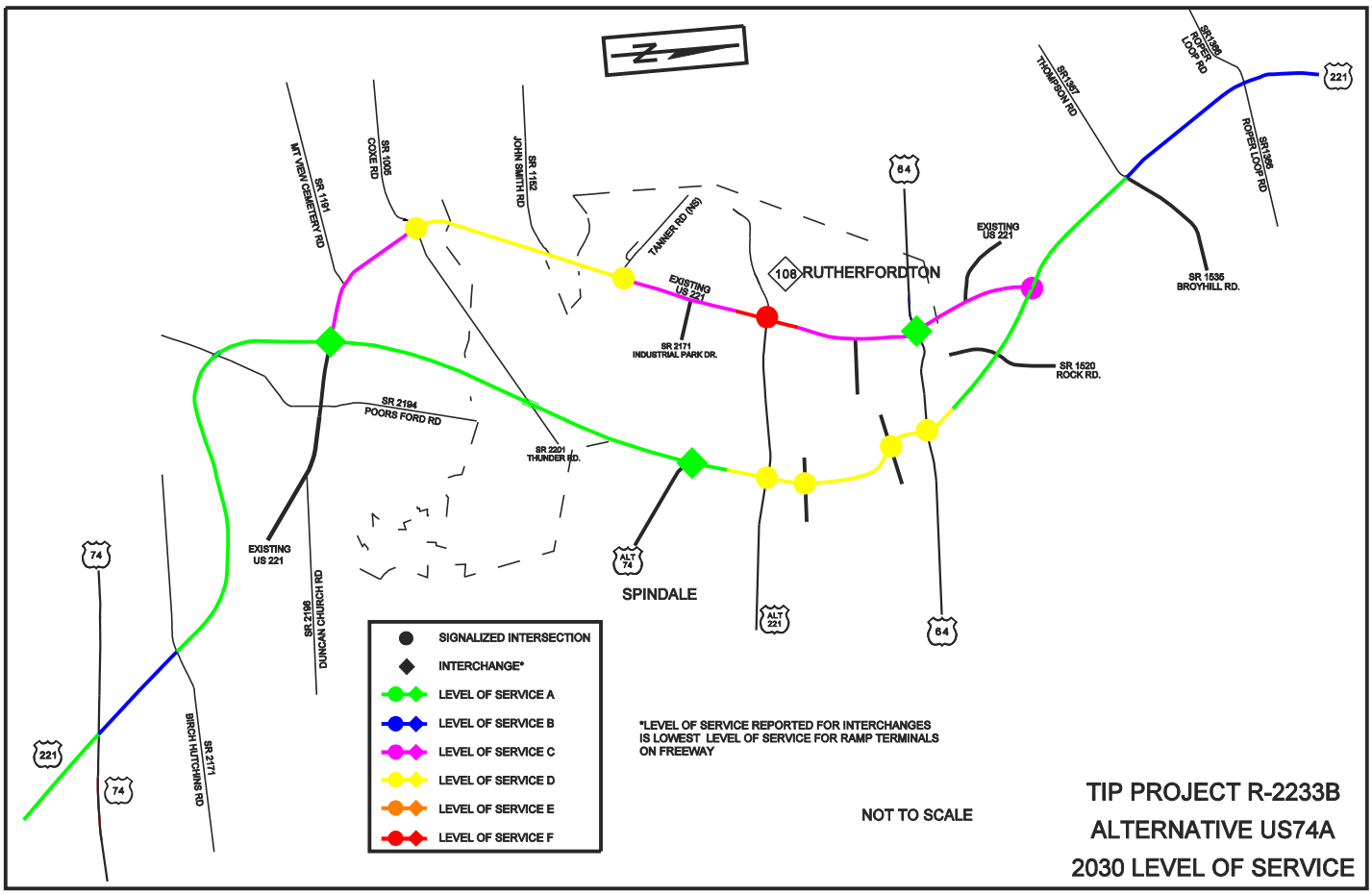

SR 1191
MT VIEW CEMETERY RD
SR 1005
COXE RD
SR 1162
JOHN SMITH RD
TANNER RD (NB)
EXISTING US 221
SR 2171
INDUSTRIAL PARK DR.
108
RUTHERFORDTON
64
EXISTING US 221
SR1367
THOMPSON RD
SR1368
ROPER LOOP RD
SR1368
ROPER LOOP RD
221
SR 1535
BROYHILL RD.
SR 1520
ROCK RD.
SR 2194
POORS FORD RD
SR 2201
THUNDER RD.
EXISTING US 221
SR 2196
DUNCAN CHURCH RD
ALT 74
SPINDALE
ALT 221
64
74
221
74
SR 2171
BIRCH HUTCHINS RD
SIGNALIZED INTERSECTION
INTERCHANGE*
LEVEL OF SERVICE A
LEVEL OF SERVICE B
LEVEL OF SERVICE C
LEVEL OF SERVICE D
LEVEL OF SERVICE E
LEVEL OF SERVICE F
*LEVEL OF SERVICE REPORTED FOR INTERCHANGES IS LOWEST LEVEL OF SERVICE FOR RAMP TERMINALS ON FREEWAY
NOT TO SCALE
TIP PROJECT R-2233B
ALTERNATIVE US74A
2030 LEVEL OF SERVICE

FIGURE 2-11

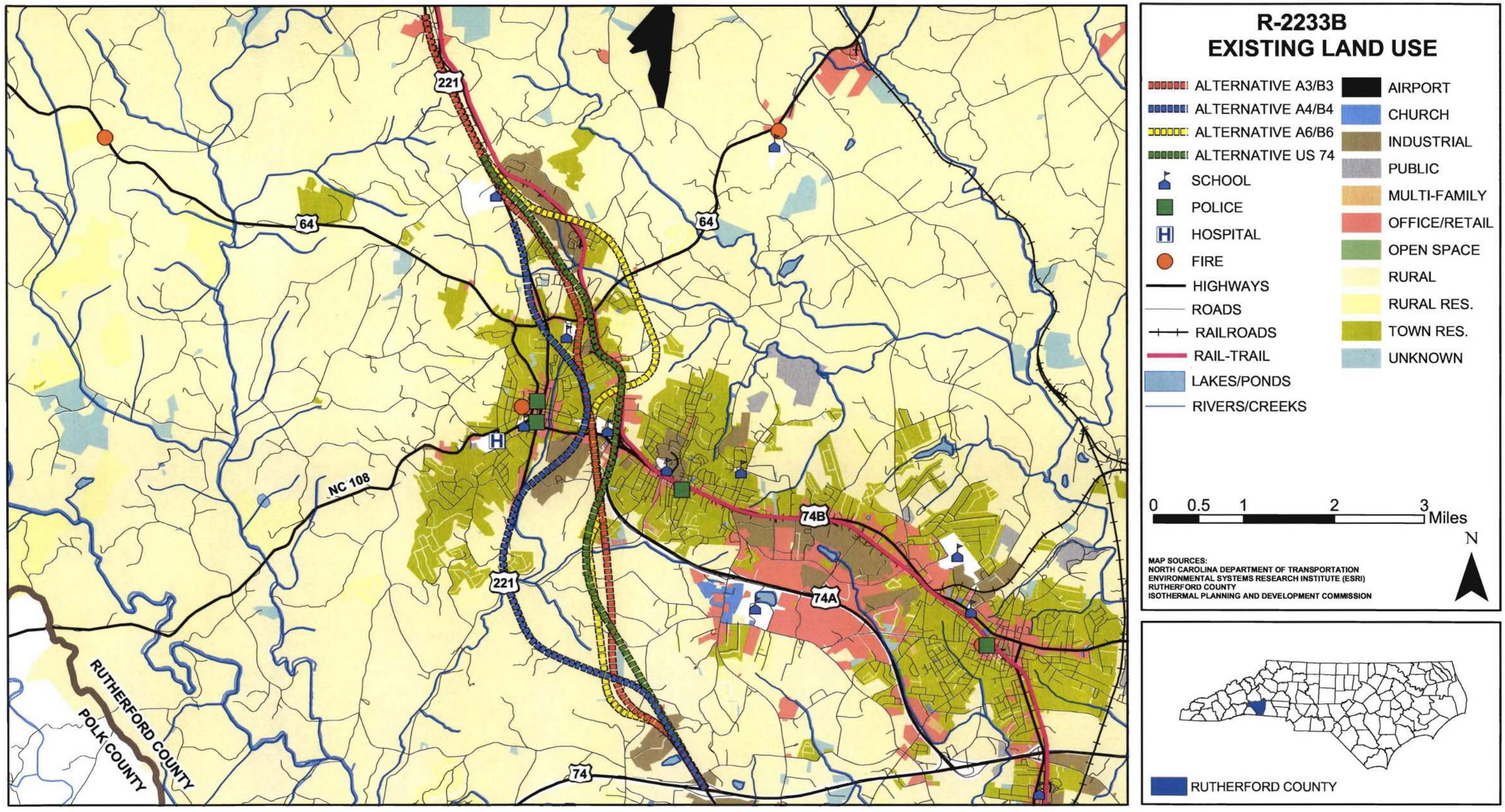
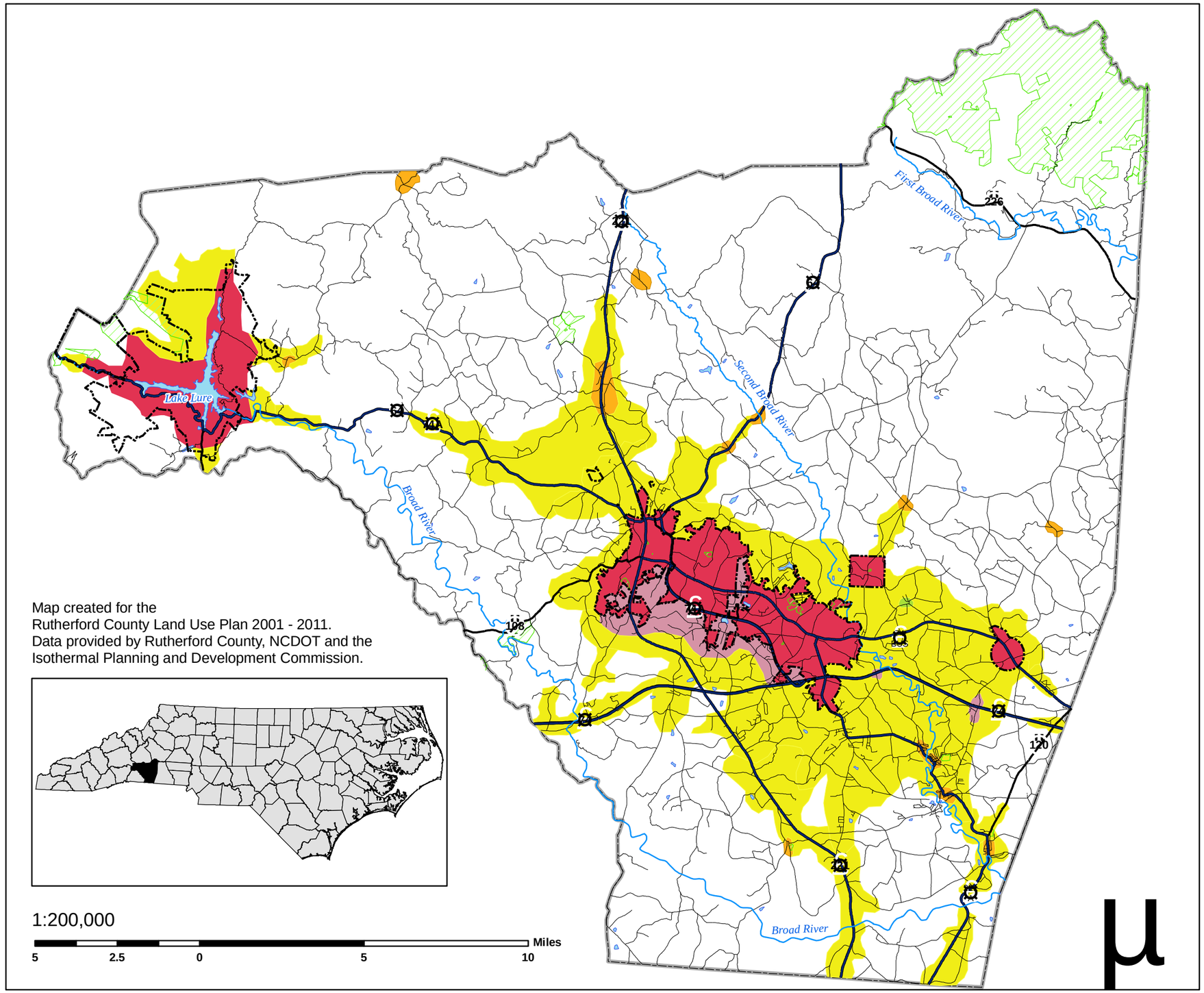

R-2233B
EXISTING LAND USE
ALTERNATIVE A3/B3
ALTERNATIVE A4/B4
ALTERNATIVE A6/B6
ALTERNATIVE US 74
SCHOOL
POLICE
HOSPITAL
FIRE
HIGHWAYS
ROADS
RAILROADS
RAIL-TRAIL
LAKES/PONDS
RIVERS/CREEKS
AIRPORT
CHURCH
INDUSTRIAL
PUBLIC
MULTI-FAMILY
OFFICE/RETAIL
OPEN SPACE
RURAL
RURAL RES.
TOWN RES.
UNKNOWN
0 0.5 1 2 3 Miles
N
MAP SOURCES:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI)
RUTHERFORD COUNTY
ISOTHERMAL PLANNING AND DEVELOPMENT COMMISSION
RUTHERFORD COUNTY
221
64
64
NC 108
221
74B
74A
74
RUTHERFORD COUNTY
POLK COUNTY

FIGURE 3-1

RUTHERFORD COUNTY FUTURE LAND USE



Map created for the
Rutherford County Land Use Plan 2001 - 2011.
Data provided by Rutherford County, NCDOT and the
Isothermal Planning and Development Commission.

Future Land Use

- 🟥 Developed
- ▨ Urban Transition
- 🟧 Community
- 🟨 Limited Transition
- 🟩 Rural with Services
- ☐ Rural
- ▨ Protected Lands

Map created by:
Isothermal Planning and Development Commission
111 West Court Street
P.O. Box 841
Rutherfordton, NC 28139
(828) 287-2281
"serving Cleveland, McDowell, Polk and Rutherford Counties"

FIGURE 3-2

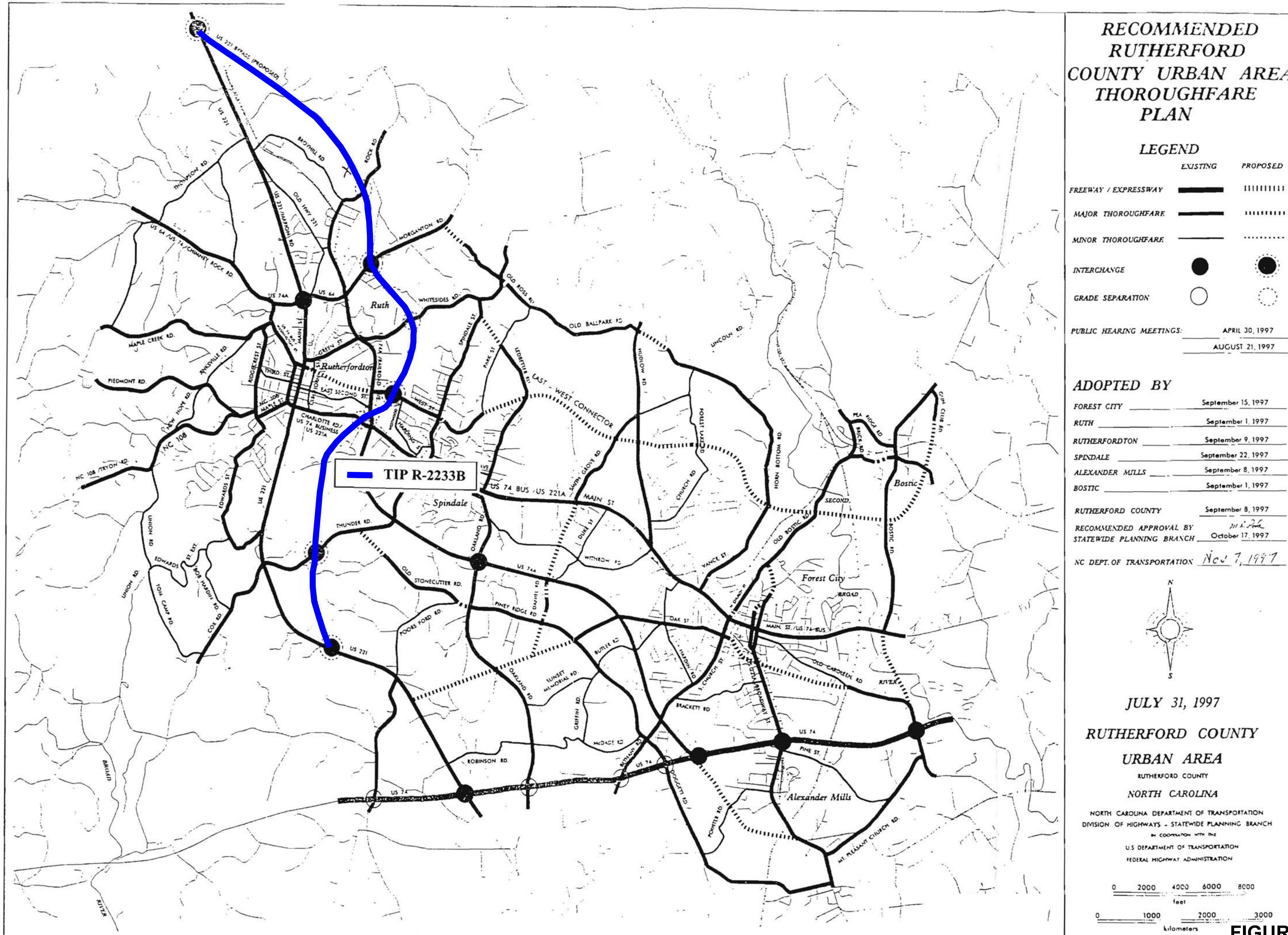
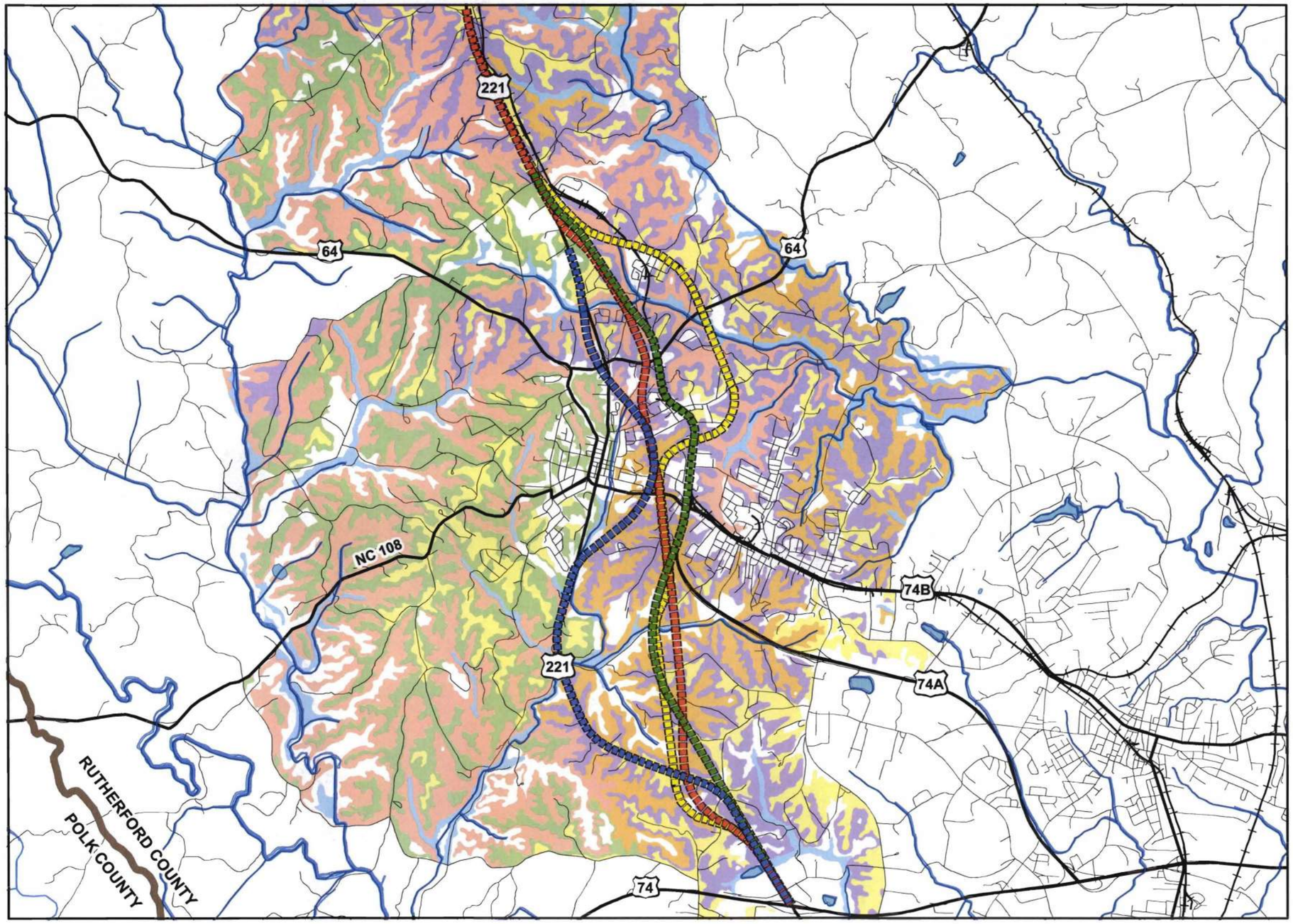

RECOMMENDED RUTHERFORD COUNTY URBAN AREA THOROUGHFARE PLAN
LEGEND
EXISTING
PROPOSED
FREEWAY / EXPRESSWAY
MAJOR THOROUGHFARE
MINOR THOROUGHFARE
INTERCHANGE
GRADE SEPARATION
PUBLIC HEARING MEETINGS: APRIL 30, 1997
AUGUST 21, 1997
ADOPTED BY
FOREST CITY September 15, 1997
RUTH September 1, 1997
RUTHERFORDTON September 9, 1997
SPINDALE September 22, 1997
ALEXANDER MILLS September 8, 1997
BOSTIC September 1, 1997
RUTHERFORD COUNTY September 8, 1997
RECOMMENDED APPROVAL BY STATEWIDE PLANNING BRANCH October 17, 1997
NC DEPT. OF TRANSPORTATION Nov 7, 1997
N
S
JULY 31, 1997
RUTHERFORD COUNTY URBAN AREA
RUTHERFORD COUNTY
NORTH CAROLINA
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - STATEWIDE PLANNING BRANCH
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
0 2000 4000 6000 8000
feet
0 1000 2000 3000
kilometers
TIP R-2233B
US 221 BYPASS (PROPOSED)
Ruth
Rutherfordton
Spindale
Forest City
Bostic
Alexander Mills
US 74 BUS./US 221A
MAIN ST
EAST - WEST CONNECTOR
US 74A
US 221
US 74
US 64
NC 108
OLD BALLPARK RD.
MORGANTON RD.
WHITESIDES RD.
THUNDER RD.
OLD STONECUTTER RD.
PINEY RIDGE RD.
OAK ST
ROBINSON RD.
BRACKETT RD
PINE ST.
SECOND
RIVER
BROAD

FIGURE 3-3



R-2233B PREDOMINANT SOILS IN PROJECT AREA

- ALTERNATIVE A3/B3
- ALTERNATIVE A4/B4
- ALTERNATIVE A6/B6
- ALTERNATIVE 4
- HIGHWAYS
- ROADS
- RAILROADS
- LAKES/PONDS
- RIVERS/CREEKS
- CaB2
- ChA
- MaC2
- MaD2
- PaC2
- PaD2

0 0.5 1 2 3 Miles

N

MAP SOURCES:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI)
RUTHERFORD COUNTY
ISOTHERMAL PLANNING AND DEVELOPMENT COMMISSION

RUTHERFORD COUNTY

FIGURE 3-4

RUTHERFORDTON

RUTH

SPINDALE

RUTHERFORD CO. LANDFILL

SR 1005 (COXE RD.)

SR 2200 (DAVENPORT RD.)

SR 2201 (THUNDER RD.)

US 221

US 74A (RAILROAD AVE.)

US 74

US 64-74A

NC 108

SR 1366 (ROPER LOOP RD.)

SR 1367 (THOMPSON RD.)

SR 1536 (OLD US 221)

SR 1520 (ROCK RD.)

SR 1535 (BROYHILL RD.)

SR 1539 (OLD GILBERT TOWN RD.)

SR 1538 (WHITESIDE RD.)

SR 1544 (WEST ST.)

US 74BUS-US 221A

SR 2193 (OLD STONECUTTER RD.)

SR 1004 (POORS FORD RD.)

SR 2171

GREEN ST.

COLLETT ST.

SOUTH MAIN ST.

SOUTHERN

SEABOARD

① POTENTIALLY CONTAMINATED PROPERTY
RUTHERFORD COUNTY LANDFILL
ALTERNATIVE 3 STUDY CORRIDOR
ALTERNATIVE 4 STUDY CORRIDOR
ALTERNATIVE 6 STUDY CORRIDOR
ALTERNATIVE US74A STUDY CORRIDOR

0 0.5 1
MILE

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

POTENTIALLY CONTAMINATED PROPERTIES
PROPOSED US 221 RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

FIGURE 3-5

END PROJECT

SR 1366 (ROPER LOOP RD.)

GILBOA UNITED METHODIST CHURCH (NATIONAL REGISTER ELIGIBLE)

SR 1367 (THOMPSON RD.)

PROPOSED MAIN STREET HISTORIC DISTRICT EXPANSION (NATIONAL REGISTER ELIGIBLE)

MAIN STREET HISTORIC DISTRICT (NATIONAL REGISTER LISTED)

US 64-74A

SR 1535 (BROYHILL RD.)

SR 1536 (OLD US 221)

US 221

RUTH ELEMENTARY SCHOOL (NATIONAL REGISTER ELIGIBLE)

SR 1005 (COXE RD.)

RUTHERFORDTON

GREEN ST

SR 1520 (ROCK RD.)

GILBERT TOWN HISTORIC DISTRICT (NATIONAL REGISTER LISTED)

SR 2200 (DAVENPORT RD.)

SR 2201 (THUNDER RD.)

RUTHERFORDTON-SPINDALE CENTRAL HIGH SCHOOL (NATIONAL REGISTER LISTED)

COLLETT ST

RUTH

ROBERT J. NORRIS HOUSE (NATIONAL REGISTER ELIGIBLE)

SR 1520 (ROCK RD.)

SR 1539 (OLD GILBERT TOWN RD.)

US 74A (RAILROAD AVE.)

HOMER & BERTHA SPARKS HOUSE (NATIONAL REGISTER ELIGIBLE)

WASHINGTON GEER HOUSE (NATIONAL REGISTER ELIGIBLE)

SR 1544 (WEST ST.)

YELTON'S FLOUR MILL (NATIONAL REGISTER ELIGIBLE)

US 74BUS-US 221A

SR 1538 (WHITESIDE RD.)

US 64

SPINDALE

US 74

US 74A

SR 1004 (POORS FORD RD.)

DUNKARD'S CREEK BAPTIST CHURCH (NATIONAL REGISTER ELIGIBLE)

SR 2193 (OLD STONECUTTER RD.)

BEGIN PROJECT

SR 2171

US 221

HISTORIC PROPERTY OR DISTRICT

OVERMOUNTAIN VICTORY NATIONAL HISTORIC TRAIL

ALTERNATIVE 3 STUDY CORRIDOR

ALTERNATIVE 4 STUDY CORRIDOR

ALTERNATIVE 6 STUDY CORRIDOR

ALTERNATIVE US74A STUDY CORRIDOR

0 1000 2000 3000
FEET

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

CULTURAL RESOURCES IN PROJECT AREA
PROPOSED US 221 RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

FIGURE 3-6

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

WETLANDS & STREAMS
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

SHEET 1 OF 2 **FIGURE 3-7**

BEGIN PROJECT
US 74
SR 1005 (COXE RD.)
SR 2201 (THUNDER RD.)
SR 2200 (DAVENPORT RD.)
SR 2193 (OLD STONECUTTER RD.)
SR 2169 (OAKLAND RD.)
SR 2171
SR 2213
US 221
US 74 BUS-US 221
US 74A
SPINDALE
PROPOSED LANDFILL
MATCHLINE-SEE SHEET 2
Stream 2UTIC
Stream IC
Stream 2ZZ
Stream 2A
Stream 2B
Stream 2UT2B
Stream IE
Stream IJ
Stream 3-2C
Stream 2F
Stream 2C
Stream 3B
Stream 3C
Stream B
Wetland B
Wetland IE-C
SITE 1
SITE 2
SITE 3
SITE 4
SITE 5
SITE 6
SITE 8
SITES 7 & 9

LEGEND

- ALTERNATIVE 3 STUDY CORRIDOR
- ALTERNATIVE 4 STUDY CORRIDOR
- ALTERNATIVE 6 STUDY CORRIDOR
- US 74A BYPASS ALTERNATIVE STUDY CORRIDOR
- MAJOR STREAM CROSSING SITES (>72" PIPE)
- WETLANDS (DELINEATED)
- STREAMS (DELINEATED)
- PONDS (DELINEATED)
- OVERMOUNTAIN VICTORY NATIONAL HISTORIC TRAIL
- LAND & WATER CONSERVATION FUND PROPERTIES
- WATER SUPPLY WATERSHED

METERS
0 200 400 600 800 1000
0 1000 2000 3000
FEET

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

WETLANDS & STREAMS
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B

SHEET 2 OF 2 **FIGURE 3-7**

MATCHLINE - SEE SHEET 1

SITES 7 & 9

US 221

US 74 BUS-US 221A

RUTHERFORDTON

US 64-74A

Stream 6UT2G

Stream IE

Stream UT3F

SITE 14

Stream 3F

US 64

US 74A

Stream 2UT2K

Stream UT2K

Stream 3UT2K

Wetland UT2KX

SITE 13

Stream 2K

Stream IK

END PROJECT

US 221

Stream UT3X

Stream 3X

Wetland IHC

Stream UTUT3X

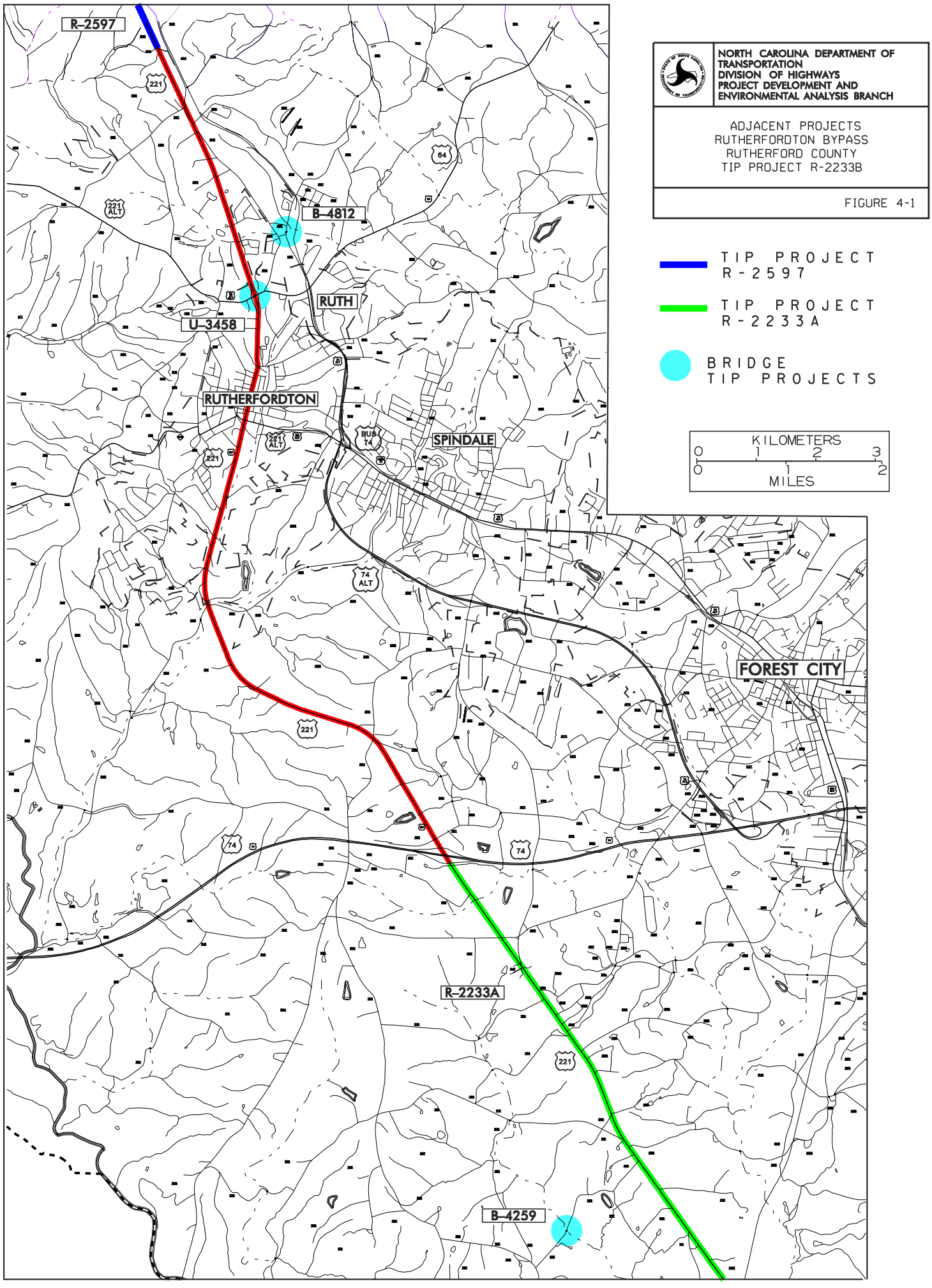
SITE 11

SITE 12

Stream 3UTUT3G

Stream 3G

METERS
0 200 400 600 800 1000
0 1000 2000 3000
FEET


R-2597
B-4812
RUTH
U-3458
RUTHERFORDTON
SPINDALE
FOREST CITY
R-2233A
B-4259
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH
ADJACENT PROJECTS
RUTHERFORDTON BYPASS
RUTHERFORD COUNTY
TIP PROJECT R-2233B
FIGURE 4-1
TIP PROJECT R-2597
TIP PROJECT R-2233A
BRIDGE TIP PROJECTS
KILOMETERS
0 1 2 3
0 1 2
MILES

APPENDIX A

COMMENTS AND COORDINATION

APPENDIX A
COMMENTS AND COORDINATION

A. Citizens Informational Workshop

A citizens informational workshop was held on August 23, 2001 at the R-S Middle School in Rutherfordton to obtain comments and suggestions about the project from the public. Approximately 400 citizens attended this meeting. This meeting was advertised through local newspapers and flyers were sent to property owners and citizens in the project area.

No objections to the project were raised at the workshop. The majority of comments and questions related to the project alternatives and the effects of the project on individual properties.

Several people representing historic interest groups attended the workshop due to the proximity of the project alternatives to Gilbert Town (see Section 3.4.1). In comments at and following the workshop, they asked NCDOT avoid Gilbert Town.

B. Public Hearing

A corridor public hearing for this project was held on January 26, 2009 at the R-S High School in Rutherfordton. Approximately 271 citizens attended the hearing. The alternatives still under consideration for the project were presented to the public for their comments at the hearing. The hearing consisted of an informal "open house" followed by a formal hearing with a presentation. Sixteen people made comments during the formal portion of the hearing. Approximately 43 written comments were submitted either at the hearing or during the 15-day comment period following the hearing.

The majority of comments and questions heard at the hearing or submitted following the hearing related to the potential impact of the proposed bypass on individual properties. A number of people also stated they did not believe the project is needed. Several individuals commented on their preferred alternative. Among those stating a preference, Alternative US 74A was favored by the most (7), followed by Alternative 4 (4), Alternative 6 (3) and Alternative 3 (2). Some individuals also listed the alternative(s) they did not prefer. More people were against selecting Alternative 4 (7), followed by Alternative 6 (6). One person stated they opposed selecting Alternative US 74A and no one expressed opposition to Alternative 3.

The preliminary design for the recommended alternative for the project (Alternative 3) will be presented to the public at a second hearing following distribution of this document. Citizen comments will be taken into consideration as project design progresses.

C. NEPA/404 Merger Process

This project has followed the NEPA/404 merger process. Appendix C of this document contains additional information regarding the merger process.

D. Other Coordination

NCDOT has coordinated with appropriate federal, state and local agencies throughout the project development study. Comments on the project have been requested from the agencies listed below. Asterisks indicate a response was received. Copies of the comments received are included here in Appendix A.

US Department of the Army - Corps of Engineers
(Wilmington District)
US Environmental Protection Agency
*US Department of the Interior - US Fish and Wildlife Service – Asheville
US Department of the Interior – National Park Service
*NC Department of Cultural Resources-State Historic Preservation Office
NC Department of Environment and Natural Resources-DENR
DENR-NC Division of Water Quality
DENR-NC Wildlife Resources Commission
Isothermal Planning & Development Commission (Region O)
Rutherford County
*Town of Forest City
*Town of Rutherfordton
Town of Spindale

Following the corridor public hearing for the project, NCDOT and the NEPA/404 merger team agreed to drop Alternatives 4 and 6 from consideration. NCDOT staff then met with residents of the Ellington Heights neighborhood and the Towns of Rutherfordton, Spindale and Ruth to discuss the two remaining alternatives, Alternative 3 and Alternative US 74A. The Towns of Spindale and Ruth both expressed support for Alternative 3. The Ruth Town Council passed a resolution in support of Alternative 3. Copies of the letters from the Towns are included here in Appendix A.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

September 17, 1999

Hanson McInnis

Mr. William D. Gilmore, P.E., Manager
Project Development and Environmentai Analysis Branch
North Carolina Department of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Gilmore:

Subject: US 221, from South Carolina State Line to North of Rutherfordton, Rutherford County, North Carolina, Federal Aid Project No. NHF-221(9), State Project No. 8.1891001, TIP No. R-2233

In your letter of September 9, 1999, you requested our review and comments on the subject project. The following comments are provided in accordance with the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act).

According to the information provided with your letter, the North Carolina Department of Transportation is proposing to widen US 221 from the South Carolina state line to south of Rutherfordton and construct a bypass of Rutherfordton on a new location.

Enclosed is a list of species from Rutherford County that are on the *Federal List of Endangered and Threatened Wildlife and Plants* and species of Federal concern that may occur in the project impact area. We recommend surveying the project area for these species prior to any further planning or on-the-ground activities to ensure that no adverse impacts occur to these species. We do have records from the project area of the threatened dwarf-flowered heartleaf (*Hexastylis naniflora*) in the vicinity of Floyds Creek. Species of Federal concern are not legally protected under the Act and are not subject to any of its provisions, including Section 7, unless they are formally proposed or listed as endangered or threatened. We are including these species in our response to give you advance notification. The presence or absence of these species in the

project impact area should be addressed in any environmental document prepared for this project. The environmental document should contain the following information, if pertinent:

(1) A complete analysis and comparison of the available alternatives (the build and no-build alternatives).

(2) A description of the fishery and wildlife resources within existing and required additional rights-of-way and any areas, such as borrow areas, that may be affected directly or indirectly by the proposed road improvements.

(3) Acreage and description of wetlands that will be filled as a result of the proposed road improvements. We are concerned about potential wetland areas along Torrence Creek and its tributaries. Wetlands affected by the proposed project should be mapped in accordance with the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. We recommend contacting the U.S. Army Corps of Engineers to determine the need for a Section 404 Clean Water Act permit.

(4) Extent (linear feet as well as discharge) of any water courses that will be impacted as a result of the proposed project. A description of any streams should include the classification (Rosgen 1995, 1996) and a description of the biotic resources.

(5) Acreage of upland habitat, by cover type, that will be eliminated because of the proposed project.

(6) Description of all expected secondary and cumulative environmental impacts associated with this proposed work.

(7) An analysis of the crossing structures considered (i.e., spanning structure, culvert) and the rationale for choosing the preferred structure(s). We prefer stream crossings that span the bankfull width of the stream and do not impede natural stream functions or fish passage.

(8) A discussion about the extent to which the project will result in the loss, degradation, or fragmentation of wildlife habitat from direct construction impacts and from secondary development impacts.

(9) Mitigation measures that will be employed to avoid, eliminate, reduce, or compensate for habitat value losses (wetland, riverine, and upland) associated with any phase of the proposed project.

We appreciate the opportunity to provide these scoping comments and request that you continue to keep us informed as to the progress of this project. In any future correspondence concerning the project, please reference our Log Number 4-2-99-267.

Sincerely,

Brian P. Cole
State Supervisor

Enclosure

cc:
Ms. Linda Pearsall, Director, Natural Heritage Program, Division of Parks and Recreation, North Carolina Department of Environment and Natural Resources, P.O. Box 27687, Raleigh, NC 27611
Mr. David Cox, Highway Projects Coordinator, North Carolina Wildlife Resources Commission, 1142 I-85 Service Road, Creedmoor, NC 27522

ENDANGERED, THREATENED, AND CANDIDATE SPECIES AND FEDERAL SPECIES OF CONCERN, RUTHERFORD COUNTY, NORTH CAROLINA

This list was adapted from the North Carolina Natural Heritage Program's County Species List. It is a listing, for Rutherford County, of North Carolina's federally listed and proposed endangered, threatened, and candidate species and Federal species of concern (for a complete list of rare species in the state, please contact the North Carolina Natural Heritage Program). The information in this list is compiled from a variety of sources, including field surveys, museums and herbariums, literature, and personal communications. The North Carolina Natural Heritage Program's database is dynamic, with new records being added and old records being revised as new information is received. Please note that this list cannot be considered a definitive record of listed species and Federal species of concern, and it should not be considered a substitute for field surveys.

Critical habitat: Critical habitat is noted, with a description, for the counties where it is designated.

Aquatic species: Fishes and aquatic invertebrates are noted for counties where they are known to occur. However, projects may have effects on downstream aquatic systems in adjacent counties.

Sea turtles: Sea turtles occur in coastal waters and nest along beaches. This list includes sea turtles in the counties where they are known to nest. The U.S. Fish and Wildlife Service has jurisdiction over sea turtle issues on terrestrial systems; the National Marine Fisheries Service has authority over sea turtles in coastal waters.

Manatees: Manatees occur throughout North Carolina's coastal waters; this list includes manatees in counties where there are known concentrations. The U.S. Fish and Wildlife Service has consultation and recovery responsibility for manatees.

RUTHERFORD COUNTY

COMMON NAME	SCIENTIFIC NAME	STATUS
Vertebrates		
Green salamander	*Aneides aeneus*	FSC
Cerulean warbler	*Dendroica cerulea*	FSC
Peregrine falcon	*Falco peregrinus anatum*	Endangered
Eastern small-footed myotis	*Myotis leibii*	FSC
Indiana bat	*Myotis sodalis*	Endangered
Southern Appalachian woodrat	*Neotoma floridana haematoreia*	FSC
Northern pine snake	*Pituophis melanoleucus melanoleucus*	FSC
Vascular Plants		
Dwarf-flowered heartleaf	*Hexastylis naniflora*	Threatened
Butternut	*Juglans cinerea*	FSC
Sweet pinesap	*Monotropsis odorata*	FSC
Carolina saxifrage	*Saxifraga caroliniana*	FSC
Divided-leaf ragwort	*Senecio millefolium*	FSC
Mountain catchfly	*Silene ovata*	FSC**
White irisette	*Sisyrinchium dichotomum*	Endangered

COMMON NAME	SCIENTIFIC NAME	STATUS
Nonvascular Plants		
Rock gnome lichen	*Gymnoderma lineare*	Endangered

KEY:

Status	Definition
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."
FSC	A Federal species of concern--a species that 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).

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 more than 50 years ago.
**Obscure record - the date and/or location of observation is uncertain.
***Incidental/migrant record - the species was observed outside of its normal range or habitat.
****Historic record - obscure and incidental record.

United States Department of the Interior

NATIONAL PARK SERVICE
Southeast Support Office
Sam Nunn Atlanta Federal Center, 1924 Building
100 Alabama Street, S.W.
Atlanta, Georgia 30303

August 10, 2001

Mr. Jay McGinnis
PDEA Branch, NCDOT
1548 Mail Service Center
Raleigh NC 27699-1548

Dear Jay:

Here is a map illustrating the location of a certified segment of the Overmountain Victory National Historic Trail (OVNHT). Through its Challenge Cost Share Program the National Park Service funded 50% of the trail's development. This segment is a portion of a longer rail-trail project in Rutherford County developed by the Bechtler Development Corporation.

Two of the alternatives presented at the August 8 meeting would have a negative impact on this trail. If either of these alternatives becomes the preferred option, the National Park Service would like to see this trail segment and accompanying facilities (such as interpretive exhibits and parking) incorporated into the design. At this stage we are not opposed to either Eastern Bypass Alternatives 2 and 3, we want to ensure that this very popular trail is included.

If you have any questions, please do not hesitate to contact me at (404) 562-3124 ext. 601.

Sincerely,

Richard H. Sussman

Richard H. Sussman
Chief
Planning and Compliance

Enclosure

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 09-E-4220-0090 F02
DATE RECEIVED: 10/02/2008
AGENCY RESPONSE: 11/20/2008
REVIEW CLOSED: 11/25/2008

MS HOLLY GILROY
CLEARINGHOUSE COORDINATOR
DEPT OF AGRICULTURE
1001 MAIL SERVICE CENTER
AGRICULTURE BLDG
RALEIGH NC

REVIEW DISTRIBUTION
CC&PS - DEM, GTMO
DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CUL RESOURCES
DEPT OF TRANSPORTATION
ISOTHERMAL PLANN & ECON DEV

PROJECT INFORMATION
APPLICANT: NC Department of Transportation
TYPE: State Environmental Policy Act
ERD: Draft Environmental Impact Statement
DESC: Proposal to construct the US 221 Bypass of Rutherfordton in Rutherford County as a four-lane roadway with a 46-ft median. TIP No. R-2233B

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

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

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

☐ NO COMMENT

☑ COMMENTS ATTACHED

SIGNED BY: Holly Gilroy

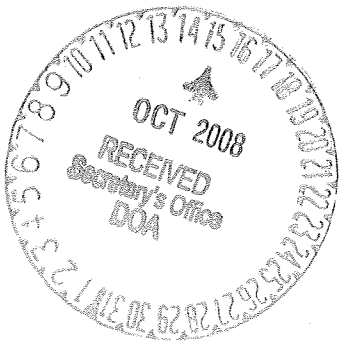
DATE: 10/14/08

Steven W. Troxler
Commissioner

North Carolina Department of Agriculture and Consumer Services

Agricultural Services

Maximilian Merrill
Environmental Programs



Ms. Valerie McMillan
State Clearinghouse
N.C. Department of Administration
1301 Mail Service Center
Raleigh, North Carolina 27699-1301

State #: 09-E-4220-0090

RE: Proposed construction of US 221 Bypass of Rutherfordton

Dear Ms McMillan

I commend NC DOT for investigating the possibility of using existing infrastructure to alleviate congestion and improve safety around Rutherfordton. There is the least amount of impact on the agricultural and soil resources with alternatives A3/B3, A6/B6, and 4. Alternative A4/B4 will have the most impact on the areas agricultural and soil resources.

Gratefully

Maximilian Merrill

E-mail: maximilian.merrill@ncmail.net
1001 Mail Service Center, Raleigh, North Carolina, 27699-1001 (919) 733-7125 ● Fax (919) 716-0105
TTY: 1-800-735-2962 Voice: 1-877-735-8200

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

Ken; 490 for your review & comments. See 3-7 & 4-7. 10/03/09

Rtn by 11/12

STATE NUMBER: 09-E-4220-0090 F02

DATE RECEIVED: 10/02/2008

AGENCY RESPONSE: 11/20/2008

REVIEW CLOSED: 11/25/2008

CLEARINGHOUSE COORD
CC&PS - DEM, GTMO
MSC # 4716
RALEIGH NC

OCT 2008 RECEIVED Secretary's Office DOA

RECEIVED OCT 3 2008 N.C. Floodplain Mapping Program

REVIEW DISTRIBUTION
CC&PS - DEM, GTMO
DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CUL RESOURCES
DEPT OF TRANSPORTATION
ISOTHERMAL PLANN & ECON DEV

PROJECT INFORMATION

APPLICANT: NC Department of Transportation

TYPE: State Environmental Policy Act

ERD: Draft Environmental Impact Statement

DESC: Proposal to construct the US 221 Bypass of Rutherfordton in Rutherford County as a four-lane roadway with a 46-ft median. TIP No. R-2233B

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

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

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

☐ NO COMMENT

☒ COMMENTS ATTACHED

SIGNED BY: [signature]

DATE: ~~8/10/08~~ 10/10/08

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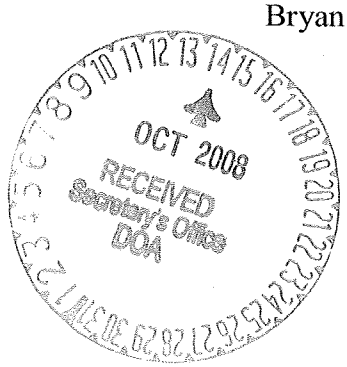
North Carolina Department of Crime Control and Public Safety
Division of Emergency Management
Office of Geospatial and Technology Management
4719 Mail Service Center • Raleigh, NC 27699-4719

Michael F. Easley
Governor

Bryan E. Beatty
Secretary



August 31, 2008

Ms. Valerie McMillian
State Clearinghouse
N.C. Department of Administration
1301 Mail Service Center
Raleigh, North Carolina 27699-1301

Subject: Intergovernmental Review State Number: 09-E-4220-0009
Proposed Construction of US 221 Bypass of Rutherfordton in Rutherford County as a four-lane Roadway with a 46-ft Median. TIP No. R-2233B

Dear Ms. McMillian:

As requested by the North Carolina State Clearinghouse, the North Carolina Department of Crime Control and Public Safety Division of Emergency Management Geospatial and Technology Management Office (GTMO) reviewed the proposed project listed above and has provided comments herein. It is our understanding that the North Carolina Department of Transportation is considering four (4) alternatives to construct the US 221 Bypass of Rutherfordton as a four-lane roadway with 46 foot wide median in Rutherford County.

The GTMO has the following comments:

1) As shown on the preliminary Rutherford County DFIRM Panels 1611, 1621, 1620, 1610, 1600, 1509, 1519, 1529, 1508, 1518, and 1528 (Effective date July 2, 2008), the proposed alignment intersects the special flood hazard area (SFHA) and non-encroachment area of several flooding sources in and around the Town of Rutherfordton, the Town of Spindale and within Rutherford County. Any proposed construction within the non-encroachment area of the flooding sources shown to have SFHA on the DFIRM panels will require, prior to construction, approval of either a no-rise study with a no-rise certification for projects that do not increase base flood elevation or for projects that result in an increase in base flood elevations the approval of a Conditional Letter of Map Revision (CLOMR).

2) All CLOMR submittals are required to have Letter of Map Revision submittals within six (6) months following construction.

3) The North Carolina Floodplain Mapping Program and North Carolina Department of Transportation (NCDOT) have entered into a Memorandum of Agreement that includes NCDOT no-rise studies and Letter of Map Revisions. Please contact Dr. David Chang, NCDOT Assistant Hydraulics Engineer for further information and guidance.

Thank you for your cooperation and consideration. If you have any questions concerning the above comments, please contact me at (919) 715-5711, by email at kashe@ncem.org or at the address shown on the footer of this document.

Sincerely,

Kenneth W. Ashe, P.E., CFM
Assistant Director

c: Randy Mundt, Acting NC NFIP State Coordinator

Federal Aid # **N/A** *TIP #* **R-2233B** *County*: **Rutherford**

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Rutherfordton Bypass from US 74 bypass to SR 1355
(Alternative #'s 3, 4, 6, and 74a)

On 04/21/2008 and 06/02/2008, representatives of the

- [x] North Carolina Department of Transportation (NCDOT)
- [x] US Army Corps of Engineers (USACE)
- [x] North Carolina State Historic Preservation Office (HPO)
- [ ] Other

Reviewed the subject project and agreed

- [ ] There are no effects on the National Register-listed property/properties located within the project's area of potential effect and listed on the reverse.
- [ ] There are no effects on the National Register-eligible property/properties located within the project's area of potential effect and listed on the reverse.
- [x] There is an effect on the National Register-listed property/properties located within the project's area of potential effect. The property/properties and the effect(s) are listed on the reverse.
- [x] There is an effect on the National Register-eligible property/properties located within the project's area of potential effect. The property/properties and effect(s) are listed on the reverse.

Signed:

Mary Pope Furr — 7.7.2008
Representative, NCDOT — Date

David L. Baker — 6-30-2008
USACE, Wilmington District — Date

Representative, HPO — Date

Renee Gledhill-Earley — 8-15-08
State Historic Preservation Officer — Date

PROPERTIES WITHIN THE AREA OF POTENTIAL EFFECT FOR WHICH THERE IS NO EFFECT. INDICATE IF PROPERTY IS NATIONAL REGISTER-LISTED (NR) OR DETERMINED ELIGIBLE (DE).

Ruth Elementary School (DE) – No effect for Alternative # 6.

Rutherfordton Historic District (NR) – No effect for Alternative #'s 3, 6, and 74a.

Norris House (DE) – No effect for Alternative #'s 4 and 6.

Sparks House (DE) – No effect for Alternative #'s 3, 4, and 6.

Washington Greer House (DE) – No effect for Alternative #'s 3, 4, and 74a.

Gilbert Town Historic District (NR) – No effect for Alternative #'s 3, 4, and 74a.

Central High School (DE) – No effect for Alternative # 4.

Yelton's Flour Mill (DE) – No effect for Alternative #'s 3, 4, and 6.

Dunkard Creek Church (DE) – No effect for Alternative #'s 3, 6, and 74a.

PROPERTIES WITHIN THE AREA OF POTENTIAL EFFECT FOR WHICH THERE IS AN EFFECT. INDICATE PROPERTY STATUS (NR OR DE) AND DESCRIBE THE EFFECT. STATE REASON FOR THE EFFECT

Ruth Elementary School (DE) – Adverse effect for Alternative #'s 3 and 4 because these alternatives require land from the school's boundary, eliminate one historic entrance to the property, and require large cut and fill areas along the boundary and in the view shed of the school. There is also reasonable potential for development. There will be no adverse effect for Alternative # 74a because this alternative only requires an easement within the historic boundary and access will remain the same. However, the reasonable potential for development remains a concern.

Rutherfordton Historic District (NR) – No adverse effect for Alternative # 4 because the reconfiguration of the ramp between existing US 221 and the new bypass will not require ROW or construction within the district (as per the maps shown 6/2/2008).

Norris House (DE) – No adverse effect for Alternative #'s 3 and 74a because access to the property will not be impaired. For #3, the service road will pull away from the existing property and meet the ramp for the bypass at a t-intersection. For # 74a the access to the property will be at signalized intersection.

Initialed: NCDOT MPS USACE DJB HPO RGE

Sparks House (DE) – No adverse effect for Alternative # 74a because the new facility will be approximately at the current grade level and no new ROW is required.

Washington Greer House (DE) – No adverse effect for Alternative # 6 because there will be no staging on the property and the new ROW only requires removal of a small, ruinous corn crib.

Gilbert Town Historic District (NR) – No adverse effect for Alternative # 6 because it does not impact structures or landscapes integral to the significance of the district. In fact, the land has already been changed with the development of a mobile home park.

Central High School (DE) – No adverse effect for Alternative #'s 3, 6 because the school is not negatively affected as a noise receptor and does not require noise abatement measures. There is no adverse effect for Alternative # 74a because the change in access with a loop driveway does not affect the historic character of the setting since it is below grade of the school building, nor does it negatively affect the school as a noise receptor.

Yelton's Flour Mill (DE) – No adverse effect for Alternative # 74a because access to the building and parking will not be blocked by control of access.

Dunkard Creek Church (DE) – No adverse effect for Alternative # 4 because access to the building and parking will not be blocked by control of access.

Initialed: NCDOT MPA USACE [illegible] HPO [illegible]

North Carolina Department of Cultural Resources

State Historic Preservation Office

Peter B. Sandbeck, Administrator

December 20, 2007

MEMORANDUM

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

FROM: Peter Sandbeck PBS for Peter Sandbeck

RE: Rutherfordton Bypass fro US 74 to SE 1355 (Mountain Creek Road), R-2233B, Rutherford County, ER 00-7599

We have reviewed the November 19, 2007, letter report on Yelton's Flour Mill, prepared by Courtney Foley of your staff and off the following comments.

Based on the information provided in the report, we concur with the recommendation that the flour mill is eligible for listing in the National Register under criteria A and C and that the boundaries for the property are appropriate. In the future, please clearly indicate the criterion for which a property is found eligible.

Please note that we need to receive another hardcopy of the letter report and a compact disk containing the report for our files. 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.

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.

cc: Mary Pope Furr
Courtney Foley

Location: 109 East Jones Street, Raleigh NC 27601 **Mailing Address**: 4617 Mail Service Center, Raleigh NC 27699-4617 **Telephone/Fax**: (919) 807-6570/807-6599

North Carolina Department of Cultural Resources
State Historic Preservation Office
David L. S. Brook, Administrator

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

Division of Historical Resources
David J. Olson, Director

April 25, 2003

MEMORANDUM

TO: Greg Thorpe, Manager
Project Development and Environmental Analysis Branch
NCDOT Division of Highways

FROM: David Brook DSB for David Brook

SUBJECT: Historic Architectural Resources Report, Widen US 221 from the SC state line to SR 1536 north of Rutherfordton, R-2233 A&B, Rutherford County, ER00-7599

Thank you for your letter of April 2, 2003, transmitting the survey report by Frances P. Alexander of Mattson, Alexander and Associates, Inc. for the above project.

For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following properties are eligible for listing in the National Register of Historic Places under the criterion cited:

Proposed Boundary Expansion of Main Street Historic District, bounded by North Main, Carnegie, North Washington, and Fernwood Streets, Rutherfordton, is eligible for the National Register under Criteria A: Community Planning and Development and C: Architecture. The district expansion epitomizes a typical pattern of development for small towns and includes spacious houses and churches designed in representative architectural styles of the late 19th to mid 20th centuries. We concur with the National Register boundaries for the district expansion as described and delineated in the survey report.

Dunkard's Creek Baptist Church, east side of U.S. 221 at the junction with SR 2194, Rutherfordton vicinity, is eligible for the National Register under Criteria A and C. The property is significant as a religious property that does not represent the significant patterns of events that shaped the county and is also a rare surviving example of turn-of-the-twentieth-century, rural church architecture in Rutherford County. We concur with the National Register boundaries for this property, which

www.hpo.dcr.state.nc.us

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-4763 • 733-8653
RESTORATION	515 N. Blount St., Raleigh NC	4613 Mail Service Center, Raleigh NC 27699-4613	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St., Raleigh NC	4618 Mail Service Center, Raleigh NC 27699-4618	(919) 733-6545 • 715-4801

encompass both the church and contributing cemetery, as described and delineated in the survey report.

Homer and Berta Sparks House, east side of Railroad Avenue, Rutherfordton, is eligible for the National Register under Criterion C: Architecture, as a fine expression of the twentieth-century Queen Anne style in Rutherfordton. We concur with the National Register boundaries as for this property as described and delineated in the survey report.

Robert J. Norris House, Southeast corner of Railroad Avenue and U.S. 64, Ruth, is eligible for the National Register under Criterion C: Architecture, as among the finest late 19th century dwellings in the area and is a well-preserved expression of the traditional two story, single pile house in Rutherford County. We concur with the National Register boundaries as described and delineated in the survey report.

Ruth Elementary School, south side of U.S. 64, 0.2 mile east of junction with U.S. 221, Ruth, is eligible for the National Register under Crireria A: Education and C: Architecture. The school is representative of the school consolidation movement and is fine example of 1920s scholastic architecture in the county. We concur with the National Register boundaries as described and delineated in the survey report.

Gilboa United Methodist Church, east side of SR 1532, 0.3 mile south of junction with SR 1533, Rutherfordton vicinity, is eligible for the National Register under Criterion C: Architecture. The church is a well-preserved and rare surviving example of a late nineteenth century, rural church in the county. We concur with the National Register boundaries, which include both the church and cemetery, as described and delineated in the survey report.

Washington Geer House, north side of U.S. 64 at the junction with SR 1539, Rutherfordton vicinity is eligible for the National Register under Criterion C: Architecture. The house is a rare local example of the two-story, single pile house type with an engaged double piazza, strongly suggesting the low country influence on architectural design in the region. We concur with the National Register boundaries as described and delineated in the survey report.

The following properties are determined not eligible for listing in the National Register of Historic Places:

Nos. 2-6; 8-13; 15-16; 18-37; 39-54; 56-82; 84-119; 121-145.

The Rutherfordton-Spindale Central High School and the Main Street Historic District, Rutherfordton, are currently listed in the National Register.

Please remove the Gilboa Methodist Church (No. 38) inventory entry from Appendix A. This can be achieved with a replacement page.

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.

cc: ✓ Mary Pope Furr
Frances P. Alexander, Mattson, Alexander and Associates. Inc.

Federal Aid # **NHF-221(9)** *TIP #* **R-2233 A&B** *County:* **Rutherford**

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

Project Description: **Widen US 221 from SC Line to SR 1355 including bypass of Rutherfordton**

On 3 December 2002, 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. EVAL: 41-48 as part of H.D. expans.
- ☒ 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. #1 (NR); #83 (NR); EVAL: 7, 14, 17, 38, 55, 120
- ☒ 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 2-6; 8-13; 15-16; 18-37; 39-54; 56-119; 121-145 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:

Richard L. Shumate — 3 Dec 2002
Representative, NCDOT — Date

[signature] — 12/3/02
FHWA, for the Division Administrator, or other Federal Agency — Date

Claudia R Brown — 12/3/02
Representative, HPO — Date

David Brook — 12/11/02
State Historic Preservation Officer — Date

If a survey report is prepared, a final copy of this form and the attached list will be included.

NCDENR
North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

MEMORANDUM

TO: Valerie McMillan
State Clearinghouse

FROM: Melba McGee
Environmental Projects Officer

SUBJECT: #09-0090 Construct US 221 bypass of Rutherfordton as a four-lane roadway, Rutherford County

DATE: November 25, 2008

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

Thank you for the opportunity to respond.

Attachment

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

One NorthCarolina *Naturally*

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Inter-Agency Project Review Response

Project Number **09-0090**

County **Rutherford**

Project Name **NC-DOT** Type of Project **Proposal to construct US 221 Bypass of Rutherfordton as a 4-lane roadway with 46-ft median. TIP No. R-2233B.**

Comments provided by:

☐ Regional Program Person

☒ Regional Supervisor for Public Water Supply Section

☐ Central Office program person

Name ~~Jim Adams-ARO~~ **Debra Benoy-Fayetteville RO** Date **10/07/2008**

Telephone number: 828-296-4500

Program within Division of Environmental Health:

☒ Public Water Supply

☐ Other, Name of Program: _____

Response (check all applicable):

☒ No objection to project as proposed

☐ No comment

☐ Insufficient information to complete review

☒ Comments attached

☐ See comments below

Plans and Specifications for any water main relocations associated with the project must receive prior approval by DEH.

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

OCT 20 2008

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Project Number
09-0090
County
Rutherford

Inter-Agency Project Review Response

Project Name **NC-DOT**

Type of Project **Proposal to construct US 221 Bypass of Rutherfordton as a 4-lane roadway with 46-ft median. TIP No. R-2233B.**

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

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

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

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

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

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

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

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

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

Jim McRight	PWSS	10/07/08
Reviewer	Section/Branch	Date

OCT 14 2008

North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

November 17, 2008

MEMORANDUM

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

FROM: Misty Buchanan, Natural Heritage Program MB

SUBJECT: Rutherfordton Bypass from US 74 to SR 1353, Rutherford County, Federal Aid Project NHF-221(9), State Project 8.1891001, WBS Element 34400.1.1, TIP Project R-2233B

The NC Natural Heritage Program has several records of a state- and federally Threatened plant, dwarf-flowered heartleaf (*Hexastylis naniflora*), in the vicinity of the project area. The largest occurrence near the project area is located at Davenport Road/Mountain View Rare Plant Site, a Significant Natural Heritage Area, which supports one of the largest populations of dwarf-flowered heartleaf in North Carolina.

Generally, the region surrounding US 221 in Rutherford County is a major population center for dwarf-flowered heartleaf. Careful planning should be used to minimize direct, cumulative, and secondary impacts to the rare species and its habitat. If such impacts are expected, coordination with the US Fish and Wildlife Service and the NC Plant Conservation Program are recommended.

We encourage you to report the results of any surveys for dwarf-flowered heartleaf to the NC Natural Heritage Program, so that we may assist the USFWS, NC PCP, and NC DOT in evaluating impacts to this species.

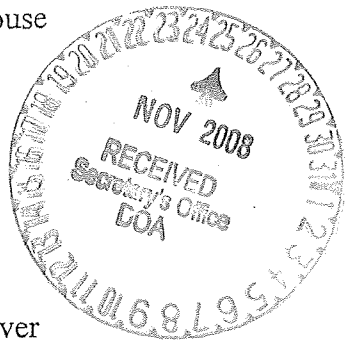
1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-715-8700 \ FAX: 919-715-3085 \ Internet www.ncnhp.org

NORTH CAROLINA Natural Heritage Program
SCIENCE GUIDING CONSERVATION

ENVIRONMENTAL REVIEW SCREENING REPORT

Type of Review: Project No. 09-0090

- ☐ DOT
- ☒ State Clearinghouse
- ☐ Corps of Engineers
- ☐ CAMA
- ☐ Other



Type of Potential Impacts:

- ☐ Registered Natural Area
- ☐ State/Federal River
- ☒ Rare Plant/Animal/Natural Community
- ☐ State Park
- ☒ Significant Natural Heritage Area
- ☐ State Trail

County: Rutherford
Due Date: 11/20/08

Notes: NHP GIS data -> One ED and one SNHA within project area.

Response: ☐ No ☑ Yes Date: 11/17/08

Town of Forest City
P. O. Box 728
Forest City, North Carolina 28043

September 27, 1999

Mr. David McCoy, Secretary
NC Dept. of Transportation
PO Box 25201
Raleigh, NC 27611-5201

Dear Mr. McCoy:

The Town of Forest City appreciates the opportunity to have input for the update of the 2000-2006 Transportation Improvement Program for the 2002-2008 schedule.

Forest City endorses the projects scheduled in the present T.I.P. which includes:

Project – R2233 – US 221 improvements
Project – R2597 – US 221 improvements
Project – R3612 – US 221-A spot improvement
Project – U-2711 including two projects on Oak Street in Forest City

We ask that these projects continue on schedule and the following recommendations be given serious consideration:

Priority 1: A portion of the East-West Connector proposed in the current Thoroughfare Plan from SR 1585 (Vance Street) to SR 1576 (Old Bostic Road) a distance of 0.5± miles. This would be a tremendous help for school traffic from the new school on Vance Street in Forest City.

Priority 2: Rutherford County bridge number 69, SR 1576 (Old Bostic Rd.) This structure is over the CSX railroad and is narrow, on poor alignment and has limited sight distance. This is a heavily traveled road with several school buses using this bridge each school day.

Thank you again for this opportunity. I also want to express our appreciation for the excellent cooperation extended to us by the Department of Transportation personnel at the division, district and county level.

Your consideration of these requests is appreciated.

Sincerely,

Harold K. Stallcup
Commissioner

TO

Please accept our most sincere appreciation for your most professional presentation of the alternate routes for the Rutherfordton bypass plans. Both your knowledge and kindness were noted by all in attendance at the meeting.

The Council and citizens much prefer Alternate 3. The 74 route would totally eliminate our business district. As you are aware, we are a small town. On the 74 route, we would loose: the Express Inspection Station, The automatic RS Speedy Car Wash, the RS Speedy Lube, The M&G Laundry, Guffey's Appliances, S&D Auto Sales and Rutherford Locksmith and Pawn. Both routes will eliminate Freeman Gas , Ruth Tire and perhaps Greene Memorial. This will leave only one business in the entire town. Of course this will have a very severe economic impact on the municipality.

The Town of Ruth does not wish to impede progress and we certainly realize the necessity of efficient transportation. Because alternate 3 will give us a much greater chance of survival, we request that you give it your utmost consideration.

Thank you for the opportunity to have input into the decision making process.

Sincerely,

Don Bayne

Mayor of Ruth, N. C.

Resolution 10-09-2

Whereas the North Carolina Department of Transportation is considering alternate routes for the Rutherfordton bypass and

Whereas both routes will have considerable impact on the Town of Ruth and

Whereas alternate 74 will have much greater adverse impact on the Town of Ruth than Alternate 3:

Be it resolved by the Town of Ruth that council requests the Department of Transportation to select alternate 3. The 74 route will eliminate every business in Ruth with the exception of one gasoline station. Alternate 3 will leave 70% of our businesses intact. Therefore, alternate 3 will afford the Town a much greater chance to survive the economic impact of this project.

This resolution passed by the Council of Ruth by a vote of 3 for and 0 against.

October 7. 2009.

Don Bayard

MAYOR

Amy Goode-Hanaway

CLERK

J. M. Teague Engineering and Consulting

December 21, 2010

Mr. Jay McInnis, Jr., P.E.
Project Development and Environmental Analysis
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

SUBJECT: TIP R-2233B – US 221
Overmountain Victory National Historic Trail
Rutherford County

Dear Jay:

Please find below additional comments regarding the access and impact to the Overmountain Victory National Historic Trail (OVNHT) from R-2233B.

You have previously mentioned there is consideration of using the US 64 bridge crossing as a concurrent OVHT crossing. Based on the general consensus from a recent meeting with Town, County, and National Park Officials, there seems to be overall agreement that this trail routing across US 64 would be in the best interests of the community as well as trail users. It was agreed that the concept of an overpass crossing, although adjacent to an US Highway, would be more desirable than an isolated tunnel or culvert crossing.

The current trail route follows Cleghorn Creek and Southern Street from downtown Rutherfordton, northwest across the project limits. At the point where Southern Street is absorbed into the project, the trail will need to diverge from its current northwest path and turn due north to US 64, closely paralleling the control of access fence. The Town and all interested parties desire the relocated portion of the trail be constructed with design elements that minimize the noise and visual impact from a divided highway facility.

As previously requested, it is important to the Town that stream mitigation for the project be targeted for Cleghorn Creek. Mitigations along Cleghorn Creek will coincide with the current town plan to create a multi use trail along the creek on the same route as the OVNHT.

The National Park Service has embarked on a project to bring additional emphasis, visitorship, and regional attention to the 330 mile OVNHT. This endeavor includes a new Overmountain Victory National Historic Trail Headquarters, visitor centers and trail information sites spaced at various locations along its route, better signing for the trail and for the commemorative motor route, improved identification and use of historic sites along the trail, and partnering with local groups to promote the trail and trail related activities.

One of the historic sites identified along the OVNHT is the original Gilbert Town Historic Site on Rock Road. It is possible that a visitor center may be developed at Gilbert Town by state or local agencies that would provide additional trail and historic site information. As indicated in a previous letter, the Isothermal Rural Planning Organization Transportation Advisory Committee has recently endorsed a resolution supporting additional funding that will further preserve and enhance the Gilbert Town and Rock Road Historic areas. It is essential that access to Rock Road from US 64 remain intact, preferably by way of Old US 221.

Phone: 828-231-4920
Fax: 828-452-0169
mark.teague@wncconsultinggroup.com
196 NORTH MAIN STREET
WAYNESVILLE, NORTH CAROLINA 28786

More detailed information regarding the trail, including maps, commemorative motor route location, and further details relating to the R-2233 impact, will be sent to you in a few weeks. Thank you for the opportunity to further comment. Please let me know if you have any questions or need more information. I look forward to working together for a successful and context sensitive project.

Sincerely,

J. M. Teague, P.E., CPM
Owner and Principal Engineer

cc: Ms. Karen Andrews, Rutherfordton Town Manager
Mr. Paul Carson, Superintendent - Overmountain Victory National Historic Trail
Mr. Jerry Stensland, Rutherford County Cultural and Heritage Planner
Mr. Chivous Bradley, Rutherford County Historian

Phone: 828-231-4920
Fax: 828-452-0169
mark.teague@wncconsultinggroup.com

196 NORTH MAIN STREET
WAYNESVILLE, NORTH CAROLINA 28786

J. M. Teague Engineering and Consulting

October 28, 2010

Mr. Jay McInnis, Jr., P.E.
Project Development and Environmental Analysis
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

SUBJECT: TIP R-2233B – US 221
Rutherford County

Dear Jay:

Thank you for your response letter of July 15, 2010. Please find below additional comments and clarification regarding your response letter.

Part BA

- **Rutherford Square and US Veterans Administration Outpatient Clinic** – As stated earlier, Rutherfordton strongly desires that the ramps in the SW quadrant be relocated to the northwest quadrant to preserve Rutherford Square and the VA Clinic. This shopping center has recently undergone major renovation by the Federal Government in order to accommodate this regional facility. The clinic was strategically placed in Rutherford Square in order to provide the best possible access from the proposed US 221 US 74-A, and US 74. It is centrally located within the county and provides excellent access from all areas of the southern foothills. Currently the VA Clinic serves nearly 13,000 patients per year and employees 25 full time staff, with plans to increase over the next year. It also has a current tax value of 1.25 million.

  The Town understands that NCDOT has an access management guideline of 350 feet full control from the ramp and 600 feet partial control beyond the full control. The Town also understands that these distances are guidelines and NCDOT can be flexible in order to accommodate local government desires, especially those associated with health care, economic impacts, and local employment situations.

  The Town of Rutherfordton request that NCDOT consider an exemption to the access management guideline and allow full access into Rutherford Square approximately 500 feet west of the proposed ramp. There is currently an access point at this location. If an exemption is not possible, the Town requests NCDOT to build a small rear connector road to Rutherford Square from Executive Drive. Executive Drive currently intersects Charlotte Road just beyond the proposed control of access point. Rutherford Square can still be accessed via a right in – right out along the partial control of access.

  Your response also indicated a concern based on anticipated traffic movements. I have reviewed the proposed 2030 traffic forecasts and need further clarification on your statement of a "higher traffic movement in the southwest quadrant in comparison to the northwest quadrant".

Phone: 828-231-4920
Fax: 828-452-0169
mark.teague@wncconsultinggroup.com

196 NORTH MAIN STREET
WAYNESVILLE, NORTH CAROLINA 28786

The 2030 traffic forecast interchange diagram is not showing a ramp in the southwest quadrant and is based on traffic patterns from 5 years ago. I have developed several questions regarding these projections and am seeking clarification with the Traffic Forecast Unit on a few of the numbers. The traffic volume forecast shows 600 vehicles per day (vpd) turning west toward Rutherfordton from southbound US 221 and 2600 vpd turning east toward Spindale. The forecast for northbound US 221 shows 2200 vehicles turning west and 2100 vehicles turning east. As you can see, there is a significant difference between the projected westbound movements from US 221. There likely has been a change in traffic patterns since the forecast was completed in 2005, specifically as a result of growth within the Town of Rutherfordton and the VA Clinic trip generation of nearly 1000 trips per day (based on the estimated square footage). Having the ramp in the northwest quadrant will also provide a convenient right turn movement for many of the 92,000 annual patients and 3600 daily trips generated by Rutherford Hospital.

The Town certainly understands the significance of stream impacts and the valuable input of natural resource agencies on roadway projects. However, it seems that the economic, traffic operational, and safety benefits of relocating the ramp to the northwest quadrant would outweigh the minimal wetland gains by keeping the ramp in the southwest quadrant. It may be beneficial to further discuss these concerns with DEHNR or other appropriate natural resource agencies, perhaps at a future project meeting with Town officials.

An additional issue not addressed previously pertains to the safety aspect of the proposed ramp configuration. Relocating the southbound US 221 off-ramp from the southwest quadrant to the northwest quadrant will eliminate the high speed approach into a sharp "cloverleaf" type curve.

Part BB

- **Green Street** – The Town is pleased that NCDOT is continuing to investigate the option for a grade separation at Green Street. Please keep the Town and all interested parties informed of this effort as the project planning details move forward. The Town would also like additional consideration regarding the connector road request. Using Allen Street may be suitable, but the ultimate desire of the Town will partially hinge on the Green Street grade separation decision and further discussions with Town officials and NCDOT.

- **Overmountain Victory National Historic** Trail (OVHT)– According to your response, there has been consideration on using the US 64 bridge crossing as a concurrent OVHT crossing. The Town would like to further discuss the possible crossing location and continue to explore a alternate solutions. Please keep the Town and all interested parties informed of the Cleghorn Creek stream mitigation investigation. As mentioned earlier, mitigations along Cleghorn Creek will coincide with the current town plan to create a multi use trail along the same route as the Overmountain Victory Trail, which parallels Cleghorn Creek.

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196 NORTH MAIN STREET
WAYNESVILLE, NORTH CAROLINA 28786

- **Rock Road** – There is still much concern about Rock Road access from the Ruth and Rutherfordton area. As mentioned before, Rock Road serves as the primary access to the original Rutherford County Courthouse Site, the original Gilbert Town Historic Site, and an additional access to the Overmountain Victory National Historic Trail. The Isothermal Rural Planning Organization Transportation Advisory Committee has recently endorsed a resolution supporting additional funding that will further preserve and enhance the Gilbert Town and Rock Road Historic areas.

  The Town would like NCDOT to further consider this connectivity issue and provide a more detailed response as to the number of additional homes impacted by allowing this connection of Rock Road to Old US 221. We would also like NCDOT to provide a conceptual design showing this connectivity for the Town's and public review. It is likely that the skew for the needed bridge structure can be minimized by a slight roadway alignment modification. The Town lift station near Rock Road and Old US 221 is visited and monitored daily by Town officials. Convenient access from Rutherfordton to the lift station is strongly desired and can be accomplished by the connectivity and continuation of Old US 221 through the project.

- **Town Lift Station** – The Town is pleased that NCDOT anticipates no direct impact to the lift station. Town officials visit and monitor the lift station daily so easy access is desirable. Please keep the Town and all interested parties informed if this scenario changes as the project progresses.

- **Thermal Valley Subdivision** – The Town would like to further explore this issue. I have sent you some additional questions and a request for the noise abatement study associated with this project by email

- **Murals and Etches –** The Town is interested in decorative murals or etches along the project and welcomes further detailed discussion as the project progresses. The Town is also interested in exploring options for decorative roadway lighting along the project.

Thank you for the opportunity to further comment. Please let me know if you have any questions or need more information. I look forward to working together for a successful and context sensitive project.

Sincerely,

J. M. Teague, P.E., CPM
Owner and Principal Engineer

cc: Ms. Karen Andrews, Rutherfordton Town Manager

Phone: 828-231-4920
Fax: 828-452-0169
mark.teague@wncconsultinggroup.com

196 NORTH MAIN STREET
WAYNESVILLE, NORTH CAROLINA 28786

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J. M. Teague Engineering and Consulting

June 4, 2010

Mr. Jay McInnis, Jr., P.E.
Project Development and Environmental Analysis
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

SUBJECT: TIP R-2233B – US 221
Rutherford County

Dear Jay:

The Town of Rutherfordton has finished their initial review of the proposed corridor plans for TIP R-2233B – Alternative 3. They have asked me to summarize their comments, observations, and recommendations. Since the project is still in the early design stage, these comments are limited to broader and significant issues. Several of these issues have already been identified through previous meetings, correspondence, and conversations.

FROM SOUTH TO NORTH

- **Rutherford Square and VA Clinic** – The proposed southbound on / off ramp will obliterate the Rutherford Square Shopping Center. Considering the current tax value of this parcel (1.25 million), as well as its current use as a United States Veterans Administration Regional Outpatient Clinic, it is desirable to relocate the proposed US 221 southbound ramps from the southwest quadrant to the northwest quadrant. Although there will be some additional stream mitigation in the northwest quadrant, there is more uninhabited land and the general property tax value is lower than the county average. It is also recommended that the proposed C/A on the south side of US 221A be modified to allow access to Rutherford Square and other adjacent businesses.

- **Green Street** – Needs to remain un-severed and connected through the project as a separated grade crossing. Rutherfordton provides fire protection to areas of Ruth, and Green Street serves as the direct connection to the Ruth area from Rutherfordton. If Green Street is severed, fire vehicles will have to travel approximately 1.1 miles, or about 80 seconds further to access the same point at the intersection of Green Street and US 74-A (Railroad Ave). A connector road that joins Collett Street and Green Street on the eastern side of the project is also desirable. This road will help ensure neighborhood cohesiveness while providing the needed transportation linkage between communities and across the project

- **Overmountain Victory National Trail** – The project severs the Historic Trail near Southern Street. Connectivity should remain as a separated grade crossing. Mitigation should also extend, even beyond project limits if necessary, to ensure a seamless transition from existing trail to project crossing. It is desired that any required stream mitigation occur along Cleghorn Creek in the vicinity of Southern Street and Cleghorn Street. These mitigation improvements will coincide with the current town plan to create a multi use trail along the same route as the Overmountain Victory Trail, which parallels Cleghorn Creek.

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WAYNESVILLE, NORTH CAROLINA 28786

- **Rock Road** – The project eliminates access to Rock Road from US 74-A (Railroad Avenue) in the Ruth area, leaving its sole access from existing Old US 221 (SR 1536) at the northern end of the project. This collector road directly serves approximately 100 homes and indirectly serves hundreds of others. In 2008, the AADT on Rock Road was 2300. Rock Road also serves as the primary access to the original Rutherford County Courthouse Site and the original Gilbert Town Historic Site. There should be an attempt to continue allowing access to Rock Road directly from the Ruth area. This can be accomplished by joining Rock Road, through the project, to existing Old US 221 (SR 1536) where it eventually connects with US 64 (near the Old Ruth School). The current plan shows Old US 221 terminating as a cul-de-sac at the project limits.

- **Town Lift Station** – A town lift station is located in the northeast quadrant of the current intersection of Old US 221 and the Rock Road Connector Road. This facility is currently undergoing a $250k upgrade and should be avoided by the project.

- **Thermal Valley Subdivision** – The project obliterates approximately 13 homes in Thermal Valley. Noise mitigation should be considered for the remaining portion of the subdivision.

- **Broyhill Road (SR 1535) and Gilboa Church Road (SR 1532)** – What is the planned treatment for the intersection of the Rails to Trails path just east of the project?

GENERAL COMMENTS

- There should be consideration for decorative murals or etches along noise walls that will enhance the Rutherfordton community - perhaps a gold coin, image of the courthouse, or an image of downtown. Similar features have been installed on other noise barriers within North Carolina. Similar decorative murals or etches are also desirable on some of the bridge structures.

- Rutherfordton is beginning to formulate detailed ideas and comments such as signing, road numbering, and signalization as the design and planning continues and will present to NCDOT at the appropriate time.

Thank you for the opportunity to comment at this early stage. Please let me know if you have any questions or need more information. I look forward to your response.

Sincerely,

J. M. Teague, P.E., CPM
Owner and Principal Engineer

cc: Ms. Karen Andrews, Rutherfordton Town Manager

Phone: 828-231-4920
Fax: 828-452-0169
mark.teague@wncconsultinggroup.com

196 NORTH MAIN STREET
WAYNESVILLE, NORTH CAROLINA 28786

TOWN OF RUTHERFORDTON
"The Heart of the Thermal Belt"

Town Hall * 129 North Main Street
Rutherfordton, NC 28139

828/287-3520 * FAX 828/286-8054

October 7, 2009

Mr. James McInnis, Jr., PE
Project Engineer
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Reference: TIP No. R-2233B

Dear Mr. McInnis:

We, the Rutherfordton Town Council, appreciate NC DOT meeting with us on August 4th to discuss the two alternatives for the by-pass and to hear and address our concerns and questions about the two alternatives.

Alternative 3
During our meeting the Town expressed the necessity to have more than one through street available for emergency response vehicles; but also for the convenience of our residents, county residents and visitors. With only Charlotte Road as a through street this would greatly slow emergency response time and would be a tremendous hindrance to safety for anyone living or having a business on the east side of proposed Alternative 3. The Town of Rutherfordton contracts with the Town of Ruth to provide fire service for their municipality. With Charlotte Road being the only through street, in the heart of Town, shown on the proposed route, this would significantly hinder a quick response time for our emergency first responders and fire department personnel when answering a call for service in Ruth. The addition of Green as a through street we see as a response safety issue for emergency needs, etc.

The Town sees that a street needs to be designed and built to connect Collett and Green Streets. Again, this would aid in better access for emergency vehicles and provide more than one egress option for our residents living in these neighborhoods.

When streets are designed to be "dead ended" the Town needs to have NC DOT place a cul de sac, so as to allow large emergency response vehicles movement at that location. Because Alternative 3 dissects Town neighborhoods, we ask NC DOT to look at various ways to place noise barriers.

74A Alternative
The Alternative 3 issue of connectivity and more than one through street are also issues for the 74A Alternative.

Both Alternatives will dissect the Federal Overmountain Victory Trail, which is on a portion of the Rails to Trails and comes down Southern Street into the downtown of Rutherfordton. This is an historic trail that is walked each year by numerous reenactors. We request NC DOT look at options available to keep the Trail as a walkable trail, whether via a bridge, tunnel under an overpass, etc.

Either Alternative will disturb commercial and residential properties. Once NC DOT has chosen an alternative, we would appreciate close cooperation in working with our residents, in a timely fashion, to inform and assist them. The Town would also like to be involved to assist not only our residents, but our business community in possible areas for their relocation.

The Rutherfordton Town Council and staff stand ready to work with NC DOT as the decision is made for the chosen route, and to begin to help our residents and businesses. Thank you for your consideration and implementation of our requests. Should you have any questions or comments please feel free to contact the Town.

Sincerely,

Christy Bare
Councilmember

Terry D. Cobb
Councilmember

Jimmy Dancy
Councilmember

Bob Jones
Councilmember

Sally Lesher
Mayor

SPINDALE 19 23 N.C.

TOWN OF SPINDALE

P.O. Box 186 • 103 Reveley Street • Spindale, North Carolina 28160

May 19, 2009

Jameelah El-Amin, PE
NC Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27699-1548

Ref: U.S. 221 Bypass, TIP Project R-2233B

Dear Ms. El-Amin:

On behalf of the Town of Spindale, I am writing in response to the April 21, 2009 Merger Team Meeting for the proposed US 221 Rutherfordton Bypass. It is our understanding that the Merger Team agreed to drop Alternative 4 and Alternative 6 from further consideration, while Alternatives 3 and US 74A remain under study.

In light of the remaining options, the Town of Spindale Board of Commissioners agreed by consensus at their meeting on May 18, 2009 to voice their support of Alternative 3. Although both routes would eliminate one of the Town's major residential subdivisions and hence its associated tax base, Alternative 3 would present the least damaging financial impact to the Town of Spindale by avoiding the existing 74A commercial corridor. The US 74A Alternative would not only eliminate the subdivision but also drastically alter the economic health of the 74A commercial sector. Due to the significant manufacturing losses in Spindale over the past decade, our support and encouragement of local business is critical to our future livelihood.

Thank you for your service and attention, and please do not hesitate to call on us should you have questions.

Sincerely,

R. Cameron McHargue
Town Manager

Cc: Representative Bob England
Senator Debbie Clary
Governor Bev Perdue
Lt. Governor Walter Dalton

Phone: (828) 286-3466 Fax: (828) 286-3305

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Overmountain Victory Trail Association

Our Mission: *The Overmountain Victory Trail Association will protect, preserve and interpret the route of the Overmountain Men to the Battle of Kings Mountain.*

Our Vision: *The Overmountain Victory Trail Association shall forever preserve & commemorate the route and the story of the volunteer army whose victory at the Battle of King's Mountain was a turning point in the struggle for America's independence. The OVTA will ensure the trail will provide the opportunity to experience a deep sense of these events, the lands on which they occurred, and of the people who lived them.*

December 20, 2009

Mr. James McInnis, Jr., PE
Project Engineer
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Reference TIP NO R-2233B

Dear Mr. McInnis:

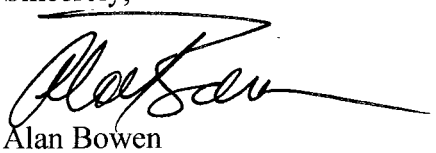
On behalf of the Overmountain Victory Trail Association, please convey our support of Alternate 3 as referenced in TIP NO R-2233B, also known as the Hwy 221 By-Pass Project in Rutherford County. After careful consideration of the final two options as proposed, I (we) feel confident Alternate 3 provides the most in both the potential economic benefit and preservation of cultural and historic assets for the citizens of Rutherford County.

Alternate 3 provides new opportunities for the development of both heritage and recreation/nature based tourism in Rutherford County and surrounding areas. It provides potential for the location of headquarters of a national historic trail her, gives our citizens the ability to better preserve and celebrate several important historical assets. These assets include the significant Revolutionary War site of Gilbert Town, both the historic and motorized route of the Overmountain Victory National Historic Trail through Rutherford County and the Town of Rutherfordton, and makes possible the long planned preservation and potential extension of an established eight mile segment of Rail Trail. The preservation, development, and expansion of each of these will provide both more opportunity can move the needle for our communities and counties who need an economic stimulus while it also provides for enhanced quality of life for our citizens.

Alternate 3 will provide a gateway from both Hwy 221 N and Hwy 64 N to Gilbert Town, a historic Revolutionary War site that is included in the National Register of Historic Places and for which a Preservation Plan is in place through the generosity of the American Battlefield Protection Agency of the National Park Service. It too will provide opportunity to extend and enhance the existing certified Overmountain Victory National Historic Trail that courses through Gilbert Town and follows along a portion of existing Rail Trail through Ruth and Spindale. And it can provide for enhancement of both the historic trail along Cleghorn Creek and along other segments of the historic OVT.

We encourage you to give every consideration to our request as we support Option 3 as the route that will have most positive impact on our county and neighboring regions. Please call me with any questions at 770-387-1945.

Sincerely,



Alan Bowen
President, Overmountain Victory Trail Association

APPENDIX B

NCDOT RELOCATION ASSISTANCE PROGRAM/ RELOCATION REPORTS

DIVISION OF HIGHWAYS RELOCATION PROGRAMS

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

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

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

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

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

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

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

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

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

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

Last Resort Housing is a program used when comparable replacement housing is not available, or when it is unavailable within the displacee's financial means, and the replacement payment exceeds the federal/state legal limitation. The purpose of the program is to allow broad latitudes in methods of implementation by the state so that decent, safe, and sanitary replacement housing can be provided.

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:	34400.1.1	COUNTY	Rutherford	Alternate 3 of Alternate
T.I.P. No.:	R-2233B			
DESCRIPTION OF PROJECT:	US 221 Rutherfordton Bypass from US 74 Bypass to SR 1366 (Roper Loop Road)			

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	80	19	99	18
Businesses	9	18	27	0
Farms	0	0	0	0
Non-Profit	1	0	1	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
4	27	30	38	0

VALUE OF DWELLING

Owners		Tenants	
0-20M	0	$ 0-150	0
20-40M	0	150-250	5
40-70M	15	250-400	14
70-100M	28	400-600	0
100 UP	37	600 UP	0
TOTAL	80		19

DSS DWELLING AVAILABLE

For Sale		For Rent	
0-20M	0	$ 0-150	4
20-40M	4	150-250	5
40-70M	21	250-400	13
70-100M	34	400-600	9
100 UP	143	600 UP	7
	202		38

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
X		2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
X		5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
X		10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing housing available during relocation period?
X		13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 30 months

REMARKS (Respond by Number)

2. Mountain View Baptist Church
3. Will not be disrupted due to the project.
4. See attached sheet for list of businesses.
5. Due to limited rental housing and the number of tenant-displacees, the project may affect available rental housing in the area.
6. Rental's Unlimited, Coldwell-Banker, Century 21- First Realty, and the Rutherford Weekly Newpaper.
8. As necessary in accordance with State Law.
10. If low rent housing is not available at the time of acquisition, public housing might be necessary.
11. HUD housing.
12. Given the last resort housing programs and proper lead time it is felt that DSS housing could be made available to those persons being displaced. Adequate lead time should be 24-36 months.
13. It is felt that our last resort housing program will enable any person(s) being displaced to obtain or maintain housing within their financial means.
14. Suitable business sites will be available during the relocation period. Sources are the same as those listed in No. 6 above.

** You may notice a difference in the number of displacees on the Relocation EIS Report and the Appraisal Cost Estimate. This is due to proximity damage being a factor on the Cost Estimate Report (improvements not actually in the proposed take, but considered damaged to the point of no value) as well as potential loss of access due to the control of access right of way. The displacees shown on this report only include those actually located within the proposed right of way of this project.

Daryl C. Roberts	7-24-08		Am Simpson	8-25-08
Daryl C. Roberts Right of Way Agent	Date		Relocation Coordinator	Date

FRM15-E

ALTERNATE 3 BUSINESSES

a).	Auction House	3 employees	1800 SF	0 min.
b).	Green Memorial Monument Co.	1 employee	2000 SF	0 min.
c).	Tri-City Tire	6 employees	3500 SF	2 min.
d).	The Little Cubbard	3 employees	1000 SF	1 min.
e).	Goode's Memorials	1 employee	1000 SF	0 min.
f).	Pro Physical Therapy	6 employees	2500 SF	3 min.
g).	Link Medical Inc. Home Care	5 employees	1800 SF	2 min.
h).	Century 21 Realty	3 employees	1800 SF	0 min.
i).	3-Tex	10 employees	8000 SF	5 min.
j).	Jon's Frame Shop	1 employee	800 SF	0 min.
k).	Mitchell's Market & Convenience Store	4 employees	1100 SF	0 min.
l).	Snack Bar	2 employees	600 SF	0 min.
m).	Mountain View Baptist Church		1800 SF	
n).	Grimes & Teich, Attorneys	5 employees	1000 SF	2 min.
o).	Blue Ridge Audiology & Hearing Aid	4 employees	1000 SF	1 min.
p).	NC Dept. of Corrections, Div. of Community Corrections, Judicial Dist. 29A	3 employees	1000 SF	1 min.
q).	Ann's Cozy Quilts & Fabrics	2 employees	1200 SF	0 min.
r).	Michael A. Gray, CPA	2 employees	1200 SF	0 min.
s).	Garland F. Byers, Jr., Attorney	3 employees	1200 SF	1 min.
t).	Allstate Insurance, Randy S. McKinney	2 employees	1200 SF	0 min.
u).	Citizen's First Mortgage	2 employees	1200 SF	1 min.
v).	Rutherford Hospital Patient Financial Serv.	8 employees	1200 SF	4 min.
w).	Butterfly Life Healthy Living Solutions	4 employees	1200 SF	0 min.
x).	Verizon Wireless Center	5 employees	1200 SF	2 min.
y).	Family Dollar Store	8 employees	2000 SF	3 min.
z).	hc Uniforms	4 employees	1500 SF	3 min.
aa).	Sunnyside Orchard	5 employees	1500 SF	2 min.

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EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:	34400.1.1	COUNTY	Rutherford	Alternate 4 of Alternate
T.I.P. No.:	R-2233B			
DESCRIPTION OF PROJECT:	US 221 Rutherfordton Bypass from US 74 Bypass to SR 1366 (Roper Loop Road)			

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	111	52	163	28
Businesses	24	19	43	0
Farms	0	0	0	0
Non-Profit	2	0	2	0

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	x	1. Will special relocation services be necessary?
x		2. Will schools or churches be affected by displacement?
x		3. Will business services still be available after project?
x		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
x		5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	x	7. Will additional housing programs be needed?
x		8. Should Last Resort Housing be considered?
	x	9. Are there large, disabled, elderly, etc. families?
x		10. Will public housing be needed for project?
x		11. Is public housing available?
x		12. Is it felt there will be adequate DSS housing housing available during relocation period?
x		13. Will there be a problem of housing within financial means?
x		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 30 months

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	46	64	52	1

VALUE OF DWELLING

Owners		Tenants	
0-20M	0	$ 0-150	0
20-40M	0	150-250	26
40-70M	18	250-400	10
70-100M	42	400-600	0
100 UP	51	600 UP	16
TOTAL	111		52

DSS DWELLING AVAILABLE

For Sale		For Rent	
0-20M	0	$ 0-150	4
20-40M	4	150-250	5
40-70M	21	250-400	13
70-100M	34	400-600	9
100 UP	143	600 UP	7
	202		38

REMARKS (Respond by Number)

2. Seventh-Day Adventist Church and Mountain View Baptist Church
3. Will not be disrupted due to the project.
4. See attached sheet for list of businesses.
5. Due to limited rental housing and the number of tenant-displacees, the project may affect available rental housing in the area.
6. Rental's Unlimited, Coldwell-Banker, Century 21- First Realty, and the Rutherford Weekly Newpaper.
8. As necessary in accordance with State Law.
10. If low rent housing is not available at the time of acquisition, public housing might be necessary.
11. HUD housing.
12. Given the last resort housing programs and proper lead time it is felt that DSS housing could be made available to those persons being displaced. Adequate lead time should be 24-36 months.
13. It is felt that our last resort housing program will enable any person(s) being displaced to obtain or maintain housing within their financial means.
14. Suitable business sites will be available during the relocation period. Sources are the same as those listed in No. 6 above.

** You may notice a difference in the number of displacees on the Relocation EIS Report and the Appraisal Cost Estimate. This is due to proximity damage being a factor on the Cost Estimate Report (improvements not actually in the proposed take, but considered damaged to the point of no value) as well as potential loss of access due to the control of access right of way. The displacees shown on this report only include those actually located within the proposed right of way of this project.

Daryl C. Roberts	7-24-08		Ann Simpson	8-25-08
Daryl C. Roberts Right of Way Agent	Date		Relocation Coordinator	Date

FRM15-E

BUSINESSES ON ALTERNATIVE 4

a).	Mitchell's Market & Convenience Store	4 employees	1100 SF	0 min.
b).	Snack Bar	2 employees	600 SF	0 min.
c).	Healing Touch Chiropractic Center	8 employees	1800 SF	2 min.
d).	CF Reece & Son Crane Service	20 employees	3500 SF	4 min.
e).	Bon Bon Quick Mart	3 employees	1500 SF	1 min.
f).	Dogwood Motel	3 employees	3500 SF	2 min.
g).	East Mountain KwikMart	5 employees	1700 SF	3 min.
h).	Chevron Food Store & Deli	5 employees	1700 SF	3 min.
i).	Gold Nugget Auto Sales	6 employees	1800 SF	0 min.
j).	Seventh-Day Adventist Church of Rutherfordton		3000 SF	
k).	Mountain View Baptist Church		1800 SF	
l).	Grimes & Teich, Attorneys	5 employees	1000 SF	2 min.
m).	Blue Ridge Audiology & Hearing Aid	4 employees	1000 SF	1 min.
n).	NC Dept. of Corrections, Div. of Community Corrections, Judicial Dist. 29A	3 employees	1000 SF	1 min.
o).	Ann's Cozy Quilts & Fabrics	2 employees	1200 SF	0 min.
p).	Michael A. Gray, CPA	2 employees	1200 SF	0 min.
q).	Garland F. Byers, Jr., Attorney	3 employees	1200 SF	1 min.
r).	Allstate Insurance, Randy S. McKinney	2 employees	1200 SF	0 min.
s).	Citizen's First Mortgage	2 employees	1200 SF	1 min.
t).	Rutherford Hospital Patient Financial Service	8 employees	1200 SF	4 min.
u).	Butterfly Life Healthy Living Solutions	4 employees	1200 SF	0 min.
v).	Verizon Wireless Center	5 employees	1200 SF	2 min.
w).	Family Dollar Store	8 employees	2000 SF	3 min.
x).	hc Uniforms	4 employees	1500 SF	3 min.
y).	Carolina First	8 employees	2000 SF	4 min.
z).	Clean Ride Carwash	1 employee	1500 SF	0 min.
aa).	Cabin Fever Furniture	8 employees	4000 SF	4 min.
bb).	Thera-SSage	5 employees	1000 SF	0 min.
cc).	Skill-Creation, Inc.	3 employees	1000 SF	0 min.
dd).	List for Less Realty	3 employees	1000 SF	1 min.
ee).	Auditory Advantage Hearing Care Center	5 employees	1000 SF	3 min.
ff).	Lovelace Financial Group	4 employees	1000 SF	1 min.
gg).	SkyCatcher Communications	6 employees	1000 SF	2 min.
hh).	ABC Store	4 employees	2000 SF	1 min.
ii).	American Trans-Med	10 employees	1800 SF	3 min.
jj).	The Barbecue Place	6 employees	2700 SF	3 min.
kk).	Carolina Energies Gas Station	5 employees	1200 SF	0 min.
ll).	Joe Moore Auto Sales, Inc.	5 employees	2000 SF	2 min.
mm).	Super Lube Oil Change	5 employees	1100 SF	1 min.
nn).	Jack's Self Storage	10 employees	2000 SF	3 min.
oo).	Apple Tuck & Assoc. Construction & Storage Facility	5 employees	1800 SF	2 min.
pp).	Carolina Home Services	5 employees	2000 SF	0 min.
qq).	Restwell Home Assisted Living	12 employees	3000 SF	6 min.
rr).	Fiddlesticks Antiques	2 employees	1500 SF	0 min.
ss).	Sunnyside Orchard	5 employees	1500 SF	2 min.

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EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:	34400.1.1	COUNTY	Rutherford	Alternate 6 of Alternate
T.I.P. No.:	R-2233B			
DESCRIPTION OF PROJECT:	US 221 Rutherfordton Bypass from US 74 Bypass to SR 1366 (Roper Loop Road)			

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	73	18	91	13
Businesses	7	19	26	2
Farms	0	0	0	0
Non-Profit	1	0	1	0

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
X		2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
X		5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
X		10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing housing available during relocation period?
X		13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 30 months

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	24	41	26	0

VALUE OF DWELLING

Owners		Tenants	
0-20M	0	$ 0-150	0
20-40M	0	150-250	0
40-70M	11	250-400	17
70-100M	21	400-600	1
100 UP	41	600 UP	0
TOTAL	73		18

DSS DWELLING AVAILABLE

For Sale		For Rent	
0-20M	0	$ 0-150	4
20-40M	4	150-250	5
40-70M	21	250-400	13
70-100M	34	400-600	9
100 UP	143	600 UP	7
	202		38

REMARKS (Respond by Number)

2. Mountain View Baptist Church
3. Will not be disrupted due to the project.
4. See attached sheet for list of businesses.
5. Due to limited rental housing and the number of tenant-displacees, the project may affect available rental housing in the area.
6. Rental's Unlimited, Coldwell-Banker, Century 21- First Realty, and the Rutherford Weekly Newpaper.
8. As necessary in accordance with State Law.
10. If low rent housing is not available at the time of acquisition, public housing might be necessary.
11. HUD housing.
12. Given the last resort housing programs and proper lead time it is felt that DSS housing could be made available to those persons being displaced. Adequate lead time should be 24-36 months.
13. It is felt that our last resort housing program will enable any person(s) being displaced to obtain or maintain housing within their financial means.
14. Suitable business sites will be available during the relocation period. Sources are the same as those listed in No. 6 above.

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Daryl C. Roberts	7-24-08		Ann Simpson	8-25-08
Daryl C. Roberts Right of Way Agent	Date		Relocation Coordinator	Date

FRM15-E

ALTERNATE 6 BUSINESSES

a).	Mitchell's Market & Convenience Store	4 employees	1100 SF	0 min.
b).	Mountain View Baptist Church		1800 SF	
c).	Grimes & Teich, Attorneys	5 employees	1000 SF	2 min.
d).	Blue Ridge Audiiology & Hearing Aid	4 employees	1000 SF	1 min.
e).	NC Dept. of Corrections, Div. of Community Corrections, Judicial District 29A	3 employees	1000 SF	1 min.
f).	Ann's Cozy Quilts	2 employees	1200 SF	0 min.
g).	Michael Gray, CPA	2 employees	1200 SF	0 min.
h).	Garland Byers, Jr., Attorney	3 employees	1200 SF	1 min.
i).	Allstate Insurance, Randy S. McKinney	2 employees	1200 SF	0 min.
j).	Citizen's First Mortgage	2 employees	1200 SF	1 min.
k).	Rutherford Hospital Patient Financial Serv.	8 employees	1200 SF	4 min.
l).	Butterfly Life Healthy Living Solutions	4 employees	1200 SF	0 min.
m).	Verizon Wireless Center	5 employees	1200 SF	2 min.
n).	Family Dollar Store	8 employees	2000 SF	3 min.
o).	hc Uniforms	4 employees	1500 SF	3 min.
p).	ProPhysical Therapy	6 employees	2500 SF	3 min.
q).	Link Medical Inc. Home Care	5 employees	1800 SF	2 min.
r).	Century 21	3 employees	1800 SF	0 min.
s).	3-Tex	10 employees	8000 SF	5 min.
t).	Jon's Frame Shop	1 employee	800 SF	0 min.
u).	STS Auto Sales	2 employees	1000 SF	0 min.
v).	Trans-Tecx	3 employees	1000 SF	0 min.
w).	Oates & Lane Motor Company	3 employees	1200 SF	0 min.
x).	Tarheel Motor Company	3 employees	1700 SF	1 min.
y).	Unnamed Auto Repair Shop	2 employees	1400 SF	2 min.
z).	Hamrick's Grist Mill	1 employee	1300 SF	0 min.
aa).	Unnamed Fruit & Vegetable Stand	2 employees	1100 SF	0 min.

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EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:	34400.1.1	COUNTY	Rutherford	Alternate **74-A** of	Alternate
T.I.P. NO.:	R-2233B				
DESCRIPTION OF PROJECT:	US 221 Rutherfordton Bypass from US 74 Bypass to SR 1366 (Roper Loop Road)				

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	80	8	88	8
Businesses	13	19	32	0
Farms	0	0	0	0
Non-Profit	1	1	2	0

ANSWER ALL QUESTIONS

Yes	No	*Explain all "YES" answers.*
	X	1. Will special relocation services be necessary?
X		2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
X		5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
X		10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing housing available during relocation period?
X		13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? **30 months**

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	15	38	35	0

VALUE OF DWELLING

Owners		Tenants	
0-20M	0	$ 0-150	0
20-40M	1	150-250	0
40-70M	4	250-400	8
70-100M	16	400-600	0
100 UP	59	600 UP	0
TOTAL	80		8

DSS DWELLING AVAILABLE

For Sale		For Rent	
0-20M	0	$ 0-150	4
20-40M	4	150-250	5
40-70M	21	250-400	13
70-100M	34	400-600	9
100 UP	143	600 UP	7
	202		38

REMARKS (Respond by Number)

2. Rutherford County Humane Society & Latter Rain Church of God
3. Will not be disrupted due to the project.
4. See attached sheet for list of businesses.
5. Due to limited rental housing and the number of tenant-displacees, the project may affect available rental housing in the area.
6. Rental's Unlimited, Coldwell-Banker, Century 21- First Realty, and the Rutherford Weekly Newpaper.
8. As necessary in accordance with State Law.
10. If low rent housing is not available at the time of acquisition, public housing might be necessary.
11. HUD housing.
12. Given the last resort housing programs and proper lead time it is felt that DSS housing could be made available to those persons being displaced. Adequate lead time should be 24-36 months.
13. It is felt that our last resort housing program will enable any person(s) being displaced to obtain or maintain housing within their financial means.
14. Suitable business sites will be available during the relocation period. Sources are the same as those listed in No. 6 above.

** You may notice a difference in the number of displacees on the Relocation EIS Report and the Appraisal Cost Estimate. This is due to proximity damage being a factor on the Cost Estimate Report (improvements not actually in the proposed take, but considered damaged to the point of no value) as well as potential loss of access due to the control of access right of way. The displacees shown on this report only include those actually located within the proposed right of way of this project.

Daryl C. Roberts	7-24-08		Tim Simpson	8-25-08
Daryl C. Roberts Right of Way Agent	Date		Relocation Coordinator	Date

FRM15-E

Alternate 74-A BUSINESSES

a).	Mitchell's Market & Convenience Store	4 employees	1100 SF	0 min.
b).	Snack Bar	2 employees	600 SF	0 min.
c).	Auction House	3 employees	1800 SF	0 min.
d).	Oak Grove Healthcare Center	25 employees	6500 SF	10 min.
e).	Tri-City Tire	6 employees	3500 SF	2 min.
f).	Green Memorial Monument Co.	1 employee	2000 SF	0 min.
g).	The Little Cubbard	3 employees	1000 SF	1 min.
h).	Freeman Gas	12 employees	3000 SF	4 min.
i).	Rutherford Locksmith & Pawn	3 employees	1500 SF	0 min.
j).	Guffey's Used Appliances	2 employees	1200 SF	0 min.
k).	M & G Laundry	2 employees	1200 SF	1 min.
l).	R-S Speedy Lube	4 employees	1100 SF	1 min.
m).	R-S Service Center	4 employees	1500 SF	1 min.
n).	Detail Express Carwash	1 employees	2000 SF	1 min.
o).	Express Store	4 employees	1300 SF	2 min.
p).	Volunteer Life Saving & Rescue	5 employees	1700 SF	0 min.
q).	Rutherford County Humane Society		1000 SF	
r).	NC Tractor & Farm Supply	5 employees	2000 SF	1 min.
s).	Earthdog Pet Spa	2 employees	1200 SF	2 min.
t).	Bright's Used Cars	1 employees	1100 SF	0 min.
u).	Yamaha	3 employees	2000 SF	1 min.
v).	North American Auto Credit	5 employees	3000 SF	2 min.
w).	Jerry's Used Cars	3 employees	1500 SF	0 min.
x).	Latter Rain Church of God		2800 SF	
y).	Metcalf's Body Shop	1 employee	2000 SF	0 min.
z).	Food Lion	12 employees	5500 SF	6 min.
aa).	Rite Aid Pharmacy	10 employees	5500 SF	3 min.
bb).	Hardee's	8 employees	1500 SF	4 min.
cc).	Crowe's Funeral Home	4 employees	4000 SF	1 min.
dd).	Bi-Lo	12 employees	5500 SF	6 min.
ee).	64 & Vine Auto Sales	4 employees	1100 SF	1 min.
ff).	New Generation Homes	5 employees	1200 SF	2 min.
gg).	Unnamed Fruit & Vegetable Stand	2 employees	1100 SF	0 min.
hh).	Hamrick's Grist Mill	1 employee	1300 SF	0 min.

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APPENDIX C

NEPA/404 MERGER PROCESS

APPENDIX C
NEPA/404 MERGER PROCESS

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

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

US Fish and Wildlife Service
US Environmental Protection Agency
National Park Service
NC Department of Cultural Resources
NC Wildlife Resources Commission
Isothermal Planning & Development Commission (non-signatory)

The merger team has concurred on the purpose and need, alternatives to be studied in detail, wetlands/streams to be bridged, selection of the least environmentally damaging practicable alternative and avoidance and minimization measures. Concurrence forms signed by the merger team are included in this appendix.

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Section 404/NEPA Interagency Agreement

Concurrence Point No. 4A Avoidance and Minimization

Project Title: US 221 Rutherfordton Bypass, Rutherford County, TIP Project R-2233B, State Project 8.1891001, WBS Element 34400.1.1

Project Description: The proposed project is a four-lane median divided roadway. Portions of the bypass will be constructed on new location. Approximately 300 feet of right of way will be required on new location portions.

404 Avoidance and Minimization Measures

In an effort to avoid and minimize impacts to jurisdictional wetlands and streams associated with the LEDPA (Alternative 3), NCDOT has proposed to implement one or more of the following measures:

☑ The design of the proposed interchange with existing US 221 south of Rutherfordton was changed from a diamond interchange to a half-cloverleaf interchange. No ramps are proposed in the northern quadrants of the interchange. Estimated impacts avoided or minimized: 375 feet of streams.

☑ Extending bridge over SR 2201 (Thunder Road) by approximately 500 feet to bridge Stonecutter Creek and an unnamed tributary to Stonecutter Creek (Stream 1E). Estimated impacts avoided or minimized: 1,111 feet of streams, 0.02 acre wetlands.

☑ 2:1 side slopes in jurisdictional areas.

☑ The design of the ramp in the northeast quadrant of the proposed US 64 interchange has been changed. The ramp will now more closely follow the alignment of the proposed loop. Estimated impacts avoided or minimized: 243 feet of streams.

☑ The alignment of the proposed connection between SR 1536 (Old US 221) and SR 1520 (Rock Road) has been changed to avoid Holland's Creek (2K) and an unnamed tributary (UT2K). Estimated impacts avoided or minimized: 288 feet of streams.

☑ Prior to the Concurrence Point 4B meeting, the merger team will review Streams 2UT1C and 1N to determine if additional minimization at these locations is feasible.

The project team has unconditionally concurred on this date of April 14, 2011 on the above listed avoidance and minimization measures for the proposed US 221 Rutherfordton Bypass.

Concurring Agencies

NAME	AGENCY
	NCDOT
	DCR/SHPO
	NCDWQ
	USEPA
	NCWRC
	USACE 4/18/11

Section 404/NEPA Interagency Agreement

Concurrence Point 3
Least Environmentally Damaging Practicable Alternative

Project Title: US 221 Rutherfordton Bypass, Rutherford County, TIP Project R-2233B, State Project 8.1891001, WBS Element 34400.1.2

Project Description: The project involves the construction of a US 221 bypass of Rutherfordton.

Least Environmentally Damaging Practicable Alternative: The alternative marked with a check below has been selected by the merger team as the least environmentally damaging practicable alternative (LEDPA) for the proposed US 221 Rutherfordton Bypass. Alternatives with a line drawn through the alternative name have been dropped from further consideration.

- [x] Alternative 3
- [ ] ~~Alternative 4~~
- [ ] ~~Alternative 6~~
- [ ] ~~Alternative US74A~~

The merger team has unconditionally concurred on this date of February 17, 2010 on the LEDPA for the US 221 Rutherfordton Bypass, as shown on the attached figure and described above.

Name	Agency
	NCDOT
	COE
	USEPA - Raleigh
	USFWS
	NC DWQ
Renee Gledhill-Earley	DCR/SHPO
Marla Chambers	NCWRC

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Section 404/NEPA Interagency Agreement

Concurrence Point No. 2A-Bridging Decisions

Project Title: US 221 Rutherfordton Bypass, Rutherford County, TIP Project R-2233B, State Project 8.1891001, WBS Element 34400.1.1

Project Description: The purpose of the project is to reduce congestion, improve safety, and improve travel time for traffic using US 221 corridor in the vicinity of Rutherfordton. The proposed project will be constructed mostly on new location.

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

PROPOSED BRIDGE/CULVERT LOCATIONS AND LENGTHS

STREAM ID.	ALTERNATIVE	PROPOSED STRUCTURE
B	3, 4, 6 and US 74A	Retain and Extend Existing 2 @ 5'x 6' RCBC
1C	3, 6 and US 74A	New 1 @ 72" RCP
2B	3, 6 and US 74A	New 1 @ 6'x 6' RCBC
3-2C (Cleghorn Crk)	4	Spanning structure
2C, 3-2C (Stonecutter Crk)	3, 6 and US 74A	Bridge (bridge also spans SR 2201)
2F	4	Retain and Extend Existing 2 @ 6'x 8' RCBC
2G (Cleghorn Crk)	4	New 2 @ 9'x 9' RCBC
1J	3, 6 and US 74A	New 1 @ 6'x 7' RCBC
3X	6	New 1 @ 6'x 7' RCBC
3G (Hollands Crk)	6	New 2 @ 9'x 10' RCBC
2K	3 and US 74A	New 2 @ 8'x 8' RCBC
3F (Hollands Crk)	4	Retain and Extend Existing 2 @ 7'x 7' RCBC

The Section 404/NEPA Merger Team has concurred on this date of October 15, 2007 with the proposed bridge and culvert locations as listed above.

Concurring Agencies

NAME	AGENCY
[signature]	USEPA 10/25/07
[signature]	NCWRC 11/1/07
[signature]	USFWS 12/5/07
[signature]	NCDOT

Concurring Agencies

NAME	AGENCY
[signature]	USEPA 10/25/07
[signature]	NCWRC 11/1/07
[signature]	USFWS 12/5/07
[signature]	NCDOT
[signature]	USACE 12/6/07

Concurring Agencies

NAME	AGENCY
[signature]	USEPA 10/25/07
[signature]	NCWRC 11/1/07
[signature]	USFWS 12/5/07
[signature]	NCDOT
[signature]	DWQ 12/10/2007

Section 404/NEPA Interagency Agreement

Concurrence Point 2
Alternatives to be Carried Forward

Project Title: US 221 Rutherfordton Bypass, Rutherford County, TIP Project R-2233B, Federal-Aid Project NHF-221(9), State Project 8.1891001

Project Description: The project is programmed in the approved 2002-2008 North Carolina Transportation Improvement Program (TIP) as the construction of a US 221 bypass of Rutherfordton.

Alternatives to be Carried Forward: The environmental document will evaluate the alternatives described in the meeting information (see attached) provided by NCDOT and agreed to by the project team at its meeting on April 17, 2002. The alternatives marked with a check will be carried forward, those with a line drawn through the alternative name will not be carried forward in the environmental document.

- ☐ ~~Alternate Modes of Transportation~~
- ☐ ~~Widen Existing Roadway~~
- ☐ ~~Widen Existing/One Way Pair~~
- ☐ ~~West Side Bypass~~
- ☐ ~~Eastern Bypass Alt. 1~~
- ☐ ~~Eastern Bypass Alt. 2~~
- ☑ Eastern Bypass Alt. 3
- ☑ Eastern Bypass Alt. 4
- ☐ ~~Eastern Bypass Alt. 5~~
- ☑ Eastern Bypass Alt. 6
- ☑ US 74 Bypass Alt.

Name	Agency
James A. Mehaffey Jr	NCDOT
Cynthia J. Van Der Wiele	NCDWQ
Steven W. Lund	USACE
James B. Phillips	FHWA
Gloria D. Zien	USEPA
David R. Cox	NCWRC
M. R. Phillips	NCDOT
Renee Gledhill-Earley	NC SHPO
Howard P. Clem	OVVI - NPS
Marella A. Buncick	USFWS

SECTION 404/NEPA INTERAGENCY AGREEMENT

CONCURRENCE POINT 1 – PURPOSE AND NEED

Project Title: US 221 Rutherfordton Bypass, Rutherford County, TIP Project R-2233B, Federal-Aid Project NHF-221(9), State Project 8.1891001

Purpose and Need of Proposed Project: The purpose of the project is to reduce congestion, improve safety, and improve travel time for traffic using the US 221 corridor in the vicinity of Rutherfordton. Supporting data for the purpose and need for this project is contained in the August, 2000 Purpose and Need Statement prepared by NCDOT.

The project team has concurred on this date of Dec. 14, 2009 with the purpose and need for the proposed project as described above.

USACE Steven W. Lund

NCDOT James A. Mahler Jr.

USEPA _____

USFWS Marella A. Buncick

NCDWQ Cynthia F. Van Der Wiele

NCWRC David H. Cox

NCDCR April Montgomery

FHWA A. Gatchell

APPENDIX D

COMMENTS ON THE STATE DRAFT ENVIRONMENTAL IMPACT STATEMENT

APPENDIX D
COMMENTS ON
THE STATE DRAFT ENVIRONMENTAL IMPACT STATEMENT

NCDOT has distributed the state draft environmental impact statement (SDEIS) to the appropriate federal, state and local agencies. Comments on the SDEIS were requested from the agencies listed below. Asterisks indicate comments were received. Copies of the comments received are included in this appendix.

US Department of the Army - Corps of Engineers
(Wilmington District)
*US Environmental Protection Agency
US Department of the Interior - US Fish and Wildlife Service – Asheville
*US Department of the Interior – National Park Service
*NC Department of Cultural Resources-State Historic Preservation Office
*NC Department of Environment and Natural Resources-DENR
*DENR-NC Division of Water Quality
*DENR-NC Wildlife Resources Commission
Isothermal Planning & Development Commission (Region O)
*Rutherford County
Town of Forest City
Town of Rutherfordton
Town of Spindale

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

November 7, 2008

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

SUBJECT: EPA Review Comments of the State Draft Environmental Impact Statement for R-2233B, US 221 Rutherfordton Bypass, Rutherford County

Dear Dr. Thorpe:

The U.S. Environmental Protection Agency Region 4 (EPA) has reviewed the subject document and is commenting consistent with Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA). The North Carolina Department of Transportation (NCDOT) is proposing a new location 4-lane, median divided facility in Rutherford County for an approximate distance of 9 miles.

The proposed project has been in the Section 404/NEPA Merger 01 process and EPA notes the following concurrence point (CP) milestones: CP 1 Purpose and Need signed 10/1/2000, CP 2 Alternatives to be Carried Forward for Detailed Study signed 4/17/02, and CP 2A Bridging and Alignment Review signed 10/25/07.

There are four (4) build alternatives currently under consideration, including Alternatives 3, 4, 6 and 'US 74A'. EPA specific comments on the State Draft Environmental Impact Statement are attached (See Attachment).

In summary, EPA has not identified an environmentally preferred alternative at this time. EPA has environmental concerns because of the potential stream impacts from Alternatives #3 and #6. EPA also requests that comments and concerns identified in this letter be addressed at the next Merger 01 Concurrence Point meeting and in the Final EIS. Mr. Christopher Militscher of my staff will continue to stay active in the Merger 01 process for this proposed project. Please also include Ms. Kathy Matthews on any proposed future on-site mitigation efforts. Thank you for the opportunity to comment.

Sincerely,

Heinz J. Mueller, Chief
EPA Region 4 NEPA Program Office

cc: Brian Wrenn, NCDWQ
Scott McClendon, USACE

Attachment A
R-2233B, US 221 Rutherfordton Bypass
Rutherford County
State DEIS

EPA Specific Comments

Wetland and Stream Impacts

The State DEIS identifies that there are 12,063 linear feet, 8,734 linear feet, 13,113 linear feet, and 9,200 linear feet of jurisdictional stream impacts from Alternatives 3, 4, 6, and US 74A Alt., respectively. Due to the substantial difference in stream impacts for the proposed project, EPA environmentally prefers either Alternative 4 or US 74A Alt. Most all of the major stream systems in the project study area are Class C or Water Supply V (WS-V) waters. The State DEIS did not identify any Section 303(d) listed impaired waters or High Quality Waters (HQW) in the project study area. Wetland impacts range from 0.6 acres to 1.3 acres. Both Alternatives 4 and US 74A Alt. have the least wetland impacts at 0.6 and 0.7 acres.

The State DEIS identifies avoidance and minimization and compensatory mitigation issues in Section 4.5.4. The State DEIS identifies proposed bridging efforts under CP 2A as one specific avoidance and minimization measure to wetlands and streams. Table 2-4 of the State DEIS only references one potential location for a bridge out of 14 crossings. Site No. 5, Stonecutter Creek is proposed to be bridged but no length for the different alternatives (i.e., Alternatives 3, 6 and US 74A) are included in the table. Site No. 4 at Cleghorn Creek for Alternative 4 is identified as needing a 'spanning structure', but no design details are provided in the State DEIS. EPA notes that the Merger 01 CP 2A forms are not included in the Appendices or discussed in the text of the State DEIS. There are several other potential avoidance and minimization measures that NCDOT did not identify in the State DEIS, including increased side slopes, reduced outside paved shoulders, reduced median width from the standard 46-foot design, and alignment shifts. EPA notes that on-site mitigation opportunities will be explored by NCDOT. EPA requests that updated information on proposed bridge structures and avoidance and minimization efforts be made available to permitting and resource agencies at the next Merger 01 meeting. EPA also requests that on-site mitigation opportunities and feasibility study be coordinated with Ms. Kathy Matthews of EPA's Wetlands Section prior to the CP 4A Avoidance and Minimization meeting.

Prime Farmlands Impacts

Section 3.3.3 of the State DEIS references the N.C. Executive Order No. 96, the Preservation of Prime Agricultural and Forest Lands. This Executive Order requires all state agencies to consider the impact of land acquisition and construction impacts on prime farmland soils, as designated by the Natural Resources Conservation Service

(NRCS). Section 4.3.3 includes Table 4-3 that provides anticipated prime farmland effects of the detailed study alternatives for the four (4) build alternatives. NCDOT conducted the prime farmland analysis using soil type data. Identification of the soil type is first step in conducting a prime farmland analysis under the 1981 Farmland Protection Policy Act (FPPA). EPA refers NCDOT and FHWA to 7 CFR Part 658 regulations that set out the criteria for performing a 'prime farmland assessment' under the FPPA. In addition, NCDOT may also wish to contact the Natural Resources Conservation Service (NRCS) at www.nrcs.usda.gov for additional information. The prime farmland soils 'affected' for Alternatives 3, 4, 6 and US 74A are 362.2 acres, 205.3 acres, 363.0 acres, and 226.8 acres, respectively. EPA anticipates that actual impacts (i.e., Conversion of prime farmland to NCDOT right of way) to prime farmlands may be substantially less than what is presented in the State DEIS based upon NRCS criteria. The State DEIS also references that an active farm may be impacted by the proposed project but does not provide any further details. EPA requests that this information be updated and provided at the Concurrence Point 3 ("LEDPA") meeting as per Appendix A of the Merger 01 NEPA/Section 404 Guidance.

Terrestrial Forest Impacts

Table S-1 of the State DEIS does not include potential terrestrial forest impacts. Table 4-6 includes the potential effects of detailed study alternatives on terrestrial communities. EPA calculates from Table 4-6 that there are 202.6 acres, 111.1 acres, 271.4 acres, and 85.6 acres of terrestrial forest impacts for Alternatives 3, 4, 6, and US 74A, respectively. The State DEIS does not identify how these impacts to mesic-mixed hardwood, dry-mesic oak-hickory forests, and pine forests were estimated (e.g., Corridor width, right-of-way width, or construction width plus 25 feet slope stakes). EPA does not include disturbed/maintained areas in the terrestrial forest impact estimates. EPA requests that this information be updated and provided at the Concurrence Point 3 ("LEDPA") meeting as per Appendix A of the Merger 01 NEPA/Section 404 Guidance.

EPA also acknowledges that there is a discussion concerning terrestrial wildlife in Section 4.5.2.1. Habitat fragmentation is generally discussed. EPA also recognizes that there is a safety issue associated with new location, multi-lane, high-speed corridors and safe wildlife passage. According to a recent report from the Highway Loss Data Institute, fatalities from vehicle crashes with deer and other animals have more than doubled over the last 15 years. In a 2004 study by the Insurance Institute for Highway Safety, it found that fencing, combined with underpasses and overpasses, could be an effective way to prevent deer-vehicle crashes. Alternatives 3 and 6 appear to have the greatest potential to fragment terrestrial forest habitat. EPA requests that NCDOT consider further consultation with the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission on potential measures to minimize these potential safety conflicts.

Noise Receptor Impacts

The Table S-1 of the State DEIS does not identify potential noise receptor impacts. From Table 4-2, noise receptor impacts using FHWA Noise Abatement Criteria are identified for Alternatives 3, 4, 6, and US 74A. There are potentially 9, 0, 4, and 2 residential noise receptors impacted, respectively. The State DEIS did not indicate that the 2004 NCDOT Noise Abatement Policy was applied and cites the pre-2004 abatement threshold of $25,000 per benefited receptor on page 4-4. Using the old criteria, no noise abatement measures were considered reasonable. However, the in effect 2004 NCDOT threshold is $35,000 per benefited receptor (plus an incremental value). EPA requests that the 2004 NCDOT Noise Abatement Policy be applied to the potential traffic noise abatement measures analysis and presented in the Final EIS.

Relocation Impacts

EPA notes that Alternative 4 has greatest impact to residences and businesses with 163 and 43, respectively. Residential and business relocations for Alternatives 3, 6 and US 74A are fairly similar and range between 88 and 99 residences and 26 and 32 businesses.

Mobile Source Air Toxics (MSATs)

EPA notes the general qualitative analysis on Mobile Source Air Toxics (MSATs) provided on pages 4-5 and 4-6 of the State DEIS. The MSAT discussion in the State DEIS does not address potential near-roadway, sensitive receptors along the proposed new routes, such as daycare centers, hospitals, and nursing homes. As previously identified by EPA and in past FHWA interim guidance, MSAT emissions are primarily a near-roadway exposure issue and not a 'region-wide' problem. If there are no sensitive receptors identified along the proposed Alternatives, EPA could concur with NCDOT's general assumptions and predictions presented in the qualitative analysis. The Final EIS should identify potential near roadway sensitive receptors to MSAT emissions.

Indirect and Cumulative Effects

Section 4.6 of the State DEIS addresses potential indirect and cumulative effects of the proposed project. Table 4-10 includes the magnitude of land use changes anticipated between 2000 and 2020. This table should to be updated based upon more current development and economic trends in the project study area. EPA acknowledges that Table 4-11 includes adjacent project effects for R-2233A and R-2597. EPA notes that combined there are an additional 125 residential relocations and 24 business relocations from these projects. In addition, there is also a combined 6,113 linear feet (i.e., More than a mile) of stream impacts. EPA has environmental concerns for the indirect and cumulative effects to water quality in the Upper Broad River hydrologic cataloguing unit (HUC # 03050105) area as a result of these cumulative impacts.

United States Department of the Interior

NATIONAL PARK SERVICE
Southeast Regional Office
Atlanta Federal Center
1924 Building
100 Alabama St., SW.
Atlanta, Georgia 30303

IN REPLY REFER TO:
SER-PC

NOV 25 2008

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

Dear Mr. Thorpe:

The National Park Service (NPS) has reviewed the Draft Environmental Impact Statement (EIS) for the proposed US 221 Rutherfordton Bypass, from US 74 Bypass 1366 Roper Loop Road, in Rutherford County, North Carolina (State Project: 8.1891001, WBS Element 34400.1.1, TIP Project R-2233B).

This project has the potential to adversely affect the Overmountain Victory National Historic Trail (OMVNHT). The OMVNHT is managed by the NPS and is a Section 4(f) resource to be protected under the United States Code at 49 U.S.C. 303.

Section 4(f) of the Department of Transportation Act of 1966 provides significant authority to the Secretary of the Interior to seek the protection of public (Federal and non-Federal) recreational lands in the planning of State Department of Transportation proposals. As such the North Carolina Department of Transportation (NCDOT) must be able to prove that there is no other prudent and feasible alternative to the use of the 4(f) resource administered by or affiliated with the NPS, regardless of the funding source for the project. The NCDOT also must propose actions to minimize and mitigate harm.

The boundaries of the project area reveal the potential to adversely affect several resources included in the OMVNHT. This includes portions of the identified primary historic route, the affiliated site of Gilbert Town, and the Commemorative Motor Route. All of these resources are identified in the Comprehensive Management Plan (CMP) for the trail, a copy of which was provided to the NCDOT in the early stages of this project.

Although the Draft EIS addressed Gilbert Town, neither the primary historic route of the OMVNHT nor the Commemorative Motor Route are discussed. The route on maps within the report, which are identified as "Overmountain Victory National Historic Trail, is primarily the Commemorative Motor Route, which significantly differs from the primary historic route.

The primary historic route within the project boundaries has several recognizable road remnants, as well as the potential for revealing undiscovered archaeological resources. As outlined in Figure 2-2, all of the alternatives under consideration adversely affect, to some degree, the primary historic route. It should be noted that the CMP clearly delineates the primary historic route.

Presently, part of the identified primary historic route has been re-opened as a non-motorized portion of pathway. This 1-mile section follows the old Norfolk Southern Railway roadbed from State Route 1520 (Rock Road) to US Highway 64. In August 2002, the NPS officially certified this 1-mile section as a part of the OVMNHT in conjunction with the Betchler Rails to Trails project; this pathway is currently marked with trail logo signs. Figure 2-2E shows that Alternatives 3 and 6 could either adversely affect or completely obliterate portions of this existing publicly accessible historic pathway.

Table 4-5 on Page 4-8 of the Draft EIS states that Gilbert Town will have "No Adverse Effect" from the Alternative 6 corridor. An examination of Figure 2-2E clearly shows the proposed boundary of Alternative 6 protruding approximately 1,200 feet northward from the recognized southern boundary of the Gilbert Town Historic District. Of special concern is that the northern end of this extension terminates in the northern end of the core of the Historic District. What criteria did NCDOT use to determine that this would have "No Adverse Effect?"

As always we are more than willing to meet with NCDOT officials regarding the OMVNHT and its resources. We would request that you contact the OMVNHT Superintendent Paul Carson directly. He may be reached at paul_carson@nps.gov, or by phone at 864-936-3477.

We appreciate the opportunity to review the Draft EIS and will look forward to resolving trail related issues together so that transportation needs for the area are met, while ensuring that unique nationally recognized resources are not adversely impacted.

Sincerely,

David Vela
Region Director
Southeast Region

North Carolina
Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

October 2, 2008

Mr. Gregory Thorpe
NC Department of Transportation
Program Dev. & Env. Analysis
1548 Mail Service Center
Raleigh NC 27699-1548

Dear Mr. Thorpe:

Subject: Draft Environmental Impact Statement - Proposal to construct the US 221 Bypass of Rutherfordton in Rutherford County as a four-lane roadway with a 46-ft median. TIP No. R-2233B

The N. C. State Clearinghouse has received the above project for intergovernmental review. This project has been assigned State Application Number 09-E-4220-0090. Please use this number with all inquiries or correspondence with this office.

Review of this project should be completed on or before 11/25/2008. Should you have any questions, please call (919)807-2425.

Sincerely,

Valerie McMillan

Valerie W. McMillan, Director
State Environmental Policy Act

cc: Jameelah El-Amin, Project Development Engineer

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

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail: valerie.w.mcmillan@doa.nc.gov

Location Address:
116 West Jones Street
Raleigh, North Carolina

North Carolina
Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

December 1, 2008

Mr. Gregory Thorpe
NC Department of Transportation
Program Dev. & Env. Analysis
1548 Mail Service Center
Raleigh, NC 27699-1548

Re: SCH File # 09-E-4220-0090; DEIS; Proposal to construct the US 221 Bypass of Rutherfordton in Rutherford County as a four-lane roadway with a 46-ft median. TIP No. R-2233B

Dear Mr. Thorpe:

The above referenced environmental impact information has been reviewed through the State Clearinghouse under the provisions of the North Carolina Environmental Policy Act.

Attached to this letter are comments made in the review of this document. The comment(s) need to be addressed in the Final Environmental Impact Statement. This document should be submitted to the State Clearinghouse upon completion for compliance with the North Carolina Environmental Policy Act.

Best regards.

Sincerely,

Valerie McMillan (STG)

Valerie W. McMillan, Director
State Environmental Policy Act

Attachments

cc: Region C

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

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail valerie.w.mcmillan@doa.nc.gov

Location Address:
116 West Jones Street
Raleigh, North Carolina

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 09-E-4220-0090 F02
DATE RECEIVED: 10/02/2008
AGENCY RESPONSE: 11/20/2008
REVIEW CLOSED: 11/25/2008

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

ER 00-7599

A - No response necessary, Survey to be conducted. LGH/ESS 10-17-08

S - ok - RGE 10/21/08

REVIEW DISTRIBUTION
CC&PS - DEM, GTMO
DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CUL RESOURCES
DEPT OF TRANSPORTATION
ISOTHERMAL PLANN & ECON DEV

PROJECT INFORMATION
APPLICANT: NC Department of Transportation
TYPE: State Environmental Policy Act
ERD: Draft Environmental Impact Statement

Due 10/20/08

DESC: Proposal to construct the US 221 Bypass of Rutherfordton in Rutherford County as a four-lane roadway with a 46-ft median. TIP No. R-2233B

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

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

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

☒ NO COMMENT

☐ COMMENTS ATTACHED

SIGNED BY: Renee Gledhill-Earley

DATE: 10·21·08

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North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

MEMORANDUM

TO: Valerie McMillan
State Clearinghouse

FROM: Melba McGee
Environmental Review Coordinator

RE: 08-0090 DEIS Proposed Project to Construct the US 221 Rutherfordton Bypass from US 74 Bypass to SR 1366 Roper Loop Road in Rutherford County

DATE: November 25, 2008

The Department of Environment and Natural Resources has reviewed the proposed information. The applicant is encouraged to consider the attached recommendations. Addressing these comments during the review process and/or during the NEPA Merger Process will avoid delays during the permit review process.

Thank you for the opportunity to review.

Attachments

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

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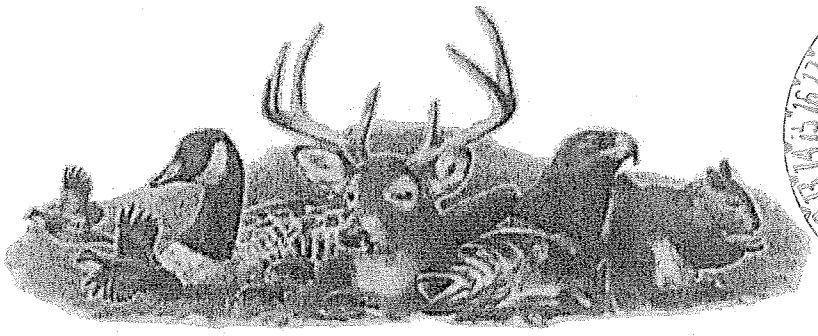

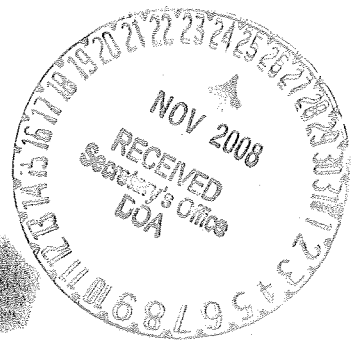

North Carolina Wildlife Resources Commission

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

FROM: Marla Chambers, Western NCDOT Permit Coordinator Marla Chambers
Habitat Conservation Program, NCWRC

DATE: November 20, 2008

SUBJECT: Review of the State Draft Environmental Impact Statement for NCDOT's proposed project to construct the US 221 Rutherfordton Bypass from US 74 Bypass to SR 1366 (Roper Loop Road), Rutherford County. TIP No. R-2233B. OLIA Project No. 09-0090, due 11/20/2008.

North Carolina Department of Transportation (NCDOT) has submitted for review a State Draft Environmental Impact Statement (DEIS) for the subject project. Staff biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the information provided and are participating in the Merger 01 process for this project. These comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)), the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d), and the Clean Water Act of 1977 (33 U.S.C. 466 et seq.).

The NCDOT proposes to construct the US 221 Bypass of Rutherfordton as a four-lane divided roadway, partly on new location. Full control of access is proposed for new location sections and partial control of access will be obtained for sections of the project along existing roadways. Four alternatives are being considered: Alternatives 3, 4, 6, and US 74A. The project is located within the Broad River Basin. A total of 103 streams, 11 ponds, and 45 wetlands have been identified within the project study area. Anticipated stream impacts range from 8,730 to 13,113 linear feet and wetland impacts range from 0.6 to 1.3 acres. Stonecutter Creek (Class C waters), Cleghorn Creek (Class C waters), and Hollands Creek (Class WS-V waters) are the major streams in the project area.

State listed species were not addressed in the DEIS, other than those that are also Federal Species of Concern. Historical records of state listed aquatic species exist for the Piedmont Shiner

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

(*Notropis sp. cf. chlorocephalus*), Significantly Rare (SR), in Cleghorn and Hollands Creek and for the Santee chub (*Cyprinella zanema*), SR, in Hollands Creek. The SR crayfish, Chattahoochee Crayfish (*Cambarus howardi*) and Broad River Stream Crayfish (*Cambarus lenati*), may inhabit these streams. State Special Concern salamanders, mole salamander (*Ambystoma talpoideum*) and four-toed salamander (*Hemidactylium scutatum*), may also be impacted by the project. In addition, we are concerned about impacts to NC Wildlife Action Plan (NCWAP) Priority Species that may occur the project area. In 2001 Congress developed new conservation funding legislation, the Wildlife Conservation and Restoration Program and the State Wildlife Grants Program, which required states to develop a Wildlife Action Plan. The funding is intended to target species in the greatest need of conservation, species indicative of the diversity and health of the state's wildlife, and species with low and declining populations, as deemed appropriate by the states' fish and wildlife agencies. The NCWAP lists priority species of mammals, birds, amphibians, reptiles, fish, mussels, and crayfish that should be targeted for conservation efforts throughout the state. (See ncwildlife.org to review the NCWAP.)

NCWRC is also concerned about indirect and cumulative impacts to area waterways, wildlife habitat, and water quality. Numerous studies have shown that when 10–15% of a watershed is converted to impervious surfaces, there is a serious decline in the health of receiving waters (Schueler 1994) and the quality of fish habitat and wetlands are negatively impacted (Booth 1991, Taylor 1993). We encourage NCDOT and local officials to protect water quality and habitat through the use of Low Impact Development (LID) techniques, growth management, and other mitigation efforts. Information on Low Impact Development practices and measures can be found at www.lowimpactdevelopment.org, http://www.epa.gov/owow/nps/lid/lidnatl.pdf and http://www.stormwatercenter.net/. Measures to mitigate secondary and cumulative impacts can be found in the Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality (NCWRC 2002).

Thank you for the opportunity to review and comment on this project. We look forward to continued participation in the Merger 01 process for the development of this project. If you have any questions regarding these comments, please contact me at (704) 485-8291.

cc: Marella Buncick, USFWS
Brian Wrenn, NCDWQ
Christopher Militscher, USEPA
Steve Lund, USACE
Angie Rodgers, NCNHP

Literature Cited:

Booth, D. 1991. Urbanization and the natural drainage system-impacts, solutions, and prognoses. Northwest Environmental Journal. 7(1):93-118.

NCWRC (North Carolina Wildlife Resources Commission). 2002. Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality. NCWRC, Raleigh. Available:

http://www.ncwildlife.org/pg07_WildlifeSpeciesCon/pg7c3_impacts.pdf. (February 2003).

Schueler, Tom. 1994. The Importance of Imperviousness. Watershed Protection Techniques. 1:3 (pp100-111).

Taylor, B.L. 1993. The influences of wetland and watershed morphological characteristics and relationships to wetland vegetation communities. Masters thesis. Dept. of Civil Engineering. University of Washington. Seattle, WA.

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

Coleen H. Sullins, Director
Division of Water Quality

November 3, 2008

MEMORANDUM

To: Melba McGee, Environmental Coordinator, Office of Legislative and Intergovernmental Affairs

From: Brian Wrenn, Division of Water Quality, Transportation Permitting Unit BW

Subject: Comments on the Draft State Environmental Impact Statement related to proposed the proposed Rutherford Bypass from Us 74 Bypass to SR 1366 in Rutherford County, State Project No. 8.1891001, WBS No. 34400.1.1, TIP No. R-2233B, State Clearinghouse Project No. 09-0090.

This office has reviewed the referenced document dated August 29, 2008. The Division of Water Quality (DWQ) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. It is our understanding that the project as presented will result in impacts to jurisdictional wetlands, streams, and other surface waters. The DWQ offers the following comments based on review of the aforementioned document:

Project Specific Comments:

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

2. In section 4.5.4, wetlands are the only jurisdictional resource that is discussed. The stream impacts anticipated with the proposed project should be included in this section as well. In addition, stream and wetland impacts should be itemized by crossing and presented in this section.

3. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical.

General Comments:

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

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

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

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

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

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

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

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

8. 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.

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

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

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

12. Based on the information presented in the document, the magnitude of impacts to wetlands and streams may 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.

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

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

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

16. If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.

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

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

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

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

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

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

23. While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.

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

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

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

The NCDWQ appreciates the opportunity to provide comments on your project. Should you have any questions or require any additional information, please contact Brian Wrenn at 919-733-5715.

cc: David Baker, US Army Corps of Engineers, Asheville Field Office
Marla Chambers, NC Wildlife Resources Commission
Mike Parker, DWQ Asheville Regional Office
File Copy

North Carolina
Department of Environment ar
Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

North Carolina
Division of Forest Resources

Wib L. Owen, Director

May 29th, 2008

MEMORANDUM

TO: Melba McGee, Office of Legislative Affairs

FROM: Ron Myers, NC Division of Forest Resources

SUBJECT: Proposal to construct the US 221 Bypass of Rutherfordton in Rutherford County. TIP #R-2233B

PROJECT #: 09-0090

The North Carolina Division of Forest Resources has reviewed the Scoping document and offers the following comments concerning impacts to woodlands.

We would support the following alternatives in order of preference:

1. US 74A ALT
2. ALT. 4
3. ALT 3

We feel that the US 74A ALT would have the least impact on the Terrestrial Plant Communities and result in less loss to important hardwood forest types. This alternative would also have a lower impact on anticipated prime farmland soils that would be affected.

1. Efforts should be made to avoid or minimize impact to forest resources. Areas to avoid include unique or unusual ecosystems, highly productive managed woodlands and wetlands. Additionally, efforts should be made to align corridors to minimize impacts to woodlands in the following order of priority:
   - Managed, high site index woodland
   - Productive forested woodlands
   - Unique forest ecosystems
   - Urban woodlands

1616 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919 – 733-2162 ext. 255 \ FAX: 919 – 715-5247 \ Internet: www.dfr.state.nc.us

2. The EA should include any provisions the contractor will take to utilize any merchantable timber removed during construction. Emphasis should be on selling all wood products. However, if the wood products cannot be sold then efforts should be made to haul off the material or turn it into mulch with a tub grinder. This practice will minimize the need for debris burning, and the risk of escaped fires and smoke management problems to residences, highways, schools, and towns.

3. If woodland burning is needed, the contractor must comply with the laws and regulations of open burning as covered under G.S. 113-60.21 through G.S. 113-60.31. Rutherford County is classified as a non-high hazard county, and G.S. 113-60.24 requiring a regular burning permit applies.

4. The EA should include any provisions that site contractors will take to prevent erosion and damage to forestland. Trees, particularly the root system, can be permanently damaged by heavy equipment. Efforts should be made to avoid skinning of the tree trunk, compaction of the soil around the tree, adding excessive layers of fill, exposing the root system, or spilling petroleum or other substances.

We appreciate the opportunity to comment on the proposed project to provide input in the early planning stages for this project. If you have any questions or require additional information, please feel free to contact me at (919) 553-6178.

Sincerely,

Ron Myers
Staff Forester – Hardwood Silviculture
Registered Forester #869, Certified Arborist #SO-5520A

cc: Barry New

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW Linh Nguyen

STATE NUMBER: 09-E-4220-0090 F02
DATE RECEIVED: 10/02/2008
AGENCY RESPONSE: 11/20/2008
REVIEW CLOSED: 11/25/2008

MS SHIRLEY FOYE
CLEARINGHOUSE COORD
DEPT OF TRANSPORTATION
STATEWIDE PLANNING - MSC #1554
RALEIGH NC

REVIEW DISTRIBUTION
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DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CUL RESOURCES
DEPT OF TRANSPORTATION
ISOTHERMAL PLANN & ECON DEV

PROJECT INFORMATION
APPLICANT: NC Department of Transportation
TYPE: State Environmental Policy Act
ERD: Draft Environmental Impact Statement
DESC: Proposal to construct the US 221 Bypass of Rutherfordton in Rutherford County as a four-lane roadway with a 46-ft median. TIP No. R-2233B

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

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

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

☐ NO COMMENT

☒ COMMENTS ATTACHED

SIGNED BY: David C Smith

DATE: 10/13/08

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 13, 2008

MEMORANDUM

Subject: Clearing House 09-E-4220-0090
Rutherfordton Bypass from US 74 Bypass to SR 1353, Rutherford County,
Federal Aid Project NHF-221(9), State Project 8.1891001,
WBS Element 34400.1.1, TIP Project R-2233B

From: Cooper Sellers
Transportation Planning Branch

The above referenced Clearinghouse project is located between the Cities of Rutherfordton and Spindale in Rutherford County. The following is a list of comments or questions about the Draft Environmental Impact Statement.

Page 1-1 Section 1.3.1

The base year daily traffic volume referenced is 2010 forecast data. Why was historical data not used for the base? The 2010 forecast data is referenced throughout the report.

Page 3-3 Section 3.2.2.1

In line one, the reference to the "Rutherfordton" Thoroughfare Plan should be "Rutherford County" Thoroughfare Plan.

Page 4-19 Section 4.9

First sentence has an extra period at the end, before "Most short-term" in the second sentence.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING BRANCH
1554 MAIL SERVICE CENTER
RALEIGH NC 27699-1554

NCDOT TPB
TRANSPORTATION PLANNING BRANCH
http://ncdot.org/doh/preconstruct/tpb/

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
Phone: 919-733-4705
Fax: 919-733-2417

09-0090

RUTHERFORD COUNTY BUILDING INSPECTIONS
AND PLANNING DEPARTMENT
141 West Third Street
Rutherfordton, NC 28139

TELEPHONE: (828) 287-6035
FACSIMILE: (828) 287-6338

Hicks Owens, Director of Inspections
Steve Hill, Assistant Director of Inspections
Charles Lattimore, Inspector
Robin Sparks, Inspector
Jason Ruff, Inspector
Shane Dotson, Inspector
Danny Searcy, County Planner
Jerry Stensland, Rec. Planner
Eric Bradley, Fire Inspector
Angela Tesseneer, Administrative
Ruth Sams, Administrative

FAX TRANSMITTAL

Date: 11-24-08

Please deliver to: _____

Fax number: (919) 733-9571

From: Jerry Stensland

Department: Building Inspection [ ]

Fire Inspection [ ]

Planning [x]

Time: _____

Message: Comments regarding draft EIS for TIP # R-2233B

Total number of pages including cover sheet: 3

IF YOU DO NOT RECEIVE ALL PAGES AS INDICATED, PLEASE CALL US.

WEBSITE ADDRESS: rutherfordcountync.gov

Hicks Owens, Director
Danny Searcy, County Planner
Jerry Stensland, Recreational, Cultural & Heritage Planner

Rutherford County
Planning Department

11/24/08

NC State Clearinghouse
Department of Administration
Intergovermental Review

Dear NC State Clearinghouse:

Isothermal Planning and Development Commission forward Rutherford County a copy of the draft Environmental Impact Statement for the US 221 Bypass project and asked that we add any comments. What follows are the comments from Rutherford County regarding the draft EIS for the TIP project R-2233B.

1) Aerial photos are old. There are new color ortho aerial photos from 2005 available from the county's GIS department.
2) The Bechtler Mint Site, a National Register of Historic Places site, is not shown. It is located near Gilboa Church Road near the north end of the project.
3) How will the Thermal Belt Rail Trail and other existing railroad corridors be handled? The rail corridor for the current rail trail is federally banked and must remain open. Where would the replacement corridor be for those routes that impact it?
4) There is an active water tower along Railroad Avenue. How will this be handled? It is a Broad River Water Authority tower. The cost and feasibility of moving the tower must be taken into account in any route that impacts it. Broad River Water Authority should be contacted.
5) The Dunkard's Church is listed as "No effect" or "No Adverse Effect" on the chart summarizing the four route's impacts to historic sites. It is not clear how that can be the case when each of the right-of-ways for all four routes shows the church near the middle of the right of way.
6) Dunkard's Church should be identified as "Huntley Memorial Dunkard's Church."
7) Are the effects of noise considered, particular for historic sites like Gilbert Town? Gilbert Town is historic partly because it is a traditional rural landscape. Noise from a major highway can impact that rural character.

8) In quantifying the impact of each route, are the number of people living in each residence considered? Rest homes, for example, would have a high number of people displaced.

If you require any additional information please contact me.

Regards,

Jerry Stensland