North Carolina Department of Transportation

Relocation of Old Beatty Ford Road (SR 1221) From
SR 1210/SR 1221 to Lentz Road (SR 1337)
Rowan County
Federal Aid Project No. HISP-1221 (18)
WBS No. 44105.1.FD1
TIP No. W-5516

ENVIRONMENTAL ASSESSMENT

U.S. Department of Transportation
Federal Highway Administration
and
N.C. Department of Transportation

Approved:

5/16/2014
DATE

Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation

5/16/2014
DATE

FOR John F. Sullivan, III, P.E.
Division Administrator
FHWA

North Carolina Department of Transportation

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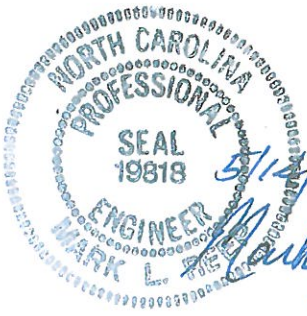

5/14/2014

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PROJECT COMMITMENTS

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North Carolina Department of Transportation
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PROJECT COMMITMENTS

Commitments Developed Through Project Development and Design

NCDOT Hydraulics Unit

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

- The eastern section of the project draining to the Dutch Buffalo Creek water supply watershed (WS-II, HQW) will be designed according to Design Standards in Sensitive Watersheds (DSSW).

NCDOT Division 9

- This project involves construction activities on or adjacent to Federal Emergency Management Agency regulated streams. Therefore, the NCDOT Division 9 shall submit sealed as-built construction plans to the NCDOT Hydraulics Unit upon completion of project construction, certifying that the drainage structures and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

- During final design, NCDOT will investigate removing the existing culvert at Old Beatty Ford Road and Cold Water Creek for potential on-site stream and wetland mitigation use.

- NCDOT will design the cul-de-sacs on existing Old Beatty Ford Road with Alternative 2 to be large enough to allow school buses to turn around.

NCDOT Project Development & Environmental Analysis Unit

- NCDOT will continue to coordinate appropriately with USFWS to determine if this project will incur potential effects to the Northern long-eared bat, and how to address these potential effects, if necessary.

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I. DESCRIPTION OF PROPOSED ACTION

A. General Description

The North Carolina Department of Transportation (NCDOT) Division 9 Office proposes to improve or relocate Old Beatty Ford Road (SR 1221) from its intersection with Bostian Road (SR 1210/1221) to Lentz Road (SR 1337) in Rowan County (see Figure 1.1).

The project will construct a two-lane road on new location with a new grade separation over I-85 near Kannapolis, Landis, and China Grove. The bridge carrying existing Old Beatty Ford Road over I-85 will be removed as part of this project. The proposed project is approximately 3.1 miles long. The project proposes the following:

- 26-foot paved roadway (two 11-foot wide lanes and two-foot wide shoulders)
- Straighter alignment that reduces horizontal and vertical curves
- Paved shoulders
- Improved intersections
- Improved bridge over I-85

B. Historical Resume and Project Status

The project is included in the 2012-2020 State Transportation Improvement Program (STIP) and is scheduled for right-of-way acquisition in Fall 2014 and construction in Fall 2015. The Cabarrus-Rowan Metropolitan Planning Organization's (CRMPO) Comprehensive Transportation Plan has identified this section of Old Beatty Ford Road as a major thoroughfare that needs improvement.

In 2007, NCDOT performed a Road Safety Review for an approximate 16-mile portion of Old Beatty Ford Road. [1] The Road Safety Review found that Old Beatty Ford Road had higher fatal and non-fatal injury crash rates that occurred over a five year period (January 1, 2000 through January 31, 2005) when compared to similar roadways statewide.

In general, the Road Safety Review found that Old Beatty Ford Road experienced a substantial number of lane departure crashes due to a poor alignment, narrow pavement, and inadequate

[1] The 2007 NCDOT Safety Review analyzed crash data along Old Beatty Ford Road from just west of US 52 near Gold Hill to Bostian Road.

shoulders (see *Section II.B.4, Safety* for more information). Several intersections also contributed to frontal impact and other collisions. The review provided the following recommendations regarding safety conditions within the project study area:

- Widen the roadway to a minimum of 11 feet per lane with two-foot paved shoulders.
- Rebuild and rework shoulders along much of the route.
- Examine and replace guardrail and bridge treatments as necessary.
- Add pavement markers for entire route.
- Remove obstructions within the right-of-way.
- Remove trees and shrubs that obscure intersection sight distances.
- Install additional warning signs throughout the study area, particularly at curves.
- Replace the existing signs and add lighting at the Lentz Road intersection.

The Road Safety Review led to the project being developed for funding through the Hazard Elimination Program. The federally-funded Hazard Elimination Program is used to address specific traffic safety concerns with a goal to reduce the frequency and severity of traffic crashes involving injuries and fatalities on public roadways. The project was prioritized for funding based on a high safety benefit to cost (B/C) ratio, with the safety benefit being based on crash reduction.

C. Cost Estimates

The estimated cost in the STIP is $6,111,000. This includes $1,111,000 for right-of-way acquisition and $5,000,000 for construction. The current total estimated cost for Alternative 1 is $18,200,000, consisting of $4,400,000 for right-of-way acquisition and $13,800,000 for construction. The current total estimated cost for Alternative 2 is $16,300,000, consisting of $1,200,000 for right-of-way acquisition and $15,100,000 for construction.

II. PURPOSE AND NEED FOR PROJECT

A. Purpose of Project

The purpose of this project is to improve vehicular safety on Old Beatty Ford Road by reducing the frequency of lane departure and frontal impact crashes that have resulted in fatal and non-fatal injuries. A secondary purpose is to improve the deficient bridge. Proposed safety countermeasures include:

- improving the horizontal and vertical alignment
- increasing the lane widths and adding paved shoulders
- widening shoulders and improving clear zones

These countermeasures have been shown to substantially reduce crashes.

B. Need for Project

This project is needed to reduce lane departure and frontal impact crashes along Old Beatty Ford Road between Bostian Road and Lentz Road. The 2007 NCDOT Road Safety Review identified higher than average fatal and non-fatal injury crash rates along a 16-mile portion of Old Beatty Ford Road when compared to similar roadways statewide.

More recent data (gathered between 2008 and 2013) shows 33 crashes occurred along Old Beatty Ford Road between Bostian Road and Lentz Road, including one fatality and 14 non-fatal injuries. Lane departure and frontal impact crashes accounted for nearly 75 percent of the total crashes. See *Section II.B.4, Safety* for more information regarding crashes.

A number of roadway deficiencies on Old Beatty Ford Road contribute to the crash frequencies. These include narrow lane widths, insufficient shoulder widths and clear zones, a poor vertical and horizontal alignment, and a stop condition at the Old Beatty Ford Road/ Lentz Road intersection.

The project is also needed to address a deficient bridge. The bridge over I-85 has a low sufficiency rating, posted weight limits for trucks, and is considered functionally obsolete and structurally deficient.

1. Description of Existing Conditions

    a. Functional Classification

Old Beatty Ford Road is classified by NCDOT as a major collector west of China Grove Road, a minor collector east of Lentz Road, and a local road between China Grove Road and Lentz Road. It is designated by the CRMPO as a major thoroughfare that needs improvement.

    b. Physical Description of Existing Facility

<u>Existing Facility</u>

The existing two-lane roadway is 18 to 22 feet wide with narrow, unpaved shoulders and multiple sharp curves. The right-of-way is generally 60 feet wide, but it widens to approximately 200 feet at the bridge over I-85. There is no control of access. It has a speed limit of 55 miles per hour (mph), but several curves are posted with 25 to 35 mph advisory signs. The existing bridge over I-85 is located between sharp curves in the alignment and is in need of rehabilitation. This bridge is considered structurally deficient and functionally obsolete, has posted weight limits, and has a sufficiency rating of 38 out of a possible 100. At the project's eastern terminus, Old Beatty Ford Road forms a T-intersection with Lentz Road. This condition requires traffic to turn to remain on Old Beatty Ford Road and contributes to the occurrence of crashes at the intersection.

Railroad Crossings

There are no existing railroad crossings associated with this project nor are any being proposed.

Pedestrian/ Bicycle Facilities and Greenways

There are no sidewalks or pedestrian designated areas located in the project area. The CRMPO's Comprehensive Transportation Plan Pedestrian Map (August 24, 2011) does not recommend any future sidewalks or pedestrian facilities in the project area.

There are no existing County, State, or local bicycle facilities or greenways in the project area. No State or local plans call for bicycle facilities in the project area.

Structures

One culvert and one bridge are located on Old Beatty Ford Road in the project area and are described in Table 1.

Table 1: Existing Structures

Crossing Location	Structure Description	Year Built	Sufficiency Rating (0 to 100)	Posted Weight Limit (tons)
Cold Water Creek (Culvert No. 399)*	3 @ 10'x12'x 131' RCBC	1966	99.8	Not Posted
I-85 (Bridge No. 65)	34' x 249' @ 3 spans, RC deck, I-beams, caps, piles, and footings	1967	38.2	40 (SV) 44 (TTST)

RC = reinforced concrete; RCBC = reinforced concrete box culvert;
SV = Single Vehicle Truck; TTST = Tractor Trailer Semi-Truck.
* This structure is located beside Site 4 in the *Preliminary Hydraulics Study for Environmental Impact* (January 23, 2014). The study is available in NCDOT's project file.

Proposed bridge and drainage structures are discussed in *Section IV.F, Structures*.

c. Traffic Volumes

Annual Average Daily Traffic (AADT) volumes in the project area currently (2013) range from 1,400 vehicles per day (vpd) to 2,200 vpd on Old Beatty Ford Road.

Traffic forecasts are a useful tool for determining the elements of roadway design required to accommodate anticipated future volumes. According to forecasts for the year 2035, traffic volumes in the two locations mentioned in the previous paragraph are estimated to range from 2,700 vpd to 5,100 vpd under No Build conditions. Trucks account for eight percent of the daily volumes. A two-lane roadway is sufficient to carry the future year traffic volumes at an acceptable level of service. Traffic volumes are shown in Appendix D.

2. Transportation and Land Use Plans

a. North Carolina Transportation Improvement Program (TIP)

According to the 2012-2020 State Transportation Improvement Program (TIP), the following projects are in the vicinity of the study area (see Figure 4):

- I-3802B proposes to add additional lanes to I-85 from north of Lane Street (SR 2180) (Exit 63) in Cabarrus County to the US 29/ US 601 Connector (Exit 68) in Rowan County. Right-of-way acquisition is to begin in FY 2018 with construction in FY 2020.
- I-3610 proposes to revise the I-85/ US 29/ NC 152 interchange area (Exit 68). This project is included in I-3802B. Right-of-way acquisition is to begin in FY 2018 with construction in FY 2020.
- W-5313 proposes to widen existing two-lane Old Beatty Ford Road to improve the horizontal and vertical alignment, provide wider travel lanes, and improve shoulders and clear zones from Lower Stone Church Road (SR 2335) to Lentz Road. Right-of-way acquisition is to begin in FY 2014 with construction in FY 2015.
- P-5206 proposes to restore a second railroad track from north of Kannapolis to south of Salisbury. Right-of-way acquisition is to begin in FY 2013 with construction in FY 2014.
- B-5365 proposes to replace two US 29/ NC 152 bridges (Bridge No. 21 and Bridge No. 34) over the Norfolk Southern Railroad and US 29. Right-of-way acquisition is to begin in FY 2017 with construction in FY 2019.

I-3804, a new interchange at Old Beatty Ford Road, had been in a previous version of the TIP as part of I-3802 but was removed because land use and traffic projections did not support the need for a new interchange at that time. An interchange is included in the Cabarrus-Rowan Metropolitan Planning Organization's (CRMPO) current 2035 Long Range Transportation Plan (LRTP) and the draft 2040 LRTP (as a 2016-2025 horizon year project) and is scheduled to be reevaluated in NCDOT's Prioritization 3.0. The location of an interchange has not been determined.

b. Local Thoroughfare Plans

The CRMPO's *Comprehensive Transportation Plan (CTP)*, adopted in October 2011 and last updated in July 2013, is a series of maps of recommended transportation improvements. Improvements to Old Beatty Ford Road are included in this plan as well as a future I-85 interchange at Old Beatty Ford Road (see Figure 5).

The *Long Range Transportation Plan (LRTP) 2035* was updated by the CRMPO in April 2009. The LRTP lists the transportation improvements and policies to be implemented in the MPO area. Improvements to Old Beatty Ford Road are included in this plan as well as a future I-85 interchange at Old Beatty Ford Road.

c. Land Use Plans

Rowan County's *Land Use Plan, Areas East of I-85* was adopted on January 17, 2012. It describes the existing characteristics of unincorporated areas of the County and serves as a guide for future land use decisions. Improvements to Old Beatty Ford Road are included in this plan as well as a new I-85 interchange at Old Beatty Ford Road. According to this plan, the project area is currently considered to be in a low-density residential and agricultural area of the County. Future plans for the area are to preserve the rural character by limiting non-residential development to regional and community nodes.

3. System Linkage

a. Existing Road Network

Four US routes (US 29, US 70, US 601, and US 52) and I-85 traverse Rowan County. I-85, which passes through the project area, provides direct access in a regional sense north to the Triad and south to Charlotte. This excellent connectivity and its strategic location between two of North Carolina's largest metropolitan areas is an economic asset for the County. US 29 generally parallels I-85 from Greensboro to Charlotte and is approximately 0.6 mile from the project area. US 70 also parallels I-85, but it turns to the west in Salisbury and takes travelers west to I-77 and I-40 near Statesville in neighboring Iredell County. US 601 heads north out of Rowan County to I-40 and south to nearby Kannapolis in Cabarrus County. US 52 passes through Rowan County in the north / south direction and takes motorists north to Lexington and Winston Salem and south through Stanly and Anson Counties.

Old Beatty Ford Road crosses over I-85, but there is no direct connection to the interstate via an interchange. It connects to US 29 beyond the project's western terminus.

b. Modal Interrelationships

<u>Public Transportation</u>

Project area residents have the following options for public transportation:

- Rowan Individual Transportation Assistance (RITA) – RITA provides a reservation service that takes riders to places such as doctor appointments, grocery shopping, connections to other area transit systems, etc. It operates in a different area of the County Tuesday through Friday.
- Rowan Express South – this is a fixed-route service operated by Rowan County. It carries passengers between the Kannapolis train station and the Salisbury train station with stops in between at the Landis Town Hall, South Rowan YMCA, a Food Lion, the China Grove police station, and the Employment Security Commission. Rowan Express South operates Monday through Friday.
- Rider – Rider is a fixed-route bus system providing passengers transportation to destinations primarily in the cities of Kannapolis and Concord. The Blue Route is the northern-most route bringing customers to just south of downtown Landis.

There are no scheduled transit stops along the project.

4. Safety

Between 2008 and 2013, 33 crashes occurred along Old Beatty Ford Road between Lentz Road and Bostian Road, including one fatality and 14 non-fatal injuries. This equates to total, fatal, and non-fatal crash rates that are higher than statewide rates for similar type roads but lower than the respective critical crash rates. The critical crash rate is used as a tool to identify or screen for high accident locations. It is developed by statistically adjusting study area crash rates based on other roads with similar characteristics to remove elements of chance and randomness. Approximately 49 percent of crashes resulted from lane departures and 24 percent resulted from frontal impacts.

Within the project limits, crashes primarily occurred in and near the sharp curves between China Grove Road and State Road. Another area of concern is the Old Beatty Ford Road/ Lentz Road intersection where three crashes occurred during the five-year period. The sole fatality during this period occurred from a fixed object accident near Serenity Ridge Road. The most prevalent types of crashes and their locations are as follows and shown on Figure 1.2:

- Lane departure due to head-on, sideswipe, opposite direction, and vehicles running off the road (Lentz Road; I-85 to State Road; and China Grove to Bostian Road)
- Frontal impacts due to angle and turning collisions (China Grove Road)

Table 2 provides crash statistics along Old Beatty Ford Road between Lentz Road and Bostian Road between September 1, 2008 and August 31, 2013.

Table 2: Crash Statistics

Category	Crashes	Crashes per 100 Million Vehicle Miles (MVM)	Statewide Rate	Critical Rate [1]
Total	33	371.28	335.34	442.04
Fatal	1	11.25	3.38	19.16
Non-Fatal	14	157.51	112.58	176.77
Night	13	146.26	138.62	209.23
Wet	5	56.26	57.39	104.83

[1] Based on the statewide crash rate (95% level confidence). The critical crash rate is a statistically derived value against which a calculated rate can be compared to see if the rate is above and average far enough so that something besides chance must be the cause.

Safety countermeasures proposed with this project include:

- improving the horizontal and vertical alignment
- increasing the lane widths and adding paved shoulders
- widening shoulders and improving clear zones

The effectiveness of these improvements in addressing the specific deficiencies is well documented. NCDOT's *Regional Crash Reduction Factors* (dated November 1, 2012) are developed through agreement of a committee of NCDOT representatives formed to develop the factors and are based on available research. Specific references used by the committee as guidance to develop crash reduction factors include publications from the Kentucky Transportation Center and FHWA. [2,3]

C. Benefits of the Project

The project will reduce the frequency of crashes that have resulted in fatal and non-fatal injuries. It will improve the pavement width, shoulders, clear zones, and horizontal and vertical alignment. These treatments have been proven to reduce the frequency and severity of crashes when applied to similar roadways experiencing similar crash patterns. Table 3 illustrates the extent to which the proposed design will correct the narrow lane widths, insufficient shoulder widths and clear zones, and the poor alignment to result in safer conditions.

The proposed relocation of Old Beatty Ford Road will divert more than 80 percent of design year traffic from the existing roadway. This will decrease the crash exposure between China Grove Road and Goldfish Road where the highest frequency of crashes occurred. The project will remove the existing bridge over I-85, close the existing road to through traffic by adding cul-de-sacs on each side of I-85, and add signs to notify drivers of the dead ends. The existing road will remain open east and west of I-85 to serve local traffic where drivers are most familiar with the existing roadway conditions.

Table 3 – Design Characteristics

Design Element	Existing and No-Build Conditions	Proposed Design Conditions
Posted Speed (mph)	45	45
Speed Posted on Advisory Signs (mph)	25 to 35	none
Minimum Design Speed (mph)	30 (Based on vertical alignment)	50
Lane Widths (feet)	$\leq$ 11	11
Usable Shoulder Widths (feet)	4 - 6	6
Paved Shoulder Widths (feet)	None	2
Clear Zone Width (feet)	N/A	14
Number of Curves Requiring Design Exceptions	5 (Horizontal) 13 (Vertical)	None
Minimum Horizontal Curve Radius (feet)	280	760
Minimum Rate of Vertical Curvature (K Value = curve length ÷ change in % grade)	37 (sag) 19 (crest)	96 (sag) 84 (crest)
Sight Distance (feet)	270 (minimum)	> 500

[2] *Development of Accident Reduction Factors* (Kentucky Transportation Center, 1996).
[3] *Annual Report on Highway Safety Improvement Programs* (FHWA, 1996) and *Highway Safety Evaluation System*, (FHWA, 1982)

III. ALTERNATIVES

A. Preliminary Study Alternatives

"No-Build" Alternative

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

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

The No-Build Alternative would not meet the purpose of the project or satisfy the projected transportation needs. Furthermore, it is not consistent with NCDOT's TIP. The existing roadway cannot serve the purpose of this project – to improve vehicular safety on Old Beatty Ford Road.

While the No-Build Alternative does not meet the purpose or need for the project, it is included in this Environmental Assessment (EA) as a baseline for comparing impacts and benefits.

B. Detailed Study Alternatives

Two alternatives are being studied in detail for this project.

Alternative 1

Alternative 1 generally follows existing Old Beatty Ford Road from Bostian Road to Lentz Road, but will also remove a number of curves to straighten the roadway (see Figures 2.1-2.2). It includes the replacement of the existing bridge over I-85. This alternative is approximately 3.1 miles long.

This alternative is estimated to cost $18,200,000 (see Table 4). This includes $4,400,000 for right-of-way and $13,800,000 for construction. It will relocate ten residences and one business. It crosses two streams requiring major structures and impacts approximately 115 feet of stream channel. A bridge spanning I-85, Cold Water Creek, and adjacent wetlands is proposed to minimize stream and wetland impacts. Wetland impacts are expected to be approximately 0.2 acre. Noise impacts are expected at one residence. Impacts to prime and statewide important farmlands are anticipated and are expected to be about 9.3 acres. One hazardous material site (UST) was identified for Alternative 1, and geo-environmental impacts are expected to be low. Impacts to floodplains, endangered species, cultural resources, or Section 4(f) resources associated with Alternative 1 are not anticipated.

Alternative 1 corrects the deficiencies along the existing roadway and has less impact to streams. However, it has the highest cost, relocates the largest number of residences and businesses, acquires land from more properties, and moves the roadway closer to more homes located beside the existing road.

Alternative 2 (Recommended)

Alternative 2 begins near the Old Beatty Ford Road/ Bostian Road intersection, extends east on new location to Lentz Road, and follows Lentz Road for approximately 0.6 mile to its intersection with Old Beatty Ford Road (see Figures 3.1-3.2). It will also include a new bridge over I-85. As a result, the existing bridge will be removed, cul-de-sacs will be constructed along existing Old Beatty Ford Road on both sides of I-85, and signs will be added to notify drivers of the dead ends. This alternative is also approximately 3.1 miles long.

This alternative is estimated to cost $16,300,000 (see Table 4). This includes $1,200,000 for right-of-way and $15,100,000 for construction. It will relocate one residence and no businesses. It crosses three streams requiring major structures and impacts approximately 965 feet of stream channel. A bridge spanning I-85, Cold Water Creek, and adjacent wetlands is proposed to minimize stream and wetland impacts. Impacts to wetlands will be less than 0.1 acre, and floodplain impacts are not expected. Noise impacts are not expected. Impacts to prime and statewide important farmlands are anticipated and are expected to be about 19.2 acres. Impacts to endangered species, cultural resources, Section 4(f) resources, or hazardous materials sites associated with Alternative 2 are not anticipated.

Table 4: Summary of Impacts – Detailed Study Alternatives

Impacts	Alternative 1	Alternative 2 (Recommended)
Costs		
Right-of-way	$4,400,000	$1,200,000
Construction	$13,800,000	$15,100,000
Total	$18,200,000	$16,300,000
Length (miles)	3.1	3.1
Relocations		
Residential	10	1
Business	1	0
Non Profit	0	0
Farms	0	0
Total	11	1
Prime/ Statewide Important Farmland (acres)	9.3	19.2
Water Resource Impacts		
Stream Crossings (major structures)	2	3
Stream Crossings (pipes)	0	4
Stream Impacts (feet)	115	965
Open Water Impacts (acres)	0.0	0.0
Wetland Impacts (acres)	0.2	< 0.1
Floodplain Impacts (acres)	0.0	0.0
Endangered Species		
Schweinitz's sunflower	No Effect	No Effect
Historic Property Impacts	No Effect	No Effect
Archaeological Sites	No Effect	No Effect
Section 4(f) Resources (Parks, Recreation Areas, Wildlife Management Areas)	0	0
Noise Impacts	1	0
Hazardous Material Sites (including USTs)	1	0

Alternative 2 is recommended as the preferred alternative. Although it impacts more streams, it has the lowest cost, relocates fewer residences and businesses, and affects the least number of properties. Alternative 2 diverts most of the design year traffic from the existing roadway to a new location with fewer access points. The existing road will remain open east and west of I-85 to serve a much lower volume of local traffic and have a lower exposure to potential crashes.

IV. PROPOSED IMPROVEMENTS

A. Roadway Cross-section and Alignment

The project proposes to provide a 26-foot paved roadway width (two 11-foot lanes with two-foot paved shoulders), a straighter horizontal alignment, improved vertical alignment, improved intersections, and a new bridge over I-85 (see Figures 2.1-3.2).

B. Right-of-way and Access Control

The proposed right-of-way width is 60 feet, and there will be no access control. Temporary and permanent easements are also anticipated.

C. Speed Limit

The proposed posted speed limit is 45 mph.

D. Design Speed

The design speed for both alternatives is 50 mph.

E. Intersections/Interchanges

Currently, Old Beatty Ford Road travelers are required to stop at the intersection with Lentz Road, which is the through movement. Under both proposals, Old Beatty Ford Road will become the through movement, and stop signs will be placed along Lentz Road. Old Beatty Ford Road is, and will continue to be, the through movement at all other intersections within the project limits.

As discussed in *Section II.B.2, Transportation and Land Use Plans*, a new I-85 interchange at Old Beatty Ford Road is being considered for a future transportation project – separate from W-5516. The proposed project does not include an interchange with I-85, but it does not preclude the construction of one in the future.

F. Structures

Structure and drainage requirements are shown in Table 5 (see Figure 6).

Drainage Structures

According to the January 23, 2014 *Preliminary Hydraulics Study for Environmental Impact* for this project (available from NCDOT), one new culvert is required for Alternative 1, and Alternative 2 will require two new culverts.

Grade Separation/ Drainage Structures

A new bridge is proposed over I-85, Cold Water Creek, and adjacent wetlands for both Build Alternatives.

Table 5: Proposed Structures

Structure No. (Site)	Build Alternative(s)	Crossing	Proposed Structure
Drainage Structures			
1 (NL-1)	Alternative 2	Proposed project over Town Branch (SA)	Two 10'x9' RCBC approximately 133' long
3 (NL-3)	Alternative 2	Proposed project over UT to Cold Water Creek (SE)	One 8'x9' RCBC approximately 75' long
5 (IE-2)	Alternative 1	Proposed project over Cold Water Creek Tributary #1[1]	Two 8'x9' RCBC approximately 130' long
Grade Separation/ Drainage Structures			
2 (NL-2)	Alternative 2	Proposed project over I-85 and Cold Water Creek (SG)	Approximately 51' wide by 610' long
4 (IE-1)	Alternative 1	Proposed project over I-85, Cold Water Creek (SG), and adjacent wetlands	Approximately 51' wide by 1,070' long

RCBC = reinforced concrete box culvert.

[1] The Natural Resources Technical Report for the proposed project did not identify Cold Water Creek Tributary #1 as a jurisdictional stream.

G. Utilities

Utilities in the study area primarily consist of aerial power lines and phone lines. In some cases, power and phone lines are underground.

Construction of the project is not expected to cause any serious disruptions in service to any of the utilities serving the area. Before construction is started, a preconstruction conference involving the contractor, local officials, utility companies, and the Division of Highways will be held to discuss various construction procedures. It will include a discussion of precautionary steps to be taken during the time of construction that will minimize interruption of utility service.

H. Noise Barriers

Traffic noise abatement measures were considered but were determined not to be feasible. Based on this preliminary study, traffic noise abatement is not recommended, and no noise abatement measures are proposed. See *Section V.I, Traffic Noise Analysis* for more information. A copy of the technical report entitled, *Traffic Noise Analysis, Relocation of Old Beatty Ford Road (SR 1221/ SR 1210) From SR 1210/ SR 1221 to Lentz Road (SR 1337)* (March 14, 2014), is available from NCDOT.

V. ENVIRONMENTAL EFFECTS OF PROPOSED ACTION

A. Natural Resources

The project study area lies in the piedmont physiographic region of North Carolina (see Figures 7.1-7.3). Topography in the project vicinity is comprised of gently rolling hills with narrow to wide level floodplains along streams. Elevation is 650 – 800 ft above sea level. Land use consists of residential areas, agriculture, fallow fields, mixed hardwoods, mixed pine forests, cutover forests, and commercial property.

1. Biotic Resources

a. Terrestrial Communities

Five terrestrial communities were identified in the project study area: maintained/ disturbed, mixed pine community, bottomland hardwood forest, piedmont alluvial forest, and mesic mixed hardwood forest (see Figures 7.1-7.3). A brief description of each community type follows. Scientific names of species identified are included in Appendix B of the W-5516 *Natural Resources Technical Report* (March 2014) – available from NCDOT.

Maintained/Disturbed

Maintained/disturbed areas are scattered throughout in places where the vegetation is periodically maintained or mowed, such as agriculture fields, fallow fields, pastures, churches, residential lawns, commercial properties, utility easements, and roadside shoulders. Vegetation observed in agriculture fields during the field investigations include but are not limited to soybeans, and winter cover crops such as fescue, cereal rye, and annual rye. Fallow fields, utility easements, and roadside shoulders are mostly open consisting of sweetgum, poplar, hickory, and pine saplings. Shrubs include silverling and winged sumac, while the herbs include broomsedge, tall goldenrod, blackberry, sour grass, and tall fescue. Pastures are generally open, but comprised of some scattered canopy species including sweetgum, white oak, tulip poplar, green ash, loblolly pine, shortleaf pine, and Virginia pine. Fescue and other pasture grasses dominate the herbaceous layer. Residential areas consist of fully exposed maintained lawns to fully shaded hardwood canopied lots. Canopy species mainly consist of Virginia pine, shortleaf pine, loblolly pine, sweetgum, red maple, pignut hickory, mockernut hickory, white oak, red oak, willow oak, water oak, and tulip poplar. Subcanopy and shrub species include, but are not limited to, flowering dogwood, American holly, crepe myrtle, eastern red cedar, azalea, boxwood, and Chinese privet. Grasses and herbs include tall fescue, annual bluegrass, perennial ryegrass, clover, dandelion, wild garlic, broomsedge, and purple henbit. Commercial properties and roadside shoulders are comprised of grasses and herbs including tall fescue, Bermuda grass, bahia grass, dandelion, purple henbit, broomsedge, and perennial ryegrass. Invasive species within these communities include mimosa, Bradford pear, tree of heaven, golden bamboo, Chinese privet, multiflora rose, gill-over-the-ground, English ivy, Japanese stiltgrass, and Japanese honeysuckle. Wetland WAT, WAG, and WG were observed within this community type (see Figures 7.1-7.3 for the location of wetlands). WAT and a portion of WAG is a floodplain depression that is periodically mowed that classifies as a disturbed bottomland

hardwood forest according to the North Carolina Wetland Assessment Method (NCWAM). WG is a small headwater forest according to the NCWAM classification.

Cutover Forest

The cutover forest community type is scattered throughout, ranging from one to ten years old. These cutover communities are predominantly immature mesic mixed hardwood forests and one Piedmont alluvial forest. Dominant tree species are comprised of sweetgum, tulip poplar, red maple, black cherry, shagbark hickory, black oak, red elm, green ash, blackgum, American beech, white oak, northern red oak, willow oak, mockernut hickory, pignut hickory, loblolly pine, shortleaf pine, Virginia pine, eastern red cedar, and winged elm. Shrubs observed include silverling, Chinese privet, American holly, and multiflora rose. Herb and vine species include broomsedge, tall goldenrod, horseweed, dog fennel, blackberry, poison ivy, muscadine grape, common greenbrier, Japanese stiltgrass, Chinese trumpet creeper, and Japanese honeysuckle. Herbaceous species observed include broomsedge, tall goldenrod, horseweed, dog fennel, and blackberry. Wetland WAN and WAQ are within this community type. Wetland WAN and WAQ are classified as bottomland hardwood forest and headwater forest respectively, according to NCWAM.

Mixed Pine Forest

Mixed pine forest areas were interspersed throughout the study area. The canopy was mainly comprised of loblolly pine, Virginia pine, and shortleaf pine. Some stands were monotypic while others were a mix of pine species. Subcanopy species include red maple, sweetgum, tulip poplar, and red elm. The understory within this community is open with a sparse herb and vine layer composed of ebony spleenwort and common greenbrier. No wetlands were observed within this community type.

Piedmont Alluvial Forest

The piedmont alluvial forest community occurs along the floodplains of the larger streams observed within the study area. Dominant canopy species include sycamore, green ash, box elder, swamp chestnut oak, river birch, sweetgum, hackberry, tulip poplar, red elm, and red maple. Dominant subcanopy and shrub species include ironwood, paw-paw, spicebush, sugar maple, eastern redbud, willow oak, flowering dogwood, and Chinese privet. Herbs and vines include false nettle, common rush, sedges, wild ginger, snakeroot, grape fern, cinnamon fern, netted chain fern, Christmas fern, poison ivy, muscadine grape, common greenbrier, and crossvine. Invasive species observed include tree of heaven, Chinese privet, Japanese stilt grass, Japanese honeysuckle. Wetland WB, WE, WAG, WAH, WAP, and WAO are included within this community and are classified as bottomland hardwood forests according to the NCWAM classification.

Mesic Mixed Hardwood Forest

The mesic mixed hardwood forest community is scattered throughout the study area, occurring within undisturbed uplands and along small stream valleys. Dominant canopy species include

sweetgum, tulip poplar, red maple, sugar maple, red elm, green ash, blackgum, American beech, white oak, southern red oak, northern red oak, willow oak, mockernut hickory, pignut hickory, shagbark hickory, loblolly pine, shortleaf pine, and Virginia pine. Subcanopy and shrub species include flowering dogwood, eastern red cedar, trifoliate orange, sugar maple, black haw, winged elm, , and American holly. Herb and vine species include Christmas fern, ebony spleenwort, cranefly orchid, rattlesnake plantain, poison ivy, muscadine grape, and common greenbrier. Invasives observed include tree of heaven, Japanese stiltgrass, Asiatic dayflower, Chinese privet, nandina, and Japanese honeysuckle. Wetland WA, WC, WD, WF, WG, WH, and WI are within this community type. WA, WC, WD, WF, and WG are classified as headwater forest according to NCWAM. WH and WI are classified as a non-tidal freshwater and seep respectively, according to NCWAM.

Table 6: Coverage of Terrestrial Communities within the Study Area

Community	Coverage (ac.)
Maintained/ Disturbed	212.0
Cutover Forest	32.5
Mixed Pine Forest	49.3
Piedmont Alluvial Forest	18.2
Mesic Mixed Hardwood Forest	129.7
Total	**441.7**

b. Terrestrial Wildlife

Terrestrial communities in the study area are comprised of natural and disturbed habitats that may support several wildlife species (those species actually observed are indicated with *). Mammal species that commonly exploit forested habitats and stream corridors include eastern cottontail, raccoon, Virginia opossum, and white-tailed deer*. Birds that commonly use forest and forest edge habitats include the American crow*, cardinal*, robin*, white breasted nuthatch*, blue jay*, Carolina chickadee*, tufted titmouse*, Carolina wren*, and red-shouldered hawk*. Birds observed in open exposed habitats include black vulture*, turkey vulture*, bluebird*, brown thrasher, mockingbird*, and red-tailed hawk*. Reptile and amphibian species that may use terrestrial communities include the northern copperhead, black rat snake*, black racer, eastern box turtle*, eastern fence lizard*, ground skink*, five-lined skink, Fowler's toad*, and American toad.

c. Aquatic Communities

Aquatic communities in the study area include five perennial streams (SA, SC, SE, SI, and SG) and three intermittent streams (SB, SF, SH, and SJ) (see Figures 7.1-7.3 for stream locations). Stream SC and SE had both intermittent and perennial portions within the study area. SA and SG are medium to large sized streams with shallow riffles and pools with some interspersed cobble features that could support fish, crayfish, amphibians, and various benthic macroinvertebrates. SB is a much smaller intermittent stream that had no water in it during the investigations with the exception of an occasional pool supporting some macroinvertebrates. SC is a small perennial stream with a steeper grade with a cobble boulder substrate. Mosquito fish, crayfish, dusky salamanders, and benthic macroinverebrates were observed.

SE is a perennial stream that crosses the study area in two locations that had fish and benthic macroinvertebrates. SF is a short intermittent tributary to SE that had no flow and an occasional pool containing a macroinvertebrate assemblage. SH is a short intermittent tributary to SI supporting some macroinvertebrates and could provide habitat for crayfish and amphibians. SI is a tributary from a pond where crayfish, larval salamanders, and a diverse assemblage of benthic macroinvertebrates were observed. SJ is tributary draining into Wetland WG where crayfish and benthic macroinvertebrates were observed.

d. Invasive Species

Fourteen species from the NCDOT Invasive Exotic Plant List for North Carolina were found in the project study area: tree of heaven (Threat), multiflora rose (Threat), Chinese lespedeza (Threat), Japanese stilt grass (Threat), Asian dayflower (Threat), Chinese privet (Threat), Japanese honeysuckle (Moderate Threat), mimosa (Moderate Threat), golden bamboo (Moderate Threat), gill over the ground (Moderate Threat), English ivy (Moderate Threat), Bradford pear (Watch List), nandina (Watch List), and Asiatic dayflower (Watch List). It is anticipated NCDOT will manage invasive plant species in the right-of-way as appropriate.

2. Waters of the United States

Water resources in and adjacent to study area are part of the Yadkin-Pee Dee River basin (U.S. Geological Survey [USGS] Hydrologic Unit 03040105). Eleven stream channels were identified (see Table 7) according to the North Carolina Division of Water Resources (NCDWR) stream identification form (Version 4.11) (see Figures 7.1-7.3). The physical characteristics of these streams are provided in Table 8. There are two ponds in the study area, totaling approximately 1.3 acres.

Table 7: Water Resources in the Study Area

Stream Name	Map ID*	Figure No.	NCDWR Index Number	Best Usage Classification
Town Branch***	SA	7.1	12-84-1-2	WS-IV
UT to Town Branch	SB	7.1	12-84-1-2	WS-IV
UT to Town Branch	SC**	7.1	12-84-1-2	WS-IV
UT to Cold Water Creek	SE	7.2	13-17-9-4-(0.5)	WS-IV
UT to Cold Water Creek	SF	7.2	13-17-9-4-(0.5)	WS-IV
Coldwater Creek	SG	7.1/ 7.2	13-17-9-4-(0.5)	WS-IV
UT to Lake Fisher	SH	7.3	13-17-9-4-(0.5)	WS-IV
UT to Lake Fisher	SI	7.3	13-17-9-4-(0.5)	WS-IV
UT to Coldwater Creek	SJ	7.2	13-17-9-4-(0.5)	WS-IV
I-3802 Streams				
UT to Cold Water Creek	SIE	7.1-7.3	13-17-9-4-(0.5)	WS-IV
UT to Cold Water Creek	SZD	7.1	13-17-9-4-(0.5)	WS-IV

* There is no stream SD within the Study Area
** Stream contains both intermittent and perennial sections
*** Stream name according to FIRM Panel 5625K

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

Map ID	Bank Height (ft)	Bankful Width (ft)	Water Depth (in)	Channel Substrate	Velocity	Clarity
SA	3-5	12-16	3-6	Sand, Gravel, Cobble, Bedrock	Moderate	Clear
SB	3-5	5-8	0-3	Clay, Sand, Gravel, Cobble	Slow	Clear
SC(I)	1	1-2	2-6	Silt, Sand	Slow	Slightly Turbid
SC(P)	2-3	2-3	2-8	Sand, Gravel, Cobble, Bedrock	Moderate	Clear
SE	5-6	6-8	3-15	Sand, Gravel, Cobble, Bedrock	Slow	Clear
SF	4-6	6-8	0-4	Sand, Gravel, Cobble	Slow	Clear
SG	6-8	20	2-20	Sand, Gravel, Cobble	Moderate	Clear
SH	1-2	2-3	0-1	Sand, Gravel	Slow	Clear
SI	3	4-6	3-10	Sand, Gravel, Cobble	Slow	Clear
SJ	1	2-3	0-2	Sand, Clay	Slow	Clear
I-3802 Streams						
SIE	1-3	10-20	2-6	Silt, Gravel		
SZD	1-3	1-3	0	Silt, Sand	Water Absent	Water absent

(I) = Intermittent segment
(P) = Perennial segment

The project is located within the Cold Water Creek water supply watershed and has a North Carolina water quality classification of WS-IV. Lentz Road is the approximate boundary

between the Cold Water Creek and the Dutch Buffalo Creek (WS-II) water supply watersheds. Cold Water Creek, Town Branch, and an unnamed tributary of Cold Water Creek cross the project study area. No features within the study area have been designated as Outstanding Resource Water (ORW) or as trout waters. There are no designated anadromous fish waters, Primary Nursery Areas (PNA), or designated High Quality Waters (HQW) within one mile downstream.[4] There are no impaired waters, identified on the North Carolina 2012 Final 303(d) list for sedimentation or turbidity, within one mile downstream of the study area.

a. Clean Water Act Waters of the United States

Jurisdictional streams were identified in the study area (see Table 9). SA, SB, and SC are part of the Town Creek stream complex draining to Coldwater Creek. SE, SF, SG, SH, SI, and SJ are unnamed tributaries to Coldwater Creek. SA (Town Creek) flows as a perennial stream throughout the study area with two floodplain wetlands (WB, WE). SB is perennial throughout with a small headwater wetland (WA) near the study area boundary. SC begins as an intermittent stream within a fallow field of the study area and transitions to a perennial stream near wetland WD. SC also has one small headwater wetland (WC) along the perennial reach. SE is a perennial stream throughout the study area and flows through wetland WH. A small intermittent stream (SF) is an unnamed tributary to SE that also flows from WH. SG (Coldwater Creek), is the largest creek within the study area to which all waters in the study area flow and it traverses the study area in two locations. SH is a pond-fed perennial stream that converges with a small intermittent stream (SI). SJ is a small intermittent stream that flows into wetland WG. Stream SJ is the only stream identified as intermittent, unimportant with no mitigation required. The locations of all streams are shown on Figures 7.1-7.3. The jurisdictional streams have been designated as warm water streams for the purposes of stream mitigation.

[4] While Dutch Buffalo Creek (WS-II) water supply watershed has a secondary designation of HQW, there are no jurisdictional streams within the project area that drain to it.

Table 9: Jurisdictional Characteristics of Water Resources in the Study Area

Stream Name	Map ID	Length (ft.)	Classification	Anticipated Impacts (ft.)[1]		Compensatory Mitigation Required	River Basin Buffer
				Alt. 1	Alt. 2		
Town Branch	SA	1,221	Perennial	--	205	Yes	Not Subject
UT to Town Branch	SB	923	Perennial	--	215	Yes	Not Subject
UT to Town Branch	SC(I)	218	Intermittent	--	185	Yes	Not Subject
UT to Town Branch	SC(P)	853	Perennial	--	--	Yes	Not Subject
UT to Cold Water Creek	SE(P)	1,123	Perennial	--	140	Yes	Not Subject
UT to Cold Water Creek	SF	187	Intermittent	--	105	Yes	Not Subject
Cold Water Creek	SG	600	Perennial	--	--	Yes	Not Subject
UT to Lake Fisher	SH	18	Intermittent	--	--	Yes	Not Subject
UT to Lake Fisher	SI	440	Perennial	--	--	Yes	Not Subject
UT to Cold Water Creek	SJ[2]	414	Intermittent	--	115	No[3]	Not Subject
I-3802 Streams							
UT to Cold Water Creek	SIE[4]	3,332	Perennial	115	--	Yes	Not Subject
UT to Cold Water Creek	SZD[5]	780	Intermittent	--	--	Yes	Not Subject
	Total	**10,109**	--	115	965	--	--

[1] Anticipated Impacts: Impacts to jurisdictional areas are considered to be all areas which fall within 25 feet of the proposed slope-stake limits.
[2] Unimportant Jurisdictional Channel
[3] USACE identifies this stream as unimportant with no mitigation required. Since this is an intermittent stream NCDWR will require mitigation if impacts are greater than 149' linear feet.
[4] Stream characteristics for SIE are from the I-3802 *Natural Resources Technical Report* (March 2008).
[5] Stream SZD is an I-3802 jurisdictional stream that was verified in July 2012 as part of W-5516.

Jurisdictional wetlands were identified within the study area (see Figures 7.1-7.3). Seven wetlands were previously identified in the original *I-3802 Natural Resources Technical Report* (March 2008). Wetland classifications and quality ratings are presented in Table 10. All wetlands are within the Yadkin Pee-Dee River basin (USGS Hydrologic Unit 03040105). United States Army Corps of Engineers (USACE) wetland delineation forms and NCDWR wetland rating forms (4th Version) are included in Appendix C of the W-5516 *Natural Resources Technical Report* (March 2014) – available from NCDOT. Descriptions of the terrestrial communities containing these wetlands are presented in *Section V.A.1, Biotic Resources*.

WA, WC, WD, and WF are headwater wetlands located with the mesic mixed hardwood forest community. WG is located next to a maintained field. WB and WE are small local depressions within the piedmont alluvial forest. Wetland WH is included in the Non-Tidal Freshwater Marsh community. WI is a small seep located within a mesic mixed hardwood forest downstream of the pond and contiguous to stream SI.

Table 10: Jurisdictional Characteristics of Wetlands in the Study Area

Map ID	NCWAM Classification	Hydrologic Classification	NCDWR Wetland Rating [1]	Area (ac.)	Anticipated Impacts [2]	
					Alt. 1	Alt. 2
WA	Headwater Forest	Riparian	29	0.13	--	--
WB	Bottomland Hardwood Forest	Riparian	16	0.12	--	--
WC	Headwater Forest	Riparian	19	0.01	--	--
WD	Headwater Forest	Riparian	15	0.02	--	--
WE	Bottomland Hardwood Forest	Riparian	7	0.04	--	< 0.1
WF	Headwater Forest	Riparian	23	0.10	--	--
WG	Headwater Forest	Riparian	23	0.26	--	--
WH	Non-Tidal Freshwater Marsh	Riparian	35	0.25	--	--
WI	Seep	Riparian	6	0.01	--	--
I-3802 Wetlands (Verified July 2012) [3]						
WAG	Bottomland Hardwood Forest	Riparian	58	0.17	--	--
WAH	Bottomland Hardwood Forest	Riparian	27	0.01	--	--
WAN	Bottomland Hardwood Forest	Riparian	68	0.02	--	--
WAO	Bottomland Hardwood Forest	Riparian	29	0.20	0.2	--
WAP	Bottomland Hardwood Forest	Riparian	30	0.35	--	--
WAQ	Headwater Forest	Riparian	24	0.01	--	--
WAT	Bottomland Hardwood Forest	Riparian	30	1.51	< 0.1	--
			Total	**3.21**	**0.2**	**< 0.1**

[1] I-3802 wetland rating scores from I-3802 NRTR

[2] Anticipated Impacts: Impacts to jurisdictional wetlands are considered to be all areas which fall within 25 feet of the proposed slope-stake limits.

[3] Only including actual area within the W-5516 study area

b. Clean Water Act Permits

As the project is anticipated to have jurisdictional impacts to surface waters, Clean Water Act permits will be required. It is anticipated that a Section 404 Nationwide 14 Permit and the corresponding NCDWR Section 401 Water Quality Certification will be applicable. Ultimately, the USACE holds the final discretion as to what permit will be required to authorize project construction.

c. Construction Moratoria

Rowan County is not identified as having trout waters and habitat for anadromous fish; therefore, construction moratoria are not anticipated for the project.

d. North Carolina River Basin Buffer Rules

The project is located within the Yadkin-Pee Dee River Basin. The project is not within an area where buffer rules will apply.

e. Rivers and Harbors Act Section 10 Navigable Waters

There are no Traditionally Navigable Waters, as defined under Section 10 of the Rivers and Harbors Act, in the study area.

f. Wetland and Stream Mitigation

Avoidance and Minimization of Impacts

Alternative 1 avoidance and minimization measures include:

- A longer bridge over I-85 that will also span Cold Water Creek and adjacent wetlands.
- Realigning Old Beatty Ford Road to the north of the existing bridge over I-85 to avoid impacts to parallel streams.
- Consideration given to adjusting the alignment closer to the existing bridge.[5]

Alternative 2 avoidance and minimization measures include:

- A longer bridge over I-85 that will also span Cold Water Creek.
- Locating the alignment to avoid wetlands and parallel streams where possible.
- Adjusting the grades to reduce the footprint at stream crossings.

NCDOT will continue to avoid and minimize impacts to streams and wetlands to the greatest extent practicable during project design. The eastern section of the project draining to Dutch

[5] Adjusting the alignment closer to the existing bridge was considered but not pursued because it would have resulted in greater stream impacts.

Buffalo Creek water supply watershed (WS-II, HQW) will be designed according to Design Standards in Sensitive Watersheds (DSSW).

Compensatory Mitigation of Impacts

During final design, NCDOT will investigate removing the existing culvert at Old Beatty Ford Road and Cold Water Creek for potential on-site stream and wetland mitigation use. Other potential on-site stream and wetland mitigation opportunities will also be considered once a final decision has been rendered on the location of the preferred alternative. If on-site mitigation is not feasible, it is anticipated mitigation will be provided by North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP).

3. Rare and Protected Species

As of December 26, 2012, the United States Fish and Wildlife Service (USFWS) lists one federally protected species for Rowan County, Schweinitz's sunflower (*Helianthus schweinitzii*). A brief description of habitat requirements follows, along with the Biological Conclusion rendered based on survey results in the study area. Habitat requirements are based on the current best available information from referenced literature and/or USFWS.

Schweinitz's Sunflower
USFWS Optimal Survey Window: May - October

Schweinitz's sunflower is endemic to the Piedmont of North and South Carolina. The few sites where this rhizomatous perennial herb occurs in relatively natural vegetation are found in Xeric Hardpan Forests. The species is also found along roadside rights-of-way, maintained power lines and other utility rights-of-way, edges of thickets and old pastures, clearings and edges of upland oak-pine-hickory woods and Piedmont longleaf pine forests, and other sunny or semi-sunny habitats where disturbances (*e.g.*, mowing, clearing, grazing, blow downs, storms, frequent fire) help create open or partially open areas for sunlight. It is intolerant of full shade and excessive competition from other vegetation. Schweinitz's sunflower occurs in a variety of soil series, including Badin, Cecil, Cid, Enon, Gaston, Georgeville, Iredell, Mecklenburg, Misenheimer, Secrest, Tatum, Uwharrie, and Zion, among others. It is generally found growing on shallow sandy soils with high gravel content; shallow, poor, clayey hardpans; or shallow rocky soils, especially those derived from mafic rocks.

Biological Conclusion: No Effect

Potential habitat is present within the study area. Current habitats within the study area include roadsides, periodically disturbed or maintained utility rights of way, old pastures, and sunny or semi-sunny woodland openings. A plant by plant survey of approximately 22 man-hours was conducted within the study area by qualified personnel from The Catena Group on October 18 and 19, 2013 within all suitable habitats found. No Schweinitz's sunflowers were observed. A sunflower population was visited previous to the surveys to reference the current conditions of flowering, plant structure, and appearance. A review of the NCNHP database on October 17, 2013, indicated no populations of Schweinitz's sunflower are known to occur within

a one mile radius of the study area. Therefore, the proposed road improvement project will have No Effect on the Schweinitz's sunflower.

A USFWS proposal for listing the Northern Long-eared Bat (Myotis septentrionalis) as an endangered species was published in the Federal Register in October 2013. The listing may become effective as soon as October 2014. Furthermore, this species is included in USFWS's current list of protected species for Rowan County. NCDOT is working closely with the USFWS to understand how this proposed listing may impact NCDOT projects. NCDOT will continue to coordinate appropriately with USFWS to determine if this project will incur potential effects to the Northern long-eared bat, and how to address these potential effects, if necessary.

Bald and Golden Eagle Protection Act

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large dominant trees are utilized for nesting sites, typically within one mile of open water.

A desktop-GIS assessment of the study area, as well as within a 1.13 mile radius of the project limits, was performed on October 17, 2013, using 2010 color aerials. Lake Fisher, which is large enough and sufficiently open to be considered foraging habitat, was the only appropriate foraging habitat observed. No other water bodies large enough or sufficiently open to be considered foraging habitat were identified. Since foraging habitat is located within 1.13 miles of the study area, an onsite survey for suitable nesting habitat was conducted within the study area and within 660 feet beyond the study area limits. The study area was surveyed for suitable nesting habitat and no bald eagles or nests were observed. A review of the North Carolina National Heritage Program (NCNHP) database reveals no known occurrences of this species within one mile of the study area. Additional there are no known occurrences of bald eagles at Lake Fisher. Due to the lack of habitat, known occurrences, and minimal impact anticipated for this project, it has been determined that this project will not affect this species.

Endangered Species Act Candidate Species

As of December 26, 2012 the USFWS lists one Candidate species for Rowan County, the Georgia aster (*Symphyotrichum georgianum*). A review of NCNHP records, updated October 2013, indicates no known occurrence of Georgia aster within one mile of the study area.

Essential Fish Habitat

According to the National Marine Fisheries Service (NMFS), there is no essential fish habitat within the study area.

4. Soils

The Rowan County Soil Survey identifies 19 soil series within the study area (see Table 11).

Table 11: Soils in the Study Area

Soil Series	Mapping Unit	Drainage Class	Hydric Status
Appling sandy loam, 1 to 6 percent slope	ApB	Well drained	Non-Hydric
Cecil sandy loam, 2 to 8 percent slopes	CcB	Well drained	Non-Hydric
Cecil sandy loam, 8 to 15 percent slopes	CcC	Well drained	Non-Hydric
Chewacla loam, 0 to 2 percent slopes	ChA	Somewhat poorly drained	Hydric
Enon fine sandy loam, 2 to 8 percent slopes	EnB	Well drained	Hydric
Enon fine sandy loam, 8 to 15 percent slopes	EnC	Well drained	Hydric
Helena sandy loam, 1 to 6 percent slopes	HeB	Moderately well drained	Hydric
Lloyd clay loam, 2 to 8 percent slopes	LdB2	Well drained	Non-Hydric
Mecklenburg clay loam, 2 to 8 percent slopes	MeB2	Well drained	Non-Hydric
Pacolet sandy clay loam, 8 to 15 percent slopes	PcC2	Well drained	Non-Hydric
Pacolet sandy loam, 15 to 25 percent slopes	PaD	Well drained	Non-Hydric
Poindexter-Rowan complex, 2 to 8 percent slopes	PxB	Well drained	Non-Hydric
Poindexter-Rowan complex, 8 to 15 percent slopes	PxC	Well drained	Non-Hydric
Poindexter-Rowan complex, 15 to 25 percent slopes	PxD	Well drained	Non-Hydric
Rion-Wedowee complex, 2 to 8 percent slopes	RnB	Well drained	Non-Hydric
Rion-Wedowee complex, 8 to 15 percent slopes	RnC	Well drained	Non-Hydric
Sedgefield fine sandy loam, 1 to 6 percent slopes	SeB	Moderately well drained	Non-Hydric
Vance sandy loam, 2 to 8 percent slopes	VaB	Well drained	Non-Hydric
Vance sandy loam, 8 to 15 percent slopes	VaC	Well drained	Non-Hydric

B. Cultural Resources

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

1. Historic Architectural Resources

In correspondence dated November 5, 2013, the State Historic Preservation Office (HPO) recommended that a qualified architectural historian identify and evaluate the National Register

eligibility of the following properties and any other structures over 50 years of age within the project's Area of Potential Effect (APE):

- Samuel Deal House (RW 0317)
- Yost Post Office (RW 0773)
- Ketner-Funderburke House (RW 1402)
- Correll-Albright House (RW 1365)
- Moses Ketner House and Farm (RW 1411)

The HPO also noted that the Bostian School (RW 1772) (currently known as Bostian Elementary School) was previously identified with TIP Project W-5313 as being eligible for listing in the National Register of Historic Places.

Pursuant to Section 4(f) of the Department of Transportation Act of 1966, Section 106 of the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation's regulations, Protection of Historic Properties (36 CFR 800), a Phase II (Intensive Level) Architectural Survey and Evaluations of Eligibility (2014) was conducted for the proposed project. This survey was conducted within the project's APE, defined as the geographic area or areas within which a project may cause changes to the character or use of historic properties. The APE for this project was determined during an initial field survey and generally follows modern development, woodland, and sharp changes in topography that serve as effective physical buffers to the project. The architectural resources survey consisted of background research into the historical and architectural development of the study area and a field survey of the APE.

The December 2013 survey of the APE resulted in the identification of a total of 58 properties that were built prior to 1964. These findings were presented to HPO staff on January 7, 2014. Fifty-one of the surveyed properties did not warrant any further examination. Seven properties required intensive-level investigation to determine National Register eligibility. Following in-depth investigations of these resources, two properties, Bostian School (RW1772) and the Yost-Weddington Farm-Yost Post Office (RW0773), were recommended for National Register eligibility (see Figure 8). The other five properties surveyed at the intensive level were considered ineligible for the National Register.

Bostian School (RW1772) is located west of Lentz Road and was determined eligible for the National Register under Criterion A for education (NCHPO 2012). The school has not changed significantly since the 2012 Determination of Eligibility (DOE) and remains eligible under Criterion A. The DOE boundary encompasses the 1936 school and the 1997 addition, but excludes the 1988 cafeteria/gymnasium. Neither alternative will acquire right-of-way or involve construction activities within the property's DOE boundary. The project will have no effect on the property, and the HPO concurs with this determination (see correspondence in Appendix A).

The Yost-Weddington Farm-Yost Post Office (RW0773) is located at 3175 Lentz Road north of Alternative 2. The Yost-Weddington Farm spans the east and west sides of Lentz Road.

Originally comprised of roughly 45 acres, the farm tract now encompasses approximately 12 acres of fields, woodland, and a large complex of outbuildings oriented to the farmhouse.

Sited on the Yost-Weddington Farm, the Yost Post Office stands on the east side of Lentz Road, facing the main farm complex, situated on the west side of the road. Now vacant and in poor but stable condition, this simple, frame, one-story, gable-front building served as the Yost Post Office between 1888 and 1889. Based on the findings of the Historic Architecture Report, the Yost-Weddington Farm-Yost Post Office is recommended as eligible for the National Register under Criterion A for agriculture, politics/government, and commerce. Neither alternative will acquire right-of-way or involve construction activities within the property's DOE boundary. The project will have no effect on the property, and the HPO concurs with this determination (see correspondence in Appendix A).

2. Archaeological Resources

In correspondence dated November 5, 2013, HPO commented that there is a high probability that prehistoric and historic archaeological features associated with past residents may exist within the project area (see Appendix A). The HPO recommended a comprehensive archaeological survey be conducted to identify and evaluate the significance of any archaeological remains that may be damaged or destroyed by the proposed project. An archaeological survey was conducted by an archaeology consultant firm for NCDOT in January and February 2014 for this project.

The archaeological survey and evaluation gave full consideration to approximately 123 acres comprising the APE. Of this total area, approximately 93 acres were intensively investigated using subsurface shovel testing. Of the 11 newly recorded resources that were documented during the course of the survey, eight meet the definition of an archaeological site (Native American and/or historic period). These are Sites 31RW250, 31RW253/253**, 31RW254**, 31RW255**, 31RW256, 31RW257, 31RW258, and 31RW259**. Three others are considered isolated finds and are characterized by one or two artifacts (31RW251, 31RW252**, and 31RW260**). The 11 archaeological resources include four newly recorded precontact Native American sites, three newly recorded historic period sites, one newly recorded multicomponent precontact Native American and historic period site, and three isolated finds.

All eight of the archaeological sites that have been identified in, or have portions in, the current APE are recommended as either not eligible for the National Register of Historic Places (NRHP) or not contributing to any NRHP eligibility. The site areas typically have either low artifact densities or have evidence suggesting disturbed deposits that would be unable to yield contextual data and contribute to studies involving significant research questions. The three isolated finds recorded during the current survey are also recommended as not eligible for the NRHP under Criteria A, B. C or D, as all of them lack sufficient context for further interpretation. The isolated finds may relate to site areas extending outside of the APE; however, the area outside of the APE was not surveyed. The project has been determined to have no effect on any eligible archaeological resources, and the HPO Office of State Archaeology concurs with this determination (see Appendix A).

C. Farmland

The Farmland Protection Policy Act (FPPA) of 1981 (7 CFR 568) requires that for all highway projects involving federal action, the impact of land acquisition and construction activities must be considered regarding prime and statewide important farmland, as defined by the Natural Resources Conservation Services (NRCS). In addition, FPPA is intended to minimize the impact that federal programs, or projects completed with federal assistance, have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. Prime farmland is defined as "that land best suited for producing food, feed, fiber, forage, and oil seed crops." These soils are favorable for all major common crops, have a favorable growing season, and receive the moisture needed to produce high yields on an average of eight out of every ten years. Land that is already in or committed to urban development or water storage is not included. Farmland of statewide and local importance is defined as "soils important for agriculture as determined by the appropriate state or local government agency."

North Carolina Executive Order 96 requires all state agencies under the jurisdiction of the Governor to ensure that actions taken by those agencies will minimize the loss of prime agricultural lands and forest lands. It also requires the identification and disclosure of prime soil impacts.

As is required by the FPPA, the Form AD-1006 has been completed according to FHWA guidelines (see Appendix A). Alternative 1 and Alternative 2 were analyzed and both received total point values of 70 points for Parts III and VI of the Form AD-1006. Therefore, because point totals for both alternatives exceeded 60 points, and in accordance with FHWA guidance of FPPA, they were submitted to NRCS for review.

NRCS has completed their review (Parts IV and V of the Form AD-1006) and both alternatives received final point totals of less than 160 points. Therefore, both alternatives fall below the NRCS minimum criteria rating and will not be evaluated further for farmland impacts. These alternatives will not have a significant impact to farmland.

Part VII of Form AD-1006 will be completed once an alternative has been selected and will be included in the final environmental document.

No other alternatives other than those already discussed in this document will be considered without a re-evaluation of the project's potential impacts upon farmland.

The North Carolina Agricultural Development and Farmland Preservation Trust Fund’s Agricultural District Program encourages the preservation and protection of farmland from non-farm development. This is in recognition of the importance of agriculture to the economic and social well-being of North Carolina. In Chapter 106, Article 61 of the North Carolina General Statutes, the North Carolina General Assembly authorized counties to undertake a series of programs to encourage the preservation of farmland. As a result, counties throughout the state of North Carolina have begun to adopt Voluntary Agricultural District Ordinances (VAD) and Enhanced Voluntary Agricultural District Ordinances (EVAD).

Rowan County has an adopted EVAD ordinance, but, according to information found on Rowan County's website, none are located within the project area.

D. Social Effects

1. Neighborhoods/ Communities

There should be no community/ neighborhood cohesion or stability impacts as a result of this project. The proposed project will not prevent area residents from interacting with one another, nor will it hinder access to neighbors or frequent business destinations. The neighborhoods in the project area are not cohesive as a whole or individually. There is no major employment or retail center (groceries, shopping, entertainment, etc.) in the project area.

The relatively low traffic volume suggests Old Beatty Ford Road is not a major commuting route. See *Section II.B.1.d, Traffic Volumes* for more information.

If Alternative 2 is selected as the preferred alternative, travel patterns and the accessibility to some Old Beatty Ford Road properties will change. However, this should not have any effect on community/ neighborhood cohesion and stability. With Alternative 2, the existing Old Beatty Ford Road bridge over I-85 will be removed and cul-de-sacs will be constructed on both sides of the interstate. Residents, school buses, and emergency responders would be required to use the relocated Old Beatty Ford Road and Lentz Road, which will increase trip distances by as much as 3.4 miles and travel times by five minutes or more. During and following a public meeting held in November 2013, some Old Beatty Ford Road residents expressed concern over the increased distance and time.

This project will have a positive effect on community safety. The purpose of this project is to improve vehicular safety on Old Beatty Ford Road by reducing the frequency of lane departure and frontal impact crashes that have resulted in fatal and non-fatal injuries as well as property damage. A straighter horizontal/ vertical alignment, wider roadway, and paved shoulders can reduce crashes by more than 70 percent.

2. Relocation of Residences and Businesses

The number of residential and business displacements for the Build Alternatives was determined by reviewing current tax maps, aerial maps and by conducting site visits. Alternative 1 displaces ten residences and one business for a total of 11 relocations. Alternative 2 displaces one residence. There are no minority-owned or rented residential units and no minority-owned business units that will be relocated for either Build Alternative. No farming businesses, non-profit organizations, churches, or schools will be relocated for either Build Alternative. Detailed information is provided in the Relocation Reports included in Appendix B.

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

assistance, relocation moving payments, and relocation replacement housing payments or rent supplement.

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

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

The relocation officer will determine the needs of displaced families, individuals, businesses, non-profit organizations, and farm operations without regard to race, color, religion, sex, or national origin. The NCDOT will schedule its work to allow ample time, prior to displacement, for negotiations and possession of replacement housing that meets decent, safe, and sanitary standards. The displacees are given a 90-day written notice to vacate after NCDOT purchases the property. Relocation of displaced persons will be offered in areas not generally less desirable in regard to public utilities and commercial facilities.

Rent and sale prices of replacement housing will be within the financial budget of the families and individuals displaced and will be reasonably accessible to their places of employment. The relocation officer will also assist owners of displaced businesses, non-profit organizations, and farm operations in searching for and moving to replacement property.

All tenant and owner residential occupants who may be displaced will receive an explanation regarding all available options, such as: 1) purchases of replacement housing; 2) rental of replacement housing, either private or public; 3) moving existing owner-occupant housing to another site (if practicable). The relocation officer will also supply information concerning other state or federal programs offering assistance to displaced persons and will provide other advisory services as needed in order to minimize hardships to displaced persons in adjusting to a new location.

The Moving Expense Payments Program is designed to compensate the displaced persons for the costs of moving personal property from homes, businesses, non-profit organizations, and farm operations acquired for a highway project. Under the Replacement Program for Owners, NCDOT will participate in reasonable incidental purchase payments for replacement dwellings such as attorney's fees, surveys, appraisals, and other closing costs and if applicable, make a

payment for any increased interest payments, and incidental purchase expenses, except under the Last Resort Housing Provision.

A displaced tenant may be eligible to receive a payment to rent a replacement dwelling or to make a down payment, including incidental expenses, on the purchase of a replacement dwelling. The down payment is based upon what the state determines is required, when the rent supplement exceeds a given threshold.

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

Last Resort Housing is a program used when comparable replacement housing is not available, or is unavailable within the displacee's financial means, and the replacement payment exceeds the federal and state legal limitation. The purpose of the program is to allow broad latitude in methods of implementation by the state so that decent, safe, and sanitary replacement housing can be provided. The Last Resort Housing Program may be necessary if the opportunity for relocation within the area is inadequate.

3. Demographics

Table 12 presents demographic data gathered from the 2000 and 2010 US Census for the Demographic Study Area (DSA), Rowan County, and North Carolina.[6] An examination of the data indicates the DSA grew considerably more than the County between 2000 and 2010. The DSA had a lower percentage of minorities compared to Rowan County for the 2010 Census.

[6] The Demographic Study Area (DSA) includes the 2010 US Census boundary for Census Tract 514/ Block Group 1. See the *Community Impact Assessment* for this project (available from NCDOT) for more demographic information.

Table 12: Demographic Overview

Population Growth, 2000 - 2010						
	Demographic Study Area [1]		Rowan County		North Carolina	
2000 Population	1,629		130,340		8,049,313	
2010 Population	1,936		138,428		9,535,483	
Difference	307		8,088		1,486,170	
% Change	18.8%		6.2%		18.5%	
Population By Race/ Ethnicity, 2010						
	Demographic Study Area		Rowan County		North Carolina	
Race	Pop.	%	Pop.	%	Pop.	%
White	1,864	96.3%	105,923	76.5%	6,528,950	68.5%
African-American	28	1.4%	22,392	16.2%	2,048,628	21.5%
Hispanic or Latino [2]	49	2.5%	10,644	7.7%	800,120	8.4%
Total [3]	1,892	97.7%	128,315	92.7%	8,577,578	90.0%

Source: US Census Bureau, 2000 and 2010 census.

1. The Demographic Study Area consists of Census Tract 514/ Block Group 1 in Rowan County.

2. Hispanic or Latino is an ethnic category and can include persons of any race; therefore, the Hispanic or Latino population data is not included in the total.

3. Race population and percentages do not equal population totals due to other racial groups not shown here. For table simplicity, and due to other racial groups being either nonexistent or very small, complete racial breakdown data is provided in the Appendix of the *Community Impact Assessment* (January 2014), available from NCDOT.

African-Americans are the largest minority population in the DSA and Rowan County. However, the percentage of African-Americans in the DSA is well below that of Rowan County. There are no population data that suggests a minority community would be disproportionately affected by the proposed project.

Executive Order 13166 "Improving Access to Services for Persons with Limited English Proficiency" requires all recipients of federal funds to provide meaningful access to persons who are limited in their English proficiency (LEP). The US Department of Justice defines LEP individuals as those "who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English" (67 FR 41459). Data about LEP populations were gathered from the US Census' 2007-2011 American Community Survey (ACS).

According to data obtained from the ACS, there are no groups within the DSA in which more than five percent of the adult population or 1,000 persons, whichever is less, speak English less than "Very Well." Therefore, demographic assessment does not indicate the presence of LEP language groups that exceed the Department of Justice's Safe Harbor threshold. See the *Community Impact Assessment* for this project (available from NCDOT) for more information concerning LEP groups.

4. Environmental Justice

No notably adverse community impacts are anticipated with this project and no Environmental Justice populations appear to be affected. Thus, based on demographic data, information from local officials, and field observations, impacts to minority and low income populations do not appear to be disproportionately high and adverse. Benefits and burdens resulting from the project are anticipated to be equitably distributed throughout the community, and no denial of benefit is expected. A demographic analysis summary of the project area may be found in *Section V.D.3, Demographics*.

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

5. Bicycle and Pedestrian Facilities

According to local officials, there is very little pedestrian or bike activity along Old Beatty Ford Road, and there are no accommodations for them in the designs of this project. There are no requests from the state or local governments to provide bike or pedestrian accommodations as part of this project.

6. Other Public Facilities and Services

Other public facilities and services in, or in close proximity to, the project area include (see Figure 8):

- Bostian Elementary School located along Old Beatty Ford Road south of its intersection with Lentz Road.
- Highest Praise Family Worship Center along Bostian Road north of the Old Beatty Ford Road/ Bostian Road intersection.
- Oak Grove Freewill Baptist Church at the end of Chastity Lane (approximately 0.5 mile west of the Old Beatty Ford Road/ Lentz Road intersection).
- The Kannapolis Moose Family Center along Old Beatty Ford Road just south of the Old Beatty Ford Road/ Bostian Road intersection.

Alternative 1 will have no effect on any of the above facilities.

Alternative 2 will require right-of-way from the Highest Praise Family Worship Center property. The affected portion of the property is more than 1,000 feet behind the church and is currently undeveloped. The proposed project should not impact any facilities belonging to the church or it operations. As discussed in *Section V.D.1, Neighborhoods/ Communities*, if Alternative 2 is selected as the preferred, accessibility to some properties along Old Beatty Ford Road will be altered. This includes accessibility to Oak Grove Freewill Baptist Church. Churchgoers from the west side of I-85 that currently use Old Beatty Ford Road will have to use the relocated Old Beatty Ford Road, Lentz Road, and existing Old Beatty Ford Road to travel to and from the church. Alternative 2 will have no effect on Bostian Elementary School, the Highest Praise Family Worship Center, or the Kannapolis Moose Family Center.

7. School Bus Usage

According to information found on its web site (January 2014), Rowan-Salisbury School System operates six buses (12 trips) within and near the project study area on school days. The following schools serve the project area: Bostian Elementary, Landis Elementary, China Grove Middle, Jesse Carson High, and South Rowan High.

According to Rowan-Salisbury School System officials, neither alternative will have a considerable impact on bus routing nor is there a preference for one alternative over the other (see correspondence in Appendix A). Should Alternative 2 be selected, they request the cul-de-sacs on existing Old Beatty Ford Road be large enough to allow buses to turn around. NCDOT will design the cul-de-sacs to be large enough to allow school buses to turn around.

E. Economics

1. Economic and Infrastructure Data

Economic data gathered from the 2007-2011 ACS is shown in Table 13.

Table 13: Economic Indicators

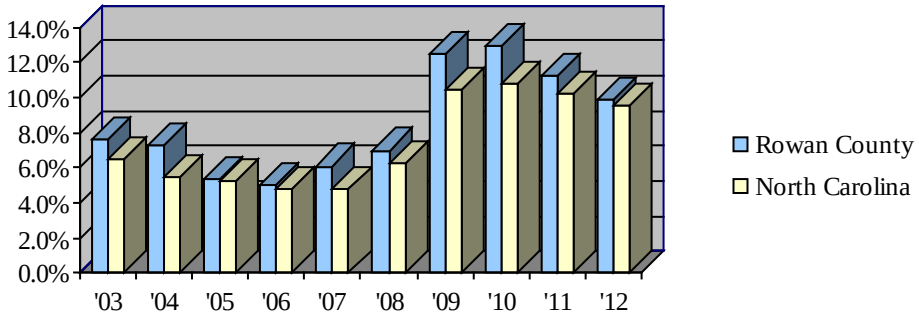
	Demographic Study Area [1]	Rowan County	North Carolina
Median Household Income	$56,250	$43,121	$46,291
Income Below Poverty Level (% Population) in the Past 12 Months	15.3%	16.9%	16.1%
Households Receiving Public Assistance in the Past 12 Months	1.5% [2]	2.5%	1.8%

Source: US Census Bureau, 2007-2011 American Community Survey.
1. The Demographic Study Area consists of Census Tract 514/ Block Group 1 in Rowan County except as noted below.
2. Based on Tract 514 data. This information is not available at the Block Group level.

Over the five-year period from 2007 to 2011, residents of the DSA had higher household incomes than Rowan County. The percentage of households with incomes below the poverty level and the number of households receiving public assistance was lower than the rest of the County.

Based on Division of Employment Security (DES) information over a 10-year period from 2003 through 2012, Rowan County's annual unemployment rate fluctuated between five percent in 2006 and seven percent in 2008. Unemployment rates jumped considerably in 2009 to 12.5 percent. The County's unemployment rate followed the statewide trend – falling steadily between 2003 and 2006 and climbing beginning in 2007. Through August of 2013, the average unemployment rate in Rowan County is 9.3 percent.

Annual Unemployment Rates, 2001-2010



2. Economic Effects

If Alternative 1 is selected as the preferred alternative, one business (Steve's Corner Store) will likely have to be relocated. Alternative 2 is not expected to require any business relocations. There are active farms near the proposed project that could be affected, but neither alternative is expected to require the relocation of farms operating as a business. No resources that are considered major economic attractions will be affected by the proposed project.

Nearby businesses farther removed from the project area should not be affected by the proposed project.

The proposed project is not expected to affect economic development in the area or serve a specific development. Local officials are anticipating a future I-85 interchange with Old Beatty Ford Road will be constructed within the project study area as a separate project. Although there are no specific development plans on file or under review at this time, local officials have received inquiries from interested developers and expect commercial and industrial development to occur adjacent to a new interchange. This project does not include an interchange with I-85, but it does not preclude the construction of one in the future. It is not expected to interfere with any development plans.

F. Land Use

This project is not expected to have any considerable effect on local land use, character, or development plans.

1. Existing Land Use and Zoning

According to Rowan County's *Land Use Plan, Areas East of I-85* (January 17, 2012), the project area is currently considered to be in a low-density residential and agricultural area of the County. In the past ten years, a few small areas near the proposed project have transitioned from agricultural uses to homes on large lots. Recent residential development along Lentz Road is the best example of this transition. Houses tend to be on larger lots with considerable separation between them. There are no commercial centers (i.e. grocery stores, shopping centers, etc.) in the project area. According to local officials, residential development has not been attracted to the area by any specific characteristics or development plans.

The Rowan County Zoning Map (August 26, 2013) shows the majority of the project area is zoned as rural agricultural. Exceptions to this are: commercial zones along I-85 (from south of Daugherty Road to Pine Ridge Road and from Moose Road south to the County line) and US 29; industrial zones south of Old Beatty Ford Road between Ebenezer Road and China Grove Road; and an area zoned for a mobile home park south of the Old Beatty Ford Road/ Lentz Road intersection adjacent to Bostian Elementary School.

2. Future Land Use

The proposed project is a safety project and is unlikely to alone alter land use patterns or create transportation nodes. According to Rowan County's land use plan, the project area is generally expected to maintain its rural residential/ agricultural characteristics. A lack of water/ sewer utilities, soil types not suitable for septic systems or wells, and the presence of two water supply watersheds are factors that are likely to prevent dense development.

Rowan County's land use plan indicates a future "regional node" at Old Beatty Ford Road and I-85. However, this is predicated on an interchange being built in this location in the future. According to the land use plan, examples of land uses in a regional node include: shopping complexes, grocery stores, convenience goods, gas stations, office complexes, restaurants and health care services. If one is built, an interchange in this area could become a transportation node. A land use or transportation node is unlikely to occur without the construction of an I-85/ Old Beatty Ford Road interchange. The proposed project does not include an interchange with I-85.

3. Project Compatibility With Local Plans

This project is consistent with local area plans and goals. Improvements to Old Beatty Ford Road are included in the following local plans:

- Rowan County's *Land Use Plan, Areas East of I-85* (January 17, 2012)
- The *Zoning Ordinance of Rowan County* (adopted in January 1998 and amended in January 2001)
- The Cabarrus-Rowan Metropolitan Planning Organization's *(CRMPO) Comprehensive Transportation Plan (CTP)* (adopted in October 2011 and last updated in July 2013)
- CRMPO's *Long Range Transportation Plan (LRTP) 2035* (updated by the CRMPO in April 2009)

G. Indirect and Cumulative Effects

Indirect impacts are those impacts that, as a result of an event such as this proposed transportation project, occur over a longer period of time and can take place away from the immediate project area. A short-term example would be the development of a small subdivision along a new or widened roadway that would otherwise not have occurred. Closely related is the concept of cumulative impacts, which are the collective effects of multiple events and actions. These may be dependent or independent of the proposed action.

A more detailed assessment of potential indirect and cumulative effects associated with this project is given in the Indirect *and Cumulative Effects Screening Report* for this project, dated February 2014, available from the NCDOT.

1. Future Land Use Study Area

The Future Land Use Study Area (FLUSA) is the area surrounding a project that could be indirectly affected as a result of the proposed project and other actions. This study area encompasses all of the areas examined for potential increases in development pressure as a result of project construction. Although it is the focus for data collection and analysis, it is not meant to infer that land use effects will be felt throughout the FLUSA. The area outlined in orange and black on Figure 9 is the FLUSA for the proposed project.

The FLUSA includes four jurisdictions – Landis, China Grove, Kannapolis, and Rowan County. Unincorporated parts of Rowan County make up the majority of the FLUSA followed by China Grove and Landis. The portion of the Kannapolis extra territorial jurisdiction (ETJ) is only a very small fraction of the FLUSA. The FLUSA boundary was defined so that potential land use nodes (i.e., future commercial development) at major intersections could be included in the analysis. It also accounts for a large amount of undeveloped land to the east and north of the proposed alternatives.

2. Indirect Effects

No notable indirect effects are expected from the proposed project alone. The major factors contributing to this result a lack of travel time savings, a lack of existing water and sewer infrastructure, stagnant development growth, and a population that is projected to decrease over the next 20 years.[7]

[7] The decline in population was determined based on county projections from the North Carolina Office of State Budget and Management.

The proposed project intends to improve the safety of a 3.1-mile stretch of Old Beatty Ford Road by either improving the existing alignment or relocating it to a new alignment. Although the new location alternative will increase exposure to some properties, this project should not cause the affected properties to become more attractive for non-residential development. Any residential development will be limited in size due to a lack of water and sewer services, soil unsuitable for septic systems, and growth management policies such as water supply watershed development restrictions. This project has been taken into account in local land use plans.

Other transportation projects are planned for this area, including widening I-85 and a potential I-85/ Old Beatty Ford Road interchange. The *combination* of the subject project and a future interchange will have an effect on the rate and type of development in the FLUSA, but this project alone should not result in notable indirect effects.

3. Cumulative Effects

Past Projects

There have not been any notable past actions. Past actions, such as the construction of I-85 and a trucking facility and automobile salvage yard in the northwest corner of the FLUSA, have not resulted in considerable cumulative effects on environmental resources.

Current Projects

There are no notable development actions that are currently underway. The ongoing construction of homes in Castlebrooke Farms (located along Lentz Road) includes relatively few homes on large lots and is not likely contributing to cumulative effects on environmental resources.

Future Projects

Projects planned for the future include:

- Widening I-85 (I-3802);
- Revising the I-85/ US 29/ NC 152 interchange area (Exit 68) (I-3610);
- Widening Old Beatty Ford Road to a multi-lane facility from Lower Stone Church Road to Lentz Road (W-5313);
- Adding a second railroad track to the North Carolina Railroad corridor (P-5206);
- A new I-85 interchange at Old Beatty Ford Road (I-3804).

Since there have not been any notable past or present actions, it is reasonable to assume there has been very little cumulative effect on environmental resources. Future transportation projects, especially a new interchange at Old Beatty Ford Road, could spur non-residential development in the interchange area, which would most likely prompt utility providers to extend water and sewer services to accommodate the new development. These potential development and infrastructure projects could have a cumulative effect on environmental resources.

Notable Environmental Resources

Notable features include two protected water supply watershed areas [Cold Water Creek (WS-IV) and Dutch Buffalo Creek (WS-II)], a critical area of the Cold Water Creek Water Supply Watershed, and Lake Fisher. There are no outstanding resource waters, trout waters, anadromous fish waters, primary nursery areas, high quality waters, or essential fish habitats.

Impacts on Environmental Resources

Direct environmental impacts from NCDOT projects are addressed by avoidance, minimization, and/or mitigation. These are consistent with programmatic discussions with the natural resource agencies occurring during the project development and permitting processes.

Based on the findings and conclusions from this project's *Indirect and Cumulative Effects Screening Report* (dated February 2014 and available from the NCDOT), cumulative effects resulting from the proposed project and primarily from other actions such as a potential future I-85/ Old Beatty Ford Road interchange will have the potential to minimally impact water quality in the FLUSA. State, local, and water supply watershed development regulations are in place to help protect sensitive environmental resources, which include: National Pollutant Discharge Elimination System (NPDES) Phase II regulations, local growth management strategies and stormwater management plans, and development restrictions within the two water supply watersheds.

H. Flood Hazard Evaluation

All of the streams in the project area drain to Lake Fisher. This includes the tributaries Town Branch and Unnamed Tributaries to Cold Water Creek. Town Branch and Cold Water Creek are located west of the I-85 corridor, while Cold Water Creek Tributary 1 and Unnamed Tributary to Cold Water Creek are located to the east of the I-85 corridor. The majority of the project is located in the Cold Water Creek watershed, with only a small western portion of the project located in the Town Branch watershed.

Five major stream crossings (see Table 14 and Figures 6-7.3) have been identified. Drainage areas were delineated based on the China Grove, North Carolina United States Geological Survey (USGS) quadrangle map.

Table 14: Major Stream Crossings and FEMA Floodplain Involvement

Structure No.	Site	Alternative	Stream	Drainage Area (mi^2)	Flood Zone	FIRM
1	NL-1	2	Town Branch (SA)	1.3	AE	3710562500K
2	NL-2	2	Cold Water Creek (SG)	5.9	AE	3710563500J
3	NL-3	2	UT to Cold Water Creek (SE)	0.3	X	3710563500J
4	IE-1	1	Cold Water Creek (SG)	7.7	AE	3710563500J
5	IE-2	1	Cold Water Creek Tributary 1 (SIE)	1.2	AE	3710563500J

Rowan County is a current participant in the National Flood Insurance Program (NFIP). There are no sites within a designated flood hazard zone where an approximate flood study has been completed. There are four crossings within a designated flood hazard zone where a detailed flood study has been completed. Federal Emergency Management Agency (FEMA) involvement for the project is summarized in Table 14.

For the sites within a designated flood hazard zone, the proposed structure will provide conveyance sufficient to limit the resulting backwater to less than one foot above the natural 100-year water surface elevation; therefore, the project should not have any significant adverse impact on the existing floodplain or on the associated flood hazard to the adjacent properties. Floodway coordination with North Carolina Floodplain Mapping Program (NCFMP) will be required for all crossings located within a FEMA-designated AE flood zone.

I. Traffic Noise Analysis

In accordance with Title 23 Code of Federal Regulations Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (Title 23 CFR 772) and the *North Carolina Department of Transportation Traffic Noise Abatement Policy,* each Type I highway project must be analyzed for predicted traffic noise impacts. In general, Type I projects are proposed federal or federal-aid highway projects for construction of a highway or interchange on new location, improvements of an existing highway which significantly changes the horizontal or vertical alignment or increases the vehicle capacity, or projects that involve new construction or substantial alteration of transportation facilities such as weigh stations, rest stops, ride-share lots or toll plazas.

Traffic noise impacts are determined through implementing the current Traffic Noise Model (TNM®) approved by the Federal Highway Administration and following procedures detailed in Title 23 CFR 772 and the *NCDOT Traffic Noise Analysis and Abatement Manual*. 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 technical report entitled, *Traffic Noise Analysis, Relocation of Old Beatty Ford Road (SR 1221/ SR 1210) From SR 1210/ SR 1221 to Lentz Road (SR 1337)* (March 14, 2014), is available from NCDOT. The evaluation in the technical report 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.

1. Traffic Noise Impacts and Noise Contours

One receptor is anticipated to be impacted by the project (see Table 15 and Figure 2.1). With Alternative 1, Receptor 26, a residence near the Old Beatty Ford Road/ China Grove Road intersection, would experience a five-decibel [dB(A)] increase in noise levels that would approach the Federal Highway Administration (FHWA) noise abatement criteria (NAC). The noise level for the impacted receiver would increase from an existing level in 2013 of 61 dB(A)

to a 2035 predicted level of 66 dB(A). The NAC for this type of receptor is 67 dB(A). No other study area receptors would result in traffic noise impacts.

Predicted build-condition traffic noise level contours are not a definitive means by which to assess traffic noise level impacts; however, they can aid in future land use planning efforts in presently undeveloped areas. Correlating to the traffic noise impact thresholds for FHWA NAC "E" and NAC "B" and "C" land uses, the TNM-predicted for 66 dB(A) noise level contours were calculated to reach a maximum of 38.5 feet from the center of the proposed roadway. The 71 dB(A) contour could not be achieved, even at the roadway edge.

According to 23 CFR 772.9(c) and NCDOT Policy, noise contour lines shall not be used for determining highway traffic noise impacts. However, the 71 dB(A) and 66 dB(A) noise level contour information should assist local authorities in exercising land use control over the remaining undeveloped lands, so as to avoid development of incompatible activities adjacent to the roadways within local jurisdiction.

Table 15: Traffic Noise Impact Summary[1]

Location	Approximate # of Impacted Receptors Approaching or Exceeding FHWA NAC[2]							Subst'l Noise Level Incr.[3]	Impacts Due to Both Criteria	Total Impacts Per 23 CFR 772
	A	B	C	D	E	F	G			
Alternative 1	0	1	0	0	0	0	0	0	0	1
Alternative 2	0	0	0	0	0	0	0	0	0	0

1. This table presents the number of build-condition traffic noise impacts as predicted for Alternatives 1 and 2.
2. Predicted traffic noise level impact due to approaching or exceeding NAC. Predicted "substantial increase" traffic noise level impact.
3. Predicted traffic noise level impact due to exceeding NAC and "substantial increase" in build-condition noise levels.

Temporary and localized noise impacts will likely occur as a result of project construction activities. Construction noise control measures will be incorporated into the project plans and specifications.

2. Traffic Noise Abatement Measures

FHWA and NCDOT require that feasible and reasonable measures be considered to mitigate noise impacts at the impacted receptors. Noise abatement measures must be considered for all receptors that are predicted to experience a noise impact. Measures considered include highway alignment selection, traffic systems management, buffer zones, proper use of land controls, noise barriers, and earth berms.

Traffic noise abatement measures were considered but were determined not to be feasible. Based on the traffic noise analysis for this project, traffic noise abatement is not recommended, and no noise abatement measures are proposed.

Highway Alignment Selection

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

Traffic System Management Measures

Traffic management measures such as prohibition of truck traffic, lowering speed limits, limiting of traffic volumes, and/or limiting time of operation were considered as possible traffic noise impact abatement measures. The purpose of the proposed project is to improve safety. Prohibition of truck traffic, speed limit reduction, or screening total traffic volumes would diminish the functional capacity of the highway facility and are not considered practicable.

Buffer Zones

Buffer zones are typically not practical and/ or cost effective for noise mitigation due to the substantial amount of right-of-way required, and would not be a feasible noise mitigation measure for this project. Furthermore, if the acquisition of a suitable buffer zone had been feasible, the associated costs would exceed the NCDOT Policy reasonable abatement cost threshold per benefited receptor.

Proper Use of Land Controls

One of the most effective means to prevent future traffic noise impacts is the proper use of land controls. As indicated in the July 2011 *NCDOT Traffic Noise Abatement Policy*, local jurisdictions with zoning control should use the information contained in this report to develop policies and/ or ordinances to limit the growth of noise-sensitive land uses located adjacent to the proposed project; however, regulation of land use is not within the purview of FHWA or NCDOT.

3. Noise Barriers

Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb, and reflect highway traffic noise. For this project, earthen berms and noise walls are not found to be a viable abatement measure because neither would be able to achieve the minimum seven dB(A) reasonableness criteria design goal for at least one impacted receptor. As identified in the project Traffic Noise Analysis, no areas exist for which potential traffic noise abatement measures are feasible and reasonable, as defined in the NCDOT Traffic Noise Abatement Policy.

J. Air Quality Analysis

This project will not add substantial new capacity or create a facility that is likely to meaningfully increase emissions. It is not anticipated to create any adverse effects on the air quality of this area.

Air pollution originates from various sources. Emissions from industry and internal combustion engines are the most prevalent sources. The impact resulting from highway construction ranges from intensifying existing air pollution problems to improving the ambient air quality. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing highway facility. Motor vehicles emit carbon monoxide (CO), nitrogen oxide (NO), hydrocarbons (HC), particulate matter, sulfur dioxide (SO2), and lead (Pb) (listed in order of decreasing emission rate). New highways or the widening of existing highways increase localized levels of vehicle emissions, but these increases could be offset due to increases in speeds from reductions in congestion and because vehicle emissions will decrease in areas where traffic shifts to the new roadway. Significant progress has been made in reducing criteria pollutant emissions from motor vehicles and improving air quality, even as vehicle travel has increased rapidly.

The Federal Clean Air Act of 1970 established the National Ambient Air Quality Standards (NAAQS). These were established in order to protect public health, safety, and welfare from known or anticipated effects of air pollutants. The most recent amendments to the NAAQS contain criteria for sulfur dioxide (SO_2), particulate matter (PM_{10}, 10-micron and smaller, $PM_{2.5}$, 2.5 micron and smaller), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and lead (Pb).

The primary pollutants from motor vehicles are unburned hydrocarbons, NOx, CO, and particulates. Hydrocarbons (HC) and Nitrogen oxides (NOx) can combine in a complex series of reactions catalyzed by sunlight to produce photochemical oxidants such as ozone and NO_2. Because these reactions take place over a period of several hours, maximum concentrations of photochemical oxidants are often found far downwind of the precursor sources. These pollutants are regional problems.

The project is located in Rowan County, which is within the Charlotte-Gastonia-Rock Hill nonattainment area for ozone (O3) as defined by the EPA. This area was designated marginal nonattainment for O3 under the 2008 eight-hour ozone standard on July 20, 2012. Section 176(c) of the CAAA requires that transportation plans, programs, and projects conform to the intent of the state air quality implementation plan (SIP). The current SIP does not contain any transportation control measures for Rowan County. The Cabarrus Rowan Metropolitan Planning Organization 2040 Long Range Transportation Plan (LRTP) and the 2012-2018 Transportation Improvement Program (TIP) conform to the intent of the SIP. The USDOT made a conformity determination on the LRTP on May 2, 2014 and the TIP on May 2, 2014. The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51 and 93. There are no significant changes in the project's design concept or scope, as used in the conformity analyses.

A copy of the technical report entitled, *Air Quality Analysis, Relocation of Old Beatty Ford Road (SR 1221) From SR 1210/ SR 1221 to Lentz Road (SR 1337)* (January 15, 2014), is available from NCDOT. The evaluation in the technical report completes the assessment requirements for air quality of the 1990 Clean Air Act Amendments and the NEPA process, and no additional reports are necessary.

1. Carbon Monoxide

Automobiles are considered the major source of CO in the project area. In order to determine the ambient CO concentration at a receptor near a highway, two concentration components must be used: local and background. The local concentration is defined as the CO emissions from cars operating on highways in the near vicinity (i.e., distances within 400 feet) of the receptor location. The background concentration is defined by the North Carolina Department of Environment, Health and Natural Resources as "the concentration of a pollutant at a point that is the result of emissions outside the local vicinity; that is, the concentration at the upwind edge of the local sources."

2. Mobile Source Air Toxics (MSATs)

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 potential public health risks posed by MSAT exposure should be factored into project-level decision-making within the context of the National Environmental Policy Act (NEPA).

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

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

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

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

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

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (http://pubs.healtheffects.org/view.php?id=282). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (http://www.epa.gov/risk/basicinformation.htm#g) and the HEI (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "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 one 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 one 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 deemed 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.

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

A qualitative analysis of MSATs for this project appears in its entirety in the project *Air Quality Analysis*, dated January 15, 2014. A copy of this report is available from NCDOT.

K. Hazardous Material

A hazardous material evaluation was performed to identify properties within the project study area that are, or may be, contaminated, and therefore result in increased project costs and future liability if acquired by NCDOT. Hazardous material impacts may include, but are not limited to, active and abandoned underground storage tank (UST) sites, hazardous waste sites, regulated landfills and unregulated dumpsites. Geographical Information System (GIS) data was consulted to identify known sites of concern in relation to the proposed project. NCDOT personnel conducted a field reconnaissance along portions of the project in December 2010 and again in September 2012. A search of appropriate environmental agencies' databases was performed to assist in evaluating sites identified during the evaluation.

One UST site was identified (see below). It is anticipated to present low geo-environmental impacts to the project.

- Steve's Corner Store currently operates as a convenience store and gas station (see Figure 8). It is located in the fork between Old Beatty Ford Road and Lentz Road. The tank bed is located approximately 45 feet from the Lentz Road centerline. According to the UST Section Registry, there are two tanks currently in use. A groundwater incident occurred in April 1992 while under the ownership of Carolina Oil Company. The site has received a "No Further Action", and the incident closed out in May 1992. There are no monitoring wells on site. This parcel is identified as Site #1 in the W-5313 Hazardous Material Report dated January 5, 2011.

For a full evaluation of hazardous materials, see the Hazardous Materials Report (November 7, 2013) available from NCDOT.

VI. COMMENTS AND COORDINATION

A. Public Comments

A Local Officials Information Meeting (LOIM) and a Public Meeting were held on November 12, 2013. The LOIM was held from 1:00 p.m. to 2:00 p.m. at the China Grove Town Hall, 333 North Main Street, China Grove. The Public Meeting was held between 4:00 p.m. and 7:00 p.m. at the Kannapolis Moose Family Center, 990 Old Beatty Ford Road, China Grove. Approximately 22 people attended the LOIM, including representatives from Rowan County, Kannapolis, and China Grove. Approximately 117 people attended the Public Meeting. The Public Meeting was conducted in an open house-style format with no formal presentation. The purpose of the meeting was to introduce the project to the community and to receive comments on the alternatives and issues to be considered during the project development process. Based on comments received during and after the Public Meeting, more than twice the number of people who submitted comments preferred Alternative 2 over Alternative 1.

Generally, those that prefer Alternative 2 said it meets the purpose and need better than Alternative 1 and does not impact as many homes.

The people who prefer Alternative 1 oppose Alternative 2 primarily because it would result in the removal of the existing bridge over I-85 and make Old Beatty Ford Road a dead end on either side of the interstate. Residents expressed concern over the increase in time and distance it would take them to reach some destinations. Another concern was about the additional time it would take emergency responders to get to their homes. Other concerns about Alternative 2 include:

- it will take too much land that could otherwise be developed for residential and commercial uses;
- it is being influenced by owners of large tracts of land that would financially benefit from the increased exposure and the development potential of their property.

Some citizens suggested alternative ways to improve Old Beatty Ford Road while reducing costs and impacts including:

- improve only those curves west of State Road;
- repave existing Old Beatty Ford Road;
- enforce the speed limit.

After the public meeting, in early 2014, NCDOT coordinated with representatives from the Highest Praise Family Worship Center to request their comments. Alternative 2 crosses the church property just east of China Grove Road. Church leaders raised questions regarding the amount of land needed, limitations on the use of remaining land, remnants that would be isolated by the road, and future access to Old Beatty Ford Road. NCDOT agreed to maintain contact with church representatives and to notify them when a preferred alternative is announced.

The specific public comments and the corresponding responses may be found in Appendix C.

B. Public Hearing

A public hearing will be held after the EA is made available for public review to inform the public of the recommended alternative and to receive comments on the EA.

C. Agency Coordination

Input from the appropriate federal, state, and local agencies concerning effects of the proposed project on the environment was requested in a scoping letter (dated September 25, 2013) in preparation for the environmental document. Written comments were received from agencies noted with an asterisk (*) (see Appendix A). The agencies contacted are listed below:

* Department of Army - Corps of Engineers
  Department of Interior - U.S. Fish and Wildlife Service
  Department of Transportation - Federal Highway Administration
* Department of Agriculture and Consumer Services – Agricultural Services
* Department of Public Safety – Emergency Management
* Environmental Protection Agency
* Department of Cultural Resources
* Department of Environment and Natural Resources
* Division of Water Resources
* Division of Waste Management
* NC Wildlife Resources Commission
  Rowan County
  Rowan County Board of Commissioners
  Rowan-Salisbury School System
  Rowan County Department of Emergency Services
  Rowan County Sheriff's Office
  Rowan County Planning and Development
  Rowan Transit System
  City of Kannapolis
  Town of China Grove
  Town of Landis
* Cabarrus Rowan Metropolitan Planning Organization (CRMPO)

On September 25, 2013, NCDOT initiated the project scoping process to invite input from federal, state, and local agencies. Responses from the agencies were collected, and no formal interagency scoping meeting was held for the project.

An informal Interagency Meeting was held November 15, 2013 at NCDOT's Century Center in Raleigh for the proposed improvements to Old Beatty Ford Road (see Appendix A for a summary of the Interagency Meeting). The purpose of the meeting was to obtain input on the preliminary purpose and need, alternatives, and potential impacts. Meeting participants included

representatives from the Army Corps of Engineers, Federal Highway Administration, Division of Water Resources, and the NCDOT. Two alternatives were presented, and options were discussed for reducing impacts to streams and wetlands. The project team agreed to consider refining Alternative 1 near the existing bridge over I-85 so that it is closer to the existing alignment to avoid and minimize impacts. The participants agreed that as long as the stream and wetland impacts are below the nationwide permit thresholds, the project can be developed without following the Merger Process. Following the meeting, refinements to Alternative 1 to bring the proposed bridge closer to the existing alignment were considered to further avoid and minimize impacts. Because wetlands and streams are on both sides of the existing road, the refinements did not reduce overall stream and wetland impacts and were not evaluated in detail.

A second interagency meeting with the same representatives was held March 12, 2014 at NCDOT's Century Center to review more detailed analysis results, initial cultural resource findings, and proposed recommendations (see Appendix A for a meeting summary). Costs and impacts for Alternatives 1 and 2 were presented along with refinements considered to avoid and minimize impacts along both the existing alignment and the new location alignment. Agency representatives requested more information about the evaluation of historic period farm buildings near Alternative 2 (see the response to the first agency comment below). It was also noted that Alternative 2 crosses more streams and has the potential to open more vacant land to future development. Stream mitigation costs were noted to be higher with Alternative 2. NCDOT agreed to investigate the potential for restoring a portion of Cold Water Creek and associated wetlands by removing the existing Old Beatty Ford Road culvert (see Project Commitments). FHWA requested detailed information describing the measures of performance for the project and the effectiveness of the proposed improvements in reducing crashes (see *Section II.C, Benefits of the Project*).

Responses to project-specific agency comments are addressed as follows.

Comment: The USACE noted historic period buildings within the Alternative 2 study area and requested a copy of the cultural resources evaluation.
Response: Comment noted. A copy of the cultural resources evaluation has been sent to the USACE.

Comment: The EPA recommends that strict avoidance and minimization measures to water supply watershed streams (i.e., Cold Water Creek & Dutch Buffalo Creek) be made.
Response: NCDOT's "Best Management Practices for Protection of Surface Waters" will be implemented, as applicable. The eastern section of the project draining to the Dutch Buffalo Creek water supply watershed (WS-II, HQW) will be designed according to Design Standards in Sensitive Watersheds (DSSW) (see Project Commitments).

Comment: The NC Department of Public Safety Emergency Management Division requested the project to be coordinated with NCDOT Hydraulics to determine if the project is eligible to fall within the Memorandum of Agreement for the compliance with NC Executive Order 123 regarding FHWA floodplain management requirements.
Response: The NCDOT Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of the project with regard to applicability of NCDOT'S

Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR) (see Project Commitments).

Comment: The NC Department of Agriculture and Consumer Services encouraged NCDOT to consider routing and/or designs that would reduce the potential negative effects on farm and forest land, including the use of existing Old Beatty Ford Road. The project has the potential to adversely impact the agricultural environmental and economic resources.
Response: As is required by the FPPA, the Form AD-1006 has been completed according to FHWA guidelines (see Appendix A). NRCS has completed their review (Parts IV and V of the Form AD-1006) and both alternatives received final point totals of less than 160 points. Therefore, both alternatives fall below the NRCS minimum criteria rating and will not be evaluated further for farmland impacts. These alternatives will not have a significant impact to farmland. Part VII of Form AD-1006 will be completed once an alternative has been selected and will be included in the final environmental document. See Section V.B, Farmland *for more information.*

Comment: The NC Department of Cultural Resources recommended NCDOT conduct a comprehensive archaeological survey to identify and evaluate the significance of any archaeological remains that may be damaged or destroyed by the proposed project. The agency further recommended that a qualified architectural historian identify and evaluate the National Register eligibility of structures of historic or architectural importance as well as any structures over 50 years of age within the project's Area of Potential Effect (APE).
Response: An archaeological survey was completed for this project in January and February 2014. It identified 11 newly recorded archaeological resources and recommended all of them as either not eligible for the National Register of Historic Places (NRHP) or not contributing to any NRHP eligibility. An in-depth architectural investigation revealed two properties, Bostian School and the Yost-Weddington Farm-Yost Post Office, recommended for National Register eligibility. Neither alternative will acquire right-of-way or involve construction activities in close proximity to either of these two properties. The Historic Preservation Office (HPO) concurs the proposed project will have no effect on either property. See Section V.B, Cultural Resources *for more information.*

Comment: The NCDENR Division of Water Resources requests that NCDOT strictly adhere to North Carolina regulations entitled Design Standards in Sensitive Watersheds (15A NCAC 04B .0124) throughout design and construction of the project. This would apply to any area that drains to streams having WS CA (Water Supply Critical Area) classifications.
Response: See the response to the comment from the EPA above.

Comment: During the March 12, 2014 interagency meeting, a representative from the NCDENR Division of Water Resources requested a copy of the Indirect and Cumulative Effects (ICE) Screening Report for the proposed project.
Response: A copy of the ICE Screening Report has been sent to the Division of Water Resources.

Comment: The NCDENR Division of Water Resources requests placement of culverts and other structures in waters and streams to be placed below the elevation of the stream bed 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, are not to be conducted in a manner that may result in dis-equilibrium of wetlands or stream beds or banks adjacent to or upstream and downstream of the above structures.
Response: Comment noted. The final design and placement of proposed structures will be in accordance with the above recommendations.

Comment: The NCDENR Division of Waste Management recommends removal of any abandoned or out-of-use petroleum underground storage tanks (USTs) or petroleum above ground storage tanks (ASTs). Petroleum spills of significant quantity must be reported to the Division of Waste Management. Any soils excavated during construction that show evidence of petroleum contamination must be reported to the local Fire Marshall and to the Division of Waste Management. In addition, sedimentation and erosion control must be addressed in accordance with NCDOT's approved program.
Response: Comments noted. Alternative 1 would affect one UST site. However, removal of the UST is not expected since Alternative 1 is not the recommended alternative. NCDOT will use Best Management Practices for erosion control and protection of surface waters during construction of the proposed project.

Comment: The NC Wildlife Resources Commission recommends NCDOT should strive to minimize direct and indirect impacts to streams, wetlands and terrestrial habitats. Impervious surfaces should also be minimized. The agency also commented that Town Creek is one of the streams that cross the project study area, and that Town Creek is on the 303(d) list of impaired waters.
Response: The preliminary alternatives have been designed and the alignments placed to avoid and/ or minimize direct and indirect impacts to natural resources to the extent possible. NCDOT will continue to investigate ways to further reduce impacts during the final design of the proposed project. Based on flood insurance rate map (FIRM) panel 5625K from the North Carolina Floodplain Mapping Program, Town Branch – not Town Creek – crosses the project study area (see Figure 7.1). Town Creek is located approximately 2.5 miles north of the Alternative 2 project area and will not be impacted by this project.

Comment: On January 22, 2014 the CRMPO's Transportation Advisory Committee (TAC) unanimously voted to endorse and support Alternative 2.
Response: Comment noted – no response necessary.

Comment: In an email dated April 3, 2014, Tim Beck, Transportation Supervisor from Rowan-Salisbury Schools, stated there would be little to no impact to bus routing for either alternative. If Alternative 2 is chosen as the preferred alternative, Rowan-Salisbury Schools request the cul-de-sacs along existing Old Beatty Ford Road be built large enough to allow buses to turn around.
Response: NCDOT will design the cul-de-sacs large enough to allow buses to turn around (see Project Commitments).

VII. CONCLUSION

The purpose of the project is to improve vehicular safety by reducing the frequency of lane departure and frontal impact crashes along Old Beatty Ford Road. A secondary purpose is to improve the deficient bridge.

Two Build Alternatives are being considered – Alternative 1 and Alternative 2 (Recommended). The current total estimated cost for Alternative 1 is $18,200,000, consisting of $4,400,000 for right-of-way acquisition and $13,800,000 for construction. The current total estimated cost for Alternative 2 is $16,300,000, consisting of $1,200,000 for right-of-way acquisition and $15,100,000 for construction.

This project is not expected to have any considerable effect on local land use, character, or development plans.

There are active farms near the proposed project that could be affected, but neither alternative is expected to require the relocation of farms operating as a business. No resources that are considered major economic attractions will be affected by the proposed project. The proposed project is not expected to affect economic development in the area or serve a specific development.

Alternative 1 will relocate ten residences and one business. Alternative 2 will relocate one residence. There are no minority-owned or rented residential units and no minority-owned business units that will be relocated. No farms, non-profit organizations, churches, or schools will be relocated.

The proposed project will not prevent area residents from interacting with one another, nor will it hinder access to neighbors or frequent business destinations. The neighborhoods in the project area are not cohesive as a whole or individually. There is no major employment or retail center (groceries, shopping, entertainment, etc.) in the project area.

No notably adverse community impacts are anticipated with this project and no Environmental Justice populations appear to be affected; thus, impacts to minority and low income populations do not appear to be disproportionately high and adverse.

The project has been determined to have no effect on historic architectural or archaeological resources, and the HPO concurs with these determinations.

No Section 4(f) or Section 6(f) resources are anticipated to be impacted.

No notable indirect effects are expected from the proposed project alone. The major factors contributing to this result are the limited scope of the project, a lack of existing water and sewer infrastructure, stagnant development growth, and a population that is projected to decrease over the next 20 years. Since there have not been any notable past or present actions, it is reasonable to assume there has been very little cumulative effect on environmental resources.

Alternative 1 will cross two streams requiring major structures, impacting 115 feet. It will impact 0.2 acre of wetlands. Alternative 2 will cross three streams requiring major structures, impacting 965 feet. It will impact less than 0.1 acre of wetlands.

The project is located within the Cold Water Creek water supply watershed and has a North Carolina water quality classification of WS-IV. Lentz Road is the approximate boundary between the Cold Water Creek and the Dutch Buffalo Creek (WS-II) water supply watersheds. No features within the study area have been designated as Outstanding Resource Water (ORW) or as trout waters. There are no designated anadromous fish waters, Primary Nursery Areas (PNA), or designated High Quality Waters (HQW) within one mile downstream. There are no impaired waters, identified on the North Carolina 2012 Final 303(d) list for sedimentation or turbidity, within one mile downstream of the study area.

NCDOT will attempt to avoid and minimize impacts to streams, open waters, and wetland areas to the greatest extent practicable with the preferred alternative and during project design.

There are four crossings within a designated flood hazard zone where a detailed flood study has been completed. For the sites within a designated flood hazard zone, the proposed structure will provide conveyance sufficient to limit the resulting backwater to less than one foot above the natural 100-year water surface elevation; therefore, the project should not have any significant adverse impact on the existing floodplain or on the associated flood hazard to the adjacent properties.

The Schweinitz's sunflower is the only federally protected species listed for Rowan County according to the US Fish and Wildlife Service. A biological conclusion of “No Effect” has been determined for this species.

With Alternative 1, only one residence would be impacted by traffic noise levels. Noise impacts will not occur with Alternative 2. Traffic noise abatement is not recommended or proposed for the project.

The project is located in Rowan County, which is within the Charlotte-Gastonia-Rock Hill nonattainment area for ozone (O3) as defined by the EPA. It is within an attainment area for PM2.5 and PM10. This project will not add substantial new capacity or create a facility that is likely to meaningfully increase emissions. Therefore, it is not anticipated to create any adverse effects on the air quality of this area. This evaluation completes the assessment requirements for air quality of the 1990 Clean Air Act Amendments and the NEPA process, and no additional reports are necessary.

Alternative 1 would impact one hazardous material site, but geo-environmental impacts are expected to be low. Alternative 2 is not expected to impact hazardous materials sites.

To date, public involvement efforts have included one project newsletter, a Public Officials Informational Meeting, and a Public Meeting. No public controversy is anticipated with this project. A public hearing will be held after the EA is made available for public review to inform the public of the recommended alternative and to receive comments on the EA.

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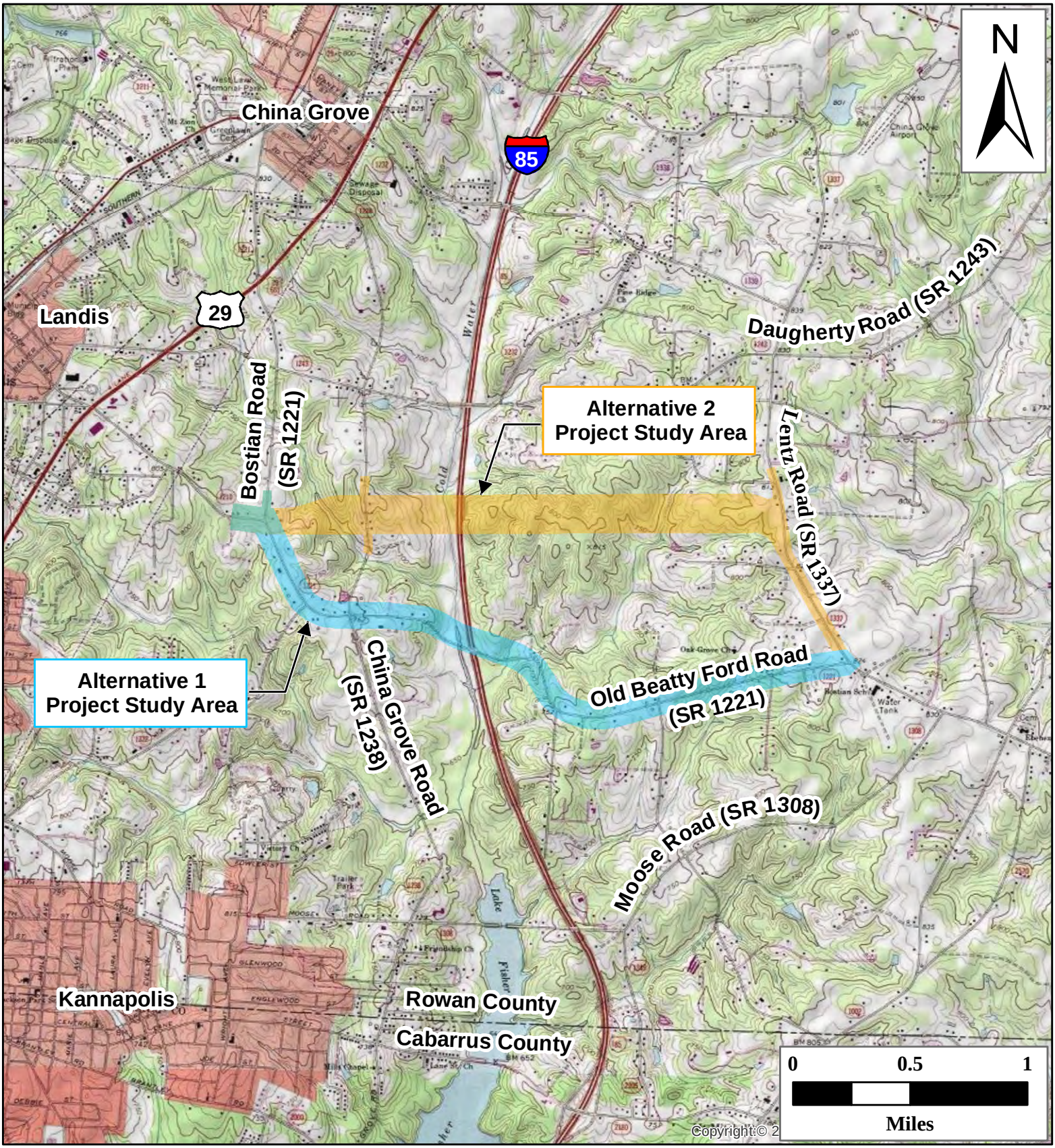
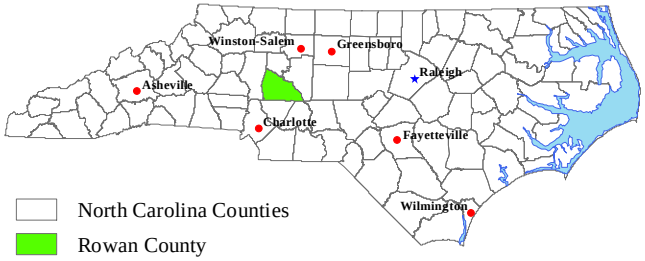
FIGURES

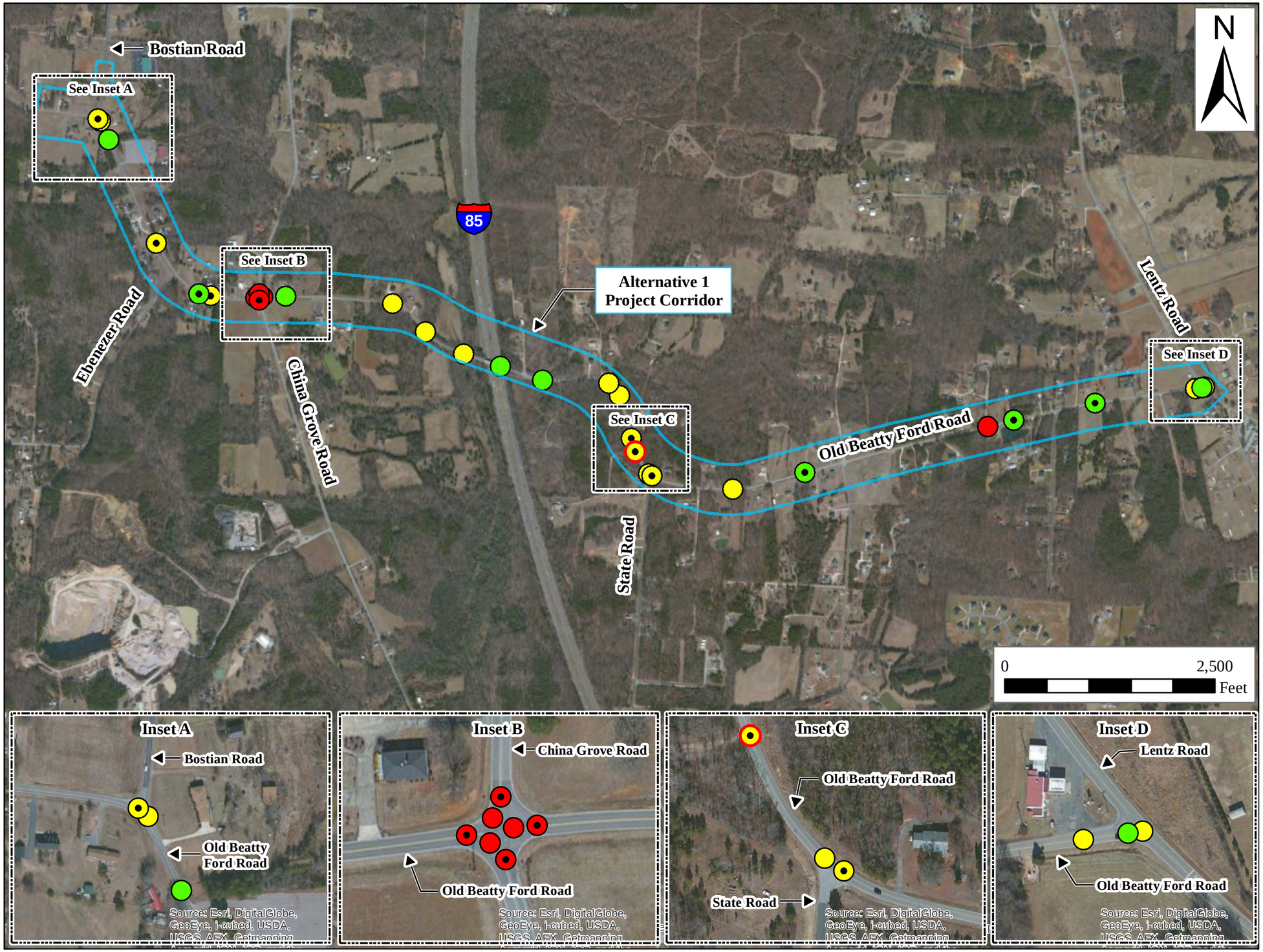




STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 9

Figure 1.1 - Project Vicinity Map
W-5516
Relocation of Old Beatty Ford Road (SR 1221)
Rowan County

Figure 1.2 - Crashes, 2008-2013



Alternative 1 Project Corridor

Lane Departure Crash

Lane Departure Crash with Injury(s)

Lane Departure Crash with Fatality

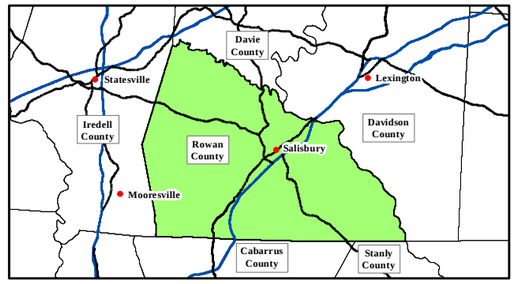
Frontal Impact Crash

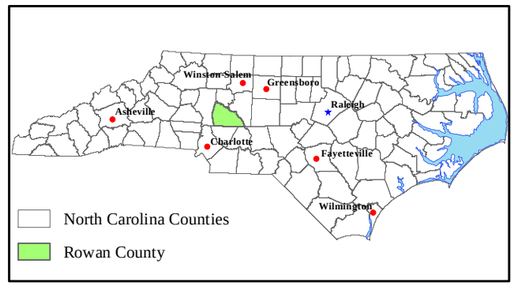
Frontal Impact Crash with Injury(s)

Other Crash

Other Crash with Injury(s)

Map Sources:
North Carolina Department of Transportation
ESRI ArcGIS Online World Imagery
ICA Engineering





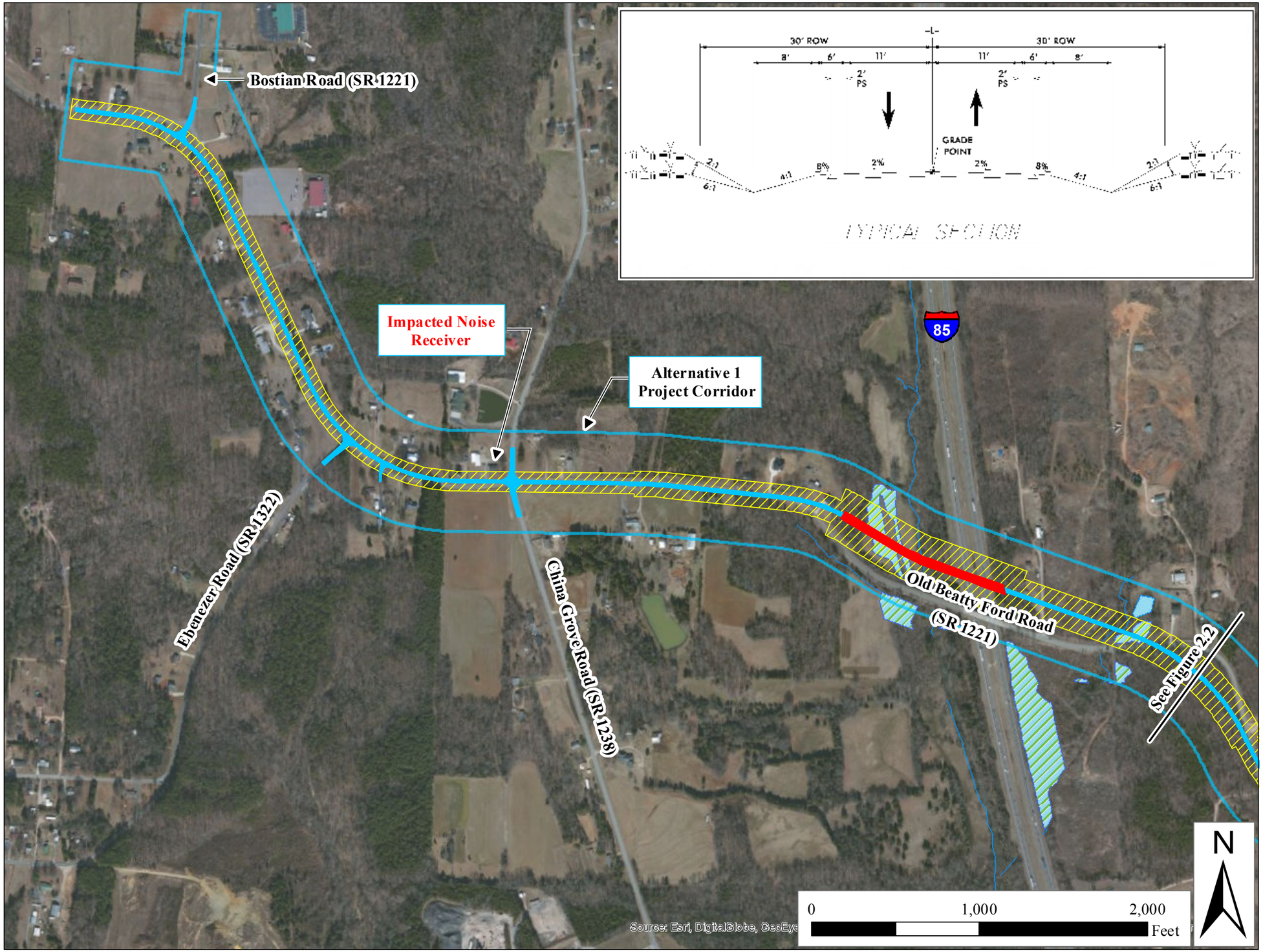
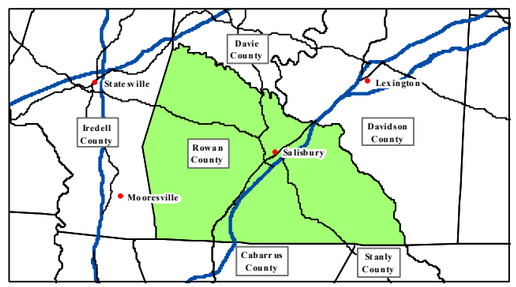
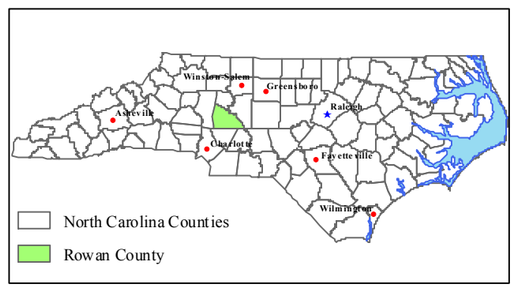


Figure 2.1 - Alternative 1

- Alternative 1 Project Corridor
- Alternative 1
- Preliminary Construction Limits
- Proposed Structure (No. 4)
- Jurisdictional Wetland
- Jurisdictional Open Water
- Jurisdictional Stream

Map Sources:
North Carolina Department of Transportation
ESRI ArcGIS Online World Imagery
ICA Engineering





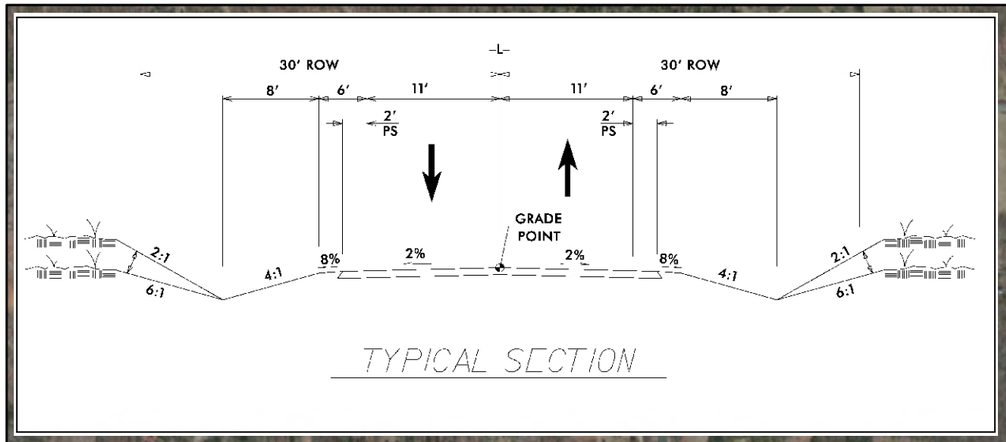
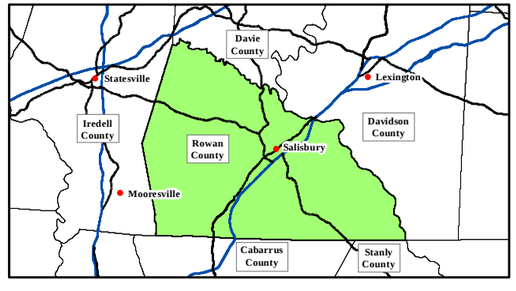


Figure 2.2 - Alternative 1

Bruner Sloop Road (SR 1418)
Lentz Road (SR 1337)
See Figure 3.2
Castlegate Way
Deal Estate Drive
Alternative 2 Project Corridor
Cherish Lane
Old Beatty Ford Road (SR 1221)
See Figure 2.1
Alternative 1 Project Corridor
Bostian Elementary School
State Road (SR 1440)
Goldfish Road (SR 1348)
Beth Drive
Source: Esri, DigitalGlobe, GeoEye, i-c
0
1,000
2,000
Feet
N

- Alternative 1 Project Corridor
- Alternative 2 Project Corridor
- Alternative 1
- Preliminary Construction Limits
- Jurisdictional Wetland
- Jurisdictional Open Water
- Jurisdictional Stream

Map Sources:
North Carolina Department of Transportation
ESRI ArcGIS Online World Imagery
ICA Engineering



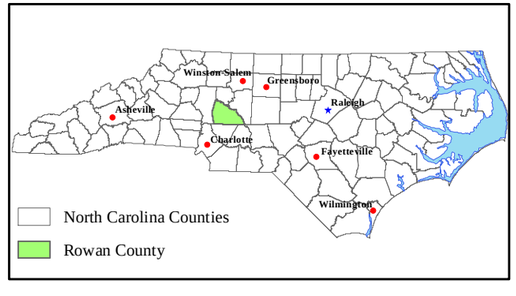
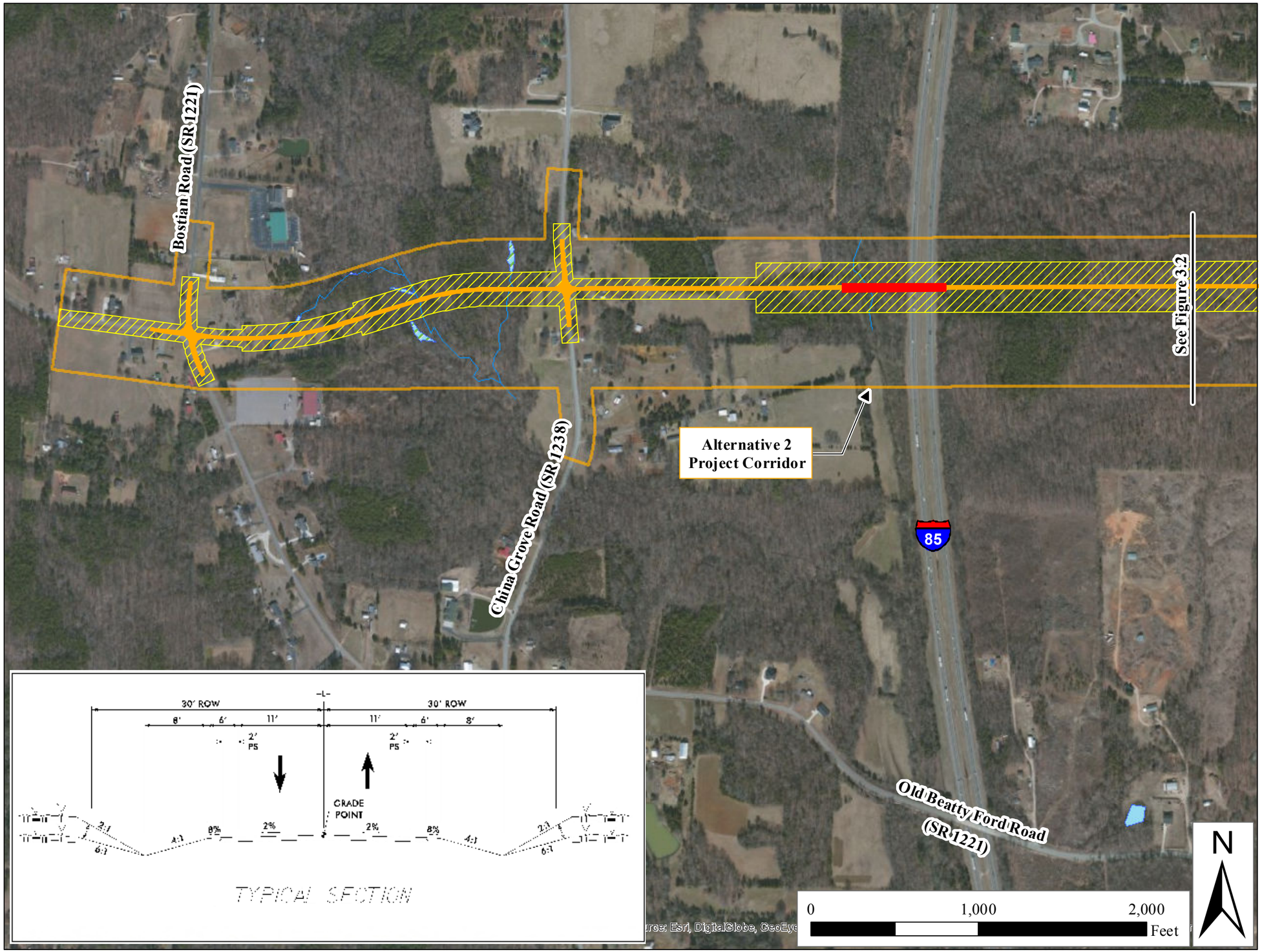


Figure 3.1 - Alternative 2



Alternative 2 Project Corridor

Alternative 2

Bridge

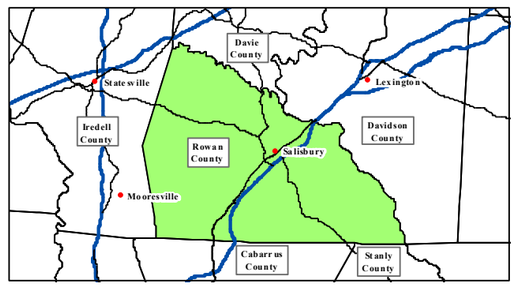
Preliminary Construction Limits

Jurisdictional Wetland

Jurisdictional Open Water

Jurisdictional Stream

Map Sources:
North Carolina Department of Transportation
ESRI ArcGIS Online World Imagery
ICA Engineering



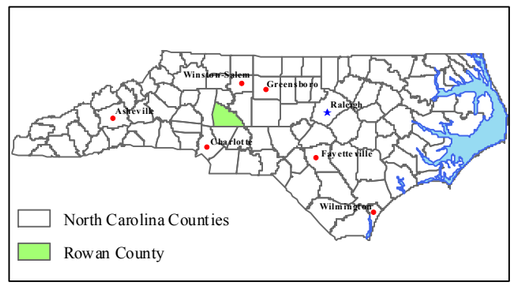
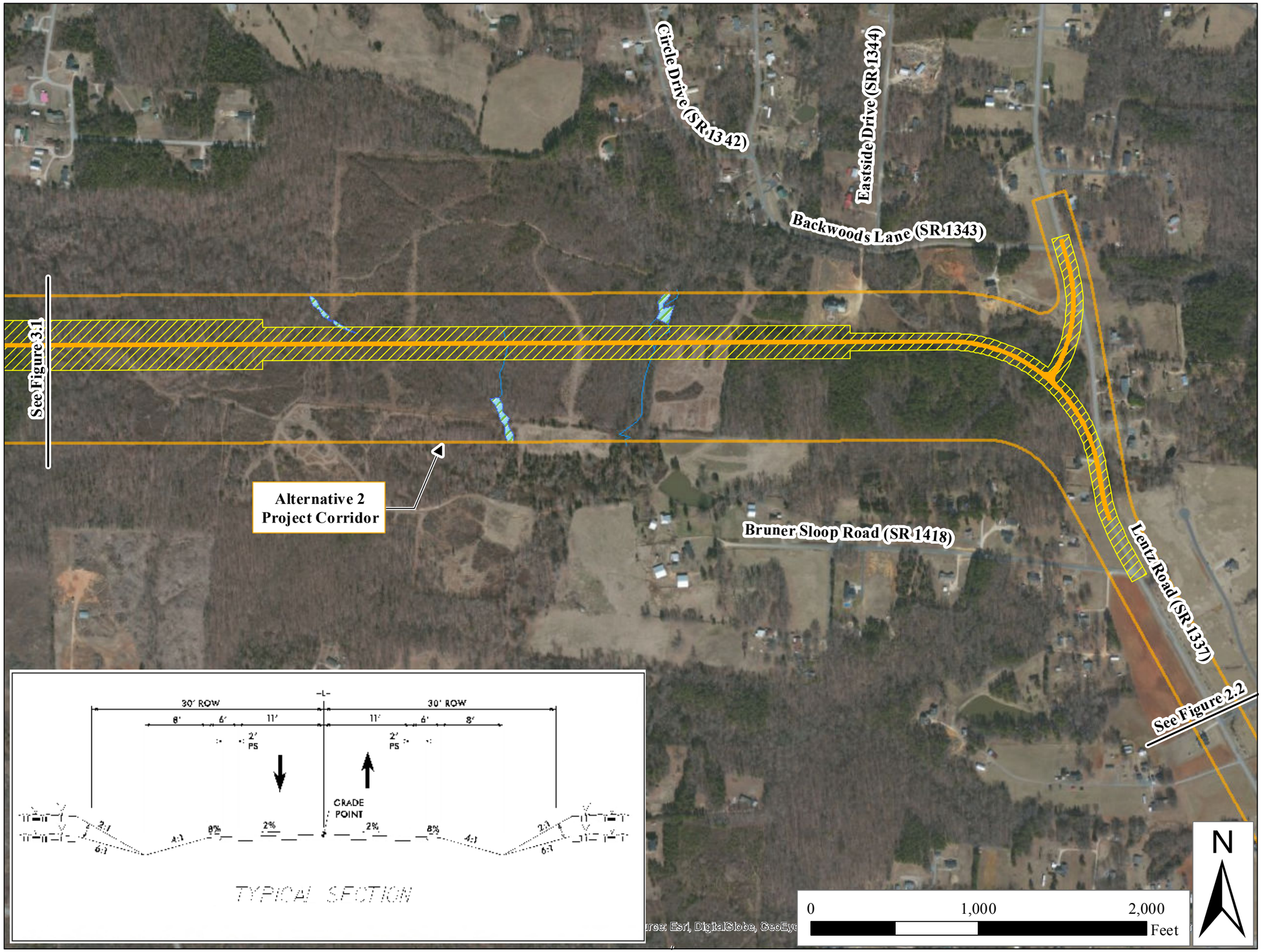
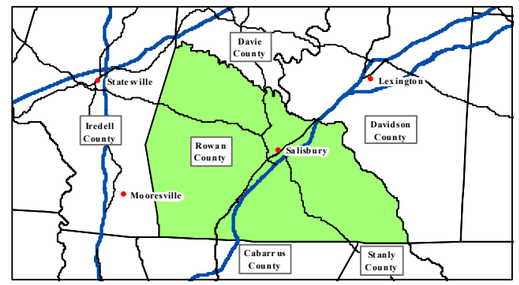


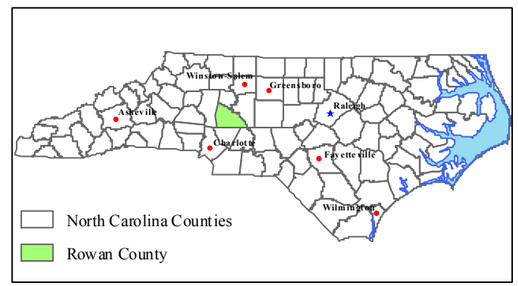
Figure 3.2 - Alternative 2



- Alternative 2 Project Corridor
- Alternative 2
- Preliminary Construction Limits
- Jurisdictional Wetland
- Jurisdictional Open Water
- Jurisdictional Stream

Map Sources:
North Carolina Department of Transportation
ESRI ArcGIS Online World Imagery
ICA Engineering





STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 9

TIP Project No. W-5516
Rowan County

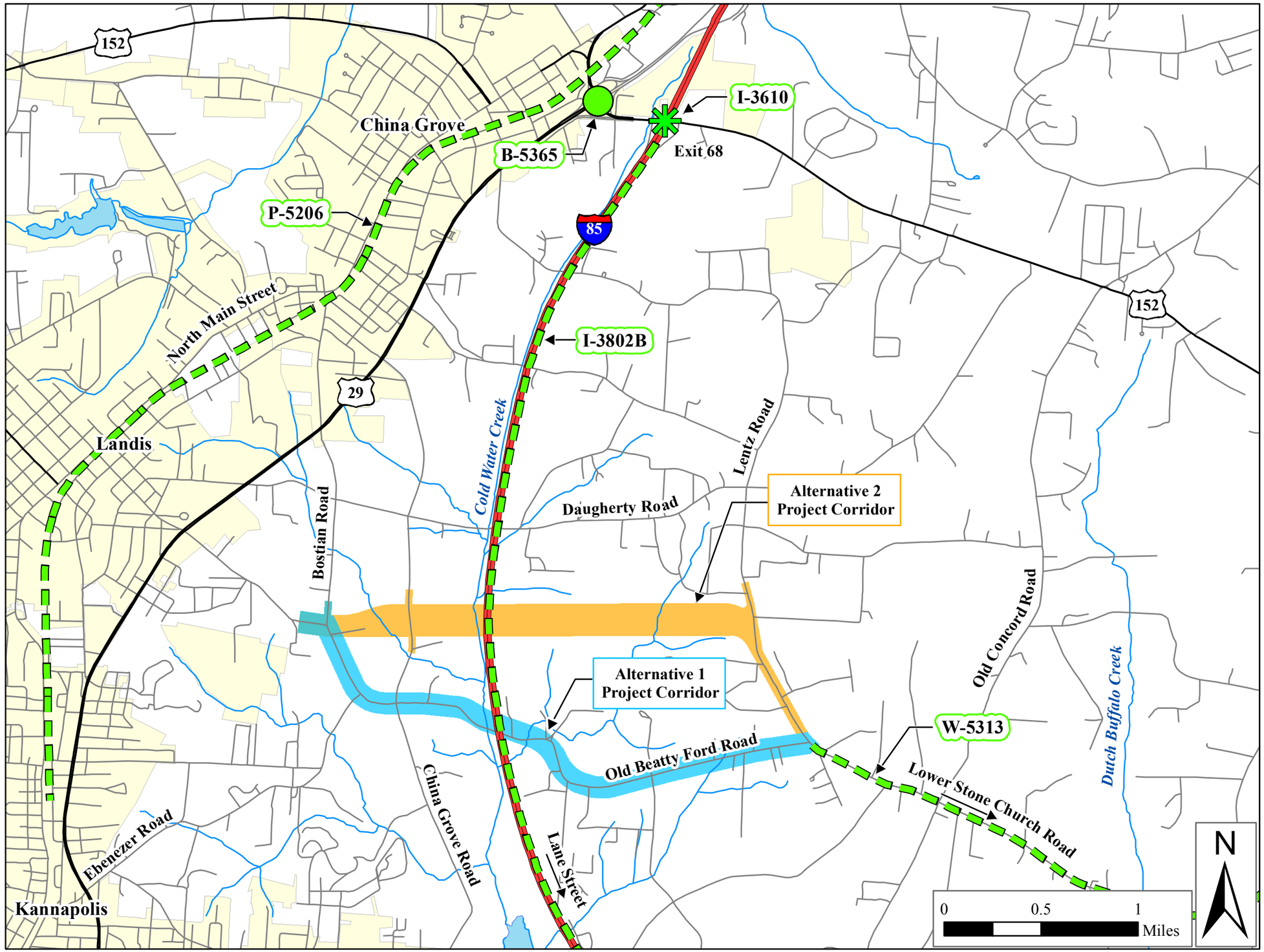
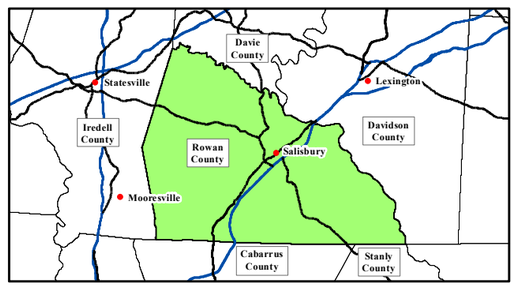
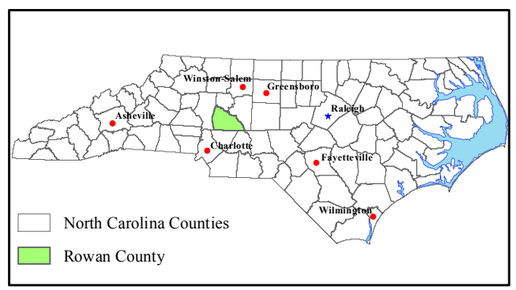


Figure 4 - Other TIP Projects

- Alternative 1 Project Corridor
- Alternative 2 Project Corridor
- Municipal Boundary
- Water Body
- Stream or Creek
- TIP Project
- Interstate
- Major Road
- Road
- TIP Interchange Improvement Project
- TIP Bridge Replacement Project

Map Sources:
North Carolina Department of Transportation
Rowan County
NC One Map
ICA Engineering





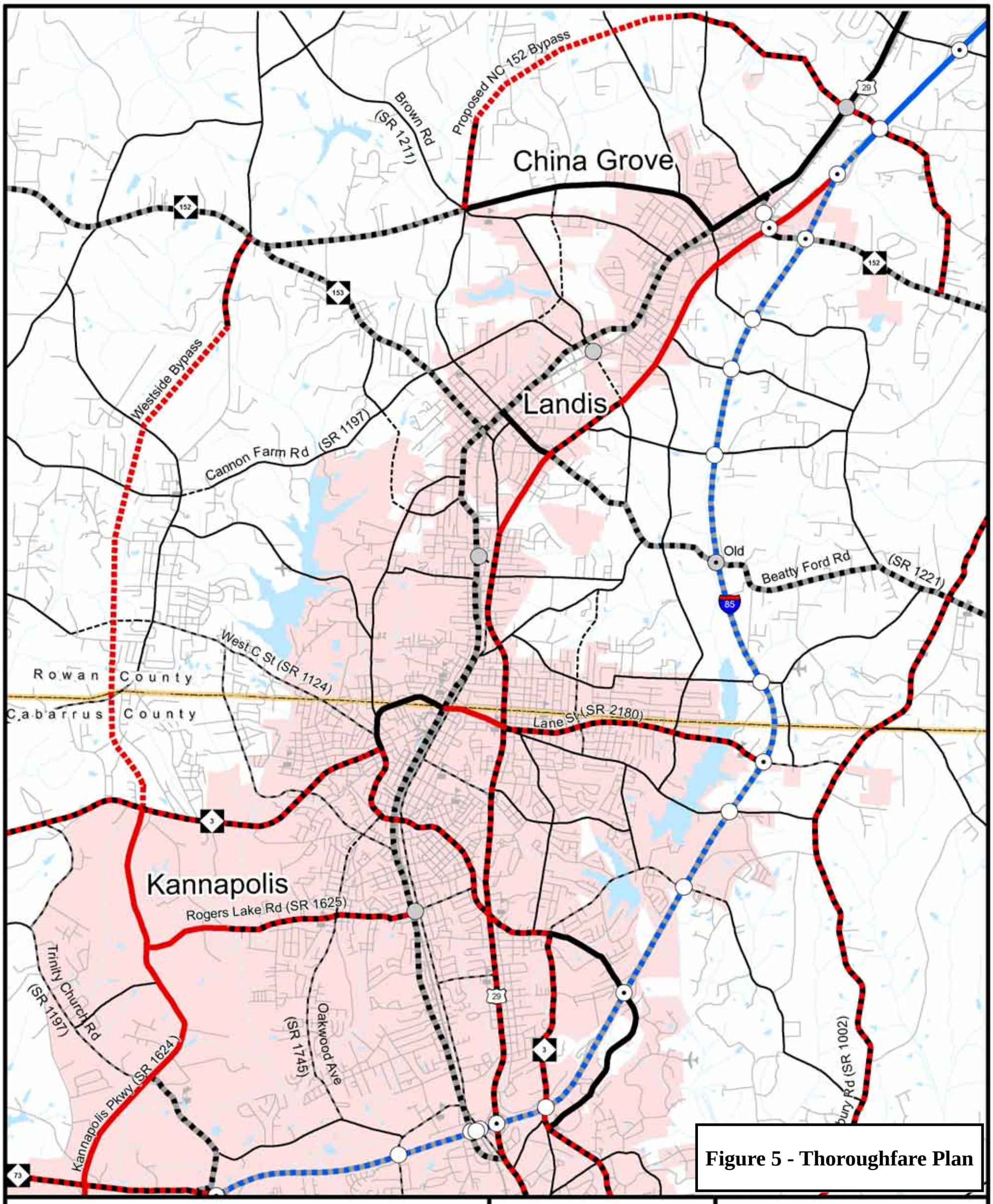
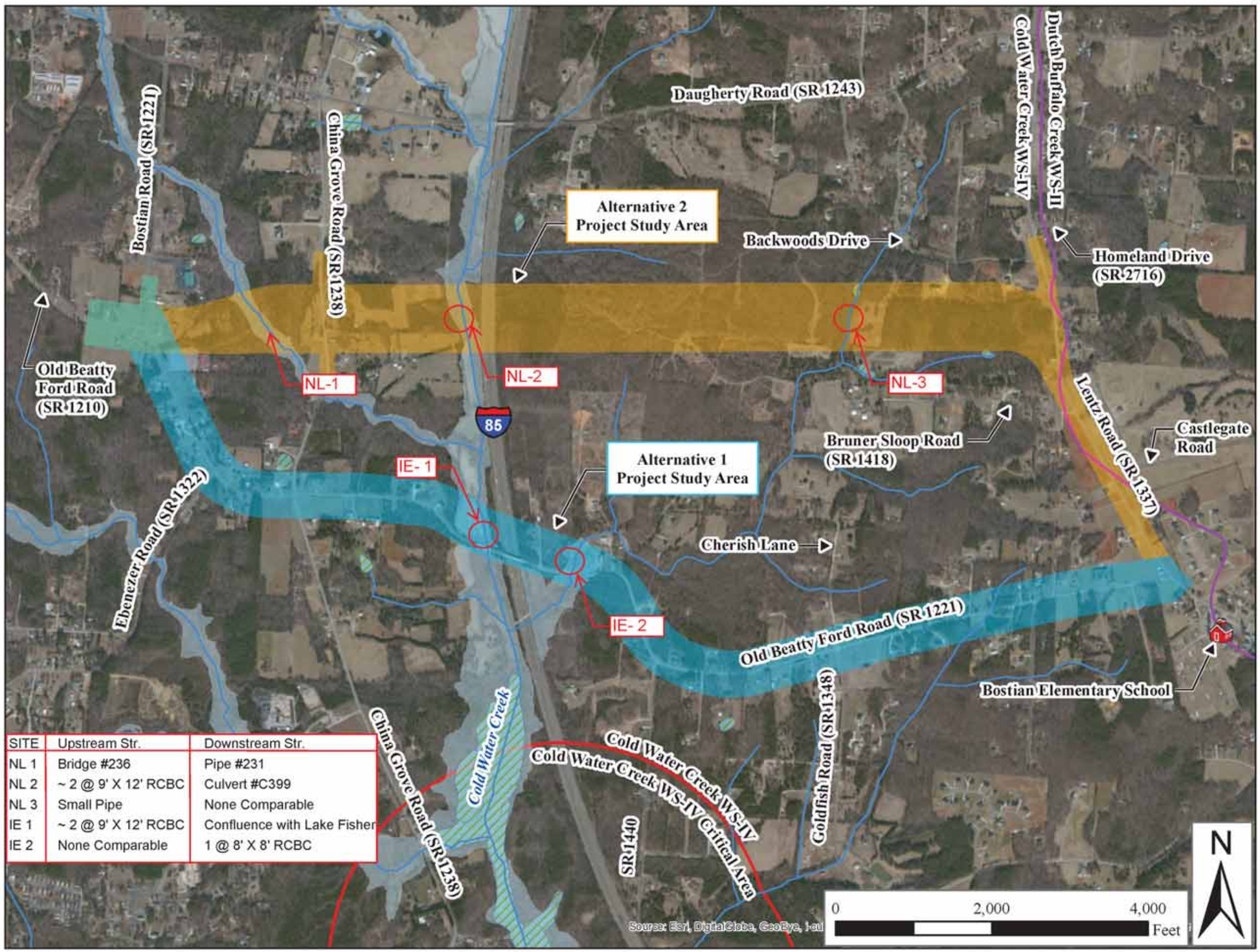


Figure 5 - Thoroughfare Plan

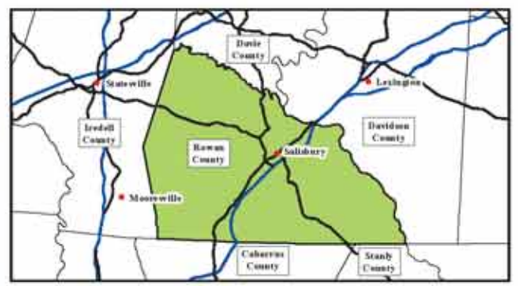
Figure 6 - Proposed Structures

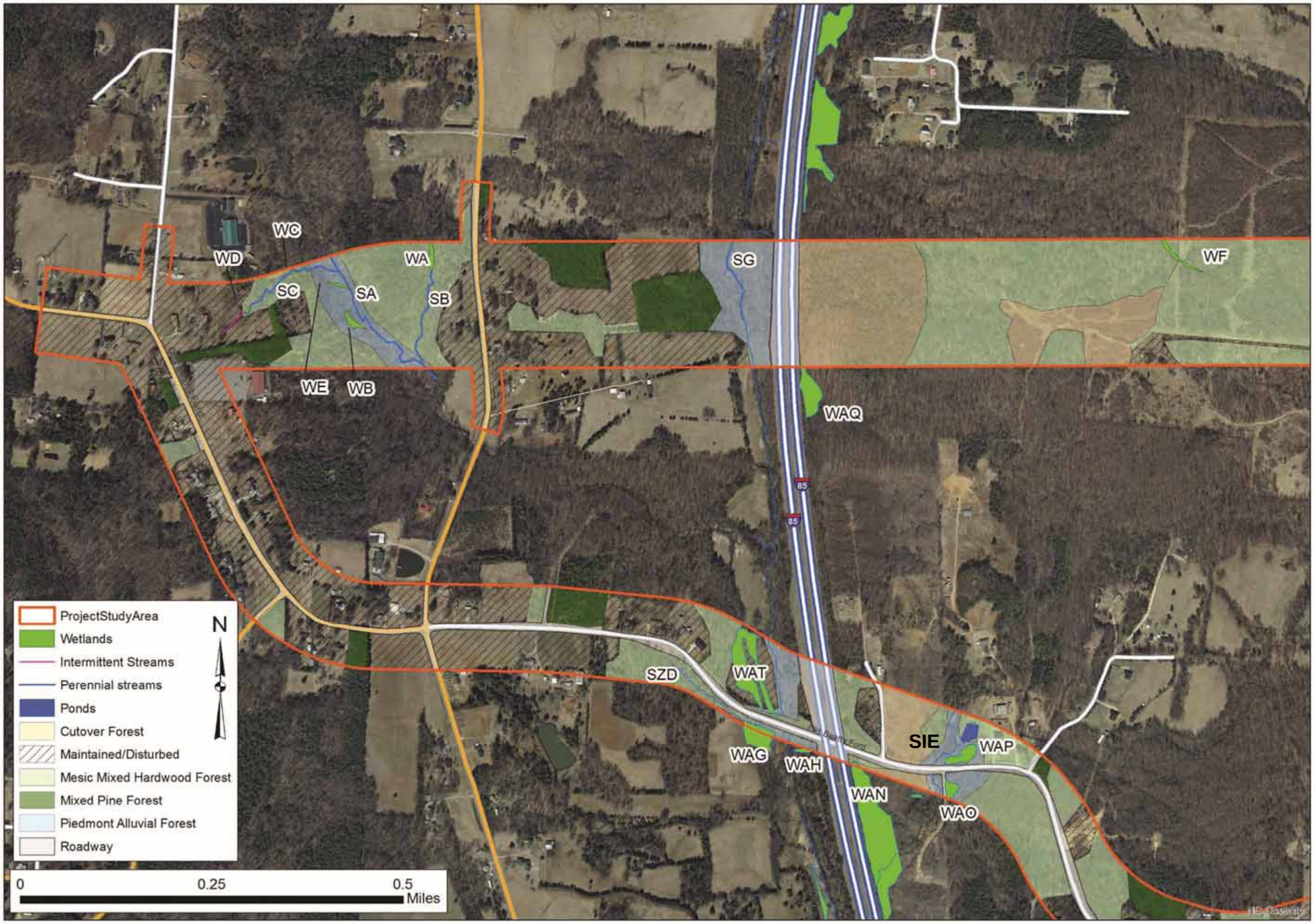


SITE	Upstream Str.	Downstream Str.
NL 1	Bridge #236	Pipe #231
NL 2	~ 2 @ 9' X 12' RCBC	Culvert #C399
NL 3	Small Pipe	None Comparable
IE 1	~ 2 @ 9' X 12' RCBC	Confluence with Lake Fisher
IE 2	None Comparable	1 @ 8' X 8' RCBC

- Alternative 1 Project Study Area
- Alternative 2 Project Study Area
- National Wetland Inventory
- Floodplain
- Water Supply Watershed Critical Area
- Water Supply Watershed Boundary
- Stream or Creek
- School
- Major Hydraulic Structure

Map Sources:
North Carolina Department of Transportation
NC Floodplain Mapping Program
NC One Map
ESRI ArcGIS Online World Imagery
ICA Engineering





The Catena Group

Date: January 2014

Scale: As Shown

Job No.: 6182

Title:

W-5516 Old Beatty Ford Road

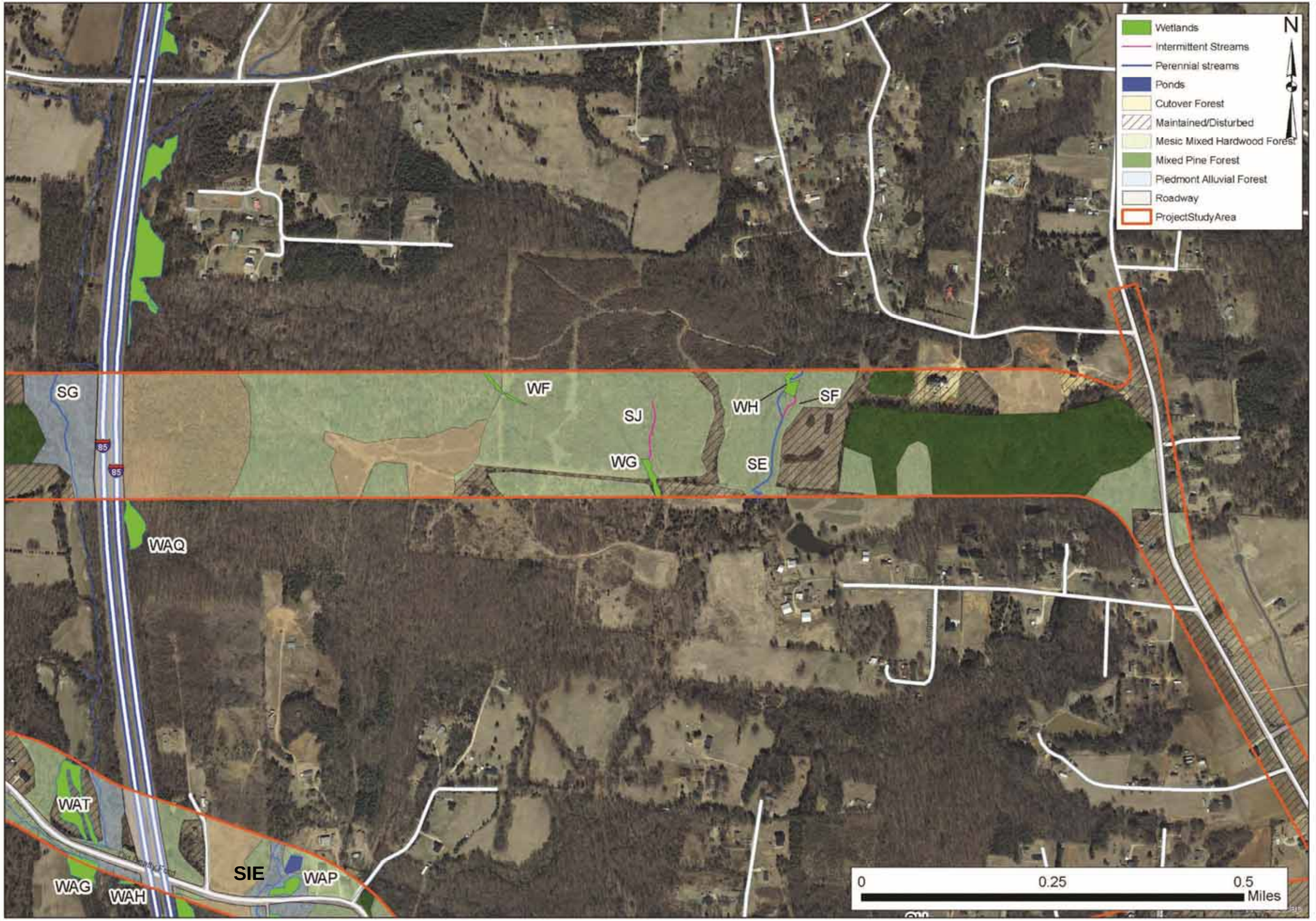
Natural Communities Map

Rowan County, NC

Client:

Figure

7.1



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Date: January 2014

Scale: As Shown

Job No.: 6182

Title:

W-5516 Old Beatty Ford Road

Natural Communities Map

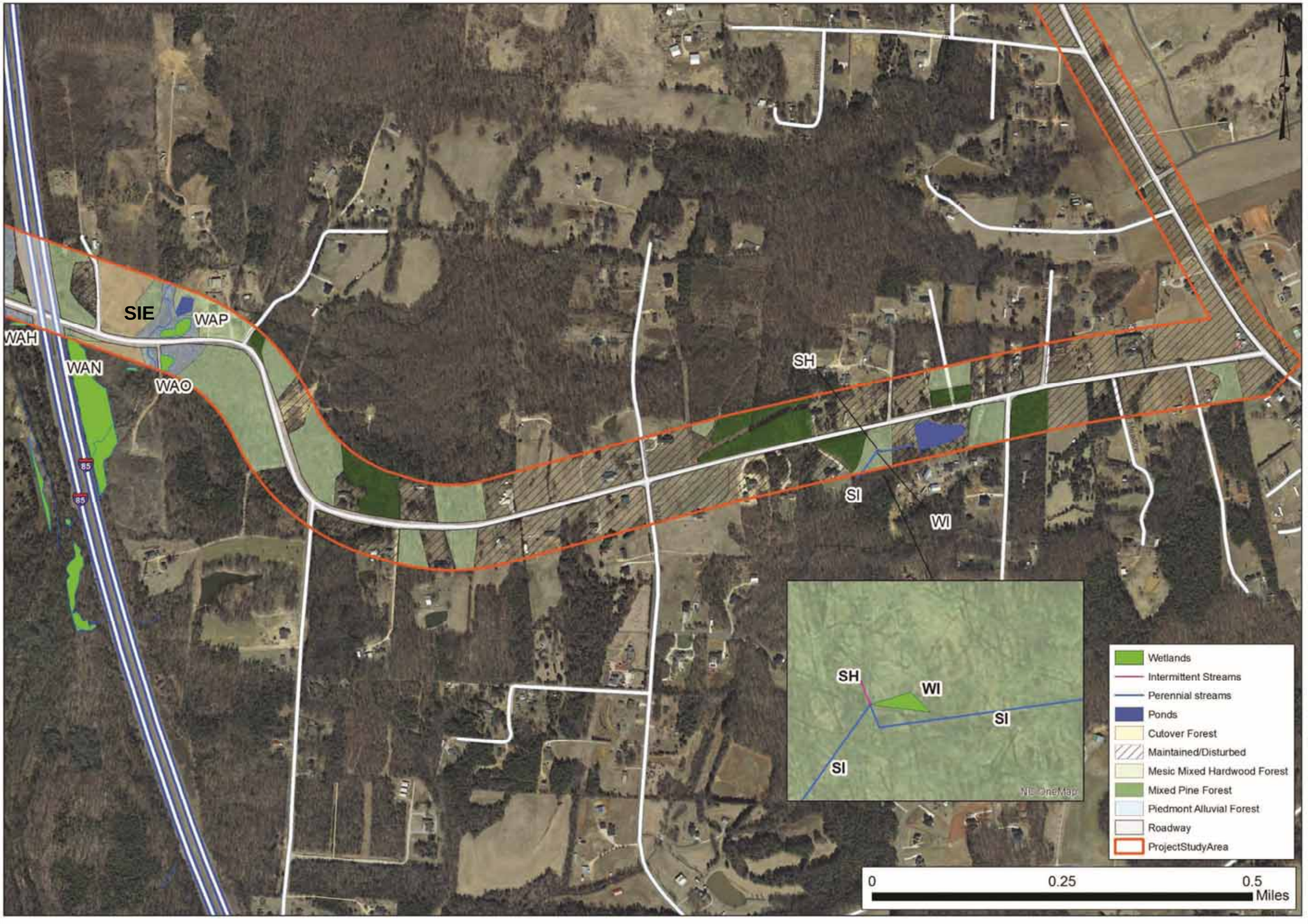
Rowan County, NC

Client:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

Figure

7.2



The Catena Group

Date: January 2014

Scale: As Shown

Job No.: 6182

Title:

W-5516
Old Beatty Ford Road

Natural Communities Map

Rowan County, NC

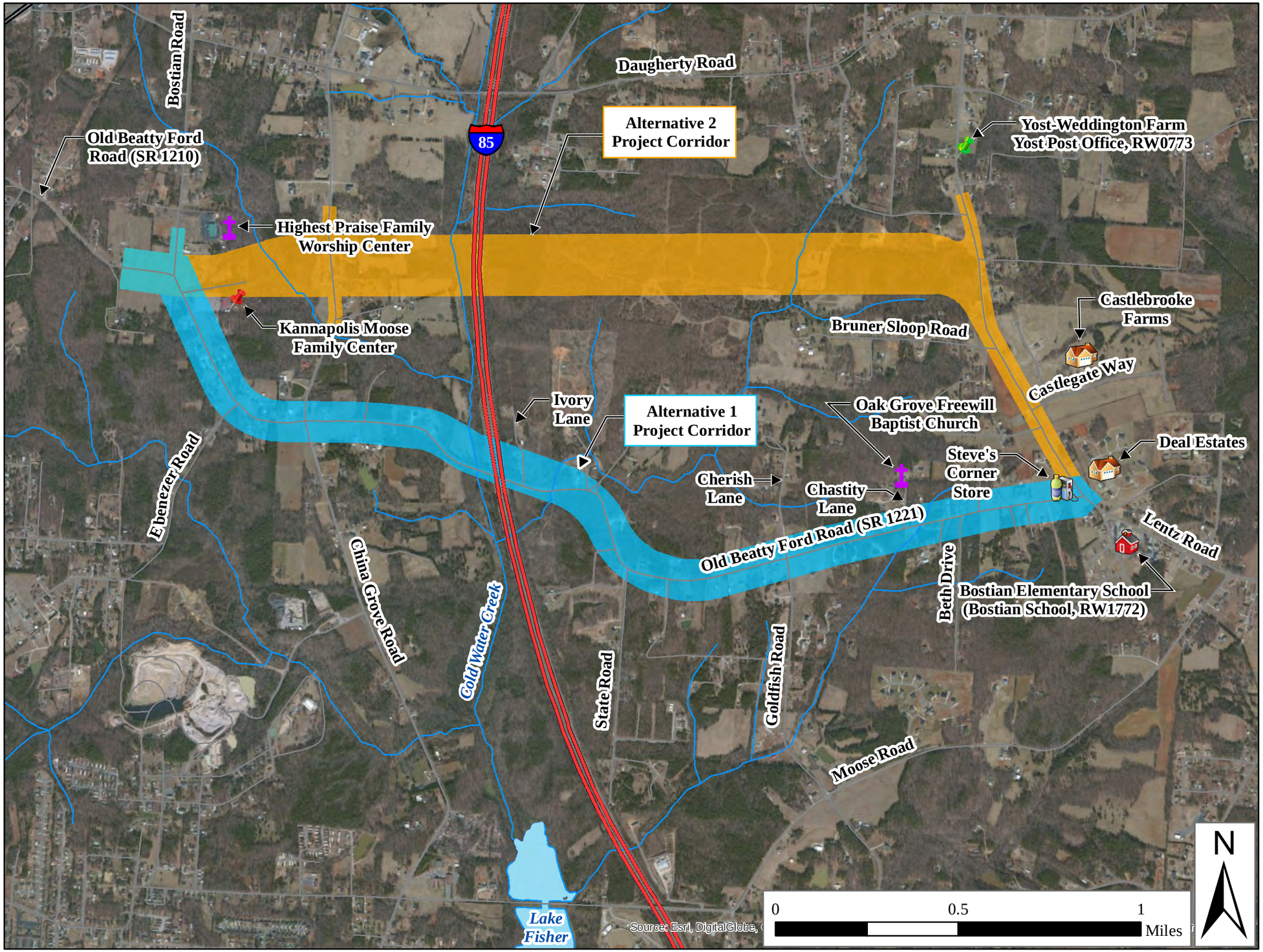
Client:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Figure

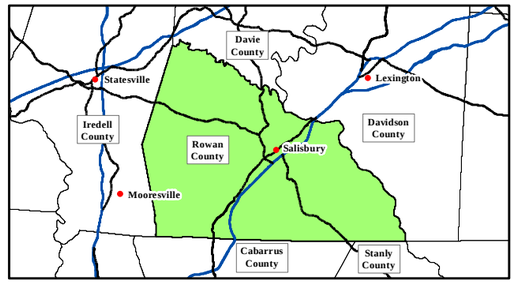
7.3

Figure 8 - Community Resources



- Alternative 1 Project Corridor
- Alternative 2 Project Corridor
- Water Body
- Stream or Creek
- Interstate
- Residential Subdivision
- Place of Worship
- Kannapolis Moose Family Center
- Steve's Corner Store
- Bostian Elementary School
- Yost Post Office

Map Sources:
North Carolina Department of Transportation
Rowan County
NC One Map
ICA Engineering



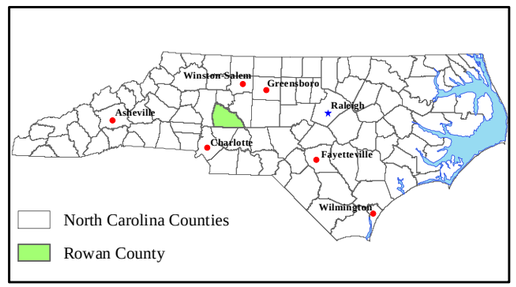
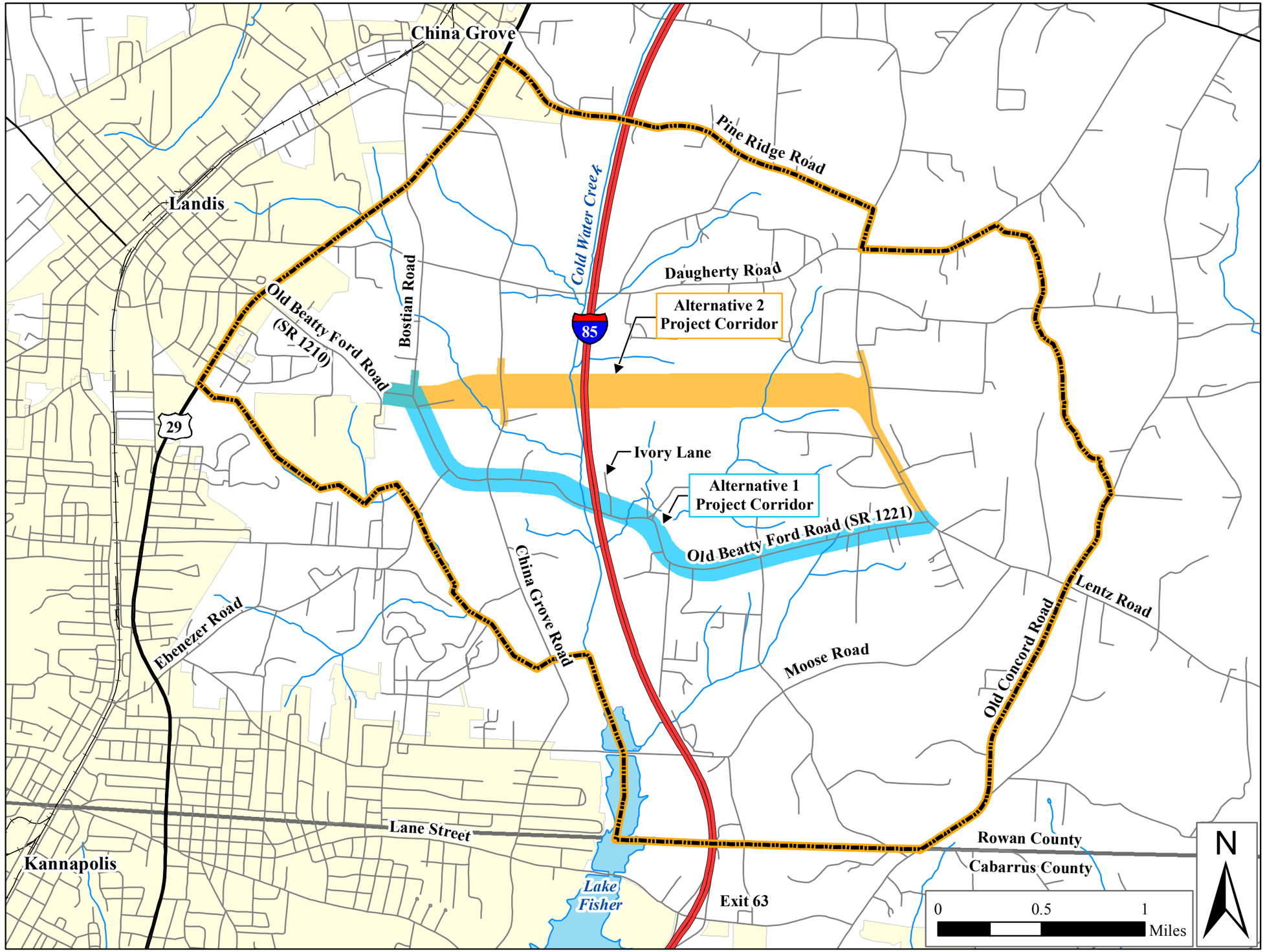
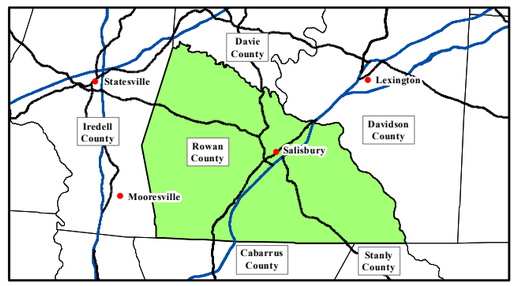


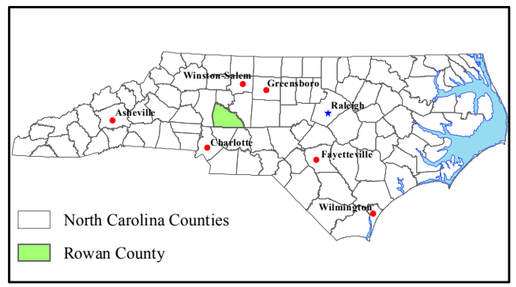
Figure 9 - Future Land Use Study Area (FLUSA)



- Future Land Use Study Area (FLUSA)
- Alternative 1 Project Corridor
- Alternative 2 Project Corridor
- Municipal Boundary
- County Boundary
- Water Body
- Stream or Creek
- Interstate
- Major Road
- Road

Map Sources:
North Carolina Department of Transportation
Rowan County
US Census Bureau
NC One Map
ICA Engineering





APPENDIX A

Comments Received from Federal and State Agencies and Regional and Local Governments

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

REPLY TO
ATTENTION OF

September 30, 2013

Regulatory Division/1200A

Action ID: SAW-2013-01905

Mr. Brett Abernathy, P.E.
NC DOT Division 9
375 Silas Creek Parkway
Winston-Salem, North Carolina 27127

Dear Mr. Abernathy:

Reference is made to your letter of September 25, 2013, regarding the relocation of Old Betty Ford (SR 1221) from SR 1210 / SR 1221 to Lentz Road (SR 1337) in Rowan County, North Carolina. The letter requested a review of the information provided and comments with regard to the interests of our agency.

We have reviewed the subject documents and determined that, based upon a review of the information provided and available maps, construction of the project is likely to impact streams and wetlands of the jurisdictional waters of Cold Water Creek which is a tributary of the Rocky River, and accordingly, would impact jurisdictional waters of the United States which are subject to our regulatory authority pursuant to Section 404 of the Clean Water Act. Therefore, please be aware that any discharge of excavated or fill material into waters of the United States and/or any adjacent wetlands will require Department of the Army (DA) permit authorization. The type of DA authorization required (i.e., general or individual permit) will be determined by the location, type, and extent of jurisdictional area impacted by the project, and by the project design and construction limits.

Should you have any further questions related to DA permits for this project, please contact me at 919-554-4884, extension 25.

Sincerely,

John Thomas
Regulatory Project Manager,
Raleigh Field Office

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

April 28, 2014

John F. Sullivan, III, P.E.
Division Administrator
North Carolina Division Office
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

Dear Mr. Sullivan:

Thank you for your letter requesting our review of the transportation conformity determinations for the 2008 8-hour ozone and carbon monoxide (CO) standards for the new 2040 Long Range Transportation Plans (LRTPs) and reaffirmed/amended Fiscal Year (FY) 2012-2018 Transportation Improvement Programs (TIPs) for the Charlotte Regional Transportation Planning Organization (CRTPO); the Gaston-Cleveland Lincoln Metropolitan Planning Organization (GCLMPO); the Cabarrus-Rowan Metropolitan Planning Organization (CRMPO); and the FY 2012-2018 TIP for the donut portion of Union County located in the North Carolina portion of the Charlotte bi-state nonattainment area. As allowed by the Transportation Conformity Rule, the South Carolina portion of this nonattainment area implements transportation conformity independent of the North Carolina portion of this area.

On June 20, 2013, the United States Environmental Protection Agency approved a maintenance plan, known as a "limited maintenance plan," for the Mecklenburg County, North Carolina CO maintenance area. This limited maintenance plan has a 2015 horizon year. Because of the approved limited maintenance plan, the CRTPO no longer has to complete a regional emissions analysis for the CO standard pursuant to 40 Code of Federal Regulations (CFR) 93.109(e). However, all other transportation conformity requirements under 40 CFR 93.109(b) continue to apply. We have completed our review, and recommend a finding of conformity for the 2008 8-hour ozone and CO standards for the new 2040 LRTPs and the reaffirmed/amended FY 2012 -2018 TIPs.

On August 15, 1997, and subsequently on July 1, 2004, the EPA published revisions related to the "Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act," or Transportation Conformity Rule (40 CFR Part 93). These revisions outline the criteria that must be met for the 8-hour ozone standard. The EPA has reviewed the conformity determinations related to the 2008 8-hour ozone and CO standards for the new 2040 LRTPs and the reaffirmed/amended FY 2012-2018 TIPs, and has concluded that all of the criteria, including those outlined in the July 1, 2004, conformity rule revision entitled, "Transportation Conformity Rule Amendments: Conformity Amendments for New 8-hour Ozone and PM2.5 National Ambient Air Quality Standards, Response to March 1999, Court Decision and Additional Rule Changes," (69 FR 40004) have been met.

The EPA has considered this conformity determination in light of the current status of the Clean Air Interstate Rule (CAIR). The EPA notes that the District of Columbia (D.C.) Circuit issued a decision on July 11, 2008 vacating CAIR. North Carolina v. EPA, 531 F.3d 896 (D.C. Cir. 2008). On September 24, 2008, the EPA and other parties in the case filed motions for rehearing asking the D.C. Circuit to reconsider its decision in the case. On December 23, 2008, the court granted EPA's motion for rehearing to the extent it agreed to remand CAIR without vacating it. However, the court made no other changes to the July 11, 2008 opinion, remanding the case to the EPA for further rulemaking consistent with this opinion. Therefore, the CAIR rule remained in place, but the EPA was required to promulgate another rule consistent with the court's July 11, 2008 opinion.

On August 8, 2011, (76 FR 48208) the EPA finalized the Cross State Air Pollution Rule (CSAPR) as replacement for the remanded CAIR rule. The final rule was effective on October 7, 2011.

On December 30, 2011, the D.C. Circuit Court stayed the implementation of CSAPR pending its review of the rule. The Court also ruled that the EPA was expected to continue administering the CAIR pending the Court's resolution of the petitions for review of CSAPR.

On August 21, 2012, the D.C. Circuit Court issued its decision on CSAPR. The Court vacated the rule and the associated federal implementation plans. The Court further ruled that the EPA must continue to administer CAIR pending the promulgation of a valid replacement. Therefore, CAIR remains in place. (EME Homer City Generation v. EPA, No. 11-1302 (D.C. Cir))

Thank you again for the opportunity to review the conformity determinations for the 2008 8-hr ozone and CO standards for the new 2040 LRTPs and reaffirmed/amended FY 2012-2018 TIPs for the CRTPO, the GCLMPO, the CRMPO and the FY 2012-2018 TIP for the donut portion of Union County located in the North Carolina portion of the Charlotte bi-state nonattainment area. If you have any questions regarding this letter, please contact Dianna B. Smith of the EPA Region 4 staff at (404) 562-9207.

Sincerely,

Katy R. Lusky
Chief
Air Quality Modeling
and Transportation Section

cc: Eddie Dancausse, FHWA NC
Loretta Barren, FHWA NC
Anne Galamb, NCDNER
Heather Hildebrandt, NCDOT
Keith Melton, FTA Region 4

U.S. Department of Transportation
Federal Highway Administration

North Carolina Division

310 New Bern Avenue, Suite 410
Raleigh, NC 27601
(919) 856-4346
(919) 747-7030
http://www.fhwa.dot.gov/ncdiv/

May 2, 2014

In Reply Refer To:
HDA-NC

Mr. Anthony J. Tata
Secretary
North Carolina Department of Transportation
1501 Mail Service Center
Raleigh, NC 27699-1501

Dear Secretary Tata:

We reviewed the Metrolina Area Transportation Conformity Determination Report for the:

- Cabarrus Rowan (CR) Metropolitan Planning Organization (MPO), Charlotte Region Transportation Planning Organization (CRTPO) and the Gaston Cleveland Lincoln (GCL) MPO 2040 Metropolitan Transportation Plans (MTPs)
- CRMPO, CRTPO and the GCLMPO FY 2012-2018 Transportation Improvement Programs (TIPs)
- Projects from the FY 2012-2018 State TIP for the county donut area of Union

The CRMPO, the CRTPO and the GCLMPO made conformity determinations on the 2040 MTPs/FY 2012-2018 TIPs and the North Carolina Department of Transportation made a conformity determination on projects from the FY 2012-2018 State TIP on the following dates:

- CRMPO April 23, 2014
- CRTPO on April 16, 2014
- GCLMPO on March 27, 2014
- The NCDOT (for the county donut area of Union) on April 1, 2014

The CRMPO, the CRTPO and the GCLMPO FY 2012-2018 TIPs are direct subsets of the 2040 MTPs.

The Federal Highway Administration and the Federal Transit Administration reviewed these documents. We also coordinated our review with the Environmental Protection Agency (EPA) Region 4 and enclosed their comments to this letter.

Based on our review and the comments provided to us by the EPA, we find that the following conform to the purpose of the State Implementation Plan (or interim emissions tests, in areas where no State Implementation Plan is approved or found adequate by EPA) in accordance with 40 CFR Part 93:

- The CRMPO, the CRTPO and the GCLMPO 2040 MTPs
- The CRMPO, the CRTPO and the GCLMPO FY 2012-2018 TIPs
  - *Including CRMPO TIP amendments for projects W-5516 and U-4910A&B*
- Projects from the FY 2012-2018 State TIP for the county donut area of Union

Sincerely,

For John F. Sullivan, III, P.E.
Division Administrator

Correspondence from the US Environmental Protection Agency

From: Militscher, Chris [mailto:Militscher.Chris@epa.gov]
Sent: Monday, November 04, 2013 10:13 AM
To: jbabernathy@ncdot.gov; Reep, Mark
Cc: Mueller, Heinz; Militscher, Chris; John Thomas
Subject: W-5516; Relocation of Old Betty Ford Road, Rowan County

Mr. Abernathy and Mr. Reep: The 9/25/13 scoping notice for the proposed 3.1 mile project indicates that the NCDOT is proposing to prepare a Federally-funded Environmental Assessment (EA). The scoping notice does not indicate if this proposed project will be placed in the NEPA/Section 404 Merger process. From the information provided, it appears that the proposed project alternatives have several stream crossings (from Figure 2; Environmental Features Map) that might require an Individual Permit by the US Army Corps of Engineers.

1. EPA recommends that strict avoidance and minimization measures to water supply watershed streams (i.e., Cold Water Creek & Dutch Buffalo Creek) be made.
2. EPA requests a copy of the EA when it becomes available.

Thank you for the opportunity to comment and please call me should you have any questions.

Christopher A. Militscher, REM, CHMM
USEPA Region 4 NEPA Program Office
AFC -13th floor
61 Forsyth Street, SW
Atlanta, GA 30303-8960
404-562-9512

North Carolina Department of Public Safety

Emergency Management

Pat McCrory, Governor
Frank L. Perry, Secretary

Michael A. Sprayberry, Director

October 7, 2013

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

Subject: Intergovernmental Review State Number: 14-E-4220-0143
Old Beatty Ford Road, Rowan County

As requested by the North Carolina State Clearinghouse, the North Carolina Department of Crime Control and Public Safety Division of Emergency Management Office of Geospatial and Technology Management (GTM) reviewed the proposed project listed above and offer the following comment:

The project includes crossings of the Special Flood Hazard Areas of Cold Water Creek, Cold Water Creek Tributary 1, and Town Branch in Rowan County. See Flood Insurance Rate Map 5635. North Carolina Executive Order 123 directs NCDOT to coordinate with and follow the FHWA floodplain management requirements which are found in the Federal Executive Order 11988. To ensure NCDOT compliance with EO 11988 and 44 CFR the NCDOT Hydraulics Section and the NC Floodplain Mapping Program have a Memorandum Of Agreement (MOA). Please coordinate with Mr. David Chang, NCDOT Hydraulics, to determine if this project is eligible to fall within the MOA.

Thank you for your cooperation and consideration. If you have any questions concerning the above comments, please contact Dan Brubaker, P.E., CFM, the NC NFIP Engineer at (919) 825-2300, by email at dan.brubaker@ncdps.gov or at the address shown on the footer of this documents.

Sincerely,

Kenneth W. Ashe, P.E., CFM
Assistant Director
Geospatial and Technology Management Office

cc: John Gerber, NFIP State Coordinator
Dan Brubaker, NFIP Engineer

MAILING ADDRESS:
4218 Mail Service Center
Raleigh NC 27699-4218
www.ncem.org

GTM OFFICE LOCATION:
4105 Reedy Creek Road
Raleigh, NC 27607
Telephone: (919) 825-2341
Fax: (919) 825-0408

Steven W. Troxler
Commissioner

North Carolina Department of Agriculture and Consumer Services
Agricultural Services

Keith Larick
Environmental Programs

October 11, 2013

Zeke Creech
NC State Clearinghouse
N.C. Department of Administration
1301 Mail Service Center
Raleigh, North Carolina 27699-1301

State #: 14-E-4220-0143
RE: Improvements to Old Beatty Ford Road in Rowan County

Dear Mr. Creech:

The proposed route options for improvements to Old Beatty Ford Road in Rowan County have the potential of irreversible damage and increases the loss of state important farm and forest land in the immediate area. The NCDOT is encouraged to give due consideration of routing and / or designs that would reduce the potential of negative environmental and economic impacts on farm and forest land in the proposed work area and choose a route that limits these damages. Preference should be given to using the existing land resources already being used for the existing Old Beatty Ford Road route.

Farm and forest lands are natural resources with no mitigation process. These agribusiness resources cannot be replaced nor relocated once converted to other uses. Improvements to Old Beatty Ford Road should preference designs that reduce potential negative impacts on farms and forest land. These plans should also negate the formation of incompatible and inaccessible land units that degrades agricultural production capabilities associated with the area's farm and agribusinesses.

Agricultural production incomes from locally grown products have a considerable multiplier influence. It is estimated that for every 40 acres converted from agricultural production, one agribusiness job and its associated economic activity is lost indefinitely. Furthermore the costs of community services used by agribusiness are usually minimal and therefore are net contributors to county budgets. Both current and future cost for the conversion land from production agriculture is needed for an accurate evaluation which is not accurately recognized by the Farmland Conversion Impact Rating using Form AD 1006.

Based on the secondary, cumulative, and direct impacts, this project has potential to adversely impact the agricultural environmental and economic resources. The total negative impact on the environmental and agribusiness economy will be proportionately related to the total acres of farm and forest land taken out of production.

Respectfully,

Keith Larick
Environmental Programs Specialist

E-mail: keith.larick@ncagr.gov
1001 Mail Service Center, Raleigh, North Carolina, 27699-1001 ● (919) 707-3070 ● Fax (919) 716-0105

USDA
United States Department of Agriculture
Natural Resources Conservation Service
4407 Bland Road, Suite 117
Raleigh, North Carolina 27609

Milton Cortés, Assistant State Soil Scientist
Telephone No.: (919) 873-2171
Fax No.: (919) 873-2157
E-mail: milton.cortes@nc.usda.gov

April 25, 2014

Brett Abernathy, PE, PLS
Division Project Manager
NCDOT Division 9
375 Silas Creek Parkway
Winston-Salem, NC 27127

Mr. Abernathy;

The following information is in response to your review request in W-5516, Old Beatty Ford Rd, Rowan Co.

Projects are subject to Farmland Protection Policy Act (FPPA) requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

Farmland means prime or unique farmlands as defined in section 1540(c)(1) of the Act or farmland that is determined by the appropriate state or unit of local government agency or agencies with concurrence of the Secretary to be farmland of statewide of local importance.

“Farmland" does not include land already in or committed to urban development or water storage. Farmland ``already in" urban development or water storage includes all such land with a density of 30 structures per 40-acre area. Farmland already in urban development also includes lands identified as ``urbanized area" (UA) on the Census Bureau Map, or as urban area mapped with a ``tint overprint" on the USGS topographical maps, or as ``urban-built-up" on the USDA Important Farmland Maps. See over for more information.

The area in question meets one or more of the above criteria for Farmland. Farmland area will be affected or converted. Enclosed is the Farmland Conversion Impact Rating form AD1006 with PARTS II, IV and V completed by NRCS. The corresponding agency will need to complete the evaluation, according to the Code of Federal Regulation 7CFR 658, Farmland Protection Policy Act.

If you have any questions, please contact me at number above.

Sincerely,

Milton Cortes
Assistant State Soil Scientist
cc. Mark Reep, PE, ICA Engineering, Inc.

Projects and Activities Subject to FPPA

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.

Assistance from a Federal agency includes:

- Acquiring or disposing of land.
- Providing financing or loans.
- Managing property.
- Providing technical assistance

Activities that may be subject to FPPA include:

- State highway construction projects, (through the Federal Highway Administration)
- Airport expansions
- Electric cooperative construction projects
- Railroad construction projects
- Telephone company construction projects
- Reservoir and hydroelectric projects
- Federal agency projects that convert farmland
- Other projects completed with Federal assistance.

Activities not subject to FPPA include:

- Federal permitting and licensing
- Projects planned and completed without the assistance of a Federal agency
- Projects on land already in urban development or used for water storage
- Construction within an existing right-of-way purchased on or before August 4, 1984
- Construction for national defense purposes
- Construction of on-farm structures needed for farm operations
- Surface mining, where restoration to agricultural use is planned
- Construction of new minor secondary structures such as a garage or storage shed.

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 1/23/14
Name of Project W-5516 Relocation of O. Beatty Ford Rd	Federal Agency Involved Federal Highway Administration
Proposed Land Use Roadway	County and State Rowan County, NC
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 04/21/2014 — Person Completing Form:

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES	NO	Acres Irrigated	Average Farm Size
	☑	☐	none	118 acres

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount of Farmland As Defined in FPPA
Corn	Acres: 85.7 % 286,887 acres	Acres: 82 % 173,687 acres

Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS
Rowan Co. NC LESA	None	04/25/2014

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Alt. 1	Alt. 2	Site C	Site D
A. Total Acres To Be Converted Directly	7.3	19.2		
B. Total Acres To Be Converted Indirectly	0.0	0.0		
C. Total Acres In Site	7.3	19.2		
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	5.2	11.20		
B. Total Acres Statewide Important or Local Important Farmland	2.10	5.20		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0042	0.0094		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	73	73		
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	70	70		

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	14	14		
2. Perimeter In Non-urban Use	(10)	10	10		
3. Percent Of Site Being Farmed	(20)	0	0		
4. Protection Provided By State and Local Government	(20)	0	0		
5. Distance From Urban Built-up Area	(15)	NA	NA		
6. Distance To Urban Support Services	(15)	NA	NA		
7. Size Of Present Farm Unit Compared To Average	(10)	0	0		
8. Creation Of Non-farmable Farmland	(10)	0	10		
9. Availability Of Farm Support Services	(5)	5	5		
10. On-Farm Investments	(20)	20	20		
11. Effects Of Conversion On Farm Support Services	(10)	0	0		
12. Compatibility With Existing Agricultural Use	(10)	2	9		
TOTAL SITE ASSESSMENT POINTS	160	51	68		
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	70	70		
Total Site Assessment *(From Part VI above or local site assessment)*	160	51	68		
TOTAL POINTS ***(Total of above 2 lines***	260	121	138		

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

January 28, 2014

Mr. Larry Hendrix
District Conservationist
USDA Natural Resources Conservation Service
2727-C Old Concord Road
Salisbury, NC 28146-8388

SUBJECT: Farmland Conversion Impact Rating for the Federal Environmental Assessment for the Relocation of Old Beatty Ford Road (SR 1221) from Bostian Road (SR 1210/SR 1220) to Lentz Road (SR 1337), Rowan County, TIP No. W-5516

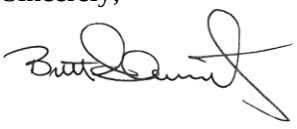
Dear Mr. Hendrix:

The NCDOT Division 9 Office is preparing a Federal Environmental Assessment for the proposed relocation of Old Beatty Ford Road (SR 1221) from its intersection with Bostian Road (SR 1210/1221) to Lentz Road (SR 1337) in Rowan County. The project will construct a two-lane road on new location with a new grade separation over I-85 near Kannapolis, Landis, and China Grove. Attachments are included with more detailed project information.

This is being forwarded to you in compliance with the Federal Farmland Protection Policy Act (FPPA) of 1981. Consistent with the Act, we are submitting Form AD-1006 and attachments for an assessment of potential farmland impacts. As directed in the instructions for the AD-1006 form, we have attached four (4) copies of each form and mapping for your review and assessment.

If you have any questions regarding this correspondence, please contact me at jbabernathy@ncdot.gov or by telephone at 336-747-7800. Thank you for your assistance with this project.

Sincerely,



J. Brett Abernathy, PE, PLS
Division 9 Project Manager

Attachments

cc: Leza Mundt, AICP, NCDOT Project Development & Environmental Analysis Unit

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: ROWAN

F02: HIGHWAYS AND ROADS

STATE NUMBER: 14-E-4220-0143
DATE RECEIVED: 09/30/2013
AGENCY RESPONSE: 10/25/2013
REVIEW CLOSED: 10/30/2013

MS CAROLYN PENNY
CLEARINGHOUSE COORDINATOR
CC&PS - DIV OF EMERGENCY MANAGEMENT
FLOODPLAIN MANAGEMENT PROGRAM
MSC # 4719
RALEIGH NC

REVIEW DISTRIBUTION

CC&PS - DIV OF EMERGENCY MANAGEMENT
CENTRALINA COG
DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION

RECEIVED
OCT 2 2013
N.C. Floodplain Mapping Program

OCT 2013
RECEIVED
Governor's Office
DOA

PROJECT INFORMATION

APPLICANT: NCDOT
TYPE: National Environmental Policy Act Scoping

DESC: Proposed project is for relocation of Old Beatty Ford Road from its intersection with SR 1210/Bostian Road to Lentz Road. Project area is approximately 3.1 miles long.

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: John D Barbour

DATE: 07 oct 2013

OCT 2013
RECEIVED
Governor's Office
DOA

Linda Dosse

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: ROWAN

F02: HIGHWAYS AND ROADS

STATE NUMBER: 14-E-4220-0143
DATE RECEIVED: 09/30/2013
AGENCY RESPONSE: 10/25/2013
REVIEW CLOSED: 10/30/2013

MS CARRIE ATKINSON
CLEARINGHOUSE COORDINATOR
DEPT OF TRANSPORTATION
STATEWIDE PLANNING - MSC #1554
RALEIGH NC

REVIEW DISTRIBUTION

CC&PS - DIV OF EMERGENCY MANAGEMENT
CENTRALINA COG
DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION

PROJECT INFORMATION

APPLICANT: NCDOT
TYPE: National Environmental Policy Act Scoping

DESC: Proposed project is for relocation of Old Beatty Ford Road from its intersection with SR 1210/Bostian Road to Lentz Road. Project area is approximately 3.1 miles long.

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: Linda Dosse DATE: 10-4-13

Federal Aid #HSIP-1221(18) *TIP* # W-5516 *County*: Rowan

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Relocate Old Beatty Ford Road (SR 1221) from Bostian Road (SR 1210) to Lentz Road (SR 1337)

On *May 13, 2014*, representatives of the

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

Reviewed the subject project and agreed on the effects findings listed within the table on the reverse of this signature page.

Signed:

Mary Pope Furr — 5/13/2014
Representative, NCDOT — Date

5-13-14
FHWA, for the Division Administrator, or other Federal Agency — Date

Renee Gledhill-Earley — 5-13-14
Representative, HPO — Date

Federal Aid #HSIP-1221(18) *TIP* # W-5516 *County*: Rowan

Property and Status	Alternative	Effect Finding	Reasons
Bostian School (DE) Criterion A	Alt. 1 improve existing	no effect	constuction stops 150' from boundary access to school maintained during construction
	Alt. 2 new location	no effect	no constuction in area of historic property
Yost-Weddington Farm & Post Office (DE) Criterion C	Alt. 1 improve existing	no effect	out of project area
	Alt. 2 new location	no effect	no constuction in area of historic property

Initialed: NCDOT MPA FHWA DB HPO RGE

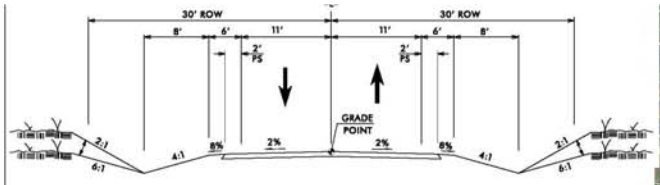
FHWA Intends to use the SHPO's concurrence as a basis for a "de minimis" finding for the following properties, pursuant to Section 4(f):

T.I.P. No. W-5516
F.A. No. HSIP-1221 (18)
WBS No. 44105.1.FD

ROWAN COUNTY

Proposed Relocation of Old Beatty Ford Road (SR 1221) From Bostian Road (SR 1210/1221) To Lentz Road (SR 1337), Rowan County

ALTERNATIVE 1



TYPICAL SECTION

LEGEND

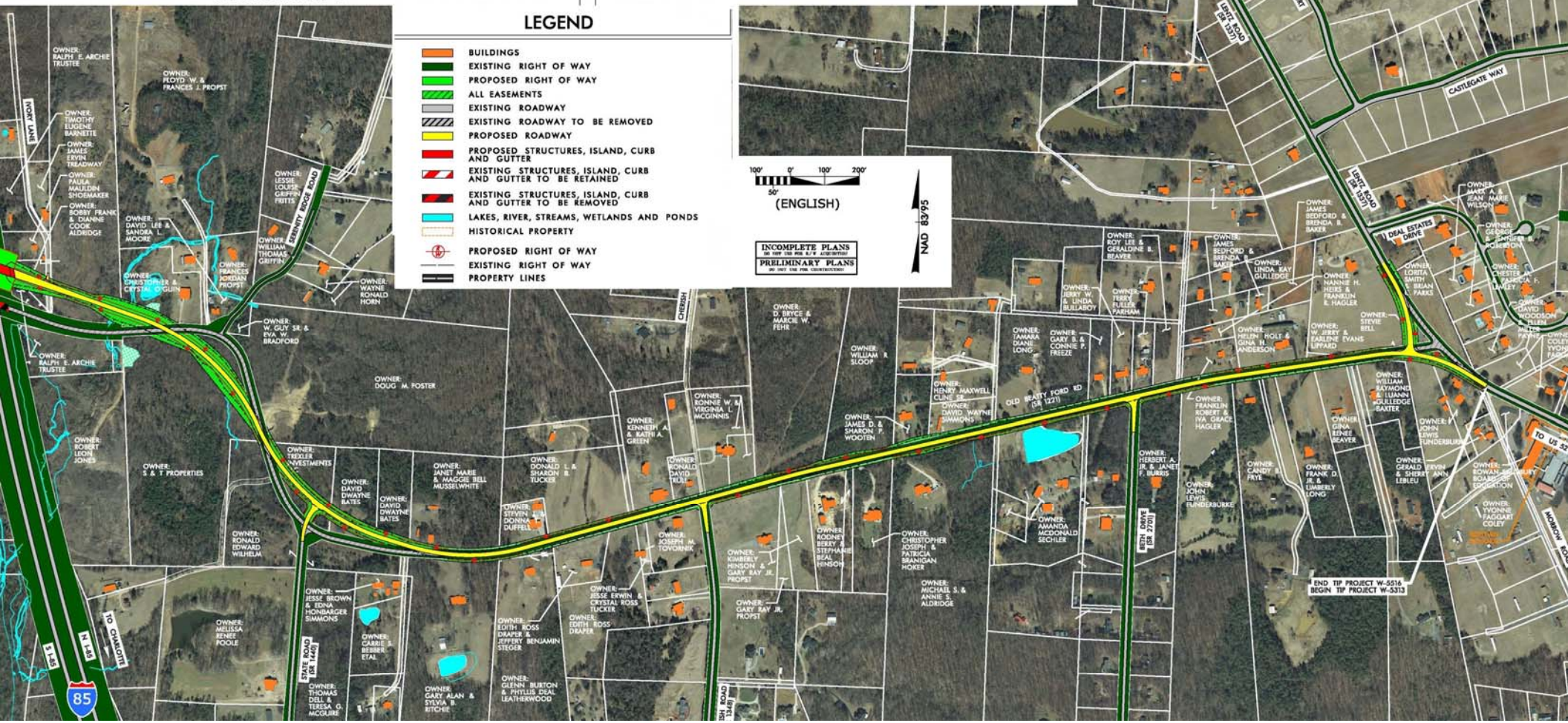
- BUILDINGS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- ALL EASEMENTS
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE REMOVED
- PROPOSED ROADWAY
- PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
- EXISTING STRUCTURES, ISLAND, CURB AND GUTTER TO BE RETAINED
- EXISTING STRUCTURES, ISLAND, CURB AND GUTTER TO BE REMOVED
- LAKES, RIVER, STREAMS, WETLANDS AND PONDS
- HISTORICAL PROPERTY
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- PROPERTY LINES

100' 0' 100' 200'
50'
(ENGLISH)

NAD 83/95

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

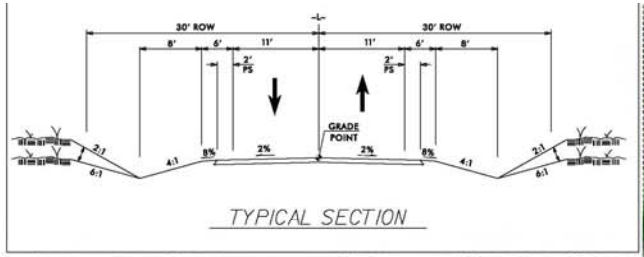


T.I.P. No. W-5516
F.A. No. HSIP-1221 (18)
WBS No. 44105.1.FD

ROWAN COUNTY

Proposed Relocation of Old Beatty Ford Road (SR 1221) From Bostian Road (SR 1210/1221) To Lentz Road (SR 1337), Rowan County

ALTERNATIVE 2



TYPICAL SECTION

100' 0' 100' 200'
50'
(ENGLISH)

INCOMPLETE PLANS
PRELIMINARY PLANS

NAD 83/95

LEGEND

- BUILDINGS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- ALL EASEMENTS
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE REMOVED
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- LAKES, RIVER, STREAMS, WETLANDS AND PONDS
- HISTORICAL PROPERTY
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- PROPERTY LINES

OWNER: HIGH BRIDGE LLC
OWNER: TRACY POWERS & JONATHAN D. EDDY
OWNER: JOHN T. & FAITH A. LIGHTFOOD
OWNER: ASHLEIGH HARRINGTON & SCOTT HOLLAND KIRKPATRICK
OWNER: GARY DAVID & LORI GAIL C. HOUGH
OWNER: RALPH LEE & MARY E. WEDDINGTON
OWNER: JERRY G. & ESTEFANA MILES
OWNER: LARRY WAYNE & BARBARA BEAVER BASINGER
OWNER: DAVID DWAYNE BASINGER
OWNER: MARK ALVIN & JOY ROBERTS LANE
OWNER: TERRY D. BASINGER
OWNER: LARRY WAYNE & BARBARA BEAVER BASINGER
OWNER: JAMES F. & TERA H. CARTER
OWNER: NORMAN R. BASINGER
OWNER: JERRY LEE & TONYA BASINGER BARRINGER
OWNER: WESLEY D. & KIMBERLY W. HOYLE
OWNER: LARMAD INC.
OWNER: L.C. BEAVER ETAL
OWNER: SHEA CASTLEBROOKE LLC
OWNER: SHEA HIGHLAND INVESTMENTS

EASTSIDE DRIVE (SR 1540)
LENTZ RD (SR 1337)
HOMELAND DRIVE (SR 2716)
BACKWOODS LANE (SR 1343)
BRUNER SLOOP ROAD (SR 1418)
DUBLIN COURT
TO US 52
CASTLEGA
LENTZ ROAD (SR 1337)
DEAL ESTATES DRIVE
OLD BEATTY FORD RD (SR 1221)
SERENITY RIDGE ROAD
TO CHARLOTTE
HOPE LANE
I-85 N
I-85 S
85

Federal Aid #HSIP-1221(18) *TIP* # W-5516 *County*: Rowan

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

Project Description: Relocate Old Beatty Ford Road (SR 1221) from Bostian Rd (SR 1210) to Lentz Road (SR 1337)

On January 7, 2014, representatives of the

- [x] North Carolina Department of Transportation (NCDOT)
- [x] North Carolina State Historic Preservation Office (NC-HPO)
- [ ] Federal Agency FHWA
- [ ] Other

Reviewed the subject project at historic architectural resources photograph review session/consultation and

All parties present agreed

- [ ] There are no properties over fifty years old within the project's Area of Potential Effects (APE).
- [x] There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's APE.
- [x] There are properties over fifty years old within the project's APE, but based on the historical information available and the photographs of each property, the properties identified as 1-15, 17-25, 28, 31-36, 38-53, 55-58, are considered not eligible for the National Register and no further evaluation of them is necessary. Photographs of these properties are attached.
- [x] There are no National Register-listed or Study Listed properties within the project's APE.
- [ ] 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.
- [x] More information is requested on properties 16, 26, 27, 29, 30, 37, 54

Signed:

Mary Pope Furr — 1.7.2014

Representative, NCDOT — Date

Renee Gledhill-Earley — 1.7.14

Representative, NC-HPO — Date

Representative, Federal Agency — Date

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

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

November 5, 2013

MEMORANDUM

TO: J. Brett Abernathy, PE, Project Manager
Division of Highway, Division 9
NC Department of Transportation

FROM: Ramona Bartos RSE for Ramona M. Bartos

SUBJECT: Relocate Old Beatty Ford Road from its Intersection with Bostian Road to Lentz Road, W-5516, Rowan County, ER 13-2317

Thank you for your letter of September 25, 2013, concerning the above referenced information. We apologize for the delay in our response.

After reviewing the information provided, and based on the physical location, we have determined that there is a high probability that prehistoric and historic archaeological features associated with past residents may exist within the project area. We therefore recommend that if any earth moving activities are scheduled to take place, that a comprehensive archaeological survey be conducted by an experienced archaeologist to identify and evaluate the significance of any archaeological remains that may be damaged or destroyed by the proposed project. *Please note that our office now requests consultation with the Office of State Archaeology to discuss appropriate field methodology prior to the archaeological field investigation.*

If an archaeological field investigation is conducted, two copies of the resulting archaeological survey report, as well as one copy of the appropriate site forms should be forwarded to us for review and comment as soon as they are available and well in advance of any earth moving activities.

We have conducted a review of our maps and files and located the following structures of historic or architectural importance within the general project area:

- **Samuel Deal House** (RW 0317);
- **Yost Post Office** (RW 0773);
- **Ketner-Funderburke House** (RW 1402);
- **Correll-Albright House** (RW 1365); and,
- **Moses Ketner House and Farm** (RW 1411).

We recommend that a qualified architectural historian identify and evaluate the National Register eligibility—individually and as part of a potential historic district(s)—of the above properties and any other structures over fifty (50) years of age within the project's area of potential effect (APE) and report the findings to us. The last comprehensive architectural survey of Rowan County was completed in 1977.

An architectural survey for improvements to Old Beatty Ford Road (W-5313), between Lentz Road and Lower Stone Church Road, was completed in 2012. Any properties that were evaluated during W-5313 that were determined *not* eligible for listing do not need to be reevaluated as part of this project. Please note, the survey for W-5313 determined that the **Bostian School** (RW 1772), at the intersection of Old Beatty Ford Road and Morrow Road, was eligible for listing in the National Register of Historic Places.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the 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 919-807-6579 or renee.gledhill-earley@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Matt Wilkerson, NCDOT
Mary Pope Furr, NCDOT
State Clearinghouse

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

May 13, 2014

MEMORANDUM

TO: Matt Wilkerson
Office of Human Environment
NCDOT Division of Highways

FROM: Ramona M. Bartos RBB for Ramona M. Bartos

SUBJECT: Archaeological Survey and Evaluation, Proposed Relocation of Old Beatty Ford Road (SR 1221) from its Intersection with Bostian Road (SR1210/1221) to Lentz Road (SR1337), W-5516, Rowan County, ER 13-2317

Thank you for your letter of April 28, 2014, transmitting the above referenced document.

The report authors state that 11 archaeological sites, (31RW250-31RW260), were identified and determined not eligible for listing in the National Register of Historic Places. We concur with these assessments. Please note that for purposes of discussion our office classifies isolated finds as archaeological sites.

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 919-807-6579 or renee.gledhill-earley@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

North Carolina
Department of Administration

Pat McCrory, Governor

Bill Daughtridge, Jr., Secretary

November 1, 2013

Mr. J. Brett Abernathy, P.E.
NCDOT
Division 9
375 Silas Creek Parkway
Winston Salem, North Carolina 27127

Re: SCH File # 14-E-4220-0143; SCOPING; Proposed project is for relocation of Old Beatty Ford Road from its intersection with SR 1210/Bostian Road to Lentz Road. Project area is approximately 3.1 miles long. TIP W-5516

Dear Mr. Abernathy:

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

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

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

Sincerely,

Crystal Best

Crystal Best
State Environmental Review Clearinghouse

Attachments

cc: Region F

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 state.clearinghouse@doa.nc.gov

Location Address:
116 West Jones Street
Raleigh, North Carolina

North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

MEMORANDUM

To: Crystal Best
State Clearinghouse

From: Lyn Hardison
Division of Environmental Assistance and Customer Service
Environmental Assistance and Project Review Coordinator

RE: 14-0143
Scoping – Proposed project is for the relocation of Old Beatty Ford Road from its intersection with SR 1210/Bostian Road to Lentz Road, approximately 3.1 miles long
TIP W-5516
Rowan County

Date: October 25, 2013

The Department of Environment and Natural Resources has reviewed the proposal for the referenced project. Based on the information provided, several of the agencies have identified permits that may be required. Both NC Wildlife Resources Commission and Division of Water Resources have provided some guidance to minimize impacts to the streams, wetlands and aquatic and terrestrial wildlife resources within the project site area. These comments are attached for the applicant review.

The Department will provide more specific comments during the environmental review process.

Thank you for the opportunity to respond.

Attachments

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-707-8600 \ Internet: www.ncdenr.gov

North Carolina Department of Environment and Natural Resources
Division of Water Resources
Water Quality Programs

Pat McCrory
Governor

Thomas A. Reeder
Director

John E. Skvarla, III
Secretary

October 24, 2013

Mr. Bret Abernathy, P.E.
NCDOT Division 9
375 Silas Creek Pkwy.
Winston-Salem, NC 27127

Subject: Relocation of Old Beatty Ford Rd (SR 1221), Rowan County

Dear Mr. Abernathy:

This office has reviewed the referenced document dated September 25, 2013, regarding the relocation of Old Beatty Ford Rd. (SR 1221) from Bostian Rd. (SR 1210) to Lentz Rd. (SR 1337). We have reviewed the submitted information and have noted that the proposed alternatives will likely impact jurisdictional waters of the state within the Cold Water Creek Watershed. As such these impacts will be subject to Section 401 of the Clean Water Act and will require compliance with the appropriate 401 Water Quality Certification dependent on location, type, and extent of impact to wetlands and streams.

This office is available to conduct a site inspection of the potential impact areas for the proposed alternatives. If you have any additional questions or require additional information please call Alan Johnson at 704-663-1699 or email alan.johnson@ncdenr.gov.

Sincerely,

Alan Johnson
Env. Sr. Specialist

cc: Sonia Carrillo, Wetlands 401 Transportation

Transportation and Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604
Phone: 919-807-6300 \ FAX: 919-807-6492
Internet: www.ncwaterquality.org

North Carolina Department of Environment and Natural Resources
Division of Water Resources
Water Quality Programs

Pat McCrory
Governor

Thomas A. Reeder
Director

John E. Skvarla, III
Secretary

October 3, 2013

MEMORANDUM

To: J. Brett Abernathy, NCDOT Division 9 Project Manager

From: Amy Euliss, NC Division of Water Resources, Winston Salem Regional Office

Subject: Scoping comments on proposed improvements to Old Beatty Ford Road (SR 1221) from SR 1210/SR 1221 to Lentz Road (SR 1337) in Rowan County, TIP No. W-5516. State Clearinghouse Project No. 2014-0143.

Reference your correspondence dated September 25, 2013 in which you requested comments for the referenced project. Preliminary analysis of the project reveals the potential for multiple impacts to streams and jurisdictional wetlands in the project area. More specifically, impacts to:

Stream Name	River Basin	Stream Classification(s)	Stream Index Number	303(d) Listing
Cold Water Creek and UTs	Yadkin	WSIV	13-17-9-4-(.5)	No
Cold Water Creek (Lake Higgins) and UTs	Yadkin	WSIV;CA	13-17-9-4-(1)	No

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

Project Specific Comments:

1. Review of the project reveals the presence of surface waters classified as Water Supply Critical Area in the project study area. Given the potential for impacts to these resources during the project implementation, the NCDWR requests that NCDOT strictly adhere to North Carolina regulations entitled *Design Standards in Sensitive Watersheds* (15A NCAC 04B .0124) throughout design and construction of the project. This would apply for any area that drains to streams having WS CA (Water Supply Critical Area) classifications.

Transportation and Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604
Phone: 919-807-6300 \ FAX: 919-807-6488
Internet: www.ncwaterquality.org

2. Should the project be located within the Critical Area of a Water Supply, the NCDOT may be required to design, construct, and maintain hazardous spill catch basins in the project area. The number of catch basins installed should be determined by the design of the bridge, so that runoff would enter said basin(s) rather than flowing directly into the stream, and in consultation with the NCDWR.

General Project Comments:

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

2. Environmental 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 NCDWR's *Stormwater Best Management Practices Manual*, July 2007, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.

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

4. In accordance with the Environmental Management Commission's Rules (15A NCAC 2H.0506[h]), mitigation will be required for impacts of greater than 150 linear feet to any single 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.

5. 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.

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

7. 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 Resource Policy on the assessment of secondary and cumulative impacts dated April 10, 2004.

8. The NCDOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, and rip rap 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.

9. Where streams must be crossed, the NCDWR 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, the NCDOT should not install the bridge bents in the creek, to the maximum extent practicable.

10. Whenever possible, the NCDWR 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 shall allow for human and wildlife passage beneath the structure. Fish passage and navigation by canoeists and boaters shall not be blocked. Bridge supports (bents) should not be placed in the stream when possible.

11. Bridge deck drains shall 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 NCDWR's *Stormwater Best Management Practices.*

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

13. 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.

14. 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.

15. Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an Individual Permit (IP) application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from the NCDWR. 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.

16. If concrete is used during construction, a dry work area shall 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. Unless otherwise authorized, placement of culverts and other structures in waters and streams 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 downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by the NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWR 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, floodplain benches, and/or sills may be required 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 3883/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 the 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.

Thank you for requesting our input at this time. The NCDOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact Amy Chapman at (919) 807-6365 or amy.chapman@ncdenr.gov.

cc: John Thomas, US Army Corps of Engineers, Raleigh Field Office (electronic copy only)
Lyn Hardison, NCDENR Division of Environmental Assistance and Customer Service (electronic copy only)
NCDWR Transportation Permitting Unit (electronic copy only)
File Copy

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

Pat McCrory
Governor

Dexter R. Matthews
Director

John E. Skvarla, III
Secretary

TO: Lyn Hardison, Environmental Coordinator

FROM: Ron Taraban, Regional UST Supervisor

DATE: October 21, 2013

RE: Project Review Form: 14-0143

I have searched the Petroleum Underground Storage Tank (UST) and Non-UST databases for documented releases of petroleum and regulated substances for the proposed alternative 1 route along Old Beatty Ford Road in Rowan County. I did not find a documented open release along the proposed route. The following comments however, are pertinent to my review:

1. The Mooresville Regional Office (MRO) UST Section recommends removal of any abandoned or out-of-use petroleum USTs or petroleum above ground storage tanks (ASTs) within the project area. The UST Section should be contacted regarding use of any proposed or on-site petroleum USTs or ASTs. We may be reached at 704-663-1699.

2. Any petroleum spills must be contained and the area of impact must be properly restored. Petroleum spills of significant quantity must be reported to the North Carolina Department of Environment & Natural Resources – Division of Waste Management Underground Storage Tank Section in the Mooresville Regional Office at 704-663-1699.

3. Any soils excavated during demolition or construction that show evidence of petroleum contamination, such as stained soil, odors, or free product must be reported immediately to the local Fire Marshall to determine whether explosion or inhalation hazards exist. Also, notify the UST Section of the Mooresville Regional Office at 704-663-1699. Petroleum contaminated soils must be handled in accordance with all applicable regulations.

If you have any questions or need additional information, please contact me at Ron.Taraban@ncdenr.gov or by phone at 704-235-2167.

Department of Environment and Natural Resources
Project Review Form

Project Number: 14-0143 **County: Rowan** **Date Received: 10/02/2013**

Due Date: 10/25/2013

Project Description: Scoping - Proposed project is for relocation of Old Beatty Ford Road from its intersection with SR 1210/Bostian Road to Lentz Road. Project area is approximately 3.1 miles long. TIP W-5516

This Project is being reviewed as indicated below:

Regional Office	Regional Office Area	In-House Review	
___ Asheville	___ Air	___ Air Quality	___ Coastal Management
___ Fayetteville	___ DWR Surface Water	___ Marine Fisheries	___ Military Affairs
✓ Mooresville	✓ DWR-Aquifer AHP 10.7.13	✓ Parks & Recreation	___ Water Quality
___ Raleigh	✓ DEMLR-LQ & SW Zoe Liles 10/8/13	___ Waste Mgmt	✓ DWR-Transportation Unit Amy Euliss
___ Washington	✓ UST BHT 10/22/13	___ Water Resources Mgmt	___ Wildlife
___ Wilmington	√ DWR-PW BLS 10/8/13	✓ DWR Public Water	✓ Wildlife–DOT-Marla Chambers
___ Winston-Salem			

RECEIVED
OCT 07 2013
NC DEPT OF ENVIRONMENT AND NATURAL RESOURCES MOORESVILLE REGIONAL OFFICE

Manager Sign-Off/Region:	Date:	In-House Reviewer/Agency:
Angela W Edwards	10/22/13	

Response (check all applicable)

___ No objection to project as proposed. ___ No Comment

___ Insufficient information to complete review ✓ Other (specify or attach comments)

If you have any questions, please contact:

Lyn Hardison at lyn.hardison@ncdenr.gov or (252) 948-3842
943 Washington Square Mall Washington NC 27889
Courier No. 16-04-01

State of North Carolina
Department of Environment and Natural Resources

Reviewing Office: Mooresville RO

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

Project Number: 14-0143 Due Date: 10/25/2013

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

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
☐	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
☐	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
☐	Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
☐	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
☐	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
☐	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
☐	Permit to construct & operate Transportation Facility as per 15 A NCAC (2D.0800, 2Q.0601)	Application must be submitted at least 90 days prior to construction or modification of the source.	90 days
☐	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
☐	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950.		
☐	Complex Source Permit required under 15 A NCAC 2D.0800		
☐	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) At least 30 days before beginning activity. A fee of **$65** for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
☑	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.		(30 days)
☐	Mining Permit	On-site inspection usual. Surety bond filed with ENR. Bond amount varies with type mine and number of acres of affected land. Any acre mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
☐	North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
☐	Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
☐	Oil Refining Facilities	N/A	90-120 days (N/A)
☐	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of $200.00 must accompany the application. An additional processing fee based on a percentage or the total project cost will be required upon completion.	30 days (60 days)

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
☐	Permit to drill exploratory oil or gas well	File surety bond of $5,000 with ENR running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations.	10 days N/A
☐	Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
☐	State Lakes Construction Permit	Application fee is charged based on structure size. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15-20 days N/A
☑	401 Water Quality Certification	N/A	60 days (130 days)
☐	CAMA Permit for MAJOR development	$250.00 fee must accompany application	55 days (150 days)
☐	CAMA Permit for MINOR development	$50.00 fee must accompany application	22 days (25 days)
☐	Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, NC 27611		
☑	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
☑	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
☐	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
☐	Tar Pamlico or Neuse Riparian Buffer Rules required.		
☐	Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq. Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
☒	If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days

* Other comments (attach additional pages as necessary, being certain to cite comment authority)

LR – No Comments Jan S-H 10/8/13

UST - see attached comments RHT 10/21/13

REGIONAL OFFICES

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

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

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

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

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

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

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

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

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: ROWAN

F02: HIGHWAYS AND ROADS

STATE NUMBER: 14-E-4220-0143
DATE RECEIVED: 09/30/2013
AGENCY RESPONSE: 10/25/2013
REVIEW CLOSED: 10/30/2013

MS ELIZABETH HEATH
CLEARINGHOUSE COORDINATOR
DEPT OF AGRICULTURE
1001 MSC - AGRICULTURE BLDG
RALEIGH NC

REVIEW DISTRIBUTION

CC&PS - DIV OF EMERGENCY MANAGEMENT
CENTRALINA COG
DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION

PROJECT INFORMATION

APPLICANT: NCDOT
TYPE: National Environmental Policy Act Scoping

DESC: Proposed project is for relocation of Old Beatty Ford Road from its intersection with SR 1210/Bostian Road to Lentz Road. Project area is approximately 3.1 miles long.

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: Elizabeth H. Heath DATE: 10/16/13

North Carolina Wildlife Resources Commission

Gordon Myers, Executive Director

TO: Lyn Hardison, Environmental Assistance and SEPA Coordinator
Division of Environmental Assistance & Customer Services, NCDENR

FROM: Marla Chambers, Western NCDOT Projects Coordinator Marla Chambers
Habitat Conservation Program, NCWRC

DATE: October 24, 2013

SUBJECT: Scoping review of NCDOT's proposed improvements to Old Beatty Ford Road (SR 1221) from its intersection with Bostian Road (SR 1210) to Lentz Road (SR 1337), Rowan County, North Carolina. TIP No. W-5516. NCDENR Project No. 14-0143, due 10/25/2013.

North Carolina Department of Transportation (NCDOT) is requesting comments from the North Carolina Wildlife Resources Commission (NCWRC) regarding impacts to fish and wildlife resources resulting from the subject project. Staff biologists have reviewed the information provided and have the following preliminary comments. These comments are provided in accordance with the provisions of the state and federal Environmental Policy Acts (G.S. 113A-1through 113-10; 1 NCAC 25 and 42 U.S.C. 4332(2)(c), respectively), the Clean Water Act of 1977 (33 U.S.C. 466 et seq.) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d), as applicable.

The NCDOT proposes to improve and possibly relocate Old Beatty Ford Road (SR 1221) from its intersection with Bostian Road (SR 1210) to Lentz Road (SR 1337) for a project length of approximately 3.1 miles. The project will address high fatal and non-fatal injury crash rates by providing a 22-foot pavement width, paved shoulders and a straighter horizontal alignment. The project will also improve intersections and the vertical alignment, and replace the bridge over I-85. Two alternatives are being considered, one mostly on new location and the other mainly improves the existing roadway.

The project is within the Cold Water Creek water supply watershed (Class WS-IV). Town Creek, Cold Water Creek and an unnamed tributary to Cold Water Creek cross the project study area. Town Creek appears to be on the 303(d) list of impaired waters. The NCDOT should

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh NC 27699-1721
Telephone: (919) 707-0020 · **Fax:** (919) 707-0028

strive to minimize direct and indirect impacts to streams, wetlands and terrestrial habitats. Impervious surfaces should also be minimized.

In addition, to help facilitate document preparation and the review process, our general information needs are outlined below:

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

   The Natural Heritage Program
   http://www.ncsparks.net/nhp
   1601 Mail Service Center
   Raleigh, N. C. 27699-1601

   and,

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

2. Description of any streams or wetlands affected by the project. If applicable, include the linear feet of stream that will be channelized or relocated.

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

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

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

6. Include the mitigation plan for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses.

7. Address the overall environmental effects of the project construction and quantify the contribution of this individual project to environmental degradation.

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

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

Thank you for the opportunity to provide input in the early planning stages of this project. If you have any questions regarding these comments, please contact me at (704) 485-8291.

cc: Amy Chapman, NCDWR
Jason Mays, USFWS

CABARRUS – ROWAN URBAN AREA
METROPOLITAN PLANNING ORGANIZATION

CABARRUS COUNTY • CHINA GROVE • CLEVELAND • CONCORD • GRANITE QUARRY • HARRISBURG • KANNAPOLIS • LANDIS
MIDLAND • MOUNT PLEASANT • ROCKWELL • EAST SPENCER • ROWAN COUNTY • SALISBURY • SPENCER • FAITH

January 22, 2014

Mr. J. Brett Abernathy
North Carolina Department of Transportation
375 Silas Creek Parkway
Winston-Salem, North Carolina 27127

RE: Old Beatty Ford Road Safety Project

Dear Mr. Abernathy:

This letter is to convey the Cabarrus-Rowan Transportation Advisory Committee (TAC) support for the northern alternative (2) or proposed realignment of Old Beatty Ford Road (W-5516). We believe this alternative provides the safest option for the motoring public in this portion of Rowan County. Hence, the TAC unanimously endorsed this alignment at their January 22, 2014 meeting. We appreciate your consideration of this request and look forward to the Department and MPO working cooperatively to complete this important safety project for the South Rowan area.

If you should have any questions, please do not hesitate to contact our staff at 704-795-7528.

Sincerely,

Lee Withers, TAC Chairman
Cabarrus-Rowan MPO

cc: Mr. Jake Alexander, Board of Transportation
Mr. Pat Ivey, NCDOT Division 9
Mr. Craig Pierce, Rowan County Commissioner
Mr. Ed Muire, Rowan County

135 CABARRUS AVENUE EAST • CONCORD, NC • 28025 • PHONE 704.795.7528 • FAX 704.795.7529

From:	Robin Shoe
To:	Oliver, Clay
Subject:	Fwd: Old Beatty Ford Road (NCDOT TIP W-5516)
Date:	Thursday, April 03, 2014 3:58:11 PM
Attachments:	image001.png

Below is the response regarding Old Beatty Ford Road (NCDOT TIP W-5516)

Robin B. Shoe
Administrative Assistant for Operations
Rowan-Salisbury Schools

Begin forwarded message:

From: Tim Beck <beckrw@rss.k12.nc.us>
Date: April 3, 2014 8:47:22 AM EDT
To: "Robin B. Shoe" <shoerb@rss.k12.nc.us>
Cc: anthony vann <vannwa@rss.k12.nc.us>
Subject: Re: Old Beatty Ford Road (NCDOT TIP W-5516)

I have met with our South/East area route coordinator. This is the area that will be affected by this DOT work. It is alot of info she has come up with but to sum it up we will be able to make either option work with little to no impact to our bus routing. We would simply need a area on each side of the Interstate for bus turnarounds. DOT always works well with us in these regards.
If you have any questions please let me know.

Tim Beck
Transportation Supervisor
Rowan-Salisbury Schools
Office 704-639-3051 ext 116
Cell 704-213-9729
beckrw@rss.k12.nc.us

> ----- Original Message -----
> **From:** Robin B. Shoe
> **To:** Robert T. Beck
> **Sent:** Wednesday, April 02, 2014 2:58 PM
> **Subject:** Fwd: Old Beatty Ford Road (NCDOT TIP W-5516)
>
> Below is the information that Mr. Vann spoke to you about.
> Let me know if you have any questions.
>
> Robin B. Shoe
> Administrative Assistant for Operations
> Rowan-Salisbury Schools
>
> Begin forwarded message:

From: "Oliver, Clay" <coliver@icaeng.com>
Date: April 2, 2014 9:41:53 AM EDT
To: "shoerb@rss.k12.nc.us" <shoerb@rss.k12.nc.us>
Cc: "Reep, Mark" <mreep@icaeng.com>
Subject: Old Beatty Ford Road (NCDOT TIP W-5516)

Ms. Shoe,

The North Carolina Department of Transportation (NCDOT) Division 9 Office proposes to improve or relocate Old Beatty Ford Road (SR 1221) from its intersection with Bostian Road (SR 1210/1221) to Lentz Road (SR 1337) in Rowan County. I work for a consulting firm that is assisting NCDOT on this project.

Per our phone conversation earlier this morning, we would like to know if there are any comments on this project in addition to those made by Ms. Judy Burris during a November 2013 local officials meeting (see a summary of her comments below). I have attached two maps of the Old Beatty Ford Road project – one for each alternative under consideration.

- Alternative 1 would make improvements to existing Old Beatty Ford Road between Lentz Road and Bostian Road.
- Alternative 2 would relocate Old Beatty Ford Road to the north of its present location. With Alternative 2, the existing Old Beatty Ford Road bridge over I-85 would be removed and cul-de-sacs constructed on both sides of the interstate (making existing Old Beatty Ford Road a dead end in both directions).

During a November 2013 local officials meeting, Ms. Judy Burris verbally commented on the project. She said Alternative 2 would have the most disruptions to bus routes since the existing road would dead end at I-85. She also stated the cul-de-sacs would need to be large enough to allow school buses to turn around.

We are in the final review process for the Environmental Assessment and would like to have any additional comments your office may have by 12 noon tomorrow (Thursday, April 3). Comments may be made in a response to this email or over the phone (my contact information is below).

Thank you in advance for your prompt response.

Best regards,

Clay

Clay D. Oliver, P.E.
Project Engineer
ICA Engineering, Inc.
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
T 919.900.1623 | **F** 919-851-6846
coliver@icaeng.com | www.icaeng.com

ICA Engineering

f/k/a Florence & Hutcheson, Inc.

December 6, 2013

MEMORANDUM TO: Meeting Participants

FROM: Mark L. Reep, P.E.
Project Manager

SUBJECT: Relocation of Old Beatty Ford Road (SR 1221) from Bostian Road (SR 1210/ SR 1221) to Lentz Road (SR 1337), Rowan County, W-5516

An informal Interagency Meeting was held November 15, 2013 at NCDOT's Century Center in Raleigh for the proposed improvements to Old Beatty Ford Road (SR 1221). The purpose of the meeting was to obtain input on the preliminary purpose and need, alternatives, and potential impacts. Background information was summarized in a meeting agenda and slide presentation.

The following people attended the meeting.

Felix Davila	Federal Highway Administration
John Thomas	US Army Corps of Engineers
Alan Johnson	NC DENR Division of Water Quality
Pat Ivey	NCDOT Division 9 Office
Brett Abernathy	NCDOT Division 9 Office
Keith Raulston	NCDOT Division 9 Office
Diane Hampton	NCDOT Division 9 Office
Amy Euliss	NCDOT Division 9 Office
Leza Mundt	NCDOT PDEA Unit
Galen Cail	NCDOT Hydraulics Unit
Brian Mayhew	NCDOT Traffic Safety Unit
Brian Murphy	NCDOT Traffic Safety Unit
Chris Sheats	The Catena Group
Michael Wood	The Catena Group
Herb Turner	ICA Engineering
David Waller	ICA Engineering
Tom Tallman	ICA Engineering
Trent Cormier	ICA Engineering
Mark Reep	ICA Engineering

Major topics discussed during the meeting are described below.

- The project is needed to reduce lane departure and frontal impact crashes on this portion of Old Beatty Ford Road. The project's purpose is to improve safety by reducing the frequency of lane departure and frontal impact collisions that have resulted in fatal and non-fatal injuries. A secondary purpose is to improve the deficient bridge over I-85.

- Meeting participants suggested clarifying that the crash data described in the information package pertains to the W-5516 project limits, and not the entire 16-mile corridor.
- FHWA asked whether the bridge improvement was considered in the NC Highway Safety Improvement Program (HSIP) funding. If not, the secondary purpose of improving the deficient bridge may not be necessary.
- Major crossings of jurisdictional streams and wetlands were discussed for Alternatives 1 and 2. Bridge and culvert options were presented with both alternatives in the vicinity of I-85 and Cold Water Creek. NCDOT intends to span I-85 and Cold Water Creek with a bridge to minimize stream impacts. With Alternative 1 this would require a longer bridge to span adjacent wetlands.
- With a bridge considered over Cold Water Creek, preliminary impacts are estimated to be no more than 200 feet at each stream crossing, and wetland impacts are estimated to be no more than 0.4 acre.
- John Thomas, of the Army Corps of Engineers, commented that as long as the stream and wetland impacts are below the nationwide permit thresholds, the project can be developed without following the Merger Process.
- Alan Johnson, of the DENR Division of Water Quality asked for an alternative to be considered at the existing Old Beatty Ford Road bridge over I-85 to avoid wetland areas. The existing alignment has substandard horizontal and vertical conditions. The project team agreed to consider refinements of Alternative 1 close to the existing alignment to avoid and minimize impacts.
- W-5516 delineations were completed in early November 2013. This information will be supplied to NCDOT and the resource agencies in the near future for review and field verification.
- Jurisdictional determinations have been issued for streams and wetlands along the I-85 corridor with project I-3802. These are valid for five years.
- Cultural resource studies are underway to examine the potential for archaeological and historic architectural resources. These findings are anticipated in early 2014.
- A second informal interagency meeting will be scheduled for February or March 2014 to review more detailed analysis results, cultural resource findings, and proposed recommendations to be presented in the Environmental Assessment, scheduled for approval in spring 2014.

If you have comments, please provide them to me by 12/16/13 at mreep@icaeng.com and to Brett Abernathy at jbabernathy@ncdot.gov.

MLR
Attachment

March 24, 2014

MEMORANDUM TO: Meeting Participants

FROM: Mark L. Reep, P.E.
Project Manager

SUBJECT: Relocation of Old Beatty Ford Road (SR 1221) from Bostian Road (SR 1210/ SR 1221) to Lentz Road (SR 1337), Rowan County, W-5516

An informal interagency meeting was held March 12, 2014 at NCDOT's Century Center in Raleigh for the proposed improvements to Old Beatty Ford Road (SR 1221). The purpose of the meeting was to obtain input on the analysis of alternatives and a preferred alternative. Background information was summarized in a meeting agenda and slide presentation.

The following people attended the meeting.

Felix Davila	Federal Highway Administration
John Thomas	US Army Corps of Engineers
Alan Johnson	NC DENR Division of Water Quality (via phone)
Pat Ivey	NCDOT Division 9 Office
Brett Abernathy	NCDOT Division 9 Office
Keith Raulston	NCDOT Division 9 Office
Diane Hampton	NCDOT Division 9 Office
Amy Euliss	NCDOT Division 9 Office
Leza Mundt	NCDOT PDEA Unit
Galen Cail	NCDOT Hydraulics Unit
Brian Mayhew	NCDOT Traffic Safety Unit
Brian Murphy	NCDOT Traffic Safety Unit
John Button	NCDOT Triad Regional Traffic Office
Michael Wood	The Catena Group
David Waller	ICA Engineering
Tom Tallman	ICA Engineering
Trent Cormier	ICA Engineering
Mark Reep	ICA Engineering

Major topics discussed during the meeting are described below.

- Alternative 1 is estimated to cost $18,200,000 for right of way and construction and relocates ten residences and a business. It includes a bridge over I-85, Cold Water Creek, and adjacent wetlands as well as a box culvert at a stream crossing. Alternative 1 is estimated to impact 115 feet of stream and 0.2 acre of wetlands.
- Refinements of Alternative 1 near the existing bridge over I-85 were considered to further avoid and minimize impacts. Because wetlands and streams are on both sides of the existing road, the refinements do not reduce overall stream and wetland impacts and were not evaluated in detail.

- Alternative 2 is estimated to cost $16,300,000 for right of way and construction and relocates one residence. It includes a bridge over I-85 and Cold Water Creek, box culverts at two major stream crossings, and pipes at four minor stream crossings. Alternative 2 is estimated to impact 965 feet of stream and less than 0.1 acre of wetlands. The impacts at individual streams crossings range from 105 feet to 215 feet.
- Alternative 2 was located to avoid wetlands to the extent practicable. Stream impacts were minimized by lowering the grade and reducing the roadway footprint as much as possible at stream crossings.
- Stream and wetland impacts are expected to be within the nationwide permit thresholds.
- John Thomas, of the Army Corps of Engineers, noted during a recent site visit that several historic period farm buildings are located near Bruner Sloop Road and Alternative 2. He asked whether these buildings were being evaluated in the cultural resource investigations. **ICA Engineering will coordinate with the PDEA Unit to provide a copy of the reports to Mr. Thomas when they are available in the coming weeks.**
- Alan Johnson, of the DENR Division of Water Resources commented that Alternative 2 would cross more streams on new location and potentially open the vacant land to future development. This is a less desirable alternative from a water resources or water quality perspective. **ICA Engineering agreed to send him a copy of the Indirect and Cumulative Effects (ICE) Screening Report for the project.**
- Agency representatives suggested that the Environmental Assessment (EA) describe the avoidance and minimization of water resources. This should describe alternative alignments, grade changes, footprint reductions, bridging, and other measures to reduce impacts.
- Stream mitigation costs for Alternative 2, based on fees from the Ecosystem Enhancement Program, are anticipated to be in the range of $400,000 to $500,000.
- Participants suggested investigating the potential for restoring the Cold Water Creek channel and associated wetlands by removing the existing culvert at Old Beatty Ford Road and Cold Water Creek located west of I-85. The project team agreed to prepare information for the agencies to consider for potential on-site mitigation. **This will be included as a project commitment in the EA and explored by the consultant team for resolution in the final environmental document or design.**
- FHWA requested that the EA describe measures of performance considered how the alternatives meet the purpose and need. Such items include the effectiveness of proposed safety improvements, crash research information, crash history, roadway geometric conditions, reduction in traffic volumes and accident exposure, and references to safety research. **ICA Engineering will coordinate with NCDOT to provide this information to FHWA for comments in advance of reviewing the EA.**
- NCDOT's Traffic Safety Unit representatives suggested extending the Lentz Road pavement widening limits for Alternative 2 further south to the existing Old Beatty Ford Road/ Lentz Road intersection to maintain a consistent pavement width throughout the project area. Division 9 representatives confirmed that Lentz Road has a 24-foot pavement width and sufficient usable shoulders. The existing Lentz Road pavement can be configured to provide consistent lane widths.

- Meeting participants agreed that there was not a need to hold another meeting to review further analysis results prior to approval of the EA in May 2014. The next steps for the project are as follows:

○ Approval of EA	May 2014
○ Public Meeting	June 2014
○ Approval of Final Environmental Document	August 2014
○ Begin Right of Way Acquisition	September 2014
○ Begin Construction	Fall 2015

If you have comments, please provide them to me at mreep@icaeng.com and to Brett Abernathy at jbabernathy@ncdot.gov.

MLR
Attachment

APPENDIX B

NCDOT Relocation Assistance Program/ Relocation Reports

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS:	44105.1.FD	COUNTY	Rowan	Alternate 1 of 2 Alternate	
I.D. NO.:	W-5516	F.A. PROJECT	NA		
DESCRIPTION OF PROJECT:	Relocation of Old Beatty Ford Road (SR1221) from SR 1210/SR 1221 to Lentz Rd. (SR1337)				

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	10	0	10	
Businesses	1	0	1	
Farms	0	0	0	
Non-Profit	0	0	0	

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
		2	4	4

VALUE OF DWELLING

Owners		Tenants	
0-20M		$ 0-150	
20-40M	1	150-250	
40-70M	2	250-400	
70-100M	2	400-600	
100 UP	5	600 UP	
TOTAL	10		0

DSS DWELLING AVAILABLE

For Sale		For Rent	
0-20M		$ 0-150	
20-40M	4	150-250	
40-70M	10	250-400	
70-100M	11	400-600	
100 UP	32	600 UP	
TOTAL	57		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? **24 months**

REMARKS (Respond by Number)

#3. Business services will be available after the project
#4. Stevie's Corner Store #3; Convience store/gas station; 1SBlock Business; 1500+- sf; 2 F/T & 1 P/T employees

#8. Last resort housing will be available as mandated by law
#11. Public housing is available

#12. DSS housing is available or can be built if necessary
#14. Local Realtors and newspapers

Kris Barr	3-21-14		3/24/14
Kris Barr Right of Way Agent	Date	Relocation Coordinator	Date

FRM15-E Revised 09-02

Original & 1 Copy: Relocation Coordinator
2 Copy Division Relocation File

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS:	44105.1.FD	COUNTY	Rowan	Alternate 2 of 2 Alternate	
I.D. NO.:	W-5516	F.A. PROJECT	NA		
DESCRIPTION OF PROJECT:	Relocation of Old Beatty Ford Road (SR1221) from SR 1210/SR 1221 to Lentz Rd. (SR1337)				

ESTIMATED DISPLACEES

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

INCOME LEVEL

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

VALUE OF DWELLING

Owners		Tenants	
0-20M	0	$ 0-150	0
20-40M	0	150-250	0
40-70M	0	250-400	0
70-100M	0	400-600	0
100 UP	1	600 UP	0
TOTAL	1		0

DSS DWELLING AVAILABLE

For Sale		For Rent	
0-20M	0	$ 0-150	0
20-40M	0	150-250	0
40-70M	0	250-400	0
70-100M	0	400-600	0
100 UP	81	600 UP	0
TOTAL	81		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? **9 months**

REMARKS (Respond by Number)

#3. Business services will be available after the project

#6. MLS, Realtor.com, newspaper, local realty offices

#8. As mandated by law

#11. Public housing is available

#12. DSS housing is available

#14. Local realtors and local newspapers

Kris Barr	11-6-13		11/8/13
Kris Barr Right of Way Agent	Date	Relocation Coordinator	Date

FRM15-E Revised 09-02

Original & 1 Copy: Relocation Coordinator
2 Copy Division Relocation File

APPENDIX C

Public Involvement

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

January 8, 2013

MEMORANDUM TO: Post Public Meeting Review Participants

FROM: Brett Abernathy, PE, PLS
Division Project Manager, Division 9 Office

SUBJECT: Post Public Meeting Review for Relocation of Old Beatty Ford Road (SR 1221) from Bostian Road (SR 1210/ SR 1221) to Lentz Road (SR 1337), Rowan County, W-5516

A post-public meeting review was held at 1:30 p.m. on December 18, 2013. The purpose of the review was to discuss and respond to public comments from the November 12, 2013 public meeting for the subject project. The following people participated in the review meeting:

Pat Ivey	NCDOT Division 9 Office
Brett Abernathy	NCDOT Division 9 Office
Diane Hampton	NCDOT Division 9 Office
Jamille Robbins	NCDOT PDEA Unit, Human Environment Section
Leza Mundt	NCDOT PDEA Unit, Project Development
Garold Smith	Eydo
David Waller	ICA Engineering
Clay Oliver	ICA Engineering
Mark Reep	ICA Engineering

A Public Meeting was held between 4:00 p.m. – 7:00 p.m. on November 12, 2013, at the Kannapolis Moose Family Center, 990 Old Beatty Ford Road, China Grove. The meeting was conducted in an open house-style format with no formal presentation. The purpose of the meeting was to introduce the project to the community and to receive comments on the alternatives and issues to be considered during the project development process. Approximately 117 people attended the meeting. Public comments and responses discussed during the review meeting are summarized below.

Written and Verbal Comments

1. Cedrick Rodgers, 140 Scarlet Road, China Grove, NC

Comment: Mr. Rodgers commented not to touch Annie Morgan's property (Alternative 2), but suggested Alternative 1.

Response: The comment is noted. Alternative 1 would have minimal effect on this property located at Old Beatty Ford Road and Bostian Road. Alternative 2 would relocate the home.

2. George F. Stirewalt

Comment: Mr. Stirewalt noted that Alternative 2 will create traffic problems on Lentz Road. He prefers Alternative 1.

Response: Alternative 2 will be designed to carry the projected future year traffic volumes at an acceptable level of service. Intersections will be designed to meet NCDOT's Roadway Design standards for safe and efficient travel. Preference for Alternative 1 is noted.

3. Anonymous

Comment: The attendee believes the project is stupid and politically driven and that the land should be left alone.

Response: There has been a long history of severe crashes along this portion of Old Beatty Ford Road. The project is needed to reduce lane departure and frontal impact crashes along this portion of Old Beatty Ford Road that are a result of roadway deficiencies. The project's purpose is to improve safety by reducing the frequency of these types of crashes that have resulted in fatal and non-fatal injuries. By improving horizontal and vertical curves and increasing the roadway and shoulder widths, crashes are expected to reduce by more than 70 percent. Both alternatives meet the intended purpose and are being planned to avoid or minimize impacts to the human and natural environment.

4. Anne Aldridge, 3345 Old Beatty Ford Road, China Grove, NC

Comment: Ms. Aldridge is wondering what happens with the name of Old Beatty Ford Road if Alternative 2 is chosen – she hopes it will not be renamed. She does not believe that Alternative 2 will fix the road because it doesn't fix the curves at her end of the road.

Response: If Alternative 2 is selected, any road name changes would be handled by Rowan County according to local policies and emergency response standards. With Alternative 2, the existing bridge over I-85 would be removed, and the existing road would end on each side of I-85. Old Beatty Ford Road through traffic would be rerouted to a new location route designed to meet safe operating conditions for the majority of drivers on this route. Alternative 2 would not improve curves along the existing roadway; however, it would substantially reduce daily traffic volumes and speeds for local access to properties.

5. Eric and June Leazer, 165 Beth Drive, China Grove, NC

Comment: Mr. and Mrs. Leazer support the proposed Alternative 1 plan. They believe Alternative 2 will take too much land from many residents. It would leave residents east of I-85 on a dead end road and diminish property values. Instead of a new road, they suggest improving only the dangerous curves west of State Road to save money and preserve residential properties.

Response: Alternative 2 affects fewer residences by crossing large parcels that are mostly undeveloped. Preference for Alternative 1 is noted. Throughout the Alternative 1 project limits, pavement and shoulder widening is needed. Curve

improvements are also needed from Bostian Road to State Road and at the intersection with Lentz Road. Adjustments to Alternative 1 are being considered near the existing Old Beatty Ford Road bridge in order to reduce property impacts.

6. David W. & Mary Moose, 1315 China Grove Road, China Grove, NC

Comment: The Mooses believe that an interchange is needed and will be good for China Grove and Landis. They prefer Alternative 2.

Response: The Cabarrus-Rowan Metropolitan Planning Organization (CRMPO) proposes a future I-85 interchange with Old Beatty Ford Road in its Comprehensive Transportation Plan. Project W-5516 focuses on safety improvements and does not include an interchange at I-85. The location of a future I-85 interchange with Old Beatty Ford Road would be evaluated separately in the unfunded TIP Project I-3804. Preference for Alternative 2 is noted.

7. Eugene & Irene Moose, 1415 China Grove Road, China Grove, NC

Comment: They believe Alternative 2 will be good for Landis and China Grove by providing jobs, industry, etc.

Response: Preference for Alternative 2 is noted.

8. Joy Robert Lane, 21201 Island Forest Drive, Cornelius, NC

Comment: Ms. Lane wants to be added to the mailing list as all correspondence currently goes to her brother.

Response: Ms. Lane's name was added to the mailing list.

9. Ronnie Stirewalt, 1135 Old Beatty Ford Road, China Grove, NC

Comment: Mr. Stirewalt does not believe that the loss of one house, versus the loss of seven homes, makes sense. Although part of his land will be lost either way, he believes that it will be more affordable and logical to go straight through to Lentz Road with the possibility of a new interchange.

Response: Alternative 2 affects fewer residences by crossing large, mostly undeveloped parcels. A cost comparison will be available during the preparation of the Environmental Assessment (EA) to help in selecting a preferred alternative. As mentioned in Response #6, a future I-85 interchange would be evaluated separately in the unfunded TIP Project I-3804.

10. John M. McGee, 1325 Old Beatty Ford Road, China Grove, NC

Comment: Mr. McGee believes Alternative 2 provides the most benefit and least impact. He suggests that if Alternative 1 is selected, new speed limits and signage should be used in lieu of ruining so many homes.

Response: As mentioned in Response #3, there has been a history of severe crashes, and the project's purpose is to reduce the frequency of these types of crashes. While reduced speed limits and signage may help, the greatest crash reduction benefits would be gained with the proposed realignment, roadway width, and shoulder widths improvements.

11. Dorann Overcash, 1111 E. 22 Street, Kannapolis, NC

Comment: Ms. Overcash believes that the project is unneeded and that existing roads should be repaved, instead. She sees this as a road to nowhere and that another interchange in this area would lead to traffic problems.

Response: As mentioned in Response #3, there is a history of severe crashes, and the project's purpose is to reduce the frequency of these types of crashes. As mentioned in Response #6, a future I-85 interchange would be evaluated separately in the unfunded TIP Project I-3804.

12. Jessica Gaskill, 204 E. Innes Street, Salisbury, NC

Comment: Ms. Gaskill believes Alternative 1, by following the current route and making safer corners and reduced traveling speeds, would be better for the community.

Response: As mentioned in Response #10, reduced speed limits and signage may help, but the greatest crash reduction benefits would be gained with the proposed realignment, roadway width, and shoulder widths improvements.

13. Julia Corriher, 1385 Old Beatty Ford Road, China Grove, NC

Comment: Ms. Corriher believes Alternative 2 would be a much better option because there would be less impact on existing houses and property.

Response: Preference for Alternative 2 is noted.

14. Darren Corriher, 1385 Old Beatty Ford Road, China Grove, NC

Comment: Mr. Corriher believes Alternative 2 would be the better option with less impact on homes and property than Alternative 1. He also suggests that a four-way stop sign at China Grove Road and Old Beatty Ford Road would take care of a lot of wrecks.

Response: Preference for Alternative 2 is noted. Upon completion of the project, NCDOT's Division 9 and Regional Traffic Offices will study the existing Old Beatty Ford Road and China Grove Road intersection and address safety needs.

15. Ross F. Russo III, 1360 Old Beatty Ford Road, China Grove, NC
16. Darlene Russo, 1360 Old Beatty Ford Road, China Grove, NC

Comment: Mr. and Ms. Russo believe Alternative 2 is the better option. They noted that Alternative 1 has too many property impacts and does not remove dangerous curves nor would it eliminate street racing through the residential area between Bostian Road and China Grove Road as Alternative 2 would. They also suggest a four-way stop with a blinker signal at the intersection of existing Old Beatty Ford Road and China Grove Road as well as rumble strips and slower posted speeds.

Response: Preference for Alternative 2 is noted. As mentioned in Response #14, NCDOT's Division 9 and Regional Traffic Offices will study the existing Old Beatty Ford Road and China Grove Road intersection and address safety needs.

17. Donald Grady Efird, 455 Backwoods, Lane, China Grove, NC

Comment: Mr. Efird thinks that Old Beatty Ford should be repaired and repaved since Daughtery Road already connects Landis and China Grove, thereby

negating the need for Alternative 2. He believes Alternative 1 is the only real option.

Response: Preference for Alternative 1 is noted.

18. Gary Morton, 505 Branchview Court, China Grove, NC

Comment: Mr. Morton believes that Alternative 2 addresses safety by eliminating curves, leveling elevations, enhancing access for emergency vehicles to remote rural areas. It also eliminates a number of residential driveways entering traffic. An access road from Old Beatty Ford Road on the east side to the new location would address access problems for residents in that area.

Response: Preference for Alternative 2 is noted. A service road between Old Beatty Ford Road and Alternative 2 is beyond the scope of this project.

19. Michael W. and Wayne R Horn, 260 Serenity Ridge Road, China Grove, NC

Comment: Mr. Horn believes Alternative 2 would displace fewer residents and provide a safer route for citizens. He also believes the State should have looked at a crossing further south on Interstate 85.

Response: Preference for Alternative 2 is noted. As mentioned in Response #5, adjustments to Alternative 1 are being considered near the existing Old Beatty Ford Road bridge in order to reduce property impacts.

20. Anonymous

Comment: Commenter suggested painting the interstate shield with the road number on the pavement along with directional arrows every 5 miles or so.

Response: Pavement markings must conform to the standards described in the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD).

21. Paula Shoemaker, 130 Ivory Lane, China Grove, NC

Comment: Ms. Shoemaker favors Alternative 1 chiefly because it improves the existing road and bridge and does not create a cul-de-sac that makes travel to Landis or Kannapolis inconvenient. Alternative 2 impacts land that could be used for residential or retail development instead.

Response: Preference for Alternative 1 is noted.

22. Gary Ritchie, Gary's Bar BQ, 1200 China Grove Road, China Grove, NC

Comment: Mr. Ritchie has no problem with a new road crossing his property, but he does not support closing Old Beatty Ford Road on both sides of I-85. He suggests adding a new bridge on Old Beatty Ford Road with no interchange.

Response: Preference for Alternative 2 is noted. As mentioned in Response #3, the project's purpose is to reduce the frequency of severe crashes. With this alternative, the existing Old Beatty Ford Road bridge will be removed to route through traffic to an improved roadway.

23. Janet and Herbert Burris, Jr., 125 Beth Drive, China Grove, NC

Comment: Ms. Burris believes that Alternative 2 is the logical choice. Safety and the numbers of wrecks are the main reasons for the project. Alternative 1 has too many property impacts.

Response: Preference for Alternative 2 is noted.

24. Chris O'Guin, 2215 Old Beatty Ford Road, China Grove, NC
25. Crystal O'Guin, 2215 Old Beatty Ford Road, China Grove, NC

Comment: Mr. O'Guin commented that Alternative 1 would directly impact their property by taking out wooded property and a $45,000 brick and wrought iron fence. He adds that he will fight the project legally if necessary. He suggests leaving Old Beatty Ford as is and build another bridge up the road. Ms. O'Guin suggests an access road parallel to I-85 on the east side from existing Old Beatty Ford Road to Alternative 2. She also asks about the names for the new Road and the existing Road if Alternative 2 is selected.

Response: As mentioned in Response #5, adjustments to Alternative 1 are being considered near the existing Old Beatty Ford Road bridge in order to reduce property impacts. During the right of way acquisition phase, NCDOT will compensate property owners for damages to their properties. If a fence is removed, NCDOT would pay for damages, and the owner would be responsible for fence reconstruction. As mentioned in Response #18, a service road between Old Beatty Ford Road and Alternative 2 is beyond the scope of this project. As mentioned in Response #4, any road name changes would be handled by Rowan County according to local policies and emergency response standards.

26. Larry Sechler, 1205 & 1275 Old Beatty Ford Road, China Grove, NC

Comment: Prefers Alternative 2.

Response: Preference for Alternative 2 is noted.

27. Dorothy S. Howell, 1265 Old Beatty Ford Road, China Grove, NC

Comment: Ms. Howell believes there is too much traffic on the road now. She prefers Alternative 2.

Response: Preference for Alternative 2 is noted.

28. Doug M. Foster, 8752 Overcash Road, Concord, NC

Comment: Mr. Foster prefers Alternative 1 and strongly opposes Alternative 2 due to the impact it would have on his property. He also poses the following questions in his comment: 1) Why would the state spend money on new right of way when they already own existing right of way? 2) Is there a link to follow the status on the evaluation as it progresses?

Response: Preference to Alternative 1 is noted. Alternative 2 meets the purpose and need of the project and affects fewer residences by crossing large parcels that are mostly undeveloped. A cost comparison will be available during the preparation of the EA to help in selecting a preferred alternative. In Spring 2014, a project newsletter will be distributed to individuals on the mailing list with updates on the progress of the EA and links to available online resources.

29. David Cherry, 365 Ketner Farm Road, China Grove, NC

Comment: Mr. Cherry prefers Alternative 1 and suggests a new bridge over I-85.

Response: Preference for Alternative 1 is noted.

30. Brenda Elaine Rogers Langley, 1225 Old Beatty Ford Road, China Grove, NC

Comment: She prefers Alternative 2 because it will have fewer impacts and take less time to build that would Alternative 1.

Response: Preference for Alternative 2 is noted.

31. Keith and Debbie Roach, 3070 N. Cannon Boulevard, Kannapolis, NC

Comment: Ms. Roach supports Alternative 2 because of its straighter alignment. She is wondering why the project does not include the construction of an interchange now, rather than waiting until later when it will cost more.

Response: Preference for Alternative 2 is noted. As mentioned in Response #6, Project W-5516 focuses on safety improvements. A future I-85 interchange would be evaluated separately in the unfunded TIP Project I-3804.

32. Charles Rymer, 1810 Old Beatty Ford Road, China Grove, NC

Comment: Mr. Rymer believes that the project is just for the benefit of landowners between Lentz Road and I-85 and that the project should not be built. He believes the existing road would be safer if people would drive the speed limit and without drugs/alcohol.

Response: As mentioned in Response #3, there has been a history of severe crashes, and the project's purpose is to reduce the frequency of these types of crashes. By improving horizontal and vertical curves and increasing the roadway and shoulder widths, crashes are expected to reduce by more than 70 percent. Both alternatives meet the intended purpose and are being planned to avoid or minimize impacts to the human and natural environment.

E-Mail Comments

The following questions and comments were received from individuals that did not attend the workshop.

33. Shelly Williamson, 5045 Ruff Road, Concord, NC

Comment: Ms. Williamson believes that the EA should look at an interchange as part of the project. She is also concerned about water quality impacts during construction and the addition of bike lanes on new road.

Response: As described in Response #6, Project W-5516 focuses on safety improvements. Neither alternative would preclude a future I-85 interchange from being evaluated separately in the unfunded TIP Project I-3804. The project is being planned to minimize impacts to water resources, and the EA will include an evaluation of water quality impacts. Bike lanes are not included in the Comprehensive Transportation Plan for this area and are not included in the project.

34. Thomas Corl, 336 Serenity Ridge Road, China Grove, NC

Comment: Mr. Corl voiced his concern over the cost of the project and the influence of developers of the large tracts of land on the project. He also suggested the construction of a service road from the existing road to the new road to provide better connection to Landis and China Grove.

Response: As mentioned in Response #3, there is a demonstrated safety need for the project. Alternatives 1 and 2 meet the purpose and need. Alternative 2 affects

fewer residences by crossing large parcels that are mostly undeveloped. The project is being planned according to Federal Highway Administration guidelines and the National Environmental Policy Act (NEPA). A cost comparison will be available during the preparation of the EA to help in selecting a preferred alternative. As mentioned in Response #18, a service road between Old Beatty Ford Road and Alternative 2 is beyond the scope of this project.

35. Paula Shoemaker, PO Box 133, Rockwell, NC

Comment: She asked if there was any more leaning toward Alternative 1 or if meetings would be held for its selection.

Response: As mentioned in Response #28, a project newsletter will be distributed in Spring 2014 to individuals on the mailing list with updates on the status of a preferred alternative and progress of the EA.

36. Pastor Chris O'Guin, 2215 Old Beatty Ford Road, China Grove, NC

Comment: Pastor O'Guin's house will be greatly impacted, and he is concerned about the geometry of the new road with Alternative 1. He does not like Alternative 2 but believes it is the logical choice of the two. He suggests shifting Alternative 1 south of the existing bridge on Old Beatty Ford Road to avoid homes. With Alternative 2, he suggests a new service road from Old Beatty Ford Road to the new route or from Lane Street to the new road if money allows.

Response: These comments were previously addressed in Response #24.

37. Rodney Hinson, 3295 Old Beatty Ford Road, China Grove, NC

[This comment was received after the post-public meeting review.]

Comment: Mr. Hinson prefers a new road from I-85 to Lentz Road using Alternative 2. New ramps to I-85 would be helpful.

Response: Preference for Alternative 2 is noted. As mentioned in Response #6, a future I-85 interchange would be evaluated separately in the unfunded TIP Project I-3804.

The following action items were recorded:

- NCDOT will distribute the meeting minutes to serve as a response to individuals who provided comments on the project.
- NCDOT will schedule a meeting in spring 2014 to compare the results of the alternative studies and identify a preferred alternative
- An open-house style public hearing is anticipated to be held in mid 2014 after the EA is approved.

JBA/mlr

Public Comments
Correspondence with Highest Praise Family Worship Center

From: Abernathy, Brett [mailto:jbabernathy@ncdot.gov]
Sent: Monday, May 05, 2014 11:12 AM
To: HP Administrator
Cc: Corriher, Christopher T; Hatton, Rodney K; Lambert, Ray C; Reep, Mark (mreep@icaeng.com); Mundt, Leza W; Davila, Felix (FHWA); Waller, Dave (dwaller@icaeng.com); Ivey, Stephen P
Subject: RE: W-5516 Public Meeting Maps

Anita,
I'm sorry you didn't get the information until this morning. I sent the map as soon as I received it from the engineering firm. I have provided answers to your questions below [italicized].

Please let me know if we need to follow up on any of your concerns. I can have the appropriate staff contact you at your convenience. The preferred alternate has not been selected but we will notify you when an announcement is made. Presently, construction is slated to begin on the project as soon as Fall of 2015.

Thanks you for responding and if you have additional questions or concerns, please let me know.

Thanks,
Brett

Brett Abernathy, PE, PLS
Division Project Manager
NCDOT Division 9
375 Silas Creek Parkway
Winston-Salem, NC 27127
336-747-7800

From: HP Administrator [mailto:administrator@hpfwc.net]
Sent: Monday, May 05, 2014 10:38 AM
To: Abernathy, Brett
Subject: RE: W-5516 Public Meeting Maps

Brett,

I didn't get this map until this morning, but I was able to go on the NCDOT website and print the proposed widening and relocation sheets, and gave the elders copies of that.

We had our elders meeting yesterday. None of them were opposed to the straightening of Old Beatty Ford Rd., siting the accidents that have been on that road. When we "voted", basically none were opposed or in favor of either one because this was all news to them, and there was no time to give it thought or consideration. They did seem to think the relocation and straightening of the road would be good for the community. I did tell them that construction could begin very soon.

Their questions were:

1. Is the red lines on either side of the road the Right of Way…and will that be property that we can or cannot use? (from the map I printed on your webpage)

Response: The red lines on the public meeting map denote the study area. They do not represent the R/W. The R/W is depicted on the map I sent you on Friday.

2. How much of our property in total will we lose, and will we be compensated for it? At this time I do not have the total area of your property that will be impacted by the project.

Response: Yes, you will be compensated for it and if you would like more information on how that process works, I can have someone from our Right of Way office contact you.

3. Will we have any of our property on the other side of Old Beatty Ford Road?

Response: At this time you will have a remnant piece of property on the opposite side of Old Beatty Ford Road. Our R/W staff can also address any questions you may have about how that would be handled.

4. Are there any stipulations for access to our property off Old Beatty Ford Road? In other words, will we be able to access our property directly off Old Beatty Ford Rd.? (I believe you answered that affirmatively but I didn't have that answer yesterday)

Response: This is not a controlled access roadway, so you will be able to access the church property off of Old Beatty Ford Road. You will just need to go through our standard driveway approval process handled through the District Engineer's office In Salisbury. If needed, I can have our District Engineer call you concerning this.

5. …on a different subject, do you know when DOT plans to begin widening I-85 at China Grove?

Response: NCDOT is in the process of updating the way we prioritize projects. This ongoing process is nearing completion and we hope to have the final results by later this summer or early fall. We anticipate the widening of I-85 will move up on our prioritization list, but we have no definitive answers at this time.

We appreciate your notifying us, and keeping us informed.

Thank you,

Anita W.

Highest Praise Family Worship Center
(Formerly Landis Church of God)

Public Comments
Correspondence with Highest Praise Family Worship Center

From: Abernathy, Brett [mailto:jbabernathy@ncdot.gov]
Sent: Friday, May 02, 2014 2:15 PM
To: HP Administrator
Subject: RE: W-5516 Public Meeting Maps

Anita,

I have just received the plan sheet from our engineering firm showing the proposed R/W impacts to the church property. Unfortunately I do not have the areas calculated, so I can't provide that information at this time. The Right of way is shown on the plan sheet as a solid dark line with a R/W in a circle. The solid lines with the letter "E" on them are temporary construction easements. NCDOT pays the owner for the use of that property during construction and after the project is completed the property reverts back to the owner. I will be leaving the office around 2:30 today but will be happy to answer any questions you may have on Monday. There is no driveway shown at this time, but if the church would like a driveway turnout for future expansion, that shouldn't be a problem. I look forward to hearing from you early next week. Have a good weekend.

Brett

From: HP Administrator [mailto:administrator@hpfwc.net]
Sent: Wednesday, April 23, 2014 3:06 PM
To: Abernathy, Brett
Subject: RE: W-5516 Public Meeting Maps

We are scheduled to have an elder's meeting Sunday May 4th. Will you need any information from us before then? What is the deadline for input, and when will the decision be made as to whether you will widen or straighten Old Beatty Ford Rd.?

I would like to let them know how much of our property will be effected, or exactly where along our property the proposed road will go. I will try to zoom in on the map I downloaded, and hopefully will be able to get the info from there.

I still think the best idea for us, and for the community will be to straighten Old Beatty Ford Road. I don't know how many accidents have been on the road, but I know of at least two that involved people from church, one at the intersection of Old Beatty Ford and China Grove Rd, and another in the curve right at Bostian Rd.

Thank you for the phone call and I look forward to letting the elders know the NCDOT proposal.

Anita Wallis
Highest Praise Family Worship Center

Public Comments
Correspondence with Highest Praise Family Worship Center

From: Abernathy, Brett [mailto:jbabernathy@ncdot.gov]
Sent: Tuesday, April 15, 2014 9:48 AM
To: administrator@hpfwc.net
Subject: W-5516 Public Meeting Maps

Anita,

The public meeting maps can be found at the link below. You will need to enter W-5516 in the search box and it will give you access to .pdf copies of the maps for Alternate 1 (improving the existing Old Beatty Ford Road) and Alternate 2 (proposed relocation of Old Beatty Ford Road). If you have any questions, please let me know.

http://www.ncdot.gov/projects/publicmeetings/

Thanks,

Brett

NCDOT TO HOLD A PUBLIC MEETING NOV. 12 IN CHINA GROVE REGARDING THE PROPOSED RELOCATION OF OLD BEATTY FORD ROAD (S.R. 1221)

TIP Project W-5516

The N.C. Department of Transportation will hold a public meeting in November regarding a proposed safety project to relocate Old Beatty Ford Road (S.R. 1221) from its intersection with Bostian Road (S.R. 1210 / 1221) to Lentz Road (S.R. 1337) in Rowan County. The project will construct a two-lane road on a new location with a new grade separation over I-85 near Kannapolis, Landis, and China Grove. The bridge carrying existing Old Beatty Ford Road over I-85 will be removed as part of this project. This project study area is about 3 miles long.

The meeting will take place on **Tuesday, Nov. 12** at the **Kannapolis Moose Family Center**, located at **990 Old Beatty Ford Road** in **China Grove** from **4 p.m.** to **7p.m.** Interested citizens may attend at any time during the meeting hours, as there will be no formal presentation. NCDOT representatives will be available to answer questions and listen to comments regarding the project. Citizens will also have the opportunity to submit comments and questions in writing.

The project is currently scheduled for right of way acquisition in September 2014 and construction in September 2015. The Cabarrus-Rowan Metropolitan Planning Organization's Comprehensive Transportation Plan has identified this section of Old Beatty Ford Road (S.R. 1221) as a major thoroughfare that needs improvement. The purpose of the project is to increase safety for the travelling public.

For more information, contact Mr. Brett Abernathy, PE, PLS, Division Project Manager at 375 Silas Creek Parkway, Winston Salem, 27127, by phone at: 336-747-7800 or by email at jbabernathy@ncdot.gov.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who want to participate in these meetings. Anyone requiring special services should contact Jamille Robbins, NCDOT – Human Environment Section at 1598 Mail Service Center, Raleigh 27699; by phone at: (919)707-6085 or by e-mail at: jarobbins@ncdot.gov as early as possible so that arrangements can be made.

Persons who speak Spanish and do not speak English or have a limited ability to read, speak, or understand English, may receive interpretive services upon request prior to the meeting by calling 1-800-481-6494.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

October 31, 2013

Dear Sir or Madam:

RE: Invitation to Local Officials Information Meeting:
TIP Project W-5516 – Proposed Relocation of Old Beatty Ford Road (SR 1221) from the intersection with Bostian Road (SR 1210 / 1221) to Lentz Road (SR 1337) in Rowan County

The North Carolina Department of Transportation (NCDOT) invites you to attend a Local Officials Information Meeting to be held for the above-referenced project. This meeting is scheduled for:

Date: Tuesday, November 12, 2013
Time: 1:00 pm - 2:00 pm
Location: China Grove Town Hall, 333 North Main Street, China Grove, 28023

An informal, drop-in style public meeting will follow the Local Officials Information Meeting from 4:00 pm until 7:00 pm at the Kannapolis Moose Family Center, located at 990 Old Beatty Ford Road in China Grove. Please contact me at 336-747-7800 or by email at jbabernathy@ncdot.gov if you or your representative will attend this Local Officials Information Meeting on November 12. Thank you and we look forward to meeting with you.

Sincerely,

Brett Abernathy, PE, PLS,
Division Project Manager, Division 9 Office

cc: Jamille Robbins, Human Environment Section, NCDOT
Leza Mundt, AICP, Project Planning Engineer, NCDOT
David Waller, PE, ICA Engineering

Division of Highways ♦ Division 9 ♦375 Silas Creek Parkway Winston-Salem, N.C. 27127
Telephone: 336-747-7800 Fax: 336-703-6693

J. Brett Abernathy, P.E.
Division 9 Project Manager
375 Silas Creek Parkway
Winston-Salem, N.C. 27127

Issue 1 | Rowan County | October 2013

PROPOSED RELOCATION OF OLD BEATTY FORD ROAD (S.R. 1221)

State Transportation Improvement Program Project No. W-5516

Project Description

The North Carolina Department of Transportation (NCDOT) Division 9 Office has begun studying the proposed relocation of Old Beatty Ford Road (S.R. 1221) from its intersection with Bostian Road (S.R. 1210/1221) to Lentz Road (S.R. 1337) in Rowan County. The project will construct a two-lane road on new location with a new grade separation over I-85 near Kannapolis, Landis, and China Grove. The bridge carrying existing Old Beatty Ford Road over I-85 will be removed as part of this project. This project study area is approximately 3.1 miles long and is shown on the enclosed map.

The project proposes to improve Old Beatty Ford Road by providing the following:

- 22-foot wide road
- Paved shoulders
- Fewer curves and hills
- Improved intersections

The project is included in the 2012-2020 State Transportation Improvement Project (STIP) and is scheduled for right-of-way acquisition in fiscal year (FY) 2014 and construction in FY 2015. The Cabarrus-Rowan Metropolitan Planning Organization's Comprehensive Transportation Plan has identified this section of Old Beatty Ford Road (S.R. 1221) as a major thoroughfare that needs improvement. The purpose of the project is to increase safety for the travelling public.

Public Meeting

Date: Tuesday, November 12, 2013
Time: 4:00 pm to 7:00 pm (Open house format — drop in any time during the meeting)
Location: Kannapolis Moose Family Center
990 Old Beatty Ford Road / China Grove, 28023

Interested citizens may attend the public meeting at any time during the meeting hours, as there will be no formal presentation. NCDOT representatives will be available to answer questions and listen to comments regarding the project. Citizens will also have the opportunity to submit comments and questions in writing.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who want to participate in these meetings. Anyone requiring special services should contact Jamille Robbins, Public Involvement Group Leader, NCDOT — Human Environment Section at 1598 Mail Service Center, Raleigh 27699; by phone at: **(919) 707-6085** *or by e-mail at:* **jarobbins@ncdot.gov** *as early as possible so that arrangements can be made.*

Maps displaying the location and design of the project are available on NCDOT's website at: http://www.ncdot.gov/projects/publicmeetings/

Persons who speak Spanish and do not speak English, or have a limited ability to read, speak or understand English, may receive interpretive services upon request by calling **1-800-481-6494**.

For more information about this project, contact:

J. Brett Abernathy, P.E.
Division 9 Project Manager
375 Silas Creek Parkway
Winston-Salem, N.C. 27127
(336) 747-7800
jbabernathy@ncdot.gov

NCDOT is on the Web!

www.ncdot.gov

Public involvement is an important part of the planning process. The NCDOT encourages citizen involvement on transportation projects, and will consider your suggestions and address your concerns. If you have transportation questions on other projects, call our Customer Services Center toll-free at **1-877-DOT-4YOU**, or visit the NCDOT website at **www.ncdot.gov**.

Connecting people and places safely and efficiently, with accountability and environmental sensitivity to enhance the economy, health and well-being of North Carolina.

Why is it Needed?

In short, NCDOT is looking at relocating Old Beatty Ford Road in order to improve the safety of the traveling public. A 2007 NCDOT Road Safety Review of a 16-mile section of the road showed high crash rates over a five-year period, including crashes involving fatalities. The most prevalent crashes resulted from vehicles leaving their travel lanes, vehicles running off the road and from frontal impacts due to angle and turning collisions. This Road Safety Review helped to identify potential safety improvements to be considered with future projects.

The existing roadway is 18 to 22 feet wide with narrow, unpaved shoulders and multiple sharp curves. It has a speed limit of 55 mph, but several curves are posted with 25 to 35 mph advisory signs. The existing bridge over I-85 is in need of rehabilitation as it is considered structurally deficient and functionally obsolete, has posted weight limits and has a sufficiency rating of 38 out of a possible 100. The west approach of Old Beatty Ford Road (S.R. 1221) forms a Tee intersection with Lentz Road (S.R. 1337), which requires traffic to turn to remain on Old Beatty Ford Road (S.R. 1221). This turn contributes to the number of crashes at the intersection.

The Environment

The project is being designed in a way that it does not have an adverse effect on the human or natural environment. The land use within the study area consists of mostly rural agricultural and low density housing sitting on large lots.

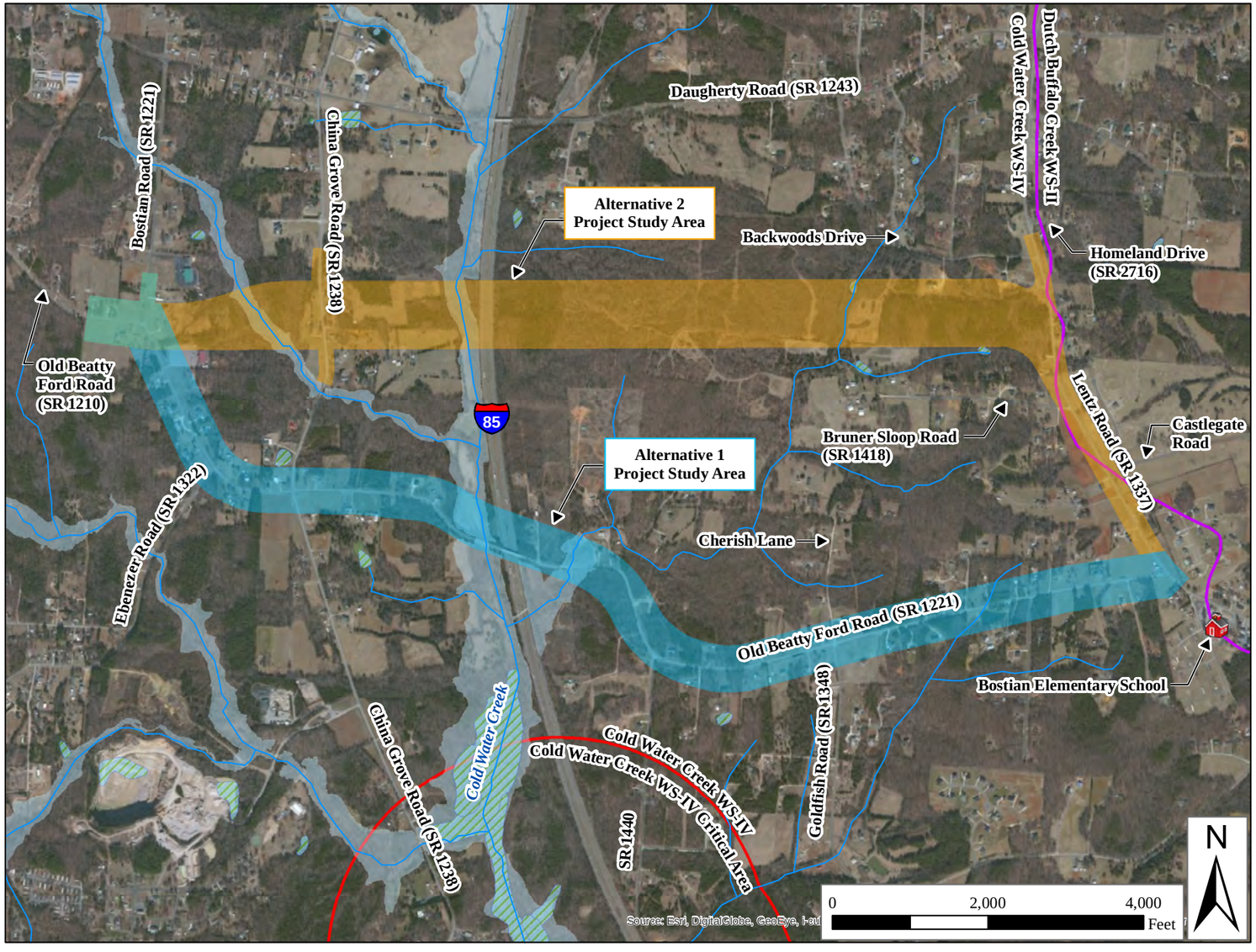
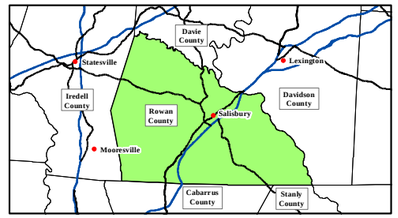
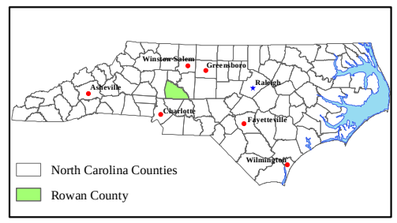


Figure 2 - Environmental Features Map, W-5516 Relocation of Old Beatty Ford Road (SR 1221), Rowan County

- Alternative 1 Project Study Area
- Alternative 2 Project Study Area
- National Wetland Inventory
- Floodplain
- Water Supply Watershed Critical Area
- Water Supply Watershed Boundary
- Stream or Creek
- School

Map Sources:
North Carolina Department of Transportation
NC Floodplain Mapping Program
NC One Map
ESRI ArcGIS Online World Imagery
ICA Engineering





The project is located either within, or adjacent to, two water supply watersheds — areas where water drains, is collected, and then is used as a source for public drinking water. The Cold Water Creek watershed, located west of Lentz Road (S.R. 1337), is highly developed. The Dutch Buffalo Creek watershed, located east of Lentz Road, is within a predominantly undeveloped area. Town Creek, Cold Water Creek, and an unnamed tributary of Cold Water Creek cross the project study area.

Alternatives

Alternative 1 — This alternative generally follows existing Old Beatty Ford Road (S.R. 1221), but also removes a number of curves to straighten the roadway. This alternative is approximately 3.1 miles long.

Alternative 2 — This alternative is partly on a new location and follows Lentz Road (S.R. 1337) for approximately 0.6 mile to its intersection with Old Beatty Ford Road (S.R. 1221). This alternative is also approximately 3.1 miles long.

Project Schedule*

Environmental Assessment — Spring 2014
Final Environmental Document — Summer 2014
Right-of-Way Acquisition — Fall 2014
Construction — FY 2015
* Schedules are subject to funding

PUBLIC MEETING FOR THE PROPOSED RELOCATION OF OLD BEATTY FORD ROAD (S.R. 1221)

State Transportation Improvement Program (STIP)
Project No. W-5516

November 12, 2013

Welcome!

Purpose of the Meeting

The purpose of the workshop is to:

- Introduce the project and project team.
- Present information related to the proposed transportation improvements.
- Discuss any concerns and answer questions on the proposed project.
- Receive your comments on the proposed project.

NCDOT is on the Web!
www.ncdot.gov

Public involvement is an important part of the planning process. The NCDOT encourages citizen involvement on transportation projects, and will consider your suggestions and address your concerns. If you have transportation questions on other projects, call our Customer Service Center toll-free at 1-877-DOT-4YOU, or visit the NCDOT website at www.ncdot.gov.

Meeting Format

- The Meeting this evening is an “open-house” style format between the hours of 4:00 p.m. and 7:00 p.m. Project representatives are located around the room to discuss the project with you and answer your questions.
- Please sign in at the registration table.
- Several displays showing project related information are stationed around the room.
- Comment forms are available and can be filled out tonight or returned by mail to the address shown on the form.

Project Description

The North Carolina Department of Transportation (NCDOT) Division 9 Office has begun studying the proposed relocation of Old Beatty Ford Road (S.R. 1221) from its intersection with Bostian Road (S.R. 1210/1221) to Lentz Road (S.R. 1337) in Rowan County. The project will construct a two-lane road on new location with a new grade separation over I-85 near Kannapolis, Landis, and China Grove. The bridge carrying existing Old Beatty Ford Road over I-85 will be removed as part of this project. This project study area is approximately 3.1 miles long and is shown on the enclosed map. The project proposes to improve Old Beatty Ford Road by providing the following:

- 22-foot wide road
- Paved shoulders
- Fewer curves and hills
- Improved intersections

The project is included in the 2012-2020 State Transportation Improvement Project (STIP) and is scheduled for right-of-way acquisition in Fall 2014 and construction in FY 2015. The Cabarrus-Rowan Metropolitan Planning Organization’s Comprehensive Transportation Plan has identified this section of Old Beatty Ford Road as a major thoroughfare that needs improvement.

Why is the Project Needed?

A 2007 NCDOT Road Safety Review of a 16-mile section of the road showed high crash rates over a five-year period, including crashes involving fatalities. The most prevalent crashes resulted from vehicles leaving their travel lanes, vehicles running off the road and from frontal impacts due to angle and turning collisions. This Road Safety Review helped to identify potential safety improvements to be considered with future projects.

The existing roadway is 18 to 22 feet wide with narrow, unpaved shoulders and multiple sharp curves. The speed is limited in several curves that are posted with 25 to 35 mph advisory signs. The existing bridge over I-85 is in need of rehabilitation as it is considered structurally deficient and functionally obsolete, has posted weight limits and has a sufficiency rating of 38 out of a possible 100. The west approach of Old Beatty Ford Road forms a T-intersection with Lentz Road, which requires traffic to turn to remain on Old Beatty Ford Road. This turn contributes to the number of crashes at the intersection.

Alternatives

NCDOT is designing the project in a way that it does not have an adverse effect on the human or natural environment. Two alternatives are being evaluated:

- Alternative 1 — This alternative generally follows existing Old Beatty Ford Road, but also removes a number of curves to straighten the roadway. This alternative is approximately 3.1 miles long.
- Alternative 2 — This alternative is partly on a new location and follows Lentz Road for approximately 0.6 mile to its intersection with Old Beatty Ford Road. This alternative is also approximately 3.1 miles long.

Project Schedule*

- Environmental Assessment — Spring 2014
- Final Environmental Document — Summer 2014
- Right-of-Way Acquisition — Fall 2014
- Construction — FY 2015

*Schedules are subject to funding

Project Contact Information

If you need additional information or would like to discuss the project further, please contact the project representative listed below.

Mr. J. Brett Abernathy, P.E.
NCDOT Division 9 Project Manager
375 Silas Creek Parkway
Winston-Salem, NC 27127
(336) 747-7800
jbabernathy@ncdot.gov

Project Vicinity Map

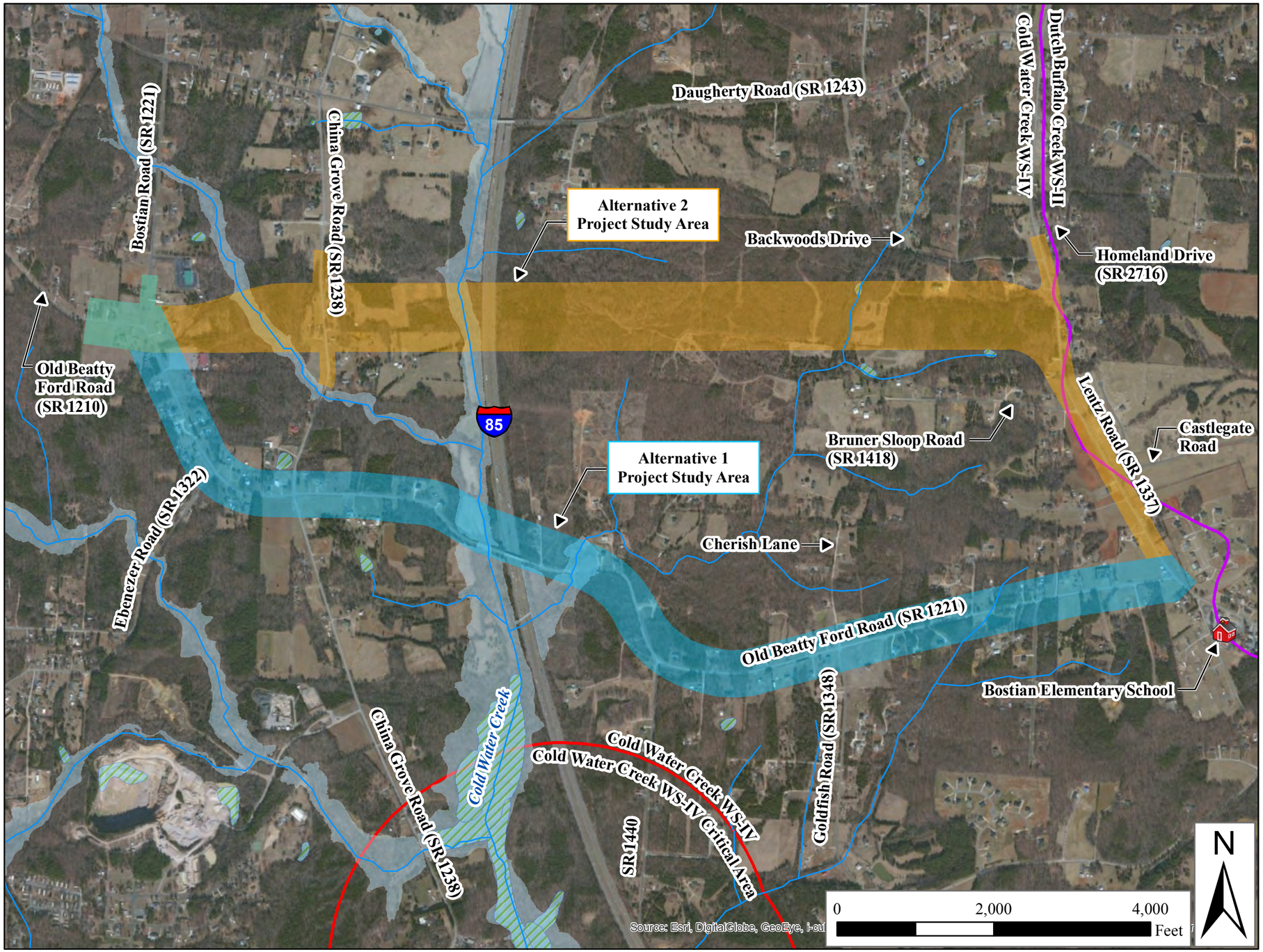
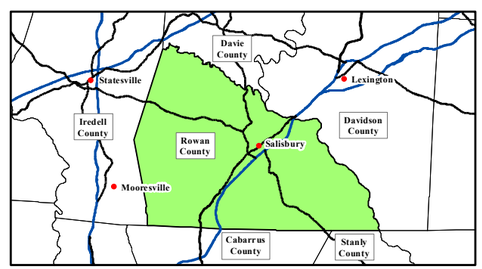
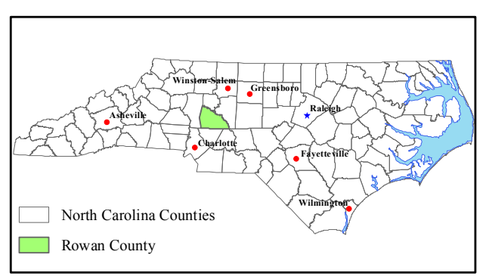


Figure 1 - Environmental Features Map, W-5516 Relocation of Old Beatty Ford Road (SR 1221), Rowan County

- Alternative 1 Project Study Area
- Alternative 2 Project Study Area
- National Wetland Inventory
- Floodplain
- Water Supply Watershed Critical Area
- Water Supply Watershed Boundary
- Stream or Creek
- School

Map Sources:
North Carolina Department of Transportation
NC Floodplain Mapping Program
NC One Map
ESRI ArcGIS Online World Imagery
ICA Engineering





TITLE VI PUBLIC INVOLVEMENT FORM

Completing this form is completely voluntary. You are not required to provide the information requested in order to participate in this meeting.

Meeting Type: Public Meeting **Location:** Kannapolis Moose Family Center, 990 Old Beatty Ford Road / China Grove, 28023	**Date:** November 12, 2013
TIP No.: W-5516 **Project Description: Proposed relocation of Old Beatty Ford Road (S.R. 1221) from its intersection with Bostian Road (S.R. 1210/1221) to Lentz Road (S.R. 1337) in Rowan County.**	

In accordance with Title VI of the Civil Rights Act of 1964 and related authorities, the North Carolina Department of Transportation (NCDOT) assures that no person(s) shall be excluded from participation in, denied the benefits of, or subjected to discrimination under any of the Department's programs, policies, or activities, based on their race, color, national origin, disability, age, income, or gender.

Completing this form helps meet our data collection and public involvement obligations under Title VI and NEPA, and will improve how we serve the public. Please place the completed form in the designated box on the sign-in table, hand it to an NCDOT official or mail it to the PDEA-Human Environment Section, 1598 Mail Service Center, Raleigh, NC 27699-1598.

All forms will remain on file at the NCDOT as part of the public record.

Zip Code: _____

Street Name:
(i.e. Main Street) _____

Total Household Income:

- ☐ Less than $12,000
- ☐ $12,000 – $19,999
- ☐ $20,000 – $30,999
- ☐ $31,000 – $46,999
- ☐ $47,000 – $69,999
- ☐ $70,000 – $93,999
- ☐ $94,000 – $117,999
- ☐ $118,000 or greater

Gender: ☐ Male ☐ Female

Age:

- ☐ Less than 18
- ☐ 18-29
- ☐ 30-44
- ☐ 45-64
- ☐ 65 and older

Have a Disability: ☐ **Yes** ☐ **No**

Race/Ethnicity:

- ☐ White
- ☐ Black/African American
- ☐ Asian
- ☐ American Indian/Alaskan Native
- ☐ Native Hawaiian/Pacific Islander
- ☐ Hispanic/Latino
- ☐ Other (please specify): _____

National Origin: (if born outside the U.S.)

- ☐ Mexican
- ☐ Central American: _____
- ☐ South American: _____
- ☐ Puerto Rican
- ☐ Chinese
- ☐ Vietnamese
- ☐ Korean
- ☐ Other (please specify): _____

How did you hear about this meeting? (newspaper advertisement, flyer, and/or mailing) _____

For more information regarding Title VI or this request, please contact the NCDOT Title VI Section at (919) 508-1808 or toll free at 1-800-522-0453, or by email at slipscomb@ncdot.gov.

Thank you for your participation!

Mr. Jamille Robbins
NCDOT - PDEA
Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

Comment Sheet

PROPOSED RELOCATION OF OLD BEATTY FORD ROAD (S.R. 1221)

State Transportation Improvement Program Project No. W-5516

NCDOT Public Meeting
November 12, 2013

Name:

Address:

Email:

Comments and/or Questions:

Which Alternative do you prefer? (Please circle one) **Alternative 1** **Alternative 2**

Mr. J. Brett Abernathy, P.E.
NCDOT Division 9 Project Manager
375 Silas Creek Parkway
Winston-Salem, NC 27127

APPENDIX D

Traffic Volumes

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

February 27, 2014

MEMORANDUM TO: Brett Abernathy, PE
Division 9

FROM: Bryan D. Johnson
Transportation Planning Branch

SUBJECT: Traffic Forecast for TIP Project W-5516
Rowan County
Relocate SR 1221 from SR 1210 to SR 1337

Please find attached the 2013 / 2025 / 2035 Traffic Forecast for the above mentioned project. Project W-5516 is defined as the relocation of SR 1221 from SR 1210 to SR 1337. There are two alternatives to this project. Alternative 1 generally follows the existing alignment; the volume of traffic for this alternative is the same as the No-Build scenario. Alternative 2 extends partly on a new location to the north. W-5516 is scheduled for construction in 2015 in the STIP. This is the first forecast for this project. This project lies within the Cabarrus-Rowan MPO area.

The forecast for W-5313, dated April 7, 2011, was reviewed during the development of this forecast. Linda Dosse, PE, NCDOT Transportation Planning Branch; Brett Abernathy, PE, NCDOT Division 9; Chris Corriher, PE, NCDOT Division 9; Shane Stewart, Rowan County Planning and Development; Phil Conrad, AICP, Cabarrus-Rowan MPO; Jeff Wells, Kannapolis Planning Department; and Diane Hampton, PE, NCDOT Division 9, were consulted during the development of this forecast.

The following scenarios are provided:

- 2013 Base Year No-Build
- 2013 Base Year Alternative 2
- 2025 Interim Year No-Build without I-3804
- 2025 Interim Year No-Build with I-3804
- 2025 Interim Year Alternative 2 without I-3804
- 2025 Interim Year Alternative 2 with I-3804
- 2035 Future Year No-Build with I-3804
- 2035 Future Year Alternative 2 with I-3804
- 2035 Future Year Alternative 2 without I-3804

Certain assumptions were made in the development of the forecast:

Fiscal Constraint: Within an MPO, the future year forecasts assume construction of projects as listed within the MPO's Long Range Transportation Plan (LRTP). This forecast is consistent with the Cabarrus-Rowan MPO's current LRTP, adopted March 24, 2010.

The LRTP includes the widening of I-85 (TIP Project I-3802B), scheduled in the 2025 Horizon Year of the LRTP. TIP Project I-3804, a new interchange at I-85 and SR 1221 is also scheduled in the 2025 Horizon Year of the LRTP. Several scenarios were prepared showing W-5516 with and without I-3804 completed.

Development Activity: Based upon information provided by Shane Stewart, Rowan County Planning Department, there are currently no specific plans for development what would significantly affect traffic within the project area. While the zoning map for Kannapolis shows that some of the project area is zoned for Campus Development; there are no definite plans and this is not assumed for this forecast.

Methodology:
The Base Year No-Build forecast was developed primarily based upon traffic counts taken for this forecast and for the W-5313 forecast, as well as historic traffic counts and trends.

The Base Year Alternative 2 forecast was developed using the Metrolina Regional Model 2011 (version 1.1) and applying the predicted shift in traffic to the Base Year No-Build estimate.

The growth rate calculated from the MRM11's output was applied to the Base Year No-Build estimate to help determine the volume for the Interim Year No-Build Forecast without I-3804. The Interim Year No-Build Forecast with I-3804 was developed by using the MRM11 to see how traffic will shift when the interchange is added. To determine the Interim Year Alternative 2 without I-3804 volumes, the model was used to estimate how traffic would shift between the two scenarios. The model was then used to estimate the shift in traffic between the Interim Year Alternative 2 without I-3804 and with I-3804 scenarios.

The Future Year No-Build scenario was developed using the MRM11's output to calculate the growth rates between that scenario and the Interim Year No-Build scenario. The Future Year Alternative 2 with I-3804 scenario was determined by using the MRM11's predicted shift in traffic from the Future Year No-Build scenario. The Future Year Alternative 2 without I-3804 was developed using the growth rate calculated from the MRM11's output between the Interim Year Alternative 2 with I-3804 and the Future Year Alternative 2 with I-3804 scenarios.

Interpolation:
The table below shows a visual representation of what interpolations are allowed.

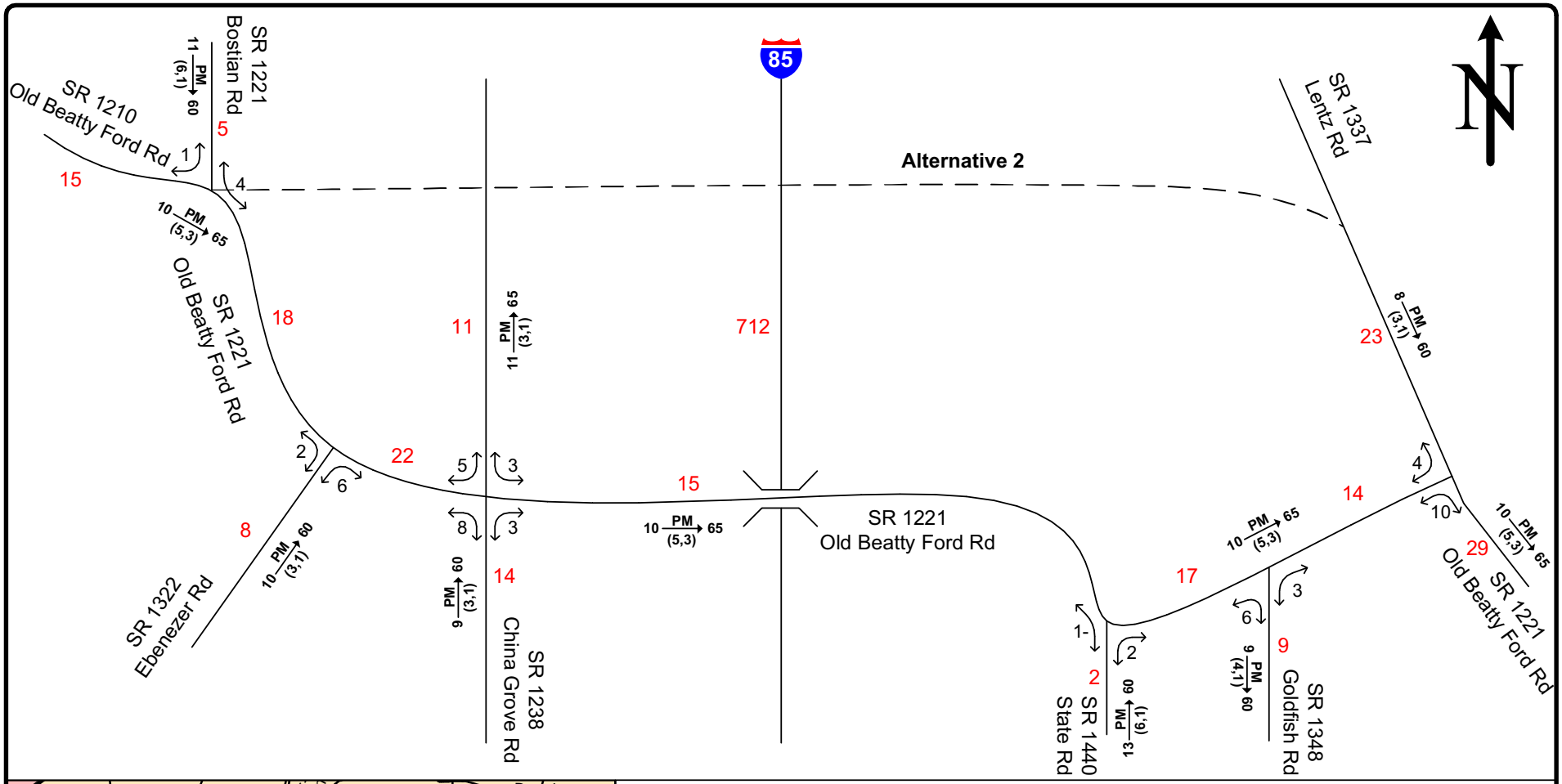
Forecast Scenarios - Interpolation Chart			
No-Build	2013 (Sheet 1) →	2025 without I-3804 (Sheet 3)	
		2025 with I-3804 (Sheet 4) →	2035 with I-3804 (Sheet 7)
Alternative 2	2013 (Sheet 2) →	2025 without I-3804 (Sheet 5) →	2035 without I-3804 (Sheet 9)
		2025 with I-3804 (Sheet 6) →	2035 with I-3804 (Sheet 8)

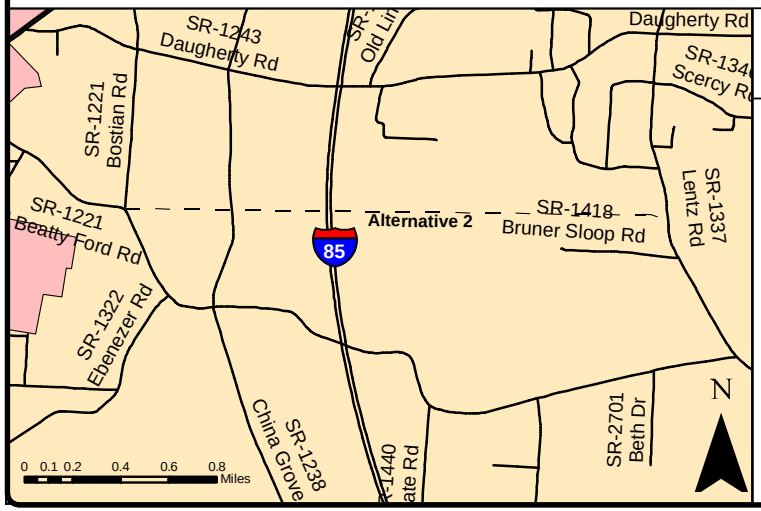
The use of straight-line interpolation to estimate AADT for years between the arrows, and straight-line extrapolation to estimate AADT for up to 2 years beyond the 2035 scenarios is acceptable.

For future reference this forecast will be saved in Project Store in the LongRangePlanning\ Traffic Forecasts folder, under project W5516. If you have any questions or I can be of further assistance, please do not hesitate to call me at (919) 707-0985, or e-mail me at bdjohnson3@ncdot.gov.

cc: FILE (Rowan County, TIP Project W-5516)

cc: *Final distribution for your records via e-mail. Diagrams as PDF attachment*
Jay Bennett, PE, NCDOT Roadway Design Unit
Deborah Hutchings, PE, NCDOT Transportation Planning Branch
Jamal Alavi, PE, NCDOT Transportation Planning Branch
James Dunlop, PE, NCDOT Congestion Management Section
Don Chen, PE, NCDOT Pavement Management Unit
Diane Hampton, NCDOT Division 9 Planning Engineer
Phil Conrad, AICP, Cabarrus-Rowan MPO





2013 AVERAGE ANNUAL DAILY TRAFFIC

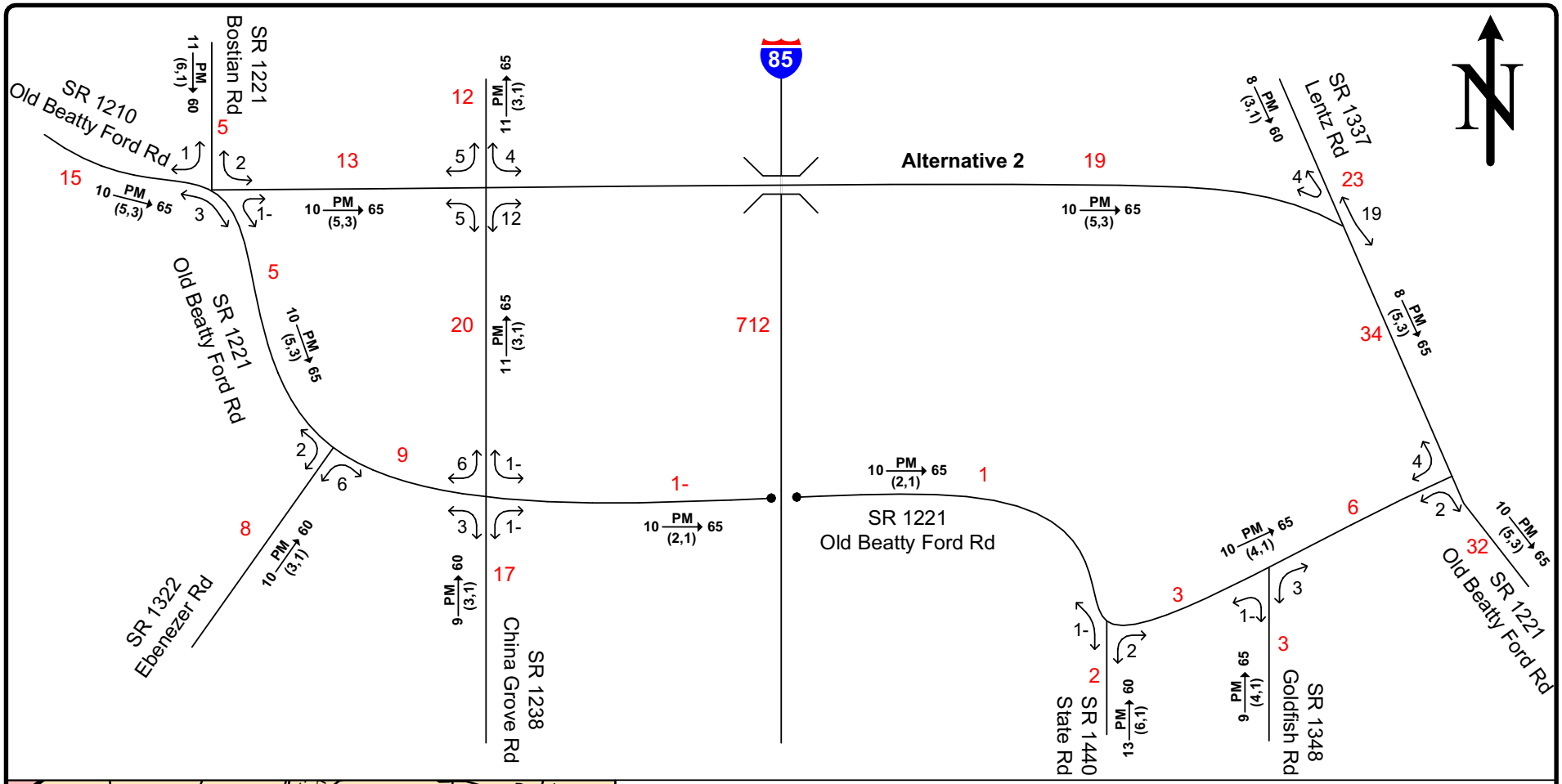
No-Build

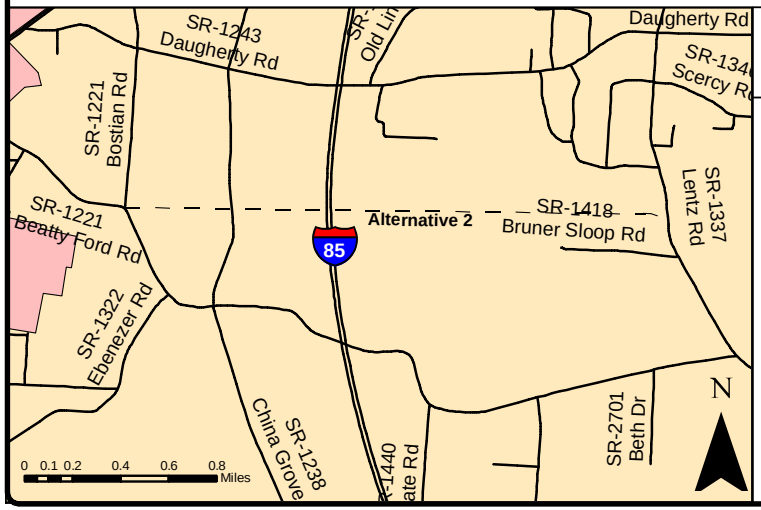
SHEET 1 OF 9

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K PM (d, t) D	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: W-5516	**WBS:** 44105.1.FD1
COUNTY: Rowan	**DIVISION:** 9
DATE: 02-27-2014	
PREPARED BY: Bryan D. Johnson	
LOCATION: **SR 1221** (Old Beatty Ford Rd) from Bostian Rd to Lentz Rd	
PROJECT: Relocate SR 1221	





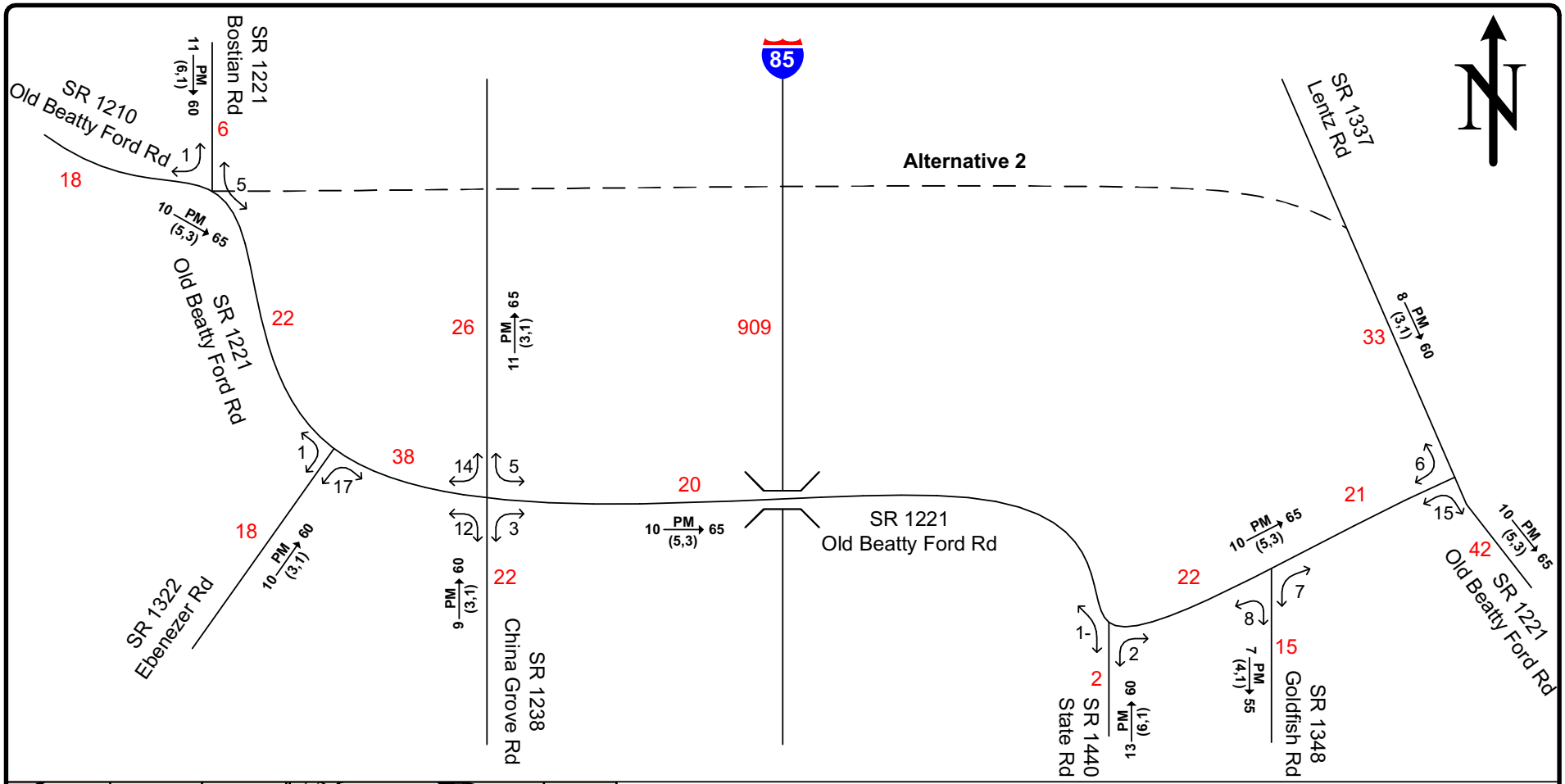
2013 AVERAGE ANNUAL DAILY TRAFFIC

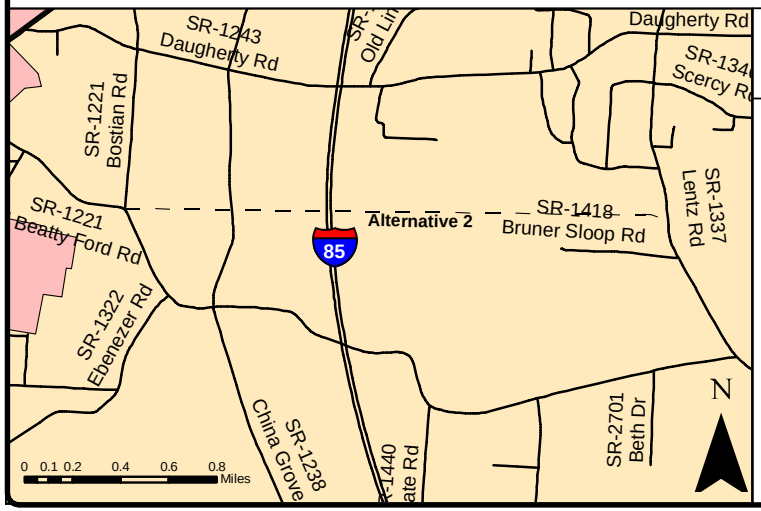
ALTERNATIVE 2
SHEET 2 OF 9

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K PM (d, t) D	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: W-5516	**WBS:** 44105.1.FD1
COUNTY: Rowan	**DIVISION:** 9
DATE: 02-27-2014	
PREPARED BY: Bryan D. Johnson	
LOCATION: **SR 1221** (Old Beatty Ford Rd) from Bostian Rd to Lentz Rd	
PROJECT: Relocate SR 1221	





2025 AVERAGE ANNUAL DAILY TRAFFIC

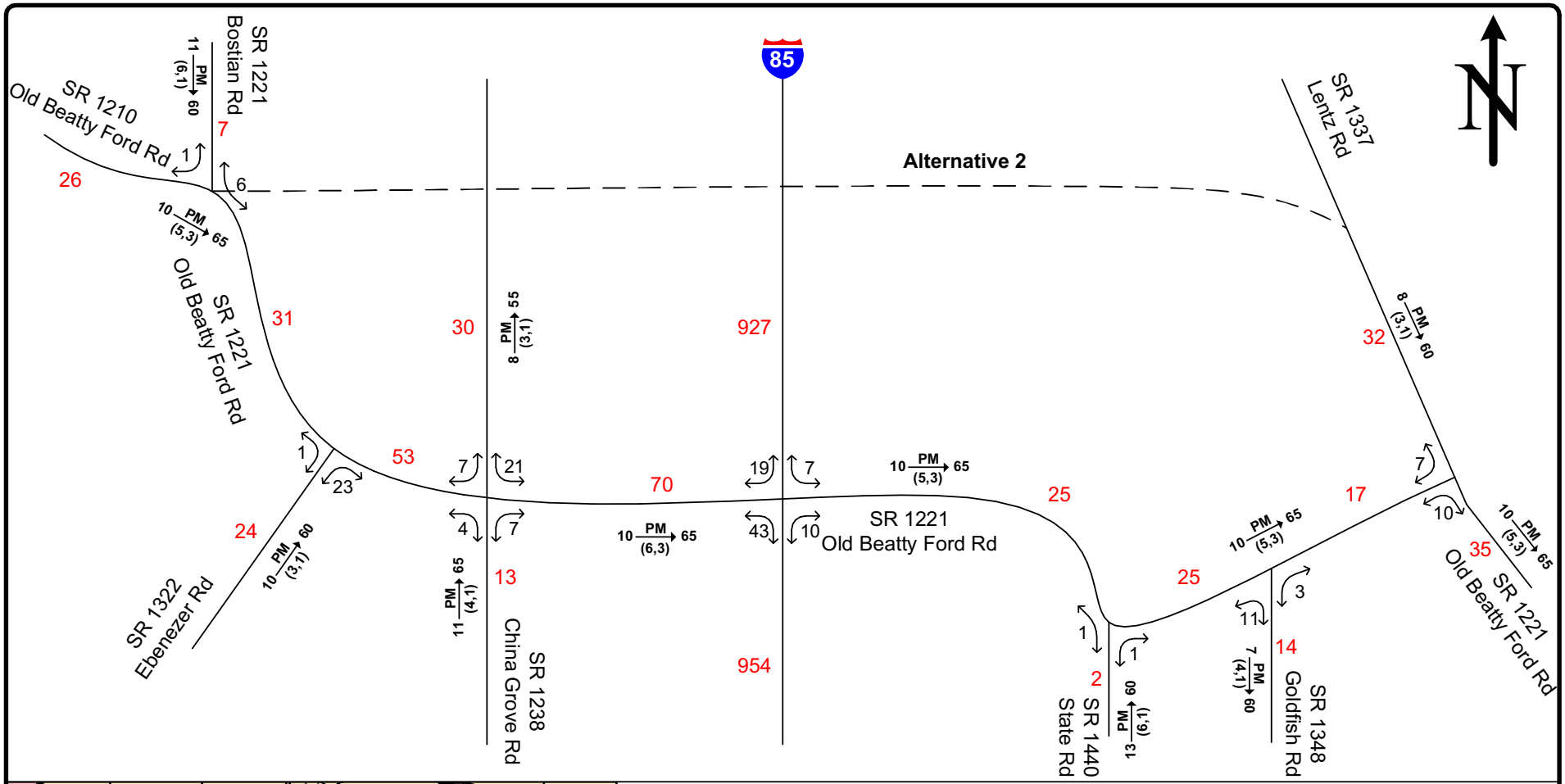
No-Build - without I-3804

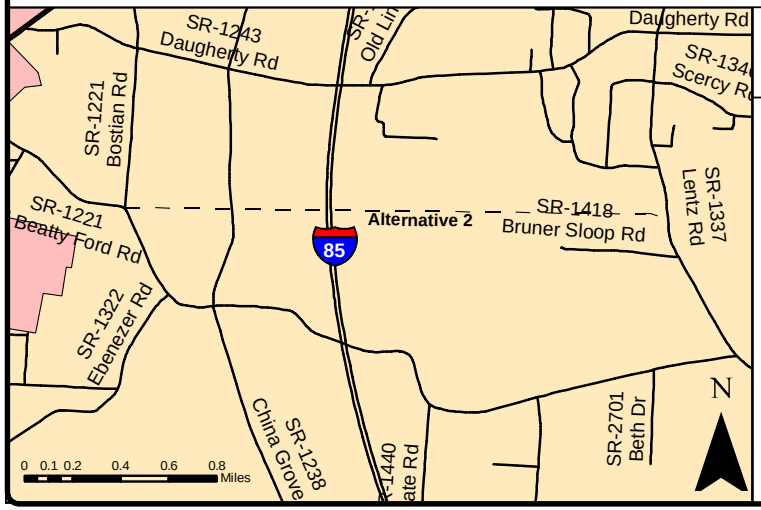
SHEET 3 OF 9

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K PM (d, t) D	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: W-5516	**WBS:** 44105.1.FD1
COUNTY: Rowan	**DIVISION:** 9
DATE: 02-27-2014	
PREPARED BY: Bryan D. Johnson	
LOCATION: **SR 1221** (Old Beatty Ford Rd) from Bostian Rd to Lentz Rd	
PROJECT: Relocate SR 1221	





2025 AVERAGE ANNUAL DAILY TRAFFIC

No-Build - with I-3804

SHEET 4 OF 9

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K PM (d, t) D	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
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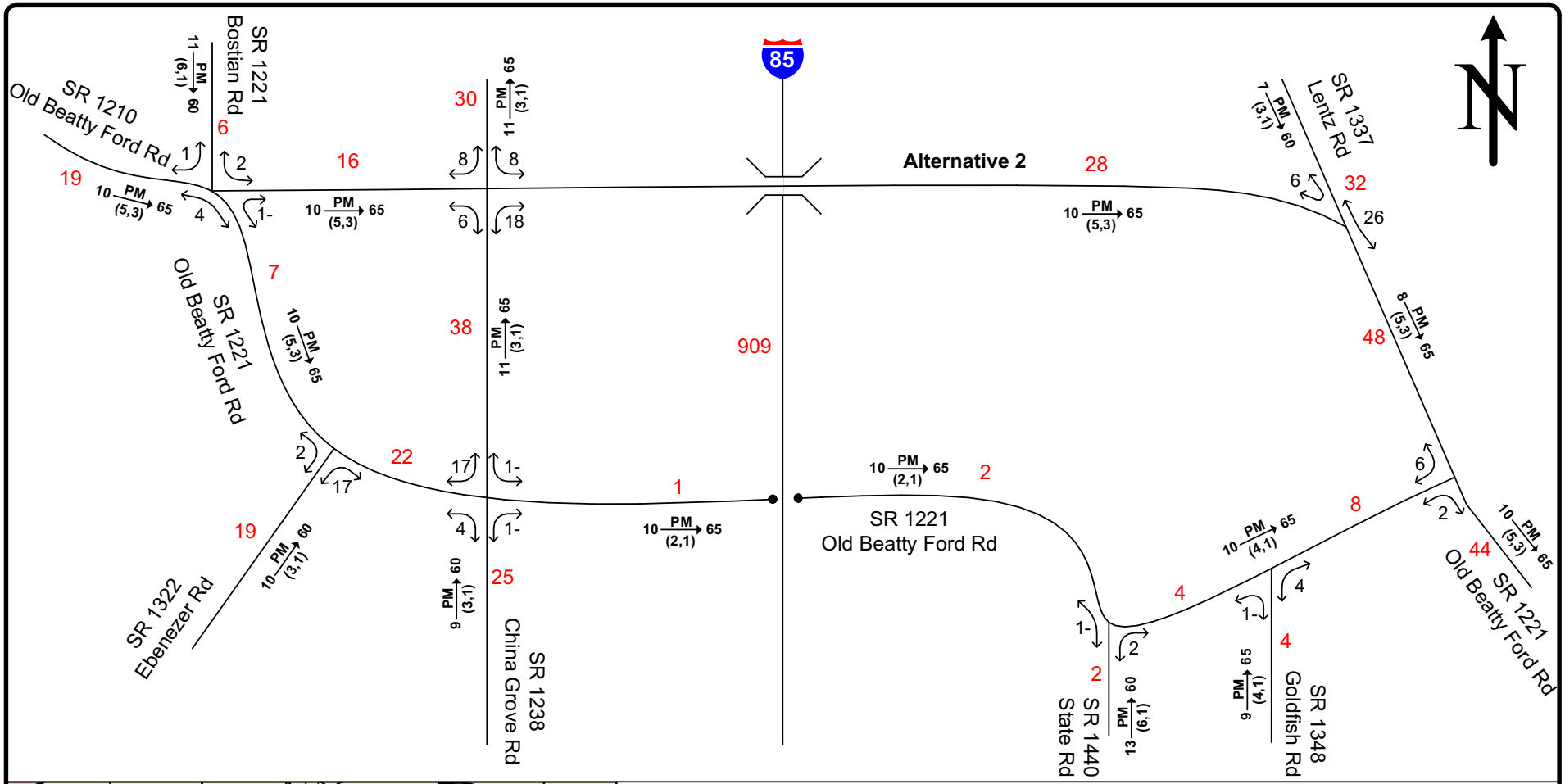
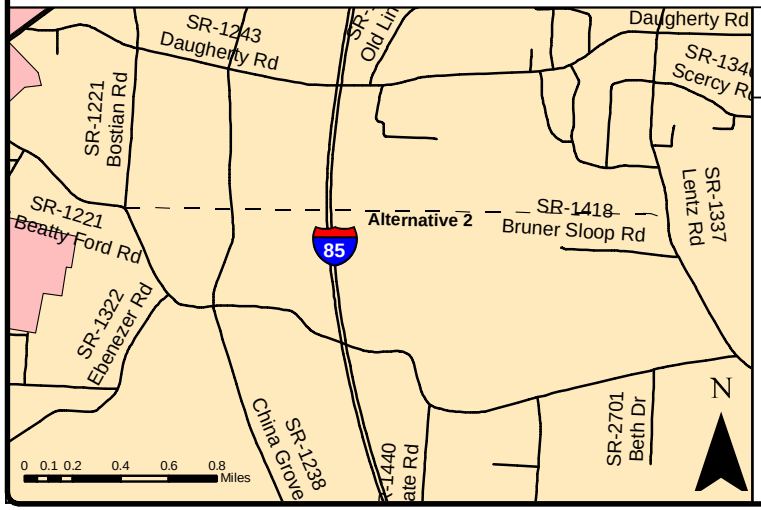
(d, t)	Duals, TT-STs (%)

TIP: W-5516	**WBS:** 44105.1.FD1
COUNTY: Rowan	**DIVISION:** 9
DATE: 02-27-2014	
PREPARED BY: Bryan D. Johnson	
LOCATION: **SR 1221** (Old Beatty Ford Rd) from Bostian Rd to Lentz Rd	
PROJECT: Relocate SR 1221	





2025 AVERAGE ANNUAL DAILY TRAFFIC

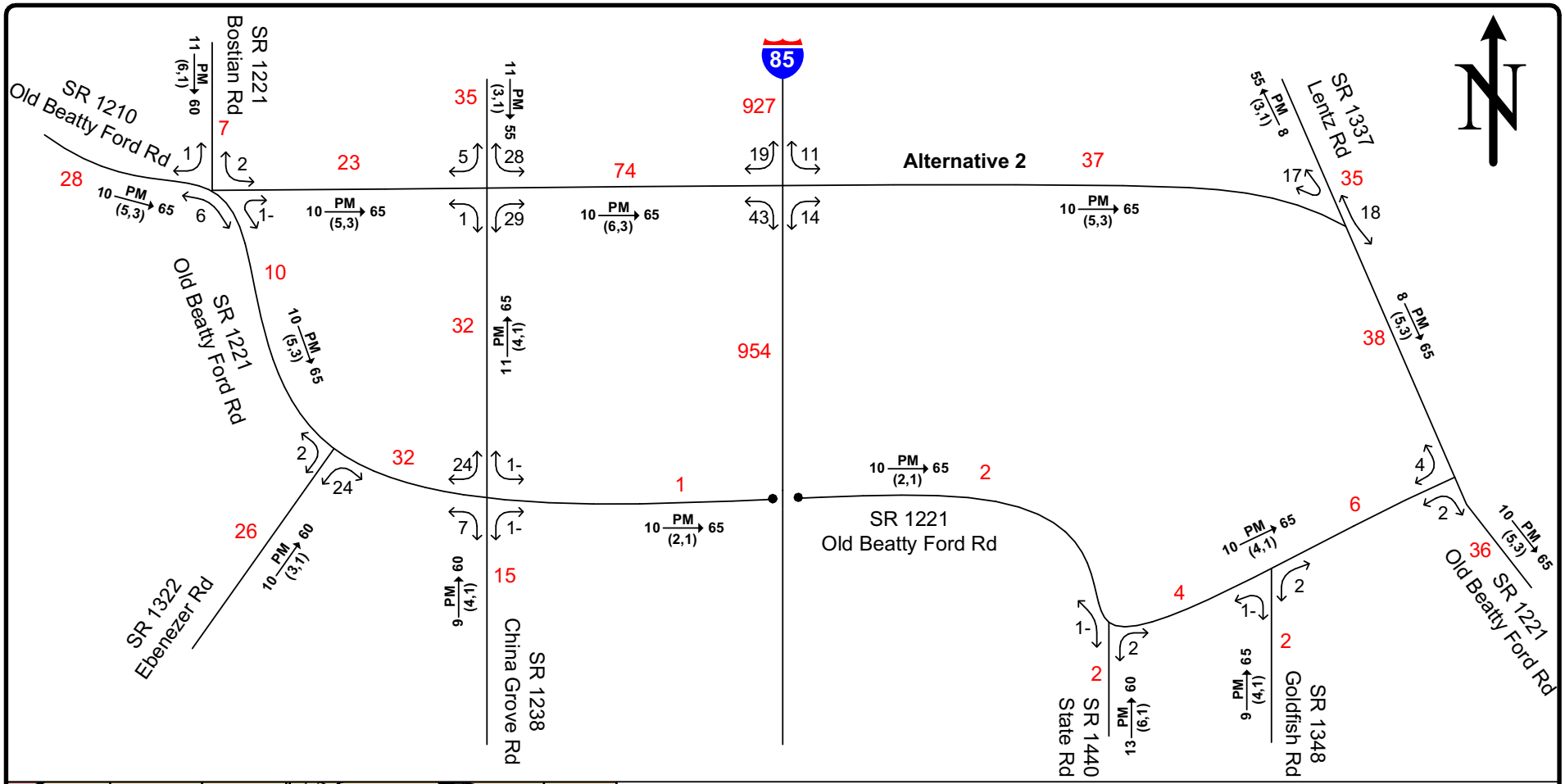
ALTERNATIVE 2 - without I-3804

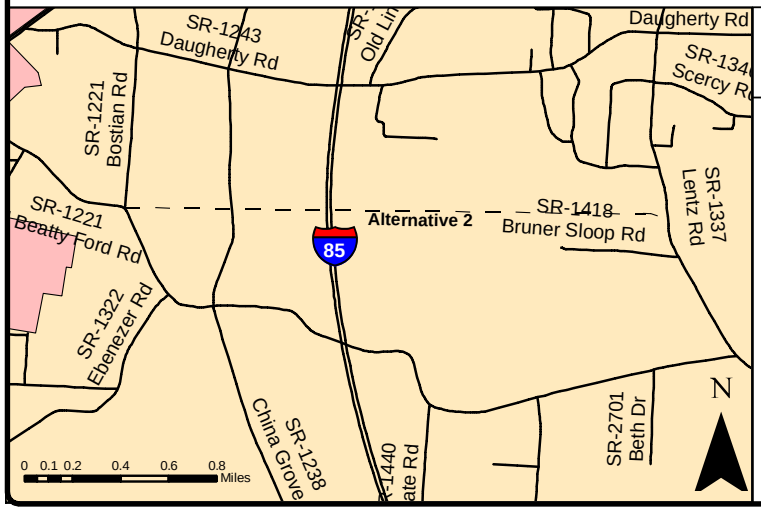
SHEET 5 OF 9

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K PM (d, t) D	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: W-5516	**WBS:** 44105.1.FD1
COUNTY: Rowan	**DIVISION:** 9
DATE: 02-27-2014	
PREPARED BY: Bryan D. Johnson	
LOCATION: **SR 1221** (Old Beatty Ford Rd) from Bostian Rd to Lentz Rd	
PROJECT: Relocate SR 1221	





2025 AVERAGE ANNUAL DAILY TRAFFIC

ALTERNATIVE 2 - with I-3804

SHEET 6 OF 9

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K PM (d, t) D	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
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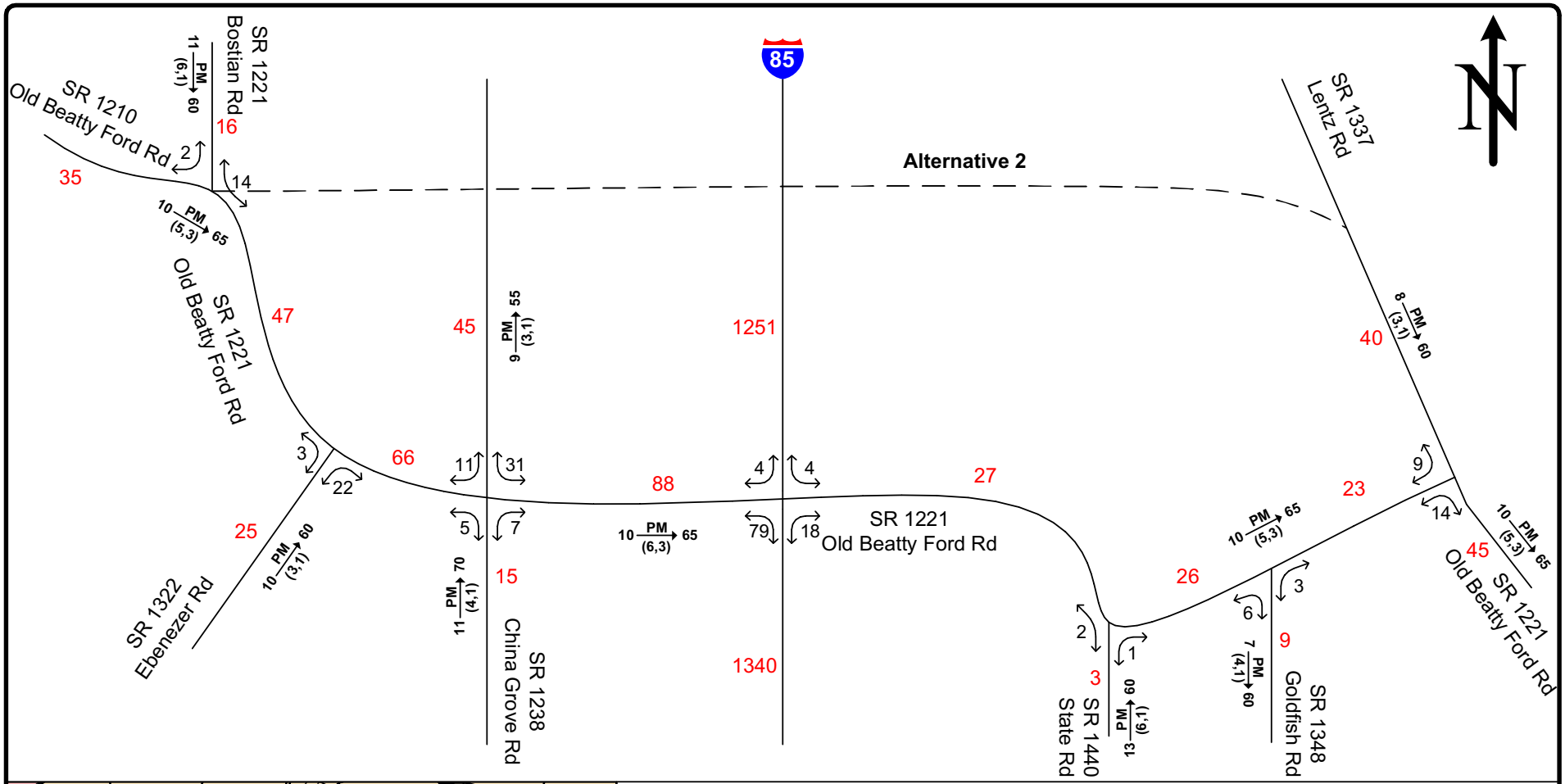
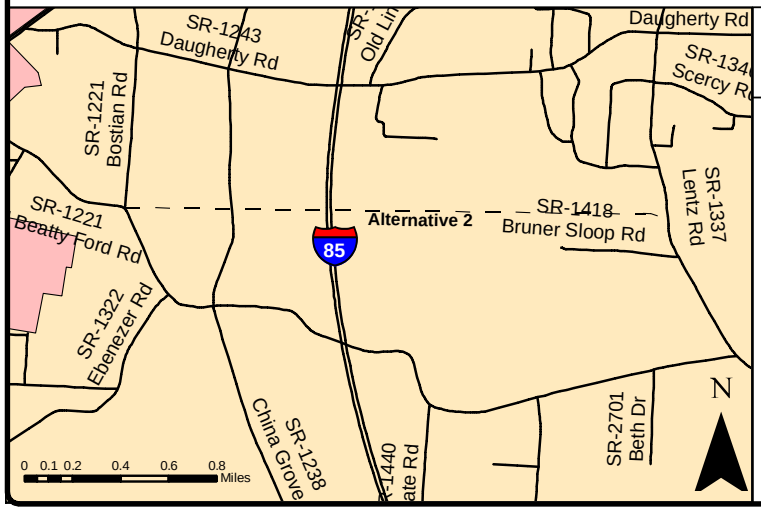
(d, t)	Duals, TT-STs (%)

TIP: W-5516	**WBS:** 44105.1.FD1
COUNTY: Rowan	**DIVISION:** 9
DATE: 02-27-2014	
PREPARED BY: Bryan D. Johnson	
LOCATION: **SR 1221** (Old Beatty Ford Rd) from Bostian Rd to Lentz Rd	
PROJECT: Relocate SR 1221	





2035 AVERAGE ANNUAL DAILY TRAFFIC

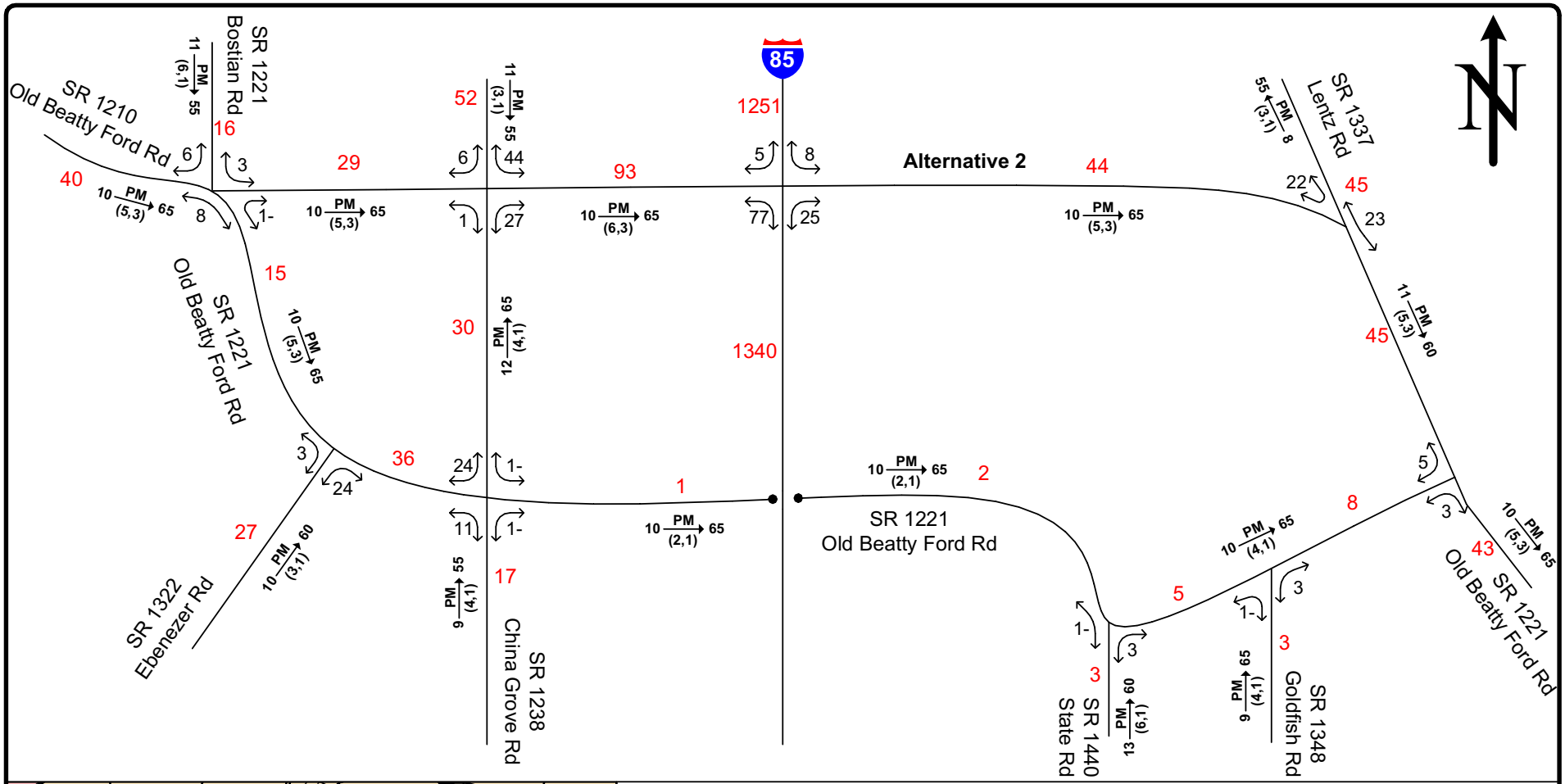
No-Build - with I-3804

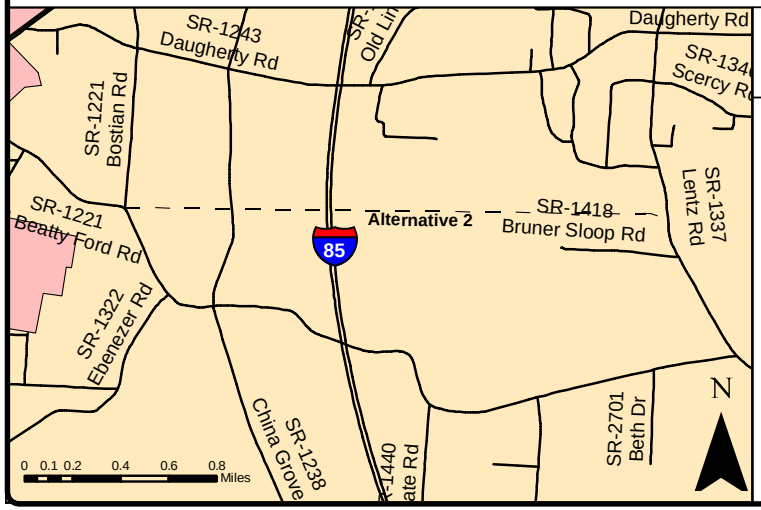
SHEET 7 OF 9

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K PM (d, t) D	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: W-5516	**WBS:** 44105.1.FD1
COUNTY: Rowan	**DIVISION:** 9
DATE: 02-27-2014	
PREPARED BY: Bryan D. Johnson	
LOCATION: **SR 1221** (Old Beatty Ford Rd) from Bostian Rd to Lentz Rd	
PROJECT: Relocate SR 1221	





2035 AVERAGE ANNUAL DAILY TRAFFIC

ALTERNATIVE 2 - with I-3804

SHEET 8 OF 9

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K PM (d, t) D	
K	Design Hour Factor (%)
PM	PM Peak Period
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TIP: W-5516	**WBS:** 44105.1.FD1
COUNTY: Rowan	**DIVISION:** 9
DATE: 02-27-2014	
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LOCATION: **SR 1221** (Old Beatty Ford Rd) from Bostian Rd to Lentz Rd	
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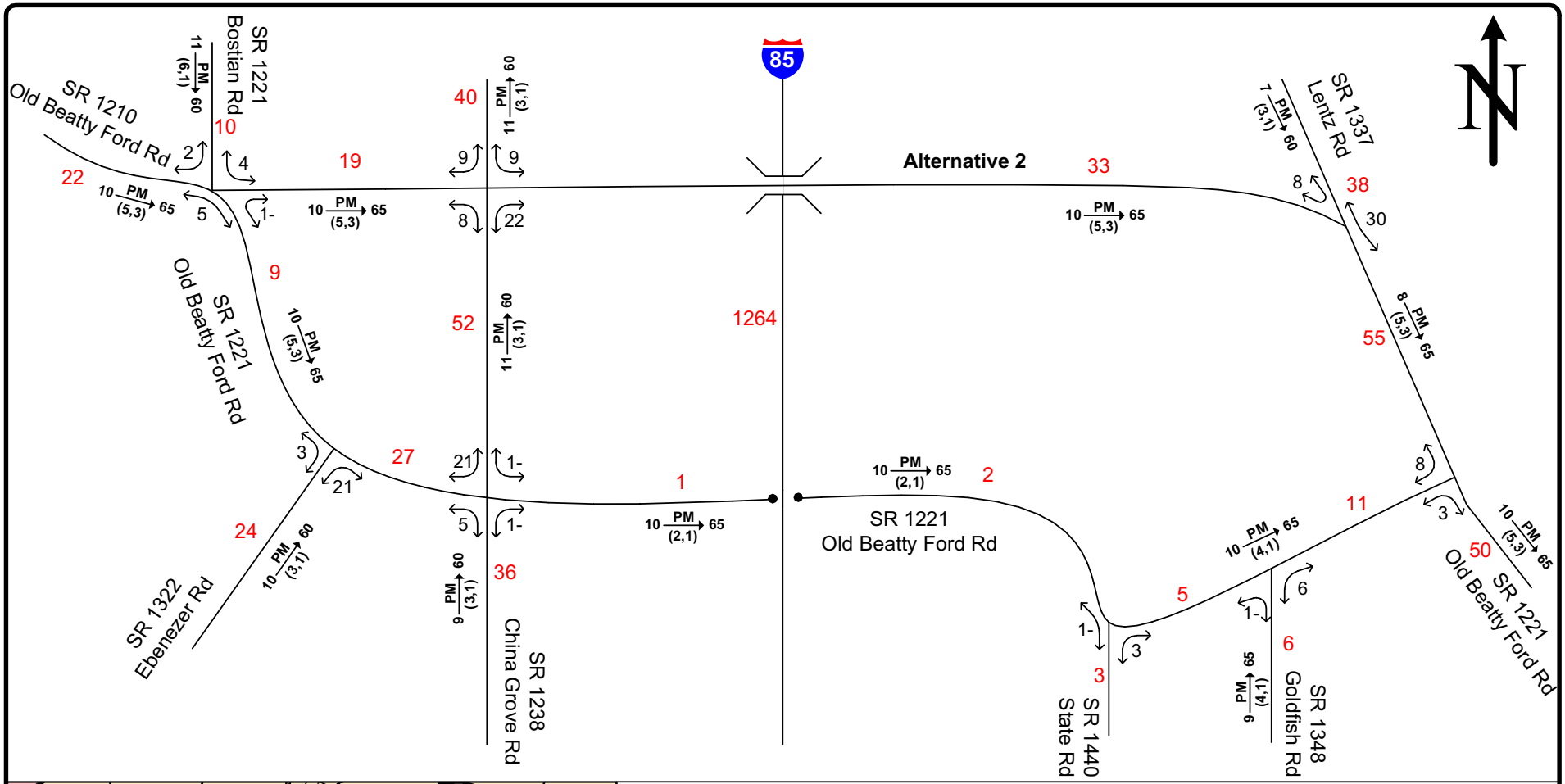

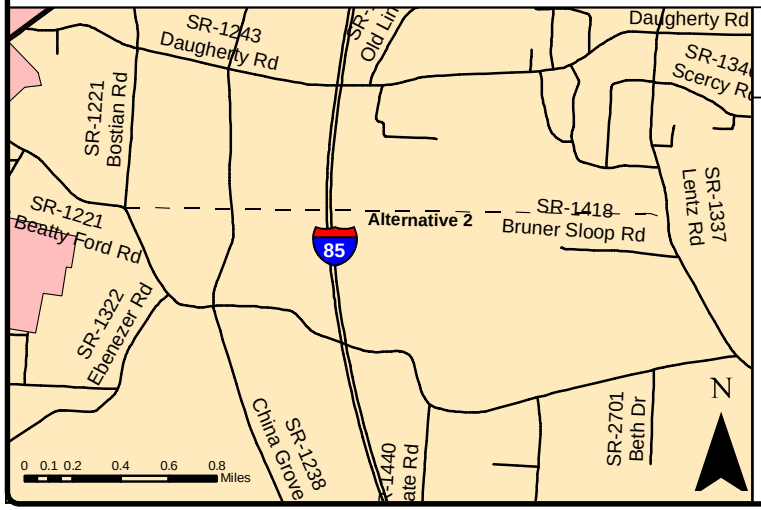

2035 AVERAGE ANNUAL DAILY TRAFFIC

ALTERNATIVE 2 - without I-3804

SHEET 9 OF 9

LEGEND

###	No. of Vehicles Per Day in 100s
1-	Less than 50 vpd
X	Movement Prohibited
K PM (d, t) D	
K	Design Hour Factor (%)
PM	PM Peak Period
D	Peak Hour Directional Split (%)
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TIP: W-5516	**WBS:** 44105.1.FD1
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