

**Proposed I-40/I-77 Interchange Area Improvements
Iredell County**

Federal Aid Project No. IMS-40-2
State Project No. 8.1823901
WBS Element No. 34192.1.2
TIP Project No. I-3819

ADMINISTRATIVE ACTION

FINDING OF NO SIGNIFICANT IMPACT

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**



Submitted Pursuant to the National Environmental Policy Act 42 U.S.C. 4332(2)(c)

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Date

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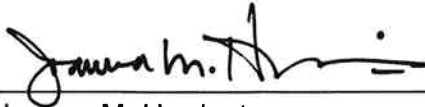
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**Documentation Prepared By:
URS CORPORATION – NORTH CAROLINA**

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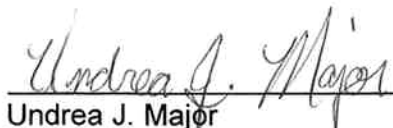


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Project Environmental Commitments

Proposed I-40/I-77 Interchange Area Improvements Iredell County

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In addition to the Section 404 Conditions, Regional Conditions, State Consistency, North Carolina Department of Transportation's (NCDOT) Guidance for Best Management Practices for the Protection of Surface Waters, General Certification Conditions, and Section 401 Conditions of Certification, NCDOT has agreed to the following special commitments:

ROADWAY DESIGN UNIT

Wetlands. Additional area of wetlands in the southwest quadrant of the I-40/I-77 interchange will be bridged to minimize impacts. Fill slopes will not encroach into the jurisdictional wetland boundaries any more than practicable as shown in the preliminary design.

Structures over Fourth Creek will accommodate the existing Museum Greenway path. The new and widened structures at SR 1934 (Hillside Lane) extension, I-40 and I-77, and their associated ramps shall be designed to span the existing greenway that follows Fourth Creek.

Retaining walls at Pressly Elementary School and Northview Elementary School. In order to minimize the impact to the grounds of these schools, a retaining wall along the proposed shoulder of I-40 and I-77 shall be constructed in accordance with NCDOT construction standards.

Noise Mitigation. A final design noise report will be performed based on the results of the planning noise study. Noise mitigation will be provided as required in accordance with the NCDOT Noise Abatement Policy.

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1.0 TYPE OF ACTION

This is a Federal Highway Administration (FHWA) administrative action, Finding of No Significant Impact (FONSI).

The North Carolina Department of Transportation (NCDOT) and the FHWA have determined this project will not have any significant impact on the human environment. This FONSI is based on the November 29, 2006 Environmental Assessment (EA), which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required.

2.0 ADDITIONAL INFORMATION

The following persons can be contacted for additional information concerning this proposal and assessment:

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3.0 DESCRIPTION OF THE PROPOSED ACTION

The proposed action is designated in the 2009-2015 North Carolina Department of Transportation's (NCDOT's) State Transportation Improvement Program (STIP) as STIP project number I-3819 and is described as "Statesville, modification of interchange area."¹ The general location for the project is shown in Figure 1 and the Project Study Area is shown in Figure 2.

The **primary purposes** of the proposed I-40/I-77 Interchange Area Improvements include the following:

- Improve traffic flow along the I-40 and I-77 corridors within the study area;
- Improve regional connectivity between Iredell County and points east, west, north and south within North Carolina and across the Interstate System.

The **primary needs** for the proposed I-40/I-77 Interchange Area Improvements include the following:

- Traffic operations deficiencies – For the 2005 existing analysis, 15 of 46 analysis points are operating at LOS E or F, and for the 2030 No-Build analysis, 42 of 46 analysis points are operating at LOS E or F;
- Safety concerns; and
- Diminished ability to operate as a North Carolina Strategic Highway Corridor and part of the United States Interstate System.

4.0 ALTERNATIVES STUDIED IN THE ENVIRONMENTAL ASSESSMENT

A range of alternatives for the proposed action were evaluated. Two build alternatives were carried forward for further study and are described below.

4.1 FOUR-LEVEL OFFSET INTERCHANGE ALTERNATIVE

The Four-level Offset Interchange Alternative allows for directional movements while allowing a lower overall elevation compared to the Four-level Stacked Interchange as the fourth level ramp is offset from the intersection of I-40/I-77 allowing for it to cross under both I-40 and I-77 creating a more compact footprint. The compact footprint allows for adequate traffic operations between the US 21 and I-77 interchanges along I-40. The forecast traffic volumes for the loop in the southwest quadrant were low enough to allow the loop to remain in place with only slight modifications in order to tie into the wider freeway cross section.

This alternative allowed the interchange to operate acceptably under the forecast traffic volumes and meets the purpose and need for the proposed project; therefore it was carried forward and studied as a detailed construction alternative.

4.2 FOUR-LEVEL TURBINE INTERCHANGE ALTERNATIVE

The Four-level Turbine Interchange Alternative allows for directional movements while allowing a lower overall elevation compared to the Four-level Stacked and Four-level Offset Interchanges because the ramps do not cross the freeways at the intersection of the freeways but rather are offset from the intersection. An advantage to the interchange is that it can be stage constructed with low interruption to existing traffic patterns.

This alternative allowed the interchange to operate acceptably under the forecast traffic volumes and meets the purpose and need for the proposed project; therefore, it was carried forward and studied as a detailed construction alternative.

5.0 RECOMMENDED ALTERNATIVE

Based on data gathered and presented in the Environmental Assessment (EA) the NCDOT selected the Four-Level Offset Interchange Alternative as the Recommended Alternative.

Description of the Recommended Alternative

The Four-level Offset Interchange Alternative begins on I-40 approximately 2,500 feet west of the SR 2003 (Radio Road) overpass and heads east to the existing interchange with US 21. It continues to the existing interchange with I-77 and ends at the existing interchange with SR 2158 (Old Mocksville Road), for a total length of 3.70 miles. I-77 begins 1,680 feet north of SR 2157 (Salisbury Road) and heads north to the existing interchange with SR 2321 (E. Broad Street). It continues under US 64 to the I-40 interchange and ends approximately 2,400 feet south of SR 2171 (Jane Sowers Road) for a total length of 3.24 miles. New collector-distributor (C-D) roadways will be constructed along I-40 to provide access to and from both the US 21 and I-77 interchanges. The westbound C-D roadway will exit slightly west of where I-40 crosses under I-77, then merge back onto westbound I-40 approximately 3,460 feet west of US 21. The eastbound C-D roadway will begin approximately 2,950 feet west of US 21 and continue through both the US 21 and I-77 interchanges and merge back into eastbound I-40 approximately 4,590 feet east of I-77. Typical sections for the proposed project are shown in Figure 3a and 3b.

The two-level full cloverleaf interchange at I-40/I-77 will be revised to a four-level offset interchange replacing three of the four loops with directional ramps, as shown in Figure 4. The four existing one-lane ramps will be shifted outward to accommodate the new two-lane directional ramps. New bridges on I-40 and I-77 will be constructed to accommodate the two-lane directional ramp for northbound I-77 to westbound I-40 that is proposed to cross under both interstates. The ramp for eastbound I-40 to northbound I-77 as well as westbound I-40 ramps to southbound I-77 will be constructed above the interstate levels. One loop will remain for southbound I-77 to eastbound I-40.

The interchange at I-40/US 21 will be maintained as a diamond interchange, but revised to provide for longer, wider and safer ramps in each quadrant. US 21 will be widened from south of Free Nancy Drive to the existing bridge over Fourth Creek. The I-40 bridge over US 21 will be constructed to allow for future widening of two additional US 21 lanes under the bridge (STIP Project U-2930). SR 1934 (Hillside Lane) will be extended to SR 1965 (Gaither Road) to maintain access to US 21. This road will include a new stream crossing at Fourth Creek approximately 400 feet downstream of the existing crossing at SR 1933 (Pump Station Road). The section of SR 2187 (Glenway Drive) that runs parallel to I-40 will be maintained in place. The section of SR 2187 to the east of the shopping center will be realigned to the west to accommodate the expansion of the I-40/I-77 interchange. The US 64/I-40 partial interchange will be removed, including ramp pavement and structures on I-40. The eastbound ramp terminal at US 64 (Davie Avenue) will be reconfigured to eliminate the intersection and transition the four-lane divided section into the existing two lanes. At the I-40 interchange with SR 2158 (Old Mocksville Road), the westbound entrance ramp and eastbound exit ramp will be realigned to tie to the interstate widening. SR 2158 (Old Mocksville Road) will be widened one lane between the eastbound exit interchange ramp terminal and US 64. The interchange with I-77 and SR 2321 (E. Broad Street) will maintain the current loop and ramp configuration but be realigned to tie to the interstate widening. SR 2321 (E. Broad Street) will be widened from Cynthia Street to Middleton Street. Approximately 1,950 feet of US 64 (Davie Avenue) will be realigned 150 feet to the south of the current structure with a longer bridge that will span the additional interstate lanes. Approximately 1,900 feet of SR 2322 (Simonton Road) will be realigned to the east due to the widening of I-77, tying into the realigned US 64 (Davie Avenue).

A service road will begin at SR 2174 (Crawford Road) and run approximately 2,850 feet to the west, ending in a cul-de-sac that will provide access to the adjacent property owners.

The Recommended Alternative for the proposed project is shown on Figure 4.

6.0 COST ESTIMATES

The total cost of the improvements recommended in this document is \$278,815,000 which includes \$263,100,000 for construction, and \$15,715,000 for right-of-way acquisition.

7.0 PROJECT IMPACTS

Operational impacts include:

- Increased traffic capacity resulting from the new facility;
- Increased safety over use of existing routes;
- Reduced travel times; and
- Interchanges designed to accommodate high traffic volumes and improve safety.

Impacts to the human and natural environment include:

- Impacts to jurisdictional features: wetlands (3.82 acres); and streams (4,221 linear feet); and
- Five (5) residential relocations, three (3) business relocations, and one (1) farm relocation. One of the residential relocations was determined as minority or low-income.

The Recommended Alternative will not:

- Cause any appreciable change in the regional air quality;
- Affect any recreational areas or public facilities;
- Disproportionately benefit, harm, or impact any social group including the elderly, handicapped, non-drivers, minority, or low income; or
- Will not impact any federally listed Endangered or Threatened species.

Estimated impacts and costs associated with the Recommended Alternative are summarized in Table 1. The design has been revised since the completion of the EA as the project has moved into the final design phase. The impacts presented in the EA as well as those for the updated design are included in Table 1.

Table 1: Estimated Project Impacts and Costs of the Recommended Alternative

Impact	EA Impacts	Updated Design Impacts
Length (miles)	6.8	6.8
Estimated Cost		
Construction Costs	\$170,000,000	\$263,100,000
Right-of-Way Costs	\$15,715,000	\$15,715,000
Total Costs	\$185,715,000	\$278,815,000
Relocation Impact Summary		
Residences (total)	5	5
Owner Occupied	3	3
Tenant Occupied	2	2

Impact	EA Impacts	Updated Design Impacts
Minority	1	1
Businesses	3	3
Farms	1	1
Section 4(f) Resources Impact Summary		
Section 4(f) resources	0	0
Community Services and Facilities Impact Summary		
Schools	3 ¹	3 ¹
Parks and Recreation Facilities	1 ²	1 ²
Churches	2 ³	2 ³
Cemeteries	0	0
Utilities		
Electrical Easement Crossings	1	1
Major Gas Mains	0	0
Railroad Crossings	0	0
Cultural Resources Impact Summary		
No. of Archaeological sites	0	0
No. of Historic Resources	0	0
Farmland Impact Summary (acres)		
Prime and Unique Farmland	27	27
Statewide and Local Important Farmland	16	16
Biotic Community Impact Summary (acres)		
Piedmont/Mountain Semipermanent Impoundment	0.9	0.9
Low Elevation Seep	1.6	1.6
Piedmont/Mountain Bottomland Forest	12.1	12.1
Mesic Mixed Hardwood Forest	12.2	12.2
Dry-Mesic Oak-Hickory Forest	6.1	6.1
Piedmont/Mountain Levee Forest	0.1	0.1
Pastoral/Agricultural Land	49.5	49.5
Urban/Disturbed Areas	207.8	207.8
Jurisdictional Impact Summary		
Acres of Wetlands Impacted	3.19	3.82
Number of Wetland crossings	9	8
Linear Feet of Jurisdictional Streams Impacted by Stream Crossings	2,428	2,804
Total Linear Feet of Jurisdictional Streams Relocated ⁴	1,476	1,417
Total Linear Feet of Jurisdictional Streams Impacted	3,904	4,221
Protected Species Impact Summary		
Bog turtle (<i>Clemmys muhlenbergii</i>)	No Effect	No Effect
Dwarf-flowered heartleaf (<i>Hexastylis naniflora</i>) ⁵	n/a	No Effect
Air Quality Impacts		
No. of Intersections exceeding Carbon Monoxide NAAQS	0	0
Noise Impacts		
Number of Impacted Receptors	120	120
Hazardous Materials Impact Summary		

Impact	EA Impacts	Updated Design Impacts
No. of Impacted Hazardous Materials Sites	63	7

Source: URS, 2006

Impacts calculated for EA based on 10 feet beyond the slope limits. Impacts for Updated Design calculated based on 25 feet beyond slope stake limits.

¹ Right-of-Way acquisition only. No impact to school usage

² No new Greenway crossings. Existing crossings to remain.

³ Right-of-Way acquisition from church property only. No impact to use or facilities.

⁴ Stream Relocations are existing stream channels that will be impacted by fill slopes and require relocation. Utilizing natural stream design principles when relocating stream will be incorporated where practical.

⁵ The dwarf-flowered heartleaf (*Hexastylis naniflora*) was not a federally listed species at the time the EA was approved. It was added to the list of threatened and endangered species for Iredell County after the EA was signed.

8.0 FLOODPLAIN ANALYSIS

8.1 FLOOD HAZARD ELEVATION

This section contains information corresponding to the analysis of impacts to floodplains. The Floodplains and Flood Insurance Maps (FIRM) have been updated since the completion of the EA. The following section will evaluate the effects to floodplains as a result of the proposed project, based on the latest available data.

Executive Order 11988, Floodplain Management (42 CFR 26951) requires the following:

- All federal actions must avoid the occupancy and modification of floodplains and avoid direct or indirect support of floodplain development wherever there is a practicable alternative.
- If an action must be located on the base floodplain, the agency shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.
- Each agency shall also provide opportunity for early public review of any plans or proposals for actions in floodplains.

It has been determined that, due to the linear nature of the project and existing roadway configuration, no practicable alternative exists to completely avoid impacts to floodplains. Efforts are being made to minimize the impacts to floodplains and to diminish the risk to human safety, health and welfare.

Consideration must be given to the floodplain's "natural and beneficial values" which are discussed in the Federal Emergency Management Agency's (FEMA's) *Unified National Program for Floodplain Management*. According to FEMA, surface waters, their floodplains and their watersheds must be viewed as parts of one ecological system.² This system exists in a state of dynamic equilibrium. If one of the parts of the system is disturbed, the entire system will readjust toward a new equilibrium. The geological and biological effects of the system's readjustments toward its new equilibrium are often felt far from the original site of the disturbance and can last for decades. For this reason, if for no other, floodplain development and modification should be viewed with caution and with careful assessment of the potential adverse impacts on natural values.

Floodplains in their natural or relatively undisturbed state provide three broad sets of natural and beneficial resources and hence resource values: (1) water resources values including natural

moderation of floods, water quality maintenance, and groundwater recharge; (2) living resources values including large and diverse populations of plants and animals; and (3) cultural resource values including historical, archeological, scientific, recreational, and aesthetic sites in addition to sites generally highly productive for agriculture, aquaculture, and forestry where these uses are compatible with natural values.³

The study area is located completely within Iredell County with portions of the study area located within the City of Statesville Extraterritorial Limits. The Federal Emergency Management Agency's Flood Insurance Rate Maps - Community Panel Numbers for the study area include 370135 4735, 370135 4744, 370135 4745, and 370135 4755 for the City of Statesville and 370313 4735, 370313 4746, 370313 4755 for the unincorporated areas of Iredell County. In April 2007, the United States Department of Housing and Urban Development – Flood Insurance Administration prepared a Preliminary Flood Insurance Study (FIS) corresponding to the FIRM for the City of Statesville and the unincorporated areas of Iredell County.⁴

The project study area contains five stream systems that are designated by name on the FIRM with their associated floodplains and have been designated as Detailed Studies^a and are included in the FIS for the City of Statesville and the unincorporated areas of Iredell County.

The construction of the proposed improvements would encroach in several areas on the designated floodplain associated with several local stream systems. A description of streams and encroachments are discussed in the following sections and shown on Figure 5.

8.1.1 MORRISON CREEK

Morrison Creek enters the study area northwest of the I-40 interchange with US 21 and flows southeasterly until it converges with Fourth Creek. Due to the on-ramp to I-40 westbound being converted from two-way traffic to one-way traffic, it was necessary to construct a new roadway to provide access to the businesses along SR 1965 (Gaither Rd.). The new roadway includes a single bridge spanning just east of the confluence of Morrison Creek and Fourth Creek. The project will not impact the floodplain or floodway of Morrison Creek.

8.1.2 FREE NANCY BRANCH

Free Nancy Branch enters the study area southwest of the I-40 interchange at US 21 and flows northeasterly until it converges with Fourth Creek. The project will not have any direct impact on Free Nancy Branch; however, the project will require some construction within the floodplains associated with Free Nancy Branch. The required construction is widening existing I-40 and US 21 to improve the operation of the interchange. The total area of the encroachment upon the floodplain would be 4.5 acres for the recommended alternative. Free Nancy Branch currently enters a culvert west of US 21 and is carried to a point 1,000 feet east of US 21. Therefore, the project is not likely to further affect the natural and beneficial value of the floodplain system.

^a A detailed study is an engineering analysis which identifies 1% annual flood elevations. For the North Carolina Floodplain Mapping Program, this study method entails using the digital elevation data, supplementing the data with field surveys for channel bathymetry, bridge/culvert opening geometry, and channel and floodplain characteristics in order to conduct fully detailed hydrologic and hydraulic analyses and floodplain mapping.

As previously noted, the floodplain is extensively developed, with several large stores, restaurants and hotels located completely within the floodplain. The risks associated with the impact to the floodplain with regard to human safety are moderate due to the amount of existing development. However, the impact as a result of the project is not likely to increase the risk over what is currently present, that is, the project will have no impact.

8.1.3 TRIBUTARY 2

Tributary 2, also identified as Stream S3, is a tributary to Fourth Creek that enters the study area southwest of the I-77 interchange with SR 2321 (E. Broad Street) and flows northeasterly under the interchange and parallel to I-77's northbound lanes until it turns northeasterly and converges with Fourth Creek. In the vicinity of Tributary 2, the project will widen I-77 and slightly modify the interchange at SR 2321. A retaining wall along I-77 is proposed that will minimize the impact to the stream system and the associated floodplain. The project will result in two encroachments of the floodplain associated with Tributary 2. The first encroachment is where an existing culvert carries the stream under I-77, outlets into a channel and crosses SR 2321 under the overpass bridge. The encroachment upon the floodplain is transverse and crosses with a skew very close to perpendicular. The impact to the floodplain will be minimal as the project will likely only require a slight extension to existing culverts and the amount of fill material in the floodplain should not substantially increase the flood elevation. The second encroachment to Tributary 2 is longitudinal as the stream runs parallel to the northbound lanes of I-77. The impact to the stream system and the floodplain occurs for approximately 2,100 feet with a total encroachment area of 0.8 acre. A longitudinal encroachment is not favorable, however, due to the location of the existing roadway; the encroachment is unavoidable. The use of retaining walls reduces the effect of the encroachment and allows for the preservation of the floodplain's natural and beneficial values. The total area for both encroachments upon the floodplain is 1.4 acres.

The area adjacent to the floodplain is vacant and densely vegetated with adequate storage for flooding. Therefore, the risk to human safety associated with the encroachments is low.

8.1.4 TRIBUTARY 3

Tributary 3, also identified as Stream S2, is a tributary to Fourth Creek that begins northeast of the I-40/I-77 interchange and flows southwesterly across I-40 and converges with Fourth Creek as it crosses US 64. The interchange will be reconfigured in the vicinity of Tributary 3. Three transverse crossings of the stream system and the associated floodplains will result. The encroachments upon the floodplain are transverse and cross with a skew very close to perpendicular. For one of the crossings the existing culvert under I-40 will be replaced with a bridge. The existing culvert crossing is undersized causing periodic flooding. As such, the project would have a beneficial effect in the floodplain and will require a floodplain map revision. The total area of the encroachment upon the floodplain for the three crossings is approximately 5.6 acres.

8.1.5 FOURTH CREEK

Fourth Creek is the major stream system running through the study area. The stream system begins northwest of US 21 and enters the study area before crossing under Pump Station Road, converging with Morrison Creek, crossing under US 21 and I-40, converging with Free Nancy Branch, crossing under I-77, converging with Tributary 2 and Tributary 3 and finally exiting the study area southeast of the I-40/I-77 interchange. Within the study area, all of the crossings of Fourth Creek will be accomplished using bridges. The project includes four floodplain crossings;

at Hillside Lane extension below the existing Pump Station Road crossing, US 21, I-40 (includes ramps to US 21 interchange), and I-77 (includes ramps to I-40 and a temporary structure for maintenance of traffic during construction). The floodplain encroachment impacts will be minimized as the crossings are being upgraded to account for higher flows due to urban development within the study area. The ability to pass larger flood volumes will allow for more of the floodway to return to a more natural state as the roadway fill has a lesser impedance to the flow.

There is an existing risk of flooding in this floodplain due to existing development. The project is not expected to further increase risk to human life from flooding.

8.1.5.1 Hillside Lane Crossing

There is a small encroachment on the floodplain as the Hillside Lane extension crosses Fourth Creek with a bridge spanning a majority of the floodplain at this location. The extension is required due to the need for an improved roadway to service SR 1965 (Gaither Road) following the elimination of the two-way ramp to US 21. The existing crossing at Pump Station Road just upstream is accomplished using a 19-foot wide by 60-foot long bridge, while the new bridge connecting Hillside Lane and Gaither Road will be 36 feet wide by 356 feet long. The new structure will provide for improved flood passage. The existing bridge on Pump Station Road will not be disturbed and will remain in service as it provides the only access to Statesville's water treatment plant located at the end of Pump Station Road. The total area of the encroachment upon the floodplain for the crossing is approximately 0.1 acres.

8.1.5.2 US 21 Encroachment

The encroachment on the floodplain as Fourth Creek crosses US 21 will not be changed as a result of the project. The existing bridge, which is 72 feet wide by 200 feet long, over Fourth Creek will not be disturbed and will remain in service.

8.1.5.3 I-40 Encroachment

The encroachment on the floodplain as Fourth Creek crosses I-40 will be modified from the existing configuration as the ramps associated with the US 21 interchange must be lengthened to provide adequate storage for safe operation of the ramp terminals at US 21. As a result of the lengthening of the ramps the width of the structures will be wider than the existing bridges to accommodate the wider cross-section on I-40 and the interchange ramps. The length of the bridges will be increased from 150 feet to 235 feet, providing additional floodplain passage. The new structures will provide for improved flood passage; however, they are not long enough to completely eliminate the encroachment upon the floodplain. The total area of encroachment as a result of the I-40 crossing is approximately 14.0 acres for the recommended alternative.

8.1.5.4 I-77 Encroachment

The encroachment on the floodplains as I-77 crosses Fourth Creek will also be modified from the existing configuration due to the ramps associated with the I-40 interchange to the north of the crossing. The reasons for the additional encroachment are due to the size of the proposed I-40/I-77 interchange alternatives and because the ramp ties to the interstate must occur further to the south of I-40 to accommodate the larger interchange alternatives. To accomplish fully directional movements, the interchange footprint becomes larger and thus increases the floodplain encroachment. Fourth Creek will have bridge crossings on both the I-40 to I-77 entrance ramp and as it crosses I-77. The length of the bridge as Fourth Creek crosses under I-77 will be increased from 160 feet to 195 feet to accommodate a revised profile and provide for

the planned greenway that will cross under I-77 at this location. A temporary bridge for the southbound lanes of I-77 will be required to maintain traffic during construction. The bridge will be adjacent to the existing I-77 structure. The total area of encroachment as a result of the crossings at I-77 and the I-77 ramps is approximately 3.3 acres for the design.

8.2 SUMMARY

The overall effect of the project as a result of the encroachment on floodplains are anticipated to be minor and are not significant, as the project will increase the bridge lengths for most crossings allowing for increased passage of water. The encroachments on the floodplain will also not present an increased danger to human life as a result of the construction, nor will it promote development within the floodplain.

The recommended alternative includes structures crossing floodplains that are included in FEMA detailed studies. Impacts to these floodplains / floodways will be analyzed, mapped and a Conditional Letter of Map Revision (CLOMR) will be requested. The CLOMR will be submitted to FEMA for review and approval prior to construction. The analysis will detail the proposed structure opening, roadway embankment encroachments and any hydraulic changes that would occur within the floodplain. Upon approval and after construction is complete, as-built plans will be submitted with documentation for a Letter of Map Revision (LOMR) to FEMA. Once this is approved, the FEMA maps will be revised and reissued by FEMA. For structures that are not in a FEMA detailed study or structures that are lengthened but cause no significant impact to the floodplain, no map revision is required.

9.0 CULTURAL RESOURCES

This 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.

No historic resources were discovered while preparing the EA; however, while the EA was being finalized the North Carolina Department of Transportation assessed the National Register eligibility of the McKee House, an early nineteenth-century dwelling that stands approximately 0.8 miles northeast of the intersection of the two interstates. In a report to NCDOT, dated March 26, 2007, it was recommended that the house as well as a small area surrounding the house be eligible for the National Register listing under Criterion C as shown in Figure 6. It was determined that the historic property was not within the Area of Potential Effect (APE) for the project. Therefore, the historic resource will not be affected by the proposed I-40/I-77 interchange improvements.

A copy of the report to NCDOT on the McKee House is included in Appendix A.

9.1 SECTION 4(F)

Section 4(f) of the USDOT Act of 1966, codified in federal law at 49 U.S.C. §303, declares that "[i]t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that the USDOT “may approve a transportation program or project . . . requiring publicly-owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance, or land of a historic site of national, state or local significance (as determined by the Federal, state or local officials having jurisdiction over the park, area, refuge, or site) only if [1] there is no prudent or feasible alternative to using that land and [2] the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use” (49 U.S.C. 303, Section 3.10).

Three potential Section 4(f) resources were identified in the project study area and were subsequently evaluated for Section 4(f) applicability. These resources include Pressly Elementary School, Northview Elementary School, and a greenway owned by the City of Statesville that traverses the project area. It was concluded that Section 4(f) did not apply to the elementary schools and that the project had no effects on the use of the greenway. Thus, the proposed project will have no effect to Section 4(f) resources.

10.0 HAZARDOUS MATERIALS IMPACTS

Hazardous waste is defined by the USEPA as any waste material, or combination of waste materials that pose a hazard to human health, welfare, or the environment. Materials classified as hazardous can be in the form of solids, sludges, liquids, or gases, and are characterized as reactive, toxic, infectious, explosive, flammable, corrosive, or radioactive. Examples of hazardous waste sites include landfills, dumps, pits, lagoons, salvage areas, retail operations and storage tanks.

In April 2005, a search of available environmental records was conducted to identify potential hazardous materials sites in the study area. Results of the search were reported and mapped in the *EDR DataMap Corridor Study Report* (EDR Report).⁵ A Geotechnical Pre-Scoping Report (Geotechnical Report) was conducted in September 2007 to provide an early identification of geoenvironmental issues that may impact the planning, design or construction of the project. The results of an examination of the EDR Report for accuracy and use of GIS to identify any known environmentally impacting sites within the study area not identified in the EDR Report are presented in the Geotechnical Report. Based on the study, four active underground storage tanks (USTs), two former UST facilities, and one facility with a ground water incident number (GWI) were found within the proposed project corridor (Figure 7). These sites are shown in Table 2. It is anticipated that low to non-existent monetary and scheduling impacts will result from these sites. No other geoenvironmental concerns were identified.⁶

Table 2: Potential Hazardous Materials Sites in Project Study Area

Site No.	Site Name and Address
1	Petro Express #31 131 Turnersburg Rd. Statesville, NC 28625
2	Wilco #349 122 Turnersburg Rd. Statesville, NC 28625
3	Priscila's 731 Sullivan Rd. Statesville, NC 28625
4	Delux Ice Cream Bar

Site No.	Site Name and Address
	716 Sullivan Rd. Statesville, NC 28625
5	Broad Street Shell 1502 E. Broad Street Statesville, NC 28625
6	Royal Express 1501-B East Broad Street Statesville, NC 28625
7	Starbucks Coffee 1501 East Broad Street Statesville, NC 28625

Source: Wainaina, Njoroge W., PE., State Geotechnical Engineer, North Carolina Department of Transportation. "Geotechnical Pre-Scoping Report." Memorandum to Teresa Hart, P.E., Project Development and Environmental Analysis Branch, North Carolina Department of Transportation. 1 November 2007.

11.0 JURISDICTIONAL FINDINGS

The jurisdictional findings were updated for the Recommended Alternative due to design revisions as a result of the final design plan preparation. The impacts to the jurisdictional resources are shown in Tables 3 through 6, and Figure 8 shows the locations of the impacts to jurisdictional wetlands and streams based on the slope stake limits.

Table 3: Stream Impacts due to Stream Crossings

Stream			Four-level Offset Alternative		
Stream Label	Stream Classification	Stream Name	EA Impacts (lf)	New Design Impacts (lf)	Number of Crossings
S1	Perennial	Fourth Creek	0	0	8
S2	Perennial	UT to Fourth Creek	0	0	3
S3	Perennial	UT to Fourth Creek	145	199	3
S6	Perennial	UT to Fourth Creek	500	1085	2
S9	Intermittent	UT to Fourth Creek	0	176	1
S12	Perennial	UT to Fourth Creek	590	0	1
S16	Intermittent	UT to Fourth Creek	601	541	1
S18	Perennial	UT to Fourth Creek	89	122	1
S19	Perennial	UT to Fourth Creek	80	109	1
S20	Perennial	UT to Fourth Creek	69	44	1
S22	Intermittent	UT to Fourth Creek	237	235	1
S23	Intermittent	UT to Fourth Creek	0	71	1
S24	Perennial	UT to Fourth Creek	117	192	1
JS*	Perennial	UT to Gregory Branch	0	30	1
Total			2,428	2,804	26

* Stream 'JS' was outside of the original study area and has not been field delineated yet. The information for this stream is subject to change based on field delineations.

Table 4: Stream Impacts due to Stream Relocations*

Stream Label	Stream Classification	Stream Name	EA Impacts (lf)	New Design Impacts (lf)
S11	Perennial	UT to Fourth Creek	269	247
S17	Perennial	UT to Fourth Creek	565	565
S20	Perennial	UT to Fourth Creek	616	578
S21	Perennial	UT to Fourth Creek	0	27
S23	Intermittent	UT to Fourth Creek	26	0
Total			1,476	1,417

*Stream Relocations are existing stream channels that will be impacted by fill slopes and require relocation. Utilizing natural stream design principles when relocating stream will be incorporated where practical.

Table 5: Total Stream Impacts

Type	EA Impacts (lf)	New Design Impacts (lf)
Stream Crossing	2,428	2,804
Stream Relocation*	1,476	1,417
TOTAL	3,904	4,221

*Stream Relocations are existing stream channels that will be impacted by fill slopes and require relocation. Utilizing natural stream design principles when relocating stream will be incorporated where practical.

Table 6: Impacts to USACE Jurisdictional Wetlands

Wetland	Wetland Area (acres)	Riverine/ Non-Riverine	Classification	NCDWQ Rating	EA Impacts – 10' offset (lf)	New Design Impacts – 25' offset (lf)
W6	0.60	Non-Riverine	PFO1	23	0.00	0.02
W7	0.87	Riverine	PFO1	40	0.51	0.87
W8	3.87	Riverine	PFO1	56	0.10	0.00
W9	0.08	Non-Riverine	PFO1	23	0.00	<0.01
W12	3.74	Riverine	PFO1	38	0.00	0.17
W14	1.44	Non-Riverine	PFO1	21	0.00	<0.01
W15	14.72	Riverine	PEM1/PFO1	92	1.81	2.41
W16	0.17	Non-Riverine	PFO1	19	0.17	0.00
W17	0.29	Non-Riverine	PFO1	16	0.04	0.05
W20	0.09	Non-Riverine	PFO1	16	0.09	0.09
W24	0.52	Riverine	PFO1	46	0.14	0.18
W25	0.22	Riverine	PFO1	69	0.02	0.03
WSL	0.21	Riverine	PFO1	15	0.21	0.00
Total Impacts					3.19	3.82

11.1 WETLANDS

The Recommended Alternative (Four Level Offset Alternative) will impact 3.82 acres of jurisdictional wetlands. The majority of impacts will occur to a wetland system in the southwestern quadrant of the interchange, W15 (Figure 8). This wetland is the highest quality wetland in the project study area (NCDWQ rating of 92) and is being spanned by the proposed bridge over Fourth Creek.

11.2 STREAMS

The Recommended Alternative (Four Level Offset Alternative) will have 26 stream crossings, impacting a total of 4,221 linear feet of jurisdictional streams.

11.3 AVOIDANCE AND MINIMIZATION

Due to the extent of wetlands and streams within the project study area, and the location of the existing roadways and interchanges, avoidance is not possible.

Minimization for wetlands includes the examination of appropriate and practicable steps to reduce adverse impacts to wetlands. In order to minimize the impacts to wetland W15, which has the highest NCDWQ wetland rating (92) in the natural resources study area, the bridge proposed to span Fourth Creek for each alternative is being lengthened beyond what is needed hydraulically and will span an additional length of this wetland area that would have been impacted by roadway fill.

Minimization of streams includes the examination of appropriate and practicable steps to reduce adverse impacts to streams. A retaining wall is proposed to run adjacent to the east side of I-77 for 1,730 feet to keep the fill slope from impacting stream S3.

Other steps that will be implemented to minimize impacts to wetlands and streams include:

- Minimizing “in-stream” activities,
- Strictly enforcing the sedimentation and erosion control best management practices (BMPs) for the protection of wetlands and streams,
- Decreasing the impacts of the project through the use of Type III clearing and grubbing which does not clear the entire right of way width,
- Decreasing the footprint of the project through the steepening of fill slope where possible, and
- Utilizing natural stream channel design principles when relocating streams.

11.4 COMPENSATORY MITIGATION

Mitigation has been defined in NEPA regulations to include efforts which: a) avoid; b) minimize; c) rectify; d) eliminate; or e) compensate for adverse impacts to the environment. Avoidance and minimization must be fully evaluated before compensatory mitigation can be discussed. Based on the nature of this project, it is determined that there is no practicable alternative to the proposed construction in jurisdictional areas.

The projected impacts for the Recommended Alternative are 3.82 acres of wetlands and 4,221 linear feet of streams. On-site mitigation is being pursued and potential sites have been identified and will be presented to the Merger Team at subsequent meeting. However due to the limited on-site opportunities, additional compensatory mitigation for this project will be provided by the North Carolina Ecosystem Enhancement Program (EEP), as outlined in the tri-party Memorandum of Agreement between the US Army Corps of Engineers, NC Department of Environment and Natural Resources, and the NC Department of Transportation dated July 23, 2003.

12.0 FEDERALLY PROTECTED SPECIES

Reviewing the most recent list of federally endangered and threatened species indicates two (2) species as occurring in Iredell County (list date January 2008). These species are the bog turtle (*Clemmys muhlenbergii*) and the dwarf-flowered heartleaf (*Hexastylis naniflora*).

Bog turtle (*Clemmys muhlenbergii*)

The bog turtle is listed by the USFWS as Threatened due to Similarity of Appearance (T/SA), and by the state as Threatened. Species designated as T/SA are listed as threatened due to their similarity of appearance with other rare species, and are listed to provide protection to these other rare species. According to the USFWS, T/SA species are not biologically endangered or threatened and are not subject to Section 7 consultation. In addition, biological conclusions are not required for T/SA species. The North Carolina Natural Heritage Program (NCNHP) lists the species as Threatened, without the Similarity of Appearance designation. NCNHP coverages were reviewed as well as physical files at the NCNHP office, and no known documented occurrences of federally listed Threatened or Endangered species were identified within one mile of the study area. No occurrences or available habitat for the bog turtle was located in the natural resource study area during field reviews.

Dwarf-flowered heartleaf (*Hexastylis naniflora*)

Field surveys were conducted for this species March 27, April 2, and April 9, 2008. The entire project area was surveyed for potential habitat, with areas identified as potential habitat surveyed for the plant by walking visual surveys. While multiple areas of potential habitat existed within the project study area, most of those areas provided poor habitat. No individuals of this species were found, therefore it was determined that this project will have no effect on the dwarf-flowered heartleaf. A check of the NCNHP database on April 16, 2008 indicated no known occurrences of dwarf-flowered heartleaf within 1.0 mile of the study area.

Additionally, two Federal Species of Concern (FSC) are listed for Iredell County; Allegheny woodrat (*Neotoma magister*) and Prairie birdsfoot-trefoil (*Lotus unifoliolatus var. helleri*). Neither FSC has habitat located in the project study area and will not be affected by the proposed project.

13.0 PERMITS

Construction activities associated with the Recommended Alternative will result in several activities requiring environmental regulatory permits from state and federal agencies. A list of these permits, organized by issuing agency, is provided below. NCDOT will maintain close coordination with federal and state environmental regulatory and resource agencies throughout the entire process. The NCDOT will obtain all necessary permits prior to construction. During project construction, the NCDOT will implement Best Management Practices and will comply with all permit conditions. Any additional measures that will minimize environmental impacts that are agreed upon during consultations with resource agencies will be implemented.

United State Army Corps of Engineers

Section 404 Individual Permit (dredging or filling in U.S. waters or wetlands)

North Carolina Division of Water Quality (DWQ)

Section 401 Certification (Water Quality)

North Carolina Division of Land Resources
Erosion and Sedimentation Permit

North Carolina Division of Forest Resources
Burning Permit

14.0 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

A NEPA/Section 404 merger process was developed under an agreement between the NCDOT, the Federal Highway Administration (FHWA), the USACE and other state and federal environmental resource and regulatory agencies.

NEPA/Section 404 Merger Team meetings are a formal means for early involvement in the project development process for state and federal environmental resource and regulatory agencies that have an interest in the issuance of USACE dredge and fill permits for wetland and stream impacts under the terms of Section 404 of the Clean Water Act. A representative of the SHPO also participates in these meetings.

The NEPA/Section 404 merger process is a streamlining effort that helps to avoid duplication of effort between the two processes. The USACE must meet the requirements of the National Environmental Policy Act (NEPA) in order to issue a dredge and fill permit under the Clean Water Act. The NEPA/Section 404 Merger Team meetings provide an opportunity for participants to formally concur with key decisions in the NCDOT's and the FHWA's National Environmental Policy Act impact assessment process so that those decisions do not need to be revisited during application for a USACE's permit.

14.1 AGENCY COORDINATION

NEPA/Section 404 Merger Team Meetings

The general purpose of NEPA/Section 404 Merger Team meetings is to obtain agency comments on the on-going planning and environmental studies. The following NEPA/Section 404 Merger Team meetings were held:

The Initial NEPA/Section 404 Screening Meeting for the proposed project was held on March 17, 2004, and it was determined that the project would follow a modified process. After a Jurisdictional Determination field meeting on March 29, 2005, the USACE suggested that, due to the amount of jurisdictional features potentially impacted by the project and the higher quality characteristics associated with several systems present, the project would be returned to the Merger 01 Process at CP 1.

After an agency coordination meeting on April 14, 2005, NCDOT received a letter from USACE addressing their change in position that the project enter the Merger 01 process at CP 1. An agency coordination meeting was held between NCDOT, FHWA and USACE on September 27, 2006 to present the project alternatives carried forward, explain the alternatives that did meet the purpose and need, and quantify the impacts to the natural and human environments. Based on this presentation, USACE agreed that it would be acceptable to proceed with the project as originally agreed upon as long as NCDOT held a coordination meeting with the other NEPA/Section 404 Merger Team members to solicit comments before the circulation of the Environmental Assessment (EA). An agency coordination meeting was held on October 17, 2006 to present the project to the Merger Team members and solicit input.

The EA was approved on November 29, 2006, and the first concurrence meeting (Concurrence Points 2A and 4A) was held on May 13, 2008 resulting in the signing of the Concurrence form for both Concurrence Points. Meeting minutes and concurrence forms from the Concurrence Point Nos. 2A and 4A meeting are included in Appendix B.

14.2 PUBLIC INVOLVEMENT

A public involvement program was developed and will be maintained throughout the project pursuant to Part 1506.6 of NEPA (Public Involvement Regulations for Implementing the Procedural Provision of NEPA). In general, the public involvement program to date has included development of a mailing list, a project newsletter, a meeting with the local officials, a Citizens Informational Workshop, a toll-free telephone number for direct citizen inquiries, and a Public Hearing.

In accordance with 23 U.S.C. 128, the North Carolina Department of Transportation certifies that a public hearing for the subject project has been held and the social, economic, and environmental impacts, consistency with local community planning goals and objectives, and comments from individuals have been considered in the selection of the recommended alternative for the project.

The Public Hearing for the I-40/I-77 Interchange Improvement project was held on May 21, 2007 at the Statesville Civic Center. A Pre-Hearing Open House was held from 4:00 - 6:30 p.m. and the Formal Hearing began at 7:00 p.m. The Recommended Alternative was presented, as well as the findings of the engineering, environmental, and public outreach efforts conducted for the project. Participants were encouraged to provide comments for the public record, whether verbally or in writing. Maps and exhibit boards were available for viewing and all attendees received a project handout.

A total of 301 participants signed in at the Public Hearing. NCDOT also received 37 comment sheets, emails, or letters regarding the project, and eight people spoke on record. A summary of verbal and written comments made during the Hearing is presented in Appendix C.

An executive summary of the main issues concerning the project is as follows:

The US 21 corridor was a concern to many of the attendees of the public hearing due to safety concerns (including fatal accidents at the I-40 interchange) and persistent congestion along the corridor. The proposed project will improve the I-40/US 21 interchange as well as provide improved access control along portions of the corridor. Substantial improvements along the corridor were determined to be beyond the scope of the proposed project and two future STIP Projects (U-2930 and U-2731) will widen US 21 and improve the traffic operations along the corridor.

Concerns related to the reconstruction of grade separated crossings of Radio Road over I-40 and US 64 (Davie Avenue) over I-77 were expressed by attendees. NCDOT will study the feasibility of temporarily closing the roadways and reconstructing the existing grade separations at the existing locations during the final design of the project.

Concerns were expressed regarding the loss of access to Gaither Road as a result of the elimination of the two-way movement on the westbound ramp to I-40. Current guidelines do not allow non-interstate access. The proposed configuration was determined to be the preferred solution.

Concerns relating to the effects of noise at multiple residential locations were expressed by attendees. Due to growth along the I-40 and I-77 corridors, additional noise analysis will be performed during final design to determine the reasonableness and feasibility of providing additional noise abatement measures.

A post-hearing meeting was held on May 27, 2007 to discuss the comments expressed at or following the Public Hearing on STIP Project I-3819, I-40/I-77 Interchange Area Improvements.

14.3 CIRCULATION OF THE ENVIRONMENTAL ASSESSMENT

The Environmental Assessment was approved on November 29, 2006 by the Federal Highway Administration and the North Carolina Department of Transportation. The approved EA was circulated to the following federal, state, and local agencies for review and comments. An asterisk (*) indicates a written response was received from the agency. Copies of the correspondence are included in Appendix D of this document.

Federal Agencies

Department of Health and Human Services, Office of Environmental Affairs
Department of the Interior
Department of Agriculture
Federal Aviation Administration

Regional Offices

Department of Housing and Urban Development
Federal Emergency Management Agency
U.S. Army Corps of Engineers
*Environmental Protection Agency
U.S. Fish and Wildlife Service

State Agencies

North Carolina Department of Cultural Resources
*North Carolina Wildlife Resources Commission
*North Carolina Department of Environment and Natural Resources
North Carolina Department of Public Instruction
North Carolina Department of Economic and Community Development
North Carolina State Clearinghouse

Local Governments

Mayor of Statesville
Statesville City Manager
City of Statesville Planning Department
Chair, Statesville City Council
Iredell County Planning Department
Iredell County Manager
Chair, Iredell County Commissioners
Lake Norman MPO

14.4 COMMENTS RECEIVED ON THE ENVIRONMENTAL ASSESSMENT

Comments on the Environmental Assessment were received from a number of agency personnel and are summarized in Table 6. Agency review letters are included in Appendix D.

Table 7: Agency Comments Received on the EA

Comment No.	Comment	Response
North Carolina Department of Environment and Natural Resources, Division of Water Quality, January 31, 2007		
1	Fourth Creek is a Class C, 303 (d) waters of the State. Fourth Creek is on the 303(d) list for impaired use for aquatic life due to turbidity, fecal coliform and biological impairment. DWQ is very concerned with sediment and erosion impacts that could result from this project. DWQ recommends that the most protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Fourth Creek. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of the NC DWQ <i>Stormwater Best Management Practices</i> .	BMPs will be incorporated into the design plans and implemented where practicable.
2	The environmental document should continue to 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.	Impacts to streams and wetlands are included in the Natural Resources Technical Report (NRTR) and summarized in the EA. Comment noted. NCDOT is aware of the regulations for the North Carolina 401 Water Quality Certification. All proposed stream crossings for the project are identified in the EA, and mitigation planning will incorporate these regulations. Mitigation for the proposed impacts to streams will be arranged through the NCDENR Ecosystem Enhancement Program (EEP) under the Memorandum of Agreement (MOA) between the USACE, NCDOT and NCDENR of 2002.
3	Environmental assessment alternatives should consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives should include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ Stormwater Best Management Practices, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.	BMPs will be incorporated into the design plans and implemented where practicable.
4	Prior to issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.	Wetland and stream impacts were avoided where practicable and roadway design criteria would allow. However, mitigation efforts will be required due to unavoidable impacts. Mitigation for the proposed impacts to streams will be arranged through the NCDENR Ecosystem Enhancement Program (EEP) under the Memorandum of Agreement (MOS) between the USACE, NCDOT and NCDENR of 2002. Mitigation planning will take into account requirements set forward by NCDWQ.

Table 7: Agency Comments Received on the EA

Comment No.	Comment	Response
5	Future documentation, including the 401 Water Quality Certification Application, should continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.	Comment noted.
6	DWQ is very concerned with sediment and erosion impacts that could result from this project. NCDOT should address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.	Comment noted. Further avoidance and minimization measures will continue to be addressed in the Merger 01 process as final design plans are developed.
7	An analysis of cumulative and secondary impacts anticipated as a result of this project is required. The type and detail of analysis should conform to the NC Division of Water Quality Policy on the assessment of secondary and cumulative impacts dated April 10, 2004.	And Indirect and Cumulative Effects (ICE) Analysis was prepared in November 2005 and summarized in section 6.3.5 of the EA.
8	NCDOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.	Final impact calculations will include all impacts including bridging, fill, excavation, and clearing. Temporary and permanent construction impacts will be included as part of the 401 Water Quality Certification Application.
9	Where streams must be crossed, the DWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, DOT should not install bridge bents in the creek, to the maximum extent practicable.	Comment noted.
10	Sediment and erosion control measures should not be placed in wetlands or streams.	Comment noted.
11	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.	Comment noted.
12	The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater should not be permitted to discharge directly into streams or surface waters.	Comment noted.
13	Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an Individual Permit (IP) application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from the NCDWQ.	Comment noted.

Table 7: Agency Comments Received on the EA

Comment No.	Comment	Response
	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.	
14	Bridge supports (bents) should not be placed in the stream when possible.	Comment noted.
15	Whenever possible, the DWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allow for human and wildlife passage beneath the structure, do not block fish passage and do not block navigation by canoeists and boaters.	Comment noted.
16	Bridge deck drains should not discharge directly into the stream. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NCDWQ Stormwater Best Management Practices.	BMPs will be incorporated into the design plans and implemented where practicable.
17	If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.	Comment noted.
18	If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas should be seeded or mulched to stabilize the soil and appropriate native woody species should be planted. When using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.	BMPs will be utilized for the control of erosion and to minimize any impacts from clearing and grubbing activities.
19	Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.	Comment noted.
20	If multiple pipes or barrels are required, they should be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain	Comment noted.

Table 7: Agency Comments Received on the EA

Comment No.	Comment	Response
	elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.	
21	If foundation test borings are necessary, it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3494/Nationwide Permit No. 6 for Survey Activities.	Comment noted.
22	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.	Comment noted.
23	All work in or adjacent to stream waters should be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures should be used to prevent excavation in flowing water.	BMPs will be incorporated into the design plans and implemented where practicable.
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 should be inspected daily and maintained to prevent contamination or surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.	Comment noted.
25	Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.	Comment noted.
26	Riparian vegetation (native trees and shrubs) should be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.	Comment noted.
North Carolina Wildlife Resources Commission, February 12, 2007		
1	Proposed stream impacts range from 3,738 to 3,904 linear feet for the two alternatives, 1,476 of which are planned as stream relocations. Expected wetland impacts range from 3.19 to 3.65 acres. The level of impacts should have placed this project in the Merger 01 process; however, despite efforts by the US Army Corps of Engineers, the NCDOT and Federal Highway Administration will not place the project in the Merger 01 process until the 4A stage.	An Agency Coordination meeting was held with representatives from the Corps of Engineers on September 27, 2006 to discuss concerns related to the Merger Process. At the meeting it was determined that the project would still enter at Concurrence Point 4A and that NCDOT would coordinate with all members of the Merger Team prior to distribution of the EA. The additional coordination meeting was held on October 17, 2006.
2	Direct impacts are expected to Fourth Creek and numerous unnamed tributaries	Comment noted. Additional coordination on avoidance

Table 7: Agency Comments Received on the EA

Comment No.	Comment	Response
	(UT's) to Fourth Creek, all Class C waters and on the 303 (d) list of impaired waters. It appears that nine wetland areas will be impacted, including a large high-quality wetland (NC Division of Water Quality rating 92) in the southwest quadrant of the I-40/I-77 interchange. We commend NCDOT on efforts to minimize impacts to aquatic habitats and floodplains, such as using bridges at all Fourth Creek crossings, designing new bridges to span the floodways, and using a retaining wall. It appears that NCDOT will also provide for the existing and planned greenways in the area. We are hopeful that additional minimization of impacts can be achieved, especially to aquatic resources in the southwest quadrant of the interchange. We look forward to working with NCDOT on this within the Merger 01 process.	and minimization measures will continue to be addressed in the Merger 01 process.
3	Numerous studies have shown that when 10-15% of a watershed is converted to impervious surfaces, there is a serious decline in the health of receiving waters (Schueler 1994) and the quality of fish habitat and wetlands are negatively impacted (Booth 1991, Taylor 1993). The project area is rapidly developing. The water quality has been degraded and stream crossings are being upgraded to account for higher flows due to urban development. Some natural and agricultural areas still exist; therefore potential for further development is high. Crossing designs should use a build-out scenario for the area to determine adequate sizes for the structures.	Future development was addressed in the November 2005 ICE study. At this point, it has not been determined that quantitative water quality impact analysis be conducted.
4	Secondary and cumulative impacts are a serious concern. We strongly recommend that NCDOT and local authorities work together to minimize construction and development impacts through strong sediment and erosion controls and stormwater management. Special efforts should be made to prevent further degradation of area streams and to improve their water quality. Impervious surfaces should be limited and floodplains should be preserved in a natural state. Measures to mitigate secondary and cumulative impacts can be found in the Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife (NCWRC 2002). We also encourage NCDOT and local authorities to use low impact development techniques to manage stormwater quantity and quality in developed and developing areas (see www.lowimpactdevelopment.org for information). We encourage the use of non-impervious materials to construct sidewalks, parking lots, and other facilities, and the use of retrofits for existing development.	Possible mitigation is addressed in the ICE study.
North Carolina Department of Environment and Natural Resources, Division of Environmental Health, February 22, 2007		
1	If existing water lines will be relocated during the construction plans for the water line relocation must be submitted to the Division of Environmental Health, Public Water Supply Section, Technical Services Branch, 1634 Mail Service Center, Raleigh, North Carolina 27699-1634m (919) 733-2321.	Comment noted.

Table 7: Agency Comments Received on the EA

Comment No.	Comment	Response
Environmental Protection Agency, March 1, 2007		
1	EPA notes that Fourth Creek and its UTs are on the 303(d) list of impaired waters from non-point source pollution resulting from urban runoff and sediment. NCDOT should incorporate the most environmentally methods of pre-treatment of stormwater to this receiving water to remove pollutants and sediment.	BMPs will be incorporated into the design plans and implemented where practicable.
2	NCDOT proposes to relocate approximately 1,476 linear feet of streams (both alternatives) on-site. EPA requests that these proposed stream relocations in the Piedmont be closely coordinated with DWQ, ACE, FWS, WRC and EPA (Kathy Matthews) in order to insure that the relocations are technically and environmentally sound.	Comment noted. Coordination with the agencies will occur through the Merger 01 process.
3	EPA notes that Wetland system #15 represents the largest impact site of the 3.19/3.65 acres totals. Alternative 1 impacts 1.81 acres of W15 and Alternative 2 impacts 2.51 acres. W15 was rated as a 92 (NCDWQ) riverine system. This wetland is by far the highest quality wetland in the project study. EPA will be seeking avoidance and minimization measures at CP 4A to reduce the impacts to this high quality wetland.	Comment noted.
4	EPA has some environmental concerns for the proposed project as it relates to measures to avoid and minimize certain impacts from the proposed interchange designs. EPA requests that NCDOT look for environmental stewardship opportunities and mitigation of impacts to jurisdictional wetlands and streams, prime farmlands, and noise receptors. NCDOT should also complete its noise analysis to determine the acceptability of noise barriers. NCDOT should complete its geotechnical evaluation to determine the actual number of hazardous material sites impacted.	Comment noted. Potential hazardous material involvement will be evaluated during each remaining phase of the project.
5	Neither build alternative considered by NCDOT is substantially different in most of the impacts for EPA to have an identified preference, although Alternative 1 does have less impact (0.7 acre) to W#15. The Federal EA was generally very comprehensive and the Summary table of impacts (S-2 to S-4) was very useful in comparing the two alternatives.	Comment noted.

15.0 SUMMARY OF REVISIONS TO ENVIRONMENTAL ASSESSMENT

A historic resource (The McKee House) was identified following the circulation of the EA. Following analysis it was determined that the structure as well as a small portion of the property surrounding the structure were eligible for listing on the National Register of Historic Places; however the project will not affect the property due it being outside the Area of Potential Effect (APE).

An evaluation of the service road located to the northeast of the I-40/I-77 interchange was requested by the Merger Team members at the Concurrence Point 2A/4A meeting. NCDOT evaluated the following three potential alternatives:

- An alignment that crossed to the north of the wetland system, but through two stream systems, named the green alternative.
- An alignment that crossed the southern portion of the wetland system with a bridge crossing of the wetland, named the red alternative
- An alternative to purchase the property that would no longer have access

Based on the evaluation, NCDOT selected the green alternative as the preferred alternative because it provided access to both of the landlocked parcels in the vicinity of the service road.

Following the circulation of the EA, the final design portion of the project was undertaken and included a revision to the vertical profile on I-40 to eliminate a flooding problem created by the roadway being located within the 100-year floodplain. The impacts to jurisdictional features were updated to reflect the design changes and the application of a 25-foot buffer from the slope stakes limits as is currently the standard method for quantifying impacts (the EA is based on a 10-foot buffer).

An updated floodplain analysis was completed based on the recently updated Flood Insurance Rate Maps (FIRM) for the city of Statesville and the Unincorporated Areas of Iredell County.

The EA included an evaluation of the overall study area for hazardous materials, which has been updated to reflect the likely impacts associated with the construction of the recommended alternative.

A new federally protected species, Dwarf-flowered heartleaf (*Hexastylis naniflora*), was added to the listing for Iredell County following the circulation of EA. Based on field surveys conducted by NCDOT it was determined that this project will have no effect on the dwarf-flowered heartleaf.

The construction cost estimate for the proposed project was updated to reflect the design revisions stated above.

16.0 ONLY PRACTICABLE ALTERNATIVE WETLAND FINDING

Executive Order 11990 established a national policy to avoid, to the extent possible, adverse impacts on wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

NCDOT and the Merger Team for the proposed project have developed avoidance and minimization measures throughout the project. Avoidance and minimization efforts discussed at the Concurrence Point 4A meeting included lengthening bridge crossings to minimize impacts to wetlands and utilizing retaining walls where appropriate to reduce or eliminate impacts. There are 3.82 acres of jurisdictional wetlands impacts anticipated as a result of the project. With the exception of not building the project, there are no feasible means of avoiding the taking. Avoidance and minimization measures have been implemented throughout the planning and preliminary design of the project and NCDOT will continue to minimize impacts on wetlands through the use of Best Management Practices during final design and construction.

It has been determined there is no practical alternative to the proposed construction in wetlands and that the proposed action includes all practical measures to minimize harm to these jurisdictional features which may result from such use.

17.0 BASIS FOR FINDING OF NO SIGNIFICANT IMPACT

Based upon a detailed study of the proposed project as documented in the Environmental Assessment (EA) and upon comments received from federal, state, and local agencies and the public, it is the finding of the North Carolina Department of Transportation and the Federal Highway Administration that this project will not have a significant impact upon the human or natural environment. The project is not controversial from an environmental standpoint. No significant impacts to natural, ecological, cultural, or scenic resources are anticipated. Every effort has been made to avoid and/or minimize wetlands, streams and riparian buffers. Potential on-site mitigation opportunities exist but are limited; consequently, most of the mitigation requirements will be provided by the NC Ecosystem Enhancement Program. No significant impact on air or water quality is expected and no effects on federally listed endangered or threatened species are anticipated. The proposed project is consistent with local plans and will not disrupt any communities. In view of the above evaluation, it has been determined a Finding of No Significant Impact is applicable for this project. Therefore, neither an Environmental Impact Statement nor further environmental analysis will be required.

¹ North Carolina Department of Transportation. State Transportation Improvement Program, 2009-2015. Available: <http://www.ncdot.org/PLANNING/development/tip/TIP/Trans/pdf/div12.pdf>

² Federal Emergency Management Agency. Unified National Program for Floodplain Management. March 1986. Available: <http://www.fema.gov/pdf/fima/fema100.pdf>.

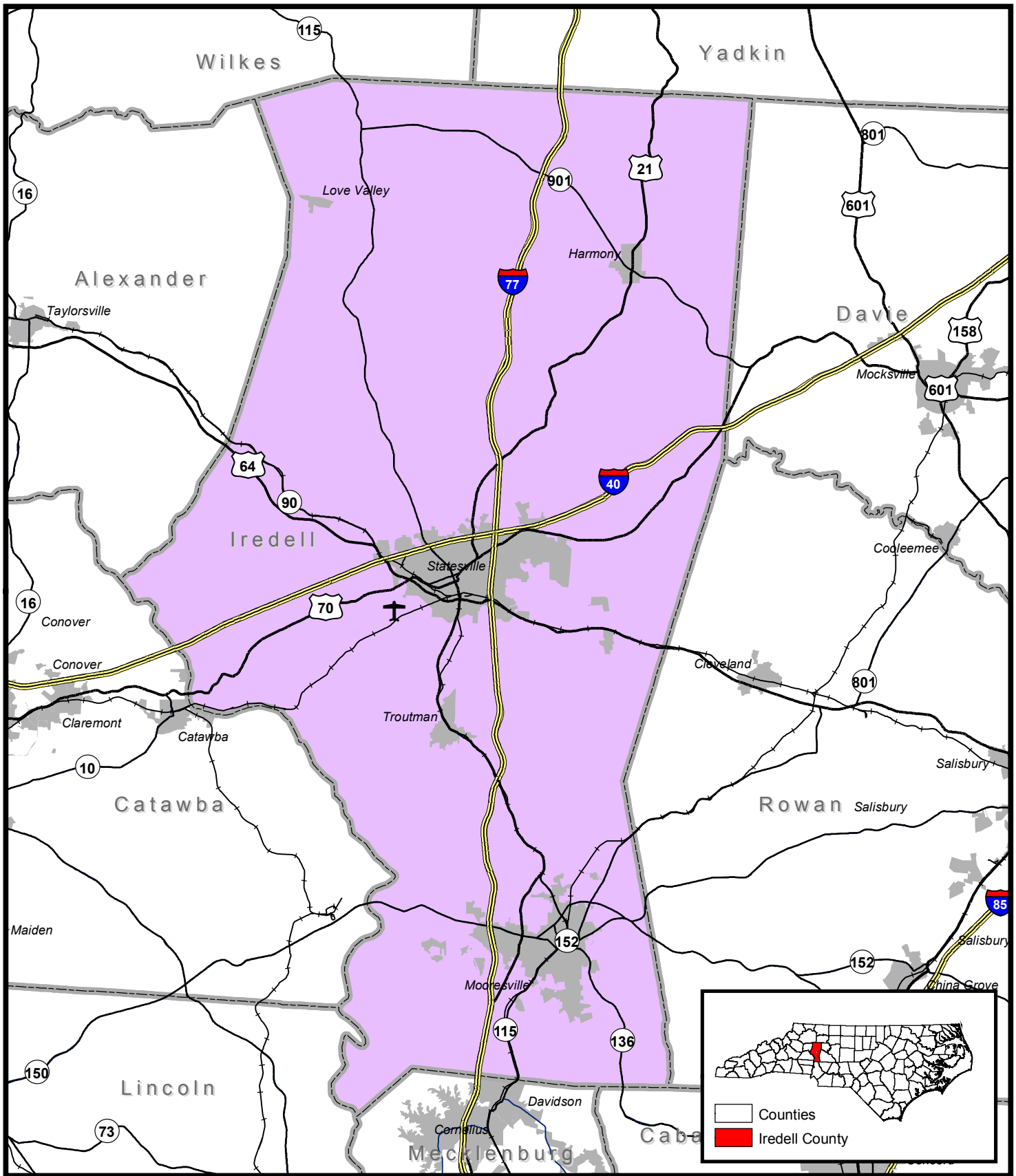
³ Federal Emergency Management Agency. Unified National Program for Floodplain Management. March 1986. Available: <http://www.fema.gov/pdf/fima/fema100.pdf>.

⁴ United States Department of Housing and Urban Development, Federal Insurance Administration. Flood Insurance Study, City of Iredell County, North Carolina, and Incorporated Areas. April 2007.

⁵ Environmental Data Resources, Incorporated. EDR Data Map Corridor Study, I-40/I-77 Interchange Improvements Project, Statesville, NC. 7 April 2005.

⁶ Wainaina, Njoroge W., PE., State Geotechnical Engineer, North Carolina Department of Transportation. "Geotechnical Pre-Scoping Report." Memorandum to Teresa Hart, P.E., Project Development and Environmental Analysis Branch, North Carolina Department of Transportation. 1 November 2007.

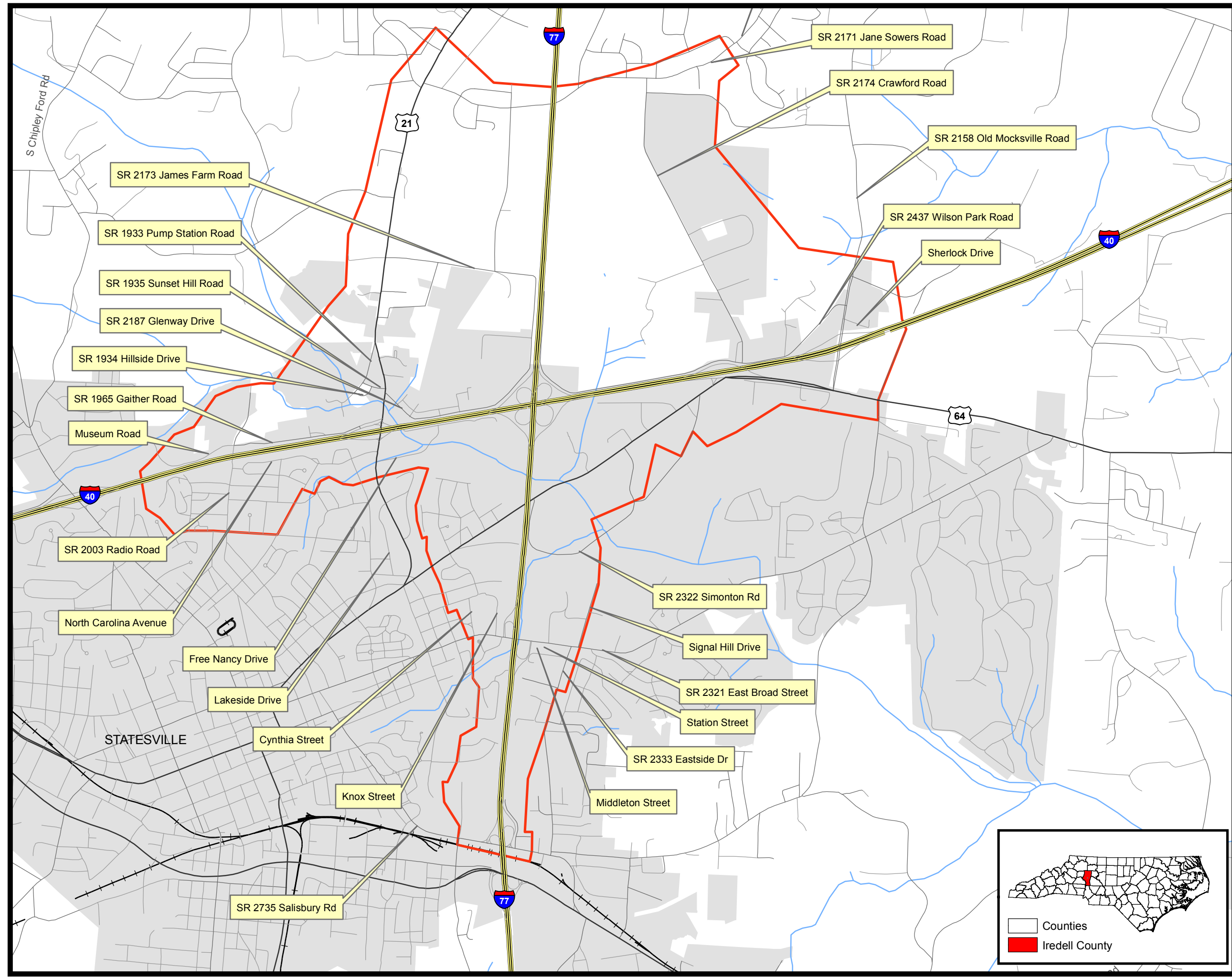
Figures



<p>0 2.5 5 10 Miles</p> <p>Legend</p> <ul style="list-style-type: none"> Interstate US Highway State Highway Railroad Municipal Boundary County Boundary Airport 			<p>I-40/I-77 Interchange Area Improvements TIP Number I-3819 Iredell County, NC</p> <p>Figure 1 Project Location Map</p> <p><small>Date: June 2008 Sources: Iredell County, NC; ESRI, Inc; NCDOT; and URS. Map for reference only.</small></p>
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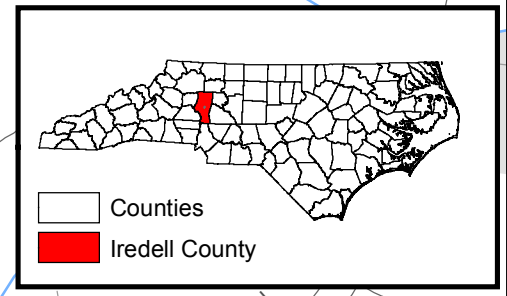
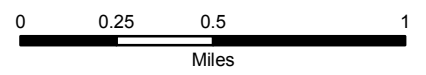
I-40/I-77 Interchange Area Improvements
 TIP Number I-3819
 Iredell County, NC

Figure 2
 Project Study Area



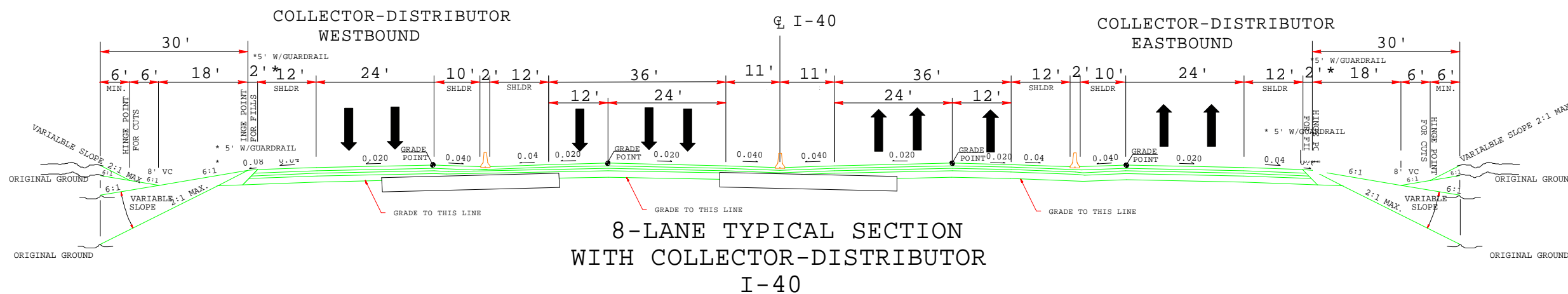
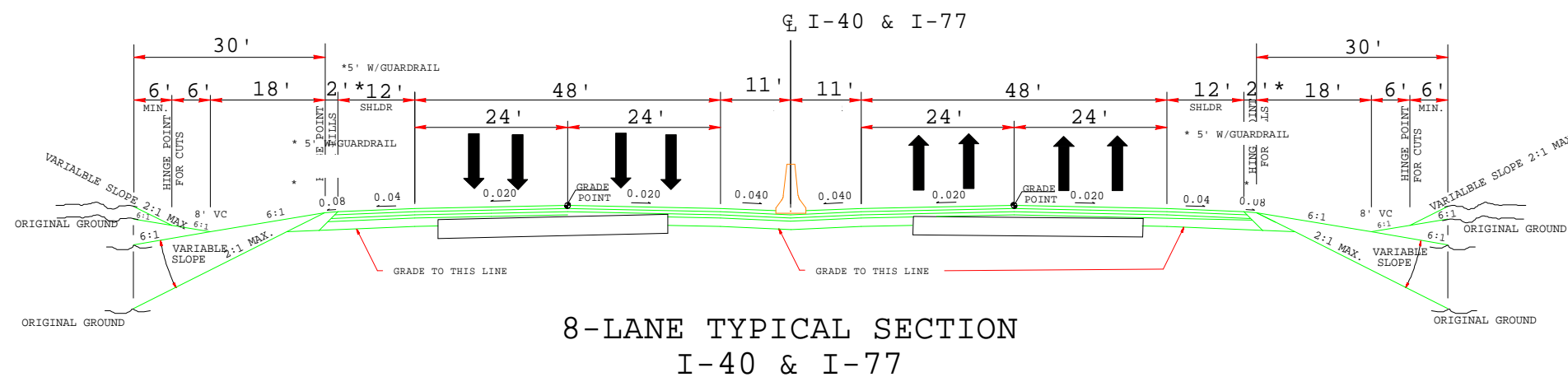
Legend

- Project Study Area
- Interstate
- US Highway
- State Highway
- Local Road
- Railroad
- Streams (non-delineated)
- Municipal Boundary



Date: June 2008
 Sources: Iredell County, NC; NCDOT; ESRI, Inc.; and URS.
 Map for reference only.

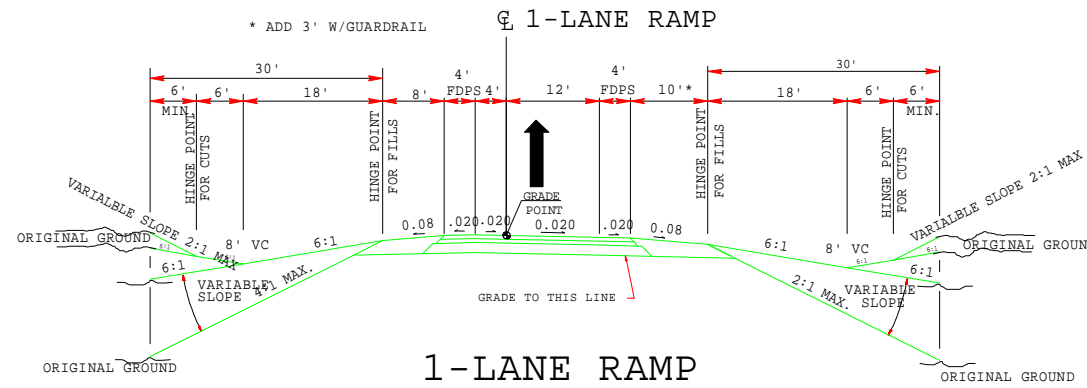
Figure 3a
 Typical Sections



NOT TO SCALE

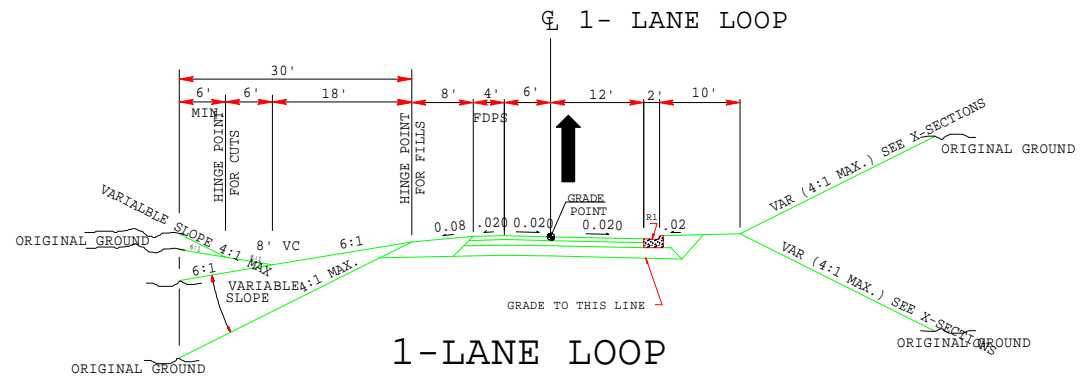


Figure 3b
 Typical Sections



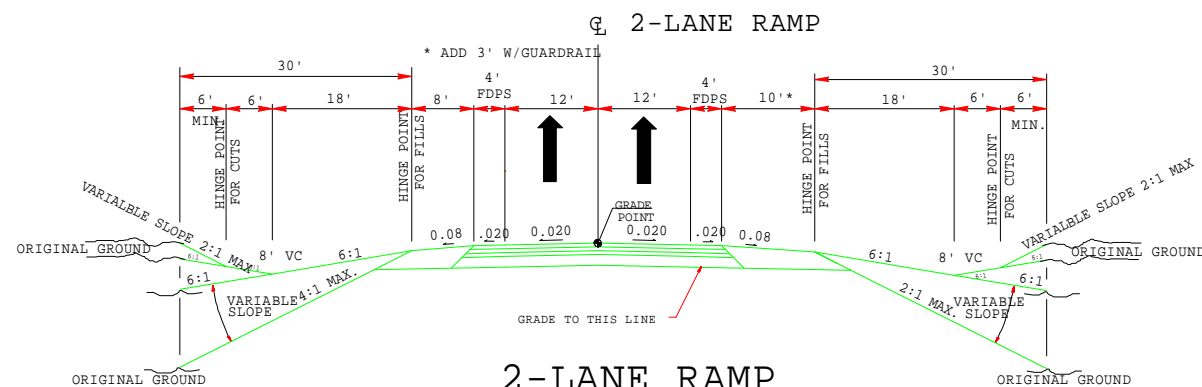
1-LANE RAMP
 TYPICAL SECTION

- L2RPB- -Y9RPA-
- L2RPA- -Y9RPC-
- L2RPAT-



1-LANE LOOP
 TYPICAL SECTION

- L2LPC-
- Y9LPA-
- Y9LPC-



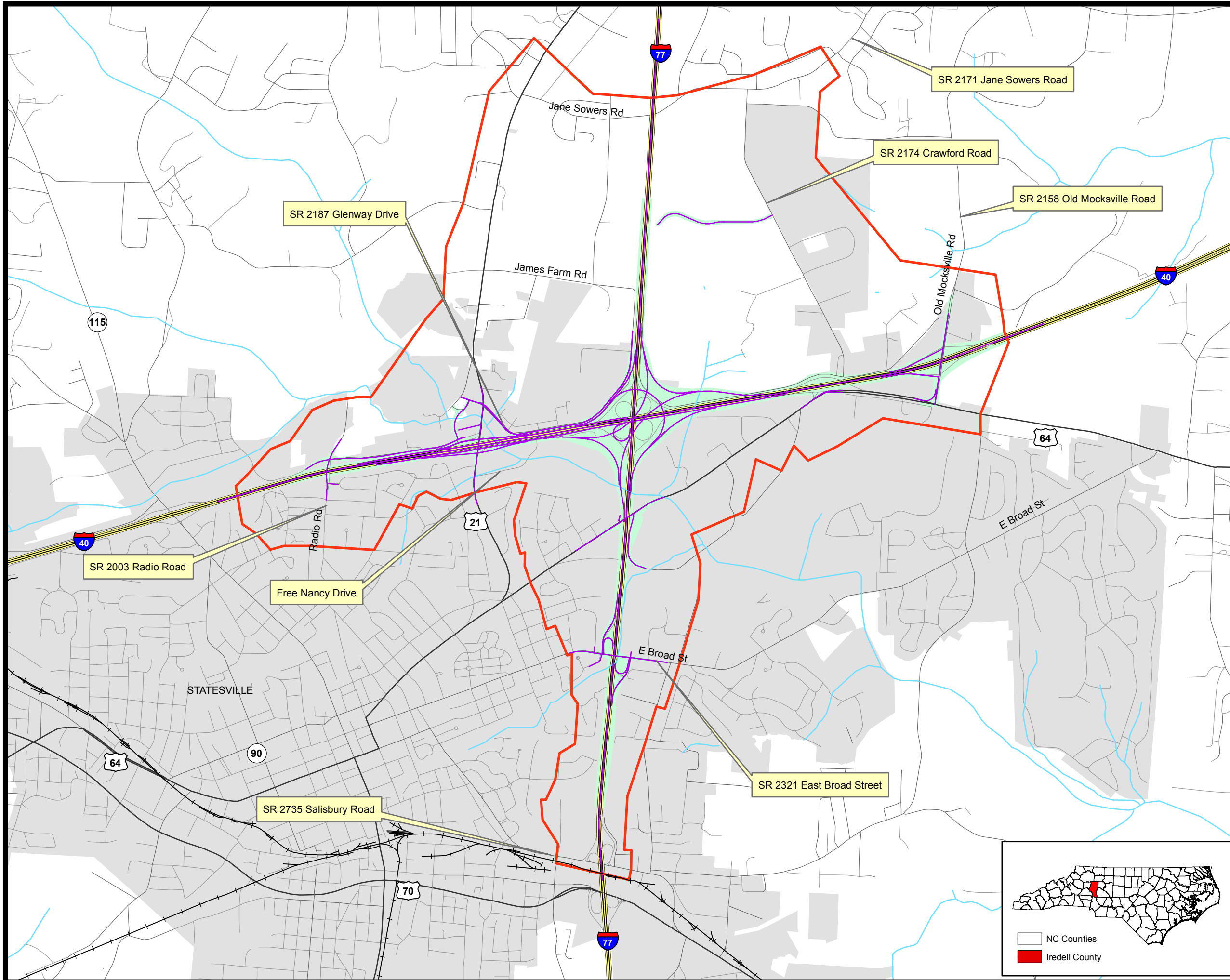
2-LANE RAMP
 TYPICAL SECTION

- L2RPDB- -L2RPCA- -L2RPD-
- L2RPAC- -L2RPC-
- L2RPACT- -L2RPCAT-

NOT TO SCALE



Figure 4
Four-Level Offset
Interchange Alternative



Legend

- Project Study Area
- Interstate
- US Highway
- State Highway
- Local Road
- Railroad
- Municipal Boundary
- Streams (non-delineated)
- Four-Level Offset Alignment
- Right of Way

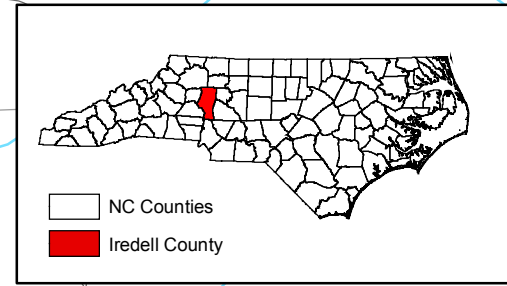
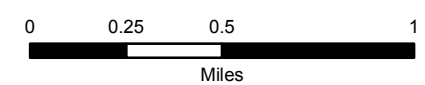
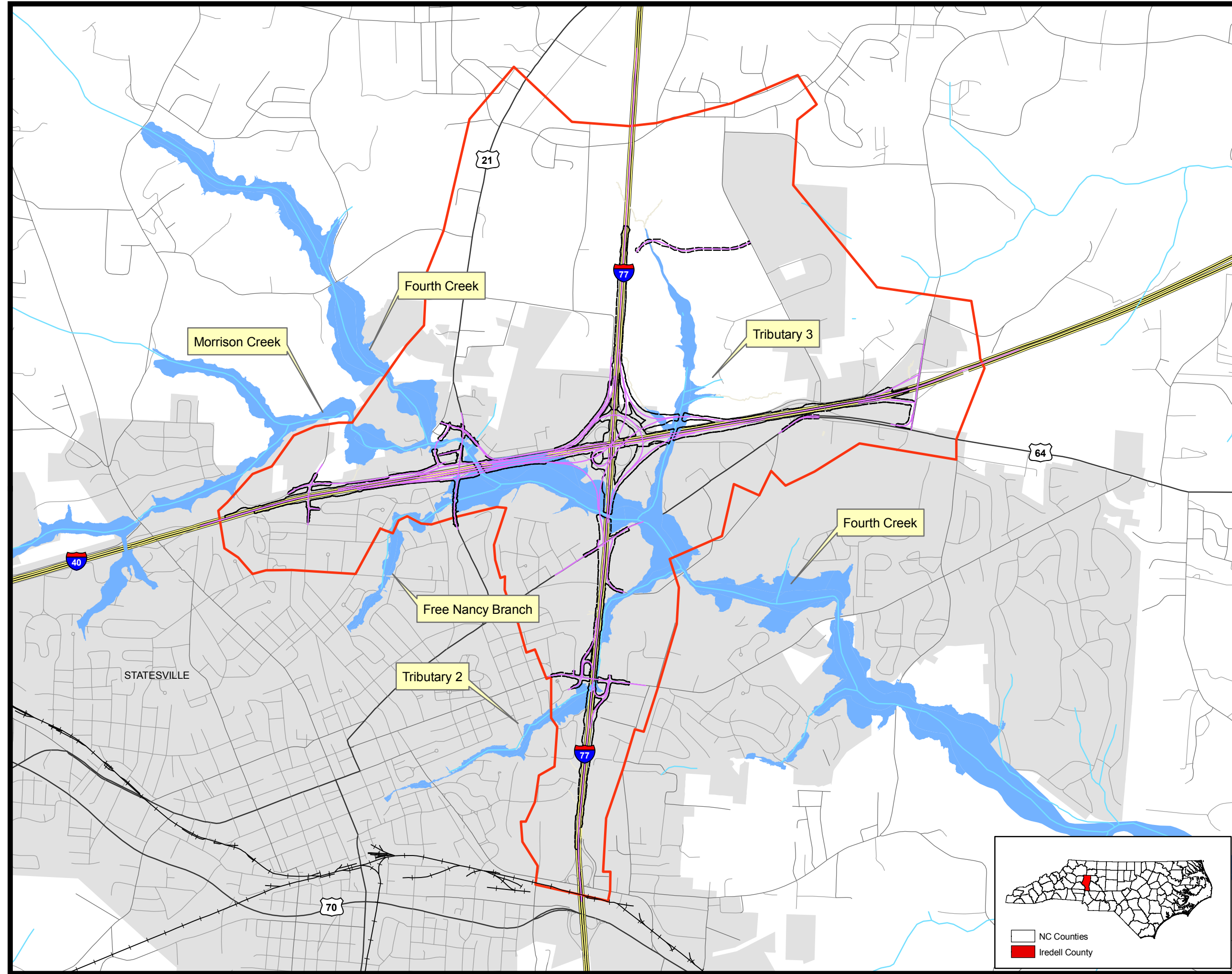


Figure 5
 Flood Hazard Evaluation
 Four-level Offset Interchange Alternative



Legend

- Project Study Area
- Interstate
- US Highway
- State Highway
- Local Road
- Railroad
- Municipal Boundary
- Streams (non- delineated)
- Four-level Offset Alignment
- - - Four-level Offset Slope Stake
- FEMA 100 Year Floodplain Boundary

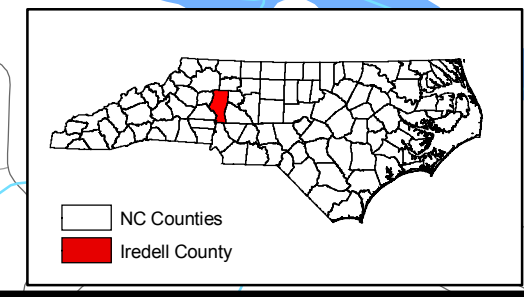
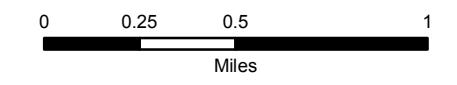
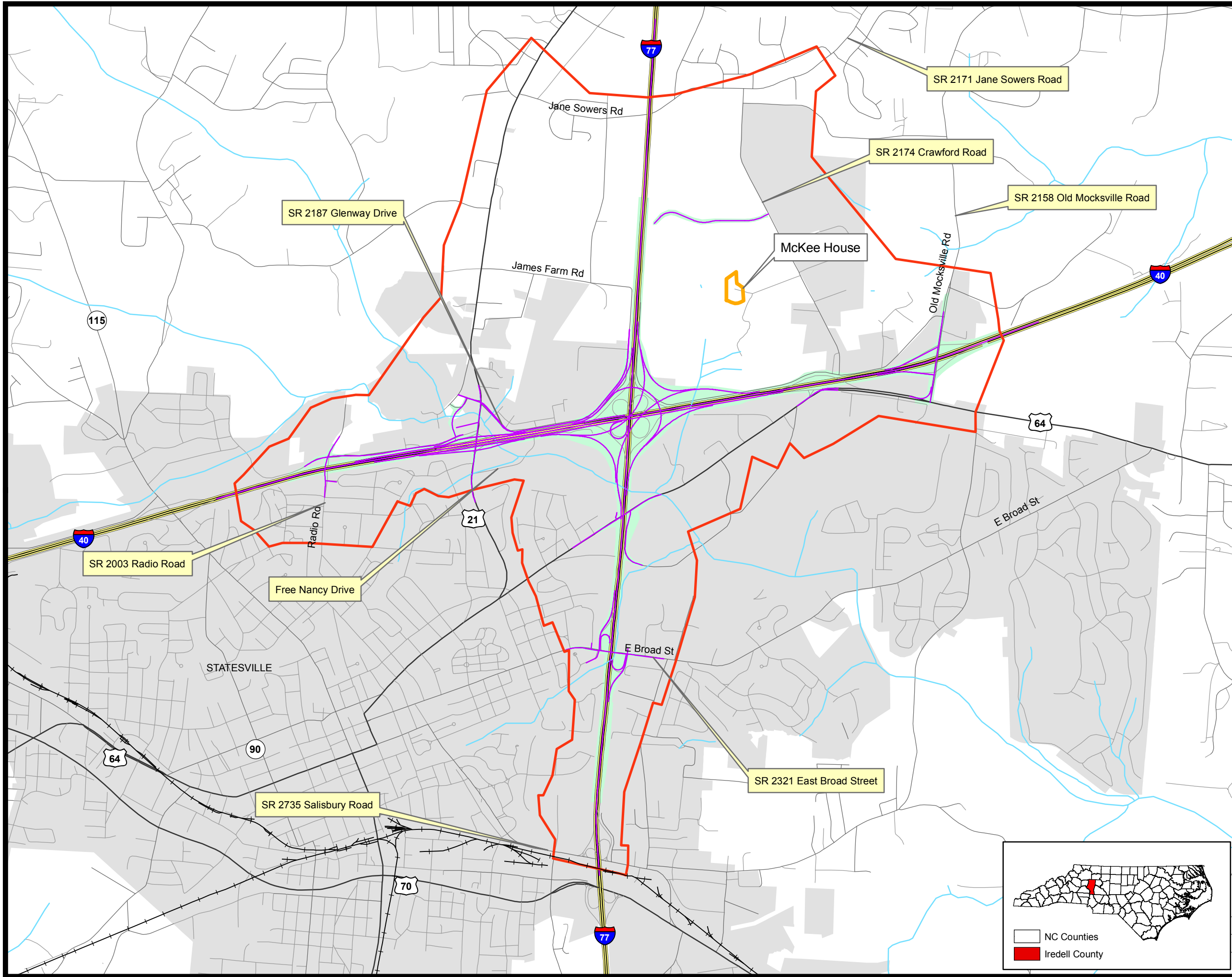


Figure 6
 Four-level Offset
 Interchange Alternative
 Architectural Historic Resources



- Legend**
- Project Study Area
 - Interstate
 - US Highway
 - State Highway
 - Local Road
 - +— Railroad
 - Municipal Boundary
 - Streams (non-delineated)
 - Four-level Offset Alignment
 - Right of Way
 - Historic Boundary

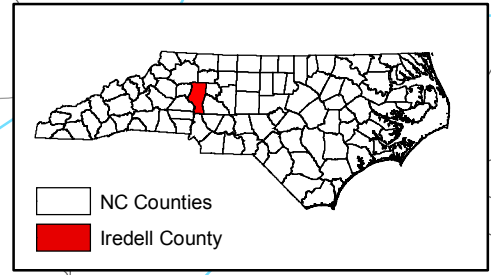
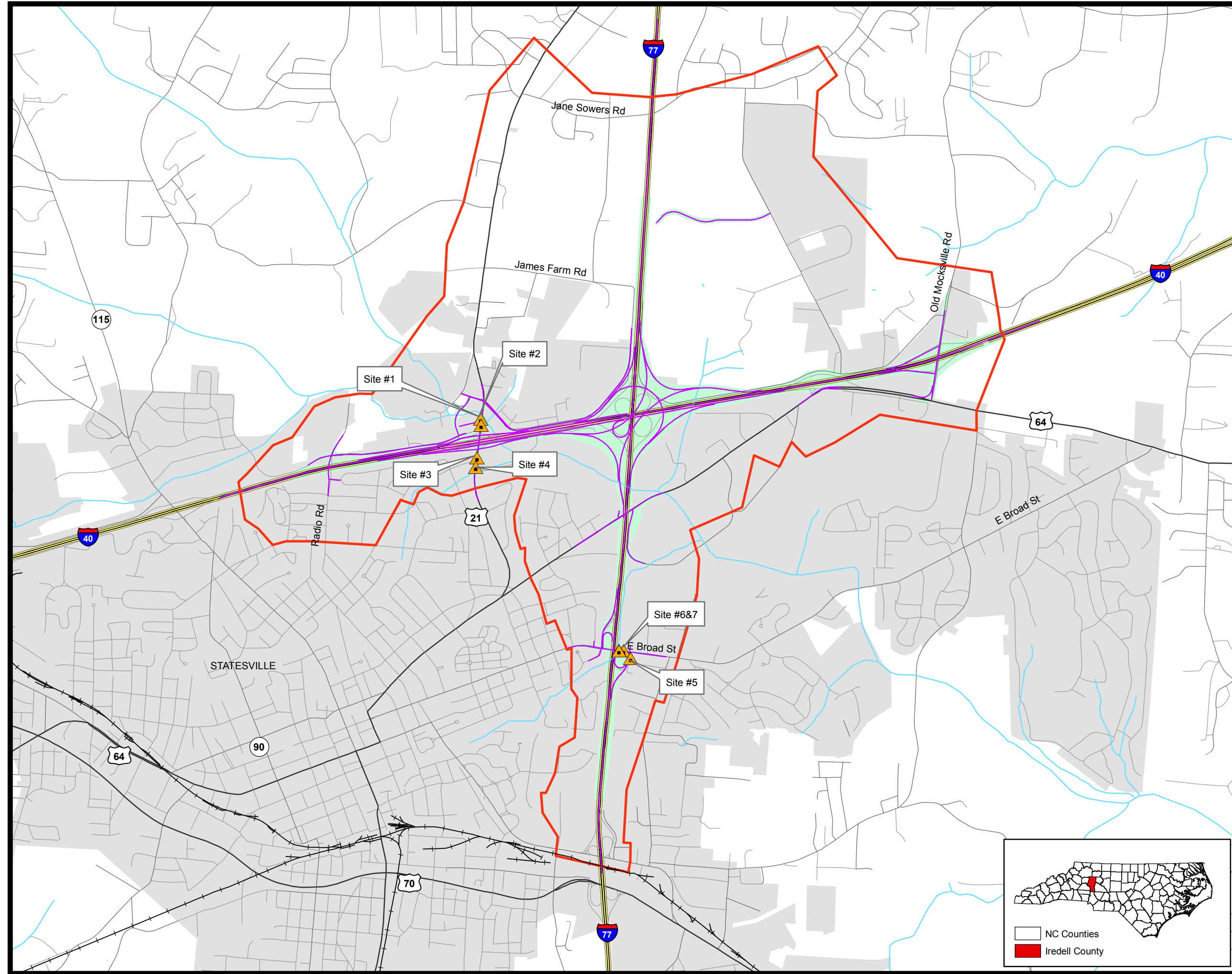
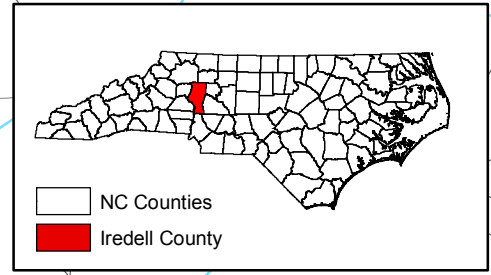
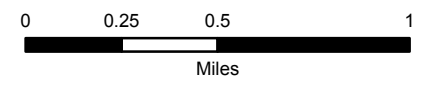


Figure 7
 Four-level Offset
 Interchange Alternative
 Locations of USTs, Landfills, &
 Other Potentially Contaminated Sites



Legend

- Project Study Area
- Hazardous Materials
- Interstate
- US Highway
- State Highway
- Local Road
- Railroad
- Municipal Boundary
- Streams (non-delineated)
- Four-level Offset Alignment
- Right of Way



Appendices

Appendix A
Historic Architecture



March 26, 2007

Ms. Mary Pope Furr
Historic Architecture Supervisor
Human Environment Unit
North Carolina Department of Transportation
1583 Mail Service Center
Raleigh, North Carolina 27699-1583

Subject: National Register Assessment of the McKee House within the Area of Potential Effect of Proposed I-40/I-77 Interchange Area Improvements, Iredell County (TIP Project No. I-3819, Federal Air Project No. IMS-40-2, State Project No. 8.1823901, WBS Element No. 34192.1.2)

Dear Ms. Furr:

The proposed action that prompted this letter is the modification of the I-40/I-77 interchange area in the vicinity of Statesville in Iredell County. As part of the project's environmental review, URS Corporation – North Carolina (URS) prepared an Environmental Assessment (EA) in November 2006. While the EA was being finalized, the North Carolina Department of Transportation asked URS to assess the National Register eligibility of the McKee House, an early nineteenth-century dwelling that stands approximately 0.8 miles northeast of the intersection of the two interstates. URS Senior Architectural Historian Marvin A. Brown inventoried, researched, and assessed the resource during the weeks of December 11 and December 18, 2006. He subsequently prepared this letter report, which recommends that the house is eligible for the National Register listing under Criterion C within a boundary of 7.25 acres.

Assessment

The McKee House is located near the center of a 292.33-acre tract of land (Figure 1). This tract, which is partially wooded and partially cleared and cultivated, includes six additional standing resources. To the house's west are a shed, a livestock barn, and a large dairy barn. To its east are a small frame house and a garage. To its south near the southern end of the tract—on the edge of one of the property's three farm ponds—is an additional small frame house (Figure 1).

According to family accounts in secondary sources, the McKee House was built by William McKee (1745-1820) sometime between 1813 and 1818, near the end of his life. William had

come to North Carolina in 1760 from Pennsylvania with his twice-widowed mother, Margaret McKee Potts, who built the original, no-longer-extant, log house on the property. Following William's death in 1820, his son—John Henry McKee—inherited the house and plantation. The next year, John married Mary Tirzah McKnight (Genealogical Society of Iredell County 1980:387-88; Sharpe 1913). (The age of William McKee when the house was reportedly constructed, coupled with the dates of his son John's ascension to ownership of the estate and marriage, suggests that perhaps John built the house. Family histories consistently ascribe its construction to his father, however.)

The house is said to have been “built of brick made on the place, ‘tramped with oxen and molded by hand.’” It became the center of a plantation that included large barns, a “cluster of log cabins” for the slaves, and a slave cemetery (Genealogical Society of Iredell County 1980:387). The 40 slaves John McKee owned in 1850 (or 1860) made him one of the ten largest slave owners in Iredell County near the onset of the Civil War (Keever 1976:130).

The property remained in the McKee family until “well into” the twentieth century, although it was not occupied by the family during all or most of that century. A county map notes its ownership in 1917 by Dr. Frank Sharpe, William's grandson (Genealogical Society of Iredell County 1980:387-88; Kinney 1917). The original log house stood on the property until the early twentieth century. Its loss and the loss of the interior of the brick plantation house are intertwined, as William McKee's great-granddaughter, Katherine Nooe Knox noted in 1980 (Genealogical Society of Iredell County 1980:387):

I clearly remember the family log cabin which was a marvel of construction. Later when the family left the plantation, the logs were burnt for firewood by the tenants. These same tenants smoked meat in the attic of the brick house. That caused a fire that burned the entire interior of the fine old building on Mar. 13, 1913. The interior was later built back.

By the mid-1970s, the McKee House was owned by Herbert Hawthorne of Statesville (Iredell County American Revolution Bicentennial Commission 1976:37; Little-Stokes 1977). In 2003 Peppercorn Management LLC acquired the house and its 292+-acre parcel (Iredell County Deed Book 1514/Page 2449).

The principal block of the McKee House is a two-story, gable-end, masonry building with a vernacular three-room Quaker plan (Plates 1 through 4). All four of its walls—as well as its pair of step-shouldered, exterior-end chimneys—are built of Flemish bond raised on a fieldstone foundation. Its south-facing front elevation is three bays wide and it is two bays deep. Flat brick arches top the bays of all four elevations, but for the front entry, which is surmounted by a three-light transom. A wide ghost mark of less-weathered brick indicates the presence of a porch that once wrapped around the front and side elevations, extending from the

lintels of the first-story bays to the sills of the second-story windows. (In all likelihood the original porch looked much like the porch that still shades Cedar Grove, a National Register-listed, Quaker-plan house built in 1825 in nearby Burke County (Cotton 1987:168; Black & Black 1988).) Affixed to the rear of the principal block is a one-story wing with a gable-end roof and interior chimney stack. Its one-over-five common bond and flat brick arches suggest that it was an early addition. To the rear and west side of this block is a small, shed-roofed, later-added, frame addition.

Only the brick walls and fieldstone foundation of the principal block's exterior are original; the 1913 fire must have effectively reduced the house to a shell. The front door and all of the windows postdate the fire, as do the three-bay-wide front porch, the boxed eaves and their wooden dentils, and the front façade gable. The bays of the brick ell also postdate the fire, as does its frame addition. The house's only original interior elements are its brick partition walls, which mark its Quaker plan and hearth placements (Plates 5, 6, and 7). On the right (east) is one large room, into which the front and rear doors open and from which the stair rises. On the left are back-to-back rooms with corner hearths that share the west chimney. The only interior feature that appears to predate the fire is a one-panel door, flat on one side and barely raised on the other, beneath the stair. It too was in all likelihood not original to the house, as its form suggests an 1850s' date of assembly.

The remainder of the buildings on the property postdate 1913 as well. The house and garage to the east appear to date from the 1930s or 1940s (Plates 8 and 9). The shed, dairy barn, and collapsing livestock barn to the west appear to date from the 1940s or 1950s (Plates 10 through 13). The house to the south was likely not erected before the 1990s (Plate 14).

Recommendation

The McKee House is one of a relatively small surviving group of Quaker-plan, brick houses laid in Flemish bond that were erected in North Carolina's western Piedmont in the late eighteenth and early nineteenth centuries (see Black & Black 1988; Brown and York 1986; Cotton 1987; Survey and Planning Unit 1971 and 1973). Following her comprehensive inventory of the historic architecture of Iredell County in the late 1970s, Ruth Little-Stokes identified the dwelling as one of only four surviving antebellum brick houses in the county (Little-Stokes 1978:47). The McKee House is believed to be eligible for National Register listing under Register Criterion C as a rare surviving representative of a brick, Quaker-plan, antebellum dwelling in Iredell County. It is recommended that its area of significance is architecture; that its period of significance is the 1810s, its decade of construction; and that the extent of its significance is local. It is believed that it retains sufficient overall integrity to support this significance. Still located on, in Little-Stoke's words, a "lovely site on a rise above a creek [with] ancient cedars and elms around," it is believed to retain its integrity of location,

setting, feeling, and association. With its Flemish bond walls and Quaker-plan intact, it is believed to retain sufficient integrity of design, materials, and workmanship to support local architectural significance under Criterion C (in spite of the loss of its original exterior and interior woodwork).

As the house is closely framed by twentieth-century resources built more than a century after its construction, its recommended National Register boundaries are relatively tightly constricted within its large tract, which includes the house yard, woods, and part of a cultivated field (Plates 15 through 18) (Figure 2). They include the house and the noncontributing shed to its west: were the shed excluded, the boundaries would not provide a sufficient setting for the house. They exclude the two barns farther to the west and the house and garage to the east. On the south (to the house's front) the boundaries extend across a cultivated field to the edge of a wood line. On the north they extend behind the house through woods to a narrow watercourse. The boundaries encompass approximately 7.25 acres. Neither I-77 nor I-40 is visible from within the recommended boundaries. Indeed, the two interstates are hidden from the view of virtually the entire tract due to the rolling lay of the land.

Bibliography

Black & Black

1988 *A Research Report: The McDowell House, Quaker Meadows, Burke County, N.C.*
Located at the North Carolina State Historic Preservation Office, Raleigh NC.

Brown, Marvin A. and Maurice C. York

1986 *Our Enduring Past: A Survey of 235 Years of Life and Architecture in Lincoln County, North Carolina.* Lincoln County Historic Properties Commission and the North Carolina Division of Archives and History, Lincolnton NC.

Cotton, J. Randall

1987 *Historic Burke: An Architectural Inventory of Burke County, North Carolina.* Historic Burke Foundation, Inc.

Genealogical Society of Iredell County

1980 *The Heritage of Iredell County.* Statesville NC.

Iredell County American Revolution Bicentennial Commission

1976 *Iredell County Landmarks: A Pictorial History of Iredell County.*

Iredell County deed books and tax maps. Iredell County Courthouse, Statesville NC.

Keever, Homer M.

1976 *Iredell: Piedmont County*. Iredell County Bicentennial Commission.

Kinney, N.R.

1917 "Map of Iredell County." George F. Cram Company, Chicago. Copy located on wall of Iredell County Register of Deeds Office, Statesville NC.

Little-Stokes, Ruth

1977 Historic Sites Survey form for the McKee House, Iredell County NC. Located at the North Carolina State Historic Preservation Office, Raleigh NC.

1978 *An Inventory of Historic Architecture, Iredell County, North Carolina*. Iredell County and Division of Archives & History.

Sharpe, Sarah Jane McKee

1913 "A Daughter of Old Iredell." In *The [Statesville] Landmark*, April 1, 1913. Photocopy located in McKee Family vertical file, Iredell County Public Library, Statesville NC.

Survey and Planning Unit

1971 National Register of Historic Places Inventory-Nomination Form for "Pleasant Valley," Burke County NC. Located at the North Carolina State Historic Preservation Office, Raleigh NC.

1973 National Register of Historic Places Inventory-Nomination Form for "Quaker Meadows," Burke County NC. Located at the North Carolina State Historic Preservation Office, Raleigh NC.

Conclusion

The McKee House is recommended as eligible for National Register listing under Register Criterion C as a rare surviving representative of a brick, Quaker-plan, antebellum dwelling in Iredell County. Its boundaries are recommended as a rectangle centered on the house that encompasses 7.25 acres.

Respectfully submitted

URS Corporation – North Carolina

Marvin A. Brown
Senior Architectural Historian

MAB:bkc

Enclosures

cc: Jeff Koontz, PE
Peter Trencansky, PE



Plate 1: South front end and west side elevations of McKee House



Plate 2: South front and east side elevations of McKee House



Plate 3: East side and north rear elevations of McKee House



Plate 4: Detail of Flemish bond brickwork and fieldstone foundation of McKee House



Plate 6: East downstairs principal room of McKee House with entry to ell at left and twentieth-century stair at right



Plate 7: East upstairs principal room of McKee House



Plate 8: Looking northwest at deteriorated twentieth-century house and garage to east of McKee House



Plate 9: Looking west from deteriorated twentieth-century house toward McKee House in distance



Plate 10: Looking west from rear ell of McKee House toward three twentieth-century outbuildings



Plate 11: Looking west at shed to west of McKee House; dairy barn at left



Plate 12: Looking southwest at dairy barn to west of McKee House



Plate 13: Looking west at ruinous livestock barn to west of McKee House



Plate 14: Looking east at late twentieth-century house to south of McKee House



Plate 15: Looking northwest at McKee House and shed



Plate 16: Looking west at McKee House and barns from twentieth-century house; I-77 invisible behind hill in background



Plate 17: Looking northwest at McKee House; outbuildings at left (west) obscured by trees, and house and garage located just outside of frame at right (east); I-77 hidden by hill in distance



Plate 18: Looking southwest from second story of McKee House across porch roof; junction of I-40 and I-77 in distance obscured by elevation of land



Plate 5: Southeast downstairs front room of McKee House from principal room; note corner hearth and twentieth-century door, mantel, and woodwork

Appendix B
Merger Team Concurrence Forms and
Meeting Minutes

Section 404/NEPA Merger Project Team Meeting Agreement
**Concurrence Point No. 2A – Bridging Decisions and Alignment Review
and
Concurrence Point No. 4A – Avoidance and Minimization**

I-40/I-77 Interchange Area Improvements
Iredell County, North Carolina
Federal Aid Project No. IMS-40-2
WBS Element No. 34192.1.2
TIP Project No. I-3819

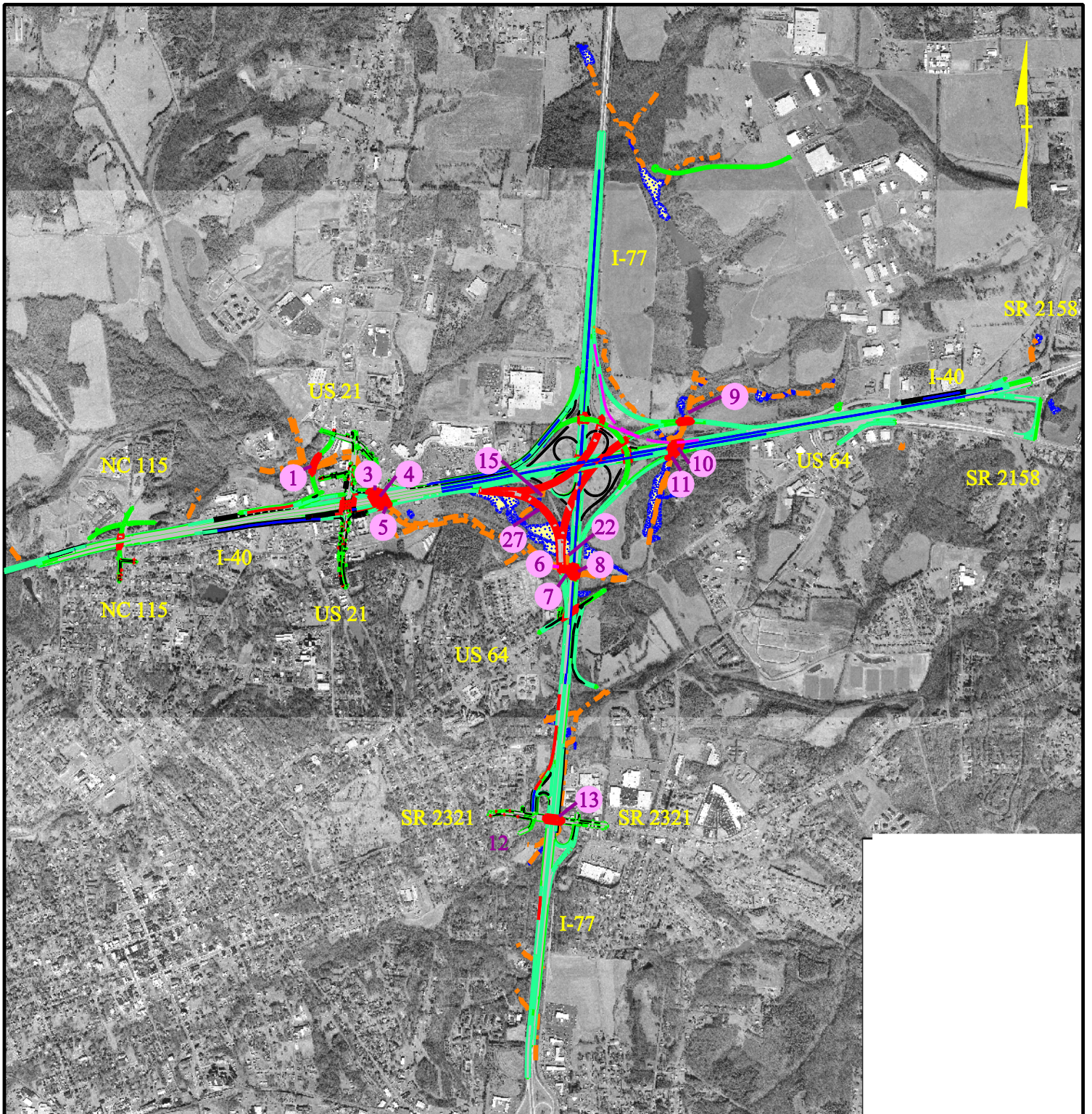
Approximate lengths of bridges for the preferred alternative are included in the following table and are referenced to the attached figure dated May 13, 2008:

Resource ID	Stream ID, Name & Class	Wetland ID, Type & Rating	Bridge Width (ft)	Bridge Length (ft)
1	S1 (Fourth Creek), Perennial	N/A	36	356
3	S1 (Fourth Creek), Perennial	N/A	36	225
4	S1 (Fourth Creek), Perennial	N/A	219	235
5	S1 (Fourth Creek), Perennial	N/A	29	219
6	S1 (Fourth Creek), Perennial	N/A	72	variable*
15		WSL, Riverine, 15		
22		W15, Riverine, 92		
27		W20, Non-Riverine, 16		
7	S1 (Fourth Creek), Perennial	N/A	40	162
8	S1 (Fourth Creek), Perennial	N/A	142-150	195
9	S2 (Tributary 3), Perennial	W6, Non-Riverine, 23	55-65	228
10	S2 (Tributary 3), Perennial	N/A	200	190
11	S2 (Tributary 3), Perennial	W12, Riverine, 38	58	202
13	S3 (Tributary 2), Perennial	N/A	103	300

The Project Team has concurred on this date of May 13, 2008 with the approximate bridge lengths proposed for the preferred alternative. The Project Team also concurred on May 13, 2008 that Avoidance and Minimization efforts to jurisdictional features and other important resources were complete for the preferred alternative with the following commitments that will be discussed at Concurrence Point 4B:

- Resource ID 21 will be evaluated to further minimize impacts including studying relocating the service road to the north, to the south (including bridging the wetland) or purchasing the affected property.

USACE *Stewart J. [Signature]* NCDOT *Andreea Major*
USEPA *Kathy J. Matthews* USFWS *Malcolm [Signature]*
NCDWQ *David White* NCWRC *Maria [Signature]*
FHWA *[Signature]* SHPO *Rene [Signature]*



North Carolina
Department of Transportation



I-40/I-77 Interchange Improvements
Iredell County

TIP Project No. I-3819

Legend

- # RESOURCE ID NUMBER
- JURISDICTIONAL STREAM
- JURISDICTIONAL WETLAND
- EDGE OF PAVEMENT
- PROPOSED BRIDGE
- CONCRETE BARRIER

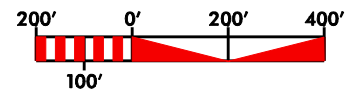
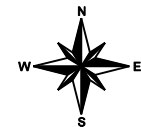


Figure 1

Bridging Locations

May 13, 2008



MEMORANDUM

To: Concurrence Point 2A/4A Merger Meeting Attendees

From: Peter Trencansky, PE
Project Engineer

Date: May 13, 2008

Subject: **Meeting Minutes to 2A/4A Meeting
I-40/I-77 Interchange Improvements
Project No. I-3819
WBS No. 34192.1.2
Federal Aid No. IMS-40-2**

Attendees:

Kathy Matthews – United States Environmental Protection Agency (EPA)
Steve Lund – US Army Corps of Engineers (USACE)
David Wainwright – North Carolina Division of Water Quality (DWQ)
Marella Buncick – United States Fish and Wildlife Service (USFWS)
Marla Chambers – North Carolina Wildlife Resources Commission (WRC)
Renee Gledhill-Earley – State Historic Preservation Office (SHPO)
Jill Stark – Federal Highway Administration (FHWA)
Ron Lucas – FHWA
Teresa Hart, PE – North Carolina Department of Transportation (NCDOT), Project Development and Environmental Analysis (PDEA)
Undrea Major – NCDOT, PDEA
James Bridges, PE – NCDOT, PDEA
Kristina Solberg – NCDOT, PDEA
Erin Cheely – NCDOT, PDEA
Carla Dagnino – NCDOT, PDEA
Dan Grissom – NCDOT, Division 12
M.L. Holder – NCDOT, Division 12
Michael Orr – NCDOT, Transportation Planning Branch (TPB)
David Keilson – NCDOT, TPB
Marshall Clawson, PE – NCDOT, Hydraulics Unit
Robert J. Stroup, PE – NCDOT, Roadway Design Unit
Clayton Walston – NCDOT, Roadway Design Unit
Karen McCauley, PE – NCDOT, Roadway Design Unit
Herb Turner – KO & Associates
David Waller – KO & Associates
Peter Trencansky, PE – URS Corporation
Joanna Harrington – URS Corporation

A Concurrence Point 2A/4A meeting was held on May 13, 2008 in the NCDOT Transportation Building boardroom at 1:00 pm. The primary purpose of this meeting was to achieve Merger Project Team Concurrence on Points 2A (Bridging and Alignment Review) and 4A (Avoidance and

Minimization) for the proposed I-40/I-77 Interchange improvements. The meeting was the first merger meeting of this project.

Undrea Major of NCDOT began the meeting by starting introductions and explaining the purpose of the meeting. He then turned the presentation over to Peter Trencansky of URS Corporation. Mr. Trencansky began the presentation by giving a brief history of the project. The design of the project has changed since the signing of the EA in 2006 due to the raising of the grade along I-40 to elevate the roadway above the 100-year flood elevation. Mr. Trencansky explained the purpose and need of the project, which is heavily concentrated on traffic deficiencies. Safety is also an issue, as there are closely spaced interchange and multiple weaving movements due to the cloverleaf interchange, wrong-way entries onto the interstate, and fatal accidents.

Mr. Trencansky explained the range of alternatives that were considered for the project, including several wetland avoidance alternatives that were evaluated due to the high quality system in the southwestern quadrant of the interchange. The two detailed study alternatives were the four-level turbine interchange and the four-level offset interchange, with the four-level offset alternative being selected as the recommended alternative.

Renee Gledhill-Earley of SHPO asked about the service road located to the north of the I-40/I-77 interchange in the northeastern area of the project. Marla Chambers of WRC stated that there may be secondary and cumulative impacts to the stream and wetland in this area due to attracting development. Kathy Mathews of the EPA also felt there was concern for indirect and cumulative impacts because it will cause the property owner to have to cross the wetland to gain access to the service road. Mr. Trencansky explained that there is no additional access to this area due to the service road, and the road will actually be farther from the interstate, probably making it less desirable for development. Ms. Chambers stated that there needs to be further evaluation of the area to determine if there can be less of an impact, and David Wainwright of DWQ stated that it will be difficult to get this project permitted since the service road deadends at a wetland. It was decided that the impacts associated with the service road would be discussed in more detailed later in the meeting.

Mr. Trencansky then went over the impacts to each resource ID identified in the hydraulic table and attached maps. He explained that the impacts to streams and wetlands have increased from the EA impacts due to the new NCDOT directive to calculate impacts based on a 25-foot buffer from the slope stakes line as opposed to the 10-foot buffer used for the EA. He explained that Wetland 15, with a 92 rating, is the highest quality system in the project study area. The area has been bridged as much as design would allow, and impacts have increased slightly since the EA due to the raising of the I-40 and I-77 grades. He also explained that all bridges in this area span the entire floodway.

Mr. Trencansky explained that the stream that feeds Wetland 15 is impacted and will be relocated outside of the fill slope. Ms. Mathews asked where the stream location would be, because she is concerned that the relocation could drain the wetland. Marshall Clawson of NCDOT explained that the relocation would be at the same elevation, just moved over. Mr. Trencansky added that this would be analyzed more at Concurrence Point 4B. Steve Lund of the USACE asked about the total impacts of this wetland, and Mr. Trencansky noted that the impacts total 2.41 acres.

Erin Cheely of NCDOT asked Mr. Trencansky if the impacts at site 23 could change due to the culvert planned at this site, and Mr. Trencansky stated that impacts are probably already encapsulated due to the 25-foot buffer.

Mr. Trencansky stated that sites 9 through 11 will span the entire floodway, and site 25 only has 2 square

feet of impact. These impacts may be avoided during final design.

Mr. Trencansky then discussed site 14. During the initial phase of construction, a “flyunder” will be constructed. The current plan is to bring US 21 traffic north and have a connection to the flyunder to separate traffic to US 21 from the interstate traffic. This will maximize safety and traffic operations. This design will probably have an impact on the entire wetland at site 14, as well as the stream. Figure 10 shows a change in design that will be made to make the impacts of the final design consistent with the design and impacts from the preliminary design. There will be further avoidance and minimization once the design revision takes place, which will probably reduce the impacts from 1,470 linear feet to approximately 1,000 linear feet.

Ms. Chambers asked about lane widening. Mr. Trencansky explained that I-40 and I-77 will be going from 4 lanes to 8 lanes, with this widening attributing to most of the impacts to streams and wetlands.

Mr. Trencansky stated that Figure 9 includes impacts not included in the EA (Tributary to Gregory Creek). This will probably be a short extension of a culvert.

Mr. Trencansky noted that concerns among agency members at this meeting seem to be more about avoidance and minimization. The bridge lengths will probably not change. Therefore, he suggested that the team agree that Concurrence Point 2A has been accomplished and continue with a more in-depth discussion of avoidance and minimization, to try and reach concurrence. Mr. Major addressed site 21 at the service road, which was discussed earlier in the meeting, and the hearing map was projected on the screen.

Ms. Mathews addressed concern for areas that are labeled as stream relocation that are actually culverts, specifically at site 19. This area is also a 303(d) watershed, and stressed that there needs to be innovative stormwater control so that water quality issues will not be significant. Mr. Wainwright agreed that the water quality must not get worse, and a more detailed discussion needs to be held at Concurrence Points 4B and 4C.

Jill Stark with FHWA asked if the stream at site 14 was a candidate for a retaining wall. Mr. Trencansky explained that due to the new design on Figure 10, the crossing will be relatively perpendicular. This eliminates a parallel impact, so a retaining wall would not work.

The discussion returned to the service road on Figure 8. Ron Lucas of FHWA proposed that the service road be lengthened to reach the southwestern parcel. Then the property would not be forced to cross the wetland. Mr. Clawson stated that this could increase stream impacts.

Ms. Mathews asked if there needed to be paved access to the parcel. Mr. Trencansky stated that the need for access is based on history and coordination with the property owner. It was suggested that the proposed alignment of the service road be shifted north, and Mr. Trencansky stated that there may need to be a small group meeting with the property owners if the access is revised.

Ms. Chambers stressed that NCDOT needs to take responsibility for the wetland in this area, and consider redesigning or moving the service road.

James Bridges of NCDOT asked the team if there was agreement to have NCDOT Roadway Design workup a revision north of the current design location for the service road. Dan Grissom suggested cutting off access and paying for the property. Mr. Trencansky stated that it would be worth it for NCDOT to find out the price of the property, as it may be more expensive to go this route. Mike

Holder of NCDOT explained that it may be more effective to buy the property, since a developer will most likely buy the property back and not want a service road at that location. He also suggested that providing access on the west side of the wetland, as opposed to the east side, would allow the wetland to be bridged. The road would then turn south before the stream, eliminating any stream impacts, and the wetland would be bridged at its narrowest point.

It was agreed that there would be concurrence on avoidance and minimization if a commitment was added to the signature sheet in reference to the service road site. Therefore, a commitment to present the best option at this site at the Concurrence 4B meeting was included in the concurrence signature sheet as follows:

- Resource ID 21 will be evaluated to further minimize impacts including studying relocating the service road to the north, to the south (including bridging the wetland) or purchasing the affected property.

The concurrence form for points 2A and 4A were then signed by all Merger Team members, with the exception of Renee Gledhill-Earley who had to leave the meeting early. NCDOT will coordinate with Ms. Gledhill-Earley to attain her signature on the concurrence form.

The meeting was then adjourned.

Appendix C

Public Hearing

Appendix C-1
Public Hearing Handout



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-40/I-77 Interchange Area Improvements

WBS Number 34192.1.2
TIP PROJECT I-3819

Iredell County

Combined Public Hearing

Statesville Civic Center
300 South Center Street
Statesville

Pre-Hearing Open House 4:00 p.m. – 6:30 p.m.
Formal Presentation 7:00 p.m.

March 21, 2007

PURPOSE OF PROJECT

This project proposes to widen I-40 and I-77 to eight-lanes (in the vicinity of the interchange) and, as a result, improve the I-40/I-77 interchange from the current two-level full cloverleaf interchange to a four-level offset interchange by replacing three of the four existing ramps with directional ramps. The purpose of the project is to improve traffic flow along the I-40 and I-77 corridors within the study area; and, improve regional connectivity between Iredell county and points east, west, north, and south within North Carolina and across the Interstate System.

PURPOSE OF PUBLIC HEARING

Today's hearing is an important step in the North Carolina Department of Transportation's (NCDOT) procedure for making you, the public, a part of the project development process. The purpose of the hearing is to obtain public input on the location and design of the proposed project.

Planning and environmental studies on this highway project are provided in the environmental report – the Environmental Assessment (EA). Copies of this report and today's hearing map displaying the location and design have been available for public review at the City of Statesville, City Manager's Office, 301 South Center Street, Statesville, 28677 and at the NCDOT District Engineer's Office located at 124 Prison Camp Road, Statesville, 28625.

YOUR PARTICIPATION

Now that the opportunity is here, you are encouraged to participate by making your comments and/or questions a part of the public record. This may be done by having them recorded at the Formal Public Hearing or by writing them on the attached comment sheet. Several representatives of the North Carolina Department of Transportation are present. They will talk with you, explain the design to you and answer your questions. You may write your comments or questions on the attached comment sheet and leave it with one of the representatives or mail them by June 20, 2007 to the following address:

Mr. Jamille Robbins
NCDOT - Human Environment Unit
1583 Mail Service Center
Raleigh, NC 27699-1583
Email: jarobbins@dot.state.nc.us

Everyone present is urged to participate in the proceedings. It is important, however, that **THE OPINIONS OF ALL INDIVIDUALS BE RESPECTED REGARDLESS OF HOW DIFFERENT THEY MAY BE FROM YOUR OWN**. Accordingly, debates, as such, are out of place at public hearings. Also, the public hearing is not to be used as a **POPULAR REFERENDUM** to determine the location and/or design by a majority vote of those present.



WHAT IS DONE WITH THE INPUT?

A post-hearing meeting will be conducted after the comment period has ended. NCDOT staff representing Planning, Design, Traffic, Division, Right of Way, Public Involvement & Community Studies and others who play a role in the development of a project will attend this meeting. The project will also be reviewed with federal agencies such as the US Army Corps of Engineers (USACE) as well as state agencies such as the NC Department of Environment and Natural Resources. When appropriate, local government officials will attend.

All spoken and written issues are discussed at this meeting. Most issues are resolved at the post-hearing meeting. The NCDOT considers safety, costs, traffic service, social impacts and public comments in making decisions. Complex issues may require additional study and may be reviewed by higher management, Board of Transportation Members and/or the Secretary of Transportation.

Minutes of the post-hearing meeting are prepared and a summary is available to the public. You may request this document on the attached comment sheet.

STATE-FEDERAL RELATIONSHIP

This proposed project is a Federal-Aid Highway Project and thus will be constructed under the State-Federal Aid Highway Program. Financing of this project will be 90% Federal Funds and 10% State Funds. The Board of Transportation is responsible for the selection and scheduling of projects on the Federal Aid System, their location, design and maintenance cost after construction. FHWA is responsible for the review and approval of the previously mentioned activities to ensure that each Federal Aid Project is designed, constructed and maintained to Federal Aid Standards.

NEED FOR THE PROJECT

Existing I-40 and I-77 have a number of roadway configurations that create driving conditions that are a safety concern, particularly when traffic volumes are at their peak. The ramps at I-40/US 21 are shorter in length than desirable standards. Weaving problems associated with the four back-to-back loops of a cloverleaf interchange are safety concern at the I-40/I-77 interchange. The distance for vehicles to accelerate onto the interstate while vehicles are decelerating to exit the interstate is inadequate. The current Average Daily Traffic (ADT) on I-40, within the study area, ranges from 33,600 to 64,000 vehicles per day (vpd) while traffic on I-77, within the study area, ranges from 40,600 to 64,200 vpd. By 2030, traffic volumes on I-40 and I-77 are expected to increase in the range of 58,800 to 99,400 vpd and 71,000 to 108,800 vpd, respectively. Without the proposed project, the projected deficiencies will increase the potential for accidents, create significant traffic delays, and contribute to the inefficient operation of motor vehicles in the local area.

Also, I-40 and I-77 are designated as North Carolina Strategic Highway Corridors (SHC). The primary purpose of the SHC initiative is to provide a network of high-speed, safe, reliable highways throughout the state in an effort to foster economic prosperity through the quick and efficient movement of goods and people. The existing and projected traffic volumes along I-40 and I-77 diminish the interchange's ability to serve as a high-speed interchange between the designated Strategic Highway Corridors.

Tonight's public hearing will present the design and modifications that have occurred since the August 23, 2004 Citizens Informational Workshop.

PROJECT DESCRIPTION

The NCDOT, Division of Highways, proposes to widen I-40 and I-77 to eight-lanes (in the vicinity of the interchange) and, as a result, improve the I-40/I-77 interchange from the current two-level full cloverleaf interchange to a four-level offset interchange by replacing three of the four existing ramps with directional ramps. The four existing one-lane ramps will be shifted outward to allow for the new two-lane directional ramps. The improvements on I-40 will begin just west of SR 2003 (Radio Road) continuing east to SR 2158 (Old Mocksville Road). Improvements to I-77 begin just north of SR 2157 (Salisbury Road) to and heads north SR 2171 (Jane Sowers Road). New collector-distributor (C-D) roadways will be constructed along I-40 to provide access to and from both US 21 and I-77 interchanges. C-D roadways will be built to facilitate the separation of through traffic from local (exiting-entering) traffic.

INITIAL IMPROVEMENTS

- ◆ The initial modifications to the I-40/I-77 interchange will replace two of the four loops with directional ramps. The existing westbound I-40 to southbound I-77 as well as existing northbound I-77 to westbound I-40 will be removed. New bridges will be constructed to accommodate the two-lane directional ramp for northbound I-77 to westbound I-40 to cross under both interstates. The ramp for westbound I-40 to southbound I-77 will be constructed above the interstate levels. The ramps for northbound I-77 to eastbound I-40 as well as the southbound I-77 ramp to westbound I-40 will be shifted outward from its current configuration.
- ◆ The westbound C-D roadway will be constructed, beginning slightly west of where I-40 crosses under I-77, then merging back onto westbound I-40 about 3,500 feet west of US 21.
- ◆ SR 2003 (Radio Road) will be realigned to the west and new bridge constructed over I-40. The existing overpass will be removed. Radio Road will then tie into a new/realigned intersection on the north side of I-40 with Museum Road and SR 1965 (Gaither Road).
- ◆ The interchange at I-40/US 21 will be maintained as a diamond interchange, but revised to provide for longer, wider and safer ramps in each quadrant. US 21 will be widened from the south of Free Nancy Drive to the existing bridge over Fourth Creek. The I-40 bridge over US 21 will be constructed to allow for future widening of two additional US 21 lanes under the bridge (TIP Project U-2930). SR 1934 (Hillside Lane) will be extended to Gaither Road to

maintain access to US 21. This roadway will include a new stream crossing over Fourth Creek.

- ◆ The intersection of SR 2187 (Glenway Drive) and Summit Avenue will be modified slightly to provide for better alignment. The section of Glenway Drive that runs parallel to I-40 will be maintained in place. The section of Glenway Drive to the east of the shopping center will be realigned to the west to allow for the expansion of the I-40/I-77 interchange.
- ◆ The US 64/I-40 partial interchange will be removed, including ramp pavement and structures on I-40. The eastbound ramp terminal at US 64 (Davie Avenue) will be reconfigured to eliminate the intersection and transition the four-lane divided section into the existing two lanes.
- ◆ US 64 (Davie Avenue) will be realigned 150 feet to the south of the current structure with a longer bridge to accommodate the additional I-77 lanes. SR 2322 (Simonton Road) will be realigned to the east due to the I-77 widening, tying into the realigned US 64 (Davie Avenue).
- ◆ A service road will be constructed off of SR 2174 (Crawford Road), ending in a cul-de-sac that will provide access to the adjacent property owners.

FINAL IMPROVEMENTS

- ◆ The final modifications to the I-40/I-77 interchange will replace the eastbound I-40 to northbound I-77 loop as well as the eastbound I-40 to southbound I-77 ramp with two-lane directional ramps, constructed above the interstate level.
- ◆ The eastbound C-D roadway will be constructed, beginning about 3,000 feet west of US 21 continuing through both the US 21 and I-77 interchanges and merging back into eastbound I-40 about 4,600 feet east of I-77.
- ◆ At the I-40/SR 2158 (Old Mocksville Road) interchange, the westbound entrance ramp and eastbound exit ramp will be realigned to tie to the interstate widening. An additional lane will be added to Old Mocksville Road between the eastbound exit interchange ramp terminal and US 64.
- ◆ The interchange with I-77 and SR 2321 (East Broad Street) will maintain the current loop and ramp configuration but be realigned to tie into the I-77 widening. East Broad Street will be widened from Cynthia Street to Middleton Street.

PROPOSED PROJECT INFORMATION

Length: **I-40 Improvements** – 3.6 miles
 I-77 Improvements – 3.2 miles

Typical Section: See Figures

Right of Way: Varies from 200 feet to 280 feet

Access Control: **I-40, I-77, and at Interchanges**
Full Control of Access
No Private Driveway connections will be allowed.

US 21, East Broad Street, and Old Mocksville Road
No Control of Access; However, Access Management measures will be used

Relocates: See Table S-1 – Summary of Environmental Impacts

Estimated Cost:	<u>Initial Improvements</u>	<u>Final Improvements</u>
Right of Way Cost:	\$ 11,000,000	\$ 15,715,000
Construction Cost:	<u>\$ 92,000,000</u>	<u>\$ 170,000,000</u>
Total:	\$ 103,000,000	\$ 185,715,000

Tentative Schedule: **The *tentative* schedule is shown below. A number of factors can affect a project schedule, so schedules are subject to change.**

Initial Improvements

Right of Way Acquisition – December 2008
Construction – September 2010

Final Improvements

Right of Way Acquisition – Post Year
Construction – Post Year

RIGHT-OF-WAY PROCEDURES

After decisions are made regarding the final design, the proposed right-of-way limits will be staked in the ground. If you are an affected property owner, a Right-of-Way Agent will contact you and arrange a meeting. The agent will explain the plans and advise you as to how the project will affect you. The agent will inform you of your rights as a property owner. If permanent right-of-way is required, professionals who are familiar with real estate values will evaluate or appraise your property. The evaluations or appraisals will be reviewed for completeness and accuracy and then the Right-of-Way Agent will make a written offer to you. The current market value of the property at its highest and best use when appraised will be offered as compensation. The Department of Transportation must:

1. Treat all owners and tenants equally.
2. Fully explain the owner's rights.
3. Pay just compensation in exchange for property rights.
4. Furnish relocation advisory assistance.

RELOCATION ASSISTANCE

If you are a relocatee, that is, if your residence or business is to be acquired as part of the project, additional assistance in the form of advice and compensation is available. You will also be provided with assistance on locations of comparable housing and/or commercial establishments, moving procedures, and moving aid. Moving expenses may be paid for you. Additional monetary compensation is available to help homeowners cope with mortgage increases, increased value of comparable homes, closing costs, etc. A similar program is available to assist business owners. The Right-of-Way Agent can explain this assistance in greater detail.

NOTE: PAMPHLETS SUMMARIZING RIGHT OF WAY AND RELOCATION PROCEDURES ARE AVAILABLE AT THE SIGN-IN TABLE.

COMMENT SHEET

I-40/I-77 Interchange Area Improvements

Combined Public Hearing – May 21, 2007

TIP Project No. I-3819

Iredell County

WBS No. 34192.1.2

NAME:

ADDRESS:

COMMENTS AND/OR QUESTIONS:

Comments may be mailed by June 20, 2007:


Mr. Jamille A. Robbins
Senior Public Involvement Officer
NCDOT - Human Environment Unit
1583 Mail Service Center
Raleigh, NC 27699-1583
Phone: (919) 715-1534 FAX: (919) 715-1501
Email: jarobbins@dot.state.nc.us

Appendix C-2
Public Hearing Summary of Comments



MEMORANDUM

To: Post-Hearing Meeting Attendees

From: Peter Trencansky, PE 
Project Engineer

Date: July 25, 2008

Subject: Meeting Minutes to Post-Hearing Meeting
I-40/I-77 Interchange Improvements
Project No. I-3819
WBS No. 34192.1.2
Federal Aid No. IMS-40-2

A post-hearing meeting was held on May 27, 2007 in the Roadway Design Conference Room to discuss the comments expressed at or following the Public Hearing on TIP Project I-3819, I-40/I-77 Interchange Area Improvements. The Public Hearing for the I-40/I-77 Interchange Improvement project was held on May 21, 2007 at the Statesville Civic Center and conducted by Mr. Jamille Robbins. A Pre-Hearing Open House was held from 4:00 - 6:30 p.m. and the Formal Hearing began at 7:00 p.m. The Recommended Alternative was presented, as well as the findings of the engineering, environmental, and public outreach efforts conducted for the project. Participants were encouraged to provide comments for the public record, whether verbally or in writing. Maps and exhibit boards were available for viewing and all attendees received a project handout.

A total of 301 participants signed in at the Public Hearing. NCDOT also received 37 comment sheets, emails, or letters regarding the project, and eight people spoke on record. A summary of verbal and written comments made during the Hearing is presented in the Summary of Public Hearing Comments.

The following representatives attended the Post Hearing Meeting:

Art McMillan	Highway Design Branch
Jay Bennett	Roadway Design Unit
Scott Blevins	Roadway Design Unit
Greg Brew	Roadway Design Unit
Robert Stroup	Roadway Design Unit
Mike Holder	Division 12
Dan Grissom	Division 12
Erin Hendee	Congestion Management Section
Bao Long Le	Congestion Management Section
Ray Lotfi	Program Development Branch
James Bridges	Project Development and Environmental Analysis Branch
Undrea Major	Project Development and Environmental Analysis Branch
Jamille Robbins	Human Environment Unit
Marshall Clawson	Hydraulics Unit
Peter Trencansky	URS Corporation
Meme Diaz	URS Corporation

An executive summary of the main issues concerning the project is as follows:

Executive Summary

- The US 21 corridor was a concern to many of the attendees of the public hearing due to safety concerns (including fatal accidents at the I-40 interchange) and persistent congestion along the corridor. The proposed project will improve the I-40/US 21 interchange as well as provide improved access control along portions of the corridor. Substantial improvements along the corridor were determined to be beyond the scope of the proposed project and two future TIP Projects (U-2930 and U-2731) will widen US 21 and improve the traffic operations along the corridor.
- Concerns related to the reconstruction of grade separated crossings of Radio Road over I-40 and US 64 (Davie Avenue) over I-77 were expressed by attendees. NCDOT will study the feasibility of temporarily closing the roadways and reconstructing the existing grade separations at the existing locations during the final design of the project.
- Concerns were expressed regarding the loss of access to Gaither Road as a result of the elimination of the two-way movement on the westbound ramp to I-40. Current guidelines do not allow non-interstate access to ramps. The proposed configuration was determined to be the preferred solution.
- Concerns relating to the effects of noise at multiple residential locations were expressed by attendees. Due to growth along the I-40 and I-77 corridors, additional noise analysis will be performed during final design to determine the reasonableness and feasibility of providing additional noise abatement measures.

Summary of Comments and Responses

The following people made comments at the Public Hearing:

Julie Stropp - Commented on access during construction along US 21 and had concerns regarding travel between area hospitals.

Response

The construction of the project will maintain 2-lanes of traffic in each direction and will attempt to minimize disruptions to the traveling public to the extent practical. The maintenance of traffic plan and construction phasing for the project will incorporate safety features to protect both the motoring public and the construction workers.

Victor Crosby - Expressed concerns about the construction of I-40 from I-77 to Radio Rd. He stated that there were problems with priorities. He believes that US 21 is more of a problem and that there is a need to extend US 21 up to Jane Sower Road with revised access to Glennway.

Michael Bivens - Expressed concerns about the traffic on back roads from the Fort Dobbs area; roadways to the north of the interchange intersect with US 21 and traffic backs up to the Wal-mart intersection. He stated that the improvements need to go further north on US 21.

Chris Shubridge - Looked at the design and is still worried about US 21 intersections and traffic backups and delays. There are times when traffic from US 21 backs up on I-77.

Response

The project will include improvements to the US 21 interchange including longer ramps, increased turn lanes on ramps, the widening of US 21 to seven lanes from the current four with the ability to expand to a nine-lane cross section. The revised design will also separate the traffic bound for US 21 from the through traffic on I-40 along a collector/distributor lane which will improve the safety of the interchange. It has been determined that additional improvements are needed along the US 21 corridor; however, these improvements are beyond the scope of this project. The 2009-2015 NCDOT Transportation Improvement Program (TIP) includes two projects (U-2930 and U-2731) which will provide improvements to the US 21 corridor. . Neither project is currently funded.

Howard Henderson - Recounted the story of his son getting killed on I-40 at the US 21 ramp. He is happy that something is getting done to the I-40/US 21 interchange, but he is frustrated regarding the bureaucracy and time that it has taken. He mentioned how it took a long time to put flashing lights, lighting and signage into place and how it has been of benefit from a safety standpoint. Until other safety measures are put into place, he feels it is still a dangerous situation. He recommends putting in lights above the roads and painting the lane that goes through the US 21 interchange with white arrows.

Doug Nichols – Stated that he travels the area everyday and you have to get in the right lane before you can get into the left lane at US 21. He suggested that a temporary fix would be to extend the left turn lane back to the freeway.

Response

The interim I-3819 project will improve the I-40/US 21 interchange. It was decided that temporary measures would not be implemented due to the accelerated schedule for the project.

Bob Hopkins – Thanked NCDOT and stated that he has lived in the area since 1965 and thinks that improvements are needed to US 21, especially the intersections. He felt that all of the improvements shown on the hearing maps are not needed. He was concerned with the Davie Avenue bridge going through new development and felt that the plans need to be revised with the new bridge placed north of the existing bridge.

Response

The reconstruction of the US 64 (Davie Avenue) bridge is due to the widening of I-77 and the existing horizontal clearance under the bridge not being adequate for the additional travel lanes proposed on I-77. The new development was known during the development of the preliminary plans but was not far enough along at the time the plans were developed to know what the impacts would be. During the next phase of design it will be determined if the roadway can be closed with the new bridge being constructed in the location of the existing bridge in order to minimize impacts to development.

Charles Sipple – Commented about the noise walls and stated that the walls do not go far enough. He stated that Statesville is growing rapidly and we need to accommodate the growth. He mentioned the growth in Mooresville and stated that it will take 10-12 years to complete the project, so we need to be careful, understanding, tolerant and patient.

Response

The evaluation of noise abatement measures will be completed based on the NCDOT *Traffic Noise Abatement Policy* and will be updated during final design to include a more detailed analysis and include any new receptors along

the corridor.

The following people submitted written comments**Concerns relating to construction of the project***Comments*

Dr. Julie Schopps – Stated that unlimited and unrestricted access is needed to both Davis Regional Medical Center and Iredell Memorial Hospital, particularly for those doctors who need to travel or cross I-40 and I-77 to reach these hospitals. Construction work at these areas will delay doctors who are on emergency calls.

Ted Benbow – requested that all necessary safety precautions be exercised during construction to prevent traffic accidents.

Response

The construction of the project will maintain 2-lanes of traffic along the interstates in each direction and will attempt to minimize disruptions to the traveling public to the extent practical. The maintenance of traffic plan and construction phasing for the project will incorporate safety features to protect both the motoring public and the construction workers.

Concerns with US 21 Interchange and Corridor*Comments*

Earlene Horne – Stated that it can take 20 minutes to get from Golden Coral to I-40 and wanted to know how this will improve traffic flow at Glenway Drive?

The intersection at US 21 and Glenway Road will be modified to consolidate the split intersection to Sunset Hill Road with the Glenway Road intersection which will improve the traffic operations. Additionally the corridor will include a coordinated signal system that will improve the flow of traffic along the corridor. Improvements to the Glenway Drive intersection with US 21 would be completed under TIP Project U-2930

Diane Dickens – Stated that NCDOT should widen the bridge on Highway 21, although it would mean taking the eatery adjacent to Highway 21 and part of the Sagebrush parking lot. This improvement would add width to the bridge and exit and entry ramps on both sides to allow for better traffic.

Roger Bejcek – Expressed concern that there was not much discussion about the I-40/Highway 21 interchange, and that this intersection needs to be changed/improved.

Response

The project will include improvements to the US 21 interchange including longer ramps, increased turn lanes on ramps, the widening of US 21 to seven lanes from the current four with the ability to expand to a nine-lane cross section. The revised design will also separate the traffic bound for US 21 from the through traffic on I-40 along a collector/distributor lane which will improve the safety of the interchange. The removal of the two-way ramp in the northwest quadrant will improve traffic operations by simplifying the traffic signal and allowing more green time for the exit ramp from I-40. It has been determined that additional improvements are needed along the US 21 corridor; however, these improvements are beyond the scope of this project. The 2009-2015 NCDOT Transportation Improvement Program (TIP) includes two projects (U-2930 and U-2731) which will provide improvements to the US 21 corridor. . Neither project is currently funded.

Concerns relating to access to businesses along Gaither Road*Comments*

David and Pam Trompower – Commented that the design should consider “arc-ing” the turn on Gaither Road rather than creating a 90 degree turn at Sagebrush.

Julian West (West-Finch Corporation) – Recommended that I-40/Highway 21 be routed to go north on Highway 21 and west to the private drive between the Sleep Inn Motel and Chili’s restaurant. This design would shorten access to Gaither Road, avoid building a new bridge and have less impact on wetlands, as well as save a lot of money.

W.L. Hamiter – Commented that he was very unhappy with many of the proposed changes, including closing access to Gaither Road from the entry ramp to I-40 and stated that the businesses along Gaither will not likely survive.

Mary Lou Brinkley (J.A.M.E. Ltd. Partnership) – Requested that NCDOT send detailed information concerning how the new bridge, Hillside Drive and Summit Drive will effect lots #12, 13, 14, 15, 16, 17, 18, 21 and 22; TIP Project # U-2930; SR1934.

Julian R. West, Jr. – Was concerned about the effect the proposed improvements will have on the West-Finch property shown as Lot #212 on your drawings. The proposed plans show that the west bound ramp to the interstate in front of his property would be removed, cutting off access to the businesses on Gaither Road and devaluing his property. Plans also show that a new access road to Gaither Road between two of his buildings, which will cause serious parking problems. He requested that NCDOT reconsider the plans to close access to the ramp and locating a new access road to Gaither. He requested that NCDOT consider moving it west by extending Pump Station Road.

Response

The removal of the existing two-way ramp in the northwest quadrant of the US 21/I-40 interchange is required by the Federal Highway Administration, which requires that interchange ramps have control of access for the entire length of the ramp. The location of the access road to the businesses along Gaither Road was carefully evaluated. The potential locations suggested were all evaluated; however, due to the close proximity to the interchange, ramps were not considered feasible due to the disruption to traffic flow at the interchange. Breaking the control of access in close proximity to the interchange can cause traffic to back up into the interchange and have substantial negative effects on traffic operations. The intersection with the access road and Gaither Road is at a 90 degree angle because it serves parcels both the east and west of the roadway, which would not allow the roadway to be arced. The project will require acquisition of several of the parcels within the J.A.M.E Ltd Partnership property and will be further coordinated as the final design plans are developed. The extension of Pump Station Road was also considered as a location for the access road; however, due to the floodplain and floodway associated with Fourth Creek and Morrison Creek, the proposed location was substantially less expensive due to the length of bridge that would be required to extend Pump Station Road.

Concerns relating to Davie Avenue bridge over I-77*Comments*

Steve Knight – Was concerned with the design because the SEP development adjacent to the east side of I-77 at Davie Ave/Simonton Road has had significant grading and improvements with curb and gutter and paved parking as well as a turn lane on Davie Avenue.

Pat Stewart (United Way of Iredell County) – Stated that the property owners on Lot 202 of the Interchange Plan show that access to Davie Avenue is being abandoned and relocated, and that there will be no provision for

access to Fourth Creek Drive from new Davie Avenue, as well as limited access for approximately $\frac{3}{4}$ of the property frontage. It was requested that NCDOT consider maintaining access to Fourth Creek Drive from Davie Avenue.

W.L. Hamiter – Stated he was very unhappy with many of the proposed changes, including the bridge changes that are proposed for the bridge over Davey Avenue.

J. Todd Ellis – Commented that his company, Stiles, Ellis & Pope (SEP), are currently developing a 31-acre development called Creekside on the corner of Davie and Simonton Roads, and is positioned adjacent to the bridge over I-77 at Simonton. He requested that NCDOT verify that a connection will not be made through the property, and that there will not be a new bridge on US 64. SEP is also developing plans to develop a 72-acre tract of land directly across Davie Road along I-77. He stated that NCDOT personnel indicated that they would need 250 feet of right of way along this property and requested that NCDOT verify this amount so that they could continue to move forward with their project.

Response

The reconstruction of the US 64 (Davie Avenue) bridge is due to the widening of I-77 and the existing horizontal clearance under the bridge not be adequate for the additional travel lanes proposed on I-77. The new development was known during the development of the preliminary plans but was not far enough along at the time the plans were developed to know what the impacts would be. The final design of the project is coordinating with the developments and the potential exists to close the bridge and reconstruct it at the existing location. This decision as well as decisions on access in the vicinity of the bridge will be coordinated closely during the final design of the project.

Concerns relating to noise walls

Comments

Maynard and Brenda Self – Requested that NCDOT consider extending the noise wall at the East Broad Street exit (I-77S) to the Catholic Church because the noise from the interstate is much too loud.

Peter VanDermark – Was concerned that the new ramp at I-40/I-77 South will be approximately 250 feet from his property with no buffer. He stated that the noise is already bad; however, this improvement would make it worse. He also stated that trucks should be prohibited from using jake brakes and a new sound barrier should be installed in the area of the open field near the ramp.

Linda Dingler - Requested that NCDOT extend the noise barrier from the bridge at E. Broad Street to Salisbury Road.

Eleanor McMillan – Requested that NCDOT extend the planned acoustic fence on I-77 southbound past the Catholic Church to the on-ramp for Salisbury Road.

Jerry Ambrose – Made a comment on behalf of her mother that the proposed improvements to I-77 at exit 50 will be very close, if not adjacent, to her condominium development. She requested that NCDOT provide the specific details of how the project will affect the condominium, as well as how the noise will be mitigated.

Response

The evaluation of noise abatement measures such as noise walls is completed based on the NCDOT *Traffic Noise Abatement Policy* and will be updated during final design to include a more detailed analysis and include any new receptors along the corridor.

Concerns Related to US 64 Interchange and Corridor*Comments*

Bill Sherrill – Commented that there is a need for solid yellow lines from the traffic signal to Peachtree exit at Davis (Hospital) and US 64 exit and provided a hand drawing on the comment sheet.

Steve Johnson – Stated that traffic is backed up several hundred yards at I-40 and US 64 exit (heading east onto US 64). He commented that traffic is also held up at Greenbriar through the traffic signal at Old Mocksville Road and it would be opportunistic if NCDOT would require the current developers to put in a right-hand turn lane at Greenbriar and US 64.

Sheri Raymer - Suggested creating an extension of Crawford Road to US 64.

Randy Treacy – Requested that NCDOT consider widening the intersection of Highway 64 and Old Mocksville Road.

W.L. Hamiter – Stated that he was very unhappy with many of the proposed changes, including removing the US 64 interchange

Response

The removal of the US 64 interchange was required due to FHWA policy not allowing partial interchanges (interchanges that do not provide for all traffic movements) and due to the close proximity to the I-40/I-77 interchange. The intersection of Old Mocksville Road and US 64 is proposed to be widened under the ultimate solution for the project to include two southbound left turn lanes and two receiving lanes along US 64. The developer is being required to include a traffic signal at US 64 and Peachtree Road which would mitigate Mr. Sherrill's concerns. The extension of Crawford Road to US 64 under the existing US 64 interchange bridges on I-40 was considered, however due to the difference in elevation this is not feasible.

Concerns related to improvements beyond the scope of the proposed project*Comments*

Steve Knight – Commented that local traffic going between Statesville's two main shopping areas (Wal-Mart at US 21 to the north and Signal Hill Mall and other shopping area at Broad St. to the southeast) uses the city streets to avoid interstate traffic, causing problems on these roads. In particular the 5-points intersection at US 21 / Davie Ave is a problem, especially for trucks having to make an impossibly sharp turn or drive out of the way to access the interstates. He stated that the traffic is particularly bad during the seasonal shopping peaks and that NCDOT should Consider creating a 4-way signalized intersection with N. Carolina Avenue and Gateway Drive (labeled Free Nancy Dr on the map) by shifting N. Carolina Avenue to the south. The hotel parking lot could be swapped to the north side where the road is now. Left turns out of Gateway Dr are very dangerous and near accidents occur regularly with so much traffic on US 21. Mr. Knight also requested that NCDOT should consider extending Gateway Drive to Fourth Creek Drive to provide an access road that avoids the 5-points intersection. He stated that the State should be purchasing the businesses to allow the widening of US 21 and should consider extending the dead end of Radio Road along Morrison Creek (behind businesses along Gaither Road) to tie to the new access road tying to Hillside Lane and dead end Gaither Road by the Chevrolet dealership. This road could also tie to a recently constructed road at the NC 115/I-40 interchange and provide a long service road for the north side of I-40. Traffic at the Hwy 115/I-40 interchange is getting bad and that interchange needs to be improved before it becomes like US 21. This project should be considered sooner to keep ahead of the growth.

David and Pam Trompower – Requested that NCDOT consider connecting Radio Road to Pump Station Road and to Glenway Drive, which would help traffic flow more smoothly. He also stated that it has been over a

decade that he has endured the potholes, cracked and poorly maintained on- and off-ramps at I-40 and Highway 115-Highway 90-Old Mountain Road. He wanted to know how much longer before NCDOT repairs these ramps and the poorly maintained Highway 115 from I-40 to Hardees?

Response

These improvements are considered beyond the scope of the project and should be considered in future planning initiatives including future TIP Projects in the vicinity of the project as well as any long-range planning for Statesville or Iredell County. NCDOT maintenance staff will be made aware of the maintenance concerns.

Concerns related to Radio Road bridge over I-40

Comments

Steve Knight – Commented that the Western Avenue Baptist Church owns the property on the northeast corner of the Radio Road / Gaither Road intersection and plans to put a high school at this location. The proposed interstate widening and shifting of the intersection directly impacts this parcel.

Sheri Raymer – Requested that NCDOT consider providing an exit ramp/access at Radio Road from I-40 to access Gaither Road.

David and Pam Trompower – Commented that NCDOT should build a longer span bridge at Radio Road, rather than curve the new bridge which will only increase the speed of cars.

W.L. Hamiter – Stated that he was very unhappy with many of the proposed changes, including repositioning the Radio Road bridge to square up the intersection of Gaither Road and Museum Road.

Philip McGaha - Requested a meeting to discuss the impacts of the planned improvements on the future plans of the Western Avenue Baptist Church that includes expanding the church facilities at Radio Road and Museum/Gaither Roads.

Rev. Scott Jackson and Mrs. Lacier Jackson – Requested a meeting with a NCDOT right of way representative to discuss the proposed improvements that will impact their residence.

Judy Hix – Expressed concerns about the widening of I-40 from the Radio Road bridge east and the impact it will have on their house. Commented that they understand that there will be land acquisition for a ten foot right of way, and perhaps an additional 20 feet if a sound barrier is constructed, which will be very close to their house. She wanted to know where the ten feet starts and how thick the barrier will be? Also she was concerned about structural damage to their house during construction and decreased property values and wanted NCDOT to consider taking more land from the other side of I-40?

Response

The reconstruction of the Radio Road bridge is due to the widening of I-40 and the existing horizontal clearance under the bridge not being adequate for the additional travel lanes proposed on I-40. During the final design of the project NCDOT will evaluate the possibility of closing the bridge and reconstructing it at the existing location. This decision, as well as decisions on access in the vicinity of the bridge will be evaluated further during the final design of the project. Coordination between NCDOT and Western Avenue Baptist church representatives will occur as the plans are further developed. The ability to construct an interchange at Radio Road is not possible due to the close proximity to the I-40/US 21 interchange. It is not anticipated that the proposed construction will cause structural damage to any of the houses outside the proposed construction limits.

Concerns relating to direct connection to shopping center on US 21*Comments*

Steve Knight – Requested that NCDOT consider a southbound ramp from I-77 into the Wal-Mart shopping center or overpass at I-40 to connect the shopping center to Fourth Creek Road.

Tina Dillow – Requested that NCDOT consider separating Highway 21 from all the shopping traffic at the Walmart Shopping Center road since this is where most of the congestion is located. He wanted to know why was this not fixed when the I-40 West exit ramp to US 21 was extended?

W.L. Hamiter - Stated that he was unhappy with many of the proposed changes, including not providing a ramp to the Walmart area.

Response

The ability to construct a direct access to and from the shopping center has been suggested several times during the development of the project, however is not feasible due to the close location of the shopping center and the I-40/I-77 interchange. Direct access to the shopping center would create additional interchange connections in an area where the close proximity of the US 21/I-40 interchange is already problematic. The minimum recommended interchange spacing is one mile for urban areas which would not be possible to attain for this situation.

Comments relating to proposed construction schedule*Comments*

Steve Knight – Stated that the start and finish of the project should be expedited to solve the problems.

Ted Benbow – Requested that NCDOT consider improving all of the proposed changes to I-40/I-77 in Phase 1 rather than exposing Statesville to prolonged construction.

Response

The final design plans are being developed on an accelerated schedule and the project will include as much of the proposed initial design as can be funded.

Comments relating to concerns with the existing roadway network*Comments*

Diane Dickens – Requested that NCDOT consider slowing the traffic at the I-40/I-77 interchange to 45 or 55 mph and place rumble strips or temporary concrete barriers on the exit ramp onto Highway 21 from I-40 to slow down traffic and to protect those in the exit ramp from flow through traffic on I-40.

Response

The project will improve the existing roadway network and will be designed to current design standards for an interstate route. The proposed design does separate traffic existing to US 21 for the I-40 through traffic utilizing a collector/distributor roadway separated by concrete barriers.

Comments related to Jane Sowers Road overpass/interchange*Comments*

Randy Treacy – Requested that NCDOT consider adding exit and entrance ramps at Jane Sowers Road and I-77.

Response

An interchange at Jane Sowers Road was considered during early planning stages and was eliminated due to the potential to delay the overall project and the limited benefit shown with regard to traffic operations. The project is included in the TIP as project I-2514 and is currently unfunded.

Comments related to I-77 corridor south of East Broad StreetComments

Sue Walser – Stated that her home backs up on I-77 near Broad Street. Would like NCDOT to please advise her as to the proposed improvements near her home so that she can determine what her future plans will be?

Rev. Keith and Laura Snoddy – Stated that the proposed improvements include a sound wall that will encroach onto their property, about 30 feet from their back door, taking 2/3 of their backyard. He stated that the final improvements will change the lifestyle that their family has been accustomed to for the past 19 years. They are also concerned about the structural damage that construction will have on their house. He requested a meeting with NCDOT right of way representative to explain the possible options that they would have regarding the future impacts to their property.

James R. and Sandra D. Campbell – Stated that the proposed improvements include a sound wall along the west side of I-77, south of the Broad Street overpass that will eliminate about 90% of their backyard (329 Earlwood Road). They are assuming that NCDOT will acquire the entire property. They would like some advice from an NCDOT representative. They also stated that their property is shown incorrectly on the tax maps as the previous owners M. and S. Harris.

Response

The widening of I-77 south of East Broad Street is included in the ultimate solution for the project and is not currently funded. The impacts associated with the initial section will be coordinated with the property owners as the right-of-way plans are developed in final design. It is not anticipated that the proposed or future construction will cause structural damage to any of the houses outside the proposed construction limits.

MiscellaneousComment

Ralph and Pat Dalton – Inquired about how the changes will affect them directly.

Response

The project will not have any direct impact to the property.

Comment

Ted Benbow – Stated that the parcel of land located on the north side of I-40, west side of Radio Road and the south side of Museum Road is not owned by Sam Gaither, but is owned by NCDOT ; the Iredell County tax map is incorrect. He also own 25 acres on the north side of I-40 at Mile Marker 156 which has 1,329 linear feet of frontage on I-40. He would like to lease this land to NCDOT for construction storage site, and may also sell to NCDOT if needed.

Response

Property owner information will be updated, and right of way and easement needs will be determined as the right of way plans are developed.

Comment

Jerry Ambrose – Commented on behalf of her mother, that the proposed improvements to I-77 at exit 50 will be very close, if not adjacent, to her condominium development. She would like the specific details of how the project will affect the condominium, as well as how the noise will be mitigated.

Response

The widening of I-77 in the vicinity of East Broad Street is included in the ultimate solution for the project and is not currently funded. The impacts associated with this section will be coordinated with the property owners as the right-of-way plans are developed.

RequestsRequest

Philip McGaha (Western Avenue Baptist Church) – Stated that he would like to request a meeting to discuss the impacts of the planned improvements on their future plans to expand the church facilities at Radio Road and Museum/Gaither Roads.

Response

NCDOT will make arrangements to meet with representatives of Western Ave. Baptist Church.

Request

Andrew E. Causey - Requested that NCDOT add his brother to the mailing list.

Response

Mr. Causey's brother has been added to the mailing list.

Request

Alan Horne – Requested that NCDOT forward him information on the project, particularly land acquisition and any blueprints relative to this project.

Dan Jordan - Requested that NCDOT send him copies of the color maps that were at the Hearing.

Response

Information will be provided..

Request

Mary Lou Brinkley (J.A.M.E. Ltd. Partnership) – Requested that NCDOT send her detailed information concerning how the new bridge, Hillside Drive and Summit Drive will effect lots #12, 13, 14, 15, 16, 17, 18, 21 and 22; TIP Project # U-2930; SR1934.

Response

Information will be provided..

Resolution

Robert Hites, Jr., City Manager, City of Statesville. The City of Statesville has passed a Resolution (16-07) requesting that NCDOT erect its sound detention walls along the path of improvements to I-77 and I-40 at an early stage of construction.

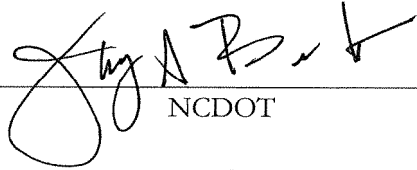
Response

NCDOT will only construct the noise walls associated with the construction in the first phase and will provide noise walls required for the ultimate solution during the construction of the ultimate solution. The noise walls along I-40 will be constructed under the initial phase with the noise walls along I-77, south of US 64, being constructed during the ultimate phase of construction.

If you have questions or comments regarding this information, please Greg Brew, NCDOT Project Engineer, at (919) 250-4016 or Peter Trencansky, URS Project Engineer (Consultant) at (919) 461-1332

BKC/pt

Approved By



NCDOT

cc: Attendees

JAY A. BENNETT
STATE ROADWAY DESIGN ENGINEER

Appendix D
Agency Comments on
Environmental Assessment



North Carolina Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

March 1, 2007

Mr. Gregory Thorpe
NC Department of Transportation
Project Development and Environ. Anal.
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Thorpe:

Re: SCH File # 07-E-4220-0248; EA; Proposed project is for the improvements to existing I-40/I-77 Interchange. TIP No. I-3819.

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,

A handwritten signature in cursive script that reads "Chrys Baggett/576".

Ms. Chrys Baggett
Environmental Policy Act Coordinator

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 Chrys.Baggett@ncmail.net

Location Address:
116 West Jones Street
Raleigh, North Carolina



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

MEMORANDUM

TO: Chrys Baggett
State Clearinghouse

FROM: Melba McGee
Project Review Coordinator

RE: 07-0248 EA I-40/I-77 Improvements in Iredell County

DATE: February 13, 2007

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

Several areas need further clarification as noted in the attached comments from the N.C. Wildlife Resources Commission and the Division of Water Quality. We ask that the Department of Transportation work with our commenting agencies to assure that their concerns are adequately addressed prior to finalizing project plans. Addressing these comments during the review process and/or during the merger process will avoid delays at the permit phase.

Thank you for the opportunity to comment on this project.

Attachments



Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director
Division of Water Quality

January 31, 2007

MEMORANDUM

To: Melba McGee

From: Polly Lespinasse, Division of Water Quality, Mooresville Regional Office

Subject: **Comments on the Environmental Assessment Related to the Proposed I-40/I-77 Improvements, Iredell County, WBS Element 34192.1.2, Federal Aid Project No. IMS-40-2, State Project No. 8.1823901, TIP I-3819, DENR Project Number 07-0248, Due Date 02/12/2007**

This office has reviewed the referenced document dated November 2006. The Division of Water Quality (DWQ) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. It is our understanding that the project as presented will result in impacts to jurisdictional wetlands, streams, and other surface waters. The DWQ offers the following comments based on review of the aforementioned document:

Specific Comments:

- A) Fourth Creek is a Class C, 303(d) waters of the State. Fourth Creek is on the 303(d) list for impaired use for aquatic life due to turbidity, fecal coliform and biological impairment. DWQ is very concerned with sediment and erosion impacts that could result from this project. DWQ recommends that the most protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Fourth Creek. DWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ *Stormwater Best Management Practices*.

General Comments:

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

The
North Carolina
Naturally

North Carolina Division of Water Quality
Internet: h2o.enr.state.nc.us

610 East Center Avenue, Suite 301
Mooresville, NC 28115

Phone (704) 663-1699
Fax (704) 663-6040

- D) Prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.
- E) In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.
- F) Future documentation, including the 401 Water Quality Certification Application, should continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.
- G) DWQ is very concerned with sediment and erosion impacts that could result from this project. NCDOT should address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.
- H) An analysis of cumulative and secondary impacts anticipated as a result of this project is required. The type and detail of analysis should conform to the NC Division of Water Quality Policy on the assessment of secondary and cumulative impacts dated April 10, 2004.
- I) NCDOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.
- J) Where streams must be crossed, the DWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, DOT should not install the bridge bents in the creek, to the maximum extent practicable.
- K) Sediment and erosion control measures should not be placed in wetlands or streams.
- L) 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.
- M) The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater should not be permitted to discharge directly into streams or surface waters.
- N) Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an **Individual Permit (IP)** application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from the NCDWQ.

Please be aware that any approval will be contingent on appropriate avoidance and minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.

- O) Bridge supports (bents) should not be placed in the stream when possible.
- P) Whenever possible, the DWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allow for human and wildlife passage beneath the structure, do not block fish passage and do not block navigation by canoeists and boaters.
- Q) Bridge deck drains should not discharge directly into the stream. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NCDWQ *Stormwater Best Management Practices*.
- R) If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
- S) If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas should be seeded or mulched to stabilize the soil and appropriate native woody species should be planted. When using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.
- T) Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in disequilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.
- U) If multiple pipes or barrels are required, they should be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
- V) If foundation test borings are necessary, it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3494/Nationwide Permit No. 6 for Survey Activities.
- W) 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.

- X) All work in or adjacent to stream waters should be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures should be used to prevent excavation in flowing water.
- Y) Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
- Z) Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.
- AA) Riparian vegetation (native trees and shrubs) should be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

The NCDWQ appreciates the opportunity to provide comments on your project. Should you have any questions or require any additional information, please contact Polly Lespinasse at (704) 663-1699.

cc: Steve Lund, US Army Corps of Engineers, Asheville Field Office
Chris Militscher, Environmental Protection Agency
Marla Chambers, NC Wildlife Resources Commission
Marella Buncick, US Fish and Wildlife Service
Sonia Gregory, DWQ Central Regional Office
File Copy



North Carolina Wildlife Resources Commission

Richard B. Hamilton, Executive Director

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

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

DATE: February 12, 2007

SUBJECT: Review of the Environmental Assessment of NCDOT's proposed improvements to the existing I-40/I-77 interchange area, Statesville, Iredell County. TIP No. I-3819. Project No. 07-0248, due February 12, 2007.

North Carolina Department of Transportation (NCDOT) has submitted for review an Environmental Assessment (EA) document for the subject project. Staff biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the information provided. These comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The NCDOT proposes to make improvements to the existing I-40/I-77 interchange area. The two intersecting roadways are among the most heavily traveled interstate highways in North Carolina. The study area includes the four adjacent interchanges, one in each direction. Proposed stream impacts range from 3,738 to 3,904 linear feet for the two alternatives, 1,476 feet of which are planned as stream relocations. Expected wetland impacts range from 3.19 to 3.65 acres. The level of impacts should have placed this project in the Merger 01 process; however, despite efforts by the US Army Corps of Engineers, the NCDOT and Federal Highways Administration will not place the project in the Merger 01 process until the 4A stage.

Direct impacts are expected to Fourth Creek and numerous unnamed tributaries (UT's) to Fourth Creek, all Class C waters and on the 303(d) list of impaired waters. It appears that nine wetland areas will be impacted, including a large high-quality wetland (NC Division of Water Quality rating 92) in the southwest quadrant of the I-40/I-77 interchange. We commend NCDOT on

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 707-0220 • **Fax:** (919) 707-0028

efforts to minimize impacts to aquatic habitats and floodplains, such as using bridges at all Fourth Creek crossings, designing new bridges to span the floodways, and using a retaining wall. It appears that NCDOT will also provide for the existing and planned greenways in the area. We are hopeful that additional minimization of impacts can be achieved, especially to aquatic resources in the southwest quadrant of the interchange. We look forward to working with NCDOT on this within the Merger 01 process.

Numerous studies have shown that when 10-15% of a watershed is converted to impervious surfaces, there is a serious decline in the health of receiving waters (Schueler 1994) and the quality of fish habitat and wetlands are negatively impacted (Booth 1991, Taylor 1993). The project area is rapidly developing. The water quality has been degraded and stream crossings are being upgraded to account for higher flows due to urban development. Some natural and agricultural areas still exist; therefore potential for further development is high. Crossing designs should use a build-out scenario for the area to determine adequate sizes for the structures. Secondary and cumulative impacts are a serious concern. We strongly recommend that NCDOT and local authorities work together to minimize construction and development impacts through strong sediment and erosion controls and stormwater management. Special efforts should be made to prevent further degradation of area streams and to improve their water quality. Impervious surfaces should be limited and floodplains should be preserved in a natural state.

Measures to mitigate secondary and cumulative impacts can be found in the Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality (NCWRC 2002). We also encourage NCDOT and local authorities to use low impact development techniques to manage stormwater quantity and quality in developed and developing areas (see www.lowimpactdevelopment.org for information). We encourage the use of non-impervious materials to construct sidewalks, parking lots, and other facilities, and the use of retrofits for existing development.

Thank you for the opportunity to review and comment on this project. If you have any questions regarding these comments, please contact me at (704) 545-3841.

Literature Cited:

- Booth, D. 1991. Urbanization and the natural drainage system-impacts, solutions, and prognoses. Northwest Environmental Journal. 7(1):93-118.
- NCWRC (North Carolina Wildlife Resources Commission). 2002. Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality. NCWRC, Raleigh. Available: http://www.ncwildlife.org/pg07_WildlifeSpeciesCon/pg7c3_impacts.pdf. (February 2003).
- Schueler, Tom. 1994. The Importance of Imperviousness. Watershed Protection Techniques. 1:3 (pp100-111).

Taylor, B.L. 1993. The influences of wetland and watershed morphological characteristics and relationships to wetland vegetation communities. Masters thesis. Dept. of Civil Engineering. University of Washington. Seattle, WA.

cc: Marella Buncick, USFWS
Polly Lespinasse, NCDWQ
Chris Militscher, USEPA



North Carolina Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

March 14, 2007

Mr. Gregory Thorpe
NC Department of Transportation
Project Development and Environ. Anal.
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Thorpe:

Re: SCH File # 07-E-4220-0248; EA; Proposed project is for the improvements to existing I-40/I-77 Interchange. TIP No. I-3819.

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

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

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

Sincerely,

A handwritten signature in cursive script that reads "Chrys Baggett / 576".

Ms. Chrys Baggett
Environmental Policy Act Coordinator

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 Chrys.Baggett@ncmail.net

Location Address:
116 West Jones Street
Raleigh, North Carolina



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

MEMORANDUM

TO: Chrys Baggett
State Clearinghouse

FROM: Melba McGee *LM*
Environmental Projects Officer

SUBJECT: #07-0248 Improvements to existing I-40/I-77 Interchange, Iredell County

DATE: March 12, 2007

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

Thank you for the opportunity to respond.

Attachment

FEB 28 2007

DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Inter-Agency Project Review Response

Project Number
07-0248

County
Iredell

Project Name NC DOT Type of Project

Proposed project is for the
improvements to existing I-
40/I-77 Interchange

Comments provided by:

RECEIVED
Mooresville Regional Office

- Regional Program Person
- Regional Supervisor for Public Water Supply Section
- Central Office program person

FEB 28 2007

NCDENR
Public Water Supply

Name Britt Setzer-Mooresville RO Date 2/16/07

Telephone number: 704-235-2127

Program within Division of Environmental Health:

- Public Water Supply
- Other. Name of Program: _____

Response (check all applicable):

- No objection to project as proposed
- No comment
- Insufficient information to complete review
- Comments attached
- See comments below

See comments on reverse side.

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

DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Project Number 07-0248
County Iredell

Inter-Agency Project Review Response

Project Name NC DOT Type of Project Proposed project is for the improvements to existing I-40/I-77 Interchange

- The applicant should be advised that plans and specifications for all water system improvements must be approved by the Division of Environmental Health prior to the award of a contract or the initiation of construction (as required by 15A NCAC 18C 0300et. seq.). For information, contact the Public Water Supply Section, (919) 733-2321.
- This project will be classified as a non-community public water supply and must comply with state and federal drinking water monitoring requirements. For more information the applicant should contact the Public Water Supply Section, (919) 733-2321.
- If this project is constructed as proposed, we will recommend closure of _____ feet of adjacent waters to the harvest of shellfish. For information regarding the shellfish sanitation program, the applicant should contact the Shellfish Sanitation Section at (252) 726-6827.
- The soil disposal area(s) proposed for this project may produce a mosquito breeding problem. For information concerning appropriate mosquito control measures, the applicant should contact the Public Health Pest Management Section at (919) 733-6407.
- The applicant should be advised that prior to the removal or demolition of dilapidated structures, a extensive rodent control program may be necessary in order to prevent the migration of the rodents to adjacent areas. For information concerning rodent control, contact the local health department or the Public Health Pest Management Section at (919) 733-6407.
- The applicant should be advised to contact the local health department regarding their requirements for septic tank installations (as required under 15A NCAC 18A. 1900 et. sep.). For information concerning septic tank and other on-site waste disposal methods, contact the On-Site Wastewater Section at (919) 733-2895.
- The applicant should be advised to contact the local health department regarding the sanitary facilities required for this project.
- If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Environmental Health, Public Water Supply Section, Technical Services Branch, 1634 Mail Service Center, Raleigh, North Carolina 27699-1634, (919) 733-2321.
- For Regional and Central Office comments, see the reverse side of this form.

Jim McRight

PWSS

02/16/07

Reviewer

Section/Branch

Date

EPA Review Comments on the Federal EA for I-3819, I-40/I-77 Interchange Modifications, Iredell County.

This is a non-Merger project. The Federal EA was issued on 1/16/07 and comments were requested by 3/5/07. EPA attended a scoping type meeting approximately 6 months ago that discussed the alternatives being considered and that this project was proposed to be put into the Merger 01 process at CP 4A. NCDOT proposes to modify the existing interchange to address traffic capacity deficiencies and safety concerns, and to improve traffic flow for approximately 6.8 miles.

Two alternatives were studied in detail, Alternative 1 (Four-level Offset) and Alternative 2 (Four-level Turbine). NCDOT prefers Alternative 1. Estimated impacts for the proposed interchange alternatives are as follows (Alternatives 1 & 2, respectively):

Residential & Business relocations: 5R/3B & 5R/3B (and 1 Farm each)
Churches/Schools: 2/3 & 2/3
Wetlands: 3.19 & 3.65 acres
Streams: 2,428 & 2,262 linear feet
Riparian buffers: 0 & 0
Sections 4(f)/106 properties: 1/0 & 1/0 (Greenway)
Archaeological sites: 0 & 0
Noise Receptors: 120 & 120
ESAs: 0 & 0
EJ communities: 0 & 0
Natural Heritage Program areas: 0 & 0
Air quality: No (NAAQS Attainment)
Terrestrial forests: 30.5 & 31.9 acres
Prime Farmlands: 43 & 43 acres
Hazardous Material Sites: 63 & 63 (potential sites)
Critical Water Supplies: No

EPA notes that Fourth Creek and its UTs are on the 303(d) list of impaired waters from non-point source pollution resulting from urban runoff and sediment. NCDOT should incorporate the most environmentally methods of pre-treatment of stormwater to this receiving water to remove pollutants and sediment. NCDOT proposes to relocate approximately 1,476 linear feet of streams (both alternatives) on-site. EPA requests that these proposed stream relocations in the Piedmont be closely coordinated with DWQ, ACE, FWS, WRC and EPA (Kathy Matthews) in order to insure that the relocations are technically and environmentally sound.

EPA notes that Wetland system #15 represents the largest impact site of the 3.19/3.65 acres totals. Alternative 1 impacts 1.81 acres of W15 and Alternative 2 impacts 2.51 acres. W15 was rated as a 92 (NCDWQ) riverine system. This wetland is by far the highest quality wetland in the project study. EPA will be seeking avoidance and minimization measures at CP 4A to reduce the impacts to this high quality wetland.

EPA has some environmental concerns for the proposed project as it relates to measures to avoid and minimize certain impacts from the proposed interchange designs. EPA requests that NCDOT look for environmental stewardship opportunities and mitigation of impacts to jurisdictional wetlands and streams, prime farmlands and noise receptors. NCDOT should also complete its noise analysis to determining the acceptability of noise barriers. NCDOT should complete its geotechnical evaluation to determine the actual number of hazardous material sites impacted. Neither build alternative considered by NCDOT is substantially different in most of the impacts for EPA to have an identified preference, although Alternative 1 does have less impact (0.7 acres) to W#15. The Federal EA was generally very comprehensive and the Summary table of impacts (S-2 to S-4) was very useful in comparing the two alternatives.

EPA acknowledges the project environmental commitments (Green sheets) concerning wetlands, structures over Fourth Creek for the existing Museum Greenway path, retaining walls at the elementary schools, noise mitigation and hazardous materials assessment.