RECORD OF DECISION

US 74 Shelby Bypass

From 0.6 Mile West of SR 1162 to SR 1001
Cleveland County, North Carolina

FHWA-NC-EIS-97-02-F
Federal Aid Project Number NHF-74(14)
State Project Number 8.1801001
WBS Number 34497.1.2
T.I.P. Project Number R-2707

US DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

and

NC DEPARTMENT OF TRANSPORTATION
Division of Highways

October 2008

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A. INTRODUCTION

This Record of Decision (ROD) records the decision of the Selected Alternative for the proposed US 74 Shelby Bypass. In accordance with the National Environmental Policy Act (NEPA) and the requirements set forth by the Council on Environmental Quality (CEQ) (40 CFR 1505.2), this ROD identifies: 1) the selected alternative; 2) all alternatives considered by the Federal Highway Administration (FHWA) and the factors that were considered in the evaluation of the alternatives; 3) measures adopted to avoid and minimize harm; 4) monitoring and enforcement programs for the implementation of mitigation measures; and 5) comments on the Final Environmental Impact Statement (FEIS).

To maintain brevity, supporting project information (i.e., background information on the purpose of and need for the proposed project, discussion of the affected environment, a complete description of the anticipated impacts of each alternative) contained in the Draft Environmental Impact Statement (DEIS), dated October 1, 1998, and the FEIS, dated January 25, 2008, are incorporated by reference (40 CFR 1502.21).

B. OVERVIEW

The City of Shelby is situated along existing US 74 in Cleveland County in southwestern North Carolina. A city of approximately 20,000 residents, it is a moderately dense, low-rise urban area surrounded by the gently rolling countryside typical of the Piedmont. Exhibit 1 shows the project location. Exhibit 2 shows the study area. Existing US 74 is primarily a four-lane divided highway with partial control of access and limited right-of-way. This highway, particularly the bypass portion, includes commercial strip development containing a variety of busy retail uses and some light industry. It has frontage roads and numerous intersections, driveways, and traffic signals, all of which have contributed to increasingly congested, unsafe conditions as traffic volumes have increased.

This portion of US 74 is identified as Transportation Improvement Program (TIP) Number R-2707 in the North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program - 2009-2015. The proposed roadway, approximately 19 miles in length, will be a four-lane divided highway with full control of access, primarily on new location (a bypass of the City of Shelby), with widening sections to the east and west of the new location section along existing US 74. The proposed action is the improvement of the US 74 corridor in the Shelby area by bypassing the existing US 74 Bypass route in Shelby, which includes strip developments, frontage roads, and a series of traffic signals, all of which contribute to delays and safety problems. Congestion is anticipated to be a problem in the future, if the project is not constructed; levels of service for all intersections and the NC 150/18 interchange in the year 2020 would be LOS F, indicating breakdown conditions essentially along the entire length of the project.

C. DECISION

In accordance with An Interagency Agreement Integrating Section 404/NEPA, a Merger team was assembled to consider the comments received on the DEIS and the Tier 2 detailed study alternatives and to identify the "least environmentally damaging practicable alternative" or LEDPA. Agencies on the Merger team who attended the May 5, 1999 LEDPA selection meeting included the Corps of Engineers; the US Fish and Wildlife Service; the NC Department of Environment and Natural Resources Division of Water Quality; FHWA; NCDOT Division 12; NCDOT Project Development and Environmental Analysis Branch and NCDOT Roadway Design Unit. Additionally, a May 25, 1999 letter from the Wilmington District Army Corps of Engineers notes that verbal coordination was orchestrated with the NC Wildlife Resources Commission, the Environmental Protection Agency (EPA) and the State Historic Preservation Office (SHPO). This Merger team selected Alternative 21 as the Selected Alternative, or LEDPA.

Alternative 21 (also known as the Southern alternative) is approximately 18.6 miles in length. It would include improvement of existing US 74 to a freeway facility from the western project terminus approximately 0.6 mile west of SR 1162 to east of SR 1161; this portion would cross SR 1162, Sandy Run, and SR 1161. The bypass portion of the Southern Alternative would extend from east of SR 1161 to west of Buffalo Creek, where it ties back into existing US 74; it passes approximately 2.2 miles north of the Shelby town center at its northernmost point. The bypass portion of the Southern Alternative would cross (from west to east): Beaverdam Creek, SR 1315, SR 1313, a Norfolk Southern rail line, Brushy Creek, NC 226, the First Broad River, SR 1850, SR 1005, SR 1827, NC 18, Carter Road (SR 1927), a CSX rail line, NC 150, and SR 2033. Existing US 74 from west of Buffalo Creek to the eastern project terminus at SR 1001 would be improved to a freeway facility; this portion of the project would cross Buffalo Creek and Bethlehem Road (SR 2245). In addition to interchanges at the two bypass termini with existing US 74, there would also be interchanges at SR 1162, SR 1313, NC 226, NC 18, NC 150, and SR 2245.

Basis for Selection

Alternative 21 was selected as the LEDPA for this project for the following reasons:

- Fewer prime farmland impacts.
- Fewer wetland impacts.
- Fewer noise impacts.
- Lesser construction cost.
- Consistency with town and county land use plans and policies.

Table 1 provides a summary of the quantitative data from the DEIS used in support of the LEDPA decision. The LEDPA is shown in Exhibit 3. Some impacts data has changed since the DEIS and LEDPA decision due to design refinements and changes in impacts reporting procedures.

Table 1
QUANTITATIVE DATA SUPPORTING SELECTION OF THE LEDPA

CATEGORY OF IMPACT	LEDPA SELECTION (DEIS) DATA *		Selected Alternative**
	Range for All Tier 2 Detailed Study Alternatives	Selected Alternative (LEDPA)	
Prime farmland	298 - 414 acres	298 acres	N/A
Wetlands (unbridged)	0 - 0.526 acres	0 acres	3.070 acres †
Noise receptors with substantial (10 or 15 dBA)min. increase ††	81 - 150	81	14
Total affected noise receptors (w/o barriers)	137 - 205	147	21
Construction cost	$155.9 million - $167.0 million	$155.9 million	$196.6 million ‡

* Based on functional design roadway plans.

** Based on preliminary design roadway plans and detailed environmental analysis methods.

† This is the total right-of-way impact calculated for the Selected Alternative based on preliminary design. The construction limit impact (which is considered to be the mitigable impact) is 2.373 acres.

†† Based on the following criterion, which was in effect at the time of the noise analyses.

Existing (Leq[h])	Increase
Less than or equal to 50 dBA	Greater than or equal to 15 dBA
Greater than 50 dBA	Greater than or equal to 10 dBA

‡ Construction cost includes the following costs (note: all of these costs were generated by NCDOT):

$ 195.3 million – December 5, 2000 NCDOT cost estimate
$ 1.1 million – Stream mitigation for *major* stream culvert crossings
$ 0.7 million – Cost of bridging Beaverdam Creek
$ - 0.5 million – Cost of culvert replaced by bridge at Beaverdam Creek
$ 196.6 million - TOTAL

Impacts of the Selected Alternative (Alternative 21)

A summary of impacts description is provided in the following paragraphs. Detailed discussions and comparison of impacts is contained in FEIS Section 2.4.7 (Preferred Alternative) and Chapter 4 (Environmental Consequences). Table 2 summarizes the impacts associated with the construction of the Selected Alternative for all environmental and engineering factors.

Land Use – The Selected Alternative is compatible with both the 2005 Cleveland County Land Use Plan, the City of Shelby Land Development Plan Update 1999-2010, and the Unified Development Ordinance, City of Shelby, North Carolina (2001). Impacts to existing land uses will include displacement of agricultural land, relocation of residences and businesses, and possible induced development at interchange areas.

Relocations – The Selected Alternative would displace a total of 165 residences, 25 businesses, and 2 churches (note: Eskridge Grove Church is not included in this total). NCDOT will ensure that comparable replacement housing is available for those relocated. NCDOT has three programs to minimize the inconvenience of relocation: Relocation Assistance, Relocation Moving Payments, and Relocation Replacement Housing Payment, or Rent Supplement. Last Resort Housing will also be considered and administered in accordance with State law, as applicable.

Agricultural Impacts - The Selected Alternative will impact an estimated 258 acres of agricultural/cleared land.

Schools - There will be no impacts to study area schools.

Parks and Recreational Facilities - No publicly-owned parks or recreational facilities would be affected by the Selected Alternative.

Historic Architectural Resources - There will be an effect to the National Register of Historic Places (NRHP)-eligible Hamilton-McBrayer Farm for the Selected Alternative, but the effect will not be adverse, provided that highway improvements remain within current right-of-way limits.

Archaeological Resources - There are no archaeological sites within the Selected Alternative that are eligible for the NRHP. No further archaeological work is required for this project.

Community Facilities - Seven churches and four known cemeteries are included within the Selected Alternative corridor. Lithia Springs Road will be cul-de-sac on the south side of the US 74 Bypass. The NCDOT facilities on Kempers Road (SR 2063) could also be affected by the Selected Alternative.

Utilities – The following utilities would be crossed by the Selected Alternative:

- Several major electric transmission and distribution lines belonging to Duke Power.
- One sewer line under the jurisdiction of the City of Shelby.
- Existing City of Shelby and Cleveland County major water distribution facilities.
- City of Shelby gas lines.

- Fiberoptic, copper toll, exchange, and distribution telephone lines belonging to BellSouth.

Air Quality - Air quality in the study area is not anticipated to change considerably with construction of the Selected Alternative. None of the sites studied in the air quality analysis is projected to exceed either the one-hour or eight-hour carbon monoxide concentrations set forth by the National Ambient Air Quality Standards.

Noise – A total of 34 receptors would approach or exceed the 67/72 dBA criterion, and 49 receptors would experience a substantial increase (a 10- to 15-dBA increase). Sixty-eight receptors would exceed either one or both criteria for the Selected Alternative based on preliminary design. A total of seven noise barriers were examined for the Selected Alternative. Two of these barriers potentially appear to be feasible: one would be adjacent to SR 1315, and the other would be west of the Light Oak community near SR 2033.

Hazardous Materials Sites/Underground Storage Tanks (USTs) - Eight potential hazardous materials sites/UST sites could be affected by the Selected Alternative, including 5 UST sites, two junkyards and an abandoned household landfill. During preparation of final design plans any potential hazardous material sites will be evaluated.

Prime, Important and Unique Farmlands - The Selected Alternative would impact 53.5 acres of prime and unique farmland and 150.8 acres of important farmland.

Mineral Resources - One active mine (the Buffalo Valley Mine on US 74 east of Shelby) would be affected by the Selected Alternative.

Upland Plant Communities - The Selected Alternative would impact an estimated 277 acres of forest land and 258 acres of agricultural/cleared farmland.

Wetlands – The Selected Alternative will impact 2.393 acres of wetlands; 0.02 acres of that total will be bridged wetlands. A breakdown of the 2.373 acres of wetlands impacts is provided in Table 2. The following defines the types of wetlands shown in that table:

PEM1 = Palustrine, emergent, persistent
PEM2 = Palustrine, emergent, nonpersistent
PFO1 = Palustrine forested, broad-leaved deciduous
PSS1 = Palustrine scrub-shrub, broad-leaved deciduous

Permits will be required for the projected wetlands impacts. A Section 404 Individual Permit will be required from the US Army Corps of Engineers. A 401 Water Quality Certification from NCDENR will be required.

Wildlife - Fragmentation and loss of wildlife habitat would result from construction of the Selected Alternative. Short-term displacement of local wildlife populations would occur during initial construction on the facility. Several of the proposed waterway bridges for the Selected Alternative would provide opportunities for wildlife passage.

Floodplains - The Selected Alternative will include six floodplain encroachments.

Water Resources –The Selected Alternative will impact 18,389 feet of streams (within the construction limits). Two stream relocations have been identified for the Selected Alternative:

- An approximately 1,100-foot segment of a tributary of Buffalo Creek, between SR 2063 and the Light Oak community, will require relocation to the east of its existing location.

- An approximately 950-foot segment, of a tributary of the First Broad River just to the west of Lithia Springs Road, will be relocated to the north of the existing stream bed.

Implementation of the NCDOT Guidelines for Erosion and Sediment Control During Construction and Best Management Practices for Protection of Surface Waters would reduce siltation and other stream crossing impacts.

Protected Species - The Selected Alternative will impact 36 dwarf-flowered heartleaf sites, and a total of 4.067 acres (within the construction limits plus ten feet for equipment staging).

Visual Impacts - Visual effects are anticipated due to current lack of development in the study area, but would be limited to few people due to sparseness of population. Interchange areas would likely have the greatest effect on visual values in the study area.

Table 2 SUMMARY OF IMPACTS FOR THE SELECTED ALTERNATIVE (Alternative 21)

CATEGORY OF IMPACT			IMPACT
Engineering Factors	Mainline Length (miles)		18.62
	Number of Interchanges		8
	Costs	Right-of-way	$ 51,600,000
		Construction	$196,300,000
		Total	$247,900,000
Relocations	Residences		165
	Businesses		25
	Churches		2
	Total		192
Cultural Resources	Architectural Sites		1
	Archaeological Sites		0
Air Quality	Number of Exceedances of NAAQS CO		0
Noise	Receptors with Substantial Increase		49
	Receptors Approaching or Exceeding 67/72 dBA		34
	Total Impacted Receptors without Barriers		68
	Total Impacted Receptors with Barriers		40
Hazardous Materials Sites	Total		8

Table 2 SUMMARY OF IMPACTS FOR THE SELECTED ALTERNATIVE (Alternative 21)

CATEGORY OF IMPACT			IMPACT
Farmland	Prime/Unique		53.5 acres
	State and Locally Important		150.8 acres
	Total		204.3 acres
Forest Impacts	Total		915 acres
Streams (Length Taken)	Right-of-Way Limits	Perennial	12,347 lf
		Intermittent	11,707 lf
		TOTAL	24,054 lf
		Mitigable	21,940 lf
Streams (Length Taken)	Construction Limits	Perennial	9,148 lf
		Intermittent	9,241 lf
		TOTAL	18,389 lf
		Mitigable	16,786 lf
Wetlands (Area Taken) [5]	Right-of-Way Limits	PSS1	1.340 acres
		PFO1	1.514 acres
		PEM1	0.216 acres
		PEM2	0.050 acres
		TOTAL	3.120 acres
		Mitigable	3.070 acres
	Construction Limits	PSS1	1.160 acres
		PFO1	0.999 acres
		PEM1	0.214 acres
		PEM2	0.020 acres
		TOTAL	2.393 acres
		Mitigable	2.373 acres
Dwarf-Flowered Heartleaf Sites (Area Taken)	Right-of-Way Limits		5.275 acres
	Construction Limits		3.714 acres
	Construction Limits + 10-Foot Buffer		4.067 acres

D. ALTERNATIVES CONSIDERED

This section addresses the various alternatives analyzed for the proposed action. Alternatives that did not meet the goals of the project, created disproportionate adverse impacts, or were considered impractical or non-competitive, were eliminated from further consideration.

No Build Alternative - The No Build alternative assumes no improvement of existing US 74 or the construction of a US 74 Bypass of Shelby within the study area. With the exception of routine maintenance, no other changes would take place to the existing US 74 facility by the year 2020. The No Build alternative would result in Levels of Service (LOS) of F along most portions of the existing US 74 highway and, thus, was not

consistent with the project purpose of improving traffic capacity. Therefore, it was eliminated from further consideration.

Mass Transit Alternative - There is no mass transit system in operation within the study area for the subject project. This is most likely due to a combination of the high cost of transit, the relatively low population and population densities, and a diversity of trip origins and destinations. Mass transit was eliminated from further consideration, due to the timing of implementing it compared to the study area's more immediate needs, anticipated ineffectiveness and failure to respond to the transportation needs identified for this project.

Transportation System Management Alternative - Transportation System Management (TSM) measures would neither increase capacity nor improve levels of service on US 74. Therefore, it was eliminated from further consideration.

Upgrade Alternative - The Upgrade alternative considered for this project consisted of improvement of existing US 74 to a full control of access facility, from approximately 0.6 mile west of SR 1162 to SR 1001 east of Shelby (a distance of approximately 16.2 miles). In conjunction with the access control-related improvements, US 74 would be widened as necessary between the western junction of US 74 Business in Shelby and the eastern project terminus, a distance of approximately 10.0 miles.

The Upgrade alternative was eliminated from consideration for the following reasons:

- Higher construction and right-of-way costs.
- Higher residential and business relocation impacts.
- Adverse effect on three National Register-eligible historic architectural properties.
- Greater impacts to existing roadway network, resulting in less efficient traffic functioning.
- Higher impacts to hazardous materials sites.

Tier 2 Detailed Study Alternatives - The Tier 2 detailed study alternatives consisted of improvement of existing US 74 to a full control access facility from the proposed western project terminus 0.6 mile west of SR 1162 to the proposed western bypass terminus; construction of a four-lane divided full control of access facility on new location north of the City of Shelby; and improvement of existing US 74 to a full control access facility from the proposed eastern bypass terminus to the existing full control of access section near SR 1001. The Tier 2 detailed study alternatives consisted of Northern and Southern corridors and Crossovers C'-J and J-K, which were combined to form ten (10) distinct Tier 2 detailed study alternatives. Exhibit 4 shows the Tier 2 detailed study alternatives. Table 3 provides a definition of each of the 10 alternatives, and a comparison of the impacts that resulted in the selection of Alternative 21 as the Selected Alternative. It should be noted that data in this table differs from the data in Table 2 due to design refinements and changes in impacts reporting procedures since the impacts in Table 3 were determined.

Table 3

SUMMARY OF IMPACTS FOR 10 TIER 2 DETAILED STUDY ALTERNATIVES

IMPACT	Build Alternative									
	1	3	7	9	13	15	16	18	19	21
Community Facilities Potentially Affected (1)	7	9	8	10	8	10	9	11	8	10
Residences Relocated	202	219	166	183	255	272	219	236	218	235
Businesses Relocated	9	25	17	33	16	32	24	40	26	42
Churches Relocated	3	4	4	5	3	4	4	5	3	4
Total Relocations	214	248	187	221	274	308	247	281	247	281
Parks and Recreational Sites Affected (2)	1	1	0	0	1	1	0	0	0	0
Historic Sites Adversely Affected	0	0	0	0	0	0	0	0	0	0
Noise Receptors with 10 or 15 dBA Minimum Increase	150	100	149	99	141	91	140	90	131	81
Noise Receptors Equal to or Exceeding 66/71 dBA Criterion	74	63	68	57	99	88	93	82	95	84
Total Impacted Noise Receptors Without Barriers	188	141	184	137	205	158	201	154	194	147
Total Impacted Noise Receptors With Barriers	112	105	109	102	116	109	113	106	117	110
Hazardous Materials Sites Potentially Affected	7	8	6	7	8	9	7	8	7	8
Prime Farmland (3): Acres	414	395	401	382	356	337	343	324	317	298
State and Locally Important Farmland (3): Acres	326	322	305	301	273	269	252	248	272	268
Stream Crossings	38	36	36	34	38	36	36	34	37	35

Table 3

SUMMARY OF IMPACTS FOR 10 TIER 2 DETAILED STUDY ALTERNATIVES

IMPACT	Build Alternative									
	1	3	7	9	13	15	16	18	19	21
Floodplain Encroachments	8	4	8	4	11	7	11	7	10	6
Forest Land (3): Acres	351	303	343	295	318	270	310	261	326	277
Agricultural/Cleared Land (3): Acres	313.0	315.5	302.4	304.9	277.4	279.9	266.8	269.3	255.2	257.7
Wetlands (3), (4): Acres	0.526	0.000	0.526	0.000	0.526	0.000	0.526	0.000	0.526	0.000
Palustrine Open Water (3): Acres	2.437	2.108	2.363	2.034	2.091	1.762	2.017	1.688	2.042	1.713
Surface Waters (3): Acres	5.158	3.944	4.499	3.285	5.132	3.918	4.473	3.259	4.498	3.284
Right-of-Way Cost: Millions	$33.613	$39.598	$28.768	$34.753	$38.644	$44.629	$33.799	$39.784	$37.579	$43.564
Construction Cost: Millions	$167.000	$163.100	$164.800	$160.900	$164.900	$161.000	$162.700	$158.800	$159.800	$155.900
Total Cost: Millions	$200.613	$202.698	$193.568	$195.653	$203.544	$205.629	$196.499	$198.584	$197.379	$199.464

ALTERNATIVE IDENTIFICATION LEGEND
1: A-J-M-N-S
3: A-J-M-N-P-S
7: A-J-K-M-N-S
9: A-J-K-M-N-P-S
13: A-C'-J-M-N-S
15: A-C'-J-M-N-P-S
16: A-C'-J-K-M-N-S
18: A-C'-J-K-M-N-P-S
19: A-C'-K-M-N-S
21: A-C'-K-M-N-P-S

Notes:

(1) "Community Facilities Potentially Affected" include all facilities which fall within the corridors; these are not necessarily all relocatees. There were no schools within the corridors, so there are no schools included in these totals, although schools may sustain other impacts from highway proximity. A total of 11 churches and 3 cemeteries were identified within the various Tier 2 detailed alternative corridors. Shelby Seventh Day Adventist Church was not included in the totals because it was not in existence at the time of the Tier 2 analyses.

(2) The one recreational facility identified is a privately owned golf facility and is not a Section 4(f) parkland property.

(3) This quantity is prorated from corridor-wide data to represent a typical average right-of-way width impact.

(4) Reflects bridging of either of the two wetland sites on Beaverdam Creek.

E. MEASURES TO AVOID AND MINIMIZE HARM

Avoidance and minimization measures were finalized by the NEPA/404 Merger team during the meeting for Concurrence Point 4 (Avoidance and Minimization, now Concurrence Point 4A) on January 17, 2001. FEIS Appendix A.2 contains the signed Concurrence Point 4 forms. FEIS Sections 4.13.1 (*Wetlands and Surface Waters*), 4.13.2 (*Stream Impacts*, as amended in Section H of this Record of Decision), and 4.13.3 (*Protected Species*) contain detailed discussions of the mitigation measures associated with the Selected Alternative.

Avoidance and Minimization Measures for the Planning and Design Phase

Avoidance and minimization measures include the following items:

- Use of 2:1 fill slopes at streams to minimize impacts
- Bridging of Beaverdam Creek (Stream 2-11) to minimize impacts.
- Replacement of west ramps with east loop ramps for NC 226 interchange to minimize impacts to Stream 3-10.
- Shifts in horizontal alignment in the vicinity of dwarf-flowered heartleaf (DFHL) Site #22 to minimize impacts to that site.
- Shift in SR 2245 horizontal alignment to minimize impacts to Streams 8-8, 8-9, and 8-11 and DFHL Site #32.

Avoidance and Minimization Measures for the Construction Phase

Standard construction practices designed to avoid and minimize impacts during construction are discussed in Section 4.15 of the FEIS. The following project-specific measures are proposed for this project:

Brushy Creek
- Cut trees at base (root wads) to help stabilize banks.

First Broad River (Stream #4-7)
- Construction of a temporary causeway
- Construction of a temporary work bridge
- Installation of a drainage system on the bridge for stormwater runoff
- Coordination with local water supply administrator
- Installation of hazardous spill basins
- Non-impact on vegetation

Dwarf-Flowered Heartleaf Sites
- Areas containing dwarf-flowered heartleaf plants, but not impacted by the project, will be clearly marked prior to any ground-disturbing activity on the site to assure that construction does not affect the plants.
- A USFWS biologist will attend the preconstruction meeting to discuss the importance of avoiding the plants, and other environmental commitments that are a part of the project.
- If it is determined necessary by the USFWS to relocate impacted plants, the work will be performed by qualified persons. The relocation work could include

transplanting the vegetative portions of plants from existing sites to pre-selected, USFWS-approved alternate sites and/or dispersing seed from existing sites to the USFWS-approved sites.

Compensatory Mitigation

Tables D-2 and D-3 in Appendix D of the FEIS identify the stream and wetland takings by individual site, respectively, that are subject to mitigation, based on input earlier in the project from the USACE and other resource agencies. A total of 2.373 acres of wetlands and 16,786 linear feet of streams will require mitigation, either through the Ecosystem Enhancement Program (EEP) or onsite mitigation, per the Clean Water Act of 1970. This will be revisited when the permit applications are prepared and submitted to the USACE and the NCDENR Division of Water Quality.

Special Concerns and Issues

Mitigation for impacted dwarf-flowered heartleaf sites has been determined in consultation with USFWS. There are two types of mitigation available for this project: onsite and off-site mitigation. The following are the measures proposed for this project (note: sites are identified and discussed in greater detail in the FEIS and the Biological Assessment for this project):

- Purchase all or portions of Sites 7, 10, 11, 15, 16, 19, 20, 22, 24, 25, 28, 30, and 32 through right-of-way acquisition (these sites are within or directly adjacent to the proposed right-of-way limits for the project).

- Attempt to obtain conservation easements with access points for all of Sites 8, 9, 12, 13, 26, 33, 34, 35, and 43.

- Purchase the 1,079-acre tract of land known as the Broad River Tract (formerly known as International Paper Tract). This tract, which includes 47 acres of dwarf-flowered heartleaf habitat with 10,796 confirmed dwarf-flowered heartleaf plants, is located approximately one mile southwest of Boiling Springs. This tract has already been purchased by NCDOT.

F. MONITORING AND ENFORCEMENT PROGRAMS

Coordination will be maintained with regulatory and resource agencies during final design, permitting, right-of-way acquisition, and construction to ensure that the avoidance, minimization, and compensatory mitigation commitments will be initiated.

Federal and State Enforcement Programs

The NCDOT, through the Clean Water Act (CWA) Section 404/401 permitting process will ensure that all project commitments are duly implemented before, during, and after project construction.

Wetland impacts will be regulated by the US Army Corps of Engineers (USACE), in cooperation with the US Fish and Wildlife Service (USFWS) and the US Environmental Protection Agency (USEPA), through the CWA Section 404 permitting process. Issuance of a federal Section 404 permit requires a state Section 401 Water Quality Certification, which is administered by the NC Division of Water Quality.

Local Enforcement Programs

Cleveland County

The Cleveland County Code of Ordinances includes several clauses concerning storm water and drainage. Sec. 12-271 (Developments must drain properly) states:

> "Drainage swales, curbs and gutters, and storm drains shall be constructed in accordance with North Carolina Department of Transportation minimum standards."

Sec. 12-272 (Storm Water Management) states:

> "All developments shall be constructed and maintained so adjacent properties are not unreasonably burdened with surface waters as a result of such developments. More specifically:
>
> (1) No development may be constructed or maintained so that such development unreasonably impedes the natural flow of water from higher adjacent properties across such development, thereby unreasonably causing substantial damage to such higher adjacent properties; and
>
> (2) No development may be constructed or maintained so that surface waters from such development are unreasonably collected and channeled onto lower adjacent properties at such locations or at such volumes as to cause substantial damage to such lower adjacent properties."

City of Shelby

The City of Shelby is required to submit a plan for compliance with the NPDES Phase II rules by 2008. This will require that the City begin, among the several things noted above, a mapping program to locate and identify the various components of the stormwater system. Part of this mapping program will be an effort to track down illicit connections to the City.

The City will be responsible for adopting new standards and reviewing and approving development proposals to significantly reduce the amount of stormwater runoff (1) during construction and (2) after the development is completed.

Environmental Commitments

Environmental Commitments are shown in Appendix C, Project Commitments

G. COMMENTS AND RESPONSES ON THE FEIS

The Final EIS was approved by FHWA on January 25, 2008 and was distributed for review. Various comments concerning the FEIS for this project were received from the Federal, State and local agencies. The following is a summary of those comments and responses for each agency. Copies of the comment letters are in Appendix A.

Agency: United States Environmental Protection Agency

Letter Date: May 1, 2008

Comments/Responses:

Comment: **1** – "In EPA's comments on the 1998 DEIS, Alternative 21 (Preferred alternative and eventual LEDPA) was given a rating of "EC-2", Environmental Concerns, more information required. While some of EPA's concerns have been addressed since that time, there are several outstanding environmental concerns that EPA's continues to have regarding the proposed project. These environmental concerns are detailed in the attachment to this letter (See Attachment "A")"

Response: **1** – The concerns presented by EPA in Attachment "A" of their May 1, 2008 letter are addressed below.

Comment: **2** - "One of the difficulties in reviewing the FEIS included the presentation of the information. EPA understands that NCDOT and FHWA wanted to 're-fresh' the public record because of the time period since the 1998 issuance of the DEIS. However, the information presented concerning impacts and the Tier 1 Alternatives, Tier 2 Detailed Study Alternatives, and the Preferred Alternative made certain issues more confusing. Tables S-1 (Alternative #21 – Preferred) and S-2 should have been compared to one another to see the changes that have occurred since additional design work has been completed and additional avoidance and minimization measures implemented. For the text of the impacts in Section S.8, the ranges of the impacts between the earlier "Tier 2" alternatives does not provide any helpful information that could not be accomplished through a table such as Table S-1. Furthermore, Table S-2 provides impacts to certain resources such as streams and wetlands in a new form: right-of-way limits versus construction limits. Most permitting and resource agencies are only concerned with what aquatic resources are actually impacted (i.e., Filled, drained, piped, ditched, etc.). Aquatic resources that are un-impacted but are included within the right-of-way required for the project are not typically included in impact calculations. Similarly, impacts to other resources were prorated using the original 1000-foot corridor widths and not based upon currently proposed right-of-way widths required for the project (e.g., Agricultural lands and terrestrial forests)."

Response: **2** - A comparison of the Selected Alternative data in Table S-1 (the data presented in the DEIS that was used to make decisions on the Selected Alternative) with that in Table S-2 would not be meaningful because the data in Table S-2 was generated in a vastly different way. Specifically:

- Data sets used – Traffic data used for the DEIS studies was for the years 1994 and 2020. This data set was used for the DEIS noise and air analyses.
- Methodologies – Wetlands were identified and impacts quantified through determination (combination of mapping and field spot checking), versus the delineation used for the Selected Alternative. No stream delineations were performed at the DEIS level because that was not yet being done at that time.
- Level of detail of design plans – Functional design plans were used to determine impacts for the DEIS. More detailed preliminary design plans were prepared for the Selected Alternative after the selection was made, and subsequent impacts evaluations were based on those plans.
- Software used – Noise modeling in the DEIS for the 10 Tier 2 detailed study alternatives used the STAMINA/OPTIMA software program. The Selected Alternative noise analysis was performed using the newer TNM 2.5 software.

It should be noted that all of the above were acceptable for EIS studies performed at the time that the DEIS document was produced, and were considered acceptable for Selected Alternative decision-making when the Concurrence Point #3 meeting was held on May 5, 1999. The data in Table S-1 is the data that was used to make decisions on the Selected Alternative selection because all data in that table was produced with consistent methodologies, data sets, design plans, analysis software, etc. that were within acceptable parameters at the time that the data sets were produced. Despite the differences in the data from DEIS to FEIS, NCDOT believes that the decision made on the Selected Alternative is valid and supportable. The DEIS reevaluation dated April 30, 2007 discusses these issues in greater depth, and provides justification of the Selected Alternative decision based on the DEIS data.

The text in Section S.8, pages vii through xiii, provides impacts information other than just ranges of impacts: identification of the architectural resources affected, utility impacts, types of hazardous materials sites affected, and so forth.

The right-of-way impacts provide a "worst-case" impacts scenario for the Selected Alternative. This is important since the construction limit quantities were computed without a buffer (in accordance with established procedure at the time that the quantifications were performed for the avoidance/minimization discussions). The final impacts (construction limits plus buffer width) will most likely range somewhere between the construction limits and right-of-way limits information presented in the FEIS document.

The prorated data provided on agricultural and forest impacts was simply intended to provide an order of magnitude for the expected impacts of the 10 Tier 2 alternatives for each of those categories.

Comment: **3** - "EPA also notes that a substantial portion of the data in the FEIS, including wetland and stream information, was based upon 2001 data and not more current guidance and requirements. EPA's records also indicate that CP 4B and 4C meetings were held on portions of the project on March 17, 2004 and May 19, 2004. All data and information for this project should be updated to current requirements and accepted methodologies in the Record of Decision (ROD). Because of the length of time from pre-Merger 01 NEPA/Section 404 guidance (i.e., CP #4 in 2001) and that several sections of the project are not funded or proposed for funding until after Fiscal Year (FY) 2013, EPA requests that NCDOT and FHWA put those portions of the project in the Merger 01 process at Concurrence Point 4A, Avoidance and minimization, to insure that the most current guidelines and requirements are being addressed and documented."

Response: **3** - NCDOT will have to provide Rapanos data forms for impacted features when the permitting occurs; and changes in the upland landscape along the LEDPA could lead to some changes in hydrology patterns, which have the potential to affect wetlands and/or streams. It is likely that this effect would be relatively minor (or even non-existent), and complete re-quantification is not needed. Wetland and stream information will be re-verified during the Section 404 permit application process.

Comment: **4** - "In summary, EPA continues to have substantial environmental concerns with stream impacts, water quality impacts, air quality impacts (including Mobile Source Air Toxics – MSATs), prime farmland impacts and indirect and cumulative impacts. NCDOT and FHWA should consider the issuance of a FEIS re-evaluation considering that some of the information and requirements that have not been updated in the current FEIS."

Response: **4** - These concerns are individually addressed under the corresponding comments in Attachment A.

Comment: **5** - "EPA recommends that (unfunded) portions of this project be included in the Merger 01 process at Concurrence Point 4A, avoidance and minimization. Please continue to include EPA through the hydraulic and permit review stages as well, including the detailed avoidance and minimization efforts for stormwater management and the use of Best Management Practices (BMPs). Please include Ms. Kathy Matthews of EPA's Wetlands Section on any Concurrence Point 4B and 4C meetings in addition to any activities in developing a mitigation plan."

Response: **5** - The requirements of Concurrence Point 4A have been met through the January 17, 2001 Concurrence Point meeting. EPA will be included in any future Concurrence Point 4B and 4C meetings.

Comment: **6** - Project Description and Purpose and Need – "The document is unclear about the exact length of the proposed freeway. On Page 2-48, Table 2-10, the total length of the project based upon the project phasing for the 5 phases of R-2707 (A thru E) is estimated by EPA at 18.2 miles. Phases D and E are unfunded (i.e., Post year, after FY 2013). Phase C is only funded in the TIP for right-of-way acquisition in FY 2012. The Record of Decision (ROD) should clearly state the length of the new freeway."

Response: **6** - The lengths of the various phases of the project are shown in the revised Table 2-10 in this ROD, page 43.

Comment: **7** - Project Description and Purpose and Need – "The land required for the proposed project would be approximately 1,000 acres, which is 0.33% of the total land area of Cleveland County. It is also important to note that there are two existing US 74 routes through Shelby, the US 74 Bypass and US 74 Business. The proposed full-control of access, multi-lane freeway is a longer, northern US 74 bypass."

Response: **7** - Comment noted.

Comment: **8** - Project Description and Purpose and Need – "Exhibit 2-16 provides Year 2025 AADT volumes for the Preferred Alternative (i.e., Alternative #21). On page 2-46 of the FEIS there is also a discussion concerning the updated traffic estimates from the DEIS which used 2020 traffic numbers. Projected traffic numbers increased based upon the 2020 to 2025 update, except for the bypass segment from NC 150 to the eastern bypass terminus (i.e., 33,300 AADT to 30,900 AADT). However, EPA recommends that all projected traffic volume estimates should be updated to Year 2030 or 2035. Accident data and analysis is also from the period of 2000 to 2002 and needs to be updated."

Response: **8** - The primary objective of both the traffic data and the accident analysis was to demonstrate the deficiencies in the current system, both in terms of capacity and safety. Although future traffic could be generated for the project, the original (i.e., 1994 and 2020) traffic data achieved the objective of proving the need for this project based on capacity. The current accident analysis provides sufficient justification of the need for the project from a safety standpoint. It is unlikely that a newer accident analysis based on travel conditions on an existing roadway with a greater number of vehicles will exhibit substantial decreases in accident occurrence and/or rates that would lead to a conclusion that the project is no longer needed for safety reasons.

The (2025) traffic data generated for the Selected Alternative was an attempt to provide updated input for air quality and noise modeling for that alternative, in addition to ensuring that preliminary design met current design criteria relating to highway capacity. The results of the updated Selected Alternative noise and air quality analyses presented in the FEIS using Year 2030 or 2035 traffic indicated that carbon monoxide rates would not exceed NAAQS standards and additional cost-effective noise barriers are not warranted.

Comment: **9** - Project Description and Purpose and Need – "EPA believes that there is adequate traffic congestion (i.e., Future traffic congestion, improving safety, regional improvements to a Strategic Highway Corridor, etc.) for the proposed controlled access freeway without the secondary purpose of economic development (Pages 1-6 to 1-10, 1-25, et al.). While regionally there may be some tangible benefits in terms of reduced costs for travel time, etc., locally there may be adverse economic effects to local downtown businesses in Shelby and the loss of a portion of the tax base from the relocation of 165 residences and 25 businesses. This freeway is proposed as a fully controlled access facility and may not enhance re-development except potentially at interchange locations. Without conducting an in-depth economic development and land use study, many of the 'benefit issues' identified in the FEIS do not appear to be supported by currently available studies or reports."

Response: **9** - Many of the points raised in this portion of the text have to do with the savings of time, fuel, and money by the various identified highway user groups, and this is a valid project purpose, given the rapidly rising fuel prices in the U.S.

Comment: **10** - Project Alternatives and the Least Environmentally Damaging Preferred Alternative (LEDPA) or Preferred Alternative – "EPA does not have any major environmental concerns regarding the alternatives carried forward for detail study (Tier 2) in the DEIS/FEIS or the corridor selection of the LEDPA (Alternative #21). However, much of the data and assumptions made for avoidance and minimization to wetlands and streams, other natural resources and human resources were made in 2001. The FEIS does not address these assumptions or address the potential need to re-visit issues based upon new information or requirements, including the 2005 Merger 01 NEPA/Section 404 guidance."

Response: **10** - See Response #3 to EPA.

Comment: **11** - Project Alternatives and the Least Environmentally Damaging Preferred Alternative (LEDPA) or Preferred Alternative – "There are eight (8) interchanges proposed for the project including SR 1162, US 74 Western Bypass terminus, SR 1313, NC 226, NC 18, NC 150, US 74

Eastern Bypass terminus and SR 2245. From Exhibit 2-16, the proposed interchanges at SR 1162 and the Western Bypass Terminus appear to be very close (Approximate scale 1" = 5,000 feet and measured distance is approximately a quarter of an inch or approximately 1,250 feet)."

Response: **11** – The actual distance between the two interchanges is approximately one-half mile.

Comment: **12** - Project Alternatives and the Least Environmentally Damaging Preferred Alternative (LEDPA) or Preferred Alternative - "Eight (8) interchanges, including 6 local access interchanges for the preferred alternative (Alternative #21) is more than a number of the other alternatives considered, including Alternatives 1, 3, 7, 9, 13, 16, and 19. EPA reviewed Table 4-26, page 4-124 of the FEIS, where the types of each interchange are presented for all of the alternatives. EPA is primarily concerned with the impacts to the human and natural environment at the diamond interchange at SR 2245 (Rural residential/some agricultural uses), and the partial cloverleaf at SR 1162 (Rural agricultural/scattered residences). Interchanges at these rural locations can also cause potentially indirect and cumulative impacts to resources around these interchanges. EPA requests that NCDOT and FHWA provide detailed updated traffic justification for both of these interchanges. Both of these interchanges extend beyond the two new interchanges proposed along the existing US 74 corridor at the western and eastern termini."

Response: **12** - Direct impacts (i.e., based on the roadway footprint) to the human and natural environment resulting from the proposed configurations of the interchanges in question are reflected in Table S-2 on page xvii in the FEIS, as well as other data tables within the document. Indirect and cumulative effects are reported in the *Indirect and Cumulative Impacts Report* (May 2004) prepared for this project. As stated on Exhibit 2-12 in the FEIS, the interchange at SR 2245 was added for reasons of providing local access. The interchange at SR 1162 is needed to provide local access. Although these two interchanges are located along the widening portions of the project (rather than the new location bypass), the widening segments will be full control of access, and the roads in question can only access the US 74 highway by means of interchanges.

Comment: **13** – Stream and Wetland Impacts – "EPA provided a letter to the Army Corps of Engineers (ACE) dated May 10, 1999, on the public notice on the DEIS. None of the comments specifically identified in this letter are included in the FEIS."

Response: **13** - Please contact the US Army Corps of Engineers for responses to your letter dated May 10, 1999.

Comment: **14** - Stream and Wetland Impacts – "Wetland impacts from the preferred alternative are relatively low at 2.37 acres (based upon construction limits). EPA is uncertain as to the difference between this estimated construction impact and the projected 3.07 acres of right-of-way impacts. For consistency purposes, NCDOT and FHWA typically report the estimated impact based upon the construction limits (cuts and fills) plus 25 feet beyond slope stakes lines. Wetlands that are near the construction limits and may be drained from cut sections are also calculated in the impact total. Not all of the proposed 320-foot right-of-way is expected to be cleared. EPA is unsure what this new category of right-of-impact means in relation to the construction impact, or what will be included in the as the final impact numbers for the 404 or 401 permits."

Response: **14** - This was an early Merger effort to specify the typical difference between impacts based upon proposed right-of-way limits and anticipated construction limits using preliminary designs. The 404 and 401 permits will include impacts in terms of exact limits for those sections where final design has been completed. For any sections where final design has not been completed, impacts will be calculated as construction limits plus 25 feet.

Comment: **15** - Stream and Wetland Impacts – "Similarly, stream impacts were reported with right-of-way limits and construction limits. For right-of-way impacts the total is 24,054 linear feet with 21,940 being "mitigable". The construction limit impact total is 18,389 linear feet with 16,786 "mitigable". EPA reviewed the FEIS text, Tables D-1 and D-2, including the notes on S-5 in Table D-2, and can not find the specific 'design' definition for either. This was apparently an early 'Merger CP #4' effort to specify the typical difference between impacts based upon proposed right-of-way limits and anticipated construction limits using preliminary and/or functional designs. However, at this point in the NEPA process, NCDOT and FHWA should have more final design plans and should be able to provide the actual estimated impacts based upon the construction limit slope stakes plus 25 feet."

Response: **15** - The design used to quantify the wetland and stream impacts in the FEIS for the Selected Alternative was preliminary design. This was an early Merger effort to differentiate right-of-way and construction impacts. The design plans cannot be finalized until a Design Public Hearing is held to allow the public an opportunity to comment on the preliminary design plans. The Design Public Hearing cannot be held until the ROD is issued. After these activities have taken place, the impacts will be determined based on construction limits plus 25 feet.

Comment: **16** - Stream and Wetland Impacts – "Based upon a general comparison to other projects in the Piedmont on new location, the proposed Shelby Bypass has high impacts to streams in the project area (i.e., Greater than 1,000 linear feet per mile of roadway improvement). EPA would request

that additional avoidance and minimization to streams be considered by the agencies."

Response: **16** - Avoidance and minimization was examined in-depth during the CP #4 Merger meetings held on January 4, 2001 (field pre-meeting) and January 17, 2001. The decisions made at those meetings represent the best balance that the Merger Team was able to achieve between impacts to one resource and another. Alterations to the horizontal or vertical alignments to avoid one stream crossing would cause greater impacts to another.

Comment: **17** - Stream and Wetland Impacts – "The FEIS lists four streams that are on the Section 303(d) list for impaired streams, including Brushy Creek, Beaverdam Creek, Buffalo Creek and Lick Creek. There is no discussion concerning the implications of potential impacts to these already impaired waters of the U.S. Based upon more recent DWQ data (2008) on 303(d) listed waters in North Carolina, Buffalo Creek and First Broad River is listed and not Brushy Creek, Beaverdam Creek, and Lick Creek. NCDOT and FHWA need to correct and/or clarify this information and develop a detailed stormwater management plan that eliminates further degradation to any 303(d) listed streams. EPA also notes that hazardous spill catch basins may be required by DWQ at the First Broad River crossing. Combined stormwater retention and hazardous spill catch basins should also be considered in the final designs. The administrative record and potentially the ROD should include appropriate environmental commitments to protect downstream water quality for 'confirmed' 303(d) listed streams."

Response: **17** - A clarification is needed of the information presented in the FEIS concerning 303(d) listed streams. The 303(d) stream designations have changed. These changes would not substantively affect the ICE analysis for the project. The updated 303(d) listings are included on page 50 in this ROD.

Comment: **18** - Stream and Wetland Impacts – "EPA also notes that NCDOT used the DWQ Wetland Rating system and another consultant developed wetland assessment method from the 1990's. Due to the relatively small impact to wetlands for the proposed project, EPA is not requesting a quality re-assessment based upon more current methodologies. However, this 'pre-Merger 01' assessment illustrates EPA's concern that the project's avoidance and minimization efforts have not been brought up to more current guidance and requirements."

Response: **18** - The consultant developed wetland assessment method was presented to provide supplemental information in terms of wetland quality and function; it was not intended as the sole definition of wetland quality or

function. The DWQ rating system is still in use and should be considered as current.

Comment: **19** - Stream and Wetland Impacts – "It is also important for EPA to emphasis the new guidelines concerning jurisdictional determinations to waters of the U.S. and that NCDOT and FHWA should confirm the jurisdictional determinations that were made for the impacted streams and wetlands. Ms. Kathy Matthews of EPA has previously forwarded the new jurisdictional form and instruction manual to NCDOT. Depending upon the time of permitting, NCDOT may be required to adhere to the new guidance and requirements by the ACE."

Response: **19** - NCDOT will use the new guidelines concerning jurisdictional determinations to waters of the U.S., and will confirm the jurisdictional determinations that were made for the impacted streams and wetlands when preparing the 404 and 401 applications.

Comment: **20** - Additional Avoidance and Minimization Measures for Streams and Wetlands – "EPA requests that NCDOT and FHWA specifically identify what additional avoidance and minimization opportunities there maybe to reduce impacts to streams in the project study area and that these measures should be included in the final designs. It is important to note that stream impacts associated with the two SR route interchanges could be reduced and/or eliminated depending upon the current traffic need for these proposed facilities. Retention basins and other strict adherence to Best Management Practices (BMPs) will also be needed to protect critical water supply waters and 303(d) listed streams."

Response: **20** - Additional avoidance and minimization opportunities cannot be identified until the final designs are prepared following the Design Public Hearing. Retention basins and other strict adherence to Best Management Practices (BMPs) will be used to protect critical water supply waters and 303(d) listed streams.

Comment: **21** - Additional Avoidance and Minimization Measures for Streams and Wetlands – "EPA acknowledges the environmental commitment to provide 2:1 side slopes in wetland areas, the use of native vegetation to stabilize banks, and stream relocation efforts (Tributary to Buffalo Creek and a tributary to the First Broad River). NCDOT and FHWA should also consider median reductions at bridge crossings to minimize the construction footprint of the proposed project. The NCDOT is using a 320-foot right-of-way width as the 'minimum' roadway design criteria for a new location freeway. Most new location, multi-lane facilities planned and implemented in the last 5-7 years have a right-of-way width of 300 feet or less."

Response: **21** - NCDOT and FHWA will consider median reductions at bridge crossings during preparation of final design plans to minimize the construction footprint of the proposed project. The 320-foot right-of-way being used is a result of the use of metric in the original project design, and conversion of metric (100-meter right-of-way width) to English units. The impacts of the roadway footprint will be the same regardless of the right-of-way width

Comment: **22** - Stream and Wetland Mitigation – "In the Environmental Commitments ("Green sheets"), pages 1 and 2 of 5, NCDOT and FHWA exclude EPA concerning discussions about wetland and stream relocations and mitigation and the development of mitigation plans. EPA has been involved in this project since the issuance of the DEIS. NCDOT has acknowledged EPA's DEIS comments and responded to comments in the FEIS. EPA has attended the CP 4B and 4C meetings for the "A" section of the proposed project. EPA requests that it be included with other resource and permitting agencies on all issues pertaining to either on-site mitigation and/or the development of all compensatory mitigation plans for jurisdictional impacts to wetlands and streams under Section 404 of the Clean Water Act.

Specifically, Ms. Kathy Matthews of EPA's Wetland Sections should be contacted regarding these matters and the Environmental Commitments revised to include EPA."

Response: **22** - EPA will be included with other resource and permitting agencies on all issues pertaining to either on-site mitigation and/or the development of all compensatory mitigation plans for jurisdictional impacts to wetlands and streams under Section 404 of the Clean Water Act.

Comment: **23** - Stream and Wetland Mitigation – "Due to the significant amount of stream impacts from the proposed project, EPA requests that detailed coordination on compensatory mitigation plan efforts be commenced as soon as possible. The FEIS lacks a detailed discussion concerning compensatory mitigation. On pages 4-109 and 4-112 of the FEIS, there are misleading statements concerning compensatory mitigation. In Section 4.13.2, Stream Impacts, the first sentence states: "Impacts to streams are a jurisdictional issue for NCDENR". The language in this section of mitigation in the FEIS makes it appear that the U.S. Army Corps of Engineers and EPA have no jurisdictional role in compensatory mitigation for stream impacts. In the mitigation section of the FEIS there is a repeated discussion concerning avoidance and minimization, which is the section before the mitigation discussion. This is confusing and has not been updated. Page 4-107 cites the 1997 Interagency Agreement Integrating Section 404/NEPA. This is an outdated agreement superseded by the 2005 Merger 01 NEPA/Section 404 Memorandum of Understanding (MOU). This section also references a copy of the merger agreement in Appendix A.2. Appendix A.2 contains agency coordination

correspondence and some early CP #4 signed concurrence forms on avoidance and minimization. The signed forms reference avoidance and minimization measures are described in 'attached handouts'. These handouts are not included specifically in the FEIS."

Response: **23** - Compensatory mitigation cannot be fully established until the final design is completed. Section 4.13.2 of the FEIS has been updated in this ROD to include mitigation discussion (see Section H, pages 48 through 50, Revisions and Corrections). The 1997 Interagency Agreement is referenced on Page 4-107 because that was the agreement in effect when the initial avoidance and minimization (CP #4) meeting/concurrence occurred, and it is consistent with the concurrence form included in Appendix A.2. The attached handouts referenced on the CP #4 form would be the various tables included in Appendix D of the FEIS.

Comment: **24** - Stream and Wetland Mitigation – "EPA notes that NCDOT appears to have purchased the "International Paper" site (now called the Broad River site). This 1,079-acre site was investigated in the late 1990's for wetland and stream mitigation for the proposed project. However, at this time it appears to be proposed only for mitigation for the Dwarf-Flowered Heartleaf and is not included in the discussions for compensatory mitigation for streams and wetlands. Details of any future mitigation plans for this site in relation to stream and wetland impacts associate with the Shelby Bypass are not provided in the FEIS. There were potential opportunities for on-site or other wetland and stream restoration projects (in addition to preservation), but these issues are not discussed in the FEIS. EPA refers specifically to the Item 32, page 18, of the 2005 NEPA/Section 404 Merger 01 MOU and Guidance Manual."

Response: **24** - Use of the "International Paper" (Broad River) site for mitigation of stream and/or wetland impacts will be explored when the final design is complete and during the preparation of the Section 404 permit application.

Comment: **25** - Noise Receptor Impacts and Noise Abatement – "Based on the DEIS analysis the Preferred alternative would impact 147 noise receptors, of which 84 would approach or exceed FHWA Noise Abatement Criteria (NAC). Seven locations for noise abatement walls were evaluated and two of the barriers appear to be feasible (i.e., Barrier locations D and F). There would be 28 benefited receptors based upon the FEIS noise abatement analysis. Noise impacts in detail are discussed on pages 4-51 to 4-67 of the FEIS. The total impacted number of receptors exceeding NAC is now 68, with 40 total impacted receptors after abatement noise barriers (Table S-2)."

Response: **25** - Comment noted.

Comment: **26** - Air Quality and Mobile Source Air Toxics (MSATs) – "In Section 3.6.3, page 3-51, the FEIS includes the statement that the average route speed for the proposed project was assumed to be 55 miles per hour based upon the freeway nature of its design and was used in calculating future Carbon monoxide (CO) emissions. Considering other multi-lane, divided freeways in the North Carolina and Strategic Highways, this assumption does not appear to be supported by actually studies or available data for other expanded segments of the US 74 corridor. The design speed for this facility is 70 miles per hour (minimum: Table 2-2). The statement "CO emissions also decrease at higher speeds because of more efficient engine operation", is also misleading to the public. Based upon USDOT and FHWA studies and reports, there is an optimum range concerning speed with engine efficiency and performance and CO and other pollutant emission rates.

Response: **26** - The design speed for this project is 70 miles per hour. The actual operating speed for the facility will be 55 miles per hour. The modeling is intended to simulate actual conditions on the roadway, so 55 miles per hour would seem to be a more accurate representation of future conditions than 70 miles per hour. The discussion in the FEIS concerning CO emissions decreases is based on MOBILE5A outputs.

Comment: **27** - Air Quality and Mobile Source Air Toxics (MSATs) – "Table 4-9 of the FEIS includes future year CO concentrations in parts per million (one-hour) for 2 receptors using generic year 2020 traffic and year 2025 preferred alternative estimates. Future CO concentrations need to be updated to more current traffic forecasts for 2030 or even 2035. There are sections of the proposed project that are unfunded and post-year let beyond 2013. EPA requests that these analyses and comparisons to current NAAQS standards be updated to future traffic projections. Furthermore, EPA is uncertain as to the specific meaning of the environmental commitment on page 2 of 5 regarding future air quality ("Any future air quality analysis of this project will include a review of vehicle-mix percentages, given the industrial nature of the portions of the project area"). This is a FEIS and there is typically no additional air quality studies conducted for projects after this stage in the NEPA process. This vehicle-mix percentages analysis should be conducted and provided to EPA prior to the issuance of a ROD."

Response: **27** - The future air quality commitment was in response to an EPA comment received on the project DEIS (January 22, 1999 letter). Although post-FEIS analysis was not anticipated at that time, the project commitment was an attempt to respond to EPA's earlier comment.

Comment: **28** - Air Quality and Mobile Source Air Toxics (MSATs) – "The FEIS does not address any of the Clean Air Act requirements for evaluating MSATs. EPA also regulates air toxics from mobile sources (EPA issued a Final

Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources, 66 FR 17229, March 29, 2001). The FEIS does not include FHWA's generic qualitative guidance on MSATs. Before the issuance of a ROD, EPA requests that NCDOT and FHWA address MSATs for the proposed project. This would include the description of the affected environment, an analysis of existing and future MSATs conditions, identification of any potential sensitive receptors, potential adverse impacts, and any proposed avoidance, minimization or mitigation for these adverse effects to sensitive receptors."

Response: **28** - Information on MSATs is included in this ROD (see Section H, pages 43 through 47, Revisions and Corrections).

Comment: **29** - Prime Farmlands – "The FEIS states that there are an estimated 258 acres of agricultural/cleared land impacts based upon prorated corridor data (Page vii, et al). On page xi, the FEIS includes the category of prime, important and unique farmland impacts for the preferred alternative to be an estimated 298 acres of prime farmland and 268 acres of important farmland, also based on prorated corridor data. EPA notes the environmental commitment regarding 'farmlands' on page 4 of 5. This commitment is potentially required for impacts to farmlands that are regulated under the Farmland Protection Policy Act of 1981. This includes prime farmlands, unique farmlands, and farmlands of State-wide or local importance as per the regulations contained at Title 7, U.S.C. 658."

Response: **29** - Comment noted.

Comment: **30** - Prime Farmlands – "EPA is very concerned that the Natural Resource Conservation Service (NRCS) did not conduct an analysis of prime farmland soils in the project study area. Referring to the letter from August 23, 1996, in Appendix A.2, it is stated that due to a lack of soil information we cannot complete the AD-1006 form for the project. More than decade has transpired since this communication with NCDOT's consultant and there is no documentation that a re-analysis was requested by NCDOT and FHWA (excluding the NRCS's "no comment letter of November 30, 1998, on the DEIS). Soils information provided in Section 3.10 and 4.10, including Table 4-16, Estimated Special Status Farmland Impacts. EPA does not understand how this assessment was completed when NRCS did not apply the Land Evaluation Site Assessment criteria (LESA) and complete AD-1006 forms. There are no evaluation forms contained in the FEIS. There is no other information in the FEIS that indicates that a 'conforming' prime farmland assessment was performed by a competent agency or person. Specific impacts shown are approximated right-of-way impacts based upon prorated corridor values. These impacts estimates to 'potentially' protected farmlands are very significant (i.e., More than 560 acres or more than half of the total right-of-way acreage needed for the project). The local and regional economic effects due to direct losses to prime farmlands could be drastic and far-

reaching. EPA requests that these issues be addressed and coordinated with NRCS and/or the NC State Department of Agriculture before a ROD is signed. EPA also anticipates that the impact to actual prime farmlands meeting NRCS criteria is potentially less than is being reported in the FEIS."

Response: **30** - An SCS-CPA-106 form was submitted to the Natural Resources Conservation Service on July 23, 2008, and completed by NRCS. The farmlands on this project are not eligible for Federal protection. Information on this is included in Section H, pages 47 through 48 and Appendix B of this ROD.

Comment: **31** - Critical Water Supply Watersheds – "Exhibit 3-14 includes water quality features for the project study area (undated map). There are two distinct water supply watershed areas (WS-III CA; and protected areas) and two critical areas shown in the Exhibit. It appears from the map that the Preferred Alternative corridor is within the critical water supply area known as NCS Kings Mountain Reservoir or Moss Lake. It is unclear from the review of the FEIS, pages 3-78 to 3-80 and pages 4-91 to 4-93 if the proposed freeway will have an impact on protected areas within the protected areas of the watersheds (quantified in acres). According to the FEIS, WS-III rules state that 'construction of new roads and bridges should minimize built upon area, etc'. EPA cannot specifically find what measures were developed or designed by NCDOT to minimize built upon areas within the WS-III protected areas. EPA acknowledges the general environmental commitment to sensitive waters, Item #3 on page 2 of 5. However, this general commitment does not specifically address how the proposed project minimizes 'built upon areas' within protected watersheds (e.g., Narrower right-of-way widths)."

Response: **31** - The proposed freeway right-of-way will not have an effect on the WSCA for either Moss Lake or the First Broad River. Measures being employed to minimize impacts to built upon areas could include Best Management Practices such as grass swales and pre-formed scour holes and use of hazardous spill basins. This will not be fully defined until final design.

Comment: **32** - Other Potential Impacts – "The FEIS provides a substantial amount of information and commitments regarding the Dwarf-flowered Heartleaf plants. NCDOT and FHWA appeared to have coordinated extensively with U.S. Fish and Wildlife (FWS) and other agencies regarding this threatened and endangered plant species."

Response: **32** - Comment noted.

Comment: **33** - Other Potential Impacts – "EPA notes that the terrestrial forest impacts are estimated at 277 acres for the preferred alternative. The FEIS

also includes an environmental commitment regarding wildlife passage at Brushy Creek (Item #6, Page 3 of 5). The design for the wildlife passage should also be coordinated with NC Wildlife Resources Commission (WRC) in addition to FWS."

Response: **33** - Any designs for wildlife passage will be coordinated with NC Wildlife Resources Commission.

Comment: **34** - Indirect and Cumulative Impacts (ICI) – "The FEIS addresses ICI in Section 4.16. One page 4-138 on induced development potential, the FEIS states that the potential conflicts of interchanges with notable features can be ameliorated somewhat through use of minimization strategies. Some of these strategies are identified on page 4-139 and include: Set an acceptable threshold for wetland and floodplain loss or degradation (?); and require the implementation of least-invasive practices for sand and gravel mining. This entire ICI section needs to be revised to reflect more current conditions and understanding of natural and human resource impacts associated with new location bypass facilities. Table 4-29 of project-specific notable features is important information and should be retained for further ICI studies. Due to potential direct and indirect and cumulative impacts to 303(d) listed streams in the project area, EPA requests that a more quantitative ICI be provided. EPA's requests that the quantitative ICI identify how these population trends might change with and without the bypass. The ICI should include an analysis of the potential long-term impact on Shelby's population, economic sustainability, water quality and water supply resources, changes in land use patterns, etc. Copies of the quantitative ICI information should be provided to Ms. Kathy Matthews and Mr. Militscher for review. On page 4-143, it indicates that direct impacts have been established by the design, but does not identify what level of design (preliminary or final) has been completed to this point in the NEPA process."

Response: **34** – The 2003 ICE analysis will be supplemented to reflect any changes. It will include more discussion of specific growth areas, as well as the municipal planning regulatory environment.

Agency: **North Carolina Department of Environment and Natural Resources**

Letter Date: April 9, 2008

Comments/Responses:

Comment: **1** - "The Department of Environment and Natural Resources has reviewed the proposed information. The applicant is encouraged to consider the attached recommendations by the Division of Water Quality. Addressing these comments during the review process and/or during the NEPA Merger Process will avoid delays during the permit phase."

Response: **1** - Ongoing agency coordination will be maintained to expedite the project. Several divisions within NCDENR have been involved in the Merger Process, and their concerns have been addressed during the various Concurrence Points meetings.

Agency: **North Carolina Department of Environment and Natural Resources, Division of Water Quality**

Letter Date: March 31, 2008

Comments/Responses:

Comment: **1** – Project Specific Comments - "2. Review of the project reveals the presence of surface waters classified as Water Supply Critical Area in the project study area. Given the potential for impacts to these resources during the project implementation, the DWQ requests that DOT strictly adhere to North Carolina regulations entitled "Design Standards in Sensitive Watersheds" (15A NCAC 04B. 0124) throughout design and construction of the project. This applies to all areas that drain to streams having WS CA (Water Supply Critical Area) classifications. This includes all tributaries upstream of Moss Lake and on the First Broad River and its upstream tributaries."

Response: **1** - There are no High Quality Waters present in the project study area. Therefore, "Design Standards in Sensitive Watersheds" do not apply on this project. It is understood that the supplemental classification of CA may require special considerations such as hazardous spill basins and/or in the stormwater management plan.

Comment: **2** – Project Specific Comments - "3. The NCDOT will be required to design, construct, and maintain hazardous spill catch basin(s) on the main stem of the First Broad River and its associated tributaries. The number of catch basins installed should be determined by the design of the bridge(s), so that runoff would enter said basin(s) rather than flowing directly into the stream, and in consultation with the DWQ. "

Response: **2** - Comment noted.

Comment: **3** – General Comments - "1. The environmental document should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification."

Response: **3** - Itemized wetland and stream impacts are presented in Table 4-24(a) of the FEIS. Additional information on avoidance and minimization measures for the Selected Alternative is presented in Tables D-1, D-2 and D-3 in Appendix D. A mitigation plan will be prepared as a part of the 401 Water Certification Application.

Comment: **4** – General Comments - "2. Environmental assessment alternatives should consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives should include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NC DWQ *Stormwater Best Management Practices*, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc."

Response: **4** - Comment noted.

Comment: **5** – General Comments - "3. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation."

Response: **5** - Comment noted. Further measures may be available after final design.

Comment: **6** – General Comments - "4. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation."

Response: **6** - Comment noted. Further measures may be available after final design.

Comment: **7** – General Comments - "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."

Response: **7** - Comment noted.

Comment: **8** – General Comments - "6. DWQ is very concerned with sediment and erosion impacts that could result from this project. NC DOT should address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts."

Response: **8** - This information is included on pages 4-91 through 4-93 of the FEIS.

Comment: **9** – General Comments - "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."

Response: **9** - An analysis of the cumulative and secondary effects anticipated as a result of this project was completed in May 2004, and a summary of this document was provided in the FEIS on pages 4-132 through 4-139.

Comment: **10** – General Comments - "8. NC DOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application."

Response: **10** - Comment noted.

Comment: **11** – General Comments - "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 the bridge bents in the creek, to the maximum extent practicable."

Response: **11** - Culverts will be countersunk to allow unimpeded passage by fish and other aquatic organisms. Bridging being used at the wetland area at Brushy Creek will reduce wetland impacts at that location. The Merger Process Team agreed on the bridge lengths at these locations at the Concurrence Point 4 meeting held on January 17, 2001. Bridge bents will not be installed in the creeks to the extent practicable under NCDOT structure design guidelines.

Comment: **12** – General Comments - "10. Sediment and erosion control measures should not be placed in wetlands or streams."

Response: **12** - Sediment and erosion control measures will not be placed in wetlands or streams to the maximum extent practicable.

Comment: **13** – General Comments - "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."

Response: **13** - Comment noted.

Comment: **14** – General Comments - "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."

Response: **14** - Comment noted.

Comment: **15** – General Comments - "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. 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."

Response: **15** - Information on avoidance and minimization of wetland and stream impacts, a stormwater management plan, and appropriate mitigation plans will be included in the permit application.

Comment: **16** – General Comments - "14. Bridge supports (bents) should not be placed in the stream when possible."

Response: **16** - - Comment noted.

Comment: **17** – General Comments - "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."

Response: **17** - Spanning structures will be used whenever possible. Past Merger Process Team discussions concerning horizontal and vertical clearances of the proposed waterway structures for the project have included consideration of wildlife passage issues.

Comment: **18** – General Comments - "16. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NC DWQ *Stormwater Best Management Practices.*"

Response: **18** - Comment noted.

Comment: **19** – General Comments - "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."

Response: **19** - Comment noted.

Comment: **20** – General Comments - "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."

Response: **20** - If temporary access roads or detours are constructed, the site will be graded to its preconstruction contours and elevations. Disturbed areas will be seeded or mulched to stabilize the soil and appropriate native woody species will be planted. When using temporary structures, the area will be cleared but not grubbed. The area will be cleared with chain saws, mowers, bush hogs, or other mechanized equipment and leaving the

stumps and root mat intact to allow the area to re-vegetate naturally and minimizes soil disturbance.

Comment: **21** – General Comments - "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, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required."

Response: **21** - Comment noted.

Comment: **22** – General Comments - "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 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."

Response: **22** - Comment noted.

Comment: **23** – General Comments - "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."

Response: **23** – Final design is underway and the need for test borings has not been established. In the event that they are needed, NCDOT will coordinate the permitting with the Division of Water Quality.

Comment: **24** – General Comments - "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."

Response: **24** - Comment noted.

Comment: **25** – General Comments - "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."

Response: **25** - Comment noted.

Comment: **26** – General Comments - "24. While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval."

Response: **26** - Qualified wetland personnel performed onsite wetland delineations in 1999. If needed during the permit application process, additional jurisdictional wetland delineations will be performed.

Comment: **27** – General Comments - "25. 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."

Response: **27** - Comment noted.

Comment: **28** – General Comments - "26. 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."

Response: **28** - Comment noted.

Comment: **29** – General Comments - "27. 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."

Response: **29** - Comment noted.

Agency: **North Carolina Wildlife Resources Commission**

Letter Date: April 4, 2008

Comments/Responses:

Comment: **1** - "North Carolina Department of Transportation (NCDOT) has submitted for review a Final Environmental Impact Statement (FEIS) document for the subject project. Staff biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the information provided and have participated in the Merger process for the latter planning stages of this project. 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 construct a four-lane controlled access freeway on new location to bypass the existing four-lane section of US 74 through Shelby. The Draft Environmental Impact Statement (DEIS) was approved October 1, 1998. Although over nine years have passed since the draft document, many aspects of the project were not updated in the FEIS. For example, traffic data from 1994 were used as "existing" traffic conditions and the projected Year 2020 traffic data came from that used in the 1998 DEIS. Accident analysis in the FEIS examined reported accidents from Years 2000 through 2002."

Response: **1** - NCDOT believes that the information presented in the FEIS is still valid in terms of the decision-making based on that information, and the specific uses of the various data sets. For example, the primary purpose of the traffic was to justify the need for a four-lane controlled access freeway facility. Since the 1994/2020 data achieved that goal, newer data was not necessary for that purpose. Additional 2025 traffic was generated for the Selected Alternative (presented in Exhibit 2-16) due to the need for more up-to-date volumes for regeneration of noise and air quality analyses, and for preliminary design of that alternative. The accident analysis for 2000-2002 pointed to safety deficiencies which would likely be reduced or eliminated with the construction of the project. Newer accident data, which would have been based on higher traffic volumes and more crowded roadway conditions, would have served to reinforce these conclusions but was not critical to making the point that improvement of safety is a project purpose. A DEIS Reevaluation approved in April 2007 addressed these issues in detail.

Comment: **2** - "An alternative to the south of Shelby was eliminated from the preliminary alternatives prior to the analysis of the Tier 1 Detailed Study Alternatives (DSA's), despite receiving early support from NCDOT and requests from some resource agencies to include it in the analysis upon review of the DEIS. An upgrade existing alternative, which also received some resource agency support, was considered in the Tier 1 detailed studies, but was not carried forward to the Tier 2 Detailed Study

Alternatives. The Tier 2 DSA's consisted of two basic parallel corridors north of Shelby with cross-over segments between them that create ten end-to-end alternatives. The project entered the newly established Merger process at Concurrence Point 3, and the southernmost corridor, Alternative 21, was selected as the Least Environmentally Damaging Practicable Alternative (LEDPA) on May 5 1999. In addition, several resource agencies requested that estimated stream impacts for the various alternatives be reported in linear feet, as opposed to acres, however linear feet of impacts was only reported for the Preferred Alternative in the FEIS."

Response: **2** - The issue of the elimination of the southern alternatives as viable alternatives was discussed at the May 5, 1999 Concurrence Point #3 meeting with resource agency representatives. It was understood that since the project was a pipeline project and had been inserted into the Merger Process at CP #3 that the agencies had some concerns about decisions made regarding prior concurrence points. Following discussions concerning those alternatives, the agency representatives indicated that they were satisfied by the decision made to eliminate the southern alternatives, but requested that additional qualitative/ quantitative data be included in the FEIS to further support that decision. Tables 2-4, 2-5(a) and 2-5(b) (pages 2-17 through 2-19 of the FEIS) were added to the FEIS in response to this request, as well as extensive information on the reasons for the elimination of Segments D-Q and A-R (the two southern alternatives). The social and cultural impacts of the Upgrade alternative (as shown in Table 2-6 as Alternative 25) were clearly excessive in comparison with the other Tier 1 alternatives, due to the amount of pre-existing development along the existing US 74 Bypass segment. The stream impacts reported for the 10 Tier 2 alternatives were provided in terms of both numbers of stream crossings and surface water areas (see Tables 4-19(a), 4-23(a), and 4-23(b)), according to the established procedure at the time the studies were performed. Although this procedure has since changed, the information provided by these two parameters is sufficient to provide a valid order-of-magnitude comparison of the 10 Tier 2 alternatives for Selected Alternative decision-making. The stream delineations and linear feet calculated for the Selected Alternative serve to provide the information needed for the required permits.

Comment: **3** - "Based on preliminary roadway design plans and more detailed studies performed, the jurisdictional impacts within the construction limits for Alternative 21 total 18,389 linear feet of stream and 2.393 acres of wetlands. Waterways crossed by the preferred alternative include main stem and/or tributaries to Sandy Run Creek, Beaverdam Creek, Brushy Creek, First Broad River, Hickory Creek, Kings Mountain Reservoir/Moss Lake, Buffalo Creek, Potts Creek, and Beason Creek. Based on the information provided, the project area streams appear to be degraded. The high incidence of Natural Stream Channel classifications of G and F type channels indicates that theses streams are probably not stable and are likely undergoing excessive down-cutting and bank erosion. Benthic macroinvertebrate sampling stations on Brushy, Hickory and Buffalo

Creeks revealed water quality ratings of Fair and Poor in 1991. Table 4-29 indicates portions of Brushy, Beaverdam, Buffalo, and Lick Creeks as being on the state's 303(d) list of impaired waters."

Response: **3** - The 303(d) stream designations have changed. The updated 303(d) listings are included on page 50 in this ROD.

Comment: **4** - "Protection and restoration of area streams and water quality will be important to this project. Stream crossings should be evaluated for the opportunity to include floodplain pipes in the roadway fill adjacent to the stream crossing structures to spread out flood flows and minimize stream channel degradation and damage to properties and structures in the area. Alternating baffles should be installed in culverts in such a manner that mimics the natural sinuosity of the stream and promotes aquatic life passage. Mitigation efforts should focus on improving the habitat, water quality, and stream channel conditions of project area streams."

Response: **4** - Comment noted.

Comment: **5** - "We appreciate NCDOT's efforts to provide some large mammal crossings at major waterway crossings to reduce habitat fragmentation and improve roadway safety for motorists. Bridges are proposed for crossings of the Beaverdam, Brushy, and Buffalo Creeks and the First Broad River. In the Project Commitments section of the FEIS (green sheets), NCDOT indicates they will coordinate wildlife passage designs with USFWS on page 3 of 5. NCRWC requests that we be included in this coordination. Also, the first bullet on this page says "Trees will be cut at the base to create root wads to help stabilize the banks." However, a significant length of the trunk should remain connected to root wads used for bank stabilization and stream restoration, so that the trucks can be buried in the bank to keep the root wads in place. We recommend that tree clearing for the project occur outside of bird nesting periods to the extent practicable, to protect migratory birds, many of which are in decline."

Response: **5** - NCRWC will be included in coordination of wildlife passage designs. A significant length of the trunk will be left connected to root wads used for bank stabilization and stream restoration. Tree clearing for the project will occur outside of bird nesting periods to the extent practicable, to protect migratory birds.

Comment: **6** - "Cumulative and secondary impacts are a major concern for this project. The proposed roadway will have full control of access, which will minimize development adjacent to the roadway; however induced development is expected near the intersections and in the general project vicinity due to the proximity of a freeway facility. The document indicated the area north of Shelby is where the majority of growth is occurring and

expected in the future. The Cleveland County Land Use Plan (from 2005) strongly discourages the proliferation of urban sprawl and indicates a desire to preserve the rural character and open spaces of the county. However it does not appear that ordinances are place to provide adequate protection in natural lands and water quality and to prevent urban sprawl."

Response: **6** – Cleveland County may not have sufficient ordinances in place to provide adequate protection to natural lands and water quality, or to prevent urban sprawl. The 2003 ICE analysis will be updated to reflect any changes. It will include more discussion of specific growth areas, as well as the municipal planning regulatory environment.

Comment: **7** – "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 the receiving waters (Schueler 1994) and the quality of fish habitat and wetlands are negatively impacted (Booth 1991, Taylor 1993). Stormwater quantity and quality should be managed using Low Impact Development (LID) techniques and there should be no net gain in flood stage. Information on LID practices and measures can be found at www.lowimpactdevelopment.org, http://www.epa.gov/owow/nps/lid/lidnatl.pdf and http://www.stormwatercenter.net/. Measures to mitigate secondary and cumulative impacts can be found in the Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality (NCWRC 2002). Local authorities and NCDOT should work together to develop strategies that prevent further degradation of area streams, improve water quality, and ensure proper management of secondary growth prior to permit application."

Response: **7** – Comment noted.

H. REVISIONS AND CORRECTIONS

Since the finalization of the FEIS on January 25, 2008, the following items were revised or corrected (note: revisions are in bold and italicized):

Clarification to FEIS Section 1.5.3

The existing (year 1994) level of service of B for the NC 150/18 interchange is for the ramp terminals.

Updates to FEIS Table 1-4

Table 1-4
CRASH RATES ON EXISTING US 74 IN THE STUDY AREA

Segment (1)	Roadway Typical Section (2)	ADT (3)	Length (miles)	ACCIDENTS		TOTAL RATE 100 mvm		FATAL RATE 100 mvm	
				Total	Fatal	US 74 (4)	Statewide (5)	US 74 (4)	Statewide (5)
US 74 from 0.3 mile west of SR 1162 to US 74 Business	4-lane divided rural (6)	21,900	6.18	208	2	140.2*	***83.22***	1.35*	***1.11***
Existing US 74 Bypass	4-lane divided urban (6)	35,000	5.64	482	1	222.8	***245.66***	0.46	***0.76***
US 74 from US 74 Business to SR 1001	4-lane divided rural (6)	30,600	4.49	169	0	112.23*	83.22	0.00	1.11

* US 74 rate exceeds statewide rate.

(1) Segments listed in order from west to east.
(2) "Roadway Typical Section" reflects conditions during the accident analysis period.
(3) Average Daily Traffic figures supplied in NCDOT accident reports.
(4) NCDOT Traffic Accident Reports for US 74 for 1/1/00 through 12/31/02.
(5) NCDOT "Crash Rates for 2000-2002 by Road System, Type and Control".
(6) Partial control of access.

Updates to FEIS Table 2-10

Table 2-10
PROJECT PHASING FOR PREFERRED ALTERNATIVE

Segment Designation	Approximate Segment Limits	Approximate Length	TENTATIVE DATE	
			ROW Acquisition	Construction Letting
R-2707 A	West of SR 1162 to west of SR 1314	***3.93*** miles	FY ***2009***	FY 2012
R-2707 B	West of SR 1314 to west of NC 226	***2.62*** miles	FY ***2009***	FY 2011
R-2707 C	West of NC 226 to west of NC 150	***5.34*** miles	FY ***2014***	PY
R-2707 D	West of NC 150 to existing US 74 west of SR 2238	***4.09*** miles	PY	PY
R-2707 E	Existing US 74 west of SR 2238 to west of SR 1001	***2.64*** miles	PY	PY
TOTAL	***N/A***	***18.62*** miles	***N/A***	***N/A***

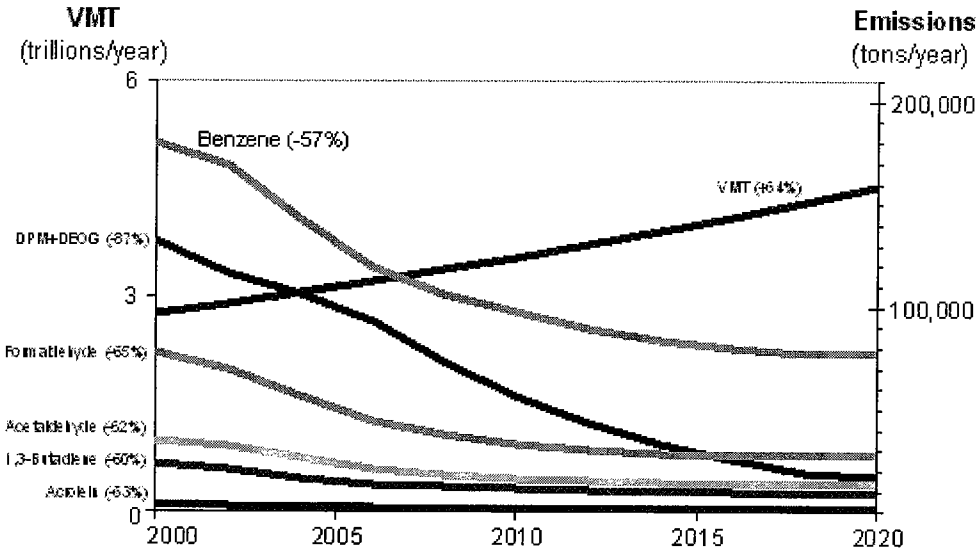
Mobile Source Air Toxics (MSATs)
(Addendum to FEIS Section 4.6 Air Quality Impacts)

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

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources. 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent, as shown in the following graph:

U.S. Annual Vehicle Miles Traveled (VMT) vs. Mobile Source Air Toxics Emissions, 2000-2020



Notes: For on-road mobile sources. Emissions factors were generated using MOBILE6.2. MTBE proportion of market for oxygenates is held constant, at 50%. Gasoline RVP and oxygenate content are held constant. VMT: Highway Statistics 2000, Table VM-2 for 2000, analysis assumes annual growth rate of 2.5%. "DPM + DEOG" is based on MOBILE6.2-generated factors for elemental carbon, organic carbon and SO4 from diesel-powered vehicles, with the particle size cutoff set at 10.0 microns.

As a result, EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(l) that will address these issues and could make adjustments to the full 21 and the primary six MSATs.

Unavailable Information for Project Specific MSAT Impact Analysis

This [ROD] includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this [EA or EIS]. Due to these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information:

For each alternative in this ROD, the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the Preferred Alternative (Alternative 21) is slightly higher than that for the No Build Alternative, because the interchange facilitates new development that attracts trips that were not occurring in this area before. This increase in VMT means MSATs under the Preferred Alternative would probably be higher than the No Build Alternative in the study area. There could also be localized differences in MSATs from indirect effects of the project such as associated access traffic, emissions of evaporative MSATs (e.g., benzene) from parked cars, and emissions of diesel particulate matter from delivery trucks, depending on the

type and extent of development. On a regional scale, this emissions increase would be offset somewhat by reduced travel to other destinations.

Because the estimated VMT under each of the Build Alternatives are nearly the same, it is expected there would be no appreciable difference in overall MSAT emissions among the various Build Alternatives. For all Alternatives, emissions are virtually certain to be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent from 2000 to 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future than they are today.

The new ramps [and accel/decel lanes] [and additional lanes on the crossing arterial streets] contemplated as part of the project alternatives will have the effect of moving some traffic closer to nearby homes, schools and businesses; therefore, under each alternative there may be localized areas where ambient concentrations of MSATs would be higher under certain Alternatives than others]. The localized differences in MSAT concentrations would likely be most pronounced along the new/expanded roadway sections that would be built at new interchanges located along NC 158, NC 16, NC 226, and SR 1313 (Washburn Switch Road)under the Preferred Alternative. However, as discussed above, the magnitude and the duration of these potential increases cannot be accurately quantified because of limitations on modeling techniques. Further, under all Alternatives, overall future MSATs are expected to be substantially lower than today due to implementation of EPA's vehicle and fuel regulations.

In sum, under all Build Alternatives in the design year it is expected there would be higher MSAT emissions in the study area, relative to the No Build Alternative, due to increased VMT. There could be slightly elevated but unquantifiable changes in MSATs to residents and others in a few localized areas where VMT increases, which may be important particularly to any members of sensitive populations. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Information that is Unavailable or Incomplete. Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

- **Emissions:** The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model--emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not

have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Also, the emissions rates used in MOBILE 6.2 for both particulate matter and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, EPA has identified problems with MOBILE6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

- **Dispersion.** The tools to predict how MSATs disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The NCHRP is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.

- **Exposure Levels and Health Effects.** Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision

makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs. Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at http://www.epa.gov/iris. The following toxicity information for the six prioritized MSATs was taken from the IRIS database *Weight of Evidence Characterization* summaries. This information is taken verbatim from EPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** (DE) is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.
- **Diesel exhaust** also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes -- particularly respiratory problems[1]. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of impacts based upon theoretical approaches or research methods generally accepted in the scientific community. Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

In this document, FHWA has provided a quantitative analysis of MSAT emissions relative to the various alternatives, (or a qualitative assessment, as applicable) and has acknowledged that (some, all, or identify by alternative) the project alternatives may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

FEIS Section 4.10 Prime, Important and Unique Farmland Impacts Update (page 4-71 to 4-42)

This project has been coordinated with the US Natural Resources Conservation Service (NRCS), as required by the Farmland Protection Policy Act. A Farmland Conversion Impact Rating For Corridor Type Projects (SCS-CPA-106) form for the Selected Alternative was submitted to the NRCS on July 23, 2008. The NRCS returned the completed form in August 2008, and the form was completed per NRCS guidelines. The letter from NRCS and the form are included in Appendix B.

According to the information on the completed CPA-106 form, 53.5 acres of prime and unique farmland will be impacted by the Selected Alternative, and 150.8 acres of state and locally important farmlands will be impacted. The values assigned under the Land Evaluation Criteria and Corridor Assessment Criteria sections of the CPA-106 form resulted in a total value of 151 points. Since this is less than the threshold value of 160 points, the farmlands affected by this project do not qualify for federal protection.

Update to FEIS Section 4.13.2 Stream Impacts (page 4-112)

Impacts to streams are a jurisdictional issue for the NC Department of Environment and Natural Resources, the US Army Corps of Engineers and the US Environmental Protection Agency. Based on the preliminary roadway design plans, 16,786 of the 18,389 linear feet of impacted streams will require mitigation (based on construction limits) for the Preferred Alternative.

Permits. Regulations and permit requirements for streams are similar to those for wetlands. These include the following (note: additional detail is available in Section 4.13.1 if the FEIS):

- ***The National Environmental Policy Act of 1969 (NEPA)***
- ***The Clean Water Act of 1977 (CWA)***
- ***The Interagency Merger Process established in 1997, amended in 2001.***

Following the publication of the DEIS, the NCDOT submitted a Section 404 permit application and scheduled a corridor public hearing to solicit comment on the proposed action. The COE issued a Public Notice to allow for concurrent review. The NCDOT, the FHWA and the COE considered the comments received on the DEIS and from the Public Notice and the corridor public hearing when the LEDPA or Selected Alternative was selected.

Section 401 of the Clean Water Act requires each state to certify that state water quality standards will not be violated for activities which: 1) involve issuance of a federal permit or license; or 2) require discharges to "waters of the United States". A Section 401 Water Quality Certification from the NCDENR, Division of Water Quality (DWQ) will be required for the proposed project. General 401 certification may be available for minor impacts.

Avoidance and Minimization. Total avoidance of all streams on this project is not feasible; the distribution of stream systems throughout the study area would preclude totally avoiding all streams. The Selected Alternative is designed to avoid the maximum amount of streams practicable.

Avoidance and minimization of stream impacts during all phases of the project has included shifts in alignment and use of perpendicular stream crossings to the extent practicable. Large streams along the Selected Alternative (Brushy Creek, First Broad River and Buffalo Creek) are being bridged due to hydraulic requirements. Use of 2:1 fill slopes was employed at Stream Sites 3-2, 3-5, and 3-6 to minimize stream impacts.

On January 17, 2001, the NEPA/404 Merger Team convened to discuss avoidance and minimization measures for the Selected Alternative (then Concurrence Point #4 of the NEPA/404 Merger Process). The following avoidance/minimization measures for streams were agreed upon (note: table includes bridging of streams for hydraulic reasons):

Avoidance/Minimization Measure	Stream Site	Reduction in Impact Based on Construction Limits (linear feet)
Bridging of Beaverdam Creek	2-11	261
Bridging of Brushy Creek	3-9	256
Reconfigure NC 226 interchange	3-10	697
	4-4	(56)
Bridging of First Broad River	4-7	119
Shift horizontal alignment to south	7-1	177
	7-5	228
	7-12	15
Bridging of Buffalo Creek	7-27	317
Shift horizontal alignment of SR 2245	8-8	186
	8-9	16
	8-11	294
TOTAL	N/A	2,510

Note: Number in parentheses indicates increase in impact.

Mitigation. A jurisdictional stream assessment was made in the field. On June 12, 2001, a COE representative field reviewed this assessment and revised perennial/intermittent stream designations as necessary and made preliminary mitigation recommendations. The assessment review also determined where on-site stream mitigation would be possible. The following is a preliminary COE evaluation of mitigation ratio requirements for this project:

- A 2:1 off-site compensatory stream mitigation ratio will be required unless the stream is being relocated on-site via natural stream design techniques (which is at a 1:1 stream mitigation).

- Stream mitigation (i.e., enhancement, preservation) adjacent to the project must be completed at a 2:1 mitigation ratio because the mitigation is not an on-site natural stream design relocation.
- High-level on-site enhancement mitigation, such as bank repairs, fencing out cattle, and grade repairs (restoring riffle-pool structure) may be completed at a 1:1 or 1.5:1 stream mitigation ratio. This type of enhancement will best work along streams that parallel the project and are situated along animal grazing/pasture fields. The stream complex at Stream 2-15 may be a candidate for this type of enhancement mitigation.

- Riparian buffers installed along non-relocated stream banks may count toward stream preservation mitigation. The preservation mitigation ratio still needs to be determined. The non-relocated segment of Stream 7-1 may be a candidate for this type of preservation mitigation.

Bioengineering techniques will be applied to relocated streams. These techniques will result in meandering streams with riffles and pools. Native vegetation will be used to stabilize banks and root wads will be used instead of rip-rap as appropriate.

Revision to List of 303(d) Streams (page 4-136)

Section 303(d) of the Clean Water Act (CWA) requires states to develop a list of waters not meeting water quality standards or which have impaired uses. Listed waters must be prioritized, and a management strategy or total maximum daily load (TMDL) must subsequently be developed for all listed waters. The following project area streams are currently included on the NC Division of Water Quality's *Draft 2008 303(d) List - Integrated Report Category 5* (Version 20080107):

DWQ Subbasin	Description of Segment	Length (Miles)	Use Support Category	Use Support Rating	Reason for Rating	Parameter of Interest
Sandy Run Creek	From source to Mayne Creek	10.4	Aquatic Life	Impaired	Biological Criteria Exceeded	Ecological/ Biological Integrity Fish Community
First Broad River	From Shelby Downstream Raw Water Intake to Broad River	14.6	Aquatic Life	Impaired	Standard Violation	Turbidity
Buffalo Creek	From Dam at Kings Mountain Reservoir to NC-SC State Line	9.7	Aquatic Life	Impaired	Standard Violation	Turbidity

Additional Project Commitments

The following Project Commitments have been added to this project. The complete list of commitments is in Appendix C.

- Wetlands and stream information will be re-verified during the Section 404 permit application process.
- A supplemental Indirect and Cumulative Effects analysis will be performed prior to construction.

The following Project Commitment has been deleted from this project:

- Sensitive Waters. Sedimentation Pollution Control Act Design Standards in Sensitive Waters will be employed on WS-III stream crossings upstream of Moss Lake and on WS-IV First Broad River and its upstream tributaries crossed by the Preferred Alternative.

RECORD OF DECISION

US 74 Shelby Bypass

From 0.6 Mile West of SR 1162 to SR 1001

Cleveland County, North Carolina

Documentation Prepared By:

PARSONS TRANSPORTATION GROUP

11/19/08

Date

H. Franklin Vick, PE
Project Manager

Documentation Prepared for:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

11-19-2008

Date

Stacy Oberhausen, PE
Consultant Engineering Group Leader, Western Region
Project Development and Environmental Analysis Branch

11/19/08

Date

Theresa Ellerby
Project Planning Engineer
Project Development and Environmental Analysis Branch

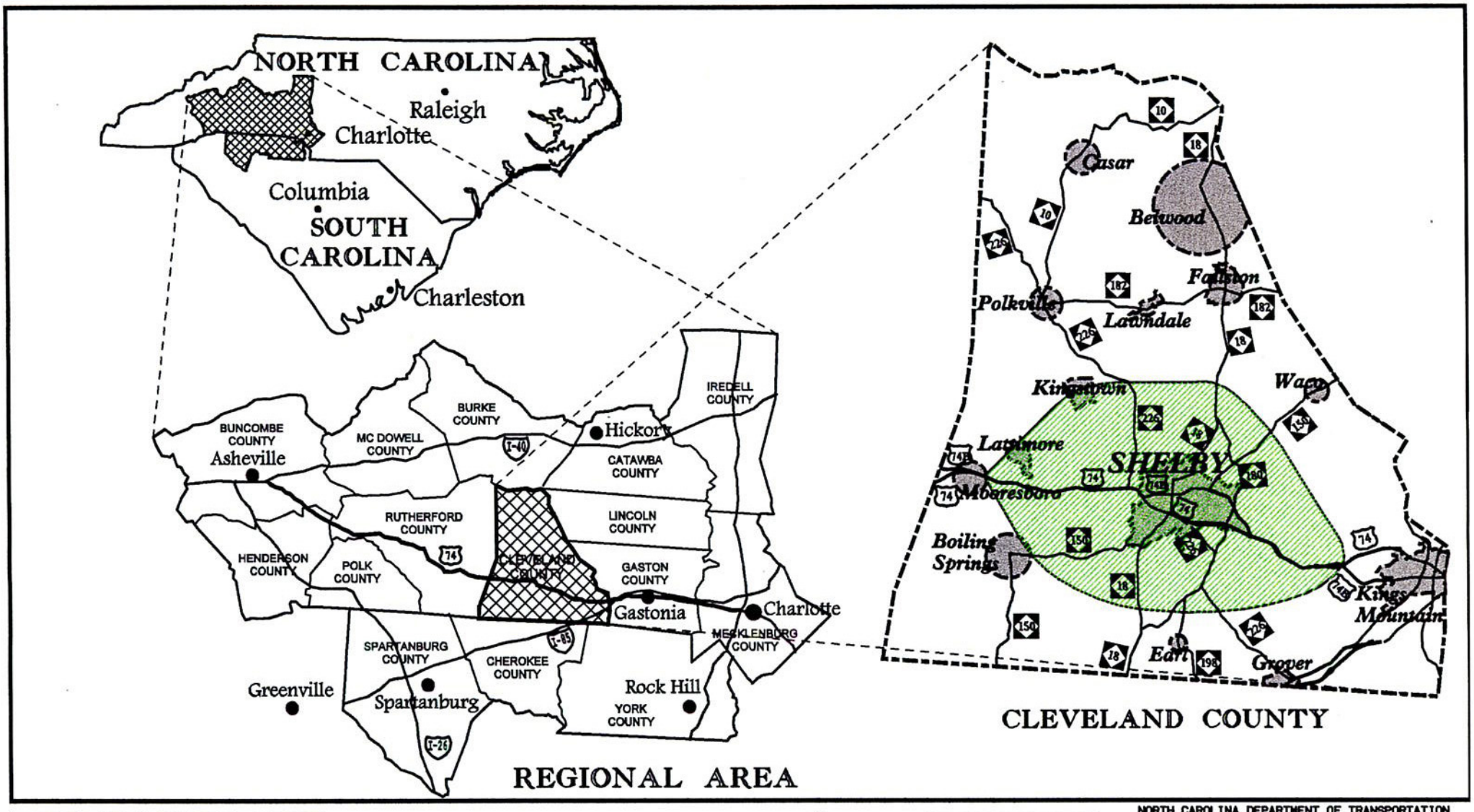
I. CONCLUSION

To achieve the purpose of and need for the project and for the reasons discussed in this ROD, the FHWA hereby approves the selection of Alternative 21, with all incorporated project commitments, for the final design and eventual construction of the US 74 Shelby Bypass from west of SR 1162 (Peachtree Road) to SR 1001 (Stoney Point Road) in Cleveland County, North Carolina.

12/1/2008
Date

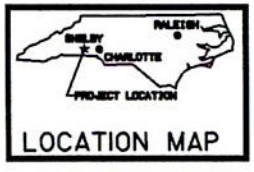
Clarence W. Coleman, Jr.
for John F. Sullivan, III, PE
Division Administrator
Federal Highway Administration

EXHIBITS



LEGEND
STUDY AREA
CITY LIMITS

N



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL IMPACT STUDY
US 74 SHELBY BYPASS (R-2707)
CLEVELAND COUNTY, NORTH CAROLINA

EXHIBIT 3-1 REGIONAL CONTEXT

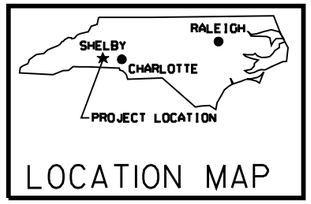
LEGEND

PROJECT STUDY AREA

N

1" = 6,667'

APPROXIMATE SCALE



LOCATION MAP

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL IMPACT STUDY
US 74 SHELBY BYPASS (R-2707)
CLEVELAND COUNTY, NORTH CAROLINA

EXHIBIT 2 PROJECT STUDY AREA

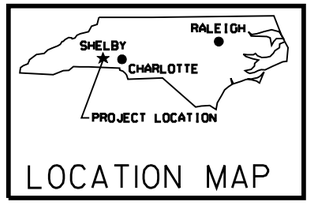
LEGEND

LEDPA

N

1" = 5000'

APPROXIMATE SCALE



LOCATION MAP

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL IMPACT STUDY
US 74 SHELBY BYPASS (R-2707)
CLEVELAND COUNTY, NORTH CAROLINA

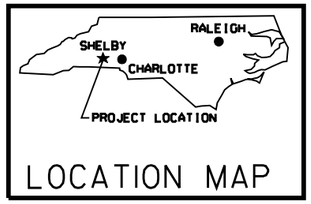
EXHIBIT 3 LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE (LEDPA)

LEGEND

- NORTHERN CORRIDOR
- SOUTHERN CORRIDOR
- CROSSOVER CORRIDOR

N

1" = 5000'
APPROXIMATE SCALE



LOCATION MAP

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL IMPACT STUDY
US 74 SHELBY BYPASS (R-2707)
CLEVELAND COUNTY, NORTH CAROLINA

EXHIBIT 4

ALTERNATIVES CONSIDERED
(TIER 2 DETAILED STUDY ALTERNATIVES)

APPENDIX A

COMMENTS ON THE FEIS

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

RECEIVED
Division of Highways
MAY 05 2008
Preconstruction
Project Development and
Environmental Analysis Branch

May 1, 2008

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

Subject: US 74 Shelby Bypass, Cleveland County
Final EIS; TIP R-2707
CEQ No.: 20080099; FHW-E40778-NC

Dear Dr. Thorpe:

The U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the subject document and is commenting in accordance with Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA). The North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) are proposing to construct a new location 4-lane freeway around the Town of Shelby in Cleveland County. The 18.2-mile new bypass freeway is proposed to address traffic capacity on US 74, mobility in the region, potential for future traffic congestion, improving safety and strengthening the economy of the area. This 'pipeline' project was placed in the NEPA/Section 404 Merger process in May of 1999 and included the selection of the Least Environmentally Damaging Practicable Alternative (LEDPA). On January 17, 2001, a meeting was held regarding avoidance and minimization (Concurrence point #4). The Draft Environmental Impact Statement (DEIS) was issued in October of 1998.

EPA provided DEIS review comments on the proposed project on January 22, 1999. NCDOT and FHWA have addressed EPA's comments in Chapter 6 of the FEIS, pages 6-9 to 6-18. EPA acknowledges NCDOT and FHWA's responses to EPA's comments concerning economic development, mass transit, HOV lanes, inclusion of a southern bypass alternative, and the need for a northern arterial facility, air quality issues, noise receptor impacts, relocation impacts, and water resource impacts.

In EPA's comments on the 1998 DEIS, Alternative 21 (Preferred alternative and eventual LEDPA) was given a rating of "EC-2", Environmental Concerns, more information required. While some of EPA's concerns have been addressed since that time, there are several outstanding environmental concerns that EPA's continues to have regarding the proposed

project. These environmental concerns are detailed in the attachment to this letter (See Attachment "A")

One of the difficulties in reviewing the FEIS included the presentation of the information. EPA understands that NCDOT and FHWA wanted to 're-fresh' the public record because of the time period since the 1998 issuance of the DEIS. However, the information presented concerning impacts and the Tier 1 Alternatives, Tier 2 Detailed Study Alternatives, and the Preferred Alternative made certain issues more confusing. Tables S-1 (Alternative #21 – Preferred) and S-2 should have been compared to one another to see the changes that have occurred since additional design work has been completed and additional avoidance and minimization measures implemented. For the text of the impacts in Section S.8, the ranges of the impacts between the earlier "Tier 2" alternatives does not provide any helpful information that could not be accomplished through a table such as Table S-1. Furthermore, Table S-2 provides impacts to certain resources such as streams and wetlands in a new form: right-of-way limits versus construction limits. Most permitting and resource agencies are only concerned with what aquatic resources are actually impacted (i.e., Filled, drained, piped, ditched, etc.). Aquatic resources that are un-impacted but are included within the right-of-way required for the project are not typically included in impact calculations. Similarly, impacts to other resources were prorated using the original 1000-foot corridor widths and not based upon currently proposed right-of-way widths required for the project (e.g., Agricultural lands and terrestrial forests).

EPA also notes that a substantial portion of the data in the FEIS, including wetland and stream information, was based upon 2001 data and not more current guidance and requirements. EPA's records also indicate that CP 4B and 4C meetings were held on portions of the project on March 17, 2004 and May 19, 2004. All data and information for this project should be updated to current requirements and accepted methodologies in the Record of Decision (ROD). Because of the length of time from pre-Merger 01 NEPA/Section 404 guidance (i.e., CP #4 in 2001) and that several sections of the project are not funded or proposed for funding until after Fiscal Year (FY) 2013, EPA requests that NCDOT and FHWA put those portions of the project in the Merger 01 process at Concurrence Point 4A, Avoidance and minimization, to insure that the most current guidelines and requirements are being addressed and documented.

In summary, EPA continues to have substantial environmental concerns with stream impacts, water quality impacts, air quality impacts (including Mobile Source Air Toxics – MSATs), prime farmland impacts and indirect and cumulative impacts. NCDOT and FHWA should consider the issuance of a FEIS re-evaluation considering that some of the information and requirements that have not been updated in the current FEIS.

EPA recommends that (unfunded) portions of this project be included in the Merger 01 process at Concurrence Point 4A, avoidance and minimization. Please continue to include EPA through the hydraulic and permit review stages as well, including the detailed avoidance and minimization efforts for stormwater management and the use of Best Management Practices (BMPs). Please include Ms. Kathy Matthews of EPA's Wetlands Section on any Concurrence Point 4B and 4C meetings in addition to any activities in developing a mitigation plan. Should you have any questions about EPA's comments, please contact Mr. Christopher Militscher on my staff at (919) 856-4206 or by e-mail at: militscher.chris@epa.gov.

Sincerely,

Heinz J. Mueller
Chief, NEPA Program Office
Office of Policy and Management

cc: K. Jolly, USACE Wilmington District
J. Sullivan, FHWA-NC
P. Benjamin, USFWS-Raleigh
B. Wrenn , NCDENR-DWQ

ATTACHMENT A
US 74, Shelby Bypass, Cleveland Counties
TIP# R-2707

Specific Comments on FEIS

Project Description and Purpose and Need

The document is unclear about the exact length of the proposed freeway. On Page 2-48, Table 2-10, the total length of the project based upon the project phasing for the 5 phases of R-2707 (A thru E) is estimated by EPA at 18.2 miles. Phases D and E are unfunded (i.e., Post year, after FY 2013). Phase C is only funded in the TIP for right-of-way acquisition in FY 2012. The Record of Decision (ROD) should clearly state the length of the new freeway.

The land required for the proposed project would be approximately 1,000 acres, which is 0.33% of the total land area of Cleveland County. It is also important to note that there are two existing US 74 routes through Shelby, the US 74 Bypass and US 74 Business. The proposed full-control of access, multi-lane freeway is a longer, northern US 74 bypass.

Exhibit 2-16 provides Year 2025 AADT volumes for the Preferred Alternative (i.e., Alternative #21). On page 2-46 of the FEIS there is also a discussion concerning the updated traffic estimates from the DEIS which used 2020 traffic numbers. Projected traffic numbers increased based upon the 2020 to 2025 update, except for the bypass segment from NC 150 to the eastern bypass terminus (i.e., 33,300 AADT to 30,900 AADT). However, EPA recommends that all projected traffic volume estimates should be updated to Year 2030 or 2035. Accident data and analysis is also from the period of 2000 to 2002 and needs to be updated.

EPA believes that there is adequate traffic justification (i.e., Future traffic congestion, improving safety, regional improvements to a Strategic Highway Corridor, etc.) for the proposed controlled access freeway without the secondary purpose of economic development (Pages 1-6 to 1-10, 1-25, et al.). While regionally there may be some tangible benefits in terms of reduced costs for travel time, etc., locally there may be adverse economic effects to local downtown businesses in Shelby and the loss of a portion of the tax base from the relocation of 165 residences and 25 businesses. This freeway is proposed as a fully controlled access facility and may not enhance re-development except potentially at interchange locations. Without conducting an in-depth economic development and land use study, many of the 'benefit issues' identified in the FEIS do not appear to be supported by currently available studies or reports.

Project Alternatives and the Least Environmentally Damaging Preferred Alternative (LEDPA) or Preferred Alternative

EPA does not have any major environmental concerns regarding the alternatives carried forward for detail study (Tier 2) in the DEIS/FEIS or the corridor selection of the LEDPA (Alternative #21). However, much of the data and assumptions made for avoidance and minimization to wetlands and streams, other natural resources and human resources were made in 2001. The FEIS does not address these assumptions or address the potential need to re-visit

issues based upon new information or requirements, including the 2005 Merger 01 NEPA/Section 404 guidance.

There are eight (8) interchanges proposed for the project including SR 1162, US 74 Western Bypass terminus, SR 1313, NC 226, NC 18, NC 150, US 74 Eastern Bypass terminus and SR 2245. From Exhibit 2-16, the proposed interchanges at SR 1162 and the Western Bypass Terminus appear to be very close (Approximate scale 1" = 5,000 feet and measured distance is approximately a quarter of an inch or approximately 1,250 feet).

Eight (8) interchanges, including 6 local access interchanges for the preferred alternative (Alternative #21) is more than a number of the other alternatives considered, including Alternatives 1, 3, 7, 9, 13, 16, and 19. EPA reviewed Table 4-26, page 4-124 of the FEIS, where the types of each interchange are presented for all of the alternatives. EPA is primarily concerned with the impacts to the human and natural environment at the diamond interchange at SR 2245 (Rural residential/some agricultural uses), and the partial cloverleaf at SR 1162 (Rural agricultural/scattered residences). Interchanges at these rural locations can also cause potentially indirect and cumulative impacts to resources around these interchanges. EPA requests that NCDOT and FHWA provide detailed updated traffic justification for both of these interchanges. Both of these interchanges extend beyond the two new interchanges proposed along the existing US 74 corridor at the western and eastern termini.

Stream and Wetland Impacts

EPA provided a letter to the Army Corps of Engineers (ACE) dated May 10, 1999, on the public notice on the DEIS. None of the comments specifically identified in this letter are included in the FEIS.

Wetlands impacts from the preferred alternative are relatively low at 2.37 acres (based upon construction limits). EPA is uncertain as to the difference between this estimated construction impact and the projected 3.07 acres of right-of-way impacts. For consistency purposes, NCDOT and FHWA typically report the estimated impact based upon the construction limits (cuts and fills) plus 25 feet beyond slope stakes lines. Wetlands that are near the construction limits and may be drained from cut sections are also calculated in the impact total. Not all of the proposed 320-foot right-of-way is expected to be cleared. EPA is unsure what this new category of right-of-impact means in relation to the construction impact or what will be included in the as the final impact numbers for the 404 or 401 permits.

Similarly, stream impacts were reported with right-of-way limits and construction limits. For right-of-way impacts the total is 24,054 linear feet with 21,940 linear feet being "mitigable". The construction limit impact total is 18,389 linear feet with 16,786 "mitigable". EPA reviewed the FEIS text, Tables D-1 and D-2, including the notes on S-5 in Table D-2, and can not find the specific 'design' definition for either. This was apparently an early 'Merger CP #4' effort to specify the typical difference between impacts based upon proposed right-of-way limits and anticipated construction limits using preliminary and/or functional designs. However, at this point in the NEPA process, NCDOT and FHWA should have more final design plans and should

be able to provide the actual estimated impacts based upon the construction limit slope stakes plus 25 feet.
Based upon a general comparison to other projects in the Piedmont on new location, the proposed Shelby Bypass has high impacts to streams in the project area (i.e., Greater than 1,000 linear feet per mile of roadway improvement). EPA would request that additional avoidance and minimization to streams be considered by the agencies.

The FEIS lists four streams that are on the Section 303(d) list for impaired streams, including Brushy Creek, Beaverdam Creek, Buffalo Creek and Lick Creek. There is no discussion concerning the implications of potential impacts to these already impaired waters of the U.S. Based upon more recent DWQ data (2008) on 303(d) listed waters in North Carolina, Buffalo Creek and First Broad River is listed and not Brushy Creek, Beaverdam Creek and Lick Creek. NCDOT and FHWA need to correct and/or clarify this information and develop a detailed stormwater management plan that eliminates further degradation to any 303(d) listed streams. EPA also notes that hazardous spill catch basins may be required by DWQ at the First Broad River crossing. Combined stormwater retention and hazardous spill catch basins should also be considered in the final designs. The administrative record and potentially the ROD should include appropriate environmental commitments to protect downstream water quality for 'confirmed' 303(d) listed streams.

EPA also notes that NCDOT used the DWQ Wetland Rating system and another consultant developed wetland assessment method from the 1990's. Due to the relative small impact to wetlands for the proposed project, EPA is not requesting a quality re-assessment based upon more current methodologies. However, this 'pre-Merger 01' assessment illustrates EPA's concern that the project's avoidance and minimization efforts have not been brought up to more current guidance and requirements.

It is also important for EPA to emphasis the new guidelines concerning jurisdictional determinations to waters of the U.S. and that NCDOT and FHWA should confirm the jurisdictional determinations that were made for the impacted streams and wetlands. Ms. Kathy Matthews of EPA has previously forwarded the new jurisdictional form and instruction manual to NCDOT. Depending upon the time of permitting, NCDOT may be required to adhere to the new guidance and requirements by the ACE.

Additional Avoidance and Minimization Measures for Streams and Wetlands

EPA requests that NCDOT and FHWA specifically identify what additional avoidance and minimization opportunities there maybe to reduce impacts to streams in the project study area and that these measures should be included in the final designs. It is important to note that stream impacts associated with the two SR route interchanges could be reduced and/or eliminated depending upon the current traffic need for these proposed facilities. Retention basins and other strict adherence to Best Management Practices (BMPs) will also be needed to protect critical water supply waters and 303(d) listed streams.

EPA acknowledges the environmental commitment to provide 2:1 side slopes in wetland areas, the use of native vegetation to stabilize banks, and stream relocation efforts (Tributary to

Buffalo Creek and a tributary to the First Broad River). NCDOT and FHWA should also consider median reductions at bridge crossings to minimize the construction footprint of the proposed project. The NCDOT is using a 320-foot right-of-way width as the 'minimum' roadway design criteria for a new location freeway. Most new location, multi-lane facilities planned and implemented in the last 5-7 years have a right-of-way width of 300 feet or less.

Stream and Wetland Mitigation

In the Environmental Commitments ("Green sheets"), pages 1 and 2 of 5, NCDOT and FHWA exclude EPA concerning discussions about wetland and stream relocations and mitigation and the development of mitigation plans. EPA has been involved in this project since the issuance of the DEIS. NCDOT has acknowledged EPA's DEIS comments and responded to comments in the FEIS. EPA has attended the CP 4B and 4C meetings for the "A" section of the proposed project. EPA requests that it be included with other resource and permitting agencies on all issues pertaining to either on-site mitigation and/or the development of all compensatory mitigation plans for jurisdictional impacts to wetlands and streams under Section 404 of the Clean Water Act.
Specifically, Ms. Kathy Matthews of EPA's Wetland Sections should be contacted regarding these matters and the Environmental Commitments revised to include EPA.

Due to the significant amount of stream impacts from the proposed project, EPA requests that detailed coordination on compensatory mitigation plan efforts be commenced as soon as possible. The FEIS lacks a detailed discussion concerning compensatory mitigation. On pages 4-109 and 4-112 of the FEIS, there are misleading statements concerning compensatory mitigation. In Section 4.13.2, Stream Impacts, the first sentence states: "Impacts to streams are a jurisdictional issue for NCDENR". The language in this section of mitigation in the FEIS makes it appear that the U.S. Army Corps of Engineers and EPA have no jurisdictional role in compensatory mitigation for stream impacts. In the mitigation section of the FEIS there is a repeated discussion concerning avoidance and minimization, which is in the section before the mitigation discussion. This is confusing and has not been updated. Page 4-107 cites the 1997 Interagency Agreement Integrating Section 404/NEPA. This is an outdated agreement superseded by the 2005 Merger 01 NEPA/Section 404 Memorandum of Understanding (MOU). This section also references a copy of the merger agreement in Appendix A.2. Appendix A.2 contains agency coordination correspondence and some early CP #4 signed concurrence forms on avoidance and minimization. The signed forms reference avoidance and minimization measures are described in 'attached handouts'. These handouts are not included specifically in the FEIS.

EPA notes that NCDOT appears to have purchased the "International Paper" site (now called the Broad River site). This 1,079-acre site was investigated in the late 1990's for wetland and stream mitigation for the proposed project. However, at this time it appears to be proposed only for mitigation for the Dwarf-Flowered Heartleaf and is not included in the discussions for compensatory mitigation for streams and wetlands. Details of any future mitigation plans for this site in relation to stream and wetland impacts associate with the Shelby Bypass are not provided in the FEIS. There were potential opportunities for on-site or other wetland and stream restoration projects (in addition to preservation), but these issues are not discussed in the FEIS.

EPA refers specifically to the Item 32, page 18, of the 2005 NEPA/Section 404 Merger 01 MOU and Guidance Manual.

Noise Receptor Impacts and Noise Abatement

Based on the DEIS analysis the Preferred alternative would impact 147 noise receptors, of which 84 would approach or exceed FHWA Noise Abatement Criteria (NAC). Seven locations for noise abatement walls were evaluated and two of the barriers appear to be feasible (i.e., Barrier locations D and F). There would be 28 benefited receptors based upon the FEIS noise abatement analysis. Noise impacts in detail are discussed on pages 4-51 to 4-67 of the FEIS. The total impacted number of receptors exceeding NAC is now 68, with 40 total impacted receptors after abatement noise barriers (Table S-2).

Environmental Justice

EPA acknowledges the Executive Order 12898 Environmental Justice analysis that is provided in the FEIS at pages 4-31 to 4-32.

Air Quality and Mobile Source Air Toxics (MSATs)

In section 3.6.3, page 3-51, the FEIS includes the statement that the average route speed for the proposed project was assumed to be 55 miles per hour based upon the freeway nature of its design and was used in calculating future Carbon monoxide (CO) emissions. Considering other multi-lane, divided freeways in the North Carolina and Strategic Highways, this assumption does not appear to be supported by actually studies or available data for other expanded segments of the US 74 corridor. The design speed for this facility is 70 miles per hour (minimum: Table 2-2). The statement, "CO emissions also decrease at higher speeds because of more efficient engine operation", is also misleading to the public. Based upon USDOT and FHWA studies and reports, there is an optimum range concerning speed with engine efficiency and performance and CO and other pollutant emission rates. This discussion should be updated to include current information and requirements.

Table 4-9 of the FEIS includes future year CO concentrations in parts per million (one-hour) for 2 receptors using generic year 2020 traffic and year 2025 preferred alternative estimates. Future CO concentrations need to be updated to more current traffic forecasts for 2030 or even 2035. There are sections of the proposed project that are unfunded and post-year let beyond 2013. EPA requests that these analyses and comparisons to current NAAQS standards be updated to future traffic projections. Furthermore, EPA is uncertain as to the specific meaning of the environmental commitment on page 2 of 5 regarding future air quality ("Any future air quality analysis of this project will include a review of vehicle-mix percentages, given the industrial nature of portions of the project area"). This is a FEIS and there is typically no additional air quality studies conducted for projects after this stage in the NEPA process. This vehicle-mix percentages analysis should be conducted and provided to EPA prior to the issuance of a ROD.

The FEIS does not address any of the Clean Air Act requirements for evaluating MSATs. EPA also regulates air toxics from mobile sources (EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources, 66 FR 17229, March 29, 2001). The FEIS does not include FHWA's generic qualitative guidance on MSATs. Before the issuance of a ROD, EPA requests that NCDOT and FHWA address MSATs for the proposed project. This would include the description of the affected environment, an analysis of existing and future MSATs conditions, identification of any potential sensitive receptors, potential adverse impacts, and any proposed avoidance, minimization or mitigation for these adverse effects to sensitive receptors.

Prime Farmlands

The FEIS states that there are an estimated 258 acres of agricultural/cleared land impacts based upon prorated corridor data (Page vii, et al). On page xi, the FEIS includes the category of prime, important and unique farmland impacts for the preferred alternative to be an estimated 298 acres of prime farmland and 268 acres of important farmland, also based on prorated corridor data. EPA notes the environmental commitment regarding 'farmlands' on page 4 of 5. This commitment is potentially required for impacts to farmlands that are regulated under the Farmland Protection Policy Act of 1981. This includes prime farmlands, unique farmlands and farmlands of State-wide or local importance as per the regulations contained at Title 7, U.S.C. 658.

EPA is very concerned that the Natural Resource Conservation Service (NRCS) did not conduct an analysis of prime farmland soils in the project study area. Referring to the letter from August 23, 1996, in Appendix A.2, it is stated that due to a lack of soil information we cannot complete the AD-1006 form for the project. More than decade has transpired since this communication with NCDOT's consultant and there is no documentation that a re-analysis was requested by NCDOT and FHWA (excluding the NRCS's "no comment letter of November 30, 1998, on the DEIS). Soils information is provided in Sections 3.10 and 4.10, including Table 4-16, Estimated Special Status Farmland Impacts. EPA does not understand how this assessment was completed when NRCS did not apply the Land Evaluation Site Assessment criteria (LESA) and complete AD-1006 forms. There are no evaluation forms contained in the FEIS. There is no other information in the FEIS that indicates that a 'conforming' prime farmland assessment was performed by a competent agency or person. Specific impacts shown are approximated right-of-way impacts based upon prorated corridor values. These impacts estimates to 'potentially' protected farmlands are very significant (i.e., More than 560 acres or more than half of the total right-of-way acreage needed for the project). The local and regional economic effects due to direct losses to prime farmlands could be drastic and far-reaching. EPA requests that these issues be addressed and coordinated with NRCS and/or the NC State Department of Agriculture before a ROD is signed. EPA also anticipates that the impact to actual prime farmlands meeting NRCS criteria is potentially less than is being reported in the FEIS.

Critical Water Supply Watersheds

Exhibit 3-14 includes water quality features for the project study area (undated map). There are two distinct water supply watershed areas (WS-III CA; and protected areas) and two

critical areas shown in the Exhibit. It appears from the map that the Preferred Alternative corridor is within the critical water supply area known as NCS Kings Mountain Reservoir or Moss Lake. It is unclear from the review of the FEIS, pages 3-78 to 3-80 and pages 4-91 to 4-93 if the proposed freeway will have an impact on protected areas within the protected areas of the watersheds (quantified in acres). According to the FEIS, WS-III rules state that 'construction of new roads and bridges should minimize built upon area, etc'. EPA cannot specifically find what measures were developed or designed by NCDOT to minimize built upon areas within the WS-III protected areas. EPA acknowledges the general environmental commitment to sensitive waters, Item #3 on page 2 of 5. However, this general commitment does not specifically address how the proposed project minimizes 'built upon areas' within protected watersheds (e.g., Narrower right-of-way widths).

Other Potential Impacts

The FEIS provides a substantial amount of information and commitments regarding the Dwarf-flowered Heartleaf plants. NCDOT and FHWA appeared to have coordinated extensively with U.S. Fish and Wildlife (FWS) and other agencies regarding this threatened and endangered plant species.

EPA notes that the terrestrial forest impacts are estimated at 277 acres for the preferred alternative. The FEIS also includes an environmental commitment regarding wildlife passage at Brushy Creek (Item #6, Page 3 of 5). The design for the wildlife passage should also be coordinated with NC Wildlife Resources Commission (WRC) in addition to FWS.

Indirect and Cumulative Impacts (ICI)

The FEIS addresses ICI in Section 4.16. On page 4-138 on induced development potential, the FEIS states that the potential conflicts of interchanges with notable features can be ameliorated somewhat through use of minimization strategies. Some of these strategies are identified on page 4-139 and include: Set an acceptable threshold for wetland and floodplain loss or degradation (?); and require the implementation of least-invasive practices for sand and gravel mining. This entire ICI section needs to be revised to reflect more current conditions and understanding of natural and human resource impacts associated with new location bypass facilities. Table 4-29 of project-specific notable features is important information and should be retained for further ICI studies. Due to potential direct and indirect and cumulative impacts to 303(d) listed streams in the project area, EPA requests that a more quantitative ICI analysis be provided. EPA's requests that the quantitative ICI identify how these population trends might change with and without the bypass. The ICI should include an analysis of the potential long-term impact on Shelby's population, economic sustainability, water quality and water supply resources, changes in land use patterns, etc. Copies of the quantitative ICI information should be provided to Ms. Kathy Matthews and Mr. Militscher for review. On page 4-143, it indicates that direct impacts have been established by the design, but does not identify what level of design (preliminary or final) has been completed to this point in the NEPA process.

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Preconstruction
Project Development and
Environmental Analysis Branch

North Carolina
Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

May 5, 2008

Mr. Gregory Thorpe
NCDOT
Project Dev. & Env. Analysis
1548 Mail Service Center
Raleigh, NC 27699

Re: SCH File # 08-E-4220-0269; FEIS; US 74 Shelby By-Pass; construction of a four-lane controlled access freeway on a new location to bypass the existing four-lane section of US 74 through Shelby. TIP #R-2707

Dear Mr. Thorpe:

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,

KM/SJG

W. Kevin McLaughlin, Jr., General Counsel
Interim Environmental Policy Act Coordinator

Attachments

cc: Region C

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Raleigh, North Carolina

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Project Development and Environmental Analysis Branch, Division 12

1. Street Closings. Any street closings will be coordinated with fire, police, and EMS personnel.

Project Development and Environmental Analysis Branch, Highway Design Branch

1. Noise Barriers. In areas of impacted noise receptors where abatement measures have been considered and found not to be reasonable, a vegetative barrier will be considered for psychological and aesthetic screening.

2. Farmland. Efforts will be made to minimize impacts to farmlands during final design, including crossing of farm fields along property boundaries wherever possible to avoid bisecting farm operations.

3. Lithia Springs. Impacts to Lithia Springs will be avoided and/or minimized to the extent practicable during the final design phase of the project. A study of the impacts to the underground water table due to road grading operations at Lithia Springs will be undertaken during final design.

Project Development and Environmental Analysis Branch, Highway Design Branch, Right-of-Way Branch

1. Hazardous Materials Sites. Should the Selected Alternative impact any hazardous material site or UST, a Preliminary Site Assessment will be performed prior to right-of-way acquisition to determine the existence and/or extent of any contamination. These assessments will also be used by NCDOT to estimate the associated clean-up costs.

Project Development and Environmental Analysis Branch, Highway Design Branch, Division 12, Right-of-Way Branch

1. Protection of Dwarf-Flowered Heartleaf Sites. Dwarf-flowered heartleaf sites outside of the construction limits of the project in areas where NCDOT owns the property or has a construction easement will be protected and will not be disturbed during construction. Those sites will be left forested and will be protected in perpetuity. The sites will remain on the design plans and will be labeled as sensitive areas.