

NC-EIS-92-01-F

Eastern/Northern Urban Loop from north of  
the interchange with I-85 and the proposed  
I-85 Bypass east of Greensboro to Lawndale Drive  
north of Greensboro, approximately 12.5 miles  
in Guilford County, North Carolina

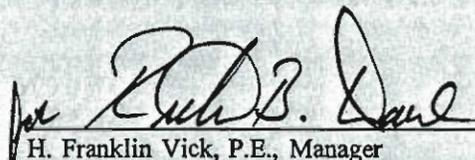
State Project No. 6.498003T  
Guilford County  
TIP No. U-2525

ADMINISTRATIVE ACTION  
FINAL ENVIRONMENTAL IMPACT STATEMENT

Submitted Pursuant to the North Carolina Environmental Policy Act  
G.S. 113A-1 through 113A-10

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

8/12/94  
Date

  
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North Carolina Department of Transportation

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This action involves construction of the Greensboro Eastern/Northern Urban Loop in Guilford County. This Final Environmental Impact Statement (EIS) presents the Preferred Alternative selected based on the findings of the Draft EIS as well as agency comments and public input obtained at the Corridor Public Hearing. The Draft EIS was published in August 1992. The Public Hearing was held October 27, 1992. Comments were accepted through November 13, 1992. All comments and public input received subsequent to publication of the Draft EIS are included in this document.

This Final EIS is an abbreviated document which presents only those sections of the Draft EIS which required modification or clarification. The Draft EIS is incorporated into this Final EIS by reference.

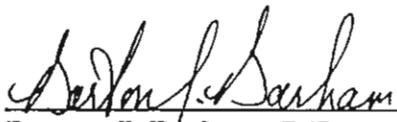
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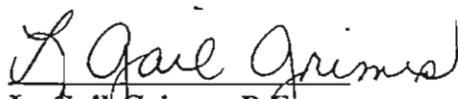
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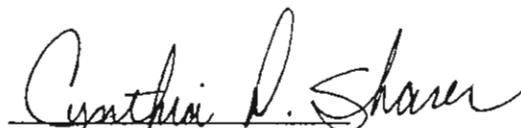
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## PREFACE

This document is the Final Environmental Impact Statement (EIS) for the Greensboro Eastern/Northern Urban Loop from north of the interchange with I-85 and the proposed I-85 Bypass east of Greensboro to Lawndale Drive (SR 2303) north of Greensboro. The Final EIS was prepared in accordance with Federal Highway Administration Technical Advisory T6640.8A, Section VI-C, as an abbreviated Final EIS. As such, only those sections of the Draft EIS that required modification or clarification are presented in the Final EIS. Therefore, the Draft EIS is incorporated into the Final EIS by reference.

The abbreviated Final EIS is divided into seven sections and one Appendix. The first section identifies those portions of the Draft EIS that are revised or expanded. Entire paragraphs and/or portions of tables from the Draft EIS are presented in this section, as appropriate, and the new or revised information is underlined for clarity. Material deleted from the Draft EIS is indicated in the revised text or table. Page and paragraph references are provided to assist the reader.

The second section of the Final EIS identifies the Preferred Alternative for the proposed project. This section includes the justification for the selection of the Preferred Alternative along with reasons for the elimination of the other alternatives. Sections three and four detail the wetlands and floodplain findings, respectively, for the Preferred Alternative. The fifth section discusses the preferred interchange alternative with US 70 and the proposed improvements to US 70.

Mitigation measures for impacts associated with the Preferred Alternative are addressed in the sixth section. These mitigation measures were compiled from Chapter IV of the Draft EIS and from agency correspondence received throughout the study process. Public and agency involvement is addressed in the seventh section, including information concerning the Corridor Public Hearing and summaries of public comments on the Draft EIS. Comments made by federal, state, and local agencies and officials concerning the Draft EIS are provided with specific responses. Copies of agency correspondence are provided in the Appendix to this document.

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## 1.0 ERRATA INFORMATION

### ■ Page i:

1. North Carolina Department of Transportation Administrative Action  
Environmental Impact Statement

( ) Draft

(X) Final

2. Contacts:  
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concerning this environmental impact statement:

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#### 4. ACTION PROPOSED BY OTHERS

An interchange with existing I-85 is included with the proposed I-85 Greensboro Bypass (I-2402) around the southern portion of Greensboro. This interchange will be the southern terminus for the Greensboro Eastern/Northern Urban Loop. Based on selection of the Northern Alternative (with Crossover 2) as the Preferred Alternative for the I-85 Greensboro Bypass, the interchange will be located just east of the McConnell Road interchange with existing I-85. In addition, the Western Alternative was selected as the Preferred Alternative for the Western Urban Loop (U-2524). Several major projects in Greensboro are listed in the North Carolina Department of Transportation's Transportation Improvement Program (TIP) for 1995 to 2001. In addition to the Greensboro Urban Loop, the widening of I-40/I-85 to eight lanes is proposed. The rehabilitation of the concrete pavement of US 29 is also planned.

### ■ Page ii, first paragraph:

An extension of North Elm Street was constructed from Pisgah Church Road to Lake Jeanette Road. This road will interchange with the Greensboro Eastern/Northern Urban Loop.

**TABLE S-1  
ENVIRONMENTAL COMPARISON OF RETAINED ALTERNATIVES**

	<u>ALTERNATIVE</u>	
	<u>Eastern</u>	<u>Preferred Middle</u>
Length (miles)	13.0	12.5
Displacements		
Residences (Minority)	311(55)	307(55)
Businesses	10(0)	9(0)
Other	0	0
Acreage Required		
Field (inc. Agriculture)	78.4	63.1
Forest	293.1	288.3
Urban (man-dominated)	<u>223.2</u>	<u>206.4</u>
Total	594.7	557.8
Acres of Prime Farmland	317.0	262.0
Acres of Wetland	<u>8.1</u>	<u>11.2</u>
Acres of Floodplain	6.2	16.5
Number of Stream Crossings	23	22
Number of Receptors Exceeding Noise Abatement Criteria or with Substantial Increase	168	119
National Register Historic Sites	0	0
National Register Archaeological Sites	0	0
Potential Hazardous Material Sites In or Near Corridors	1	1

**TABLE S-2**  
**ENGINEERING COMPARISON OF RETAINED ALTERNATIVES**

	<u>ALTERNATIVE</u>	
	<u>Eastern</u>	<u>Preferred Middle</u>
Length (miles)	13.0	12.5
Interchanges (number)	<u>6</u>	<u>6</u>
Other Structures		
Railroad	2	2
Drainage	16	16
Grade Separation	19	17
Traffic (high/low) (Vehicles per day)	33,400/ 18,400	33,400/ 18,400
Level-of-Service	C-B	C-B
Construction Cost (millions)	\$81.0	82.6
Right-of-Way Cost (millions)	\$39.5	\$41.5
Total Cost (millions)	\$120.5	\$124.1

■ Page I-8, second paragraph:

- Summit Avenue from Cone Boulevard to Spry Street
- Lawndale Drive from Pisgah Church Road to Lake Jeanette Road

■ Page II-4, second paragraph:

The study area is constrained to the north by critical watershed areas and to the east by McLeansville.

■ Page II-6, second and fourth paragraph :

This alternative then follows a west-southwest path, crossing both Yanceyville Road and Church Street approximately 1/2 mile north of Lee's Chapel Road before connecting with the Western Alternative in the vicinity of the existing Elm Street Extension.

Interchanges are included at the crossings of I-85, Fourmile Loop, Huffine Mill Road, US 29, Yanceyville Road, the existing Elm Street Extension, and Lawndale Drive.

■ Page II-7, second paragraph:

Interchanges are proposed at the Western Alternative's crossings of I-85, US 70, Ranking Mill Road/Huffine Mill Road, US 29, Yanceyville Road, the existing Elm Street Extension, and Lawndale Drive.

■ Page III-5, list of thoroughfares:

Major Thoroughfares

North Elm Street Extension  
McLeansville Road

■ Page III-9, list of churches/cemeteries

<u>Map Designation</u>	<u>Church</u>
42	<u>Northeast Baptist Church</u>

■ Figure III-4, revised location of site 11.

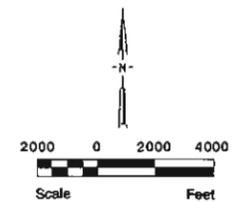
■ Page III-15, fourth paragraph:

The only mine or quarry in the study area is a sand rock quarry located off McLeansville Road. The Eastern Alternative runs along the western edge of the quarry.

**GREENSBORO  
EASTERN/NORTHERN  
URBAN LOOP  
GUILFORD COUNTY, NC**

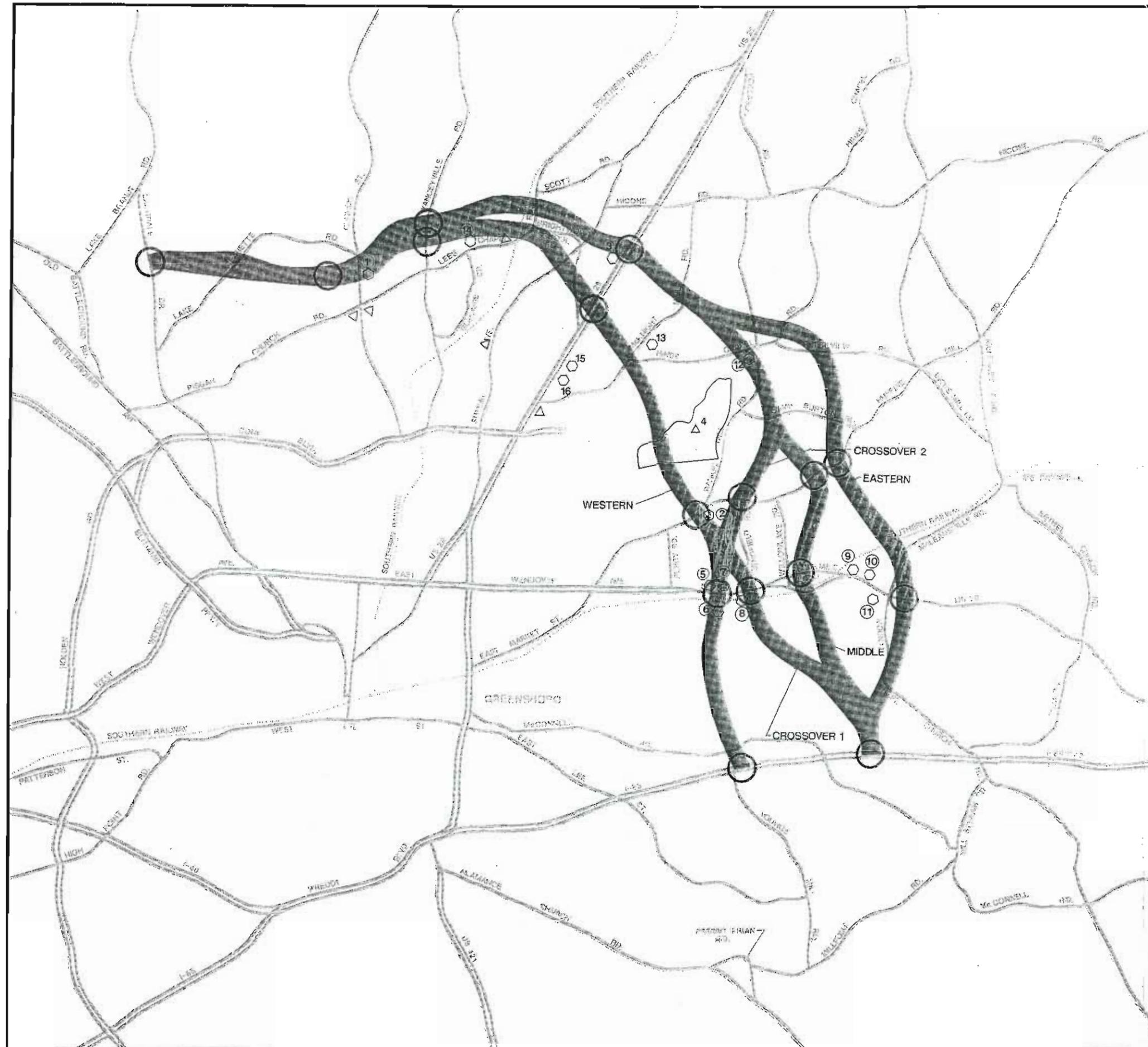
**LEGEND**

- POTENTIAL HAZARDOUS MATERIALS SITE (Refer to Table III-7)
- △ LANDFILL SITE
- ▭ WHITE STREET LANDFILL
- ② UNDERGROUND STORAGE TANK LOCATION (Refer to Table III-7)



**POTENTIAL HAZARDOUS MATERIALS,  
UNDERGROUND STORAGE TANKS, AND  
LANDFILL SITES**

**FIGURE III-4**



- Page III-17, last paragraph:

All three of the build alternatives would pass through a portion (Tier 4) of the Lake Townsend WCA. Any development within the WCA boundary must meet the requirements of Article VII, Sections 7-1, 7-2, and 7-3 of the Guilford County Development Ordinance.

- Page III-24, third and fourth paragraphs

Figure III-5 shows the location of the wetlands within each of the alternative alignments. Wetlands recognized within the study area include bottomland (alluvial) forests, scrub-shrub wetlands, and marsh wetlands. Bottomland forests are the most frequently encountered wetlands in the study area, followed by scrub-shrub, and marsh wetlands. The majority of the forested wetlands occurring in the study area are between I-85 and US 29.

Bottomland forests are dominated by such species as sycamore, sweetgum, water oak and red maple. Shrub/scrub wetlands, found in the vicinity of stream systems in the study area, consists of thickets of shrub and/or young hardwood species. This wetland type can be a natural feature or a result of past disturbances by man. Woody species include sweet-gum (*Liquidambar styraciflua*), cottonwood (*Populus deltoides*), alder, river birch (*Betula nigra*), red maple (*Acer rubrum*), ironwood (*Carpinus caroliniana*), willows, buckeye (*Aesculus sylvatica*), and spicebush (*Lindera benzoin*).

- Page III-25, first paragraph

Some low-lying areas adjacent to the creeks in the study area have formed into marshes. The herbaceous layer is dominant in this community. Herbs include sedges (*Cares spp.* and *Scirpus spp.*), rushes (*Juncus spp.*), seedboxes (*Ludwigia spp.*), jewelweed (*impatiens capensis*), knotweeds (*Polygonum spp.*), common cattail (*Typhalatifolia*), false nettle (*Boehmeria cylindrica*), and nonewort (*Cryptotaenia canadensis*). Wetland shrubs such as buttonbush (*Cephalanthu occidentalis*), alder (*Alnus serrulata*), willows (*Salis spp.*), and swamp rose (*Rosa palustris*) can be found along the more upland edge of the marsh.

The location of the impacted wetlands is illustrated on Figure III-5. The estimates of wetland acreage impacted by the proposed alignments are shown in Table IV-12. The largest extent of potential wetlands are found in association with the wider floodplains of North Buffalo Creek and South Buffalo Creek and their second-order tributaries.

The Western Alternative impacts more wetland acreage than any other build alternative, 31.2 acres. Approximately 65 percent of the wetlands within the construction limits of the Western Alternative are hardwood forest, 20.3 acres. The Crossover 1 Alternative would involve approximately 29.3 acres of wetlands; a major portion of the impacted wetlands would be hardwood forest (21.1 acres). The Eastern Alternative contains the least amount of impacted wetland acreage, 8.1 acres, with two acres of these wetlands consisting of hardwood forest. Major wetland impacts to hardwood forest areas occur at South Buffalo Creek (Western and Middle Alternatives, Crossover 1) and North Buffalo Creek (Western Alternative), north of the City of Greensboro landfill. The forested wetlands within the Western Alternative are afforded buffering from man-dominated land influences by adjacent upland forested communities.

**TABLE IV-12A**  
**SUMMARY OF WETLAND INVOLVEMENT**

ACRES AFFECTED BY ALTERNATIVE

<u>Site</u>	<u>Wetland</u>	<u>Type</u>	<u>Eastern</u>	<u>(Preferred)</u> <u>Middle</u>	<u>Western</u>	<u>CROSSOVER</u>	
						<u>1</u>	<u>2</u>
1	South Buffalo Creek	M,S			2.7	2.7	
2,3	South Buffalo Creek	F			5.1	5.1	
11,12	South Buffalo Creek UT	F		4.6			
13	South Buffalo Creek UT	M,S		1.5			
14	South Buffalo Creek	F				5.7	0.3
17	South Buffalo Creek	M,S	3.2				
18	South Buffalo Creek	F		1.4			
19	South Buffalo Creek UT	F			2.2		2.2
19A	South Buffalo Creek UT	F				2.4	
21	North Buffalo Creek, UT	F			0.7	0.7	
22	North Buffalo Creek, UT	M,S			4.5	4.5	
23	North Buffalo Creek	F			10.6	10.6	
25	North Buffalo Creek	F			0.7	0.7	
30	North Buffalo Creek, UT	M,S	2.2				
33	North Buffalo Creek, UT	M,S	0.7	1.1			
34	North Buffalo Creek, UT	F	1.0	1.6			1.6
35	North Buffalo Creek, UT	M,S			3.0	3.0	
43	Richland Creek, UT	M,S			0.7	0.7	
46	Richland Creek, UT	F	1.0	1.0	1.0	1.0	1.0
	SUBTOTALS	F	2.0	8.6	20.3	26.2	5.1
		M,S	6.1	2.6	10.9	10.9	0.0
	TOTALS		<u>8.1</u>	<u>11.2</u>	<u>31.2</u>	<u>37.1</u>	<u>5.1</u>

UT = UNNAMED TRIBUTARY  
WETLAND VEGETATION CODES:  
F = MATURE HARDWOOD WETLAND FOREST, HIGHEST QUALITY  
S = SCRUB-SHRUB - DOMINATED WETLAND  
M = MARSH

**TABLE IV-12B  
SUMMARY OF STREAM/OPEN WATER INVOLVEMENT**

<u>Site</u>	<u>Wetland</u>	<u>Type</u>	<u>ACRES AFFECTED BY ALTERNATIVE</u>			<u>CROSSOVER</u>	
			<u>Eastern</u>	<u>(Preferred) Middle</u>	<u>Western</u>	<u>1</u>	<u>2</u>
4,5	Little Alamance Creek, UT	B					
6,8	Little Alamance Creek, UT	B		0.5			
9	Little Alamance Creek, UT	B	0.2	0.2			
10	South Buffalo Creek, UT	B			0.1		0.1
15	Little Alamance Creek, UT	B			0.3		
16	Little Alamance Creek, UT	L	0.7				
20	South Buffalo Creek, UT	L					0.8
24	North Buffalo Creek	L			0.3	0.3	
26	North Buffalo Creek	B		0.3		0.3	0.3
27	North Buffalo Creek, UT	L		0.2			0.2
28	North Buffalo Creek, UT	B	0.2				
29	North Buffalo Creek, UT	B	0.1				
31	North Buffalo Creek, UT	B		0.1			
32	North Buffalo Creek, UT	B	0.1	0.2			
36	North Buffalo Creek, UT	L			0.4	0.4	
37	North Buffalo Creek, UT	L			0.6	0.6	
38,39	North Buffalo Creek, UT	L	1.4	1.4			1.4
40	Richland Creek, UT	B	0.1	0.1			
41	Richland Creek, UT	B	0.1	0.1			
42	Richland Creek, UT	L			0.5	0.5	
44	Richland Creek, UT	B	0.1	0.1			0.1

**TABLE IV-12B  
SUMMARY OF STREAM/OPEN WATER INVOLVEMENT**

ACRES AFFECTED BY ALTERNATIVE

<u>Site</u>	<u>Wetland</u>	<u>Type</u>				<u>CROSSOVER</u>	
						<u>1</u>	<u>2</u>
45	Richland Creek, UT	B			0.1	0.1	
47	Richland Creek, UT	B	0.1	0.1	0.1	0.1	0.1
48	Richland Creek, UT	B	0.1	0.1	0.1	0.1	0.1
49	Richland Creek, UT	B	0.3	0.3	0.3	0.3	0.3
	SUBTOTALS	B	1.5	2.2	1.0	1.1	1.0
		L	<u>2.1</u>	<u>1.6</u>	<u>1.8</u>	<u>1.8</u>	<u>2.4</u>
	TOTALS		3.6	3.8	2.8	2.9	3.4

WETLAND VEGETATION CODES:

B = BANK-TO-BANK WETLAND  
L = LAKES AND PONDS

■ Page IV-42

The proposed alternative alignments will not impact any properties listed in the National Register of Historic Places or on the State Study Lists. This project is in compliance with General Statute 121-12(a) which requires an accounting of the effect of any state undertaking on any district, site, building, structure, or object that is listed in the National Register of Historic Places.

**3. Archaeological Sites**

The proposed alternative alignments will not impact any archaeological sites that are currently listed, or eligible for listing, in the National Register of Historic Places. A prehistoric lithic site with five artifacts was found within the interchange area on the south side of I-85, outside the study area. These artifacts were not considered significant. Areas requiring further investigation for Section 106 compliance will be determined by the U.S. Army Corps of Engineers during the permitting process.

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## 2.0 SELECTION OF PREFERRED ALTERNATIVE

Various alternative courses of action (build) and non-action (no-build) were considered and evaluated for the Greensboro Eastern/Northern Urban Loop. These alternatives included a No-Build Alternative, a Transportation System Management (TSM) Alternative, a Multi-Modal Systems Alternative, and four Build Alternatives. The No-Build, TSM, and Multi-Modal Systems Alternatives were described and discussed in Chapter II, sections A, B, and C, of the Draft EIS. The three no-build alternatives did not satisfy the purpose for and need of the project and were not retained for detailed study.

The four build alternatives were described and discussed in Chapter II, section D, of the Draft EIS. They included the Widen Existing Alternative, Eastern Alternative, Middle Alternative, and Western Alternative. Two Crossover Alternatives, which allowed for possible combination of portions of the Eastern, Middle, and Western Alternatives, were also included in the discussion of the build alternatives.

The Widen Existing Alternative was not compatible with the adopted Thoroughfare Plan and did not offer a cost-effective solution to the purpose of and need for the project. The Widen Existing Alternative was not retained for detailed study.

The Western Alternative was eliminated based on its impact on wetlands, residential relocations, and the City of Greensboro's White Street Landfill. A detailed discussion of the elimination of the Western Alternative is included in Chapter II, section D, part 5 of the Draft EIS.

The identification of the Preferred Alternative for the I-85 Bypass (TIP No. I-2402) eliminated the need for Crossover 2. Crossover 1 existed to provide a transition for the Western Alternative. The elimination of the Western Alternative eliminated the need for Crossover 1. Consequently, the Middle and Eastern Alternatives were retained as reasonable and feasible corridors for the Greensboro Eastern/Northern Urban Loop.

The Middle Alternative was selected as the Preferred Alternative based on the analysis of the environmental impacts presented in the DEIS, citizen comments received at the Corridor Public Hearing, and review comments from federal, state, and local agencies. The Preferred Alternative begins at Old School Road, approximately 2,200 feet north of I-85. The Preferred Alternative travels north to an interchange with US 70 at Fourmile Loop and an interchange with Huffine Mill Road near Oakleigh Road. The Preferred Alternative turns to the northwest and interchanges with US 29 south of Hicone Road, Yanceyville Road north of Lees Chapel Road, and Elm Street Extension. It ends with an interchange at Lawndale Drive in north Greensboro, aligning with the Western Urban Loop (see Figure I).

Reasons for the selection of the Preferred Alternative included the following:

- Compatibility with established Thoroughfare Plan
- Fewer residential and business relocations
- Fewer acres of prime farmland
- No relocation of churches
- No impact to schools
- Minimizes impact on McLeansville
- Compatibility with land use plan
- Fewer noise impacts
- Better access to K-Mart Distribution Center on US 70 (major truck traffic generator)

The advantages of the Preferred Alternative are detailed below:

Thoroughfare Plan. With minor exceptions, the Preferred Alternative closely follows the conceptual location for the Greensboro Urban Loop between US 29 and Lawndale Drive shown in the 1989 Greensboro Urban Area Thoroughfare Plan. Between US 29 and I-85, the alignment in the Thoroughfare Plan runs parallel to and west of the Preferred Alternative and has a severe impact on the City's White Street Landfill. The Preferred Alternative was aligned to avoid the White Street Landfill.

Relocations. The Preferred Alternative will involve approximately 307 residential relocations and nine business relocations. Of these relocations, 273 residential relocations are in the section common to the Eastern and Middle Alternative between Lawndale Drive and McKnight Mill Road. The Eastern Alternative would involve approximately 311 residential relocations and ten business relocations.

Prime Farmland. The Preferred Alternative affects 262 acres of prime and unique farmland. The Eastern Alternative would affect 317 acres of such farmland.

Churches, Schools, and Community Facilities. The section common to both the Eastern and Middle Alternatives, between Lawndale Drive and McKnight Mill Road, passes within 400 feet of the Gateway Baptist Church and the Fire Station at Lee's Chapel Road, and lies just to the south of the United Holy Church. The Preferred Alternative also passes within 400 feet of the Prison Farm. The Preferred Alternative will not impact the Woodmen of the World civic organization facility.

Public Comments. The areas of the project that generated the most comments are the Eastern Alternative near McLeansville and the interchange with I-85 near McConnell Road. Strong sentiment was expressed from McLeansville residents during the Public Hearing and through written comments to have the alignment located as far west as possible. The Preferred Alternative is the furthest from McLeansville and minimizes impact to major business interests along I-85. The Preferred Alternative received the most favorable comments. The interchange with I-85 is not a part of this project. It is included in the I-85 Bypass (TIP No. I-2402).

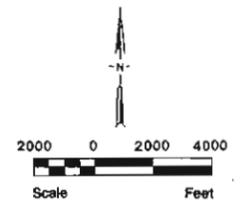
Noise. The Preferred Alternative will impact fewer residential noise receptors (119) and will require only one noise barrier. The Eastern Alternative would require two noise barriers and would impact 168 receptors.

Shift to Avoid Replacements, Ltd. Based on comments received at the Public Hearing for the I-85 Greensboro Bypass (I-2402), the alignment for the Preferred Alternative between McConnell

**GREENSBORO  
EASTERN/NORTHERN  
URBAN LOOP  
GUILFORD COUNTY, NC**

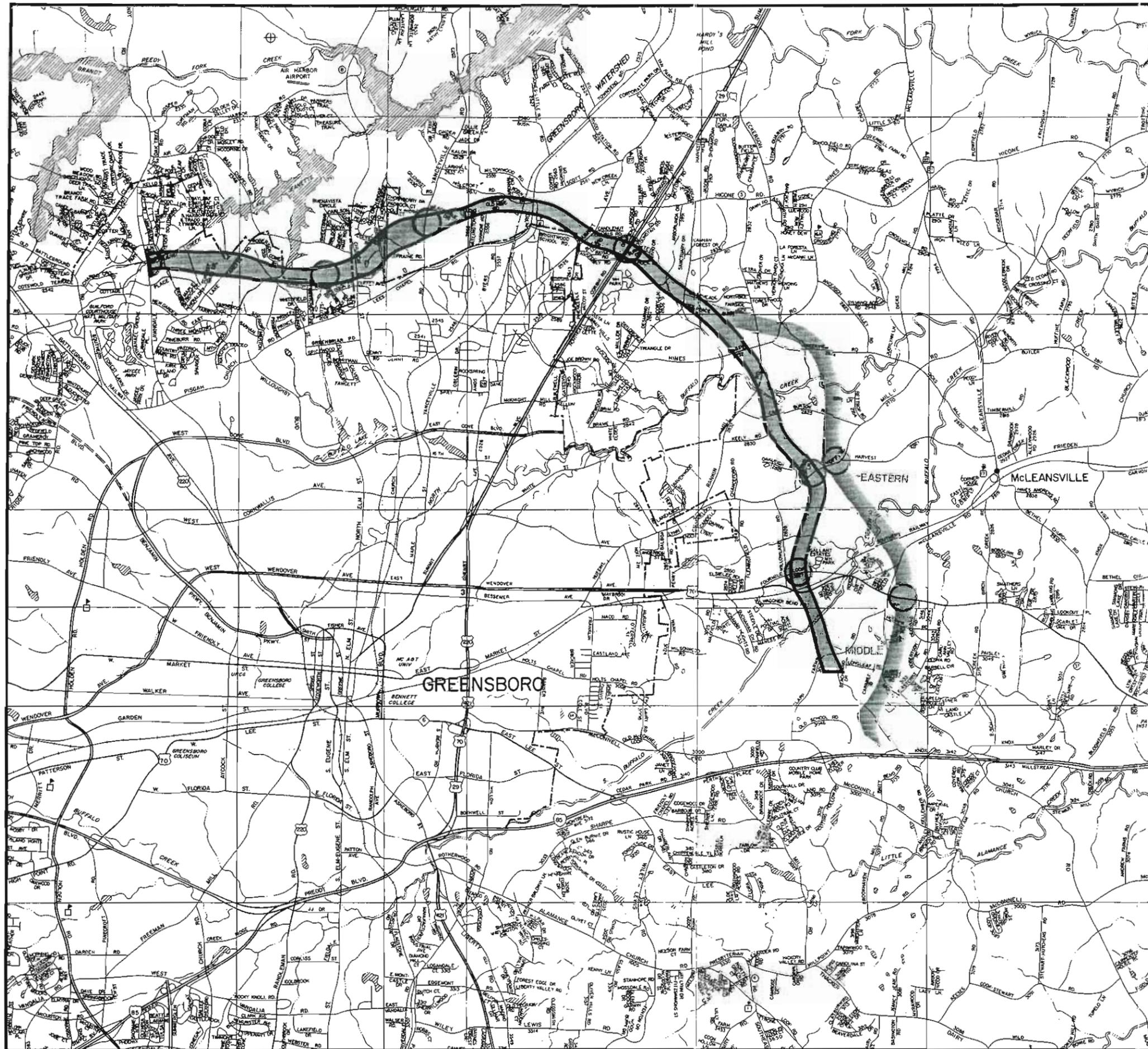
**LEGEND**

-  CITY LIMIT
-  STUDY CORRIDOR
-  PREFERRED ALTERNATIVE
-  PROPOSED INTERCHANGE



**PREFERRED ALTERNATIVE**

**FIGURE 1**



Road and Mount Hope Church Road was shifted west to avoid relocating a large business, Replacements, Limited. This shift aligns with the Preferred Alternative. The Eastern Alternative would not accommodate this shift without resulting in an undesirable "dog-leg" design near US 70 or requiring the relocation of Replacements Limited, which would defeat the purpose of the shift and result in major additional right-of-way costs. The Preferred Alternative for the Eastern/Northern Urban Loop will accommodate the revised alignment of the I-85 Bypass (see Figure 2).

Impact on the J.P. Stevens Facility. As identified in the Draft EIS (Chapter IV, section B, part 9), twelve underground storage tanks (USTs) were removed from the J.P. Stevens site in September 1989. The site is located on the west side of US 29 within the right-of-way for the proposed interchange of US 29 and the Eastern/Northern Urban Loop.

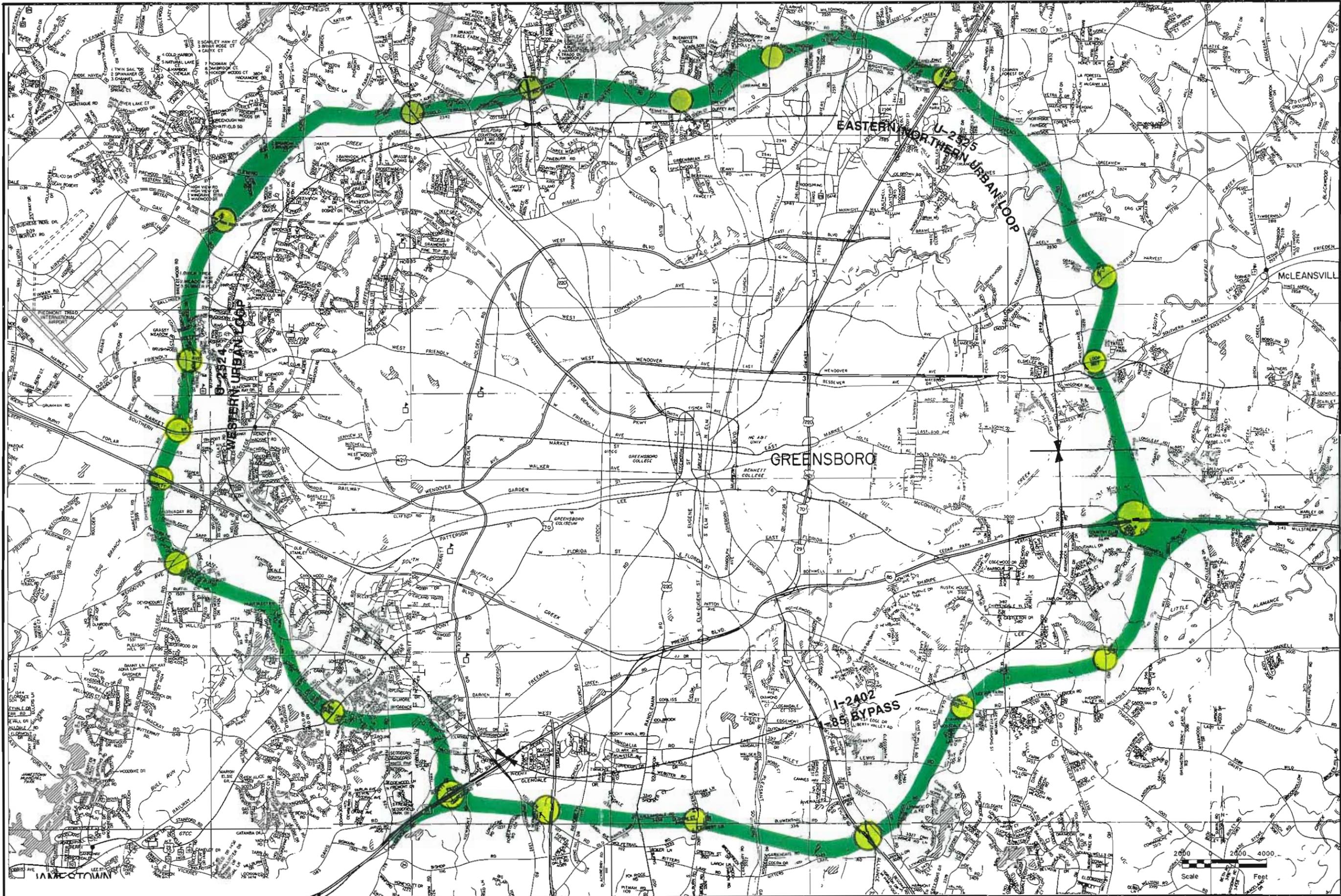
Further investigations conducted in late 1990 and early 1991 indicates that soil and groundwater contamination is present at the site. The likely source for the contamination is the removed USTs.

A corrective action plan for the cleanup of the facility was submitted in April 1991. The plan involves three separate steps: soil excavation, free product removal, and groundwater treatment. The cleanup will take a minimum of three years.

Shifting the alignment and redesigning the interchange were reviewed as options to avoid impacting the contamination at the J.P. Stevens site. Moving the interchange was not a feasible option due to the proximity of Oakwood Forest Mobile Home Park to the south and the United Holy Church and Hicone Road interchange to the north. A shift in either direction would greatly increase the number of relocations and community disruptions. Redesigning the interchange was also not a feasible option due to the requirement for a freeway to freeway cloverleaf design. A change in the interchange design would either degrade traffic operations and capacity of US 29 and the interchange or increase the relocations and social impacts.

The Department of Transportation is coordinating clean-up efforts with the Division of Environmental Management. Since the acquisition of the right-of-way in the vicinity of the US 29 interchange and the J.P. Stevens site is not scheduled until after 1999, there is adequate time for the remediation clean-up to be completed.

Based on the prohibitive impacts associated with shifting the location or changing the interchange design and the likelihood that the contaminants will be removed prior to the purchase of right-of-way, it was determined that the proposed interchange location at US 29 is the only reasonable and feasible alternative.



GREENSBORO URBAN LOOP

PREFERRED ALTERNATIVE

FIGURE 2

### 3.0 WETLAND FINDINGS

The proposed build alternatives for the Greensboro Eastern/Northern Urban Loop were evaluated for potential impacts on wetland areas in accordance with Executive Order 11990, "Protection of Wetlands," dated May 23, 1977. As documented in the Draft EIS, wetland determinations within the project area were made using Routine Level 1 methodology as outlined in the 1987 U.S. Army Corps of Engineers (COE) Wetlands Delineation Manual. Consultation with the COE's Wilmington District, a review of the Soil Survey of Guilford County, U.S. Geological Survey topographic maps, and FEMA Flood Insurance Rate Maps (FIRMs); and stereoscopic interpretation of aerial photography were utilized to determine the locations, extent, and functional value of the wetlands in the study area. Additionally, a field reconnaissance was conducted in selected areas in February 1991 to confirm data findings.

Wetlands are a special class of "Waters of the United States." Section 404(b)(1) guidelines promulgated under the Clean Water Act require a sequential approach to mitigating impacts of dredge and fill activities. The initial step in the sequence is avoidance. Impacts to wetlands that cannot be avoided must be minimized to the fullest extent practicable. Only after avoidance and minimization are satisfactorily addressed may compensatory forms of mitigation be considered. These measures may include restoration of degraded wetlands, enhancement of existing wetlands, or creation of replacement wetlands in or as close to the impacted wetlands as possible.

As discussed in the Draft EIS, there are no practicable alternatives to the proposed action which would avoid impacting wetlands. A summary of wetland involvement is shown in Table IV-12, on pages 7-8 of the FEIS.

The Eastern Alternative would impact 8.1 acres of wetlands, of which 6.1 acres are scrub-shrub marsh and 2.0 acres are forested wetlands.

The Preferred Alternative will impact 11.2 acres of wetlands. Of this total, 8.6 acres are forested wetlands and 2.6 acres are scrub-shrub marsh.

Although the Middle Alternative will impact approximately 3.1 acres of wetlands more than the Eastern Alternative, it was selected as the Preferred Alternative because it generated more public support, has lesser impact on McLeansville, involves fewer residential and business relocations, has fewer noise impacts, and allows for a more economical and compatible design with the proposed I-85 Bypass.

The NCDOT "Best Management Practices for the Protection of Surface Waters" (BMPs) will be utilized to further minimize potential wetland impacts, where applicable. BMPs could include restriction of fill in drainage areas, reduction of side slopes in wetlands, minimization of canopy removal, and elimination of staging areas in lowlands. The remaining unavoidable impacts will be mitigated by compensation through wetland enhancement, restoration, or creation.

Several stream crossings and associated floodplain areas were identified as potential sites for enhancement or creation of wetlands. Potential mitigation sites include the low-lying agricultural areas adjacent to the unnamed tributary of North Buffalo Creek in the vicinity of wetland sites 31 through 33 of the Eastern and Preferred Alternatives and the cleared agricultural areas adjacent to the South Buffalo Creek floodplain between the Preferred and Western Alternatives. The exact method used to create wetlands will vary from site to site. Generally, each site will be graded to about the same elevation as existing adjacent wetlands or surface water and planted with wetlands vegetation. Topsoil may be added, and some natural colonization by wetland plants also may occur.

If on-site mitigation measures are not practicable, off-site mitigation measures will be developed. These off-site mitigation projects will be designed to reestablish, to the extent reasonable, similar conditions as the pre-existing vegetation. Off-site mitigation will be conducted in the same geographic vicinity or near the highway project. Action may include expanding existing wetlands, revegetating with hydrophytic species or regulating waste levels in impoundments or streams. A detailed mitigation proposal will be developed in coordination with the COE during the permit phase. The potential mitigation sites identified will collectively provide enough acreage to mitigate the impacts. Any mitigation plan prepared will achieve no net loss of wetland

function and value and will meet all regulatory agency standards. As appropriate, efforts will be made to address impacts of both the Eastern/Northern Urban Loop and the related US 70 improvements in one mitigation plan. To the extent practicable, mitigation will be located within the same watershed and will create habitat similar to that being impacted.

Potential short-term impacts to the wetlands involve sediment loading during construction. These impacts will be minimized through the development of a Sedimentation and Erosion Control Plan following NCDOT's "Best Management Practice for Protection of Surface Waters."

Based on the above consideration, it is determined that there are no practicable alternatives to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to the wetlands resulting from such construction.

#### 4.0 FLOODPLAIN FINDINGS

A floodplain evaluation for the Greensboro Eastern/Northern Urban Loop was conducted in accordance with Executive Order 11988 "Floodplain Management" to determine if encroachment would occur with the Preferred Alternative. Any modification to floodplain elevation or limits will be coordinated and approved by the Federal Emergency Management Agency (FEMA).

Guilford County participates in the National Flood Insurance Program. Boundaries of the 100-year floodplain were determined using FEMA's Flood Insurance Rate Maps.

The Preferred Alternative will encroach upon the 100-year floodplain for South Buffalo Creek and North Buffalo Creek. The Preferred Alternative will impact 16.5 acres of floodplain: 11.0 acres at South Buffalo Creek (south of US 70) and 5.5 acres at North Buffalo Creek (near Camp Burton Road). In crossing the regulatory floodway of South Buffalo Creek, the Preferred Alternative will impact 3.4 acres. In addition, the Preferred Alternative will cross Lake Jeanette and include 19 other minor stream crossings.

Floodplain crossings will be as close to 90 degrees as practical to minimize floodplain encroachments. The Preferred Alternative will be designed such that the floodway will carry the 100-year flood without increasing the flood water elevation more than one foot at any point. During the design phase, the dimensions of the drainage structures and roadway grades will be adjusted to avoid increasing the flood hazard in the project area. Methods to minimize harm and preserve the floodplains could include minimizing fill and grading requirements, preserving the free natural drainage wherever possible, maintaining vegetative buffers, controlling urban runoff, and minimizing erosion and sedimentation during construction. Based on these conditions, the project would not constitute a significant floodplain encroachment.

Final design of the Preferred Alternative will be coordinated with appropriate federal, state, and local officials to ensure compliance with floodway regulation.

## 5.0 US 70 IMPROVEMENTS

The proposed project was expanded to consider widening US 70 from just west of Maxfield Road (SR 3025) eastward to Mount Hope Church Road (SR 3045). Midway along this highway segment, the Preferred Alternative for the Eastern/Northern Urban Loop has an interchange. The preferred alignment of the interchange requires US 70 to be relocated to Fourmile Loop.

### Alternatives

Three options were developed and studied for relocating and improving US 70 at the proposed Greensboro Eastern/Northern Urban Loop interchange and for maintaining local access on existing US 70. The options are shown in Figures 3, 4, and 5 and are described below.

Option 1 would terminate existing US 70 with a cul-de-sac on either side of the proposed Greensboro Urban Loop. To maintain local access, the western segment of existing US 70 would tie into future US 70 (existing Fourmile Loop). The eastern segment of existing US 70 would be relocated for approximately 1,000 feet before tying into new US 70 between the proposed bridges over Southern Railroad and South Buffalo Creek.

Option 1 would displace two homes and an auto repair business. The parking lot of a second commercial site would be taken, as well as one plant shed at a landscape business. In addition, impacts to a wetland site and floodplain of South Buffalo Creek would occur. The estimated cost of Option 1 is \$1,050,000.

With Option 2, the proposed Greensboro Eastern/Northern Urban Loop would cross over existing US 70. Structures would be necessary to carry the Loop and interchange ramp over existing US 70. The eastern end of existing US 70 would be terminated with a cul-de-sac, while the western end would tie into future US 70. This alignment would avoid the impacts of Option 1, particularly on additional wetland and floodplain acreage at South Buffalo Creek. The estimated cost of Option 2 is \$1,700,000.

Option 3 would involve lengthening the proposed Loop bridges over the Southern Railroad to extend over existing US 70 also. Existing US 70 would be relocated to parallel the Southern Railroad, requiring an S-curve on the western section. The road would terminate with a cul-de-sac as with Option 2. This option would require agreement and coordination with Southern Railroad. The estimated cost of Option 3 is \$1,550,000.

In addition to the relocations, wetland impacts, and floodplain encroachment, Option 1 could have hidden costs and delays because of potential contamination at the auto repair business. Option 2 would avoid the impacts of Option 1 and provide a better design than the S-curve of Option 3. Therefore, Option 2 was selected as the Preferred Alternative for the US 70 improvements and interchange.

### Impacts

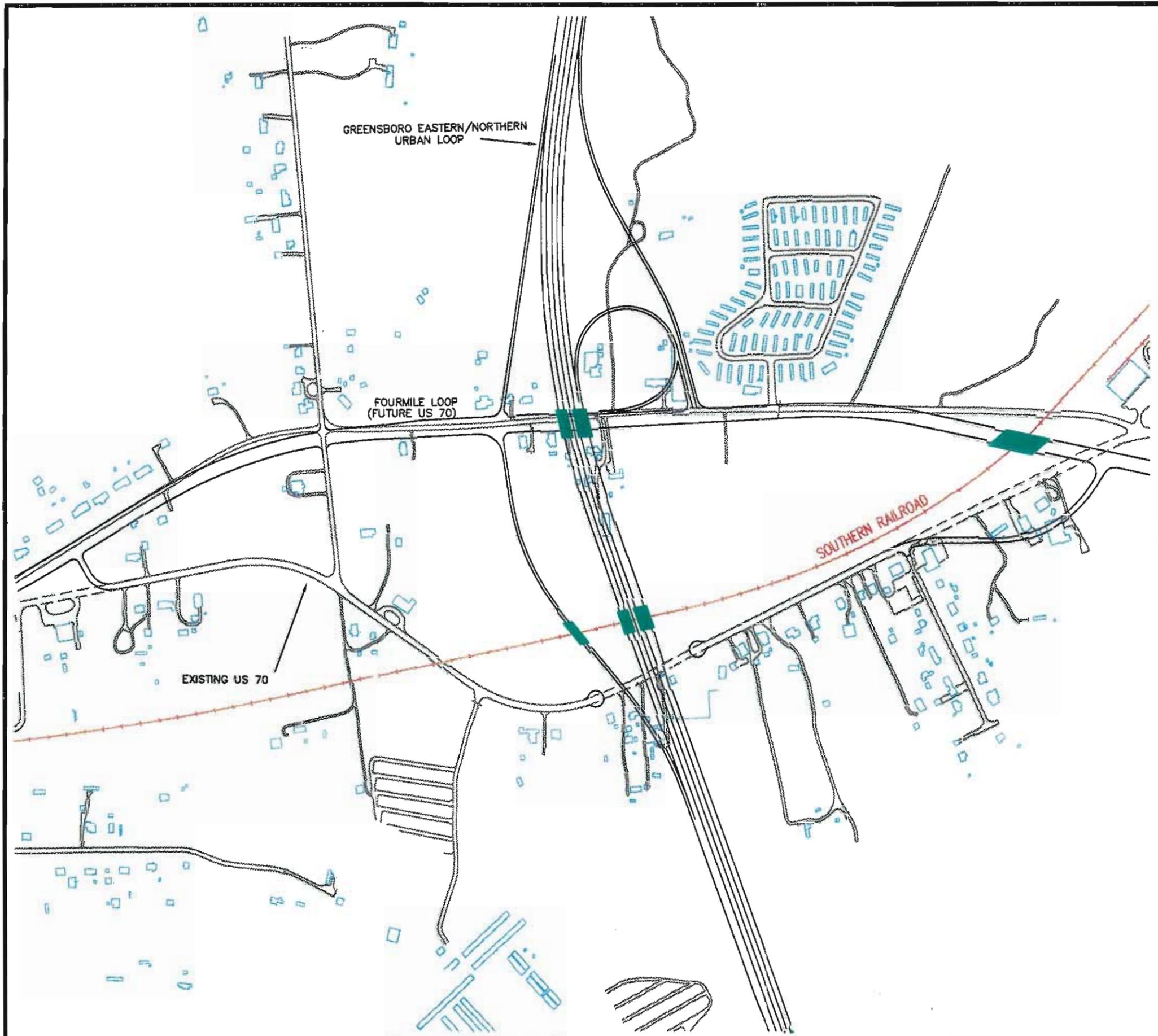
To address the impacts of the preferred US 70 interchange and widening, an environmental analysis was conducted. Much of the affected environment and potential impacts of the Preferred Alternative for the US 70 improvements and interchange were considered in the Draft EIS and in the previous sections of the Final EIS. Additional field reconnaissance was conducted to include the improvements to US 70 extending from Maxfield Road to Mount Hope Church Road. The impacts of the selected option (Option 2) and the additional US 70 improvements are described below:

#### **A. Urban and Community Impacts**

The proposed Greensboro Urban Loop interchange with US 70 is located in an urbanized area of eastern Guilford County. Along Fourmile Loop and the parallel segment of existing US 70 are residences, businesses, and subdivisions. Overall land uses will not be affected by the proposed Loop; however, changes in traffic patterns will occur.

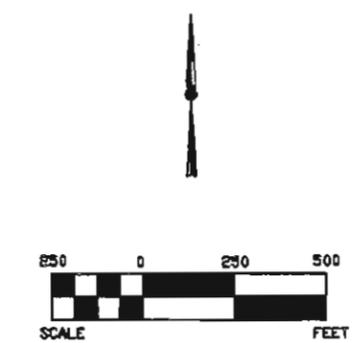
The through traffic currently traveling on existing US 70 will be redirected to the widened, relocated future US 70 (existing Fourmile Loop). Existing US 70 will remain open to local access for the residences and businesses, with a connection to future US 70 at the western end

**GREENSBORO  
EASTERN/NORTHERN  
URBAN LOOP  
GUILFORD COUNTY, NC**



**LEGEND**

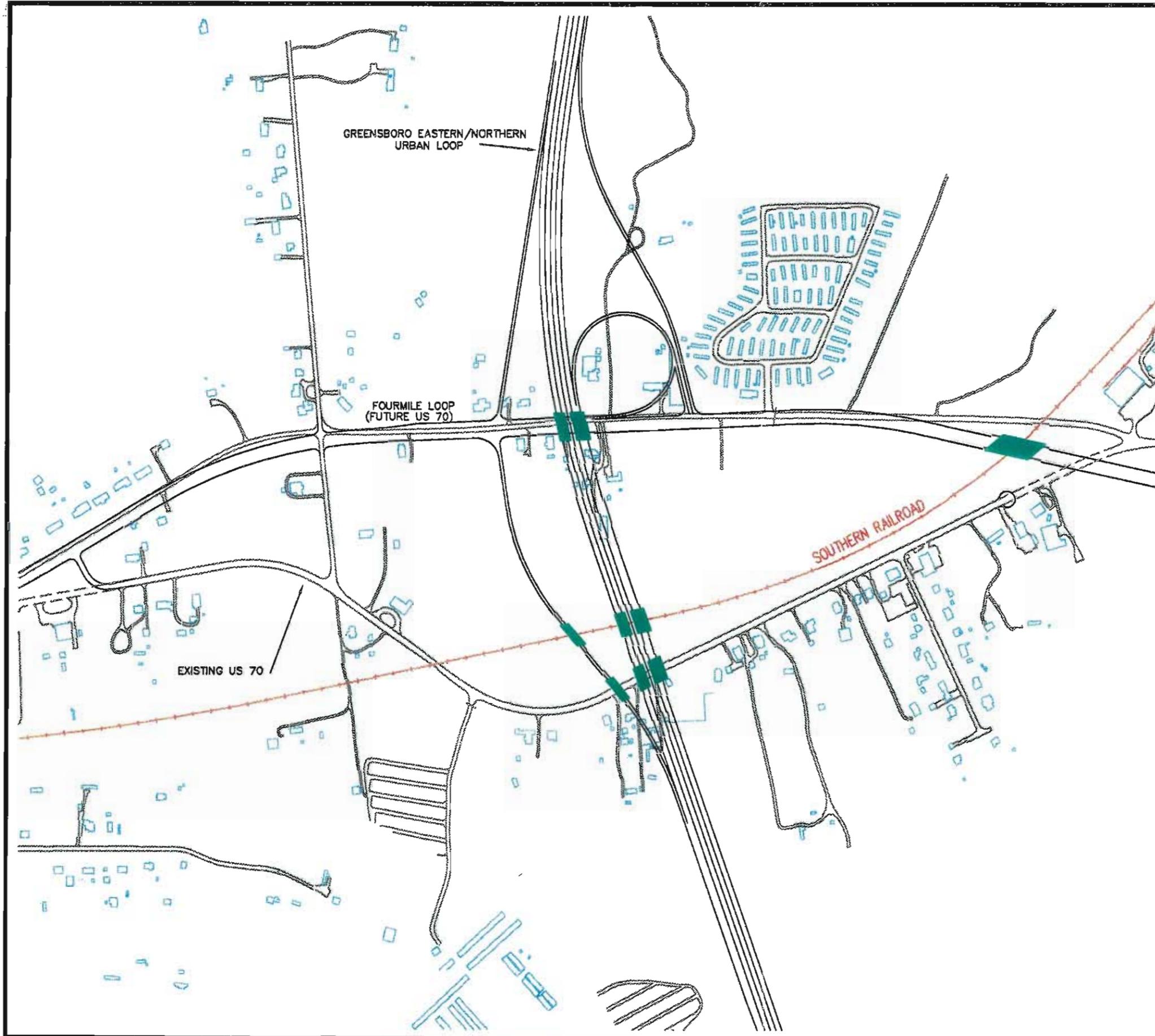
-  STRUCTURES
-  RAILROAD
-  EXISTING ROADS
-  PROPOSED FACILITIES
-  BRIDGES



**US 70 IMPROVEMENTS  
OPTION 1**

**FIGURE 3**

**GREENSBORO  
EASTERN/NORTHERN  
URBAN LOOP  
GUILFORD COUNTY, NC**



**LEGEND**

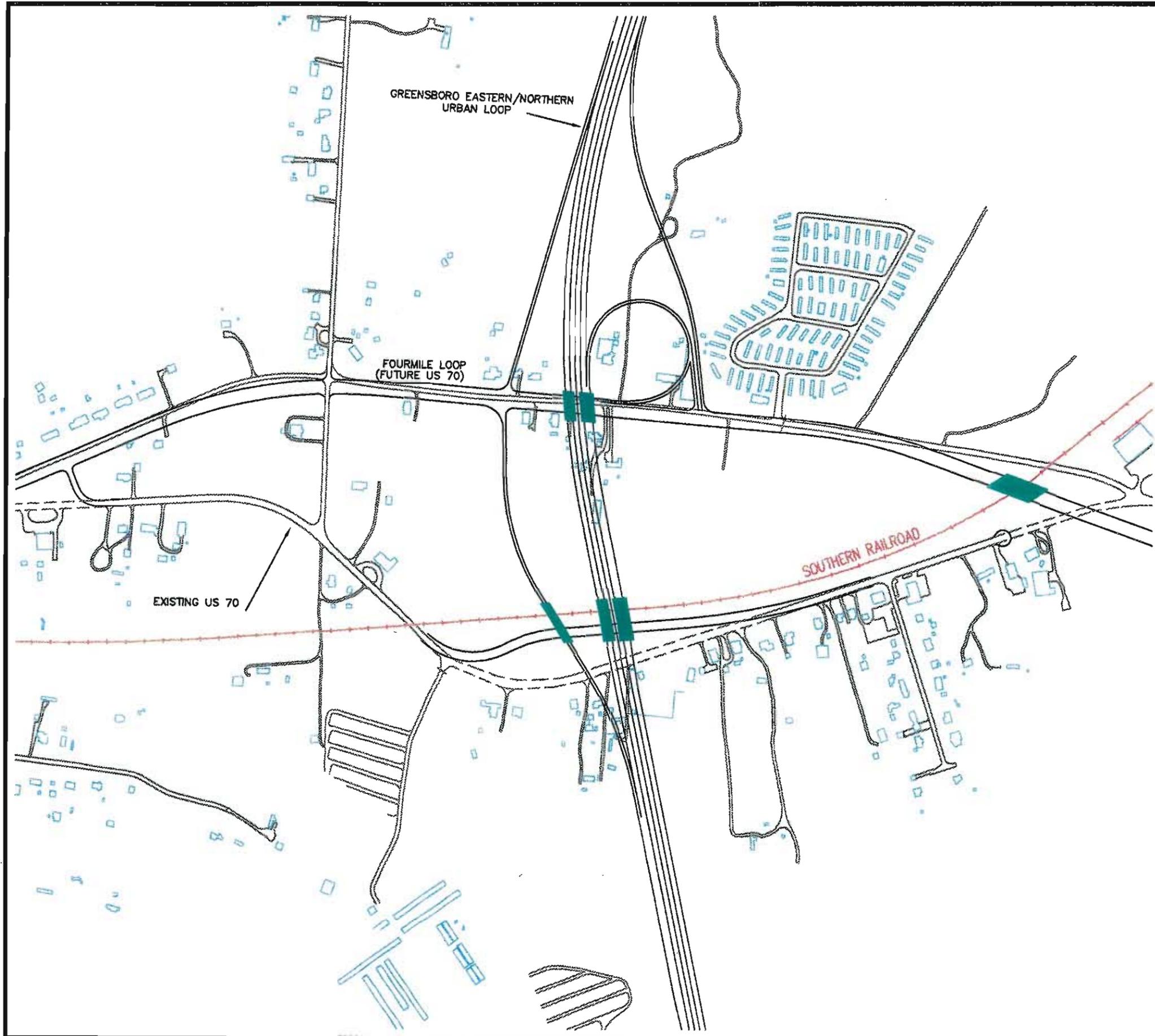
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- RAILROAD
- EXISTING ROADS
- PROPOSED FACILITIES
- BRIDGES



**US 70 IMPROVEMENTS  
OPTION 2**

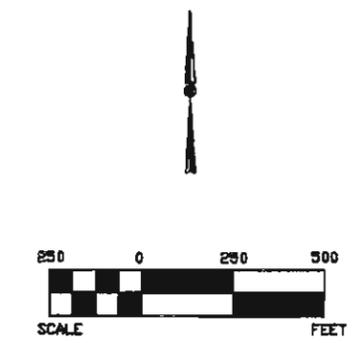
**FIGURE 4**

**GREENSBORO  
EASTERN/NORTHERN  
URBAN LOOP  
GUILFORD COUNTY, NC**



**LEGEND**

- STRUCTURES
- RAILROAD
- EXISTING ROADS
- PROPOSED FACILITIES
- BRIDGES



**US 70 IMPROVEMENTS  
OPTION 3**

**FIGURE 5**

just west of the Loop interchange. Because the selected option for the interchange will carry the Loop over existing US 70, additional disruption will be avoided. To the east, the road will end in a cul-de-sac. Rail access and patterns will not be affected.

Relocations within the proposed right-of-way of the US 70 interchange already were addressed in the Preferred Alternative for the Eastern/Northern Urban Loop. The widened section of US 70 will require additional right-of-way. Actual impacts to structures were minimized through preliminary design. Approximately six residences may be displaced. Businesses impacted by the widening are concentrated west of the Loop interchange. Four business sites on the northern side of US 70 may be impacted: Bryant's True Value and Shop Rite, Mobil Gas Station, Brenda's Wear House, and Greensboro Diesel Repair. On the southern side of US 70, an unoccupied market site may be displaced. East of the interchange and South Buffalo Creek, a single-story metal building will be displaced on the southern side of the existing roadway.

All relocations will follow the procedures of the NCDOT Relocation Assistance Program, as outlined in the Draft EIS.

No community services, facilities, or major utilities will be adversely impacted by the widening project. The Mount Pleasant United Methodist Church and cemetery, located in the southwestern quadrant of the US 70/Mount Hope Church Road intersection, will not be affected by the proposed US 70 widening.

## **B. Physical Impacts**

Impacts to the natural environment were assessed based on field reconnaissance in July 1994 and on the impacts addressed in the Eastern/Northern Urban Loop Draft EIS. Environmental features along the US 70 improvements are shown in Figures 6A and 6B.

### **1. Air Quality**

The Draft EIS for the Greensboro Eastern/Northern Urban Loop included detailed discussion on the air quality analysis conducted. Receptors for the air analysis were located along the right-of-way in each quadrant of the proposed interchanges, including the US 70 Interchange. These

"worst-case" receptors would adequately address any additional air quality impacts of the proposed US 70 improvements.

The Preferred Alternative for the Eastern/Northern Urban Loop would provide higher overall air quality in the region than the No-Build Alternative because of reduced vehicle-miles and vehicle-hours of travel, increased operating speed, and reduced congestion. The US 70 relocation and widening project would also contribute to improving overall air quality for the same reasons.

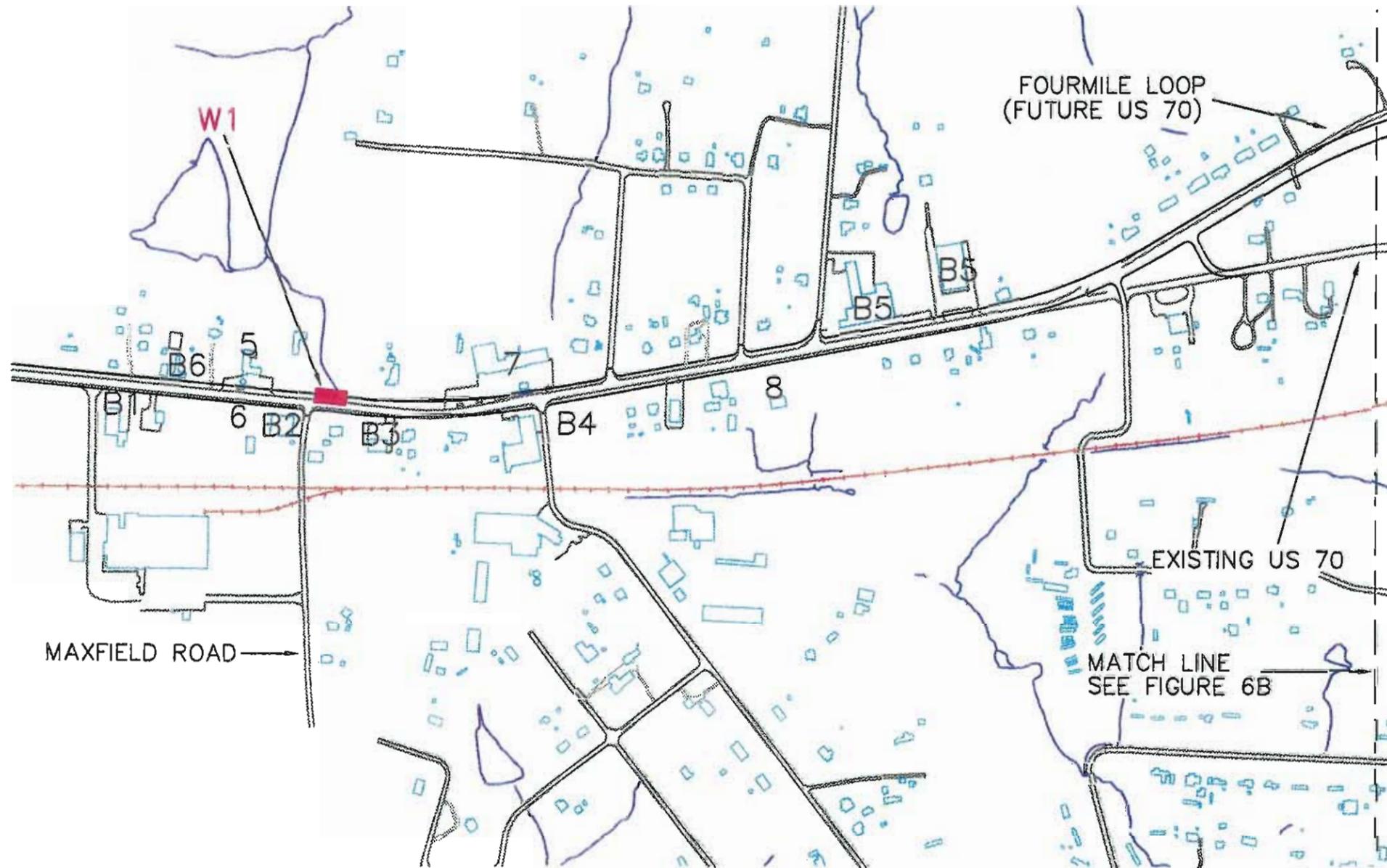
The project is located within an area administered by the Winston-Salem Regional Office of the North Carolina Division of Environmental Management (DEM). Since this project is located in an area where the State Implementation Plan (SIP) does not currently contain any transportation control measures, the conformity procedures of 23 CFR 770 do not apply.

## 2. Noise

The noise analysis performed for the Draft EIS measured ambient noise levels and projected impacts of the alternatives, including most of the proposed US 70 interchange area. Noise levels projected for the US 70 improvements will not exceed those already identified for the construction of the Eastern/Northern Urban Loop Preferred Alternative. Because the US 70 improvements will be on an existing road with unlimited access, future noise levels in the vicinity are not expected to substantially differ from existing levels. Some temporary noise impacts will occur during the construction of the project.

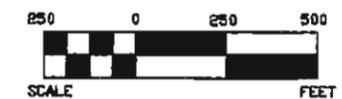
No areas requiring extreme quiet (e.g., hospitals) will be impacted by the construction noise. Limiting the permitted days and/or hours of operation of certain construction activities will minimize the impacts of construction noise. Temporary work areas and material storage areas will be located away from noise-sensitive receptors. Moreover, contract specifications will require that construction operations be performed in such a manner that specific maximum construction noise levels are not exceeded. The City of Greensboro and Guilford County have no noise ordinance that applies to road construction.

**GREENSBORO  
EASTERN/NORTHERN  
URBAN LOOP  
GUILFORD COUNTY, NC**



**LEGEND**

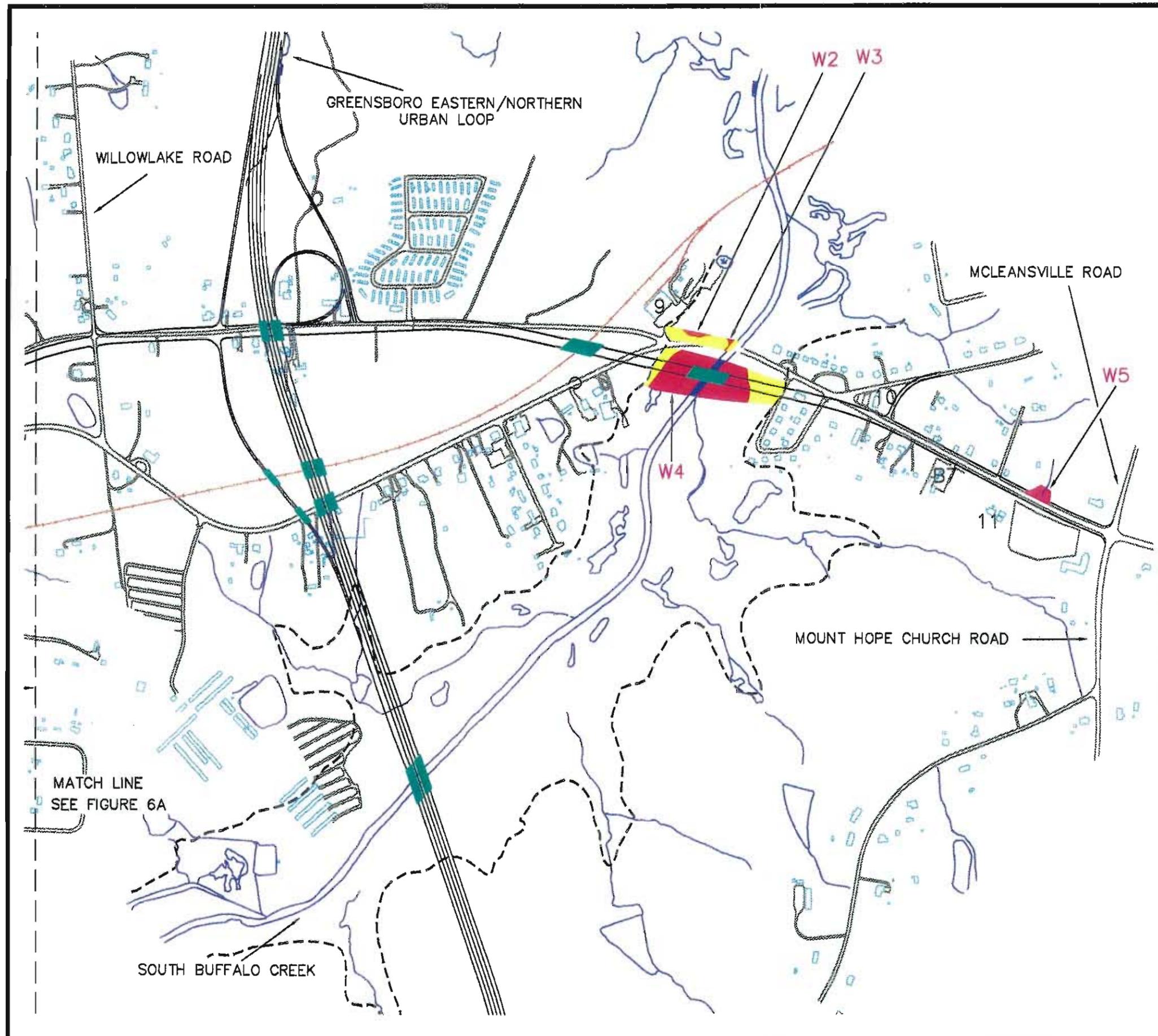
- STRUCTURES
- RAILROAD
- EXISTING ROADS
- PROPOSED FACILITIES
- BRIDGES
- FLOODPLAINS
- STREAM/OPEN WATER
- 1 USTs/HAZARDOUS MATERIALS
- B1 POTENTIAL SITES WITH HAZARDOUS MATERIAL
- W1 WETLANDS



**US 70 IMPROVEMENTS  
ENVIRONMENTAL FEATURES**

**FIGURE 6A**

**GREENSBORO  
EASTERN/NORTHERN  
URBAN LOOP  
GUILFORD COUNTY, NC**



**LEGEND**

- STRUCTURES
- RAILROAD
- EXISTING ROADS
- PROPOSED FACILITIES
- BRIDGES
- FLOODPLAINS
- STREAM/OPEN WATER
- 1 USTs/HAZARDOUS MATERIALS
- B1 POTENTIAL SITES WITH HAZARDOUS MATERIAL
- W1 WETLANDS



**US 70 IMPROVEMENTS  
ENVIRONMENTAL FEATURES**

**FIGURE 6B**

### **3. Water Quality**

The US 70 improvements will impact one surface water body in one location: South Buffalo Creek. The Draft EIS and Technical Memorandum on Natural Resources contain detailed information on the nature of the water bodies in the study area and the associated water quality. In summary, South Buffalo Creek is classified as CNSW (Nutrient-Sensitive Watershed, suitable for secondary recreation and fish propagation). Based on North Carolina DEM water quality data for South Buffalo Creek, the drainage area shows severely degraded habitat qualities.

The construction techniques, soil erosion/sediment control, stormwater management measures, and mitigation measures discussed in the Draft EIS will be followed for the US 70 interchange and improvements. Through the use of these measures, no significant impacts to water quality are expected.

### **4. Hydrology and Floodplain Management**

The US 70 improvements will impact South Buffalo Creek, with a stream crossing encroaching on approximately 4.7 acres of floodplain. However, impacts to the floodplain are expected to be minimized through the use of a bridge instead of culverts. No stream relocations or channelization will be required. The proposed improvements require bridging the existing channel of South Buffalo Creek.

A number of small intermittent streams and wetlands will be impacted by the widening and relocation of US 70. Adequately sized culverts will be included in the final design.

All design and construction measures for the Eastern/Northern Urban Loop to minimize and/or avoid impacts to floodplains will be used for the US 70 stream crossing. Final designs will be coordinated with the appropriate state and local officials and FEMA to assure compliance with federal, state, and local flooding regulations.

As previously discussed, measures will be taken during design and construction to minimize floodplain impacts and to provide stormwater management, soil erosion/sediment control, and maintenance of vegetated buffers.

## 5. Natural Systems

The natural vegetative communities along the US 70 interchange and improvements are largely modified and disturbed due to urbanization. Eight primary community types were identified within the study area during field reconnaissance performed in July 1994. These community types include upland hardwood forest, upland mixed forest, pine forest, alluvial forest, old fields, agricultural fields, open water, and man-dominated areas. Characteristics of these communities were defined and discussed in detail in the Draft EIS and the Technical Memorandum on Natural Resources.

Impacts to vegetation associated with the construction of the proposed roadway improvements were quantified, and the approximate acreage of the vegetative communities affected by the proposed improvements are shown in Table 1.

---

**TABLE 1**  
**IMPACTS TO VEGETATIVE COMMUNITIES**

<u>Community Type</u>	<u>Acres of Impact</u>
Upland hardwood forest	0.9
Upland mixed forest	5.7
Pine forest	1.0
Alluvial forest	0.4
Old field	2.3
Agricultural fields	0
Open water	0.1
Man-dominated areas	<u>20.1</u>
Total Acres	30.5

---

## 6. Protected Species

As part of the analysis for the Draft EIS, a protected species study was completed. According to the Draft EIS, three species potentially occur within the study area, nestronia (Nestronia umbella), Greensboro burrowing crayfish (Cambarus catagius), and Loggerhead Shrike (Lanius ludovivianus) are listed as federal candidate species (C2). Although not protected under the Endangered Species Act until listed, these species were reviewed. An additional species may occur in the general vicinity that is listed as state protected: the four-toed salamander (Hemidactylium scaturum). This species is listed by the state as "Special Concern." The loggerhead shrike is also listed by the State as "Special Concern."

Nestronia occurs in sandy, open woodlands and creek borders, usually parasitic on oak and pine roots. This species was not observed during field work; however, habitat suitable for the species occurs within the study area. The Greensboro burrowing crayfish is considered a primary burrower largely restricted to burrows rather than in surface waters. Little information is known about the species habitat requirements, life cycle, or distributional patterns. Although no specific survey was conducted for this species, its presence within the project area is unlikely due to its limited distribution and lack of recent occurrence. During earlier field reconnaissance for the Draft EIS, the loggerhead shrike was observed. The loggerhead shrike occurs in open country where scattered trees and other fixed items offer perches. The species is migratory and does not breed in the area. The population in North Carolina is seasonal in its numbers. There is suitable habitat within the US 70 improvements study area. However, the project will not impact the species or the habitat.

The four-toed salamander requires seepages or shallow ponds with moss-covered roots and logs, grass clumps over quiet water. Habitat suitable for this species does occur in the US 70 interchange and improvements study area; however, no species were found on-site during field reconnaissance.

No further field survey or biological assessment for these species is required.

## 7. Prime and Important Farmlands

According to the Soil Conservation Service Soil Survey for Guilford County, a majority of the US 70 improvements study area is underlain by Enon fine sandy loam soils. This soil series is classified by the U.S. Department of Agriculture as a prime farmland soil. The Soil Survey for Guilford County describes this soil as having moderate potential for corn, soybeans, tobacco, and small grains, as well as horticulture crops such as tomatoes, sweet corn, green beans, and peas.

Although this soil type is prominent in the study area, no actively cultivated farms were observed during field reconnaissance of the study area. Due to the urban nature of the study area and because construction of the US 70 improvements will consist of widening existing roadway, no significant impacts to prime farmlands are anticipated.

## 8. Wetlands

An evaluation of wetlands within the US 70 improvements study area was performed in July 1994. The approximate location and extent of wetlands located within the study area were determined based on the methodology outlined in the COE's 1987 Wetlands Delineation Manual.

Wetlands observed during field review consist primarily of wet hardwood forest associated with intermittent streams and bottomland (alluvial) forest, interspersed with scrub-shrub vegetation, located along the floodplain of South Buffalo Creek. A description of each of these wetland types and their functions is contained in the Technical Memorandum on Natural Resources and in the Draft EIS.

Wetland impacts within the construction limits for the proposed improvements are identified in Table 2. The wetlands site identified along South Buffalo Creek (W4) consists of two habitat types: bottomland hardwood swamp on the outer ends of the stream and a scrub-shrub wetland along the stream banks. The acreages are shown in Table 2. Results reflect the "worst case," as some areas within the construction limits may not be impacted. In addition, portions of the South Buffalo Creek floodplain will be spanned with a bridge structure, further reducing the impact to the wetland areas. Minimization techniques and mitigation measures utilized in the

construction of the Eastern/Northern Loop, as discussed in the Technical Memorandum on Natural Resources and the Draft EIS, will be incorporated into the construction of the interchange and US 70 improvements.

**TABLE 2  
SUMMARY OF WETLAND INVOLVEMENT**

<u>Site</u>	<u>Hydrology</u>	<u>Type</u>	<u>Acres Affected</u>
W-1	Intermittent Stream	F	0.06
W-2	South Buffalo Creek	S	0.06
W-3	South Buffalo Creek	S	0.03
W-4	South Buffalo Creek	BHW	1.08
	South Buffalo Creek	S	1.58
W-5	Intermittent Stream	F	<u>0.06</u>
	Total		2.87

WETLAND VEGETATION CODES:  
 F = Wet hardwood forest  
 S = Scrub-shrub  
 BHW = Bottomland hardwood forest

### 9. Hazardous Materials Sites and Underground Storage Tanks

As part of the Draft EIS, a hazardous materials and underground storage tank site survey was conducted. Appropriate entities responsible for regulating hazardous materials were contacted and field observations were performed. The results of those studies are included as Figures III-4 and Table III-7 of the Draft EIS.

Based on those studies, a number of potential hazardous materials sites and underground storage tanks were located, including sites within the US 70 improvements study area. Additional field observations were performed in July 1994 to confirm the nature of these sites. No additional hazardous materials sites or underground storage tanks were found along the US 70 improvements.

Table IV-13 of the Draft EIS provides a breakdown of the individual sites which could be potentially impacted by the various loop alternatives. Of the eight sites identified, four sites are located in the US 70 improvements study area. These sites include East Wendover Mobil, Dodson Auto Parts/Junk Yard, Shoprite Market/Gas Station (Bentley's), and Texaco. Three additional sites may also be affected by the US 70 improvements as listed in Table III-7 and shown on Figure III-4 of the DEIS: Superior Petroleum Products, Shell Gas Station, and Wade Oil and Gas Company. These seven sites are shown in Figures 6A and 6B with the number designations matching Figure IV-13 and Table III-7 of the Draft EIS.

The potential impacts from the US 70 interchange and improvements to the first four of these sites have been discussed in detail in the Draft EIS. The three additional sites and their potential for impact are discussed in the following paragraphs:

Superior Petroleum Products: numerous fuel/oil bulk tanks and other miscellaneous-sized containers of motor oil, transmission fluid, and industrial oil. The widening of existing Fourmile Loop (future US 70) may impact portions of this site.

Shell Gas Station: a gas station with underground storage tanks (gasoline), diesel, kerosene and an above ground storage tank. The widening of US 70 will be designed to avoid this site and its underground storage tanks.

Wade Oil and Gas Company: heating and air conditioning, custom sheet metal work, heat pumps, central air, oil and gas. This site includes several large petroleum dispensing tanks and storage of old units and is shown as site 11 on Figure III-4 in Section 1.0 of the FEIS. The road widening in front of this business will not impact the tanks.

In addition, businesses were identified that may not contain underground storage tanks or be included on state contamination lists, but may use materials that could generate potential liability. The following businesses were identified that may be impacted by the US 70 improvements, with their potential environmental liabilities.

<u>Figure Key</u> (6A, 6B)	<u>Business Name</u>	<u>Potential Source</u>
B1	General Repairs Company	batteries, tires, drums, barrels
B2	Tri-City Auto Salvage & Auto Shop	oils, tires, batteries, on-site storage
B3	Eastside Pools/Tropical Fish	chemical stored on-site
B4	Emergency Generators Service	oils, storage
B5	Allen Boat Company	old boat storage (oils/batteries)
B6	Greensboro Diesel Repair	oils, diesel, batteries, tires
B7	T&T Paving	storage, oils

Lots being used as junk yards/storage areas have the potential for liability due to the materials stored on-site. Two of these are located across US 70 from the Dodson Junk Yard. The remainder are located along existing US 70, where no improvements proposed.

The proposed alignment for the improvements would not physically impact the businesses identified above. However, due to the nature of the materials used at these sites, these businesses have the potential of creating liability on adjoining sites should the materials contaminate groundwater.

## **10. Mineral Resources**

The proposed improvements for US 70 will not impact mineral resources in the project area.

### **C. Cultural Resource Impacts**

The additional US 70 improvements will not impact any public parks, recreation facilities, known historic structures, or archaeological sites. The South Buffalo Creek floodplain is designated as future open space. The proposed US 70 interchange and improvements will include a bridged crossing of this floodplain. No impacts to the open space are expected because the crossing will be in the vicinity of the existing crossing of the floodplain. The US 70 interchange area was previously evaluated for cultural resources, as described in the Draft EIS. No historic structures or archeological sites were found in the study area that are listed in the National

Register of Historic Places or on the State Study List. While additional archaeological surveys were not conducted, the project is a road widening in an urban area. Therefore, no important archaeological resources are anticipated in the vicinity.

## 6.0 ENVIRONMENTAL COMMITMENTS

Environmental commitments for the proposed action include the following:

- A. Noise abatement measures will continue to be considered throughout the design process.
- B. The design of any necessary drainage structures at greenways will be coordinated with the Guilford County Parks and Recreation Department.
- C. Any underground storage tanks discovered during construction will be reported to the North Carolina Division of Environmental Management.
- D. The final designs will be coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with FEMA, state, and local floodway regulations.
- E. NCDOT's "Best Management Practices for Protection of Surface Waters" will be implemented where applicable.
- F. Mitigation for unavoidable wetland loss will be provided through implementation of a wetland mitigation plan developed during the permitting phase of the project.
- G. Geodetic survey control monuments will be located during design, and the U.S. Coast and Geodetic Survey and North Carolina Geodetic Survey will be notified of their location.
- H. Bridges will be considered during the design phase at major waterway and floodplain crossings.
- I. Recommendations to restore stream segments to resemble the destroyed habitat will be considered where practicable. Banks and beds of relocated channels will be stabilized with vegetation or other protective devices as practicable, including consideration of using logs to line banks.

## 7.0 PUBLIC AND AGENCY COMMENTS AND RESPONSES

The pre-hearing workshop was held on October 20, 1992 at Northeast Guilford High School. Representatives of the NCDOT, City of Greensboro, and Guilford County were present to answer questions and receive comments. Approximately 200 people attended the workshop. Exhibits included copies of the corridor public hearing map, a map showing the proposed Greensboro Urban Loop, and boards comparing the environmental and engineering aspects of the alternatives. Most of the questions and comments expressed at the workshop concerned the effect of alternatives on specific properties and the feasibility of other alignments.

A Corridor Public Hearing was conducted by the NCDOT on October 27, 1992 at Northeast Guilford High School. Of the approximately 600 people who attended the hearing, 37 made comments for the record.

Issues and concerns addressed at the public hearing are summarized below, with responses added:

**Comment:** The Middle and Eastern Alternatives will have a negative impact on McLeansville. The NCDOT should consider some other alternatives further to the west such as combining Crossovers 1 and 2.

**Response:** *The Crossovers were developed to provide possible transitions from one alternative to another. Crossover 1 provided a transition from the Western Alternative to I-85 while Crossover 2 acted as a transition between the Western Alternative and the Middle Alternative. Combining Crossovers 1 and 2 would create a circuitous path for traffic flow on that particular section of the urban loop.*

**Comment:** The interchange between the Greensboro Urban Loop and I-85/I-40 should be located between McConnell Road and Youngs Mill Road.

**Response:** *The location of the interchange was determined as part of the Preferred Alternative for the I-85 Bypass EIS (I-2402). This determination was made as a result of an extensive environmental impact study.*

**Comment:** Why was Replacements Limited overlooked during the preparation of the EIS?

**Response:** *Replacements Limited was not overlooked during the preparation of the EIS. The interchange with I-85/I-40 and the Greensboro Urban Loop is included in the study area for the I-85 Bypass (I-2402).*

**Comment:** The Urban Loop should be moved further away from Greensboro towards NC 150.

**Response:** *A roadway further from Greensboro would not attract the circumferential travel necessary to justify its location and cost. The proposed location of the Greensboro Eastern/Northern Urban Loop is compatible with local, regional, and state transportation goals.*

**Comment:** Why was Northeast Baptist Church not included on the list of churches in the study area?

**Response:** *As indicated in the Errata Section, Figure III-3 of the DEIS is revised to identify #42 as Northeast Baptist Church.*

In addition to the comments received at the public hearing, 12 letters, a petition opposing the Middle Alternative with 87 signatures, and 354 postcards supporting the Western Alternative were received during the public comment period.

Most of the letters expressed opposition to the project or concern for the proximity of the Eastern/Northern Urban Loop to particular properties. The questions and concerns addressed in the letters are summarized as follows:

**Comment:** How are school buses and routes affected?

**Response:** *Some of the school bus routes may be adjusted due to the Eastern/Northern Urban Loop. The roadway will be a full control of access freeway and school buses will be permitted to use the facility.*

**Comment:** How will relocation costs affect retired persons?

**Response:** *For people who are displaced by the Eastern/Northern Urban Loop, the state has a relocation assistance program. A relocation agent from the Department of Transportation will contact affected individuals to offer assistance. Owners who have owned and occupied their property for 180 days or more before the first written offer to purchase, may be eligible for a purchase supplement up to \$22,500; or a rent supplement up to \$5,250. Owners or tenants who have lived in a home less than 180 days before the first written purchase offer may be eligible for lesser supplements.*

**Comment:** Proposed roadway projects should be publicized more extensively.

**Response:** *Public Informational Workshops were held on September 18, 1990 and March 6, 1992 at Brightwood Elementary School and four newsletters updating the public on the project were mailed in September 1990, February 1991, October 1992, and June 1993. The local*

*newspaper, Greensboro News and Record, announced each workshop and the public hearing and contained several feature articles on the Urban Loop.*

Written responses received from agencies commenting on the Draft Environmental Impact Statement are summarized below. Copies of the comments are included in the Appendix. An appropriate response follows each comment and is printed in italics.

Department of Army, Corps of Engineers, Regulatory Branch

Date of Letter: October 27, 1992

"A conceptual mitigation plan should be included in the Final EIS with potential sites and options. Although specific mitigation sites may not be known at this time, the Final EIS should include those concepts of mitigation considered for the Preferred Alternative, the proposed ratios of compensatory mitigation, and the acreage of mitigation proposed according to wetland type."

**Response:** *A conceptual mitigation plan is included in the "Wetland Findings," Section 3.0 of the FEIS.*

"Based on our review of the document, the Eastern Alternative is the least damaging in reference to jurisdictional waters of the United States."

**Response:** *See FEIS Section 2.0, Selection of Preferred Alternative.*

Department of the Army, Corps of Engineers, Planning Division

Date of Letter: November 16, 1992

"We suggest that you coordinate with the City of Greensboro and Guilford County for compliance with their floodplain ordinances and possible revision to their flood insurance maps and reports."

**Response:** *Coordination in all relevant aspects of the project with the City of Greensboro and Guilford County will continue through the design and construction phases of the project.*

"A conceptual mitigation plan should be included in the Final EIS with potential sites and options."

**Response:** *See response to Corps of Engineers, Regulatory Branch.*

"Based on our review, the Eastern Alternative is the least damaging in reference to jurisdictional waters of the United States."

**Response:** *See FEIS Section 2.0, Selection of Preferred Alternative.*

U.S. Department of Interior, Fish and Wildlife Service

Date of Letter: December 3, 1992

"The Service recommends that all unavoidable impacts will be mitigated fully in accordance with the Service's Mitigation Policy."

**Response:** *All wetland impacts will be mitigated in accordance with US Army Corps of Engineers policy. Where possible, wetlands will be avoided. In those instances where avoidance is not feasible, wetland impacts will be minimized. After minimization, wetland impacts will be mitigated.*

"We recommend that every reasonable effort be made to minimize the extent of stream channelization and culverts."

**Response:** *NCDOT will minimize the extent and impact of stream channelization and culverts to the fullest extent practicable.*

"The Service concurs that there are no currently Federally-listed or proposed endangered or threatened plant or animal species in the project impact area. Therefore, the requirements of Section 7 of the Endangered Species Act are fulfilled. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner which was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by the identified action."

**Response:** *Any changes in the status of endangered species in the study area will be reviewed prior to the right-of-way and construction phases of the project. If additional species for Guilford County have been listed, coordination with the Fish and Wildlife Service will resume in accordance with Section 7 of the Endangered Species Act.*

"Based on the information provided in the document, the Eastern Alternative is the Service's preferred alternative because it would result in the least impact to wetlands and floodplains."

**Response:** *None required.*

Guilford County, Planning Division

Date of Letter: November 13, 1992

"The northern portion of the project from Lawndale Drive east to the Brightwood School Road is located in the Greensboro (Richland Creek) Watershed Critical Area (WCA). Page III-17 incorrectly states that '...any development within the WCA boundary must meet the requirements of Article VII, Division 2, of the City of Greensboro Code of Ordinances.' Guilford County currently has Watershed and WCA jurisdiction in this part of the Northern Loop. The sentence should be amended to read Article VII, Sections 7-1, 7-2 and 7-3 of the Guilford County Development Ordinance."

**Response:** *The discussion of the ordinances associated with the Watershed and WCA jurisdiction on page III-17 were revised as noted above (See Errata sheet, page 5 of the FEIS).*

"Based on the recently-adopted Statewide Water Supply Watershed Management and Protection rules, the following measures for mitigating the non-point source highway construction impacts should be incorporated into the DEIS, the construction plans, and the actual construction of the project as part of the Transportation Best Management Practices (BMP's):

- (1) Bridges instead of culverts at major stream crossings to lessen wetland impacts and to cause little or no change in base flood flow elevations;
- (2) Wide separation of drainage inlet structures and the prevention of bridge drainage directly into receiving streams;
- (3) Permanent water quality ponds at points of runoff into major streams to maintain or enhance existing water quality in the drinking water supply watersheds;
- (4) Provide flush shoulder and grass-line drainage channels;
- (5) Eliminate curb and gutter to the maximum extent feasible;
- (6) Litter and pesticide control;
- (7) Use of wetlands for chemical and biological pollutant removal; and,
- (8) Vegetation establishment and maintenance."

**Response:** *The NCDOT "Best Management Practices for Protection of Surface Waters" will be implemented where practicable.*

North Carolina Department of Cultural Resources Division of Archives and History

Date of Letter: October 21, 1992

"This project requires authorization from both the Army Corps of Engineers and the Federal Highway Administration since federal permits and crossing of interstate highways are necessary. Because all the reasonable and feasible alignments include federal permit areas and crossing of interstate highways, we feel that this project cannot be built without federal approval. Thus, the entire project area is subject to compliance with Section 106 of the National Historic Preservation Act. We recommend that this undertaking be reviewed for possible effects upon properties which may be eligible for National Register-listing.

An archaeological survey of the selected corridor will be necessary to evaluate effects upon eligible properties since the majority of the proposed project area has never been systematically examined by an experienced archaeologist."

**Response:** *The Greensboro Eastern/Northern Loop is a state trust fund project. The project is subject to compliance with General Statute 121(12)(a), "North Carolina Historic Commission, Protection of Properties on National Register."*

*Section 106 of the National Historic Preservation Act of 1966 applies to areas requiring federal permits, such as permits under Section 404 of the Clean Water Act issued by the Army Corps of Engineers. The Corps of Engineers' interpretation of Section 404 is federal jurisdiction is applicable only to the permit area as defined in Appendix C to 33 CFR Part 325, Processing of Department of the Army Permits: Protection of Historic Properties. The FHWA and NCDOT concur with the Corps' interpretation. Therefore, only the permit area is subject to Section 106 compliance. For this project, a permit will be required for several individual sites along South Buffalo Creek, North Buffalo Creek, Richland Creek, and some of the unnamed tributaries of these creeks.*

#### North Carolina Wildlife Resources Commission

Date of Letter: October 21, 1992

"In view of the extensive loss of upland habitat under all alternatives, and the continuing loss of wildlife habitat in Guilford County, the NCWRC recommends that the NCDOT consider mitigation for upland habitat impacts on major urban loop projects. We also recommend that relocated stream segments be restored to resemble the destroyed stream habitat with respect to gradient, meander, and instream structure. Such restorations may be incorporated into on site wetland mitigation areas and may help to offset long-term increases in runoff and sedimentation during storm events."

**Response:** *NCDOT currently has no plans for upland habitat mitigation. The recommendations to restore relocated stream segments to resemble the destroyed habitat will be considered where practicable.*

North Carolina Department of Environment, Health and Natural Resources, Division of Forest Resources

Date of Letter: October 7, 1992

"Perhaps some salvaging of a portion of the Western Alternative plus Crossover #2 could be reconsidered as a means of bypassing the landfill problem and still attempt to lessen the impact to woodland."

**Response:** *The Western Alternative was eliminated from consideration due to its wetland impacts and number of residential displacements as well as impacts to the White Street Landfill. Additionally, the Preferred Alternative for the I-85 Bypass (TIP I-2402) interchanges with existing I-85/I-40 just east of McConnell Road, which makes the southernmost section of the Western Alternative incompatible with the Preferred Alternative for the I-85 Bypass project.*

"The ROW Contractor should attempt to salvage merchantable trees for pulpwood and saw timber whenever possible and protect trees outside of construction limits from -

- a. Skinning of tree trunks by machinery.
- b. Soil compaction and root exposure or injury by heavy equipment.
- c. Adding layers of fill dirt over the root systems of trees, a practice that impairs root aeration.
- d. Accidental spilling of petroleum products or other damaging substances over the root systems of trees."

**Response:** *The timber cut during the clearing operations becomes the property of the contractor and shall be removed from the property by him. The salvage of merchantable trees is at the discretion of the contractor.*

*The contractor shall conduct his operations in a manner to prevent limb, bark, or root injuries to trees and other types of vegetation on adjacent property in accordance with NCDOT Standard Specifications for Roads and Structures.*

North Carolina Department of Environment, Health and Natural Resources, Division of Environmental Management

Date of Letter: October 23, 1992

"DOT should install and maintain hazardous spill catch basins at all water supply stream crossings."

**Response:** *NCDOT's "Best Management Practices for Protection of Surface Waters" will be implemented as applicable to protect water quality at all stream crossings.*

"DEM believes that improvements can be made to the Transportation System Management (TSM) option. DEM does not view improvements to the TSM or construction of the Loop as an either/or situation."

**Response:** *Some Transportation System Management type improvements can be made in the study area. These improvements (e.g., improving signal timing, adding turn lanes) will lead to a marginal improvement in traffic flow and operation along the existing roadway network. However, the existing roadway network does not provide for efficient circumferential travel around Greensboro, one of the primary purposes of the Eastern/Northern Urban Loop.*

"DOT should require that the contractor not impact additional wetland areas due to the disposal of excavated spoil material, as a source of borrow material or other construction related activities. Prior to the approval of any borrow source in a wetland, the contractor shall obtain a 401 Certification from DEM."

**Response:** *In accordance with the 1990 NCDOT Standard Specifications for Roadway and Structures, disposal of waste and debris will not be allowed in any areas under the Corps of Engineers' regulating jurisdiction until the Contractor has obtained a permit for such disposal from the Corps' District Engineer having jurisdiction, and has furnished a copy of this permit to the NCDOT Resident Engineer.*

"After stream relocation, the banks should be planted with suitable canopy species to produce shade on the water surface at high noon. It is recommended that the denuded stream banks be stabilized with log banks rather than rip-rap."

**Response:** *In accordance with NCDOT "Best Management Practices for Protection of Surface Waters," the banks and beds of relocated channels will be stabilized with vegetation or other protective devices as practicable. NCDOT will investigate the use of lining the banks with logs during design phase.*

"The document states on page II-2, 'Transit services for circumferential trips were reviewed as part of the 1989 Greensboro Urban Area Thoroughfare Plan Update and the Greensboro Transit Service Plan. Both studies show that transit cannot meet current or projected circumferential trip needs. Due to the low projected ridership...' How will the proposed Loop help move traffic if there is no demand for circumferential trips?"

**Response:** *There is a demand for circumferential trips in Greensboro. By the year 2010, the average daily traffic on the Eastern/Northern Urban Loop (circumferential traffic) is projected to range from 18,400 to over 30,000 vehicles per day. Transit systems are generally designed to serve radial, not circumferential, trips. As stated on Page II-7 of the Draft EIS, "Both studies show that transit cannot meet current or projected circumferential trip needs (emphasis added). The present system is designed to serve radial needs.*

"DEM recommends that the Eastern Alternative be chosen as the preferred alternative due to the least impact to high quality wetlands, lowest total wetland impacts and the lowest total cost."

**Response:** *See FEIS Section 2.0, Selection of Preferred Alternative.*

"Endorsement of the EIS by DEM does not preclude the denial of a 401 Certification upon application if wetland impacts have not been avoided and minimized to the maximum extent practicable. In addition, endorsement of the EIS does not force concurrence with the two other sections of the Urban Loop."

**Response:** *None required.*

## APPENDIX



C. Sharce

DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402-1890



IN REPLY REFER TO

October 27, 1992

Regulatory Branch

SUBJECT: Action ID. 199300243

North Carolina Department  
of Transportation  
Division of Highways  
Planning and Environmental Branch  
C/O Mr. L. J. Ward, P.E., Manager  
Post Office Box 25201  
Raleigh, North Carolina 27611-5201

Dear Mr. Ward:

We have reviewed your letter of September 19, 1992, requesting information for the alternatives described in the Draft Environmental Impact Statement (EIS) for the Eastern/Northern Urban Loop from I-85 east of Greensboro to Lawndale Drive, north of Greensboro, Guilford County, North Carolina, TIP No. U-2525, State Project No. 6.498003t.

Section 404 of the Clean Water Act regulates the discharge of excavated and/or fill material into waters of the United States. The U.S. Army Corps of Engineers must assess the impacts of such activities on the aquatic environment prior to issuing Department of the Army permits. Authorization of aquatic fill activities requires that the project be water dependent and/or that no practicable alternatives are available. Our initial review emphasis for NCDOT projects will focus on the impacts to waters and or wetlands. However, if degradation to other aspects of the natural environment (e.g., habitat of endangered species) is considered to be of greater concern, an alternative resulting in greater aquatic losses may be chosen as preferred. In all cases, and in accordance with the Memorandum of Agreement between the U.S. Environmental Protection Agency and the Corps, the sequencing process of avoidance, minimization, and mitigation of unavoidable wetland fill will be satisfied prior to the final permit decision.

Five primary build alternative alignments for the project were described in detail in the aforementioned Draft Environmental Impact Statement (EIS) document. All alternatives are for the construction of a beltway on new locations consisting of three general corridors within the Buffalo Creek Basin. These corridors are identified as a western (WEST) corridor, middle (MIDDLE) corridor, and an eastern (EAST) corridor. Two potential southern endpoints are located along I-85 (-A- near Youngs Mill Road and -B- east of McConnell Road). Crossover segments allow for variations to the primary alternatives to include two more build alternatives. These combine to form five alternatives: West, Middle, East, Crossover 1, and Crossover 2. The western alternative has been eliminated because of serious legal,

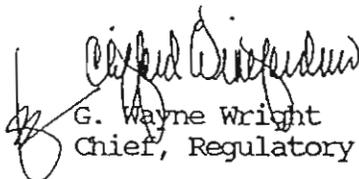
environmental, and operational constraints that would result due to the alternative's impacts to 8.4 acres of the White Street Sanitary Landfill. Crossovers 1 and 2 have been also eliminated due to association with the western alternative and recent identification of the preferred alternative for the proposed I-85 Bypass. As a result of the aforementioned, the Middle Alternative and the Eastern Alternative remain for review.

Based on our review of the aforementioned document with regards to the U.S. Army Corps of Engineers perspective, the EAST Alternative is the least damaging in reference to jurisdictional waters of the United States to be impacted. Specifically, this alternative would impact 11.7 acres of jurisdictional wetlands (8.1 acres of forested wetlands / shrub - marsh and 3.6 acres of bank to bank / pond waters of the US) with 23 stream crossings. The middle alternative would impact 15.0 acres of jurisdictional wetlands (11.2 acres of forested wetlands / shrub - marsh and 3.8 acres of bank to bank/pond waters of the US) with 22 stream crossings. The acreage of 100 year floodplain encroachment for the East Alternative at 6.2 acres is also less damaging than the Middle Alternative at 16.5 acres.

A conceptual mitigation plan should be included in the Final EIS with potential sites and options. Although specific mitigation sites may not be known at that time, the Final EIS should include those concepts of mitigation considered for the preferred alternative, the proposed ratios of compensatory mitigation, and the acreage of mitigation proposed according to wetland types.

Mr. John Thomas is the point of contact for processing of your Department of the Army permit for the proposed project. Should you have questions, please contact Mr. Thomas, Raleigh Regulatory Field Office, at telephone (919) 876-8441

Sincerely,

  
G. Wayne Wright  
Chief, Regulatory Branch

Copies Furnished:

Mr. Thomas Welborn, Chief  
Wetlands Regulatory Section - Region IV  
Wetlands, Oceans and Watersheds Branch  
U.S. Environmental Protection Agency  
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Atlanta, Georgia 30365

Mr. John Parker  
Division of Coastal Management  
North Carolina Department of  
Environment, Health and  
Natural Resources  
Post Office Box 27687  
Raleigh, North Carolina 27611-7687

Mr. Larry Hardy  
National Marine Fisheries Service  
Pivers Island  
Beaufort, North Carolina 28516

Mr. John Dorney  
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North Carolina Department of  
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Natural Resources  
Post Office Box 27687  
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Mr. Robert Lee  
District Engineer  
Federal Highway Administration  
310 New Bern Avenue  
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Raleigh, North Carolina 27610

Ms. L. K. (Mike) Gantt  
U.S. Fish and Wildlife Service  
Fish and Wildlife Enhancement  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402-1890

IN REPLY REFER TO:

November 16, 1992

Planning Division

Mr. L. J. Ward, P.E., Manager  
Planning and Environmental Branch  
Division of Highways  
North Carolina Department  
of Transportation  
Post Office Box 25201  
Raleigh, North Carolina 27611-5201



Dear Mr. Ward:

This is in response to your letter of September 16, 1992, requesting our comments on the "State Draft EIS for Eastern/Northern Urban Loop, from I-85 East of Greensboro to Lawndale Drive North of Greensboro, Approximately 13 Miles, in Guilford County, TIP No. U-2525, State Project No. 6.498003T," (Regulatory Branch Action I.D. No. 199300243).

Our comments, from the U.S. Army Corps of Engineers (COE) perspective, involve impacts to COE projects, flood plains, and other environmental aspects, primarily waters and wetlands. None of the alternatives considered cross any COE constructed flood control or navigation projects.

The proposed project is sited in Greensboro and Guilford County, which participate in the Federal Flood Insurance Program. The Retained Alternatives have planned crossings of Richland, North Buffalo, and South Buffalo Creeks. These streams have been studied by detailed methods, with the 100-year flood elevations determined and a floodway defined. We suggest that you coordinate with the city of Greensboro and Guilford County for compliance with their flood plain ordinances and possible revision to their flood insurance maps and reports.

Our Raleigh Regulatory Office has reviewed the above-mentioned project and offers the following comments. Section 404 of the Clean Water Act regulates the discharge of excavated and/or fill material into waters of the United States. The COE must assess the impacts of such activities on the aquatic environment prior to issuing Department of the Army permits. Authorization of aquatic fill activities requires that the project be water dependent and/or that no practicable alternatives are available. Our initial review emphasis for North Carolina Department of Transportation projects will focus on the impacts to waters and/or wetlands. However, if degradation to other aspects of the natural environment (e.g., habitat of endangered species) is considered

to be of greater concern, an alternative resulting in greater aquatic losses may be chosen as preferred. In all cases, and in accordance with the Memorandum of Agreement between the U.S. Environmental Protection Agency and the COE, the sequencing process of avoidance, minimization, and mitigation of unavoidable wetland fill will be satisfied prior to the final permit decision.

Five primary build alternative alignments for the project were described in detail in the aforementioned Draft Environmental Impact Statement (EIS) document. All alternatives are for the construction of a beltway on new locations, consisting of three general corridors within the Buffalo Creek Basin. These corridors are identified as a Western (West) Corridor, Middle (Middle) Corridor, and Eastern (East) Corridor. Two potential southern endpoints are located along I-85 (A: near Youngs Mill Road and B: east of McConnell Road). Crossover segments allow for variations to the primary alternatives to include two more build alternatives. These combine to form five alternatives: West, Middle, East, Crossover 1, and Crossover 2. The Western Alternative has been eliminated because of serious legal, environmental, and operational constraints that would result due to the alternative's impacts to 8.4 acres of the White Street Sanitary Landfill. Crossovers 1 and 2 have also been eliminated due to association with the Western Alternative and recent identification of the preferred alternative for the proposed I-85 Bypass. As a result of the aforementioned, the Middle Alternative and the Eastern Alternative remain for review.

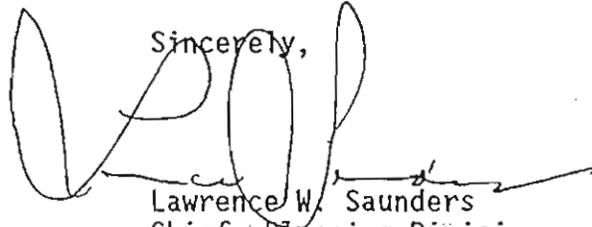
Based on our review of the aforementioned document with regard to the COE perspective, the EAST Alternative is the least damaging in reference to jurisdictional waters of the United States to be impacted. Specifically, this alternative would impact 11.7 acres of jurisdictional wetlands (8.1 acres of forested wetlands/shrub-marsh and 3.6 acres of bank-to-bank/pond waters of the United States) with 23 stream crossings. The Middle Alternative would impact 15.0 acres of jurisdictional wetlands (11.2 acres of forested wetlands/shrub-marsh and 3.8 acres of bank-to-bank/pond waters of the United States) with 22 stream crossings. The acreage of 100-year flood plain encroachment for the East Alternative at 6.2 acres is also less damaging than the Middle Alternative at 16.5 acres.

A conceptual mitigation plan should be included in the Final EIS with potential sites and options. Although specific mitigation sites may not be known at that time, the Final EIS should include those concepts of mitigation considered for the preferred alternative, the proposed ratios of compensatory mitigation, and the acreage of mitigation proposed according to wetland types.

Mr. John Thomas is the point of contact for processing your Department of the Army permit for the proposed project. Should you have questions concerning the permit, please contact Mr. Thomas, Raleigh Regulatory Field Office, at telephone (919) 876-8441.

We appreciate the opportunity to comment on this project. If we can be of further assistance to you, please do not hesitate to contact us.

Sincerely,



Lawrence W. Saunders  
Chief, Planning Division



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Raleigh Field Office  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726



December 3, 1992

**RECEIVED**

DEC 10 1992

KIMLEY-HORN  
TPTO OFFICE

Mr. L.J. Ward, Manager  
Planning and Environmental Branch  
N.C. Department of Transportation  
Division of Highways  
Post Office Box 25201  
Raleigh, North Carolina 27611-5201

SUBJECT: State Draft EIS for Eastern/Northern Urban Loop, from I-85 East of Greensboro to Lawndale Drive North of Greensboro, Guilford Conty, TIP No. U-2525, State Project No. 6.498003T

Dear Mr. Ward:

This responds to your September 16, 1992 letter soliciting comments on the subject document. Although this report was not provided by the requested November 13, 1992, Ms. Cindy Sharer, Project Manager, North Carolina Department of Transportation, has indicated that comments would, nonetheless, be useful and appreciated. This is the report of the Department of the Interior and U.S. Fish and Wildlife Service (Service) and is submitted in accordance with provisions of the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

Based on the information provided in the document, the Eastern Alternative is the Service's preferred alternative because it would result in the least impact to wetlands and floodplains.

The Service is particularly concerned about minimizing impacts to the forested wetlands and floodplains that occur along the streams that would be crossed by the proposed project on new location, particularly the crossings of South Buffalo Creek and North Buffalo Creek. While the water quality and associated fish and wildlife habitat of these streams has been degraded by past activities of man, as pointed out in the document, future development projects that would result in further degradation are clearly undesirable. The Service recommends that all unavoidable wetland impacts will be mitigated fully in accordance with the Service's Mitigation Policy (Federal Register 46(15): 7644-7663), January 23, 1981).

Because detailed coordination on stream channel modifications has not been initiated with the Service at this time, we will reserve detailed comments on this aspect of the proposed project until such coordination takes place. However, we do recommend that every reasonable effort (e.g., shifting

alignment within an identified corridor, perpendicular stream crossings) be made to minimize the extent of stream channelization and culverts.

The Service concurs that there are no currently Federally-listed or proposed endangered or threatened plant or animal species in the project impact area. Therefore, the requirements of Section 7 of the Endangered Species Act are fulfilled. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner which was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

The attached page provides a updated listing of Federal candidate species which may occur in the proposed project vicinity for your information.

Sincerely yours,



L.K. Mike Gantt  
Supervisor

REVISED JANUARY 1, 1992

Guilford County

There are species which, although not now listed or officially proposed for listing as endangered or threatened, are under status review by the Service. These "Candidate" (C1 and C2) species are not legally protected under the Act, and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as threatened or endangered. We are providing the below list of candidate species which may occur within the project area for the purpose of giving you advance notification. These species may be listed in the future, at which time they will be protected under the Act. In the meantime, we would appreciate anything you might do for them.

Nestronia (Nestronia umbellula) - C2  
Greensboro burrowing crayfish (Cambarus cataquius) - C2  
Loggerhead shrike (Lanius ludovicianus) - C2



## GUILFORD COUNTY

November 13, 1992



L. J. Ward, P.E., Manager  
Planning and Environmental Branch  
North Carolina Department of Transportation  
Raleigh, North Carolina 27611-5201

RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)  
EASTERN/NORTHERN URBAN LOOP  
GUILFORD COUNTY, NC TIP NO. U-2525

Dear Mr. Ward:

This letter is written as commentary to the DRAFT EIS for the proposed Eastern/Northern Urban Loop project in Guilford County from I-85 East to Lawndale Drive.

The principal concerns are as follows:

### Roadway Alternatives:

As explained in the DEIS, the Western Alternative has been eliminated because of the significant constraints posed by the White Street Landfill, the impact on wetlands, and the residential displacements. The Middle Alternative appears to be the more preferable because (1) its proximity to the K-Mart Distribution Center would cause less disruption on US 70 from eastbound and westbound truck traffic; (2) would have less impact on the McLeansville Community; and (3) would have fewer environmental constraints.

### Roadway Design:

Figure II-3 shows the typical four-lane grass median 300-foot cross-section for the proposed facility. We concur with this typical cross-section to meet the immediate and long-term traffic needs of the area. The 300-foot right-of-way will insure sufficient roadway capacity if future widening is necessary.

### Wetlands, Floodplains, and Major Stream Crossings:

Figure III-5 shows both alternatives with major stream crossings which impact wetlands, particularly the North and South Buffalo Creek crossings. While it may not be possible to avoid these crossings and wetlands, every effort should be made to provide on-site wetland replacement to mitigate the disturbance and loss.

L. J. Ward, P.E.  
Page 2  
November 13, 1992

As noted in Table IV-7 and Table IV-9, the project alternatives will encroach the 100-year floodplain and require stream channelization and/or relocation. At every affected location, the affected floodway should carry the 100-year flood without increasing the base flood elevation (BFE) more than one foot at any point. Letter of Map Revision (LOMR) approval for stream relocation should also be coordinated with Guilford County.

Watershed Boundaries and Watershed Critical Areas:

The northern portion of the project from Lawndale Drive east to Brightwood School Road is located in the Greensboro (Richland Creek) Watershed and Watershed Critical Area (WCA). Page III-17 incorrectly states that "...any development within the WCA boundary must meet the requirements of Article VII, Division 2, of the City of Greensboro Code of Ordinances." Guilford County currently has Watershed and WCA jurisdiction in this part of the Northern Loop. The sentence should be amended to read Article VII, Sections 7-1, 7-2, and 7-3 of the Guilford County Development Ordinance.

Based on the recently-adopted Statewide Water Supply Watershed Management and Protection rules, the following measures for mitigating the non-point source highway construction impacts should be incorporated into the DEIS, the construction plans, and the actual construction of the project as part of the Transportation Best Management Practices (BMP's):

- (1) Bridges instead of culverts at major stream crossings to lessen wetland impacts and to cause little or no change in base flood flow elevations;
- (2) Wide separation of drainage inlet structures and the prevention of bridge drainage directly into receiving streams;
- (3) Permanent water quality ponds at points of runoff into major streams to maintain or enhance existing water quality in the drinking water supply watersheds;
- (4) Provide flush shoulder and grass-line drainage channels;

L. J. Ward, P.E.  
Page 3  
November 13, 1992

- (5) Eliminate curb and gutter to the maximum extent feasible;
- (6) Litter and pesticide control;
- (7) Use of wetlands for chemical and biological pollutant removal; and,
- (8) Vegetation establishment and maintenance.

As indicated in the DEIS, the selection of a Preferred Alternative in the Final EIS is a balancing process of weighing all the potential or probable impacts with the intended benefits. Inclusion of the above measures and commentary should help in the balancing process and insure that the cumulative (long-range) impacts are mitigated to the maximum extent feasible.

Sincerely,

  
DeLacy M. Wyman, AICP  
Chief, Planning Division

/1

cc: County Commissioners  
Brenda Jones  
Jim Elza



*Candy*

North Carolina Department of Cultural Resources

James G. Martin, Governor  
Patric Dorsey, Secretary

Division of Archives and History  
William S. Price, Jr., Director

October 21, 1992

MEMORANDUM



TO: L. J. Ward, P.E., Manager  
Planning and Environmental Branch  
Division of Highways  
Department of Transportation

FROM: David Brook *David Brook*  
Deputy State Historic Preservation Officer

SUBJECT: Greensboro Eastern/Northern Loop, Guilford County,  
U-2525, 6.498003T, CH 93-E-4220-0202

We have received the draft environmental impact statement for the above project from the State Clearinghouse and would like to comment.

This project requires authorization from both the Army Corps of Engineers and the Federal Highway Administration since federal permits and crossings of interstate highways are necessary. Because all the reasonable and feasible alignments include federal permit areas and crossings of interstate highways, we feel that this project cannot be built without federal approval. Thus, the entire project area is subject to compliance with Section 106 of the National Historic Preservation Act. We recommend that this undertaking be reviewed for possible effects upon properties which may be eligible for National Register-listing.

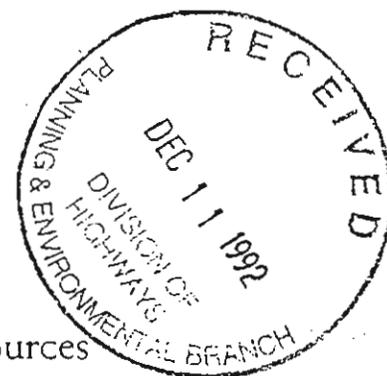
An archaeological survey of the selected corridor will be necessary to evaluate effects upon eligible properties since the majority of the proposed project area has never been systematically examined by an experienced archaeologist.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: State Clearinghouse  
Nicholas Graf, Federal Highway Administration  
Col. Walter S. Tulloch, Army Corps of Engineers



North Carolina Department of Cultural Resources

James G. Martin, Governor  
Patric Dorsey, Secretary

Division of Archives and History  
William S. Price, Jr., Director

December 9, 1992

MEMORANDUM

TO: L. J. Ward, P.E., Manager  
Planning and Environmental Branch  
Division of Highways  
Department of Transportation

FROM: David Brook *David Brook*  
Deputy State Historic Preservation Officer

SUBJECT: Greensboro Eastern/Northern Loop, Guilford County,  
U-2525, 6.498003T, GS 93-0033

Thank you for your letter of November 9, 1992, concerning the above project. We hope that this letter provides some clarification regarding our previous comments.

Your letter states that the project will require permit approval from the Army Corps of Engineers (ACOE) and that only these permit areas are subject to compliance with Section 106 of the National Historic Preservation Act. Please note that Section 110(a)(2)(E)(i) of the Fowler Bill (H.R. 429, passed and signed in October 1992) states that the Department of the Army's Appendix C to 33 CFR Part 325 (Processing of DOA Permits: Procedures for the Protection of Historic Properties) must be consistent with the regulations issued by the Advisory Council on Historic Preservation (ACHP). Since the ACHP has not approved the ACOE's Appendix C, we believe that their use is inappropriate.

Section 106 applies to all undertakings requiring federal assistance or approval. Thus, this project's effects upon properties included in or eligible for inclusion in the National Register should be taken into account. While we understand that no National Register-listed properties are located in the area of potential effect, we believe all properties over fifty years of age in the area of potential effect should be identified and evaluated. We look forward to reviewing North Carolina Department of Transportation's findings.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800.

L. J. Ward  
December 9, 1992, Page 2

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: L. J. Ward  
B. Church  
Army Corps of Engineers, Wilmington



10302

State of North Carolina  
Department of Environment, Health, and Natural Resources  
Division of Land Resources



James G. Martin, Governor  
William W. Cobey, Jr., Secretary

PROJECT REVIEW COMMENTS

Project Number: 93-0202 County: GUILFORD

Project Name: GREENSBORO LOOP

Geodetic Survey

This project will impact        geodetic survey markers. N.C. Geodetic Survey should be contacted prior to construction at P.O. Box 27687, Raleigh, N.C. 27611 (919) 733-3836. Intentional destruction of a geodetic monument is a violation of N.C. General Statute 102-4.

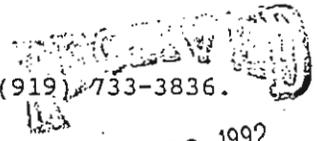
This project will have no impact on geodetic survey markers.

Other (comments attached) SCE STUDY AREA

For more information contact the Geodetic Survey office at (919) 733-3836.

Cliff A. ...  
Reviewer

9-29-92  
Date



SEP 29 1992  
GEODETS SURVEY.

Erosion and Sedimentation Control

No comment

This project will require approval of an erosion and sedimentation control plan prior to beginning any land-disturbing activity if more than one (1) acre will be disturbed.

If an environmental document is required to satisfy Environmental Policy Act (SEPA) requirements, the document must be submitted as part of the erosion and sedimentation control plan.

If any portion of the project is located within a High Quality Water Zone (HQW), as classified by the Division of Environmental Management, increased design standards for sediment and erosion control will apply.

The erosion and sedimentation control plan required for this project should be prepared by the Department of Transportation under the erosion control program delegation to the Division of Highways from the North Carolina Sedimentation Control Commission.

Other (comments attached)

For more information contact the Land Quality Section at (919) 733-4574.

David Ward  
Reviewer

9/29/92  
Date



State of North Carolina  
Department of Environment, Health, and Natural Resources

Reviewing Office: <b>WJRO</b>	
Project Number: <b>93-0202</b>	Due Date: <b>10/19/92</b>

**INTERGOVERNMENTAL REVIEW -- PROJECT COMMENTS**

After review of this project it has been determined that the EHNR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law.

Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form.

If applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
Permit to construct & operate wastewater treatment facilities, sewer system extensions, & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
Water Use Permit	Pre-application technical conference usually necessary.	30 days (N/A)
Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15A NCAC 21H.0600	N/A	60 days (90 days)
Any open burning associated with subject proposal must be in compliance with 15A NCAC 2D.0520.		
Demolition or renovations of structures containing asbestos material must be in compliance with 15A NCAC 2D.0525 which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-733-0820	N/A	60 days (90 days)
Complex Source Permit required under 15A NCAC 2D.0800.		
The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Sect.) at least 30 days before beginning activity. A fee of \$30 for the first acre and \$20.00 for each additional acre or part must accompany the plan.		20 days (30 days)
The Sedimentation Pollution Control Act of 1973 must be addressed with respect to the referenced Local Ordinance:		(30 days)
Mining Permit	On-site inspection usual. Surety bond filed with EHNR. Bond amount varies with type mine and number of acres of affected land. Any area mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days.	1 day (N/A)
Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "If more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
Oil Refining Facilities	N/A	90-120 days (N/A)
Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to prepare plans. Inspect construction, certify construction is according to EHNR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany application.	30 days (60 days)



Forestry

100  
ANNIVERSARY

N.C. - Where it all began

State of North Carolina  
Department of Environment, Health, and Natural Resources

Division of Forest Resources  
512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

Griffiths Forestry Center  
2411 Garner Road  
Clayton, North Carolina 27520  
October 7, 1992

Stanford M. Adams  
Director

MEMORANDUM

TO: Melba McGee  
Environmental Assessment Unit

FROM: Don H. Robbins  
Staff Forester

SUBJECT: DOT Draft EIS for the Eastern/Northern Urban Loop from I-85 East of Greensboro to Lawndale Drive, North of Greensboro in Guilford County

PROJECT #93-0202

DUE DATE 10-19-92



We have reviewed the above subject draft document and have the following comments:

1. All five alternatives would heavily impact forest and related resources.
2. We would have favored the Western Alternative because it would have the least impact to forest resources (258.5 acres). However, because of the problems of the landfill and impacts to wetlands, the Western Alternative has been eliminated from further consideration as indicated in the summary. This has also eliminated the need for the two crossover alternatives.
3. This leaves the Eastern and Middle Alternatives for consideration. Both of these have a very high impact to woodland (288.3 to 293.1 acres).
4. Perhaps some salvaging of a portion of the Western Alternative plus Crossover #2 could be reconsidered as a means of bypassing the landfill problem and still attempt to lessen the impact to woodland.
5. If this is not possible, it is hoped that the final alignment design will attempt to reduce the impact to woodland and related resources.
6. The ROW Contractor should attempt to salvage merchantable trees for pulpwood and sawtimber whenever possible.
7. The ROW Contractor should protect trees outside of construction limits from -

- a. Skinning of tree trunks by machinery.
- b. Soil compaction and root exposure or injury by heavy equipment.
- c. Adding layers of fill dirt over the root systems of trees, a practice that impairs root aeration.
- d. Accidental spilling of petroleum products or other damaging substances over the root systems of trees.

DHR:1a

pc: Warren Boyette - CO  
Vic Owen - D10  
David Henderson - Guilford County  
File



State of North Carolina  
 Department of Environment, Health, and Natural Resources  
 Division of Environmental Management  
 512 North Salisbury Street • Raleigh, North Carolina 27604

James G. Martin, Governor  
 William W. Cobey, Jr., Secretary

October 23, 1992

A. Preston Howard, Jr., P.E.  
 Acting Director

MEMORANDUM

To: Melba McGee  
 Through: John Dorne *JD*  
 Monica Swihart *MS*  
 From: Eric Galamb *EG*  
 Subject: Draft EIS Greensboro Eastern/Northern Urban Loop  
 Guilford County  
 State Project DOT No. 6.498003T, TIP #U-2525  
 EHNH # 93-0202, DEM WQ # 6994



The subject document has been reviewed by this office. The Division of Environmental Management is responsible for the issuance of the Section 401 Water Quality Certification for activities which may impact waters of the state including wetlands. The following comments are offered in response to the draft EIS prepared for this project which will impact 11.7 or 15.0 acres of wetlands depending upon the alternative chosen.

1. An Individual 401 Water Quality Certification is probably necessary for stream crossings of North and South Buffalo Creeks. DOT may wish to have the Individual Certification address all impacts to surface waters and wetlands.
2. DOT should install and maintain hazardous spill catch basins at all water supply (WS) stream crossings.
3. DOT should require that the contractor not impact additional wetland areas due to the disposal of excavated spoil material, as a source of borrow material or other construction related activities. Prior to the approval of any borrow source in a wetland, the contractor shall obtain a 401 Certification from DEM.
4. DEM believes that improvements can be made to the Transportation System Management (TSM) option. DEM does not view improvements to the TSM or construction of the Loop as an either/or situation.

REGIONAL OFFICES

Asheville	Fayetteville	Mooresville	Raleigh	Washington	Wilmington	Winston-Salem
704/251-6208	919/486-1541	704/663-1699	919/571-4700	919/946-6481	919/395-3900	919/896-7007

5. After stream relocations, the banks should be planted with suitable canopy species to produce shade on the water surface at high noon. It is recommended that the denuded stream banks be stabilized with log banks rather than rip-rap.
6. The document states on page II-2, "Transit services for circumferential trips were reviewed as part of the 1989 Greensboro Urban Area Thoroughfare Plan Update and the Greensboro Transit Service Plan. Both studies show that transit cannot meet current or projected circumferential trip needs. Due to the low projected ridership..." How will the proposed Loop help move traffic if there is no demand for circumferential trips?
7. DEM recommends that the Eastern Alternative be chosen as the preferred alternative due to the least impact to high quality wetlands, lowest total wetland impacts and the lowest total cost.
8. Endorsement of the EIS by DEM does not preclude the denial of a 401 Certification upon application if wetland impacts have not been avoided and minimized to the maximum extent practicable. In addition, endorsement of the EIS does not force concurrence with the two other sections of the Urban Loop.

Questions regarding the 401 Certification should be directed to Eric Galamb in DEM's Water Quality Planning Branch.

gboloop.eis

cc: Eric Galamb



☒ North Carolina Wildlife Resources Commission ☒

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391  
Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Melba McGee, Planning and Assessment  
Dept. of Environment, Health, & Natural Resources

FROM: *David Z. Jones*  
for Dennis Stewart, Manager  
Habitat Conservation Program

Date: October 21, 1992

SUBJECT: Draft Environmental Impact Statement (DEIS) for the Eastern/Northern Urban Loop from I-85 east of Greensboro to Lawndale Drive north of Greensboro, Guilford County, North Carolina, TIP No. U-2525, SCH Project No. 93-0202.

The N. C. Wildlife Resources Commission (NCWRC) has completed a review of the proposed project and possible impacts on existing wildlife and fishery resources on the area. The associated Technical Memorandum on Natural Resources has been reviewed by NCWRC field personnel. Our comments are provided in accordance with provisions of the North Carolina Environmental Policy Act (G.S. 113A-1 et seq., as amended; 1 NCAC 25), and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

In previous scoping comments, (Fred Harris, November 15, 1990), the NCWRC expressed concerns regarding fragmentation and loss of aquatic, wetland and upland habitat resulting from highway construction, and recommended the western portion of the study area for location of a "build" alternative. However, additional data presented in the DEIS indicates that wetland loss and stream channelization will be greater in the western study corridor than in other alternatives. Of the two remaining alternatives, the eastern corridor has the higher qualitative and quantitative loss of upland habitat, while the middle corridor has the higher qualitative and quantitative impact on wetlands.

While both of the remaining alternatives will result in significant loss and degradation of fish and wildlife habitat,

the eastern alternative avoids wetlands, particularly mature bottomland hardwood habitat, to a greater extent than other alternatives. This alternative is clearly preferable from the standpoint of Section 404(b)(1) Guidelines and associated permits. However, the eastern corridor, with its wider sweep into rural Guilford County, will facilitate more rapid secondary development in the project area and isolate more wildlife habitat within the urban loop than the middle alternative. These indirect impacts, in addition to the greater direct destruction of upland habitat in the eastern corridor, may ultimately result in more overall impact to natural resources than the alternative corridors.

Due to the concerns outlined above, the NCWRC cannot recommend a "preferred" corridor for the Eastern/Northern Urban Loop. In view of the extensive loss of upland habitat under all alternatives, and the continuing loss of wildlife habitat in Guilford County, the NCWRC recommends that the NCDOT consider mitigation for upland habitat impacts on major urban loop projects. We also recommend that relocated stream segments be restored to resemble the destroyed stream habitat with respect to gradient, meander, and instream structure. Such restorations may be incorporated into onsite wetland mitigation areas and may help to offset long-term increases in runoff and sedimentation during storm events.

The NCWRC is encouraged by the proposed use of spanning structures at major stream crossings on the project, and we request that vegetated floodplain areas be retained beneath these structures to encourage wildlife movements underneath the proposed highway. The DEIS (p. IV-29) accurately describes the impacts of highway construction on the mobility of wildlife populations. Consideration of such concerns on this and future projects may help to reduce the effect of highway construction as a barrier to such movements. We also appreciate the inclusion of preliminary mitigation strategies in the wetland discussion on page IV-37, and look forward to cooperating with the NCDOT in development of detailed mitigation plans.

Thank you for the ongoing opportunity to provide input to planning stages for this project. The associated Technical Memorandum on Natural Resources proved useful to our staff in evaluating environmental impacts, and we appreciate the efforts of the NCDOT to make such supplemental materials available to the reviewing agencies. If we can further assist your office, please call David Yow, Highway Project Coordinator, at (919) 528-9887.

DLS/DLY

cc: Larry Warlick, District 5 Wildlife Biologist  
Shari Bryant, District 5 Fisheries Biologist  
David Yow, Highway Project Coordinator

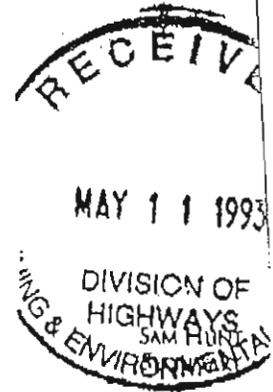


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS  
P.O. BOX 25201, RALEIGH, N.C. 27611-5201

May 6, 1993

JAMES B. HUNT, JR.  
GOVERNOR



Memorandum To: Mr. L.J. Ward, P.E., Manager  
Planning and Environmental Branch

From: *Gregory A. Smith*  
Gregory A. Smith, Environmental Geologist  
Geotechnical Unit

Subject: Project 6.498003T (U-2525); Guilford County;  
Greensboro Eastern/Northern Urban Loop;  
Environmental Report- IPI Industries, Inc. and  
Former J.P. Stevens Transport Facility.

Per request from your office, we have performed a regulatory agency file review for the above two sites in Greensboro to determine ~~any~~ whether any environmental problems exist which may impact the project alignment or schedule. Following is a discussion of each site and our recommendations.

Former J.P. Stevens Transport Facility  
US 29 North and Assembly Road

This facility provided maintenance and fueling support for the J.P. Stevens and later West Point Pepperell trucking fleets, and closed in 1989. It was listed as a generator of hazardous waste because of the used motor oil produced here. This waste was taken off-site for disposal, and no hazardous waste problems have been documented.

There are, however, leaking underground storage tanks located on the property. West Point Pepperell was issued a Notice of Violations by the NC Division of Environmental Management in 1990 for groundwater contamination levels exceeding state standards. West Point had an environmental consulting firm prepare a remedial action plan, submitted to the Winston-Salem Regional Office of DEM in April, 1991. To date no review of this report has been performed. We spoke with Mr. Waddell Watters of the Winston-Salem office and he said that the site has confirmed groundwater contamination and probable soil contamination, but that it is not actively being handled. Apparently the site has a low priority with DEM, but continued enforcement action is probable once DEM is able to review the current remedial action plan. Based upon the high concentrations of up to nine ground-

Mr. L.J. Ward, P.E.  
U-2525  
May 6, 1993  
Page 2

water contaminants, and the anticipated high costs and lengthy period of time that would be encountered in the remediation of the site, we recommend avoiding this property in the siting of the project's alignment.

IPI Industries, Inc. Site  
Clover Road, East of McConnell Road

The building on this site formerly housed a metal plating company that used a leachate drain field to dispose of wastewater created in their operations. In 1985, the NC Division of Health Services found IPI Industries, Inc. to be in violation of General Statutes concerning the disposal of hazardous waste. Disposal rates of a waste zinc-chromium compound created in their plating processes exceeded the design capacity of the drain field, causing the wastes to seep onto the ground and enter a small pond located down gradient on the same property, killing all vegetation between the drain field and pond. A groundwater assessment performed in 1986 indicated the presence of both zinc and chromium in excess of state action levels. IPI was told not to dispose of further wastes in the drain field in 1987. Subsequent to this order, wastes were stored on-site in drums, for which IPI was sent a second Notice of Violation for exceeding allowable storage times. In 1988, IPI filed for bankruptcy. According to Mr. Jack Butler of the NC Division of Solid Waste Management, Superfund Section, the vegetation was noted to be returning during the latest site check, performed in 1992. Soil samples taken on-site during this visit indicated elevated levels of zinc, but Mr. Butler said this was most likely attributable to plumbing materials and not leachate. The stored wastes have been, or soon will be, removed from the site and disposed of. Groundwater samples, also obtained in 1992, indicate that the contamination has essentially been naturally remediated. Overall, there appear to be no further environmental problems anticipated at this site, based upon the information obtained from the Superfund Section and through conversation with Mr. Butler. We recommend that planning proceed as if this is a non-contaminated property.

Should you have any comments or require additional information concerning these sites, please do not hesitate contacting this office at 250-4088.

cc: Mr. Don Morton, P.E.  
Mr. Tom Shearin, P.E.



Gail

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT, JR.  
GOVERNOR

DIVISION OF HIGHWAYS  
P.O. BOX 25201, RALEIGH, N.C. 27611-5201

R. SAMUEL HUNT III  
SECRETARY

August 10, 1993

Mr. Larry Coble, Regional Supervisor  
Division of Environmental Management  
Winston-Salem Regional Office.  
8025 North Point Boulevard  
Winston-Salem, North Carolina 27106

Dear Mr. Coble:

Subject: Greensboro Eastern/Northern Urban Loop, Guilford County, TIP No.  
U-2525, Project No. 6.498003T

The subject project will involve right of way acquisition from the contaminated J. P. Stevens Transport facility on US 29 in Greensboro. A major interchange between the Greensboro Loop and US 29 is proposed at this location and a portion of the interchange is within the contamination plume in the southeast corner of the site. The proximity of dense urban development and the Hicone Road/US 29 interchange prevent avoidance of the contamination by the proposed project.

The Department of Transportation was provided information regarding contamination at this site by the Winston-Salem Regional Office of the DEM/Groundwater Section. Remediation of the contamination will take a minimum of three years to complete, but cleanup is not actively being pursued at this time. Since right of way acquisition and construction of this section of the proposed Greensboro Urban Loop are scheduled after 1999, there is adequate time for the remediation of the contaminated site prior to right of way acquisition if the cleanup is started within the next year or two.

Since the Greensboro Urban Loop is of considerable importance to the future of the City of Greensboro, I request remediation efforts at this site be initiated to avoid a delay to the project.

Thank you for your assistance. If you have questions or need additional information, please contact me or the project planning engineer, Ms. Cindy Sharer, at 733-7842.

Sincerely,

L. J. Ward, P. E., Manager  
Planning and Environmental Branch

CS/rfm

cc: Gail Grimes, P. E.  
Cindy Sharer, P. E.  
Greg Smith, Geotechnical Unit

