FHWA-TN-EIS-05-01-D

INTERSTATE 69

Segment of Independent Utility #8

From SR 385 in Millington, TN to I-155/US 51 in Dyersburg, TN
Shelby, Tipton, Lauderdale and Dyer Counties, Tennessee

Draft Environmental Impact Statement

Volume I

Submitted Pursuant to National Environmental Policy Act of 1969
42 USC 4332(2) and 49 USC 303

U.S. Department of Transportation
Federal Highway Administration
Tennessee Department of Transportation

Cooperating Agencies:
U.S. Army Corps of Engineers
Tennessee Valley Authority

This document identifies and assesses the environment impacts associated with the project to construct a segment of new transcontinental interstate beginning at State Route 385 (Paul Barrett Parkway) in Millington, north to Interstate 155 at Dyersburg. The project is a segment of Corridor 18, a congressionally mandated High Priority transportation corridor, designated as Interstate 69. The total length of the proposed improvement is approximately 65 miles. Portions of the roadway are proposed for new locations while one section of Build Alternative (R) would follow existing U.S. 51.

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08/31/05
Date of Approval

D. Delaney
For Tennessee Department of Transportation

25 AUG 2005
Date of Approval

Walter E. Boyd
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S.1 Proposed Action

This document identifies and assesses the environmental impacts associated with the proposal to construct a new four-lane divided interstate in Shelby, Tipton, Lauderdale and Dyer Counties, Tennessee. The proposed project, mandated by the U.S. Congress, would involve the construction of a new facility and improvements to the existing US 51, from Paul Barrett Parkway (SR 385) in Millington to I-155/US 51 in Dyersburg, a distance of approximately 65 miles. The Tennessee Department of Transportation (TDOT) is administering the project. The Federal Highway Administration (FHWA) is designated as the lead federal agency.

S.1.1 Purpose and Need

Project need is based upon the following:

- Proposed action is an unfinished portion of High Priority Corridor 18 and congressionally-designated I-69;
- Projected Substandard Level of Service along US 51;
- Roadway system linkages in the study area are substandard/inadequate;
- Modal Connections are substandard/inadequate; and
- Facilitation of Economic Development.

<u>Corridor 18/I-69</u>
The primary purpose of the proposed action is to advance the completion of Corridor 18. The proposed project would complete Segment of Independent Utility #8 of the High Priority Corridor 18, identified in the Intermodal Surface Transportation Act of 1991 (ISTEA).

Level of Service

A level of service analysis was conducted for each of the Build Alternatives. Level of Service refers to a method of analysis, which quantifies, or rates, congestion along a roadway. Factors considered in such an analysis include traffic, number of lanes, passing and turning sight distances, and terrain. An LOS rating ranges from A (best) to F (worst).

Using a Level of Service of C as the least desirable condition, SR 78 is over-congested in 2010 from the US 51 Bypass around Dyersburg to I-155 with a Level of Service of D. By 2030, in a no-build situation with I-69 traffic, virtually all segments of US-51 would be congested, with several segments reaching a Level of Service of F, indicating the road would be over capacity. With all of the Build Alternatives, even by 2030, none of the segments would fall below a Level of Service of C with most segments maintaining a Level of Service of B.

Table S1 Level of Service and Traffic

Roadway Segment		*Analysis Years*	
		Year 2010 (ADT)*	*Year 2030 (ADT*)*
Existing Condition			
From	*To*		
SR 385	SR 59	C (33148)	F (49784)
SR 59	SR 87	B (25470)	D (40750)
SR 87	SR 19	B (19440)	D (38880)
SR 19	SR 88	B (18050)	C (27075)
SR 88	SR 104	A (15080)	B (19120)
SR 104	SR 78	B (23200)	C (30160)
US 51 Bypass	I-155 via SR 78	D (38620)	F (61790)
SR 78	US 412 via I-155	A (19120)	C (36330)
No Build W/ I-69 Traffic from SIUs 7 and 9			
From	*To*		
SR 385	SR 59	C (33148)	F (58584)
SR 59	SR 87	B (25470)	E (49550)
SR 87	SR 19	B (19440)	D (47680)
SR 19	SR 88	B (18050)	C (35875)
SR 88	SR 104	A (15080)	C (27920)
SR 104	SR 78	B (23200)	D (38960)
US 51/Bypass 3	I-155 via SR 78	D (38620)	F (70590)
SR 78	US 412 via I-155	A (19120)	C (45130)
Build Alternatives by Node			
From	*To*		
A (SR 385)	**B** (South of SR 59)	A (19288)	B (35150)
B (South of SR 59)	**D** (South of Hatchie River)	A (15280)	B (29730)
D (South of Hatchie River)	**K** (North of Hatchie River	A (25470)	B (49550)
E (SR 87)	**G** (Unionville Road)	A (10410)	A (21940)
K (North of Hatchie River)	**E** (SR 87)	A (15280)	B (29730)
K (North of Hatchie River)	**W** (SR 87)	A (16560)	B (32210)
G (Unionville Road)	**H** (I-155)	A (13920)	B (24975)
G (Unionville Road)	**Y** (SR 210)	A (11435)	B (22125)
J (SR 385)	**S** (Brighton-Clopton Road)	A (18963)	B (34388)
S (Brighton-Clopton Road)	**T** (SR 59)	A (19650)	C (36860)
S (Brighton-Clopton Road)	**C** (SR 59)	A (20110)	C (37530)
T (SR 59)	**U** (North of SR 54)	A (17600)	B (33580)
U (North of SR 54)	**V** (North of Hatchie River)	A (16560)	B (32210)
V (North of Hatchie River)	**W** (SR 87)	A (16560)	B (32210)
V (North of Hatchie River)	**E** (SR 87)	A (15920)	B (30970)
W (SR 87)	**Y** (SR 210)	A (11424)	B (23146)
Y (SR 210)	**Z** (I-155)	A (30137)	C (59957)

System Linkage

US 51 is a four-lane facility with a mix of access controls, connecting I-155 at Dyersburg; Interstates 55, 40 and 240 at Memphis, Tennessee and East Memphis, Arkansas; I-40 via SR 385 at Millington. Additionally, segments of US 51 in the study area have numerous points of access serving industrial, commercial and residential areas, including side roads, business entranceways and driveways. Therefore, traffic moving between the above-referenced interstates is required to mix with local traffic in these developed areas.

Linking the existing highway systems via a fully controlled Interstate would yield economic benefits, resulting from increased transportation efficiency and including: direct cost savings in terms of travel time, vehicle operating cost savings, and an improved competitive advantage to businesses.

Modal Connections

I-69 would serve to connect the study area with other modes of transportation, such as rail, water, air and motor carrier/trucks, as outlined below:

- **Rail** – Memphis serves as one of four rail traffic gateways across the Mississippi River;
- **Water** – The Port of Memphis is the fourth largest, inland river port in the U.S. Additionally, Memphis has the largest number of facilities, transferring highway and marine trailers between modes;
- **Air** – The Memphis International Airport is a regional hub. It also houses Federal Express, which assists in making the facility the largest cargo-handling airport in the United States; and,
- **Motor Carrier/Trucks** – I-40, an east-west roadway through Tennessee, has a major truck terminal in West Memphis that could be connected to the north-south I-69.

Economic Development

A large portion of the I-69 Corridor has historically had limited access to economic development opportunities, has poverty rates well above, and median income levels well below, the national average. With an improved competitive position, resulting from reduced transportation costs, enhanced reliability for the delivery of goods, and improved access to the employment base, I-69 can expect to assist communities in attracting significantly more economic production activity. The original feasibility study conducted in 1995 estimated that improving only the section of I-69 between Houston and Indianapolis could result in over 27,000 new jobs and $11 billion in additional wages.

The needs of local communities are reflected in the national needs for this project, including economic development opportunities resulting from an improved transportation system. The four counties comprising the project area are included in the Mississippi Delta Initiative, developed in cooperation with a bipartisan commission of federal legislators to investigate prospects to provide economic and social opportunities for 219 counties in Louisiana, Mississippi, Arkansas, Tennessee, Missouri, Kentucky and Illinois. The Commission's transportation goal envisioned the promotion of economic growth through an improved network of highways, airports, and rail and port facilities. The I-69 Corridor and its associated connections closely parallel the goals developed for the Mississippi Delta Initiative.

S.2 Alternatives

The following alternatives were considered in the decision-making process:

- Alternatives Previously Considered But Found to be Unreasonable

No-Build Alternative

The No-Build Alternative is just as the name implies, leaving the current U.S. 51 between Millington and Dyersburg in its current configuration. This alternative does not meet the goals and objectives of the Purpose and Need for the project. It would not advance the completion of Corridor 18/I-69, would not provide a controlled-access link between two sections of controlled access roadway, would not facilitate future economic development and would not improve the traffic flow (level of service) of the existing facility.

Build Alternatives

Two corridors are under consideration for the construction of I-69, SIU 8. They include the Alternative R, which lies to the west of existing US 51, and the Alternative G, which lies to the east of existing US 51. Additionally, several "crossover" options are considered in this document. The crossover options are intended to provide greater flexibility in the selection of a Preferred Alternative. Please refer to Figure S.1 for a general map of the proposed alternatives.

Alternative G begins on SR 385, east of Millington and proceeds in a northerly direction, passing east of the Rosemark community. After the Alternative G crosses SR 14 (Austin Peay Highway) the alignment would curve to the northeast, passing Covington and crossing the Hatchie River east of the existing US 51 Bridge near the Rialto community. After crossing the Hatchie River, the alignment would continue in a northerly direction, passing east of Ripley, Gates, Halls and Fowlkes. After crossing the South Fork of the Forked Deer River, the Alternative G would merge with US 412, passing east of Dyersburg before tying into I-155/US 51.

Alternative R

The Alternative R would begin on SR 385 in Millington and proceed in a northeastern direction and remain west of US 51. As Alternative R crosses the Hatchie River, it will briefly coincide with US 51. It will pass near the communities of Brighton and Covington before crossing the Hatchie River. Alternative R will briefly coincide with US 51 as it approaches and crosses the Hatchie River. As Alternative R continues in a northeastern direction just west of US 51 it eventually forms its northern terminus by merging with I-155/US 421 just west of Dyersburg.

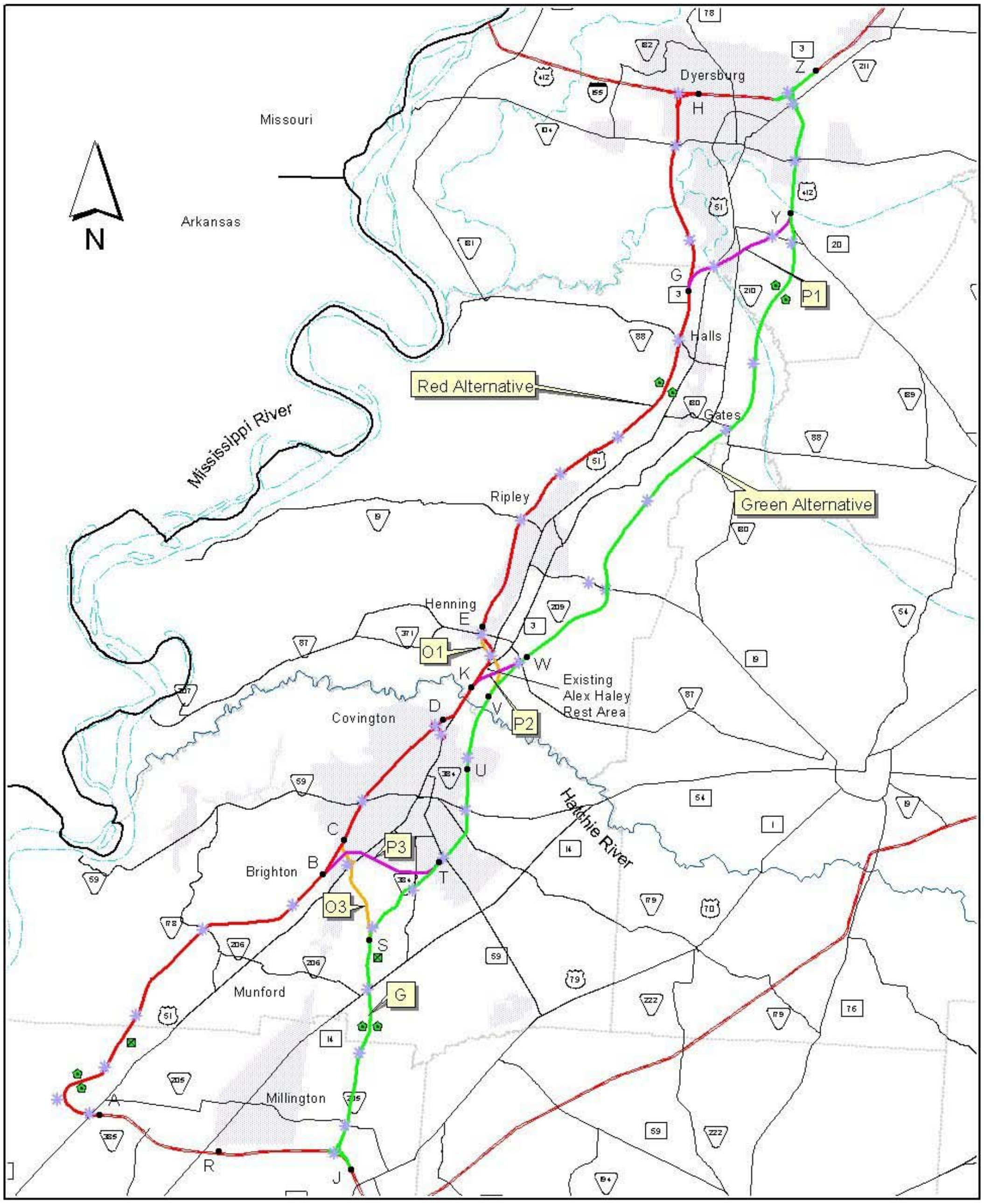
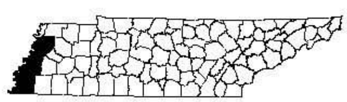
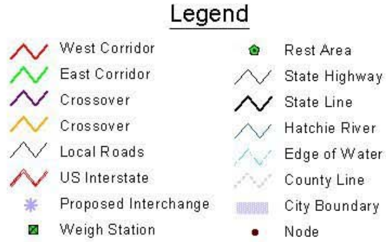


Figure S.1
Summary Map

Interstate 69 SIU #8
Millington, TN to Dyersburg, TN
Alignments



Location Map



Alternative G

Alternative G begins on SR 385, east of Millington and proceeds in a northerly direction, passing east of the Rosemark community. After the Alternative G crosses SR 14 (Austin Peay Highway) the alignment would curve to the northeast, passing Covington and crossing the Hatchie River east of the existing US 51 Bridge near the Rialto community. After crossing the Hatchie River, the alignment would continue in a northerly direction, passing east of Ripley, Gates, Halls and Fowlkes. After crossing the South Fork of the Forked Deer River, the Alternative G would merge with US 412, passing east of Dyersburg before tying into I-155/US 51.

The two proposed corridors and crossover options have been divided into nodes (A-Z). The nodes allow for the combining of various segments of the main alternatives, with the crossover alternatives. The combining of the nodes allow for the consideration of a wider range of options in the selection of a Preferred Alternative.

O-1

Crossing Alternative O-1 begins along Alternative G, north of the of the Hatchie River crossing. From this point the alternative proceeds northward and crosses over Lovelace Crossing Road, then curves northwest, and crosses under the TVA transmission line and over the railroad southwest of SR 87. The proposed alignment then crosses SR 209, before crossing US 51 northeast of Cooper Creek Road. From there, it turns northward and crosses SR 87. It then crosses Thumb Road and Faye Barfield Road, before connecting to Alternative R.

O-3

Crossing Alternative O-3 begins along Alternative G at Brighton-Clopton Road and proceeds northwest, crossing Old Memphis Road northeast of Woodlawn Avenue. It continues to cross over the railroad and US 51 and ties to the Alternative R, south of Holly Grove Road.

P-1

Crossing Alternative P-1 begins along Alternative R near Groundhog Road and crosses over Chambers Branch and Chamber Creek Road. It curves east to cross US 51 with an entrance only interchange at the South Fork of the Forked Deer River. It continues east, crossing Old US 51, and the railroad before crossing Fowlkes Road. The alignment then crosses Pond Creek and SR 210. From this point, it crosses Sorrell Chapel Road before curving north and connecting to the Alternative G.

P-2

Crossing Alternative P-2 begins along Alternative R just north of the Hatchie River and west of existing US 51. This alternative curves toward the northeast and crosses over Lovelace Crossing Road southeast of the Alex Haley Rest Area before crossing over relocated US 51. On the north side of the Hatchie River, existing US 51 curves northeast and crosses under I-69 before curving northward and passing east of the Alex Haley Rest Area, intersecting Cooper Creek Road/SR 210, to tie back into existing US 51 north of the water tower. This allows US 51 traffic to have access to the rest area. After crossing relocated US 51, I-69 crosses over the railroad southwest of SR 87. It then continues northeast, crossing under the TVA transmission line and under SR 87 with a diamond interchange northwest of Lovelace Crossing Road before connecting to the Alternative G.

<u>P-3</u>
Crossing Alternative P-3 begins along Alternative R and proceeds northeasterly to cross Jack Bennett Road, before turning east to cross Liberty Church Road. Alternative P-3 then crosses U.S. 51 turning slightly southeasterly, crossing the railroad and Melrose Road. The proposed alignment then crosses Old Memphis Road and turns northeasterly to cross SR 384, Terry Lane and Hall Road before tying into the Alternative G.

S.2.1 Design Features

The project would be designed according to the Tennessee Department of Transportation standards for interstate facilities with depressed medians. The proposed design would involve sufficient right-of-way for the construction of a four-lane facility initially, with enough area to accommodate a six-lane facility, if needed in the future. The proposed roadway would feature two 12 ft. (3.6-meter) driving lanes in each direction, 12 ft. (3.6-meter) outside shoulders, and a minimum median width of 88 ft. (26.8 meters) with 6.0 ft (1.8 meter) inside shoulders and an outside slope ratio of 6:1 to 3:1. Additionally, the roadway right-of-way, as proposed, would have a width of approximately 300 ft. (91.4 meters).

S.2.2 Costs

Table S.2 shown below provides a comparison of the estimated costs for the two main Build Alternatives, as well as the crossover options.

Table S.2 Estimated Costs

Alternative	Nodes	Length	Const. Costs	Utility Costs	ROW Costs	Total
R	ABCDKEGH	64.3	$547,160,000	$3,870,000	$8,800,000	**$559,830,000**
G	JSTUVWYZ	60.7	$479,080,000	$5,680,000	$7,670,000	**$492,430,000**
P1	ABCDKEGYZ	67.5	$587,050,000	$4,780,000	$9,260,000	**$601,090,000**
P2	ABCDKWYZ	66.8	$562,080,000	$5,490,000	$8,720,000	**$576,290,000**
P3	ABTUVWYZ	69.4	$543,090,000	$5,920,000	$8,280,000	**$557,290,000**
O1	JSTUVEGH	59	$520,130,000	$4,780,000	$9,170,000	**$534,080,000**
O3	JSCDKEGH	62.6	$531,430,000	$4,190,000	$7,650,000	**$543,270,000**
O1/P1	JSTUVEGYZ	62.4	$560,020,000	$5,690,000	$9,630,000	**$575,340,000**
O3/P1	JSCDKEGYZ	66	$571,320,000	$5,100,000	$8,110,000	**$584,530,000**
O3/P2	JSCDKWYZ	65.1	$546,350,000	$5,810,000	$7,570,000	**$559,730,000**

S.3 Impacts Matrix

Alternative	**Residential Relocations**	**Business Relocations**	**Wetlands Impacts (Acres)**	**Flood Plains Impacts (Acres)**	**Adverse Impacts to Historical Sites**	**Impacts to Archaeological Sites**	**Hazardous Materials Sights Requiring Additional Work**
R	111	4	11.9	432.9	0	7	5
G	59	2	97.6	701.3	0	11	0
P1	98	3	54.7	794	0	5	4
P2	64	2	85.6	844	0	9	4
P3	76	1	100.4	674	0	9	4
O1	77	4	29.9	379	0	7	1
O3	87	4	13.8	329	0	5	1
O1/P1	63	3	70.6	328.5	0	5	1
O3/P1	76	3	54.5	619.6	0	5	1
O3/P2	63	2	91.5	789.9	0	9	0

CHAPTER 1.0
PURPOSE AND NEED

1.0 PURPOSE AND NEED

This document identifies and assesses the environmental impacts associated with the proposal to construct a new four-lane divided interstate in Shelby, Tipton, Lauderdale and Dyer Counties, Tennessee. The proposed project would involve the construction of a new facility from Paul Barrett Parkway (SR 385) in Millington to I-155/US 51 in Dyersburg, a distance of approximately 65 miles. The Tennessee Department of Transportation (TDOT) is administering the project. The Federal Highway Administration (FHWA) is designated as the lead federal agency.

1.1. Project Setting and Background

1.1.1 Description of the Study Corridor

The project study area, as depicted in Figure 1.1, is situated in west Tennessee, north of Memphis. The corridor begins in Millington, at SR 385 (Paul Barrett Parkway), and extends to the north side of Dyersburg. The study area lies within Shelby, Tipton, Lauderdale and Dyer Counties, as well as small portions of western Crockett and Haywood Counties. The study area is approximately 17 miles wide at Millington and Dyersburg, with a more narrow middle section of approximately 10 miles in width.

1.1.2 Project Background

The proposed project is within High Priority Corridor 18, identified in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). The United States Congress designated the inclusion in the National Highway System of certain corridors of national significance, corridors mainly in regions served inadequately by the existing interstate highway system. Corridor 18 extends from Indianapolis, Indiana to Memphis, Tennessee via Evansville, Indiana.

The designation of Corridor 18 was amended in 1993 by Congress to extend the corridor from Memphis to Houston, Texas via Shreveport/Bossier City, Louisiana. The corridor definition again was amended by the National Highway System Designation Act of 1995 to include an extension from Houston to a crossing of the Mexican border in the Lower Rio Grande Valley (LRGV). This provided an overlap of Corridor 18 with a second high priority corridor that generally follows US 59 from the vicinity of Texarkana to Houston and on to Laredo, Texas (Corridor 20). The 1995 Act also stated that Corridor 18 was to be located in Mississippi and Arkansas for the section extending from Memphis toward Shreveport/Bossier City. The Transportation Equity Act for the 21st Century (TEA21) signed into law on June 9, 1998, added facilities to Corridor 18 and officially designated the extension south of Indianapolis as Interstate 69. Please refer to Figure 1.2 for a depiction of Corridor 18.

Corridor 18 incorporates existing I-69 from Port Huron, Michigan-Sarnia, Ontario, Canada to Indianapolis, Indiana. A new interstate facility, designated as I-69, is proposed from Indianapolis to the Lower Rio Grande Valley, serving the major cities of Evansville, Indiana, Memphis, Tennessee, Shreveport/Bossier City, Louisiana, and Houston, Texas.

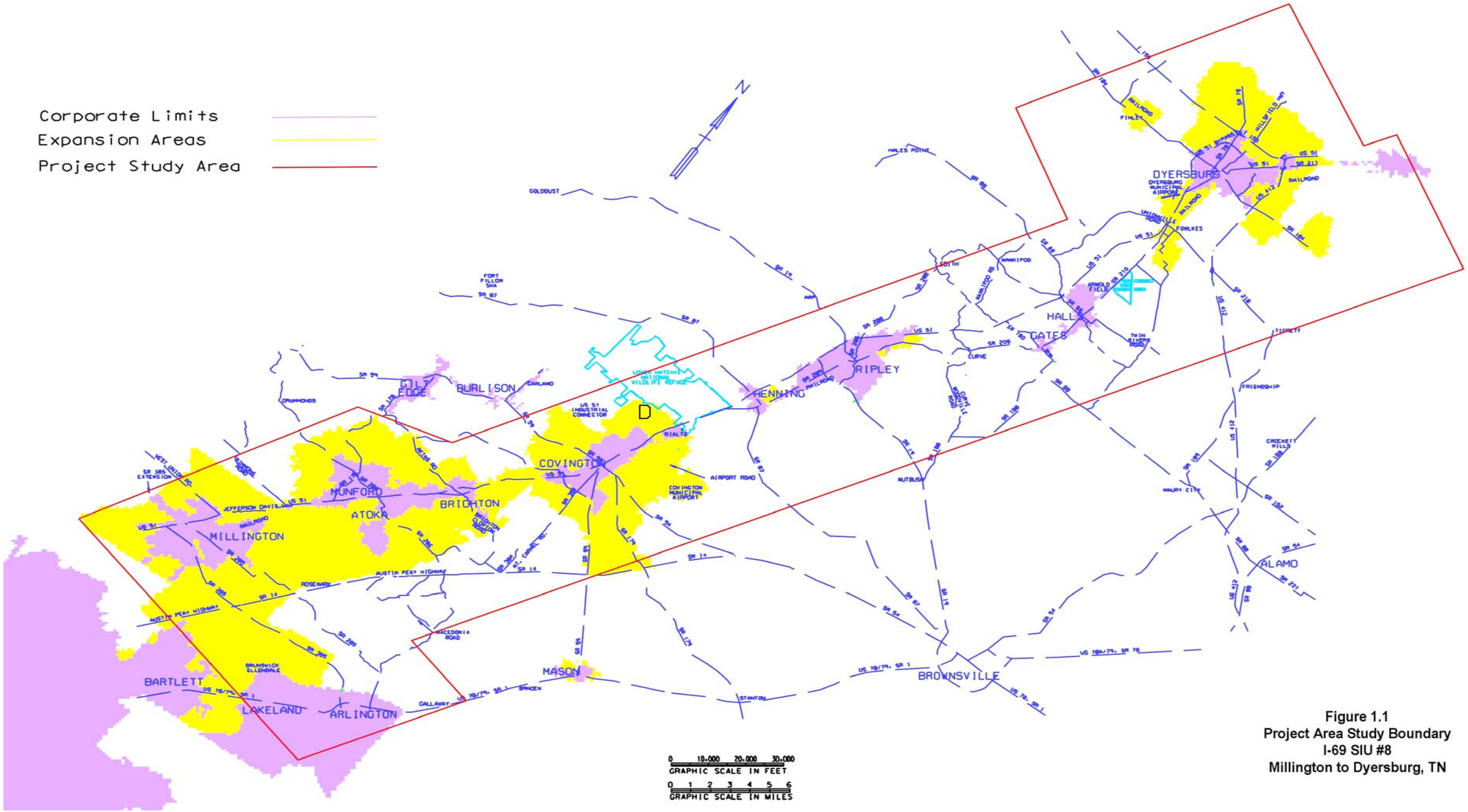
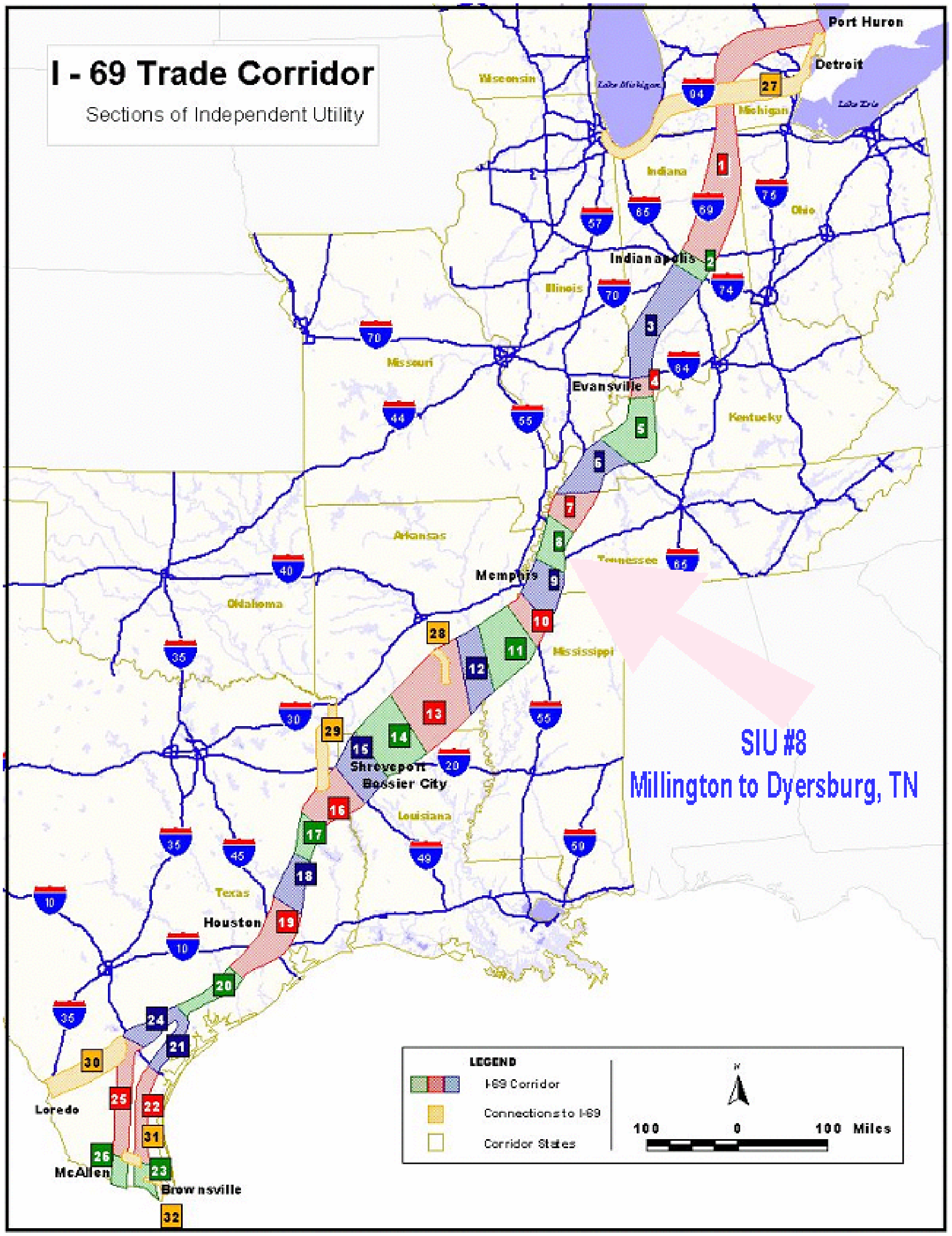


Figure 1.1
Project Area Study Boundary
I-69 SIU #8
Millington to Dyersburg, TN

Beginning in 1991, a series of studies have analyzed the corridor in its entirety. These studies include:

- Corridor 18 Feasibility Study (1995),
- Corridor 20 Feasibility Study (1996),
- Corridor 18 Special Issues Study (1997),
- I-69 (Corridor 18) Special Environmental Study (2000),
- I-69 Section of Independent Utility (2000).

The Special Environmental Study served to facilitate FHWA's NEPA decision-making process. The Special Environmental Study also identified Sections of Independent Utility (SIU) for I-69. These segments are situated in such a manner that they would serve local needs, even if no additional transportation improvements were made. SIU #8, from Millington to Dyersburg, Tennessee is the proposed action covered in this document.


I - 69 Trade Corridor
Sections of Independent Utility
Port Huron
Detroit
Indianapolis
Evansville
Memphis
Shreveport
Bossier City
Houston
Loredo
McAllen
Brownsville
Wisconsin
Michigan
Indiana
Ohio
Illinois
Missouri
Kentucky
Arkansas
Tennessee
Oklahoma
Mississippi
Louisiana
Texas
SIU #8
Millington to Dyersburg, TN
LEGEND
I-69 Corridor
Connections to I-69
Corridor States
100
0
100 Miles

1.2 Project Need

Project need is based upon the following:

- Proposed action is an unfinished portion of congressionally-designated I-69;
- Projected Substandard Level of Service along US 51;
- Roadway system linkages in the study area are substandard/inadequate;
- Modal Connections are substandard/inadequate; and
- Facilitation of Economic Development.

1.2.1 Corridor 18/Interstate 69

The proposed project is within High Priority Corridor 18, re-designated as I-69 by Congress. I-69 is also referred to as a "North American trade route", the North American Free Trade Act (NAFTA) Highway, and an international trade route.

I-69 currently extends from Indianapolis, Indiana to the U.S/Canadian border. Legislation passed by Congress mandated the extension of I-69 from Indianapolis to the Lower Rio Grande Valley (LRGV) in Texas, creating a trans-continental highway corridor. The purpose of the corridor is to improve international and interstate trade, in accordance with national and state goals, and to facilitate economic development, in accordance with state, regional, and local policies, plans and surface transportation. It is also to improve trade, in accordance with national, state, regional, local needs and with congressional designation of the corridor.

The February 7, 2000, "I-69 (Corridor 18) Special Environmental Study Statement of Purpose and Need" details the need for I-69, as follows:

> I-*69 exists as an Interstate highway from Port Huron, Michigan to the northeast side of Indianapolis, Indiana area. Only indirect Interstate highway routes exist from Indianapolis to the Texas/Mexico border on the LRGV.*
>
> *Analyses of the I-69 Corridor have shown that extension of an Interstate highway in the I-69 Corridor from Indianapolis to the U.S./Mexico border in the LRGV is a feasible project. Currently, there is no Interstate highway within the I-69 Corridor that can be used for a border-to-border trip within the corridor.*
>
> *Feasibility studies included consideration of connections between the named cites in federal legislation. These are Indianapolis, Evansville, Memphis, Shreveport/Bossier City, and Houston along with the LRGV. The feasibility conclusions consisted of the following elements for I-69:*
>
> 1. *Use of existing I-69 from Port Huron, Michigan to Indianapolis;*
> 2. *An alignment on a new location from Indianapolis to Evansville;*

3. *Upgraded and/or relocated parkways, highways, and other facilities from Evansville to Memphis;*
4. *An upgraded or relocated route from Memphis to a new Mississippi River bridge between Mississippi and Arkansas (including a portion which involves improvements to existing facilities);*
5. *An Interstate highway on a new location from Mississippi (at the new Mississippi River crossing) to Shreveport/Bossier City;*
6. *An Interstate highway on a new location from Shreveport/Bossier City to a new connection with U.S. 59 in northeast Texas; and*
7. *An upgraded or relocated highway to be built to Interstate design standards from northeast Texas to the LRGV (including improvements to existing facilities). In Texas, existing U.S. 59, U.S. 77 and U.S. 281 will be signed as I-69.*

The anticipated return in U.S. dollar savings and economic growth exceeds the cost to develop the facility by a considerable margin.

Item 3 above includes the section of proposed I-69 that is the subject of this document, from Millington to Dyersburg, Tennessee.

1.2.2 Level of Service

Level of Service (LOS) refers to an analysis that utilizes roadway design parameters and quantifiable highway factors to generate a qualitative rating of roadway travel conditions. Factors considered in such an analysis include: traffic, number of lanes, passing and turning sight distances and terrain. The LOS ratings range from 'A' (best conditions) to 'F' (worst conditions). The levels are as described below:

- A – Describes free flow conditions. Vehicles are unimpeded in their ability to maneuver within the traffic stream.

- B – Represents reasonably free flow. The ability to maneuver in the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is high.

- C – Provides for flow at or near the posted speed limits. Maneuverability within the traffic stream is noticeably restricted, and changing lanes requires more attention on the part of the driver. Traffic will begin to backup (form queues) behind any blockage, such as a disabled vehicle.

- D – Level at which speeds begin to decline slightly with increasing flows and density begins to increase more quickly. Maneuverability is noticeably limited, and drivers experience reduced physical and psychological comfort levels. Minor incidents are expected create queues, due to the limited space to absorb disruptions within the traffic stream.

- E – Describes operation at capacity. Vehicles are closely spaced, leaving little or no room to maneuver within the traffic stream at speeds that exceed 49 miles per hour.

- F – Represents breakdowns in vehicular flow. These conditions generally occur within queues forming behind the breakdown points. These breakdowns in flow occur for a number of reasons, including collisions where more traffic is arriving at the breakdown point than the number of vehicles that can move through it. Points of recurring congestion, such as merge or weaving segments, can also contribute to these conditions where the number vehicles arriving at the point is greater than the number of vehicles discharged.

The LOS analysis was conducted for the existing scenario, the No-Build Scenario with I-69 traffic and a Build Scenario for each of the proposed Build Alternatives with I-69 traffic. This was done to accurately predict the following possibilities; 1) no portion of I-69 being constructed in Tennessee, 2) SIUs 7 and 9 being constructed north and south of the project area with the resulting traffic utilizing the existing US 51, and 3) Build Alternative in place that would accommodate the resulting I-69 through traffic in the project area. The LOS study analyzed US 51 in segments between intersecting roadways, including SR 385, SR 59, SR 19, SR 88,etc. Please refer to Figure 1.4 for the location of these roadways referenced in the LOS analysis, summarized in Table 1.1.

Using a LOS of C as the minimum level acceptable, US 51 is overly congested from the US 51 Bypass around Dyersburg to I-155 with a LOS of D. By 2030, in a no-build situation with I-69 traffic, virtually all segments of US-51 would be congested, with several segments reaching a LOS of F, indicating the road would be operating with breakdowns in vehicular flow. With all of the Build Alternatives, even by 2030, none of the segments would fall below a LOS of C with 14 of the 17 segments maintaining a LOS of B or greater.

Table 1.1 Levels of Service Analysis for Existing US 51 and Build Alternatives

Roadway Segment		*Analysis Years*	
		Year 2010 (ADT)*	*Year 2030 (ADT*)*
Existing Condition			
From	*To*		
SR 385	SR 59	C (33148)	F (49784)
SR 59	SR 87	B (25470)	D (40750)
SR 87	SR 19	B (19440)	D (38880)
SR 19	SR 88	B (18050)	C (27075)
SR 88	SR 104	A (15080)	B (19120)
SR 104	SR 78	B (23200)	C (30160)

US 51 Bypass	I-155 via SR 78	D (38620)	F (61790)
SR 78	US 412 via I-155	A (19120)	C (36330)
No Build W/ I-69 Traffic			
From	*To*		
SR 385	SR 59	C (33148)	F (58584)
SR 59	SR 87	B (25470)	E (49550)
SR 87	SR 19	B (19440)	D (47680)
SR 19	SR 88	B (18050)	C (35875)
SR 88	SR 104	A (15080)	C (27920)
SR 104	SR 78	B (23200)	D (38960)
US 51/Bypass 3	I-155 via SR 78	D (38620)	F (70590)
SR 78	US 412 via I-155	A (19120)	C (45130)
Build Alternatives by Node			
From	*To*		
A (SR 385)	**B** (South of SR 59)	A (19288)	B (35150)
B (South of SR 59)	**D** (South of Hatchie River)	A (15280)	B (29730)
D (South of Hatchie River)	**K** (North of Hatchie River	A (25470)	B (49550)
E (SR 87)	**G** (Unionville Road)	A (10410)	A (21940)
K (North of Hatchie River)	**E** (SR 87)	A (15280)	B (29730)
K (North of Hatchie River)	**W** (SR 87)	A (16560)	B (32210)
G (Unionville Road)	**H** (I-155)	A (13920)	B (24975)
G (Unionville Road)	**Y** (SR 210)	A (11435)	B (22125)
J (SR 385)	**S** (Brighton-Clopton Road)	A (18963)	B (34388)
S (Brighton-Clopton Road)	**T** (SR 59)	A (19650)	C (36860)
S (Brighton-Clopton Road)	**C** (SR 59)	A (20110)	C (37530)
T (SR 59)	**U** (North of SR 54)	A (17600)	B (33580)
U (North of SR 54)	**V** (North of Hatchie River)	A (16560)	B (32210)
V (North of Hatchie River)	**W** (SR 87)	A (16560)	B (32210)
V (North of Hatchie River)	**E** (SR 87)	A (15920)	B (30970)
W (SR 87)	**Y** (SR 210)	A (11424)	B (23146)
Y (SR 210)	**Z** (I-155)	A (30137)	C (59957)

*ADT – Average Daily Traffic

1.2.3 <u>System Linkage</u>

<u>I-69</u>
At present, no facilities exist within the proposed I-69 corridor that provides a direct connection between the Mexican and Canadian borders. The development of the proposed I-69 would provide a continuous link between the two international borders with the United States, a route of approximately 1650 miles in length. I-69, as it currently exists, extends from the northeast corner of Indianapolis, Indiana to Port Huron/Sarnia, Ontario, Canada, a length of approximately 400 miles. The extension of I-69 from Indianapolis to the Mexican border would be approximately 1250 miles in length.

I-69 has a high demand for the movement of NAFTA-related goods. While short to medium length trips far out-number international trips in the corridor, local and regional trips could take advantage of a facility designed to interstate standards. Additionally, the diversion of traffic from local roads to the I-69 corridor would increase the efficiency and safety of the local and regional transportation systems.

I-69 would connect 16 existing interstate highways that cross the proposed corridor (ten east-west routes and six north-south routes). In its entirety, I-69 would also connect 9 urban areas with an average population of 570,000 that are situated within the corridor. The development of I-69 within urban areas could provide the opportunity to upgrade existing interstates of the area, connect major transportation corridors and radial freeways with a new facility, and connect modal and multi-modal terminals to the Interstate Highway Network.

<u>U.S. 51</u>
Highway 51 is a north-south facility, originating just west of New Orleans and ending near Ironwood, Michigan. Locally, US 51 connects the greater Memphis area with Dyersburg to the north. The portion of US 51 detailed in this document extends from Millington to Dyersburg, Tennessee for a total length of approximately 65 miles.

US 51 is four-lane facility with a mix of access controls, connecting I-155 at Dyersburg; Interstates 55, 40 and 240 at Memphis, Tennessee and West Memphis, Arkansas; I-40 east of Memphis via SR 385. Additionally, segments of US 51 in the study area have numerous points of access serving industrial, commercial and residential areas, including side roads, business entranceways and residential driveways. Therefore, traffic moving between the above-referenced interstates is required to mix with local traffic in these developed areas.

Communities in the project area that do not have a direct connection to the Interstate Highway System include the following; Millington, Kerrville, Atoka, Brighton, Covington, Munford, Henning, Ripley, Halls, Gates, Fowlkes and Newbern. This lack of a direct connection to the Interstate Highway System could impede the evacuation of area citizens in the event of any major natural disaster. I-69 would likely improve the evacuation of area residents should the need arise.

Linking the existing highway systems via a fully controlled Interstate would yield economic benefits, resulting from increased transportation efficiency and including: direct cost savings in terms of travel time, vehicle operating cost savings, and an improved competitive advantage to businesses.

1.2.4 <u>Modal Connections</u>
I-69 would serve to connect the study area with other modes of transportation, such as rail, water, air and motor carrier/trucks, as outlined below:

- Rail – Memphis serves as one of four rail traffic gateways across the Mississippi River;

- Water – The Port of Memphis is the fourth largest inland river port in the U.S.;

- Air – The Memphis International Airport is a regional hub. It also houses Federal Express, which assists in making the facility the largest cargo-handling airport in the United States; and,

- Motor Carrier/Trucks – I-40, an east-west roadway through Tennessee, has a major truck terminal in West Memphis that could be connected to the north-south I-69.

Shelby County, located at the southern-end of the project area and home to the city of Memphis, features an international airport offering services of ten passenger carriers and twenty-one air cargo companies. In addition to air services, seven railways converge in Shelby County.

Dyer County, located at the northern-end of the project area, features eight trucking firms, three rail lines and a private port facility on the Mississippi River. Included in the rail service is one of only two passenger stops in Tennessee. The private port facility provides bulk materials handling services with access to international markets and twenty-two mid-American states.

1.2.5 Economic Development

A large portion of the I-69 Corridor has historically had limited access to economic development opportunities, has poverty rates well above, and median income levels well below, the national average. With an improved competitive position, resulting from reduced transportation costs, enhanced reliability for the delivery of goods, and improved access to the employment base, I-69 can expect to assist communities in attracting considerably more economic production activity. The original feasibility study conducted in 1995 estimated that improving only the section of I-69 between Houston and Indianapolis could result in over 27,000 new jobs and $11 billion in additional wages.

The needs of local communities are reflected in the national needs for this project, including economic development opportunities resulting from an improved transportation system. The four counties comprising the project area are included in the Mississippi Delta Initiative, developed in cooperation with a bipartisan commission of federal legislators to investigate prospects to provide economic and social opportunities for 219 counties in Louisiana, Mississippi, Arkansas, Tennessee, Missouri, Kentucky and Illinois. The Commission’s transportation goal envisioned the promotion of economic growth through an improved network of highways, airports, rail and port facilities. The I-69 Corridor and its associated connections closely parallel the goals developed by the Commission.

The U.S. Census Bureau data reflects higher poverty trends for Tennessee in the year 2000 than what the nation has experienced as a whole. The national poverty rate in 2000 was 12.4%, while Tennessee shows 13.6% of the state's population was living in poverty in 2000. Compared to other states, Tennessee ranked 16th in percent of persons living in poverty. The table below shows 2003 income data for Tennessee and the four Mississippi Delta Initiative counties that comprise the project area. Tennessee's poverty rate decreased by 0.1% between 2000 and 2003.

Table 1.2 Population and Poverty Rates

Geographic Area	Population 2003 Estimate	% Below Poverty Level* *1997 Model-based Estimate
Tennessee	5,841,748	13.5
Shelby County	906,178	16.0
Tipton County	54,184	12.1
Lauderdale County	27,077	19.2
Dyer County	37,308	15.9

In December 2004 the unemployment rate for Tennessee was 5.3%. In the project area counties, the unemployment rates were as follows: Shelby 6.4%; Tipton 7.0%; Lauderdale 12.8%; and Dyer County at 6.2%. Table 1.3 shows the number of working-age citizens residing in the state and counties of the project area, as well as the number employed, unemployed, and the unemployment rate of the respective areas.

Table 1.3 Project Area Workforce 2004

Geographic Area	Total Labor Force	Employed	Unemployed	Unemployment Rate
Tennessee	2,902,703	2,747,526	154,996	5.3%
Shelby County	454,327	425,190	29,137	6.4%
Tipton County	24,840	23,996	1,744	7.0%
Lauderdale County	9,193	8,015	1,178	12.8%
Dyer County	17,869	16,762	1,107	6.2%

A new interstate corridor will benefit these counties by improving access, reducing transportation costs for local businesses, providing an incentive for new businesses to locate in the region, and diverting travelers and tourists through the area, resulting in additional roadside expenditures.

1.3 Consistency With Other Plans

The proposed project is consistent with the plans and legislation for I-69, a congressionally mandated High Priority Corridor of national significance. The project is on page 22 of Tennessee's State Transportation Improvement Plan (STIP), FY 2004-2006. Shelby Tipton, Lauderdale and Dyers Counties have several additional transportation improvement projects contained in the STIP. Adverse effects, associated with this project, to those proposed actions are not anticipated.

The unincorporated areas of Shelby County are included in the Memphis Metropolitan Area Long Range Plan, which addresses I-69 as being consistent with the goals therein. The incorporated city of Millington has a Comprehensive Plan that has not been updated for a number of years, and therefore does not address I-69. However, the Millington Reserve Area study indicates there is an abundance of land available in the surrounding area available for development, making this area consistent with a primary goal of I-69.

Dyer County's Vision 21 Plan, developed in cooperation with the Dyersburg Chamber of Commerce, outlines goals and actions for Dyer County. This document actively supports the goals of I-69. Information concerning developed Comprehensive Plans for Tipton and Lauderdale counties is not available.

1.4 Logical Termini and Independent Utility

Logical termini (beginning and ending points) for project development include SR 385 (Paul Barrett Parkway), near Millington on the southern end, and I-155 at Dyersburg on the northern end of the project area. The terminus in the Millington area permits study of outer loop possibilities within the Memphis urban area for the routing of I-69, as well as the more direct routing along I-40/I-240. The terminus in the Dyersburg area allows for a connecting link for I-155 travelers.

The Build Alternatives under consideration in this document are designed as Segments of Independent Utility (SIU), in that each segment would serve a local need in the event that I-69, as a whole, is not constructed. Those local needs include an increased level of service along existing US 51, improved system linkage for many small communities of the project area, as well as attracting new commercial and residential development needed to bolster the area's economy.

CHAPTER 2.0
ALTERNATIVES

2.0 ALTERNATIVES

The following alternatives were considered in the decision-making process and are described in this chapter:

- No-Build Alternative
- Transportation System Management Alternatives
- Highway Alternatives
- Highway Alternatives Previously Considered But Found to be Unreasonable

2.1 No-Build Alternative

The No-Action Alternative is just as the name implies, involving no construction of I-69 SIU 8, and leaving the existing highway system in place. This alternative does not meet the goals and objectives of the Purpose and Need for the project. It would not advance the completion of Corridor 18/I-69, would not provide a controlled-access link between two sections of controlled access roadway, would not facilitate future economic development and would not improve the traffic flow (level of service) of the existing facility, as demonstrated in Chapter 1, Table 1.1.

In the No-Build scenario, some portion of the traffic moving south on I-69 could possibly use I-155 at Dyersburg to access I-55 in Missouri and Arkansas to link with I-69 SIU 9 in Memphis, Tennessee. Consequently, due to the volume of traffic predicted for I-69, the safety and capacity (LOS) of I-55 could be negatively impacted.

2.2 Transportation Management Alternatives

Transportation Management Alternatives considered for the proposed project are a combination of “Transportation Demand Management” (TDM) and “Transportation System Management” (TSM) concepts, as well as modes of mass transit that would not address the identified needs of the immediate project area or the legislative mandate issued by the U.S. Congress for an Interstate Highway connecting Canada and Mexico. A description of the concepts and modes of mass transit considered are provided below.

TDM alternatives are relatively low-cost ways of reducing travel demand and improving traffic flow. TDM alternatives consist of programs or policies focused on either reducing the number of vehicles on the highway or distributing trips to less congested periods of the day. The goal of these alternatives is to relieve peak hour traffic congestion. These programs and policies include van/car pooling, non-motorized facility enhancements such as sidewalks and bicycle lanes, congestion pricing that would charge the users a varying fee based upon the amount of vehicles on the roadway, and employer-based trip reduction programs such as telecommuting and flexible work schedules. While any of these potential alternatives would address travel demand and traffic flow on a roadway, they would not meet the identified Purpose and Need for the project.

TSM alternatives are relatively low-cost ways of reducing traffic congestion and improving traffic flow. TSM alternatives consist of techniques or applications focused on improving the transportation networks ability to handle traffic volumes by increasing its travel efficiency. These techniques and applications include the use of expanded Intelligent Transportation System applications including technology-based programs intended to actively manage the transportation system. These programs provide improved access to travel information that allows a traveler to adjust their particular routes in response to changing traffic conditions. Information provided to users of the system typically includes travel times, crash locations and other service interruptions. The means of providing this information may include: signage on affected facilities, web sites with map and/or real-time pictures, and broadcasts on dedicated radio stations. Additionally, TSM alternatives include the use of Incident Management Programs that provide timely responses to traffic incidents that affect congestion, reversible lanes and High Occupancy Vehicle (HOV) lanes. While any of these potential alternatives would address congestion on a roadway, they would not meet the identified Purpose and Need for the project.

Mass Transit alternatives include the implementation of bus routes and light rail, neither of which are present in the project area. The urban area of Memphis features extensive bus routes and is in the early planning stages for a system of light rail alternatives. However, neither of these services are being planned to extend into the I-69 SIU #8 project area. Additionally, these alternatives would not meet the identified Purpose and Need for the project.

2.3 Highway Alternatives

Efforts were taken to identify areas containing sensitive resources early in the process of developing viable build alternatives. Methods utilized in the identification of these resources included a windshield survey of the project area, as well as the use of existing aerial photography and topographic mapping to help avoid sensitive areas. Identified resources included large wetland complexes, minority and low-income communities, as well as areas where the predominant land use was residential housing. These efforts have resulted in the development of alignments that help to minimize potential impacts associated with the proposed action.

2.3.1 Description of Build Alternatives

Two main corridors are under consideration for the construction of I-69, SIU 8. They include Alternative R, which lies to the west of existing US 51, and the Alternative G, which lies to the east of existing US 51. Additionally, several “crossover” options are considered in this document. The crossover options are intended to provide greater flexibility in the selection of a Preferred Alternative. Additionally, there are two proposed rest areas and one truck weigh station that are considered in this document. Please refer to Figure 2.1 for a map of the proposed alternatives. Volume II contains aerial photography with the preliminary design of the proposed alternatives, and features an Index Sheet to reference specific sections of the proposed alignments.

The two proposed corridors and crossover options have been divided into nodes (A-Z). The nodes allow for the combining of various segments of the main alternatives, with the crossover alternatives. The combining of the nodes allow for the consideration of a wider range of options in the selection of a Preferred Alternative. A range of node combinations is considered in this document. However, all possible combinations of the nodes are not covered in this analysis, only those that are logical and prudent. The other various node combinations not considered reasonable in this report have been found to be of unnecessary length and cost with no reduction in potential social, economic or environmental impacts. Please refer to Table 2.1 for a complete listing of all alternatives and their node designations.

Table 2.1 Build Alternatives

Alternative Name	Nodes Utilized
R	ABCDKEGH
G	JSTUVWYZ
P1	ABCDKEGYZ
P2	ABCDKWYZ
P3	ABTUVWYZ
O1	JSTUVEGH
O3	JSCDKEGH
O1/P1	JSTUVEGYZ
O3/P1	JSCDKEGYZ
O3/P2	JSCDKWYZ

Detailed descriptions of the proposed alternatives considered in this document are provided below. Tables 2.2 – 2.11 contain information concerning the crossing of existing routes, as well as proposed interchange locations. All proposed interchanges would be designed in typical diamond formations, unless otherwise noted.

Build Alternatives

For

Interstate 69

Segment of Independent Utility # 8

Millington to Dyersburg, TN

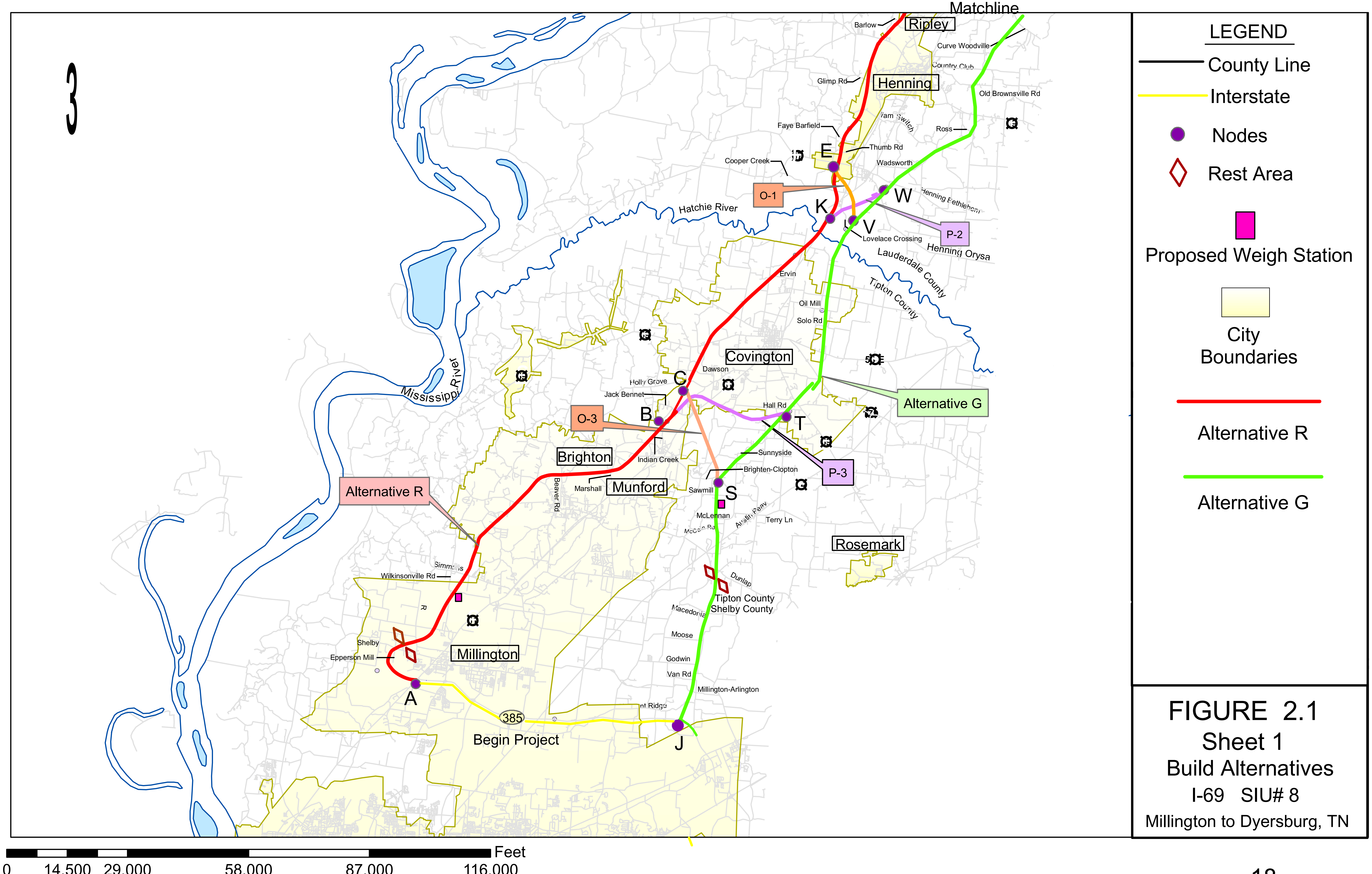


FIGURE 2.1
Sheet 1
Build Alternatives
I-69 SIU# 8
Millington to Dyersburg, TN

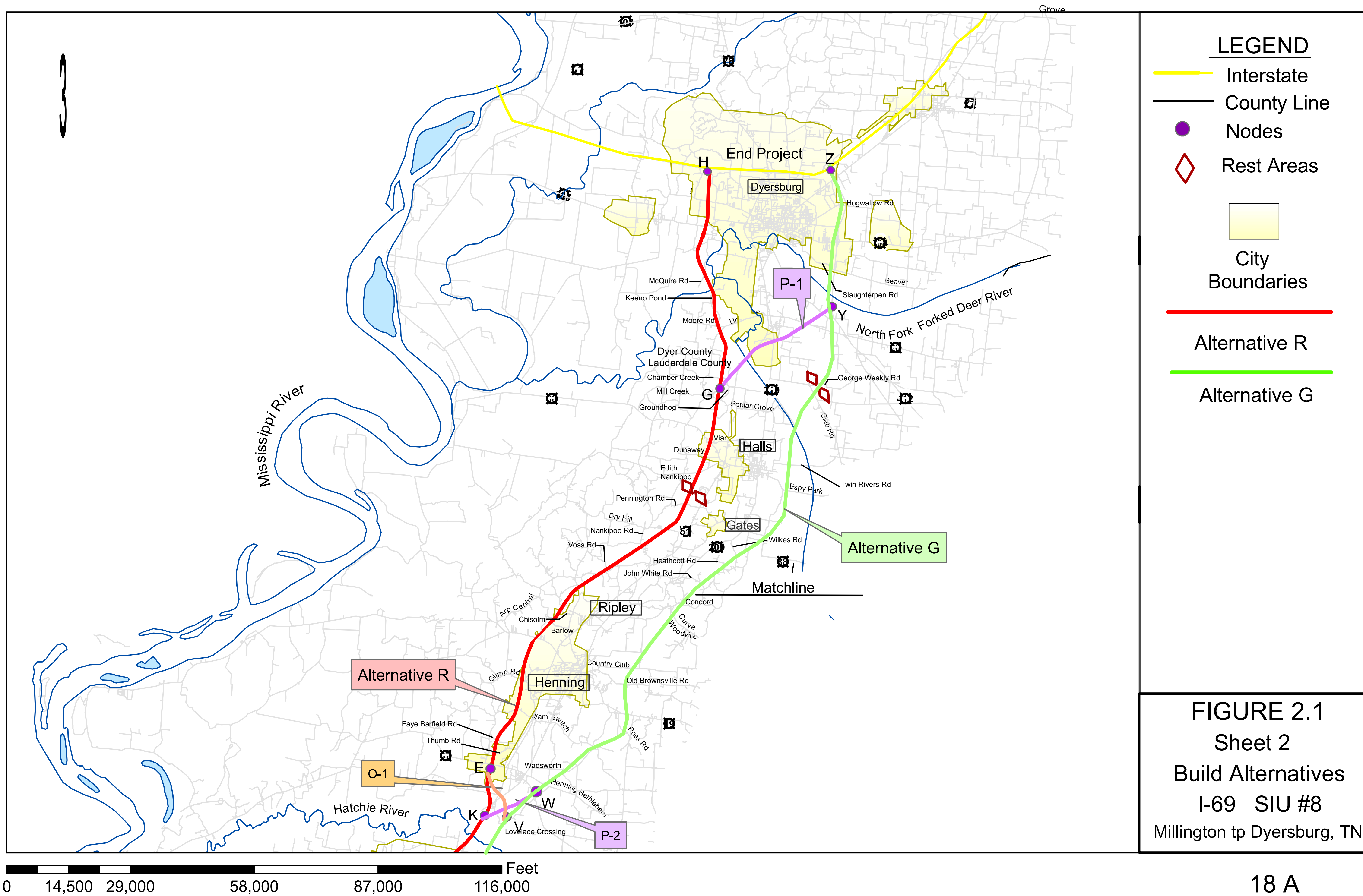


FIGURE 2.1
Sheet 2
Build Alternatives
I-69 SIU #8
Millington tp Dyersburg, TN

Alternative R (Nodes ABCDKEGH)

Alternative R would extend from Millington to Dyersburg, west of the existing US 51 for its entire length. Alternative R would begin with a connection to SR 385 Extending northward; one of two proposed rest areas would be located south of the West Union Road crossing. Approaching the Tipton/Lauderdale county line, Alternative R would feature an interchange with SR 59 and a connector to access the industrial development along US 51 at the small community of Rialto. Here, the alignment continues northward across the Hatchie River on the existing crossing location. On the north side of the Hatchie River, US 51 would be rebuilt to curve northeast and pass east of the existing Alex Haley Rest Area before intersecting Cooper Creek Road/SR 209 and tying back into the existing US 51 alignment. This allows US 51 traffic to maintain access to the existing rest area. From this point Alternative R would continue northward passing west of Ripley. West of the communities of Gates and Halls is the second proposed location for a rest area. From this point the alignment continues northward, tying to SIU #7 and I-155 northwest of Dyersburg. Table 2.2 details the project area roadways crossed and the location of proposed interchanges.

Table 2.2 Alternative R Route Crossings and Interchanges

Existing Route Crossings – Alternative R		
(Node) Road Name	Over/Under	Interchange
(**A**) Shelby/Epperson Mill	Over	None
Quito Road	Over	None
West Union Road	Over	Yes
Wilkinsonville Road	Over	None
Walker Road	Over	None
Simmons Road	Over	Yes
Campground Road	Under	None
Appleberry Road	Under	None
Drummonds Road	Over	None
SR 178	Over	Yes
Beaver Road	Under	None
Walker Field Road	Over	None
Marshall Road	Under	None
Atkins Store Road	Over	Yes
Marshall Road	Under	None
Indian Creek Road	Over	None
(**B**) Jack Bennett Road	Under	None
(**C**) Holly Grove Road	Under	None

Table 2.2 continued

Existing Route Crossings – Alternative R		
(Node) Road Name	Over/Under	Interchange
Melrose Road	Under	None
Dawson Road*	Under	None
SR 59	Over	Yes
Bridge Road	Under	None
Leigh's Chapel Road*	Under	None
Ervin Lane	Over	None
(**D**) US51/Industrial Park Connector	Over	Yes
Leigh's Chapel Road*	Under	None
Cooper Creek Road	Under	None
SR 87	Over	Yes
Thumb Road	Under	None
Faye Barfield Road	Under	None
(**E**) William Switch Road	Under	None
Glimp Road	Under	None
SR 19	Over	Yes
Barlow Road*	Under	None
Chisolm Road*	Under	None
SR 208	Under	Yes
Arp Central Road	Under	None
Voss Road	Under	None
Nankipoo Road	Under	Yes
Dry Hill Road	Under	None
Pennington Road	Under	None
Edith Nankipoo	Over	None
Dunaway Road	Over	None
SR 88	Over	Yes
Mill Creek Road	Under	None
Groundhog Road	Over	None
(**G**) Chamber Creek Road	Over	None
Poplar Grove Road	Under	None
Unionville Road	Over	Yes
Moore Road*	Over	None
Keeno Pond Road*	Over	None
McGuire/Thomas	Over	None
SR 104	Over	Yes
Upper Finley Drive	Over	None
(**H**) I-155	Over	Yes**

*Relocated
**Directional Interchange

Alternative G (Nodes JSTUVWYZ)

Alternative G, located entirely to the east of existing US 51, begins on SR 385 west of the community of Arlington. A proposed Rest Area would be located between the Macedonia/I-69 interchange and the crossing of SR 206. Continuing northward is the location of a proposed Truck Weigh Station. From this point Alternative G continues northward to cross the Hatchie River east of the existing US 51 crossing and the community of Rialto. The alignment passes east of Ripley, Hall and Gates, crossing the South Fork of the Forked Deer River east of the Lauderdale Waterfowl Refuge, passing the second of two proposed rest area locations for this alignment. Alternative G ties to combined US 51/US 412 and SIU 7 northeast of Dyersburg. Table 2.3 details the project area roadways crossed and the location of the proposed interchanges.

Table 2.3 Alternative G Route Crossings and Interchanges

Existing Route Crossings –Alternative G		
Road Name	Over/Under	Interchange
(**J**) SR 385	At Grade	Yes
Pleasant Ridge Road	Under	None
SR 205 (Millington-Arlington)	Over	Yes
Van Road	Under	None
Godwin Road	Over	None
Moose Road	Over	None
Macedonia Road	Under	Yes
Dunlap Road	Over	None
SR 14 (Austin Peay Hwy)	Over	Yes
McCain Road	Under	None
McClennon Road	Over	None
Sawmill Road	Over	None
(**S**) Brighton/Clopton Road	Over	Yes
Sunnyside Road	Over	None
Sunnyside Road*	Over	None
SR 384	Over	Yes
Terry Lane	Over	None
Hall Road	Over	None
(**T**) SR 59	Over	Yes
SR 179	Over	None
SR 54	Over	Yes
Solo Road	Over	None
(**U**) Old Mill Road	Over	None
Airport Road	Over	Yes
(**V**) Lovelace Crossing	Under	None
SR 87	Under	Yes
(**W**) Henning Road	Over	None

Table 2.3 continued

Existing Route Crossings –Alternative G		
Road Name	Over/Under	Interchange
Wadsworth Road	Under	None
Hargrove/Willie Road	Under	None
Ross Road	Under	None
SR 19	Over	Yes
Old Brownsville Road	Over	None
Country Club Road	Over	None
Curve/Woodville Road	Under	Yes
Concord Road	Under	None
John White Road	Over	None
Heathcock Road*	Over	None
Wilkes Road*	Under	None
Concord Road*	Under	None
SR 88*	Under	Yes
Espy Park Road	Over	None
Twin Rivers Road	Over	Yes
Slab Road	Under	None
George Weakly Road	Over	None
SR 210	Under	Yes
US 412**	At Grade	None
(**Y**) Slaughterpen Road	Over	None
SR 104	Over	Yes
Hogwallow Road	Over	None
US 51/SR 211	Over	Yes***
(**Z**) I-155	Over	Yes

*Relocated
** Merge
***Directional Interchange

Alternative P1 (Nodes ABCDKEGYZ)

Alternative P1 begins along the proposed alignment of Alternative R with a direct connection with SR 385. One of two proposed rest areas would be located south the West Union Road crossing. Approaching the Tipton/Lauderdale county line, Alternative P1 would feature an interchange with SR 59 and a connector to access the industrial development along US 51 at the small community of Rialto. Here, the alignment continues northward across the Hatchie River on the existing crossing location. On the north side of the Hatchie River, relocated US 51 curves northeast and passes east of the Alex Haley Rest Area before intersecting Cooper Creek Road/SR 209 and tying back into existing US 51. This allows US 51 traffic to maintain access to the existing rest area. Alternative P1 passes west of Ripley. West of the communities of Halls and Gates is the second proposed Rest Area location. The alignment continues northward before curving eastward to cross US 51 and the South Fork of the Forked Deer River. It continues east, crossing the railroad and turns northeast to tie to US 51/US 412 and Segment of Independent Utility 7 of I-69. Table 2.4 details the project area roadways crossed and the location of the proposed interchanges.

Table 2.4 Alternative P1 Route Crossings and Interchanges

Existing Route Crossings – Alternative P1		
Road Name	Over/Under	Interchange
(**A**) Shelby/Epperson Mill	Over	None
Quito Road	Over	None
West Union Road	Over	Yes
Wilkinsonville Road	Over	None
Walker Road	Over	None
Simmons Road	Over	Yes
Campground Road	Under	None
Appleberry Road	Under	None
Drummonds Road	Over	None
SR 178	Over	Yes
Beaver Road	Under	None
Walker Field Road	Over	None
Marshall Road	Under	None
Atkins Store Road	Over	Yes
Marshall Road	Under	None
Indian Creek Road	Over	None
(**B**) Jack Bennett Road	Under	None
(**C**) Holly Grove Road	Under	None
Melrose Road	Under	None
Dawson Road*	Under	None
SR 59	Over	Yes
Bridge Road	Under	None
Leigh’s Chapel Road*	Under	None
Ervin Lane	Over	None
(**D**) US51/Industrial Park Connector	Over	Yes
Leigh’s Chapel Road*	Under	None
Cooper Creek Road	Under	None
SR 87	Over	Yes
Thumb Road	Under	None
Faye Barfield Road	Under	None
(**E**) William Switch Road	Under	None
Glimp Road	Under	None
SR 19	Over	Yes
Barlow Road*	Under	None
Chisolm Road*	Under	None

Table 2.4 continued

Existing Route Crossings – Alternative P1		
Road Name	Over/Under	Interchange
SR 208	Under	Yes
Arp Central Road	Under	None
Voss Road	Under	None
Nankipoo Road	Under	Yes
Dry Hill Road	Under	None
Pennington Road	Under	None
Edith Nankipoo	Over	None
Dunaway Road	Over	None
SR 88	Over	Yes
Mill Creek Road	Under	None
Groundhog Road	Over	None
(**G**) Chamber Creek Road	Over	None
Poplar Grove Road	Under	None
US 51	Over	Yes*
SR 210	Over	None
Old Fowlkes Road	Under	None
SR 210	Over	Yes
Sorrell Chapel Road	Under	None
(**Y**) Slaughterpen Road	Over	None
SR 104	Over	Yes
Hogwallow Road	Over	None
US 51/SR 211	Over	Yes***
(**Z**) I-155	Over	Yes

*Entrance Only Interchange
**Merge
*** Directional

<u>Alternative P2 (Nodes ABCDKWYZ)</u>

Alternative P2 begins along the proposed alignment of Alternative R with a direct connection with SR 385. One of two proposed rest areas would be located south the West Union Road crossing. Approaching the Tipton/Lauderdale county line, Alternative P2 would feature an interchange with SR 59 and a connector to access the industrial development along US 51 at the small community of Rialto. Here, the alignment continues northward across the Hatchie River on the existing crossing location. Alternative P2 then turns northeast crossing over relocated US 51, over the railroad and under the TVA transmission line. The alignment the passes east of Ripley, Halls and Gates and crosses the South Fork of the Forked Deer River east of the Lauderdale Waterfowl Refuge, passing the second of two proposed rest area locations for this alignment, Alternative P2 ties to combined US 51/US 412 and SIU 7 northeast of Dyersburg. Table 2.5 details the project area roadways crossed and the location of the proposed interchanges.

Table 2.5 Alternative P2 Route Crossings and Interchanges

Existing Route Crossings – Alternative P2		
Road Name	Over/Under	Interchange
(**A**) Shelby/Epperson Mill	Over	None
Quito Road	Over	None
West Union Road	Over	Yes
Wilkinsonville Road	Over	None
Walker Road	Over	None
Simmons Road	Over	Yes
Campground Road	Under	None
Appleberry Road	Under	None
Drummonds Road	Over	None
SR 178	Over	Yes
Beaver Road	Under	None
Walker Field Road	Over	None
Marshall Road	Under	None
Atkins Store Road	Over	Yes
Marshall Road	Under	None
Indian Creek Road	Over	None
(**B**) Jack Bennett Road	Under	None
(**C**) Holly Grove Road	Under	None
Melrose Road	Under	None
Dawson Road*	Under	None
SR 59	Over	Yes
Bridge Road	Under	None
Leigh's Chapel Road*	Under	None
Ervin Lane	Over	None
(**D**) US51/Industrial Park Connector	Over	Yes
(**K**) US 51	Over	None
SR 87	Under	Yes
(**W**) Henning Road	Over	None
Wadsworth Road	Under	None
Hargrove/Willie Road	Under	None
Ross Road	Under	None
SR 19	Over	Yes
Old Brownsville Road	Over	None
Country Club Road	Over	None
Curve/Woodville Road	Under	Yes
Concord Road	Under	None
John White Road	Over	None
Heathcock Road*	Over	None
Concord Road*	Under	None

Table 2.5 continued

Existing Route Crossings – Alternative P2		
Road Name	Over/Under	Interchange
SR 88*	Under	Yes
Espy Park Road	Over	None
Twin Rivers Road	Over	Yes
Slab Road	Under	None
George Weakly Road	Over	None
SR 210	Under	Yes****
US 412**	At Grade	None
(**Y**) Slaughterpen Road	Over	None
SR 104	Over	Yes
Hogwallow Road	Over	None
US 51/SR 211	Over	Yes***
(**Z**) I-155	Over	Yes

*Relocated,
**Merge
***Directional

Alternative P3 (Nodes ABTUVWYZ)

Alternative P3 begins along the proposed alignment of Alternative R with a direct connection with SR 385. One of two proposed rest areas would be located south the West Union Road crossing. At Curtis Road, Alternative P3 turns northeast to cross U.S. 51, the railroad and the TVA transmission line. From this point Alternative G continues northward to cross the Hatchie River east of the existing US 51 crossing and the community of Rialto. The alignment passes east of Ripley, Hall and Gates, crossing the South Fork of the Forked Deer River east of the Lauderdale Waterfowl Refuge, passing the second of two proposed rest area locations for this alignment. Alternative P3 ties to combined US 51/US 412 and SIU 7 northeast of Dyersburg. Table 2.6 details the project area roadways crossed and the location of the proposed interchanges.

Table 2.6 Alternative P3 Route Crossings and Interchanges

Existing Route Crossings – Alternative P3		
Road Name	Over/Under	Interchange
(**A**) Shelby/Epperson Mill	Over	None
Quito Road	Over	None
West Union Road	Over	Yes
Wilkinsonville Road	Over	None
Walker Road	Over	None
Simmons Road	Over	Yes
Campground Road	Under	None

Table 2.6 continued

Existing Route Crossings – Alternative P3		
Road Name	Over/Under	Interchange
Appleberry Road	Under	None
Drummonds Road	Over	None
SR 178	Over	Yes
Beaver Road	Under	None
Walker Field Road	Over	None
Marshall Road	Under	None
Atkins Store Road	Over	Yes
Marshall Road	Under	None
Indian Creek Road	Over	None
(**B**) Jack Bennett Road	Under	None
Liberty Church Road	Under	None
US 51	Over	Yes*
Melrose Road	Under	None
Old Memphis Road	Over	None
SR 384 (Mt. Carmel Road)	Over	Yes
Terry Lane	Over	None
Hall Road	Over	None
(**T**) SR 59	Over	Yes
SR 179	Over	None
SR 54	Over	Yes
Solo Road	Over	None
(**U**) Old Mill Road	Over	None
Airport Road	Over	Yes
(**V**) Lovelace Crossing	Under	None
SR 87	Under	Yes
(**W**) Henning Road	Over	None
Wadsworth Road	Under	None
Hargrove/Willie Road	Under	None
Ross Road	Under	None
SR 19	Over	Yes
Old Brownsville Road	Over	None
Country Club Road	Over	None
Curve/Woodville Road	Under	Yes
Concord Road	Under	None
John White Road	Over	None
Heathcock Road*	Over	None
Wilkes Road*	Under	None
Concord Road*	Under	None
SR 88*	Under	Yes
Espy Park Road	Over	None
Twin Rivers Road	Over	Yes

Table 2.6 continued

Existing Route Crossings – Alternative P3		
Road Name	Over/Under	Interchange
Slab Road	Under	None
George Weakly Road	Over	None
SR 210	Under	Yes
US 412**	At Grade	None
(**Y**) Slaughterpen Road	Over	None
SR 104	Over	Yes
Hogwallow Road	Over	None
US 51/SR 211	Over	Yes***
(**Z**) I-155	Over	Yes

*Partial Clover Leaf
**Merge
***Directional

<u>Alternative O1 (Nodes JSTUVEGH)</u>
Alternative O1 begins along the proposed alignment of Alternative G, west of the community of Arlington. A proposed Rest Area would be located between the Macedonia/I-69 interchange and the crossing of SR 206. Continuing northward is the location of a proposed Truck Weigh Station. From this point Alternative O1 continues northward to cross the Hatchie River east of the existing US 51 Bridge and the community of Rialto. After crossing the river, Alternative O1 turns northwest to cross under the TVA transmission line, over the railroad and US 51. The alignment turns north to pass west of Ripley. West of the communities of Gates and Halls is the second location proposed for a Rest Area. From this point the alignment continues northward, tying to SIU #7 and I-155 northwest of Dyersburg. Table 2.7 details project area roadways crossed and the location of the proposed interchanges.

Table 2.7 Alternative O1 Route Crossings and Interchanges

Existing Route Crossings –Alternative O1		
Road Name	Over/Under	Interchange
(**J**) SR 385	At Grade	Yes
Pleasant Ridge Road	Under	None
SR 205 (Millington-Arlington)	Over	Yes
Van Road	Under	None
Godwin Road	Over	None
Moose Road	Over	None
Macedonia Road	Under	Yes
Dunlap Road	Over	None
SR 14 (Austin Peay Hwy)	Over	Yes
McCain Road	Under	None

Table 2.7 continued

Existing Route Crossings –Alternative O1		
Road Name	Over/Under	Interchange
McClennon Road	Over	None
Sawmill Road	Over	None
(**S**) Brighton/Clopton Road	Over	Yes
Sunnyside Road	Over	None
Sunnyside Road*	Over	None
SR 384	Over	Yes
Terry Lane	Over	None
Hall Road	Over	None
(**T**) SR 59	Over	Yes
SR 179	Over	None
SR 54	Over	Yes
Solo Road	Over	None
(**U**) Old Mill Road	Over	None
Airport Road	Over	Yes
(**V**) Lovelace Crossing	Under	None
SR 209	Over	None
US 51	Under	Yes**
SR 87	Under	None
Thumb Road	Under	None
Faye Barfield Road	Under	None
(**E**) William Switch Road	Under	None
Glimp Road	Under	None
SR 19	Over	Yes
Barlow Road*	Under	None
Chisolm Road*	Under	None
SR 208	Under	Yes
Arp Central Road	Under	None
Voss Road	Under	None
Nankipoo Road	Under	Yes
Dry Hill Road	Under	None
Pennington Road	Under	None
Edith Nankipoo	Over	None
Dunaway Road	Over	None
SR 88	Over	Yes
Mill Creek Road	Under	None
Groundhog Road	Over	None
(**G**) Chamber Creek Road	Over	None
Poplar Grove Road	Under	None
Unionville Road	Over	Yes
Moore Road*	Over	None
Keeno Pond Road*	Over	None

Table 2.7 continued

Existing Route Crossings –Alternative O1		
Road Name	Over/Under	Interchange
McGuire/Thomas	Over	None
SR 104	Over	Yes
Upper Finley Drive	Over	None
(**H**) I-155	Over	Yes**

*Relocated
**Partial Clover Leaf
**Directional

Alternative 03 (Nodes JSCDKEGH)

Alternative O3 begins along the proposed alignment of Alternative G, west of the community of Arlington. A proposed Rest Area would be located between the Macedonia/I-69 interchange and the crossing of SR 206. Continuing northward is the location of a proposed Truck Weigh Station. Just north of the weigh station Alternative O3 turns northwest, crossing the railroad and US 51 to follow along the proposed alignment for Alternative R, crossing the Hatchie River on the existing bridge. Alternative O3 proceeds northward, passing west of Ripley. West of the communities of Gates and Halls is the second proposed location for a rest area. From this point the alignment continues northward, tying to SIU #7 and I-155 northwest of Dyersburg. Table 2.8 details the project area roadways crossed and the location of proposed interchanges.

Table 2.8 Alternative O3 Route Crossings and Interchanges

Existing Route Crossings – Alternative O3		
Road Name	Over/Under	Interchange
(**J**) SR 385	At Grade	Yes
Pleasant Ridge Road	Under	None
SR 205 (Millington-Arlington)	Over	Yes
Van Road	Under	None
Godwin Road	Over	None
Moose Road	Over	None
Macedonia Road	Under	Yes
Dunlap Road	Over	None
SR 14 (Austin Peay Hwy)	Over	Yes
McCain Road	Under	None
McClennon Road	Over	None
Sawmill Road	Over	None
(**S**) Brighton/Clopton Road	Over	Yes
Old Memphis Road	Over	None
Nelson Road	Over	None
US 51	Over	Yes**

Table 2.8 continued

Existing Route Crossings – Alternative O3		
Road Name	Over/Under	Interchange
Liberty Church Road	Over	None
(**C**) Holly Grove Road	Under	None
Melrose Road	Under	None
Dawson Road*	Under	None
SR 59	Over	Yes
Bridge Road	Under	None
Leigh's Chapel Road*	Under	None
Ervin Lane	Over	None
(**D**) US51/Industrial Park Connector	Over	Yes
Leigh's Chapel Road*	Under	None
Cooper Creek Road	Under	None
SR 87	Over	Yes
Thumb Road	Under	None
Faye Barfield Road	Under	None
(**E**) William Switch Road	Under	None
Glimp Road	Under	None
SR 19	Over	Yes
Barlow Road*	Under	None
Chisolm Road*	Under	None
SR 208	Under	Yes
Arp Central Road	Under	None
Voss Road	Under	None
Nankipoo Road	Under	Yes
Dry Hill Road	Under	None
Pennington Road	Under	None
Edith Nankipoo	Over	None
Dunaway Road	Over	None
SR 88	Over	Yes
Mill Creek Road	Under	None
Groundhog Road	Over	None
(**G**) Chamber Creek Road	Over	None
Poplar Grove Road	Under	None
Unionville Road	Over	Yes
Moore Road*	Over	None
Keeno Pond Road*	Over	None
McGuire/Thomas	Over	None
SR 104	Over	Yes
Upper Finley Drive	Over	None
(**H**) I-155	Over	Yes***

*Relocated
**Partial Cloverleaf
***Directional

Alternative O1/P1 (Nodes JSTUVEGYZ)

Alternative O1/P1 begins along the proposed alignment of Alternative G, west of the community of Arlington. A proposed Rest Area would be located between the Macedonia/I-69 interchange and the crossing of SR 206. Continuing northward is the location of a proposed Truck Weigh Station. From this point Alternative O1/P1 continues northward to cross the Hatchie River east of the existing US 51 Bridge and the community of Rialto. After crossing the river, Alternative O1/P1 turns northwest to cross under the TVA transmission line, over the railroad and US 51. The alignment turns north to pass west of Ripley. West of the communities of Gates and Halls is the second location proposed for a Rest Area. The alignment continues northward before curving eastward to again cross US 51 and the South Fork of the Forked Deer River. It continues east, crossing the railroad and turns northeast to tie to US 51/US 412 and Segment of Independent Utility 7 of I-69. Table 2.9 details the project area roadways crossed and the location of the proposed interchanges.

Table 2.9 Alternative O1/P1 Route Crossings and Interchanges

Existing Route Crossings – AlternativeO1/P1		
Road Name	Over/Under	Interchange
(**J**) SR 385	At Grade	Yes
Pleasant Ridge Road	Under	None
SR 205 (Millington-Arlington)	Over	Yes
Van Road	Under	None
Godwin Road	Over	None
Moose Road	Over	None
Macedonia Road	Under	Yes
Dunlap Road	Over	None
SR 14 (Austin Peay Hwy)	Over	Yes
McCain Road	Under	None
McClennon Road	Over	None
Sawmill Road	Over	None
(**S**) Brighton/Clopton Road	Over	Yes
Sunnyside Road	Over	None
Sunnyside Road*	Over	None
SR 384	Over	Yes
Terry Lane	Over	None
Hall Road	Over	None
(**T**) SR 59	Over	Yes
SR 179	Over	None
SR 54	Over	Yes
Solo Road	Over	None
(**U**) Old Mill Road	Over	None
Airport Road	Over	Yes
(**V**) Lovelace Crossing	Under	None

Table 2.9 continued

Existing Route Crossings – AlternativeO1/P1		
Road Name	Over/Under	Interchange
SR 209	Over	None
US 51	Under	Yes
SR 87	Under	None
Thumb Road	Under	None
Faye Barfield Road	Under	None
(**E**) William Switch Road	Under	None
Glimp Road	Under	None
SR 19	Over	Yes
Barlow Road*	Under	None
Chisolm Road*	Under	None
SR 208	Under	Yes
Arp Central Road	Under	None
Voss Road	Under	None
Nankipoo Road	Under	Yes
Dry Hill Road	Under	None
Pennington Road	Under	None
Edith Nankipoo	Over	None
Dunaway Road	Over	None
SR 88	Over	Yes
Mill Creek Road	Under	None
Groundhog Road	Over	None
(**G**) Chamber Creek Road	Over	None
Poplar Grove Road	Under	None
US 51	Over	Yes*
SR 210	Over	None
Old Fowlkes Road	Under	None
SR 210	Over	Yes
Sorrell Chapel Road	Under	None
(**Y**) Slaughterpen Road	Over	None
SR 104	Over	Yes
Hogwallow Road	Over	None
US 51/SR 211	Over	Yes***
(**Z**) I-155	Over	Yes

*Relocated
**Merge
***Directional

<u>Alternative O3/P1 (Nodes JSCDKEGYZ)</u>

Alternative O3/P1 begins along the proposed alignment of Alternative G, west of the community of Arlington. A proposed Rest Area would be located between the Macedonia/I-69 interchange and the crossing of SR 206. Continuing northward is the location of a proposed Truck Weigh Station. Just north of the weigh station Alternative O3 turns northwest, crossing the railroad and US 51 to follow along the proposed alignment for Alternative R, crossing the Hatchie River on the existing bridge. Alternative O3 continues northward, passing west of Ripley. West of the communities of Gates and Halls is the second proposed location for a rest area. The alignment continues northward before curving eastward to cross US 51 again and the South Fork of the Forked Deer River. It continues east, crossing the railroad and turns northeast to tie to US 51/US 412 and Segment of Independent Utility 7 of I-69. Table 2.10 details the project area roadways crossed and the location of the proposed interchanges.

Table 2.10 Alternative O3/P1 Route Crossings and Interchanges

Existing Route Crossings – O-3/P-1		
Road Name	Over/Under	Interchange
(**J**) SR 385	At Grade	Yes
Pleasant Ridge Road	Under	None
SR 205 (Millington-Arlington)	Over	Yes
Van Road	Under	None
Godwin Road	Over	None
Moose Road	Over	None
Macedonia Road	Under	Yes
Dunlap Road	Over	None
SR 14 (Austin Peay Hwy)	Over	Yes
McCain Road	Under	None
McClennon Road	Over	None
Sawmill Road	Over	None
(**S**) Brighton/Clopton Road	Over	Yes
Old Memphis Road	Over	None
Nelson Road	Over	None
US 51	Over	Yes*
Liberty Church Road	Over	None
(**C**) Holly Grove Road	Under	None
Melrose Road	Under	None
Dawson Road*	Under	None
SR 59	Over	Yes
Bridge Road	Under	None
Leigh's Chapel Road*	Under	None
Ervin Lane	Over	None
(**D**) US51/Industrial Park Connector	Over	Yes
Leigh's Chapel Road*	Under	None
Cooper Creek Road	Under	None
SR 87	Over	Yes
Thumb Road	Under	None
Faye Barfield Road	Under	None

Table 2.10 continued

Existing Route Crossings – O-3/P-1		
Road Name	Over/Under	Interchange
(**E**) William Switch Road	Under	None
Glimp Road	Under	None
SR 19	Over	Yes
Barlow Road*	Under	None
Chisolm Road*	Under	None
SR 208	Under	Yes
Arp Central Road	Under	None
Voss Road	Under	None
Nankipoo Road	Under	Yes
Dry Hill Road	Under	None
Pennington Road	Under	None
Edith Nankipoo	Over	None
Dunaway Road	Over	None
SR 88	Over	Yes
Mill Creek Road	Under	None
Groundhog Road	Over	None
(**G**) Chamber Creek Road	Over	None
Poplar Grove Road	Under	None
US 51	Over	Yes*
SR 210	Over	None
Old Fowlkes Road	Under	None
SR 210	Over	Yes
Sorrell Chapel Road	Under	None
(**Y**) Slaughterpen Road	Over	None
SR 104	Over	Yes
Hogwallow Road	Over	None
US 51/SR 211	Over	Yes***
(**Z**) I-155	Over	Yes

*Relocated
**Directional
***Entrance Only

Alternative O3/P2 (Nodes JSCDKWYZ)

Alternative O3/P2 begins along the proposed alignment of Alternative G, west of the community of Arlington. A proposed Rest Area would be located between the Macedonia/I-69 interchange and the crossing of SR 206. Continuing northward is the location of a proposed Truck Weigh Station. Just north of the weigh station Alternative O3 turns northwest, crossing the railroad and US 51 to follow along the proposed alignment for Alternative R, crossing the Hatchie River on the existing bridge. Alternative O3/P2 then turns northeast crossing over relocated US 51, over the railroad and under the TVA transmission line. The alignment the passes east of Ripley, Halls and Gates and crosses the South Fork of the Forked Deer River east of the Lauderdale Waterfowl Refuge, passing the second of two proposed rest area locations for this alignment, Alternative O3/P2 ties to combined US 51/US 412 and SIU 7 northeast of Dyersburg. Table 2.5 details the project area roadways crossed and the location of the proposed interchanges.

Table 2.11 Alternative O-3/P-2 Route Crossings and Interchanges

Existing Route Crossings – Alternative R		
Road Name	Over/Under	Interchange
(**J**) SR 385	At Grade	Yes
Pleasant Ridge Road	Under	None
SR 205 (Millington-Arlington)	Over	Yes
Van Road	Under	None
Godwin Road	Over	None
Moose Road	Over	None
Macedonia Road	Under	Yes
Dunlap Road	Over	None
SR 14 (Austin Peay Hwy)	Over	Yes
McCain Road	Under	None
McClennon Road	Over	None
Sawmill Road	Over	None
(**S**) Brighton/Clopton Road	Over	Yes
Old Memphis Road	Over	None
Nelson Road	Over	None
US 51	Over	Yes*
Liberty Church Road	Over	None
(**C**) Holly Grove Road	Under	None
Melrose Road	Under	None
Dawson Road*	Under	None
SR 59	Over	Yes
Bridge Road	Under	None
Leigh's Chapel Road*	Under	None
Ervin Lane	Over	None
(**D**) US51/Industrial Park Connector	Over	Yes
(**K**) US 51*	Over	None
SR 87	Under	Yes
(**W**) Henning Road	Over	None
Wadsworth Road	Under	None
Hargrove/Willie Road	Under	None
Ross Road	Under	None
SR 19	Over	Yes

Table 2.11 continued

Existing Route Crossings – Alternative R		
Road Name	Over/Under	Interchange
Old Brownsville Road	Over	None
Country Club Road	Over	None
Curve/Woodville Road	Under	Yes
Concord Road	Under	None
John White Road	Over	None
Heathcock Road*	Over	None
Wilkes Road*	Under	None
Concord Road*	Under	None
SR 88*	Under	Yes
Espy Park Road	Over	None
Twin Rivers Road	Over	Yes
Slab Road	Under	None
George Weakly Road	Over	None
SR 210	Under	Yes
US 412**	At Grade	None
(**Y**) Slaughterpen Road	Over	None
SR 104	Over	Yes
Hogwallow Road	Over	None
US 51/SR 211	Over	Yes***
(**Z**) I-155	Over	Yes

*Partial Clover Leaf, **Merge, ***Directional

2.3.2 Design Features

The project would be designed according to the Tennessee Department of Transportation standards for interstate facilities with depressed medians. The proposed design would involve sufficient right-of-way for the construction of a four-lane facility initially, with enough area to accommodate a six-lane facility, if needed in the future. Existing and predicted traffic volumes along U.S. 412 require a six-lane initial, with an eight-lane ultimate. Any future widening of this section would occur in the median and would require the placement of a barrier wall to provide positive separation of traffic.

The project is proposed as an addition to the National System of Interstate and Defense Highways (Interstate System). Current policies on the design standards for the Interstate System require that the facility have full control of access. Therefore, pedestrian and bicycle usage would be prohibited except at the bridge over US 51 at the Hatchie River near the Lauderdale/Tipton County line. TDOT has proposed a ten foot-wide mixed-use path be included on the new bridge that would be constructed at the existing location that would maintain trail continuity across the Hatchie River. Please refer to Chapter 2, Figure 2.2C for a typical section depicting the lane configuration of the new Hatchie River Bridge. Access to the new roadway would be restricted to interchanges at various proposed locations. All state routes crossed by the proposed facility would have an interchange, where proper spacing permits. The proposed roadway would feature two 12 ft. driving lanes in each direction, 12 ft. outside shoulders, and a minimum median width of 88 ft. with 6.0 ft. inside shoulders and an outside slope ratio of 6:1. Additionally, the roadway right-of-way, as proposed, would have a minimum width of approximately 300 ft.

Additional design criteria includes:

Design Speed:	70 mph
Minimum stopping sight distance:	730 ft.
Maximum grade:	3%
Horizontal curvature:	3 degrees
Access control:	Full
Interchange design:	Diamond or other, as needed

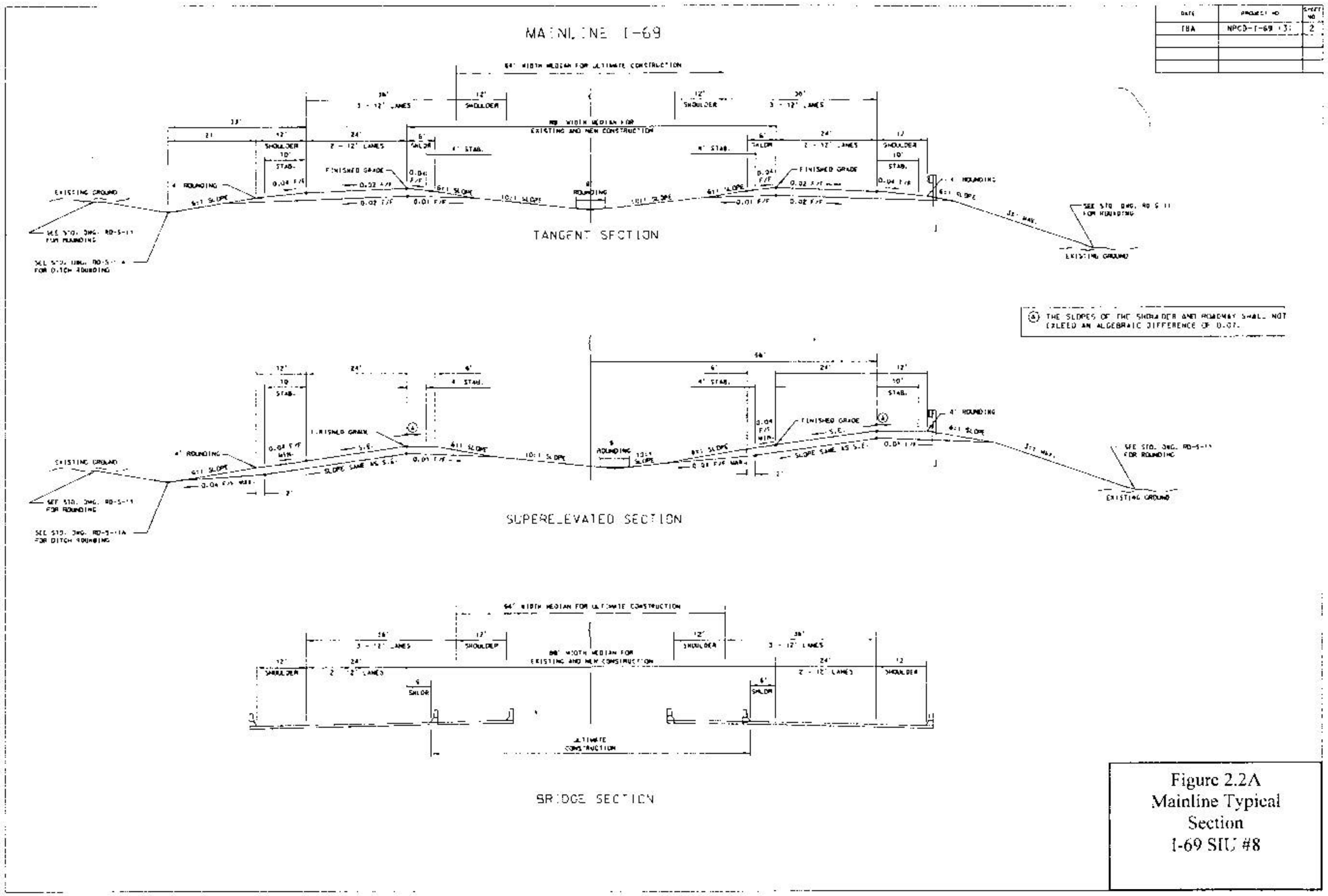


Figure 2.2A
Mainline Typical Section
I-69 SIU #8

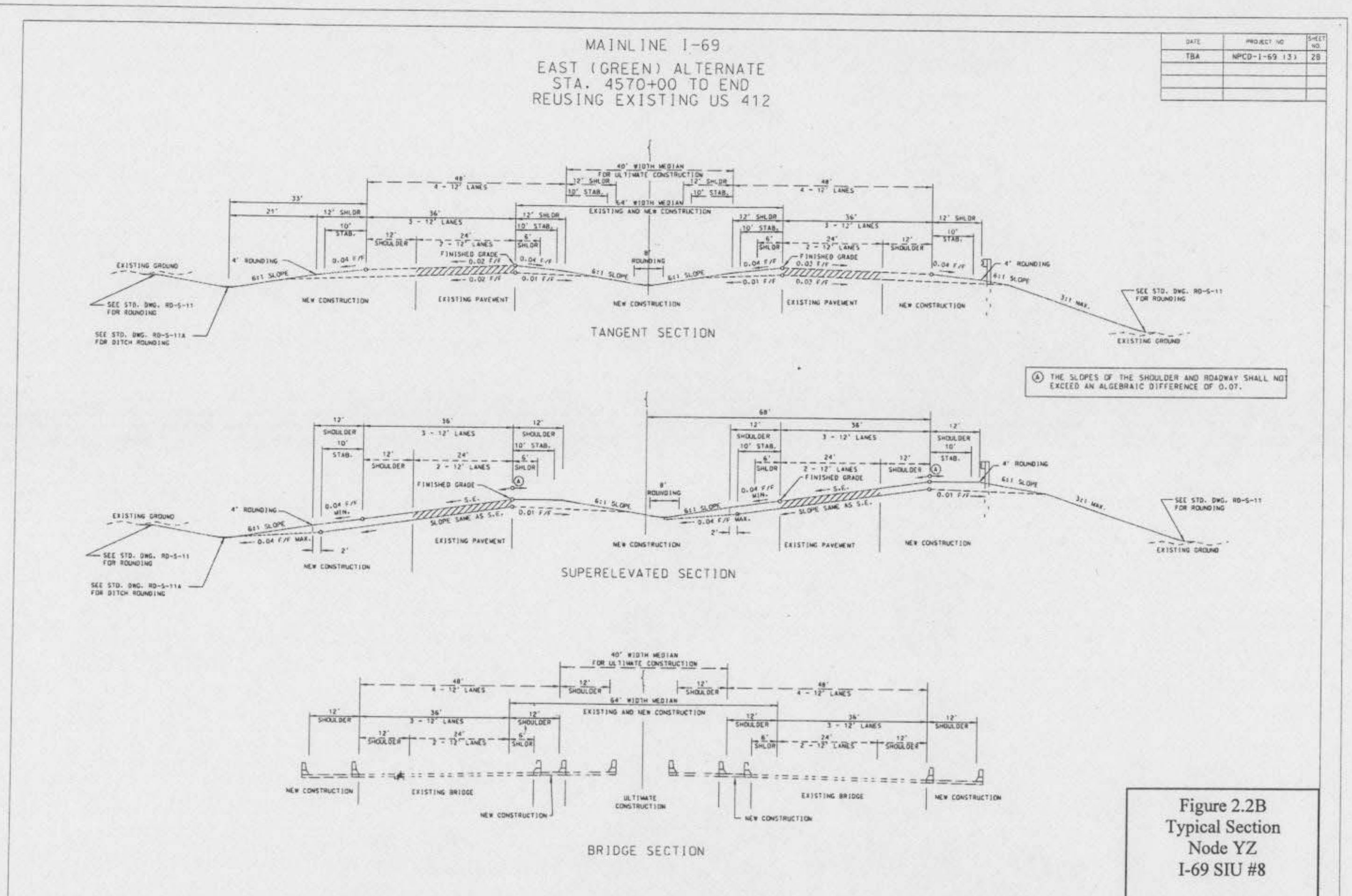
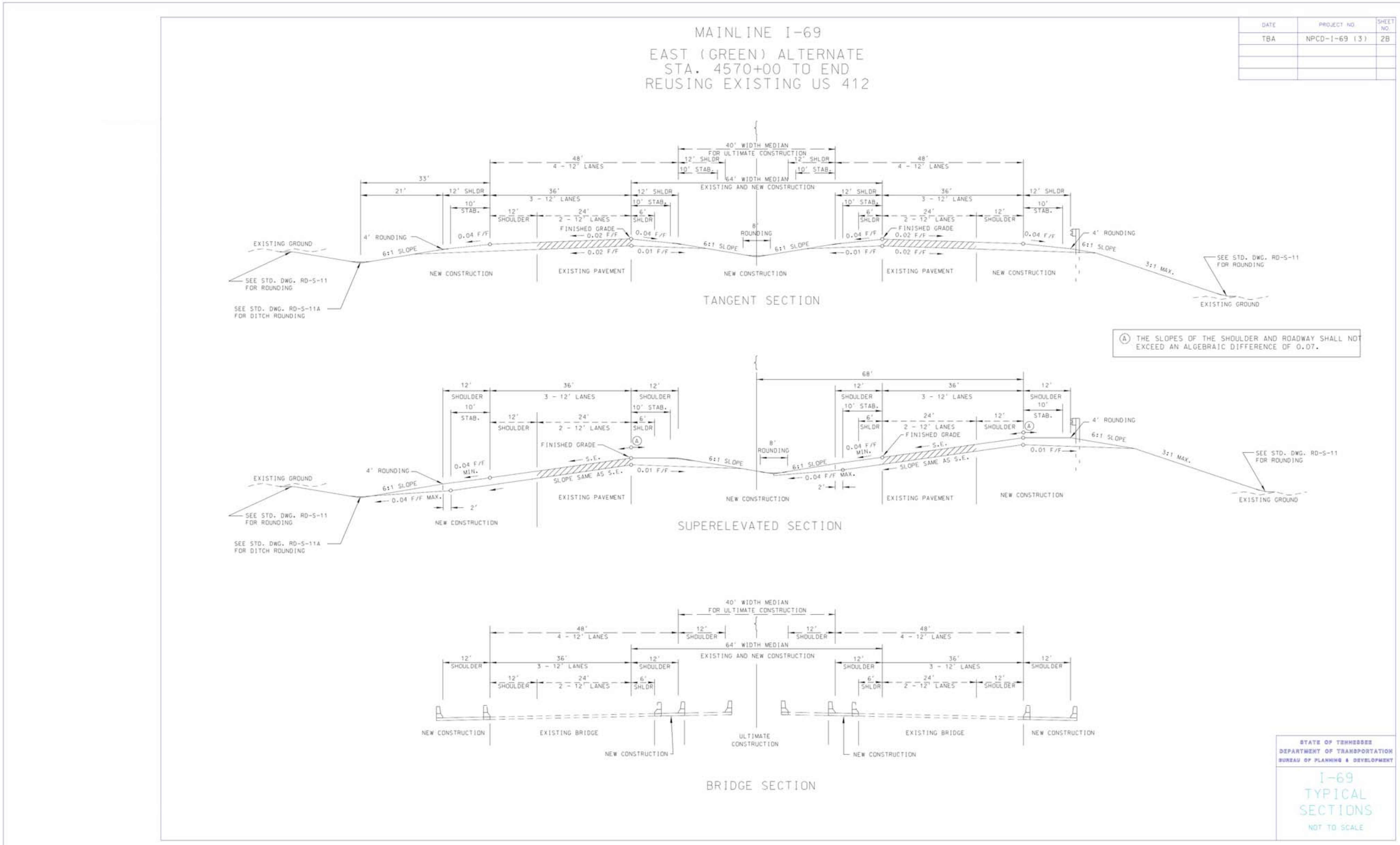
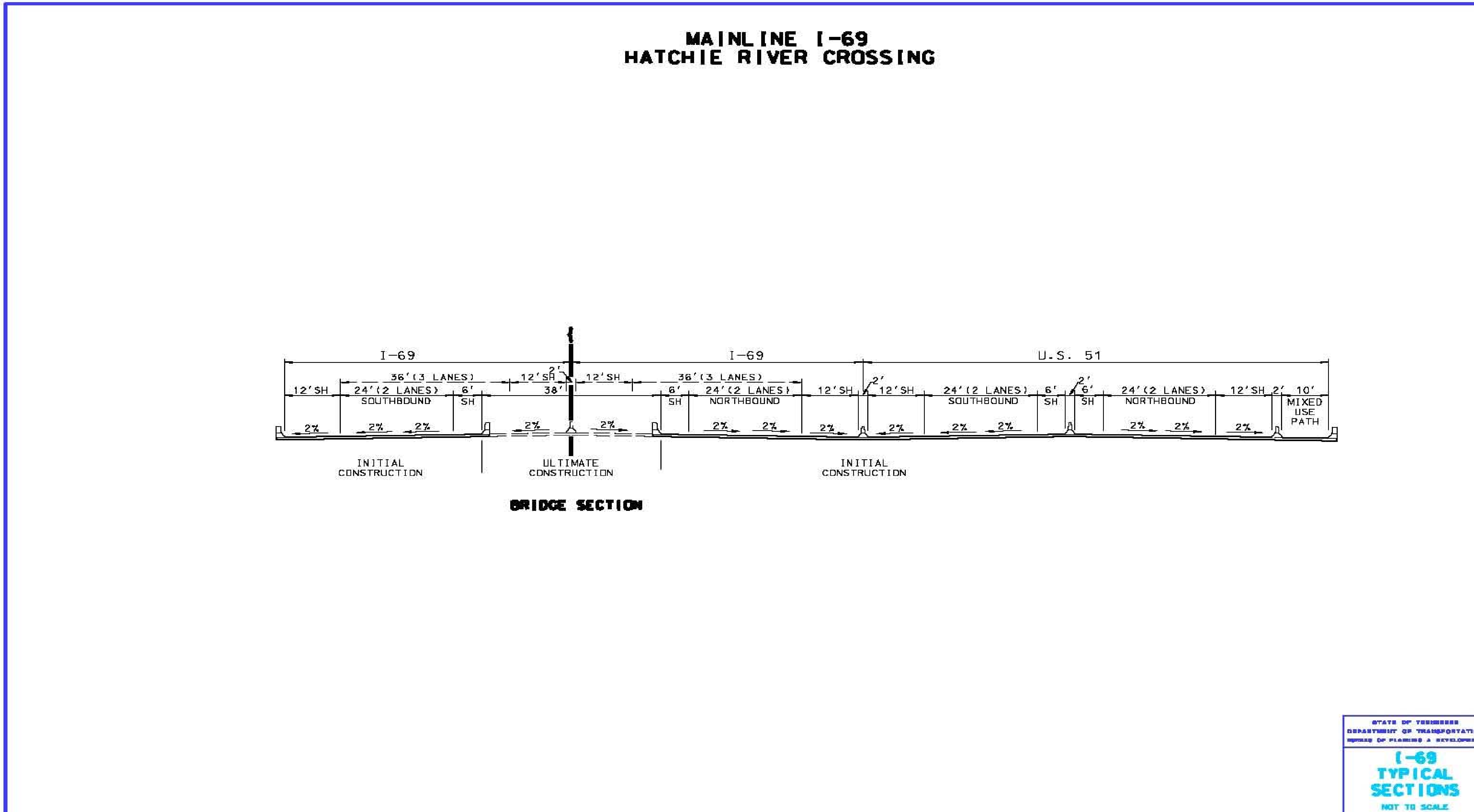
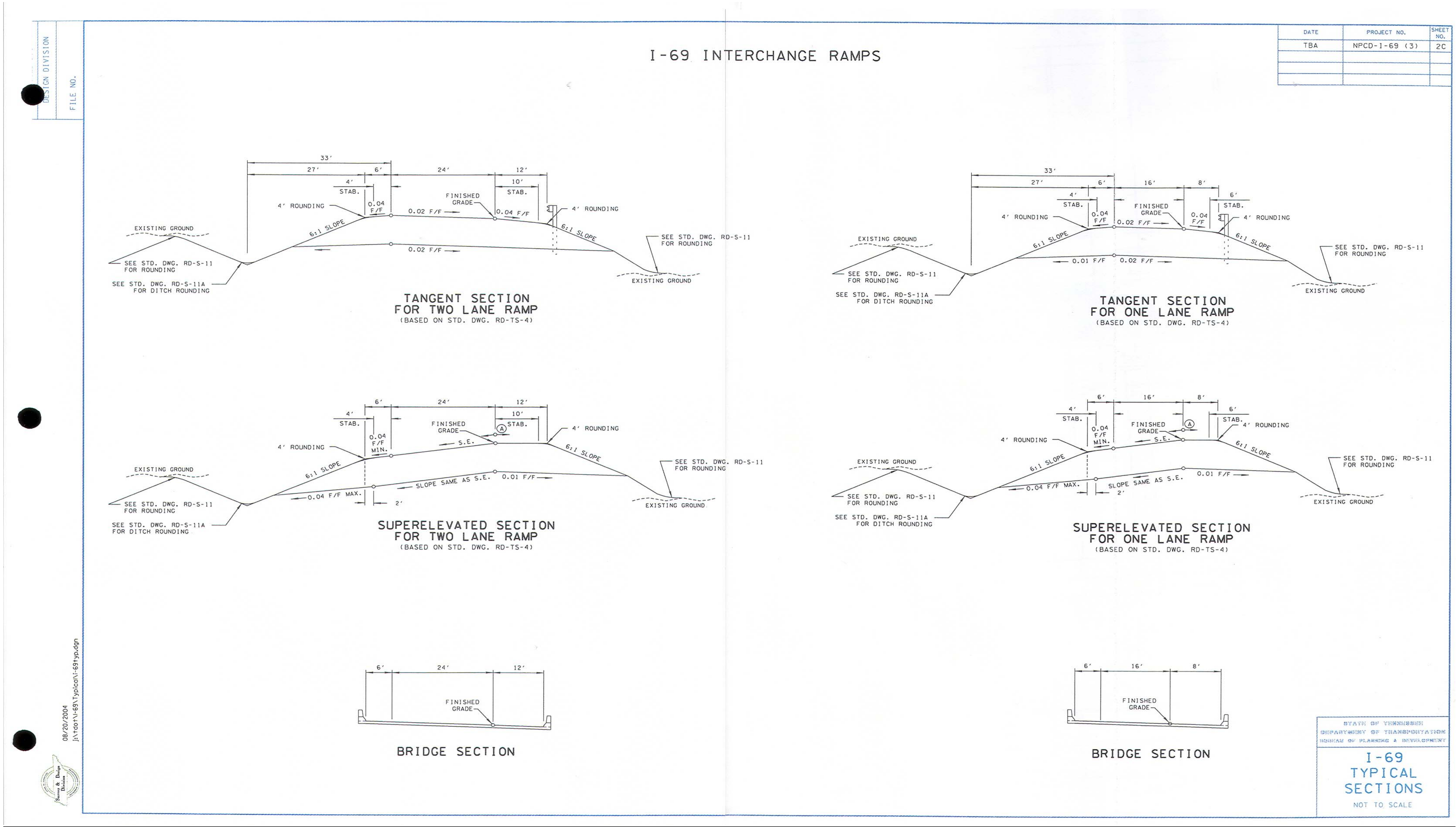


Figure 2.2B
Typical Section
Node YZ
I-69 SIU #8


MAINLINE I-69
EAST (GREEN) ALTERNATE
STA. 4570+00 TO END
REUSING EXISTING US 412
DATE
PROJECT NO.
SHEET NO.
TBA
NPCD-I-69 (3)
28
TANGENT SECTION
SUPERELEVATED SECTION
BRIDGE SECTION
(A) THE SLOPES OF THE SHOULDER AND ROADWAY SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 0.07.
40' WIDTH MEDIAN FOR ULTIMATE CONSTRUCTION
64' WIDTH MEDIAN EXISTING AND NEW CONSTRUCTION
4 - 12' LANES
3 - 12' LANES
2 - 12' LANES
EXISTING GROUND
EXISTING PAVEMENT
NEW CONSTRUCTION
EXISTING BRIDGE
ULTIMATE CONSTRUCTION
FINISHED GRADE
6:1 SLOPE
3:1 MAX.
4' ROUNDING
SEE STD. DWG. RD-S-11 FOR ROUNDING
SEE STD. DWG. RD-S-11A FOR DITCH ROUNDING
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF PLANNING & DEVELOPMENT
I-69
TYPICAL SECTIONS
NOT TO SCALE


MAINLINE I-69
HATCHIE RIVER CROSSING
I-69
I-69
U.S. 51
36'(3 LANES)
12'SH
2'
12'SH
36'(3 LANES)
12'SH
24'(2 LANES)
SOUTHBOUND
6'
SH
38'
6'
SH
24'(2 LANES)
NORTHBOUND
12'SH
2'
12'SH
24'(2 LANES)
SOUTHBOUND
6'
SH
2'
6'
SH
24'(2 LANES)
NORTHBOUND
12'SH
2'
10'
MIXED
USE
PATH
2%
INITIAL
CONSTRUCTION
ULTIMATE
CONSTRUCTION
INITIAL
CONSTRUCTION
BRIDGE SECTION
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF PLANNING & DEVELOPMENT
I-69
TYPICAL
SECTIONS
NOT TO SCALE


I-69 INTERCHANGE RAMPS
DATE
PROJECT NO.
SHEET NO.
TBA
NPCD-I-69 (3)
2C
DESIGN DIVISION
FILE NO.
TANGENT SECTION FOR TWO LANE RAMP
(BASED ON STD. DWG. RD-TS-4)
TANGENT SECTION FOR ONE LANE RAMP
(BASED ON STD. DWG. RD-TS-4)
SUPERELEVATED SECTION FOR TWO LANE RAMP
(BASED ON STD. DWG. RD-TS-4)
SUPERELEVATED SECTION FOR ONE LANE RAMP
(BASED ON STD. DWG. RD-TS-4)
BRIDGE SECTION
BRIDGE SECTION
EXISTING GROUND
FINISHED GRADE
4' ROUNDING
6:1 SLOPE
STAB.
SEE STD. DWG. RD-S-11 FOR ROUNDING
SEE STD. DWG. RD-S-11A FOR DITCH ROUNDING
SLOPE SAME AS S.E.
08/20/2004
I-69
TYPICAL
SECTIONS
NOT TO SCALE

2.3.3 Costs

Table 2.12 shown below provides a comparison of the estimated costs for all Build Alternatives.

Table 2.12 – Estimated Build Alternatives Costs

Alternative	Nodes	Length	Const. Costs	Utility Costs	ROW Costs	Total
R	ABCDKEGH	64.3	$547,160,000	$3,870,000	$8,800,000	**$559,830,000**
G	JSTUVWYZ	60.7	$479,080,000	$5,680,000	$7,670,000	**$492,430,000**
P1	ABCDKEGYZ	67.5	$587,050,000	$4,780,000	$9,260,000	**$601,090,000**
P2	ABCDKWYZ	66.8	$562,080,000	$5,490,000	$8,720,000	**$576,290,000**
P3	ABTUVWYZ	69.4	$543,090,000	$5,920,000	$8,280,000	**$557,290,000**
O1	JSTUVEGH	59	$520,130,000	$4,780,000	$9,170,000	**$534,080,000**
O3	JSCDKEGH	62.6	$531,430,000	$4,190,000	$7,650,000	**$543,270,000**
O1/P1	JSTUVEGYZ	62.4	$560,020,000	$5,690,000	$9,630,000	**$575,340,000**
O3/P1	JSCDKEGYZ	66	$571,320,000	$5,100,000	$8,110,000	**$584,530,000**
O3/P2	JSCDKWYZ	65.1	$546,350,000	$5,810,000	$7,570,000	**$559,730,000**

2.4 Alternatives Previously Considered But Eliminated

This section discusses alternatives that have been removed from further consideration. Figure 2.3 depicts the location of these previously considered Alternatives, and provides the remaining alternatives for comparison. Figures 2.3A and 2.3B provide a more detailed look at the previously considered alignments. There are no maps detailing improvements entirely upon the existing alignment.

Improve Entirely On the Existing US 51 Alignment

The use of existing US 51, from Millington to Dyersburg, was given the first consideration in identifying opportunities related to the location of a Build Alternative for the proposed project. In its current configuration, US 51 is a four-lane, divided highway with a posted speed limit, ranging from 35 to 65 miles per hour. The existing facility has a mixed use of access controls in place, varying from access by permit to partial control. Residential, as well as commercial uses, are found along the entire length of the existing facility. Development along the route includes schools, retirement homes, hospitals, state and federal government offices, as well as industrial parks, shopping centers, hotels/motels and residential development in all price ranges.

The project is proposed as a full access-controlled facility. No driveway connections to the proposed roadway will be allowed, and pedestrian and bicycle traffic would be prohibited. Access to the facility would occur only at interchanges proposed at various locations along the route. All state routes crossed by proposed I-69 will have an interchange, as long as the proper spacing for each is available.

Due to the restriction of access to certain locations, local access roads would be required in locations where businesses and residential properties abut the roadway. The roadway right-of-way, as proposed, would have a minimum width of approximately 300 feet. If the project was to be built on the existing US 51, that width would approximately double, due to the frontage roads required along both sides of the new facility. This additional width would impact a significant portion of the existing development along US 51. The construction of I-69 along the existing US 51 alignment would impact more than 300 residential and commercial properties, approximately 10 public facilities (includes churches, schools, etc.) and 6 known cemeteries. Therefore, due to the adverse social and economic impacts the use of the existing facility was eliminated from further consideration.

Alternative G-1 – (Node RS)

Alternative G-1 begins on SR 385 east of Donnell Road, proceeds northwesterly, crossing over SR 14. It crosses over old SR 205 (Millington-Arlington Road) west of the SR 14/old SR 205 intersection, and then moves northward crossing over Kerrville-Rosemark Road. There it curves easterly over Miller road just north of Mudville Road, then crosses over Rosemark Road. It moves northeasterly, crossing over Mulberry Road. G-1 continues in a northeast direction and crosses over Tracy Road, continues northeasterly for a distance before it turns northward and crosses over SR 206. It continues northward, then curves northeasterly and crosses over Old Memphis Road. It continues northeasterly, crossing over Sawmill Road and over Brighton-Clopton Road. Please refer to Figure 2.3 for a depiction of the previously considered Alternative G1.

Alternative G1 was eliminated from further consideration for the following reasons:

1. **Section 4(f)/106 Impacts to the Paw Paw Block Farm**: Section 106 of the National Historic Preservation Act details the process of identifying historic properties potentially affected by a federal action/program. Section 4(f) of the U.S. Department of Transportation Act adopted by Congress in 1966 requires the study of feasible and prudent avoidance alternatives when a federally funded action results in a "use" a property listed or deemed eligible for listing to the National Register of Historic Places. The State Historic Preservation Officer (SHPO) has concluded that a farm near the intersection of Miller and Mudville Roads is eligible for listing on the National Register of Historic Places and would be adversely affected by the proposed alignment of Alternative G1. The proposed alternative would impact a large section of the proposed National Register boundary for the Paw Paw Block Farm. This farm, consisting of 475

acres, meets National Register criterion A for its significance in local agricultural practices. This impact would result in a 4(f) use of the property. Due to the avoidance provided by the other alternatives, this alignment would need to avoid the entire farm.

2. **Design Issues** - Shifting the alignment east and south of the farm would impact additional residential properties currently under construction, and encroach upon the community of Rosemark. This alignment shift would likely result in greater noise impacts, to both the residential development and Rosemark. To move the alignment west and north of the farm would involve impacts to the floodplain of Big Creek, as well as severe horizontal curve considered substandard for a new interstate facility. Additionally, due to the spacing of the existing interchanges along SR 385, there is a limited number of locations in which to site a new interchange with Alternative G1. Consequently, the proposed relocation of Alternative G1 would not be feasible and prudent considering avoidance to the Paw Paw Block farm provided in the remaining Build Alternatives.

Please refer to Figure 2.3A for a detailed map of the eliminated Alternative G1.

West Crossing of the Hatchie River along the Alternative R:

The west crossing of the Hatchie River was a variation of Alternative R, which would cross the river alongside existing US 51. The west crossing deviates from the Alternative R near Old Highway 51, proceeding northwest crossing Leigh's Chapel Road and Turner Field Road; crossing the Hatchie River just west of a series of meanders in the river west of the existing US 51 crossing. The alternative continues northward, traversing open croplands, paralleling Coopers Spring Creek before turning slightly east and crossing Coopers Creek Road. The proposed alignment proceeds northeast crossing SR 87, paralleling Thumb Road before tying back into the Alternative R at Faye Barfield Road.

The west crossing of the Hatchie River was eliminated from further consideration for the following reason:

1. **Section 4(f) Impact to the Lower Hatchie National Wildlife Refuge:** The proposed west crossing of the Hatchie River would impact a large portion of the expanded Lower Hatchie National Wildlife Refuge. The recently expanded refuge encompasses a total area of approximately 12,052 acres and is located (1) north of the Hatchie River to Tennessee State Route 87; (2) south of the Hatchie River, as defined by existing tracts adjoining the Hatchie River; and (3) east to and slightly beyond U.S. 51. This area was integrated into the existing Lower Hatchie National Wildlife Refuge and managed as part of the Reelfoot National Wildlife Refuge Complex, which is administered by the U.S. Fish and Wildlife Service in Dyersburg, Tennessee. This impact would result in a 4(f) use of the property. The Wildlife Refuge

extends from the convergence of the Hatchie with the Mississippi River, upstream to the east side of the existing US 51 bridges. Avoidance to this 4(f) impact would include the establishment of a transportation corridor along the existing crossing of the Hatchie River for the proposed Alternative R, as well as the Alternatives G, P1 and O1. There are other feasible and prudent avoidance alternatives, therefore this alternative was eliminated from further consideration.

Please refer to Figure 2.3B for a detailed map of the eliminated West Crossing of the Hatchie River crossing.

Alternative O2 (Nodes UD)
Alternative O2 began along Alternative G, near the Old Mill Road crossing (Node U), proceeding northwest to cross Airport Road west of Rialto Road. Continuing northwesterly, the alignment crossed the railroad tracks and US 51 north of Ervine Lane. The alignment then connected to Alternative R northwest of existing US 51 (Node D).

Alternative O2 was eliminated from further consideration for the following reason:

1. **Design Issues:** Alternative O2 required a three-degree curve that began west of the US 51 crossing and tied back into Alternative R south of the Hatchie River. Traffic utilizing Alternative O2 interchange ramps on the west side of US 51 would have to merge and diverge with other traffic in the curve. This situation is not desirable for a new interstate route, considering a more acceptable alignment configuration exists just south of Covington (Alternative O3).

Please refer to Figure 2.3 for the location of the eliminated crossing option Alternative O2

Eliminated Alternatives

For

Interstate 69

Segment of Independent Utility # 8

Millington to Dyersburg, TN

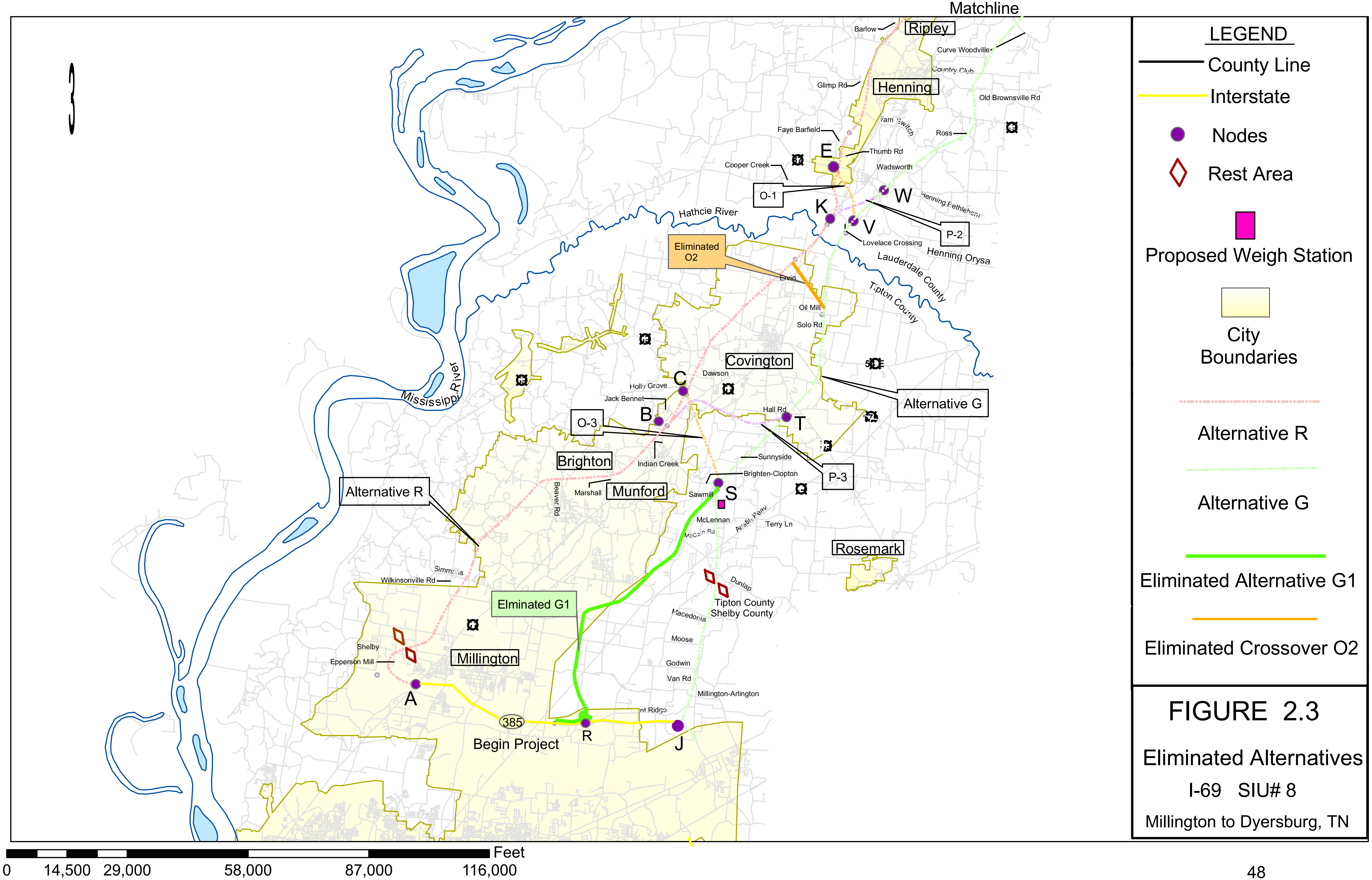


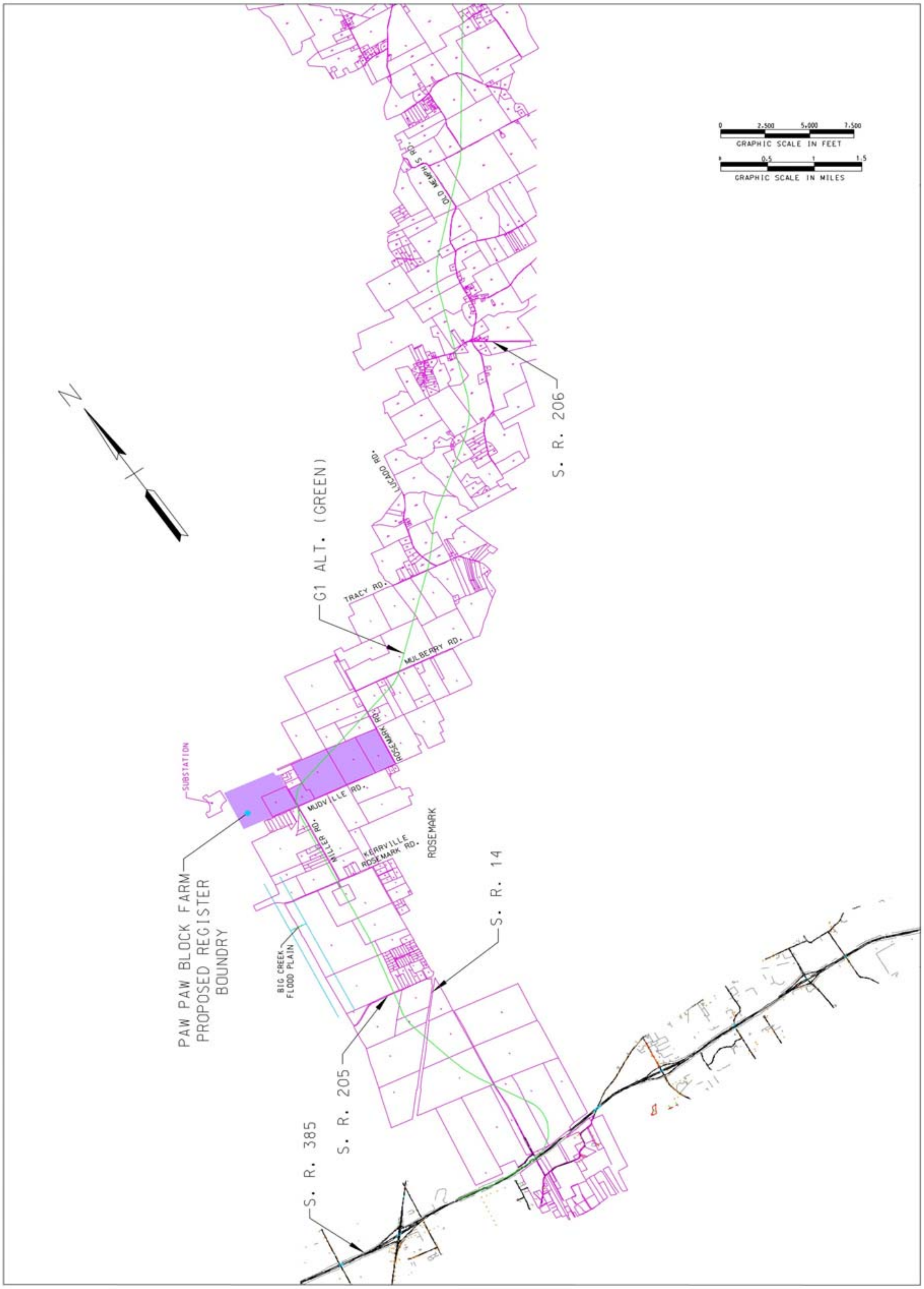
FIGURE 2.3

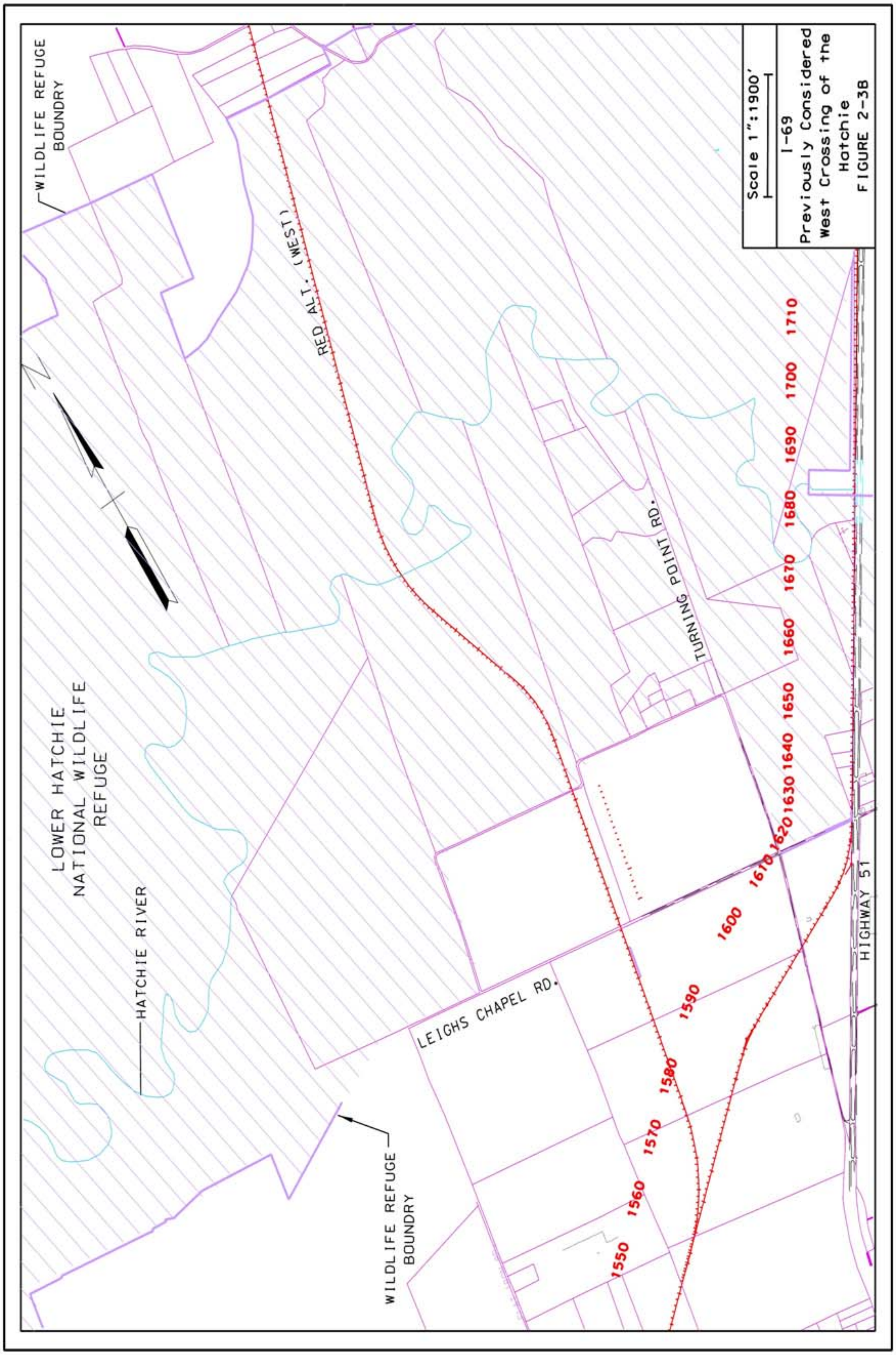
Eliminated Alternatives

I-69 SIU# 8

Millington to Dyersburg, TN

Figure 2.3 Eliminated Alternatives Figure 2.3 Eliminated Alternatives




Scale 1":1900'
I-69
Previously Considered
West Crossing of the
Hatchie
FIGURE 2-3B
WILDLIFE REFUGE BOUNDRY
RED ALT. (WEST)
LOWER HATCHIE NATIONAL WILDLIFE REFUGE
HATCHIE RIVER
TURNING POINT RD.
LEIGHS CHAPEL RD.
HIGHWAY 51
WILDLIFE REFUGE BOUNDRY
1550
1560
1570
1580
1590
1600
1610
1620
1630
1640
1650
1660
1670
1680
1690
1700
1710

CHAPTER 3.0
AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

This section of the document details the project area as it exists today, and considers all aspects of the proposed action, including the Build Alternatives, rest areas and weigh stations.

3.1 Land Use

3.1.1 Existing Land Use

The most common land use throughout the study area is agricultural. In Shelby County, 27% of the land is farmed. Tipton, Lauderdale and Dyer counties have 58%, 63% and 68% of the land farmed, respectively. Residential density is low, except in the area around Dyersburg, Ripley, Covington, Munford, Atoka and Millington, with residences typically being single-family dwellings. Several of these areas, including Munford and Atoka, have experienced growth in residential development due to their close proximity to Memphis. New rural residential development is most noticeable in the area surrounding Munford, Atoka, Brighton, and Dyersburg. The densest residential development in the study area is in northern Shelby County and southern Tipton County, both east and west of US 51.

Commercial and industrial land use in the study area is concentrated around Millington, Munford, Atoka, Covington, Ripley, and Dyersburg. Millington has numerous businesses clustered in close proximity to US 51, along with two industrial parks that are not located in the project corridor. Two industrial sites, situated near Munford and Atoka, encompass approximately 170 acres. The Covington area features two industrial parks of approximately 205 acres in size. The town of Ripley has two industrial developments within the city limits, with one adjacent to US 51. Dyersburg has two large areas designated for industrial use on the northeast side of the city. These two sites total approximately 345 acres.

3.1.2 Land Use Plans and Regulatory Controls

Shelby County: The current land use plan for Shelby County is the Shelby County Urban Growth Plan, which was completed in spring, 1999 by the city of Memphis and Shelby County staff. The municipality of Millington currently has no updated comprehensive land use plan. The land use plan for the recently annexed land from the Naval Air Base is the Millington Reserve Area Study, 1998, which is not a binding authority between Millington and Shelby County. However, it is used as a reference for development of the annexed land. Current zoning for the study area in Shelby County outside of Millington is AG (agricultural). The current zoning districts for the city of Millington are in place and include several levels of residential, commercial, and industrial, in addition to military and flood hazard zones.

Tipton County: Tipton County has an established planning and zoning authority within the county that excludes the incorporated municipalities, which are provided planning services through a contract with the West Tennessee Local

Planning Assistance Office. The municipalities within the study area are Covington, Brighton, Munford, and Atoka. The city of Covington currently uses the Covington, Tennessee Land Use and Transportation Plan approved in June 1997 and the Urban Growth Boundary Report approved in September 1999. The current land use plan for Munford is the Regional Land Use Plan, Updated 2001. The current land use plan for Atoka is the Annual Performance Report and Program Design, 2001. The current land use plan for Brighton is the Urban Growth Boundary Report, March 2000. These land use plans have been established for each municipality in cooperation with the West Tennessee State Planning Office. For these incorporated cities, planning and zoning functions are enforced within the municipality. The majority of the current zoning for the county is FAR (forestry, agricultural, and residential) but there are also areas zoned for Commercial 1, Commercial 2, Commercial 3, Industrial 1, and Industrial 2.

Lauderdale County: Current zoning and land use for Lauderdale County includes FAR (forestry, agricultural, and residential), fringe residential (FR), rural commercial, general commercial, I1 (light industrial), I2 (heavy industrial), air port zoning, and an overlay on flooding which follows FEMA floodplain regulations. Current zoning ordinances for Halls, Gates, Ripley, and Henning may include residential, commercial, and industrial land uses, and hospital zoning. The Growth Policy Plan for Lauderdale County approved April 2000 stipulates that the municipalities of Halls, Gates, Ripley, and Henning use their corporate limits as their Urban Growth Boundaries. This policy was developed as a result of the Public Chapter 1101 policy. These municipalities have an agreement with the county to get approval within their district before they can annex any more land for development beyond their current city limits.

Dyer County: Outside the city limits of Dyersburg, Dyer County is zoned FAR with some areas of commercial zoning. Subdivision regulations for the study area are in place in Dyer County and Dyersburg. Zoning Ordinances are in place for Dyersburg. Additionally, FEMA Floodplain regulations have been adopted throughout Dyer County. In September 1999, the West Tennessee State Planning Office performed an Urban Growth Boundary Report for Dyersburg. The current planning document for Dyer County is the *Vision XXI – Dyer County Today, Tomorrow – The Future*, one goal of which is to develop a world-class transportation system. One action proposed to ensure this goal is achieved is to establish a 7-member Advisory Committee that would work to promote the development of I-69 through Dyer County.

3.2 Community Services

3.2.1 Schools

Shelby County: Shelby County operates two public school systems: the Shelby County School System and the Memphis City School System, which is not in the project area. The Shelby County School System administers 43 schools with eight of those schools being in the Millington area; however, they are not in the project area. There are five elementary schools including EE Jeter Elementary (272 students), Lucy Elementary School (464 students), Harold Elementary School (389 students), Millington East Elementary School (596 students), and Millington South School (464 students). Two schools are middle schools including Millington Middle School (651 students) and Woodstock Middle School (726 students) and one high school, Millington Central High School (1529 students).

Tipton County: Tipton County operates two public school systems: Tipton County School System and Covington City School System. The two school systems plan to consolidate by July 2003 and will then be the Tipton County School System. None of the schools in either school system are in the project area. Tipton County School System currently has 11 schools. There are four elementary schools including Brighton Elementary School (1157 students), Crestview Elementary School (907 students) Drummonds Elementary School (929 students), and Munford Elementary School (926 students). There are three middle schools including Brighton Middle School (1176 students), Crestview Middle School 789 students), and Munford Middle School (1042 students). Also there are three high schools including Brighton High School (887 students), Covington High School (830 students), and Munford High School (1377 students). The Alternative Learning Center is under the Tipton County School System and has 78 students. Covington City School System has two schools, which are Covington Elementary School (650 students) and Covington Middle School (250 students).

The Tipton County School System is currently in the process of acquiring sites for two new elementary schools. Two designated areas, Southeast Elementary District and Northwest Elementary District, have been established as areas where the elementary schools will be built. The Tipton County Board of Education is identifying 2 parcels of land in the designated areas from property owners who are interested in selling their land. Evaluation of proposed elementary school sites would be performed during the first several months of 2002. Preliminary planning indicated Fall of 2003 would be the completion date for new buildings.

Lauderdale County: Lauderdale County School System is the only operating public school system in Lauderdale County. Lauderdale County School System has eight schools and they are not in the project area. There are three elementary schools including Halls Elementary School (739 students), Ripley Primary School (797 students), and Ripley Elementary School (767 students). There are two middle schools, Halls Junior High School (222 students) and Lauderdale Middle School (789) and two high schools, Halls High School (362 students) and Ripley High School (871 students). Additionally, Lauderdale County School system operates the Lauderdale County Optional School for grades 9-12. Enrollment is included in with Ripley High School.

Dyer County: Dyer County operates two public school systems: the Dyer County School System and the Dyersburg City School System, which is not in the project area. The Dyer County School System administers seven schools. There are five elementary schools including Fifth Consolidated (300 students), Finley Elementary (259 students), Holice Powell Elementary (224 students), Newbern Elementary (735 students), and Trimble Elementary (279 students). Additionally, there is one middle school, Three Oaks Middle School (519 students), and one high school, Dyer County High School (878 students). None of the schools are in the project area. However, Fifth Consolidated Elementary is located adjacent to U.S. 412 and if the western alternative is chosen traffic would be expected to increase on U.S. 412, which could be of concern to the school. Also, Holice Powell Elementary is located in close proximity to the eastern corridor. Although not in the study area, the location could cause some concern to the school.

3.2.2 Fire and Police Protection

Shelby County: The Millington Fire Department provides fire protection in the study area of Shelby County, outside the city limits fire protection is provided by the Shelby County Fire Department. The Shelby County Sheriff's office and the City of Millington Police Department provide Law enforcement in the study area. The sheriff's office is located in Memphis.

Tipton County: Fire protection in Tipton County is provided by the City of Covington and the city of Munford, which have two and three full-time stations, respectively. Outside the city limits, there are several county fire departments that are maintained by volunteer firemen including Brighton Fire Department, Charlestown Fire Department, Garland Fire Department, Gilt Edge Fire Department, Three Star Fire Department, and Quito Fire Department. Law enforcement is provided by Tipton County Sheriff's Office for Tipton County. The cities of Munford, Covington, Mason, Brighton, and Atoka maintain their own departments but are provided back up by the Tipton County Sheriff's Office when needed. The sheriff's office is located in Covington.

Lauderdale County: The City of Ripley Fire Department provides Fire protection in Lauderdale County, which is the only full-time fire department. Also, there are several volunteer fire departments throughout the study area including three county fire departments (East Lauderdale Fire Department, West Lauderdale Fire Department, and Northeast Lauderdale Fire Department) and three towns (Gates, Halls, and Henning). Law enforcement for Lauderdale County is provided by County of Lauderdale Sheriff's department except within the city limits of Halls, Ripley, Gates, and Henning, which all maintain police departments. The sheriff's office is located in Ripley.

Dyer County: Fire protection in Dyer County within the study area is provided by the Dyersburg Fire Department, the Newbern Fire Department, and the Dyer County Fire Department, which serves the rural areas of the county. Law enforcement within the study area is provided by Dyersburg Police Department and Dyer County Sheriff's office. The Dyer County Sheriff's Department protects all other areas within the study area outside the city limits of Dyersburg. The sheriff's office is located in Dyersburg.

3.2.3 Hospitals
The hospitals that serve the study area are:
- Baptist Memorial Hospital of Tipton, 1995 Highway 51 S, Covington, Tennessee
- Baptist Memorial Hospital Lauderdale, 326 Asbury Road, Ripley, Tennessee
- Methodist Healthcare Dyersburg, 400 E. Tickle Street, Dyersburg, Tennessee

All three facilities are within the study area. Baptist Memorial Hospital of Tipton, on existing U.S. 51, is a 100-bed facility that serves Tipton County and surrounding areas including Millington, which does not have a hospital facility. Baptist Memorial Hospital Lauderdale, on Asbury Lane adjacent to existing U.S. 51, is an 86-bed facility that serves Lauderdale County and surrounding areas. Methodist Healthcare Dyersburg, on East Tickle Street adjacent to old U.S. 51, is a 225-bed facility that serves Dyer County and surrounding areas.

3.2.4 Utilities
Electric Service
TVA supplies electric service to Shelby, Tipton, Lauderdale, and Dyer Counties. Local electric distributors include:
- Shelby County: Memphis Light Gas and Water
- Tipton County: Southwest Tennessee Electric Membership Corp., Covington Electric System
- Lauderdale County: Ripley Power and Light, Southwest Tennessee Electric Membership, Forked Deer Electric Cooperative
- Dyer County: Dyersburg Electric, Forked Deer Electric Cooperative

Natural Gas
Williams Gas Pipeline and South Centrals Texas Gas Transmission supply natural gas to Shelby, Tipton, Lauderdale, and Dyer Counties. Local natural gas service providers include:
- Shelby County: Memphis Light Gas and Water
- Tipton County: City of Munford, City of Covington, First Utility District, Poplar Grove Utility District
- Lauderdale County: Ripley City Gas and Water Department, Halls Gas Department, Henning Gas and Water Department
- Dyer County: Dyersburg Gas Department

Cable and Telephone
BellSouth Telecommunications provides telephone service to Shelby, Tipton, Lauderdale, and Dyer counties. Additionally, there are several private

companies that provide telephone service in the project area such as Millington Telephone and Cable. It is a privately owned company that provides telephone and cable services to Shelby County and the southern part of Tipton County (Munford, Atoka, and south Brighton).
Cable service is also provided by a variety of other companies. The Falcon Cable Company provides cable service to the northern part of Tipton County (Covington and north Brighton). Time Warner serves Tipton County and CableOne serves Dyer County.

3.3 Social and Economic Characteristics

3.3.1 Social Characteristics
Population Trends and Forecasts
The UT Center for Business and Economic Research performs population projections for the state of Tennessee, including state, county, and city populations. County populations are based on generating data to determine the annual change in population based on the definition of the change in population equals births minus deaths plus net migration.

Population projections for Tennessee, Shelby County, Tipton County, Lauderdale County, and Dyer County are shown in Table 3.1. Population growth in 2000, 2010, and 2020 for three of the four counties in the study area are less than the population growth for the state. Tipton County shows a growth rate between 1990-2000 that is twice the projected growth rate for the state (13.2%).

Tennessee and all of the counties in the project area except Lauderdale County, have a higher projected growth rate between 1990-2000 than for the following years. The population continues to grow in these areas, but at a much slower rate. Between 2000-2020, Shelby, Tipton, and Dyer County will increase by 13%, 32%, and 14%, respectively, which is an increase of 116,395, 15,331, and 4,915 people, respectively. However, population projections for Lauderdale County increase from 4% in 1990-2000 to 5.7% between 2000-2010 and decease only slightly between 2010-2020 to 5.6%. Over the next 20 years the Lauderdale County population is expected to increase approximately 11.7% or by 2,850 people.

Table 3.1 Population and Forecast Growth 1990-2020

	Population			
Geographic Area	**1990**	**2000**	**2010**	**2020**
Tennessee	4,890,525	5,533,762	6,062,695	6,593,194
Change		**13.2%**	**9.6%**	**8.8%**
Shelby County	827,868	885,964	943,806	1,002,359
Change		**7.0%**	**6.5%**	**6.2%**

Table 3.1 continued

	Population			
Geographic Area	**1990**	**2000**	**2010**	**2020**
Tipton County	37,861	48,129	55,559	63,460
Change		**27.1%**	**15.4%**	**14.2%**
Lauderdale County	23,498	24,437	25,830	27,287
Change		**4.0%**	**5.7%**	**5.6%**
Dyer County	34,938	37,839	40,597	42,754
Change		**8.3%**	**7.3%**	**5.3%**

Source: *UT Center for Business and Economic Research, March 1999*.

Social Groups

According to the 2000 Census, minority populations were higher in Shelby, Tipton, and Lauderdale Counties with 52.7%, 22.1%, and 36.2%, respectively, than the state of Tennessee, which has a minority population of 19.8% (Table 2). Only Dyer County had a lower minority population (14.6%) than the state of Tennessee. The largest minority group in all four counties is Black. Blacks accounted for 92.3% of the minority population in Shelby County, 89.9% of the minority population in Tipton County, 94.2% of the minority population in Lauderdale County, and 88.1% of the minority population in Dyer County. Blacks account for 82.8% of the minority population in Tennessee.

Table 3.2 Population Characteristics by State, County, and Census Tract

	Persons	% Minority	% Age 65 Or Over	% Under Age 18	% High School Graduates*
Tennessee	**5,689,283**	**19.8**	**13.2**	**24.6**	**75.9**
Dyer County	**37,279**	**14.6**	**13.4**	**25.7**	**66.3**
Tract 9641	7,124	4.8	9.9	25.3	65.6
Tract 9643	5,741	8.8	17.9	24.9	61.3
Tract 9644	7,196	41.4	10.0	29.9	56.9
Tract 9645	2,086	3.5	11.3	25.6	66.2
Tract 9646	2,633	6.6	14.5	23.7	58.0
Lauderdale County	**27,101**	**36.2**	**12.1**	**24.8**	**62.3**
Tract 0502	3,711	21.5	14.6	25.3	61.4
Tract 0503	2,982	20.8	14.6	26.6	60.7
Tract 0504	3,302	9.5	11.6	25.3	60.6
Tract 0505.01	4,860	27.7	14.3	25.1	64.7
Tract 0505.02	6,022	55.5	11.6	30.6	65.5
Tract 0506	2,403	60.8	12.7	30.1	62.4

Table 3.2 continued

	Persons	% Minority	% Age 65 Or Over	% Under Age 18	% High School Graduates*
Tipton County	**51,271**	**22.1**	**9.9**	**29.3**	**74.6**
Tract 0403.01	10,968	12.7	7.7	30.7	80.9
Tract 0405	4,967	13.9	7.3	31.9	79.7
Tract 0406.01	4,814	36.9	12.0	29.6	74.9
Tract 0406.02	2,931	21.8	15.1	25.6	70.5
Tract 0408	3,646	11.4	10.9	28.7	78.1
Shelby County	**897,472**	**52.7**	**10.0**	**28.2**	**80.8**
Tract 0202.1	5,957	27.5	8.1	29.8	76.0
Tract 0208.1	2,570	29.1	12.3	26.1	74.7

Source: *Profile of General Demographic Characteristics: U.S. Census Bureau, Census 2000.*
*Percent of high school graduates or higher educational attainment older than 25 years of age.

Census Tract data from the 2000 Census further demonstrates concentrations of minority groups (Exhibit 3.1). Census Tract data for Shelby County shows that the minority populations do not exceed the county's minority population average (52.7%) in the project area but they do exceed the 19.8% average minority population throughout the state. In Tipton County, Census Tract 406.01 had 36.9% minority population and exceeds the county's minority population average (22.1%). In Lauderdale County, two Census Tracts had noticeably higher minority population averages than the county including Census Tracts 505.02 (55.5 minority), and Census Tract 506 (60.8% minority). The Census Tract data for the project area in Dyer County shows a low minority population (less than 8.8%) in all Census Tracts except Census Tract 9644 with a 40.2% minority population. Dyer County has a minority population of 13.2%.

Of the four counties in the project area, only Dyer County has a greater percentage of population age 65 or older with 13.4% than the state as a whole (12.4% age 65 or older). This could be caused by Census Tract 9643, which has 17.9% of the population being age 65 or older. Additionally, all counties in the study area have a higher percentage of people under age 18 than the state as a whole, which has 24.6% under age 18 (Table 3.2).

All of the counties in the study area had a lower percentage of high school graduates than the state of Tennessee (75.9%), with the exception of Shelby County. 80.8% of persons over the age of 25 in Shelby County are high school graduates.

There is a higher average elderly population within the study area in Dyer and Lauderdale Counties and is especially noted in Census Tract 9643. However, high concentrations of elderly within proximity to the Build Alternatives are not anticipated. From Census Tract data, concentrations of minority populations exist in proximity to the Build Alternative corridors.

Please refer to Figure 3.1 for the location of the census tracts described above.

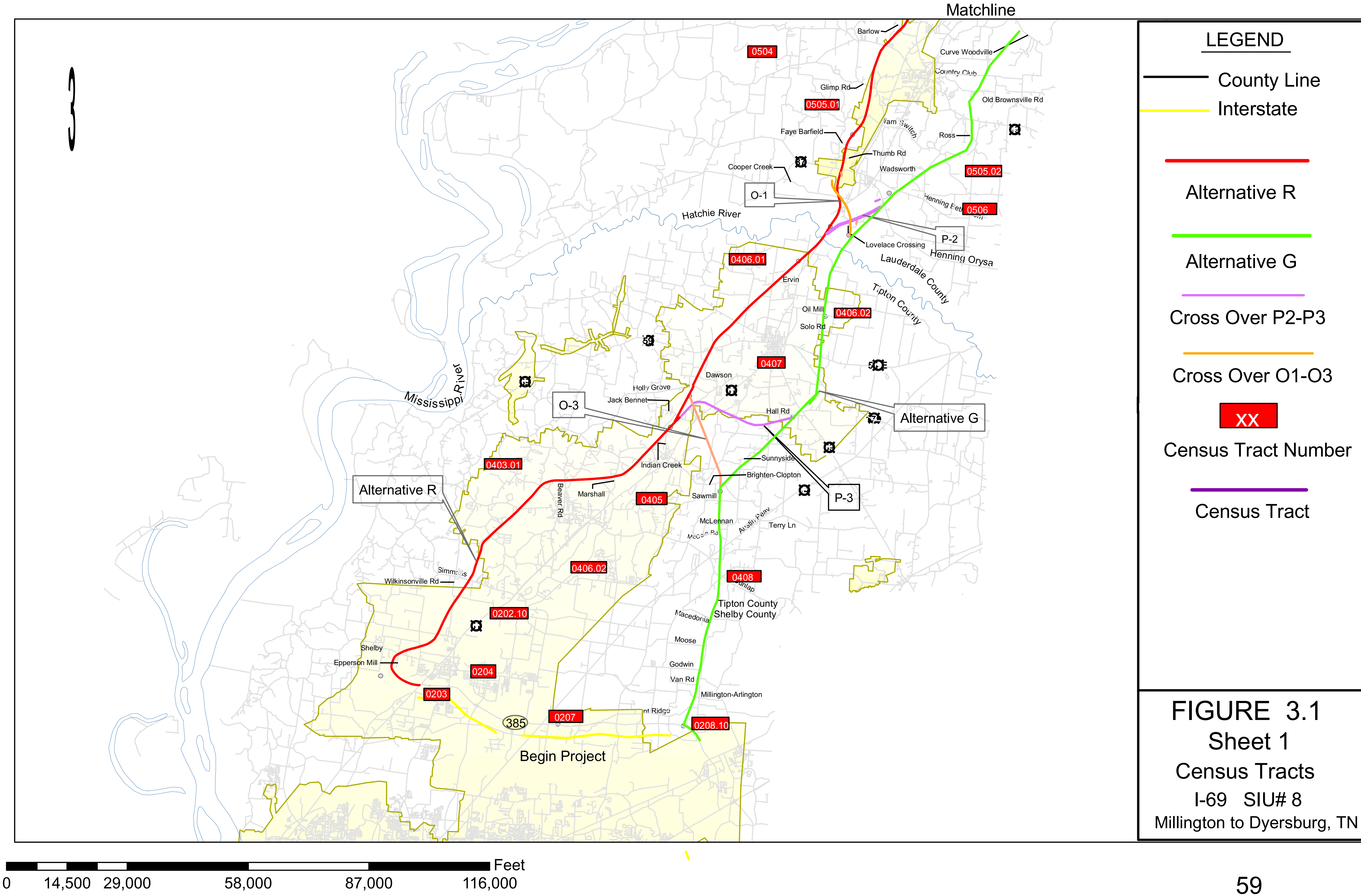


FIGURE 3.1
Sheet 1
Census Tracts
I-69 SIU# 8
Millington to Dyersburg, TN

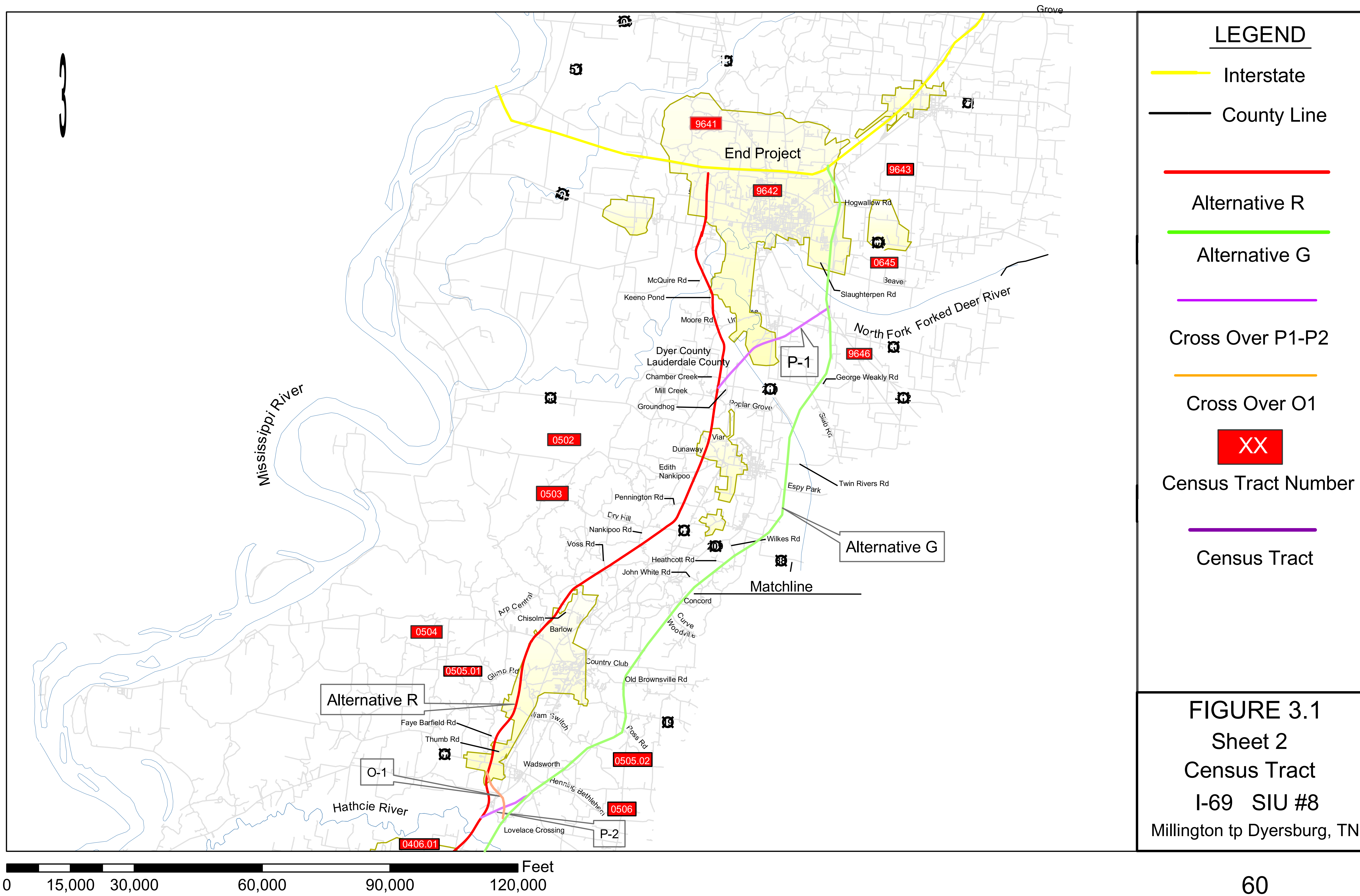


FIGURE 3.1
Sheet 2
Census Tract
I-69 SIU #8
Millington tp Dyersburg, TN

Housing
Table 3.3 compares housing characteristics by state and county. The 2000 Census Data shows Tennessee having a 32% increase in total housing units. Tipton County had a 35% increase in total housing units. Shelby, Lauderdale, and Dyer Counties also experienced an increase in housing units of 11%, 13% and 12%, respectively. The percentages for each of the counties reflect the tremendous growth that Tipton County has experienced due to relocations and commuters from the Shelby County/Memphis area. The majority of existing residences in the countywide area are owner-occupied. However, the owner-occupied ratio decreases within several cities inside the project corridor, as the number of rental units increases.

From the 2000 Census Data, the median housing value for the state of Tennessee is $93,000. Shelby and Tipton Counties have median housing values $92,200 and $91,500, which are both very close to the value for the state. Lauderdale and Dyer County have median housing values less than the state. The same trend also applies to the median rent values for Tennessee for the four counties in the project area.

Table 3.3 Housing Characteristics by State and County

Housing Characteristics by State and County				
2000	**Units**		**Housing Values**	
Geographic Area	**Total**	**Occupied**	**Median Value**	**Median Rent**
Tennessee	2,439,443	2,232,905	$93,000	$505
Dyer County	16,123	14,751	$74,900	$424
Lauderdale County	10,563	9,567	$59,900	$407
Tipton County	19,064	18,106	$91,500	$470
Shelby County	362,954	338,366	$92,200	$566
1990				
Tennessee	1,853,725	1,261,118	$58,400	$273
Dyer County	14,384	13,617	$44,100	$212
Lauderdale County	9,343	8,423	$38,700	$183
Tipton County	14,071	13,033	$56,100	$215
Shelby County	327,796	303,571	$66,500	$302

Source: *General Housing Characteristics: 2000, U.S. Census Bureau, Census 2000*

From the 1990 Census Data, the median housing value for the state of Tennessee is $58,400. Shelby County has a median housing value of $66,500, which is greater than the median value for the state. Tipton, Lauderdale, and Dyer County all have median housing values less than the state. The same trends also apply for the median rent values for Tennessee and the four counties in the project area.

Personal Income

According to the 2000 Census, the median household incomes for the project area were Shelby County, $39,593; Tipton County, $41,856; Lauderdale County, $29,751, and Dyer County, $32,788 (Table 3.4). Dyer and Lauderdale County were below the median household income of $36,360 for the State of Tennessee. Lauderdale County shows the lowest per capita income ($13,682).

Table 3.4 Income by State and County

Geographic Area	2000 Persons	Per Capita Income 2000	Median Household Income 2000	% Below Poverty 2000
Tennessee	5,689,283	$19,393	$36,360	12.6
Dyer County	37,279	$16,451	$32,788	14.7
Tract 9641	7,124	$18,716	$41,627	9.2
Tract 9643	5,741	$14,314	$27,099	19.5
Tract 9644	7,096	$14,964	$26,060	24.9
Tract 9645	2,096	$15,599	$44,250	16.0
Tract 9646	2,623	$13,387	$31,597	11.2
Lauderdale County	27,101	$13,682	$29,751	17.9
Tract 502	3,711	$15,566	$26,772	19.3
Tract 503	2,920	$16,030	$30,682	19.0
Tract 504	3,302	$14,635	$33,639	10.6
Tract 505.01	4,860	$16,103	$32,425	19.3
Tract 505.02	6,022	$12,399	$25,658	25.6
Tract 506	2,403	$13,156	$26,136	18.7
Tipton County	51,271	$17,952	$41,856	11.8
Tract 403.01	10,986	$19,729	$45,840	10.1
Tract 405	4,967	$16,619	$43,486	6.2
Tract 406.01	4,814	$16,785	$45,000	17.7
Tract 406.02	2,951	$16,073	$35,847	9.1
Tract 408	3,646	$19,286	$51,142	4.6
Shelby County	897,472	$20,856	$39,593	16.0
Tract 202.1	5,957	$16,462	$40,796	11.1
Tract 208.1	2,582	$19,987	$46,071	4.5

Source: *Age and Sex: 2000, U.S. Census Bureau, Census 2000 and State and County Quick Facts.*

Estimates for people of all ages in poverty from the 2000 Census shows that Tennessee has a poverty rate of 12.6%. Lauderdale County has the highest poverty rate with 17.9% and Tipton County has the lowest poverty rate with 11.8%. Dyer County had a poverty rate 14.7% and Shelby County had a poverty rate of 16.0%.

A comparison of race and poverty levels from the U.S. Population Census in 1999 show the Black population to have higher levels of poverty within Shelby and Lauderdale Counties. The population below poverty level in Shelby County was 77.1% black and 18.2% white. The population below poverty level in Lauderdale County was 57.5% black and 42.1% white. The population classified as below the poverty level in Tipton County was almost evenly divided with respect to race (53.7% white/46.1% black). Within the study area, Dyer County was the only area to have a higher population of white (66.5%) below the poverty level than black (32.8%).

In Dyer County, three of the five involved Census Tracts have higher levels of poverty than the county as a whole. In Lauderdale County, five of the six involved Census Tracts have higher poverty levels than the County as a whole. Tipton County has one involved Census Tract above the county as a whole. Neither of the two project-area Census Tracts in Shelby County is higher than those of the county as a whole.

3.3.2 Economic Characteristics

Employment

Table 3.5 provides data on the labor force and employment statistics for the State of Tennessee and each county in the project area. The unemployment rate for the State of Tennessee is 5.4%. The unemployment rate for Shelby County is 5.8%, which is slightly above Tennessee. Tipton and Dyer County's unemployment rates are also slightly higher at 6.6% and 6.3%, respectively, than Tennessee. However, Lauderdale County has an unemployment rate 14.8%.

Table 3.5 Employment

Geographic Area	Total Labor Force	Employed	Unemployed	Unemployment Rate
Tennessee	2,905,300	2,749,300	156,000	5.4%
Dyer County	18,140	16,670	1,140	6.3%
Lauderdale County	9,920	8,450	1,470	14.8%
Tipton County	25,080	23,430	1,650	6.6%
Shelby County	457,190	430,500	26,690	5.8%

Source: *Tennessee Department of Labor and Workforce Development*, September 2003 Labor Force Estimates

Table 3.6 provides data on the state and county employment and employment growth by sector. Services are the largest employment sector for Shelby County in 2000 with a 16.3% increase between 1995 and 2000. The largest employer in Shelby County is Federal Express (40,000 employees), which is a service-based corporation. Also, Shelby County has the largest health care service providers in the project area. For Tipton, Lauderdale, and Dyer Counties, manufacturing is the largest employment sector. Tipton and Lauderdale Counties experienced an 8.4 and 2.9% growth, respectively, in this area between 1995 and 2000, while Dyer County had a 4.7% decrease in the number of people employed. The largest manufactures in Tipton and Lauderdale Counties are Quebecor World (900 employees) and Marvin Windows & Doors of Tennessee, Inc. (775 employees), respectively. The employment decrease in manufacturing for Dyer County is due to the phase out of Dyersburg Fabrics, which closed in August 2001, and created a loss of over 900 jobs. Additionally, Penguin Publishing closed in Dyersburg, which employed 400 workers. Currently, the largest employer in Dyer County is Quebecor World with 1200 employees.

The next largest employment sector is trade for Shelby, Tipton and Lauderdale Counties. For Dyer County, services are the second largest employment sector. Tipton County showed a 34% growth in trade between 1995 and 2000, which is a much higher increase than what was experienced by Shelby and Lauderdale Counties, 4.9% and 2.6%, respectively. The increase in Tipton County is a result of the large influx of suburban development that the county has experienced. The rest of the employment sectors vary between each county in number of employees.

Table 3.6 State and County Employment and Employment Growth by Sector

	Geographic Area				
Employment Sector	Tennessee	Shelby County	Tipton County	Lauderdale County	Dyer County
Total Employees 1995	2,386,039	438,567	9,481	7,376	17,234
2000	2,613,581	484,258	10,680	7,739	17,360
Percent Change	**9.5**	**10.4**	**12.6**	**4.9**	**0.7**
Construction 1995	109,036	18,408	642	213	859
2000	125,752	22,013	774	261	730
Percent Change	**15.3**	**19.6**	**20.6**	**22.5**	**-15.0**
Manufacturing 1995	537,109	48,256	3,222	3,431	6,420
2000	503,574	46,261	3,493	3,530	6,121
Percent Change	**-6.2**	**-4.1**	**8.4**	**2.9**	**-4.7**
Transportation 1995	133,626	52,943	147	173	505
2000	174,577	66,860	177	189	577
Percent Change	**30.6**	**26.3**	**20.4**	**9.2**	**14.3**
Trade 1995	586,192	118,848	1,629	1,434	3,385
2000	643,599	124,663	2,177	1,397	3,346
Percent Change	**9.8**	**4.9**	**33.6**	**-2.6**	**-1.2**
Finances 1995	106,180	23,532	392	216	557
2000	128,407	26,223	264	285	597
Percent Change	**20.9**	**11.4**	**-32.7**	**31.9**	**7.2**

Table 3.6 Continued

Services 1995	588,845	122,845	1,627	647	3,554
Employment Sector	Tennessee	Shelby County	Tipton County	Lauderdale County	Dyer County
2000	686,499	142,922	1,658	751	3,789
Percent Change	**16.6**	**16.3**	**1.9**	**16.1**	**6.6**
Government 1995 2000	303,567 325,095	50,727 51,222	1,688 1,995	1,101 1,157	1,859 2,234
Percent Change	**7.1**	**1.0**	**18.2**	**5.1**	**20.2**

Source: *Tennessee Department of Labor and Workforce Development,* 1995-2000

Traditionally, agriculture has served as the economic base for the counties in the study area. Agricultural employment in the study area has declined as other areas of business have increased. Dyer County has experienced a 10% decrease in full-time farms within the study area, which surpasses the rate at which full-time farms have declined in the State of Tennessee (7.4%). Tipton and Lauderdale Counties have also experienced a decline in the number of full-time farms (3.7% and 4.0%, respectively).

3.4 Physical Environment

3.4.1 Geology and Soils

The project area lies in West Tennessee within the Coastal Plain physiographic region. The area is made up of Quaternary and Tertiary age Alluvial and Loess deposits. Alluvial deposits of sand, silt, clay and gravel occur in the Mississippi River floodplain. Deposits are over 100 feet thick along major streams such as Crooked Creek, Hatchie and Forked Deer drainage systems. Generally, alluvial deposits are less than 20 feet thick along smaller streams. Loess deposits of clayey and sandy silt, gray to brown massive, have a maximum thickness of 100 feet along bluffs of the Mississippi River, and thin out to the east. This area has the largest acreage of cropland in Tennessee.

The Coastal Plain region is characterized by nearly flat to rolling upland. A narrow range of highly dissected hills rising abruptly from the Mississippi River bottoms marks its western limit. Soils formed in loess, which is up to 90 feet thick along the western edge and thins as one goes eastward. Soils are silty and fairly fertile and range from poorly drained on some of the flats to well drained. Fragipans occur, even on slopes. This area has the largest acreage of cropland in Tennessee, with cotton, soybeans, corn, hay and pasture being the main crops.

Soils within the project area are broken down by County Soil Surveys. Shelby County is the southernmost county in the project impact area, covering an area of 751 square miles. The section within the I-69 project corridor is on the Mississippi River flood plain, and ranges from 185 to 230 feet in elevation. The county is mostly industrial, but agriculture provides a large amount of income as well. Occasional flooding is a soil limitation, but floods typically occur in winter and spring, allowing the soils to dry out in time for crops to be planted. All the soils are loess, silty and easy to work, making them well suited to a variety of crops.

Soils in the Shelby County section of the proposed I-69 corridor include the Memphis association along the Crooked Creek and Big Creek canals, and the Memphis-Grenada-Loring association. The Memphis association is chiefly steep, well-drained, silty soils on uplands that rise abruptly from the Mississippi River bottoms to a height of about 200 feet. These soils formed in windblown silt deposits up to 90 feet thick. About 80 percent of this association is wooded. Soils are subject to slippage if hillside cuts are made.

The Memphis-Grenada-Loring association is made up of nearly level to sloping, well drained and moderately well drained, silty soils on broad uplands. Soils in this association developed in silty deposits more than 20 feet thick. Most of these soils are cleared for communities, and farms produce cotton, soybeans, corn and livestock. Only a few streams occur in this soil association. These soils are suited to a variety of uses and have few limitations.

Tipton County is in the southwestern part of Tennessee, covering an area of 454 square miles. Many valuable resources, including streams, rivers, soils, forests and wildlife, are found in Tipton County. Tipton County is one of the top farming counties in the state. Only a small amount of woodlands occur, mainly along the Hatchie River. The county has a good potable water supply, supplied by wells dug into very deep sand aquifers. Four soil associations occur within the proposed I-69 corridor, including Memphis-Adler, Robinsville-Crevasse-Bruno, Tunica-Bowdre-Sharkey, and Adler-Vecherie.

Adler silt loam frequently flooded soils are moderately well drained, nearly level soil on flood plains along streams and along narrow drainage ways. Available water capacity is high. The water table is 2 to 3 feet below the surface during late winter and early spring. Flooding occurs in late winter and spring but is not a serious hazard during the growing season. Included with this soil series are some areas of well-drained and somewhat poorly drained soils. The Adler soils are not suited to urban uses because of the wetness and hazard of flooding. These soils are used primarily for row crops, and are good for cottonwood, black walnut and sycamores.

Memphis silt loam is deep, well drained soil on narrow ridge tops and side slopes in gently rolling areas. Most of the original surface layer has been removed by erosion. Some areas are wooded and pastured, but most of the acreage is used for row crops. Memphis silt loam has good suitability for black walnut, cherrybark oak, and loblolly pine.

Robinsonville soils are very deep, nearly level, well-drained soils of floodplains. These soils are occasionally flooded. Most of the Robinsonville soil is cleared and used for row crops, such as cotton, corn, soybeans, and peanuts. The suitability for pasture and hay is good. Suitability for bottomland hardwoods is also high. Robinsonville soil is not suited to urban uses because of the flooding hazard

Crevasse sand, occasionally flooded, is very deep, excessively drained, nearly level soil on Mississippi River floodplains. In some years the soil is flooded for periods of several weeks during winter and early spring and is subject to scouring. Most of this soil's acreage is bare, but some are wooded with black willow and eastern cottonwood. This soil is not suited to urban uses because of the hazard of flooding.

Bruno silt loam, frequently flooded, is very deep, excessively drained, nearly level soil on Mississippi River floodplains. Most of this soil is cleared and planted to soybeans or wheat. Some is wooded with black willow and eastern cottonwood. Suitability to pasture is good, but is not good for urban uses because of the hazard of flooding.

Tunica clay, frequently flooded, is very deep, nearly level, poorly drained soil on Mississippi River floodplains. Most of the acreage is used for row crops such as soybeans and corn. Some of the acreage is wooded with cottonwood, sycamore, sweetgum and black willow. This soil is not suited to most urban uses because of wetness and the hazard of flooding.

Bowdre silty clay, frequently flooded, is nearly level, somewhat poorly drained soil on Mississippi River flood plains. Row crops such as soybeans, cotton and corn use about half of the soil's acreage, while the remainder is well suited to eastern cottonwood, sweetgum and black willow. The soil is not suited to most urban uses because of the wetness and hazard of flooding.

Sharkey clay, frequently flooded, is very deep, nearly level, poorly drained soil on flood plains. About half of the acreage is used for row crops including soybeans and corn. The soil is not suited to pasture because of the high moisture content. It has good suitability for eastern cottonwood, sycamore, sweetgum and black willow. It is not suited to most urban uses because of the wetness and hazard of flooding.

Vacherie silt loam, occasionally flooded, is very deep, somewhat poorly drained, nearly level soils on floodplains. Most of the acreage is used for row crops, such as corn, cotton and soybeans. A few small areas are pastured or wooded. This soil is not suited to urban uses because of the wetness and hazard of flooding.

The Adler, Bowdre, Memphis, Robinsonville, Tunica, and Vacherie soils are considered prime farmland soils.

Lauderdale County in west Tennessee has a land area of 477 square miles. Agriculture and related services are the most economically important industries in the county. About 67 percent of the county is farmland for row crops such as soybeans, cotton, grain sorghum and corn. Tomatoes and other vegetable crops are also important. The western section of the county consists of nearly level, well drained to poorly drained clay to sandy soils on the Mississippi River flood plain. The Hatchie and Forked Deer rivers drain the eastern two-thirds of the county. Soils on these floodplains are silty and well drained to very poorly drained. Elevations in the county range from 220 ft MSL at the Hatchie Towhead to 520 MSL on several ridge tops between Edith and Dry Hill.

Soil associations that occur within the proposed project area include Memphis-Adler, Memphis-Loring, Grenada-Loring-Calloway, Amagon-Oaklimeter-Adler, and Adler-Convent-Morganfield. The Memphis-Adler soils are gently sloping to steep, well-drained, silty soils on uplands. These soils formed in loess. The nearly level, moderately well drained, silty soils along narrow drainage ways in this association formed in recent alluvium.

Memphis-Loring soils are gently sloping to steep, well-drained, silty soils and gently sloping to moderately steep, moderately well drained silty soils. These soils formed in loess and have a fragipan.

Grenada-Loring-Calloway soils are gently sloping to moderately steep, moderately well drained soils and nearly level, somewhat poorly drained soils. All are silty and have a fragipan. These soils formed in loess.

Amagon-Oaklimeter-Adler silty soils are poorly drained, and formed in old alluvium. The moderately well drained, silty soils formed in recent alluvium over old alluvium.

Adler-Convent-Morganfield soils are well drained to somewhat poorly drained, silty soils that formed in recent alluvium.

Dyer County is in western Tennessee next to the Mississippi River. The section of Dyer County surrounding US 51 is basically gently rolling hills dissected by creeks and rivers. Elevations range from 255 feet to about 510 feet. Soils range from well drained on the hills to poorly drained in the flats.

Soil associations in Dyer County, Tennessee include Routon-Calloway, Loring-Memphis-Grenada, Falaya-Waverly, and Waverly-Swamp associations. Routon-Calloway association consists of low, broad flats and some shallow depressions. Ridges and round knolls rise 3-5 feet above the surrounding flats. Areas of this association are scattered along the outer edge of bottoms of the Forked Deer River. About two thirds of these soils flood every five or six years. Routon soils are in depressions while Calloway soils are on the knolls and ridges. Most of this association has been cleared, but a few woodlots remain in the wettest areas. Average size of farms in this association is 125 acres.

Loring-Memphis-Grenada soils are silty soils on rolling uplands, making up the eastern third of Dyer County. This is an area of gently rolling hills interrupted by broad flats. Loring soils are well-drained soils dominating this association. Memphis soils are on broader ridge tops and steeper hillsides. Grenada soils occur on nearly flat ridge tops and sloping hillsides. Most all of this association has been cleared and is suitable for row crops.

Falaya-Waverly associations are silty soils on bottoms of small streams. Falaya soils cover about 60 percent of this association. Waverly soils are in low places where water drains away slowly. Nearly all of this association is cultivated every year. A few wet areas are still in woodlots. Farms in this association average about 150 acres in size. Flooding and standing waters are the main limitations.

Waverly-Swamp association consists of very wet, silty soils on swampy first bottoms of winding streams. Long, narrow lakes cover old stream channels in some areas. Cypress swamps occur in depressions that hold water all year. This association is long narrow strips in bottoms of the Forked Deer Rivers. This association is nearly all wooded with bottomland oaks and cypress in the wettest areas. Some levees have been built and provide habitat for waterfowl. Flooding and standing water are serious limitations to agriculture.

Mild to moderate winters, hot summers, and abundant rainfall characterize the area climate. Extreme and frequent changes in the weather are common; however altitude differences are not great enough to cause climatic differences. Prevailing winds are from the south. Average times of the last freezing temperature in spring and the first freezing temperature in fall are mid-March to mid-November, respectively. The average growing season is approximately 238 (+/-) days.

3.5 Natural Resources

3.5.1 Terrestrial Habitat

Eight floral habitats were identified within the I-69 proposed project corridor from Millington to Dyersburg.

1. *Cypress Sloughs*

Sloughs are inundated swamps dominated by cypress trees, with tupelo (*Nyssa aquata*) common in some areas. Pecan and cottonwood are often present as well. Duckweed typically covers the surface of standing waters.

2. *Floodplain* (*Bottomland Hardwood*) *Forests*

Floodplain forests within the area were dominated by various ash, hickory, and oak, including willow oak and cherrybark oak. Cottonwood, cypress, sycamore, box elder, elm, sugarberry, sweetgum and maple are common also. Wetness and flooding in these areas limit the use of equipment in woodland management and timber harvest

3. *Agricultural Lands/Row Crops*

Agricultural crops within the proposed project corridor were cotton, soybeans, corn, tobacco, tomatoes and other vegetables. Croplands are frequently flooded until late spring, but typically dry out early enough for crops to be planted for a full harvest year. Most of the farmed areas have been drained and diked to make them farmable.

4. *Residential/Developed Areas*

Residential/developed areas (areas developed for human use) within the project corridor held a variety of industrial plants and residential areas. Commercial and industrial sites held little or no vegetation, while lawns had a mixture of native and ornamental grasses, trees and shrubs.

5. *Emergent Vegetation Wetlands*

Emergent wetlands were identified within the project corridor area. Carex species, arrowheads, lizard's tail, bulrushes, spike rushes, and shrubs such as buttonbush and box elder often dominated these wetlands.

6. *Upland Woodlots*

Upland forested areas typically consist of mixed hardwoods. Various oaks, hickories, and yellow poplar were the dominant trees in wooded areas. Others included ash, maple, dogwood and elm.

7. *Pastures and Hay Fields*

Clovers, fescue and other grasses dominated the pastures and hay fields, with brambles and weedy plants taking hold in unmowed areas.

8. *Riparian areas*

Riparian areas are the vegetated areas surrounding deep-water habitats contained within a stream channel. These areas consist mainly of named streams and rivers (Riverine) within the project corridor. Riverine systems typically have forest canopy and provide valuable wildlife habitat. Riparian areas serve various ecological functions, including protection of water quality and preservation of ecological balance to water bodies. Following is a description of riparian functions:

- Natural riparian vegetation features deep roots, which assist in preserving bank or shoreline structures as a barrier to the erosive capabilities of water by holding the soil together. Reducing erosion and sedimentation decreases the amount of sediment transferred to a body of water, which provides support in keeping fish spawning areas clear and facilitates water purification efforts. Riparian vegetation reduces the amount of sediment and nutrients that are transported in runoff by physically trapping sediment in surface flow, and then using the nutrients in the subsurface flow.

- Riparian vegetation provides shade which regulates stream temperatures by controlling the amount of sunlight that reaches the stream. Fish typically prefer shaded streams for the cooler temperatures and the refuge provided by shade. In addition, fewer algae grow in shaded streams due to the limited amount of sunlight that regulates the photosynthetic process.
- Riparian vegetation is also a source of large, woody debris, which can provide shelter for fish and habitat for aquatic insects. The debris also traps sediment and helps create structures (pools, riffles and runs) in a stream, which are crucial in its ability to maintain aquatic life. Smaller debris is a source of food source for many aquatic organisms.
- Vegetation (i.e., plants, trees, grasses) within a riparian area can slow the above ground movement of water, and can cause sediment and attached nutrients to be deposited on the land before they can reach the stream channel. Riparian vegetation can also take up and remove some of the nutrients being transported through the water. Trees and deep-rooted shrubs and grasses use significant quantities of subsurface waters. These processes mean that riparian vegetation can influence underground water flows and the nutrients, salt or other contaminants that might enter streams by this route.
- Riparian vegetation is active in reducing stream velocity during high flooding, high rain and other situations that could cause accelerated erosion. Rapid erosion of the stream beds can lower the local groundwater table. Once the groundwater table is lowered, it is very difficult for plants that rely on large quantities of water to reestablish themselves.

As land conversion occurs within and near the project corridor, sensitivity to riparian areas and their functions should be demonstrated by local and regional planners.

3.5.2 Aquatic Resources

Surface Waters

The Hatchie and Forked Deer Rivers, with their contributing tributaries, form the drainage basins for the project area. These streams are in the larger Mississippi River drainage basin. The Hatchie River is listed as a State Scenic River because of its outstanding scenic and ecological values. Tennessee Department of Environment and Conservation in their *Tennessee Rivers Assessment Project* Summary Report, 1988, lists outstanding characteristics of state streams as Natural/Scenic Quality (NSQ), Recreational Boating (RB), Recreational Fishing (RF), and Water Quality (WQ) by rank from 1 to 4, with 1 having statewide or greater significance, and 4 being not significant. The Hatchie River is listed as categories 1, 2, 3 in Natural/Scenic Quality, 1, 2 in Recreational Boating, 2 in Recreational Fishing, and 1, 2, 3 in Water Quality. The North Fork of the Forked Deer River is listed as class 2 in Natural/Scenic Quality, Recreational Fishing, and class 3 in Water Quality. The South Fork of the Forked Deer River is classified as classes 3, and 4 in Natural/Scenic Quality, classes 2, and 3 in Recreational Boating, and classes 1, 2, and 3 in Water Quality.

The following is a list of those streams sampled, beginning at the project's south terminus in Shelby County and moving north to Dyer County: Crooked Creek Canal; Big Creek at BFI property, Big Creek at State Route 178, Hebron Branch, Indian Creek, Flat Creek, Town Creek, Hatchie River, Cane Creek (2 sites), Cold Creek at confluence of north and south forks, South Fork Cold Creek, North Fork Cold Creek, Tisdale Creek, Mill Creek, Chambers Branch, South Fork Forked Deer, Pond Creek, Old Bed Forked Deer, North Fork Forked Deer, and Lewis Creek. Water chemistry parameters were taken, and in some streams macro invertebrates and fish were sampled as well. Some of the streams had thick, silty substrates so that walking through the streams with nets and seines was not possible. All sampled streams had silty substrates to some degree. Channeled streams in the area tend to cut downward, scouring the steep, muddy banks, thus increasing the sediment loads.

Water quality parameters sampled included pH, conductivity, total dissolved solids (TDS), temperature, alkalinity, acidity, dissolved oxygen, chloride, nitrogen ammonia, nitrates, turbidity, reactive phosphorus, sulfates, color and hardness. All water quality standards should be in compliance with the Clean Water Act. The Clean Water Act set the basic structure for regulating discharges of pollutants into waters of the United States. The following table includes the comprehensive listings of water quality parameters from area streams. Chemical water analysis showed water quality parameters to be within EPA standards and were normal for the area in most streams sampled. The analysis showed that some area streams were somewhat impacted. Cane Creek, which is channelized throughout the project area, showed increased levels of nitrate (NO_{3-}), nitrate-nitrogen (NO_3^--N), and sulfate (SO_4^{2-}), total dissolved solids (TDS), conductivity (uS/cm), and salinity (%) over other streams in the area. Lewis Creek had higher levels of ammonia (NH_3), ammonium (NH_4^+) and phosphate (PO_4^{3-}), phosphorus (P), and phosphorus pentoxide (P_2O_5) than other area streams. The Hatchie River showed elevated sulfate (SO_4^{2-}) levels. Big Creek tested relatively high for nitrates and nitrate-nitrogen. Elevated water chemistry parameters of this type are not uncommon for streams in this heavily farmed area. In general, sampled area streams are relatively low in DO. Low-gradient streams with silt substrates, such as those in western Tennessee, are typically lower in DO due to the lack of turbulence normally associated with higher gradient, cobble substrate streams.

Crooked Creek is a channelized stream with deep, muddy, eroded banks. The stream at sample site was approximately 40 feet in width. Depth ranged from 4 inches in riffles to four feet in pool. Riprap covered some of the banks, and spilled into the streambed. Canopy was limited to one side of the channel.

Big Creek is a wide channel with steep banks. The stream is open but banks are forested, and depth ranged from a few inches to several feet at the sample site.

Hebron Branch had steep, rock-lined banks with silty substrate. Water was low at sample time, ranging from 4 to 8 inches. The water was turbid, and there were hundreds of Asian clams in the area at the sample site.

Indian Creek Canal is an open, narrow, channelized stream. Banks were steep and substrate was silty. The water was standing at depths of four to twelve inches at sample time.

Flat Creek near Gift is channelized with steep banks and silty substrates. The water was standing and stagnant, with few insects or fish found in the stream.

Town Creek at the sampling point has been channelized. Banks are steep and lined with riprap. Width of the stream is approximately six feet at the widest point, and depth ranged from six inches to two feet at sample time. Trash had been dumped into the stream as well.

The Hatchie River was sampled at the US 51 Bridge. The sample site was quite open, but bottomland hardwood forests lined the Hatchie in this area, except at those sites cleared for the bridge. Substrate is silty and sloughs and backwaters occur.

Cane Creek at the west sample site is a wide, deep, channelized stream. Substrate was gravelly/rocky. Corbicula (Asian clam) was abundant. The banks are tree-lined, with agricultural crops occurring alongside the stream. Cane Creek at the east sample site was about 30-40 feet, with a depth of several feet. Substrate was silty/gravelly, and the stream was open with no canopy.

Cold Creek is a narrow stream approximately four to six feet wide and 10 inches to four feet deep at sample time. Substrate was silty, and riffles and pools were present. Cold Creek was generally canopied. This stream was sampled at 3 sites.

Tisdale Creek was sampled along old US 51. The stream was turbid, with silty, muddy substrate. Stream width was narrow, and pools and runs were present. Stream width was six to eight feet and depth was 2 to 3 feet. The stream was open with a few scattered trees.

Mill Creek was sampled at the US 51 Bridge. Substrate was silty. Depth was approximately 4 feet and was too deep to seine for fish. Width was approximately 8 to 10 feet. There was no stream canopy cover.

Chambers Branch was sampled at the US 51 Bridge. This stream has been channelized and has steep banks with a few scattered trees. Width was 10 to 12 feet at widest area, and depth was approximately 2 feet with stagnant pools present at sample time. The water was turbid and substrate was very silty.

The South Fork of the Forked Deer River was sampled at the bridge on Unionville Road. This section has been channelized, and the waters flowed deep. Stream banks were tree-lined. A large portion of the South Fork of Forked Deer has been channelized and is very open with no tree canopy. Farther north near the community of Fowlkes, the stream flows naturally through riparian forests. Oxbows and wetlands are common there.

Pond Creek was sampled at the State Route 210 Bridge. The stream width was about 10 to 12 feet and has been channelized. Depth ranged from 4 inches in the riffles to 12 inches in the pools at the time the sample was taken, and the substrate was muddy and sandy. Canopy cover was about 5 percent. Agricultural fields occur on both sides of the stream.

The Old Bed Forked Deer River had sloughs and oxbows. The sample site was not canopied, and water was deep in the stream at sample time.

North Fork of Forked Deer River was a deep-channeled stream, with thick silty bottom. The North Fork Forked Deer River Channel is surrounded by wetlands, old oxbows, and sloughs. Stream banks were steep and muddy. No riffles occurred, and water was deep at the sample site. This stream flowed through the Tigrett Wildlife Management Area.

Lewis Creek water sample was taken at the State Route 104 Bridge. This creek has been channelized, and banks were steep and muddy. Lewis Creek was approximately 25 feet wide. Canopy cover does occur.

EPA listed some aquatic habitats in the project area as Impaired Waters. The North Fork of the Forked Deer is impacted by excessive siltation and pathogens; some sections have increased nutrients and habitat alterations. Pond Creek in the North Fork Forked Deer drainage has excessive sedimentation due to agricultural activities and channelization of the stream.

The South Fork Forked Deer has been impaired by habitat alterations, pathogens, siltation, organic enrichment and low dissolved oxygen due to agricultural practices, industry, land development and urban sewers. The Lower Hatchie River is impaired by organic enrichment/low dissolved oxygen, metals, pathogens, siltation and habitat alterations as a result of agricultural practices, bank degradation and industrial sources.

Other stream channels that would be considered waters of the United States are present within the project area and alignments. The project team employed the same level of sensitivity in attempts to avoid or minimize impacts to these streams.

<u>Groundwater</u>
Many rural residents access aquifers through private wells and springs as their water supplies, although there is good coverage from municipal water supplies. Municipal supplies often rely on groundwater as well. Wellhead Protection Areas do occur within the project corridor.

Wellhead protection areas are those surface and subsurface areas, which contribute water to a community public water supply system production well or well field and through which contaminants are likely to move and reach the well within a specified period (US EPA, 1987).

Wellhead protection areas in Lauderdale County are in the towns of Gates, Halls, Ripley, Henning, Central and in the areas of Ripley North. In Gates, there is a wellhead protection area at about 35° 50’30” N and 89° 24’ W, just west of SR 209/210. A wellhead protection area is located in the town of Halls at 35° 53’ to 35° 52’ N and 89° 23’ 30” W off SR 210. Just north of Ripley, there is a wellhead protection area at 35° 45’ to 35° 44’ 30’’ N and 89° 32’ W off SR 209, near the Illinois Central Railroad. Another is located in the Ripley North region east of SR 208 off either Sutton or Voss Rd. at 35° 49’ N, 89° 31’30” W. At or near the town of Henning off SR 87 is a wellhead protection area at 35° 41’ 30” N and 89° 34’ 30” W off SR 87, near the Illinois Central RR. Another is east of the town of Central at 35° 48” N and 89° 31’ 30” W.
One wellhead protection area is located in Shelby County in the city of Millington, at the US Naval Air Station at 35° 17’ to 20’ N and 89° 55’ to 89° 52’ W.

In Tipton County, wellhead protection areas are located in or near the towns of Tipton, Munford and Covington. One is located off US 51 near the town of Tipton at 35° 25’ N and 89° 49’ 30” W. Another is located off SR 209 east of Munford near Crosstown at 35° 27’ N and 89° 48’ W. In Covington, a wellhead protection area is located at or near the intersection of US 51 and SR 54 at 35° 34’ N and 89° 38’ W. Finally, a wellhead protection area lies east of Covington off SR 59 at 35° 34’ N and 89° 42’ 30” W.

In Dyer County, wellhead protection areas are located at or near Dyersburg, Newbern and Bonicord. One is located at 36° 06’ 30” N and 89° 26’ W just west of SR 78 and north of SR 182. Another is located in the city of Dyersburg at approximately 36° 02’ N and 89° 22’ 30” to 89° 24’ W. Another lies just north of Dyersburg north of the SR 412 and SR 211 intersection at 36° 04’ N and 89° 20’ 30” W. There is a wellhead protection area located in the town of Newbern off SR 211 at 36° 07’ N and 89° 15’ to 89° 16’ W. Finally, a wellhead protection area is located off SR 210 just west of the US 412 intersection north of the town of Bonicord at 36° 57’ N and 89° 20’ W.

Jurisdictional Wetlands

The U.S. Army Corps of Engineers (USACOE) defines wetlands as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated conditions. For the USACOE to classify an area as a jurisdictional wetland under Section 404 of the Clean Water Act, the following conditions must be present: 1) Area must contain a dominance of vegetation adapted to growth in low-oxygen soils (i.e., hydrophytic vegetation); 2) have soils that have developed over time in a low oxygen environment (i.e. hydric soils); and 3) have hydrology that saturates or inundates the soil for a required percentage of the vegetative growing season. The proposed project is located within the jurisdiction of the Memphis District of the U.S. Army Corps of Engineers.

Hydrophytic vegetation consists of plants typically adapted to life in areas permanently or periodically inundated or saturated by surface or ground water. Vegetation found in a wetland may consist of more than one plant community. Although many factors influence the presence and character of hydrophytic vegetation, hydrologic factors exert an overriding influence on the plant species that occur in wetlands.

Hydric soils are soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper portion. A hydric soil may be drained or undrained, and a drained hydric soil may not continue to support hydrophytic vegetation. Therefore, not all areas having hydric soils will qualify as wetlands. Hydric soil is referred to as a “wetland soil” in areas where it supports hydrophytic vegetation and has additional wetland indicators.

Wetland hydrology includes all hydrologic conditions that cause an area to be periodically inundated or saturated to the degree that other wetland characteristics develop.

Wetlands dominated the ecological studies for the proposed project. Large bottomland hardwood wetland complexes associated with the Hatchie and Forked Deer Rivers and related tributaries were identified and delineated in accordance with the 1987 Army Corps of Engineers Wetland Delineation Manual. Smaller isolated wetlands and emergent wetlands associated with farm ponds were not as common as the large complexes, but did occur. All potential wetland sites were delineated in accordance with the “1987 Army Corps of Engineers Wetland Delineation Manual.” Routine Wetland Determination Data Forms were completed in the field for each potential jurisdictional wetland except those areas that contained obvious lacustrine or riverine systems, or palustrine unconsolidated bottom. These areas included sites such as farm ponds, creeks and rivers.

Palustrine Forested Wetlands are commonly known as swamps and are covered by persistent trees greater than 20 feet tall. Forested swamps within the area consist of bottomland hardwoods. These wetlands consist of broad-leaved deciduous trees such as hickories, ash, sycamore, and cottonwood. Bald cypress also commonly occurs. Most of the bottomland hardwood forest within the project area is considered palustrine-forested wetland.

Emergent wetlands are dominated by erect, herbaceous vegetation and often appear as stands of rush and sedge growth. These areas occur typically between open waters and uplands. They may occur at edges of ponds, streams and lakes.

Riverine/Lacustrine Wetlands
Riverine/lacustrine and unconsolidated bottom wetlands are those areas of open waters in the project area. These include lakes, ponds and streams.

3.5.3 Federally-listed and Proposed Threatened and Endangered Species
Early coordination with U.S. Fish and Wildlife Service indicated that no federally endangered species are known to occur within the project impact area.

3.5.4 State-listed Rare Species
The Tennessee Department of Environment and Conservation lists a number of species that have been identified as occurring in the project area, and are of Special Concern to regulatory agencies. Table 3.7 provides a summary of Rare Species occurring within the project area.

Table 3.7 Tennessee Rare Species

Tennessee Rare Species Occurring in the Project Area						
Animal scientific name	**Animal common name**	**County rare**	**State status**	**Federal status**	**County found from 2001 field survey**	**Found by other agencies**
Ardea alba	great egret	Dyer, Lauderdale	D		Lauderdale, Tipton	
Limnothlypis swainsonii	Swainson's warbler	Dyer, Haywood, Shelby, Lauderdale	D	MC	Crockett, Lauderdale	

Table 3.7 Tennessee Rare Species (cont.)

Animal scientific name	Animal common name	County rare	State status	Federal status	County found from 2001 field survey	Found by other agencies
Riparia riparia	bank swallow	Dyer, Lauderdale			Dyer, Shelby	
Buteo lineatus	red-shouldered hawk	Haywood			Dyer	
Lanius ludovicianus	loggerhead shrike		D	MC	* Dyer	
Uniomerus declivis	tapered pondhorn	Haywood	S1			TNC US 51 crossing 1999
Villosa vibex	southern rainbow	Haywood, Tipton	S2			US 51 crossing
Cycleptus elongatus	blue sucker	Tipton, Lauderdale, Shelby, Haywood, Dyer	T	MC		TWR Hatchie River 2001
Lepisosteus spatula	alligator gar	Lauderdale, Dyer	S1			TWR Hatchie River 2001

S1: Extremely rare and critically imperiled in the state with 5 or fewer occurrences, or very few remaining individuals, or because of some special condition where the species is particularly vulnerable to extirpation from Tennessee
S2: Very rare and imperiled within the state, six to twenty occurrences and less than 3,000 individuals, or few remaining individuals, or because of some factor(s) making it vulnerable to extirpation from the Tennessee.
T: Threatened
MC: Management Concern
D: Deemed in need of management
(Department of Environment and Conservation, 2001)
* The Tennessee Department of Environment and Conservation's Division of Natural Heritage (DNH) lists the loggerhead shrike among the vertebrates actively tracked by the state.

3.5.5 Invasive Species

Next to habitat loss, invasive species are a considerable threat to native ecosystems. Exotic invasive plants are those that have evolved within one ecosystem and were introduced, either intentionally or accidentally, to another ecosystem. Because they evolved elsewhere, they encounter few or no natural control mechanisms in their new location, allowing them to spread easily and quickly. As they spread, invasive plants disrupt available nutrients, occupy space, and out-compete native plants. Some exotic species introduce pathogens or insects that can devastate the native ecosystem, although the exotic is relatively immune to its effects. Other exotic plants, such as leafy spurge (*Euphorbia esula*), may be poisonous to wildlife or livestock. Typically, exotic invasive plants offer native wildlife only inferior nutrition, and inadequate nesting habitat or shelter, placing them at risk for extinction or extirpation. All of these changes alter the ecosystem, oftentimes dramatically and negatively. A severely altered ecosystem is incapable of functioning adequately and can no longer supply the necessary goods and services upon which humans depend.

Invasive plants identified in the project area include the following; Japanese honeysuckle (*Lonicera japonica),* Japanese grass (*Microstegium vimineum),* mimosa/silk tree *(Albizia julibrissin),* kudzu *(Pueraria montana1),* chinese privet *(Ligustrum sinense) and* common privet *(Ligustrum vulgare),* multiflora rose *(Rosa multiflora),* princess tree *(Paulownia tomentosa),* tree-of-heaven *(Ailanthus altissima),* poison hemlock (*Cicuta maculata),* Queen Anne's lace (*Daucus carota),* lady's-thumb (*Ploygonum persicaria),* paper mulberry (*Broussonetia papyrifera),* ground-ivy (*Glechoma hederacea),* Cocklebur (*Xanthium strumarium),* bull-thistle (*Cirsium vulgare),* Canada thistle (*Cirsium arvense),* ox-eye daisy (*Chrysanthemum leucanthemum),* meadow fescue and tall fescue *(Festuca arundinacea).*

Field surveys noted the presence of several exotic terrestrial species. Included in these observations were Asian clams (*Corbicula fluminea)* and starlings (*Sturnus vulgaris*), an exotic bird species. Other exotic organisms, including fish species, are likely to be present in the project area. However, field surveys did not reveal their presence.

3.6 Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by the Council and referred to as "Protection of Historic Properties" (36 CFR Part 800).

Surveys of potential historic/archaeological sites were performed pursuant to the Section 106 guidelines outlined in 36 CFR 800. The purpose of these studies was to determine the presence of resources listed, or eligible for listing, in the National Register of Historic Places (NRHP) within the Area of Potential Effect (APE). The APE is defined as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.

The NRHP criteria of eligibility outlined in 36 CFR 63 were applied to all surveyed resources. Those criteria are as follows:

- Criterion A – Sites that are associated with events that have made an important contribution to the broad patterns of our history; or
- Criterion B - Sites associated with the lives of persons of considerable importance in our past; or
- Criterion C – Sites that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a noteworthy and distinguishable entity whose components may lack individual distinction; or

- Criterion D – Sites that have yielded, or may be likely to yield, information important in history or prehistory.

Provided below are summaries of the findings of this analysis. Please refer to Chapter 5 for a summary of Section 106 coordination.

3.6.1 <u>Architectural/Historic Resources</u>
Within the project area, a total of 121 properties were either surveyed or resurveyed for this proposed project. An additional 185 properties were noted but not surveyed. For a complete listing and description of all properties investigated for this proposed action, please refer to Tennessee Department of Transportation for the *Historic and Architectural Survey and Documentation For Effect Under 36 CFR 800 Evaluation, I69 Dyer, Lauderdale, Shelby, and Tipton Counties, Tennessee (Thomason 2002)*. Of these properties, three within close proximity of the proposed project have been identified as either listed, or eligible for listing, on the National Register of Historic Places (NRHP). These properties and their associated Build Alternative are as follows:

<u>Alternative R</u>
National Register-Eligible - James A. Langley House (LA-27), 2933 Central Curve Road, Ripley Tennessee. This house was built in 1912 and is a notable example of the Queen Anne style. This property is eligible for the National Register under criterion C for its architectural design.

<u>Alternative G</u>
National Register-Listed - Mt. Carmel Presbyterian Church (TP-38), Mt. Carmel Road, Covington, Tennessee. The Mt. Carmel Presbyterian Church was built in 1854 and combines elements of the gothic and Greek revival styles. The church retains much of its original design and was listed on the National Register on July 12, 1984.

National Register-Eligible - Farmer Store (TP-67), 2002 Rialto Road, Covington, Tennessee. The Farmer Store was built in 1908 at the railroad community of Rialto. This frame commercial building retains much of its original design and meets National register criterion A and C for its architectural distinction and role in local commerce.

3.6.2 <u>Archaeological Resources</u>
Beginning in October of 2001, investigations were conducted to provide information on the distribution of important archaeological properties within the project area. This information was used to make informed management decisions relating to the design and construction of I-69, SIU 8 in Shelby, Tipton, Lauderdale and Dyer Counties, Tennessee.

These investigations were conducted in two phases. Phase 1a consisted of a literature and records search for the areas surrounding the proposed alternatives.

This phase of the investigation addressed three objectives; (1) to identify all previously recorded archaeological and historical properties within the study area; (2) to develop an environmental, cultural and historical context for the study area, and; (3) to develop a model to predict site locations within the various topographic regions included within the study area.

Phase 1b, the second phase of the investigation, consisted of a systematic pedestrian survey of the 34 high-probability areas resulting from the predictive model, for archaeological resources within the proposed alternatives. Goals and methods employed during the pedestrian survey were based upon criteria outlined in the *Scope of Work for TDOT Phase 1 Archaeological Assessments* (Kline 1999). The objective of the survey was to identify and record all cultural resources within, or adjacent, the proposed highway corridors that are listed, eligible for listing, or potentially eligible for listing on the NRHP pursuant to criteria set forth in 36 CFR 60.4.

The results of the surveys included a total of 51 new sites being identified within, or adjacent to the proposed alternatives, and 17 previously recorded sites were re-visited during the study. Please refer to Chapter 4 for a detailed description of sites impacted by the various proposed Build Alternatives.

Once a Build Alternative is selected, additional archaeological investigations, referred to as Phase 1c, will examine the entire alignment. These investigations will make recommendations for each recorded site's eligibility for inclusion in the NRHP.

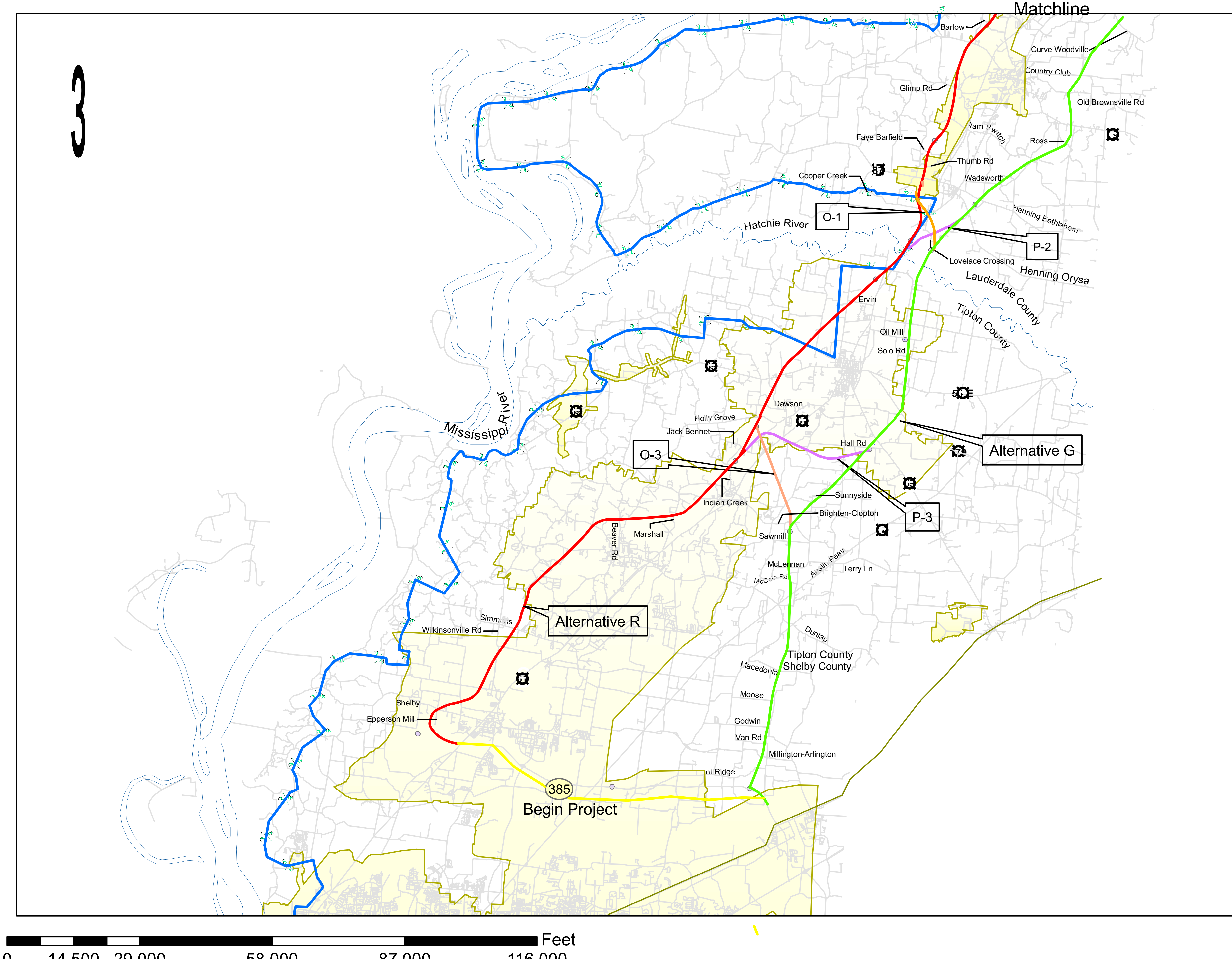
3.7 Recreational Resources

Valentine Park in Munford and the Henning Ball Park Facility in Henning are typical of the recreational parks in the project area. Valentine Park is approximately 107 acres and contains soccer fields, a BMX bike park, and a playground. Future plans for the park include ball fields and riding arena. Valentine Park is located south of the Alternative R, near Beaver Road and Walker Field Road. Please refer to Volume II, Sheet 12, Station 790 to 820 for a map of Valentine Park.

The Henning Ball Park Facility has two ball fields, a concession stand, a press box, and team-dug outs. In addition to the ballpark, a Henning Facility Building has been planned and will be approximately 14,860 sq. ft. It will contain a medical facility, a dental facility, basketball court, and locker rooms with showers, reading room, library, cultural room, and kitchen. The Henning Ball Park Facility and Henning Facility Building have been built on land owned by the Mississippi Band of Choctaws. The exact role these facilities will have in the community has not been determined at this time. The Henning Ball Park Facility is located along SR 87, just west of the intersection with US 51 and east of the proposed Alternative R. Please refer to Appendix B, Sheet 24, Station 3290 for a map of the Henning Ball Park.

There are several other recreation areas used by the communities that are not in the study area. Glen Springs Lake is a recreational fishing lake comprising over 300 acres that the Tennessee Wildlife Resource Agency constructed. Several state parks including Reelfoot Lake, State Resort Park, Fort Pillow State Historic Park, and Meeman-Shelby Forest State Park are available for public use but are outside the project area. Additionally, the public utilizes numerous community and city parks for a variety of events. All of these recreational resources are outside the project area and are not mapped in the document.

Bicycling is a recreational activity within the state of Tennessee that has been promoted by state officials. Currently, there are approximately 500 biking clubs with over 20,000 members in Tennessee. Within the project area are several bicycling routes including the Chickasaw Bluffs State Scenic Trail, which is a state designated biking route and the Reelfoot Bicycle Route. Additionally, the Mississippi River Trail (MRT), which follows the Mississippi River, is within the project area for a short distance as it uses existing U.S. 51 to cross the Hatchie River. In Tennessee, the MRT is a 177-mile biking route that runs from the Memphis Downtown Welcome Center to Reelfoot Lake Visitor's Center. This route is part of a ten state cycling route in the process of development that travels over 2000 continuous miles between the headwaters of the Mississippi at Lake Itasca, Minnesota and the Gulf of Mexico. Please refer to Figure 3.2 for a detailed look at the above described bicycle routes.



LEGEND

County Line

Interstate

Alternative R

Alternative G

Cross Over O1-O3

Cross Over P1-P3

Mississipi River Trail

FIGURE 3.2
Sheet 1
Bicycle Routes
I-69 SIU# 8
Millington to Dyersburg, TN

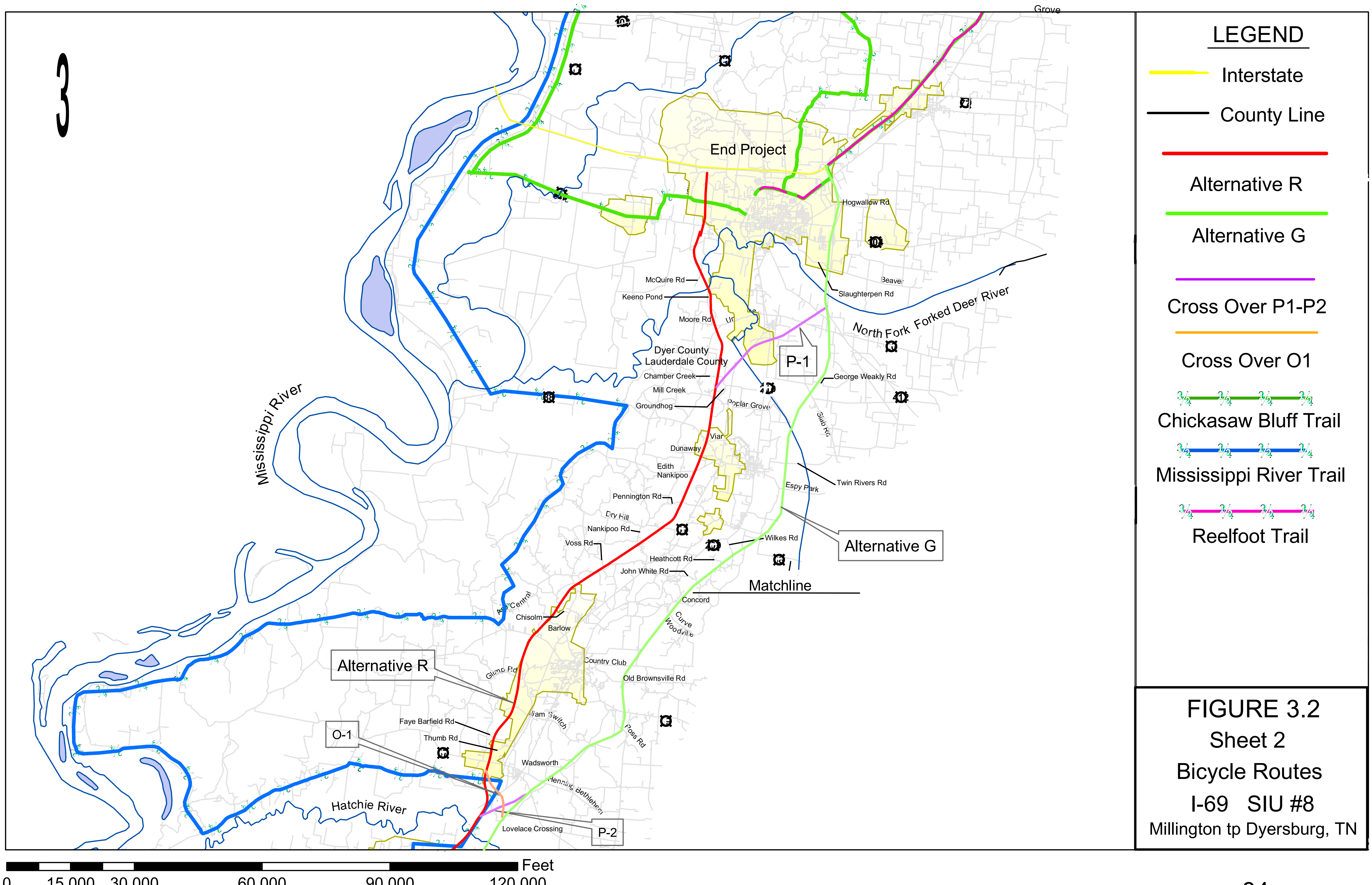


FIGURE 3.2
Sheet 2
Bicycle Routes
I-69 SIU #8
Millington tp Dyersburg, TN

An additional recreational activity within the project area is duck hunting. Ducks Unlimited has no conservation easements in Western Tennessee. However, they do have wetland development agreements with private property owners. In the agreement, Ducks Unlimited contributes water resource management tools that provide seasonal habitat for waterfowl. For the service, the property owner agrees to manage the property for 10 years. If the contract is broken, the property owner must refund Ducks Unlimited a set prorated amount.

Regulated hunting is also allowed on several refuges in and surrounding the project area. The Lower Hatchie National Wildlife Refuge (LHNWR), which is in the project area, currently occupies 9,035 acres located along the Hatchie River in northwest Tipton County. The Chickasaw National Wildlife Refuge, which is outside of the project area, currently occupies 22,736 acres in the northwest part of Lauderdale County. The U.S. Fish and Wildlife Service has approved Proposed Expansion of Chickasaw and Lower Hatchie National Wildlife Refuges of 31,480 acres and 12,052 acres, respectively. The Reelfoot National Wildlife Refuge Complex, with offices in Dyersburg and Henning, manages the Lower Hatchie and Chickasaw refuges. Please refer to Figure 3.3 for a broad view of the existing and proposed expansion boundaries for the LHNWR.

In addition to the above-described Wildlife Refuges, a waterfowl refuge is located within the project area. The Lauderdale Waterfowl Refuge is located along SR 210, and is bounded by the South Fork of the Forked Deer River, and the Alternative G. Based upon boundary information received from the U.S. Fish and Wildlife Service, the Alternative G was revised to avoid impacts to this resource.

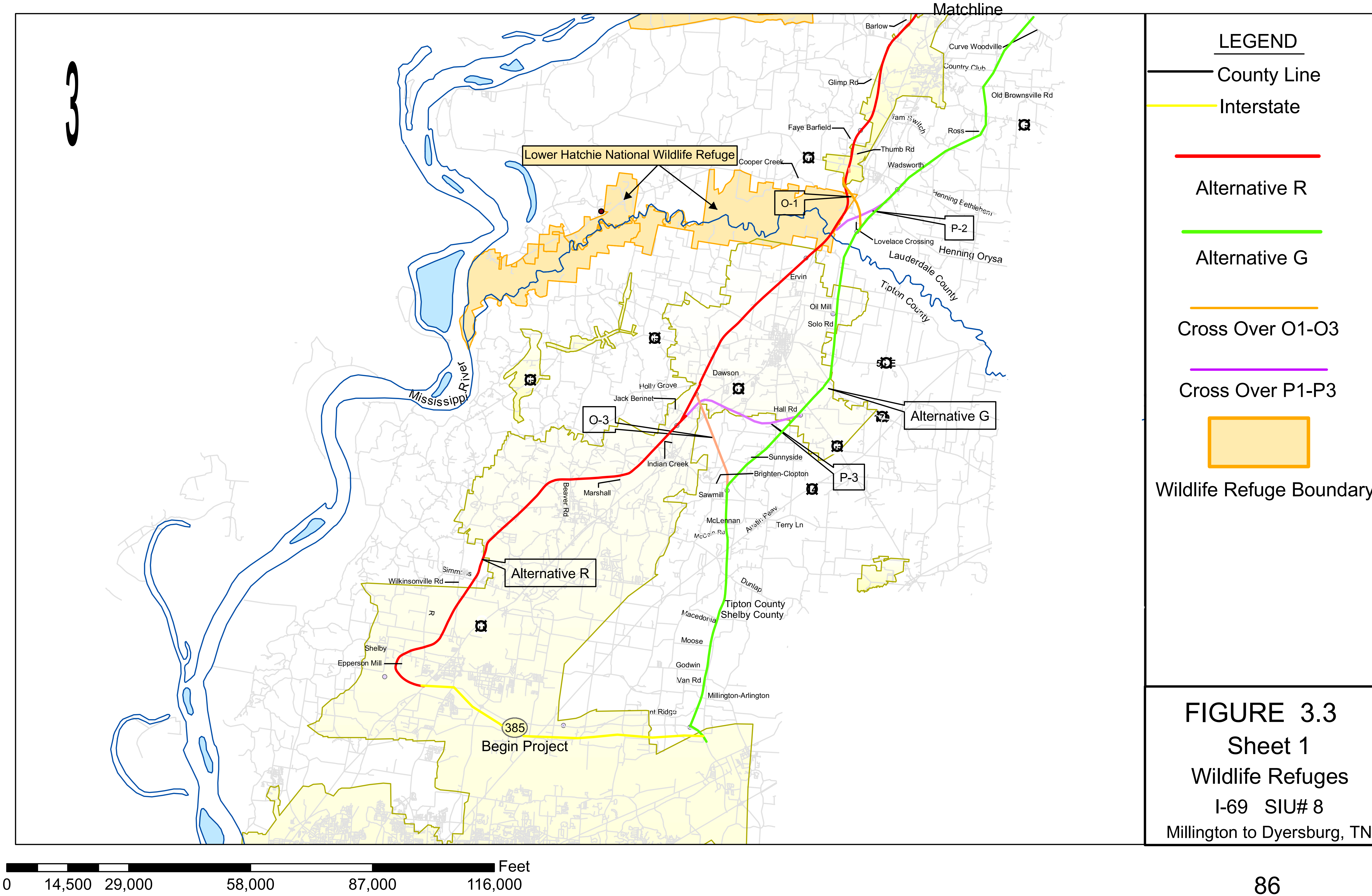


FIGURE 3.3
Sheet 1
Wildlife Refuges
I-69 SIU# 8
Millington to Dyersburg, TN

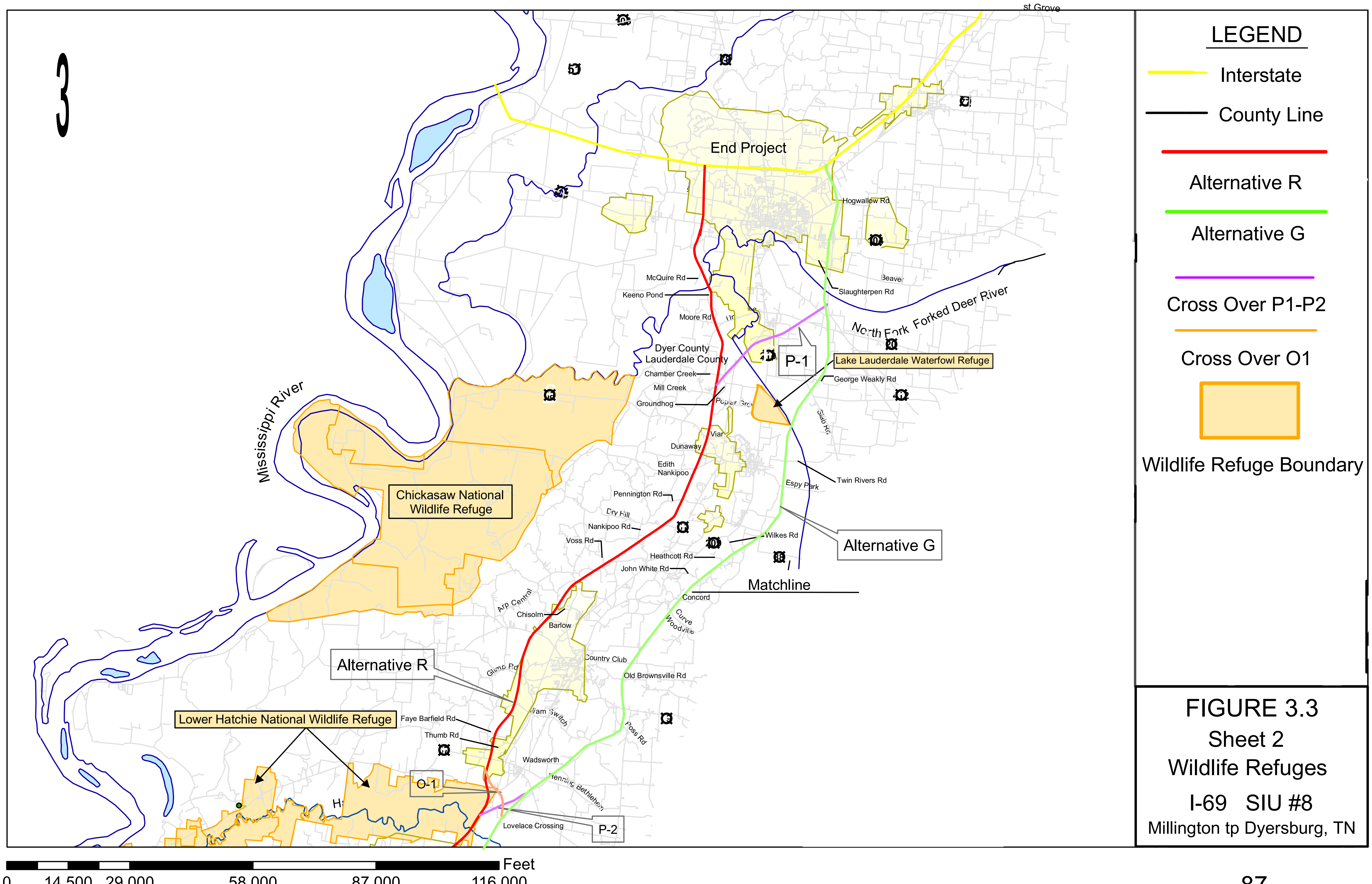


FIGURE 3.3
Sheet 2
Wildlife Refuges
I-69 SIU #8
Millington tp Dyersburg, TN

3.8 Visual Resources

As stated previously, the project area goes through four different counties in western Tennessee and parallels the Mississippi River. The length of the project requires several different landscape units, or geographic areas, to fully detail the existing landscape's visual character. The north part of the project, above the Hatchie River, has gently rolling hills. The South Fork of the Forked Deer River runs through the north part of the project and drains into the Mississippi River. Wetlands and marshes are very common in this area with seasonal flooding occurring in the winter months as part of the floodplain system linked to the Mississippi River. The vegetation in this area is a mix of deciduous trees and agricultural land use of cotton fields and pasture. Residential areas are sparsely mixed with agricultural farm use. The residential areas, along with limited shopping and commercial areas are located adjacent to towns on U.S. 51.

The south part of the project, below the Hatchie River, is flatter with minimal rolling terrain. This area is also not as prone to flooding as the northern part of the project. However, wetlands are still a part of this terrain. Vegetation is predominantly agricultural crops and pastureland. Residential areas are larger and more densely located through the southern half of the project. Additionally, commercial and industrial areas are more common.

The visual quality of the existing landscape is generally appealing. The visual along U.S. 51 is your typical highway that passes through areas of residential and commercial development along with areas of agricultural land use. The visual landscape away from U.S. 51 is more rural with fields of cotton and other agricultural crops.

There are numerous highway viewers throughout the project area. There are a high number of viewers with a view from the road, including local and commuter traffic. These groups are generally on the road daily and view the landscape while driving their vehicles. The number of viewers of the road, such as residents and commercial and industrial facilities vary from low to high throughout the project area depending on if they are located in a town or agricultural area. The groups with a view of the road in town will have a view with heavier traffic. The view of the road in an agricultural area will have less traffic with higher speeds.

3.9 Air Quality

An air quality analysis was performed to determine if this section of the proposed Interstate 69 from Millington to Dyersburg, Tennessee could contribute to decreased air quality within the project area by exceeding the National Ambient Air Quality Standards (NAAQS). The U.S. Environmental Protection Agency (EPA) has identified seven air pollutants of national concern including carbon monoxide (CO), nitrogen oxides (NOx), ozone (O_3), particulate matter (PM_{10} and

$PM_{2.5}$), sulfur oxides (SOx), and lead (Pb). The FHWA requires modeling of CO to determine concentrations and compare with the NAAQS. Please refer to Table 3.8 for the above-described NAAQS criteria.

Table 3.8 National Ambient Air Quality Standards (NAAQS)

Pollutant	Averaging Period	National Standards	
		Primary	Secondary
Ozone	1 Hour[1]	0.12 ppm (235 ug/m^3)	Same as Primary
	8 Hour[2]	0.08 ppm (157 ug/m^3)	Same as Primary
Carbon Monoxide	1 Hour[3]	35 ppm (40 mg/m^3)	Same as Primary
	8 Hour[3]	9 ppm (10 mg/m^3)	Same as Primary
Nitrogen oxide	Annual Average	0.053 ppm (100 ug/m^3)	Same as Primary
Sulfur Dioxide	Annual Average	80 ug/m3 (0.03 ppm)	None
	24 Hour[3]	0.14 ppm (365 ug/m^3)	None
Suspended Particulate Matter (PM_{10})	24 Hour[4]	150 ug/m^3	Same as Primary
	Annual Arithmetic Mean	50 ug/m^3	Same as Primary
Suspended Fine Particulate Matter ($PM_{2.5}$)	24 Hour[4]	65 ug/m^3	Same as Primary
	Annual Arithmetic Mean	15 ug/m^3	Same as Primary
Lead	Quarterly Mean	1.5 ug/m^3	Same as Primary

Sources: U.S. EPA, "National Primary and Secondary Ambient Air Quality Standards" (49 CFR 50) Monitoring Report. Abbreviations: ppm – parts per million, ug/m^3 – micrograms per cubic meter, mg/m^3 – milligrams per cubic meter.

[1]Applicable to current Non-attainment areas until such areas meet the standard for three consecutive years.
[2]New Standards effective September 16, 1997.
[3]Not to be exceeded more than once a year per site.
[4]Relaxed National Standard. The number of days with hourly levels greater than the standard are not to be exceeded more than once per year.

Section 107 of the 1977 Clean Air Act Amendment requires the EPA to publish a list of geographic areas in compliance with the NAAQS. Shelby County, TN is part of the Metropolitan Memphis Interstate Air Quality Control Region. Shelby County, TN is in attainment for O_3 (January 17, 1995) and CO (July 26, 1994). Tipton, Lauderdale and Dyer counties are with the Western Tennessee Interstate Air Quality Control Region, which is in attainment for all criteria pollutants.

3.10 Existing Noise Levels

A noise impact analysis was conducted for the proposed project in accordance with the methodology outlined in 23 CFR 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise,* as well as guidelines developed by TDOT. This study identified noise sensitive sites adjacent to all Build Alternatives.

The FHWA Noise Abatement Criteria (NAC), provided in 23CFR 772, are outlined in this document in Table 3.10. The purposes of the NAC for highway projects are to minimize any potential adverse effects resulting from noise related to the operation of the facility and, where appropriate, to provide reasonable and feasible noise control. More specifically, the NAC are thresholds for considering abatement measures.

Table 3.9 FHWA Noise Abatement Criteria Hourly A-Weighted Sound Levels

Land Use Category	L_{eq}	Description
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in categories A and B above.
D	---	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: FHWA, 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise, FHWA, USDOT, April 1992

Field measurements were taken at representative sites throughout the project area, located at or near existing areas of human use. These measurements were made at varying times with the majority of the readings occurring between 6:30 and 9:30 am or between 3:30 and 6:30 pm. Local industry and commercial work times dictated peak traffic hours. However, the predominate agricultural land use throughout the project area created traffic on local roads throughout the day traveling between farms during typically off-peak traffic times. Field measurements for all sites were conducted during clear and dry weather conditions. The existing (ambient) noise levels were documented to establish baseline conditions for comparative reasons, as well as to calibrate the prediction model.

A total of 58 representative receptors were measured and included in the model, with all receptors in Land Use Category B and were either occupied residential properties or churches. Existing noise levels ranged from 43 to 65 dbA L_{eq} for all sites. No sites were found to have existing conditions above their respective NAC threshold levels. Please refer to Table 3.10 for a summary of receptors, as well as Figure 3.4 for the receptor locations.

Table 3.10 Noise Receptors

Site	Build Alternative	2001 Field Measured Existing**	Number and Type of Sensitive Receptors Represented†
2	Red	55*	1
3	Red	56	6
4	Red	45*	3

Table 3.10 Continued

Site	Build Alternative	2001 Field Measured Existing**	Number and Type of Sensitive Receptors Represented†
5	Red	53*	3
7	Red	56	7
8	Red	64*	1 Residence/1 Church
9	Red	60*	2
11	Red	46*	4
12	Red	60	4
13	Red	62*	5
15	Red	43*	3
16	Red	46*	3
17	Red	50*	3
18	Red	50	3
19	Red	53*	3
20	Red	61	4
21	Red	65	3
22	Red	50*	6
23	Red	55	3
24	Red	56	3
25	P3	56	2
26	P3	46	1
27	P3	51*	2
28	P3	56*	3
28	O3	56*	0
29	Red	50	4
30	Red	53	3
31	Red	59	5
32	Red	49	7
33	Red	52	13
34	Red	51*	6
35	Red	57	5
36	Red	57	5
37	Red	56	1 School
38	Red	58*	1 Church
39	Red	44	11
40	Green	57*	3
41	Green	54	1
42	Green	46*	3
43	Green	55*	3 Residences/1 Church
44	Green	54*	6
45	Green	54*	1
45	O3	54*	1 Church
46	Green	56*	4
47	Green	55*	5
51	Green	60	4
52	Green	63	2
53	P3	61*	3
54	Green	50*	6

Table 3.10 continued

Site	Build Alternative	2001 Field Measured Existing**	Number and Type of Sensitive Receptors Represented†
56	Green	46	2
57	Green	55*	2
58	Green	50*	2
59	Green	50*	1
60	O2	58*	4
61	Green	48*	3
63	Red	63	1 Residence/1 Church
64	Green	51*	4
69	Green	50*	2
72	Green	56*	8 Residences/1 Church
73	Green	56*	4

*Field Measured Existing Levels at these receptors were primarily the result of ambient noise.
**The Field Measured Existing level is used when it is greater than modeled No-Build or Build levels.
†Sensitive receptors are residences unless otherwise indicated.

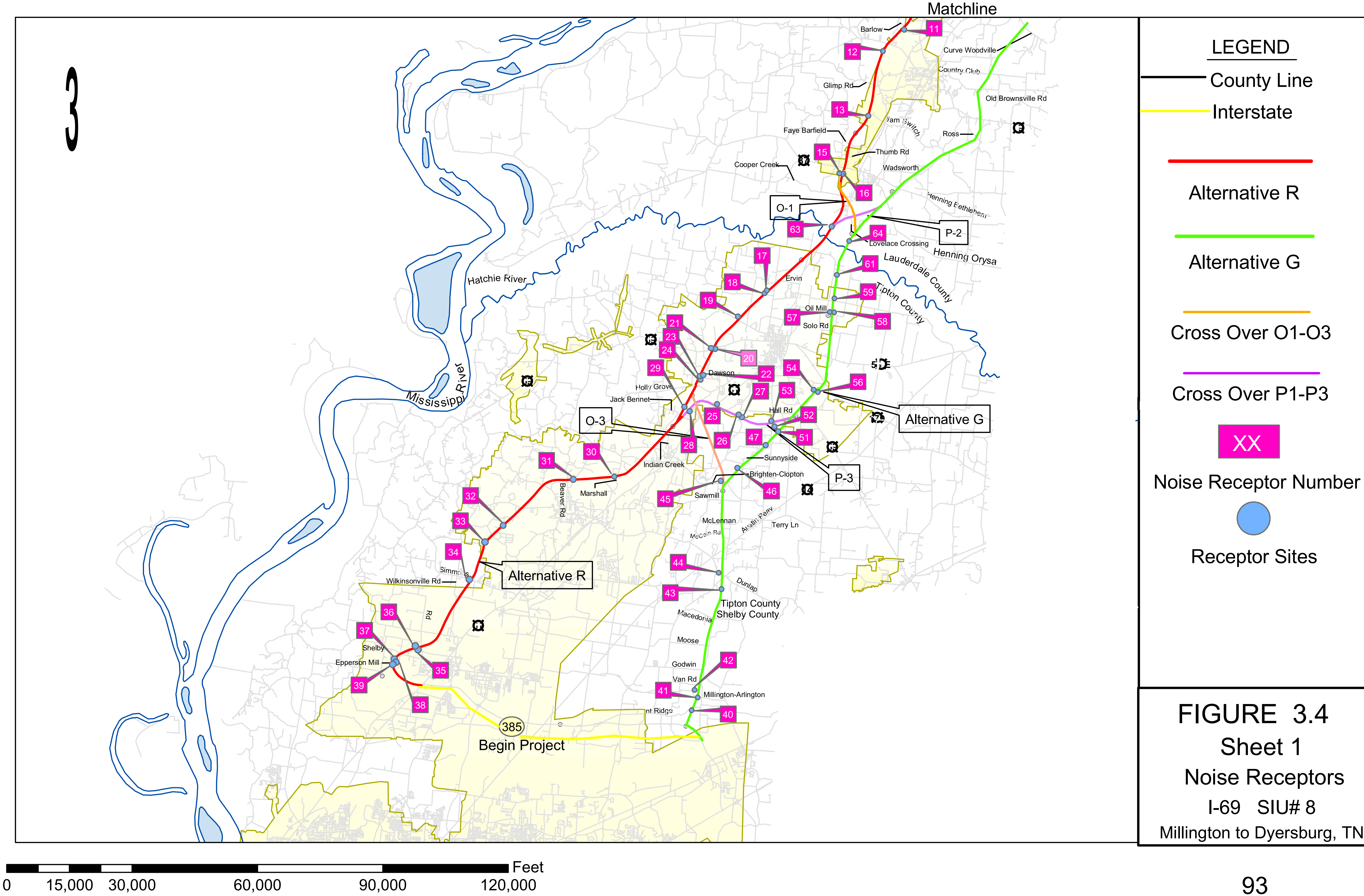


FIGURE 3.4
Sheet 1
Noise Receptors
I-69 SIU# 8
Millington to Dyersburg, TN

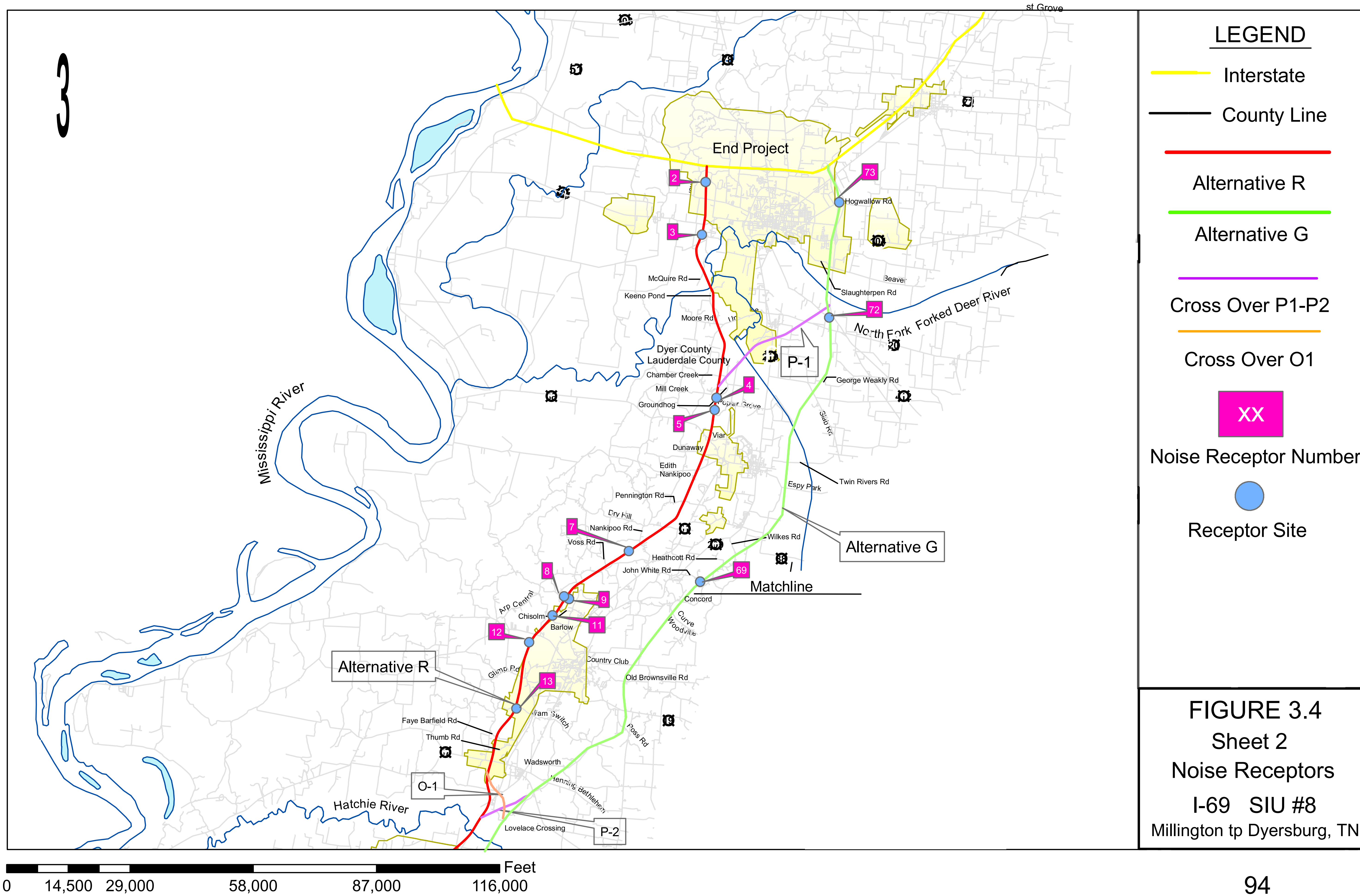


FIGURE 3.4
Sheet 2
Noise Receptors
I-69 SIU #8
Millington tp Dyersburg, TN

CHAPTER 4.0
ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes the environmental impacts of the No-Build and Build Alternatives. Three types of impacts are covered: direct, indirect and cumulative.

No-Build Alternative
The No-Build Alternative is just as the name implies. It involves not constructing I69 SIU #8 and leaving the existing highway system in place. The No-Build Alternative would have no direct impacts to the environment. However, this alternative would not meet the purpose and need of the proposed action. The No-Build Alternative would not meet the primary goal of the project, which is completing a segment of trans-continental Interstate 69. This alternative would also not address the predicted deficiencies in the LOS for existing U.S. 51, substandard modal connections and highway system linkages in the area transportation network. Additionally, this alternative would not improve access to the area, or increase opportunities for economic development. If selected as the Preferred Alternative, The No-Build scenario could result in increased traffic congestion. A cumulative effect of this selection could be an increase in travel time for area residents, increased fuel consumption for motorists, and decreased economic opportunities for area residents and businesses.

Build Alternatives
Two main build alternatives have been considered for the proposed construction of I-69, SIU 8. They include the Alternative R, which lies to the west of existing US 51, and the Alternative G, which lies to the east of existing US 51. The two main build alternatives have been divided into nodes (A-Z). The nodes allow for the combining of various segments of the main alternatives, with the crossover alternatives. The Crossover options are referred to as P1, P2, P3 and O1, O-2, and O3, as well as the combinations of O1/P1, O3/P1and O3/P2.

The sections below address potential impacts associated with the Build Alternatives. For a general view of the impacts described within this chapter, please refer to the Figures in Chapter 3.0.

4.1 Land Use Impacts

All Alternatives
The project Build Alternatives would result in direct changes in land use within the project area. From Millington to Dyersburg, land inside the proposed right-of-way of any Build Alternative that is presently utilized for agricultural, residential, or commercial usage would be converted to highway right-of-way.

The proposed action is consistent with planning and zoning controls currently in place within the project area. Please refer to Chapter 3, section 3.1.2 for a description of the planning and zoning controls in place within the project area.

Alternative R – ABCDKEGH

Alternative R has 15 proposed interchanges/access points:

- S.R. 385
- West Union Road
- Simmons Road
- S.R. 178
- Akins Road
- S.R. 59
- Interchange between Flat Iron Road and Leigh's Chapel Road/Access to U.S. 51
- S.R. 87
- S.R. 19
- S.R. 208/Edith Nankipoo Road
- Nankipoo Road
- S.R. 88
- Unionville Road
- S.R. 104
- I 155

Land use at each of the above points is currently agricultural and/or low density residential. The proposed interchanges could open the land at the interchanges to strip development commonly found at interchanges, e.g., gas stations, fast food franchises and motels. The interchanges will also create the opportunity for increased use of existing facilities in communities throughout the corridor. The West Union Road interchange would allow easier access to northern Millington and Millington Municipal Airport. The Simmons Road interchange will allow increased access between south Munford and northern Millington. The interchange at S.R. 178 will be accessible to the large residential development that is occurring west of Munford and, therefore decrease overall commuting times within the project area. The interchange on Atkins Store Road will provide increased access to Brighton. The interchange at HWY 59 will allow increased access to Covington. The interchange between Flat Iron Road and Leighs Chapel Road and connector to U.S. 51 will allow direct access to the industrial park in northern Covington. The interchange at S.R. 87 will allow easier access to Henning and one of their community resources, the Henning Ball Park Facility. The interchange at S.R. 19 will allow easier access to the commercial and industrial development occurring in Ripley. The interchange at S.R. 208/Edith Nankipoo Road will allow increased access to northern Ripley. The interchange at Nankipoo Road will benefit local residents by decreasing their daily commuting times. The interchange at S.R. 88 will allow greater access to Halls and Gates, in addition to helping reduce daily commuting times. The interchange at Unionville Road will allow greater access to Folkes and the commercial development in southern Dyersburg. The interchange at S.R. 104 will allow greater access to Dyersburg and help the commercial development already established in the area. Local officials of these towns are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area.

Alternative R also includes the construction of two rest areas. The first one is located west of Millington, just south of the West Union Road interchange and the second one is located west of Halls and south of Salisbury Road (Figure 2.1). Also, the northbound traffic on Alternative R has access to the existing Alex Haley Rest Area.

<u>Alternative G – JSTUVWYZ</u>

Alternative G has 18 proposed interchanges/access points:

- S.R. 385
- Old S.R. 205
- Macedonia Road
- S.R. 14/Austin Peay Highway
- Brighton-Clopton Road
- S.R. 384/Mt. Carmel Road
- S.R. 59
- S.R. 54
- Airport Road
- S.R. 87
- S.R. 19
- Curve Woodville Road
- S.R. 88
- Twin Rivers Road
- S.R. 210
- S.R. 104
- S.R. 211
- U.S. 51

Land use at each of the above points is currently agricultural and/or low density residential. The proposed interchanges could open the land at the interchanges to strip development commonly found at interchanges, e.g., gas stations, fast food franchises and motels. The interchanges at S.R. 205, Macedonia Road, and S.R. 14 will benefit local residents in Millington, Atoka, and Brighton, respectively, by decreasing commuting times. The interchange at Brighton-Clopton Road will provide increased access to Brighton. The interchange at S.R. 384 (Mt Carmel Road) will allow increased access to the industrial areas of Covington and commercial area of Brighton in addition to reducing daily commuting times for local resident. The interchange at S.R. 59 will allow increased access to the industrial areas of Covington. The interchange at S.R. 54 will allow increased access to Covington. The interchange at Airport Road will allow increased access to the industrial areas in northern Covington. The interchanges at S.R. 87 will allow increased access to Henning. The interchange at S.R. 19 will allow increased access to the commercial and industrial areas of Ripley. The interchange at Curve Woodville Road will reduce daily commuting times for local residents near the community of Curve and northern Ripley. The interchange at S.R. 88 will increase access to Gates. The interchange at Twin Rivers Road will increase the access to Halls. The interchange at S.R. 210 will improve access to Fowlkes and southern Dyersburg. The interchange at S.R. 104 will improve access to Dyersburg and reduce daily commute times for local residents. The interchange at S.R. 211 will improve access to several industrial parks in Dyersburg. Local officials of these towns are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area.

Alternative G includes the construction of two rest areas. The first one is located between S.R. 14 and Macedonia Road. The second one is located north of Sorrel Chapel Road (Figure 2.1).

Alternative P1 - ABCDKEGYZ

Alternative P1 has 17 proposed access points/interchanges:

- S.R. 385
- West Union Road
- Simmons Road
- S.R. 178
- Akins Road
- S.R. 59
- Interchange between Flat Iron Road and Leigh's Chapel Road/Access to U.S. 51
- S.R. 87
- S.R. 19
- S.R. 208/Edith Nankipoo Road
- Nankipoo Road
- S.R. 88
- U.S. 51 with an entrance only interchange at the South Fork of the Forked Deer River
- S.R. 210
- S.R. 104
- S.R. 211
- U.S. 51

Land use for Alternative P1 is currently agricultural or low density residential. The proposed interchanges would allow for strip development commonly found at interchanges. The interchanges will also create the opportunity for increased use of existing facilities in communities throughout the corridor. The West Union Road interchange would allow easier access to northern Millington and Millington Municipal Airport. The Simmons Road interchange will allow increased access between south Munford and northern Millington. The interchange at S.R. 178 will be very accessible to the large residential development that is occurring west of Munford and decrease commuting times. The interchange on Atkins Store Road will provide increased access to Brighton. The interchange at HWY 59 will allow increased access to Covington. The interchange between Flat Iron Road and Leighs Chapel Road and connector to U.S. 51 will allow direct access to the industrial park in northern Covington. The interchange at S.R. 87 will allow easier access to Henning and one of their community resources, the Henning Ball Park Facility. The interchange at S.R. 19 will allow easier access to the commercial and industrial development occurring in Ripley. The interchange at S.R. 208/Edith Nankipoo Road will allow increased access to northern Ripley. The interchange at Nankipoo Road will benefit local residents by decreasing their daily commuting times. The interchange at S.R. 88 will allow greater access to Halls and Gates, in addition to helping reduce daily commuting times. At U.S. 51, an entrance only interchange is proposed at the South Fork of the Forked Deer River, which would directly impact the community of Fowlkes due to the change in land use and possible commercial or industrial growth. The economic benefit would be a positive impact that could also carry into Dyersburg and Ripley. The interchange at S.R. 210 will improve access to Fowlkes and southern Dyersburg. The interchange at S.R. 104 will improve access to Dyersburg and reduce daily commute times for local residents. The interchange at S.R. 211 will improve access to several industrial parks in Dyersburg. Local officials of these towns are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area.

Alternative P1 also includes the construction of two rest areas. The first one is located west of Millington, just south of the West Union Road interchange and the second one is located west of Halls and south of Salisbury Road (Figure 2.1). Also, the northbound traffic on Alternative R has access to the existing Alex Haley Rest Area.

<u>Alternative P2 - ABCDKWYZ</u>

Alternative P2 has 16 proposed interchanges/access points:

- S.R. 385
- West Union Road
- Simmons Road
- S.R. 178
- Akins Road
- S.R. 59
- Interchange between Flat Iron Road and Leigh's Chapel Road/Access to U.S. 51
- S.R. 87
- S.R. 19

- Curve Woodville Road
- S.R. 88
- Twin Rivers Road
- S.R. 210
- S.R. 104
- S.R. 211
- U.S. 51

Land use for Alternative P2 is currently agricultural and/or low density residential. The proposed interchanges could open the land at the interchanges to strip development commonly found at interchanges, e.g., gas stations, fast food franchises and motels. The P2 Alternative would be a direct benefit to Henning, which is a small rural town that is very economically depressed. The interchanges will also create the opportunity for increased use of existing facilities in communities throughout the corridor. The West Union Road interchange would allow easier access to northern Millington and Millington Municipal Airport. The Simmons Road interchange will allow increased access between south Munford and northern Millington. The interchange at S.R. 178 will be very accessible to the large residential development that is occurring west of Munford and decrease commuting times. The interchange on Atkins Store Road will provide increased access to Brighton. The interchange at HWY 59 will allow increased access to Covington. The interchange between Flat Iron Road and Leighs Chapel Road and connector to U.S. 51 will allow direct access to the industrial park in northern Covington. The interchange at S.R. 87 will allow easier access to Henning and one of their community resources, the Henning Ball Park Facility. The interchange at S.R. 19 will allow easier access to the commercial and industrial development occurring in Ripley. The interchange at Curve Woodville Road will reduce daily commuting times for local residents near the community of Curve and northern Ripley. The interchange at S.R. 88 will increase access to Gates. The interchange at Twin Rivers Road will increase the access to Halls. The interchange at S.R. 210 will improve access to Fowlkes and southern Dyersburg. The interchange at S.R. 104 will improve access to Dyersburg and reduce daily commute times for local residents. The interchange at S.R. 211 will improve access to several industrial parks in Dyersburg. Local officials of these towns are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area.

<u>P3 Alternative - ABTUVWYZ</u>

Alternative P3 has 18 proposed interchanges/access points:

- S.R. 385
- West Union Road
- Simmons Road
- S.R. 178

- Akins Road
- U.S. 51
- S.R. 59
- S.R. 54
- Airport Road
- S.R. 87
- S.R. 19
- Curve Woodville Road
- S.R. 88
- Twin Rivers Road
- S.R. 210
- S.R. 104
- S.R. 211
- U.S. 51

Land use for Alternative P3 is currently agricultural with limited low, density residential areas. The proposed interchanges could open the land at the interchanges to strip development commonly found at interchanges, e.g., gas stations, fast food franchises and motels. The interchanges will also create the opportunity for increased use of existing facilities in communities throughout the corridor. The West Union Road interchange would allow easier access to northern Millington and Millington Municipal Airport. The Simmons Road interchange will allow increased access between south Munford and northern Millington. The interchange at S.R. 178 will be very accessible to the large residential development that is occurring west of Munford and decrease commuting times. The interchange on Atkins Store Road will provide increased access to Brighton. The proposed interchange on U.S. 51 would be a direct economic benefit to Covington. The area surrounding this interchange, in particular, would be very conducive to transition into commercial development with the possibility of industrial development because of the easy access that would be provided to the new interstate. The interchange at S.R. 59 will allow increased access to the industrial areas of Covington. The interchange at S.R. 54 will allow increased access to Covington. The interchange at Airport Road will allow increased access to the industrial areas in northern Covington. The interchanges at S.R. 87 will allow increased access to Henning. The interchange at S.R. 19 will allow increased access to the commercial and industrial areas of Ripley. The interchange at Curve Woodville Road will reduce daily commuting times for local residents near the community of Curve and northern Ripley. The interchange at S.R. 88 will increase access to Gates. The interchange at Twin Rivers Road will increase the access to Halls. The interchange at S.R. 210 will improve access to Fowlkes and southern Dyersburg. The interchange at S.R. 104 will improve access to Dyersburg and reduce daily commute times for local residents. The interchange at S.R. 211 will improve access to several industrial parks in Dyersburg. Local officials of these towns are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area.

O1 Alternative - JSTUVEGH

Alternative O1 has 18 proposed interchanges/access points:

- S.R. 385
- Old S.R. 205
- Macedonia Road
- S.R. 14/Austin Peay Highway
- Brighton-Clopton Road
- S.R. 384/Mt. Carmel Road
- S.R. 59
- S.R. 54
- Airport Road
- U.S. 51
- S.R. 87
- S.R. 19
- S.R. 208/Edith Nankipoo Road
- Nankipoo Road
- S.R. 88
- Unionville Road
- S.R. 104
- I 155

Land use for Alternative O1 is currently agricultural and/or low density residential. The proposed interchanges could open the land at the interchanges to strip development commonly found at interchanges, e.g., gas stations, fast food franchises and motels. The interchanges at S.R. 205, Macedonia Road, and S.R. 14 will benefit local residents in Millington, Atoka, and Brighton, respectively, by decreasing commuting times. The interchange at Brighton-Clopton Road will provide increased access to Brighton. The interchange at S.R. 384 (Mt Carmel Road) will allow increased access to the industrial areas of Covington and commercial area of Brighton in addition to reducing daily commuting times for local resident. The interchange at S.R. 59 will allow increased access to the industrial areas of Covington. The interchange at S.R. 54 will allow increased access to Covington. The interchange at Airport Road will allow increased access to the industrial areas in northern Covington. The proposed interchange on U.S. 51 would provide access to Henning, which is a small rural town that is very economically depressed. Local officials of Henning are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area. The interchange at S.R. 87 will also provide additional access to Henning and one of their community resources, the Henning Ball Park Facility. The interchange at S.R. 19 will allow easier access to the commercial and industrial development occurring in Ripley. The interchange at S.R. 208/Edith Nankipoo Road will allow increased access to northern Ripley. The interchange at Nankipoo Road will benefit local residents by decreasing their daily commuting times. The interchange at S.R. 88 will allow greater access to Halls and Gates, in addition to helping reduce daily commuting times. The interchange at Unionville Road will allow greater access to Folkes and the commercial development in southern Dyersburg. The interchange at S.R. 104 will allow greater access to Dyersburg and help the commercial development already established in the area. Local officials of these towns are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area.

Alternative O1 includes the construction of four rest areas. The first one is located west of Millington, just south of the West Union Road interchange and the second one is located west of Halls and south of Salisbury Road (Figure 2.1). Also, the northbound traffic on Alternative R has access to the existing Alex Haley Rest Area. The third one is located between S.R. 14 and Macedonia Road. The fourth one is located north of Sorrel Chapel Road (Figure 2.1).

<u>O3 Alternative - JSCDKEGH</u>

Alternative O3 has 15 proposed interchanges/access points:

- S.R. 385
- Old S.R. 205
- Macedonia Road
- S.R. 14/Austin Peay Highway
- U.S. 51
- S.R. 59
- Interchange between Flat Iron Road and Leigh's Chapel Road/access to U.S. 51
- S.R. 87
- S.R. 19
- S.R. 208/Edith Nankipoo Road
- Nankipoo Road
- S.R. 88
- Unionville Road
- S.R. 104
- I 155

Land use for Alternative O3 is currently agricultural and limited, low density residential. The interchanges at S.R. 205, Macedonia Road, and S.R. 14 will benefit local residents in Millington, Atoka, and Brighton, respectively, by decreasing commuting times. The proposed location of the interchange on US 51 currently has commercial and industrial development on U.S. 51. Commercial and industrial development would be expected to grow because of the interstate access that would be provided to the new roadway. This would be a direct economic benefit to Brighton and Covington. Munford and Atoka would also benefit indirectly from the economic boost. The interchange at HWY 59 will allow

increased access to Covington. The interchange between Flat Iron Road and Leighs Chapel Road and connector to U.S. 51 will allow direct access to the industrial park in northern Covington. The interchange at S.R. 87 will allow easier access to Henning and one of their community resources, the Henning Ball Park Facility. The interchange at S.R. 19 will allow easier access to the commercial and industrial development occurring in Ripley. The interchange at S.R. 208/Edith Nankipoo Road will allow increased access to northern Ripley. The interchange at Nankipoo Road will benefit local residents by decreasing their daily commuting times. The interchange at S.R. 88 will allow greater access to Halls and Gates, in addition to helping reduce daily commuting times. The interchange at Unionville Road will allow greater access to Folkes and the commercial development in southern Dyersburg. The interchange at S.R. 104 will allow greater access to Dyersburg and help the commercial development already established in the area. Local officials of these towns are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area.
Alternative O3 includes the construction of four rest areas. The first one is located west of Millington, just south of the West Union Road interchange and the second one is located west of Halls and south of Salisbury Road. Also, the northbound traffic on Alternative R has access to the existing Alex Haley Rest Area. The third one is located between S.R. 14 and Macedonia Road. The fourth one is located north of Sorrel Chapel Road (Figure 2.1 2).

O1/P1 Alternative - JSTUVEGYZ

Alternative O1/P1 has 20 proposed access points/interchanges:

- S.R. 385
- Old S.R. 205
- Macedonia Road
- S.R. 14/Austin Peay Highway
- Brighton-Clopton Road
- S.R. 384/Mt. Carmel Road
- S.R. 59
- S.R. 54
- Airport Road
- U.S. 51
- S.R. 87
- S.R. 19
- S.R. 208/Edith Nankipoo Road
- Nankipoo Road
- S.R. 88
- U.S. 51 with an entrance only interchange at the South Fork of the Forked Deer River
- S.R. 210
- S.R. 104

- S.R. 211
- U.S. 51

Land use for Alternative O1/P1 is currently agricultural or low density residential. The proposed interchanges would allow for strip development commonly found at interchanges. The interchanges at S.R. 205, Macedonia Road, and S.R. 14 will benefit local residents in Millington, Atoka, and Brighton, respectively, by decreasing commuting times. The interchange at Brighton-Clopton Road will provide increased access to Brighton. The interchange at S.R. 384 (Mt Carmel Road) will allow increased access to the industrial areas of Covington and commercial area of Brighton in addition to reducing daily commuting times for local resident. The interchange at S.R. 59 will allow increased access to the industrial areas of Covington. The interchange at S.R. 54 will allow increased access to Covington. The interchange at Airport Road will allow increased access to the industrial areas in northern Covington. The proposed interchange on U.S. 51 would provide access to Henning, which is a small rural town that is very economically depressed. Local officials of Henning are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area. The interchange at S.R. 87 will allow easier access to Henning and one of their community resources, the Henning Ball Park Facility. The interchange at S.R. 19 will allow easier access to the commercial and industrial development occurring in Ripley. The interchange at S.R. 208/Edith Nankipoo Road will allow increased access to northern Ripley. The interchange at Nankipoo Road will benefit local residents by decreasing their daily commuting times. The interchange at S.R. 88 will allow greater access to Halls and Gates, in addition to helping reduce daily commuting times. At U.S. 51, an entrance only interchange is proposed at the South Fork of the Forked Deer River, which would directly impact the community of Fowlkes due to the change in land use and possible commercial or industrial growth. The economic benefit would be a positive impact that could also carry into Dyersburg and Ripley. The interchange at S.R. 210 will improve access to Fowlkes and southern Dyersburg. The interchange at S.R. 104 will improve access to Dyersburg and reduce daily commute times for local residents. The interchange at S.R. 211 will improve access to several industrial parks in Dyersburg. Local officials of these towns are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area.

Alternative O1/P1 includes the construction of four rest areas. The first one is located west of Millington, just south of the West Union Road interchange and the second one is located west of Halls and south of Salisbury Road. Also, the northbound traffic on Alternative R has access to the existing Alex Haley Rest Area. The third one is located between S.R. 14 and Macedonia Road. The fourth one is located north of Sorrel Chapel Road (Figure 2.1 2).

<u>O3/P1 Alternative - JSCDKEGYZ</u>

Alternative O3/P1 has 17 proposed access points/interchanges:

- S.R. 385
- Old S.R. 205
- Macedonia Road
- S.R. 14/Austin Peay Highway
- U.S. 51
- S.R. 59
- Interchange between Flat Iron Road and Leigh's Chapel Road/access to U.S. 51
- S.R. 87
- S.R. 19
- S.R. 208/Edith Nankipoo Road
- Nankipoo Road
- S.R. 88
- U.S. 51 with an entrance only interchange at the South Fork of the Forked Deer River
- S.R. 210
- S.R. 104
- S.R. 211
- U.S. 51

Land use for Alternative O3/P1 is currently agricultural or low density residential. The proposed interchanges would allow for strip development commonly found at interchanges. The interchanges at S.R. 205, Macedonia Road, and S.R. 14 will benefit local residents in Millington, Atoka, and Brighton, respectively, by decreasing commuting times. The proposed location of the interchange on US 51 currently has commercial and industrial development on U.S. 51. Commercial and industrial development would be expected to grow because of the interstate access that would be provided to the new roadway. This would be a direct economic benefit to Brighton and Covington. Munford and Atoka would also benefit indirectly from the economic boost. The interchange at HWY 59 will allow increased access to Covington. The interchange between Flat Iron Road and Leighs Chapel Road and connector to U.S. 51 will allow direct access to the industrial park in northern Covington. The interchange at S.R. 87 will allow easier access to Henning and one of their community resources, the Henning Ball Park Facility. The interchange at S.R. 19 will allow easier access to the commercial and industrial development occurring in Ripley. The interchange at S.R. 208/Edith Nankipoo Road will allow increased access to northern Ripley. The interchange at Nankipoo Road will benefit local residents by decreasing their daily commuting times. The interchange at S.R. 88 will allow greater access to Halls and Gates, in addition to helping reduce daily commuting times. At U.S. 51, an entrance only interchange is proposed at the South Fork of the Forked Deer River, which would directly impact the community of Fowlkes due to the change in land use and possible commercial or industrial growth. The economic benefit would be a positive impact that could also carry into Dyersburg and Ripley. The interchange at S.R. 210 will improve access to Fowlkes and southern Dyersburg. The interchange at S.R. 104 will improve access to Dyersburg and reduce daily commute times for local residents. The interchange at S.R. 211 will improve access to several industrial parks in Dyersburg. Local officials of these towns are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area.

Alternative O3/P1 includes the construction of four rest areas. The first one is located west of Millington, just south of the West Union Road interchange and the second one is located west of Halls and south of Salisbury Road. Also, the northbound traffic on Alternative R has access to the existing Alex Haley Rest Area. The third one is located between S.R. 14 and Macedonia Road. The fourth one is located north of Sorrel Chapel Road (Figure 2.1 2).

<u>O3/P2 Alternative - JSCDKWYZ</u>

Alternative O3/P2 has 16 proposed interchanges/access points:

- S.R. 385
- Old S.R. 205
- Macedonia Road
- S.R. 14/Austin Peay Highway
- U.S. 51
- S.R. 59
- Interchange between Flat Iron Road and Leigh's Chapel Road/access to U.S. 51
- S.R. 87
- S.R. 19
- Curve Woodville Road
- S.R. 88
- Twin Rivers Road
- S.R. 210
- S.R. 104
- S.R. 211
- U.S. 51

Land use for Alternative O3/P2 is currently agricultural or low density residential. The interchanges at S.R. 205, Macedonia Road, and S.R. 14 will benefit local residents in Millington, Atoka, and Brighton, respectively, by decreasing commuting times. The proposed location of the interchange on US 51 currently has commercial and industrial development on U.S. 51. Commercial and industrial development would be expected to grow because of the interstate access that would be provided to the new roadway. This would be a direct economic benefit to Brighton and Covington. Munford and Atoka would also benefit indirectly from the economic boost. The interchange at HWY 59 will allow increased access to Covington. The interchange between Flat Iron Road and Leighs Chapel Road and connector to U.S. 51 will allow direct access to the industrial park in northern Covington. The interchange at S.R. 87 will allow easier access to Henning and one of their community resources, the Henning Ball Park Facility. The interchange at S.R. 19 will allow easier access to the commercial and industrial development occurring in Ripley. The interchange at Curve Woodville Road will reduce daily commuting times for local residents near the community of Curve and northern Ripley. The interchange at S.R. 88 will increase access to Gates. The interchange at Twin Rivers Road will increase the access to Halls. The interchange at S.R. 210 will improve access to Fowlkes and southern Dyersburg. The interchange at S.R. 104 will improve access to Dyersburg and reduce daily commute times for local residents. The interchange at S.R. 211 will improve access to several industrial parks in Dyersburg. Local officials of these towns are supportive of the project and recognize the business potential and increase in revenue that the interchange/access facility would provide the area.

Alternative O3/P2 includes the construction of two rest areas. The first one is located between S.R. 14 and Macedonia Road. The second one is located north of Sorrel Chapel Road (Figure 2.1 Sheets 1 and 2).

4.2 Community Services Impacts

Schools

No educational facilities are located within any of the proposed alternatives right-of-way. Therefore, the proposed project will not have a direct affect on any of the public school facilities located within the project corridor. All Build Alternatives would likely have a positive impact on school bus safety from the projected reduction of traffic on US 51. Each of the proposed alternatives would divert the majority of truck and through traffic from existing U.S. 51, thereby making the road safer for school-related traffic. However, secondary roadways connecting US 51 with a Build Alternative would experience increases in traffic volumes, potentially affecting LOS and safety on these routes.

Direct impact to bus routes would include through roads being converted to cul-de-sac. Alternative R would result in three roadways being converted to a cul-de-sac; Walker Field Road, Groundhog Road, McCullough Chapel Road. Alternative G would result in eight roadways being converted to a cul-de-sac; Sadler School Road, McCain Road, Sunnyside Road, Solo Road, George Walker Road, Chapel Road, Ashley Road, and Slaughter Pen Road west of Alternative G.

The crossing alternatives would have a combination of these roadways being converted to a cul-de-sac. Build Alternative O1 would result in 6 through-roads being converted to a cul-de-sac, Sadler School Road, McCain Road, Sunnyside Road, Solo Road, Groundhog Road, McCullough Chapel Road. Build Alternative O3 would result in four through-roadways being converted to a cul-de-sac, Sadler School Road, McCain Road, Groundhog Road, McCullough Chapel Road. Build Alternative P1 would result in three through-roads being converted to a cul-de-sac, Walker Field Road, Groundhog Road, Slaughter Pen Road west of Alternative G. Build Alternative P2 would result in five through-roads being converted to a cul-de-sac, Walker Field Road, Solo Road, George Walker Road, Chapel Road, Ashley Road, and Slaughter Pen Road west of Alternative G. Build Alternative O1/P1 would result in six through-roads being converted to a cul-de-sac, Sadler School Road, McCain Road, Sunnyside Road, Solo Road, Groundhog Road, and Slaughter Pen Road west of Alternative G. Build Alternative O3/P1 would result in four through-roads being converted to cul-de-sac, Sadler School Road, McCain Road, Groundhog Road, and Slaughter Pen Road west of Alternative G. Build Alternative O3/P2 would result in six through-roads being converted to cul-de-sac, Sadler School Road, McCain Road, George Walker Road, Chapel Road, Ashley Road, and Slaughter Pen Road west of Alternative G.

These roadways would no longer carry through-traffic in the event a proposed alignment is selected as the Preferred Alternative. However, access would be maintained to all roadways impacted by construction. Existing school bus routes would be re-routed to accommodate those roadways being converted to a cul-de-sac. Impacts to school walking routes would occur only to those areas in close proximity to both a proposed alignment and an existing school. There are 4 schools located in close proximity to the proposed Build Alternatives, 1 in Shelby County (Alternative R), 2 in Tipton County (Alternative R), 1 in Dyer County (Alternative R). However, the proposed Build Alternative R, or any of the crossing alternatives utilizing portions of Alternative R, would not impacts any neighborhoods within walking distance of project area educational facilities.

Tipton County is currently in the process of obtaining land for two new elementary schools. Since a location has not been determined, it is not possible to determine impacts at this time.

Fire and Police

The proposed project will not have a direct impact on police and emergency services response times. None of these services are located in the immediate project corridor. The proposed highway facility will provide access for secondary roads to go over or under the new facility even if there is no interchange at the intersection. Reduced response times on secondary roads for emergency vehicles might result because of easier access to the highway and reduction of congestion on US 51.

Hospitals

None of the services provided by hospitals within the study area will be impacted or impaired by the proposed alternatives. The project will help to ease congestion on U.S. 51, which would benefit the hospitals in the study area. This should be a particular benefit to Baptist Memorial Hospital of Tipton, which is located on U.S. 51.

Utilities
No long-term impacts are anticipated for area utilities. Alternative G and Crossing Alternates P2, P3, O-2, and O3 cross an existing gas transmission pipeline. Alternate R does not create any problems with gas transmission pipelines. Tennessee Valley Authority has several power lines that would be crossed throughout the project area. Utility relocations required by the Build Alternatives would be coordinated with local service providers. Although service disruptions could result, these would be short-term during project construction.

Rail Transit
The Illinois Central Gulf Railroad is located east of US 51, paralleling the roadway for the entire length of the project corridor. The following Build Alternatives would directly affect this rail line: G, P3, P2, P1, O1, O3, as well as the combinations of O1/P1, O3/p1 and O3/P2. All proposed mainline crossings of the railroad would involve overpasses for the Build Alternatives. However, secondary roadways connecting the proposed facility to US 51 would remain in their current configuration, unless they are being re-routed to maintain existing connections. One example of this would be the Melrose Road/US 51 intersection. The section of Melrose Road east of US 51 would be re-aligned to connect with US 51 in a “T”. This re-alignment would maintain an at-grade crossing of the railroad.

Many secondary roadways of the project area would carry an increased volume of traffic moving between the proposed facility and US 51. The existing system of secondary roadways mainly utilizes at-grade crossings of the railway. In the event any of the proposed alignments situated east of US 51 are selected as the Preferred Alternative, the at-grade crossings of the railway would experience greater traffic volumes, thus increasing the potential for car/train crashes.

4.3 Social and Economic Impacts

4.3.1 Relocations

The project would require both residential and business relocation depending on the alternate chosen. Available housing data was not available for the various nodes associated with the build alternatives. Therefore, relocations associated with the build alternatives are broken down on a county level. This allows for the comparison of relocations and available replacement housing.

Residential Relocations: Each build alternative would result in residential relocations (Table 4.1). The relocations are generally located along the entire corridor and are not concentrated in one particular area. Alternative R would require the largest number of residential relocations (111 relocations) and Alternative G has the least number of relocations (59 relocations).

Table 4.1 Residential Relocations

Alternative (Node)	Shelby County	Tipton County	Lauderdale County	Dyer County	Total
R (ABCDKEGH)	6/***0***	44/***6***	37/***4***	10/***4***	97/***14***
G (JSTUVWYZ)	4/***1***	20/***3***	21/***2***	8/***0***	53/***6***
P1 (ABCDKEGYZ)	6/***0***	44/***6***	37/***5***	0/***0***	87/***11***
P2 – (ABCDKWYZ)	6/***0***	44/***6***	0/***0***	8/***0***	58/***6***
P3 (ABTUVWYZ)	6/***0***	39/***0***	21/***2***	8/***0***	74/***2***
O1 (JSTUVEGH)	4/***1***	20/***3***	32/***3***	10/***4***	66/***11***
O3 (JSCDKEGH)	4/***1***	24/***2***	37/***5***	10/***4***	75/***12***
O1/P1 (JSTUVEGYZ)	4/***1***	20/***3***	32/***3***	0/***0***	56/***7***
O3/P1 (JSCDKEGYZ)	4/***1***	27/***2***	37/***5***	0/***0***	68/***8***
O3/P2 (JSCDKWYZ)	4/***1***	27/***2***	19/***2***	8/***0***	58/***5***

Single Family Unit/***Mobile Homes***

Alternative R would displace approximately 97 single-family residences and 14 single-family mobile homes. Approximately 333 individuals may be required to relocate as a result of these displacements.

Alternative G would displace 53 single-family residences and 6 single-family mobile homes. Approximately 177 individuals may be required to relocate as a result of these displacements.

Alternative P1: The P1 Alternative would displace 87 single-family residences and 11 single-family mobile homes. Approximately 294 individuals may be required to relocate as a result of these displacements.

Alternative P2: The P2 Alternative would displace 58 single-family residences and 6 single-family mobile homes. Approximately 192 individuals may be required to relocate as a result of these displacements.

Alternative P3: The P3 Alternative would displace 74 single-family residences and 2 single-family mobile homes. Approximately 228 individuals may be required to relocate as a result of these displacements.

Alternative O1: The O1 Alternative would displace 66 single-family residences and 11 single-family mobile homes. Approximately 231 individuals may be required to relocate as a result of these displacements.

Alternative O3: The O3 Alternative would displace 75 single-family residences and 12 single-family mobile homes. Approximately 261 individuals may be required to relocate as a result of these displacements.

Alternative O1/P1 would displace 56 single-family residences and 7 single-family mobile homes. Approximately 189 individuals may be required to relocate as a result of these displacements.

Alternative O3/P1 would displace 68 single-family residences and 8 single-family mobile homes. Approximately 228 individuals may be required to relocate as a result of these displacements.

Alternative O3/P2 would displace 58 single-family residences and 5 single-family mobile homes. Approximately 189 individuals may be required to relocate as a result of these displacements.

The above described relocation impacts involve residences ranging in value from less than $20,000 to more than $100,000 for all Build Alternatives. Please refer to Table 4.4 for a breakdown of the estimated value for all residential relocations.

The displacees are a mix of individuals, couples and families with children, the majority of which appear to be owner-occupied. Based on available information and field observances, some minority, low-income, handicapped and elderly citizens of the project area are likely to be relocated. However, disproportionate impacts to these sensitive groups are not anticipated. The majority of the residential displacees appear to have maintained their present occupancy for approximately ten years. However, due to increased development within the last five years, there are several homes that are less than five years old within the project area. The average household size was approximately 3 persons within the project area.

Business Relocations: The Build Alternatives would result in a small number of business displacements. Business displacements are shown in Table 4.2 and are summarized below:

Table 4.2 Business Displacements

Alternatives	Number of Business Displacements			
	Shelby	Tipton	Lauderdale	Dyer
R (ABCDKEGH)	0	2	1	1
G (JSTUVWYZ)	0	2	0	0
P1 (ABCDKEGYZ)	0	2	1	0
P2 (ABCDKWYZ)	0	2	0	0
P3 (ABTUVWYZ)	0	1	0	0
O1 (JSTUVEGH)	0	2	1	1
O3 (JSCDKEGH)	0	2	1	1
O1/P1 (JSTUVEGYZ)	0	2	1	0
O3/P1 (JSCDKEGYZ)	0	2	1	0
O3/P2 (JSCDKWYZ)	0	2	0	0

Alternative R would result in the displacement of a communication business, restaurant, convenient store, and horse arena.

Alternative G would result in the displacement a seasonal sales stand and an agricultural related business.

Alternative P1 would result in the displacement of a communication business, restaurant, and convenient store.

Alternative P2 would result in the displacement of a restaurant and convenient store.

Alternative P3 would result in the displacement of a seasonal produce sales stand.

Alternative O1 would result in the displacement of an agricultural related business, a season sales stand, a communication business, and a horse arena.

Alternative O3 would result in the displacement of a restaurant, convenient store, a communication business, and a horse arena.

Alternative O1/P1 would result in the displacement of an agricultural related business, a seasonal produce sales stand, and a communication business.

Alternative O3/P1 would result in the displacement of a restaurant, convenient store, and a communications business.

Alternative O3/P2 would result in the displacement of a restaurant and convenience store.

<u>Availability of Replacement Housing and Commercial Property</u>: At the time the relocation study was conducted, the real estate market throughout the project area (Shelby, Tipton, Lauderdale, and Dyer Counties) indicated that ample replacement sites and dwellings exist within the area and the financial means of the potential displacees (Table 4.3). The numbers of houses available for less than $20,000 are not as readily accessible as some of the housing in other price ranges. However, the majority of the homes in that price range requiring relocation are mobile homes, which could be moved to another location where zoning allows placement of mobile homes. The relocation assistance program will include any needed assistance in the relocation of mobile homes.

Table 4.3 Housing Availability

Range	Number of Units Available by Areas*			
	Shelby **	Tipton	Lauderdale	Dyer
<$20,000	0	4	1	8
$20,000-39,999	1	7	7	63
$40,000-69,999	13	28	17	111
$70,000-99,999	45	65	8	88
$100,000+	117	291	8	139
Total Units	**176**	**395**	**41**	**409**

*Information from Realtor.com 7/12/02. Realtor.com is an all inclusive real estate database that contains all MLS listing currently on the market.
**Search results from the Millington area.

The number of required replacement housing units shown in Table 4.4 is representative of the number of units needed for each alignment. However, relocation activities will take place over several years and not all of those units will be required at the same time. This allows the housing market time to adjust during each phase of right-of-way acquisition. Also, because of the rural nature of the project, some parcels in the project area would be large enough to allow residences to relocate on their own property.

Table 4.4 Housing Units Needed by Price and County

	<$20,000				$20,000-39,999				$40,000-69,999				$70,000-99,999				$100+			
	Shelby	Tipton	Lauderdale	Dyer	Shelby	Tipton	Lauderdale	Dyer	Shelby	Tipton	Lauderdale	Dyer	Shelby	Tipton	Lauderdale	Dyer	Shelby	Tipton	Lauderdale	Dyer
R (ABCDKEGH)	0	3	3	5	0	12	3	0	3	21	25	5	1	12	6	3	2	4	2	2
G (JSTUVWYZ)	1	4	2	0	0	2	2	1	1	12	8	3	1	3	1	0	2	3	0	1
P1 (ABCDKEGYZ)	0	3	3	0	0	12	3	0	3	21	25	3	1	12	6	2	2	4	2	2
P2 (ABCDKWYZ)	0	3	2	0	0	12	1	1	3	21	8	3	1	12	0	0	2	4	0	1
P3 (ABTUVWYZ)	0	2	2	0	0	11	2	1	3	16	8	3	1	5	1	0	2	7	0	1
O1 (JSTUVEGH)	1	4	1	5	0	2	2	0	1	12	22	5	1	3	6	3	2	3	2	2
O3 (JSCDKEGH)	1	0	3	5	0	3	3	0	1	17	25	5	1	8	6	3	2	3	2	2
O1/P1 (JSTUVEGYZ)	0	4	1	0	0	2	2	0	1	12	25	3	1	3	8	2	2	3	4	2
O3/P1 (JSCDKEGYZ)	1	0	3	0	0	3	3	0	1	17	25	3	1	8	6	2	2	3	2	2
O3/P2 (JSCDKWYZ)	1	0	2	0	0	3	1	1	1	17	8	3	1	8	0	0	2	2	0	1

The businesses that may be displaced are of a nature such that much of its clientele comes from the surrounding community, although their services are not unique. Should the business owners elect to relocate out of the community, it would not adversely affect the community because similar businesses operate nearby. Field studies indicate that adequate commercial properties and vacant commercial lots are available in the area for displaced businesses to relocate. Each case will have to be analyzed further on a case-by-case basis to ensure the business owner is fully compensated.

Relocation Assistance: TDOT can assure that all relocatees would be offered decent, safe and sanitary housing within their financial means. Within a reasonable period of time prior to displacement, a comparable replacement dwelling would be available or provided for displaced individuals and families who are initial occupants, or an adequate replacement dwelling would be available or provided for subsequent occupants.

To minimize unavoidable effects of right-of-way acquisition and displacement of people and businesses, all displaced persons will be treated without discrimination on any basis. The Relocation Assistance Program will work with low-income and minority residents to ensure these individuals are relocated and their special needs are met. The Tennessee Department of Transportation will carry out a right-of-way and relocation program in accordance with the *Tennessee Uniform Relocation Assistance Act of 1972* and the *Uniform Relocation Assistance and Real Property Acquisition Act of 1970* as amended; Public Law 91-646, *Title IV of the Surface Transportation Uniform Relocation Act of 1987*; CFR, Part 24, *Uniform Relocation Assistance and Real Property Regulations for Federal and Federally Assisted Programs*. Relocation resources are available to all residential and business relocatees without discrimination in accordance with the Civil Rights Act of 1964, Title VI.

TDOT will provide advance notification of impending right-of-way acquisition and before acquiring right-of-way, have all properties appraised on the basis of comparable sales and land values in the area. Owners of property to be acquired will be offered and paid fair market value for their property.

If any unforeseen problem should arise, last resort housing can be implemented on a case-by-case basis. Last Resort Housing is used when there is no comparable housing available for sale or rent within TDOT's current limitations. Last resort housing procedures can be implemented through the *Uniform Relocation Assistance and Real Property Acquisition Act of 1970* and may include construction of a new dwelling, loan or rental subsidy, relocation of a dwelling, or the purchase of land.

4.3.2 Community Cohesion

Several towns and communities are located within the general project area including Dyersburg, Fowlkes, Halls, Gates, Ripley, Henning, Covington, Brighton, Atoka, Munford, and Millington. All of the Build Alternates bypass Dyersburg, Halls, Gates, Ripley, and Henning and would not affect the community cohesion in those communities. All Build Alternatives propose I-69 along the east or west edges of Covington. Construction of the interstate highway through this area could create a perceived barrier between Covington and existing or potential development. Alternative G could have the same affect on the eastern edge of Brighton and Atoka. Also, Alternative R creates the same difficulties with the western edge of Munford.

In the areas of the project outside the above-noted communities, the Build Alternatives travel primarily through rural, agricultural land. Tipton and Lauderdale County, which have the greatest number of residential relocations across all Build Alternatives, would experience the most disruption within established neighborhoods and communities. All Build Alternatives would cause some disruption to individual residences because of displacements and could change some local travel patterns due to improvements in travel-time savings. The alternatives would cause some minor changes to the basic social arrangement of the residential clusters and to the character of the project area, however; it would not represent a barrier to social interaction within the community. While the proposed project would likely result in secondary economic development in the area, it is not likely that such development would cause more than minor impacts to community cohesion. No other projects are planned or foreseeable for the study area, so no cumulative impacts to community cohesion are foreseeable.

4.3.3 Environmental Justice

The purpose of Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, February 11, 1994 is to focus Federal attention on the environmental and human health condition in minority and low-income communities. This requires evaluation of the project area to identify and address disproportionately high and adverse human health and environmental impacts on low income and minority populations. FHWA defines low income as a household that has a household income at or below the Department of Health and Human Services poverty guidelines and minority as a person who is black, Hispanic, Asian American, American Indian or Alaskan Native.

Census data was evaluated at the following statistical levels; Census tract, block group and block. Census tracts are large, relatively permanent statistical subdivisions within a county that do not cross county or state boundaries. Block groups are statistical subdivisions of a census tract. Census blocks, statistical subdivisions of the Block Group, are the smallest geographic entity for which the Census Bureau tabulates data. 4-digit numbers identify census blocks with the first number of each block representing the block group it is in. Impacts were further quantified through field reviews, coordination with local officials during the initial scoping efforts. Please refer to Figure 4.1 for the location of all Census Tracts, Block Groups and Blocks described in Section 4.3.3 Environmental Justice.

Census data for the project area shows that Lauderdale County has a higher percentage of minorities in several Census Tracts and the poverty levels of Shelby, Tipton, Lauderdale, and Dyer Counties tend to be higher than what is experienced by Tennessee. Block group data was incorporated to assess all alternatives.

Minority and low-income data are summarized in Table 4.5 for the Census tracts and relevant Block groups associated with each node within project area. Poverty data at the block group level did not reveal any areas that had the majority of the population in poverty. The highest levels were in Census Tract 202.1 Block group 5 in Shelby County and Census Tract 9644 Block group 3 in Dyer County, with 35% and 34%, respectively, of population below the poverty level. Block group data on minority populations showed five block groups within the project area having 50% or more of the population as minorities. They include Census Tract 406.01 Block group 1 in Tipton County; Census Tract 503 Block group 1, Census Tract 506 Block groups 1 and 2 in Lauderdale County; and Census Tract 9644 Block group 3 in Dyer County. Four Block groups had 40% or more of the population listed as minorities, including Census Tract 202.10 Block group 5 in Shelby County; Census Tract 406.01 Block group 2 in Tipton County; and Census Tract 505.02 Block groups 1 and 3 in Lauderdale County.

Table 4.5 Census Block Group Data

NODES	CENSUS TRACT	BLOCK GROUP	% Minority	% Below Poverty	NODES	CENSUS TRACT	BLOCK GROUP	% Minority	% Below Poverty
A-B	202.21	1	34	5	**U-V**	406.02	1	24	4
	203	4	4	3		506	1	50	18
	202.1	4	14	8	**V-W**	506	1	50	18
	202.1	5	45	35	**W-Y**	506	1	50	18
	202.1	6	13	0		505.02	1	41	8
	403.01	1	10	4		505.02	3	49	26
	403.01	2	7	9		504	3	21	18
	403.01	4	21	11		503	1	51	25
	405	1	16	5		503	2	7	19
B-D	405	1	16	5		502	2	22	18
	406.01	1	66	15		9646	1	11	12
	406.01	2	45	29		9646	2	2	11
	406.01	3	13	14	**Y-Z**	9646	1	11	12
C-D	405	1	16	5		9645	2	1	18
	406.01	1	66	15		9644	1	15	11
	406.01	2	45	29		9644	3	80	34
	406.01	3	13	14		9643	1	3	8
D-K	406.01	1	66	15		9643	3	11	33
	506	2	65	19		9643	4	2	3
K-E	506	2	65	19		9641	4	5	6

Table 4.5 Continued

NODES	CENSUS TRACT	BLOCK GROUP	% Minority	% Below Poverty	NODES	CENSUS TRACT	BLOCK GROUP	% Minority	% Below Poverty
E-G	506	2	65	19	**G-Y**	502	4	14	15
	505.01	1	8	19		9646	1	11	12
	505.01	2	21	9		9644	2	81	32
	504	2	1	12		9644	5	10	22
	503	2	7	19	**K-W**	506	1	50	18
	502	4	14	15		506	2	65	19
G-H	9646	2	2	11	**B-T**	405	1	16	5
	502	2	22	18		406.01	3	13	14
	502	4	14	15		406.02	2	13	12
	9641	2	2	11		406.02	3	25	12
	9641	3	20	18	**V-E**	506	1	50	0
J-S	208.1	1	38	4		506	2	65	0
	208.1	2	11	5	**S-C**	408	2	9	5
	408	1	15	4		405	1	16	5
	408	2	9	5		405	2	13	7
S-T	408	2	9	5		406.02	3	25	12
	406.02	2	13	12		406.01	3	13	14
T-U	406.02	2	13	12					
	406.02	1	24	4					

Block group data showed evidence of high concentrations of minority populations within the project area. Therefore, block level data was also evaluated to further determine potential impacts on minority populations within the project area (Exhibits 4.1 Sheets 1-5). There are 34 blocks within the project area that show the majority of the population as minority (Table 4.6). Several node segments have multiple census block levels with 50% or higher minority populations, including A-B, J-S, W-Y, G-Y, K-W, and V-E. There are other segments with census block levels that show a high percentage of minority populations but the concentrations appear more highly dispersed, with only one block level affected within that area.

Table 4.6 Census Blocks Containing High Concentrations of Minority Communities

NODE	CENSUS TRACT	BLOCK GROUP	BLOCK	NODE	CENSUS TRACT	BLOCK GROUP	BLOCK
A-B	203	4	4005	**V-W**	506	1	1026
	202.1	4	4003	**W-Y**	506	1	1017
	202.1	4	4011		505.02	3	3015
	202.1	4	4019		503	1	1064

Table 4.6 Continued

NODE	CENSUS TRACT	BLOCK GROUP	BLOCK	NODE	CENSUS TRACT	BLOCK GROUP	BLOCK
	202.1	5	5002	**Y-Z**	9643	1	1032
	403.01	4	4017		9643	4	4008
	403.01	4	4055		9641	5	5041
	403.01	4	4064	**G-Y**	9646	2	2021
	405	1	1014		9646	2	2024
B-D	406.01	1	1012		9646	2	2025
	406.01	1	1013		9646	2	2026
C-D	406.01	1	1012	**K-W**	506	1	1026
	406.01	1	1013		506	1	1029
K-E	506	2	2014	**V-E**	506	1	1026
E-G	506	2	2014		506	1	1029
G-H	9646	2	2055		506	2	2014
J-S	208.1	1	1018				
	208.1	2	2000				

Source: *Census 2000*

The node segments with a high percentage of minority population (A-B, J-S, W-Y, G-Y, K-W, and V-E) were then compared to the relocation numbers from the Conceptual Stage Relocation Report. Segments A-B and W-Y both have higher relocation numbers than most of the other segments. Cross-over segment G-Y has a few relocations, while cross-over segment K-W has no relocations. Relocation numbers are low for segments J-S and V-E and no disproportionately high impacts are anticipated.

The project team is aware that minority and/or low-income populations and have been identified in areas near the project corridor. Every effort is being made to avoid direct and indirect impacts to these communities of minority or low-income residences, and to social/family clusters, where community cohesion has been established. Area roadways which intersect with I-69 would be provided with underpasses or overpasses, as appropriate, to ensure safe and uninterrupted passage for area residents to houses of worship, community services, government assistance offices, and hospitals, and to ensure that social interactions with other communities remains unhindered. The impacts of the project concerning social isolation, segmentation or disruption to these communities are not anticipated to warrant selection of the No Build Alternative or realignment of the proposed Build Alternatives.

Sensitivity to relocations has been shown in respect to Executive Order 12898 to ensure that social or familial clusters are not impacted by the project. Social and family clusters are basic forms of communities. These interdependencies are typified by low-income clusters of residents who reside in proximity to each other, sometimes on a common parcel, and rely upon each other for basic services that would otherwise not be afforded them in daily life. These services include shared use of an automobile, a telephone, and/or dependency upon each other for transportation to government services, medical services, worship services, and essential needs shopping (i.e. groceries, pharmacies, home supplies). Although no special needs have been identified through previous efforts via field trips, conversations with local officials or from the past public meetings, TDOT acknowledges that these needs may be identified at any time of the project. If such needs are established, TDOT right of way officials would work with social/family clusters, and groups of minority/low income residents to ensure that relocation efforts would be as minimally disruptive as possible. These measures include efforts to locate parcels that would accommodate the relocation of several homes to keep the clusters intact. Efforts will continue through the design phase, the public involvement process, the environmental process and the right of way phase of the project.

The project team has used mitigative efforts to avoid direct impacts (relocations) and indirect impacts (neighborhood divisions, segmentations) to communities throughout the process. These efforts have included avoidance of minority and low-income communities, and construction of overpasses and underpasses at areas where I-69 would intersect with roadways that provide uninterrupted passage between the communities and regional economic centers, government services, job sites and schools. In May 2003, the project team determined that a potential environmental justice concern could exist in the area near the community of Ripley. Reviews of U.S. Census Data indicated that high percentages of minority residents lived in the immediate area of the project (66% in U.S. Census Tract 406, Block Group 1 and 45% in U.S. Census Tract 406 Block Group 2). These block groups also included 15% and 29% low-income residents, respectively. The team agreed that it would be beneficial to the community to move project alignments to avoid this area. Portions of two alternatives were shifted, and the changes were furnished by the team to TDOT for consideration. Additional mapping was provided to assist in the design of the alignment changes. The new plans were completed in January 2004. These changes resulted in avoidance of direct impacts to Ripley by Alternative R (shifted west) and Alternative G (shifted east).

The project team recognized that some residents in low-income communities rely upon non-motorized forms of transportation as means to travel to work, shopping areas and other activities. In the area near the Mississippi River Trail, the project Alternatives R, O3, P1 and P3, would utilize the existing US 51 Bridge over the Hatchie River just north of Covington and south of Henning where high minority and low-income populations exist.

2000 U.S. Census figures indicated that 990 residents, including Latino/Hispanic residents, lived in Henning, and 733 (74%) were of African American heritage. An additional 29 minority residents were living within the city limits and the total number of minorities was estimated to be 762 (76.9%) of the total population. Census data indicated that 30.0% of the population lived below the poverty level.

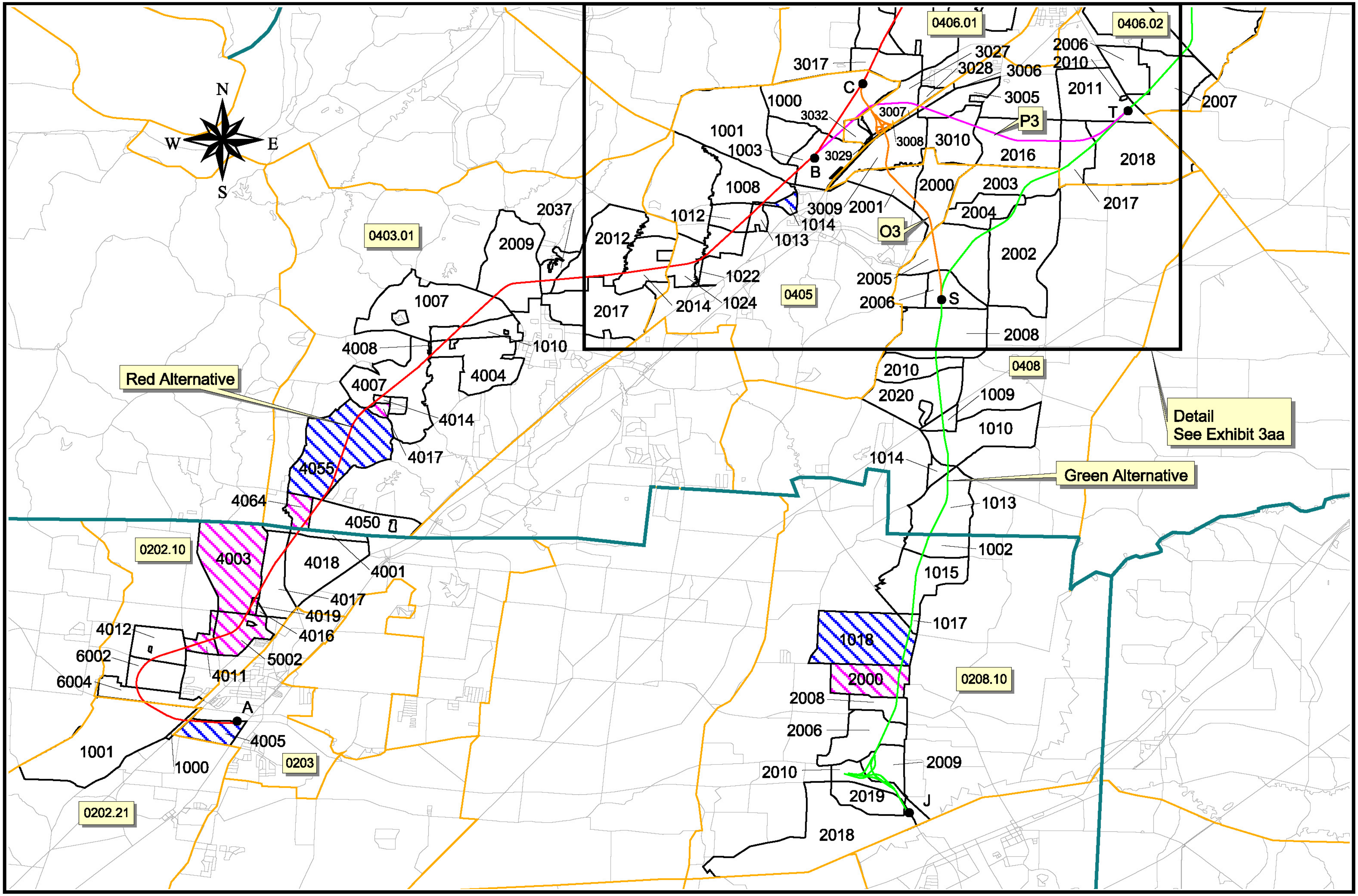
Covington reported a total of 8,522 residents (including Latino/Hispanic people) in 2000, and 3,976 (46.3%) were of African American heritage. An additional 203 residents (total percentage of 48.6%) were of minority descent. The second highest minority population, Hispanic or Latino, reported 69 (0.8%) residents. In addition, the Census data indicated that 28.2% of the residents in the city limits lived below the poverty level.

Right of way acquisition in this area would be minimal and would be used only as necessary to accommodate the additional lanes required for an interstate highway. The project will incorporate use of an existing US 51 bridge and will include bicycle/pedestrian path in this area. This would not disrupt the continuity of existing non-motorized transportation in the area, and would allow safe, unimpeded passage through the area if a Build Alternative is selected. This area is also characterized by a high occurrence of wetlands. The project team decided that the placement of the interstate alongside and in concurrence with the US 51 existing route would minimize impacts to the human and natural environments. The overpasses and underpasses featured throughout the project area will be constructed to allow safe passage for non-motorized travelers. Area roadways, as throughout the project, would be provided with overpasses and underpasses to minimize any divisive impacts between these communities and area services, houses of worship, jobsites, and government and shopping services.

In summary, no substantial impacts are anticipated on any low-income communities within the project area; however, available Census data and the Conceptual Stage Relocation Report show segments A-B, W-Y, and G-Y merit additional consideration during final design to ensure there are no disproportionately high or adverse impacts to minority groups. Segments A-B and W-Y had several census block groups that showed a high percentage minority population and these two segments had a higher number of relocations than most of the other segments. Cross-over segment G-Y also had several census block levels that showed a high percentage minority population and had several relocations. All of the proposed alternatives show some level of impact on minority populations from available Census data.

The project team made changes to address public concern in relation to the existing Alex Haley Rest Area on US 51 in Henning. The community and local officials of Henning wanted the new interstate and US 51 to have access to the rest area. The Alex Haley Rest Area was instrumental in identifying the community to those using the facility and to educate them on the great author, Alex Haley. Without direct access from the proposed interstate, the rest area would only be used by those traveling along US 51. The community felt it was vital to continue using this facility for those who worked diligently in getting the rest area located in this area, and to the community of Henning as a tourist attraction.

Any adverse impacts from the project would not be primarily borne by a minority and/or low-income population. The adverse effects suffered by a minority and/or low-income population will not be more severe or greater in magnitude than the adverse effect that will be suffered by non-minority and/or non-low income population. Consequently, the project would not have a disproportionately high and adverse effect on those populations and all people living in the project area will equally share in the benefits of the proposed project.



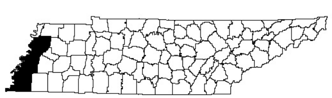
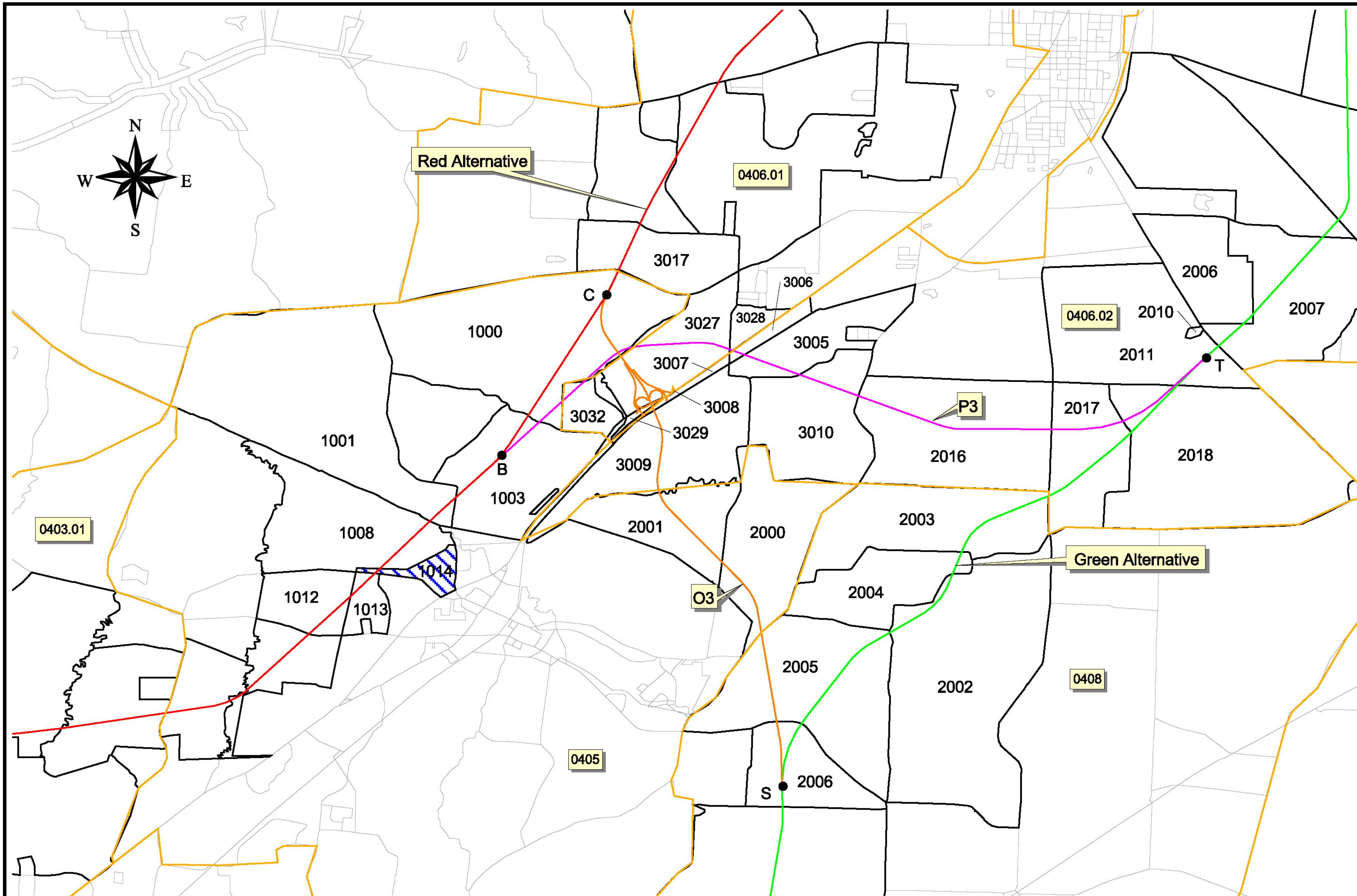


Figure 4.1 Sheet 1
I-69 SIU #8 DEIS
Millington to Dyersburg, TN

≥ 75% Minority Population
≥ 50% Minority Population

Census Tract
XXXX Tract Number
County Line
Census Block
XXXX Block Number
State Line
Node
East Corridor
West Corridor
Crossover
Crossover



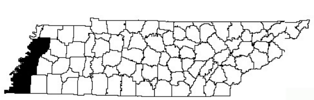
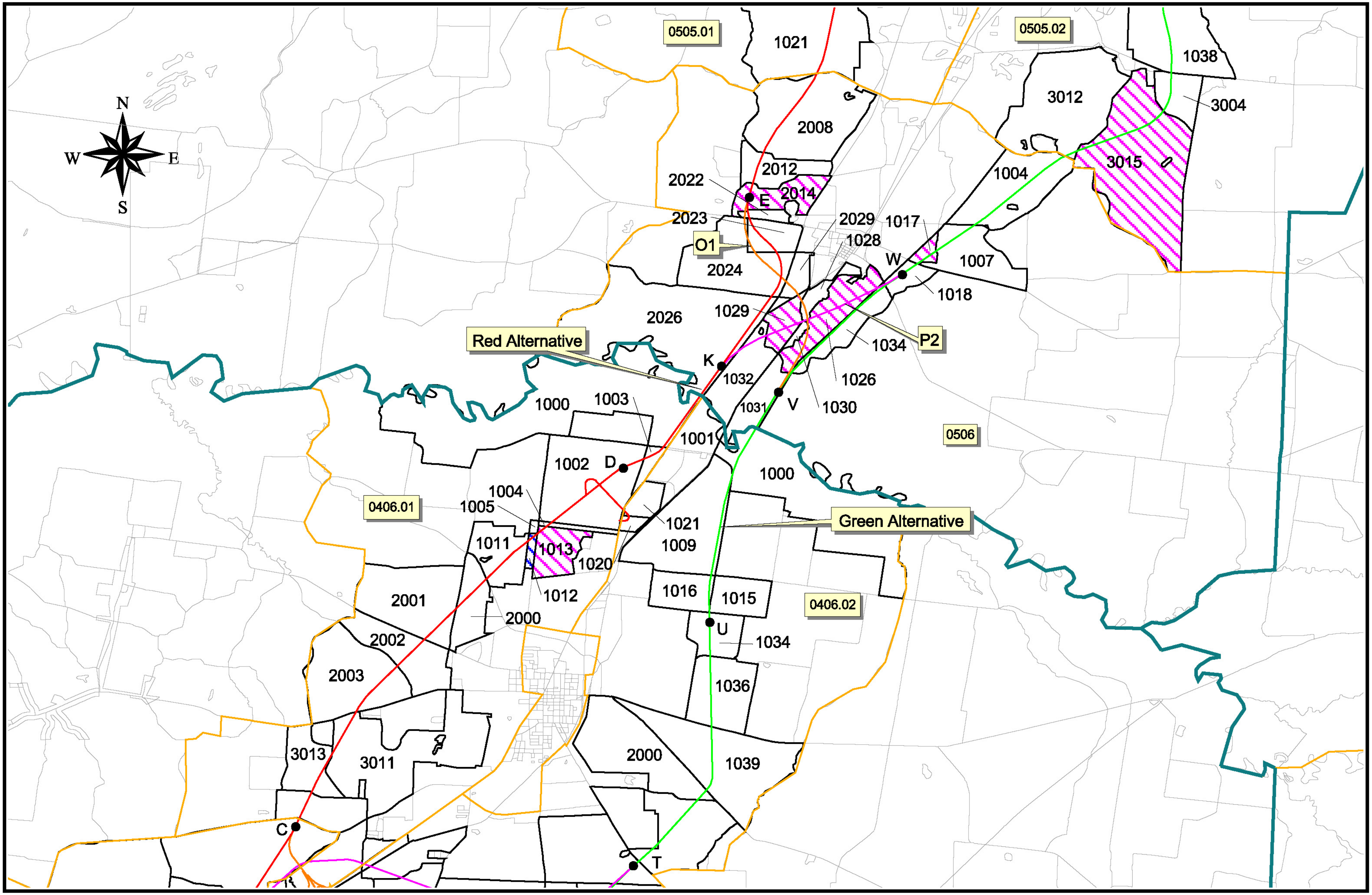
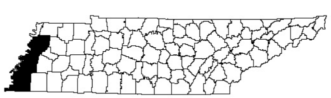


Figure 4.1 Sheet 2
I-69 SIU #8 DEIS
Millington to Dyersburg, TN





LOCATION MAP

Figure 4.1 Sheet 3
I-69 SIU #8 DEIS
Millington to Dyersburg, TN

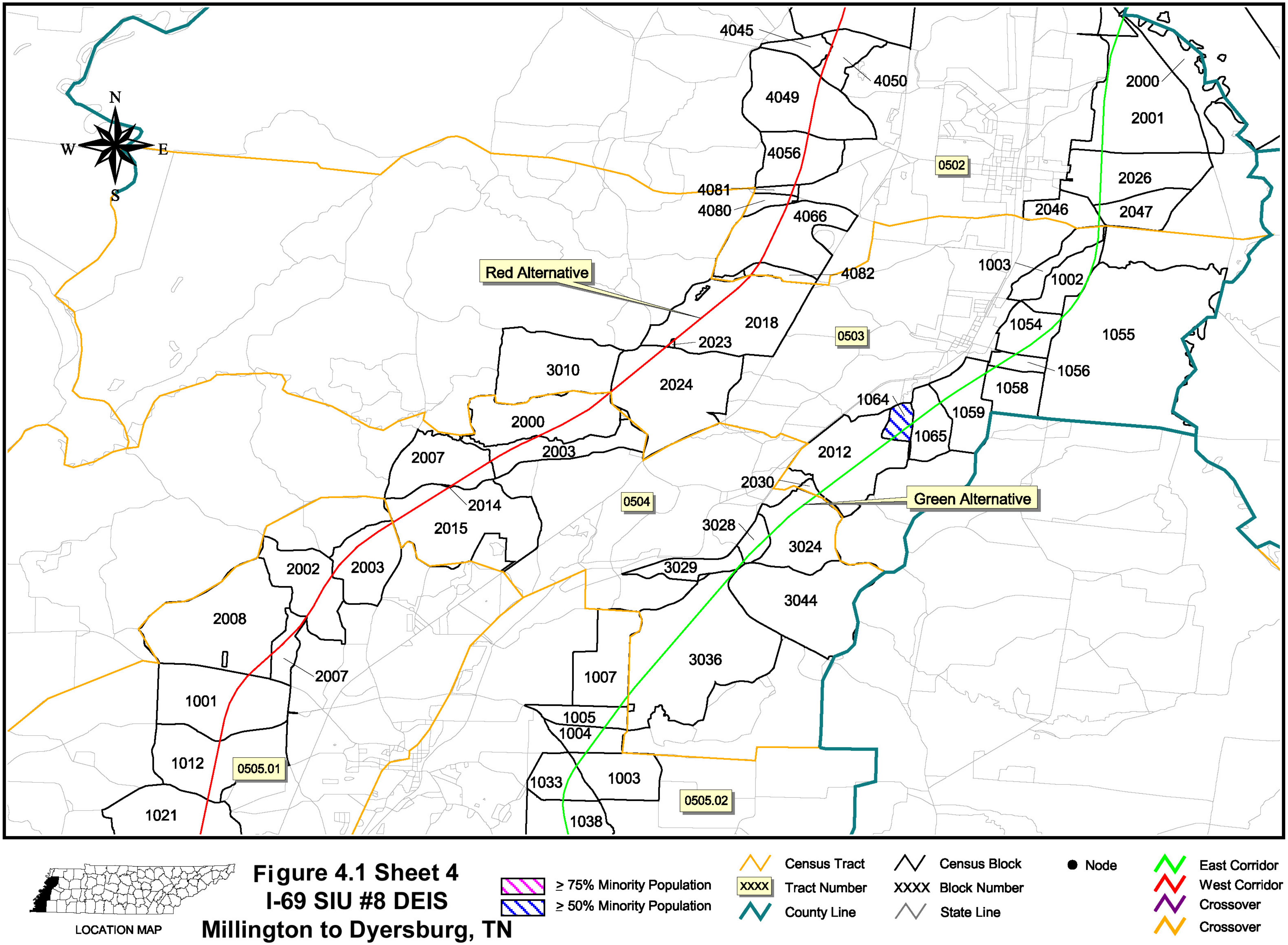
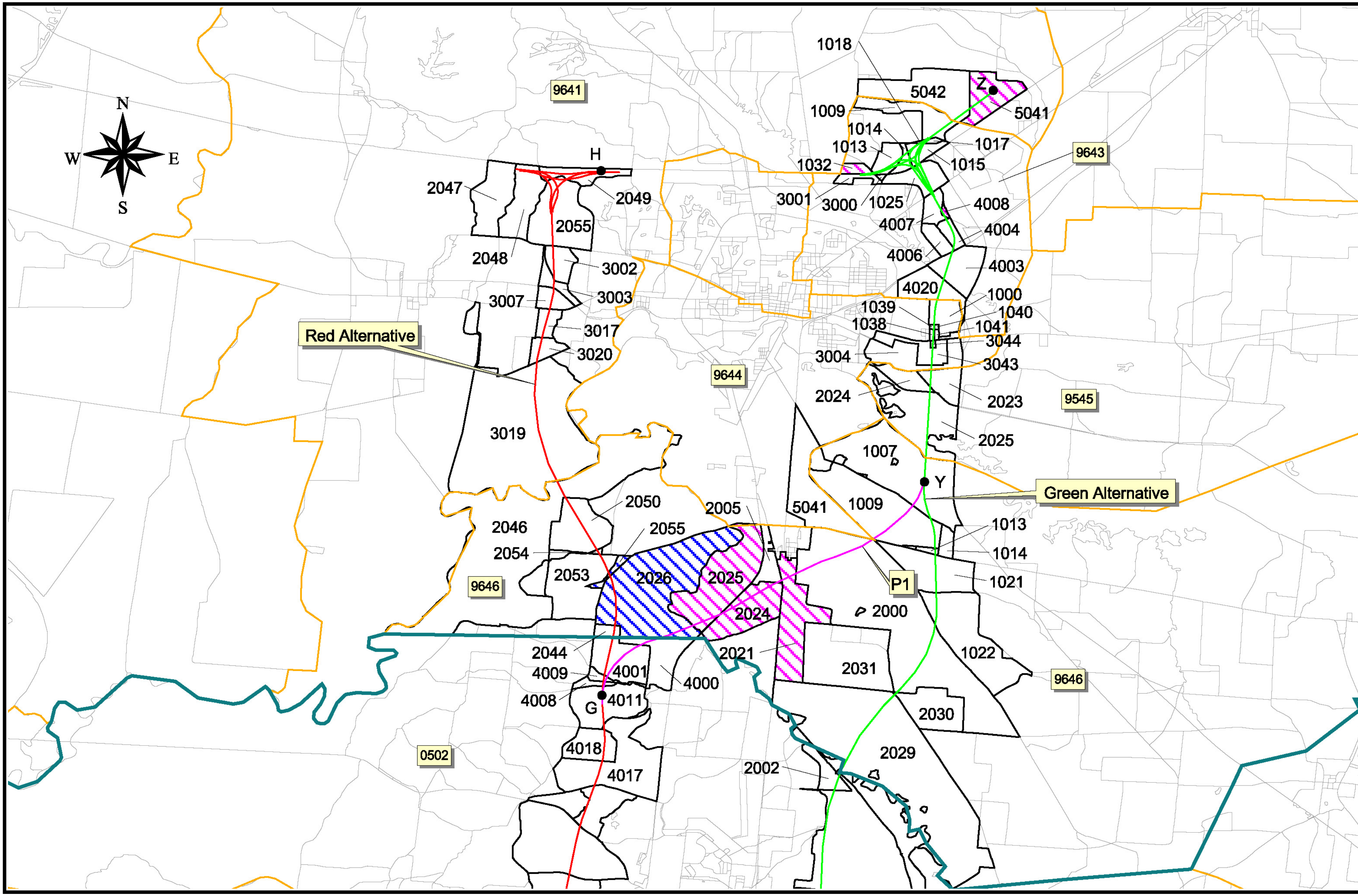


Figure 4.1 Sheet 4
I-69 SIU #8 DEIS
Millington to Dyersburg, TN



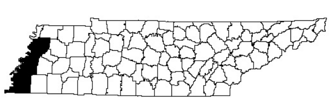


Figure 4.1 Sheet 5
I-69 SIU #8 DEIS
Millington to Dyersburg, TN

≥ 75% Minority Population
≥ 50% Minority Population

Census Tract
XXXX Tract Number
County Line
Census Block
XXXX Block Number
State Line
Node
East Corridor
West Corridor
Crossover
Crossover

4.3.4 Economic Impacts

The construction of the Build Alternatives would have a minor impact to the local economy, a result of displacing business in Tipton and Lauderdale Counties. Alternative G would displace a seasonal sales stand and one agricultural-related business, both in Tipton County. Alternative R would displace a communication business in Lauderdale County, one restaurant, and a retail establishment, both located in Tipton County. The O1 crossover would also displace the same communications business as the Alternative R. However, related businesses offering similar services and goods would remain. Additionally, properties are available should the impacted business decide to relocate in the area. The business relocations would impact employees also, particularly if the operations move out of the area, or close permanently. Table 4.7 details the number of employees impacted by each of the Build Alternatives. Compared to the total number of persons employed in the affected counties, the number of workers potentially displaced by the action would have a minimal effect on employment in the area as a whole.

Table 4.7 Potentially Displaced Employees

County	R	G	O1
Shelby	--	--	--
Tipton	16	6	--
Lauderdale	2	--	2
Dyer	--	--	--

Area businesses, which depend upon the shipment of supplies and goods into and out of the area, could positive experience secondary and cumulative effects in the form of easier, safer and faster movement of their freight.

Commercial development is anticipated at new interchange locations along the route. However, this type of development would be unlikely for all the new interchanges, and is anticipated to have a minimal effect on employment opportunities in the area. All of the proposed Build Alternatives have the potential for secondary and cumulative effects on service-related businesses located along existing US 51. These effects are due to the removal of through traffic from US 51 and could affect highway-commercial businesses such as truck stops, gas stations, restaurants and motels frequented by persons traveling through the area. Additionally, similar service-related businesses are anticipated to develop around the proposed interchanges on I-69, competing with the existing businesses remaining along US 51. Services located along existing area roadways will also realize a reduction in sales revenues as traffic is diverted to the new interstate. As a result, some businesses could elect to relocate to parcels adjacent to the new interchanges.

The Build Alternatives would remove some of the project area lands from the tax base of the four counties, due to right-of-way purchases. The long term potential exists for increased land values in the area particularly surrounding proposed interchanges. The Build Alternatives could also have a beneficial secondary effect on the area economy, if local government recruits new industrial and commercial operations for locations along the proposed route. Changes in land use could occur, and property values would be expected to increase resulting in increased revenue from property taxes. New industrial and commercial development would provide employment opportunities for local workers. In some instances local workers will vacate lower paying jobs for better income opportunities. This would allow some residents who are unemployed opportunities to become less dependent on government subsistence. Therefore, the cumulative impacts may include reduced unemployment rates, reduced poverty rates and improved per capital personal income levels for the project counties. These secondary and cumulative impacts are dependent upon local zoning efforts to recruit and retain business as well as manage population growth. Tipton, Lauderdale and Dyer counties all have a higher unemployment rate than that of the State, as a whole. Additionally, the rates for Lauderdale and Dyer are more than double that for the state. The unemployment rates for Shelby County and the state are equal. Please refer to Table 3.4 for income data and Table 3.5 for employment data for both the state and counties involved with the proposed project.

4.4 Farmland Impacts

In accordance with 7CFR, Part 658 of the National Farmland Protection Policy Act, land evaluation criteria and site assessment criteria were applied to determine effects to farmland within the project area. The land evaluation criteria is a relative value (from 0 to 100) for agriculture production of the farmland to be converted based on information within the local government's jurisdiction. The site assessment criteria are designed to assess important factors other than the agricultural value of the land and consider not only the land currently being farmed, but also the land use around the project area and whether or not that land use is urban, non-urban, or in transition. Each factor within the site assessment criteria is assigned a score relative to its importance. Sites that receive a total site assessment score of 160 points or less are given a minimal level of consideration for protection. Sites with a total site assessment score of 160 points or more would require the consideration of alternative project alignments that would serve the proposed purpose but convert fewer acres of farmland or farmland that has a relative lower value.

Coordination with Natural Resource Conservation Service (NRCS) Jackson Division Office provided the information in Table 4.8 on farmland displaced by each proposed alternative.

Table 4.8 Farmland Impacts

Alternative	Total Acres to be converted	Total Acres Prime and Unique Farmland	Total Farmland Impact Rating Score
Alternative R	2166	1887	153

Table 4.8 Continued			
Alternative	**Total Acres to be converted**	**Total Acres Prime and Unique Farmland**	**Total Farmland Impact Rating Score**
Alternative G	2165	841	150
Orange Alternatives	374	251	133
Purple Alternatives	391	135	132
A-C (Shelby County)	152	97	137
A-C (Tipton County)	402	64	160
B-D	183	82	136
D-K	105	73	152
K-E	72	21	159
E-G	660	200	165
G-H (Lauderdale County)	14	6	159
G-H (Dyer County)	283	100	142
J-S (Shelby County)	157	91	152
J-S (Tipton County)	162	56	170
S-T	149	62	165
T-U	131	70	158
U-V (Tipton County)	92	65	155
U-V (Lauderdale County)	32	3	148
V-W	47	2	166
W-Y	539	94	160
Y-Z	151	121	135

The Crossing options for the project that are part of additional alternatives analyzed do not require large amounts of land conversion relative to Alternatives R and G. Alternatives R and G both require approximately 2,165 acres to be converted and have similar impact ratings, 153 and 150, respectively. Alternative R uses 1,887 acres of land that is indicated on soil maps as “Prime and Unique” versus Alternative G, which has 841 acres of land indicated as “Prime and Unique”. Alternative R has the most impact and on a county level would impact Lauderdale County the most.

As previously stated, the total site assessment criteria score for all Alternatives is less than 160 points. However, when further analyzing the alternatives from a node perspective, four of the nodes (E-G, J-S (Tipton County), S-T, and V-W) have a total site assessment score exceeding 160 points. For these identified sections, mitigation measures should be further considered for farmland impacts. Mitigation measures could include narrowing the median or reducing right-of-way acquisition by obtaining a temporary construction easement and after construction the land would revert back to the farmer.

Due to the predominantly rural nature of the project and farming being a strong economic factor throughout the project area, consideration needs to be given to the farms that are bisected or impacted by the removal of farm buildings. The proposed Build Alternatives will bisect some existing farms in the project area, despite efforts to minimize this impact. Efforts will be made to provide access between the bisected farm segments and maintain roadway widths necessary to move farm machinery or livestock native to the project area between farms. If the bisected farm segment (remnant) is too small to continue to use for agricultural purposes, TDOT will evaluate acquisition of the remnant.

4.5 Natural Resources

4.5.1 Terrestrial Habitat Impacts

The new, cross-country sections of the proposed I-69 construction may lead to fragmentation of forested areas and other habitat for wildlife. Fragmentation of habitat is always detrimental to the wildlife species occupying the area. Travel corridors may be disrupted, and may lead to increased road kill of animals. Migratory birds are especially vulnerable to fragmentation of forested areas. The Hatchie River is significant as a forested flyway for these migrants, and is the only river in west Tennessee that remains un-channelized. Disturbance to these floodplain-forested areas will have a detrimental effect on the migratory species that use them. As their habitat shrinks, they are more prone to predatory animals and nest-predation, resulting in lower productivity rates. Many forest interior birds will not nest in fragmented forests.

Forest fragmentation appears to be minimal throughout the project corridor. Most of the land has been converted to agricultural use over the past century. Some areas of forestation are still located at the Hatchie River bottomlands near the existing US 51 roadway. Efforts to avoid or minimize this area include minimization of right of way by using the existing US 51 bridge crossing for Alternative R. This would require 0.64 acres of property. Alternative R would affect contiguous areas of forest north of Munford (see DEIS Volume II, Functional Sheets 10 – 12.) and Ripley (in the bluff hills area – see DEIS Volume II, Functional Sheets 28 – 32). The alignments were placed in these areas to avoid high numbers of residential and commercial relocations. Efforts to minimize impacts to forests included using the least amount of right of way required.

The construction of I-69 section from Millington to Dyersburg will result in a long-term loss of habitat, biomass, and primary productivity with the destruction of farms, forested areas, and wetlands through their conversion to pavement. Wildlife habitat may be displaced by fills and otherwise eliminated by construction activities.

Secondary and cumulative impacts to these resources are anticipated primarily in areas near interchanges between I-69 and existing crossroads. Highway commercial development is typically the first type of land use change that occurs and is situated along primary crossroads such as US 51 or State Route 78. Other development activity that may follow includes residential, commercial and/or industrial development. These activities usually are associated within or near city limits or in planned development areas in other areas of a county. Local officials are aware of the wetlands that are located within and near the project area, and should include plans to avoid removal of these resources by restricting development within the wetland areas. Continued awareness and attempts to avoid development of the wetlands should allow the coexistence of these resources with commercial and residential land uses.

4.5.2 Aquatic Impacts

The reduction in aquatic productivity resulting from sedimentation is both an irreversible commitment of resources and an unavoidable adverse impact. The permanent changes that will be required in the affected streams are an irreversible commitment of resources. Short-term impacts will include the disturbance of aquatic and riparian habitat, and an increase in downstream turbidity, dissolved solids, and suspended solids within the Hatchie and Forked Deer River systems and related tributaries. The implementation of an effective non-point source pollution plan, and the application of a stringent sedimentation and erosion control program may reduce adverse ecological impacts. Disturbances will result in temporary adverse impacts to water quality and aquatic life in the above-mentioned streams.

The most significant impacts to a stream during road construction typically involve habitat destruction and sedimentation. Habitat destruction will likely directly affect only the portion of the stream in the project right-of-way, but will be permanent in nature. Siltation from construction erosion activity may be temporary in nature but can impact the stream for hundreds of feet downstream. Effects include lowered oxygen levels, interfering with the ability of fish, aquatic insects, mussels and other aquatic organisms to remove oxygen from the water. Temperature patterns may be altered, as well as flow patterns. Siltation leads to increased turbidity, slowing photosynthesis. Silts can clog the gills of fish and other aquatic life. Siltation also covers suitable macro-invertebrate and fish egg-laying substrate, resulting in permanent changes within the stream. Other effects of siltation include the increased possibility of flooding, loss of storage capacity in reservoirs, impacts to navigation, and a possible economic impact due to increased water treatment costs. Siltation may contribute to the redistribution of organic chemicals and metals into the water column in prior contaminated areas.

Non-point source pollution in the project area is related to agricultural practices, industrial discharges, urban runoff, sewage and construction activities. Non-point source pollution can be expected from use of de-icing compounds and weed, rodent and insect control products; surface runoff of pollutants originating from vehicular operation such as oil, grease, asbestos and rubber; spillage of toxic chemicals by trucks into a water supply system, and contamination of surface and ground water supplies by polluted fill material. De-icing compounds and herbicide/pesticide usage are seasonal, and would result in short-term concentration increases. The surface run-off of vehicular pollutants is unavoidable; but due to the small quantities of such pollutants, adverse impacts should be negligible. Accidental spills cannot be assessed, but emergency procedures can be put in place to report, contain and clean-up hazardous materials. Use of borrow material from known sources should help to minimize pollution from fill materials.

Potential point source pollution associated with the construction of the proposed project could include effluent, discharged to area streams, from water treatment plants serving the proposed rest area facilities and weigh station. The proposed location of these facilities are adjacent to existing roadways that may, or may not, contain sanitary sewage infrastructure. If a Build Alternative were selected as the Preferred, issues such as these would be addressed in the final design of the project.

<u>Wetland Impacts</u>
Short-term and temporary impacts to wetlands include the displacement of wetland dependent wildlife due to noise, temporary alteration of drainage patterns, vegetation and soil disturbance and a potential increase in sedimentation to wetland and aquatic habitats.

Extensive areas of high quality bottomland hardwood wetlands are located along the Hatchie River. Impacts to these resources are anticipated for each of the project Build Alternatives. A build alternative located to the east of the current proposed alignments was eliminated earlier in the decision making process in part because of the potential for measurable impacts to these resources. TDOT will work with the U.S Army Corps of Engineers, and USFWS to identify suitable mitigation sites to replace the functions of these wetlands as part of the 404 Permitting process.

Direct impacts occur when the construction limits encroach upon a jurisdictional wetland. Wetlands located entirely within the proposed construction limits will be unable to function as a jurisdictional wetland subsequent to construction. Table 4.9A, below summarizes wetland impacts associated with the various Build Alternatives. This table lists the approximate size of each site and quantifies the encroachment of each alternative on these wetlands. Alterations of wetland areas could affect groundwater, flood control, increase erosion and remove wildlife and aquatic habitat. In addition, other functions including groundwater recharge/discharge, flood control, sediment stabilization/toxicant retention and nutrient removal/transformation may be altered. Table 4.9B, the Wetlands Impact Chart, compares and identifies wetlands impacted by the Build Alternatives, total area and area required for right of way acquisition, wetland type and wetland function. This table begins at page 132-I following the Wetland Impact Figures (pages 132D – 132V).

Table 4.9A Wetland Impact Totals for Build Alternatives (Project Nodes)

Build Alternatives (Nodes)	Total Wetland Area	Total Acres Impacted
R (ABCDKEGH)	**645.2**	**30.5**
G (JSTUVWYZ)	**1180.8**	**96.2**
P3 (ABTUVWYZ)	**1197.3**	**98.4**

Table 4.9A Wetland Impact Totals for Build Alternatives (Project Nodes) continued

Build Alternatives (Nodes)	Total Wetland Area	Total Acres Impacted
P2 (ABDKWYZ)	**1082.7**	**81.9**
P1 (ABDKEGYZ)	**727.3**	**53.2**
O3 (JSCDKEGH)	**631.6**	**33.3**
O1 (JSTUVEGH)	**737.9**	**46.6**
O1/P1 (JSTUVEGYZ)	**809.1**	**71.0**
O3/P1 (JSCDKEGYZ)	**692.5**	**53.5**
O3/P2 (JSCDKWYZ)	**1070.2**	**82.8**

All proposed Build Alternatives have been designed to avoid impacts to wetlands areas, where possible. However, impacts to these valuable resources remain. Losses to wetland areas would require on-site and in-kind mitigation, where practicable. When on-site/in-kind mitigation is not practicable, Obion wetland bank pre-credits are available and have been earmarked for wetland impacts associated with I69 within the Obion and Forked Deer watersheds. The mitigation ratio for impacts within these watersheds is set at a minimum of 2:1. Impacts to wetlands outside of the Obion and Forked Deer watersheds can be mitigated at the bank at a minimum ratio of 4:1.

Site bisection occurs when a wetland is not completely filled but is divided into one or more pieces. Consequences of site bisection may include loss of hydrology, creation of barriers to species or the introduction of exotic species. Site bisection may also result in one of more healthy and functioning wetlands that are smaller than the original wetland.

Fragmentation occurs when the direct impact is large relative to the overall size of the wetland. The remaining area is unlikely to function as a wetland; either because it may simply be too small to retain its function, or because the large disturbance may destroy physical processes that create a functioning wetland. This can be caused by many factors, including loss of hydrology, removal of vegetation, change in the bottom substrate and/or loss of aquatic habitat.

Hydrology alteration or removal occurs when natural watershed boundaries and subsurface flows are altered. Filling a portion of a wetland can prevent overland flow or change topography in such a manner that the directional flow of a given watershed is altered. This can also create physical barriers to the subsurface flow of water. The excavation of ditches can potentially alter subsurface flow by creating a depression in which water can preferentially flow.

Consideration of wetland areas was undertaken during the development of the project alternatives. More detailed refinement of the alternatives to avoid wetland impacts was used for slight alignment modifications. Wetland impacts have been minimized to the fullest feasible extent during this phase of project development.

In accordance with Executive Order 11990 (23 CFR 777.3(a)), it has been determined that there are no practicable alternatives to the construction in wetlands. Design modifications including narrowing medians, shoulder widths and spanning wetlands can be considered during the design of the Preferred Alternative. Several measures to entirely eliminate or minimize potential impacts to wetlands were considered during early project development of the study alternatives. Due to safety and design criteria, topography and land use, it was not possible to develop an alternative that completely avoided impacting wetlands. Detailed refinement of a Preferred Alternative to further avoid wetland losses may be feasible during the design phase.

The area around the project is experiencing conversion from an agricultural area into residential, commercial and industrial areas. Development activities are expected to continue near the Interstate 69 corridor, its interchanges and connector roads. This could cause negative secondary and cumulative impacts if wetlands are converted to commercial and residential land use. Local officials are aware of the wetlands that are located within and near the project area, and should include plans to avoid removal of these resources by restricting development within the wetland areas. Continued awareness and attempts to avoid development of the wetlands should allow the coexistence of these resources with commercial and residential land uses.
The following pages, 132D through 132W, feature figures and charts illustrating the location of the Build Alternatives and their impacts upon wetlands. Due to the prevalence of wetlands throughout the project corridor, avoidance of impacts was not possible. The following pages also compare acreage of total wetlands and the amount of acreage required for right of way. Mitigation efforts will be coordinated between TDOT and the U.S. Army Corps of Engineers and the United States Fish and Wildlife Service.

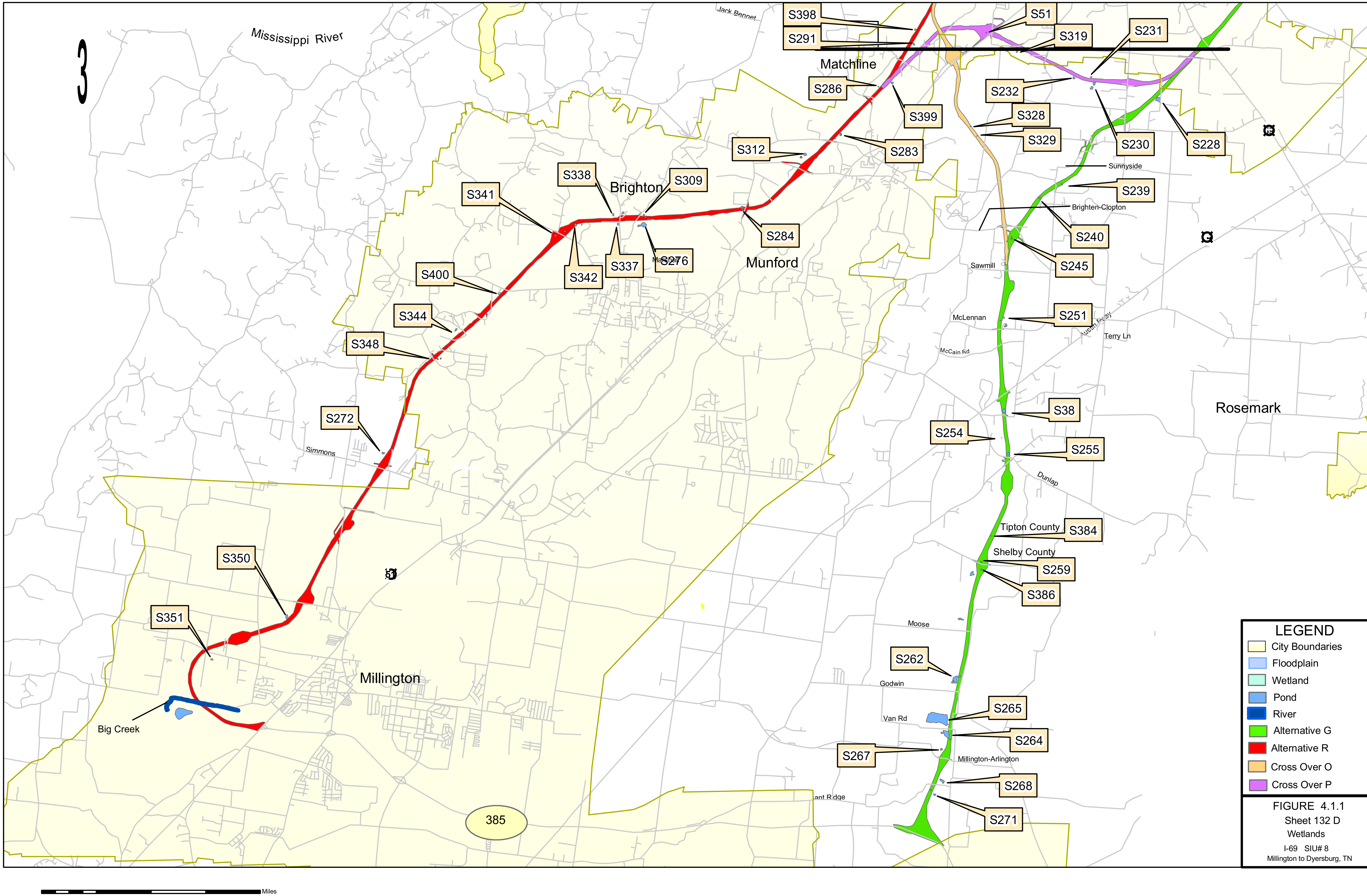
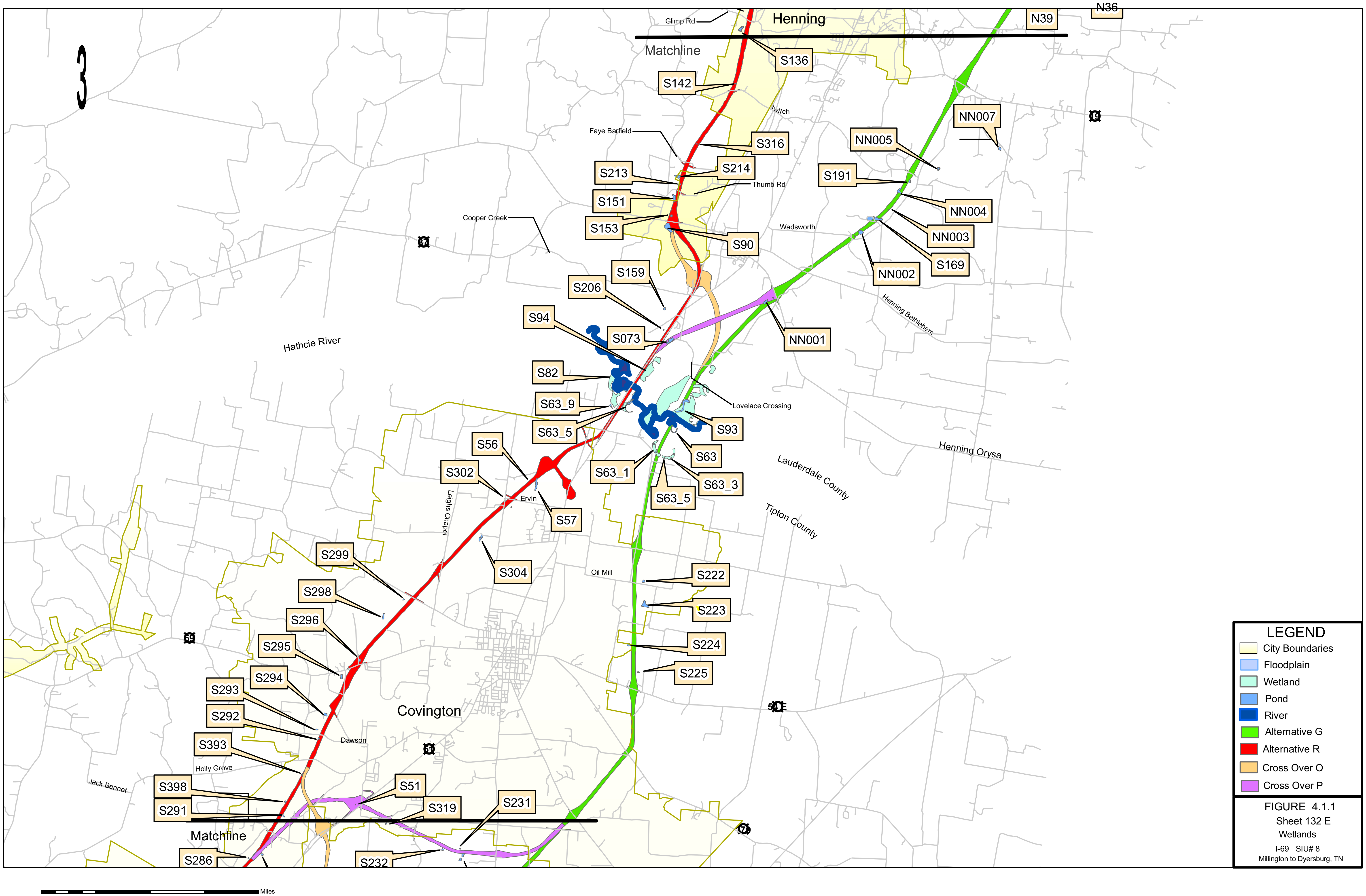


FIGURE 4.1.1
Sheet 132 D
Wetlands
I-69 SIU# 8
Millington to Dyersburg, TN


3
Henning
Matchline
Glimp Rd
N39
N36
S136
S142
Switch
NN007
Faye Barfield
S316
NN005
S213
S214
S191
Thumb Rd
S151
NN004
Cooper Creek
S153
Wadsworth
NN003
S90
S169
NN002
S159
S206
Henning Bethlehem
S94
S073
NN001
Hathcie River
S82
S63_9
Lovelace Crossing
S63_5
S93
S56
S63
Henning Orysa
S302
S63_1
Lauderdale County
S63_3
S63_5
Ervin
Leighs Chapel
S57
Tipton County
S299
S304
Oil Mill
S222
S298
S223
S296
S224
S295
S225
S294
S293
Covington
S292
Dawson
S393
Holly Grove
Jack Bennet
S398
S51
S231
S319
S291
Matchline
S286
S232
LEGEND
City Boundaries
Floodplain
Wetland
Pond
River
Alternative G
Alternative R
Cross Over O
Cross Over P
FIGURE 4.1.1
Sheet 132 E
Wetlands
I-69 SIU# 8
Millington to Dyersburg, TN
0 0.5 1 2 3 4 Miles

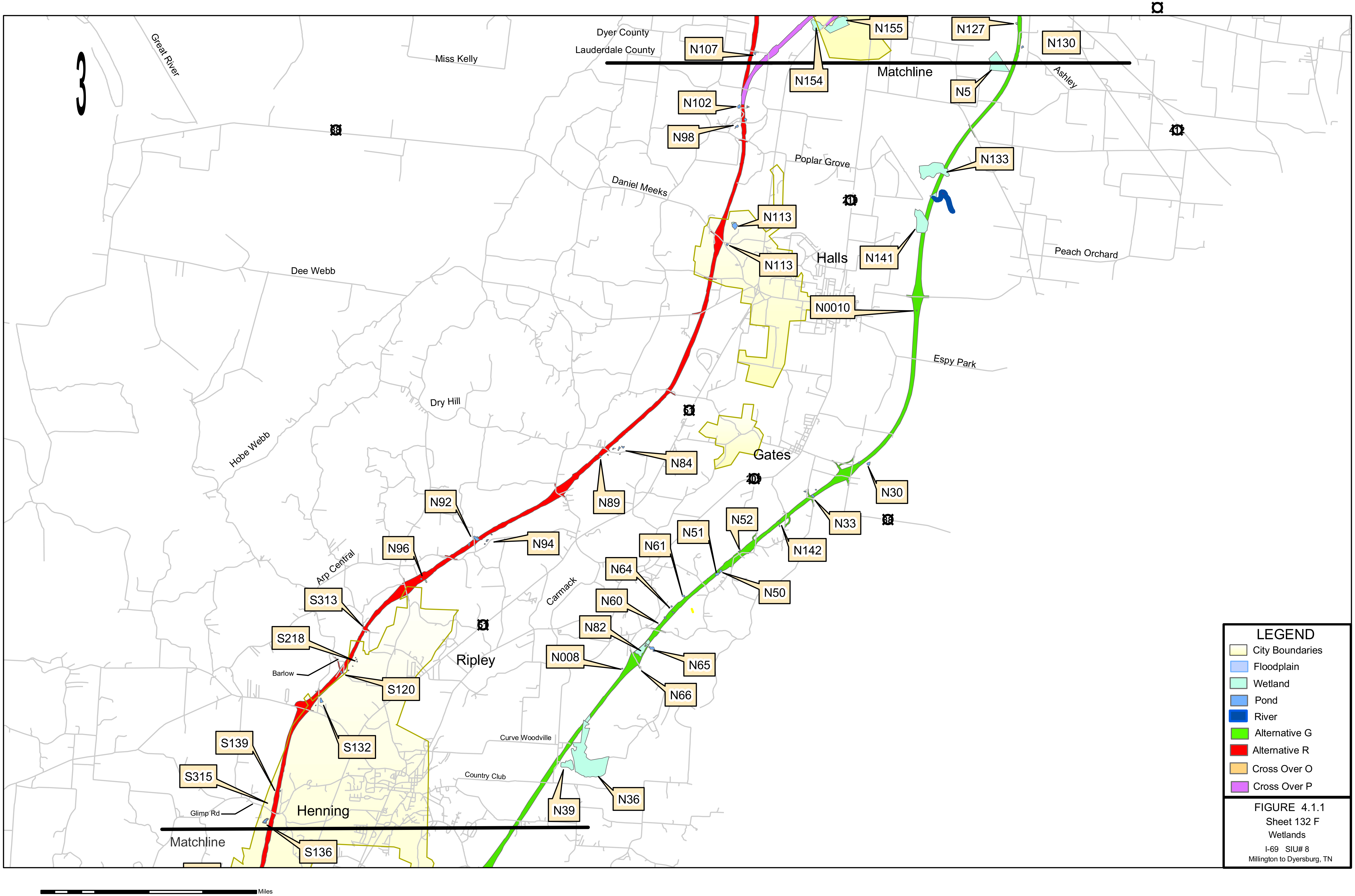
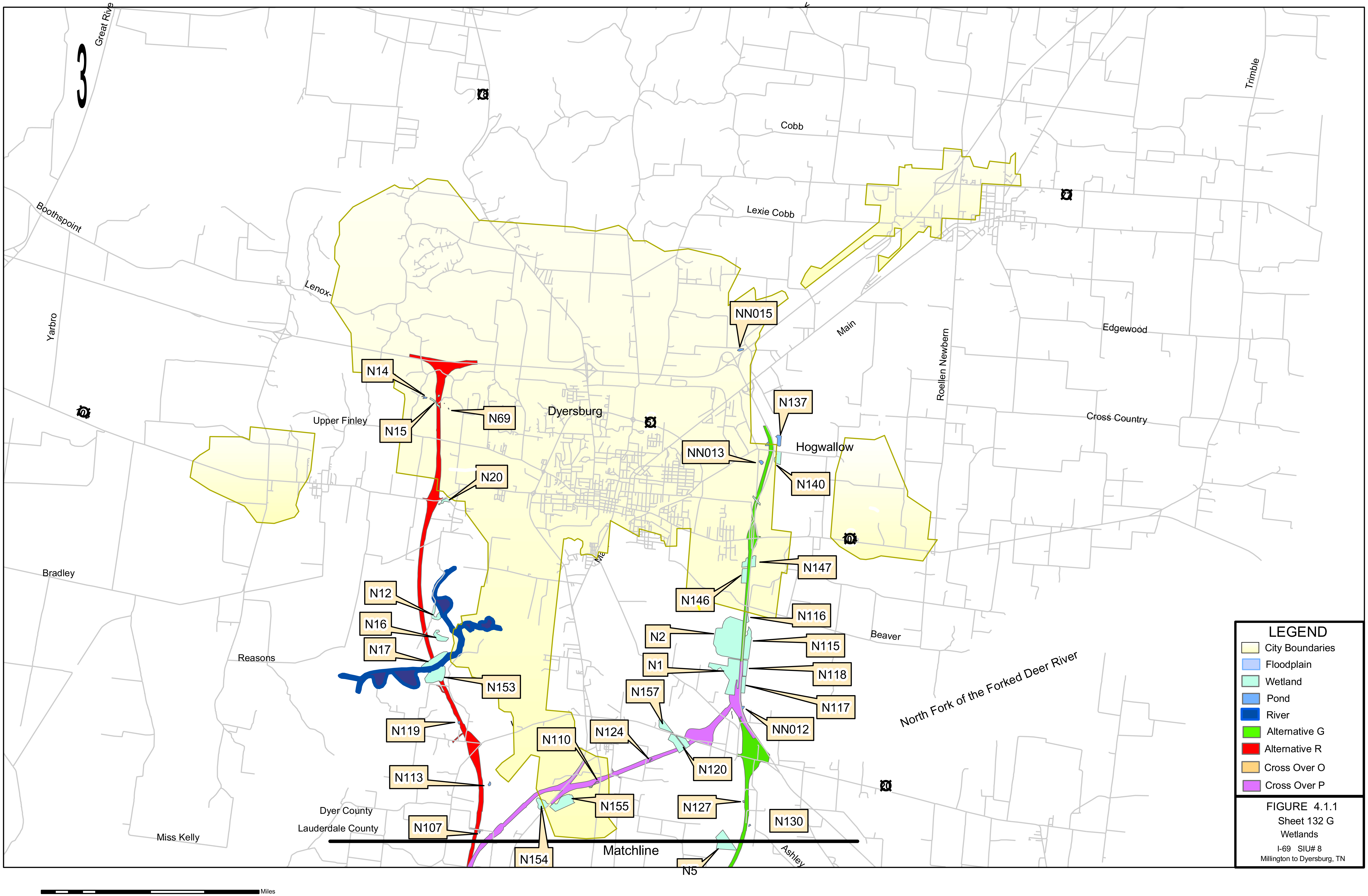


FIGURE 4.1.1
Sheet 132 F
Wetlands
I-69 SIU# 8
Millington to Dyersburg, TN


3
Cobb
Lexie Cobb
Boothspoint
Lenox-
Yarbro
Main
Edgewood
Roellen Newbern
Cross Country
Trimble
Upper Finley
Dyersburg
Hogwallow
Bradley
Reasons
Beaver
North Fork of the Forked Deer River
Dyer County
Lauderdale County
Miss Kelly
Matchline
Ashley
NN015
N14
N69
N15
N20
N137
NN013
N140
N147
N146
N12
N16
N17
N153
N116
N2
N115
N1
N118
N157
N117
NN012
N119
N110
N124
N120
N113
N155
N127
N130
N107
N154
N5
LEGEND
City Boundaries
Floodplain
Wetland
Pond
River
Alternative G
Alternative R
Cross Over O
Cross Over P
FIGURE 4.1.1
Sheet 132 G
Wetlands
I-69 SIU# 8
Millington to Dyersburg, TN
0 0.5 1 2 3 4 Miles

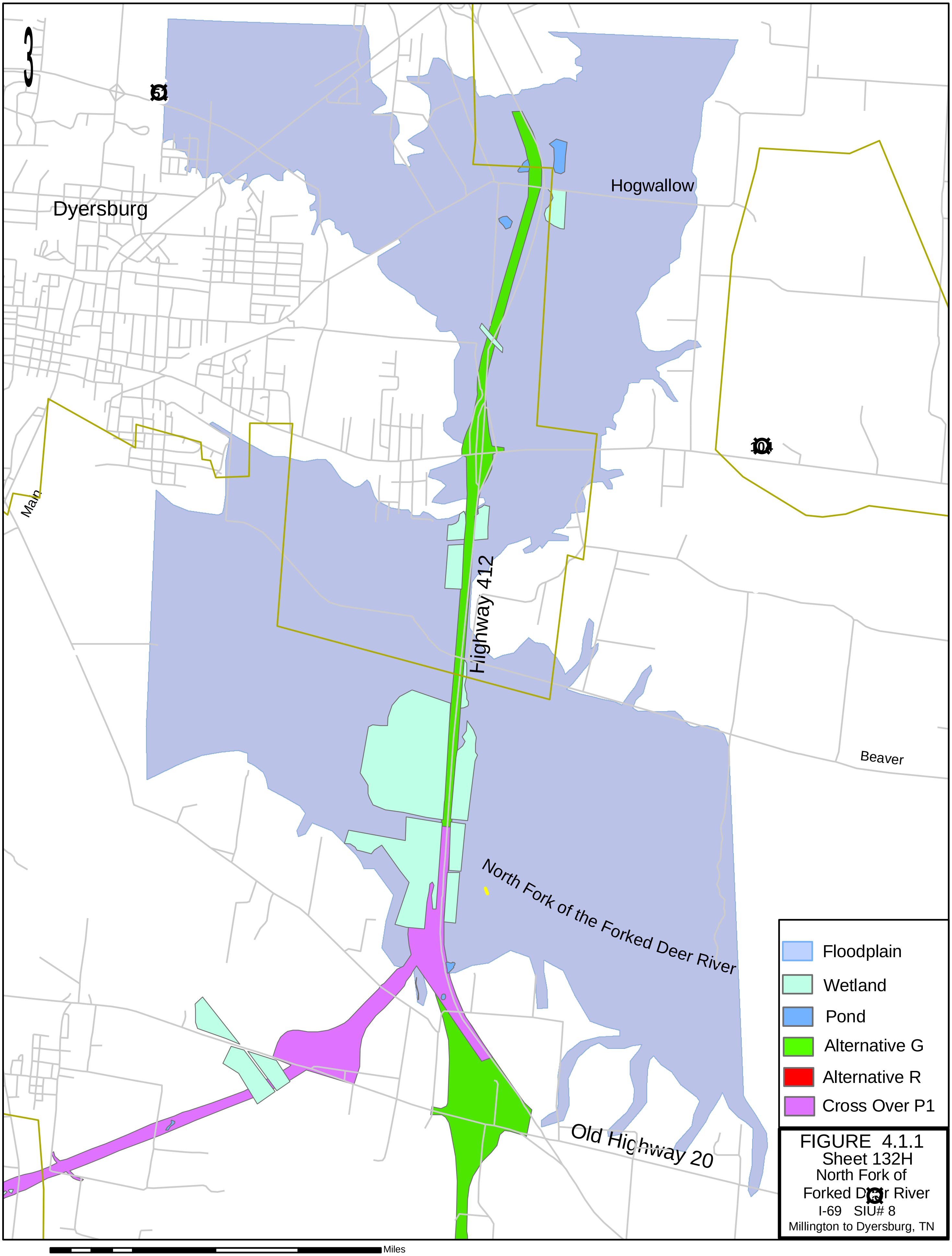

Dyersburg
Hogwallow
Main
Highway 412
North Fork of the Forked Deer River
Beaver
Old Highway 20
Floodplain
Wetland
Pond
Alternative G
Alternative R
Cross Over P1
FIGURE 4.1.1
Sheet 132H
North Fork of
Forked Deer River
I-69 SIU# 8
Millington to Dyersburg, TN
Miles
0
0.25
0.5
1
1.5
2

Table 4.9B

WETLAND IDENTIFICATION and FUNCTIONS

TOTAL ACREAGE AND ACRES REQUIRED by RIGHT of WAY

for I-69 SIU #8 PROJECT ALTERNATIVES

Pages 132-I through 132-W

Name	Cowardin	WOTUS	Functional Value	Wetland Total Area (Acres)	Wetland Impacts (Acres)
	Alternative G				
NN017	PEM	wetland	water quality, recharge, flood storage	3.6	1.3
Hatchie	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	194.2	3.2
N1	PFO	wetland	water quality, recharge, wildlife, flood storage, aesthetics, fish habitat	106.3	2.2
N115	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	36.8	1.8
N117	PFO	wetland	water quality, recharge, wildlife, flood storage	14.2	0.2
N118	PFO	wetland	water quality, recharge, wildlife, flood storage	15.1	0.4
N127	PSS	wetland	water quality, wildlife habitat, recharge	0.7	0.0
N132	PFO	wetland	water quality, wildlife habitat, flood storage, recharge	4.4	3.3
N133	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	70.5	5.0
N141	PFO	wetland	water quality, wildlife habitat, flood storage, recharge	49.2	12.3
N145	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	8.5	0.1
N146	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	16.9	0.7
N147	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	10.1	0.2
N2	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	206.3	2.5
N36	PEM	wetland	water quality, recharge	193.4	8.3
N5	PFO	wetland	water quality, flood storage, wildlife habitat, recharge	50.5	0.0
N50	PUB	pond	water quality	1.1	0.9
N51	PUB	pond	water quality, wildlife habitat	1.7	1.6
N52	PUB	pond	water quality	0.5	0.1
N60	PUB	pond	water quality	0.2	0.1
N64	PUB	pond	water quality	0.4	0.4
N65 P3	PFO	wetland	Water Quality, recharge, wildlife habitat	1.6	1.2
N82	PEM	wetland	water quality, recharge, wildlife habitat	18.1	18.1
NN001	PUB	pond	water quality	2.0	2.0
NN002	PUB	pond	water quality	0.3	0.3
NN004	PUB	pond	water quality	2.7	1.3
NN009	PUB	pond	water quality	0.7	0.4
NN011	PUB	pond	water quality	0.5	0.5
NN012	PUB	pond	H20 Quality	1.4	0.3

NN014	PUB	pond	water quality	2.1	0.1
S. F. F.D	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	18.3	0.2
S167	PUB	pond	water quality, recharge	1.3	0.9
S167	PEM	wetland	water quality, recharge	3.4	0.9
S168	PUB	pond	recharge, water quality, floodflow	2.0	1.4
S168	PEM	wetland	water quality, recharge, floodflow	3.9	1.4
S169	PEM	wetland	water quality, recharge, floodflow	4.8	0.1
S207	PEM	wetland	water quality, recharge, flood storage, fish habitat, wildlife habitat	24.4	0.5
S239	PUB	pond	water quality	0.4	0.2
S240	PUB	pond	water quality	0.6	0.6
S245	PUB	pond	water quality, recharge	0.1	0.1
S245	PEM	wetland	water quality, recharge	0.6	0.1
S250	PUB	pond	water quality, recharge	0.1	0.1
S251	PEM	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S255	PUB	pond	water quality	1.6	1.6
S255	PEM	wetland	water quality, recharge	0.1	1.6
S259	PEM	wetland	water quality, recharge	0.4	0.4
S262	PSS	wetland	water quality, recharge, wildlife habitat	6.6	0.5
S266	PEM	wetland	water quality, recharge	0.3	0.3
S271	PUB/PEM	pond	water quality, recharge	0.3	0.3
S38	PUB	pond	water quality, recharge, wildlife habitat	2.2	2.2
S386	PUB	pond	water quality, recharge, wildlife habitat	0.0	0.0
S386	PFO	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S63	PUB	pond 93-2	water quality, wildlife, recharge	1.9	0.3
S63_1	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	10.5	2.0
S63_2	PUB	pond	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	0.5	0.0

S93	PFO	wetland	water quality, wildlife habitat, flood storage, recharge, fish habitat	82.0	11.6
Alternative G Totals				1180.8	96.2
	Alternative O1				
Name	Cowardin	WOTUS	Functional Value	Wetland Total Area (Acres)	Wetland Impacts (Acres)
F.D. River	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	305.5	1.6
Hatchie	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	194.2	3.2
N106	PUB	pond	water quality	1.1	0.3
N107	PUB	pond	water quality	0.8	0.0
N108	PUB	pond	wildlife habitat	0.4	0.3
N126	PFO	wetland	water quality, wildlife habitat, recharge	0.8	0.8
N15	PFO	wetland	water quality, wildlife habitat, recharge	3.9	1.7
N153	PFO	wetland	water quality, recharge, wildlife, flood storage, aesthetics, fish habitat	54.1	9.1
N17	PFO	wetland	water quality, recharge, wildlife habitat, floodflow storage	40.6	5.5
N89	PUB	pond	water quality	0.5	0.4
N92	PUB	pond	water quality, Wildlife habitat	2.7	1.2
S207	PEM	wetland	water quality, recharge, flood storage, fish habitat, wildlife habitat	24.4	0.5
S239	PUB	pond	water quality	0.4	0.2
S240	PUB	pond	water quality	0.6	0.6
S245	PUB	pond	water quality, recharge	0.1	0.1
S245	PEM	wetland	water quality, recharge	0.6	0.1
S250	PUB	pond	water quality, recharge	0.1	0.1
S251	PEM	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S255	PEM	wetland	water quality, recharge	0.1	1.6
S255	PUB	pond	water quality	1.6	1.6
S259	PEM	wetland	water quality, recharge	0.4	0.4
S262	PSS	wetland	water quality, recharge, wildlife habitat	6.6	0.5
S266	PEM	wetland	water quality, recharge	0.3	0.3
S271	PUB/PEM	pond	water quality, recharge	0.3	0.3

S38	PUB	pond	water quality, recharge, wildlife habitat	2.2	2.2
S386	PUB	pond	water quality, recharge, wildlife habitat	0.0	0.0
S386	PFO	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S63	PUB	pond 93-2	water quality, wildlife, recharge	1.9	0.3
S63_1	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	10.5	2.0
S63_2	PUB	pond	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	0.5	0.0
S93	PFO	wetland	water quality, wildlife habitat, flood storage, recharge, fish habitat	82.0	11.6
Alternative O1 Totals				737.9	46.6
	Alternative O1/P1				
Name	Cowardin	WOTUS	Functional Value	Wetland Total Area (Acres)	Wetland Impacts (Acres)
NN017	PEM	wetland	water quality, recharge, flood storage	3.6	1.3
Hatchie	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	194.2	3.2
N1	PFO	wetland	water quality, recharge, wildlife, flood storage, aesthetics, fish habitat	106.3	21.2
N106	PUB	pond	water quality	1.1	0.3
N110	PFO	wetland	wildlife habitat, water quality, recharge	0.9	0.5
N111	PFO	wetland	water quality, recharge, wildlife habitat	0.4	0.0
N115	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	36.8	1.8
N117	PFO	wetland	water quality, recharge, wildlife, flood storage	14.2	0.2
N118	PFO	wetland	water quality, recharge, wildlife, flood storage	15.1	0.4
N120	PFO	wetland	water quality, wildlife, recharge, flood storage, aesthetics, fish habitat	28.1	5.3
N121	PFO	wetland	water quality, wildlife, recharge, flood storage, aesthetics, fish habitat	14.8	4.5
N124	PUB	pond	water quality	0.6	0.6
N145	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	8.5	0.1
N146	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	16.9	0.7
N147	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	10.1	0.2
N2	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	206.3	2.5
N89	PUB	pond	water quality	0.5	0.4
N92	PUB	pond	water quality, Wildlife habitat	2.7	1.2

NN011	PUB	pond	water quality	0.5	0.5
NN012	PUB	pond	H20 Quality	1.4	0.3
NN014	PUB	pond	water quality	2.1	0.1
NN016	PFO	wetland	wildlife habitat, water quality, recharge	0.3	0.3
S153	PUB	pond	recharge, wildlife, water quality, floodflow	0.4	0.4
S153	PFO	wetland	wildlife, H20 quality, recharge	1.1	0.4
S153	PUB	pond	wildlife, water quality, recharge	0.4	0.4
S207	PEM	wetland	water quality, recharge, flood storage, fish habitat, wildlife habitat	24.4	0.5
S239	PUB	pond	water quality	0.4	0.2
S240	PUB	pond	water quality	0.6	0.6
S245	PUB	pond	water quality, recharge	0.1	0.1
S245	PEM	wetland	water quality, recharge	0.6	0.1
S250	PUB	pond	water quality, recharge	0.1	0.1
S251	PEM	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S255	PUB	pond	water quality	1.6	1.6
S255	PEM	wetland	water quality, recharge	0.1	1.6
S259	PEM	wetland	water quality, recharge	0.4	0.4
S262	PSS	wetland	water quality, recharge, wildlife habitat	6.6	0.5
S266	PEM	wetland	water quality, recharge	0.3	0.3
S271	PUB/PEM	pond	water quality, recharge	0.3	0.3
S38	PUB	pond	water quality, recharge, wildlife habitat	2.2	2.2
S386	PUB	pond	water quality, recharge, wildlife habitat	0.0	0.0
S386	PFO	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S63	PUB	pond 93-2	water quality, wildlife, recharge	1.9	0.3
S63_1	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	10.5	2.0
S63_2	PUB	pond	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	0.5	0.0
S90	PFO	wetland	wildlife, water quality, recharge, floodflow	8.3	1.7
S93	PFO	wetland	water quality, wildlife habitat, flood storage, recharge, fish habitat	82.0	11.6
Alternative O1/P1 Totals				809.1	71.0

	Alternative O3				
Name	Cowardin	WOTUS	Functional Value	Wetland Total Area (Acres)	Wetland Impacts (Acres)
F.D. River	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	305.5	1.6
Hatchie	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	194.2	1.7
N106	PUB	pond	water quality	1.1	0.3
N107	PUB	pond	water quality	0.8	0.0
N108	PUB	pond	wildlife habitat	0.4	0.3
N126	PFO	wetland	water quality, wildlife habitat, recharge	0.8	0.8
N15	PFO	wetland	water quality, wildlife habitat, recharge	3.9	1.7
N153	PFO	wetland	water quality, recharge, wildlife, flood storage, aesthetics, fish habitat	54.1	9.1
N17	PFO	wetland	water quality, recharge, wildlife habitat, floodflow storage	40.6	5.5
N89	PUB	pond	water quality	0.5	0.4
N92	PUB	pond	water quality, Wildlife habitat	2.7	1.2
S153	PUB	pond	recharge, wildlife, water quality, floodflow	0.4	0.4
S153	PFO	wetland	wildlife, H20 quality, recharge	1.1	0.4
S153	PUB	pond	wildlife, water quality, recharge	0.4	0.4
S250	PUB	pond	water quality, recharge	0.1	0.1
S251	PEM	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S255	PUB	pond	water quality	1.6	1.6
S255	PEM	wetland	water quality, recharge	0.1	1.6
S259	PEM	wetland	water quality, recharge	0.4	0.4
S262	PSS	wetland	water quality, recharge, wildlife habitat	6.6	0.5
S266	PEM	wetland	water quality, recharge	0.3	0.3
S271	PUB/PEM	pond	water quality, recharge	0.3	0.3
S38	PUB	pond	water quality, recharge, wildlife habitat	2.2	2.2
S386	PUB	pond	water quality, recharge, wildlife habitat	0.0	0.0
S386	PFO	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S57	PSS	wetland	recharge, discharge, floodflow, wildlife	4.2	0.3

S66	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	0.3	0.0
S90	PFO	wetland	wildlife, water quality, recharge, floodflow	8.3	1.9
Alternative O3 Totals				631.6	33.3
	Alternative O3/P1				
Name	Cowardin	WOTUS	Functional Value	Wetland Total Area (Acres)	Wetland Impacts (Acres)
NN017	PEM	wetland	water quality, recharge, flood storage	3.6	0.0
Hatchie	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	194.2	1.7
N1	PFO	wetland	water quality, recharge, wildlife, flood storage, aesthetics, fish habitat	106.3	21.2
N106	PUB	pond	water quality	1.1	0.3
N110	PFO	wetland	wildlife habitat, water quality, recharge	0.9	0.5
N111	PFO	wetland	water quality, recharge, wildlife habitat	0.4	0.0
N115	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	36.8	1.8
N117	PFO	wetland	water quality, recharge, wildlife, flood storage	14.2	0.2
N118	PFO	wetland	water quality, recharge, wildlife, flood storage	15.1	0.4
N120	PFO	wetland	water quality, wildlife, recharge, flood storage, aesthetics, fish habitat	28.1	5.3
N121	PFO	wetland	water quality, wildlife, recharge, flood storage, aesthetics, fish habitat	14.8	4.5
N124	PUB	pond	water quality	0.6	0.6
N145	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	8.5	0.1
N146	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	16.9	0.7
N147	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	10.1	0.2
N2	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	206.3	2.5
N89	PUB	pond	water quality	0.5	0.4
N92	PUB	pond	water quality, Wildlife habitat	2.7	1.2
NN011	PUB	pond	water quality	0.5	0.5
NN012	PUB	pond	H20 Quality	1.4	0.3
NN014	PUB	pond	water quality	2.1	0.1
NN016	PFO	wetland	wildlife habitat, water quality, recharge	0.3	0.3
S153	PUB	pond	recharge, wildlife, water quality, floodflow	0.4	0.4
S153	PFO	wetland	wildlife, H20 quality, recharge	1.1	0.4

S153	PUB	pond	wildlife, water quality, recharge	0.4	0.4
S250	PUB	pond	water quality, recharge	0.1	0.1
S251	PEM	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S255	PUB	pond	water quality	1.6	1.6
S255	PEM	wetland	water quality, recharge	0.1	1.6
S259	PEM	wetland	water quality, recharge	0.4	0.4
S262	PSS	wetland	water quality, recharge, wildlife habitat	6.6	0.5
S266	PEM	wetland	water quality, recharge	0.3	0.3
S271	PUB/PEM	pond	water quality, recharge	0.3	0.3
S38	PUB	pond	water quality, recharge, wildlife habitat	2.2	2.2
S386	PUB	pond	water quality, recharge, wildlife habitat	0.0	0.0
S386	PFO	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S57	PSS	wetland	recharge, discharge, floodflow, wildlife	4.2	0.3
S66	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	0.3	0.0
S90	PFO	wetland	wildlife, water quality, recharge, floodflow	8.3	1.9
Alternative O3/P1 Totals				692.5	53.5
	Alternative O3/P2				
Name	Cowardin	WOTUS	Functional Value	Wetland Total Area (Acres)	Wetland Impacts (Acres)
NN017	PEM	wetland	water quality, recharge, flood storage	3.6	0.0
Hatchie	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	194.2	1.7
N1	PFO	wetland	water quality, recharge, wildlife, flood storage, aesthetics, fish habitat	106.3	2.2
N115	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	36.8	1.8
N117	PFO	wetland	water quality, recharge, wildlife, flood storage	14.2	0.2
N118	PFO	wetland	water quality, recharge, wildlife, flood storage	15.1	0.4
N127	PSS	wetland	water quality, wildlife habitat, recharge	0.7	0.0
N132	PFO	wetland	water quality, wildlife habitat, flood storage, recharge	4.4	3.3
N133	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	70.5	5.0
N141	PFO	wetland	water quality, wildlife habitat, flood storage, recharge	49.2	12.3
N145	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	8.5	0.1

N146	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	16.9	0.7
N147	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	10.1	0.2
N2	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	206.3	2.5
N36	PEM	wetland	water quality, recharge	193.4	8.3
N5	PFO	wetland	water quality, flood storage, wildlife habitat, recharge	50.5	0.0
N50	PUB	pond	water quality	1.1	0.9
N51	PUB	pond	water quality, wildlife habitat	1.7	1.6
N52	PUB	pond	water quality	0.5	0.1
N60	PUB	pond	water quality	0.2	0.1
N64	PUB	pond	water quality	0.4	0.4
N65 P3	PFO	wetland	Water Quality, recharge, wildlife habitat	1.6	1.2
N82	PEM	wetland	water quality, recharge, wildlife habitat	18.1	18.1
NN001	PUB	pond	water quality	2.0	1.6
NN002	PUB	pond	water quality	0.3	0.3
NN004	PUB	pond	water quality	2.7	1.3
NN009	PUB	pond	water quality	0.7	0.4
NN011	PUB	pond	water quality	0.5	0.5
NN012	PUB	pond	H20 Quality	1.4	0.3
NN014	PUB	pond	water quality	2.1	0.1
S. F. F.D	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	18.3	0.2
S073	PUB	pond	water quality, wildlife habitat	4.8	4.8
S167	PUB	pond	water quality, recharge	1.3	0.9
S167	PEM	wetland	water quality, recharge	3.4	0.9
S168	PUB	pond	recharge, water quality, floodflow	2.0	1.4
S168	PEM	wetland	water quality, recharge, floodflow	3.9	1.4
S169	PEM	wetland	water quality, recharge, floodflow	4.8	0.1
S250	PUB	pond	water quality, recharge	0.1	0.1
S251	PEM	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S255	PUB	pond	water quality	1.6	1.6
S255	PEM	wetland	water quality, recharge	1.6	1.6
S259	PEM	wetland	water quality, recharge	0.4	0.4

S262	PSS	wetland	water quality, recharge, wildlife habitat	6.6	0.5
S266	PEM	wetland	water quality, recharge	0.3	0.3
S271	PUB/PEM	pond	water quality, recharge	0.3	0.3
S38	PUB	pond	water quality, recharge, wildlife habitat	2.2	2.2
S386	PUB	pond	water quality, recharge, wildlife habitat	0.0	0.0
S386	PFO	wetland	water quality, recharge, wildlife habitat	0.2	0.0
S57	PSS	wetland	recharge, discharge, floodflow, wildlife	4.2	0.3
S66	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	0.3	0.0
Alternative O3/P2 Totals				1070.2	82.8
	Alternative P1				
Name	Cowardin	WOTUS	Functional Value	Wetland Total Area (Acres)	Wetland Impacts (Acres)
NN017	PEM	wetland	water quality, recharge, flood storage	3.6	0.0
Access Denied			Unknown	21.3	2.1
BigCreek	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	22.7	1.7
Hatchie	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	194.2	1.7
N1	PFO	wetland	water quality, recharge, wildlife, flood storage, aesthetics, fish habitat	106.3	21.2
N106	PUB	pond	water quality	1.1	0.3
N110	PFO	wetland	wildlife habitat, water quality, recharge	0.9	0.5
N111	PFO	wetland	water quality, recharge, wildlife habitat	0.4	0.0
N115	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	36.8	1.8
N117	PFO	wetland	water quality, recharge, wildlife, flood storage	14.2	0.2
N118	PFO	wetland	water quality, recharge, wildlife, flood storage	15.1	0.4
N120	PFO	wetland	water quality, wildlife, recharge, flood storage, aesthetics, fish habitat	28.1	5.3
N121	PFO	wetland	water quality, wildlife, recharge, flood storage, aesthetics, fish habitat	14.8	4.5
N124	PUB	pond	water quality	0.6	0.6
N145	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	8.5	0.1
N146	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	16.9	0.7
N147	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	10.1	0.2
N2	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	206.3	2.5

N89	PUB	pond	water quality	0.5	0.4
N92	PUB	pond	water quality, Wildlife habitat	2.7	1.2
NN011	PUB	pond	water quality	0.5	0.5
NN012	PUB	pond	H20 Quality	1.4	0.3
NN014	PUB	pond	water quality	2.1	0.1
NN016	PFO	wetland	wildlife habitat, water quality, recharge	0.3	0.3
S153	PUB	pond	recharge, wildlife, water quality, floodflow	0.4	0.4
S153	PFO	wetland	wildlife, H20 quality, recharge	1.1	1.1
S153	PUB	pond	wildlife, water quality, recharge	0.4	0.4
S281	PSS	wetland	recharge, wildlife, water quality, nutrient, floodflow	1.2	0.7
S281	PUB	pond	recharge, wildlife, H20 quality, nutrient, floodflow	0.7	0.4
S342	PUB	pond	water quality, recharge	0.4	0.4
S342	PEM	wetland	recharge, water quality	0.8	0.6
S57	PSS	wetland	recharge, discharge, floodflow, wildlife	4.2	0.3
S66	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	0.3	0.0
S90	PFO	wetland	wildlife, water quality, recharge, floodflow	8.3	1.9
Alternative P1 Totals				727.3	53.2
	Alternative P2				
Name	Cowardin	WOTUS	Functional Value	Wetland Total Area (Acres)	Wetland Impacts (Acres)
NN017	PEM	wetland	water quality, recharge, flood storage	3.6	0.0
BigCreek	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	22.7	1.7
Hatchie	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	194.2	1.7
N1	PFO	wetland	water quality, recharge, wildlife, flood storage, aesthetics, fish habitat	106.3	2.2
N115	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	36.8	1.8
N117	PFO	wetland	water quality, recharge, wildlife, flood storage	14.2	0.2
N118	PFO	wetland	water quality, recharge, wildlife, flood storage	15.1	0.4
N127	PSS	wetland	water quality, wildlife habitat, recharge	0.7	0.0
N132	PFO	wetland	water quality, wildlife habitat, flood storage, recharge	4.4	3.3
N133	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	70.5	5.0

N141	PFO	wetland	water quality, wildlife habitat, flood storage, recharge	49.2	12.3
N145	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	8.5	0.1
N146	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	16.9	0.7
N147	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	10.1	0.2
N2	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	206.3	2.5
N36	PEM	wetland	Water Quality, recharge	193.4	8.3
N5	PFO	wetland	water quality, flood storage, wildlife habitat, recharge	50.5	0.0
N50	PUB	pond	water quality	1.1	0.9
N51	PUB	pond	water quality, wildlife habitat	1.7	1.6
N52	PUB	pond	water quality	0.5	0.1
N60	PUB	pond	water quality	0.2	0.1
N64	PUB	pond	water quality	0.4	0.4
N65 P3	PFO	wetland	Water Quality, recharge, wildlife habitat	1.6	1.2
N82	PEM	wetland	water quality, recharge, wildlife habitat	18.1	18.1
NN001	PUB	pond	water quality	2.0	1.6
NN002	PUB	pond	water quality	0.3	0.3
NN004	PUB	pond	water quality	2.7	1.3
NN009	PUB	pond	water quality	0.7	0.4
NN011	PUB	pond	water quality	0.5	0.5
NN012	PUB	pond	H20 Quality	1.4	0.3
NN014	PUB	pond	water quality	2.1	0.1
S. F. F.D	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	18.3	0.2
S073	PUB	pond	water quality, wildlife habitat	4.8	4.8
S167	PUB	pond	water quality, recharge	1.3	0.9
S167	PEM	wetland	water quality, recharge	3.4	2.2
S168	PUB	pond	recharge, water quality, floodflow	2.0	1.4
S168	PEM	wetland	water quality, recharge, floodflow	3.9	2.4
S169	PEM	wetland	water quality, recharge, floodflow	4.8	0.1
S281	PSS	wetland	recharge, wildlife, water quality, nutrient, floodflow	1.2	0.7
S281	PUB	pond	recharge, wildlife, H20 quality, nutrient, floodflow	0.7	0.4
S342	PUB	pond	water quality, recharge	0.4	0.4

S342	PEM	wetland	recharge, water quality	0.8	0.6
S57	PSS	wetland	recharge, discharge, floodflow, wildlife	4.2	0.3
S66	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	0.3	0.0
Alternative P2 Totals				1082.7	81.9
	Alternative P3				
Name	Cowardin	WOTUS	Functional Value	Wetland Total Area (Acres)	Wetland Impacts (Acres)
NN017	PEM	wetland	water quality, recharge, flood storage	3.6	1.3
BigCreek	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	22.7	1.7
Hatchie	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	194.2	3.2
N1	PFO	wetland	water quality, recharge, wildlife, flood storage, aesthetics, fish habitat	106.3	2.2
N115	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	36.8	1.8
N117	PFO	wetland	water quality, recharge, wildlife, flood storage	14.2	0.2
N118	PFO	wetland	water quality, recharge, wildlife, flood storage	15.1	0.4
N127	PSS	wetland	water quality, wildlife habitat, recharge	0.7	0.0
N132	PFO	wetland	water quality, wildlife habitat, flood storage, recharge	4.4	3.3
N133	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	70.5	5.0
N141	PFO	wetland	water quality, wildlife habitat, flood storage, recharge	49.2	12.3
N145	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	8.5	0.1
N146	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	16.9	0.7
N147	PFO	wetland	water quality, wildlife habitat, recharge, flood storage	10.1	0.2
N2	PFO	wetland	water quality, recharge, wildlife, aesthetics, flood storage, fish habitat	206.3	2.5
N36		wetland		193.4	8.3
N5	PFO	wetland	water quality, flood storage, wildlife habitat, recharge	50.5	0.0
N50	PUB	pond	water quality	1.1	0.9
N51	PUB	pond	water quality, wildlife habitat	1.7	1.6
N52	PUB	pond	water quality	0.5	0.1
N60	PUB	pond	water quality	0.2	0.1
N64	PUB	pond	water quality	0.4	0.4
N65 P3	PFO	wetland	Water Quality, recharge, wildlife habitat	1.6	1.2

N82	PEM	wetland	water quality, recharge, wildlife habitat	18.1	18.1
NN001	PUB	pond	water quality	2.0	2.0
NN002	PUB	pond	water quality	0.3	0.3
NN004	PUB	pond	water quality	2.7	1.3
NN009	PUB	pond	water quality	0.7	0.4
NN011	PUB	pond	water quality	0.5	0.5
NN012	PUB	pond	H20 Quality	1.4	0.3
NN014	PUB	pond	water quality	2.1	0.1
S. F. F.D	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	18.3	0.2
S167	PUB	pond	water quality, recharge	1.3	0.9
S167	PEM	wetland	water quality, recharge	3.4	2.2
S168	PUB	pond	recharge, water quality, floodflow	2.0	1.4
S168	PEM	wetland	water quality, recharge, floodflow	3.9	2.4
S169	PEM	wetland	water quality, recharge, floodflow	4.8	0.1
S207	PEM	wetland	water quality, recharge, flood storage, fish habitat, wildlife habitat	24.4	0.5
S281	PSS	wetland	recharge, wildlife, water quality, nutrient, floodflow	1.2	0.7
S281	PUB	pond	recharge, wildlife, H20 quality, nutrient, floodflow	0.7	0.4
S342	PUB	pond	water quality, recharge	0.4	0.4
S342	PEM	wetland	recharge, water quality	0.8	0.4
S51_1	PUB	pond	water quality, recharge, floodflow	0.1	4.3
S51_2	PUB	pond	water quality, recharge	4.5	0.1
S63	PUB	pond 93-2	water quality, wildlife, recharge	1.9	0.3
S63_1	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	10.5	2.0
S63_2	PUB	pond	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	0.5	0.0
S93	PFO	wetland	water quality, wildlife habitat, flood storage, recharge, fish habitat	82.0	11.6
Alternative P3 Totals				1197.3	98.4

	Alternative R				
Name	Cowardin	WOTUS	Functional Value	Wetland Total Area (Acres)	Wetland Impacts (Acres)
BigCreek F.D.	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	22.7	1.7
River	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	305.5	1.6
Hatchie	RUB/RUS	river	water quality, recharge, aesthetics, fish habitat, wildlife habitat	194.2	1.7
N106	PUB	pond	water quality	1.1	0.3
N107	PUB	pond	water quality	0.8	0.0
N108	PUB	pond	wildlife habitat	0.4	0.3
N126	PFO	wetland	water quality, wildlife habitat, recharge	0.8	0.8
N15	PFO	wetland	water quality, wildlife habitat, recharge	3.9	1.7
N153	PFO	wetland	water quality, recharge, wildlife, flood storage, aesthetics, fish habitat	54.1	9.1
N17	PFO	wetland	water quality, recharge, wildlife habitat, floodflow storage	40.6	5.5
N89	PUB	pond	water quality	0.5	0.4
N92	PUB	pond	water quality, Wildlife habitat	2.7	1.2
S153	PUB	pond	recharge, wildlife, water quality, floodflow	0.4	0.4
S153	PFO	wetland	wildlife, H20 quality, recharge	1.1	1.1
S153	PUB	pond	wildlife, water quality, recharge	0.4	0.4
S281	PSS	wetland	recharge, wildlife, water quality, nutrient, floodflow	1.2	0.7
S281	PUB	pond	recharge, wildlife, H20 quality, nutrient, floodflow	0.7	0.4
S342	PUB	pond	water quality, recharge	0.4	0.4
S342	PEM	wetland	recharge, water quality	0.8	0.4
S57	PSS	wetland	recharge, discharge, floodflow, wildlife	4.2	0.3
S66	PFO	wetland	water quality, wildlife, flood store, recharge, aesthetics, fish habitat	0.3	0.0
S90	PFO	wetland	wildlife, water quality, recharge, floodflow	8.3	1.9
Alternative R Totals				645.2	30.5

4.5.3 Floodplain Impacts

Executive Order 11988, Floodplain Management addresses encroachment to floodplains. Federal agencies must avoid significant impacts to floodplains unless there is no practical alternative. Longitudinal encroachments must be avoided if possible. If it cannot be avoided, the degree of encroachment must be minimized to the greatest extent practicable. FHWA policy requires that all transverse encroachments be supported by analyses of design alternatives through design risk assessment.

The National Flood Insurance Program (NFIP) standard requires no exceedence of greater than a one-foot rise in water for the 100-year floodplain. Floodplain alterations will require close coordination with the Tennessee Valley Authority (for navigable rivers), Tennessee Division of Water Pollution Control and the USACOE. Development in the floodway is restricted to activities that would not interrupt the natural flow of the waterways. See table 4.6 for a summary of floodplain impacts per alignment.

Pursuant to Executive Order 11988, Floodplain Management, the proposed project was determined to be within one or more of the 100-year floodplains of the following streams: Hatchie River and several of its tributaries, Beaver Creek Drainage Canal, Big Creek Drainage Canal, Big Crooked Creek Canal, West Beaver Creek Drainage Canal, Hyde Creek, Cane Creek and several of its tributaries, tributary of Cold Creek, Double Branches Stream, Tisdale Creek, South fork of the Forked Deer River, North Fork of the Forked Deer River, Lewis Creek, Jones Creek, Light Creek, Town Creek, Mathis Creek, Indian Creek, Myron Creek, Cane Branch, North Fork Creek, several tributaries of Royster Creek, Bear Creek, Jakes Creek, Sumrow Creek, Mill Creek, Chambers Branch, Forked Deer River and Smith Creek.

It would be the goal of the highway designers to avoid significant impacts to the floodplain and to minimize impacts that adversely affect base floodplains. The bridge crossings should be adequately designed so that no induced flooding or increase in upstream river stages would place undue burdens on area landowners. In addition, all crossings should be adequately stabilized and protected. The Federal Highway Administration floodplain encroachment policy requires longitudinal encroachments to be avoided where practicable. If a longitudinal encroachment cannot be avoided, the degree of encroachment should be minimized to the extent practicable. Generally, any increase in the 100-year water-surface elevation produced by a longitudinal encroachment on a National Flood Insurance Program floodplain should not exceed the one-foot allowed by the federal NFIP standards. Any encroachment onto floodplains would require close coordination with the State Division of Water and the USACOE. Impacts to project area floodplains associated with the construction of the Build Alternatives is provided in Table 4.10.

Table 4.10 Floodplain Impacts

Nodes	Acres Impacted Floodplains
AB	119.3
BC	0.0
CD	37.5
DK	41.9
KE	28.6
EG	39.3
GH	166.4
JS	34.0
ST	0
TU	0
UV	31.1
VW	2.6
WY	434.9
YZ	198.7
SC	30.8
VE	57.7
BT	7.4
KW	12.1
GY	208.8
Build Alternatives	**Acres Impacted Floodplains**
R (ABCDKEGH)	**432.9**
G (JSTUVWYZ)	**701.3**
P3 (ABTUVWYZ)	**794**
P2 (ABDKWYZ)	**844**
P1 (ABDKEGYZ)	**674**
O3 (JSCDKEGH)	**379**
O1 (JSTUVEGH)	**329**
O1/P1 (JSTUVEGYZ)	**328.5**
O3/P1 (JSCDKEGYZ)	**619.6**
O3/P2 (JSCDKWYZ)	**789.9**

Alternative G would impact approximately 701 acres of floodplains in the project area, a 61% increase compared to the Alternative R. Of the Crossover alternatives, P2 would have the greater impact. As indicated in the table above, the node with the greatest impact to floodplains would be the W-Y node section, with 435 acres involved.

4.5.4 Impacts to Threatened and Endangered Species

Endangered species collection records available to the U.S. Fish and Wildlife Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the various Build Alternatives. Additionally, field surveys conducted during the course of these investigations have not revealed the presence of any federally protected species occurring within the project area. Therefore, based upon the best available information, the requirements of Section 7 of the Endangered Species Act of 1973, as amended, are fulfilled.

Obligations under Section 7 of the Endangered Species Act must be reconsidered if (1) new information reveals the impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

4.5.5 Impacts to State-listed Species

A number of state-listed species have been documented from the project corridor and are listed in the table below.

Table 4.11 State-listed Species

Tennessee Rare Species Occurring in the Project Area (Listed by Tennessee Division of Natural Heritage)				
Animal scientific name	**Animal common name**	**County rare**	**State status**	**Federal status**
Ardea alba	great egret	Dyer, Lauderdale	D	
Limnothlypis swainsonii	Swainson's warbler	Dyer, Haywood, Shelby, Lauderdale	D, S3	MC
Riparia riparia	bank swallow	Dyer, Lauderdale	S3	
Buteo lineatus	red-shouldered hawk	Haywood	S4	
Lanius ludovicianus	loggerhead shrike	Dyer	D, S3	MC
Circus cyaneus	Northern Harrier	Dyer	D, S4	
Uniomerus declivis	tapered pondhorn	Haywood	S1	
Villosa vibex	southern rainbow	Haywood, Tipton	S2	
Cycleptus elongatus	blue sucker	Tipton, Lauderdale, Shelby, Haywood, Dyer	T, S2	MC
Lepisosteus spatula	alligator gar	Lauderdale, Dyer	D, S1	

S1: Extremely rare and critically imperiled in the state with 5 or fewer occurrences, or very few remaining individuals, or because of some special condition where the species is particularly vulnerable to extirpation from Tennessee
S2: Very rare and imperiled within the state, six to twenty occurrences and less than 3,000 individuals, or few remaining individuals, or because of some factor(s) making it vulnerable to extirpation from the Tennessee.
S3: Rare or uncommon in the state. Twenty-one to 100 occurrences.
S4: Widespread, abundant, and apparently secure within the state, but with cause for long-term concern. S4 species are not discussed below due to their abundance & stability.
T: Threatened
MC: Management Concern
D: Deemed in need of management
(Department of Environment and Conservation, 2001)
* The Tennessee Department of Environment and Conservation's Division of Natural Heritage (DNH) lists the loggerhead shrike among the vertebrates actively tracked by the state.

While no formal protection is available for state-listed species, these animals are in decline within Tennessee and efforts can be taken to minimize potential harm to these organisms.

Many bird species are in decline in Tennessee. Generally native bird species are threatened by development due to habitat destruction. As forests are removed, less habitat is available for bird breeding, foraging, and nesting. Forest fragmentation is an obstruction to migration and quickly depletes & degrades habitat for interior forest species. Competition from non-native species like house wrens and starlings adds additional stress to native bird populations.

The great egret is associated with marshy openwater areas especially in bottomland hardwood habitat. Oxbows and slews make excellent habitat for the great egret. Declines of the great egret in Tennessee are attributed to channelization of major streams and associated draining of swamps often for the purpose of agricultural development. The greatest threat to this species from the proposed I-69 project is destruction of bottomland hardwood habitat.

The Swainson's warbler is a neotropical migrant that breeds in bottomland hardwood forests in the southeastern United States. It is thought that cane thickets may be important breeding habitat for this species. The Swainson's warbler was identified during project field studies in the bottomland hardwood forest along the original channel of the South Fork Forked Deer River at Espy Park Road, Approximately one mile east of Alternative G. Good habitat for the Swainson's warbler with extensive cane thickets exists on and near the BFI property near Millington along Alternative R. The proposed project would negatively impact the Swainson’s warbler by disturbing this habitat or other bottomland hardwood areas.

The bank swallow is an uncommon species in Tennessee. These birds typically nest in holes dug into steep stream banks. It is unclear why the bank swallow is in decline. Potential habitat for this species exists along most of the major streams within the project area. The most plausible impacts to this bird from the proposed project would occur from disturbance to riparian zones which would reduce foraging habitat for this species.

The loggerhead shrike in Tennessee inhabits open grassy areas with scattered trees or uncluttered grassy woods. They often utilized power lines and livestock fences to wait for prey or to spear prey after capture. Their attraction to manmade structures and man-altered landscapes is a double-edged sword as they often are killed in collisions with motor vehicles. Removal of trees and shrubs near open areas that provide roosting habitat would negatively impact this species. Additional impacts could occur from shrike collisions with motor vehicles traveling along the new roadway.

Freshwater mussels are particularly sensitive to the effects of sedimentation. Unchecked erosion causes streams to carry increased sediment loads which settle out in those areas where water velocity and turbidity allow. Because freshwater mussels live year round in the substrate, they become covered as sediment settles. Emersion in sediment directly impacts their ability to respire, feed, and reproduce. Impacts from sedimentation have caused freshwater mussels to be the most impaired group of animals in Tennessee. The state listed tapered pondhorn and southern rainbow are species listed as extremely rare and very rare respectively in Tennessee. These animals will be negatively impacted from sedimentation caused by this project unless appropriate measures are taken to control erosion and sedimentation. Pollution of area waters through hazardous materials spills also has the potential to negatively impact these species.

Two fish, the blue sucker and the alligator gar, are state listed and are thought to have the possibility of occurring within the project area.

The blue sucker is listed as threatened in the state of Tennessee. Although once abundant, this fish has declined in Tennessee likely due to impoundment and siltation of large streams. Commercial fisherman have reported these fish making spawning runs in the Hatchie River in February. (Etnier & Starnes 1993). As the last major unchannelized river in the area, the Hatchie River may be very important spawning habitat for this species. Any activities which increase sedimentation or block flow of the Hatchie River could negatively impact this species.

The alligator gar is considered extremely rare and critically imperiled within the state of Tennessee. One individual of this species was reported from the Hatchie River, near the project area in 1973 (Etnier & Starnes 1993). Declines of this species throughout its range are attributed in part to the decline of bottomland hardwood habitat where it is thought that the alligator gar breeds during spring floods. It is possible that this species is now extirpated from Tennessee as no confirmed recent records have been reported. Any disturbance to bottomland hardwood habitats or the channelization of streams associated with the I-69 project would negatively impact this species if it is still present within the vicinity.

Tennessee Department of Transportation's *Specific Specifications for Road and Bridge Construction* would guide any construction activities in the event a Build Alternative is selected as the preferred alignment. In addition to this, the following mitigation measures could be employed to help minimize and mitigate impacts to imperiled species of the area.

A written erosion control plan should be developed that includes stringent erosion control methods (i.e., straw bales, silt fences and erosion mats, immediate seeding and mulching of disturbed areas) which are placed in staggered manner to provide several stages of control. Construction machinery should be kept out of area streams and should be kept away from stream banks and associated bottomland hardwood habitat to the greatest extent practicable. Riparian vegetation removed or otherwise destroyed during construction should be limited to that absolutely necessary. In areas where disturbance to stream banks is unavoidable, disturbance should be designed in such a manner as to not initiate or contribute to headcutting, a common source of sedimentation. All erosion control measures should be monitored periodically to ensure that they are functioning as planned. Trees greater than 24 inches diameter at breast height removed from within 100 year floodplains should be replaced with native saplings of the following species: black walnut, river birch, sycamore, swamp chestnut oak, pin oak, cherrybark oak, shingle oak, green ash, black gum, sweet gum, eastern cottonwood, red maple (Other tree species may be substituted if approved by a qualified biologist). Planting or seeding these same species should be considered wherever disturbance within the riparian zoned occurs. Bridge crossings over the Hatchie and North and South Fork Forked Deer Rivers should be outfitted with hazardous spill containment structures which would stop or delay the transport of toxic spill material into these streams which support state listed wildlife.

4.5.6 Invasive Species Impacts

The potential of introducing exotic or invasive species, to the natural and farmed plant communities, not already present in the project area is remote. Habitat fragmentation has already resulted in the establishment of these organisms in the region. Additional fragmentation of habitat and soil disturbance could create more favorable conditions for the existing non-native species. These impacts can be minimized through the utilization of native woody vegetation on cut and fill slopes. Additionally, native herbaceous plants and grasses should be planted in the medians of the Build Alternatives.

4.6 Cultural Resources

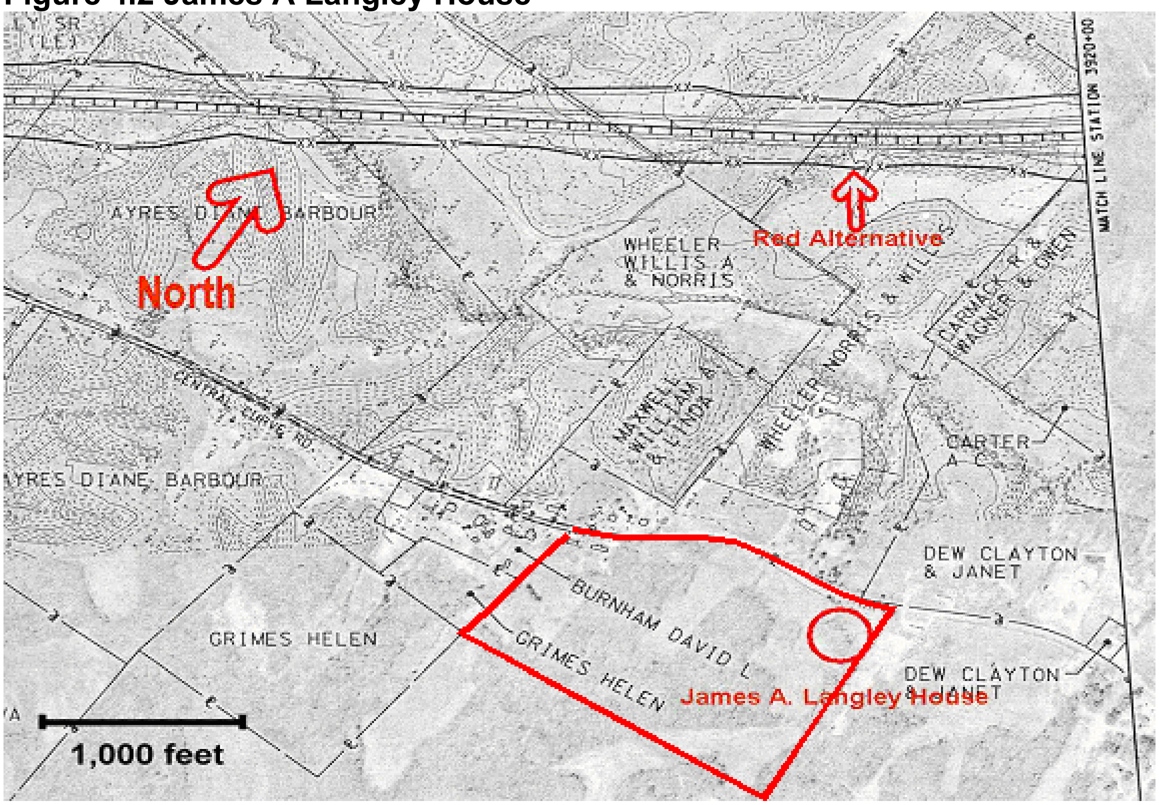
Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by the ACHP. The Section 106 process is ongoing and therefore is not completed. Unresolved issues shall be addressed in the Final Environmental Impact Statement.

4.6.1 Architectural/Historic Impacts

Three properties were identified in the project area as being listed, or potentially eligible for listing, in the National Register of Historic Places (NRHP). These properties include the James A. Langley House located on Central Curve Road in Ripley, the Mt. Carmel Presbyterian Church, Mt. Carmel Road in Covington, and the Farmer Store, Rialto Road in Covington, Tennessee. For a complete listing and description of all properties surveyed for this proposed action, please refer to Tennessee Department of Transportation for the *Historic and Architectural Survey and Documentation For Effect Under 36 CFR 800 Evaluation, I69 Dyer, Lauderdale, Shelby, and Tipton Counties, Tennessee (Thomason 2002)*.

James A. Langley House
This property is eligible for the NRHP under criterion C for its architectural design. This dwelling, constructed by James A, Langley in 1912, combines elements of the Queen Anne and Colonial Revival style, and is the most notable example of this style of architecture inventoried within the project area. The proposed location for the Alternative R is 0.5 miles north of the property's proposed National Register boundary for this property, and is a sufficient distance away that it would not directly affect the property, nor would the alignment result in any change to the properties use or physical features. Furthermore, the presence of several hills and dense tree lines would avoid the introduction of visual or audible elements that could diminish or alter the property's amenities that make it eligible for listing in the NRHP Therefore, this National Register-eligible property would not be adversely affected by the proposed project, and there would be no Section 4(f) use of the property by any of the proposed Build Alternatives.

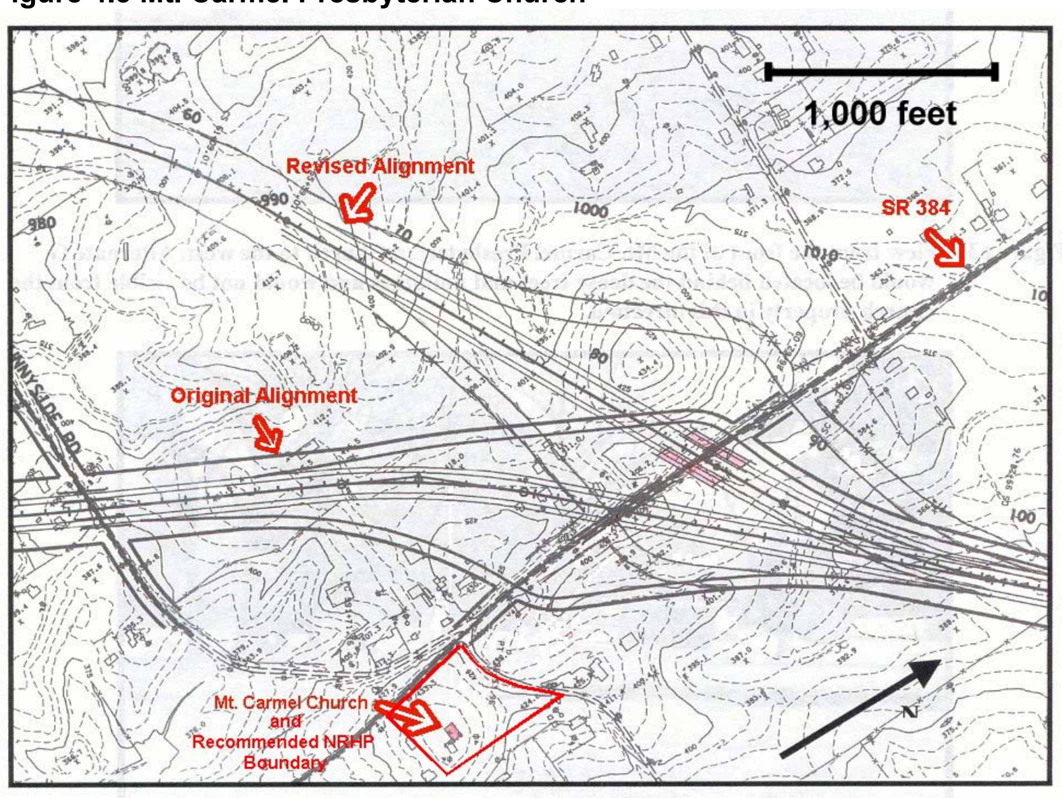
Figure 4.2 James A Langley House



Mt. Carmel Presbyterian Church
The Mt. Carmel Presbyterian Church was listed on the NRHP on July 12, 1984 under criterion C for its architectural design. A congregation formed in 1834 erected the building on the highest point in Tipton County. The present structure replaced a wooden frame building that burned in 1854. Design elements of the structure include both the Greek and Gothic Revival styles. There would be no direct impact, or any change in the use or physical features, to the property.

However, due to the proximity of the interchange and the limited screening provided by the existing tree lines, the original design of Alternative G would have had an adverse visual impact to this historic resource. As a result of this impact, Alternative G and the proposed interchange with SR 384 was moved approximately 400 feet northwest of its previous location and is now approximately 1600 feet in distance from the NRHP-listed structure. However, the tree lines to the north presently do not have sufficient density to provide a visual barrier between the church and interchange. TDOT has proposed to eliminate this potential adverse visual effect through the planting of a denser tree line of conifers and similar foliage. The proposed tree line should extend along the north property line, either within or adjacent to the existing tree lines. The addition of this landscaping to the property would result in the project having no adverse effect to the property. The interchange segment of this project will be the only portion having adverse impacts on the Mt. Carmel Presbyterian Church site. No other mitigation measures will be necessary.

Figure 4.3 Mt. Carmel Presbyterian Church



<u>Farmer Store</u>

The Farmer Store, constructed in 1908 in the small railroad community of Rialto, is eligible for listing to the NRHP under criterion A and C for its intact architectural design and for its significance in county commercial history. The property consists of a false-front commercial structure indicative of general stores of the period, and a frame storage building in the rear. These general stores served their communities and surrounding farms by providing a wide variety of goods and services, and were often centers of informal trade and socializing. The building also served as the post office for Rialto, and was the only commercial building constructed in the community. Alternative G is located approximately 0.4 miles to the southeast and would have no direct effect on the proposed NR boundary.

The proposed alignment is sufficient distance away to avoid any alteration in the properties use or physical features. Between the store and the proposed right-of-way for the Alternative G are several dense tree lines. With the distance and topography between the alignment and the Farmer Store there would be no introduction of visual or audible elements that would adversely affect the property's site or setting. Finally, there would be no Section 4(f) use of the property.

Figure 4.4 Farmer Store

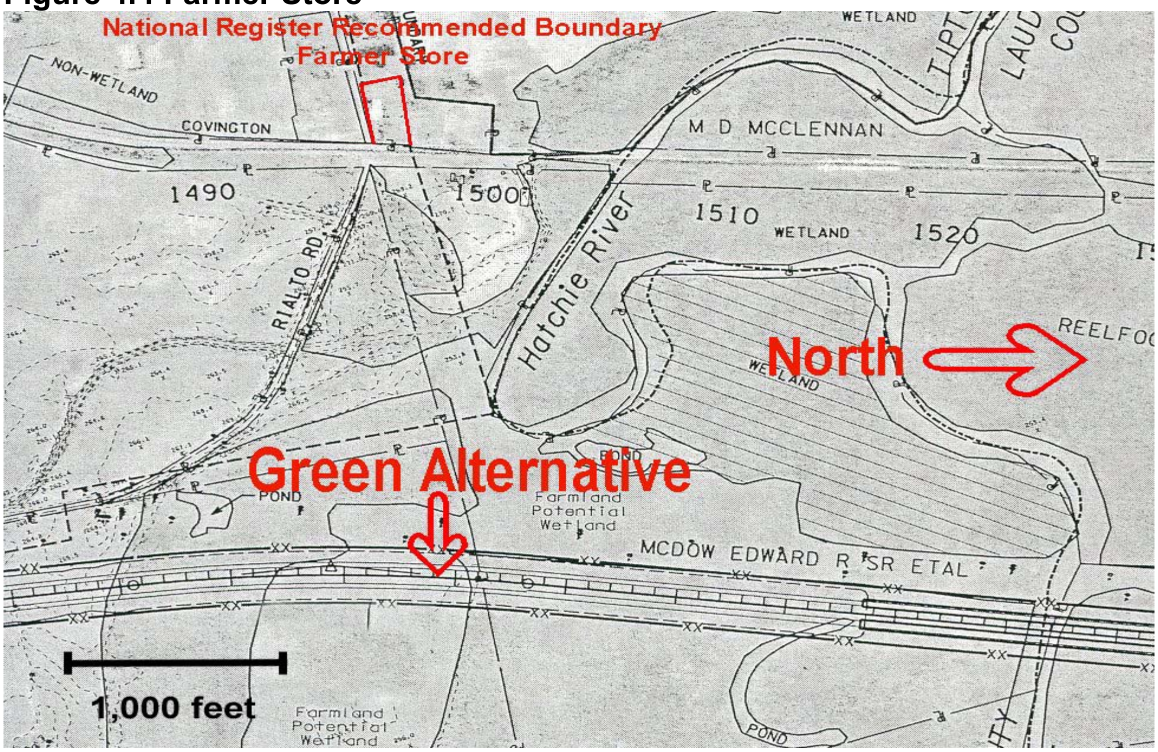


Table 4.12 Impacts to Historic Resources

Property	Node Segment	Alternative(s)	Section 106 Effects	Section 4(f) Involvement	Mitigation and Avoidance Alternatives
James A. Langley House	EG	R, P1, P2, O1, O3, O1/P1, O3/P1	No Adverse	No	N/A
Mt. Carmel Presbyterian Church	ST	G, O1, O1/P1,	No Adverse	No	Landscaping
Farmer Store	UV	G, P3, O1, O1/P1, O3/P2	No Adverse	No	N/A

The report detailing the architectural/historical resources of the project area has been reviewed by the SHPO, who concurred with the findings and conclusions concerning these resources. Please refer to Appendix A-3 for copies of the SHPO concurrence letters on the cultural resource investigations relating to the proposed project. The Section 106 process is ongoing and therefore is not completed. Unresolved issues shall be addressed in the Final Environmental Impact Statement.

4.2.1 Archaeological Impacts

The Cultural Resource investigations described in Chapter 3 resulted in the identification of 27 archaeological sites impacted by the various proposed Build Alternatives considered potentially eligible for listing in the National Register of Historic Places (NRHP). Table 4.13 summarizes the number of potentially eligible sites impacted by each Build Alternative.

Table 4.13 Archaeological Impacts Summary

Alternative (Node)	Number of Sites Impacted
R (ABCDKEGH)	7
G (JSTUVWYZ)	11
P1 (ABCDKEGYZ)	5
P2 – (ABCDKWYZ)	9
P3 (ABTUVWYZ)	9
O1 (JSTUVEGH)	7
O3 (JSCDKEGH)	5
O1/P1 (JSTUVEGYZ)	5
O3/P1 (JSCDKEGYZ)	5
O3/P2 (JSCDKWYZ)	9

Alternative R

Build Alternative R would impact seven sites that are potentially eligible for listing to the NRHP. The sites involved are as follows; **40Sy648, 40La13, 40La21, 40La157, 40La158, 40Dy13** and **40Dy76.**

Site 40Sy648 is an open habitation (camp) dating from the late archaic period, early woodland period, which extended from approximately 3800 B.C. to 1 A.D. This site is situated in fallow farmland, which is surrounded by trees and is approximately 51,600 sq. ft. in size. A total of 50 prehistoric artifacts were recovered from the site, 22 of these from shovel tests. Site 40Sy648 is a moderately sized site with low artifact density and moderate diversity. The site has been disturbed by erosion and plowing. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are considered likely. Therefore, this site has been recommended for additional testing in the event that Alternative R is selected as the Preferred Alternative.

Site 40La13 is a prehistoric open habitation (camp) containing materials from the Early Archaic, Late Archaic and Woodland periods. This site is situated in cultivated cotton field and is approximately 166,300 sq. ft. in size. Site 40La13 is a large site with low artifact density and high diversity. Erosion, plowing (although no-till practices are currently being followed), and airstrip use have disturbed 40La13. A total of 65 prehistoric artifacts were recovered from the site; none were from shovel tests. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are probable. Therefore, this site has been recommended for additional testing in the event that Alternative R is selected as the Preferred Alternative.

Site 40La21 is a prehistoric open habitation and rural domestic site that is situated in a cultivated field and is approximately 130,800 sq. ft. in size. Site 40La21 is a large, multi-component site with low artifact density and high diversity. Erosion, plowing, and clearing have disturbed 40La21. A total of 155 artifacts were recovered from 40La21. Of these, 151 are prehistoric artifacts and four are historic artifacts. No artifacts were recovered from shovel tests. Cultural affiliations at site 40La21 range from the Middle Archaic to Mississippian periods. Possible intact archaeological deposits were encountered during shovel testing, and the existence of additional intact deposits at this site remains a possibility. Therefore, this site has been recommended for additional testing in the event that Alternative R is selected as the Preferred Alternative.

Site 40La157 is a prehistoric open habitation site located in a cultivated field and is approximately 403,600 sq. ft. in size. Site 40La157 is a large site with low artifact density and moderate diversity. Erosion, plowing, and airstrip use have disturbed the site. A total of 233 prehistoric artifacts were recovered from the site, two from shovel tests. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are a possibility. Therefore, this site has been recommended for additional testing in the event that Alternative R is selected as the Preferred Alternative.

Site 40La158 is a prehistoric open habitation site located in a cultivated cotton field and is approximately 92,500 sq. ft. in size. Site 40La158 is a moderate-sized site with low artifact density and low diversity. Erosion, plowing, and airstrip use have disturbed the site. A total of nine prehistoric artifacts were recovered from the site; none were from shovel tests. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are a possibility. Therefore, this site has been recommended for additional testing in the event that Alternative R is selected as the Preferred Alternative.

Site 40Dy13 is a prehistoric open habitation site located in a cultivated soybean field and is approximately 269,000 sq. ft. in size. Site 40Dy13 is a large site with low artifact density and moderate diversity. The site has been disturbed by erosion and plowing. A total of 45 artifacts, including 44 prehistoric artifacts and one isolated historic artifact, were recovered from the site, none of these from shovel tests. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact, buried deposits at this site remain a possibility. Therefore, this site has been recommended for additional testing in the event that Alternative R is selected as the Preferred Alternative.

Site 40Dy76 is a prehistoric open habitation site that is situated in cultivated cotton field and is approximately 269,000 sq. ft. in size. Site 40Dy76 has been disturbed to an unknown extent from plowing, erosion, and alluvial deposition. A total of 201 prehistoric artifacts were recovered from the site; none were from shovel tests. Site 40Dy76 is a large-sized, multi-component site with low artifact density and high diversity. Cultural affiliations range from the Late Archaic to Middle Woodland. Erosion, plowing, and alluvial deposition have disturbed the site. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact buried deposits at this site are likely. Therefore, this site has been recommended for additional testing in the event that Alternative R is selected as the Preferred Alternative.

Alternative G

Alternative G would impact 10 sites that are potentially eligible for listing to the NRHP. The sites involved are as follows; **40Sy651, 40Sy652**, **40Sy653, 40La159, 40La162, 40La164, 40La165, 40La166, 40La171, 40Dy74** and **40Dy75.**

Site 40Sy653 is an open habitation site situated in a secondary growth forest and a fallow field, and is approximately 30,000 sq. ft. in size. The site is well preserved, although it has been impacted by erosion. There is no indication that the site area has been previously cultivated. A total of 45 prehistoric artifacts were recovered from the site; all were from shovel tests. Site 40Sy653 is a small site with high artifact density and moderate diversity. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site remain a possibility. Therefore, this site has been recommended for additional testing in the event that Alternative G is selected as the Preferred Alternative.

Site 40La159 is a prehistoric open habitation and historic rural domestic site situated in a cultivated cornfield and is approximately 371,400 sq. ft. in size. A total of 27 prehistoric artifacts and 15 historic artifacts were recovered from the site, of which 22 were from shovel tests. Site 40La159 is a large-sized site with low artifact density and high artifact diversity. The site has been disturbed by erosion and plowing. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are likely. Therefore, this site has been recommended for additional testing in the event that Alternative G is selected as the Preferred Alternative.

Site 40La162 is a prehistoric open habitation site situated in a cultivated field and is approximately 1,200,000 sq. ft. in size. Site 40La162 has been disturbed to an unknown extent from plowing and other agricultural practices, erosion, and alluvial deposition. A total of 169 prehistoric artifacts were recovered from the site; none were from shovel tests. Site 40La162 is a large site with high artifact diversity. Erosion, plowing, and alluvial deposition have disturbed the site. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are likely. Therefore, this site has been recommended for additional testing in the event that Alternative G is selected as the Preferred Alternative.

Site 40La164 is a prehistoric open habitation site situated in a cultivated cotton field and is approximately 72,600 sq. ft. in size. A total of 27 prehistoric artifacts and one historic artifact were recovered from the site; none were from shovel tests. Site 40La164 is a moderate-sized site with low artifact density and low diversity. The site has been disturbed by erosion and plowing. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are a possibility. Therefore, this site has been recommended for additional testing in the event that Alternative G is selected as the Preferred Alternative.

Site 40La165 is a prehistoric open habitation and rural domestic site situated in a cultivated cotton field and is approximately 51,600 sq. ft. in size. A total of 20 prehistoric artifacts and two historic artifacts were recovered from the site; none were from shovel tests. Historic period artifacts collected do not establish a pre-1933 occupation. The site has been disturbed by erosion and plowing. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are a possibility. Therefore, this site has been recommended for additional testing in the event that Alternative G is selected as the Preferred Alternative.

Site 40La166 is a prehistoric open habitation site situated in a cultivated cotton field and is approximately 83,900 sq. ft. in size. A total of 27 prehistoric artifacts and two historic artifacts were recovered from the site; none were from shovel tests. Site 40La166 is a moderate-sized site with low artifact density and moderate diversity. The site has been disturbed by erosion and plowing. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are likely. Therefore, this site has been recommended for additional testing in the event that Alternative G is selected as the Preferred Alternative.

Site 40La171 is a prehistoric open habitation site, located on a ridge overlooking a branch of an intermittent drainage to the Hatchie River. Site 40La171 is a large site characterized by low artifact density and diversity. The site has been disturbed by erosion and agricultural activities. A total of twelve artifacts were recovered form this site; one of which was from a shovel test. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are a possibility. Therefore, this site has been recommended for additional testing in the event that Alternative P2 is selected as the Preferred Alternative

Site 40Dy74 is a prehistoric open habitation site situated in a cultivated soybean field and is approximately 271,250 sq. ft. in size. A total of 73 prehistoric artifacts were recovered from the site; none were from shovel tests. Site 40Dy74 is a large site with high artifact diversity. Erosion, plowing and other agricultural practices, as well as flooding and alluvial deposition have disturbed the site. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are likely. Therefore, this site has been recommended for additional testing in the event that Alternative G is selected as the Preferred Alternative.

Site 40Dy75 is a prehistoric open habitation site situated in a cultivated field and is approximately 196,650 sq. ft. in size. A total of 69 prehistoric artifacts were recovered from the site; none were from shovel tests. Site 40Dy75 is a large, multi-component site with low artifact density and moderate diversity. Cultural affiliations range from the Early Archaic to the Middle Woodland period. The site has been disturbed by erosion and plowing. No intact archaeological deposits were encountered in shovel tests or surface inspections, although intact deposits at this site are likely. Therefore, this site has been recommended for additional testing in the event that Alternative G is selected as the Preferred Alternative.

The following Build Alternatives incorporate elements of both Alternative R and Alternative G in combination with the cross-over alignments. Consequently, these alignments would impact sites common with both Build Alternatives that have been previously described.

<u>Alternative P1</u>

Alternative P1would impact five sites that are potentially eligible for listing to the NRHP. The sites involved are as follows; **40Sy648, 40La13, 40La21, 40La157** and **40La158.**

<u>Alternative P2</u>

Alternative P2 would impact nine sites that are potentially eligible for listing to the NRHP. The sites involved are as follows; **40Sy648, 40La159, 40La162, 40La164, 40La165, 40La166, 40La171, 40Dy74** and **40Dy75.**

<u>Alternative P3</u>

Alternative P3 would impact nine sites that are potentially eligible for listing to the NRHP. The sites involved are as follows; **40Sy648, 40La159, 40La162, 40La164, 40La165, 40LA166, 40La171, 40Dy74** and **40Dy75.**

<u>Alternative O1</u>

Alternative O1 would impact seven sites that are potentially eligible for listing to the NRHP. The sites involved are as follows; **40Sy653, 40La13, 40La21, 40La157, 40La158, 40Dy13** and **40Dy76.**

Alternative O3

Alternative O3 would impact five sites that are potentially eligible for listing to the NRHP. The sites involved are as follows; **40Sy653, 40La13, 40La21, 40La157,** and **40La158.**

Alternative O1/P1

Alternative O1/P1 would impact five sites that are potentially eligible for listing to the NRHP. The sites involved are as follows; **40Sy653, 40La13, 40La21, 40La157 and 40La158.**

Alternative O3/P

Alternative O3/P1 would impact five sites that are potentially eligible for listing to the NRHP. The sites involved are as follows; **40Sy653, 40La13, 40La21, 40La157** and **40La158.**

Alternative O3/P2

Alternative O3/P2 would impact nine sites that are potentially eligible for listing to the NRHP. The sites involved are as follows; **40Sy653, 40La159, 40La162, 40La164, 40La165, 40La166, 40La171, 40Dy74** and **40Dy 75.**

Upon selection of a Preferred Alternative, an intensive archaeological survey will be conducted. Attempts will be made to shift the selected alignment to avoid archaeological sites that are potentially eligible for listing in the NRHP. Potentially eligible sites that cannot be avoided will be examined to determine their eligibility for listing in the NRHP. If alignment shifts are not feasible and prudent, coordination with the appropriate Indian Tribes and the Tennessee SHPO will continue in order to develop a plan to compensate the project's adverse effects on the eligible sites.

Pursuant to Section 106 of the National Historic Preservation act, a letter and project data summary were sent to Native American Groups and local officials inviting these parties to be a Section 106 consulting party for the project. Copies of the letters sent are provided in Appendix A-4. Several tribes responded, requesting that, if any human skeletal remains and/or any objects falling under the Native American Graves Protection and Repatriation Act (NAGPRA) are uncovered during additional testing of the sites or during construction, all work at the site should stop immediately, and the appropriate persons, including state and tribal NAGPRA representatives, be contacted.

The report detailing the archaeological resources of the project area has been reviewed by the SHPO, who concurred with the findings and conclusions concerning these resources. Please refer to Appendix A-3 for copies of the

SHPO concurrence letters on the cultural resource investigations relating to the proposed project.

4.3 Recreational Impacts

Valentine Park in Munford, Tennessee and the Henning Ball Park Facility in Henning, Tennessee were two areas for recreational activities within the project area. The closest proposed interchange is on S.R. 178 approximately 5500 feet west of Valentine Park. No adverse impacts are anticipated for Valentine Park.
The Henning Ball Park Facility is located approximately 1200 feet west of the centerline of the Alternative R. Access to the facility is on S.R. 87, which has a proposed modified diamond interchange as Interstate 69 goes under S.R. 87. No negative impacts to the ballpark facility are expected. A positive result of the Alternative R would be easier access to the ballpark facility.

All Build Alternatives, with the exception of Alternative G and P3, impact a portion of the Mississippi River Trail (MRT). The impact occurs at the crossing of the Hatchie River, where the MRT utilizes U.S. 51 as part of the route to cross the river. Currently, cyclists and pedestrians alike utilize the shoulders of the existing facility. Because the proposed project would be a limited-access high-speed interstate highway, all non-motorized traffic would be prohibited. Therefore, in the event that a Build Alternative is selected as the Preferred Alternative, accommodations for these types of users would be necessary.

On November 25, 2003 information was sent to the Mississippi River Trail Corporation seeking input concerning the proposed action. Their response, summarized in Chapter 5 Comments and Coordination, indicates the MRT is one of 16 National Millennium Trails and the project could potentially impact this trail and others in the area. As requested in the response, and in hopes of promoting active participation from all interested parties, the Tennessee Department of Transportation will continue to coordinate information with the Mississippi River Trail Corporation throughout the development of this project.

TDOT proposes to accommodate non-motorized traffic on the Hatchie River Bridge with the inclusion of a mixed-use path of approximately 10 feet in width cantilevered on the eastern side of the structure. Bicycle traffic moving along the MRT would continue to utilize SR 87 to access US 51. Upon arriving at the Hatchie River Bridge, the non-motorized traffic would be directed to the mixed-use path on the eastern side of the structure. On the southern side of the Hatchie River, the path would continue to the intersection of US 51 and Leigh’s Chapel Road, where users of the MRT would continue on to Flat Iron Road, the current location of the Trail.

As stated in Chapter 3, waterfowl hunting is a popular sport in the immediate project area, and contributes greatly to the tourism industry of western Tennessee. Efforts were made in the planning of the Build Alternatives to avoid areas managed for wildlife and recreation, where practicable. Alternative G has been realigned to avoid direct impacts to the Lake Lauderdale Wildlife Refuge. However, Alternative G (specifically Node segment WY) would directly impact a small portion of a tract owned by the State of Tennessee, and labeled as part of the Tigrett Wildlife Management Area.

4.8 Section 4(f)/Section 6(f) Impacts

Section 4(f)

It is national policy to make special effort to preserve public parks and recreation lands, wildlife and waterfowl refuges, and historic sites. In the Transportation Act of 1966, a special provision provides protection to these resources. This provision, known as Section 4(f), stipulates that the Federal Highway Administration (FHWA) will not approve any program or project, which requires the use of any publicly owned park, recreation area, or wildlife/waterfowl refuge, or any land from an historic site of national, state, or local significance, unless: (1) there is no feasible and prudent alternative to the use, and (2) all possible planning to minimize harm resulting from such use is included.

The proposed construction of I-69 SIU #8, from Millington to Dyersburg, Tennessee would not involve a Section 4(f) use from any properties listed, or considered eligible for listing, to the NRHP. However, the proposed project does have Section 4(f) impacts and Section 6(f) impacts associated with the Lower Hatchie National Wildlife Refuge. A Section 4(f) statement and a Section 6(f) evaluation will be necessary if a Build Alternative is selected that requires use of this resource. Discussion concerning the Mississippi River Trail is included on page 149 to document measures taken to avoid Section 4(f) impacts.

Section 6(f)

It is national policy, under Section 6(f) of the Land and Water Conservation Fund Act (16 USC 4601-6f(3)) to assure an area that has been funded with Land and Water Conservation Fund (LWCF) assistance is protected as a viable recreational entity. These sites include public parks and recreation lands, wildlife and waterfowl refuges, and/or historic sites. All practical alternatives to the proposed conversion of the recreational land must have been evaluated and it must be proven that none of these alternatives are practical. If no practical alternative exists, a request for permission to convert LWCF assisted properties must be submitted to the appropriate National Park Service Regional Director.

In addition to providing written proof that no practical alternatives exist, the fair market value of the affected property (or portion of the property) must be established and a proposed property for substitution of at least fair market value must be included in the request for the conversion. The substitute property must also demonstrate reasonable equivalent usefulness and location.

The proposed construction of I-69 SUI #8 would require the conversion of 0.64 acres of a 20,676 acre site. The Lower Hatchie National Wildlife Reserve, is described below.

Lower Hatchie Wildlife Refuge

The Lower Hatchie National Wildlife Refuge (LHNWR) is located in rural, western Tennessee, approximately 18 miles west of Henning, and covers portions of Lauderdale and Tipton Counties. The refuge, created in 1980, originally encompassed approximately 6,400 acres of bottomland hardwood forests and adjacent habitats. An expansion in 1985 added 2,224 acres of additional habitat.

Currently, the U.S. Fish and Wildlife Service has proposed to manage and protect an additional 12,052 acres adjacent to the existing LHNWR. The expansion areas are located: (1) north of the Hatchie River to Tennessee State Road 87; (2) south of the Hatchie River as defined by existing tracts adjoining the Hatchie River; and (3) east to and beyond U.S 51. Please refer to Figure 3.3 for all NWR boundaries. Land and Water Conservation Funds have been used to assist in the purchase of the additional properties for the NHNWR. These funds are provided in the form of a $750,000 grant as provided by the United States National Park Service. Alternative R is the only build alternative that would impact the LHNWR. If it is selected, a total of 0.64 acres of the NWR would be converted to highway right of way. The Tennessee Department of Transportation will explore means to avoid taking any land from the refuge. If the impact cannot be avoided, the NWR is under Section 6(f) protection, which states that such resources must not, "without the approval of the Secretary (of the Interior), be converted to (anything) other than public outdoor recreation uses. The Secretary shall approve such conversion only if he/she finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he/she deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location."

Additionally, coordination between the Federal Highway Administration and U.S. Fish and Wildlife, seeks to identify and preserve a transportation corridor across the NWR expansion area. As requested by the U.S. Fish and Wildlife, the Alternative R would maintain the existing right-of-way on the west side of the existing bridge crossing. Expansion of the existing crossing would occur to the east, and would require approximately 0.64 acres of additional right-of-way. Please refer to Figure 2.2C for a detailed drawing of the proposed bridge crossing of the Hatchie River.

In response to the Initial Coordination packet, Tennessee Wildlife Resources Agency (TWRA) commented on potential impacts to the North and South Forks of the Forked Deer River (Appendix A-2). No mention was made to potential impacts to parcels owned or managed by the agency, including the Tigrett Wildlife Management Area (WMA). TDOT will continue to coordinate information with TWRA to ensure the protection of these valuable resource lands.

The U.S. Fish and Wildlife Services (USFWS) and the National Park Service (NPS) are bureaus of the U.S. Department of Interior (DOI). USFWS maintains a list of property owners within the approved acquisition boundary who are willing sellers. They will work through the USFWS Regional Realty office in Atlanta, Georgia, to identify, appraise, and acquire adequate, similar replacement property.

TDOT will explore means to avoid taking any land from the refuge. If acquisition of 6(f) property is unavoidable, TDOT will coordinate with USFWS and NPS to identify suitable replacement property. Upon identification of the intended replacement property, appraisal values for both the affected property and the replacement property will be submitted for review and approval to NPS. If the process is completed prior to submittal of the Final Environmental Impact Statement, the appraisals and a Memorandum of Agreement between the USFWS and NPS will be attached in the Appendix of the FEIS.

Mississippi River Trail

The Mississippi River Trail utilizes the existing US 51 Bridge over the Hatchie River, just north of Covington. I-69, as planned, is a limited access four lane interstate highway, which by law prohibits pedestrians and other non-motorized use. The Mississippi River trail utilizes the existing US 51 Bridge over the Hatchie River, just north of Covington. I-69, as planned, is a limited access four lane interstate highway, which by law prohibits pedestrians and other non-motorized use. The Mississippi River Trail would be impacted by Alternative R, O3, P1 and P3, which all would cross on the existing bridge location. Avoidance alternatives include G, P3 and O1, as these alignments cross the Hatchie River upstream from the existing bridge and would not affect the continuity of the existing bicycle route. From a Resource Agency perspective, a new crossing of the Hatchie River upstream of the existing bridge is not desirable. Therefore, TDOT has proposed a mixed-use path that would be included on the new bridge constructed at the existing location to maintain trail continuity across the Hatchie River. The new path would be a mixed-use path approximately 10 feet in width and cantilevered on the eastern side of the structure. Bicycle traffic moving along the MRT would continue to utilize SR 87 to access US 51. Upon arriving at the Hatchie River Bridge, the non-motorized traffic would be directed to the mixed-use path on the eastern side of the structure. On the southern side of the Hatchie River, the path would continue to the intersection of US 51 and Leigh's Chapel Road, where users of the MRT would continue on to Flat Iron Road, the current location of the Trail. Therefore, no Section 4(f) impacts are associated with the Mississippi River Trail. Please refer to Chapter 2, Figure 2.2C for a typical section depicting the lane configuration of the new Hatchie River Bridge.

4.9 Visual Impacts

The visual character of the project is generally appealing and views alternate between agricultural, residential, and commercial land uses. The proposed roadway will have increased roadway width with a wider median, which will create larger fill slopes. Due to the terrain of the project area, it is anticipated that minimal cuts will be necessary in constructing the roadway. Existing roadside vegetation will be lost, consisting mostly of farmland or grass and brush with a few deciduous trees. This would have a low adverse effect upon the quality of views from the highway and would be temporary until roadside vegetation is naturally reestablished. It is anticipated that the view of the road by local tourists and the view from the road by the low number of permanent residents will create minimal adverse effects.

4.10 Air Quality Impacts

According to the calculated future microscale emissions of CO, the maximum CO concentrations in 2010 were 3.4 ppm for the one-hour and 2.18 for the eight-hour standard. The maximum CO concentrations in 2030 were 4.8 ppm for the one-hour and 3.16 for the eight-hour standard. The analysis indicated the CO levels for all receptors analyzed were below the one-hour standard of 35.0 ppm and the eight-hour standard of 9.0 ppm levels outlined in 40 CFR 50.

The proposed project is located in an air quality maintenance area effective August 31, 1994 for carbon monoxide and February 16, 1995 for ozone. A maintenance area is defined as a one that has been re-designated from non-attainment to one that has attained the national primary ambient air quality standard for a specific pollutant. Consequently, the revised State Implementation Plan (SIP) provides for the maintenance of this standard for at least ten years after the re-designation. Although this project is not discussed in the current 2004-06 Transportation Improvement Plan (TIP), it was discussed in the previous 2002-04 TIP, and included in the SIP, and therefore was in conformity with the developed SIP. Therefore, the current SIP, designed to maintain attainment status, considers the potential effects of this project in relation to the carbon monoxide and ozone levels for the region.

4.11 Noise Impacts

As described in section 3.10, noise levels were modeled at 58 locations along the proposed Build Alternatives. Table 4.14, provided below, is a summary of the impacts associated with the various alternatives. Please refer to Chapter 3, Figure 3.4 for the location of the noise receptor sites described below.

Table 4.14 Noise Impacts

Site	Build Alternative	2001 Field Measured Existing	Design Year 2030 Noise Levels No-Build	Design Year 2030 Noise Levels Build
2	R	55*	55**	57

Table 4.14 Noise Impacts Continued

Site	Site	Site	Site	Site
3	R	56	59	63
4	R	45*	45**	63
5	R	53*	53**	64
7	R	56	60	66
8	R	64*	64**	64
9	R	60*	60**	61
11	R	46*	46**	62
12	R	60	60	62
13	R	62*	62**	71
15	R	43*	43**	53
16	R	46*	46**	68
17	R	50*	50**	66
18	R	50	52	63
19	R	53*	53**	71
20	R	61	65	66
21	R	65	65**	65
22	R	50*	50**	61
23	R	55	57	67
24	R	56	58	68
25	P3	56	56	58
26	P3	46	47	63
27	P3	51*	51**	69
28	P3	56*	56**	59
28	O3	56*	56**	61
29	R	50	55	64
30	R	53	56	70
31	R	59	62	67
32	R	49	49	63
33	R	52	55	65
34	R	51*	51**	59
35	R	57	59	66
36	R	57	59	68
37	R	56	58	69
38	R	58*	58**	68
39	R	44	46	61
40	G	57*	57**	58
41	G	54	55	63
42	G	46*	46**	65
43	G	55*	57	65
44	G	54*	54**	59
45	G	54*	54**	54
45	O3	54*	54**	60
46	G	56*	56**	64
47	G	55*	55**	68
51	G	60	62	67
52	G	63	66	67
53	P3	61*	61**	65
54	G	50*	50**	66
56	G	46	47	62

Table 4.14 Continued

Site	Build Alternative	2001 Field Measured Existing	Design Year 2030 Noise Levels No-Build	Design Year 2030 Noise Levels Build
57	G	55*	55**	67
58	G	50*	50**	67
59	G	50*	50**	66
60	O2	58*	58**	63
61	G	48*	48**	68
63	R	63	69	72
64	G	51*	51**	62
69	G	50*	50**	69
72	G	56*	56**	57
73	G	56*	56**	66

Field Measured Existing Levels at these receptors were primarily the result of ambient noise.
**The Field Measured Existing level is used when it is greater than modeled No-Build or Build levels.
†Sensitive receptors are residences unless otherwise indicated.

The criteria for a noise level increase are as follows:

0-5 dBA	No Increase
6-9 dBA	Moderate Increase
10 dBA or greater	Substantial Increase

Highway traffic noise impacts will occur when the predicted noise levels approach (1 dBA less than the criteria), equal, or exceed the Federal Highway Administration's (FHWA) noise abatement criteria. Highway traffic noise impacts will occur if there is a substantial increase in design year noise levels above the existing noise levels when the predicted design year noise levels are between 57 and 67 dBA L_{eq} or 60 dBA to 70 dBA L_{10}. TDOT defines a substantial increase in existing noise levels to be 10 dBA or greater.

Alternative R Results

For Alternative R, there were 32 noise sensitive receptors selected for modeling. Of the 32 receptors selected, 16 receptors approached or exceeded the NAC and 21 receptors experienced a noise increase of 10 or more dBA. Eight of the 32 receptors experienced no traffic noise impacts.

Alternative G Results

For Alternative G, there were 20 noise sensitive receptors selected for modeling. Of the 20 receptors selected, 10 receptors approached or exceeded the NAC and 12 receptors experienced a noise increase of 10 or more dBA. Eight of the 20 receptors experienced no traffic noise impacts.

Alternative O1 Results

For Alternative O1, there were 28 noise sensitive receptors selected for modeling. Of the 28 receptors selected, 11 receptors approached or exceeded the NAC and 16 receptors experienced a noise increase of 10 or more dBA. Ten of the 28 receptors experienced no traffic noise impacts.

Alternative O3 Results
For Alternative O3, there were 28 noise sensitive receptors selected for modeling. Of the 28 receptors selected, 9 receptors approached or exceeded the NAC and 14 receptors experienced a noise increase above 15 dBA. Twelve of the 28 receptors experienced no traffic noise impacts.

Alternative P1 Results
For Alternative P1, there were 31 noise sensitive receptors selected for modeling. Of the 31 receptors selected, 16 receptors approached or exceeded the NAC and 17 receptors experienced a noise increase of 10 or more dBA. Seven of the 31 receptors experienced no traffic noise impacts.

Alternative P2 Results
For Alternative P2, there were 22 noise sensitive receptors selected for modeling. Of the 22 receptors selected, 13 receptors approached or exceeded the NAC and 18 receptors experienced a noise increase of 10 or more dBA. Four of the 22 receptors experienced no traffic noise impacts.

Alternative P3 Results
For Alternative P3, there were 25 noise sensitive receptors selected for modeling. Of the 25 receptors selected, 14 receptors approached or exceeded the NAC and 20 receptors experienced a noise increase of 10 or more dBA. Five of the 25 receptors experienced no traffic noise impacts.

Alternative O1/P1 Results
For Alternative O1/P1, there were 27 noise sensitive receptors selected for modeling. Of the 27 receptors selected, 12 receptors approached or exceeded the NAC and 16 receptors experienced a noise increase of 10 or more dBA. Ten of the 27 receptors experienced no traffic noise impacts.

Alternative O-3/P-1 Results
For Alternative O3/P1, there were 27 noise sensitive receptors selected for modeling. Of the 27 receptors selected, 10 receptors approached or exceeded the NAC and 15 receptors experienced a noise increase of 10 or more dBA. Eleven of the 27 receptors experienced no traffic noise impacts.

Alternative O3/P2 Results
For Alternative O3/P2, there were 18 noise sensitive receptors selected for modeling. Of the 18 receptors selected, 7 receptors approached or exceeded

the NAC and 10 receptors experienced a noise increase of 10 or more dBA. Eight of the 25 receptors experienced no traffic noise impacts.

NOISE ABATEMENT

Because some of the sites experience a traffic noise impact with the proposed alternates, the following possible abatement measures will be addressed: Traffic management (restrictions on truck use); Alteration of horizontal and vertical alignments; Installation of noise barriers.

The proposed road will be a four lane Interstate highway that will assist in providing better mobility in the area by creating a road that is suited for higher volumes of traffic. Additionally, it will be a major north-south trade route with a high percentage of heavy trucks. Imposing restrictions on trucks or reducing speed limits would not meet the Purpose and Need of the project, which is to complete an unfinished portion of the transcontinental Interstate 69, improve projected sub-standard level of service on US 51, improve project area transportation system/multi-modal connections and to facilitate regional economic development.

The alteration of horizontal and vertical alignment is another noise abatement measure. The project was initiated with a 1000-foot corridor, in which, the final alignments could be located. Due to other factors such as historical properties, wildlife refuges, archaeological areas and curvature of the proposed alignment, changing the horizontal and vertical alignment might not be considered as reasonable alternatives for noise abatement measures. Further consideration of this abatement measure will occur upon selection of a preferred alternative, and will be addressed in the Final Environmental Impact Statement.

Noise barriers were determined to be the only logical abatement measure to reduce noise levels for the impacted areas. TDOT guidelines on Highway Traffic Noise Abatement require that noise barriers provide a substantial noise reduction, which is defined as a 10 dBA reduction in noise levels. However, in situations where a 10 dBA reduction cannot be attained, the noise barrier should be able to attain a minimum 7 dBA reduction for properties in the first row and 5 dBA reduction for properties in the second row.

TDOT guidelines require that the construction of noise barriers be shown to be both feasible and reasonable. Feasibility deals primarily with engineering considerations (e.g., can a barrier be built given the topography of the location; can a substantial noise reduction be achieved given certain access, drainage, safety or maintenance requirements, are other noise sources present in the area, etc.). Reasonableness is a more subjective criterion than feasibility. It implies that common sense and good judgment were applied in arriving at a decision. Reasonableness includes the number of benefited properties and the cost of the barrier per benefited property. A benefited receptor is defined by TDOT as properties than receive a minimum 5 dBA reduction regardless of whether or not they were identified as impacted. Assessment of reasonable cost is based on the cost per benefited residence of constructing the barrier. The TDOT Policy on Highway Traffic Noise Abatement (approved April 2005) considers noise barriers to be reasonable if the cost per benefited residence does not exceed the maximum allowable benefit of $42,000 per residence. The allowable cost per benefited residence for each noise abatement location considers the allowable cost per benefited residence, the project development date/new alignment allowance, noise levels allowance and the Build versus Existing Noise Levels Allowance. The former maximum allowable benefit was $25,000 per residence. Noise barriers will not normally exceed 15 feet in height.

The addition of Interstate 69 required barrier analysis for 41 of the 57 noise sites studied due to approaching or exceeding the NAC or having a substantial increase. The barrier analysis is summarized in Table 3 and showed that 29 sites were feasible, by having the minimum 7 dBA reduction. However, Sites 7, 11, 13, 16, 19, 23, 24, 26, 30, 31, 57, and 58 had a 7 dBA reduction but would generally not be feasible to build due to the height of the barrier necessary to get the decibel reduction. The excessive barrier height at these sites was due to a break in the noise barrier as Interstate 69 went under the corresponding access road where the noise site was located. Sites 15, 27, 29, 32, 43, 59, and 64 did not obtain the minimum 7 dBA reduction due to the contribution of additional noise sources. For Site 63, access restrictions made a barrier not feasible at this location. Site 20 did not receive the 7 dBA reduction due to a combination of noise contributions from other sources and access restrictions at the location.

Sites 35 and 36 were analyzed on either side of Interstate 69 on Quito Road. However, Site 35 did not receive a 7 dBA reduction and Site 36 did get the desired reduction. The reduction was not possible because Site 35 picked up additional noise sources from Quito Road due to the roadway configuration. Site 31 had similar results in that barriers were analyzed on both sides of Interstate 69 but only experienced a 7 dBA reduction on one side. Site 31 had noise contributions from other sources but there was also a break in the noise barrier as Interstate 69 went under Beaver Road. The location of the break in the barrier was such that Site 31 did not receive any noise reductions.

None of the 29 sites that were determined feasible were reasonable from a cost perspective since all sites exceeded the maximum allowable barrier cost of $42,000 per benefited residence (former maximum allowable barrier cost was $25,000). The minimum cost per benefited receptor was $70,280 for Site 47 and the maximum cost was $2,393,00 for Site 52.

Throughout the project area, there are areas that experience sound level impacts. However, the rural nature of the project area is characterized by a low concentration of homes and minimal traffic volumes. The traffic is typically concentrated on state roads with Interstate 69 generally being the main noise contributor. At locations where Interstate 69 is not the predominant noise source a barrier is not feasible. A barrier is also not feasible where it limits or restricts access to property owner's homes. If the barriers were determined feasible in the analysis, the low number of benefited receptors and barrier costs made a barrier unreasonable as in all cases modeled. Therefore, based on the above considerations, structural noise barriers are not considered reasonable at the sites studied and are not recommended for the project. Once the project enters the design phase TDOT will re-examine the noise impacts and make a final recommendation on the use of noise barriers, shifts in vertical and/or horizontal alignments and other appropriate noise mitigation measures.

Table 4.15 Barrier Analysis

Site	Impacted Receptors	Benefited Receptors[1]	Did Barrier get a 7dBA Reduction	Barrier Cost	Barrier Cost/ Benefited Receptor
4 - East	2	2	Yes**	$465,100	$232,550
4 - West	1	1	Yes**	$724,700	$724,700
5	64	1	Yes	$199,229	$199,299
7-North	3	3	Yes*	$818,700	$272,900
7-South	4	4	Yes*	$738,000	$184,500
11	4	3	Yes*	$746,100	$248,700
13-East	3	1	Yes*	$887,900	$887,900
13-West	1	1	Yes*	$743,400	$743,400
15	1	0	No†	$940,964	
16	3	3	Yes*	$549,800	$183,267
17	3	3	Yes**	$685,500	$228,500
18	1	1	Yes	$750,010	$750,010
19	3	1	Yes*	$270,000	$270,000
20	4	0	No†§	$1,316,100	
22	1	1	No	$1,096,814	$1,096,814
23	3	3	Yes*	$908,600	$302,867
24	3	3	Yes*	$1,667,300	$555,767
26	1	1	Yes*	$353,200	$353,200
27	2	0	No†	$1,159,800	
29	9	2	No†	$545,732	$272,866
30-North	3	3	Yes*	$1,509,400	$503,133
30-South	2	2	Yes*	$427,800	$213,900
31-North	2	1	Yes*	$117,000	$117,000
31-South	3	1	No*†	$1,349,400	
32	1	0	No*	$961,889	
33	1	1	No	$949,121	$949,121
35	3	0	No†§	$1,346,700	
36	3	1	Yes**	$812,000	$812,000
37	1	1	Yes†	$1,070,300	$1,070,300
38 & 39	11	9	Yes**	$1,002,600	$111,400
42	3	2	Yes**	$190,760	$95,380
43	4	0	No	$234,595	
47	5	5	Yes**	$351,400	$70,280
51	3	3	Yes†	$2,040,400	$680,133
52	2	2	Yes†	$2,393,000	$1,196,500
54	3	3	Yes**	$1,689,000	$563,000
56	2	1	Yes†	$1,539,400	$1,539,400
57	2	2	Yes*	$662,500	$331,250
58	2	2	Yes*	$375,600	$187,800
59	1	0	No†	$1,394,800	

Table 4.15 Continued					
Site	**Impacted Receptors**	**Benefited Receptors[1]**	**Did Barrier get a 7dBA Reduction**	**Barrier Cost**	**Barrier Cost/ Benefited Receptor**
61	3	3	Yes**	$278,320	$92,773
63	2	0	No§	$150,000	
64	1	1	No†	$401,752	$401,752
69	2	2	Yes§	$503,400	$251,700
73	4	4	Yes**	$649,100	$162,275

1] Received a minimum 5 dBA reduction
[2] Represents maximum barrier height used in analysis
*I-69 goes under the access road that the receptor is located on which causes excessive barrier height
**Cost exceeds the amount considered to be reasonable of $25,000 per benefited receptor
†Barrier is not effective or feasible due to noise contributions from other sources
§Barrier not feasible due to access restrictions
Note: For sites 4, 7, 13 and 31, barriers were analyzed on both sides of I-69. sites 38 and 39 were combined in the barrier analysis

Design Year (2030) Predicted "L $_{eq(h)}$"
Project-Contributed Noise Levels (dBA)

Distance feet (meters)*	L $_{eq(h)}$ Noise Levels	
	Alternative R	Alternative G
100 (30.5)	73.1	74.6
200 (61.0)	66.8	68.4
300 (91.4)	62.5	64.1
400 (121.9)	59.3	60.9
500 (152.4)	56.6	58.2
600 (182.9)	54.2	55.8
700 (213.4)	52.0	53.6
800 (243.8)	50.1	51.7

*Perpendicular distance from the center of the proposed traffic lane

4.12 Hazardous Materials Impacts

A Phase I Environmental Site Assessment (ESA) technical report was conducted in accordance with the scope and limiting conditions set forth in the American Society for Testing and Materials (ASTM) practice 1527. Recognized Environmental Conditions (RECs) were identified for properties within, or adjacent to, the proposed right-of-way limits of the Build Alternatives under consideration in this document.

The goal of this Assessment was to determine the potential presence of aboveground and/or underground storage tanks, hazardous wastes or materials, solid and special wastes and areas of potential hazardous waste concerns which may pose a threat to human health and/or the environment. The results of the Phase I ESA were utilized to determine the need for Phase II Site Assessments.

A state and federal database search, conducted by Environmental Database Resource (EDR®) in May, 2001 identified a total of 609 potentially Recognized Environmental Conditions (pRECs) located in the general area of the proposed project. After a thorough review of the files and an exhaustive on-site field reconnaissance and literature search, it was determined that 5 sites were of sufficient concern to warrant a recommendation for Phase II testing in the event an adjacent Build Alternative is selected as the Preferred Alternative. Boundaries shown for the sights requiring additional work, where warranted, were established based upon field observations and information received from regulatory agencies. If a Build Alternative were selected, Phase II investigations would further characterize relevant sites for the potential presence of contaminates, concentrations and extent of migration in the soil or groundwater. Results of the Phase II investigations and the recommended mitigation measures will be included in the Final Environmental Impact Statement. Table 4.16 details which sites the various proposed Build Alternatives impact.

Table 4.16 Summary of UST and Hazardous Materials Impacts

Site	Alt. R (ABCDKEGH)	Alt. G (JSTUVWYZ)	P1 (ABDKEGYZ)	P2 (ABDKWYZ)	P3 (ABTUVWYZ)	O1 (JSTUVEGH)	O3 (JSTUVEGH)	O1/P1 (JSTUVEGYZ)	O3/P1 (JSCDEGYZ)	O3/P2 (JSCDKWYZ)
BFI North Shelby Landfill	X		X	X	X					
Chickasaw Ordinance Works	X		X	X	X					
Gotten-Raines Site	X		X	X	X					
Site	Alt. R (ABCDKEGH)	Alt. G (JSTUVWYZ)	P1 (ABDKEGYZ)	P2 (ABDKWYZ)	P3 (ABTUVWYZ)	O1 (JSTUVEGH)	O3 (JSTUVEGH)	O1/P1 (JSTUVEGYZ)	O3/P1 (JSCDEGYZ)	O3/P2 (JSCDKWYZ)
Shelby County Landfill	X		X	X	X					
McBride UST Site	X					X	X	X	X	
Totals	**5**	**0**	**4**	**4**	**4**	**1**	**1**	**1**	**1**	**0**

Provided below is a summary of the conditions present on the five sites recommended for additional work, if warranted.

Site Location: **BFI Landfill North Shelby Landfill**

The BFI landfill is located off Millington Road in Millington, Shelby County Tennessee. This approximate 600-acre facility receives more than 500 tons/day of waste. Waste types accepted include asbestos, demolition/ construction debris, municipal waste, non-friable asbestos, non-hazardous industrial waste, other contaminated soil and petroleum-contaminated soil. The site has a leachate system, a gas monitoring, collection and recovery system and a composite synthetic/clay liner. Please refer to Figure 4.5 for a detailed view of this site, the property limits of which are shown in blue.

Portions of this site fall within the Chickasaw Ordinance Works facility. It appears that Alternative R, P1, P2 and P3 would impact only a small portion of the BFI Landfill property that is currently not being utilized for landfill activities. It is not believed that this should pose a significant environmental concern. The actual site boundaries however, need to be determined to ensure that this site does not impact the alignment. This site should also be noted for the connecting I-69 SIU #9 corridor that extends further south. The presence of a water treatment plant and several churches in the immediate surrounding the landfill limit the possibility of shifting the alignment to avoid this site.

Site Location: **Chickasaw Ordinance Works**
The Chickasaw Ordinance Works Site was a WW II ammunitions manufacturing facility that operated from 1940 to 1945. Since that time the site has had numerous operators including E.I. duPont de Nemour. The U.S. Army has indicated that the site is also known as the Millington Powder Plant and is designated as an Army FUD (Formerly Used Defense site).

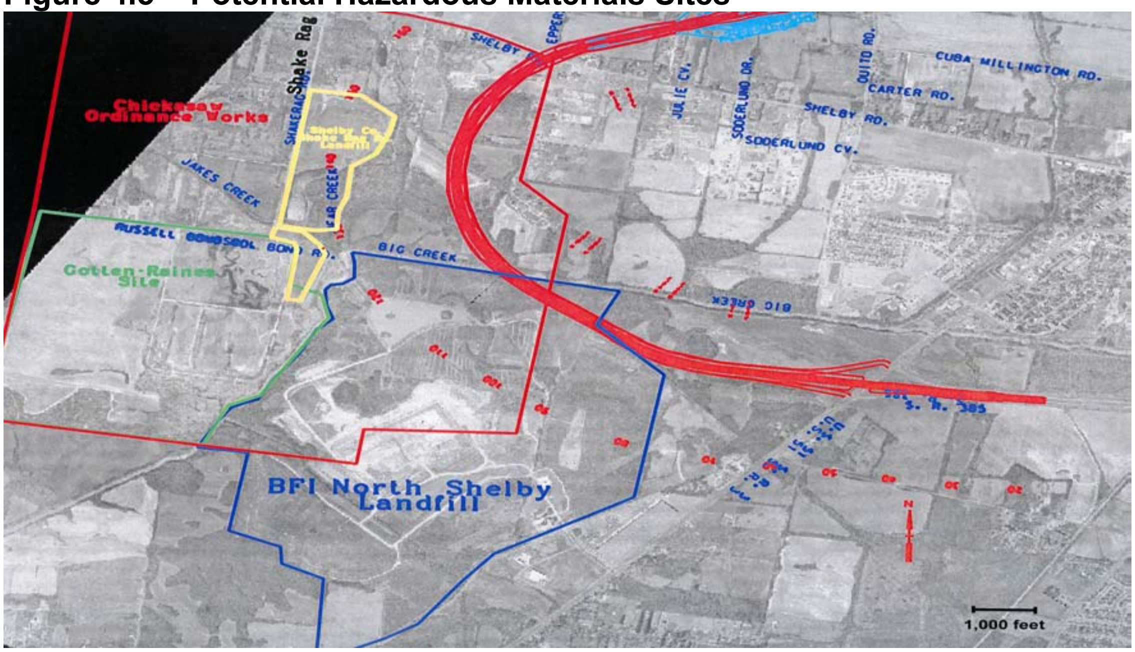
Records indicate the former Chickasaw Ordinance Works Site had initially been considered for listing as a National Priorities List (NPL) site and had some testing performed. While the sample concentrations did not show significantly elevated levels of metals or explosive constituents (RDX, PMX, HMX, etc.) there were not enough samples taken for this 5,000-acre site to provide an actual representative characterization of the site. Therefore, while the site is not a federal NPL site, there were insufficient samples collected at the site for full site characterization and there is not enough evidence to remove it from the state NPL. In addition, according to an assessment report dated July 1997 by Tennessee Division of Super Fund/Memphis Field Office (TDSF/MFO) information from the United States Army is still being evaluated on the site and the site may open to the possibility of further investigation by the United States Army. Currently, TDEC-Division of Superfund lists this site as an inactive hazardous materials site. Alternative R, P1, P2 and P3 impact this site. Please refer to Figure 4.6 for a detailed view of this site, which shows the former property limits in red.

Also included within the perimeter of this site are the Gotten-Rains Site, portions of the BFI North Shelby Landfill and the Shelby County Landfill. This site is believed to be of significant environmental concern.

Site Location: **Gotten-Raines Site**
This part of the former Chickasaw Ordinance Works was part of the old bunker area on the property where munitions were stored. Currently the area is actively being investigated by TDEC. Information from approximately one (1) year of investigatory sampling was reported to be available at some point in 2002. However, at this time detailed information is not available. This information may be helpful in determining the potential for environmental concern with the former Chickasaw Ordinance Works Site. This site is believed to be of significant environmental concern at this time. However, it is not believed to be a significant environmental concern to Alternative R, P1, P2 and P3 due to their proximity. This site should be noted for the connecting I-69 SIU #9 that extends further south. Please refer to Figure 4.5 for a detailed view of the site, the limits of which are in green.

Site Location: **Shelby County Landfill**
The Shelby County Landfill is located off Shake Rag Road in Millington, Shelby County Tennessee. According to the Division of Solid Waste Management, the southern site was a municipal landfill that began operation prior to regulatory constraints and is known as a pre-rule site. There is very little known about this landfill. It is not likely that this would meet today's landfill closure requirements. The northern site began municipal operations in 1976 and was closed in May, 1995. It is currently under post closure care. In addition this site is located on the former Chickasaw Ordinance Works property. Portions of this site fall along the southern tip of Alternative R, P1, P2 and P3. Since there are few records on this site and that it is not likely to meet today's landfill design and/or closure standards, this site is belied to be of significant environmental concern. Please refer to Figure 4.5 for a detailed view of this site, the limits of which are shown on yellow.

Figure 4.5 – Potential Hazardous Materials Sites

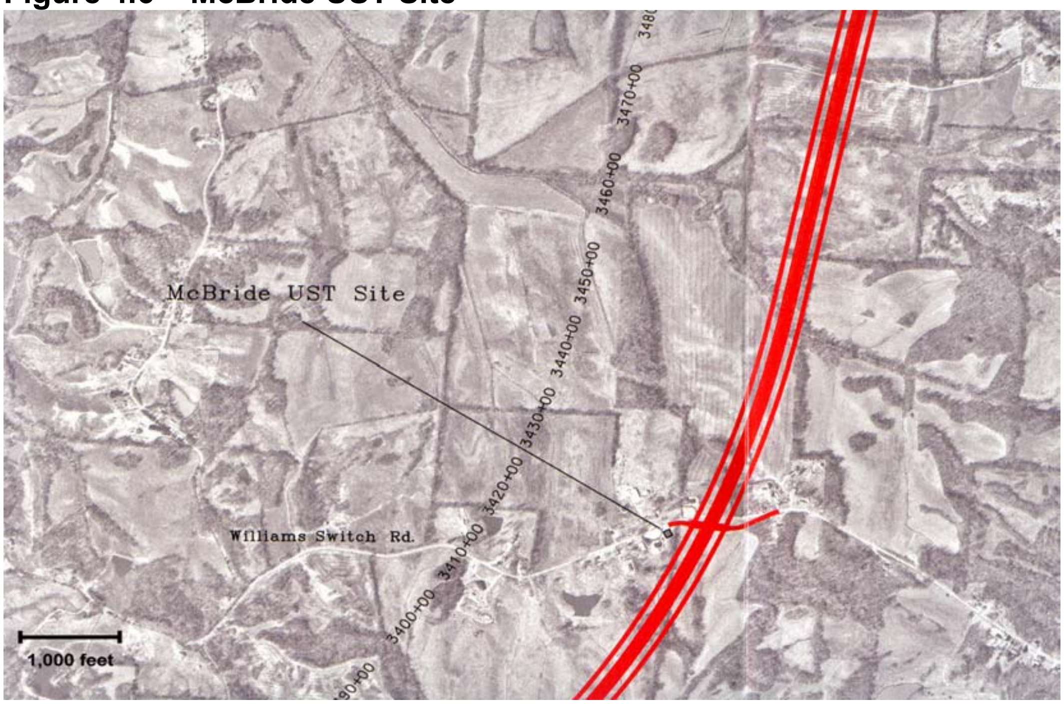


Site Location: **McBride Site**
This site was observed during the reconnaissance of Alternative R. Four UST fill ports, vent pipes, and fueling pumps were observed at this site. This site is not listed on any of the state or Federal databases that were researched for this report. Please refer to Figure 4.6 for a detailed view of this site.

According to the site owner, the USTs are 1,000 gallon tanks. The two north tanks are currently in use and store diesel, and the two west tanks are currently not in use, but have not been emptied. The tanks have reportedly stored both diesel and gasoline over the past 20-25 years. The owner also stated that the tanks are not registered, and that he does not have any leak detection methods in place at this site.

No staining or distressed vegetation was observed at this site during the pedestrian survey. However, the site is upgrade of Alternative R, P1, O3 and O1, and since four USTs reportedly are or have been in operation at the site with no leak detection program in place, any undetected or unreported leaks at this site could potentially impact the right-of-way. Therefore, this site may represent an environmental concern to the project corridor and is recommended for further analysis.

Figure 4.6 – McBride UST Site



4.13 Pedestrian and Bicycle Facility Impacts

Under 23 U.S.C. § 109(n), TDOT considered the need to provide bicycle facilities and pedestrian walkways for the project corridor. The new interstate is a limited facility that would ban use by pedestrians and bicyclists. However in the area of the Hatchie River Bridge, this would negatively impact non-motorized transportation.

The Mississippi River Trail utilizes the existing US 51 Bridge over the Hatchie River, just north of Covington. I-69, as planned, is a limited access four lane interstate highway, which by law prohibits pedestrians and other non-motorized use. The Mississippi River Trail would be impacted by Alternative R, O3, P1 and P3, which all would cross on the existing bridge location. Avoidance alternatives include G, P3 and O1, as these alignments cross the Hatchie River upstream from the existing bridge and would not affect the continuity of the existing bicycle route. From a Resource Agency perspective, a new crossing of the Hatchie River upstream of the existing bridge is not desirable. Therefore, TDOT has proposed a ten foot-wide mixed-use path be included on the new bridge that would be constructed at the existing location that would maintain trail continuity across the Hatchie River. Please refer to Chapter 2, Figure 2.2C for a typical section depicting the lane configuration of the new Hatchie River Bridge. The new path would be a mixed-use path approximately 10 feet in width and cantilevered on the eastern side of the structure. Bicycle traffic moving along the MRT would continue to utilize SR 87 to access US 51. Upon arriving at the Hatchie River Bridge, the non-motorized traffic would be directed to the mixed-use path on the eastern side of the structure. On the southern side of the Hatchie River, the path would continue to the intersection of US 51 and Leigh's Chapel Road, where users of the MRT would continue on to Flat Iron Road, the current location of the Trail.

Roadways along the new highway would be intersected by Interstate 69. These roads include SR 385, SR 14, SR 59, SR 179, SR 54E, US 51, SR87, SR19, SR 210, and SR 104. TDOT will provide safe passages over or under the new proposed project to ensure continued and safe passage of area pedestrians and bicyclists throughout the project area.

4.14 Construction Impacts

Construction activities, associated with the proposed action, would have temporary impacts to ambient noise levels, water quality, air quality, and terrestrial habitat in the immediate vicinity of the project.

An increase in project area noise levels would occur during the construction of the proposed project. Land uses that would be sensitive to vehicular noise would also be sensitive to construction noise. Contract specifications will establish construction noise limits for sensitive areas. The actual level of noise impact during this period, however, will be a function of the number and type of equipment being used, as well as the type of construction activities. This may include heavy equipment movement, pile driving for bridge supports, and grading.

The contractor will be required to follow provisions of TDOT's Standards Specifications for Road and Bridge Construction, as well as other local ordinances, during construction.

Water quality impacts through erosion and sedimentation will be temporary and controlled through the use of TDOT Standard Specifications for Road and Bridge Construction. All appropriate permits for construction-related impacts will be required.

Air pollution, associated with the creation of airborne particles, will be effectively controlled by watering or by the application of calcium chloride and through the use of Best Management Practices.

Sequence of construction and traffic maintenance will be planned and scheduled to minimize traffic delays throughout the project. Signs will be utilized, where appropriate, to provide notice of road closures to the traveling public. Local news media will be notified in advance of construction-related activities that could excessively inconvenience motorists. Access to all property will be maintained to the greatest extent practicable.

The removal of debris and structures will take place, in accordance with local and state regulation agencies permitting this operation. The contractor will be held responsible for methods of controlling pollution in borrow pits, other material pits, and areas used for disposal of waste materials from the project. Temporary erosion control features would include temporary seeding, sodding, mulching, sandbagging, slope drains, sediment basins and checks, artificial coverings and berms. The construction impacts may be mitigated using the following methods: keep proposed grades near existing pavement elevations so that traffic can be easily maintained; develop and maintain traffic plan during construction; develop construction sequence prior to construction; employ all practicable methods of silt, erosion, noise and emission controls, and provide for fueling and concrete washout areas with specific measures to contain pollutants.

4.15 Permits Required

A Department of the Army permit subject to Section 404 of the Clean Water Act will be necessary. Federal permits are required for projects involving the discharge of dredged or fill material into waters or wetlands of the United States. These permits must be obtained before conducting any activity that obstructs or alters any of the waters by excavating, filling, or crossing any such waters.

Any persons who conduct any activity involving the alteration of waters of the State of Tennessee will require an Aquatic Resource Alteration Permit. Examples of stream alterations include dredging, bank stabilization, straightening, and alteration of up to one acre of wetland, construction of road crossings of waters. Water quality standards will be in compliance with Section 401 of the Clean Water Act (Public Law 95-217). Application for Section 401 Water Quality Certification will be made to the Tennessee Department of Environment and Conservation (TDEC). Additionally, a National Pollution Discharge Elimination System (NPDES) Storm Water Construction permit will be required from TDEC.

4.16 Short-term Use of Environment vs. Long-term Productivity

Short-term impacts related to highway improvements would occur in the immediate vicinity of construction activities. Interruptions to the movement of vehicles in the project area would likely occur. However, these interruptions would be temporary, and maintenance of traffic plans would be implemented to minimize any inconveniences to area motorists.

A range of long-term benefits is anticipated to result from the proposed action. These benefits would include a decrease in travel time between project area communities along the proposed facility, and a safer existing roadway with an increased level of service resulting from through traffic utilizing I-69. The improved free-flow of traffic would result in a more efficient use of energy. Additionally, over the long term, the construction of the proposed facility would provide for an improved multi-modal transfer of cargo, and provide an economic benefit through the establishment of new commercial enterprises in the region.

4.17 Irreversible and Irretrievable Commitment of Resources

Resources expended during the construction of the proposed project would include fossil fuels, concrete, aggregate and steel. These materials are readily abundant and no shortages are foreseen in the near future.

Construction of the facility would involve a range of natural, human and funding resources. In addition to the materials discussed above, labor and additional natural resources would be utilized in the fabrication and preparation of construction materials. These materials would not be recoverable. However, these materials too, are readily abundant and the expenditure of these materials would not have an adverse effect on their continued availability in the near future. Any funding used in the construction of the proposed facility would not be considered retrievable.

The use of these resources is based upon the concept that residents and visitors of the area would benefit from an improved transportation system. These benefits include a savings of time through improved traffic flow and increased economic opportunities.

Based upon an evaluation of the context and intensity of the effects described above, no significant impacts resulting from the irreversible and irretrievable commitment of resources on the project area are anticipated.

4.18 Indirect (Secondary) and Cumulative Effects Analysis

As stated in section 4.0, three types of impacts are described in this chapter; direct, indirect and cumulative. As outlined in 40 CFR 1508.8, direct effects are those, which are "caused by the action and occur at the same time and place." Indirect effects are those that are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." Cumulative effect is the "impact on the environment which results from the incremental impact of the action, when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." Sections 4.1 through 4.16 have described the direct effects associated with the various Build Alternatives. This section of the document describes the indirect and cumulative effects of the proposed action. To clarify the meaning of the terms used in this section of the document, "impact" and "effect" are used synonymously in the regulations and guidance pertaining to the consideration of indirect and cumulative analysis. Additionally, the term "secondary impact" is not defined in 40 CFR 1508.8 or in related Council on Environmental Quality (CEQ) guidance. However, the term is utilized in the FHWA's *Position Paper: Secondary and Cumulative Impact Assessment in the Highway Project Development Process* (April, 1992), and it is defined with the CEQ definition of indirect impacts (40 CFR 1508.8). For the purposes of this document secondary and indirect impacts have the same meaning.

The analysis of indirect effects associated with the proposed Build Alternatives began with the identification of the area resources that have the potential to be adversely affected by the proposed construction of I-69 SIU #8 from Millington to Dyersburg, Tennessee. As outlined in previous sections of this chapter, these resources include land use, farmland, terrestrial and aquatic habitats, including wetlands and floodplains, traffic noise, air quality, cultural historic and archaeological resources.

Land Use

<u>All Build Alternatives</u>

The proposed highway facility would be a fully controlled access facility, which is by design, instrumental in controlling development in areas that have access to the interstate. Interchanges have been proposed at the state routes that Interstate 69 would cross, as well as at roadways that could be critical to local area traffic patterns, where feasible. Therefore, an indirect impact would occur at the proposed interchanges (Section 4.1), which are the areas most likely to experience initial develop activities. A continuation of these indirect impacts is the increased potential for land currently in agricultural use, to be converted for commercial and industrial use. This is a common trend, as new facilities redirect the focus of community cores toward the interstate. As the interstate improves access to and from an area making it more desirable for commercial and industrial trade, increased property values expand the tax base of the surrounding communities. Therefore, the anticipated changes in land use would provide for increased employment opportunities for the citizens of the area and would increase the local tax base of the counties involved. One of the stated purposes of the action is to facilitate economic development in areas that have historically had limited access to economic development opportunities, poverty rates well above, and median income levels well below, the national average. Therefore, alterations of local land use patterns associated with the construction of Interstate 69 would be mostly positive for the region from a socioeconomic perspective.

As stated in Section 3.1, land use changes are historically centered at or near the corporate limits of area cities and towns. The most active land change activities have been in Shelby County, including Millington, due to its proximity to Memphis. Other areas of growth are evident in towns throughout the project corridor including Ripley, Covington, Munford, Atoka, and Dyersburg. . These changes are anticipated to continue at paces similar to the past if the No-Build Alternative is selected. If a Build Alternative is selected for this project the construction of I-69 SIU #8 will accelerate the land use changes in each of the four project counties. These changes would be most evident in the Shelby County area due to its proximity to Memphis and its multimodal facilities.

Cumulative impacts to land use in the project area resulting from past transportation improvements are evident throughout the region. In 1974 US 51 was upgraded to include four lanes divided by a grass median for the length of the entire project area. This improvement made possible much of the development present today. Additionally, as the city of Memphis continues to grow and roadway projects improve access to the urban core of the city, development of outlying areas will continue. The same is true for the northern half of the project area. Dyersburg recently completed a bypass around the western side of town. This transportation project provided for improved access to I-155, the only crossing of the Mississippi River between Memphis and Cairo, Illinois. As a result, a considerable amount of commercial, industrial and residential development has occurred in this area.

The Tennessee Department of Transportation's STIP was referenced to determine if any other highway projects were planned in the future within the project area's counties. Following is a table listing the future projects.

Table 4.17
Future TDOT Highway Projects by County

County	Project Description
Dyer/Obion	New Construction Project. I-69 from SR 412/I-55 interchange in Dyersburg to US 51/US 45E Interchange in South Fulton (21.6 miles). Construction Date – 2005.
Lauderdale	Relocation Project. SR 19 from SR 3 (US 51 to East End Road). Widen from two lanes to four lanes (3.1 miles) No Construction Date.
Lauderdale	Relocation Project. SR 208/209 from Washington Street at SR 209 to SR 208 (US 51 Relocation – 1.6 miles) No Construction Date.
Shelby	No additional current projects.
Tipton	Widen SR 14 from two lanes to four lanes. Shelby County Line to SR 206, Atoka Road (4.6 miles). Construction Date – 2005.
Tipton	Widen SR 14 from two lanes to four lanes. SR 284 to SR 9 (4.4 miles). No Construction Date.

Planned improvements to these facilities would serve to increase access to the population centers of Memphis and Brownsville. These improved connections would likely serve to facilitate development, particularly in the area between Ripley and Brownsville, as this area has experienced less growth than other portions of the project area.

In addition to the planned and proposed new roadways, a large-scale, new river port project has been initiated on the Mississippi River in Tiptonville, approximately 25 miles from the proposed project. The port will connect the river with the Canadian National Railroad that runs through Dyer County. Food manufacturers will import large loads of raw materials via rail and barge. The existing four-lane highways and the proposed project would provide multidirectional connections to the heart of the U.S. market. This site will be constructed even if the No-Build Alternative is selected; however local and regional planning officials have cited the I-69 project as a crucial component in the continued success for this river port.

Land use changes are influential in secondary and cumulative impacts on various environmental areas of concern. These changes are directly related to rates of growth in population and economic development. When local and regional populations increase, pressure is placed on the economy to produce jobs and suitable housing to support the demands of a larger population. To sustain population growths, residences, commercial sites and industrial sites are required. These sites are typically located within or near the corporate limits of cities and towns because they are closer to the centrally located government services and are in proximity to the majority of the labor force. The additional residences and business sites generate traffic from commuters and delivery of raw materials and finished goods. Traffic provides impacts to the environment including increased emissions into the air from the burning of fossil fuel, leakage of vehicular fluids (including radiator fluid, motor oil and transmission fluid), and from tire particulates; increases in noises from vehicles, displacement of aquatic and terrestrial habitat as a result of new highway construction or improvement activities, and loss of cultural historic and archaeological resources. Therefore, land use changes, including highway projects, are a primary catalyst for secondary and cumulative impacts on the human and natural environments. The following secondary and cumulative impacts are associated with the potential I-69 SIU #8 project and with the land use changes that are anticipated to accompany and/or follow the undertaking.

Farmland

<u>All Build Alternatives</u>

Indirect impacts to project area farmlands are a continuation of the expected changes in land use described above. As described in Section 4.4, there are six node segments that scored above the 160-point threshold on the LESA Form AD-1006. Those node segments, A-C, E-G, J-S, S-T, V-W and Y-Z, all feature proposed interchange locations which are expected to experience development relating to the proposed facility, thereby indirectly impacting additional farmlands not directly affected by the roadway.

Recent transportation improvements have dealt mostly with upgrading existing roadways, including adding shoulders and traffic lanes, realignments of interchanges and other relatively minor work. Due to the fact that these improvements have been made to the existing roadway network and do not involve new roadway alignments, cumulative impacts to project area farmlands associated with past projects are minimal. The planned improvements described in the text above also involve existing roadways, and therefore would have minimal additional impact to farmlands.

Cumulative impacts to farmlands in past years have also resulted in loss of farmland through land use conversions. As populations have increased in the respective counties and regions, a sustained demand for land to support new housing and jobs has been evident. In addition, the ability to depend upon farming as a primary source of income has been diminished due to rising costs in equipment and fuel costs. Profits from crops and livestock have not matched these rising costs.

The project area is reflective of state and national inclinations for farmers located adjacent to development activities. Farming operations in proximity to these activities often succumb to the increased values of land and sell portions of or all farmland. The Build Alternatives are being proposed in part to facilitate economic development in the region. Farms existing near interchanges along the proposed I-69 would be likely to sell portions or all of their land to meet the demands for highway commercial development in the near future. Long term impacts include further loss of farmland in planned residential, commercial, and industrial land use change. These losses would occur most likely adjacent to or within corporate city limits and along State and US highways that would intersect with I-69. If the No-Build Alternative is selected, farm loss will continue to occur in each of the four project counties, but at a slower rate than if a Build Alternative is selected. Development goals should include sensitivity to farms and prime and unique farmlands when planning for expansion in the area.

Terrestrial Habitat

<u>All Build Alternatives</u>
As detailed in Section 4.5.1, the fragmentation of forested areas and other types of habitat would have an adverse effect to wildlife. This loss of habitat would impact wildlife inhabiting the area and migratory species such as waterfowl.

Indirect impacts to terrestrial habitat are associated with the conversion of lands adjacent to the proposed interchanges that currently provide habitat. Past transportation improvements have dealt mostly with upgrading existing roadways, including adding shoulders and traffic lanes, realignments of interchanges and other relatively minor work. Other past actions which have affected terrestrial habitat are associated with conversion of land usage from agricultural/rural to residential and commercial applications. These changes have been located mainly within and near the corporate limits of project area towns and cities. The heaviest levels of activity are anticipated to be located within and near the Millington, Ripley, Covington, Munford, Atoka, and Dyersburg. If a build alternative is selected, immediate future development activities would be anticipated at area interchanges between existing roadways and the proposed I-69 highway. Although residential and commercial development will not occur within the boundaries of the Lower Hatchie National Wildlife Refuge and the Mississippi River Trail, limited recreational development may be anticipated as tourism totals increase.

The new highway would cause indirect impacts due to loss of habitat in the area immediately surrounding the new interstate as highway commercial sites and possible residential activities are constructed in the near future. The highway project would be constructed in part to complement local and regional efforts to stimulate the area economy. As area populations continue to increase as predicted over the next two decades, and pressure for land required to develop new residential and commercial areas occurs in response to the population increases, future demands for land use changes will continue causing further loss of habitat. The loss of habitat will occur whether the No-Build Alternative or any one of the Build Alternatives are selected; however a Build Alternative would accelerate development activities and ultimately loss of terrestrial habitat. In addition to loss of habitat through conversion of land use, secondary and cumulative effects would also involve continued spreading of invasive and exotics through the development of agricultural lands.

Aquatic Habitat

<u>All Build Alternatives</u>
Besides the No-Build Alternative, all other alternatives would have impacts to project area aquatic habitat, particularly wetlands and floodplains. As detailed in Section 4.5.2, impacts to project area wetlands range from 11.9 acres (Alternative R) to 100.4 acres (Alternative P3). All build alternatives have been designed to avoid aquatic impacts where feasible and to minimize those impacts that are unavoidable. Indirect impacts to aquatic habitat would most likely involve increased erosion near the location of culverts and other drainage structures. Exit velocities at these points could scour the stream substrates and further erode the stream banks. These conditions can be minimized through the use of energy dissipaters such as riprap, impact basins and drop structures. Other secondary impacts would include the filling of seeps and headwater streams.

Indirect impacts can include changes in wetland function as a result of construction within the wetland or at a later time, subsequent to construction. Portions of the wetland outside of the construction right-of-way may continue to exist and will be subject to indirect impacts.

Indirect impacts to wetlands can be divided into two categories: those that are an immediate result of a direct right-of-way impact, and those that will happen later in time as a result of the proposed action. Indirect impacts are those in which the primary functions of the site and/or at least one of the three wetland criteria (soils, vegetation and hydrology) are affected by means other than a direct encroachment (e.g., filling or excavation of the site). The primary functions of wetlands within the project area may be affected indirectly by the following factors:

- site bisection
- fragmentation
- hydrology alteration or removal
- proximity of the project to wildlife habitat
- creation of barriers to species and processes (including the riffle-pool complex)
- down-cutting
- increased sediment load
- shading

Cumulative impacts would include the incremental reduction in the base flow of area streams as development occurs on lands that are now undeveloped and additional seeps are filled and streams are placed in culverts. Additional cumulative impacts to wetlands will be associated with development pressures in areas where wetlands are close to the project alignments; most notably at intersections and near city limits or areas where land use has shifted to residential and commercial development. Consideration of wetland areas was undertaken during the development of the project alternatives. More detailed refinement of the alternatives to avoid wetland impacts was used for slight alignment modifications. Wetland impacts have been minimized to the fullest feasible extent during this phase of project development.

Secondary and Cumulative effects to area wetlands in the past have been associated with loss of these resources in association with the construction and widening of area roadways, and the development activities of residential and commercial sites in response to population increases.

Commercial and residential development will not occur within the boundaries of the Lower Hatchie National Wildlife Refuge and the Mississippi River Trail. The direct impacts could impose future indirect impacts upon area wetlands. The future indirect effects would be associated primarily with land use changes. The changes are anticipated initially to occur near the Interstate 69 corridor, its interchanges and connector roads. If wetlands are converted into residential, commercial and industrial sites, negative cumulative impacts are anticipated through the further loss of these resources. Local officials are aware of wetlands located within and near the project area, and should include plans to avoid removal of these resources by restricting development activities within these areas. However, the project, its indirect effects and those associated with the past and future will likely continue the pattern of fragmentation of wetlands in West Tennessee. Development activities will require coordination with the US Army Corps of Engineers and the Tennessee Department of Environment and Conservation which would moderate impacts to area wetlands. If the No-Build Alternative were selected, fragmentation activities would still occur in the area, but it is anticipated that the rate would be less than that if the project is constructed.

Field observations have indicated that past floodplain encroachments within the proposed project area have occurred primarily as a result of scattered residential development, farm property development and roadway construction. Most of the encroachments are associated with the removal of vegetation, tilling of soil, grading and reshaping of stream banks, channeling and other riparian modifications.

Development of residential and business sites, which is expected to be concentrated along the new interstate's interchanges and the corporate limits of area cities and towns, may result in additional impacts to FEMA 100-year floodplains. Reasonably foreseeable impacts are not quantifiable but could include impacts associated with additional residential and farm property maintenance and development. All roadway construction impacts would not be anticipated as a FEMA "No Rise" certification would be required for all future transportation projects in this area. Local and regional developers should show sensitivity and consult Flood Insurance Rate Maps provided by FEMA to ensure that future potential impacts to floodplains are avoided or minimized.

Threatened and Endangered Species

Past actions involving roadway construction, residential and commercial developments have resulted in the removal of some preferred habitat or the degradation of areas of preferred habitat for these species. It is not evident at this time the extent of the combined effects of past and present actions upon threatened and endangered species in the project area.

Reasonably foreseeable future actions in relation to this project are expected to be limited and concentrated mainly at proposed interchange locations and developments not associated with the project. These actions could result in the additional loss of habitat for Federally- and State-Listed Threatened and Endangered Species. Impacts could include the loss of woodlands from clearing for residential and commercial development and the loss of wetlands, sedimentation of area streams and ponds.

Cumulative impacts to threatened and endangered species in the area cities and towns are generally less predictable. Sustained residential, commercial, industrial and roadway development activities in these areas are expected to continue, whether or not the project is constructed. These activities within urban areas are not anticipated to provide measurable secondary or cumulative impacts to these special concern species, but they should be monitored in undeveloped areas.

Local and regional development efforts should show sensitivity toward threatened and endangered species as development efforts continue to push beyond the existing boundaries between urban and rural areas. Consultation with TDEC, the USFWS and the Nature Preserves Commission would ensure that sensitive habitats could be avoided. Sensitivity to floodplains should also be monitored and coordinated with FEMA.

Air Quality

As mentioned in Section 4.10, the proposed project is located in an air quality maintenance area that became effective on August 31, 1994, for carbon monoxide, and on February 16, 1995, for ozone. The direct air quality impacts are not predicted to change the attainment status for the project area. The analyses conducted for this project concluded that existing and predicted air quality is in compliance with state and federal standards.

Land use changes are anticipated along proposed interchanges of I-69 with area roadways. The initial indirect impacts include construction and implementation of commercial highway businesses. Residential, industrial and business development is anticipated to occur, initially in areas between the corporate limits of area cities and towns and the I-69 corridor. As these developments are implemented, additional traffic will use the interstate and the area roadways for commuting, shopping, access to public services and recreational travel. The additional vehicles will emit additional pollutants into the air. Local and regional development efforts should include efforts to ensure air pollutant standards are not exceeded.

Noise Impacts

The project area has experienced sound level impacts from past actions. Most of the noise levels are associated with the construction of and improvement to area roadways including US 51, I-155, and I-40. The introduction of these roadways has had some impact on local noise levels. Prior to construction of area roadways, the project area was located in a rural, more natural setting that was absent or measurably lower in persistent traffic noises. Some noises associated with farm equipment, sporadic heavy equipment and generally light local traffic was experienced.

As present and future land use changes occur causing rural land and farmland conversion to residential, commercial and business land application, it is anticipated that traffic noises will increase. These will initially be limited to minor commercial development associated with the interstate interchanges. Additional impacts will result as business and residential development extends from the corporate limits of cities and towns toward I-69. These actions might result in minor localized noise. Local officials should include efforts to ensure that noise levels do not provide short- or long-term impacts to area residents and businesses. Predicted future noise impacts will be mitigated where determined to be feasible and reasonable within the guidelines set forth by TDOT and FHWA.

Historic and Archaeological Resources
Following the initial settlement efforts within the project area, the primary actions that might have affected historic and archaeological resources were associated with the construction of roadways, residential/commercial developments, and agricultural clearing and grazing. These actions have occurred over extended periods of time prior to the 1800s up through present activities. It is not possible to quantify the collective effects of these actions upon the cultural resources of the area.

Reasonable foreseeable future actions associated with the project are expected to be limited and concentrated mainly at interchanges and with development activities not associated with the project. Land use changes resulting from the conversion of farm property to residential and commercial applications may result cumulative impacts attributed to losses of historic and archaeological resources.

Secondary impacts could result from development efforts along area roadways that connect with the proposed project. These impacts could include acquisition and demolition of historic structures and lands, removal of archaeologically significant sites such as burial or sites of religious or occupational significance. Impacts would also be likely from additional noise and visual impacts. Noise and visual impacts would be in relation to the proximity of developments to the affected resources. Local and regional development efforts should show sensitivity when considering land use changes in respect to historic and cultural resources.

Secondary and Cumulative Benefits

As noted, secondary and cumulative impacts in past, present and future contexts, have affected and will continue to affect environmental resources throughout the Interstate 69 project corridor. Although some of these actions have or will result in loss or modification of the area's environmental resources, notable benefits have been associated with the project.

An example of a notable future impact would be the improved community and regional connectivity between residents and businesses located in Shelby, Tipton, Lauderdale and Dyer Counties. This would contribute to the economic development efforts and quality of life improvement goals. These efforts are being made to reduce poverty rates and unemployment rates, and improve income.

The improved interconnectivity of I-69 SIU #8 would assist in further improving connectivity in the area by providing better connections to the interstate system. Economic centers in the area would also be provided with improved linkage and a more efficient movement of goods and services within and throughout this four-county region. All of these actions are anticipated to increase economic opportunities in Shelby, Tipton, Lauderdale and Dyer Counties, improve the quality of life for the area residents, and are consistent with planned local and regional land use.

Based upon this information, the cumulative benefits of the project in relation to past, present and future actions in the area include:

1. Economic vitality resulting from improved linkage between residents and jobs.
2. Improved recreational opportunities provided by better connection to recreational areas in the region.
3. Preservation of natural and cultural resources through controlled development efforts.
4. Improved travel and safety conditions.

CHAPTER 5.0
COMMENTS AND COORDINATION

5.0 COMMENTS AND COORDINATION

This section describes the agency coordination process and public involvement activities that were conducted for this project and the key issues that have been identified through those efforts.

5.1 Agency Coordination

5.1.1 Initial Coordination

In November 2001, during the initial planning for the project, the Tennessee Department of Transportation (TDOT) distributed an initial coordination package to officials of federal, state and local agencies and other interested parties. The initial coordination package consisted of a letter requesting the recipient's review and comments on the project; a project location map; and a project data summary, which consisted of a description of the project and a list of potential environmental, economic and social concerns associated with the construction of the project. A copy of the initial coordination package is in Appendix A-1. Local government representatives were also asked to contact any local, social or civic groups that might be concerned with the project. Responses to initial coordination are provided in Appendix A-2.

5.2 Federal Agency Coordination

The following federal agencies, groups and interested parties were contacted

Federal Agencies

Appalachian Regional Commission
Environmental Protection Agency
Federal Emergency Management Agency
Federal Energy Regulatory Commission
Federal Highway Administration

Comment:

Federal Railroad Administration, Office of Economic Analysis
Federal Aviation Administration
Tennessee Valley Authority, Environmental Management
U.S. Army Corps of Engineers
- Memphis District
- Nashville District

U.S. Coast Guard, Eighth Coast Guard District
U.S. Department of Agriculture;
- Natural Resources Conservation Service

U.S. Department of Commerce, Ecology and Environmental Conservation Office
U.S. Department of Housing and Urban Development

U.S. Department of the Interior:
U.S. Fish and Wildlife Service
U.S. Geological Survey, District Chief, Nashville, TN
U.S. Geological Survey, National Center, Reston, VA
National Parks Service

5.2.1 Summary and Disposition of Federal Agencies' Comments

1. Memphis District Corps of Engineers

Comment: *The Department of the Army, Memphis District Corps of Engineers will be a "Cooperating Agency". A Section 404 permit will be required prior to construction, for impacts to wetlands and/or waters of the U.S.*

Response: None required.

2. U.S. Department of Agriculture

Comment: *A completed AD-1006 Farmland Conservation Impact Rating for the proposed corridor was submitted.*

Response: None required.

3. Appalachian Regional Commission

Comment: T*he proposed project will not have any adverse effect on the Appalachian Development Highway System.*

Response: None required.

4. Tennessee Valley Authority

Comment: *TVA has reviewed information provided and it appears that there would be no TVA approvals or other involvement with this project. However, there are TVA transmission lines in the corridor being evaluated, and if it appears that TVA transmission lines need to be moved, please contact us for consideration as a cooperation agency.*

Response: The construction of the proposed project could require the relocation of transmission lines under your agencies jurisdiction. Therefore, as requested, the TVA was invited to participate in the proposed action as a cooperating agency. It is our hopes that this status will help to eliminate any duplicative processes and expedite the mandated environmental clearance needed for this project.

5. United States Department of the Interior, Fish and Wildlife Services

Comment: *The Department of Fish and Wildlife Services is concerned that the highway project may accelerate erosion and stream sedimentation, resulting in adverse effects to the aquatic environment. They suggest strict adherence of*

Section 209 of the Tennessee Department of Transportation's Specific Specifications for Road and Bridge Construction and Federal Highway Administration Best Management Practices for Erosion and Sediment Control (June 1995). In addition, it was stated that based on available information at this time, the Service believes that the requirements of Section 7 of the Endangered Species Act of 1973, as amended are fulfilled. However, the collection of records available to the Service may not be all-inclusive. Obligations under Section 7 of the Act must be reconsidered if: 1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, 2) the proposed action is subsequently modified to include activities which were not considered during the consultation, or 3) new species are listed or critical habitat designated that might be affected by the proposed action.

Also the potential for impacts to wetlands was also considered. It appears that extensive forested wetlands occur in the vicinity of the proposed new alignments along the Hatchie River bottoms. All wetlands should be avoided if possible, and if not possible, losses should be minimized and will require in-kind mitigation at a minimum of 2:1 ratio.

Response: None required.

5.3 State of Tennessee Agencies

Tennessee Commission of Indian Affairs
Tennessee Department of Agriculture
Tennessee Department of Economic and Community Development
Tennessee Department of Education
Tennessee Historical Commission
Tennessee Wildlife Resources Agency
Tennessee Department of Environment and Conservation

- Division of Air Pollution Control
- Division of Natural Heritage
- Division of Groundwater Protection
- Division of Solid/Hazardous Waste Management
- Division of Water Pollution Control
- Division of Water Supply

Tennessee Historical Commission

Regional Agencies

Northwest Tennessee Development District
Southwest Tennessee Development District
Memphis Area Association of Government
Memphis and Shelby County Office of Planning and Development
Jackson Regional Planning Commission
Center City Commission, Memphis

Memphis Area Transit Authority
Jackson Transit Authority
Tennessee Trails Association
Sierra Club, Knoxville
Sierra Club, Memphis
Tennessee State Chapter of the Sierra Club
Tennessee Conservation League Mississippi River Trail Corporation
Tennessee Environmental Council
The Nature Conservancy

Local Governments

County Executives
- Dyer County, TN
- Lauderdale County, TN
- Shelby County, TN
- Tipton County, TN

Mayors
- Arlington
- Atoka
- Covington
- Henning
- Munford
- Millington
- Ripley
- Dyersburg

5.3.1 State of Tennessee Agencies Responses

1. Department of Economic and Community Development, Tennessee

Comment: *This office feels that choosing the more westerly alternatives will result in more future economic development opportunities and flexibility. The more developable property generally lies to the east. The western alternative gives the option of developing rail sites between the interstate and the railroad plus running rail into sites further to the east. If an eastern alternative is chosen, it will effectively cut the land to the east of the interstate off from rail. The western alternative leaves much more rail accessible potential acreage available. In addition, it is generally proximate to existing industries and population centers.*

Response: None required.

2. Division of Groundwater Protection, TDEC

Comment: *The Division of Groundwater Protection anticipates that it is probable the project will impact existing subsurface sewage disposal (SSD)* *systems that are within areas planned for the roadway construction. If it becomes apparent that staff assistance will be requested on this project, they ask that they be given adequate prior notice to allow for scheduling of the additional workload*.

Response: None required.

3. Tennessee Air Pollution Control Division

Comment: *The portion of the project that is in Shelby County is an area designated as being in maintenance for the National Ambient Air Quality Standards (NAAQS) for ozone and carbon monoxide. This portion of the project must demonstrate conformity in the latest Long Range Transportation Plan for the Memphis Metropolitan Area in order to proceed. In addition, the agency's other interests, above what would be addressed through the standard NEPA process, concerns the control of fugitive dust and equipment exhaust emissions during the construction phase, and the assurance that any structures requiring demolition are asbestos free, as per the requirements of chapter 1200-3-11, Hazardous Materials. Also, open burning regulations have changed dramatically. Before burning any wood waste, refer to Chapter 1200-3-4, Open Burning, TDEC: Division of Air Pollution Control.*

Additionally, the Agency would like the chance to review the Environmental Assessment when it becomes available.

Response: The Environmental Impact Statement being prepared for the project will be provided for agency review and comment.

4. (November 13, 2001) Tennessee Wildlife Resources Agency (TWRA)

Comment: *The proposed I-69 alignments would cross the Hatchie, South Fork Forked Deer and North Forked Deer rivers in areas of extremely high wildlife value. The approved Obion Wetland Mitigation Bank would be available to compensate for unavoidable impacts. However, the Agency's opinion is that the new crossings of these rivers should be avoided and that existing crossings should be upgraded to facilitate I-69.*

Mr. Sherry states that 20 years ago, one (1) of the most serious environmental Controversies in the history of Tennessee transportation projects concerned the construction of the Dyersburg bypass over the North Fork Forked Deer River. It is their hope that TDOT will do everything possible to avoid new crossings over these valuable resources. Even if permitted, higher than normal mitigation ratios might be expected to compensate for the losses. Compensation, as well as other environmental dollar costs should be calculated in the comparison of alternatives.

Response: The alignments of all proposed Build Alternatives were developed to avoid wetlands where practicable, and to minimize unavoidable impacts to these resources. All wetland mitigation would be on-site and in kind, where feasible. In response to resource agency concerns, Alternative R, P1, P2 and P3 would utilize the existing US 51 crossing location of the Hatchie River to minimize potential impacts to the river and surrounding habitat.

5. (March 13, 2002)– Tennessee Wildlife Resources Agency (TWRA)

Comment: *Agency is concerned with environmental impact of two (2) alternates. The area of interest lies immediately south of Dyersburg. There is a westerly alternative which would involve a new crossing of the Forked Deer River just below the confluence of the North and South Forks. Another easterly alternative would involve a new crossing of the South Fork. Both of these crossings would be environmentally costly. The South Fork crossing would nearly touch the Agency's Lauderdale Refuge and directly affect popular duck hunting which takes place adjacent to the refuge (i.e. at the crossing).*

The Agency strongly requests that these two alternatives not be pursued. The agency recommends that the westerly alternative be taken as it follows U.S. 51 northward then continue to follow U.S. 51 as indicated as the latter directs the road northeast still following U.S. 51 as it crosses the South and North Forks of the Forked Deer River and avoids new and damaging river crossings. It has the additional environmental advantage of generally following U.S. 51 throughout the course of the road.

Response: The use of the existing US 51 corridor was considered prior to the development of the other alternatives presented in the DEIS. However, due to the numerous points of access along the existing corridor and the resulting requirement of frontage roads, the placement of I-69 along US 51 would impact approximately 300 commercial and residential properties, approximately 10 public facilities including schools and churches, as well as 6 known cemeteries. Due to the high cost of the frontage roadways and the impacts to existing development along US 51, this alternative was eliminated from further consideration.

6. Tennessee Historical Commission

Comment: *After consideration of the available information this agency finds that the project as currently proposed "MAY AFFECT PROPERTIES THAT ARE ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES". They request continued coordination with their office, designated consulting parties and invite them to participate in consultation and provide them with appropriate survey documentation for review and comment.*

Response: Coordination with the Tennessee Historical Commission will continue throughout the NEPA process.

5.4 Section 106 Coordination

Pursuant to Section 106 of the National Historic Preservation act, a letter and project data summary were sent to Native American Groups and local officials inviting these parties to be a Section 106 consulting party for the project. A copy of the letters sent is in Appendix A-4.

The following parties were invited to be Section 106 consulting parties for the project:

Cherokee Nation of Oklahoma
Eastern Band of Cherokee Indians
Chickasaw Nation
Choctaw Nation of Oklahoma
Muscogee (Creek) Nation
Seminole Nation of Oklahoma
United Keetoowah Band of Cherokee
Eastern Shawnee Tribe of Oklahoma
Lauderdale County Historian
Center for Neighborhoods, Memphis
Center for Southern Folklore
Memphis Heritage, Inc.
West Tennessee Historical Society
Quapaw Tribe of Oklahoma
Thlopthlocco Tribal Town
Alabama Quassarte Tribal Town
Kialegee Tribal Town
Shawnee Tribe

County Executives

- Dyer County, TN
- Lauderdale County, TN
- Shelby County, TN
- Tipton County, TN

Mayors

- Arlington
- Atoka
- Covington
- Henning
- Munford
- Millington
- Ripley

- Dyersburg

The following parties with identified historic preservation interests were also sent a letter and information package asking for their comments on the proposed project's potential effects to cultural resources:

Mr. Terry Ford, Historic Zoning Commission, Covington
Mr. Russell Bailey, Tipton County Historian
Ms. Jean Crawford, Association for the Preservation of Tennessee
Nancy Jane Baker, Memphis Landmarks Commission
P. Whittenberg, Memphis & Shelby County Planning and Development
Mr. Edward F. Williams III, Shelby County Historian
Dr. Charles W. Crawford, Shelby County Historical Commission
Dr. Bobby Lovett, College of Arts and Sciences, Tennessee State University

5.4.1 Section 106 and Local Agency Responses

1. College of Arts and Sciences Tennessee State University

Comment: *At this time, the Office of Research for Afro-American State and Local History, could register no concern about adverse impact of this construction project on the historical structures and history resources in the west Tennessee area. In addition, they found no known adverse economic and social impacts, particularly in regard to African American and general Tennessee history in that area of the state.*

Response: None required.

1. (November 5, 2001) Cherokee Nation

Comment: *The Cherokee Nation is not presently aware of or able to identify any cultural resources affiliated with the Cherokee Nation within the proposed area of development. However, they are aware that inadvertent discovery may occur as a result of development, archaeological testing, or as project construction activities progress. The Cherokee Nation requests that:*

- *In the event of inadvertent discovery of human remains, burial objects, or artifacts that all site surveys or other site activities cease pending notification of the Cherokee Nation;*
- *Any and all remains, burial objects or artifacts must be properly secured and protected;*
- *The Cherokee Nation opposes any laboratory testing, data retrieval, non-biodegradable shrouding, photographic documentation, public display or unauthorized removal of ancestral remains or burial objects;*

- *Sites known to possess or are discovered to posses ancestral remains or burial objects, or that have historical, cultural or religious significance to the Cherokee people should be avoided.*

There are three (3) federally acknowledged Cherokee entities: the Cherokee Nation; the United Keetoowah Band of Cherokee Indians and the Eastern Band of Cherokee Indians. Section 106 mandates tribal commentary review or consultation with federally recognized tribal entities. Therefore, any consultation, commentary or review addressed to state recognized groups, entities, or self-identified individuals purporting to be American Indian representatives does not constitute valid tribal consultation in accordance with the authority and intent of federal legislation.

Response: In the event of an inadvertent discovery of cultural materials, all work will cease and the site will be secured to prevent unauthorized removal of these materials. The appropriate entities will be notified and consulted with to determine appropriate measures to address the site. As mandated by Section 106, the appropriate federally recognized Indian Tribes have been named as consulting parties and will continue to be involved in future project events.

2. Eastern Shawnee Tribe of Oklahoma

Comment: *The Eastern Shawnee Tribe is currently unaware of any documentation directly linking Indian Religious Sites to the proposed Construction. In addition they have no objection to the proposed construction. However, if any human skeletal remains and/or any objects falling under the Native American Graves Protection and Repatriation Act (NAGPRA) are uncovered during construction, the construction should stop immediately, and the appropriate persons, including state and tribal NAGPRA representatives contacted.*

Response: None required

3. Mayor – City of Atoka

Comment: *The City of Atoka agrees to participate as a consulting party. They have no preferences as to the location, either east or west of the Town. There are no environmental problems in Atoka's area, which is the eastern route.*

Response: None required.

5.5 Cooperating Agency Involvement

The list below identifies the Cooperating Agencies that received the initial DEIS for review and comment. These agencies will receive the revised DEIS for additional review and comment.

US Army Corps of Engineers, District Engineer, Memphis District
Comments were received on April 29, 2005, from the Memphis District. As requested,

Comment: *On pages 130 and 131, attempts to avoid or minimize impacts to wetlands are described. This information will be important during a permit review. Further, connecting specific avoidance/minimization measures to specific wetlands (particularly large wetland areas or wetlands with high ecological value) would be beneficial.*

Response: Charts and exhibits have been included in this section to further illustrate the measure taken to avoid or minimize impacts to wetlands. A discussion on the prevalence of wetlands in the area has been included on page 130.

Comment: *Also in the "Wetlands" section, it was good to include the discussion of other, more indirect impacts to wetlands (e.g., fragmentation).*

Response: None required.

Comment: *The description of "Riparian Areas" should include a description of other riparian functions, particularly relative to water quality.*

Response: This section has been expanded to fully describe riparian functions with particular emphasis upon water quality (pages 71 & 72).

Comment: *In the "Surface Waters" section (3.5.2), please note that other stream channels that would be considered waters of the United States are almost certainly present within the alignments."*

Response: This comment has been included in the document on pages 75 & 76.

Comment: *The discussion of cumulative effects on wetlands should be strengthened. A discussion of how project planners have attempted to minimize these effects would also be appropriate; this discussion could be set up like the discussion regarding impacts to streams. Also, it appears that additional development pressures to wetlands near the alignment could be considered a cumulative or indirect effect.*

Response: This has been included in the document on page 131
Comment: *Additionally, we have made the following general comments regarding the document:*

1. *Please keep in mind that Section 404(b)(1) guidelines prevent issuance of a permit for filling wetlands if other, less damaging practicable alternatives are available. For this analysis, "practicable" is defined as "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." A functional assessment of wetlands should be included.*

   Response to Comment 1: A Wetlands Impact Chart has been included in the DEIS. This chart describes the wetland locations, Build Alternatives impacting the resource, total area and area required for right of way acquisition, wetland type and wetland function for each wetland that may be impacted. This has been included in the document on page 130, Exhibit 4.1.1.

2. *Other factors to consider include floodplain impacts, residential relocations, and route length (particularly as it relates to construction costs, emissions, etc.); these factors would be considered as part of a public interest review.*

   Response to Comment 2: Sensitivity to floodplains was shown in placing the alignments for the build alternatives for this project. The DEIS has documented consideration of all impacts, including impacts to floodplains, construction costs and relocations to determine the practicable locations for the build alternatives. The impact matrix on page 132, illustrates a summary of all impacts for each build alternative considered in this process.

3. *Extensive areas of high quality bottomland hardwood wetlands are located along the Hatchie River. We are concerned about any proposed alternative that would involve a new alignment through these wetlands or across the Hatchie River. Generally, fewer new crossings of waterways would reduce impacts to water quality, floodplains and wetlands. If a permit could be issued for impacts to this system, it would be necessary to mitigate these impacts by replacing the functions of these wetlands.*

   Response to Comment 3: "Extensive areas of high quality bottomland hardwood wetlands are located along the Hatchie River. Impacts to these resources are anticipated for each of the project Build Alternatives. A build alternative located to the east of the current proposed alignments was eliminated earlier in the decision making process in part because of the potential for measurable impacts to these resources. TDOT will work with the USFWS Lower Hatchie National Wildlife Refuge to identify suitable mitigation sites to replace the functions of these wetlands as part of the 404 Permitting process, Page 130."

4. *All proposed bridge crossings should be adequately designed so there is no induced flooding or increase in upstream river states that would place an undue burden on landowners. Additionally, all crossings should be adequately stabilized and protected.*

<u>Response to Comment 4:</u> This statement has been included on page 132.

5. West Tennessee Tributaries Project – Nodes W-Y-Z or G-Y-Z would cross more waterways within this area than other routes that do not include these nodes. The Memphis District has requested that TDOT keep them advised of any progress in selected the Preferred Alternate. Existing and additional projects are ongoing in western Tennessee, and this level of coordination will ensure no conflicts exist between Corps projects and TDOT projects.

<u>Response to Comment 4:</u> TDOT will keep the Memphis District apprised of this project and all others in western Tennessee to avoid conflicts between Corps and TDOT projects.

<u>General Comment:</u> *The Memphis District requests to be informed of any additional site investigations or field meetings regarding impacts to wetlands or other waters of the United States.*

<u>Response to General Comment:</u> TDOT will inform the Memphis District will be made aware of any additional site investigations or field meetings regarding impacts to wetlands or other waters of the United States.

Tennessee Valley Authority, Environmental Manager
Comments were received on March 29, 2005 from TVA. As requested,

<u>Comment:</u> *Cover Page, first sentence. The reference should be to I-155, not US 155."*

<u>Response:</u> The reference was changed from "US 155 to I-155."

<u>Comment:</u> *Section 1.2.3, System Linkage, U.S. 51. Bloomington, Illinois should be changed to Ironwood, Michigan (or northern Wisconsin).*

<u>Response:</u> "Bloomington, Illinois," was changed to "Ironwood, Michigan."

<u>Comment:</u> *Section 4.5.1, Terrestrial Habitat Impacts. Based on other information provided in the document, much of the land area appears to be agricultural and not forested; therefore, forest fragmentation impacts would*

appear to be minimal. You may wish to provide a more detailed discussion on this issue by describing specific forested areas which may be fragmented as a result of the build alternatives. For example Alternative R would traverse contiguous areas of forest north of Munford and north of Ripley (bluff hills area) and at the Hatchie River bottomlands crossing for Alternative G. Fragmentation impacts of the Hatchie River bottomlands crossing would be minimized by the use of the existing US 51 bridge crossing for Alternative R.

Response: The instances sited above are used as examples in the document on page 128. Reasons for alignment placement are given (high numbers of potential residential and commercial relocations), and reference to the corresponding sheets in the DEIS, Volume II functionals are referenced. A paragraph on secondary and cumulative impacts to forest land was added.

5.6 Public Involvement

Public informational meetings on the proposed project were advertised in the local newspapers and subsequently held July 9, 2001 at the Dyersburg Dyer County Chamber of Commerce and the Covington High School and on July 10, 2001 at the Millington Parks and Recreation Baker Community Center and the Tennessee Technology Center in Ripley, Tennessee. In addition to the TDOT staff, a total of 131 Citizens attended at the meeting at the meeting in Millington, 262 citizens attended the meeting in Covington, 179 citizens attended the meeting in Ripley and 108 citizens attended the meeting in Dyersburg.

Summary of Issues from Initial Public Information Meeting
In general, a slight majority of the comments received noted support for the project, even though one third of the comments did include strong concerns about the proposed action. Most of these concerns dealt with the entire I-69 project from Mexico to Canada, with the general feeling that the project was not needed. Specific concerns on the local level included the need to locate the project near the communities, but far enough away to avoid major displacements of people. Connections between the interstate and these communities, especially industrial areas, were noted as important needs. Much of the support focused on creating economic opportunities.

A second round of meetings was held on October 1, 2001 at the Dyersburg Dyer County Chamber of Commerce and the Millington Parks and Recreation Baker Community Center and on October 2, 2001 at the Tennessee Technology Center at Ripley and the Covington High School. In addition to the TDOT staff, 112 citizens attended the meeting at the Dyersburg Dyer County Chamber of Commerce and 175 citizens attended the meeting at the Millington Parks and Recreation Baker Community Center, 272 citizens attended the meeting at the Tennessee Technology Center at Ripley and 203 citizens attended the meeting at the Covington High School. The purpose of these meetings was to introduce the proposed I-69 Corridor project to the public and to obtain local input regarding the proposed project. Meeting attendees were provided an opportunity to talk with project planners and view graphics illustrating the proposed alternatives. They were also invited to comment on the proposed design and alignment of the project by talking with a court reporter or submitting a comment card either at the meeting or by mail following the meeting. See Appendix A-5 for meeting summaries.

<u>Summary of Issues from Second Series of Public Meetings</u>
The major focus of issues presented at the meetings involved direct impacts to personal property. The major issues identified included noise impacts, loss of farms, streams and wetlands, impacts to property that have been retained in the same family for generations and/or properties that featured old structures. The overall cost of the project was another concern voiced by meeting attendees, as was the increased potential for illegal drugs and illegal aliens.

In addition to the meetings described above, a letter was sent to the Mississippi Band of Choctaws describing potential impacts to property, which they own. Included with the letter was mapping detailing the location of their property and the adjacent proposed alignment. To date, no response has been received. Outreach efforts will be made prior to future public meetings, as well as the Public Hearing, to involve this community. Please refer to Appendix A4 for a copy of the letter sent to the Mississippi Band of Choctaws.

CHAPTER 6.0
SELECTED SOURCES

6.0 SELECTED SOURCES

Haworth, Meyer and Boleyn Professional Engineers, Inc.

2002 Phase I Site Assessment of Underground storage Tanks and Hazardous Material Site. Interstate I-69 from Dyersburg, Tennessee to Millington, Tennessee.
April 2002.

2002 Terrestrial and Aquatic Technical Report. Interstate I-69 from Millington Tennessee to Dyersburg, Tennessee. April 2002.

Palmer Engineering

2002 Social and Economic Impact Analysis. Interstate I-69 from Millington, Tennessee to Dyersburg, Tennessee. Section of Independent Utility #8. July 2002.

2002 Air Quality Analysis. Interstate I-69 from Millington, Tennessee to Dyersburg, Tennessee. Section of Independent Utility #8. January 2002.

2002 Traffic Noise Impact Analysis. Interstate I-69 from Millington, Tennessee to Dyersburg, Tennessee. Section of Independent Utility #8. June 2002.

Traffic Analysis Report Addendum. I-69 from Memphis to Dyersburg, Tennessee. Authored by Josh Howes, P.E.

Wilbur Smith & Associates

1997 Corridor 18 Special Issues Study. May 1997.

2000 I-69 (Corridor 18) Special Environmental Study. Statement of Purpose and Need for Interstate Highway 69. February 2002.

1999 (Corridor 18) Special Environmental Study. Sections of Independent Utility. August 1999.

Weaver & Associates

2002 Phase 1a and 1b Archaeological Survey of portions of the Proposed Corridor 18
(Interstate 69), from the Paul Barrett Parkway near Millington, North to Interstate 155 at Dyersburg, Dyer, Lauderdale, Tipton and Shelby Counties, Tennessee. March 2002.

Thomason & Associates

2002 Historical and Architectural Survey and documentation for effect under 36 CFR 800 evaluation. Interstate 69 Dyer, Lauderdale, Shelby, and Tipton Counties, Tennessee. July 2002.

U.S. Fish and Wildlife Service

1999 Draft Environmental Assessment and Land Protection Plan for Proposed Expansion of Chickasaw and Lower Hatchie national Wildlife Refuges. Lauderdale and Tipton Counties, Tennessee. September 1999.

CHAPTER 7.0
LIST OF PREPARERS

Chapter 7.0 List of Preparers

Federal Highway Administration - Tennessee Division
John Steele
Area Engineer

Scott McGuire, P.E.
Field Operations Team Leader

Walter Boyd, P.E.
Field Operations Team Leader

Tennessee Department of Transportation Environmental Division

Tom Love TDOT Project Manager Present	B.S., Agriculture, NEPA Documentation 1972-

HMB Professional Engineers, Inc.

Tim Foreman DEIS Preparation	A.S., Environmental Science 6 years experience in NEPA studies and documentation.
John W. Brown DEIS Preparation	B.A. Communications 9 years experience in NEPA studies and documentation. Graduate studies in Public Administration
Peggy Measel Chief Biologist	B.S., Environmental Science and Biology M.S., Biology 16 years experience in NEPA studies and documentation.
Price Sewell Chief Field Biologist studies	B.S., Environmental Studies 6 years experience in NEPA and documentation.
Lesley E. Meade, Ph.D. Professor/Field Biologist	B.S., Biology and Chemistry M.S., Biology, Ph.D. Zoology and Biology, 26 years experience in ecological studies.
Brenda Hamm Biologist	B.S., Biology 16 years experience in ecological studies.

T.J. McMichael Biologist	M.S., Wildlife Management 19 years experience.
James Yung Ecological Field Studies	B.S, Zoology 2 years experience.
Jeremy Palazolo Ecological Field Studies	B.S, Forestry and Wildlife Management Registered Forester, 3 year experience.
C. Dale Randall Hazardous Materials Impact Analysis	B.S., Chemical Engineering 15 years experience.
Thomason and Associates, Inc.	
Philip Thomason Principal Investigator	B.S., Historical Preservation 21 years experience. Historic/Architectural Cultural Resource Analysis
Palmer Engineering	
Doug Lambert Air, Noise & Socioeconomic Impact Analysis Project Manager	B.A., Landscape Architecture MPA Environmental Management and Law, 33 years experience.
Elizabeth Bullock Noise & Air Impact Analysis	B.S., Biosystems and Agriculture Engineering M.S., Biosystems and Agricultural Engineering 3 years transportation experience.
Eric E. Fisher, P.E. Noise & Air Impact Analysis	B.S., Civil Engineering 26 years experience.
Charles O. Danison Jr. Noise Impact Analysis	B.S., Meteorology 26 years transportation experience.
Timothy Robinson Hazardous Material Impact Analysis	M.S., Civil Engineering 10 years transportation experience.

Joshua D. Howe Traffic Impact Analysis	B.S., Civil Engineering 6 years transportation experience.
Chris Blevins	B.S., Geography 6 years transportation experience.
Weaver and Associates	
Guy Weaver Project Manager	M.S., Anthropology Over 30 years experience. Archaeological Cultural Resource Analysis
Brian Collins Field Director	M.S., Anthropology 14 years experience.
Warren Oster	M.S., Anthropology 3 years experience.
Thomas Carty Field Director	M.S., Anthropology 5 years experience.
Debbie Shaw Lab Director	M.S., Anthropology 3 years experience.

APPENDIX A
Correspondence

USDA United States Department of Agriculture

Natural Resources Conservation Service

Jackson Division Office
235 Oil Well Road
Jackson, Tennessee 38305

November 13, 2001

RECEIVED
NOV 1? 2001

Mr. Charles E. Bush
Transportation Manager II
Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Dear Mr. Bush:

Enclosed is the completed AD-1006 Farmland Conversion Impact Rating for the proposed corridor 18/Interstate 69 Project from SR 385 in Millington to I-155/US 51 in Dyersburg, TN (Shelby, Lauderdale, Tipton and Dyer Counties).

If you have any additional questions please contact me at (731) 668-0700.

Charles L. Davis

Charles L. Davis
Soil Scientist

The Natural Resources Conservation Service works hand-in-hand with the American people to conserve natural resources on private lands.

AN EQUAL OPPORTUNITY EMPLOYER

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request	
Name Of Project I-69 MILLINGTON TO DYERSBURG		Federal Agency Involved	
Proposed Land Use		County And State	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS	
Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).* Yes ☑ No ☐		Acres Irrigated NA	Average Farm Size 339 ac
Major Crop(s) CORN	Farmable Land In Govt. Jurisdiction Acres: 634,856 % 59		Amount Of Farmland As Defined in FPPA Acres: 627,715 % 75
Name Of Land Evaluation System Used DYER, LAUDERDALE, SHELBY, TIPTON	Name Of Local Site Assessment System NA		Date Land Evaluation Returned By NRCS 11/12/2001

PART III *(To be completed by Federal Agency)*	Alternative Site Rating R-P1-Site A	G-G1 Site B	0-01-Site C	P-P1-Site D
A. Total Acres To Be Converted Directly	2166	2166	374	391
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	0.0 2166	0.0 2166	0.0 374	0.0 391
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	1877	1841	257	135
B. Total Acres Statewide And Local Important Farmland	NA	NA	NA	NA
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	<1%	<1%	<1%	<1%
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	58	58	58	58
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0 97	0 97	0 99	0 98

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b))*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Nonurban Use	15	7	8	5	5
2. Perimeter In Nonurban Use	10	5	5	5	5
3. Percent Of Site Being Farmed	20	12	8	4	4
4. Protection Provided By State And Local Government	20	0	0	0	0
5. Distance From Urban Builtup Area	0	0	0	0	0
6. Distance To Urban Support Services	0	0	0	0	0
7. Size Of Present Farm Unit Compared To Average	10	5	5	5	5
8. Creation Of Nonfarmable Farmland	25	10	10	5	5
9. Availability Of Farm Support Services	5	3	3	3	3
10. On-Farm Investments	20	10	10	5	5
11. Effects Of Conversion On Farm Support Services	25	3	3	1	1
12. Compatibility With Existing Agricultural Use	10	1	1	1	1
TOTAL SITE ASSESSMENT POINTS	160	0 56	0 53	0 34	0 34
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 97	0 97	0 99	0 98
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 56	0 53	0 34	0 34
TOTAL POINTS *(Total of above 2 lines)*	260	0 153	0 150	0 133	0 132

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See instructions on reverse side)

This form was electronically produced by National Production Services Staff

Form AD-1006 (10-83)

Palmer
ENGINEERING

January 14, 2002

Mr. Charles L. Davis, Soil Scientist
Natural Resource Conservation Service
Jackson Division Office
235 Oil Well Road
Jackson, TN 38305

Dear Mr. Davis:

Per our conversation today, I am sending you the Interstate 69 project corridor map you received previously and the Farmland Conversion Impact Rating you completed for this project. I would appreciate the information analyzed at the county level to allow a more thorough discussion of impacts throughout the project area. I have added some additional information on the map to help with naming the crossover options.

Thank you for your assistance in this matter.

Sincerely,

Elizabeth Bullock

Elizabeth Bullock
Environmental Engineer

3403 Stony Spring Circle ■ Louisville, KY 40220
Phone: (502) 491-2411 ■ Fax: (502) 491-2448 ■ E-mail: peclouis@palmernet.com ■ Web Site: www.palmernet.com

United States Department of Agriculture

NRCS Natural Resources Conservation Service

USDA

235 Oil Well Road, Jackson, Tennessee 38305

PALMER ENGINEERING LOUISVILLE, KY RECEIVED

FEB 14 REC'D

February 7, 2002

Miss. Elizabeth Bullock
Environmental Engineer
Palmer Engineering
3403 Stony Spring Circle
Louisville, KY 40220

Re: Interstate 69 project corridor in Tennessee

Dear Miss. Bullock:

I have reviewed the Interstate 69 project corridor in West Tennessee on a per county basis. The following is a breakdown of the Farmland Conversion Impact Rating done for the Tennessee Department Of Transportation in November of 2001.

Total acres prime farmland to be converted for each route:

Dyer County
Route R1 (370 acres) Route G1 (171 acres) Route P3 (48 acres)

Lauderdale County
Route R1 (944 acres) Route G1 (421 acres) Route P3, P2 (46 acres) Route 03 (85 acres)

Tipton County
Route R1 (384 acres) Route G1, G2 (168 acres) Route P1 (41 acres) Route 01, 02 (166 acres)

Shelby County
Route R1 (189 acres) Route G1, G2 (81 acres)

Percentage of Farmland In County To Be Converted = less than .1 percent for all counties

Percentage Of Farmland In County With Same Or Higher RV = 38 for all counties

Relative Value Of Farmland To Be Converted: use 97 for all counties

United States Department of Agriculture

NRCS Natural Resources Conservation Service

USDA

235 Oil Well Road, Jackson, Tennessee 38305

If you have any additional questions please contact me at (731) 668-0700.

Charles L. Davis

Soil Scientist

Palmer
ENGINEERING

July 10, 2003

Mr. Charles L. Davis, Soil Scientist
Natural Resource Conservation Service
Jackson Division Office
235 Oil Well Road
Jackson, TN 38305

Dear Mr. Davis:

I would like to ask for your assistance again concerning the Interstate 69 project from Millington to Dyersberg. An additional east alternative has been developed around the city of Ripley and requires a supplementary Farmland Impact Rating assessment. Also, it has been requested to display our data in a node format. To do this, I would like to get the Farmland Impact Rating information modified according to the node format developed for the project. I am enclosing an exhibit showing the new section of alignment and the nodes developed for the project. Additionally, a photocopy of the information received previously from your office is enclosed.

Thank you for your services in this matter. Please call me at 502-491-2411 if you have any questions or need any additional information.

Sincerely,

Elizabeth Bullock

Elizabeth Bullock
Environmental Engineer

3403 Stony Spring Circle ■ Louisville, KY 40220
Phone: (502) 491-2411 ■ Fax: (502) 491-2448 ■ E-mail: peclouis@palmernet.com ■ Web Site: www.palmernet.com

United States Department of Agriculture

USDA

NRCS Natural Resources Conservation Service

235 Oil Well Road, Jackson, Tennessee 38305

August 7, 2003

PALMER ENGINEERING LOUISVILLE, KY
RECEIVED

AUG 11 REC'D

Ms. Elizabeth Bullock
Palmer Engineering
3403 Stony Spring Circle
Louisville, KY 40220

Re: I-69 Project in West Tennessee

Dear Ms. Bullock:

Enclosed is the completed AD-1006 Farmland Conversion Impact Ratings for the above-mentioned project.

If you have any additional questions please contact me at (731) 668-0700.

Charles L. Davis

Charles L. Davis
Resource Soil Scientist

The Natural Resources Conservation Service works in partnership with the American people to conserve and sustain natural resources on private lands.

An Equal Opportunity Employer

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name Of Project	Federal Agency Involved
Proposed Land Use	County And State SHELBY CO., TENN
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 7/14/03

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☒	No ☐	Acres Irrigated NA	Average Farm Size 188 AC
Major Crop(s) CORN	Farmable Land In Govt. Jurisdiction Acres: 380 470 % 76		Amount Of Farmland As Defined in FPPA Acres: 283 300 % 74	
Name Of Land Evaluation System Used SHELBY	Name Of Local Site Assessment System NA		Date Land Evaluation Returned By NRCS 8/7/03	

PART III *(To be completed by Federal Agency)* NODE	Alternative Site Rating J-S Site A	A-C Site B	Site C	Site D
A. Total Acres To Be Converted Directly	157	152		
B. Total Acres To Be Converted Indirectly	—	—		
C. Total Acres In Site	0.0 157	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	91	97		
B. Total Acres Statewide And Local Important Farmland	NA	NA		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	>.01	>.01		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	11	79		
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0 81	0 77	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b))*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Nonurban Use	15	13	9		
2. Perimeter In Nonurban Use	10	8	4		
3. Percent Of Site Being Farmed	20	15	15		
4. Protection Provided By State And Local Government	20	0	0		
5. Distance From Urban Builtup Area	0	0	0		
6. Distance To Urban Support Services	0	0	0		
7. Size Of Present Farm Unit Compared To Average	10	5	5		
8. Creation Of Nonfarmable Farmland	25	5	4		
9. Availability Of Farm Support Services	5	4	4		
10. On-Farm Investments	20	14	12		
11. Effects Of Conversion On Farm Support Services	25	3	3		
12. Compatibility With Existing Agricultural Use	10	4	4		
TOTAL SITE ASSESSMENT POINTS	160	0 71	0 60	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 81	0 77	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 71	0 60	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	0 152	0 137	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

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Form AD-1006 (10-83)

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name Of Project	Federal Agency Involved
Proposed Land Use	County And State TIPTON CO, TENN.

PART II *(To be completed by NRCS)*		Date Request Received By NRCS 7/14/03	
Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☑ No ☐	Acres Irrigated NA	Average Farm Size 287
Major Crop(s) CORN	Farmable Land In Govt. Jurisdiction Acres: 201,980 % 67		Amount Of Farmland As Defined in FPPA Acres: 136670 % 68
Name Of Land Evaluation System Used TIPTON CO.	Name Of Local Site Assessment System NA		Date Land Evaluation Returned By NRCS 8/7/03

PART III *(To be completed by Federal Agency)* NODE		Alternative Site Rating		
	J-S Site A	S-T Site B	T-U Site C	U-V Site D
A. Total Acres To Be Converted Directly	162	149	131	92
B. Total Acres To Be Converted Indirectly	—	—	—	—
C. Total Acres In Site	0.0 162	0.0 149	0.0 131	0.0 92
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	56	62	70	65
B. Total Acres Statewide And Local Important Farmland	NA	NA	NA	NA
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	>.01	>.01	>.01	>.01
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	74	74	74	88
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0 99	0 98	0 99	0 89

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Nonurban Use	15	13	10	3	10
2. Perimeter In Nonurban Use	10	8	7	3	6
3. Percent Of Site Being Farmed	20	15	15	10	13
4. Protection Provided By State And Local Government	20	0	0	0	0
5. Distance From Urban Builtup Area	0	0	0	0	0
6. Distance To Urban Support Services	0	0	0	0	0
7. Size Of Present Farm Unit Compared To Average	10	5	5	5	5
8. Creation Of Nonfarmable Farmland	25	5	5	8	10
9. Availability Of Farm Support Services	5	4	4	4	4
10. On-Farm Investments	20	14	14	13	13
11. Effects Of Conversion On Farm Support Services	25	3	3	2	2
12. Compatibility With Existing Agricultural Use	10	4	4	1	3
TOTAL SITE ASSESSMENT POINTS	160	0 71	0 67	0 49	0 66
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 99	0 98	0 99	0 89
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 71	0 67	0 49	0 66
TOTAL POINTS *(Total of above 2 lines)*	260	0 170	0 165	0 158	0 155

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side) **Form AD-1006 (10-83)**

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FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name Of Project	Federal Agency Involved
Proposed Land Use	County And State TIPTON CO. TENN.
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 7-14-03

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*		Yes ☑	No ☐	Acres Irrigated NA	Average Farm Size 287
Major Crop(s) CORN	Farmable Land In Govt. Jurisdiction Acres: 201,980 % 67			Amount Of Farmland As Defined in FPPA Acres: 136670 % 68	
Name Of Land Evaluation System Used TIPTON	Name Of Local Site Assessment System NA			Date Land Evaluation Returned By NRCS 8-7-03	

PART III *(To be completed by Federal Agency)*	NODE	Alternative Site Rating A-C Site A	B-B Site B	B-D Site C	D-K Site D
A. Total Acres To Be Converted Directly		402	107	183	105
B. Total Acres To Be Converted Indirectly		—	—	—	—
C. Total Acres In Site		0.0 402	0.0 107	0.0 183	0.0 105
PART IV *(To be completed by NRCS)* Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		64	41	82	73
B. Total Acres Statewide And Local Important Farmland		NA	NA	NA	NA
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		>.01	>.01	>.01	>.01
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		74	74	74	88
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*		0 100	0 100	0 99	0 92

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	9	7	3	10
2. Perimeter In Nonurban Use	10	4	2	2	5
3. Percent Of Site Being Farmed	20	15	15	8	12
4. Protection Provided By State And Local Government	20	0	0	0	0
5. Distance From Urban Builtup Area	0	0	0	0	0
6. Distance To Urban Support Services	0	0	0	0	0
7. Size Of Present Farm Unit Compared To Average	10	5	5	5	5
8. Creation Of Nonfarmable Farmland	25	4	7	8	10
9. Availability Of Farm Support Services	5	4	4	4	4
10. On-Farm Investments	20	12	8	4	8
11. Effects Of Conversion On Farm Support Services	25	3	2	2	3
12. Compatibility With Existing Agricultural Use	10	4	2	1	3
TOTAL SITE ASSESSMENT POINTS	160	0 60	0 47	0 37	0 60
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 100	0 100	0 99	0 92
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 60	0 47	0 37	0 60
TOTAL POINTS *(Total of above 2 lines)*	260	0 160	0 147	0 136	0 152

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

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Form AD-1006 (10-83)

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name Of Project	Federal Agency Involved
Proposed Land Use	County And State LAUDERDALE CO., TENN.
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 7/14/03

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form)*.	Yes ☑ No ☐	Acres Irrigated NA	Average Farm Size 380
Major Crop(s) CORN	Farmable Land In Govt. Jurisdiction Acres: 194258 % 60		Amount Of Farmland As Defined in FPPA Acres: 84474 % 43
Name Of Land Evaluation System Used LAUDERDALE	Name Of Local Site Assessment System NA		Date Land Evaluation Returned By NRCS 8/7/03

PART III *(To be completed by Federal Agency)* NODE	Alternative Site Rating			
	U-V Site A	V-W Site B	W-Y Site C	K-E Site D
A. Total Acres To Be Converted Directly	32	47	539	72
B. Total Acres To Be Converted Indirectly	–	–	–	–
C. Total Acres In Site	0.0 32	0.0 47	0.0 539	0.0 72
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	3	2	94	21
B. Total Acres Statewide And Local Important Farmland	NA	NA	NA	NA
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	>.01	>.01	>.01	>.01
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	93	84	84	84
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0 82	0 100	0 94	0 99

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Nonurban Use	15	10	11	13	11
2. Perimeter In Nonurban Use	10	6	6	7	8
3. Percent Of Site Being Farmed	20	13	16	16	13
4. Protection Provided By State And Local Government	20	0	0	0	0
5. Distance From Urban Builtup Area	0	0	0	0	0
6. Distance To Urban Support Services	0	0	0	0	0
7. Size Of Present Farm Unit Compared To Average	10	5	5	5	5
8. Creation Of Nonfarmable Farmland	25	10	8	5	3
9. Availability Of Farm Support Services	5	4	4	4	4
10. On-Farm Investments	20	13	13	13	13
11. Effects Of Conversion On Farm Support Services	25	2	2	2	2
12. Compatibility With Existing Agricultural Use	10	3	1	1	1
TOTAL SITE ASSESSMENT POINTS	160	0 66	0 66	0 66	0 60
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 82	0 100	0 94	0 99
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 66	0 66	0 66	0 60
TOTAL POINTS *(Total of above 2 lines)*	260	0 148	0 166	0 160	0 159

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side) Form AD-1006 (10-83)

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FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name Of Project	Federal Agency Involved
Proposed Land Use	County And State LAUDERDALE CO., TENN.
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 7/14/03

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☑	No ☐	Acres Irrigated NA	Average Farm Size 380
Major Crop(s) CORN	Farmable Land In Govt. Jurisdiction Acres: 194256 % 60		Amount Of Farmland As Defined in FPPA Acres: 84474 % 43	
Name Of Land Evaluation System Used LAUDERDALE	Name Of Local Site Assessment System NA		Date Land Evaluation Returned By NRCS 8/7/03	

PART III *(To be completed by Federal Agency)* NODE	Maximum Points	E-6 Site A	G-H Site B	Site C	Site D
		Alternative Site Rating			
A. Total Acres To Be Converted Directly		660	14		
B. Total Acres To Be Converted Indirectly		–	–		
C. Total Acres In Site		0.0 660	0.0 14	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		200	6		
B. Total Acres Statewide And Local Important Farmland		NA	NA		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		7.01	7.01		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		84	84		
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*		0 98	0 100	0	0
PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15	13	10		
2. Perimeter In Nonurban Use	10	8	8		
3. Percent Of Site Being Farmed	20	15	10		
4. Protection Provided By State And Local Government	20	6	0		
5. Distance From Urban Builtup Area	0	0	0		
6. Distance To Urban Support Services	0	0	0		
7. Size Of Present Farm Unit Compared To Average	10	5	5		
8. Creation Of Nonfarmable Farmland	25	4	4		
9. Availability Of Farm Support Services	5	4	4		
10. On-Farm Investments	20	15	15		
11. Effects Of Conversion On Farm Support Services	25	2	2		
12. Compatibility With Existing Agricultural Use	10	1	1		
TOTAL SITE ASSESSMENT POINTS	160	0 67	0 59	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 98	0 100	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 67	0 59	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	0 165	0 159	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

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FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name Of Project	Federal Agency Involved
Proposed Land Use	County And State DYRE CO., TENN
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 7/14/03

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☒	No ☐	Acres Irrigated	Average Farm Size 445
Major Crop(s) CORN	Farmable Land In Govt. Jurisdiction Acres: 240148 % 71		Amount Of Farmland As Defined in FPPA Acres: 123271 % 51	
Name Of Land Evaluation System Used DYRE	Name Of Local Site Assessment System NA		Date Land Evaluation Returned By NRCS 8/7/03	

PART III *(To be completed by Federal Agency)*	Maximum Points	Alternative Site Rating: Y-Z Site A	G-H Site B	Site C	Site D
A. Total Acres To Be Converted Directly		151	283		
B. Total Acres To Be Converted Indirectly		—	—		
C. Total Acres In Site		0.0 151	0.0 283	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		121	100		
B. Total Acres Statewide And Local Important Farmland		NA	NA		
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		>.01	>.01		
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		78	78		
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*		0 82	0 83	0	0
PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b))*	Maximum Points				
1. Area In Nonurban Use	15	8	15		
2. Perimeter In Nonurban Use	10	5	8		
3. Percent Of Site Being Farmed	20	10	10		
4. Protection Provided By State And Local Government	20	0	0		
5. Distance From Urban Builtup Area	0	0	0		
6. Distance To Urban Support Services	0	0	0		
7. Size Of Present Farm Unit Compared To Average	10	5	5		
8. Creation Of Nonfarmable Farmland	25	3	4		
9. Availability Of Farm Support Services	5	4	4		
10. On-Farm Investments	20	15	15		
11. Effects Of Conversion On Farm Support Services	25	2	2		
12. Compatibility With Existing Agricultural Use	10	1	1		
TOTAL SITE ASSESSMENT POINTS	160	0 53	0 59	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 82	0 83	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 53	0 59	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	0 135	0 142	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

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Form AD-1006 (10-83)

RECEIVED

NOV 15 2001

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Ground Water Protection
10th Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243-1540

November 13, 2001

Mr. Charles E. Bush
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Re: Request for comments, Draft Environmental Impact Statement, Proposed Corridor 18/Interstate 69, from Tennessee State Route 385 in Millington to I-155/US 51 in Dyersburg, TN (Shelby, Lauderdale, Tipton, and Dyer Counties)

Dear Mr. Bush:

The Division of Ground Water Protection regulates all aspects of the subsurface sewage disposal (SSD) program in the State of Tennessee. In this regard, division staff has worked closely with TDOT on those construction projects where it is anticipated that the project will potentially impact existing SSD systems.

Regarding the above referenced project, the Division of Ground Water Protection anticipates that it is probable the project will impact existing SSD systems that are within areas planned for the roadway construction. If it becomes apparent that staff assistance will be requested on this project, we ask that they be given adequate prior notice to allow for scheduling of the additional workload.

If you have any questions or think that assistance will be requested on this project, you should contact Mr. Wade Haynes at (731) 512-1302 when assistance is needed.

Sincerely,

Kent D. Taylor

Kent D. Taylor
Director
Division of Ground Water Protection

KDT/gau

cc: Mr. Wade Haynes: Jackson Environmental Assistance Center

TDOTresponse39.doc

RECEIVED

NOV 15 2001

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
AERONAUTICS DIVISION
P.O. BOX 17326
NASHVILLE, TENNESSEE 37217
(615) 741-3208
FAX (615) 741-4959

J. BRUCE SALTSMAN, SR.
COMMISSIONER

DON SUNDQUIST
GOVERNOR

November 13, 2001

Mr. Charles E. Bush
Transportation Manager II
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

RE: Initial Coordination, Proposed Corridor 18/Interstate 69 Project from SR 385 in Millington to I-155/US 51 in Dyersburg, TN (Shelby, Lauderdale, Tipton and Dyer Counties).

Dear Mr. Bush:

I am in receipt of the information noted above and wanted to comment on the issue. There are four public use airports along the course of the proposed roadway. The roadway alternatives depicted do not appear to impact any of the sites directly, however, given the push regarding intermodal transportation, I was wondering if your initial coordination included touching base with officials of any of these airports. I believe they may be interested in commenting on the proposed routing.

I have included the names, addresses and telephone numbers of the airport managers and/or airport chairman for the four airports.

<u>Dyersburg Municipal Airport</u>

Bob Dean, Chairman
Dyersburg Airport Committee
1015 Cooper Drive
Dyersburg, TN 38024
731-285-2134

Mr. Jerrie Davis
Airport Manager
315 Airport Road
Dyersburg, TN 38024
731-286-2233

<u>Arnold Field</u>

Barry Britt, Chairman
Town of Halls Board of Mayor
and Alderman Airport Committee
227 Shannon
Halls, TN 38040
Fax 731-836-9457

Ms. Patricia Higdon
Airport Manager
719 West Main
Halls, TN 38040
731-836-7448

Covington Municipal Airport

Keith Phelps, Chairman
146 Country Lake Drive
Covington, TN 38019
901-476-9613

Robin Anderson
Airport Manager
169 Airport Parkway Drive
Covington, TN 38019
901-476-9613

Millington Municipal Airport

Jim Music, Chairman
Millington Municipal Airport Authority
P. O. Box 1133
Millington, TN 38083
901-872-7495

CDR Russ Noble (USN Ret.)
Airport Manager
P. O. Box 1133
Millington, TN 38083
901-873-5795

I appreciate the opportunity to comment on this initial coordination. Please let me know if I can be of any assistance.

Sincerely,

Brian Caldwell
Chief Planner

APPALACHIAN
REGIONAL
COMMISSION

A Proud Past,
A New Vision

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NOV 30 2001

ENVIRONMENTAL PLANNING
AND PERMITS

November 26, 2001

Mr. Charles E. Bush
Transportation Manager II
Tennessee Department of Transportation
James K. Polk Building, Suite 900
505 Deaderick Street
Nashville, Tennessee 37243 - 0334

Dear Mr. Bush:

Thank you for your November 2, 2001 letter offering the Appalachian Regional Commission an opportunity to comment on the proposed Corridor 18 / Interstate 69 project from SR 385 in Millington to I-155 / US 51 in Dyersburg. (Shelby, Lauderdale, Tipton, and Dyer Counties)

The proposed project will not have any adverse effect on the Appalachian Development Highway System.

Should you have any questions please do not hesitate to contact me at (202) 884 7706.

Sincerely:

Edward A. Terry, Jr., P.E.
Senior Transportation Advisor

Cc: Mr. Charles Boyd - FHWA

1666 CONNECTICUT AVENUE, NW, SUITE 700 WASHINGTON, DC 20009-1068 (202) 884-7799 FAX (202) 884-7691

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NOV 30 2001

ENVIRONMENTAL PLANNING
AND PERMITS

Tennessee Air Pollution Control Division
9th Floor L&C Annex, 401 Church Street
Nashville, Tennessee 37243-1531

November 15, 2001

Mr. Charles E. Bush
Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

Dear Mr. Bush:

The Division of Air Pollution Control has reviewed your project summary for the proposed construction of Corridor 18/Interstate 69 in Shelby, Lauderdale, Tipton and Dyer Counties. The portion of this project that is in Shelby County is an area designated as being in maintenance for the National Ambient Air Quality Standards (NAAQS) for ozone and carbon monoxide, so that portion of the project described in your summary must demonstrate Conformity in the latest Long Range Transportation Plan for the Memphis Metropolitan Area in order to proceed.

This agency's other interests, above what would be addressed through the standard NEPA process, concerns the control of fugitive dust and equipment exhaust emissions during the construction phrase, and the assurance that any structures requiring demolition are asbestos free, as per the requirements of Chapter 1200-3-11, Hazardous Materials. I would also like to point out that the open burning regulations have changed dramatically. Before burning any wood waste, please refer to Chapter 1200-3-4, Open Burning at TDEC: Division of Air Pollution Control.

We appreciate the chance to comment on this, and we would also appreciate the chance to review the Environmental Assessment when it becomes available.

If you have any questions or comments, please feel free to call me at (615) 532-0554.

Sincerely

Barry R. Stephens
Director

cc: Kim Olson

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

March 21, 2001

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL	# of pages ►
To Peggy Measel	From Sander
Dept./Agency HMB	Phone # 931-528-6481
Fax # 502-695-9810	Fax # " " 7075
NSN 7540-01-317-7368 5099-101	GENERAL SERVICES ADMINISTRATION

Ms. Peggy A. Measel
Haworth, Meyer & Boleyn, Incorporated
3 HMB Circle
Frankfort, Kentucky 40601

Dear Ms. Measel:

Thank you for your letter and enclosures of February 16, 2001, regarding the proposed construction of I-69 from south of Millington to north of Dyersburg, Tennessee. We have reviewed your request for information on wetlands and federally listed species that may occur within the proposed project corridor.

Information available to the Service indicates that numerous wetlands exist in the vicinity of the proposed I-69 corridor. Due to the large number of USGS quads involved, we are unable to provide paper maps of all the known locations of existing wetlands. However, there is a web site that provides digital access to wetland data layers for the entire State of Tennessee. The address for this web site is *http://163.148.169.50*. It should be noted that these digital maps are not sanctioned by the Service and are not to be used as a substitute for field verification. They are provided as a planning tool. The Corps of Engineers or the Natural Resources Conservation Service should be contacted regarding the presence of regulatory wetlands and the requirements of wetlands protection statutes.

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the project. We note, however, that collection records available to the Service may not be all-inclusive. Our data base is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality. However, based on the best information available at this time, we believe that the requirements of Section 7 of the Endangered Species Act of 1973, as amended, are fulfilled. Obligations under Section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

Your concern for the protection of wetlands and endangered species is appreciated. If you have questions, or if we can be of further assistance, please contact Timothy Merritt of my staff at telephone 931/528-6481, ext. 211, or via email at *timothy_merritt@fws.gov*.

Sincerely,

Lee A. Barclay

Lee A. Barclay, Ph.D.
Field Supervisor

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

RECEIVED

NOV

November 9, 2001

Mr. Charles E. Bush
Transportation Manager
Tennessee Department of Transportation
Environmental Planning Office
505 Deaderick Street, Suite 900
Nashville, Tennessee 37243-0330

Dear Mr. Bush:

Thank you for your letter and enclosures of November 2, 2001, concerning the proposed construction of Interstate 69 (Section 8) from SR385 (Paul Barrett Parkway) in Millington to I-155/US51 in Dyersburg. We have reviewed the information submitted and offer the following comments in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

The proposed project has two primary alternative corridors: one west of US51 and the other east of US51. Between the two primary corridors are "cross-overs" which allow for flexibility in location selection.

We are concerned that highway projects frequently accelerate erosion and stream sedimentation, resulting in adverse effects to the aquatic environment. Excessive sedimentation can degrade aquatic habitat by filling in substrate cavities, burying demersal eggs, and smothering bottom organisms.

Prevention of excessive sedimentation can occur through the use of Best Management Practices during daily construction activities. Strict adherence of Section 209 of the Tennessee Department of Transportation's Specific Specifications for Road and Bridge Construction and Federal Highway Administration Best Management Practices for Erosion and Sediment Control (December 1978) can alleviate most sedimentation problems. It is important that these practices be monitored and stringently enforced in order to minimize adverse impacts associated with construction.

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the various alternative alignments. We note, however, that collection records available to the Service may not be all-inclusive. Our data base is a compilation of collection records made available by various individuals

and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality. However, based on the best information available at this time, we believe that the requirements of Section 7 of the Endangered Species Act of 1973, as amended, are fulfilled. Obligations under Section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

The potential for impacts to wetlands was also considered. Based upon the information which you provided and review of our National Wetlands Inventory maps, it appears that extensive forested wetlands occur in the vicinity of the proposed new alignments along the Hatchie River bottoms. All wetlands located within the proposed construction impact area should be avoided if possible. Any unavoidable losses should be minimized and will require in-kind mitigation at a minimum 2:1 ratio.

Thank you for the opportunity to comment on this proposal. If you have questions, please contact Timothy Merritt of my staff at 931/528-6481, ext. 211.

Sincerely,

Robert T. Bay

for Lee A. Barclay, Ph.D
Field Supervisor

xc: Mr. Dan Sherry, TWRA, Nashville, TN
Mr. Eric Somerville, EPA, Atlanta, GA
Mr. Dan Eagar, TDEC, Nashville, TN
Mr. Gary Pogue, USFWS, Dyersburg, TN

TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

RECEIVED
NOV 29 2001
ENVIRONMENTAL PLANNING
AND PERMITS

November 13, 2001

Mr. Charles Bush
Transportation Manager II
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

re: Initial coordination proposed corridor 18/Interstate 69 project from SR 385 in Millington to I-155/US 51 in Dyersburg, Shelby, Lauderdale, Tipton and Dyer Counties, TN

Dear Charles:

The referenced portion of I-69 would cross the Hatchie, South Fork Forked Deer, and North Fork Forked Deer rivers in areas of extremely high wildlife value. The approved Obion Wetland Mitigation Bank would be available to compensate for unavoidable impacts. However, it is the view of this agency that new crossings of these rivers should be avoided and that existing crossings should be upgraded to facilitate I-69.

Twenty years ago, one of the most serious environmental controversies in the history of Tennessee transportation projects occurred with the construction of the Dyersburg bypass over the North Fork Forked Deer River. We hope that TDOT will do everything possible to avoid new crossings over these valuable resources. Even if permitted, higher than normal mitigation ratios might be expected to compensate for the losses. Compensation, as well as other environmental dollar costs, should be calculated in the comparison of alternatives.

Thank you for this coordination opportunity.

Sincerely,

Dan Sherry
Fish & Wildlife Environmentalist

DS/bjs
cc: Steve Seymour
Gary Cook
USFWS, EPA

The State of Tennessee

Tipton County

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
ACMELLA OPPOSITIFOLIA	CREEPING SPOT-FLOWER		S	S2	G5
AGALINIS AURICULATA	EARLEAVED FALSE-FOXGLOVE		E	S1S2	G3
CAREX OXYLEPIS VAR PUBESCENS	HAIRY SHARP-SCALED SEDGE		S	S1	G5?T3
HYDRASTIS CANADENSIS	GOLDENSEAL		S-CE	S3	G4
PANAX QUINQUEFOLIUS	AMERICAN GINSENG		S-CE	S3S4	G3G4
PANICUM ENSIFOLIUM	SMALL-LEAVED PANICGRASS		S	S2	G4
PHACELIA RANUNCULACEA	BLUE SCORPION-WEED		S	S3	G3G4
PRENANTHES CREPIDINEA	NODDING RATTLESNAKE-ROOT		E	S1	G3G4
SCHISANDRA GLABRA	RED STARVINE		T	S2	G3
** INVERTEBRATES - MOLLUSC					
OBOVARIA JACKSONIANA	SOUTHERN HICKORYNUT			S1	G1G2
VILLOSA VIBEX	SOUTHERN RAINBOW			S2	G4Q
** VERTEBRATES - BIRDS					
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	LE	E	S2S3B	G4T2Q
** VERTEBRATES - REPTILES					
MACROCLEMYS TEMMINCKII	ALLIGATOR SNAPPING TURTLE	MC	D	S2S3	G3G4
SISTRURUS MILIARIUS STRECKERI	WESTERN PIGMY RATTLESNAKE		T	S2S3	G5T5
** VERTEBRATES - FISH					
AMMOCRYPTA BEANI	NAKED SAND DARTER		D	S2	G5
AMMOCRYPTA VIVAX	SCALY SAND DARTER		D	S2	G5
CYCLEPTUS ELONGATUS	BLUE SUCKER	MC	T	S2	G3G4
MACRHYBOPSIS GELIDA	STURGEON CHUB	C	D	S1	G2
NOTROPIS DORSALIS	BIGMOUTH SHINER		D	S1	G5
NOTURUS STIGMOSUS	NORTHERN MADTOM	MC	D	S3	G3

Note: **Should the project require further environmental program permits from our Department, please attach a complete copy of this review or assessment to the permit application.**

The Nature Conservancy®
TENNESSEE CHAPTER

2021 21st Avenue South
Suite C 400
Nashville, Tennessee 37212

Phone: 615-383-9909
Fax: 615-383-9717
nature.org/tennessee

Worldwide Office
Arlington, Virginia
Phone: 703-841-5300

April 16, 2002

Mr. Charles Bush
Transportation Manager II
TDOT, Environmental Planning and Permitting Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Subject: Initial Coordination, Proposed Corridor 18/Interstate 69 Project from SR 385 in Millington to I-155/US 51 in Dyersburg, TN (Shelby, Lauderdale, Tipton and Dyer Counties)

Dear Mr. Bush:

I am writing in receipt of the request for comments on the proposed project listed above and to provide some concerns and subsequent considerations requested by The Nature Conservancy of Tennessee. Our organization (and many of our federal, state, local and private partners) has a direct tie to several sites/conservation projects in the vicinity of the proposed corridor, specifically SIU #8 through the Hatchie River floodplain. Our connection to this area of TN is evidenced by the fact that we opened an office in Brownsville, TN three years ago with the sole mission to maintain the natural integrity of the Hatchie River Watershed. Our staff in West TN has recently expanded due to increased conservation needs in the Hatchie watershed and we anticipate an even larger presence on other rivers, streams, natural areas and wetland complexes throughout Western Tennessee in the future.

Our conservation plans identify the lower Hatchie River as one of three priority conservation areas in the Mississippi River Alluvial Plain Ecoregion. Our commitment to protect the biologically-rich Hatchie watershed is further evidenced by the recent acquisition of two properties bordering the Hatchie to the west of Highway 51. One of the tracts (known as the Crutcher Farm) is located on the north side of the Hatchie in Lauderdale County and is adjacent to Highway 51. The Nature Conservancy signed a Memorandum of Agreement with the USFWS to assist with land acquisition from willing sellers to preserve additional habitat in the lower Hatchie watershed. The Lower Hatchie National Wildlife Refuge has been authorized by Congress to expand their boundaries from their current location east to Highway 51. Our recent acquisition of the 1,063 acre-Crutcher Farm will be owned by USFWS this spring and will serve as the easternmost property of their expansion boundary on the north side of the Hatchie.

Due to the essentially natural meandering state of the Hatchie and its rich bottomland forest ecosystem, the state-designated Scenic Hatchie River supports a tremendous assemblage of plants, animals and natural communities including at least 100 species of fish, 35 species of mussels and 250 species of birds. At least 60 globally rare elements have been recorded from the river including rare mussels such as the pocketbook

(*Lampsilis ovata*) (G5), southern hickorynut (*Obovaria jacksonia*) (G2G3), tapered pondhorn (*Uniomerus declivis*) (G5), and the southern rainbow (*Villosa vibex*) (G4Q). Rare fish include the naked sand darter (*Ammocrypta beani*) (G5), blue sucker (*Cycleptus elongatus*) (G4) and northern madtom (*Noturus stigmosus*) (G3). Species that are found in the Hatchie watershed, but that have declined or disappeared across their range, include the alligator snapping turtle and the hatchie burrowing crayfish, a species that is found nowhere else on earth. Although the Hatchie does not support any federally listed endangered species, it has the highest bio-diversity of any river system in west Tennessee and is one of the best remaining naturally functioning river systems in the Lower Mississippi River Delta. Every effort should be taken to ensure that the river sustains the rich diversity of life that it currently supports.

We have specific concerns that require consideration to alleviate adverse effects in the area during the planning phase and construction of the new interstate, including upgrades to existing Highway 51. Limiting potential impacts to wetlands and floodplain habitats is critical. Potential impacts include:

- Increased fragmentation of bottomland and upland forest habitats. Habitat fragmentation causes a variety of adverse impacts to natural communities including leading to a loss in species richness and diversity.
- Loss of wetland function by alteration of hydrologic regimes such as increased upstream flooding resulting from constricting the floodplain with a raised roadway.
- Increased erosion and aquatic habitat alteration by increased downstream scouring caused by narrowing of the floodplain due to a raised roadway.
- Wetland loss due to road construction activities.
- Decreased aesthetic value for river recreation.

Of the three proposed alternate routes across the Hatchie floodplain, we strongly support the route immediately adjacent to Highway 51. This proposed route would minimize the adverse effects of further fragmentation of the floodplain forests. The Nature Conservancy requests that the corridor not be constructed in a manner that will impede flood flows. Rather than constructing a raised roadbed with fill material, we ask that a bridge be built across the entire 100-year floodplain.

The Nature Conservancy would like to have an active role in the wetland impact mitigation process for the proposed project. We would like to continue to assist with investigations that will be conducted during the review process to identify the presence of any unique or sensitive habitat and ecological systems. Our assistance will help to minimize any potential harm to threatened/endangered species or unique habitats during the duration of the proposed project and will lend to the consideration of Executive Orders 11990 and 11988.

Please feel free to contact me (615) 383-9909 or our West TN office (731) 772-7061 at any time during the review process. We will be glad to further discuss our concerns or help provide any information.

Sincerely,

Scott Davis
State Director

MISSISSIPPI RIVER TRAIL

From the Headwaters to the Gulf

2001 SARGENT AVE.
ST. PAUL, MINNESOTA 55105
(651) 698-4568

Post-It® Fax Note 7671	Date 12/27/04	# of pages ▶ 2
To Tim Foreman	From Pat Nunnally	
Co./Dept. HMB	Co. MRT Inc.	
Phone # 502-695-9800	Phone # 651-698-4568	
Fax # 502-695-9810	Fax # 651-698-0480	

Minnesota
Wisconsin
Iowa
Illinois
Missouri
Kentucky
Tennessee
Arkansas
Mississippi
Louisiana

December 27, 2004

Mr. Tim Foreman
Project Manager
HMB Professional Engineers
3 HMB Circle
Frankfurt, KY 40601

RE: I-69 Segment of Independent Utility #8
Millington to Dyersburg, Tennessee

Dear Mr. Foreman,

Thank you for the opportunity to review and comment on materials pertaining to the above-referenced project.

As the maps prepared by HMB Professional Engineers and submitted to our office in November 2003 indicate, several segments of the Mississippi River Trail bike route as well as other western Tennessee bike routes are potentially affected by this project. These routes could be significantly adversely affected by some alignments of I-69; conversely appropriate bike route development as called for in AASHTO bicycle facility design standards could enhance the existing bicycling facilities.

The Mississippi River Trail is one of only 16 National Millennium Trails, and is rapidly becoming a significant attraction for bicyclists from throughout the region and across the country. Furthermore, the Mississippi River Trail is a central feature of the developing Mississippi Natural and Recreational Corridor Project, being developed by a consortium led by the Memphis Regional Chamber of Commerce. At the Memphis Chamber, please include John Threadgill in future correspondence regarding this project. Mr. Threadgill can be reached at:

John Threadgill
Chief Administrative Officer
Memphis Regional Chamber of Commerce
22 North Front St. Suite 200
Memphis, TN 38103
901-543-3544
901-543-3510
jthreadgill@memphischamber.com

Although planning appears to be in a preliminary stage with regard to avoidance or mitigation of the existing and planned bicycling routes, we look forward to continuing to stay in touch with you and your consultants as the project moves forward. The region will be best served by careful planning that enhances both automobile and truck traffic as well as recreation-oriented transportation routes and natural areas.

We look forward to working with you on how to balance the multiple transportation needs in this corridor.

Sincerely,

Patrick D. Nunnally
Executive Director

cc John Threadgill, Memphis Regional Chamber of Commerce

TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

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MAR 15 2002
ENVIRONMENTAL PLANNING
AND PERMITS

March 13, 2002

RECEIVED
APR 5 2002
Haworth, Meyer & Boleyn

TEF
CHW

Mr. Charles Bush
Transportation Manager II
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

re: Additional Comment - Initial coordination proposed corridor 18/Interstate 69 project from SR 385 in Millington to I-155/US 51 in Dyersburg, Shelby, Lauderdale, Tipton and Dyer Counties, TN

Dear Charles:

The Tennessee Wildlife Resources Agency is receiving more detailed information about how alternates for the referenced section on I-69 might impact major stream and associated wetland crossings, particularly the Forked Deer River crossings. We will attempt to describe the alternatives since our maps at this point do not label them.

The area of our interest in this letter lies immediately south of Dyersburg. There is a westerly alternative which would involve a new crossing of the Forked Deer River just below the confluence of the North and South Forks. Another easterly alternative would involve a new crossing of the South Fork . Both of these crossings would be environmentally costly. The South Fork crossing would nearly touch this agency's Lauderdale Refuge and directly affect popular duck hunting which takes place adjacent to the refuge (i.e. at the crossing).

We strongly request that these two alternatives not be pursued where the above discussed crossings would take place. We instead recommend that the westerly alternative be taken as it follows U.S. 51 northward, then continue to follow U.S 51 as indicated in yet another of TDOT's alternatives as the latter directs the road northeast (still following U.S. 51) to connect with the easterly alternative. This essentially utilizes existing U.S. 51 as it crosses the South and North Forks of the Forked Deer River and avoids new and damaging river crossings. It has the additional environmental advantage of generally following U.S. 51 throughout the course of the road.

We request that coordination with TWRA occur at the earliest possible time in order to further discuss the alignment of I-69 before advanced planning obligates the alignment in this sensitive area.

Thank you for considering this additional comment.

Sincerely,

Dan Sherry
Fish & Wildlife Environmentalist

DS/bjs
cc: Dodd Galbreath
Steve Seymour
Jerry Strom

RECEIVED

JUN 12 2002

Haworth, Meyer & Boleyn

TEF
CHW
JHS

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PLANNING AND PERMITTING DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3653

Job #1025

J. BRUCE SALTSMAN, SR
COMMISSIONER

DON SUNDQUIST
GOVERNOR

May 9, 2002

Mr. John M. Loney
NEPA Administration
Environmental Policy and Planning
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902-1499

RE: Proposed Corridor 18/Interstate-69 SIU #8, from Millington to Dyersburg, TN

Dear Mr. Loney:

The construction of the above referenced project could require the relocation of transmission lines under your agencies jurisdiction. Therefore, as requested in your letter dated December 18, 2001, the TVA is hereby invited to participate in the proposed action as a cooperating agency. It is our hopes that this status will help to eliminate any duplicative processes and expedite the mandated environmental clearance needed for this project.

Sincerely,

Charles Bush

Charles E. Bush
Transportation Manager II

TVA

1625

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

December 18, 2001

Mr. Charles E. Bush
Transportation Manager II
Environmental Planning Office
Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Dear Mr. Bush:

PROPOSED CORRIDOR 18/INTERSTATE 69 PROJECT FROM STATE ROUTE (SR) 385 IN MILLINGTON TO I-155/US 51 IN DYERSBURG, DYER, LAUDERDALE, SHELBY, AND TIPTON COUNTIES, TENNESSEE

TVA has reviewed information provided in your letter and Project Description of November 2, 2001, on the proposed alternatives for a 65-mile Section of Independent Utility (SIU) for I-69. From the project description, it appears that there would be no TVA approvals or other involvement with this project. However, there are TVA transmission lines in the corridor being evaluated, and if it appears that TVA transmission lines need to be moved, please contact us for consideration as a cooperating agency.

Should you have any questions, please contact Harold M. Draper at (865) 632-6889 or hmdraper@tva.gov.

Sincerely,

Jon M. Loney

Jon M. Loney, Manager
NEPA Administration
Environmental Policy and Planning

cc: Charles S. Boyd, Division Administrator
Federal Highway Administration
640 Grassmere Park, Suite 112
Nashville, Tennessee 37211

AppendixA-4
Section 106 Coordination

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NOV 30 2001

ENVIRONMENTAL PLANNING AND PERMITS

TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

November 21, 2001

Mr. Charles E. Bush
Environmental Planning Office
Dept of Transportation
Nashville, Tennessee 37243-0330

RE: FHWA,INITIAL COORDINATION, CORRIDOR 18/I-69/SR-385 TO US-51, UNINCORPORATED, MULTI COUNTY

Mr. Bush:

Pursuant to your request for initial coordination, this office has reviewed documentation concerning the above-referenced undertaking received Thursday, November 15, 2001. This is a requirement of Section 106 of the National Historic Preservation Act for compliance by the participating federal agency or applicant for federal assistance. Procedures for implementing Section 106 of the Act are codified at 36 CFR 800 (64 FR 27044, May 18, 1999).

Considering available information, we find that the project as currently proposed MAY AFFECT PROPERTIES THAT ARE ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES. You should continue consultation with our office, designated consulting parties and invite them to participate in consultation, and provide us with appropriate survey documentation for review and comment. Please direct questions and comments to Joe Garrison (615)532-1559. We appreciate your cooperation.

Sincerely,

Herbert L. Harper

Herbert L. Harper
Executive Director and
Deputy State Historic
Preservation Officer

HLH/jyg

College of Arts and Sciences
Tennessee State University
3500 John A. Merritt Blvd.
Nashville, TN 37209-1561

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NOV 1 2001
ENVIRONMENTAL PLANNING
AND PERMITS

Office of Research for Afro-American
State and Local History
(615) 963-7519
FAX: (615) 963-7588
email: blovett@tnstate.edu

Mr. Charles E. Bush,
Transportation Manager II
Tennessee Department of Transportation
Environmental Planning and Permitting Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Dear Mr. Bush:

I have reviewed the Project Data Summary Sheet on Interstate 69, SIY #8 from Millington to Dyersburg, Tennessee, and, as a professional historian, I can at this time register no concern about adverse impact of this construction project on the historical structures and history resources in the west Tennessee area. I see also no adverse economic and social impacts, particularly in regard to African American and general Tennessee history in that area of the state, as I continue to review documents related to the entire I-69 project to the Gulf of Mexico.

Sincerely,

Bobby L. Lovett, Ph.D.
Professor of History

Chad "Corntassel" Smith
ᏅᏲᏍᏆ
Principal Chief

CHEROKEE NATION

P. O. Box 948
Tahlequah, OK 74465-0948
(918) 456-0671

Hastings Shade
ᏅᏪᏯᏕᏲ
Deputy Principal Chief

November 5, 2001

Mr. Gerald Kline
Department of Transportation
Environmental Planning & Permitting Div.
Suite 900, James K Polk Bldg.
505 Deaderick Street
Nashville, TN 37243-0334

Dear Mr. Kline:

The Cherokee Nation has received your letter dated November 2, 2001 wherein you requested assistance with your site review pursuant to Section 106 of the National Historic Preservation Act as amended regarding construction of the proposed corridor 18/Interstate 69 project.

The Cherokee Nation is not presently aware of or able to identify any cultural resources affiliated with the Cherokee Nation within the proposed area of development. However, we are aware that inadvertent discovery may occur as a result of development, archaeological testing, or as project construction activities progress. Such activity has the potential to destroy, damage, or diminish the integrity of any Cherokee resources. Also, any such discovery may result in looting if not adequately protected. Therefore, the Cherokee Nation requests that:

1. In the event of inadvertent discovery of human remains, burial objects, or artifacts that all site surveys or other site activities cease pending notification of the Cherokee Nation;
2. Any and all remains, burial objects or artifacts must be properly secured and protected;
3. The Cherokee Nation opposes any laboratory testing, data retrieval, non-biodegradable shrouding, photographic documentation, public display, or unauthorized removal of ancestral remains or burial objects;
4. Sites known to possess or are discovered to posses ancestral remains or burial objects, or that have historical, cultural, or religious significance to the Cherokee people should be avoided.

There are three federally acknowledged Cherokee entities: the Cherokee Nation; the United Keetoowah Band of Cherokee Indians, and the Eastern Band of Cherokee Indians. Section 106 mandates tribal commentary, review or consultation with federally recognized tribal entities. Therefore, any consultation, commentary or review addressed to state recognized groups, entities, or self-identified individuals purporting to be American Indian representatives does not constitute valid tribal consultation in accordance with the authority and intent of federal legislation.

Should you desire to communicate with the designated tribal representative, you may contact me at (918) 456-0671, extension 2466.

Sincerely,

L. Rutherford
for
Dr. Richard Allen
NAGPRA Representative

EASTERN SHAWNEE TRIBE
OF OKLAHOMA

P.O. Box 350 · Seneca, MO 64865 · (918) 666-2435 · FAX (918) 666-3325

November 6, 2001

Gerald Kline
Department of Transportation
Environmental Planning & Permitting Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

Project – Initial Coordination, Proposed Corridor 18/I-69 Project from State Rd. 385 in Millington to US 155 at Dyersburg, Shelby, Tipton, Laurderdale & Dyer Counties, TN

Dear Mr. Kline:

Thank you for notice of the referenced project. The Eastern Shawnee Tribe of Oklahoma is currently unaware of any documentation directly linking Indian Religious Sites to the proposed construction. In the event any items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) are discovered during construction, the Eastern Shawnee Tribe request notification and further consultation.

The Eastern Shawnee Tribe has no objection to the proposed construction. However, if any human skeletal remains and/or any objects falling under NAGPRA are uncovered during construction, the construction should stop immediately, and the appropriate persons, including state and tribal NAGPRA representatives contacted.

Sincerely,

Charles Enyart

Charles Enyart, Chief
Eastern Shawnee Tribe of Oklahoma

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PLANNING AND PERMITTING DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3653

J. BRUCE SALTSMAN, SR
COMMISSIONER

DON SUNDQUIST
GOVERNOR

November 2, 2001

Mr. Bill Anoatubby
Governor
Chickasaw Nation
P.O. Box 1548
Ada, OK 74821

SUBJECT: Initial Coordination, Proposed Corridor 18/Interstate 69 Project from State Road 385 in Millington to US 155 at Dyersburg, Shelby, Tipton, Laurderdale and Dyer Counties, TN

Dear Mr. Bill Anoatubby:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is in the planning stages of evaluating the above referenced project for possible implementation. The location of the proposed project is shown on the enclosed map.

The 2001 Advisory Council on Historic Preservation regulations stipulate that Indian tribes that attach religious and cultural significance to historic properties that may be affected by an undertaking be invited to participate in the project review process as consulting parties, pursuant to 36 CFR 800. TDOT would like to invite you to participate as a consulting party for the proposed project. This letter is also TDOT's request for comments on the identification of historic properties in the project's area of potential effect that may be of religious and cultural significance to your tribe.

If you choose to participate as a consulting party on the above-referenced project, you will receive copies of cultural resource assessments that identify Native American related resources. You will also be invited to attend project-related meetings with FHWA, TDOT and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held.

We respectfully request written responses to project reports and other materials within thirty (30) days of receipt.

If you would like to participate as a consulting party, please respond to me at the above address via letter, telephone or E-mail. To facilitate our planning process, please respond within 30 days of receipt of this letter. If you do not respond, TDOT will not send any reports related to this project unless you specifically request such copies at a later date. Thank you for your assistance.

Sincerely,

Gerald Kline
Archaeologist Supervisor

Attachments

cc: Mr. Herbert Harper, TN-SHPO

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PLANNING AND PERMITTING DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3653

J. BRUCE SALTSMAN, SR
COMMISSIONER

DON SUNDQUIST
GOVERNOR

August 2, 2002

Mr. Gregory E. Pyle
Chief
Chocataw Nation of Oklahoma
P.O. Drawer 1210
Durant, OK 74702

SUBJECT: Initial Coordination, Proposed Corridor 18/Interstate 69 Project from State Road 385 in Millington to US 155 at Dyersburg, Shelby, Tipton, Laurderdale and Dyer Counties, TN

Dear Mr. Gregory E. Pyle:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is in the planning stages of evaluating the above referenced project for possible implementation. The location of the proposed project is shown on the enclosed map.

The 2001 Advisory Council on Historic Preservation regulations stipulate that Indian tribes that attach religious and cultural significance to historic properties that may be affected by an undertaking be invited to participate in the project review process as consulting parties, pursuant to 36 CFR 800. TDOT would like to invite you to participate as a consulting party for the proposed project. This letter is also TDOT's request for comments on the identification of historic properties in the project's area of potential effect that may be of religious and cultural significance to your tribe.

If you choose to participate as a consulting party on the above-referenced project, you will receive copies of cultural resource assessments that identify Native American related resources. You will also be invited to attend project-related meetings with FHWA, TDOT and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held.

We respectfully request written responses to project reports and other materials within thirty (30) days of receipt.

If you would like to participate as a consulting party, please respond to me at the above address via letter, telephone or E-mail. To facilitate our planning process, please respond within 30 days of receipt of this letter. If you do not respond, TDOT will not send any reports related to this project unless you specifically request such copies at a later date. Thank you for your assistance.

Sincerely,

Gerald Kline
Archaeologist Supervisor

Attachments

cc: Mr. Herbert Harper, TN-SHPO

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PLANNING AND PERMITTING DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3653

J. BRUCE SALTSMAN, SR
COMMISSIONER

DON SUNDQUIST
GOVERNOR

November 2, 2001

Mr. R. Perry Beaver
Principal Chief
Muscogee (Creek) Nation
P.O. Box 580
Okmulgee, OK 74447

SUBJECT: Initial Coordination, Proposed Corridor 18/Interstate 69 Project from State Road 385 in Millington to US 155 at Dyersburg, Shelby, Tipton, Laurderdale and Dyer Counties, TN

Dear Mr. R. Perry Beaver:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is in the planning stages of evaluating the above referenced project for possible implementation. The location of the proposed project is shown on the enclosed map.

The 2001 Advisory Council on Historic Preservation regulations stipulate that Indian tribes that attach religious and cultural significance to historic properties that may be affected by an undertaking be invited to participate in the project review process as consulting parties, pursuant to 36 CFR 800. TDOT would like to invite you to participate as a consulting party for the proposed project. This letter is also TDOT's request for comments on the identification of historic properties in the project's area of potential effect that may be of religious and cultural significance to your tribe.

If you choose to participate as a consulting party on the above-referenced project, you will receive copies of cultural resource assessments that identify Native American related resources. You will also be invited to attend project-related meetings with FHWA, TDOT and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held.

We respectfully request written responses to project reports and other materials within thirty (30) days of receipt.

If you would like to participate as a consulting party, please respond to me at the above address via letter, telephone or E-mail. To facilitate our planning process, please respond within 30 days of receipt of this letter. If you do not respond, TDOT will not send any reports related to this project unless you specifically request such copies at a later date. Thank you for your assistance.

Sincerely,

Gerald Kline
Archaeologist Supervisor

Attachments

cc: Mr. Herbert Harper, TN-SHPO

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

RECEIVED

November 9, 2001

Mr. Charles E. Bush
Transportation Manager
Tennessee Department of Transportation
Environmental Planning Office
505 Deaderick Street, Suite 900
Nashville, Tennessee 37243-0330

Dear Mr. Bush:

Thank you for your letter and enclosures of November 2, 2001, concerning the proposed construction of Interstate 69 (Section 8) from SR385 (Paul Barrett Parkway) in Millington to I-155/US51 in Dyersburg. We have reviewed the information submitted and offer the following comments in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

The proposed project has two primary alternative corridors: one west of US51 and the other east of US51. Between the two primary corridors are "cross-overs" which allow for flexibility in location selection.

We are concerned that highway projects frequently accelerate erosion and stream sedimentation, resulting in adverse effects to the aquatic environment. Excessive sedimentation can degrade aquatic habitat by filling in substrate cavities, burying demersal eggs, and smothering bottom organisms.

Prevention of excessive sedimentation can occur through the use of Best Management Practices during daily construction activities. Strict adherence of Section 209 of the Tennessee Department of Transportation's Specific Specifications for Road and Bridge Construction and Federal Highway Administration Best Management Practices for Erosion and Sediment Control (December 1978) can alleviate most sedimentation problems. It is important that these practices be monitored and stringently enforced in order to minimize adverse impacts associated with construction.

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the various alternative alignments. We note, however, that collection records available to the Service may not be all-inclusive. Our data base is a compilation of collection records made available by various individuals

and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality. However, based on the best information available at this time, we believe that the requirements of Section 7 of the Endangered Species Act of 1973, as amended, are fulfilled. Obligations under Section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

The potential for impacts to wetlands was also considered. Based upon the information which you provided and review of our National Wetlands Inventory maps, it appears that extensive forested wetlands occur in the vicinity of the proposed new alignments along the Hatchie River bottoms. All wetlands located within the proposed construction impact area should be avoided if possible. Any unavoidable losses should be minimized and will require in-kind mitigation at a minimum 2:1 ratio.

Thank you for the opportunity to comment on this proposal. If you have questions, please contact Timothy Merritt of my staff at 931/528-6481, ext. 211.

Sincerely,

Robert T. Bay

for Lee A. Barclay, Ph.D
Field Supervisor

xc: Mr. Dan Sherry, TWRA, Nashville, TN
Mr. Eric Somerville, EPA, Atlanta, GA
Mr. Dan Eagar, TDEC, Nashville, TN
Mr. Gary Pogue, USFWS, Dyersburg, TN

We request that coordination with TWRA occur at the earliest possible time in order to further discuss the alignment of I-69 before advanced planning obligates the alignment in this sensitive area.

Thank you for considering this additional comment.

Sincerely,

Dan Sherry
Fish & Wildlife Environmentalist

DS/bjs
cc: Dodd Galbreath
Steve Seymour
Jerry Strom

TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

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ENVIRONMENTAL PLANNING
AND PERMITS

November 13, 2001

Mr. Charles Bush
Transportation Manager II
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

re: Initial coordination proposed corridor 18/Interstate 69 project from SR 385 in Millington to I-155/US 51 in Dyersburg, Shelby, Lauderdale, Tipton and Dyer Counties, TN

Dear Charles:

The referenced portion of I-69 would cross the Hatchie, South Fork Forked Deer, and North Fork Forked Deer rivers in areas of extremely high wildlife value. The approved Obion Wetland Mitigation Bank would be available to compensate for unavoidable impacts. However, it is the view of this agency that new crossings of these rivers should be avoided and that existing crossings should be upgraded to facilitate I-69.

Twenty years ago, one of the most serious environmental controversies in the history of Tennessee transportation projects occurred with the construction of the Dyersburg bypass over the North Fork Forked Deer River. We hope that TDOT will do everything possible to avoid new crossings over these valuable resources. Even if permitted, higher than normal mitigation ratios might be expected to compensate for the losses. Compensation, as well as other environmental dollar costs, should be calculated in the comparison of alternatives.

Thank you for this coordination opportunity.

Sincerely,

Dan Sherry

Dan Sherry
Fish & Wildlife Environmentalist

DS/bjs
cc: Steve Seymour
Gary Cook
USFWS, EPA

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TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

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March 13, 2002

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Haworth, Meyer & Boleyn

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: Department of Transportation
James K. Polk Building
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TN 37243-0334

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itional Comment - Initial coordination proposed corridor 18/Interstate 69
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derdale, Tipton and Dyer Counties, TN

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essee Wildlife Resources Agency is receiving more detailed information about ates for the referenced section on I-69 might impact major stream and l wetland crossings, particularly the Forked Deer River crossings. We will describe the alternatives since our maps at this point do not label them.

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of our interest in this letter lies immediately south of Dyersburg. There is a lternative which would involve a new crossing of the Forked Deer River just confluence of the North and South Forks. Another easterly alternative would new crossing of the South Fork. Both of these crossings would be ntally costly. The South Fork crossing would nearly touch this agency's e Refuge and directly affect popular duck hunting which takes place adjacent ge (i.e. at the crossing).

ily request that these two alternatives not be pursued where the above crossings would take place. We instead recommend that the westerly e be taken as it follows U.S. 51 northward, then continue to follow U.S 51 as in yet another of TDOT's alternatives as the latter directs the road northeast ving U.S. 51) to connect with the easterly alternative. This essentially utilizes .S. 51 as it crosses the South and North Forks of the Forked Deer River and w and damaging river crossings. It has the additional environmental e of generally following U.S. 51 throughout the course of the road.

The State of Tennessee

TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

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MAR 15 2002

ENVIRONMENTAL PLANNING AND PERMITS

RECEIVED
APR 8 2002
Haworth, Meyer & Boleyn

TEF
CHW

March 13, 2002

Mr. Charles Bush
Transportation Manager II
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

re: Additional Comment - Initial coordination proposed corridor 18/Interstate 69 project from SR 385 in Millington to I-155/US 51 in Dyersburg, Shelby, Lauderdale, Tipton and Dyer Counties, TN

Dear Charles:

The Tennessee Wildlife Resources Agency is receiving more detailed information about how alternates for the referenced section on I-69 might impact major stream and associated wetland crossings, particularly the Forked Deer River crossings. We will attempt to describe the alternatives since our maps at this point do not label them.

The area of our interest in this letter lies immediately south of Dyersburg. There is a westerly alternative which would involve a new crossing of the Forked Deer River just below the confluence of the North and South Forks. Another easterly alternative would involve a new crossing of the South Fork . Both of these crossings would be environmentally costly. The South Fork crossing would nearly touch this agency's Lauderdale Refuge and directly affect popular duck hunting which takes place adjacent to the refuge (i.e. at the crossing).

We strongly request that these two alternatives not be pursued where the above discussed crossings would take place. We instead recommend that the westerly alternative be taken as it follows U.S. 51 northward, then continue to follow U.S 51 as indicated in yet another of TDOT's alternatives as the latter directs the road northeast (still following U.S. 51) to connect with the easterly alternative. This essentially utilizes existing U.S. 51 as it crosses the South and North Forks of the Forked Deer River and avoids new and damaging river crossings. It has the additional environmental advantage of generally following U.S. 51 throughout the course of the road.

We request that coordination with TWRA occur at the earliest possible time in order to further discuss the alignment of I-69 before advanced planning obligates the alignment in this sensitive area.

Thank you for considering this additional comment.

Sincerely,

Dan Sherry
Fish & Wildlife Environmentalist

DS/bjs
cc: Dodd Galbreath
Steve Seymour
Jerry Strom

U.S. Department
of Transportation

United States
Coast Guard

Commander
Eighth Coast Guard District

1222 Spruce Street
St. Louis, MO 63103-2832
Staff Symbol: obr
Phone: (314) 539-3900, Ext 382
FAX: (314) 539-3755

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29 November 2001

RECEIVED

DEC 1 01

Mr. Charles E. Bush
Tennessee Department of Transportation
Environmental Plănning and Permitting Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

Subj: PROPOSED CORRIDOR 18/INTERSTATE 69 PROJECT ACROSS THE HATCHIE RIVER AND FORKED DEER RIVER

Dear Mr. Bush:

Please refer to your letter of November 2, 2001. After reviewing the plans that you submitted we have determined that this project does not cross waterways over which the Coast Guard exercises jurisdiction for bridge administration purposes. A Coast Guard bridge permit is not required. I appreciate the opportunity to comment on the project. Should you have any questions, please contact Mr. David Orzechowski at (314) 539-3900 Ext. 382.

Sincerely,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander

U.S. Department
of Transportation

United States
Coast Guard

Commander
Eighth Coast Guard District

1222 Spruce Street
St. Louis, MO 63103-2832
Staff Symbol: obr
Phone: (314) 539-3900, Ext 382
FAX: (314) 539-3755

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29 November 2001

RECEIVED

DEC 1 01

Mr. Charles E. Bush
Tennessee Department of Transportation
Environmental Planning and Permitting Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

Subj: PROPOSED CORRIDOR 18/INTERSTATE 69 PROJECT ACROSS THE HATCHIE RIVER AND FORKED DEER RIVER

Dear Mr. Bush:

Please refer to your letter of November 2, 2001. After reviewing the plans that you submitted we have determined that this project does not cross waterways over which the Coast Guard exercises jurisdiction for bridge administration purposes. A Coast Guard bridge permit is not required. I appreciate the opportunity to comment on the project. Should you have any questions, please contact Mr. David Orzechowski at (314) 539-3900 Ext. 382.

Sincerely,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander

TVA

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

December 18, 2001

Mr. Charles E. Bush
Transportation Manager II
Environmental Planning Office
Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Dear Mr. Bush:

PROPOSED CORRIDOR 18/INTERSTATE 69 PROJECT FROM STATE ROUTE (SR) 385 IN MILLINGTON TO I-155/US 51 IN DYERSBURG, DYER, LAUDERDALE, SHELBY, AND TIPTON COUNTIES, TENNESSEE

TVA has reviewed information provided in your letter and Project Description of November 2, 2001, on the proposed alternatives for a 65-mile Section of Independent Utility (SIU) for I-69. From the project description, it appears that there would be no TVA approvals or other involvement with this project. However, there are TVA transmission lines in the corridor being evaluated, and if it appears that TVA transmission lines need to be moved, please contact us for consideration as a cooperating agency.

Should you have any questions, please contact Harold M. Draper at (865) 632-6889 or hmdraper@tva.gov.

Sincerely,

Jon M. Loney

Jon M. Loney, Manager
NEPA Administration
Environmental Policy and Planning

cc: Charles S. Boyd, Division Administrator
Federal Highway Administration
640 Grassmere Park, Suite 112
Nashville, Tennessee 37211

review process. Second, a detailed ecological study must be completed to identify any unique wildlife habitat or endangered species present in the study area affected by the proposed project. Third, stream mitigation and sediment control should be considered early in the design stage to allow for acquisition of sufficient right-of-way. Completed applications will be reviewed by Division personnel for completeness, accuracy, and adequacy. Incomplete applications will be returned.

In regards to this specific project and information you have provided, Hatchie River and Forked Deer River were identified to be within the study area, presumably from US Geological Survey topographical maps. However, there may be other "waters of the state" that are not shown as "blue line" streams on this information source. We urge that crossings of larger streams and associated floodplains be planned to minimize disruption of hydrology and hydraulics in the vicinity of the crossings. The Hatchie River is a designated State Scenic River and is subject to Tennessee's antidegradation policy. Forked Deer River is A 303(d) listed stream for siltation and organic enrichment and requires submittal of a storm water pollution prevention plan for the project. In addition, a number of additional streams that may be affected by road crossings flow into state wildlife management areas and are subject to Tennessee's antidegradation policy. The antidegradation policy is found in Section 1200-4-3-.06 of the *General Water Quality Criteria*. A field investigation is required to properly identify all streams and other "waters of the state". We expect that a more thorough investigation will precede submittal of applications for ARAPs and a construction activity storm water permit. Division personnel can assist you with other determinations, if needed.

If you have any questions regarding these issues or require additional information, please call Mr. Doug Ezell at (615)532-0648.

Sincerely,

Daniel C. Eagar

Dan Eagar, Manager, Natural Resources Section
Division of Water Pollution Control

CC: Jerry M. Shoemake, Assistant Director
Saya Qualls, Manager, Permits Section
Doug Ezell, Policy Office

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

December 10, 2001

Mr. Charles Bush
Tennessee Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville TN 37243-0334

Subject: Project review; ***Proposed Highway Improvements, Proposed Corridor 18/Interstate 69 from SR-385 in Millington to I-155/ US 51 in Dyersburg, Dyer, Lauderdale, Shelby, and Tipton Counties TN***

Dear Mr. Bush:

We are appreciative of the opportunity to review the **Initial Coordination** or **Scoping Process** information for the subject project. We have reviewed the document and attached information and offer the following general comments:

1. Please be advised that a review of our Departmental data bases indicate recorded rare, threatened and/or endangered species near the project boundaries and within a one mile radius of the proposed project. Based upon the information provided, we believe that a survey of the project area would provide valuable information concerning the protection of species known to occur within a one mile radius of the project. These species have very specific or rare habitat. Please be advised, however, that this information is sensitive to the protection of rare habitat, threatened or endangered species, and ecological sites, which our Department has the responsibility to protect. Therefore, we would request that this information **only** be used as a research tool by professional staff and not be made available to the public or anyone outside of your office/Department. Please see the attached county records (**Attachment I**) and habitat listing for further information.

2. In order to comply with the National Environmental Policy Act consideration should be given to the comprehensive and *cumulative* impacts associated with the project actions. Based upon the information provided, it is probable that any proposed in-stream construction will impact instream flow, aquatic habitat, and riparian habitat as part of the project implementation. We would encourage stream bank restoration and ***bioengineering*** design as part of the overall project planning.

3. Habitat loss and sedimentation resultant from this large construction site are of concern, not just locally but also for the potential of long term impacts to the watershed. We recommend that prudent design specifications and construction strategies be developed to address protection of sensitive ecological sites.

4. Any restoration activities should include the use of native plant species. Restoration should be accomplished by using native plant species consistent with local community types. Techniques for sediment retention and streamside reconstruction are outlined in the following documents prepared by our Department:

1. **Tennessee Erosion Control Handbook, July 1992.**
2. **Reducing Nonpoint Source Water Pollution by Preventing Soil Erosion and Controlling Sediment on Construction Sites, March 1992.**
3. **Riparian Restoration and Streamside Erosion Control Handbook, November 1994 (Revised April 1998).**

Please refer to these documents when planning measures to lessen any project or construction impacts.

We appreciate the opportunity to assist you with your pre-project planning. Should you need any additional information regarding a specific species, species habitat requirements, or species breeding season, natural resources information, etc. please contact me. If we can be of further assistance with your project please contact our office in Nashville, telephone 615/532-0431.

Respectfully,

Andrew N. Barrass

Andrew N. Barrass Ph. D.,
Environmental Review Coordinator
Division of Natural Heritage

Attachments: (1)
cc:

Gary T. Myers, TWRA
Lee A. Barclay, Ph. D., U. S. Fish and Wildlife

Attachment I

LIST OF RARE, THREATENED, AND ENDANGERED SPECIES BY TENNESSEE COUNTY

June 2001

Dyer County

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
CAREX HYALINA	TISSUE SEDGE		S	S1	G4
CAREX LACUSTRIS	LAKE-BANK SEDGE		T	S1	G5
IRIS FULVA	COPPER IRIS		T	S2	G5
PLATANTHERA FLAVA VAR FLAVA	SOUTHERN REIN-ORCHID		S	S2S3	G4T4?Q
** INVERTEBRATES - MOLLUSC					
TRIODOPSIS MULTILINEATA	STRIPED WHITELIP (=T. WEBBHELIX)			S1	G?
** Other types					
HERON ROOKERY	HERON ROOKERY				
** VERTEBRATES - BIRDS					
ARDEA ALBA	GREAT EGRET		D	S2BS3N	G5
EGRETTA CAERULEA	LITTLE BLUE HERON		D	S2BS3N	G5
ICTINIA MISSISSIPPIENSIS	MISSISSIPPI KITE		D	S2S3	G5
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER	MC	D	S3	G4
NYCTICORAX NYCTICORAX	BLACK-CROWNED NIGHT-HERON			S2S3B	G5
RIPARIA RIPARIA	BANK SWALLOW			S3	G5
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	LE	E	S2S3B	G4T2Q
** VERTEBRATES - MAMMALS					
CORYNORHINUS RAFINESQUII	EASTERN BIG-EARED BAT		D	S3	G3G4
** VERTEBRATES - FISH					
CYCLEPTUS ELONGATUS	BLUE SUCKER	MC	T	S2	G3G4
LEPISOSTEUS SPATULA	ALLIGATOR GAR		D	S1	G3G4
MACRHYBOPSIS MEEKI	SICKLEFIN CHUB	C	D	S2	G3
SCAPHIRHYNCHUS ALBUS	PALLID STURGEON	LE	E	S1	G1G2

Attachment I

LIST OF RARE, THREATENED, AND ENDANGERED SPECIES BY TENNESSEE COUNTY

June 2001

Dyer County

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
CAREX HYALINA	TISSUE SEDGE		S	S1	G4
CAREX LACUSTRIS	LAKE-BANK SEDGE		T	S1	G5
IRIS FULVA	COPPER IRIS		T	S2	G5
PLATANTHERA FLAVA VAR FLAVA	SOUTHERN REIN-ORCHID		S	S2S3	G4T4?Q
** INVERTEBRATES - MOLLUSC					
TRIODOPSIS MULTILINEATA	STRIPED WHITELIP (=T. WEBBHELIX)			S1	G?
** Other types					
HERON ROOKERY	HERON ROOKERY				
** VERTEBRATES - BIRDS					
ARDEA ALBA	GREAT EGRET		D	S2BS3N	G5
EGRETTA CAERULEA	LITTLE BLUE HERON		D	S2BS3N	G5
ICTINIA MISSISSIPPIENSIS	MISSISSIPPI KITE		D	S2S3	G5
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER	MC	D	S3	G4
NYCTICORAX NYCTICORAX	BLACK-CROWNED NIGHT-HERON			S2S3B	G5
RIPARIA RIPARIA	BANK SWALLOW			S3	G5
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	LE	E	S2S3B	G4T2Q
** VERTEBRATES - MAMMALS					
CORYNORHINUS RAFINESQUII	EASTERN BIG-EARED BAT		D	S3	G3G4
** VERTEBRATES - FISH					
CYCLEPTUS ELONGATUS	BLUE SUCKER	MC	T	S2	G3G4
LEPISOSTEUS SPATULA	ALLIGATOR GAR		D	S1	G3G4
MACRHYBOPSIS MEEKI	SICKLEFIN CHUB	C	D	S2	G3
SCAPHIRHYNCHUS ALBUS	PALLID STURGEON	LE	E	S1	G1G2

Lauderdale County

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
ACMELLA OPPOSITIFOLIA	CREEPING SPOT-FLOWER		S	S2	G5
CAREX HYALINA	TISSUE SEDGE		S	S1	G4
HOTTONIA INFLATA	FEATHERFOIL		S	S2	G4
NEOBECKIA AQUATICA	LAKE CRESS		S	S2	G4?
OROBANCHE LUDOVICIANA	LOUISIANA BROOMRAPE		S	S1	G5
SAGITTARIA PLATYPHYLLA	OVATE-LEAVED ARROWHEAD		S	S2S3	G5
SCHISANDRA GLABRA	RED STARVINE		T	S2	G3
ULMUS CRASSIFOLIA	CEDAR ELM		S	S2	G5
** INVERTEBRATES - MOLLUSC					
TRIODOPSIS MULTILINEATA	STRIPED WHITELIP (=T. WEBBHELIX)			S1	G?
** Other types					
HERON ROOKERY	HERON ROOKERY				
** VERTEBRATES - BIRDS					
ANHINGA ANHINGA	ANHINGA		D	S1B	G5
ARDEA ALBA	GREAT EGRET		D	S2BS3N	G5
CORVUS OSSIFRAGUS	FISH CROW			S3	G5
EGRETTA CAERULEA	LITTLE BLUE HERON		D	S2BS3N	G5
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	LT	D	S3	G4
ICTINIA MISSISSIPPIENSIS	MISSISSIPPI KITE		D	S2S3	G5
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER	MC	D	S3	G4
RIPARIA RIPARIA	BANK SWALLOW			S3	G5
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	LE	E	S2S3B	G4T2Q
** VERTEBRATES - FISH					
CYCLEPTUS ELONGATUS	BLUE SUCKER	MC	T	S2	G3G4
HYBOGNATHUS PLACITUS	PLAINS MINNOW		D	S1	G4
LEPISOSTEUS SPATULA	ALLIGATOR GAR		D	S1	G3G4

Shelby County

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
ACMELLA OPPOSITIFOLIA	CREEPING SPOT-FLOWER		S	S2	G5
CRATAEGUS HARBISONII	HARBISON'S HAWTHORN		E	S1	G1
HYDRASTIS CANADENSIS	GOLDENSEAL		S-CE	S3	G4
IRIS FULVA	COPPER IRIS		T	S2	G5
OPHIOGLOSSUM CROTALOPHOROIDES	BULBOUS ADDER'S-TONGUE		S	S2	G5
PANAX QUINQUEFOLIUS	AMERICAN GINSENG		S-CE	S3S4	G3G4
PHACELIA RANUNCULACEA	BLUE SCORPION-WEED		S	S3	G3G4
PLATANTHERA FLAVA VAR FLAVA	SOUTHERN REIN-ORCHID		S	S2S3	G4T4?Q

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
PRENANTHES CREPIDINEA	NODDING RATTLESNAKE-ROOT		E	S1	G3G4
SCHISANDRA GLABRA	RED STARVINE		T	S2	G3
SILENE OVATA	OVATE CATCHFLY		E	S2	G2G3
ULMUS CRASSIFOLIA	CEDAR ELM		S	S2	G5
** INVERTEBRATES - MOLLUSC					
EPIOBLASMA TURGIDULA	TURGID-BLOSSOM	LE	E	SX	GH
LAMPSILIS SILIQUOIDEA	FATMUCKET			S1	G5 ?
OBOVARIA JACKSONIANA	SOUTHERN HICKORYNUT			S1	G1G2
TRIODOPSIS MULTILINEATA	STRIPED WHITELIP (=T. WEBBHELIX)			S1	G?
** Other types					
HERON ROOKERY	HERON ROOKERY				
** VERTEBRATES - BIRDS					
CHONDESTES GRAMMACUS	LARK SPARROW		T	S1B	G5
ICTINIA MISSISSIPPIENSIS	MISSISSIPPI KITE		D	S2S3	G5
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER	MC	D	S3	G4
NYCTANASSA VIOLACEA	YELLOW-CROWNED NIGHT-HERON			S3	G5
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	LE	E	S2S3B	G4T2Q
THRYOMANES BEWICKII	BEWICK'S WREN	MC	E	S1	G5
TYTO ALBA	COMMON BARN-OWL		D	S3	G5
VIREO BELLII	BELL'S VIREO	(PS)		SPB	G5
** VERTEBRATES - MAMMALS					
CORYNORHINUS RAFINESQUII	EASTERN BIG-EARED BAT		D	S3	G3G4
MYOTIS SODALIS	INDIANA BAT	LE	E	S1	G2
NEOTOMA FLORIDANA ILLINOENSIS	EASTERN WOODRAT		D	S3	G5T5
SOREX LONGIROSTRIS	SOUTHEASTERN SHREW		D	S4	G5
** VERTEBRATES - REPTILES					
MACROCLEMYS TEMMINCKII	ALLIGATOR SNAPPING TURTLE	MC	D	S2S3	G3G4
OPHISAURUS ATTENUATUS LONGICAUDUS	EASTERN SLENDER GLASS LIZARD		D	S3	G5T5
PITUOPHIS MELANOLEUCUS MELANOLEUCUS	NORTHERN PINE SNAKE	MC	T	S3	G4T4
** VERTEBRATES - AMPHIBIANS					
HYLA GRATIOSA	BARKING TREEFROG		D	S3	G5
** VERTEBRATES - FISH					
AMMOCRYPTA BEANI	NAKED SAND DARTER		D	S2	G5
CYCLEPTUS ELONGATUS	BLUE SUCKER	MC	T	S2	G3G4
NOTURUS STIGMOSUS	NORTHERN MADTOM	MC	D	S3	G3

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PLANNING AND PERMITTING DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3653

J. BRUCE SALTSMAN, SR
COMMISSIONER

DON SUNDQUIST
GOVERNOR

November 2, 2001

Mr. Jerry G. Haney
Principal Chief
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

SUBJECT: Initial Coordination, Proposed Corridor 18/Interstate 69 Project from State Road 385 in Millington to US 155 at Dyersburg, Shelby, Tipton, Laurderdale and Dyer Counties, TN

Dear Mr. Jerry G. Haney:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is in the planning stages of evaluating the above referenced project for possible implementation. The location of the proposed project is shown on the enclosed map.

The 2001 Advisory Council on Historic Preservation regulations stipulate that Indian tribes that attach religious and cultural significance to historic properties that may be affected by an undertaking be invited to participate in the project review process as consulting parties, pursuant to 36 CFR 800. TDOT would like to invite you to participate as a consulting party for the proposed project. This letter is also TDOT's request for comments on the identification of historic properties in the project's area of potential effect that may be of religious and cultural significance to your tribe.

If you choose to participate as a consulting party on the above-referenced project, you will receive copies of cultural resource assessments that identify Native American related resources. You will also be invited to attend project-related meetings with FHWA, TDOT and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held.

We respectfully request written responses to project reports and other materials within thirty (30) days of receipt.

If you would like to participate as a consulting party, please respond to me at the above address via letter, telephone or E-mail. To facilitate our planning process, please respond within 30 days of receipt of this letter. If you do not respond, TDOT will not send any reports related to this project unless you specifically request such copies at a later date. Thank you for your assistance.

Sincerely,

Gerald Kline
Archaeologist Supervisor

Attachments

cc: Mr. Herbert Harper, TN-SHPO

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PLANNING AND PERMITTING DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3653

J. BRUCE SALTSMAN, SR
COMMISSIONER

DON SUNDQUIST
GOVERNOR

November 2, 2001

Mr. Archie Mouse
Chief
United Keetoowah Band of Cherokee
P.O. Box 746
Tahlequah, OK 74465

SUBJECT: Initial Coordination, Proposed Corridor 18/Interstate 69 Project from State Road 385 in Millington to US 155 at Dyersburg, Shelby, Tipton, Laurderdale and Dyer Counties, TN

Dear Mr. Archie Mouse:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is in the planning stages of evaluating the above referenced project for possible implementation. The location of the proposed project is shown on the enclosed map.

The 2001 Advisory Council on Historic Preservation regulations stipulate that Indian tribes that attach religious and cultural significance to historic properties that may be affected by an undertaking be invited to participate in the project review process as consulting parties, pursuant to 36 CFR 800. TDOT would like to invite you to participate as a consulting party for the proposed project. This letter is also TDOT's request for comments on the identification of historic properties in the project's area of potential effect that may be of religious and cultural significance to your tribe.

If you choose to participate as a consulting party on the above-referenced project, you will receive copies of cultural resource assessments that identify Native American related resources. You will also be invited to attend project-related meetings with FHWA, TDOT and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held.

We respectfully request written responses to project reports and other materials within thirty (30) days of receipt.

If you would like to participate as a consulting party, please respond to me at the above address via letter, telephone or E-mail. To facilitate our planning process, please respond within 30 days of receipt of this letter. If you do not respond, TDOT will not send any reports related to this project unless you specifically request such copies at a later date. Thank you for your assistance.

Sincerely,

Gerald Kline
Archaeologist Supervisor

Attachments

cc: Mr. Herbert Harper, TN-SHPO

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PLANNING AND PERMITTING DIVISION
SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-3653

J. BRUCE SALTSMAN, SR
COMMISSIONER

DON SUNDQUIST
GOVERNOR

November 2, 2001

Mr. Charles D. Enyart
Chief
Eastern Shawnee Tribe of Oklahoma
P.O. Box 350
Seneca, MO 64865

SUBJECT: Initial Coordination, Proposed Corridor 18/Interstate 69 Project from State Road 385 in Millington to US 155 at Dyersburg, Shelby, Tipton, Laurderdale and Dyer Counties, TN

Dear Mr. Charles D. Enyart:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is in the planning stages of evaluating the above referenced project for possible implementation. The location of the proposed project is shown on the enclosed map.

The 2001 Advisory Council on Historic Preservation regulations stipulate that Indian tribes that attach religious and cultural significance to historic properties that may be affected by an undertaking be invited to participate in the project review process as consulting parties, pursuant to 36 CFR 800. TDOT would like to invite you to participate as a consulting party for the proposed project. This letter is also TDOT's request for comments on the identification of historic properties in the project's area of potential effect that may be of religious and cultural significance to your tribe.

If you choose to participate as a consulting party on the above-referenced project, you will receive copies of cultural resource assessments that identify Native American related resources. You will also be invited to attend project-related meetings with FHWA, TDOT and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held.

We respectfully request written responses to project reports and other materials within thirty (30) days of receipt.

If you would like to participate as a consulting party, please respond to me at the above address via letter, telephone or E-mail. To facilitate our planning process, please respond within 30 days of receipt of this letter. If you do not respond, TDOT will not send any reports related to this project unless you specifically request such copies at a later date. Thank you for your assistance.

Sincerely,

Gerald Kline
Archaeologist Supervisor

Attachments

cc: Mr. Herbert Harper, TN-SHPO

HMB
PROFESSIONAL ENGINEERS, INC
3 HMB Circle
U.S. 460
Frankfort, KY 40601
Office: (502) 695-9800
Fax: (502) 695-9810

April 18, 2003

Mr. Phillip Martin
Tribal Chief
Mississippi Band Of Choctaws
101 Industrial Road
Choctaw, MS 39350

SUBJECT: I-69 Segment of Independent Utility #8
Millington to Dyersburg, Tennessee

Dear Chief Martin:

HMB Professional Engineers, Inc. has contracted with the Tennessee Department of Transportation (TDOT) to conduct preliminary design and environmental planning services relating to the proposed Interstate 69, a new highway facility extending from Port Huron, Michigan to the Lower Rio Grande Valley, Texas. The lead federal agency for this project is the Federal Highway Administration (FHWA).

Currently, the project is in the early planning stages, with a number of alternatives under investigation. Field studies have been completed, and the Draft Environmental Impact Statement is being written. Consequently, during the course of our work, we have determined the presence of a parcel of land owned by the Mississippi Band of Choctaws. Under direction from FHWA, TDOT has requested that HMB provide your Tribe with information concerning the potential impact to that parcel. TDOT is committed to a public involvement campaign to inform the public of the project, and to solicit comments regarding the proposed action. Therefore, please find enclosed with this letter, a summary of project related information, as well as maps of the project. The area highlighted on the maps indicates the location of said parcel. Please review this information and, if so desired, provide your comments and concerns regarding the proposed project to the following address:

Mr. Charles Bush
Tennessee Department of Transportation
Environmental Planning Office
Suite 900, James K. Polk Bldg
505 Deaderick Street
Nashville, TN 37243-0334

Additional opportunities to comment on the proposed action will be made available in the near future. The Environmental Impact Statement being prepared for the action will be made available to the public, and various local, state and federal agencies, for review and comment. In addition, Public Hearings will be held in the project area to provide information and solicit comments from the area residents.

Highway Engineering
Structural Engineering
Water & Wastewater
Site Development
Right-of-Way
Master Planning
vironmental Planning
Surveying
Project Management
Cost Estimation
truction Inspection
Aviation Services
nvironmental Remediation
Landscape Architecture

Thank you for your time and attention to this matter. Should you have any questions, or require additional information, please contact TDOT at the above address.

Respectfully,
HMB PROFESSIONAL ENGINEERS, INC.

Tim Foreman

Tim Foreman
Project Manager
Environmental Planning Division

Cc: (letter only)
Mark Doctor – FHWA
Jane Jones – TDOT
James Bryson – TDOT
Charles Bush - TDOT

APPENDIX I
TENNESSEE STATE LISTED SPECIES
BY COUNTY

Rare Species of Dyer County

The following is a list of the rare species found in Dyer County. This list was compiled by the Division of Natural Heritage.

- Tennessee's Rare Plant List
- Rare and Endangered Vertebrate List of Tennessee
- Rare and Endangered Invertebrate List of Tennessee

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
CAREX HYALINA	TISSUE SEDGE		S	S1	G4
CAREX LACUSTRIS	LAKE-BANK SEDGE		T	S1	G5
IRIS FULVA	COPPER IRIS		T	S2	G5
PLATANTHERA FLAVA VAR FLAVA	SOUTHERN REIN-ORCHID		S	S2S3	G4T4?Q
** INVERTEBRATES - MOLLUSC					
TRIODOPSIS MULTILINEATA	STRIPED WHITELIP (=T. WEBBHELIX)			S1	G?
** Other types					
Acer saccharinum - Ulmus americana - (Populus deltoides) Forest	SILVER MAPLE - AMERICAN ELM - (COTTONWOOD) FOREST:SILVER MAPLE - ELM - (COTTONWOOD) FOREST	MCS			G4?
Fraxinus pennsylvanica - Ulmus americana - Celtis laevigata / Ilex decidua Forest	GREEN ASH - AMERICAN ELM - SUGARBERRY FOREST:SOUTHERN GREEN ASH - ELM - SUGARBERRY FOREST	SCS			G?
HERON ROOKERY	HERON ROOKERY				
Populus deltoides - Salix nigra / Mikania scandens Forest	SYCAMORE - WILLOW FLLODPLAIN	SCS			G?
Quercus michauxii - Quercus shumardii - Liquidambar styraciflua / Arundinaria gigantea Forest	Swamp Chestnut Oak - Sweetgum Mesic Floodplain Forest				G3G4

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** VERTEBRATES - BIRDS					
ARDEA ALBA	GREAT EGRET		D	S2BS3N	G5
EGRETTA CAERULEA	LITTLE BLUE HERON		D	S2BS3N	G5
ICTINIA MISSISSIPPIENSIS	MISSISSIPPI KITE		D	S2S3	G5
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER	MC	D	S3	G4
NYCTICORAX NYCTICORAX	BLACK-CROWNED			S2S3B	G5

	NIGHT-HERON				
RIPARIA RIPARIA	BANK SWALLOW			S3	G5
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	LE	E	S2S3B	G4T2Q
** VERTEBRATES - MAMMALS					
CORYNORHINUS RAFINESQUII	EASTERN BIG-EARED BAT		D	S3	G3G4
** VERTEBRATES - FISH					
CYCLEPTUS ELONGATUS	BLUE SUCKER	MC	T	S2	G3G4
LEPISOSTEUS SPATULA	ALLIGATOR GAR		D	S1	G3G4
MACRHYBOPSIS MEEKI	SICKLEFIN CHUB	C	D	S2	G3
SCAPHIRHYNCHUS ALBUS	PALLID STURGEON	LE	E	S1	G1G2

Updated April 3, 2002; Send Comments to: Environment & Conservation

Rare Species of Lauderdale County

The following is a list of the rare species found in Lauderdale County. This list was compiled by the Division of Natural Heritage.

- Tennessee's Rare Plant List
- Rare and Endangered Vertebrate List of Tennessee
- Rare and Endangered Invertebrate List of Tennessee

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
ACMELLA OPPOSITIFOLIA	CREEPING SPOT-FLOWER		S	S2	G5
CAREX HYALINA	TISSUE SEDGE		S	S1	G4
HOTTONIA INFLATA	FEATHERFOIL		S	S2	G4
NEOBECKIA AQUATICA	LAKE CRESS		S	S2	G4?
OROBANCHE LUDOVICIANA	LOUISIANA BROOMRAPE		S	S1	G5
SAGITTARIA PLATYPHYLLA	OVATE-LEAVED ARROWHEAD		S	S2S3	G5
SCHISANDRA GLABRA	RED STARVINE		T	S2	G3
ULMUS CRASSIFOLIA	CEDAR ELM		S	S2	G5
** INVERTEBRATES - MOLLUSC					
TRIODOPSIS MULTILINEATA	STRIPED WHITELIP (=T. WEBBHELIX)			S1	G?
** Other types					
HERON ROOKERY	HERON ROOKERY				
Populus deltoides - Salix nigra / Mikania scandens Forest	SYCAMORE - WILLOW FLLODPLAIN	SCS			G?
Quercus michauxii - Quercus shumardii - Liquidambar styraciflua / Arundinaria gigantea Forest	Swamp Chestnut Oak - Sweetgum Mesic Floodplain Forest				G3G4
Taxodium distichum / Lemna minor Forest	BALD CYPRESS / DUCKWEED FOREST:BALD CYPRESS SWAMP	SCS			G5

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** VERTEBRATES - BIRDS					
ANHINGA ANHINGA	ANHINGA		D	S1B	G5
ARDEA ALBA	GREAT EGRET		D	S2BS3N	G5
CORVUS OSSIFRAGUS	FISH CROW			S3	G5
EGRETTA CAERULEA	LITTLE BLUE HERON		D	S2BS3N	G5
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	LT	D	S3	G4
ICTINIA MISSISSIPPIENSIS	MISSISSIPPI KITE		D	S2S3	G5
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER	MC	D	S3	G4
RIPARIA RIPARIA	BANK SWALLOW			S3	G5
STERNA ANTILLARUM	INTERIOR LEAST TERN	LE	E	S2S3B	G4T2Q

ATHALASSOS

** VERTEBRATES - FISH

CYCLEPTUS ELONGATUS	BLUE SUCKER	MC	T	S2	G3G4
HYBOGNATHUS PLACITUS	PLAINS MINNOW		D	S1	G4
LEPISOSTEUS SPATULA	ALLIGATOR GAR		D	S1	G3G4

Updated April 4, 2002; Send Comments to: Environment & Conservation

Rare Species of Tipton County

The following is a list of the rare species found in Tipton County. This list was compiled by the Division of Natural Heritage.

- Tennessee's Rare Plant List
- Rare and Endangered Vertebrate List of Tennessee
- Rare and Endangered Invertebrate List of Tennessee

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
ACMELLA OPPOSITIFOLIA	CREEPING SPOT-FLOWER		S	S2	G5
AGALINIS AURICULATA	EARLEAVED FALSE-FOXGLOVE		E	S1S2	G3
CAREX OXYLEPIS VAR PUBESCENS	HAIRY SHARP-SCALED SEDGE		S	S1	G5?T3
HYDRASTIS CANADENSIS	GOLDENSEAL		S-CE	S3	G4
PANAX QUINQUEFOLIUS	AMERICAN GINSENG		S-CE	S3S4	G3G4
PANICUM ENSIFOLIUM	SMALL-LEAVED PANICGRASS		S	S2	G4
PHACELIA RANUNCULACEA	BLUE SCORPION-WEED		S	S3	G3G4
PRENANTHES CREPIDINEA	NODDING RATTLESNAKE-ROOT		E	S1	G3G4
SCHISANDRA GLABRA	RED STARVINE		T	S2	G3
** INVERTEBRATES - MOLLUSC					
OBOVARIA JACKSONIANA	SOUTHERN HICKORYNUT			S1	G1G2
VILLOSA VIBEX	SOUTHERN RAINBOW			S2	G4Q
** VERTEBRATES - BIRDS					
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	LE	E	S2S3B	G4T2Q

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** VERTEBRATES - REPTILES					
MACROCLEMYS TEMMINCKII	ALLIGATOR SNAPPING TURTLE	MC	D	S2S3	G3G4
SISTRURUS MILIARIUS STRECKERI	WESTERN PIGMY RATTLESNAKE		T	S2S3	G5T5
** VERTEBRATES - FISH					
AMMOCRYPTA BEANI	NAKED SAND DARTER		D	S2	G5
AMMOCRYPTA VIVAX	SCALY SAND DARTER		D	S2	G5
CYCLEPTUS ELONGATUS	BLUE SUCKER	MC	T	S2	G3G4
MACRHYBOPSIS GELIDA	STURGEON CHUB	C	D	S1	G2
NOTROPIS DORSALIS	BIGMOUTH SHINER		D	S1	G5
NOTURUS STIGMOSUS	NORTHERN MADTOM	MC	D	S3	G3

Rare Species of Shelby County

The following is a list of the rare species found in Shelby County. This list was compiled by the Division of Natural Heritage.

- Tennessee's Rare Plant List
- Rare and Endangered Vertebrate List of Tennessee
- Rare and Endangered Invertebrate List of Tennessee

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
ACMELLA OPPOSITIFOLIA	CREEPING SPOT-FLOWER		S	S2	G5
CRATAEGUS HARBISONII	HARBISON'S HAWTHORN		E	S1	G1
HYDRASTIS CANADENSIS	GOLDENSEAL		S-CE	S3	G4
IRIS FULVA	COPPER IRIS		T	S2	G5
OPHIOGLOSSUM CROTALOPHOROIDES	BULBOUS ADDER'S-TONGUE		S	S2	G5
PANAX QUINQUEFOLIUS	AMERICAN GINSENG		S-CE	S3S4	G3G4
PHACELIA RANUNCULACEA	BLUE SCORPION-WEED		S	S3	G3G4
PLATANTHERA FLAVA VAR FLAVA	SOUTHERN REIN-ORCHID		S	S2S3	G4T4?Q
PRENANTHES CREPIDINEA	NODDING RATTLESNAKE-ROOT		E	S1	G3G4
SCHISANDRA GLABRA	RED STARVINE		T	S2	G3
SILENE OVATA	OVATE CATCHFLY		E	S2	G2G3
ULMUS CRASSIFOLIA	CEDAR ELM		S	S2	G5
** INVERTEBRATES - MOLLUSC					
EPIOBLASMA TURGIDULA	TURGID-BLOSSOM	LE	E	SX	GH
LAMPSILIS SILIQUOIDEA	FATMUCKET			S1	G5
OBOVARIA JACKSONIANA	SOUTHERN HICKORYNUT			S1	G1G2
TRIODOPSIS MULTILINEATA	STRIPED WHITELIP (=T. WEBBHELIX)			S1	G?
** Other types					
HERON ROOKERY	HERON ROOKERY				

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** VERTEBRATES - BIRDS					
CHONDESTES GRAMMACUS	LARK SPARROW		T	S1B	G5
ICTINIA MISSISSIPPIENSIS	MISSISSIPPI KITE		D	S2S3	G5
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER	MC	D	S3	G4
NYCTANASSA VIOLACEA	YELLOW-CROWNED NIGHT-HERON			S3	G5
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	LE	E	S2S3B	G4T2Q
THRYOMANES BEWICKII	BEWICK'S WREN	MC	E	S1	G5
TYTO ALBA	COMMON BARN-OWL		D	S3	G5
VIREO BELLII	BELL'S VIREO	(PS)		SPB	G5

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# of Shelby County

Shelby County. This list was compiled by the

nnessee
ennessee

	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
'LOWER		S	S2	G5
'HORN		E	S1	G1
		S-CE	S3	G4
		T	S2	G5
		S	S2	G5
G		S-CE	S3S4	G3G4
EF		S	S3	G3G4
RC...		S	S2S3	G4T4?Q
		E	S1	G3G4
T				
		T	S2	G3
		E	S2	G2G3
		S	S2	G5
	LE	E	SX	GH
			S1	G5
YNUT			S1	G1G2
P			S1	G?

	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
		T	S1B	G5
E		D	S2S3	G5
LER	MC	D	S3	G4
			S3	G5
TERN	LE	E	S2S3B	G4T2Q
	MC	E	S1	G5
		D	S3	G5
	(PS)		SPB	G5

http://www.state.tn.us/environment/nh/species/shelby.htm

FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
	D	S3	G3G4
LE	E	S1	G2
	D	S3	G5T5
	D	S4	G5

'EDERAL ;TATUS	STATE STATUS	STATE RANK	GLOBAL RANK
MC	D	S2S3	G3G4
	D	S3	G5T5
MC	T	S3	G4T4
	D	S3	G5
	D	S2	G5
MC	T	S2	G3G4
MC	D	S3	G3

o: Environment & Conservation

tement | User Survey | Guest Book

Rare Species of Shelby County

The following is a list of the rare species found in Shelby County. This list was compiled by the Division of Natural Heritage.

- Tennessee's Rare Plant List
- Rare and Endangered Vertebrate List of Tennessee
- Rare and Endangered Invertebrate List of Tennessee

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
ACMELLA OPPOSITIFOLIA	CREEPING SPOT-FLOWER		S	S2	G5
CRATAEGUS HARBISONII	HARBISON'S HAWTHORN		E	S1	G1
HYDRASTIS CANADENSIS	GOLDENSEAL		S-CE	S3	G4
IRIS FULVA	COPPER IRIS		T	S2	G5
OPHIOGLOSSUM CROTALOPHOROIDES	BULBOUS ADDER'S-TONGUE		S	S2	G5
PANAX QUINQUEFOLIUS	AMERICAN GINSENG		S-CE	S3S4	G3G4
PHACELIA RANUNCULACEA	BLUE SCORPION-WEED		S	S3	G3G4
PLATANTHERA FLAVA VAR FLAVA	SOUTHERN REIN-ORCHID		S	S2S3	G4T4?Q
PRENANTHES CREPIDINEA	NODDING RATTLESNAKE-ROOT		E	S1	G3G4
SCHISANDRA GLABRA	RED STARVINE		T	S2	G3
SILENE OVATA	OVATE CATCHFLY		E	S2	G2G3
ULMUS CRASSIFOLIA	CEDAR ELM		S	S2	G5
** INVERTEBRATES - MOLLUSC					
EPIOBLASMA TURGIDULA	TURGID-BLOSSOM	LE	E	SX	GH
LAMPSILIS SILIQUOIDEA	FATMUCKET			S1	G5
OBOVARIA JACKSONIANA	SOUTHERN HICKORYNUT			S1	G1G2
TRIODOPSIS MULTILINEATA	STRIPED WHITELIP (=T. WEBBHELIX)			S1	G?
** Other types					
HERON ROOKERY	HERON ROOKERY				

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** VERTEBRATES - BIRDS					
CHONDESTES GRAMMACUS	LARK SPARROW		T	S1B	G5
ICTINIA MISSISSIPPIENSIS	MISSISSIPPI KITE		D	S2S3	G5
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER	MC	D	S3	G4
NYCTANASSA VIOLACEA	YELLOW-CROWNED NIGHT-HERON			S3	G5
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	LE	E	S2S3B	G4T2Q
THRYOMANES BEWICKII	BEWICK'S WREN	MC	E	S1	G5
TYTO ALBA	COMMON BARN-OWL		D	S3	G5
VIREO BELLII	BELL'S VIREO	(PS)		SPB	G5

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** VERTEBRATES - MAMMALS					
CORYNORHINUS RAFINESQUII	EASTERN BIG-EARED BAT		D	S3	G3G4
MYOTIS SODALIS	INDIANA BAT	LE	E	S1	G2
NEOTOMA FLORIDANA ILLINOENSIS	EASTERN WOODRAT		D	S3	G5T5
SOREX LONGIROSTRIS	SOUTHEASTERN SHREW		D	S4	G5
** VERTEBRATES - REPTILES					
MACROCLEMYS TEMMINCKII	ALLIGATOR SNAPPING TURTLE	MC	D	S2S3	G3G4
OPHISAURUS ATTENUATUS LONGICAUDUS	EASTERN SLENDER GLASS LIZARD		D	S3	G5T5
PITUOPHIS MELANOLEUCUS MELANOLEUCUS	NORTHERN PINE SNAKE	MC	T	S3	G4T4
** VERTEBRATES - AMPHIBIANS					
HYLA GRATIOSA	BARKING TREEFROG		D	S3	G5
** VERTEBRATES - FISH					
AMMOCRYPTA BEANI	NAKED SAND DARTER		D	S2	G5
CYCLEPTUS ELONGATUS	BLUE SUCKER	MC	T	S2	G3G4
NOTURUS STIGMOSUS	NORTHERN MADTOM	MC	D	S3	G3

Updated April 5, 2002; Send Comments to: Environment & Conservation

Rare Species of Crockett County

The following is a list of the rare species found in Crockett County. This list was compiled by the Division of Natural Heritage.

- Tennessee's Rare Plant List
- Rare and Endangered Vertebrate List of Tennessee
- Rare and Endangered Invertebrate List of Tennessee

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
PLATANTHERA FLAVA VAR FLAVA	SOUTHERN REIN-ORCHID		S	S2S3	G4T4?Q
** VERTEBRATES - MAMMALS					
CORYNORHINUS RAFINESQUII	EASTERN BIG-EARED BAT		D	S3	G3G4
ZAPUS HUDSONIUS	MEADOW JUMPING MOUSE	(PS)	D	S4	G5

Updated April 3, 2002; Send Comments to: Environment & Conservation

Rare Species of Haywood County

The following is a list of the rare species found in Haywood County. This list was compiled by the Division of Natural Heritage.

- Tennessee's Rare Plant List
- Rare and Endangered Vertebrate List of Tennessee
- Rare and Endangered Invertebrate List of Tennessee

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
ACMELLA OPPOSITIFOLIA	CREEPING SPOT-FLOWER		S	S2	G5
PLATANTHERA FLAVA VAR FLAVA	SOUTHERN REIN-ORCHID		S	S2S3	G4T4?Q
ULMUS CRASSIFOLIA	CEDAR ELM		S	S2	G5
** INVERTEBRATES - MOLLUSC					
OBOVARIA JACKSONIANA	SOUTHERN HICKORYNUT			S1	G1G2
UNIOMERUS DECLIVIS	TAPERED PONDHORN			S1	G5
VILLOSA VIBEX	SOUTHERN RAINBOW			S2	G4Q
** VERTEBRATES - BIRDS					
BUTEO LINEATUS	RED-SHOULDERED HAWK			S4B	G5
LIMNOTHLYPIS SWAINSONII	SWAINSON'S WARBLER	MC	D	S3	G4
THRYOMANES BEWICKII	BEWICK'S WREN	MC	E	S1	G5
** VERTEBRATES - MAMMALS					
CORYNORHINUS RAFINESQUII	EASTERN BIG-EARED BAT		D	S3	G3G4
NEOTOMA FLORIDANA ILLINOENSIS	EASTERN WOODRAT		D	S3	G5T5
SOREX LONGIROSTRIS	SOUTHEASTERN SHREW		D	S4	G5
** VERTEBRATES - FISH					
AMMOCRYPTA BEANI	NAKED SAND DARTER		D	S2	G5
CYCLEPTUS ELONGATUS	BLUE SUCKER	MC	T	S2	G3G4
NOTURUS STIGMOSUS	NORTHERN MADTOM	MC	D	S3	G3

Updated April 4, 2002; Send Comments to: Environment & Conservation

APPENDIX II
RESOURCE AGENCY COORDINATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

March 21, 2001

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL	# of pages ►
To Peggy Measel	From Sandra
Dept./Agency HMB	Phone # 931-528-6481
Fax # 502-695-9810	Fax # " " 7025
NSN 7540-01-317-7368 5099-101	GENERAL SERVICES ADMINISTRATION

Ms. Peggy A. Measel
Haworth, Meyer & Boleyn, Incorporated
3 HMB Circle
Frankfort, Kentucky 40601

Dear Ms. Measel:

Thank you for your letter and enclosures of February 16, 2001, regarding the proposed construction of I-69 from south of Millington to north of Dyersburg, Tennessee. We have reviewed your request for information on wetlands and federally listed species that may occur within the proposed project corridor.

Information available to the Service indicates that numerous wetlands exist in the vicinity of the proposed I-69 corridor. Due to the large number of USGS quads involved, we are unable to provide paper maps of all the known locations of existing wetlands. However, there is a web site that provides digital access to wetland data layers for the entire State of Tennessee. The address for this web site is *http://163.148.169.50*. It should be noted that these digital maps are not sanctioned by the Service and are not to be used as a substitute for field verification. They are provided as a planning tool. The Corps of Engineers or the Natural Resources Conservation Service should be contacted regarding the presence of regulatory wetlands and the requirements of wetlands protection statutes.

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the project. We note, however, that collection records available to the Service may not be all-inclusive. Our data base is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality. However, based on the best information available at this time, we believe that the requirements of Section 7 of the Endangered Species Act of 1973, as amended, are fulfilled. Obligations under Section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

Your concern for the protection of wetlands and endangered species is appreciated. If you have questions, or if we can be of further assistance, please contact Timothy Merritt of my staff at telephone 931/528-6481, ext. 211, or via email at *timothy_merritt@fws.gov*.

Sincerely,

Lee A. Barclay

Lee A. Barclay, Ph.D.
Field Supervisor

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

RECEIVED

November 9, 2001

Mr. Charles E. Bush
Transportation Manager
Tennessee Department of Transportation
Environmental Planning Office
505 Deaderick Street, Suite 900
Nashville, Tennessee 37243-0330

Dear Mr. Bush:

Thank you for your letter and enclosures of November 2, 2001, concerning the proposed construction of Interstate 69 (Section 8) from SR385 (Paul Barrett Parkway) in Millington to I-155/US51 in Dyersburg. We have reviewed the information submitted and offer the following comments in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

The proposed project has two primary alternative corridors: one west of US51 and the other east of US51. Between the two primary corridors are "cross-overs" which allow for flexibility in location selection.

We are concerned that highway projects frequently accelerate erosion and stream sedimentation, resulting in adverse effects to the aquatic environment. Excessive sedimentation can degrade aquatic habitat by filling in substrate cavities, burying demersal eggs, and smothering bottom organisms.

Prevention of excessive sedimentation can occur through the use of Best Management Practices during daily construction activities. Strict adherence of Section 209 of the Tennessee Department of Transportation's Specific Specifications for Road and Bridge Construction and Federal Highway Administration Best Management Practices for Erosion and Sediment Control (December 1978) can alleviate most sedimentation problems. It is important that these practices be monitored and stringently enforced in order to minimize adverse impacts associated with construction.

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the various alternative alignments. We note, however, that collection records available to the Service may not be all-inclusive. Our data base is a compilation of collection records made available by various individuals

APPENDIX B
Cooperating Agency Comments and Responses

DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT, CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS, TENNESSEE 38103-1894

REPLY TO
ATTENTION OF:

April 29, 2005

Construction–Operations Division
Regulatory Branch

Mr. Tom Love
Tennessee Department of Transportation
Environmental Planning and Permits Division
James K. Polk Building, Suite 900
505 Deaderick Street
Nashville, Tennessee 37243-0334

Dear Mr. Love:

This is in reference to the preliminary Draft Environmental Impact Statement for the proposed Interstate I-69 SIU 8 between Dyersburg and Millington, Tennessee. Based on our review of the document, we have the following additional comments regarding this project:

1. On pages 130 and 131, attempts to avoid or minimize impacts to wetlands are described. This information will be important during a permit review. Further, connecting specific avoidance/ minimization measures to specific wetlands (particularly large wetland areas or wetlands with high ecological value) would be beneficial.

2. Also in the "Wetlands" section, it was good to include the discussion of other, more indirect impacts to wetlands (e.g., fragmentation).

3. The description of "Riparian Areas" should include a description of other riparian functions, particularly relative to water quality.

4. In the "Surface Waters" section (3.5.2), please note that other stream channels that would be considered waters of the United States are almost certainly present within the alignments.

5. The discussion of cumulative effects on wetlands should be strengthened. A discussion of how project planners have attempted to minimize these effects would be appropriate; this discussion could be set up like the discussion regarding impacts to streams. Also, it appears that additional development pressures to wetlands near the alignment could be considered a cumulative or indirect effect.

Additionally, we have the following general comments regarding the document:

1. Please keep in mind that the Section 404(b)(1) guidelines prevent issuance of a permit for filling wetlands if other, less damaging practicable alternatives are available. For this analysis,

"practicable" is defined as "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." A functional assessment of wetlands within the alignments should be included.

2. Other factors to consider include floodplain impacts, residential relocations, and route length (particularly as it relates to construction costs, emissions, etc.); these factors would be considered as part of a public interest review.

3. Extensive areas of high-quality bottomland hardwood wetlands are located along the Hatchie River. We are concerned about any proposed alternative that would involve a new alignment through these wetlands or across the Hatchie River. Generally, fewer new crossings of waterways would reduce impacts to water quality, floodplains and wetlands. If a permit could be issued for impacts to this system, it would be necessary to mitigate these impacts by replacing the functions of these wetlands.

5. All proposed bridge crossings should be adequately designed so that there is no induced flooding or increase in upstream river stages that would place an undue burden on landowners. Additionally, all crossings should be adequately stabilized and protected.

6. The routes that include paths W-Y-Z or G-Y-Z cross more waterways within the West Tennessee Tributaries Project than those routes that do not include these paths. We request that TDOT keep the Memphis District advised of the progress regarding the selection of the preferred alternative. Because the Memphis District has existing projects and is developing additional projects within western Tennessee, it will be important to ensure that there are no conflicts between Corps projects and proposed highway plans.

7. Please keep the Memphis District informed of any additional site investigations or field meetings regarding impacts to wetlands or other waters of the United States.

If you have questions, please reference File No. MVM-2005-351-RSA and contact Roger Allan at the letterhead address or by telephone at (901) 544-3682.

Sincerely,

Larry Watson

Larry D. Watson
Chief
Regulatory Branch

US Army Corps of Engineers, District Engineer, Memphis District
Comments were received on April 29, 2005, from the Memphis District. As requested,

Comment: *On pages 130 and 131, attempts to avoid or minimize impacts to wetlands are described. This information will be important during a permit review. Further, connecting specific avoidance/minimization measures to specific wetlands (particularly large wetland areas or wetlands with high ecological value) would be beneficial.*

Response: Page 130: Charts and exhibits have been included in this section to further illustrate the measure taken to avoid or minimize impacts to wetlands. A discussion on the prevalence of wetlands in the area has been included.

Comment: *Also in the "Wetlands" section, it was good to include the discussion of other, more indirect impacts to wetlands (e.g., fragmentation).*

Response: None required.

Comment: *The description of "Riparian Areas" should include a description of other riparian functions, particularly relative to water quality.*

Response: This section has been expanded to fully describe riparian functions with particular emphasis upon water quality (pages 71 & 72).

Comment: *In the "Surface Waters" section (3.5.2), please note that other stream channels that would be considered waters of the United States are almost certainly present within the alignments."*

Response: This comment has been included in the document on pages 75 & 76.

Comment: *The discussion of cumulative effects on wetlands should be strengthened. A discussion of how project planners have attempted to minimize these effects would also be appropriate; this discussion could be set up like the discussion regarding impacts to streams. Also, it appears that additional development pressures to wetlands near the alignment could be considered a cumulative or indirect effect.*

Response: This has been included in the document beginning on page 130A.

Comment: *Additionally, we have made the following general comments regarding the document:*

1. *Please keep in mind that Section 404(b)(1) guidelines prevent issuance of a permit for filling wetlands if other, less damaging practicable alternatives are available. For this analysis, "practicable" is defined as "available and*

capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." A functional assessment of wetlands should be included.

<u>Response to Comment 1:</u> A Wetlands Impact Chart has been included in the DEIS. This chart describes the wetland locations, Build Alternative(s) impacting the resource, total area and area required for right of way acquisition, wetland type and wetland function for each wetland that may be impacted. This has been included in the Wetlands section beginning on page 130A.

2. *Other factors to consider include floodplain impacts, residential relocations, and route length (particularly as it relates to construction costs, emissions, etc.); these factors would be considered as part of a public interest review.*

<u>Response to Comment 2:</u> Sensitivity to floodplains was shown in placing the alignments for the build alternatives for this project. The DEIS has documented consideration of all impacts, including impacts to floodplains, construction costs and relocations to determine the practicable locations for the build alternatives. The impact matrix on page 132, illustrates a summary of all impacts for each build alternative considered in this process.

3. *Extensive areas of high quality bottomland hardwood wetlands are located along the Hatchie River. We are concerned about any proposed alternative that would involve a new alignment through these wetlands or across the Hatchie River. Generally, fewer new crossings of waterways would reduce impacts to water quality, floodplains and wetlands. If a permit could be issued for impacts to this system, it would be necessary to mitigate these impacts by replacing the functions of these wetlands.*

<u>Response to Comment 3:</u> "Extensive areas of high quality bottomland hardwood wetlands are located along the Hatchie River. Impacts to these resources are anticipated for each of the project Build Alternatives. A build alternative located to the east of the current proposed alignments was eliminated earlier in the decision making process in part because of the potential for measurable impacts to these resources. TDOT will work with the USFWS Lower Hatchie National Wildlife Refuge to identify suitable mitigation sites to replace the functions of these wetlands as part of the 404 Permitting process, Page 130."

4. *All proposed bridge crossings should be adequately designed so there is no induced flooding or increase in upstream river states that would place an undue burden on landowners. Additionally, all crossings should be adequately stabilized and protected.*

<u>Response to Comment 4:</u> This statement has been included on page 132.

5. West Tennessee Tributaries Project – Nodes W-Y-Z or G-Y-Z would cross more waterways within this area than other routes that do not include these nodes. The Memphis District has requested that TDOT keep them advised of any progress in selected the Preferred Alternate. Existing and additional projects are ongoing in western Tennessee, and this level of coordination will ensure no conflicts exist between Corps projects and TDOT projects.

No response necessary.

General Comment: *The Memphis District requests to be informed of any additional site investigations or field meetings regarding impacts to wetlands or other waters of the United States.*

No response necessary.

APR 01 2005
Environmental Planning
And Permits Division

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

March 29, 2005

Mr. Charles E. Bush
Transportation Manager II
Environmental Planning and Permits Division
Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Dear Mr. Bush:

PRELIMINARY ENVIRONMENTAL IMPACT STATEMENT (EIS) – INTERSTATE 69 FROM SR 385 IN MILLINGTON TO I-155 IN DYERSBURG, SHELBY, TIPTON, LAUDERDALE AND DYER COUNTIES, TENNESSEE

Thank you for the opportunity to review the EIS for the proposed I-69 route between Millington and Dyersburg. The project has the potential to require the modification of TVA transmission lines in the area. Therefore, we appreciate the inclusion of TVA as a cooperating agency in the NEPA review for this project. It appears that the major issues have been addressed. The following are suggestions:

- *Cover Page*, first sentence. The reference should be to I-155, not US 155.

- *Section 1.2.3, System Linkage, U.S. 51*. Bloomington, Illinois should be changed to Ironwood, Michigan (or northern Wisconsin).

- *Section 4.5.1, Terrestrial Habitat Impacts*. Based on other information provided in the document, much of the land in the area appears to be agricultural and not forested; therefore, forest fragmentation impacts would appear to be minimal. You may wish to provide a more detailed discussion on this issue by describing specific forested areas which may be fragmented as a result of build alternatives. For example, Alternative R would traverse contiguous areas of forest north of Munford and north of Ripley (bluff hills area) and at the Hatchie River bottomlands crossing for Alternative G. Fragmentation impacts of the Hatchie River bottomlands crossing would be minimized by the use of the existing US 51 bridge crossing area for Alternative R.

TVA appreciates the opportunity to serve as a cooperating agency on this project. We also would appreciate receiving a copy of the public release Draft EIS when available. Should you have any questions, please contact Harold M. Draper at (865) 632-6889 or hmdraper@tva.gov.

Sincerely,

Charles P. Nicholson for JMC

Jon M. Loney, Manager
NEPA Administration
Environmental Policy and Planning

cc: Mr. John Steele
Federal Highway Administration
640 Grassmere Park, Suite 112
Nashville, Tennessee 37211-3568

Tennessee Valley Authority, Environmental Manager
Comments were received on March 29, 2005 from TVA. As requested,

Comment: *Cover Page, first sentence. The reference should be to I-155, not US 155."*

Response: The reference was changed from "US 155 to I-155."

Comment: *Section 1.2.3, System Linkage, U.S. 51. Bloomington, Illinois should be changed to Ironwood, Michigan (or northern Wisconsin).*

Response: "Bloomington, Illinois," was changed to "Ironwood, Michigan."

Comment: *Section 4.5.1, Terrestrial Habitat Impacts. Based on other information provided in the document, much of the land area appears to be agricultural and not forested; therefore, forest fragmentation impacts would appear to be minimal. You may wish to provide a more detailed discussion on this issue by describing specific forested areas which may be fragmented as a result of the build alternatives. For example Alternative R would traverse contiguous areas of forest north of Munford and north of Ripley (bluff hills area) and at the Hatchie River bottomlands crossing for Alternative G. Fragmentation impacts of the Hatchie River bottomlands crossing would be minimized by the use of the existing US 51 bridge crossing for Alternative R.*

Response: The instances sited above are used as examples in the document on page 128. Reasons for alignment placement are given (high numbers of potential residential and commercial relocations), and reference to the corresponding sheets in the DEIS, Volume II functionals are referenced. A paragraph on secondary and cumulative impacts to forest land was added.