LOCATION STUDY

INTERSTATE 69 El Dorado to McGehee, ARKANSAS

FINAL ENVIRONMENTAL IMPACT STATEMENT

I-69 Section of Independent Utility 13
El Dorado to McGehee, Arkansas





ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT • AHTD •

DEPARTMENT OF TRANSPORTATION • UNITED STATES OF AMERICA •

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I-69 SECTION OF INDEPENDENT UTILITY 13
EL DORADO TO MCGEHEE, ARKANSAS

Final Environmental Impact Statement

Submitted Pursuant to: 42 U.S.C. 4332(2)(c)

by the

U.S. Department of Transportation - Federal Highway Administration
and the
Arkansas Highway and Transportation Department

Cooperating Agencies:
U.S. Army Corps of Engineers – Vicksburg District
U.S. Fish and Wildlife Service
U.S. Coast Guard – Eighth District
U.S. Environmental Protection Agency

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Date of Approval

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Aug 17, 2005
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This project is a proposal to construct a four-lane, divided, fully controlled access highway facility located on new alignment from U.S. 82 near El Dorado, Arkansas to U.S. 65 near McGehee, Arkansas. The proposed highway would be approximately 100 miles in length and would pass through the Arkansas Counties of Ouachita, Union, Calhoun, Bradley, Drew, and Desha. Several alternatives were considered including the No-Action alternative.

Comments on this EIS are due by 10-24-05, and should be sent to:

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SUMMARY

THE I-69 LOCATION STUDY

The proposed I-69 Location Study from El Dorado to McGehee, Arkansas, represents one section (Section of Independent Utility No. 13) of the nationally designated I-69 Corridor that reaches from Port Huron, Michigan to the Texas/Mexico border (Exhibit 1-1). This project, hereafter referred to as the SIU 13 Project, would provide a divided four-lane fully controlled access facility, constructed on new location. The Federal Highway Administration (FHWA) issued a Notice of Intent (NOI) to prepare an Environmental Impact Statement for this project in the December 7, 2001 Federal Register.

The SIU 13 Project Area is approximately 110 miles long and encompasses all or portions of Columbia, Ouachita, Union, Calhoun, Bradley, Ashley, Drew, Chicot, and Desha Counties (Exhibit 1-2). Construction of the SIU 13 Project would:

- Complete a portion of the Congressionally-designated Interstate 69 Highway, expanding Interstate linkage between El Dorado and McGehee, Arkansas and the rest of the Nation.
- Support the North American Free Trade Agreement by expanding the I-69 trade corridor.
- Improve international and interstate movement of freight and people.
- Facilitate economic development and enhance economic growth opportunities in the Lower Mississippi Delta Region.
- Support the Southeast Arkansas Regional Intermodal Facility.
- Improve efficiency of travel.
- Improve traffic safety.
- Improve emergency vehicle response times and access to medical facilities.
- Improve access to education and recreational facilities
- Support the locally based needs identified by community leaders and the public.

The SIU 13 Project will function as a critical link in the Interstate system that will serve travel, economic development, and commercial demands of not only the Project Area, but also the south-central United States. The current study of alternatives and the environmental consequences of the proposed action were initiated in December 2001 by the Arkansas Highway and Transportation Department (AHTD) and the Federal Highway Administration (FHWA). This study is fully documented in the remaining sections of this Environmental Impact Statement (EIS).

ALTERNATIVES CONSIDERED

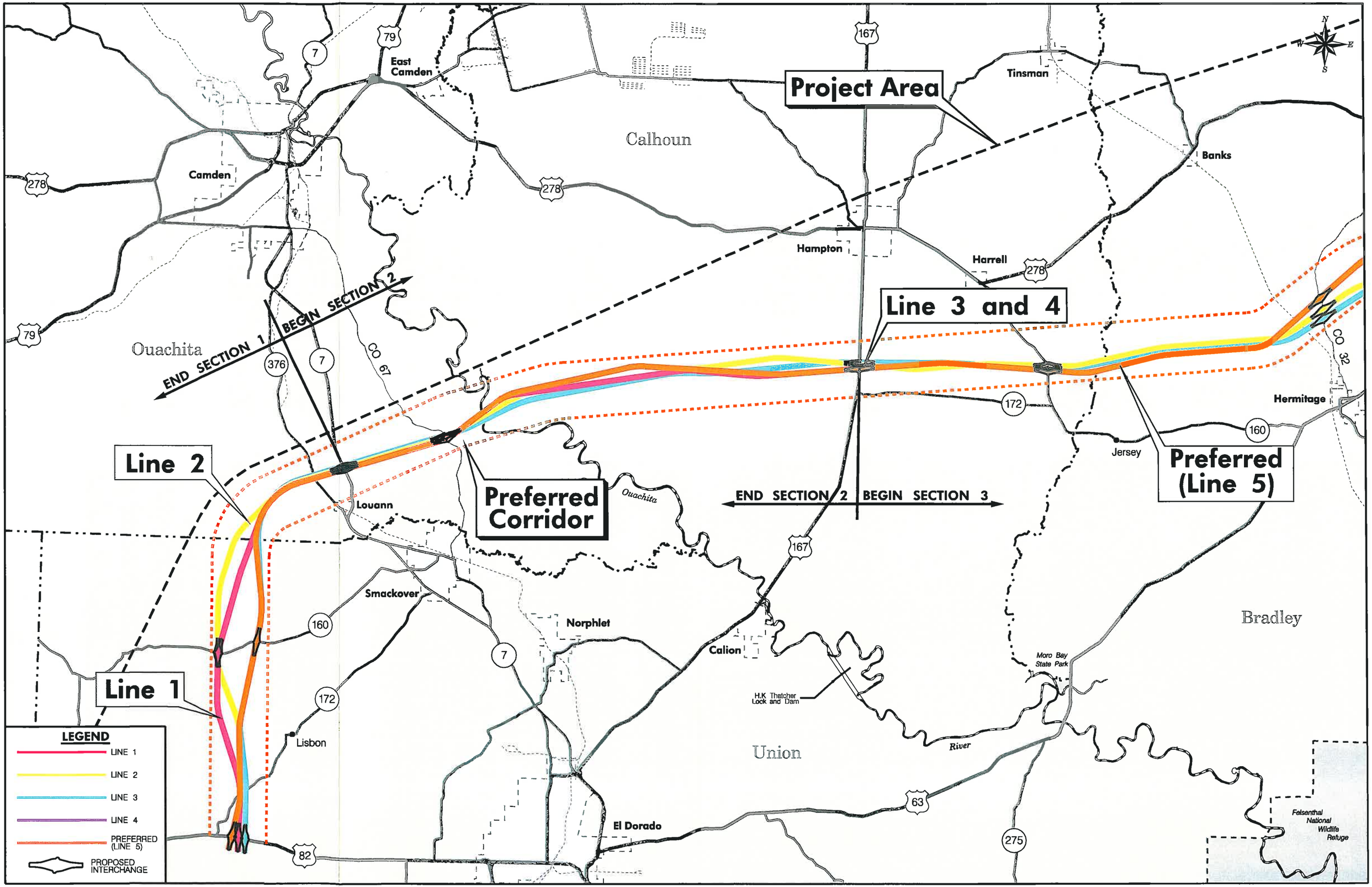
The development of alternatives for the SIU 13 Project followed a multi-step study approach that evaluated possible highway locations in several stages so that only the most practicable alternatives, i.e., those that met the project purpose

and need and that had the potential to minimize environmental impacts, were advanced to the next phase of study. Initially, an environmental resource map was created for the Project Area by collecting available environmental information from state and federal sources. Using this resource map, key environmental issues were identified for consideration throughout the study process.

The Corridor Study involved the development of four full-length corridors two miles in width within the Project Area. Corridor development used the environmental resources mapping as a guide to avoid and minimize impacts to sensitive resources in addition to consideration of appropriate engineering design criteria and local community leader concerns. These four corridors were analyzed and screened against the sensitive resources, and reviewed by the public, local community leaders, and resource agencies, including the cooperating federal agencies. Once individual corridors or portions of corridors were eliminated from further study, a multi-corridor combination (the Preferred Corridor) was identified that provided the best opportunity to develop highway alignments within it which would avoid or minimize impacts to the social, natural, and cultural environments. Additionally, highway alignments were developed to enhance the transportation services and economic vitality of the Project Area, and accommodate the overall purpose of the National I-69 Corridor. This process provided sufficient information to identify and advance a Preferred Corridor to the more detailed Alignment Study.

The Alignment Study initially developed four preliminary alignment alternatives, approximately 300 feet in width, within the Preferred Corridor. The alignment development process first emphasized avoidance, if practical, and then considered efforts to insure that the alternatives minimized impacts to sensitive resources such as wetlands, threatened and endangered species, and residential areas. This phase of study also included updating and refining the environmental inventory based on specific field investigations within the Preferred Corridor.

A comprehensive public involvement program was conducted during the Corridor and Alignment Studies that involved the public, local community leaders, appropriate state and federal resource agencies, and participating Native American Tribes. Comments from those involved resulted in revisions to the preliminary highway alignments in several areas and the addition of a fifth alignment, which incorporated these changes. Additionally, the development of this fifth alignment combined portions of the four preliminary alignments to further reduce social and environmental impacts.


Project Area
Line 3 and 4
Line 2
Line 1
Preferred Corridor
Preferred (Line 5)
END SECTION 1
BEGIN SECTION 2
END SECTION 2
BEGIN SECTION 3
Calhoun
Ouachita
Union
Bradley
Camden
East Camden
Tinsman
Banks
Hampton
Harrell
Louann
Smackover
Norphlet
Calion
Lisbon
El Dorado
Jersey
Hermitage
H.K. Thatcher Lock and Dam
Moro Bay State Park
Felsenthal National Wildlife Refuge
River
CO 67
CO 32
LEGEND
LINE 1
LINE 2
LINE 3
LINE 4
PREFERRED (LINE 5)
PROPOSED INTERCHANGE

Cleveland

Future I–530

Lake Monticello

Proposed Road Alignment by AHTD

Line 1

Line 3

Line 4

END SECTION 5

Selma

Desha

Future I–69 Mississippi River Crossing Alignment

Warren

Wilmar

Monticello

Proposed I–530 Extension

Seven Devils Swamp

McGehee

CO 32

Saline River

Line 2

Green Hill

Preferred (Line 5)

Preferred Corridor

New Hope

Collins

Drew

Dermott

Sumpter

END SECTION 3 BEGIN SECTION 4

END SECTION 4 BEGIN SECTION 5

Cut-Off Creek Wildlife Management Area

Lacey

Chicot

Bradley

Ouachita River

Ingalls

Johnsville

Fountain Hill

Ashley

Project Area

63 425 83 138 293 277 65 1 278 35 133 172 8 165 160

N W E S

I–69 Location Study
El Dorado to McGehee

Exhibit S–1

ALIGNMENT LOCATIONS

Baker

SCALE IN FEET

A No-Action alternative was retained throughout the study as a basis for comparing the relative benefits and impacts of the alternatives. Under this alternative, the only projects undertaken would be currently planned safety and capacity improvement projects in the Project Area. Safety projects generally involve shoulder widening and curve realignment where necessary and would be implemented regardless of the decision to construct the proposed highway. Widening projects are currently being constructed for US Highway 278 near Wilmar and Warren. This project would be completed under the No-Action alternative.

Active involvement and participation by community leaders, state and federal agencies, and the public provided sufficient information and comments to identify Line 5 as the Preferred Alignment for the SIU 13 Project. The developed alignments, including the Preferred Alignment, are shown in Exhibit S-1. The basis for identification of the Preferred Alignment is discussed in Section 2. The Preferred Alignment meets the project Purpose and Need and minimizes wetland impacts to the greatest extent practicable in accordance with 404 b(1) guidelines. In addition, the Preferred Alignment would impact the fewest residences (5) over the 103 mile long project. The Preferred Alignment best balances the expected project benefits with the overall project impacts. The final selection of a highway alignment for the SIU 13 Project will not be made until comments received on this Final Environmental Impact.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table S-1 summarizes the project impacts for the developed alignment alternatives discussed in Section 4. Impacts to the social, economic, natural, and cultural environments would result if any of the SIU 13 alignments were constructed. The alignments were developed in a corridor that allowed impact avoidance and minimization for a number of resources, while addressing the project Purpose and Need and providing feasible engineering alternatives. It should be noted that while many resource impacts are similar for the alignment alternatives, they are also relatively minor for a 100 - mile highway project on new location.

All highway alignments would avoid businesses, churches, community facilities, regulatory floodways, cemeteries, and known locations of endangered species, natural areas, and hazardous waste sites. Preliminary project costs range from approximately $779 million to $791 million. Line 1 and Line 2 would impact the greatest number of residences, while the Preferred Alignment (Line 5) would impact the least (5 residences over the 100 mile length of the project). Line 1 and Line 3 would impact the greatest wetland acreage, while the Preferred Alignment (Line 5) would impact the least. Line 1 and Line 2 would impact the greatest floodplain acreage and Lines 2, 3, and 4 would all impact known red-cockaded woodpecker habitat.

OTHER STATE AND FEDERAL ACTIONS REQUIRED

The following actions must occur in order to implement this project:

- The issuance of a Clean Water Act Section 404 permit for the placement of dredged or fill material in waters of the United States by the US Army Corps of Engineers and a related Section 401 Water Quality Certification issued by the Arkansas Department of Environmental Quality.
- A Bridge Permit issued by the US Coast Guard for crossing the Ouachita River.
- Coordination of the Section 106 process for consideration of archeological and historic resources with the Arkansas State Historic Preservation Officer and the Advisory Council on Historic Preservation.
- A National Pollutant Discharge Elimination System (NPDES) Permit required by Section 402 of the Clean Water Act issued by the Arkansas Department of Environmental Quality.

OTHER PROPOSED MAJOR ACTIONS

Other proposed federal and state actions in the Project Area include:

- The National I-69 Corridor – SIU 14. A Notice of Intent (NOI) was issued by the Federal Highway Administration (FHWA) in March 2003 to prepare an EIS on a proposal to construct SIU 14 of the National I-69 Corridor from I-20 near the town of Haughton in Bossier Parish, Louisiana to US Highway 82 near El Dorado in Union County, Arkansas. SIU 14 lies to the south of SIU 13. Currently, this project is in the highway alignment selection phase of study.
- The National I-69 Corridor – SIU 12. A NOI was issued in December 2000 by FHWA to prepare an Environmental Impact Statement on a proposal to construct SIU 12 of the National I-69 Corridor from US Highway 65 in Desha County, Arkansas to State Highway 1 in Bolivar County, Mississippi, including a crossing of the Mississippi River. A Record of Decision for this project was signed on June 24, 2004.
- Southeast Arkansas I-69 Connector – In October 2001 the Arkansas Highway and Transportation Department received approval from the Federal Highway Administration on the Selected Alignment for the construction of the I-69 Connector from I-530 at Pine Bluff to US Highway 278 between Monticello and Wilmar. Portions of this project are now under construction.
- Southeast Arkansas Feasibility Study – The US Army Corps of Engineers, the Arkansas Soil and Water Commission and the Boeuf-Tensas Regional Irrigation Water Distribution District is evaluating water resource needs throughout the 1.2 million acre Boeuf-Tensas Basin, which includes Bayou Bartholomew in the Project Area counties of Drew, Ashley, Chicot, and Desha Counties. This project is still in progress.

- Southeast Arkansas Regional Intermodal Facility – The Southeast Arkansas Regional Intermodal Facilities Authority was established in 1997 to create a regional intermodal industrial park within the Project Area. The facility will be located on the southern side of US Highway 278 near the Wilmar, Arkansas area. An environmental assessment was conducted for this project in April 2002 and resulted in the finding of no significant impact (FONSI). Acquisition of right-of-way for this project has been initiated and is on-going.

ENVIRONMENTAL COMMITMENTS

The AHTD and FHWA have consulted and coordinated with appropriate state and federal agencies and Native American Tribes, as well as the public regarding important project issues. Many issues have been resolved throughout the course of the preparation of the Draft and Final EISs by agreeing to the manner in which they will be treated or handled at a later date. The resolution of other issues cannot be completed until the project moves into the next phase of design, when additional information becomes available. The following list summarizes the agreements and commitments that have been reached.

- The AHTD, FHWA, Arkansas Historic Preservation Program, the Advisory Council on Historic Preservation, and the consulting Native American Tribes will develop and sign a memorandum of understanding prior to issuance of the Record of Decision (ROD) for completion of the Section 106 process with respect to the project's effect on cultural resources. A report detailing the results of the Phase I cultural resources survey will be submitted to the Arkansas Historic Preservation Program for review and concurrence.
- The AHTD will avoid wetland impacts to the extent practicable and efforts will be made to minimize unavoidable impacts during the design phase of this project. Mitigation for unavoidable wetland impacts will be provided by AHTD through coordination with the Corps of Engineers (COE) and other appropriate resource agencies. Final mitigation ratios and requirements will be determined after issuance of the Record of Decision.
- Following issuance of the ROD, AHTD will hold Design Public Hearings to receive public comments on the final design of the highway.

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Table S-1
IMPACT SUMMARY

Section	Alignment	Length (miles)	Construction Cost in (000s)	Right of Way/Utility Cost in (000s)	Structures			Cemeteries	Total Noise Impacts	Natural Resources						Cultural Resources			Known Hazardous Waste Sites
					Residences	Businesses	Churches / Community Facilities			Wetlands (acres)	Known Red-cockaded Woodpecker Habitat (acres)	100 Year Floodplains (acres)	Prime Farmlands (acres)	Statewide Farmlands (Acres)	Active Oil and Gas Wells	Recorded Archeology Sites	Recorded Historic Structures	Arch. High Probability Area (acres)	
1	Line 1	15.5	$ 108,671	$ 3,951	4	-	-	-	2	22	-	115	255	-	-	1 UN	-	49	-
	Line 2	15.7	$ 110,416	$ 3,797	1	-	-	-	3	26	-	104	261	-	1	-	-	45	-
	Line 3	15.3	$ 109,129	$ 3,980	4	-	-	-	4	28	-	96	178	-	-	-	-	84	-
	Line 4	15.3	$ 109,129	$ 3,980	4	-	-	-	4	28	-	96	178	-	-	-	-	84	-
	Preferred (Line 5)	15.2	$ 109,419	$ 3,543	1	-	-	-	2	28	-	109	160	-	-	-	-	86	-
2	Line 1	19.2	$ 164,425	$ 4,296	-	-	-	-	1	92	-	184	389	2	-	-	-	205	-
	Line 2	19.2	$ 165,804	$ 4,338	1	-	-	-	-	78	-	164	394	8	-	-	-	202	-
	Line 3	19.0	$ 167,183	$ 4,265	-	-	-	-	-	120	-	174	387	8	-	-	-	201	-
	Line 4	19.0	$ 167,183	$ 4,265	-	-	-	-	-	120	-	174	387	8	-	-	-	201	-
	Preferred (Line 5)	19.3	$ 165,269	$ 4,312	-	-	-	-	1	78	-	170	390	2	-	1 UN	-	199	-
3	Line 1	25.2	$ 163,574	$ 5,636	-	-	-	-	3	65	-	145	494	12	-	-	-	109	-
	Line 2	24.8	$ 163,621	$ 6,021	4	-	-	-	3	69	30	140	586	3	-	-	-	123	-
	Line 3	25.2	$ 166,164	$ 5,813	2	-	-	-	3	75	34	152	595	13	-	-	-	178	-
	Line 4	25.2	$ 166,164	$ 5,813	2	-	-	-	3	75	34	152	595	13	-	-	-	178	-
	Preferred (Line 5)	25.2	$ 163,965	$ 5,642	-	-	-	-	3	65	-	143	439	12	-	-	-	108	-
4	Line 1	18.2	$ 168,619	$ 5,416	8	-	-	-	2	149	-	260	452	57	-	2 NE	-	184	-
	Line 2	17.1	$ 150,863	$ 3,824	-	-	-	-	4	134	-	250	615	113	-	1 NE	-	207	-
	Line 3	18.4	$ 165,925	$ 4,985	4	-	-	-	11	103	-	236	377	50	-	2 NE	-	218	-
	Line 4	17.4	$ 148,457	$ 3,900	-	-	-	-	4	75	-	205	587	92	-	1 NE	-	198	-
	Preferred (Line 5)	17.4	$ 149,516	$ 3,904	-	-	-	-	4	75	-	204	589	91	-	1 NE	-	198	-
5	Line 1	22.3	$ 148,708	$ 5,338	4	-	-	-	7	22	-	152	547	73	-	1 UN	1*	87	-
	Line 2	26.1	$ 175,154	$ 7,045	10	-	-	-	6	23	-	193	662	175	-	1 UN	-	127	-
	Line 3	22.3	$ 148,196	$ 5,662	4	-	-	-	9	23	-	162	567	76	-	1 UN	1*	88	-
	Line 4	25.5	$ 171,500	$ 6,128	4	-	-	-	6	22	-	143	607	160	-	1 UN	-	97	-
	Preferred (Line 5)	25.6	$ 172,136	$ 6,159	4	-	-	-	5	23	-	151	621	154	-	1 UN	-	99	-
Totals	Line 1	100.4	$ 753,997	$ 24,637	16	-	-	-	15	350	-	856	2138	145	-	2 UN, 2 NE	1*	634	-
	Line 2	102.9	$ 765,858	$ 25,025	16	-	-	-	16	330	30	850	2517	299	1	1 UN, 1 NE	-	704	-
	Line 3	100.2	$ 756,597	$ 24,705	14	-	-	-	27	349	34	820	2104	146	-	1 UN, 2 NE	1*	769	-
	Line 4	102.4	$ 762,433	$ 24,086	10	-	-	-	17	320	34	769	2353	273	-	1 UN, 1 NE	-	759	-
	Preferred (Line 5)	102.7	$ 760,305	$ 23,560	5	-	-	-	15	270	-	778	2199	259	-	2 UN, 1 NE	-	690	-

Source: Michael Baker Jr., Inc.

NOTE: The No-Action alternative would result in environmental impacts associated as minor safety improvements and additional widening or passing lane projects are implemented within the Project Area, although the extent of these impacts is not known at this time.

*This structure is no longer standing.
UN = Undetermined status for eligibility for National Register of Historic Places, more work needed
NE - Archeology sites previoulsy surveyed and determined not eligible for nomination to the Nationl Register of Historic Places.

Section 1: PURPOSE AND NEED

1.1 PROJECT DESCRIPTION

The Arkansas State Highway and Transportation Department (AHTD), in cooperation with the Federal Highway Administration (FHWA), proposes to construct Section of Independent Utility (SIU) 13 of the proposed Interstate Highway 69 (I–69) from El Dorado, Arkansas to US Highway 65 near McGehee, Arkansas. This project, hereafter referred to as the SIU 13 Project, represents one section of the nationally designated I-69 Corridor that reaches from Port Huron, Michigan to the Texas/Mexico border (Exhibit 1-1). The proposed project would provide a divided four-lane fully controlled access facility located on new location. The SIU 13 Project Area encompasses all or portions of Columbia, Union, Ouachita, Calhoun, Bradley, Drew, Ashley, Chicot, and Desha Counties and is approximately 110 miles in length (Exhibit 1-2).

1.2 NATIONAL I-69 CORRIDOR

In the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the United States Congress designated certain highway corridors of national significance to be included in the National Highway System. Twenty-one "high priority corridors" were so designated mainly in regions that are not well served by the existing Interstate Highway System. The I-69 Corridor at that time was identified as Corridor 18 and only included the corridor between Indianapolis and Memphis. Congress has subsequently extended the limits of I-69 to now include a highway corridor from the Canadian border in Michigan to the Mexican border in the Lower Rio Grande Valley of Texas.

Since 1991, several planning studies have been undertaken to address a variety of issues associated with the Congressional designation for I-69. Planning process improvements within the I-69 Corridor have been deemed feasible with overall travel efficiency benefits outweighing the overall cost of constructing and maintaining the roadway. These studies also addressed special issues such as general locations of major river crossings, the development of a nationwide purpose and need, and divided the 1,600-mile I-69 Corridor into 32 Sections of Independent Utility.

1.2.1 I-69 Steering Committee

Following the passage of ISTEA, a Steering Committee was formed with members representing the eight states along the corridor. The member states are Texas, Louisiana, Arkansas, Mississippi, Tennessee, Kentucky, Indiana, and Michigan. Each state department of transportation and the FHWA are represented on the Steering Committee. Initially, the Steering Committee was referred to as the Corridor 18 Steering Committee but was renamed the I-69 Steering Committee following the

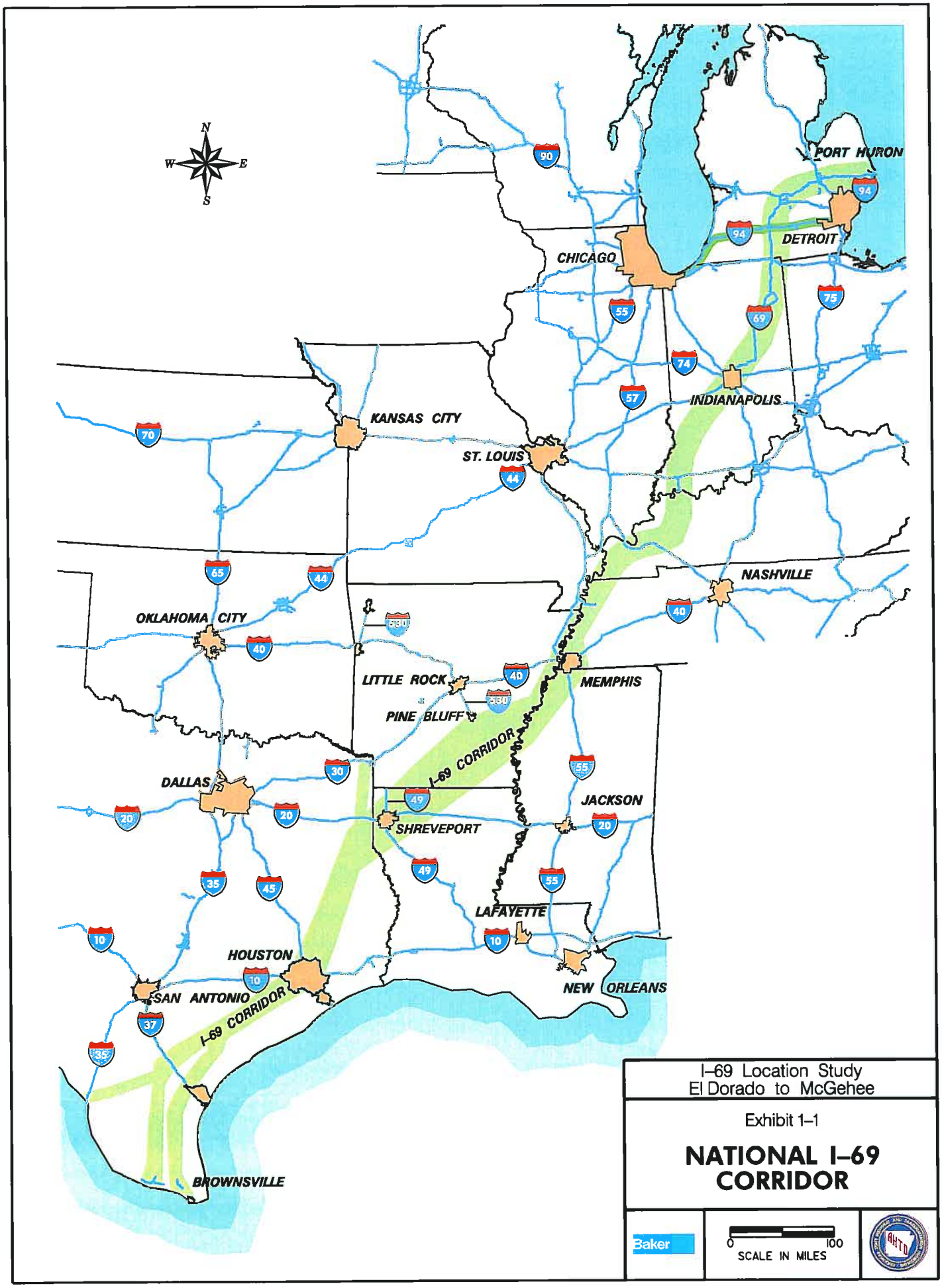
passage of the Transportation Equity Act for the 21st Century (TEA-21), which officially changed the corridor designation from Corridor 18 to I-69. AHTD is the administrative agency acting on behalf of the I-69 Steering Committee.

In recognition of the important role that I-69 can play, the Steering Committee adopted the following statement of overall purpose for the I-69 Corridor:

"To improve international and interstate trade in accordance with national and state goals; to facilitate economic development in accordance with state, regional and local policies and plans; and to improve surface transportation consistent with national, state, regional and local needs and with the Congressional designation of the corridor."

Based on the nationwide purpose established for the I-69 Corridor, the I-69 Steering Committee also identified seven goals that include:

- Improving international and interstate movement of freight and people by ensuring a safe transportation system that is accessible, integrated, and efficient while offering flexibility of transportation choices in mid-America.
- Enhancing the regional and local transportation systems by providing transportation capacity to meet current and future needs.
- Facilitating economic development and enhancing economic growth opportunities domestically and internationally through efficient and flexible transportation with particular emphasis being given to economic growth in the Lower Mississippi Delta region.
- Facilitating connections to intermodal facilities and major ports along the corridor.
- Facilitating the safe and efficient movement of persons and goods by fostering a reduction in incident risk.
- Upgrading existing facilities to be utilized as I-69 within the corridor to design standards suitable for an Interstate highway and commensurate with the projected demand.
- Directly connecting the urban areas named by Congress (the "named cities" of Indianapolis, Evansville, Memphis, Shreveport/Bossier City, and Houston and the Lower Rio Grande Valley) with an Interstate highway connection.



I–69 Location Study
El Dorado to McGehee

Exhibit 1–1

NATIONAL I–69 CORRIDOR

Baker

0 100
SCALE IN MILES

Project Area

Kingsland
Thornton
Bearden
Chidester
Ouachita
Calhoun
Tinsman
Rye
Lake Monticello
Wilmar
Monticello
Warren
Banks
Bradley
East Camden
Camden
Hampton
Harrell
Sumpter
Hermitage
Jersey
Green Hill
New Hope
Drew
Lacey
Fountain Hill
Selma
Bayou Bartholomew
Cut-off Creek
Seven Devils Swamp
Desha
McGehee
Dermott
Collins
Cut-Off Creek Wildlife Management Area
Saline River
Ouachita River
Stephens
Louann
Smackover
Norphlet
Calion
H.K. Thatcher Lock and Dam
Moro Bay State Park
Ingalls
Johnsville
Lisbon
El Dorado
Lake Georgia Pacific
Felsenthal National Wildlife Refuge
Hamburg
Montrose
Portland
Chicot
Ashley
Parkdale
Overflow National Wildlife Refuge
Newell
Hillsboro
Strong
Union
Crossett
Lake Jack Lee
Felsenthal Lock and Dam
Huttig
Felsenthal
Junction City
Arkansas
Louisiana

35 11 65 8 167 274 63 133 83 293 277 138 1 278 7 79 9 172 425 165 160 376 15 82 63 275

N S E

I-69 Location Study
El Dorado to McGehee

Exhibit 1-2

PROJECT AREA

Baker

SCALE IN MILES 0 1 2 3 4 5

1.2.2 Legislative History

The I-69 Corridor has been supported by Congressional mandates since 1991. It was first approved as a high priority corridor from Indianapolis to Memphis in the 1991 ISTEA legislation. In 1993, it was further amended by Congress to extend from Memphis to Houston. The National Highway System Designation Act of 1995 further extended the corridor from Houston to include the Lower Rio Grande Valley of Texas. TEA-21, signed into law on June 9, 1998 redefined Corridor 18 and officially designated it as Interstate 69.

TEA-21 provided several additional stipulations for the I-69 Corridor that:

- Included the existing I-69 section from Indianapolis north to the Port Huron, Michigan border crossing with Canada.
- Included existing I-94 from Port Huron, Michigan through Detroit (including the Ambassador Bridge interchange) to Chicago, Illinois.
- Included the High Priority Corridor from Laredo, Texas, northeast to Texarkana via Houston.
- Required the corridor to follow the "alignment" generally identified in the Special Issues Study in Indiana, Kentucky, Tennessee, Mississippi, Arkansas, Louisiana, and Texas.
- Provided for a connection from Pine Bluff, Arkansas to the corridor identified in the Special Issues Study near Monticello, Arkansas.
- Included connections to four ports of entry on the Mexican border in the Lower Rio Grande Valley.
- Included a connection to Laredo, Texas following US Highway 59 from the Mexican border to Victoria, Texas.
- Included a connection to McAllen, Texas following US Highway 281 from the Mexican border to US Highway 59, then following US Highway 59 to Victoria, Texas.
- US Highway 71 from the Mexican border near Brownsville, Texas to US Highway 59, then following US Highway 59 to Victoria, Texas.
- Included a connection from US Highway 77 along FM 511 to the Port of Brownsville in Texas.

1.2.3 Previous Studies

Several planning studies have been completed in the years since I-69 was officially designated in ISTEA. Two feasibility studies (Corridor 18 and Corridor 20) were completed in 1995 and 1996

respectively. Both feasibility studies confirmed that the corridor was a feasible transportation improvement and a prudent expenditure of public funds. In 1997, a Special Issues Study was completed that addressed unresolved issues from the previous studies. Those issues included logical locations for major river crossings and ensured the I-69 Corridor was still feasible if extended to the Lower Rio Grande Valley.

In 1999, the Special Environmental Study was initiated to facilitate the Corridor's transition into the FHWA National Environmental Policy Act (NEPA) process. The Special Environmental Study:

- Provided a nationwide Purpose and Need for the project, including updates to the national traffic demand forecasts for both vehicles and freight.
- Divided the 1,600-mile corridor into 32 Sections of Independent Utility (SIU) that could be carried forward through the NEPA process.
- Determined that I-69 should be an Interstate highway project, but should also consider relationships with other modal options.

In addition to these Steering Committee sponsored studies, several states had already undertaken or are currently undertaking studies to address transportation needs in the I-69 Corridor. These studies include the Southwest Indiana Highway Corridor, the Mississippi State Highway 304 Corridor, the Great River Bridge crossing of the Mississippi River, the US 59 Corridor Master Plan from Diboll, Texas, to Garrison, Texas, and the I-69 Route Feasibility Study in the Houston, Texas metropolitan area.

1.2.4 Need for a National I-69 Corridor

Previous feasibility studies completed for the I-69 Corridor have demonstrated that extending I-69 from Indianapolis, Indiana, through Memphis, Tennessee, Bossier City, Louisiana, and Houston, Texas to the Mexican border in the Lower Rio Grande Valley would be a feasible project. The anticipated dollar savings to the traveling public, combined with the potential for economic growth in the region, exceeds the cost to develop the facility by a significant margin.

Through work completed during the previous studies, the Steering Committee recognized that there were three primary needs that completion of I-69 would address. These include:

- More efficient movement of goods, primarily by truck, within the continental United States.
- Improvement of economic development opportunities in the traditionally depressed Mississippi Delta and Lower Rio Grande Valley regions.

- Improvement of transportation linkages in areas of the United States overlooked in the original Interstate system.

Movement of Goods

Both domestic and international freight flow within the United States have increased dramatically over the last ten years. A recent commodity flow survey (USDOT 1999) estimated that between 1993 and 1997, the total freight tonnage shipped in the United States increased by over 14 percent and the total increase in value of that cargo over the same period increased by almost 19 percent, which equates to between a three and five percent increase in goods movement per year. The commodity flow survey also indicated that truck shipments accounted for nearly 70 percent of the 11 billion freight tons shipped in 1997. The significant increase in both domestic and international freight flow within the United States has been attributed to the implementation of the 1993 North American Free Trade Agreement between Canada, the United States, and Mexico, the increased reliance on businesses for "just-in-time" delivery of goods, and the advent of the "global economy."

A study recently completed by the FHWA suggests that the recent growth in freight traffic will continue through the year 2020. The study estimates that total domestic freight traffic will increase by approximately 87 percent over the next twenty years and that international trade will increase by over 107 percent. The vast majority of the new growth will be in the trucking industry with trucks expected to handle 68 percent of the increased tonnage, 82 percent of the increased value, and 62 percent of the increased ton-miles (USDOT 2000).

Transportation decision-makers are faced with the growing problem of how to address the problems of congestion, safety, and travel efficiency created by the expected influx in goods, while at the same time facilitating the economic prosperity enjoyed over the last decade within the fiscal and environmental constraints of adding capacity to the nation's infrastructure. I-69 has been identified as a potential partial solution to that expected dilemma.

Information provided in the 1999 Commodity Flow Survey (USDOT, 1999) identified the following regarding the I-69 Corridor:

- Over 5 billion tons of freight passed through, originating from or terminating in the I-69 Corridor states, representing approximately one half of the total freight shipped in the United States in 1997.
- The vast majority of the shipments in the I-69 Corridor were local in nature (72 percent), while over 21 percent had either an origin or a destination within the corridor and the

remaining 70 percent were comprised of through movements.

- Over 90 percent of the domestic freight shipped to or from the states within the I-69 Corridor was moved by truck - representing approximately 3.5 billion tons.

A number of the most heavily traveled truck corridors that parallel the I-69 Corridor are expecting significant increases in truck traffic over the course of the next twenty years. The existing truck percentages along those routes currently range from 20 to 40 percent and those percentages are expected to continue to rise.

The majority of the expected growth in truck shipments will continue to be in the central, eastern and southern United States, with a dominant movement in the southwest to northeast direction, a movement ideally suited for the I-69 Corridor.

A large portion of the international freight originating in or destined to Canada is expected to move along routes generally parallel to I-69. Similar freight flows exist between the US and Mexico. A large volume of freight to and from Mexico is expected to be diverted to the I-69 Corridor from South Texas to Memphis, TN.

Additional demand for truck traffic will be generated from international, particularly Latin American, trade. A portion of the trade passing through Gulf of Mexico ports would likely utilize the new I-69 Corridor.

The recent increase in freight shipments coupled with the significant growth in automobile traffic is taxing the existing highway system. These trends have resulted in increased traffic congestion in both urban and rural areas of the corridor and decreased safety for the traveling public. If these trends are left unchecked, the effects could negatively impact the freight community and the US economy, as a whole.

The implications of this increased congestion could potentially include:

- Reductions in productivity and increased transportation costs.
- Reduced ability to efficiently transport raw materials for production and finished products to market resulting in higher overhead costs and reduced profits.
- Reduced ability to attract and retain industry in the central part of the United States.

Providing alternative routes such as I-69 would assist in alleviating congestion on the existing highways, as well as provide alternative, more direct routes for transporting freight. The existing travel demand model developed for the original feasibility study, coupled with freight origin/destination data, was used to estimate the likelihood that a new interstate facility would divert

freight movements to the I-69 Corridor. The anticipated daily volume of trucks utilizing the I-69 Corridor in the year 2030 are approximately 18,000 south of Houston, Texas, 7,000 between Houston, Texas and Memphis, Tennessee, and 9,000 between Memphis, Tennessee and Indianapolis, Indiana.

Economic Development

A large portion of the I-69 Corridor, especially in the Mississippi Delta and Lower Rio Grande Valley, has historically had limited access to economic development opportunities. These regions exhibit poverty rates well above and median income levels well below the national average. With improved competitive position resulting from reduced transportation costs, enhanced reliability for the delivery of goods, and improved access to the employment base, I-69 could be instrumental in enabling communities to attract significantly more economic production activity. The original feasibility study estimated that improving only the section of I-69 between Houston, Texas and Indianapolis, Indiana could result in over 27,000 new jobs and $11 billion in additional wages.

Mississippi Delta Initiative

In 1988, a bipartisan commission of federal legislators created the Lower Mississippi Delta Development Commission to investigate opportunities to provide economic and social opportunities for 219 counties/parishes in Louisiana, Mississippi, Arkansas, Tennessee, Missouri, Kentucky, and Illinois (see Exhibit 1-3). Historically, the Mississippi Delta region has experienced economic hardships well above the national average. In the Delta region, poverty rates remain over 175 percent higher than the national average, over half of the counties have had poverty rates greater than 20 percent for the past four decades, and the per capita income in the region is only 53 percent of the national average.

Since 1998, a variety of initiatives have been promoted to make advances in many areas of transportation, housing, environmental protection, economic development, health care, education, and other issues vital to the region.

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. This new interstate corridor provides improved access to markets on both sides of the Mississippi River, reduces transportation costs for local businesses, provides an incentive for new businesses to locate in the region, and enables travelers and tourists to travel through the region, resulting in additional roadside expenditures.

Lower Rio Grande Valley

The Lower Rio Grande Valley has experienced a similar history of above average poverty rates and below average median income levels. Counties in the Lower Rio Grande Valley have median household incomes that range from 40 to 60 percent of the national average (see Exhibit 1-4) and county poverty rates that range from 160 percent to over five times the national average.

System Linkage

Development of the proposed I-69 Corridor would provide a continuous roadway link designed to Interstate highway standards from the Mexican border in Texas to the Canadian border in Michigan, a length of more than 1,600 miles. An improved I-69 would provide the following system linkage benefits:

- Currently, no direct Interstate highway type facility exists between the major population centers named in the Congressional legislation, including Indianapolis, Indiana; Memphis, Tennessee; Shreveport, Louisiana; and Houston, Texas. In total, I-69 would connect 10 urban areas with populations in excess of 50,000.

- Several small to medium sized urban areas in the I-69 Corridor do not currently have direct access to the Interstate Highway System. Those communities include Bloomington, Indiana; Millington, Tennessee; Clarksdale, Mississippi; Monticello and El Dorado, Arkansas; as well as Nacogdoches, Lufkin, Victoria, Harlingen, McAllen, Brownsville, and Pharr, Texas.

- An improved I-69 in the urban areas would provide a means of upgrading travel efficiencies on already overburdened freeways, provide an improved connection to important transportation corridors and radial freeways, and provide an improved connection to modal and multi-modal terminals in proximity to I-69.

- I-69 would provide improved crossings of both the Mississippi and Ohio Rivers. Improved major river crossings would provide improved economic development opportunities as well as additional river crossings in times of flooding or national emergencies, such as the potential earthquake along the New Madrid fault.

An improved I-69 would also provide improved connections to alternative border crossing locations in Mexico, especially in the Brownsville and McAllen, Texas areas of the Lower Rio Grande Valley.



I-69 Location Study
El Dorado to McGehee

Exhibit 1-3

MISSISSIPPI DELTA INITIATIVE TARGET COUNTIES

Baker NOT TO SCALE

1.2.5 Sections of Independent Utility

The I-69 Corridor consists of an extension of existing I-69 from Port Huron, Michigan to the Texas/Mexico border. With a total length of over 1,600 miles, the additional sections of I-69 will require many years to complete. This length precludes development of the full corridor as a single construction project and precludes an environmental analysis of the entire corridor. Furthermore, the work to be undertaken varies along the route from widening, reconstruction, and relocation of existing roadways to development of an entirely new highway on new location.

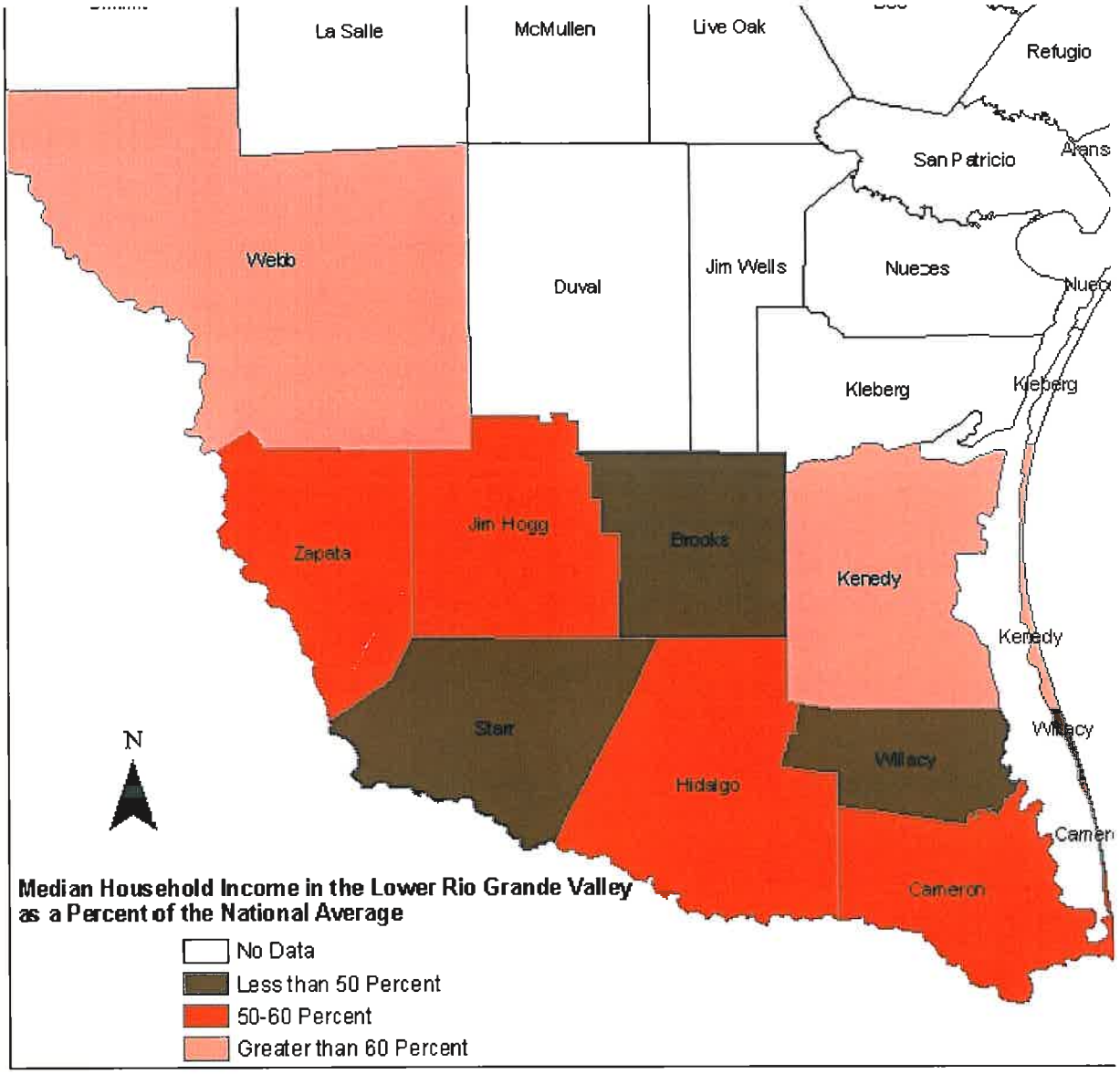
The practical approach was to undertake a series of projects that all fit into and are consistent with the overall purpose and need for I-69. In order to approach this in a realistic manner, the entire corridor was divided into viable sections, each of which could be constructed in a reasonable time frame by the state or states involved if adequate funding were to become available. Each of these sections is referred to as a Section of Independent Utility (SIU).

A given SIU may be in place for several years before an adjacent section is completed and open to traffic, hence the concept of having independent utility. The process of defining these SIUs involves identifying or framing a highway project that meets a number of principles and criteria.

FHWA Guidance

The FHWA memorandum dated November 5, 1993 provides information to guide the establishment of logical termini for a proposed project (or action). It refers to concepts and objectives contained in existing regulations. Three general principles are outlined in the FHWA regulations in 23 CFR 771.111(f) that are to be used to frame or define a highway project. In order to ensure meaningful evaluation of alternatives and to avoid commitments to related transportation improvements before they are fully evaluated, each SIU should:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope.
- Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made.
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.



I-69 Location Study
El Dorado to McGehee

Exhibit 1-4

LOWER RIO GRANDE VALLEY MEDIAN HOUSEHOLD INCOME

Baker | NOT TO SCALE

Additional Criteria for I-69

For the purposes of the I-69 Corridor, the FHWA guidelines have been expanded upon to establish criteria for evaluating the SIUs. The following is the list of criteria that was used to determine the termini for each SIU within the I-69 Corridor. Congress bases this on the premise that I-69 is to be an Interstate highway in accordance with the mandate. Each SIU should:

- Begin at an Interstate Highway, US or State numbered route (including toll roads) that have regional connectivity, at a NHS intermodal facility, or at an international border.
- Be within the adopted I-69 Representative Corridor.
- Maintain the integrity of the full I-69 Corridor alignment.
- Permit the SIU to make a connection with the crossing Interstate highway, US or State-numbered route, or major local facility at or within a limited distance from the terminus.
- Form one terminus for each adjacent SIU of I-69.
- Not force acceptance of significantly adverse environmental impacts that could be avoided while still remaining within the adopted limits of the I-69 Corridor.
- Be established giving consideration to political boundaries and jurisdictions.
- Have a construction cost estimate that is manageable for the specific state(s) so that the project can be let to contract over a reasonable time frame.
- Be independently useful, serving the I-69 or regional Purpose and Need that would complement I-69, even if other sections of I-69 are never constructed.
- Permit alternatives that provide immediate relief to nearby facilities and serve traffic generators without long-term, negative traffic complications if a decision were made not to extend I-69.
- Not limit nor restrict consideration (in separate studies) of alternatives for other reasonably foreseeable transportation improvements (e.g. committed facilities in the vicinity of the I-69 Corridor as well as other facilities on an officially adopted long-range plan).
- Be set giving consideration to other foreseeable transportation improvements.
- Be at a location that does not force a particular alternative action upon previously adopted improvements along or near the SIU.

1.2.6 I-69 Sections of Independent Utility

The application of these criteria to the I-69 Corridor resulted in 26 SIUs established within the I-69 Corridor. An additional six SIUs, for a total of 32, were added for roadways that connect to the I-69 Corridor, referred to as "I-69 Connectors." The final SIUs resulted from discussions with each state department of transportation. They form a continuous route from the Michigan/Canada border to the Texas/Mexico border. Each SIU (Exhibit 1-5) has a common terminus with adjacent SIUs and are listed in Table 1-1.

I-69 Connectors

As detailed in the current definition of I-69 in the TEA-21 legislation, a number of connecting routes are included as part of the I-69 Corridor. These additional connections are separate SIUs and are listed in Table 1-1.

Although Congress designated the I-69 Corridor as an Interstate highway, the FHWA NEPA process requires consideration of other transportation modes and alternatives to determine if they potentially could meet the identified purpose and need for the corridor. As a part of the I-69 Corridor Special Environmental Study, a modal analysis was performed to assess the potential of each mode to satisfy the overall purpose of the I-69 Corridor. Based upon a review of the characteristics of each modal alternative and the way in which they currently provide services in the corridor, all are essential to meet the diverse and complicated pattern of freight movements and personal travel in the I-69 Corridor. Together, the various transportation modes form an intermodal transportation system that provides important opportunities for travel choices so that the particular needs of specific movements can generally be met. Nevertheless, it was concluded that an Interstate highway in the I-69 Corridor is uniquely suited to address the national needs of domestic and international freight movement, economic development, and system continuity.

This is consistent with the Congressional designation of the I-69 Corridor as an Interstate highway. Unlike the relatively limited spectrum of travel needs that would be served by the other modal alternatives, an Interstate highway facility would be responsive to a wide range of needs on a local, regional, national, and international basis.

Table 1-1
SECTIONS OF INDEPENDENT UTILITY FOR THE I-69 CORRIDOR

SIU	Description	Remarks
1	Michigan/Canada Border (at Port Huron, MI) to Indianapolis, IN	SIU covers the existing portion of I-69 from Port Huron, Michigan at the US/Canada border to Indianapolis, Indiana.
2	Indianapolis Urban Area	SIU provides for the extension of I-69 from the northeast side of the city of Indianapolis to the I-465 loop on the southwest side of the area. It is located completely within the Indianapolis metropolitan area.
3	Indianapolis, IN to Evansville, IN	SIU connects from I-465S in the Indianapolis metropolitan area to I-64 north of Evansville and passes through rural southwestern Indiana. The southern terminus is at the I-64/I-164 interchange north of Evansville.
4	Evansville Urban Area and Ohio River Crossing	SIU begins north of Evansville at the I-64/I-164 interchange and proceeds southerly to cross the Ohio River in the Evansville metropolitan area. The southern terminus would be near Henderson, KY at the Pennyrile Parkway interchange with SH 425.
5	Henderson, KY to Eddyville, KY	The termini of this SIU were selected to permit consideration of alternative alignments south of Henderson while connecting with I-24 near the end of the Western Kentucky Parkway or Wendell H. Ford Parkway, as the Kentucky General Assembly renamed it in 1998. Options include 1) use and potential improvement of the Pennyrile Parkway and the Wendell H. Ford/Western Kentucky Parkway to I-24 near the Tennessee River and the Land Between-the-Lakes and 2) a more direct route on new location through western Kentucky.
6	Eddyville, KY to Fulton, KY	SIU covers the remainder of the I-69 corridor under consideration in Kentucky proceeding from the I-24/Wendell H Ford (Western Kentucky) Park-way to the US 51/Purchase Parkway interchange near Fulton, Kentucky at the Kentucky/Tennessee state line. The route follows I-24 in the vicinity of the Land Between-the-Lakes, a sensitive environmental area, and then proceeds southwesterly along the Purchase Parkway.
7	Fulton, KY to Dyersburg, TN	SIU utilizes US 51 from the Purchase Parkway to the I-155 spur that crosses the Mississippi River at Dyersburg, TN. The SIU is made up of three major "segments": 1) the upgrade of the US 51/Purchase Parkway (US 51 Bypass) Interchange in South Fulton, TN, 2) the upgrade of the route (US 51 Corridor) from north of Union City, TN, to south of Troy, TN (this study section may include multiple location alternatives), and 3) the existing freeway section from south of Troy, TN to the US 51/I-155 Interchange at Dyersburg, TN.
8	I-155 to Millington, TN, north of Memphis	SIU involves the upgrade and relocation of US 51 from the vicinity of Dyersburg to the Paul Barret Parkway south of Millington. This 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.
9	Memphis Urban Area	SIU would extend from Millington on US 51 north of Memphis to I-55 south of Memphis at Mississippi SH 304. This permits evaluation of the routing of I-69 through the Memphis area along a variety of different routes.

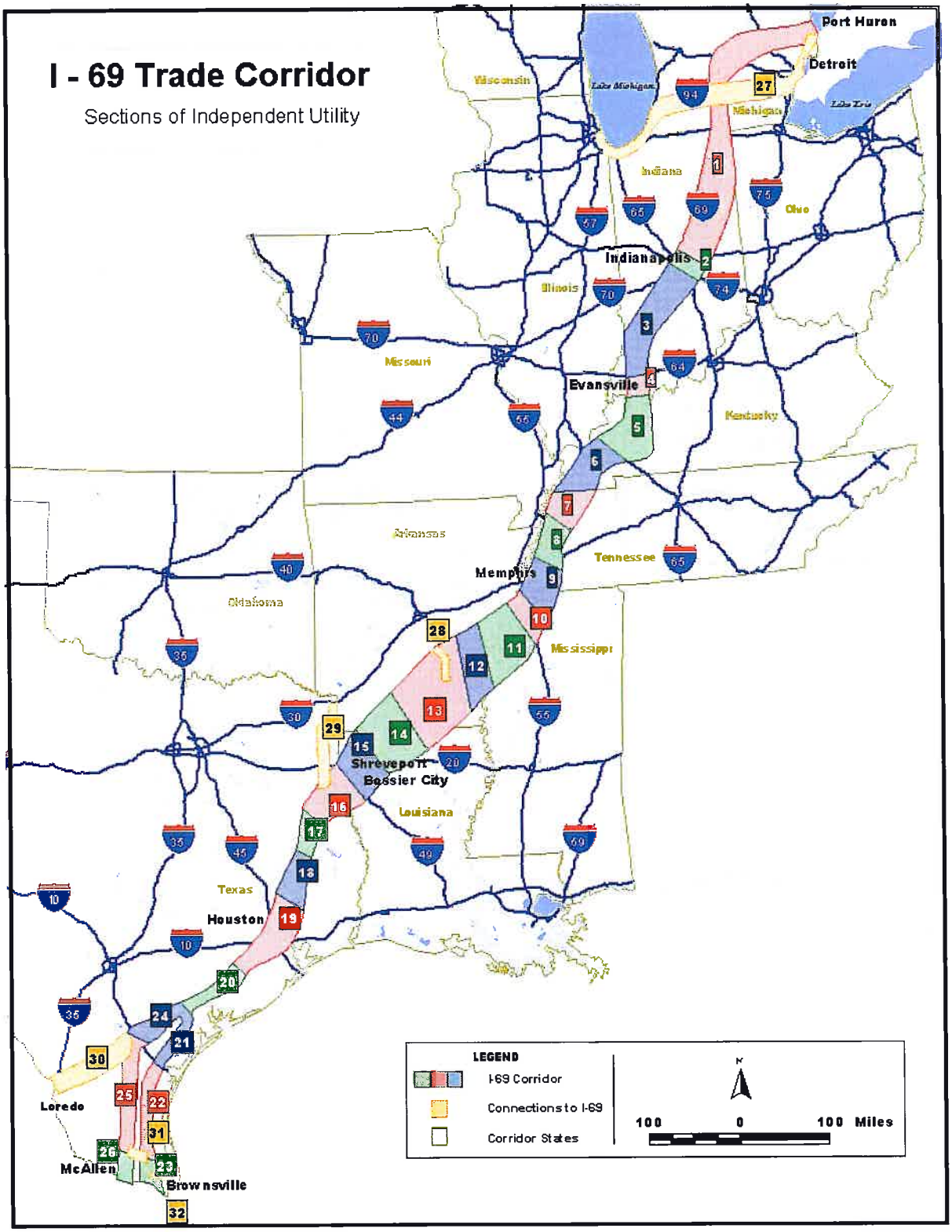
Table 1-1
SECTIONS OF INDEPENDENT UTILITY FOR THE I-69 CORRIDOR

SIU	Description	Remarks
10	MS 304 Corridor	SIU covers a segment of Mississippi State Highway 304 that is currently under development by the Mississippi DOT connecting I-55 to US 61 in northern Mississippi.
11	Mississippi Alignment	SIU connects two SIU that are currently being developed. The MS 304 Corridor and the current study of a new Mississippi River bridge are current projects. This SIU would extend from the US 61/MS 304 Interchange to the Mississippi Route 1 near Rosedale, MS.
12	Mississippi River Crossing	SIU coincides with the corridor locations being studied as a part of the Great River Bridge environmental studies to determine a new crossing of the Mississippi River near Rosedale, MS.
13	**US 65 to El Dorado, AR**	**SIU extends on new alignment from the terminus of the previous Mississippi River Crossing corridor to US 82 in the vicinity of El Dorado, Arkansas. This provides new system connectivity in southern Arkansas.**
14	El Dorado, AR to Shreveport, LA	SIU continues I-69 on a new location to a terminus on I-20 east of Bossier City. A previously identified location for this connection at I-20 was the interchange of LA 157 and I-20 at Haughton, LA.
15	Shreveport/Bossier City Urban Area	SIU provides for determination of the routing in this urban area and extends from I-20 on the east side to US 171 in southwestern Shreveport near Stonewall, LA. The general corridor resulting from the Special Issues Study adopted an alignment around the southeastern portion of the urban area based upon the 1992 study, Interstate 69 and Inner Loop Expansion: Compatibility Report.
16	Louisiana/Texas Alignment	SIU provides for the determination of the routing from the Shreveport/Bossier City area to the northeastern terminus for a current study of I-69 in the Nacogdoches, Texas area. The analyses would include determining the location for I-69 at the Texas/Louisiana border and near Carthage and Tenaha, Texas.
17	Lufkin/Nacogdoches, Texas	SIU involves the existing study area in the US 59 Master Plan that includes alignment alternatives for US 59 from north of Nacogdoches to north of Diboll, Texas. This section corresponds to the locations along US 59 being studied by the Texas Department of Transportation in this area.
18	Eastern Texas	SIU takes I-69 from the southern terminus of an existing study at its connection to existing US 59 at Diboll to the north end of the Cleveland Relief Route for US 59. The southern terminus is the beginning of the section of existing US 59 that has full access control. This is near the northern limits of the Houston metropolitan area.
19	Houston Urban Area	SIU provides for the determination of the routing of I-69 across the Houston metropolitan area. The northern terminus of this SIU is the north end of the US 59 Cleveland Relief Route. The southern terminus would be at the connection of US 59 South with TX 60 near Hungerford. The northern limit for this SIU established at Cleveland permits full consideration of upgrades and/or relocation of US59/I-69 entering the Houston area, as well as the connection between US 59/I-69 and the Grand Parkway (North). It incorporates the study limits of current work on Route Feasibility Study for I-69.

Table 1-1
SECTIONS OF INDEPENDENT UTILITY FOR THE I-69 CORRIDOR

SIU	Description	Remarks
20	Houston (Richmond, Texas) to Victoria, Texas	The northern terminus of this SIU is the connection of US 59 South with Texas Highway 60. This SIU provides for the determination of the upgrade of US 59 from the Houston area to the Victoria area. At Victoria, there is a need to determine the urban routing for I-69 with a connection to US 77 for extension towards I-37 near Corpus Christi as well as the routing along existing US 59 to George West. The southern terminus would be at the junction of US 77 with Route 175, a limited access facility extending from US 59 to the southern sector of Victoria, TX to connect with US 77.
21	Victoria, TX to Corpus Christi, TX	SIU permits analysis of the northern portion of the US 77 alignment for I-69 from Victoria to the Lower Rio Grande Valley. The southern terminus at I-37, northwest of Corpus Christi permits separate evaluations of connections and alternatives to Corpus Christi.
22	Corpus Christi, TX to Raymondville, TX	SIU extends I-69 using the US 77 Corridor to a potential connection over to the US 281 Corridor near Raymondville.
23	Raymondville, TX to Texas/Mexico Border	SIU extends along US 77 to the border by way of Harlingen. It permits evaluation of options in the Harlingen/ Brownsville, Texas, and Matamoros urban complex including the border crossing. This also connects with the separate corridor along FM 511 to the Port of Brownsville.
24	Victoria, TX to George West, TX	SIU encompasses possible routings of I-69 from Victoria, Texas southwest along the existing US 59 corridor to the vicinity of George West, Texas at US 281.
25	George West, TX to Edinburg, TX	SIU provides for the evaluation of upgrades to US 281 from the vicinity of US 59 (and connections to I-37) to TX 186 at Edinburg, Texas, with a potential connection to the Raymondville area.
26	Edinburg to Texas/Mexico Border	SIU permits evaluation of all alternatives to connect from the I-69/TX 186 terminus to the Texas/Mexico border near Reynosa
27	I-94 Connector	SIU follows existing I-94 between Port Huron, MI, the Detroit metropolitan area and the Chicago metropolitan area.
28	Southeast Arkansas I-69 Connector	SIU links Pine Bluff, Arkansas to I-69 near Monticello, Arkansas. This section corresponds to the routes along US 65 and US 425 being studied by AHTD in this area.
29	US 59/US 259 Texarkana Connector	SIU is a connection from I-30/US 59 in Texarkana to I-69/US 59 in the vicinity of Nacogdoches, Texas. This SIU corresponds to the northernmost segment of Corridor 20.
30	US 59 Laredo Connector	SIU is a link from I-35/US 59 in Laredo to I-69/US 281 in the vicinity of George West, Texas. This SIU corresponds to the southernmost segment of Corridor 20.
31	US 77/US 281 Lower Rio Grande Valley Connector	SIU is a connection from I-69/US 281 near Edinburg, Texas to I-69/US 77 near Raymondville, Texas
32	FM 511 Connector	SIU is located in the Lower Rio Grande Valley connecting from US 77 near Olmito, Texas to the Port of Brownsville.

Source: FHWA 2002, Michael Baker Jr., Inc.



I-69 Location Study
El Dorado to McGehee

Exhibit 1-5

I-69 TRADE CORRIDOR SECTIONS OF INDEPENDENT UTILITY

Baker

NOT TO SCALE

1.2.7 Project Limits and Logical Termini

The portion of I-69 between El Dorado and McGehee, Arkansas has been identified as SIU 13. The project limits are defined in the Corridor 18 Special Issues Study (1997) and in the I-69 (Corridor 18) Special Environmental Study, Task C Report - Sections of Independent Utility SIU report (1999). The eastern and western limits of the proposed project extend as necessary to connect to the existing highway system in Arkansas. This SIU has independent utility in that it connects the Great River Bridge at US Highway 65 north of McGehee, Arkansas with a regional route (US Highway 82) west of El Dorado, Arkansas as specified in the Task C Report. US Highway 65 north of McGehee and US Highway 82 west of El Dorado serve as the logical termini for the SIU 13 Project.

1.2.8 Legislation

I-69 was first designated as a High Priority Corridor as the result of the 1991 ISTEA legislation and subsequently amended twice to provide a transportation corridor from the Canadian border in Michigan to the Texas/Mexico border in the Lower Rio Grande Valley in Texas. Other legislation indirectly related to the proposed project is the North American Free Trade Agreement (NAFTA) enacted in 1994. Import and export that would result as a part of the agreement are expected to generate additional freight flow between Mexico, the United States, and Canada along several trade corridors. North-south traffic demand is expected to result and some of this increase will be accommodated by I-69.

1.3 PROJECT NEED

The need for the completion of this section of the National I-69 Corridor, SIU 13, was examined through:

- Identification of functional deficiencies in the project area roadway network
- Review of the area interstate system
- Identification of area economic development needs
- Identification of area social needs
- Review of area intermodal facilities
- Review of area recreation opportunities
- Local community involvement.

1.3.1 Traffic Analysis

A traffic analysis was performed to evaluate existing and future traffic conditions within the project area and assess the potential impacts of the proposed I-69 Project on the area transportation network.

Traffic Forecast and Capacity Analysis

Traffic volumes were evaluated for existing conditions (Year 2000), estimated future conditions without the new highway (Year 2030 No-Action),

and estimated future conditions with the proposed highway (Year 2030 Build Alternative). In addition, the traffic analysis evaluated and verified the serviceability of the proposed highway in the design year 2030. Traffic forecasts were based on 2000 AHTD annual average daily traffic (AADT) estimates. Growth rates derived from historical growth trends were used to predict year 2030 traffic volumes. Future roadway conditions were predicted that included the proposed I-69 Project for year 2030. Diverted traffic and induced travel within the project area and to the proposed highway were estimated using methods outlined in Moskowitz (1956) and Noland (1999).

A capacity analysis was conducted to determine the Level of Service (LOS) for US and state highways within the project area (Transportation Research Board 2000). The LOS qualitatively measures traffic operating conditions through a consideration of speed, safety, convenience, travel time, driving comfort, maneuverability, traffic interruptions, and travel costs. Level of service is defined in categories from A to F. Level of service A represents the highest quality of service with free flowing traffic conditions, while LOS F represents heavy congestion or traffic breakdown conditions. AHTD designs highways to operate at LOS B in rural areas and LOS C in urban areas, where possible. Complete definitions of the LOS ratings are provided in the Appendix.

Within the Project Area, the roadway network was divided into 150 roadway links to facilitate the traffic analysis. A review of the Year 2000 traffic conditions found that system wide, all roadway links operated at LOS D or above, with a majority of links operating at LOS A (33 percent) and LOS C (35 percent) (Table 1-2). Ten roadway links were found to operate at LOS D during peak periods; five in El Dorado associated with US 82B, US 167, and S.H. 7B; one in Warren associated with US Highway 63B, two in Monticello associated with US Highway 278; and two south of Monticello on US Highway 425.

Table 1-2
PROJECT AREA LEVEL OF SERVICE (LOS)

LOS Results	2000 Existing Peak % of Roadway Links	2030 No-Build Peak % of Roadway Links
A	33	22
B	25	20
C	35	24
D	**7**	**31**
E	**0**	**3**

Source; Michael Baker Jr., Inc.

By the year 2030 without the proposed I-69 Project, the increased traffic volumes projected to occur would result in an overall LOS degradation for the project area roadway network. Roadway links operating at LOS A, B, and C would decrease. Links operating at LOS D would increase by nearly 25 percent. Four roadway links are projected to operate at LOS E, two in Monticello and two near McGehee. The majority of

LOS D links are within or near the communities of El Dorado, Warren, and Monticello.

The SIU 13 Project (2030 Build Alternative) would provide additional roadway capacity in the Project Area and would result in a general increase in system wide performance when compared to the No-Build Alternative. Interstate 69 would assist in diverting traffic volumes off the surrounding roadways resulting in the majority of links operating at LOS C or better. Areas of poor performance would still exist in El Dorado and Monticello, as I-69 would not improve community specific traffic issues. Section 2 provides a more detailed discussion of the 2030 Build Alternatives effect on Project Area LOS.

1.3.2 Interstate System Linkage

In 1956, the Interstate Highway System was authorized with the goal of linking together the nation's major urban areas. Within the south-central United States, the Interstate system provides both east-west and north-south travel (Exhibit 1-1). Interstate travel in Arkansas is restricted to five routes: north-south travel on I-55 in the northeastern corner of the state, north-south travel on I-530 from Little Rock to Pine Bluff, and north-south travel on I-540 from Fort Smith to Bella Vista in the northwestern corner of the state, east-west travel on Interstate 30 from Texarkana to Little Rock, and I-40 that is the only Interstate that completely traverses the entire state from Fort Smith, Arkansas to Memphis, Tennessee.

Citizens that reside in south-central and southeastern Arkansas are not directly linked to the Interstate highway system. The population within the Project Area exceeds 190,000, which includes El Dorado with a population of over 20,000. Citizens in the El Dorado area currently travel over 80 miles to Texarkana or Arkadelphia to access I-30 for northeast travel in Arkansas, eastward travel to Tennessee, and westward travel into Texas. Those wishing to access the Interstate system to the south would have to travel over 50 miles to reach I-20 in Louisiana. Residents in the Warren, Monticello, and McGehee areas have to travel about 50 miles to access I-530 in Pine Bluff for northward travel to Little Rock, approximately 90 miles to the south to reach I-20 in Louisiana, and over 100 miles east to reach I-55 in Mississippi.

At the regional level, completion of I-69 would provide an Interstate quality facility that would provide a direct connection for the residents of south-central and southeastern Arkansas to major metropolitan areas in Louisiana, Texas, and Tennessee.

1.3.3 Economic Development

Historically, the economic base of the Project Area in southeast and south-central Arkansas has been in oil and gas production, forestry, and farming.

Larger cities such as El Dorado, Monticello, and Warren have expanded and diversified their economic base through the addition and development of manufacturing, retail, and financial employment opportunities. Some of the major employers by county include: Great Lakes Chemical Corporation, Union Powers Partnership, Georgia Pacific, Murphy Oil and The Medical Center of South Arkansas in Union County; Lockhead-Martin, and the Ouachita Valley Medical Center in Ouachita County; Potlach Corporation, Bradley County Memorial Hospital, and Robbins, Inc. in Bradley County; Burlington Industries, International Paper, University of Arkansas at Monticello, and the Drew County Memorial Hospital in Drew County; McGehee Industries and the McGehee School District in Desha County; and the Ashley County Medical Center and Georgia Pacific in Ashley County. Even though the Project Area has a diversity of employment opportunities, the 2000 unemployment rate for all Project Area counties remained higher than the statewide rate of four percent and ranged from five percent in Union County to 11 percent in Desha County (See Section 3-2). Discussions with local community leaders identified the need to attract and expand industry in their communities and in the region to reduce unemployment and to reduce the migration of their labor force and households. Local community leaders identified the SIU 13 Project as a catalyst that could spur development of local and regional businesses. Providing improved access to the Project Area for both employees and employers would result in new job opportunities and a reduction in unemployment. Furthermore, local leaders felt that the location of an Interstate facility near their communities would enhance their ability to recruit industry to south Arkansas by allowing them to compete with other communities and other states that have ready access to Interstate highways.

I-69 would increase transportation efficiency for many industries dependent on trucking as travel time and vehicle operating costs are reduced. The proposed highway would provide an alternative east-west Interstate quality highway that would avoid local traffic conflicts and communities. Increased transportation efficiencies would be expected to reduce shipping and overall operating costs for companies located in this area. In addition, the proposed highway would continue transportation improvement initiatives in south Arkansas that enhance economic development opportunities by providing a link from this region to the national Interstate highway system and connections with commerce centers in other parts of the state and country.

1.3.4 Roadway Network and Social Services

A primary role of a transportation system is to provide safe and efficient access to hospitals, schools, government offices, and retail stores, as

well as movement between communities. Discussions with local community leaders and the public identified access to these services and between communities as important quality of life factors in this primarily rural Project Area. Currently, the Project Area is linked together by a transportation system of two-lane state and county roadways and several US highways that have some four-lane sections.

The I-69 Project would reduce travel time for many citizens traveling from rural portions of the Project Area to obtain personal items, household supplies, and medical care. To travel to Monticello, citizens living in the communities of Kirkland, Liberty, and Louann currently drive nearly 80 miles in approximately 1-¾ to two hours. Travel on I-69 could reduce travel time by nearly 50 percent to cover the more direct route of just over 60 miles in less than an hour. Travelers heading from El Dorado to McGehee travel roughly 100 mile in two to 2-½ hours. Travel on I-69 between these two communities would cover approximately the same distance in just over 1-½ hours, a timesaving of over 30 percent.

When traveling to medical facilities, fewer miles traveled means less travel time. Medical facilities within the Project Area include the Medical Center of South Arkansas in El Dorado, Bradley County Medical Center in Warren, Drew Memorial Hospital in Monticello, and McGehee-Desha County Hospital in McGehee. Construction of I-69 would benefit Project Area residents with safer and more efficient travel to medical facilities.

Protection of personal property is a concern of citizens in all communities. Municipal police departments are located in El Dorado, Smackover, Hampton, Warren, Monticello, and Dermott. Most cities and towns throughout the Project Area have fire departments. Smaller populated communities are provided with fire protection from one of the surrounding towns. Law enforcement and fire personnel rely on existing local roads to protect communities. Construction of I-69 could benefit the Project Area by reducing emergency response times between communities and by removing through traffic from the local roadway network.

Post secondary education opportunities are offered at the South Arkansas Community College (SACC) in El Dorado and the University of Arkansas-Monticello campus. SACC provides a diverse two-year curriculum while the Monticello campus offers degrees at the bachelors and masters level. The construction of I-69 would provide a more efficient, safer, and accessible travel facility for the rural residents of Arkansas.

1.3.5 Intermodal Demand

With the enactment of ISTEA and TEA-21 by Congress, providing improved intermodal connectivity has become a national priority. It is

important to consider other transportation modes within a region when planning and designing highway facilities. Accommodations for intermodal facilities and activities must be provided to achieve a sound transportation system with minimal or no delay for passenger and freight movement transferring between modes.

Improved intermodal access and connectivity can be enhanced with the development of a new highway facility. Improved design features such as adequate turning radii, grades, railroad grade separations, and vertical and horizontal clearances of a new highway facility would allow ease of movement of tractor-trailer trucks and trains through the region. Control of access along a new facility would allow for the unrestricted movement of through traffic by removing the delay caused by local traffic. The reduced delay and placement of interchanges would result in improved travel times for both cars and trucks. The existence of a better transportation network would provide a more efficient medium for the shipping and receiving of freight and commodities and enhance economic growth of the region.

1.3.6 Airports

The closest commercial airports include the Texarkana Regional Airport, Adams Field in Little Rock, and the Mid Delta Regional Airport in Greenville, MS. Local airports include the South Arkansas Regional Airport at Goodwin Field and the Downtown Airport in El Dorado, and the Warren, Monticello, Dermott, and McGehee Municipal Airports.

1.3.7 Bus Lines

Passenger bus service is available for nationwide travel by Greyhound Bus Lines in El Dorado and Monticello. Additionally, the Southern Arkansas Transit service in El Dorado provides travel to Malvern via Camden and Fordyce for subsequent nationwide travel on Greyhound Bus Lines.

1.3.8 Navigable Waterways and Ports

Three ports are located within close proximity to the Project Area. The Ports of Camden and Crossett lie along the Ouachita River, the only navigable waterway in the Project Area. The Port of Camden is located about eight miles northwest of El Dorado in Ouachita County. The facility primarily consists of a 30,000 square foot warehouse leased from the city of Camden by a private firm to store tires. Currently, the Port is non-operational.

The Port of Crossett lies about five miles south of the confluence of the Ouachita and Saline Rivers along the eastern boundary of Union County. The facility is owned by the City of Crossett and consists of a docking peer, a turning basin, a four barge towing system and a 15,000 square foot warehouse. At times, crude oil is received by barge to local oil companies and pumped into on site tankers.

The Port of Yellow Bend is located along the Mississippi River approximately 11 miles southeast of McGehee at the boundary between Chicot and Desha Counties. The Chicot – Desha Metropolitan Port Authority has jurisdiction over the port. The facility includes a man-made slackwater harbor that is connected to the Mississippi River by a 2,000-foot long channel. Commodities moved through the Port Authority's public terminal include stone, lime, dry bulk fertilizer, rice, wood chips, logs, and Russian railroad iron (AHTD 1997).

1.3.9 Railways

Railroads are designated as either Class I, Class II, or Class III Railroads. Rail class is predominantly based on the area of service. A Class I Railroad refers to one that provides national rail service, Class II provides regional rail service, and Class III provides local rail service. There are no Class II railroads in the state of Arkansas.

Union Pacific provides Class I rail service at each end of the Project Area. Union Pacific directly connects El Dorado and McGehee to all major cities of the south and the west with long haul service to national market areas. Delta Southern Railroad directly connects Warren to McGehee providing Class I rail connection across the eastern half of the Project Area. Nationally, these railroads carry a wide variety of commodities including chemicals, coal, food and food products, forest products, grain and grain products, metals and minerals, and automobiles and parts. Union Pacific is the largest hauler of chemicals, much of which originates along the Gulf Coast near Houston, Texas. Additionally, it is one of the largest carriers of truck trailers and containers. Locally, cargo transported outbound from El Dorado includes chemicals, fiberboard, and dimension yellow pine lumber.

Most of the Class III railroads that operate in the Project Area link to the Union Pacific rail yards in El Dorado, Warren, and McGehee. These four Class III Railroads, also know as short line carriers, include the Ouachita, El Dorado - Wesson; Fordyce and Princeton; and the Warren Saline River Railroads. The primary services offered by Class III Railroads are switching, spotting cars, and feeder rail car service to Union Pacific (AHTD 1997).

The Ouachita Railroad, formerly part of the Rock Island Line, operates freight service from a connection with Union Pacific at El Dorado and extends to Lillie, LA. Primary cargo includes bulk chemicals, lumber, and particleboard. The El Dorado - Wesson Railroad operates freight service from a connection with the Union Pacific at El Dorado and extends to Newell, AR. Materials handled include petroleum products, chemicals, and medium density fiberboard.

The Fordyce and Princeton Railroad is owned by Georgia Pacific and operates from Fordyce to the lumber mill in Crossett. At Crossett, it changes to the Arkansas, Louisiana, and Mississippi Railroad and proceeds southward to Monroe, LA. Freight carried includes lumber and paper products.

The Warren and Saline River Railroad (WSR) is owned by Potlach Forest, Inc. and extends from the Union Pacific connection in Warren and serves lumber mills in the local area. These rail facilities transfer locally manufactured hardwood flooring and siding to the Delta Southern railway at McGehee. A portion of railroad originally connected to the Fordyce Princeton Railroad but was abandoned in 1994 (AHTD 2002). The WSR now serves the Bradley County Industrial Park.

The Southeast Arkansas Regional Intermodal Facilities Authority is planning to create a regional intermodal industrial park within the Project Area approximately 1.5 to 2 miles east of Wilmar, Arkansas south of US Highway 278. The dimensions of the facility would be approximately 3,000 feet by 6,000 feet (413 acres) of sufficient size to accommodate an Intermodal Container Transfer Facility (ICTF) and an adjacent industrial park. The facility would serve as a complex where cargo could be transferred from one mode of transportation to another (i.e. railroad car to truck or truck to railroad car). The adjacent industrial park would serve as support for warehousing, manufacturing, dry bulk handling, value added cargo, and consumer retail for the ICTF.

The I-69 Project Area has a wide variety of transportation modes on which to move people and commodities including cars, trucks, airports, bus lines, waterways, pipelines, and rail. An Interstate facility between US Highway 82 west of El Dorado and US Highway 65 at McGehee would provide the region with: better access to air and bus terminals for local citizens, a more efficient local trucking industry with improved access to railway transport of commodities to national markets, and a safer mode of travel to navigable waterways and ports beyond the Project Area.

1.3.10 Recreation Demand

Outdoor and indoor recreational activities are abundantly available within and adjacent to the Project Area. The Ouachita River, Calion Lake, Lake Georgia Pacific, Saline River, Lake Monticello, Seven Devils Lake, Raymond Lake, and Bayou Bartholomew offer boating, fishing, and camping opportunities. State, county, and local parks such as Moro Bay State Park, White Oak Lake State Park, Bradley County Park in Warren, and Wiley A. McGehee Memorial Park collectively offer a wide diversity of outdoor activities that include fishing, hunting, camping, hiking trails, water sports, and swimming. Similar types of outdoor recreation can be enjoyed in the Casey Jones, Cutoff Creek, and Seven Devils Swamp

Wildlife Management Areas, the Warren Prairie Natural Area, and the Felsenthal National Wildlife Refuge. Numerous hunting clubs throughout the Project Area provide seasonal hunting opportunities.

The South Arkansas Arboretum in El Dorado, dedicated to preserving the native, rare, and economically important flora of the West Gulf Coastal Plain, provides another scenic attraction in the Project Area. The Kisatchie National Forest is located south of El Dorado in northern Louisiana. Golfing can be enjoyed at several locations including the Magnolia, Camden, El Dorado, and Warren Country Clubs, the Pine Hills Country Club in Smackover, and the Prairie Country Club in Crossett.

Indoor recreation attractions in the Project Area include the South Arkansas Arts Center and the South Arkansas Symphony in El Dorado and the Arkansas Museum of Natural History in Smackover. This museum tells the story of the 1920s oil boom in south Arkansas and the oil and brine industry. Additional attractions include the Bradley County Historical Museum in Warren and the Drew County Museum in Monticello.

There is no Interstate access to any recreational areas in the Project Area. The closest Interstate access is I-530 in Pine Bluff, about an hour traveling distance from Warren and Monticello. An Interstate facility through southern Arkansas would provide improved access to recreational areas for in and out of state tourists.

1.3.11 Community Leader and Public Involvement

Coordination with local community leaders and discussions with the public in and around the Project Area identified several locally based project needs that include:

- Interstate access for the existing and planned industrial development southeast of Monticello to promote further economic development
- Interstate access to provide the best economic development opportunities for the communities of El Dorado, Camden, and Magnolia
- Improved safety by removing truck traffic from local roads
- Greater access to medical centers in Memphis, Tennessee and Shreveport, Louisiana
- Greater access to education and recreational facilities
- Improved delivery time for goods and services
- Greater access to southeast Arkansas and better connectivity to the Interstate system.

Citizens of the Project Area could use the new highway as a more efficient and faster link for

interstate travel into Mississippi to access I-55 for subsequent travel to Memphis, Tennessee or Jackson, Mississippi. Additionally, completion of SIU 14 could provide Project Area citizens a safer and more efficient facility for travel to Shreveport, Louisiana with subsequent travel via I-49 to southern Louisiana and Texas via I-20. Future construction of the Southeast Arkansas I-69 Connector from the Project Area to Pine Bluff would promote better access for travel to Little Rock to access I-30 and I-40. This increased interstate connectivity would result in improved travel times and safer access to medical facilities, shopping areas, employment opportunities, and recreational areas.

1.4 PURPOSE AND NEED SUMMARY

The SIU 13 Project is a component of the I-69 Corridor identified in TEA-21 and is a Section of Independent Utility in the I-69 (Corridor 18) Special Environmental Study Task C Report, Sections of Independent Utility (AHTD 1999). As such, this project will serve to function as a critical link in the Interstate system that will serve travel, economic development, and commercial demands of the south-central United States as well as serve the local and regional needs of south Arkansas.

Construction of the proposed project would:

- Complete a portion of the Congressionally-designated Interstate Highway 69, expanding Interstate linkage between El Dorado and McGehee, Arkansas and the rest of the Nation
- Support the North American Free Trade Agreement by expanding the I-69 trade corridor
- Improve international and interstate movement of freight and people
- Facilitate economic development and enhance economic growth opportunities in the Lower Mississippi Delta Region
- Improve traffic safety
- Improve efficiency of travel
- Improve access to educational facilities
- Improve access to recreational areas and facilities
- Improve emergency response times and access to medical facilities
- Support the locally based needs identified by community leaders.

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Section 2: ALTERNATIVES

This section presents the SIU 13 Project alternatives development process. This process effectively generated the information necessary to evaluate the effects of the project on the social, natural, and cultural environments (see Section 4), and provided a framework for resource agency, Native American Tribes, and public involvement. A summary of project scoping, alternatives development and screening, and project outreach is provided. This includes a discussion of all reasonable alternatives considered and included the examination of five broad transportation concepts or alternatives: the No-Action Alternative, a Transportation Systems Management (TSM) Alternative, a Mass Transit Alternative, an Upgrading the Existing Road Network Alternative, and the Build Alternative. Alternatives determined not to meet the project purpose and need (as documented in Section 1) were eliminated from further consideration, while reasonable alternatives identified were carried forward for further detailed study.

2.1 THE PROJECT STUDY PROCESS

The study process adopted for the completion of the environmental and location study for the SIU 13 Project is shown in Exhibit 2-1. Four primary phases of work are involved and include:

- The Scoping Process and Purpose and Need assessment that included the identification of important project and environmental issues, and a consideration of the National as well as project specific purpose and need.
- The Corridor Study which developed several corridor alternatives, approximately two miles in width, within the Project Area and identification of a Preferred Corridor.
- The Alignment Study that developed specific highway alignment alternatives, approximately 300 feet in width, within the Preferred Corridor.
- Environmental Documentation that consists of the preparation of the Draft and Final Environmental Impact Statements and other supporting documents and the selection of a single Preferred Alignment identified in the Final Environmental Impact Statement and the Record of Decision.

This multi-step study process allows for the examination of a full range of alternatives at both the corridor and alignment levels, with increasing detail as the study progresses. This enables alternatives to be evaluated in several stages so that only the most practicable alternatives which meet the project purpose and need as well as have the potential to minimize environmental impacts, are advanced to the next phase of study.

The study process also satisfies various regulatory and coordination requirements for projects integrating the National Environmental Policy Act (NEPA) and the Section 404 Permit processes. The

multi-step project approach allows a thorough consideration of all alternatives developed with respect to potential impacts to "waters of the United States", including wetlands, as required under Section 404 of the Clean Water Act. The required Section 404(b)(1) alternatives analysis will be conducted during both the corridor and alignment studies as the project progresses. This approach first emphasizes avoidance, and then minimization efforts to insure that the identified Preferred Corridor, and ultimately the Selected Alignment, minimize wetland impacts to the greatest extent practicable.

2.2 THE SCOPING PROCESS

Federal and state resource agencies, Native American Tribes, and local elected officials were invited to participate in a series of scoping meetings in December 2001. These meetings provided the opportunity for participants to gain an understanding of the study process, discuss project benefits and concerns, and identify key issues to be considered during corridor and alignment development. For more information, meeting minutes and attendance records are on file at AHTD.

2.2.1 Resource Agency Involvement

A scoping meeting was held with state and federal resource and regulatory agencies on December 5, 2001 in Little Rock, Arkansas to initiate early agency involvement and cooperation for the study. The objective of the meeting was to discuss the SIU 13 Project and to identify key environmental issues to be considered during both the corridor and alignment phases of study. Specific issues identified and discussed included avoiding and/or minimizing involvement with federally listed threatened and endangered species, specifically the red-cockaded woodpecker and *Geocarpon minimum* (a small plant species), Bayou Bartholomew, Seven Devil's Swamp, Cut-off Creek Wildlife Management Area, Casey Jones Wildlife Management Area, Felsenthal National Wildlife Refuge, H.K. Thatcher Lock and Dam on the Ouachita River, Moro Bay State Park, and wetland resources in the Project Area.

2.2.2 Native American Tribe Involvement

Representatives from the Caddo Tribe of Oklahoma, the Tunica-Biloxi Indians of Louisiana, and the Quapaw Tribe of Oklahoma were invited to participate in the December 2001 agency scoping meeting to discuss the SIU 13 Project study process and to identify any issues or areas of traditional religious and cultural importance that should be considered during both the corridor and alignment phases of study. No correspondence has been received from any tribe identifying specific concerns. FHWA is continuing to work with these tribes on a Programmatic Agreement for all I-69 projects in Arkansas.

LOCATION STUDY

INTERSTATE 69 El Dorado to McGehee, ARKANSAS

El Dorado to McGehee, Arkansas

Phase I - Scoping and Purpose and Need

Project Initiation
- Kick Off Meeting
- Define Study Area
- Prepare Notice of Intent
- Finalize Study Process

Scoping
- Agency, Tribal, Local Officials Meetings
- Input on Purpose and Need

Traffic Analysis
- Evaluate Level of Service on Area Roads
- Traffic Forecasting

Purpose and Need

Phase II - Corridor Study

GIS Environmental Inventory
- AHTD Aerial Photography
- Environmental Data
- Develop Aerial Mosaic

Develop Alternative Corridors
- Develop Corridors 2 Mile Wide
- Minimize Impact Potential
- GIS Analysis and Screening

Outreach Period
- Public, Local Officials Meetings
- Obtain Input on Corridor Alternatives
- Present Corridor Environmental Inventory

Corridor Revisions
- Revisions based on FHWA, AHTD, Public, Agency, Tribal, Local Official Input
- Identification of Preferred Corridor

Corridor(s) Carried Forward

Phase III - Alignment Study

Enhance GIS Environmental Inventory
- Additional Environmental Data

Engineering Alignment Studies
- Develop Alternative Alignments
- INROADS Generated

Environmental Field Studies
- Wetland Delineations
- Noise Receptors
- Confirm Hazmat Sites
- Oil/Gas Wells
- Verify Relocations

Outreach Period
- Agency, Tribal, Local Officials, Public Meetings, Agency Field Trips
- Obtain Input on Alignment Alternatives
- Present Preliminary Impacts

Alignment Revisions
- Revisions based on FHWA, AHTD, Public, Agency, Tribal, Local Official Input

Alignments Carried Forward

Phase IV - Environmental Documentation

Prepare Draft EIS
- Joint Review of Preliminary Document

Public Hearing

Selected Alignment
- Alignment Revisions

Phase I Archeology

Final EIS
- Address DEIS Comments
- Section 106 Programmetric Agreement
- Finalize Environmental Commitments

Record of Decision
- Obtain Project Approval

Work in Progress
Decision
Outreach Period
Step Involves Consensus Building

I-69 Location Study
El Dorado to McGehee

Exhibit 2-1

STUDY PROCESS

Baker

2.2.3 Community Leader Involvement

Two scoping meetings were held with local community leaders on December 6, 2001 in Monticello and El Dorado, Arkansas. These meetings presented an overview of the project study process and the proposed Project Area. Table 2-1 summarizes the project concerns and benefits discussed at the meetings.

Table 2-1
LOCAL COMMUNITY LEADER SCOPING MEETING
SUMMARY OF COMMENTS

Benefits of the Proposed Project
Increase jobs and industry
General economic development
Local impact on economy during construction
Access to metropolitan areas
Cheaper freight rates
Access to markets in Canada and Mexico
Help retain population
Improved delivery time for goods and services
Greater access to educational facilities
Increase tourism through increased accessibility to area
Improved safety by removing truck traffic from local roads
Better marketability for Southeast Arkansas
Greater access into Southeast Arkansas and better connectivity to Interstate system
Greater access to medical centers in Memphis and Shreveport
Increase access to recreation areas/facilities (Felsenthal National Wildlife Refuge)
Hazardous waste movement taken off local roads and put on to I-69
Concerns With the Proposed Project
Impacts to Bayou Bartholomew, Saline River, Ouachita River
Impacts to private property
Noise Impacts
Time frame for completion
Local community needs due to projected growth
Need for additional law enforcement, fire protection, utilities
Funding for project

Source: Michael Baker Jr., Inc.. December 6, 2001 Local Officials Meetings

2.3 ALTERNATIVES CONSIDERED AND ELIMINATED

Three of the broad transportation alternatives were considered but eliminated from further study because they did not meet the nationally established purpose and need for the project. Alternatives eliminated include the Transportation Systems Management (TSM) Alternative, the Mass Transit Alternative, and an alternative that would upgrade the existing road network.

2.3.1 Transportation Systems Management

A TSM Alternative would include limited construction activities designed to maximize the efficiency of the existing highway network. The TSM approach typically includes low cost improvements such as optimizing traffic signal timing, installing traffic signals, adding high

occupancy vehicle lanes, minor realignments of horizontal curves, and widening roadway shoulders. TSM measures are generally considered appropriate in urban areas with a population of over 200,000 persons (USDOT 1987). The Project Area lies within a nine county region with a Census 2000 estimated population of approximately 190,000. In addition, Project Area communities range from approximately 22,000 to less than 500 people situated in a primarily rural setting.

While these measures would likely result in some localized traffic safety and level of service improvements, the TSM Alternative would not provide the Interstate linkage for the proposed I-69 Corridor (Corridor 18) consistent with the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) legislation. In addition, the TSM Alternative would not provide many of the anticipated project benefits identified by local officials during the Scoping Process (See Table 2-1). The TSM Alternative was eliminated from further consideration.

2.3.2 Mass Transit Alternative

A Mass Transit Alternative, such as bus or rail service, is generally only relevant in urban areas with a population of over 200,000 (USDOT 1987), and where concentrated trip origins and/or destinations make mass transit viable. The effectiveness of a Mass Transit Alternative within the SIU 13 Project Area would be minimal due to the widely dispersed county populations and the lack of a single community approaching 200,000 inhabitants. Furthermore, mass transit would not be a reasonable transportation alternative to satisfy the project's National purpose and need to improve international and interstate movement of freight and people, or facilitate connections to intermodal facilities and major ports. The Mass Transit Alternative was eliminated from further consideration.

2.3.3 Upgrading the Existing Road Network

Existing primary highways in the Project Area that connect El Dorado to McGehee were evaluated to determine if they could function as feasible alternatives for this study. This included an evaluation of US Highways 82, 167, 278, and 63. In addition to statewide travel, these highways are heavily used by local traffic and many residences and businesses are located adjacent or close to the existing highways. Numerous driveways and secondary road intersections are associated with each route as well as adjacent environmental resources such as wildlife management areas, wetlands, and floodplains.

Reconstruction of these highways to divided, four-lane, fully controlled access facilities would require that all driveway and secondary road connections be severed. To maintain local access, frontage roads would need to be constructed. Reconstruction of these facilities on their existing locations would also reduce the opportunity to avoid and/or minimize potential environmental impacts to resources such as wildlife management areas and refuges, wetlands, floodplains, cemeteries, and archeological sites adjacent to the existing highways. Furthermore, US Highway 278

functions as a major thoroughfare in Monticello and is integrated into the city road network in this municipality. Reconstruction of this highway for the proposed project would require bypassing Monticello to avoid substantial community impacts and would involve developing new location alternatives in these areas, as well as in many other smaller communities such as Wilmar. Based on the potential community, residential and business impacts; community disruption during construction; and inability to avoid and minimize adjacent environmental resources, the reconstruction of existing highways was not considered a feasible alternative for the proposed project and was eliminated from further consideration.

2.4 ALTERNATIVES CONSIDERED FOR FURTHER STUDY

Of the five transportation alternatives considered for this project, the No-Action and Build Alternatives have been retained and carried forward for further study.

2.4.1 The No-Action Alternative

The No-Action alternative would not involve the construction of the SIU 13 Project. While this alternative would not meet the project purpose and need, it was retained to allow comparisons with the developed Build Alternatives. Under the No-Action Alternative, the Project Area roadway network would evolve as currently planned or programmed and would involve normal roadway maintenance activities, minor safety improvements, and several widening and passing lane projects. Passing lanes are currently under construction on US Highway 278 near Wilmar and Warren.

The No-Action Alternative will be maintained as an alternative to new highway construction and will be documented through the completion of the EIS process.

2.4.2 Build Alternatives

Development of the Build Alternatives involved the evaluation of a full range of alternatives at both the corridor and alignment phases of study. Section 2.5 documents the corridor development and evaluation processes and discusses the reasonable alternatives developed.

2.5 CORRIDOR STUDY

The Corridor Study considered the feasibility of several two – mile wide corridor alternatives with respect to affected social, economic, environmental, and engineering issues. The two - mile wide corridor allowed for the development and screening of a limited number of reasonable alternatives that covered a large portion of the Project Area. The Corridor Study consisted of the following work efforts:

- Collection of environmental information from resource agencies and fieldwork to create an Environmental Inventory for the Project Area.
- Creation of a project Geographic Information System (GIS) using existing environmental data.

- Development of corridor alternatives and GIS environmental analysis.
- Presentation of corridor alternatives and Environmental Inventory to local officials and the public for review and comment.
- Federal and State Agency review.
- Modification of corridor alternatives, if necessary, based on public and agency involvement.
- Identification of a Preferred Corridor in which to develop specific, more detailed highway Alignment Alternatives.

2.5.1 Environmental Inventory

Environmental data within the Project Area were collected from a variety of state and federal sources and entered into the project GIS for subsequent analysis. It should be noted that the Project Area extends approximately 15 miles southwest of the El Dorado area and the possible southern terminus locations for the SIU 13 Project. Environmental data were obtained within this extended area to identify potential concerns that could preclude or impede future extension of SIU 13 from El Dorado to Interstate 20 in Louisiana (SIU 14). Data obtained from various agencies or sources included:

- Community Facilities – -Schools, churches, hospitals, parks, and public facilities obtained from USGS topographic maps.
- Cultural Resources - Information on known archeological sites and historic structures obtained from the Arkansas Archeological Survey (AAS) and the Arkansas Historic Preservation Program (AHPP). Area cemeteries were identified from USGS maps and through public involvement. High Probability Areas were identified for areas that may contain prehistoric archeological resources.
- Environmental Justice –Census data and discussions with community leaders and the public were used to identify concentrations of minority and low-income populations.
- Floodplains and Floodways - Federal Emergency Management Agency (FEMA) floodplain maps were used to determine the extent of the 100 year floodplain.
- Hazardous Materials - Information on landfills, open dumps, Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response and Compensation Liability Act (CERCLA), Underground Storage Tank (UST), and Leaking Underground Storage Tank (LUST) sites obtained from Arkansas Department of Environmental Quality and County Sanitarians.
- Native American Interests – Coordination with Native Americans is on-going.
- Oil and Gas Resources/ Bromine Resources – Obtained information from the Arkansas

Geological Commission and Arkansas Oil and Gas Commission.

- Potential Section 4(f) and Section 6(f) Properties – Obtained information from USGS topographic maps from the Arkansas Natural Heritage Commission, Arkansas Parks and Tourism, and the Arkansas Archeological Survey.
- Protected Species - Obtained information from the Arkansas Natural Heritage Commission to determine the location of federal and state listed species. In addition, obtained red-cockaded woodpecker information from area timber company biologists.
- Potential Residential and Business Relocations - Obtained information from USGS topographic maps, aerial photographs and field investigations.
- Water Resources – Obtained location of wellhead protection areas from the Arkansas Department of Health.
- Wetland Reserve Program Lands – Obtained from the Natural Resources Conservation Service.
- Wetlands – Determined wetland areas based on photo interpretation of National Aerial Photography Program (NAPP) Color Infrared (CIR) aerial photography with limited ground-truthing.
- Wildlife Management Areas – Obtained from Arkansas Game and Fish Commission and Natural Heritage Commission.

2.5.2 Project Geographic Information System

A key component of the project study process is the use of Geographic Information System (GIS) technology and the development of a project specific GIS. This GIS-based approach has been used successfully over the last decade on numerous transportation environmental and location NEPA study efforts in a number of states, including Arkansas and Louisiana. The GIS is an effective tool for managing environmental data for extensive geographic areas in a cost and time efficient manner; in this case over 3,000 square miles. The benefits of the GIS approach include:

- Consolidation of all environmental and engineering data, regardless of source or scale, onto one map base.
- Consideration of key environmental issues *before* alternatives are developed.
- Instills confidence in the public and the resource agencies through a "seeing is believing" approach that allows visual confirmation of particular issues of concern (location of family cemeteries, sensitive wetland areas, etc.).
- Efficiently analyzes information when changes in alternatives occur. "What if" scenarios can quickly and accurately be examined to investigate possible alternative shifts with a minimum amount of time and effort.

Using the GIS approach, broad corridors developed within the Project Area were analyzed and screened early in the study process. This reduced the area where more detailed work efforts could be conducted. For this project, the corridor screening process

effectively reduced the original study area from over 3,000 square miles to 200 square miles (a reduction of over 90 percent) in approximately six months through a thorough consideration of social, environmental, and engineering issues. It should be emphasized that development of corridor alternatives occurs after key environmental and social issues have been identified throughout the Project Area. This serves to limit the number and location of broad corridor alternatives to areas that avoid and minimize involvement with identified key environmental issues and address issues such as community access.

2.5.3 Identification of Key Project Area Issues/Constraints

Prior to initial corridor development, key environmental, engineering, and social issues were identified within the Project Area based on information gathered during the Scoping Process from public, local official, and state and federal resource agencies. In the El Dorado portion of the Project Area, a number of issues or constraints influenced preliminary corridor development and included:

- Acceptable crossing locations of the Ouachita River.
- Existing and planned residential and business development.
- The location of minority and low income populations.
- The location of Moro Bay State Park and H.K. Thatcher lock and dam along the Ouachita River.
- Floodplains/wetlands associated with the Ouachita River system.
- Oil and gas fields, particularly near Smackover.
- Potential interchange locations at US Highway 82, S.H. 7, US Highway 167, and US Highway 63.
- The location of the airport west of El Dorado.
- Accessibility of I-69 to major area communities.
- The ability to minimize longitudinal stream crossings and maximize perpendicular crossings.

Moving toward the Warren/Monticello portion of the Project Area, preliminary corridor development was influenced by:

- Acceptable crossing locations of the Saline River.
- Existing and planned residential and business development.
- The location of minority and low income populations.
- The location of the Warren Prairie Natural Areas and the federally threatened plant species *Geocarpon minimum*.
- The known locations of the federally endangered red-cockaded woodpecker.
- Casey Jones Wildlife Management area property.
- Proximity to Hampton, Warren, Wilmar, Monticello.
- Compatibility with Southeast Arkansas Intermodal Facility.
- Compatibility with area airports.
- Proximity to existing and planned industrial parks.
- Proximity to University of Arkansas at Monticello.

- Compatibility with Southeast Arkansas I-69 Connector - from US Highway 278 to I-530.

In the McGehee area and eastern terminus of the project, preliminary corridor development considered:

- Existing and planned residential and business development.
- The location of minority and low-income populations.
- Bayou Bartholomew and associated wetlands and floodplains. Bayou Bartholomew was identified as a sensitive resource by the COE, the USFWS, the Arkansas Game and Fish Commission, the Arkansas Natural Heritage Commission, and the Bayou Bartholomew Alliance (a local non-profit environmental organization of citizens, landowners, and academics).
- Seven Devil's Swamp.
- Casey Jones Wildlife Management Area property.
- Cut-Off Creek Wildlife Management Area.
- Compatibility with the alternatives developed for the I-69 Mississippi River Crossing EIS study (SIU 12).

2.5.4 Preliminary Corridor Development

Using the key project issues/constraints as a guide, four corridors (A, B, C, and D) were initially developed within the Project Area (Exhibit 2-2). Within some reaches of the project, two or more corridors may be in the same location due to environmental or engineering constraints. The GIS based Environmental Inventory mapping was used to avoid and minimize impacts to sensitive environmental resources, while considering engineering issues such as river crossings and potential interchange locations. In addition, initial corridor development responded to public and local official concerns regarding community accessibility to the facility and potential residential and business displacements. Each corridor is two miles wide and extends from the El Dorado area northwestward to US Highway 65 near McGehee.

Corridor A

Corridor A begins at US Highway 82 approximately seven miles west of El Dorado near the El Dorado airport. The corridor heads in a northward direction for approximately 10 miles before crossing the Union/Calhoun County line and turning northeast crossing S.H. 7 near Louann. The corridor continues in an easterly direction, crosses the Ouachita River and then crosses US Highway 167 approximately four miles south of Hampton. Corridor A continues to the east passing south of the communities of Harrell and Banks and then turns northeasterly near Farmville, where it crosses US Highway 63 approximately two miles south of Warren. East of Warren, the corridor crosses the Saline River and then turns northward near Green Hill, crossing US Highway 278 east of Wilmar before turning back to the east and heading toward Monticello. Corridor A crosses S.H 35, US Highway 425, and S.H. 83 just north of Monticello, then crosses S.H. 138 approximately three miles east of Monticello.

The corridor continues to the east, crossing S.H. 277 near Selma, then crosses Bayou Bartholomew and

terminates at US Highway 65 approximately one mile north of McGehee.

Concerns with respect to Corridor A include involvement with floodplains and wetlands associated with the Ouachita and Saline Rivers and Moro and L'Aigle Creeks, oil and gas wells near Louann, involvement with the Warren Prairie Natural Area and associated federally listed threatened and endangered species, potential residential displacements near Monticello, and the crossing of Bayou Bartholomew.

Corridor B

Corridor B begins at US Highway 82 approximately four miles west of El Dorado and just east of the El Dorado airport. The corridor heads north for approximately three miles before turning northeast and crossing S.H. 7 between El Dorado and Norphlet. The corridor continues to the northeast where it crosses the Ouachita River near Calion, then turns to the north and converges with Corridor A at US Highway 167 south of Hampton. Corridor B follows the same path as Corridor A to Warren where it turns northward after crossing the Saline River and crosses US Highway 278 passing north and west of Wilmar, avoiding the Green Hill community and Warren Prairie Natural Areas. Just east of Wilmar, Corridor B converges again with Corridor A where it continues north of Monticello, to US Highway 65 near McGehee.

Concerns with Corridor B include involvement with floodplains and wetlands associated with the Ouachita and Saline Rivers and Moro and L'Aigle Creeks, oil and gas wells near Norphlet, involvement with red-cockaded woodpecker locations near the Ouachita River, potential residential displacements near Norphlet, and the crossing of Bayou Bartholomew.

Corridor C

Corridor C begins at US Highway 167 approximately two miles south of El Dorado. The corridor heads northeast, crossing US Highway 82 and then crosses US Highway 63 approximately five miles east of El Dorado before crossing the Ouachita River between H.K Thatcher lock and dam and Moro Bay State Park. North of the river crossing, the corridor turns to the east and crosses US Highway 63 a second time approximately four miles south of Hermitage. Corridor C then turns northeast and heads towards Monticello, crossing S.H. 8 and S.H. 172 before crossing US Highway 425 just south of Monticello. The corridor then crosses S.H. 35 and US Highway 278 where it converges with Corridor D and crosses the northern portion of Seven Devil's Swamp. Corridor C then diverges from the Corridor D footprint and terminates at US Highway 65 north of McGehee with Corridors A and B.

Project Area

Kingsland
Thornton
Bearden
Chidester
Ouachita
Calhoun
Tinsman
Rye
Lake Monticello
Bayou Bartholomew
Cut-off Creek
Selma
Desha
Warren
Banks
Bradley
Monticello
Seven Devils Swamp
McGehee
East Camden
Camden
Hampton
Harrell
Sumpter
New Hope
Dermott
Collins
Drew
Hermitage
Jersey
Lacey
Cut-Off Creek Wildlife Management Area
Stephens
Louann
Smackover
Ouachita River
Ingalls
Johnsville
Fountain Hill
Norphlet
Calion
H.K Thatcher Lock and Dam
Moro Bay State Park
Lisbon
El Dorado
Montrose
Portland
Lake Georgia Pacific
Felsenthal National Wildlife Refuge
Hamburg
Newell
Hillsboro
Strong
Union
Crossett
Ashley
Chicot
Parkdale
Lake Jack Lee
Overflow National Wildlife Refuge
Felsenthal Lock and Dam
Huttig
Felsenthal
Junction City
Arkansas
Louisiana

LEGEND

- A — CORRIDOR A
- B — CORRIDOR B
- C — CORRIDOR C
- D — CORRIDOR A

I-69 Location Study
El Dorado to McGehee

Exhibit 2-2

PROJECT AREA AND CORRIDOR LOCATIONS

Baker

SCALE IN MILES 0 1 2 3 4 5

Concerns with Corridor C include involvement with floodplains and wetlands associated with the Ouachita and Saline Rivers and Moro and L'Aigle Creeks, oil and gas wells south of El Dorado, involvement with red-cockaded woodpecker locations near the Ouachita River, proximity from major communities, proximity to Moro Bay State Park and Felsenthal National Wildlife Refuge, involvement with Seven Devil's Swamp and Casey Jones Wildlife Management Area, and the crossing of Bayou Bartholomew.

Corridor D

Corridor D begins at US Highway 167 approximately seven miles south of El Dorado. The corridor heads northeast crossing US Highway 82 near Hillsboro, then crosses Ouachita River south of Moro Bay State Park. The corridor continues to the northeast passing approximately five miles south of Hermitage then crosses S.H. 8 about 10 miles south of Warren. Corridor D crosses the Saline River and then crosses US Highway 425 approximately three miles south of Monticello. The corridor then crosses S.H. 35 and US Highway 278 where it aligns with Corridor C, crosses the northern portion of Seven Devil's Swamp, and then turns southeast and terminates at US Highway 65 south of McGehee.

Concerns with Corridor D include involvement with floodplains and wetlands associated with the Ouachita and Saline Rivers and Moro and L'Aigle Creeks, oil and gas wells south of El Dorado, involvement with red-cockaded woodpecker locations near the Ouachita and Saline Rivers, distance from major communities, proximity to Moro Bay State Park and Felsenthal National Wildlife Refuge, involvement with Seven Devil's Swamp and Casey Jones Wildlife Management Area, the crossing of Bayou Bartholomew, and the termination at US Highway 65 south of McGehee.

2.5.5 Corridor Screening

The issues/factors identified in Section 2.5.3 were used to develop and refine the screening criteria used to evaluate the preliminary corridor alternatives. In addition, several other criteria were developed that included an evaluation of the following:

- Compatibility with area economic goals – based on December 2001 meetings with local elected officials and community leaders.
- Compatibility with Southeast Arkansas I-69 Connector - from US Highway 278 near Wilmar to I-530 in Pine Bluff – would provide a connection from I-69 to Interstates 30 and 40 in Little Rock via I-530.
- Compatibility with Southeast Arkansas Regional Intermodal Facility – a planned facility near Wilmar that would include a bulk freight terminal, with freight transfer and tracking capabilities, logistic services, export/customs services, container pool service, and serve as a warehousing and distribution center.
- Construction by Useable Sections - corridors were evaluated to determine if they would allow construction of the SIU 13 Project in shorter

useable sections between El Dorado and McGehee.

- Cultural Resources – obtained known archeological and historic structure data for the Project Area so these resources could be fully considered during corridor development.
- Wellhead Protection Areas, Recorded Hazardous Waste Sites – identified and considered to address concerns expressed by the EPA and the Arkansas Department of Environmental Quality.

Table 2-2 presents a Preliminary Corridor Screening Comparison of the four corridor alternatives developed to evaluate the corridors across a number of social, engineering, and environmental issues. Rankings were assigned to each corridor based on that corridor's ability to address a particular issue or avoid a particular resource. This information was presented to the resource agencies, local elected officials and the public during Corridor Study review meetings held in March 2002. These rankings were presented as preliminary and subject to change based on information and input received at the March 2002 meetings.

2.5.6 Corridor Studies Outreach

After development of the environmental inventory, corridor alternatives, and subsequent corridor comparison analysis, public meetings were held to present the results of the Corridor Study and to obtain input on the corridor alternatives developed.

Resource Agency Involvement

Federal and state agencies were invited to participate in a corridor study review meeting held on March 12, 2002 to review the environmental inventory and the preliminary corridors developed. Specific issues identified and discussed included avoiding and/or minimizing involvement with oil and gas fields near Louann, wetlands associated with the Ouachita River, Moro Creek, L'Aigle Creek, and the Saline River, Seven Devil's Swamp and Cut-off Creek Wildlife Management area, Casey Jones Wildlife Management area, the Warren Prairie Natural Areas and associated federally listed threatened and endangered species south of Wilmar, and red-cockaded woodpecker locations throughout the Project Area. The group discussed the possibility of combining Corridors A and B to better minimize potential environmental impacts.

Community Leader Involvement

Community leaders were invited to participate in corridor study review meetings held on March 12 and 13, 2002 to review the environmental inventory and the preliminary corridors developed. Representatives attending the El Dorado meeting, including the Mayors of El Dorado and Camden, supported Corridor A as providing the best economic development opportunities for the communities of El Dorado, Camden, Magnolia, and the surrounding area.

Table 2-2
PRELIMINARY CORRIDOR SCREENING COMPARISON

Issue/Resource	CORRIDORS				Comments
	A	B	C	D	
Access to Major Communities	1	1	3	3	Based on evaluation of proximity to communities and ability to locate interchanges along major roadways.
Compatibility with Area Economic Goals	1	2	4	4	Based on December 2001 meetings with local elected officials and community leaders.
Compatibility with the Southeast Arkansas I-69 Connector - from US 278 to I-530	1	2	3	4	Provides opportunity to integrate I-69 with the Southeast Arkansas I-69 Connector.
Potential Residential Displacements	2	2	2	1	Corridor D located furthest from populated areas.
Compatibility with Area Intermodal Facility	1	1	1	1	Provides opportunity to integrate I-69 with SE Arkansas Intermodal Facility.
Compatibility with Area Airports	1	1	3	3	Provides access to Warren and El Dorado Airports.
Wildlife Management Areas	2	1	3	4	Corridors A and B have least involvement with Casey Jones Wildlife Management Area properties.
Ouachita River Crossing	1	2	4	3	Provide opportunity to construct perpendicular river crossing.
Construction by Useable Sections	1	2	3	4	Due to the length of the project, would allow I-69 to be constructed in shorter useable sections.
Natural Resources					
Wetlands	1	2	2	3	All corridors cross wetlands associated with the Ouachita River, Moro Creek, L'Aigle Creek, the Saline River, Cut-off Creek, and Bayou Bartholomew.
Seven Devil's Swamp	1	1	2	3	Alignments developed in Corridors A and B would avoid this resource.
Known Threatened or Endangered Species Locations	3	3	3	3	Based on known sites and known population clusters.
100 Year Floodplains	3	2	1	3	All corridors cross floodplains associated with the Ouachita River, Moro Creek, L'Aigle Creek, the Saline River, Cut-off Creek, and Bayou Bartholomew.
Cultural Resources					
Recorded Archeological Sites	3	4	2	1	Alignments developed in any corridor would avoid recorded archeological sites to the extent practicable.
Recorded Historic Structures	1	1	1	1	Five or fewer recorded historic structures within each Corridor. Alignments developed within any corridor could avoid impacts to recorded historic structures.
Archeological High Probability Areas	3	3	2	3	Indication of potential presence of archeological sites based on known sites and area topography.
Oil and Gas Fields	2	3	1	4	All corridors avoid high density Smackover field. Alignment development in any corridor would avoid impacts to individual wells to the extent practicable.
Wellhead Protection Areas	2	2	2	1	Public water supply areas.
Recorded Hazardous Materials Sites	1	1	1	1	No sites identified within corridors.
TOTALS	**31**	**36**	**43**	**50**	

Source: Michael Baker Jr., Inc.

Ranking system: 1 = most effective at addressing issue or greatest ability to avoid resource; 2 = moderately effective at addressing issue or moderate ability to avoid resource; 3 = slightly effective at addressing issue or some ability to avoid resource; 4 = least effective at addressing issue or least ability to avoid resource

Warren representatives believed that Corridor A and Corridor B would serve the community well and are located near the industrial portion of town. Concerns in the Monticello area focused on providing access to I-69 for the existing and planned industrial development southeast of town to promote further economic development and the possibility of removing truck traffic from local thoroughfares through the town.

Public Involvement

Over 100 people attended the public meetings held on March 11, 12, and 13, 2002 in McGehee, Monticello, and El Dorado. Public input centered on potential economic development opportunities, community access, and potential residential and property impacts.

Tribal Involvement

Tribal participation was encouraged throughout the study process. In June 2002, the FHWA met with the Caddo Nation of Oklahoma and the Quapaw Tribe of Oklahoma to discuss the Corridor Study process and the identification of any issues or areas of traditional religious and cultural importance that should be considered during the subsequent development of the preliminary alignment alternatives. The Tunica-Biloxi Indians of Louisiana received meeting correspondence, but did not attend this meeting. All tribal correspondence is included in the Appendix.

2.5.7 Corridors Not Carried Forward

Based on a review of the environmental, engineering, and social issues, and with input from the public, local officials, and various resource agencies, several corridors were not carried forward for more detailed study and were eliminated from further consideration.

Corridor D

Corridor D was not carried forward for further study due to potential impacts to Seven Devil's Swamp and Cut-off Creek Wildlife Management area, Casey Jones Wildlife Management area, Felsenthal National Wildlife Refuge, and oil and gas fields south of El Dorado. Corridor D provided limited access to many major Project Area communities, would not connect to the preferred alternative for the I-69 Mississippi River Crossing EIS study. In addition, it would be difficult to construct in shorter useable sections, and was not favored by any local officials or community leaders in the El Dorado area.

Corridor C

Corridor C was not carried forward in its entirety for further study due to potential impacts to Seven Devil's Swamp and Cut-off Creek Wildlife Management area, Casey Jones Wildlife Management area, red-cockaded woodpecker locations throughout the Project Area, oil and gas wells south of El Dorado, proximity to the Felsenthal National Wildlife Refuge and Moro Bay State Park. Furthermore, Corridor C would have

the least desirable crossing of the Ouachita River and associated floodplains and wetlands, provides limited access to many major Project Area communities, would be difficult to construct in shorter useable sections. The corridor was not favored by any local officials or community leaders in the El Dorado area.

Portion of Corridor A Near Wilmar

The portion of Corridor A located from near US Highway 278 east of Wilmar to US Highway 63 south of Warren was not carried forward for further study based on residential and community impacts in the Green Hill area, and impacts to the Warren Prairie Natural Areas and associated federally listed threatened and endangered species in this area. Future plans to expand the Warren Prairie Natural Area would also be impacted by this corridor.

Portion of Corridor B West of US Highway 167

The portion of Corridor B from US Highway 167 to US Highway 82 was eliminated from further study due to involvement with red-cockaded woodpecker locations, wetlands and floodplains near the Ouachita River, oil and gas wells near Norphlet, and potential residential and business displacements near Norphlet.

2.5.8 The Preferred Corridor for the SIU 13 Project

The objective of the Corridor Study phase of this project is to identify a corridor as part of a planning process which represents the best opportunity to develop highway alignments that avoid or minimize impacts to the social, natural, and cultural environments and will serve to enhance the transportation services and economic vitality of the Project Area, while accommodating the overall purpose of the national I-69 Corridor. It is unlikely that one corridor represents the *least* potential impact to all resource categories or *best* addresses various issues. The information collected and evaluated during the Corridor Study, combined with the involvement of the public, local community leaders and resource agencies, is sufficient to identify a preferred corridor to advance to the Alignment Study. Once corridors or portions of corridors were eliminated from further study, the remaining corridors served as a starting point for the preferred corridor identification.

Further analysis showed that a multi-corridor combination represented the best opportunity to develop highway alignments that avoid or minimize impacts to the social, natural, and cultural environments and that best meet the purpose and need of the project. This includes Corridor A from US Highway 82 near El Dorado to US Highway 167 near Hampton, Corridor B from US Highway 167 to US Highway 65 in McGehee, and in the Monticello area, a corridor link that extends from Corridor B west of Monticello, passes south of town, and reconnects to Corridor B east of Monticello. Public input led to the development of this corridor link south of Monticello that would pass north of the Warren Prairie and community of Green Hill, while providing the

opportunity for development of alignment alternatives in this area.

This corridor combination would provide the best access to the Project Area communities of El Dorado, Louann, Smackover, Hampton, Harrell, Banks, and Selma, as well as the nearby communities of Camden and Magnolia. This corridor combination would also provide the greatest opportunity to minimize impacts to the Warren Prairie Natural Areas and associated federally listed threatened and endangered species in the Wilmar/Warren area, while best serving the communities of Warren, Wilmar, and Monticello. Based on the evaluation with respect to social, engineering, economic, and environmental issues, no additional corridors or corridor combinations presented a better opportunity to minimize adverse impacts.

Table 2-3 presents a Revised Corridor Screening Comparison of the four original corridors and the preferred corridor combination. Based on comments from the resource agencies and the public at the March 11-13, 2002 meetings, minor changes were made to three issue/resource category rankings (Access to Major Communities - Corridor B changed from a 1 to a 2, Compatibility with Area Economic Goals – Corridor A changed from a 1 to a 2, and Known Threatened or Endangered Species Locations – Corridor A changed from a 3 to a 4). These changes did not result in any substantial differences to the total rankings of the corridors. All corridors would have environmental impacts. Of the resources studied, the SIU 13 Project would ultimately have the greatest impact on residences/personal property, floodplains, wetlands, and other undeveloped lands. Impacts to businesses, churches, cemeteries, oil and gas wells, and cultural resources would occur to a lesser extent and in some areas, could be avoided entirely.

After a thorough review of all resources and input from the public, community leaders, and agency representatives, a Preferred Corridor was identified and carried forward into the Alignment Study (Exhibit 2-3).

The Preferred Corridor best addresses the public's and local community leader's concern with community access and potential for economic development opportunities, access to the Southeast Arkansas Regional Intermodal Facility, and area airports. The inclusion of corridor alternatives both north and south of Monticello provides the opportunity to develop more specific highway alignments in this area and to better determine the potential impacts, both positive and negative, associated with each. The Preferred Corridor provides the best location for the Ouachita River crossing and provides the greatest opportunity to ultimately construct I-69 in shorter useable sections.

Table 2-3
REVISED CORRIDOR SCREENING COMPARISON

Issue/Resource	CORRIDORS					Comments
	A	B	C	D	Preferred A/B/C	
Access to Major Communities	1	2	3	3	1	Based on eval. of proximity to communities and ability to locate interchanges along major roadways and March 2002 meetings with local elected officials and community leaders.
Compatibility with Area Economic Goals	2	2	4	4	2	Based on December 2001 and March 2002 meetings with local elected officials and community leaders.
Compatibility with Southeast Arkansas I-69 Connector - from US 278 to I-530	1	2	3	4	1	Provides opportunity to integrate I-69 with Southeast Arkansas I-69 Connector.
Potential Residential Displacements	2	2	2	1	2	Corridor D located furthest from populated areas.
Compatibility with Area Intermodal Facility	1	1	1	1	1	Provides opportunity to integrate I-69 with SE Arkansas Intermodal Facility.
Compatibility with Area Airports	1	1	3	3	1	Provides access to Warren and El Dorado Airports.
Wildlife Management Areas	2	1	3	4	1	Corridors A and B have least involvement with Casey Jones Wildlife Management Area properties.
Ouachita River Crossing	1	2	4	3	1	Provide opportunity to construct perpendicular river crossing.
Construction by Useable Sections	1	2	3	4	1	Due to the length of the project, would allow I-69 to be constructed in shorter useable sections.
Natural Resources						
Wetlands	1	2	2	3	1	All corridors cross wetlands associated with Project Area streams.
Seven Devil's Swamp	1	1	2	3	1	Alignments developed in Corridors A and B would avoid this resource.
Known Threatened or Endangered Species Locations	4	3	3	2	1	Based on known sites and known population clusters.
100 Year Floodplains	3	2	1	3	2	All corridors cross floodplains associated with Project Area streams.
Cultural Resources						
Recorded Archeological Sites	3	4	2	1	3	Alignments developed in any corridor would avoid recorded archeological sites to the extent practicable.
Recorded Historic Structures	1	1	1	1	1	Five or fewer recorded historic structures within each Corridor. Alignments developed within any corridor could avoid impacts to recorded historic structures.
Archeological High Probability Areas	3	3	2	3	3	Indication of potential presence of prehistoric archeological sites.
Oil and Gas Fields	2	3	1	4	2	All corridors avoid high density Smackover field. Alignment development in any corridor would avoid impacts to individual wells to the extent practicable.
Wellhead Protection Areas	2	2	2	1	2	Public water supply areas.
Recorded Hazardous Materials Sites	1	1	1	1	1	No sites identified within corridors.
TOTALS	**33**	**37**	**43**	**49**	**28**	

Source: Michael Baker Jr., Inc.

Ranking system: *1 = most effective at addressing issue or greatest ability to avoid resource*
2 = moderately effective at addressing issue or moderate ability to avoid resource
3 = slightly effective at addressing issue or some ability to avoid resource
4 = least effective at addressing issue or least ability to avoid resource

In addition, the Preferred Corridor provides the greatest opportunity to avoid impacts to the Warren Prairie Natural Areas and associated federally listed threatened and endangered species in the Wilmar/Warren area, the greatest opportunity to avoid Seven Devil's Swamp and other wildlife management areas.

While all corridors would cross wetlands associated with the Ouachita River, Moro Creek, L'Aigle Creek, the Saline River, Cut-off Creek, and Bayou Bartholomew, the Preferred Corridor crosses the majority of these systems in areas well north of higher quality wetlands (Felsenthal National Wildlife Refuge), and avoids Seven Devil's Swamp. Review of aerial photos found greater opportunities to cross in degraded or disturbed areas (Ouachita River), or near existing highway bridges (Saline River).

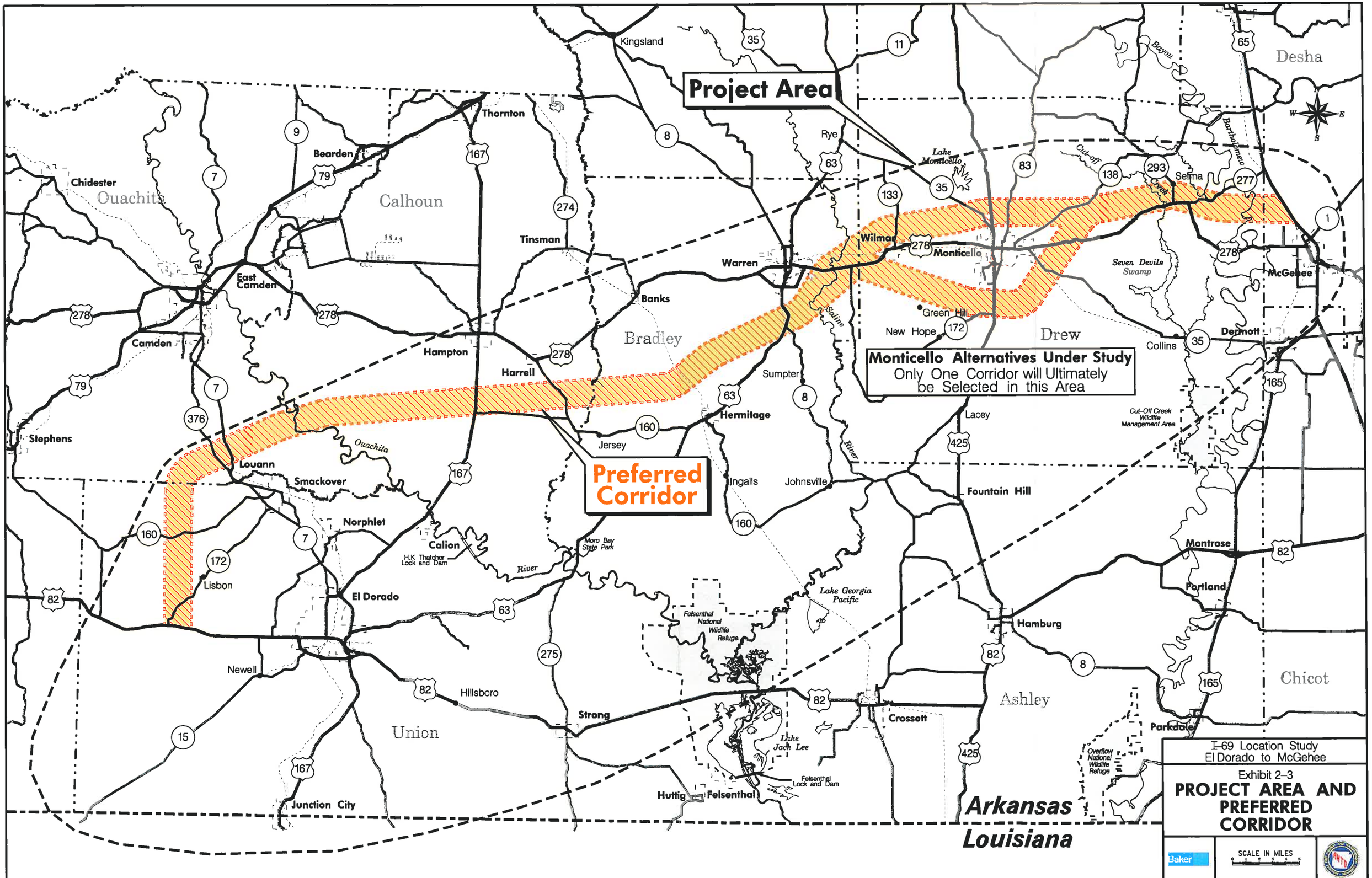
It should be noted that the identification of the Preferred Corridor does not preclude consideration of highway alignment development slightly outside of this corridor area, if warranted, to avoid or further minimize environmental and social impacts during the Alignment Study.

2.6 ALIGNMENT STUDY

The Alignment Study consisted of a focused effort within the Preferred Corridor and included:

- Obtaining Level 3 DEM USGS data for the Preferred Corridor (used to develop digital terrain model and run engineering software for alignment alternatives)
- Updating or adding the following project GIS environmental information that included:
  - Potential historic standing structures survey.
  - Farmed wetland information.
  - Field collected wetland information.
  - Streams information.
  - Standing structures survey as necessary to reflect recent and on-going construction.
  - Site boundaries of known archeological sites and cemeteries.
  - Collected property boundary information from the appropriate counties.
  - Developing preliminary alignment alternatives and conducting environmental field studies.
  - Presenting alignment comparisons to the public and local officials for review and comment.
  - Conducting field reviews of the preliminary alignments with resource agencies to obtain comments.

Revising the alignments based on public, local officials, and agency comments.


Project Area
Preferred Corridor
Monticello Alternatives Under Study
Only One Corridor will Ultimately be Selected in this Area
Kingsland
Thornton
Bearden
Chidester
Ouachita
Calhoun
Tinsman
Rye
Lake Monticello
Wilmar
Monticello
Warren
Banks
Bradley
East Camden
Camden
Hampton
Harrell
Sumpter
Hermitage
Jersey
Ingalls
Johnsville
Lacey
Fountain Hill
Drew
Seven Devils Swamp
Green Hill
New Hope
Collins
Dermott
McGehee
Desha
Bayou Bartholomew
Cut-off Creek
Selma
Cut-Off Creek Wildlife Management Area
Stephens
Louann
Smackover
Norphlet
Calion
H.K Thatcher Lock and Dam
Moro Bay State Park
Ouachita River
Lisbon
El Dorado
Newell
Hillsboro
Union
Strong
Junction City
Huttig
Felsenthal
Felsenthal National Wildlife Refuge
Lake Jack Lee
Felsenthal Lock and Dam
Lake Georgia Pacific
Crossett
Hamburg
Ashley
Montrose
Portland
Parkdale
Chicot
Overflow National Wildlife Refuge
Arkansas
Louisiana
I-69 Location Study
El Dorado to McGehee
Exhibit 2-3
PROJECT AREA AND PREFERRED CORRIDOR
Baker
SCALE IN MILES

2.6.1 Design Features

The proposed highway would be designed as a four lane, divided, fully controlled access facility on new location. Access to the proposed highway would be limited to specific interchange locations with grade separations at other crossroads. The roadway design criteria used during the alignment study are presented in Table 2-4.

Table 2-4
DESIGN CRITERIA

ITEM	VALUE	
Design Speed	70 mph	
Median Width	80 ft	
	Maximum	**Preferred**
Profile Grade	5%	4%
Degree of Curve	3°	2°

The basic geometric features or typical section for the proposed highway are presented in Exhibit 2-4. The highway typical section included two 12 - foot wide through lanes in both travel directions with an 80 - foot wide median and inside and outside shoulders.

Access to the highway would be limited to interchange locations along all of the alignment alternatives developed. Grade separations are proposed at major roadway crossings. Proposed interchanges and grade separations are provided in Table 2-5.

2.6.2 Preliminary Alignment Development

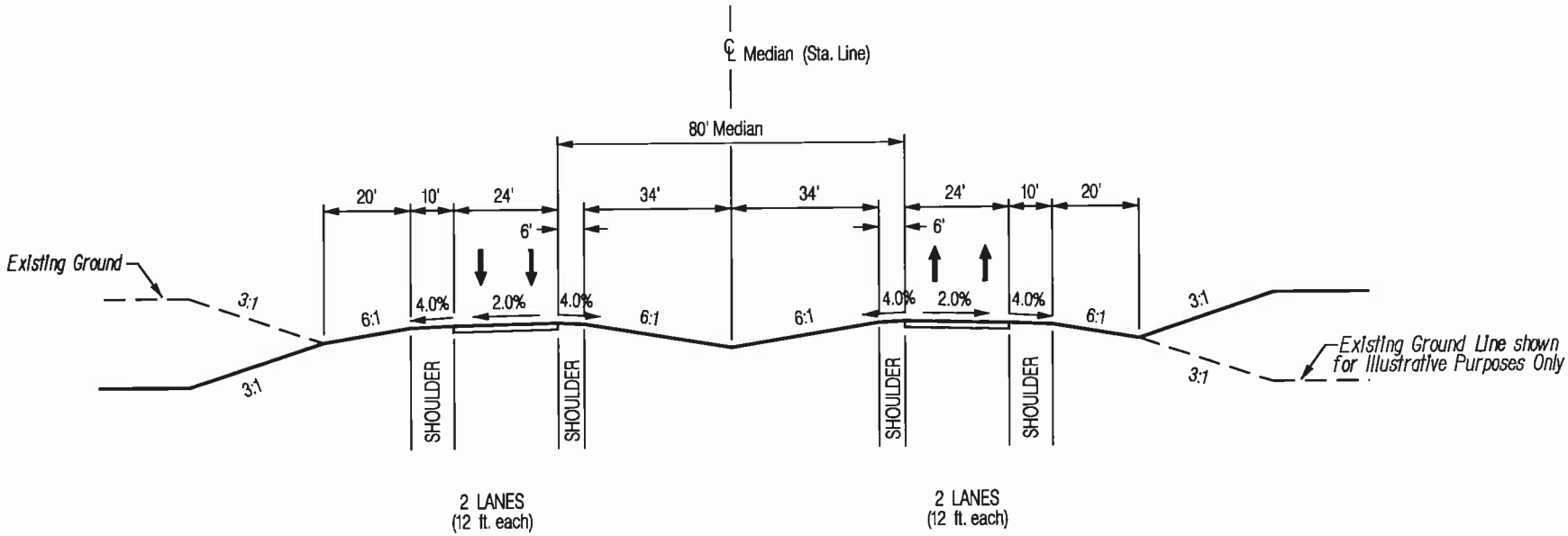
The Preferred Corridor was divided into five discrete sections to allow for more detailed analysis of potential impacts (See Exhibit 2-5). Section 1 begins at US Highway 82 approximately nine miles west of El Dorado and proceeds northward for 16 miles to S.H. 7 north of El Dorado. Section 2 extends from S.H. 7 to US Highway 167 south of Hampton, a distance of approximately 20 miles. Section 3 starts at US Highway 167 and extends to US Highway 63 south of Warren, a distance of approximately 25 miles. Section 4 begins at US Highway 63 and then splits near the Bradley/Drew County Line to form two corridor alternatives that pass to the north and south of Monticello to terminate at US Highway 425, a distance of about 18 miles. Section 5 begins at US Highway 425 and proceeds east of Monticello where the two corridors converge and terminate at US Highway 65 north of McGehee, a distance of approximately 24 miles.

Four initial alignments were developed within the Preferred Corridor and are shown on Exhibit 2-5. These alignments are identified as Line 1, Line 2, Line 3, and Line 4. In some sections, alignments are in the same location or cross over each other due to associated engineering or environmental constraints in that area of the Preferred Corridor. A brief description of each alignment and environmental and engineering issues is provided below.

Table 2-5
PROPOSED INTERCHANGES AND GRADE SEPARATIONS

Intersecting Roadway	Alignment Alternatives				
	Line 1	Line 2	Line 3	Line 4	Preferred (Line 5)
US 82	I, O	I, O	I, O	I, O	I, O
S.H. 172	O	O	O	O	O
Bethel Road	O	O	O	O	O
Sandy Creek Road	-	-	O, R	O, R	O, R
S.H. 160	I, O	I, O	I, U	I, U	I, U
Silver Hill Loop	O	O	-	-	-
Local Road	-	O	-	-	-
County Road 61	O	O	O	O	O
County Road 2	O	O	O	O	O
S.H. 376	U	U	U	U	U
S.H. 7	I, U	I, U	I, U	I, U	I, U
County Road 63	R, O	R, O	R, O	R, O	R, O
County Road 67	I, O	I, O	I, O	I, O	I, O
Near County Line	R, U	O	R, O	R, O	R, O
Potlach Road	O	O	O	O	O
Little Bay Road	O	O	O	O	O
Local Road	O	R, O	O	O	O
US 167	I, U	I, U	I, U	I, U	I, U
S.H. 160	I, O	I, O, R	I, O	I, O	I, O
Banks Jersey Road	O	O	O	O	O
County Road 88	O	O	O	O	O
County Road 5	O,R	O, R	O, R	O	O, R
County Road 32	O, R	O	O	O	O
Prospect Road	O, R	O, R	O	O	O, R
Carmel Cutoff Road	O	O	O	O	O
US 63	I, O, R	I, U	I, O, R	I, O	I, O, R
S.H. 172	U	U	-	U	U
US 278	I, O	-	I, O	-	-
Local Road	-	I, O	-	I, O	I, O
County Road 361	-	O, R	-	O, R	O. R
Sanderlin Road	U	-	U	-	-
County Road 133	O	-	O	-	-
Dickson Road	O, R	-	O	-	
Future I-530	I, U	I, O	I, U	I, O	I, O
Barkada Road	O, R	-	O	-	-
S.H. 35	O, R	I, O	U	I, O	I, O
US 425	I, U	I, U	I, U	I, U	I, U
County Road 14	-	O, R	-	O, R	O, R
County Road 15	-	O	-	O	O
S.H. 83	U		U		
Florence Road	U	-	U	-	-
County Road 36	-	O	-	O	-
County Road 46	-	O	-	O	O
County Road 50	-	O	-	O	O
US 278	-	U	-	I, U, R	I, U, R
S.H. 138	I, U	-	I, U, R	-	-
North Sixteen Section Road	O, R	O, R	O, R	O, R	O, R
S.H. 293	I, O	I, O	I, O	I, O	I, O
Local Road	O, R	O, R	O, R	O, R	O, R
S.H. 277	O	O	O	O	O
Local Road	U, R	U, R	U, R	U, R	U, R
US 65	I, U	I, U	I, U	I, U	I, U

I = Interchange
O = Overpass – Proposed highway would cross over local road
R = Proposed local road relocation
U = Underpass – Local road would cross over proposed highway



TYPICAL SECTION

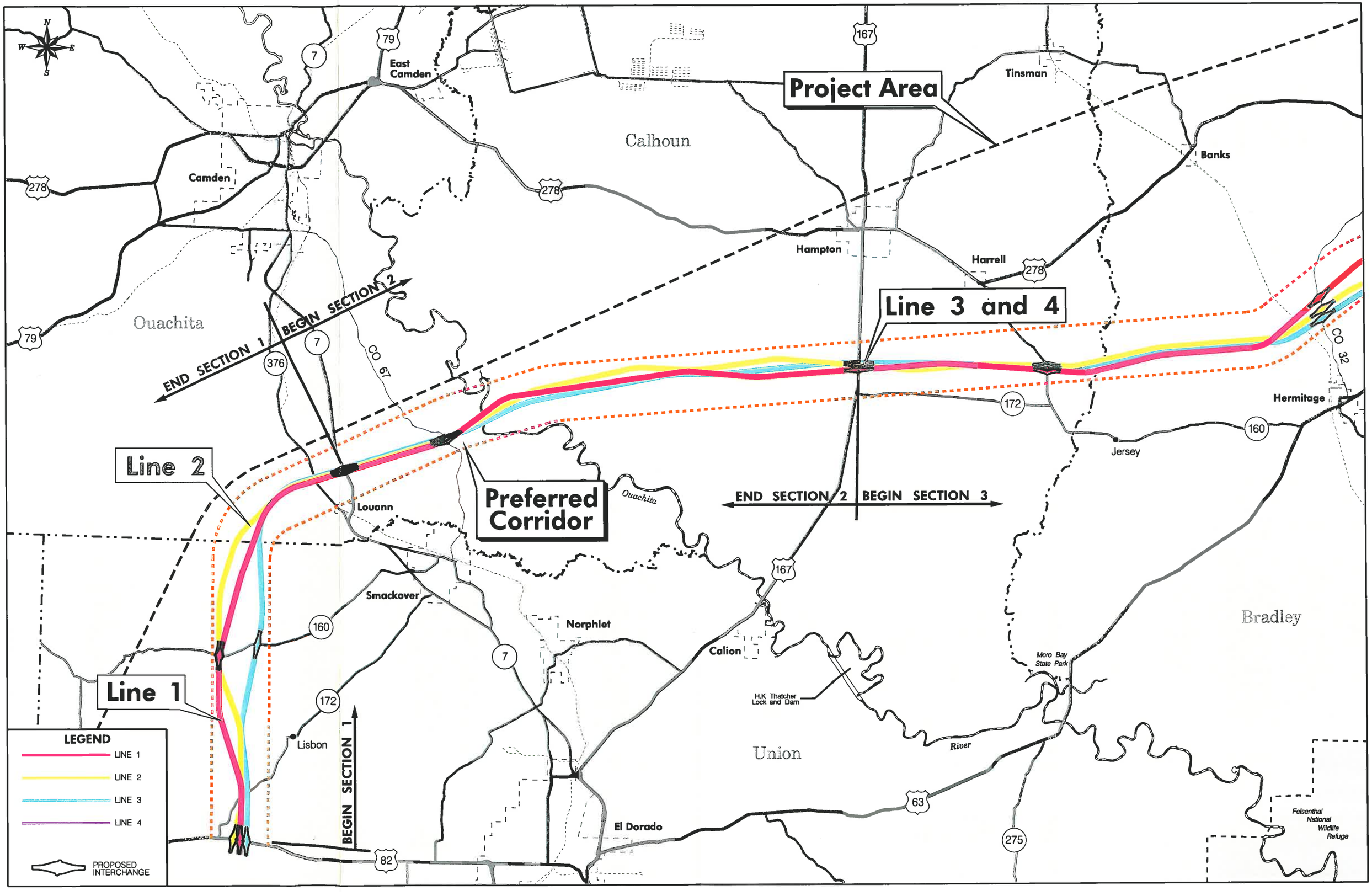
I-69 Location Study
El Dorado To McGehee

Exhibit 2-4

TYPICAL SECTION

Baker

NOT TO SCALE


N
W
E
S
Project Area
Line 3 and 4
Line 2
Line 1
Preferred Corridor
Calhoun
Ouachita
Union
Bradley
Camden
East Camden
Tinsman
Banks
Hampton
Harrell
Louann
Smackover
Norphlet
Calion
Lisbon
El Dorado
Jersey
Hermitage
Moro Bay State Park
H.K. Thatcher Lock and Dam
Ouachita River
Felsenthal National Wildlife Refuge
END SECTION 1 BEGIN SECTION 2
END SECTION 2 BEGIN SECTION 3
BEGIN SECTION 1
CO 67
CO 32
79
7
278
167
376
172
160
82
63
275
LEGEND
LINE 1
LINE 2
LINE 3
LINE 4
PROPOSED INTERCHANGE

Cleveland

Future I–530

Lake Monticello

Proposed Road Alignment by AHTD

Line 3

END SECTION 5

Selma

Desha

Future I–69 Mississippi River Crossing Alignment

Line 4

Warren

Monticello

Wilmar

Proposed I–530 Extension

McGehee

Seven Devils Swamp

Line 1

Line 2

Green Hill

Saline

Preferred Corridor

New Hope

Drew

Collins

Bayou Bartholomew

Dermott

Sumpter

END SECTION 3 BEGIN SECTION 4

END SECTION 4 BEGIN SECTION 5

Lacey

Cut-Off Creek Wildlife Management Area

Chicot

Bradley

Ouachita River

Ingalls

Johnsville

Fountain Hill

Ashley

Project Area

I–69 Location Study
El Dorado to McGehee

Exhibit 2–5

PRELIMINARY ALIGNMENT LOCATIONS

Baker

SCALE IN FEET

Section 1 Alignments

All alignments begin at a common point with an interchange at US Highway 82 approximately, two miles west of the regional El Dorado airport and heads northward toward the Union/Ouachita County line. North of Camp Creek, Line 1 and Line 2 veer to the west and intersect with S.H. 160 just west of Silver Hill Loop Road. Lines 3 and 4 proceed to the northeast and intersect with S.H. 160 slightly west of Sweet Canaan Church. An interchange is proposed for all alignments at S.H. 160. All alignments continue north to the county line, crossing Smackover Creek and converging together just west of the community of Liberty and then proceed to S.H. 7. An interchange is proposed for all alignments at this location.

Alignment development in Section 1 was influenced by the number and location of residences on US Highway 82, oil and gas wells in the vicinity of the S.H. 172 crossing, drainage and local road alignments in the vicinity of the S.H. 160 crossing, the Pace City Oil and Gas Field located between S.H. 160 and Smackover Creek, the Smackover Oil and Gas Field, and residential areas near the communities of Liberty and Kirkland near S.H. 7.

Section 2 Alignments

From S.H. 7, all alignments head east to County Road 67. An interchange is proposed for all alignments at this location to serve the rural residents in this area. The alignments continue east, crossing the Ouachita River and heading to US Highway 167. An interchange is proposed for all alignments at this location approximately one mile north of S.H. 172.

Alignment development in Section 2 was primarily influenced by the oil and gas well locations in the Smackover Field near the community of Louann, residential areas along County Roads 63 and 67, the crossing of the Ouachita River, several lakes and river oxbows in the Ouachita River floodplain. Other factors influencing alignment development included areas of land with known endangered species, the Hampton Oil Field, and determining an acceptable interchange location at US Highway 167.

Section 3 Alignments

All alignments continue eastward from US Highway 167 to a proposed interchange at S.H. 160. The alignments continue east crossing Moro and L'Aigle Creeks to County Road 32 in the Farmville area. All alignments have a proposed interchange at this location. The alignments proceed eastward to a proposed interchange location south of Warren at US Highway 63.

Alignment development in Section 3 was influenced by the location of S.H. 172 and S.H. 160, residential areas along S.H. 160 and County Roads 1, 5, and 32, and areas of land with known populations of federally listed endangered species. Additional factors influencing alignment development included the

location of churches, cemeteries, and the Warren Airport.

Section 4 Alignments

Section 4 alignments were developed both north and south of Monticello. All alignments continue from US Highway 63, with Lines 1 and 3 passing just north of town and terminating at US Highway 425, while Lines 2 and 4 pass south of town and end at US Highway 425. Lines 1 and 3 would have a proposed interchange at US Highway 278, a proposed fully directional interchange with I-530 north of Wilmar, and a proposed interchange at US Highway 425. Lines 2 and 4 would have a fully directional interchange with the proposed extension of I-530 south of Wilmar and would have a proposed interchange at US Highway 425 south of Monticello.

Alignment development in Section 4 was influenced by the Saline River crossings and the associated river floodplain and wetlands, the Warren Prairie Natural Area, the number and location of residences in the vicinity of Wilmar, Green Hill and Monticello, the location of the Warren sewage lagoon, and the ability to minimize impacts to the floodplains of Tenmile, Flat and Langford Creeks.

Section 5 Alignments

Lines 1 and 3 proceed eastward from US Highway 425, crossing S.H. 83 to S.H. 138. An interchange is proposed at this location. Lines 2 and 4 proceed from US Highway 425 and turn northeastward, crossing S.H. 35 and US Highway 278 before converging with Lines 1 and 3 east of S.H. 138. Interchanges are proposed for Lines 2 and 4 at S.H. 35 and US Highway 278. East of S.H. 138 all alignments converge at S.H. 293 with a proposed interchange south of Selma and then continue across Bayou Bartholomew and end with a proposed interchange at US Highway 65.

Alignments developed in Section 5 were influenced by proposed interchange locations at S.H. 138, S.H. 35, and US Highway 278, Monticello's sewage lagoons, wetlands in the Godfrey Creek area, and residential areas and farm related buildings near S.H. 138. Additional factors influencing alignment development included industrial areas to the south of Monticello, large tracts of farmland east of S.H. 138, a tract of property enrolled in the Wetland Reserve Program just west of Selma, wetlands in the vicinity of Bayou Bartholomew, and the SIU 12 alignment at US Highway 65 north of McGehee.

2.6.3 Public, Native American, Local Community Leader, and Agency Involvement

Comprehensive involvement of the public, Native American Tribes, local community leaders, and state and federal resources agencies was encouraged throughout the Alignment Study process. Public meetings were held in El Dorado, Warren, Monticello, and McGehee in March 2003 to obtain input on the preliminary alignments developed. Additional meetings were held with

local community leaders, and state and federal resources agencies. Public meeting display material was provided to the communities of El Dorado, Camden, Smackover, Warren, Crossett, Monticello, McGehee, and Dumas. Additionally, material was available for review at the project office in White Hall, Arkansas.

In May 2003, FHWA met with the Caddo Tribe of Oklahoma and the Quapaw Tribe of Oklahoma to review the preliminary alignments and discuss the on-going development of a Programmatic Agreement with FHWA. The Tunica-Biloxi Indians of Louisiana received meeting correspondence, but did not attend this meeting. All tribal correspondence is included in the Appendix.

Meetings with local community leaders were held in El Dorado and Monticello prior to public meetings to discuss the alignments in detail. Comments on the effect of the various lines on the local economy, traffic relief, and planned development or consistency with development objectives were specifically sought. Community leaders in attendance at the El Dorado meeting provided no preference for any alignment.

At this meeting the City of Monticello presented a letter that stated a preference for the southern alternative around Monticello, which was also supported by the Monticello Economic Development Commission.

All appropriate state and federal resource agencies were invited to attend a field review of the preliminary alignments. Detailed maps similar to those presented at the public meetings were reviewed in the field with the agencies. Public, tribal, local community leader, and agency involvement is discussed in greater detail in Section 7.

2.6.4 Alignment Revisions/Additions

Based on comments received following the March 2003 meetings, revisions were made to the preliminary alignments in several areas of the project. In addition, a fifth alignment (Line 5) was developed that incorporated these changes as well as combined portions of the four preliminary alignments to further reduce social and environmental impacts (see Exhibit 2-6).

Due to public concern of residential impacts at the proposed US Highway 82 interchange location, two additional interchange locations were developed approximately 1,200 feet to the west and east of Line 1 to form three distinctive interchange locations.

The second revision to the initial alignment locations is the result of landowner concern for an unrecorded historic cemetery north of S.H. 172. In response, Lines 1, 2, and 5 were relocated approximately 160 feet to the east to avoid this area.

Other minor revisions were made to the preliminary alignments to improve highway geometry and

further reduce or avoid impacts to sensitive environmental areas. These included improving local road crossings and further reducing and avoiding impacts to cemeteries, wetlands, and other water resources.

2.6.5 Traffic Analysis

To verify the proposed highway's future serviceability, a traffic analysis evaluated 2030 design year projected traffic conditions encompassing the area from El Dorado to McGehee, Arkansas. Due to the proximity of all developed alignments, a representative Build Alternative on new location was evaluated for the 2030 design year and considered the following four I-69 section scenarios:

1. El Dorado to McGehee, Arkansas
2. El Dorado, Arkansas to Memphis, Tennessee
3. Shreveport, Louisiana to Memphis, Tennessee
4. Build out of the National I-69 Corridor, Canadian Border to Mexican Border

Using the methodology outlined in the 2000 Highway Capacity Manual (HCM), the capacity analysis calculated the roadways' Level of Service (LOS) as discussed in Section 1.

All portions of SIU 13 from El Dorado to McGehee are projected to operate at LOS A for scenarios 1 and 2 and will operate at LOS A or B for scenarios 3 and 4. The average daily traffic volumes varied from a maximum of 3,800 vehicles under scenario 1 (El Dorado to McGehee, only) to a maximum of 14,000 under the completed National I-69 Corridor scenario.

The SIU 13 Project (2030 Build Alternative) would provide additional roadway capacity to the Project Area and would result in a general increase in system wide performance when compared to the No-Action Alternative. Interstate 69 would assist in diverting traffic volumes off the surrounding roadways resulting in the majority of links operating at LOS C or better. Areas of poor performance would still exist in El Dorado and Monticello, as I-69 would not improve community specific traffic issues. Table 2-6 and Table 2-7 provide a summary of 2030 Build Alternatives affect on Project Area LOS and includes alternatives both north and south of Monticello. Both alternatives show a general increase in system wide performance, reducing the percentage of roadway links operating at LOS D, and increasing the percentage of roadway links operating at LOS B. No substantial difference exists between these two alternatives with respect to LOS improvements.

2.6.6 Preliminary Cost Estimate

The preliminary cost estimates prepared for the alignment alternatives include construction, right-of-way (ROW) acquisition, and utility relocation costs (Table 2-8).

BEGIN SECTION 1

Line 1

Line 2

Line 3

Line 4

Preferred (Line 5)

Preferred Corridor

Cairo

Lisbon

Liberty

El-Dorado Field

Union County

Ouachita County

Sandy Creek

Bear Creek

Silver Creek

Corney Bert Creek

Creek

Creek

Spackenkill Creek

Creek

Richland

82

172

160

82

172

160

Match Line See Sheet 2 of 7

LEGEND

- LINE 1
- LINE 2
- LINE 3
- LINE 4
- PREFERRED (LINE 5)
- PROPOSED INTERCHANGE
- WETLAND
- NATURAL AREA
- FLOODPLAIN
- FLOODWAY
- WILDLIFE MANAGEMENT AREA
- WETLAND RESERVE PROGRAM
- OIL AND GAS FIELD
- HIGH PROBABILITY AREA FOR ARCHEOLOGICAL RESOURCES
- OIL AND GAS WELL LOCATION
- WELLHEAD PROTECTION AREA

I-69 Location Study
El Dorado to McGehee

Exhibit 2-6

ALIGNMENT LOCATIONS

Sheet 1 of 7

Baker

SCALE IN FEET 0 1000 2000 4000 6000

END SECTION 1 | BEGIN SECTION 2

Match Line See Sheet 1 of 7

Match Line See Sheet 3 of 7

Preferred Corridor

Line 2

Preferred (Line 5)

Line 1

Line 3

Line 4

Louann

Cross Roads

Smackover

Kenova

Snow Hill

Joyce City

Ouachita County

Union County

Calhoun County

376

7

160

CO 67

North Fork Wolf Creek

Brushy Creek

Beaver Creek

Ouachita River

Little Bay Lake

Ben Davis Lake

Cagas Lake

LEGEND

- LINE 1
- LINE 2
- LINE 3
- LINE 4
- PREFERRED (LINE 5)
- PROPOSED INTERCHANGE
- WETLAND
- NATURAL AREA
- FLOODPLAIN
- FLOODWAY
- WILDLIFE MANAGEMENT AREA
- WETLAND RESERVE PROGRAM
- OIL AND GAS FIELD
- HIGH PROBABILITY AREA FOR ARCHEOLOGICAL RESOURCES
- OIL AND GAS WELL LOCATION
- WELLHEAD PROTECTION AREA

I-69 Location Study
El Dorado to McGehee

Exhibit 2-6

ALIGNMENT LOCATIONS

Sheet 2 of 7

Baker

SCALE IN FEET
0 1000 2000 3000 4000 5000

END SECTION 2 BEGIN SECTION 3

Preferred (Line 5)

Line 2

Line 1

Line 3

Line 4

Preferred Corridor

Hampton

Harrell

Artesian

278

203

274

167

160

172

Match Line See Sheet 2 of 7

Match Line See Sheet 4 of 7

Champagnolle Creek

Dunn Creek

Jim Creek

Tom Cook Brake

Little Creek

Blann Creek

Rocky Branch

Hurricane Creek

Gibbert Branch

LEGEND

- LINE 1
- LINE 2
- LINE 3
- LINE 4
- PREFERRED (LINE 5)
- PROPOSED INTERCHANGE
- WETLAND
- NATURAL AREA
- FLOODPLAIN
- FLOODWAY
- WILDLIFE MANAGEMENT AREA
- WETLAND RESERVE PROGRAM
- OIL AND GAS FIELD
- HIGH PROBABILITY AREA FOR ARCHEOLOGICAL RESOURCES
- OIL AND GAS WELL LOCATION
- WELLHEAD PROTECTION AREA

I-69 Location Study
El Dorado to McGehee

Exhibit 2-6

ALIGNMENT LOCATIONS

Sheet 3 of 7

Baker

SCALE IN FEET
0 1000 2000 3000 4000 5000

Summerville
Farmville
Hermitage
Jersey
278
160
63
CO 32
Jacks Creek
Dunn Creek
Jolly Creek
Bradley County
Calhoun County
Wahl Branch
Springhill Creek
Wolf Branch
Villum Branch
California Creek
Little Creek
Brushy Creek
Preferred (Line 5)
Preferred Corridor
Line 1
Line 2
Line 3
Line 4
Match Line See Sheet 3 of 7
Match Line See Sheet 5 of 7
N
W
E
S

LEGEND

- LINE 1
- LINE 2
- LINE 3
- LINE 4
- PREFERRED (LINE 5)
- PROPOSED INTERCHANGE
- WETLAND
- NATURAL AREA
- FLOODPLAIN
- FLOODWAY
- WILDLIFE MANAGEMENT AREA
- WETLAND RESERVE PROGRAM
- OIL AND GAS FIELD
- HIGH PROBABILITY AREA FOR ARCHEOLOGICAL RESOURCES
- OIL AND GAS WELL LOCATION
- WELLHEAD PROTECTION AREA

I-69 Location Study
El Dorado to McGehee

Exhibit 2-6

ALIGNMENT LOCATIONS

Sheet 4 of 7

Baker

SCALE IN FEET

END SECTION 3 BEGIN SECTION 4

Warren

Wilmar

Carmel

Preferred (Line 5)

Line 4

Line 3

Line 1

Line 2

Preferred Corridor

Bradley County
Drew County

Warren Prairie Natural Area

Casey Jones Wildlife Management Area (Leased)

Carmichael Creek

Brushy Creek

L'Aigle Creek

Saline River

Tributary

Branch

Creek

63

8

278

133

172

Match Line See Sheet 4 of 7

Match Line See Sheet 6 of 7

LEGEND

- LINE 1
- LINE 2
- LINE 3
- LINE 4
- PREFERRED (LINE 5)
- PROPOSED INTERCHANGE
- WETLAND
- NATURAL AREA
- FLOODPLAIN
- FLOODWAY
- WILDLIFE MANAGEMENT AREA
- WETLAND RESERVE PROGRAM
- OIL AND GAS FIELD
- HIGH PROBABILITY AREA FOR ARCHEOLOGICAL RESOURCES
- OIL AND GAS WELL LOCATION
- WELLHEAD PROTECTION AREA

I-69 Location Study
El Dorado to McGehee

Exhibit 2-6

ALIGNMENT LOCATIONS

Sheet 5 of 7

Baker

SCALE IN FEET
0 1600 3200 4800 6400

Future I-530

Line 3

Line 1

Preferred Corridor

Proposed Road Alignment by AHTD

Line 2

Preferred (Line 5)

Preferred Corridor

Line 4

Proposed I-530 Extension

Monticello

Monticello Airport

College Heights

Enon

Langford Creek

Lower Cutoff Creek

Godfry Creek

Hurricane Creek

Piney Creek

Tennile Creek

Clear Creek

Jordan Creek

Adcock Creek

Sandy Creek

35 425 83 138 278 172

END SECTION 4 BEGIN SECTION 5

Match Line See Sheet 5 of 7

Match Line See Sheet 7 of 7

LEGEND

- LINE 1
- LINE 2
- LINE 3
- LINE 4
- PREFERRED (LINE 5)
- PROPOSED INTERCHANGE
- WETLAND
- NATURAL AREA
- FLOODPLAIN
- FLOODWAY
- WILDLIFE MANAGEMENT AREA
- WETLAND RESERVE PROGRAM
- OIL AND GAS FIELD
- HIGH PROBABILITY AREA FOR ARCHEOLOGICAL RESOURCES
- OIL AND GAS WELL LOCATION
- WELLHEAD PROTECTION AREA

I-69 Location Study
El Dorado to McGehee

Exhibit 2-6

ALIGNMENT LOCATIONS

Sheet 6 of 7

Baker

SCALE IN FEET

Match Line See Sheet 6 of 7

Wetland Reserve Program

Line 2

Line 3

Line 4

Line 1

Preferred (Line 5)

Preferred Corridor

END SECTION 5

Selma

Tiller

Reed

McGehee

Future I-69 Mississippi River Crossing Alignment

Casey Jones Wildlife Management Area (Leased)

Seven Devils Swamp WMA (CO)

Drew County

Desha County

Curaft Creek

Ables Creek

Bartholomew Bayou

Open Lake

Paw Paw Brake

Austin Brake

Piney Creek

Seven Devils Lake

138 293 65 277 278

N W E S

LEGEND

- LINE 1
- LINE 2
- LINE 3
- LINE 4
- LINE 5 (PREFERRED)
- PROPOSED INTERCHANGE
- WETLAND
- NATURAL AREA
- FLOODPLAIN
- FLOODWAY
- WILDLIFE MANAGEMENT AREA
- WETLAND RESERVE PROGRAM
- OIL AND GAS FIELD
- HIGH PROBABILITY AREA FOR ARCHEOLOGICAL RESOURCES
- OIL AND GAS WELL LOCATION
- WELLHEAD PROTECTION AREA

I-69 Location Study
El Dorado to McGehee

Exhibit 2-6

ALIGNMENT LOCATIONS

Sheet 7 of 7

Baker

SCALE IN FEET
0 2000 4000 6000 8000

Table 2-6
NORTH OF MONTICELLO BUILD ALTERNATIVE LOS

LOS RESULTS	2030 NO BUILD % of Roadway Links	2030 SCENARIO 1 % of Roadway Links	2030 SCENARIO 2 % of Roadway Links	2030 SCENARIO 3-4 % of Roadway Links
A	22	29	28	21
B	20	20	21	30
C	24	24	24	28
D	**31**	**25**	**26**	**20**
E	**3**	**2**	**1**	**1**

Source: Michael Baker Jr. Inc.

Table 2-7
SOUTH OF MONTICELLO BUILD ALTERNATIVE LOS

LOS RESULTS	2030 NO BUILD % of Roadway Links	2030 SCENARIO 1 % of Roadway Links	2030 SCENARIO 2 % of Roadway Links	2030 SCENARIO 3-4 % of Roadway Links
A	22	30	30	24
B	20	19	19	25
C	24	23	23	23
D	**31**	**24**	**24**	**24**
E	**3**	**3**	**3**	**3**

Source: Michael Baker Jr. Inc.

Table 2-8
COST ESTIMATE FOR ALIGNMENT ALTERNATIVES (IN YEAR 2003 $) (in 000s)

Cost	Line 1	Line 2	Line 3	Line 4	Preferred (Line 5)
Construction	$753,997	$765,858	$756,597	$762,433	$760,305
ROW	$24,637	$25,025	$24,705	$24,086	$23,560
Total	$778,634	$790,883	$781,302	$786,519	$783,865
Total Cost/Mile	$7,755	$7,686	$7,797	$7,681	$7,634

Source: Michael Baker Jr., Inc., AHTD Estimated Costs per Mile, July 2002

Construction costs include earthwork, grading, drainage, base and pavement, bridges, and a 15 percent engineering design and construction inspection expense (AHTD Estimated Costs per Mile, July 2002). ROW costs include land acquisition, relocation expenses for residences, utility relocations, and administrative expenses. The average total cost of the alternatives is $7.7 million/mile.

2.6.7 Environmental Documentation and Public Hearings

Public hearings were held on June 22-24, 2004 in El Dorado, Monticello, and McGehee. Over 100 DEISs were distributed to state and federal agencies, Native American Tribes, U.S. and State senators and representatives, county judges, local community leaders, chamber of commerce, and other organizations and are listed in Section 6. Comments received on the DEIS are discussed in Section 7 as part of the administrative record for this project.

2.6.8 The Preferred Alignment

Active involvement and participation by community leaders, state and federal agencies, and the public provided sufficient information and comments to identify Line 5 as the Preferred Alignment for the SIU 13 Project. The Preferred Alignment is identified in Exhibit 2-6 and is compared to the alignments considered in the Draft EIS in Table S-1. As discussed in Section 2.6.4, Line 5 (the Preferred Alignment) was developed to combine portions of the four preliminary alignments to further reduce social and environmental impacts. Furthermore, based on comments received on the DEIS and on the Preferred Alignment announcement in October 2004, minor revisions were made to Line 5 to further reduce property owner impacts.

The Preferred Alignment is discussed in more detail for each of the following project sections.

Section 1 – US Highway 82 to S.H. 7

The Preferred Alignment in Section 1 would:

- Best minimize residential impacts at the US Highway 82 interchange.
- Best avoid brine wells and transmission lines south of US Highway 82.
- Provide acceptable connections to SIU 14 alignments under development.
- Avoid an unrecorded historic cemetery north of S.H. 172.
- Best avoid residential and agricultural development in the Silver Hill Loop area.
- Eliminate the need for extended frontage roads in the Silver Hill Loop area.
- Avoid known oil well locations.
- Best avoid residential impacts near the communities of Liberty and Kirkland.
- Provide the best interchange location at US Highway 82 and S.H. 160.

Section 2 - S.H. 7 to US Highway 167

The Preferred Alignment in Section 2 would:

- Best avoid residential impacts at County Road 67 interchange.
- Best minimize impacts to forested wetlands in the Ouachita River floodplain.
- Avoid the need to relocate a timber access road east of the Ouachita River crossing.
- Provide the best crossing of the Ouachita River.

Section 3 – US Highway 167 to US Highway 63

The Preferred Alignment in Section 3 would:

- Best avoid residential impacts at S.H. 160 interchange.
- Avoid residential impacts at all local and county road crossings.
- Be located furthest from known red-cockaded woodpecker areas.
- Minimize wetland impacts.
- Avoid all known churches and cemeteries.

Section 4 - US Highway 63 to US Highway 425

The Preferred Alignment in Section 4 would:

- Provide the best crossing of the Saline River closest to US Highway 278 (a state and federal resource agency comment).
- Avoid the Warren Prairie Natural Area.
- Provide the closest interchange access to Wilmar, a predominantly minority community.
- Avoid residential impacts.
- Provide the best interchange location at US Highway 425.

Section 5 - US Highway 425 to USHighway 65

The Preferred Alignment in Section 5 would:

- Avoid a known wetland reserve program property.
- Best address potential environmental justice concerns east of Monticello.
- Best minimize impacts to farmland and farm operations east of Monticello.

Monticello Area

In addition to the five project sections, alignments north and south of Monticello were evaluated (Table 2-9) and presented to the public at the DEIS hearings. The majority of DEIS comments received on this issue favored a southern route, including support from state and community leaders (see Section 7 Coordination and Public involvement). Furthermore, the Preferred Alignment would:

- Avoid existing and planned residential development north of Monticello.
- Provide better access to the University, public schools, hospital, and other medical facilities.

- Provide better access to existing and planned industrial development.
- Best minimize impacts to farmland and farm operations east of Monticello.
- Provide better access to Crossett, Hamburg and other Ashley County communities, and Ashley County industries.

In Summary, the Preferred Alignment:

- Impacts the fewest residences (4) over the 103 mile project.
- Impacts the least amount of wetlands.
- Avoids known active oil wells.
- Avoids known red-cockaded woodpecker areas.
- Avoids direct impacts to developed communities.
- Avoids known properties on the National Register of Historic Places.
- Avoids known hazardous waste sites.
- Best avoids direct impacts to and separation of rural residential housing clusters.
- Best avoids potential environmental justice areas.
- Best avoids the Warren Prairie Natural Area.
- Best addresses social and environmental issues in the Monticello area.
- Remains closest to US Highway 278 at the Saline River crossing (a state and federal agency concern).

The Preferred Alignment will be subject to public, local community leader, state and federal agency, and Native American Tribal review during the comment period on the Final EIS. Any comments received will be evaluated and addressed in the Record of Decision.

The identification of the Preferred Alignment satisfies, to the fullest extent possible, the objectives of the NEPA/404 process that has been adopted for this study. The multi-step project approach allowed a thorough consideration of all alternatives developed at both the corridor and alignment level with respect to the potential impacts to waters of the United States including wetlands, and functioned as the Alternatives Analysis. Impacts were minimized to the greatest extent practicable in accordance with Section 404 b(1) Guidelines.

Table 2-9
PRELIMINARY ALIGNMENT COMPARISON
US 63 (WARREN) TO US 65 (MCGEHEE)

Issue/Resource	RATING (UNITS)	ALIGNMENTS					Comments
		LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	
Social/Economic/Engineering							
Economic Development Opportunities	Rating	◒	○	◒	○	○	Based on March 2003 meetings with local elected officials and community leaders. Lines 2,4,and 5 would provide the best access to existing and planned industrial development areas.
Compatibility with existing Land Use	Rating	◒	○	◒	○	○	Best avoids areas of dense residential development or planned residential development
Compatibility with existing and planned industrial development	Rating	◒	○	◒	○	○	Lines 2, 4, and 5 would provide the best access to existing and planned industrial development in Monticello. All alignments would provide good access to facilities in Warren.
Number of Residential Displacements	Rating (Number)	● (15)	◒ (10)	● (15)	◒ (3)	◒ (3)	Lines 1 and 3 would impact a residential area in Monticello.
Potential Noise Impacts	Rating	◒	○	◒	○	○	Lines 1 and 3 would have greater noise impacts as there are more sensitive receptors (residences) in the northern Monticello area
Facility accessibility to communities and industries south of project (Ashley County, Crossett, Georgia Pacific (GP) facility)	Rating	●	○	●	○	○	Support for alignments south of Monticello by Ashley County Judge, Crossett Economic Development Commission, GP
Facility accessibility to University of Arkansas at Monticello (UAM)	Rating	●	○	●	○	○	Support for alignments south of Monticello by Chancellor of UAM (Lines 2,4, and 5).
Large Scale Agricultural Operations	Rating	●	◒	●	○	○	Lines 4 and 5 would have the least impact on large agricultural properties – would cross near back portion of properties, maximizing farmable areas.
Potential Adverse Impacts to Low Income and Minority Populations (Environmental Justice Issues)	Rating	●	◒	●	◒	○	Line 5 provides the greatest opportunity to avoid adverse impacts to low income and minority residents.
Direct impacts and separation of rural residential housing clusters	Rating	◒	◒	◒	◒	○	Line 5 provides the greatest opportunity to avoid impacts to clusters of rural residential dwellings.
Preliminary Construction Cost Estimate from US 63 to US 65	Rating	○	◒	○	◒	◒	
Length of Alignment	Rating (Miles)	○ (40.5)	◒ (43.2)	○ (40.5)	◒ (42.9)	◒ (43.0)	
Extension of I-530	Rating (Miles)	○ (0)	● (2.7)	○ (0)	● (2.7)	● (2.7)	Lines 2, 4, and 5 would require the future extension of I-530 to tie directly to I-69 south of Wilmar.
Environmental							
Impacts to Forested Wetlands	Rating (Acres)	● (171)	◒ (157)	◒ (126)	○ (98)	○ (98)	Wetland impacts primarily associated with Saline River drainage.
Impacts to 100 Year Floodplain	Rating (Acres)	◒ (412)	● (443)	◒ (398)	○ (347)	○ (356)	Crossing of 100 Year Floodplain.
Impacts at Saline River Wetlands/Floodplains	Rating	●	●	◒	○	○	Based on resource agency concerns and ability to be near US 278 existing crossing of the Saline River.
Potential Impacts to Warren Prairie Natural Area	Rating	●	●	○	◒	◒	All alignments avoid the existing Warren Prairie property and the proposed expansion area. Rating based on distance from the property.
Recorded Archeological Sites	Rating (Number)	◒ (3)	○ (2)	◒ (3)	○ (2)	○ (2)	Known archeology sites of undetermined eligibility and previously determined not eligible sites.
Potential Historic Structure Impacts	Rating	●	○	●	○	○	Lines 1 and 3 would impact several potential historic structures at SH 35. Lines 2, 4, and 5 would avoid this area.
Archeological High Probability Areas	Rating (Acres)	○ (271)	● (334)	◒ (306)	◒ (295)	◒ (297)	Indication of potential presence of archeological sites. All alignments would cross Bayou Bartholomew and the Saline River drainage where archeological sites are likely to occur.
Recorded Hazardous Materials Sites	(Number)	○ (0)	○ (0)	○ (0)	○ (0)	○ (0)	Alignments would not impact any known hazardous materials sites.

Source: Michael Baker Jr., Inc.

Rating scale: ○ ◒ ◒ ◒ ● Best → Worst

Section 3 AFFECTED ENVIRONMENT

This Section provides a general description of the social, natural, and physical environments in the roughly 3,000 square mile SIU 13 Project Area in nine southern Arkansas Counties. Specific impact assessments and potential mitigation measures are presented in Section 4: Environmental Consequences.

3.1 SOCIAL ENVIRONMENT

The Project Area is located in the Gulf Coastal Plain Region of southern Arkansas and encompasses portions of Columbia, Union, Ouachita, Calhoun, Bradley, Drew, Desha, Chicot, and Ashley Counties. This portion of Arkansas is dominated by large-scale agricultural activities including expansive tracts of timber producing forests and scattered parcels in pasture and row crop production. Primary areas of residential and commercial development are confined to the cities of El Dorado, Warren, Monticello, McGehee, and Dermott, while smaller communities ranging in population from 100-1,000 are scattered throughout the nine-county area.

3.1.1 Demographics

Population data and growth rates are presented in Table 3-1. Drew and Bradley Counties experienced the only positive population increase between 1990 and 2000 in the Project Area, but were still roughly 50 percent below the statewide average of 14 percent. Monticello in Drew County had the greatest population increase (+13 percent), while Dermott in Chicot County experienced the largest population decrease (-30 percent). Overall, the nine Project Area counties experienced a decline of approximately two percent between 1990 and 2000.

The overall decline in the population within the Project Area is similar to other parts of rural southern Arkansas. These areas have experienced difficulty in transitioning from the historical economic backbone of timber and agriculture to other job market sectors such as manufacturing, medical or retail. Consequently over time, many counties have lost individuals and families who have had to move to other areas offering a more diverse and available source of employment opportunities.

Drew County, Bradley County, and the city of Monticello had the largest population within the 19-44 age class. Bradley County and the city of Warren had the highest percent of persons older than 65. In general, age distributions for the Project Area counties and larger towns and cities are very similar to state wide statistics.

Minority populations comprise a large portion of the Project Area populous and are without exception greater than those observed for the statewide average (Table 3-2). The percentage of minorities observed in Project Area county populations ranges from 25 percent in Calhoun County to 57 percent in Chicot County.

Table 3-1
PROJECT AREA POPULATION DATA

State/County/Community	1990	2000	1990-2000 Change (%)
Arkansas	*2,350,725*	*2,673,400*	*+14*
Ashley County	24,319	24,209	0
Bradley County	11,793	12,600	+7
Warren	6,455	6,442	0
Calhoun County	5,826	5,744	-1
Hampton	1,562	1,579	+1
Chicot County	15,713	14,117	-4
Dermott	4,715	3,292	-30
Columbia County	25,691	25,603	-1
Desha County	16,798	15,341	-9
McGehee	4,997	4,570	-9
Drew County	17,369	18,723	+7
Monticello	8,116	9,146	+13
Union County	46,719	45,629	-2
El Dorado	23,146	21,530	-7
Smackover	2,232	2,005	-10
Ouachita County	30,574	28,790	-6
All Project Area Counties	194,802	190,756	-2

Source: U.S. Department of Commerce - Bureau of the Census - 2000, Summary of General Characteristics - Population of Places
Source: U.S. Department of Commerce - Bureau of the Census - 1990, Summary of General Characteristics - Population of Places

The average minority percentage for all Project Area counties and larger cities is 39 percent. The higher percentage of African Americans found in the Project Area is similar to other historically agriculturally dominated areas throughout the southern United States. Prior to farming mechanization and the conversion from family and smaller sized farms to large conglomerate farm operations, African Americans served as the dominant farm labor force in this area and have remained a large proportion of the county populations.

Most of the minority population in the Project Area is African American with only two to three percent of the minority population typically composed of other ethnic groups. However, in Bradley County the Hispanic/Latino population has grown from less than two percent in 1990 to around eight percent in 2000. According to the Bradley County Economic Council, Hispanics/Latinos are coming to Bradley County to work in the poultry and tomato farming sectors.

Table 3-2
PROJECT AREA RACIAL CHARACTERISTICS

State, County or Community	Total Pop.	White		African American		Other	
		Pop.	%	Pop.	%	Pop.	%
Arkansas	*2,673,400*	*2,138,598*	*80*	*418,950*	*16*	*115,852*	*4*
Ashley County	24,209	16,892	70	6,561	27	756	3
Bradley County	12,600	7,983	63	3,607	29	1,010	8
Warren	6,442	3,508	54	2,628	41	306	5
Calhoun County	5,744	4,280	74	1,343	23	121	2
Hampton	1,579	1,045	66	506	32	28	2
Chicot County	14,117	6,104	43	7,617	54	396	3
Dermott	3,292	831	25	2,412	73	49	2
Columbia County	25,603	16,035	63	9,317	36	467	2
Desha County	15,341	7,747	50	7,107	46	481	3
McGehee	4,570	2,592	57	1,897	42	81	2
Drew County	18,723	13,162	70	5,085	27	476	3
Monticello	9,146	5,941	65	2,983	33	222	2
Ouachita County	28,790	17,200	60	11,125	38	465	2
Union County	45,629	30,182	66	14,587	32	860	2
El Dorado	21,530	11,552	54	9,512	44	466	2
Smackover	2,005	1,455	73	527	26	23	1
Project Area Counties	190,756	119,585	61	66,349	34	8,996	3

Source: U.S. Department of Commerce - Bureau of the Census - 2000, Summary of General Characteristics - Population of Places

3.1.2 Community Characteristics

The larger communities of El Dorado, Smackover, Warren, Monticello, McGehee, and Dermott, are well-defined with businesses, schools, churches, and residential development located along a network of municipal streets. These larger communities function as centers for a wide variety of social activities for city residents as well as for residents of the surrounding rural areas. Each community has grocery and retail shopping, health services, public school systems, and other services. Beyond the city limits, residential development patterns become dispersed as the environment changes to a more rural setting.

There are many smaller cities in the Project Area such as Hampton, Harrell, Hermitage, and Selma. These communities can generally be described as clusters of residences located along county or state highways with an associated church and cemetery and little or no commercial development. Residents of these small rural communities must travel to nearby larger communities such as El

Dorado, Warren, and Monticello for many goods and services.

Primary health care needs for area residents are provided at major medical facilities located in El Dorado, Warren, Monticello, and McGehee. These facilities provide emergency as well as routine and specialized care. Smaller physician and dental offices are located in area communities and provide routine care.

Primary and secondary schools, as well as public libraries, are limited to the communities of El Dorado, Smackover, Warren, Monticello, Dermott, and McGehee within the Project Area. In addition, post-secondary education opportunities are offered at the University of Arkansas – Monticello Campus and the South Arkansas Community College in El Dorado. Project Area counties had a high school graduation rate (37 percent) slightly above the statewide average (34 percent), but were lower for post-secondary education categories (Table 3-3). Calhoun County had one of the highest high school graduation rates (44 percent) yet had the lowest percent attaining a bachelor's degree or higher (seven percent). The communities of El Dorado and Monticello had the highest percent attaining a bachelor's degree or higher (19 percent and 22 percent, respectively). Many of the towns and counties that have lower percentages of post high school degrees would likely benefit from improved access to regional colleges located in El Dorado and Monticello.

Churches and cemeteries are scattered throughout the Project Area and have been identified by the public as sensitive community and family resources that should be avoided during the highway development process. Every effort was made throughout the Corridor and Alignment Studies to avoid and minimize potential impacts to these resources.

Law enforcement is provided by local, county and state police departments. Municipal police departments are located in El Dorado, Warren, Monticello, Dermott, and McGehee. Police protection is also provided by two state police offices located in Warren and Pine Bluff, and nine county Sheriff's departments.

Table 3-3
2000 PROJECT AREA EDUCATIONAL ATTAINMENT PERSONS 25 YEARS AND OLDER

State, County or Community	*Non-High School Graduate		High School Graduate		*Some College/ Associates Degree		Bachelors Degree or Higher	
	Number	% Total Pop.	Number	% Total Pop.	Number	% Total Pop.	Number.	% Total Pop.
Arkansas	*427,449*	*25*	*590,416*	*34*	*424,907*	*24*	*288,428*	*17*
Ashley County	4,325	28	6,798	43	3,017	19	1,582	10
Bradley County	2,794	33	3,082	37	1,494	18	998	12
Warren	1,494	34	1,619	37	774	18	521	12
Calhoun County	1,221	31	1,701	44	699	18	285	7
Hampton	263	27	434	44	189	19	98	10
Chicot County	3,242	36	3,196	35	1,566	17	1,058	12
Dermott	791	39	729	36	316	16	208	10
Columbia County	4,164	26	5,742	36	3,442	21	2,694	17
Desha County	3,351	35	3,443	36	1,720	18	1,060	11
McGehee	853	29	1,109	38	581	20	402	14
Drew County	3,113	27	3,966	34	2,480	21	1,994	17
Monticello	1,156	22	1,819	34	1,139	22	1,172	22
Ouachita County	5,032	26	6,622	35	4,906	26	2,415	13
Union County	7,643	26	10,648	36	7,228	24	4,467	15
El Dorado	3,707	26	4,349	31	3,320	24	2,597	19
Smackover	382	28	479	35	316	23	202	15
Project Area Counties	34,885	28	45,198	37	26,552	22	16,553	13

Source: U.S. Department of Commerce - Bureau of the Census - 2000, Census of Population and Housing.
* Categories are independent, meaning that those included in one category are not included in another category. For instance, those with a "Bachelors degree or Higher" are not also counted under the "High School Graduate" category.

Fire protection is provided by municipal fire stations located in El Dorado, Warren, Monticello, Dermott, and McGehee. Rural areas are protected through the efforts of volunteer fire departments located throughout the Project Area.

General housing characteristics for the Project Area are presented in Table 3-4. Ashley County had the highest percentage of owner-occupied housing units (67 percent). Calhoun County had the highest percentage of vacant housing units (23 percent). Monticello had the lowest percentage of owner-occupied housing units (50 percent) and the highest percentage of renter-occupied units (40 percent). Community median value for owner-occupied housing units ranged from $32,700 in Dermott to $66,000 in Monticello, while county median values ranged from $41,700 in Calhoun to $60,100 in Drew. All Project Area median home values were considerably below the statewide value of $72,800.

Table 3-4
2000 PROJECT AREA HOUSING CHARACTERISTICS

State, County or Community	Total Housing	Owner Occupied		Renter Occupied		Vacant		Median Value Owner Occupied Unit
	Units	Units	%	Units	%	Units	%	
Arkansas	*1,173,043*	*723,535*	*62*	*319,161*	*27*	*130,347*	*11*	*72,800*
Ashley County	10,615	7,136	67	2,248	21	1,231	12	55,700
Bradley County	5930	3,512	60	1,322	22	1,096	18	45,000
Warren	2,880	1,636	57	933	32	311	11	45,900
Calhoun County	3,012	1,907	63	410	14	695	23	41,700
Hampton	699	429	61	190	27	80	12	45,700
Chicot County	5,974	3,632	61	1,573	26	769	13	47,300
Dermott	1,404	815	58	401	29	188	13	32,700
Columbia County	11,566	7,127	62	2,854	25	1,585	14	39,200
Desha County	6,663	3,762	56	2,160	33	741	11	46,700
McGehee	2,044	1,130	55	706	35	208	10	47,200
Drew County	8,287	5,060	61	2,277	27	950	12	60,100
Monticello	3,972	1,974	50	1,618	40	380	10	66,000
Ouachita County	13,450	8,293	62	3,320	25	1,837	13	50,200
Union County	20,676	13,110	63	4,879	24	2,687	13	55,400
El Dorado	9,891	5,273	53	3,413	35	1,205	12	55,400
Smackover	915	590	64	204	23	121	13	53,300
Project Area Counties	86,173	53539	62	21,043	24	11,591	14	50,263

Source: U.S. Department of Commerce - Bureau of the Census - 2000, Summary of General Characteristics - Population of Place

Recreational Resources

The Project Area provides access to several major outdoor recreation areas. Used by hunters, fisherman, and a variety of other outdoor enthusiasts for bird watching, camping, and boating, these recreation areas are primarily operated as state and federal wildlife management areas such as Felsenthal National Wildlife Refuge (NWR) and Seven Devils Swamp Wildlife Management Area (WMA). In addition to these public lands, the Project Area has thousands of acres of private lands that offer similar outdoor opportunities. The major recreational areas are described below.

Lake Monticello is located in Drew County just north of the City of Monticello. This 1,520 acre impoundment provides opportunities for fishing, boating, and other water related activities. An archery range and a model airplane airport are also located at the lake.

Lake Georgia Pacific, located in Ashley County near Felsenthal NWR, is the largest impoundment in the Project Area. The lake is approximately 1,700 acres and used for fishing and as a public water supply for the community of Crossett.

Located in south central Arkansas, Felsenthal NWR is a 65,000-acre refuge established for

migrating waterfowl in 1975. Felsenthal NWR greatly enhances the regions biodiversity and is home for thousands of migrant and resident waterfowl, marsh and water birds, neotropical migrants, resident wildlife, and has the highest density of the federally endangered red-cockaded woodpecker in the state. In addition, there are over 200 known Native American archeological sites on the refuge. Felsenthal NWR averages over 300,000 visitors annually. Visitor records indicate that most live within 150 miles of the refuge.

Cut-off Creek WMA is located approximately 25 miles southeast of Monticello in Drew County. Established in 1958, this WMA consists of 9,080 acres of primarily bottomland hardwoods. Two thousand acres of hardwoods are flooded annually for waterfowl hunting. According to records of hunter activity, this WMA primarily serves as a hunting site for local residents.

Seven Devils Swamp Natural Area is located along Cut-off Creek at the point where the creek flows from the pine-covered hills of the West Gulf Coastal Plain to the flat lowlands of the Mississippi Alluvial Plain. The area is comprised of a relatively narrow bottomland occupied by bald cypress and water tupelo on the wetter sites and bottomland hardwood tree species on drier, but still flood-prone, sites. Further downstream, the area is almost permanently flooded, supporting a diverse swamp community. High quality forested canebrakes also occur within this natural area. The natural area falls within the Seven Devils Swamp Wildlife Management Area and is co-managed by the Arkansas Natural Heritage Commission (ANHC) and the Arkansas Game and Fish Commission (AGFC).

Established in 1954, Seven Devils Swamp WMA is part of a 6,000 acre wetland area located 12 miles east of Monticello in Drew County. The Arkansas Game and Fish Commission owns 512 acres, while the remainder is owned mostly by Georgia-Pacific Corp. and other private individuals. The portion owned by Georgia-Pacific is in the land lease system known as the Casey Jones WMA. This area was originally purchased for a fishing lake, but is now primarily managed for waterfowl. The area is composed of cypress, tupelo, locust and willow trees, and buttonbush. Cut-off Creek is the single source of water for the area. Thousands of waterfowl and other water birds migrate through the swamp annually. The swamp has a breeding population of anghingas, great blue herons, and little green herons. There are occasional sightings of bald eagles in the fall and winter and some alligators are present in this WMA.

Warren Prairie Natural Area is located southeast of Wilmar in Bradley and Drew Counties. This approximately 890-acre area was acquired by the Nature Conservancy in 1983 and is currently managed by the ANHC. The area consists of a mosaic of salt slick barrens, saline prairie, Delta post oak flatwoods, prairie mound woodlands, pine

woodlands, and bottomland hardwood forest communities. Soils containing high amounts of sodium at the site appear to account for the sparse and irregular distribution of trees and the resultant dominance of grasses and other herbaceous vegetation. Stands of dwarf palmetto are distributed irregularly on the prairie and lend a tropical aspect to the area. This natural area provides critical habitat for the state's largest population of the federally threatened plant, geocarpon (*Geocarpon minimum*). According to the ANHC, the potential for Warren Prairie to serve as habitat for the federally endangered red-cockaded woodpecker (*Picoides borealis*) is being examined.

The Ouachita River has been a favorite fishing spot among sportsmen for decades with catches including small-mouth, spotted, and largemouth bass and green and longear sunfish. The river is also used by boaters for water sports and provides waterfowl hunting opportunities in the winter.

The Saline River is the last major undammed stream in the Ouachita Mountain drainage area. Its watershed contains some of the finest deer, turkey, and squirrel hunting in Arkansas. The Saline is one of the few rivers in this area with a gravel bottom throughout its entire length and provides excellent fishing and canoeing opportunities.

One of the most popular fishing and water sport areas in south central Arkansas has formed where Moro Bay and Raymond Lake join the Ouachita River. Moro Bay State Park, located at the confluence of these waters, offers camping, picnicking, hiking, fishing and other related water recreation opportunities.

The Arkansas Museum of Natural Resources is located one mile south of Smackover in the heart of the Arkansas oil fields. The Museum collects, conserves, interprets, and exhibits examples of Arkansas' oil and brine industrial history and the social history that accompanied the oil boom of the 1920s.

3.2 ECONOMIC ENVIRONMENT

Historically, farming and forestry activities have formed the economic base of southern Arkansas. However in the El Dorado area, oil was discovered in 1921 and the timber/cotton based economy quickly changed with the discovery of the Smackover Oil Field. The town of Smackover, just north of El Dorado, grew from approximately 100 people to over 25,000 in less than a year. The population of Smackover is currently around 2,000 people. Although the oil boom is over, there are still many producing wells and an ongoing oil industry in the area. Additionally, the discovery of one of the world's largest brine reserves in Union and Columbia Counties has had an impact on the local economy and could play a larger role in the area's economic future.

Between 1990 and 2000, the civilian labor force decreased two percent in the Project Area counties while the statewide labor force increased 12 percent (Table 3-5). Ouachita County experienced the greatest reduction in labor force (21 percent), while Drew County's labor force increased 16 percent. The average unemployment rate for all Project Area counties in 2000 (eight percent) was higher than the statewide average (4.4 percent) and ranged from 5.1 percent in Union County to 11.2 percent in Desha County.

Many jobs continue to migrate to more urban settings. Communities such as El Dorado, Warren, and Monticello have expanded their economic base through the addition and development of diversified employment opportunities to stimulate economic growth. While major employers vary from county to county, the dominant employment industries throughout the Project Area counties include health services, agriculture (forestry, farming, and aquaculture), education, manufacturing, and retail trade.

Employment in health services and agriculture were the only industry types within the Project Area counties to exhibit an overall positive increase (Table 3-6). All project counties showed a positive increase in employment in health service with the greatest in Bradley, Chicot, and Ouachita Counties (6 percent). Agricultural activities are a modest employment contributor within most of the Project Area counties. Agricultural employment reductions were observed in Columbia, Chicot, and Desha Counties. Notable exceptions occurred in Bradley and Calhoun Counties. Bradley County has experienced strong growth in tomato farming and Calhoun County experienced a slight increase in timber related employment recent years.

Overall, employment in education remained relatively constant throughout the Project Area counties. Several counties showed a slight increase, while others had a slight decrease as school systems adjusted to the fluctuating number of school age children in each county.

Project Area employment in manufacturing and retail trade suffered the greatest decline of the industry types between 1990 and 2000 with each county experiencing a reduction in employment. Bradley County showed the greatest manufacturing employment decline (13 percent), while Union County showed the greatest retail employment decline (six percent).

Table 3-5
PROJECT AREA LABOR FORCE ESTIMATES

State/County	Civilian Labor Force			Unemployment Rate (%)		
	1990	2000	% Change	1990	2000	Difference
Arkansas	1,126,100	1,262,300	12.0	7.0	4.4	-2.6
Ashley County	10,900	10,750	-1.0	6.0	7.2	1.2
Bradley County	5,175	4,550	-12.0	9.7	8.6	-1.1
Calhoun County	2,625	2,225	-15.0	11.4	7.6	-3.8
Chicot County	5,950	6,400	8.0	10.5	9.0	-1.5
Columbia County	11,775	11,525	-2.0	7.4	5.7	-1.7
Desha County	6,850	7,100	4.0	10.6	11.2	0.6
Drew County	8,625	10,000	16.0	9.0	6.7	-2.3
Ouachita County	14,600	11,550	-21.0	13.8	7.8	-6.0
Union County	20,775	21,325	3.0	7.0	5.1	-1.9
Project Area Counties	87,275	85,425	-2.0	10.0	8.0	-2.0

Source: Arkansas Employment Security Department 2004

Table 3-6
EMPLOYMENT BY INDUSTRY TYPE*

	*Agriculture**			Manufacturing			Retail trade			Health services			Education		
County	1990	2000	% Change	1990	2000	% Change	1990	2000	% Change	1990	2000	% Change	1990	2000	% Change
Ashley	7	7	0	39	28	-10	13	12	-1	6	7	+1	9	8	-1
Bradley	3	10	+7	34	21	-13	13	12	-1	8	14	+6	8	9	+1
Calhoun	1	9	+8	34	25	-11	14	10	-4	6	10	+4	10	7	-3
Chicot	17	12	-5	17	13	-4	14	11	-3	9	15	+6	9	10	+1
Columbia	4	3	-1	27	25	-2	17	12	-5	7	10	+3	11	13	+2
Desha	16	12	-4	22	21	-1	14	10	-4	6	8	+2	9	9	0
Drew	5	6	+1	31	24	-7	15	13	-2	7	10	+3	14	11	-3
Ouachita	2	2	0	35	31	-4	15	13	-2	6	12	+6	8	9	+1
Union	2	3	+1	26	25	-1	17	11	-6	9	12	+3	7	9	+2
Project Area Counties	6	7	+1	29	24	-5	15	12	-3	7	11	+4	9	9	0

Source: U.S. Department of Commerce - Bureau of the Census – 1990 and 2000, Census of Population and Housing – General Housing Characteristics
*Values are presented as % of employed persons 16 years of age and older.
** Agriculture includes forestry, farming, and aquaculture.

Some of the largest employers in each county are listed below:

- Columbia County – Albemarle, Alcoa, Southern Arkansas University, Magnolia Hospital, Amfuel, Magnolia Public Schools.
- Union County – Union Powers Partnership, Anthony Forest Products, ConAgra, Cooper Engineered Products, Georgia Pacific, Great Lakes Chemical Corp., Lion Oil, Prescolite, Murphy Oil, Teris, The Medical Center of South Arkansas, El Dorado School District.
- Ouachita County – International Paper, Lockheed-Martin,Camden/Fairview School District, Ouachita County Medical Systems, ARC, Arquest.
- Calhoun County – Atlantic Research Corporation, Lockheed Martin, Raytheon Missile Systems, General Dynamics, Scottco Paper Products.
- Bradley County - Robbins, Inc., Potlatch Corporation, Bradley County Memorial Hospital, Warren Public School District, Southeast Arkansas Human Development Center, Wagnon Place Nursing Home, and Beverly Enterprises.
- Drew County - Burlington Industries, International Paper, University of Arkansas-Monticello, Monticello School District, Drew Memorial Hospital, Wal-Mart, and SEAARK Marine and Boat, Inc.
- Desha County – Potlatch Corporation, McGehee Industries, McGehee School District.
- Chicot County – Delta Regional Prison, Chicot Memorial Hospital, Dermott Public Schools.
- Ashley County – Georgia Pacific, P.E. Barnes Lumber, Hamburg School District, Crossett Public Schools, Bemis, Ashley County Medical Center, Ideal Construction.

Median household incomes vary from $22,024/year in Chicot County to $31,758/year in Ashley County (Table 3-7). The average median household income across the Project Area is $27,400, which is approximately 15 percent lower than the statewide average of $32,182.

Table 3-7
MEDIAN HOUSEHOLD INCOME

State/County	1990	2000	% Change
Arkansas	*21,147*	*32,182*	*52*
Ashley County	20,609	31,758	54
Bradley County	17,259	24,821	44
Calhoun County	21,198	28,438	34
Chicot County	12,680	22,024	74
Columbia County	18,400	27,640	67
Desha County	15,719	24,121	53
Drew County	18,906	28,627	51
Ouachita County	21,056	29,341	39
Union County	21,041	29,809	42
Project Area Counties	18,541	27,400	51

Source: U.S. Department of Commerce - Bureau of the Census – 1990 and 2000, Census of Population and Housing – General Housing Characteristics

In summary, the Project Area counties have experienced a declining civilian labor force, unemployment around twice the state average, changing employment industries, and incomes sometimes substantially less than the statewide average.

3.3 ENVIRONMENTAL JUSTICE

Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations" (February 1994) was issued: 1) to promote nondiscrimination in federal programs substantially affecting human health and the environment; 2) to ensure that there will be no disproportionately high and adverse impacts to low-income and minority populations; and 3) to provide low-income and minority communities access to public information on, and the opportunity for, public participation in proposed federal actions. The United States Department of Transportation's (USDOT) final Order on Environmental Justice (April 1997) was used to comply with EO 12898. In addition, the 1997 Environmental Protection Agency's, "Interim Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses" and the Council on Environmental Quality's, "Environmental Justice Guidance Under the National Environmental Policy Act" (1997) provided additional direction in addressing these issues.

3.3.1 Identification of Minority, Low-income, and Elderly Populations

Information obtained from the U.S. Census Bureau was examined to determine the presence of minority and low-income, populations within the Project Area. Although not specifically required by Executive Order 12898, elderly populations (>65 years old) were also identified. Thirty-one Census Tracts were examined to better characterize these populations that may be affected by the proposed project (Exhibit 3-1).

The highest concentrations of minority populations were found in Chicot County Tract 9802, and Union County Tracts 9509 and 9510 (Table 3-8). Drew County Tract 9902 also had a high percentage of minorities. Tract 9802 is located primarily within the town of Dermott and Tracts 9509 and 9510 are located primarily within the city limits of El Dorado. Tract 9902 is primarily rural farmland and undeveloped timberland just outside of the City of Monticello.

Of the four Tracts described above, three also had some of the highest percentages of persons in poverty. In El Dorado, Tract 9510 had the highest percentage of persons in poverty (34 percent) in the Project Area. The average percent of persons in poverty for all tracts in the Project Area was 20 percent while the statewide average was 16 percent.

The percentage of persons over 65 years of age in the Project Area is similar to the statewide percentage. Percentages ranged from 10 percent in Tract 9509 in Union County to 20 percent in Tracts 9501 in Bradley County and Tracts 9507 and 9508 in Union County.

Further discussion and analysis of Environmental Justice issues is found in Section 4.2.

Project Area

Preferred Corridor

Kingsland
Rye
Thornton
Bearden
Chidester
Ouachita
Calhoun
East Camden
Camden
Stephens
Louann
Smackover
Norphlet
Calion
H.K Thatcher Lock and Dam
Lisbon
El Dorado
Newell
Tinsman
Banks
Warren
Wilmar
Monticello
Harrell
Hampton
Bradley
Jersey
Hermitage
Sumpter
Ingalls
Johnsville
Moro Bay State Park
Felsenthal National Wildlife Refuge
Lake Georgia Pacific
Hillsboro
Strong
Huttig
Felsenthal
Felsenthal Lock and Dam
Lake Jack Lee
Union
Drew
New Hope
Green Hill
Lacey
Fountain Hill
Crossett
Ashley
Hamburg
Montrose
Portland
Parkdale
Chicot
Desha
Seven Devils Swamp
Cut-off Creek Wildlife Management Area
Overflow National Wildlife Refuge
Selma
Collins
McGehee
Dermott
Arkansas
Louisiana
Bayou
Barthlomew
Cut-off
Lake Monticello
River

9501 9502 9503 9504 9505 9801 9802 9601 9602 9603 9607 9901 9902 9903 9904 9905 9506 9507 9508 9509 9610

LEGEND

CENSUS TRACTS

ASHLEY COUNTY	BRADLEY COUNTY	CALHOUN COUNTY	COLUMBIA COUNTY	DESHA COUNTY	DREW COUNTY	OUACHITA COUNTY	UNION COUNTY	CHICOT COUNTY
9601	9501	9801	9501	9504	9901	9503	9501	9802
9602	9502	9802		9505	9902		9502	
9603	9503				9903		9503	
9607	9504				9904		9504	
	9505				9905		9505	
							9506	
							9507	
							9508	
							9509	
							9610	

I-69 Location Study
El Dorado to McGehee

Exhibit 3-1

CENSUS TRACTS

Baker

SCALE IN MILES

Table 3-8
2000 PROJECT AREA MINORITY, LOW-INCOME, AND ELDERLY POPULATIONS BY CENSUS TRACT

County/State	Census Tract*	Population	% Minority	% 65 and Older	Median Household Income	% in Poverty (Persons)
Arkansas	--	*2,673,400*	*20*	*14*	*32,182*	*16*
Ashley County	9602	2,698	12	11	32,125	12
Chicot County	9802	3,422	73	16	19,077	30
Columbia County	9501	3,539	28	14	32,813	16
Drew County	9901	2,756	25	12	31,458	16
	9902	2,621	60	10	26,628	18
	9903	5,752	20	13	31,026	17
	9904	3,352	30	15	25,670	22
	9905	4,242	28	13	30,131	16
**Drew County Totals		18,723	30	13	28,982	18
Bradley County	9501	2,825	28	20	23,682	26
	9502	2,000	34	16	26,563	21
	9503	2,397	47	12	23,490	29
	9504	1,913	34	17	28,125	15
	9505	3,465	40	14	23,026	31
Bradley County Totals		12,600	37	16	24,977	24
Calhoun County	9801	2,896	29	18	26,579	18
	9802	2,848	18	14	30,466	14
Calhoun County Totals		5,744	24	16	28,522	16
Desha County	9504	3,630	54	15	19,893	33
	9505	2,256	30	16	26,648	21
Desha County Totals		10,938	41	14	25,277	26
Ouachita County	9503	6,193	28	16	34,669	17
Union County	9501	4,124	46	15	25,652	20
	9502	4,531	18	15	32,367	15
	9503	2,653	27	19	28,388	15
	9504	6,180	22	13	34,167	11
	9505	6,264	10	12	36,173	10
	9506	4,038	39	16	37,121	18
	9507	5,163	25	20	34,732	14
	9508	3,713	26	20	30,532	18
	9509	3,219	71	10	21,250	31
	9510	5,744	69	21	15,747	34
Union County Totals		45,629	34	16	29,613	19
Project Area Totals		194,802	34	15	27,400	20

Source: U.S. Department of Commerce - Bureau of the Census - 2000 - Census of Housing and Population
*Includes only Census Tracts within Project Area boundary.
**County totals only include the Census Tracts identified within the Project Area.

3.4 BICYCLE AND PEDESTRIAN FACILITIES

The Project Area was reviewed for pedestrian walkway facilities, designated bikeways, scenic trails, and proposed trails to identify any areas where these facilities may be impacted by the proposed project. No exclusive bikeways or hiking trails exist or are planned for the Project Area. Due to the rural nature of the majority of the Project Area, most of the bicycle and pedestrian activity is limited to the larger communities such as El Dorado, Warren and Monticello.

3.5 LAND USE

Land uses within the Project Area include a mixture of agricultural, residential, commercial, and industrial development. Agricultural activities, primarily forestry, dominate the western rural portions of the Project Area, with farmland (row crop production) dominating rural portions of Desha, Drew and Chicot Counties. Residential, commercial, and industrial developments are primarily associated with the communities of El Dorado, Smackover, Warren, Monticello, and McGehee. Residential land use primarily consists of single family houses of brick or frame construction, or mobile homes. Multi-family homes and apartments are also found in the above communities. The remainder of the Project Area is populated by low-density rural residential development often associated with state and county roadways. Formal land use plans have not been developed for any locations within the Project Area.

3.5.1 Agricultural Land

Agricultural land uses consist of forestry, crop production, and poultry and livestock operations. Livestock operations are primarily small ranch operations with small acreages. Poultry farms, although increasing throughout southern Arkansas, require minimal land space. Both livestock farms and poultry farms are scattered throughout the Project Area.

Forestry activities dominate Project Area land use and include extensive forested tracts owned and operated by forest industries including Potlatch Corporation, Plum Creek, and Georgia Pacific, Inc. A number of smaller locally based private timber growers are also present. The Project Area falls within the southwest forest survey region of Arkansas that produces almost two-thirds of the state's annual timber harvest.

All major Project Area crop production is limited to the bottomland soils adjacent to Bayou Bartholomew and east toward the Mississippi River. The primary commercial crops in this area are cotton and soybeans with some rice production. In addition, tomatoes are a major crop in Bradley County.

3.5.2 Commercial and Industrial Land

Commercial and industrial areas are primarily located within the larger Project Area communities. However, a substantial planning effort is on-going that will lead to the development of a large-scale

commercial/industrial complex in the northern portion of the Project Area. The Southeast Regional Intermodal Facilities Authority was established in 1997 to plan, construct, and operate a regional intermodal facility that would integrate rail and highway transportation of freight in southeast Arkansas. The Authority plans to locate the 413 acre facility near existing rail, gas, and transmission lines in the Wilmar area. The facility would serve as a warehousing and distribution center and include a bulk freight terminal, with freight transfer and tracking capabilities, logistic services, export/customs services, and a container pool service.

An 80 acre industrial park is located off US Highway 63 just east of El Dorado. This site is part of the Golden Triangle FiberPark which has coordinated the installation of a modern, optical fiber ring connecting three distinct industrial sites (El Dorado, Camden, and Magnolia) for seamless fiber connectivity worldwide.

Although located just outside the Project Area, the Highland Industrial Park is mentioned here because of its importance to the area economy. Nearly 4,000 people are employed at this park, located primarily in East Camden, Arkansas. The current 17,000 acre park is part of the former Shumaker Naval Ammunition Depot (NAD) that covered nearly 70,000 acres in Calhoun and Ouachita Counties. The NAD site was operated by the U.S. Navy from 1944 until 1957 for the manufacture, testing, storage, distribution, and destruction of ammunition, bombs, and explosives, principally rockets. The NAD site included a system of railroad tracks and spurlines, hundreds of reinforced concrete storage magazines, loading dock facilities, headquarters and administration buildings, and an eight mile long rocket test range. The facility was declared excess by the General Services Administration (GAS) in 1960 and was subsequently purchased by International Paper (roughly 40,000-forested acres) and Highland Resources (roughly 25,000 acres which included the old headquarters compound, production facilities, and hundreds of warehouses and underground bunkers) who transformed this area into Highland Industrial Park.

During the 1980s, defense related production and employment increased at the park, where missiles, rockets, launch vehicles, and other munitions were produced. By the end of the decade, defense spending cutbacks drastically reduced weapons productions at the industrial park. The Highland Industrial Park continues to serve as an important munitions storage and testing facility for Defense Department contractors including Lockheed-Martin, Atlantic Research Corporation, BEI Defense Systems Company, Hughes Missile Systems, and Hitech Incorporated. In addition to defense related industries, the Highland Industrial Park includes a 228,000 square foot, state of the art, manufacturing

building and a 55,000 square foot office space with fiber optic connectivity.

Seven miles north of El Dorado is the Union Powers Partnership Project, a natural gas-fired power station currently expected to open operation in late 2003. This station is the largest merchant power plant in the nation (2,200-megawatts) and is expected to serve over 2,000,000 homes and businesses. A non-riparian permit was obtained from the Arkansas Soil and Water Conservation Commission to pump water from the Ouachita River to cool the natural gas powered turbines that generate the plants power. The Arkansas Soil and Water Conservation Commission places restrictions on non-riparian users. The commission has determined the amount of excess surface water available in the Ouachita Basin per year and does not issue diversion of surface water permits beyond this value. In addition, in times of low flow, the Commission can impose restrictions on surface water use.

There are additional smaller industrial/business parks located in or near the towns of Warren, Monticello and McGehee that are actively recruiting tenants. The city of Warren is working with the Bradley County Industrial Development Corporation to manage a 30-acre industrial park site located on U. S. 278. Monticello has four industrial sites ranging in size from 31 to 99 acres. The closest Interstate to both the Warren and Monticello sites is currently I-530, approximately 40 miles to the north. The 97-acre McGehee Industrial park, owned by the City of McGehee, is located 12 miles from Yellow Bend Port on the Mississippi River. The closest Interstates are I-530 located some 60 miles to the north and I-20 located around 90 miles to the south.

3.6 GEOLOGIC RESOURCES

Millions of years ago, warm shallow seas existed within the Project Area that resulted in the vast accumulation of sediments. Subsurface sediments consist of sand and gravel near the surface to poorly consolidated layers of sand, silt, clay, limestone and lignite to consolidated deposits of clay, shale, limestone, marl, chalk, sand, and gravel. Within these sediments, oil, natural gas, bromine, lignite, sand, and gravel have accumulated and are available for extraction.

3.6.1 Oil and Natural Gas

The southern part of the Gulf Coastal Plain of south Arkansas contains all the oil producing fields in the state (AGC, 2005). Over 50 oil and gas well fields occur within the Project Area, the two largest being the Smackover and West El Dorado fields (Exhibit 3-2). The Smackover field generally encompasses an area of land between the towns of Norphlet, Smackover, and Louann, while the West El Dorado field lies primarily south and west of El Dorado.

Project Area

Preferred Corridor

Proposed Sparta Mine

Warren Prospect

Kingsland
Rye
Thornton
Bearden
Chidester
Ouachita
Calhoun
Tinsman
East Camden
Camden
Stephens
Hampton
Harrell
Warren
Banks
Bradley
Wilmar
Monticello
Green Hill
New Hope
Sumpter
Hermitage
Jersey
Louann
Smackover
Norphlet
Calion
Lisbon
El Dorado
Kewell
Hillsboro
Strong
Junction City
Huttig
Felsenthal
Ingalls
Johnsville
Lacey
Fountain Hill
Drew
Collins
Selma
Dermott
McGehee
Desha
Montrose
Portland
Hamburg
Ashley
Chicot
Crossett
Parkdale

Lake Monticello
Cut-off Creek
Bayou Bartholomew
Seven Devils Swamp
Saline River
Ouachita River
Moro Bay State Park
Lake Georgia Pacific
Felsenthal National Wildlife Refuge
Lake Jack Lee
Felsenthal Lock and Dam
H.K. Thatcher Lock and Dam
Cut-Off Creek Wildlife Management Area
Overflow National Wildlife Refuge

Arkansas
Louisiana

LEGEND
- OIL AND GAS FIELD
- BROMINE FIELDS
- LIGNITE AREAS
- SAND AND GRAVEL MINES

I-69 Location Study
El Dorado to McGehee

Exhibit 3-2

GEOLOGIC RESOURCES

Baker

SCALE IN MILES

Oil and gas wells are scattered throughout the western portion of the Project Area in a variety of land use settings. In south Arkansas, several wells have been drilled to depths exceeding three miles. Oil and gas were first discovered in southern Arkansas in 1920. Commercial production of oil did not begin until 1921. In 1925, Arkansas was the 4th largest oil producer in the nation. After 1939, oil production dramatically decreased. As of 2002, Columbia County had the greatest oil production in southern Arkansas with a total of over two billion barrels, followed by Lafayette, Ouachita, Miller, and Union Counties.

3.6.2 Bromine

The ancient seas that covered the Project Area in southern Arkansas contained the element bromine. Bromine was extracted from seawater by seaweed and plankton. Decomposition of these organic materials released the bromine, which was incorporated into the salt brines associated with oil and gas deposits. Bromine occurs in abnormally high concentrations in salt brines of the Smackover Formation.

In 2001, Arkansas bromine plants accounted for 90 percent of the United States bromine production and bromine produced from plants in Arkansas and Michigan accounted for 42 percent of the world's bromine supply. Some of the products produced from bromine include fire retardants, ingredients in bug and fungus sprays, antiknock compounds in gasoline, water treatment compounds, and oil well completion fluids (Arkansas Geological Commission 2003). Albermarle Corporation and Great Lakes Chemical Corporation operate bromine-processing plants in southern Arkansas. Within the Project Area, Great Lakes Chemical Corporation obtains brine from supply wells in three designated tracts of land called brine units (Exhibit 3-2). Brine is pumped from the underlying geologic formation to the surface through supply wells and piped to the processing plants where the bromine is removed from solution. The remaining brine is then piped to disposal wells and returned to the geologic formation.

3.6.3 Lignite

Lignite is a low-rank, consolidated, brownish-black coal with high moisture and low sulfur content. Lignite has a high content of volatile matter that makes it more convertible into gas and liquid petroleum products than the higher-ranking coals. A test burn in a power plant in 1988 demonstrated that Arkansas lignite resources were suitable as an alternative source for the generation of electric power.

Historically, lignite was mined before the Civil War in south Arkansas by underground methods. Lignite has been used as fuels for steam boilers and small locomotives near mines in Ouachita County. In 1907, two small distilling plants were operating in Ouachita County that produced oils from lignite

mined by open pit methods in the Camden field (Arkansas Geological Commission 2003). In the 1940s, Vandyke brown dye was extracted from lignite and used as stain for ammunition boxes during World War II.

Coordination with the Arkansas Geological Commission identified two proposed mine locations within the Project Area where lignite resources were considered as an alternative fuel source during the energy crisis of the 1970's. These sites are known as the Sparta Mine site near Hampton and the Warren Prospect site near Warren and are shown on Exhibit 3-2.

In 1977, Arkansas Power and Light conducted investigations to evaluate and develop the proposed lignite mine sites. A coal-fired power plant was to be constructed at the Sparta Mine and production was to begin in the late 1980's. The mine was intended to produce more than eight million tons of coal per year. However, as the energy crisis of the 1970's decreased, plans to develop these mines were discontinued. International Paper owns most of the land that encompasses the Sparta Mine site.

Although still considered to be a valuable resource, Arkansas lignite is not used as an energy source in the Project Area or in the state of Arkansas. Currently, low sulfur coal is still being transported from mines in the Powder River Basin of Wyoming to provide most of the energy needs in the state of Arkansas.

3.6.4 Sand and Gravel

Deposits of sand and gravel are widely distributed across all of Arkansas and are present as alluvial deposits in the floodplains, beds, and terraces of rivers and streams (Arkansas Geological Commission 2003). Numerous sand and gravel deposits are located in Union, Ouachita, Calhoun, and Bradley counties, in addition to the western portions of Drew County. Coordination with the ADEQ's Surface Mining and Reclamation Division identified 11 sand and gravel mines within the Project Area (Exhibit 3-2).

3.7 FARMLANDS

The Natural Resources Conservation Service (NRCS) administers the Farmland Protection Policy Act (FPPA 1981) to insure that federal programs minimize unnecessary and irreversible conversion of farmland soils to nonagricultural uses. Farmland as defined by the FPPA includes Prime Farmland, Unique Farmland, or land of Statewide Importance.

The NRCS defines Prime Farmland as soils that have the best combination of physical and chemical characteristics to economically produce high yields of agricultural crops when treated and managed according to acceptable farming practices. Current land uses of areas having Prime Farmland soils include cropland, pastureland, and timberland. Land

in urban or residential development is not considered Prime Farmland. Coordination with the NRCS identified Prime Farmland soil types within the Project Area.

Statewide Important Farmland is land that has been identified by state or local agencies for agricultural use, but is not of national importance. These farmland soils generally demand a slightly higher level of management than Prime Farmland soils for statewide production of agricultural crops. Coordination with the NRCS identified Statewide Important Farmland soils within the Project Area.

The location of Prime and Statewide Important Farmland soil types was obtained from the published Soil Surveys of Ouachita, Calhoun, Bradley, Drew, and Desha counties. Currently there is no published Soil Survey for Union County, but soil location maps were reviewed at the Camden NRCS office.

3.8 WATER QUALITY

3.8.1 Surface Water Resources

The Project Area is primarily located within the Lower Ouachita River Basin, which covers over 7,600 square miles in the southeastern portion of Arkansas. The Ouachita River, Saline River, Moro Creek, L'Aigle Creek, and Bayou Bartholomew are the major streams within this basin. Surface water resources within the Project Area include perennial and intermittent rivers or bayous, wetlands, and man-made reservoirs and ponds.

The Arkansas Department of Environmental Quality's (ADEQ) 2002 Integrated Water Quality Monitoring and Assessment report was used to broadly assess existing surface water quality within the Project Area. ADEQ and the Arkansas Soil and Water Conservation Commission (ASWCC) were involved during project scoping and provided information.

Lower Ouachita River and Associated Tributaries

The Ouachita River originates in the Ouachita Mountains at the base of Rich Mountain in Polk County, Arkansas, and flows southward through the western and central portions of the Project Area. Major tributaries in this segment of the Project Area include Smackover Creek, Champagnolle Creek, Moro Creek, and L'Aigle Creek.

Waters within this segment have been designated by the State as suitable for the propagation of fish/wildlife, primary and secondary contact recreation, and public, industrial, and agricultural water supplies. However, some of the most severe water quality problems exist in an unnamed tributary draining from the El Dorado Chemical Company, in Flat Creek and in Salt Creek (ADEQ, 2000) between El Dorado and Norphlet. The unnamed tributary contains toxic levels of ammonia and very high levels of nitrates and minerals. Flat Creek and Salt Creek have very high levels of chlorides, sulfates, and minerals. Additionally, oil,

brine, and bromine extraction industries have contributed point and nonpoint source contamination to these waters for many years. Mercury contamination continues to be a major problem for the Ouachita River and some of its tributaries.

Saline River and Associated Tributaries

The Saline River is the longest free-flowing stream in the state of Arkansas. Headwaters of the Saline River drainage system originate in the Ouachita Mountains and flow south to their confluence with the Ouachita River west of Crossett, Arkansas in the Felsenthal National Wildlife Refuge. The Saline River flows through the central portion of the Project Area between Warren and the Felsenthal Refuge. Major tributaries in the Project Area include Hudgins Creek and Hurricane Creek.

State water use designations within this segment include areas suitable for the propagation of fish/wildlife; public, industrial, and agricultural water supplies; and primary and secondary contact recreation. Water quality has been degraded by both point and nonpoint source pollutants. Primary point sources of pollution are direct discharges from aluminum mining and processing industries, while a major nonpoint pollutant source is erosion occurring on forestland from timber activities.

The segment of the Saline River within the Project Area is on the Arkansas System of Natural and Scenic Rivers and is considered an Ecologically Sensitive Waterbody, and an Extraordinary Resource Water by the Arkansas DEQ. Additionally, the National Park Service lists this portion of the Saline River on the Nationwide Rivers Inventory of significant free flowing rivers.

Bayou Bartholomew and Associated Tributaries

Bayou Bartholomew, known as the world's longest bayou, begins in Jefferson County, Arkansas and flows through the northeastern portion of the Project Area southward to Louisiana to its confluence with the Ouachita River. Major streams in this segment include Cutoff Creek, and Ables Creek.

State water use designations within this segment include areas suitable for the propagation of fish/wildlife; public, industrial, and agricultural water supplies; and primary and secondary contact recreation. Water quality in much of this segment is impacted by nonpoint source pollution generated by row crop agriculture. Silt loads and turbidity are consistently very high, degrading the aquatic life in many of these streams. The entire stretch of Bayou Bartholomew has been assessed as not meeting the aquatic life uses due to siltation and turbidity. In addition, pesticide contamination has resulted in periodic fish kills along the entire stretch of Bayou Bartholomew, and mercury contamination from an unknown source is limiting fish consumption in the basin.

Despite water quality concerns, Bayou Bartholomew and its tributaries are used

extensively for agricultural irrigation. However, seasonal low flows compounded by agricultural irrigation demands have resulted in periodic water shortages in this area (ASWCC, 1987).

Reservoirs/Ponds

Lake Georgia Pacific in Ashley County is the largest impoundment in the Project Area. The lake is approximately 1,700 acres and is used as a public water supply near the Felsenthal Refuge in the south central portion of the Project Area. Lake Monticello in Drew County is 1,520 acres in size and offers a number of recreational opportunities to area residents. Wallace Lake, located south of McGehee in Drew County, encompasses an area of approximately 362 acres. Calion Lake northeast of El Dorado in Union County is approximately 510 acres in size. Wallace and Calion Lakes are used for public fishing. Many small ponds are also found throughout the Project Area. Those observed were generally associated with agricultural operations.

3.8.2 Groundwater Resources

Groundwater can be obtained from several aquifers that lie within the Gulf Coastal Plain of southern Arkansas. The Alluvial and Sparta aquifers are of most importance in the Project Area. The Alluvial aquifer is mostly used for agricultural irrigation and commonly yields as much as 1,000 to 2,000 gallons per minute (gpm). The Sparta aquifer is the most extensively used aquifer as a source of public water supply in the Project Area. The Sparta aquifer is a confined aquifer of great regional importance that extends across much of eastern and southeastern Arkansas and into adjoining states (Hays 1999). In Arkansas, water use from the aquifer has doubled since 1975 (Holland 1995). This over dependency on the Sparta aquifer has resulted in water level declines in many areas. Water levels in the aquifer have declined at rates averaging 1 foot per year for more than a decade in areas of southern Arkansas and northern Louisiana (an average decline greater than 4.5 ft/yr in El Dorado since 1943) (Baker and others 1948; R.L. Joseph, U.S. Geological Survey, written commun., 1999). The amount of groundwater withdrawn from the aquifer in recent years significantly exceeds recharge to the aquifer (Hays et al 1998). Additionally, this increased demand has resulted in the development of large cones of depression within the aquifer. A cone of depression can be defined as a depression in the groundwater table that has the shape of an inverted cone and develops around a well from which water is being withdrawn. The city of El Dorado is installing new wells and inactivating some existing wells, effectively moving its well field away from the current cone of depression centered beneath the town (Hays 2001). In 1996, in response to these declining water levels, the Arkansas Soil and Water Conservation Commission designated five counties in southern Arkansas (Columbia, Union, Ouachita, Calhoun, and Bradley) as Critical Ground Water

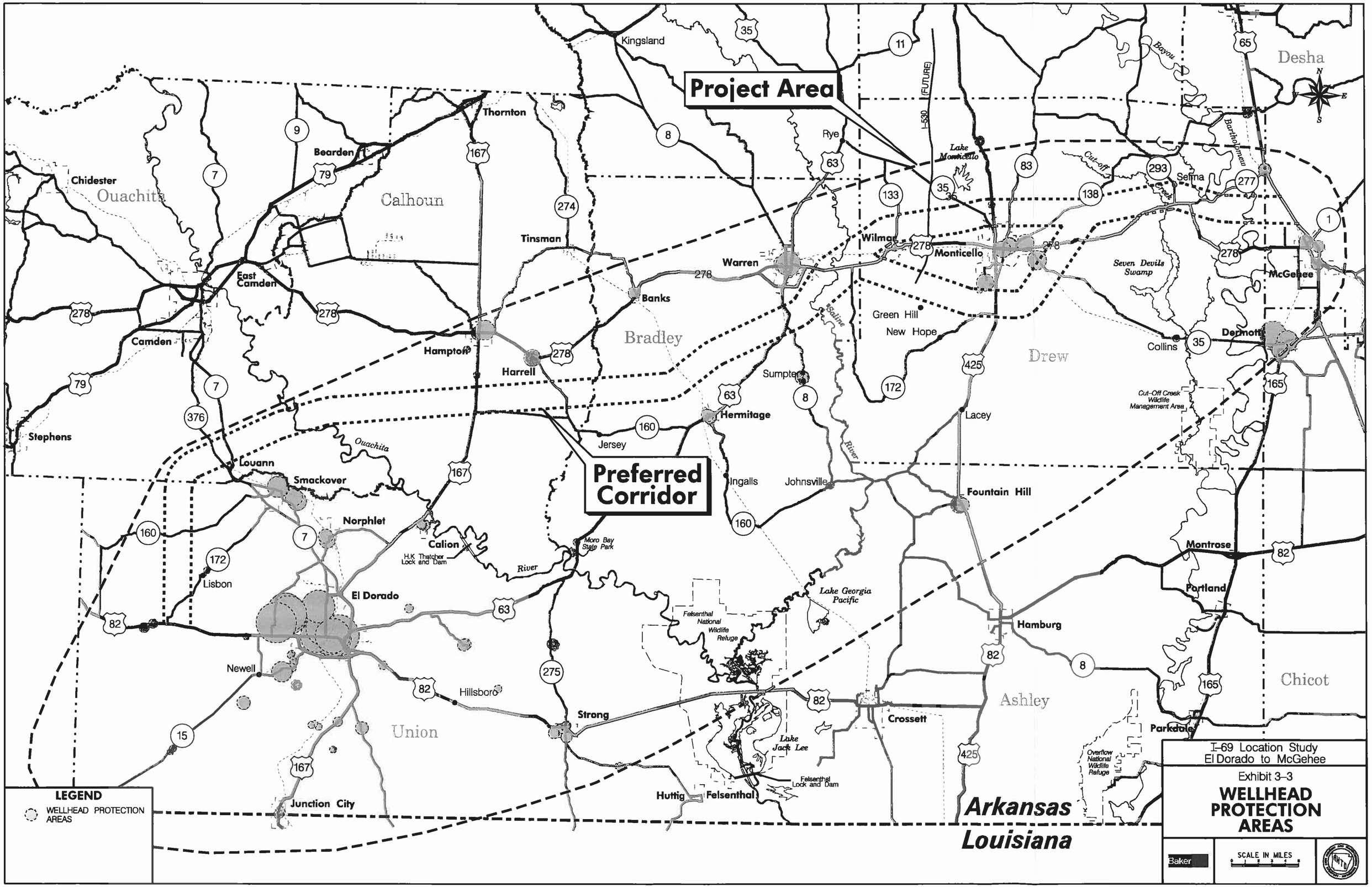
Areas. Critical groundwater designations encourage local interests to develop a plan of action to address problems. In 1999, the Arkansas legislature passed a law authorizing the creation of groundwater conservation boards in counties designated as critical groundwater areas. The Union County Water Conservation Board was the first board formed and began the process of regulating groundwater use in Union County. The board implemented a usage fee for groundwater users and began the development of a Water System Master Plan to determine how to best serve the long-term water supply needs of the county. One alternative identified as the quickest and most cost-effective was to supply raw water from the Ouachita River to area industries in place of groundwater. In 2002, the Board received a grant from the U.S. Environmental Protection Agency to study the recovery of the Sparta aquifer as these industries and other users reduced their reliance on groundwater.

3.8.3 Public Water Supplies

Several Federal laws help protect groundwater quality. Section 1424(e) of The Safe Drinking Water Act (SDWA) of 1974 and amendments passed in 1986, included the establishment of the Wellhead Protection Program and the Sole Source Aquifer Demonstration Program. To fulfill requirements of the (SDWA) as directed by the Environmental Protection Agency, the Arkansas Department of Health (DOH) provides protection of public water supply systems through the Arkansas Source Water Assessment Program.

The DOH was contacted to identify the location of any Wellhead Protection Areas (WHPA's) within the Project Area. Currently 102 WHPA's have been designated within the Project Area and are shown on Exhibit 3-3.

The U.S. EPA was contacted to determine the location of any sole source aquifers (SSA's) within the Project Area. A SSA is defined as an aquifer that is needed to supply 50 percent or more of the drinking water for a given area and for which there are no reasonably available alternative sources should the aquifer become contaminated. No sole source aquifers are located within the Project Area.


Project Area
Preferred Corridor
Kingsland
Thornton
Bearden
Chidester
Ouachita
Calhoun
Tinsman
East Camden
Camden
Hampton
Harrell
Banks
Warren
Rye
Wilmar
Monticello
Lake Monticello
Cut-off Creek
Selma
Bartholomew Bayou
Desha
Seven Devils Swamp
McGehee
Green Hill
New Hope
Bradley
Drew
Collins
Dermott
Lacey
Sumpter
Saline River
Hermitage
Jersey
Ingalls
Johnsville
Fountain Hill
Cut-Off Creek Wildlife Management Area
Stephens
Louann
Smackover
Norphlet
Calion
H.K Thatcher Lock and Dam
Ouachita River
Moro Bay State Park
Lisbon
El Dorado
Newell
Hillsboro
Union
Strong
Junction City
Huttig
Felsenthal
Felsenthal National Wildlife Refuge
Lake Georgia Pacific
Lake Jack Lee
Felsenthal Lock and Dam
Crossett
Hamburg
Fountain Hill
Montrose
Portland
Ashley
Chicot
Parkdale
Overflow National Wildlife Refuge
Arkansas
Louisiana
L-530 (FUTURE)
N
S
E
W
LEGEND
WELLHEAD PROTECTION AREAS
I-69 Location Study
El Dorado to McGehee
Exhibit 3-3
WELLHEAD PROTECTION AREAS
Baker
SCALE IN MILES

3.9 FLOODPLAINS AND FLOODWAYS

The protection of floodplains and floodways is required by Executive Order 11988, Floodplain Management; 23 CFR Part 650, Location and Hydraulic Design of Encroachments on Floodplains; and US DOT 5650.2, Floodplain Management and Protection. These regulations were designed to minimize highway encroachments within the 100 - year floodplain where practicable, and to avoid land use development inconsistent with floodplain values.

Flood Insurance Rate Maps and Flood Hazard Boundary Maps were obtained for Bradley, Calhoun, Desha, Drew, Ouachita, and Union Counties and used to identify the limits of the 100 - year floodplain and regulatory floodways.

The largest floodplains in the Project Area are associated with the Ouachita River, Saline River and Bayou Bartholomew (Exhibit 3-4). These areas are characterized by relatively large expanses of agricultural and forested land with gradual topographic gradients adjacent to existing waterbodies. During periods of high water, floodplains serve to moderate flood flow, provide water quality maintenance, act as areas for groundwater recharge, and serve as temporary habitat for a number of plant and animal species.

3.10 WETLANDS

To help slow and minimize wetland losses nationwide, Executive Order 11990 (EO 11990, May 1977) entitled, "Protection of Wetlands", established a national policy to:

> "Avoid to the extent possible the long-term and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative"

Wetlands have been evaluated in accordance with EO 11990 during the project development process (see Section 2) and wetland impacts are discussed in detail in Section 4. Project Area wetlands are shown in Exhibit 3-4.

Wetlands are defined by the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (COE) as:

> "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (40 CFR 230.3 and 33 CFR 328.3).

Wetlands often have very important functions and values in the overall ecosystem such as providing nutrient sources and catchment areas, floodwater storage, water purification, and habitat for a diverse variety of plant and animal species.

3.10.1 Wetland Communities

Wetlands within the Project Area were classified as herbaceous, scrub-shrub or forested based on dominant vegetative characteristics (Cowardin et al. 1979). The predominant wetland communities in the Project Area are forested riverine and depressional wetlands typically associated with stream or river systems. Consequently, forested wetlands found in the Ouachita and Saline River basins and other smaller creeks in the Project Area would be the dominant wetland community impacted by the proposed project.

Soils associated with Project Area wetlands generally consisted of level to gently sloping loamy and clay soils that reduced soil permeability and resulted in poor drainage. Most wetland soils were dark gray to gray within the upper 20 inches. This soil color is characteristic of hydric soils (USCOE 1987).

Herbaceous Wetlands

Herbaceous wetlands were found associated with farm ponds and bayou fringes in depressional areas. Herbaceous wetland vegetation within the Project Area consists primarily of a mixture of grasses, sedges and rushes. Typical herbaceous species identified include soft rush (*Juncus effusus*), alligator weed (*Alternanthera philoxeroides*), shallow sedge (*Carex lurida*) smartweeds (*Polygonum spp.*), spike rushes (*Eleocharis spp.*), and cattail (*Typha latifolia*).

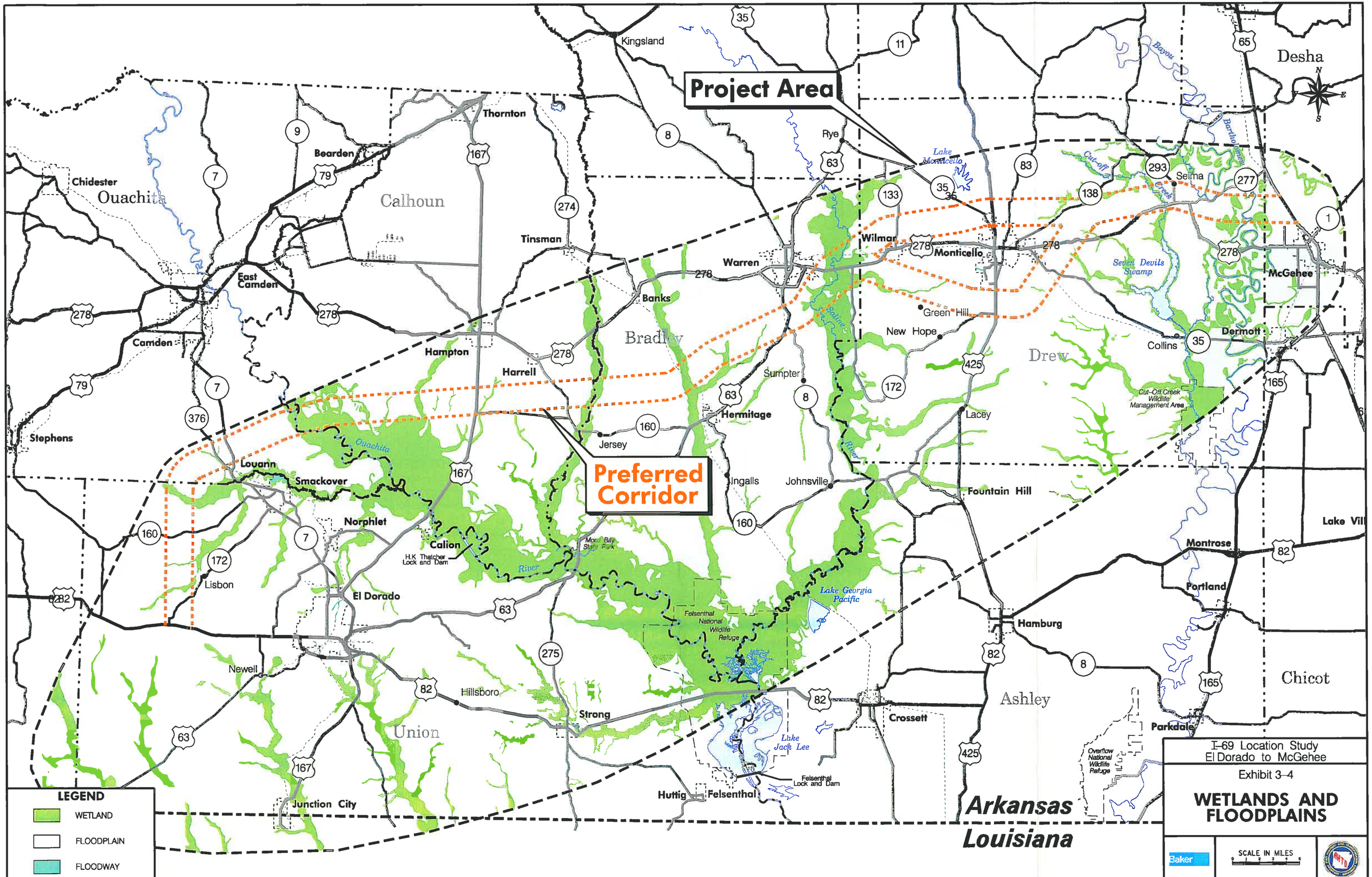
The herbaceous wetlands were generally small and ephemeral. Evidence of wetland hydrology and vegetation is often limited to the spring and early summer when rainwater is trapped for extended periods of time due to low soil permeability.

Scrub-Shrub Wetlands

Scrub-shrub wetlands were also found associated with ponds and streams and in depressional areas previously cleared for timber or agricultural purposes. These areas are often associated with both herbaceous and forested wetlands. Common shrub species observed includes black willow (*Salix nigra*), wax myrtle (*Myrica cerifera*), and buttonbush (*Cephalanthus occidentalis*).

Forested Wetlands

Bottomland hardwood forests were the dominant riverine and depressional wetland types in the Project Area. Most were associated with the floodplain area of streams or bayous. Historically, large areas of loblolly pine (*Pinus taeda*) flats were found associated with lower alluvial terraces within the floodplain of rivers and streams in the Coastal Plains region, primarily east of the Ouachita River. Most of these sites have been dramatically altered by forest management, drainage, and changes in fire frequency, timing, and intensity. Typical bottomland forest canopy species observed include bald cypress (*Taxodium distichum*), water, overcup, and willow oaks (*Quercus nigra, Q. lyrata, Q. phellos*), sugarberry (*Celtis laevigata*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*) and green ash (*Fraxinus pennsylvanica).*


Project Area
Preferred Corridor
Kingsland
Rye
Thornton
Bearden
Chidester
Ouachita
Calhoun
Tinsman
Warren
Banks
Bradley
East Camden
Camden
Hampton
Harrell
Sumpter
Hermitage
Jersey
Wilmar
Monticello
Lake Monticello
Green Hill
New Hope
Lacey
Drew
Seven Devils Swamp
Cut-Off Creek
Selma
Collins
Dermott
McGehee
Desha
Bayou Bartholomew
Cut-Off Creek Wildlife Management Area
Fountain Hill
Ingalls
Johnsville
Stephens
Louann
Smackover
Norphlet
Calion
H.K Thatcher Lock and Dam
Moro Bay State Park
Ouachita River
Lisbon
El Dorado
Newell
Hillsboro
Union
Strong
Junction City
Huttig
Felsenthal
Felsenthal National Wildlife Refuge
Lake Georgia Pacific
Lake Jack Lee
Felsenthal Lock and Dam
Crossett
Ashley
Hamburg
Montrose
Portland
Parkdale
Chicot
Lake Vil
Overflow National Wildlife Refuge
Arkansas
Louisiana
LEGEND
WETLAND
FLOODPLAIN
FLOODWAY
I-69 Location Study
El Dorado to McGehee
Exhibit 3-4
WETLANDS AND FLOODPLAINS
Baker
SCALE IN MILES

Wetland Wildlife

Herbaceous, scrub-shrub, and forested wetlands are generally diverse vegetative communities that provide habitat for a wide array of vertebrate species. Project Area species occurrence information was obtained from a variety of published sources (Sealander and Heidt 1990, James and Neal 1986, Conant and Collins 1991) and through field observations. Common mammalian species using wetland areas include beaver (*Castor canadensis*), opossum (*Ondatra zibethica*), white-tailed deer (*Odocoileus virginianus*), mink (*Mustela vison*) and raccoon (*Procyon lotor*). Birds associated with wetland habitats include warblers, vireos, thrushes, wading birds, and waterfowl. The barred owl (*Stryx varia*), and red-shouldered hawk (*Buteo lineatus*) are birds of prey commonly associated with these habitats. Permanent and ephemeral ponded water areas within these wetlands are used by a number of reptile and amphibian species including frogs, turtles, snakes, and salamanders.

3.11 UPLAND COMMUNITIES

Upland vegetative communities within the Project Area include pine (including pine plantations), oak-hickory, and oak-pine forests. Non-forested upland communities include pastureland/old-field and cropland.

3.11.1 Forests

Natural and planted pine forests dominate the Project Area. Ashley and Union Counties have the greatest acreage of pine forests (213,000 and 209,000 acres respectively), while Bradley County has the least (114,000) (Hines and Vissage 1988). Loblolly (*Pinus taeda*) and short-leaf (*Pinus echinata*) pine are the most common conifer species. Less dominant forest types include oak-pine, oak-hickory, and oak-gum-cypress forests. Tree species within these forests include southern red oak (*Quercus falcata*), post oak (*Quercus stellata*), blackjack oak (*Quercus marilandica*), mockernut hickory (*Carya tomentosa*), bitternut hickory (*Carya cordiformis*), shagbark hickory (*Carya ovata*), black gum (*Nyssa sylvatica*), and sweet gum.

Common understory species include flowering dogwood (*Cornus florida*), blueberries (*Vaccinium* spp.), serviceberry (*Amelancheir arborea*), yaupon (*Ilex vomitoria*), southern blackhaw (*Viburnum rufidulum*), poison ivy (*Toxicodendron radicans*), japanese honeysuckle (*Lonicera dioica*) and greenbriers (*Smilax* spp.).

A variety of wildlife species are present within the upland forests of the Project Area ranging from the white-tailed deer to the nine-banded armadillo (*Dasypus novemcintus*). Important small game and furbearing mammals include the fox squirrel (*Sciurus niger*), gray squirrel (*Sciurus carolinensis*),

coyote (*Canis latrans*), red fox (*Vulpes fulva*), raccoon, and opossum. Forest dwelling small mammals including mice, moles, and shrews provide a valuable food resource for larger forest predators such as the coyote and red fox.

Forest birds include a variety of warblers, wrens, thrushes, vireos, and woodpeckers. Forest raptors include the barred owl, coopers hawk (*Accipiter cooperii*), and red-shouldered hawk.

The presence of forest floor litter such as decayed logs, flat rocks, fallen limbs, and leaf material is an important habitat component, providing foraging cover and daytime refuge for many reptile and amphibian species. Common species include the box turtle (*Terrepene carolina*), fence lizard (*Sceloporus undulatus*), hog-nosed snake (*Heterodon platyrhinos*), copperhead (*Agkistrodon contortrix*), and spring peeper (*Hyla crucifer*).

3.11.2 Pastureland / Old-Fields

Previously forested portions of the Project Area have been cleared for agricultural use. This is especially true in the floodplain of Bayou Bartholomew. The floodplains of the Ouachita and Saline rivers have only marginal clearing for row crops. Scattered pasture areas are primarily used for raising livestock and/or growing forage crops to feed livestock. Pasturelands generally consist of a variety of native and cultivated grasses and legumes such as bahiagrass (*Paspalum notatum*), bermuda grass (*Cynodon dactylon*), tall fescue (*Festuca arundinacea*), clovers (*Trifolium* spp.), broomsedge (*Andropogon virginicus*) and lespedezas (*Lespedeza* spp.). Old-field communities contain similar herbaceous species with the addition of blackberry (*Rubus* spp.), japanese honeysuckle, and scattered pioneer shrub and tree species such as sumac (*Rhus* spp.), cedar (*Juniperus virginiana*), winged elm (*Ulmus alata*) and black locust (*Robinia psuedoacacia*).

Pastureland / old-field communities provide habitat for a number of wildlife species adapted to early successional vegetation. In addition, these communities can create surrounding edge environments where they intersect with one another or with other habitat types such as forests or wetlands. The resultant edge environment often provides greater habitat diversity and attracts a greater number of vertebrate species than the individual communities by themselves.

Vertebrate wildlife species are typically dominated by small mammals, primarily the cottontail rabbit (*Sylvilagus floridanus*) and a variety of mice, voles, moles, and shrews. Larger predators such as the coyote and fox frequently hunt for small mammals in these areas where multiple habitat types are interspersed and interconnected.

A variety of bird species forage in pasture-old field areas and use the shrubby edge habitat for nesting and cover. Typical species include the indigo

bunting (*Passerina cyanea*), sparrows (*Ammodramus savannum*, *Chondestes grammacus*, and *Spizella, Zonotrichia, Melospiza* spp.*)*, eastern meadowlark (*Sturnella magna*), cardinals (*Cardinalis cardinalis*), eastern bluebird (*Sialia sialis*), and blackbirds. In addition, these areas are utilized as foraging habitat by raptor species such as the red-tailed hawk (*Buteo jamaicensis*) and American kestral (*Falco sparverius*).

The relative open space and lack of adequate ground cover within these habitats generally results in poor species diversity and population numbers for most reptile and amphibian species. However, some snake species such as the black rat snake (*Elaphe obsoleta obsoleta*), garter snake (*Thamnophis sirtalis*) and the hog-nosed snake, prey on the resident small mammal and insect populations.

3.11.3 Cropland

Within the Project Area, cropland or land in the row crop production of soybeans, cotton, and corn is generally limited to the eastern portion of Drew County and the western portion of Desha County along the Bayou Bartholomew basin. Wildlife community diversity in croplands is reduced due to the large expanses of monotypic stands of row crops that provide marginal habitat for most wildlife species. Wildlife use of these areas is largely dependent on the crop being grown and the time of year. Crops such as corn and rice provide cover and food for a number of birds and small mammals. After harvest, waste material attracts many resident, migrating, and wintering bird species, while spring flooded fields provide habitat for many species of shorebirds and waterfowl.

3.12 AQUATIC COMMUNITIES

As described in Section 3.7.1, surface water resources within the Project Area include perennial and intermittent rivers or bayous, wetlands, and ponds. These water bodies provide important habitat for a number of fish and wildlife species. Bayous, reservoirs, and ponds within the Project Area typically support species such as mosquitofish (*Gambusia affinis*), catfish (*Ictalurus spp.*), gizzard shad (*Dorosoma cepedianum*), bowfin (*Amia calva*), sunfish (*Lepomis* spp.), and bass (*Micropterus salmoides*). Area waterbodies also provide foraging and nesting habitat for a number of wading bird and waterfowl species including the great blue heron (*Ardea herodias*), great egret (*Ardea alba*), green heron (*Butides virescens*), and wood duck (*Aix sponsa*). Numerous species of turtles, frogs, and snakes also utilize these habitats.

3.13 THREATENED AND ENDANGERED SPECIES

The Endangered Species Act (ESA) of 1973 (16 USC §1531-1543) declares the intention of Congress to protect all federally listed threatened

and endangered species and designated critical habitat of such species occurring both in the United States and abroad. Section 7 of the ESA requires that Federal agencies, such as FHWA, ensure that any action authorized, funded or carried out by an agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat. The USFWS is the primary regulatory agency responsible for ESA compliance.

The state of Arkansas relies upon Federal legislation to protect vertebrate and plant resources. The Arkansas Natural Heritage Commission (ANHC) maintains a database with the known locations of federally listed threatened and endangered species as well as a list of state species of special concern. State species of special concern are not afforded legal protection, as are federally listed threatened and endangered species. Potential impacts to these species were considered throughout the planning process including the development of corridors and subsequent alignment development.

The ANHC, USFWS, and the Arkansas Game and Fish Commission were contacted to determine the location of federal and state listed species within the Project Area.

3.13.1 Federally Listed Species

Twenty six plant and animal species (20 animal and six plants) are federally listed as threatened or endangered in the state of Arkansas. Consultation with the U.S. Fish and Wildlife Service indicated that there are five federally listed species that may occur within the Project Area that should be investigated further; *Geocarpon minimum,* red-cockaded woodpecker (*Picoides borealis*), Florida panther (*Puma concolor coryi),* bald eagle (*Haliaeetus leucocephalus,*) and the pink mucket (*Lampsilis abrupta.*) Additional coordination with the AGFC identified the winged mapleleaf (*Quadrula fragosa*), a freshwater mussel, as also potentially occurring within the Project Area (Posey 2004).

Geocarpon minimum is a diminutive annual plant species with an ephemeral life cycle (typically completed in about four weeks) that is often overlooked in the field (Pittman 1988). The distribution and habitat requirements of this plant are extremely specific. In Arkansas, all known sites are restricted to saline soil prairies and potential habitat within the Project Area exists in Drew and Bradley counties. The plant is most likely to occur on areas of Lafe, Foley, or Bonn soils.

The red-cockaded woodpecker (RCW) was listed as an endangered species in October 1970 (35 FR 16047). This bird's range is closely tied to the distribution of southern pine forests. Open stands of pine with a minimum age range of 80 to 120 years provide suitable nesting habitat. Foraging habitat is provided in pine and pine/hardwood stands 25 years or older. Habitat Conservation

Plans for RCW are employed by several area timber companies that actively manage forest stands for foraging habitat and cavity tree replacement. Early coordination with these timber companies was initiated to identify these areas. The ANHC also identified several historic areas of RCW activity within the Project Area.

The Florida panther was listed as endangered in 1967. Although its range is believed to be limited to Florida, all other similar species (*Puma concolor*; all subspecies) were listed as endangered in 1991 due to difficulty in differentiating between subspecies. Habitat varies from hilly hardwood forests and pine flatwoods, saw palmetto and drier scrub areas.

The bald eagle was originally listed as endangered in March 1967 (32FR 4001) and then reclassified to threatened status in July 1995 (60FR 35999-36010) within most of the lower 48 states, including Arkansas. This reclassification was prompted by the continued increase of the bald eagle population observed over 20 years throughout the majority of its range. This improvement was the direct result of removal of pesticides such as DDT from the market, habitat protection, and from other recovery efforts. The bald eagle status is currently under review for delisting from the threatened list. Foraging habitat is provided in tall mature forests near riverbanks or lakes.

The pink mucket was listed as endangered throughout its entire range in June 1976 (41FR 24062-24067). This mussel is found in sand and gravel in shallow riffles and shoals swept free of silt in major rivers and tributaries. Dams and reservoirs have flooded some of the mussel's habitat and affected the distribution of its fish hosts. Impoundments are fatal to most riverine mussels, and silt, caused by erosion and farming, can clog the mussel's feeding siphons and even bury it completely.

The winged mapleleaf was listed as endangered throughout its entire range in July 1991 (56 FR 28345 28349). Little is known about the ecology and habits of the winged mapleleaf, presumably because of its historic rarity and early population reductions. The species was historically found in well-preserved large to medium-sized clear-water streams in riffles or on gravel bars. These areas have been lost due to the development of impoundments, channelization, soil erosion, and sediment accumulation originating from land use practices. Silts caused by erosion and farming can clog the mussel's feeding siphons and even bury it completely.

3.13.2 Species of State Special Concern

The ANHC identified 105 different elements of special concern within the Project Area; 68 plants, 26 vertebrates, two invertebrates, eight natural communities, and one colonial nesting site for

water birds. These species do not have any special protection, but project coordinators will continue to work with the AHNC to protect these species and special areas wherever feasible.

3.14 NATURAL AREAS

Early project coordination with the ANHC identified two ANHC natural areas within the Project Area; the Warren Prairie Natural Area located in Drew and Bradley Counties and the Seven Devils Swamp Natural Area in Drew County. Natural areas are either state owned properties or private properties with conservation easements that protect a unique or important component of the natural diversity of Arkansas. In addition, 36 potential natural areas were also identified within and near the Project Area. Preliminary analysis suggests that these areas have high natural value, however, additional field surveys are needed to confirm the existing site conditions. The location of all sites was considered during the project development process.

In addition to the ANHC natural areas, Bayou Bartholomew was identified by many resource agencies and the Bayou Bartholomew Alliance as an important resource within the Project Area. Bayou Bartholomew has been the focus of private, state, and Federal conservation and restoration efforts in recent years. Coordination with the Alliance identified restoration areas and planned future restoration areas.

3.15 CULTURAL RESOURCES

Human occupational environments in the Project Area have been divided according to the archeological record into the Felsenthal and Bartholomew Macon regions, as defined by the *State Plan for the Conservation of Archeological Resources in Arkansas* (Davis 1994). Cultural history in these regions can be divided into three eras: Prehistoric, Proto-historic, and Historic periods. The Prehistoric period refers to pre-contact between Native American inhabitants and Europeans. The Proto-historic period refers to the time of initial contact between Native American inhabitants and Europeans, while the Historic period refers to the time of European settlement up to the present.

3.15.1 The Prehistoric Period (9500 B.C. to A.D. 1500)

The prehistoric culture history of the Felsenthal and Bartholomew Macon regions has been summarized and presented numerous times. Presentations of this sequence have ranged from the very general to the specific, based on the cultural phase and geographic comparison being made. The human occupational history of the Project Area is best thought of as a shifting mosaic through time, influenced by the Mississippi River environment, coastal and inland weather patterns, and surrounding trade networks. Table 3-9 outlines the basic prehistoric cultural history for south central and southeast Arkansas. For a more specific

review of locations within the Felsenthal and Bartholomew Macon regions, the reader is directed to Davis (1994), Jeter et al. (1989), and Mainfort and Jeter (1999).

3.15.2 The Proto-Historic Period (A.D. 1500-1700)

The Project Area was thought to be inhabited by Native Americans from the Quapaw, Tunica, and Koroa tribes during the Proto-Historic period. The western most portion of the Project Area may also have been home to Caddoan groups. The Tunica and Koroa were last recorded in Southeastern Arkansas in the 1690s. The Quapaw remained in southern Arkansas through the 1700s with their population remaining fairly constant while the number of European settlers increased.

Table 3-9
PREHISTORIC CULTURAL SEQUENCE FOR SOUTH CENTRAL AND SOUTHEAST ARKANSAS

Cultural Period	Cultural Phase	Date Range –Years Before Present (B.P.)	Site (s)
Early Paleo-Indian	Paleo-Indian	9,500-8,500 B.C.	Montgomery
Late Paleo-Indian	Dalton Culture, San Patrice Complex, Snow Hill	8,500-7,500 B.C.	Snow Hill, Coon Island, Hudgens Creek
Early Archaic Period	Scottsbluff	7,500-6000 B.C.	Derriesseaux Creek
Middle Archaic Period	Tom's Brook Culture, Crystal Mountain Phase, Big Creek Culture, Dorhceat	6,000-3,000 B.C.	Gulpha, Cooper, Hudgin Creek, Bog Creek,
Late Archaic Period	Williams Point complex, Poverty Point	3,000-600 B.C.	Calion, Coon Island, Green Island, Woodard Lake
Woodland Period	Tchula, Tchefuncte, Middle Fourche Maline, Marksville,	600 B.C. – A.D. 1000	Coon Island, Goulett Island, Godfrey Landing, Derriesseaux Creek, Eagle Lake
Coles Creek/ Plum Bayou	Coles Creek, Plum Bayou, Fourche, Maline-Early Caddoan	A. D. 700-1200	Toltec, Eagle Lake, Gordon, Fraser
Mississippi Period	Gran Marais, Plaquemine, Caddo II, Caney Bayou	A. D. 1200-1500+	Boytt's Field, False Indigo, Eagle Lake, Gordon, Fraser, Evan Field

Source: Davis (1994), Jeter et al. (1989), and Mainfort and Jeter (1999).

3.15.3 The Historic Period (A.D. 1700-Present)

The District of Arkansas was officially formed within the Louisiana Territory in 1806. Arkansas was admitted to the U.S. as its own territory on March 2, 1819 (Hanson and Moneyhon 1989). Early communities such as El Dorado, Camden, and Warren grew up along primary trail networks of rivers, streams, and trails associated with commercial timber operations, as noted on maps from the mid 19th century (Sidell 1850). These

settlements spurred further development and towns such as Magnolia, Monticello, Dumas, and McGehee were founded a few years later and connected by a developing roadway network (DeArmond 1980; Paulson 1998).

Southeast Arkansas's expansive forests provided hardwood and pine material for many human occupational necessities (DeArmond 1980). By the time of the Civil War, timber was the major industry in the region (DeArmond 1980). Civil War troop stops, and courier and recruiting stations were known near sawmill and community locales, but few Civil War battles are recorded within the Project Area (Cordell 1984).

By 1875, the Mississippi, Red River, and Ouachita Railroad (later the Missouri Pacific and Rock Island Railroad) ran across the Project Area through Camden, Warren, Monticello, and modern day McGehee, while the Ouachita Valley Railroad ran from Camden to El Dorado (Webber 1875). These arteries of commerce facilitated Southeast Arkansas's settlement growth and connection to other cities in the United States, carrying exports such as cotton and lumber to destinations throughout the nation.

In the early 1920s, the Great Arkansas Oil Boom brought thousands of people to the El Dorado area (Paulson 1998). Within weeks, the population of El Dorado increased from 4,000 to 15,000 inhabitants as the enormous underlying oil reserves were brought to market. However, these boom times were relatively short lived as over-drilling drastically reduced production, and by the late 1920s and early 1930s, the effects of the Great Depression were evident. By the 1940s, production of natural gas had eclipsed oil production (Paulson 1998), and the boost from manufacturing and industry resulting from World War II, spurred growth once again in the region. The introduction and use of the tractor in the 1930s and the use of mechanical cotton pickers and harvesters in 1948 reduced the amount of labor required for farming and the use of herbicides in the 1950s served to increase the size of operations and healthy yields of primary crops in the region such as rice, cotton, and soybeans. Changes also occurred in the timber industry that focused on the long-term development of forest resources. In addition to raw timber, new forest products such as pulp, paper, and packaging materials were developed increasing economic returns for timber growers. Current communities now reflect a more stabilized economy brought on by a boost from manufacturing and industry resulting from World War II and the production of natural gas (Paulson 1998).

3.15.4 Archeological Sites and Historic Properties

All known cultural resources within the Project Area were identified to provide the greatest opportunity

to identify a corridor that best avoided significant sites and properties. A background search that included a literature review and records check was conducted for the Project Area. Lists of properties on the National Register of Historic Places (NRHP) were reviewed at the Arkansas Historic Preservation Program (AHPP) office, along with historic structure data. Reports, files, and maps pertaining to previous archaeological and historic surveys conducted in the Project Area were examined at the Arkansas Archeological Survey. Known archeological site information was obtained from the Automated Management of Archeological Site Data in Arkansas (AMASDA) data files and the Arkansas Archeological Project Listing. County maps, early Government Land Office plats, early railroad and trail maps, and geographic site reports for early post offices and mail routes were examined at the Arkansas History Commission. Additional information was gathered from private collectors and avocational archeologists. All of the data collected was added to the project GIS. High probability areas for unrecorded archeological sites such as floodplains, terraces, and prominent nearby landforms were also added to the project GIS in addition to the known sites.

3.16 AIR QUALITY

Ambient air monitoring is conducted at various locations throughout Arkansas by the National Air Monitoring System (NAMS) and the State and Local Air Monitoring System (SLAMS) program. The existing air quality in all Project Area counties is designated as being in attainment for Carbon Monoxide (CO), Ozone (O_3), Particulate Matter (PM_{10}), and Nitrogen Oxides (NO_x) based on historical monitoring data. Attainment areas are those areas identified by the Environmental Protection Agency as being in compliance with the National Ambient Air Quality Standards (NAAQS) and therefore not subject to transportation conformity requirements.

3.17 NOISE

Noise is defined as unwanted or excessive sound. Sound is any physical disturbance in the air, or any medium, which is capable of being detected by the human ear. Sound is emitted from many sources including highway vehicles, airplanes, factories, railroads and power plants. Highway vehicle noise or traffic noise is generally composed of engine exhaust, drive train, tire-roadway interaction, and the vehicle's aerodynamics.

Sound becomes noise when it interferes with normal everyday activities such as sleeping, reading, and conversation. Degrees of sound disturbance depend on several factors including the amount and nature of the intruding noise, the relationship between the background noise and intruding noise, the type of activity where the noise is heard, and the time of day that the noise is generated.

Noise is energy and produces a wave that strikes the human ear in the form of pressure. The response to this pressure is defined as the sound pressure level (SPL) and is measured in units called decibels (dB). A decibel level below 50 is considered to be quiet outdoors while levels above 70 are considered to be noisy.

3.17.1 Noise Sensitive Areas

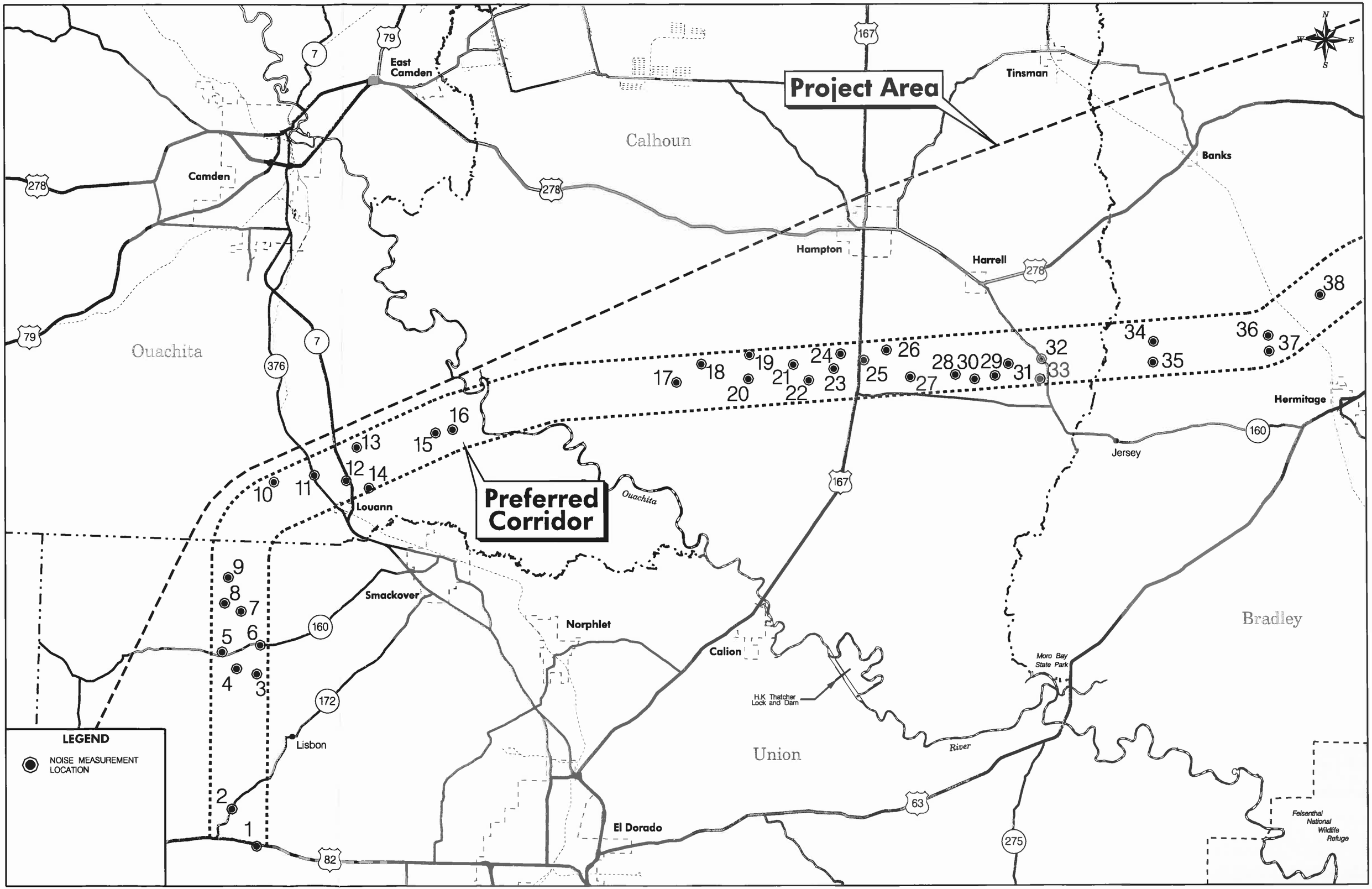
Land use is an important factor in determining the noise sensitivity of an area. Areas associated with residences, churches, schools, community centers, and parks are sensitive to noise levels. Land uses, which are less sensitive to noise, include industrial and commercial properties, agricultural areas, and undeveloped open and forested land. Land use within the Project Area is predominantly agricultural and forested land with varying amounts of residential, commercial, and recreation uses.

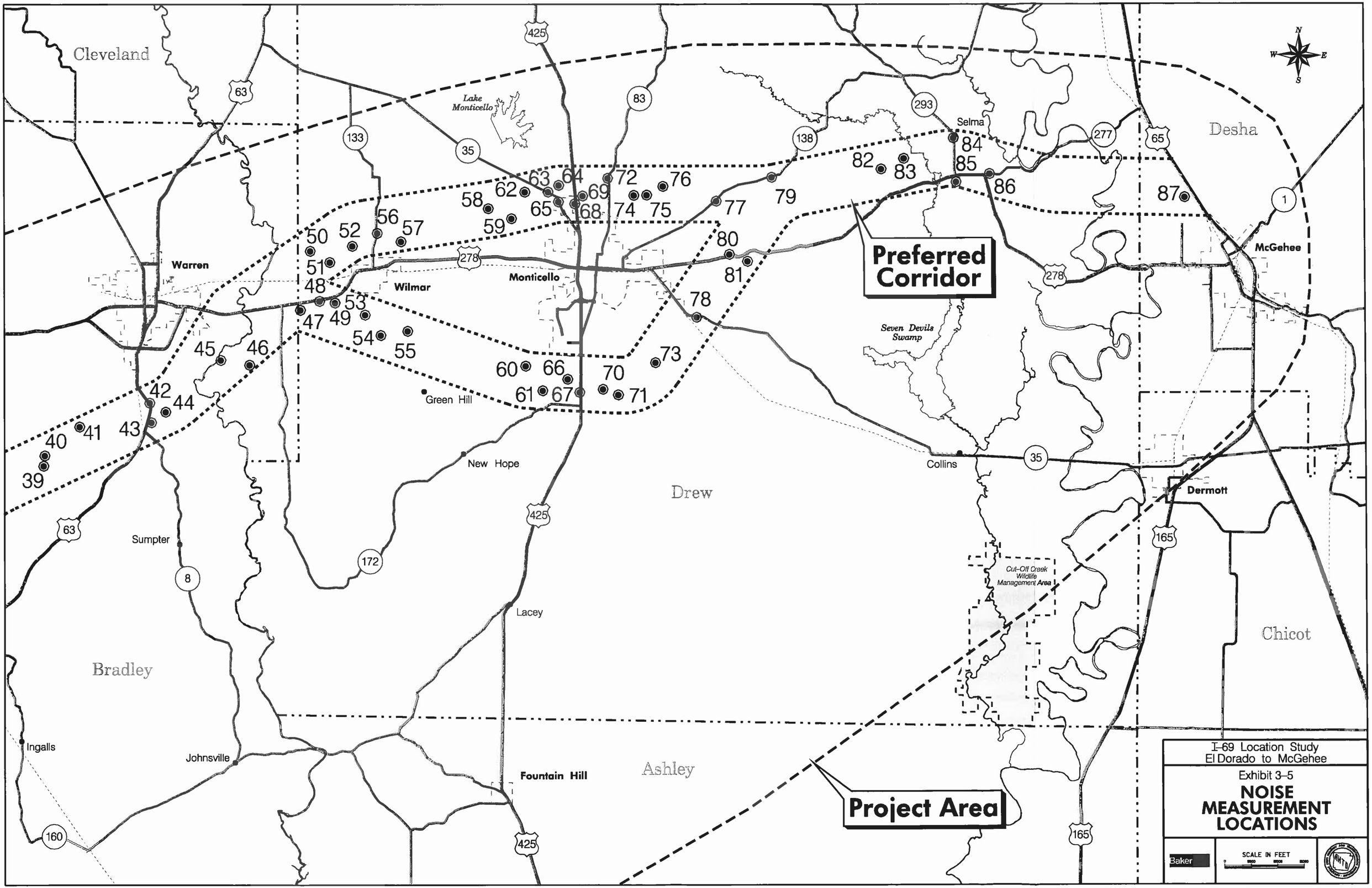
3.17.2 Measured Noise Levels

Eighty-seven short-term ambient noise measurements were taken along the alignment alternatives under consideration (Exhibit 3-5). These measurements represented the existing sound environment within the SIU 13 Project Area. Noise measurements were 15 minutes in length and were taken using a Metrosonics dB-312 sound level meter. A log was kept noting time of day, meteorological conditions, calibration results and any unusual sound sources experienced during each measurement. The meter was calibrated before and after each noise measurement. Simultaneous traffic counts were recorded for nearby roadways, as applicable and included a classification of vehicles observed (automobiles, medium and heavy trucks). Existing noise measurements are shown in Table 3-10.

3.18 VISUAL CHARACTERISTICS

The visual characteristics of the Project Area are dominated by a gently rolling landscape of expansive timber producing forests and scattered parcels in pasture and row crop production. Contrasting types of forested vegetation are limited to stream crossings where deciduous trees replace the dominant pine forests. Pasture and farmed parcels are interspersed throughout the Project Area providing some visual relief from the forested landscape. Residential and commercial development is confined to the cities of El Dorado, Warren, Monticello, and McGehee. Single-family dwellings located adjacent to county roads and highways characterize the majority of the Project Area. In summary, the Project Area is primarily a rural landscape dominated by pine forests with relatively limited visual resources. Based on the above description of the visual environment, the Project Area does not contain sensitive visual resources nor is the Project Area considered a visually sensitive rural setting.


Project Area
Preferred Corridor
East Camden
Camden
Calhoun
Ouachita
Tinsman
Banks
Hampton
Harrell
Hermitage
Jersey
Louann
Smackover
Norphlet
Calion
H.K Thatcher Lock and Dam
Moro Bay State Park
Bradley
Union
El Dorado
Lisbon
River
Felsenthal National Wildlife Refuge
LEGEND
NOISE MEASUREMENT LOCATION



I-69 Location Study
El Dorado to McGehee

Exhibit 3-5

NOISE MEASUREMENT LOCATIONS

Baker

SCALE IN FEET
0 4000 8000

Table 3-10
MEASURED AMBIENT NOISE LEVELS WITHIN PROJECT AREA*

Measurement Location Number	Land Use	L_{eq} (dBA)	General Location
1	Residential (SFH)	58	US Route 82 (Magnolia Hwy.)
2	Residential (MH)	54	State Route 172 (Lisbon Road)
3	Yocum Cemetery	48	County Route 407
4	Residential (MH)	45	Sandy Creek Road
5	Residential (SFH & MH)	52	Near Intersection of Silver Hill Loop & SR-160
6	Sweet Canaan Baptist Church	50	State Route 160 (Mount Holly Hwy.)
7	Residential (MH)	42	Sugarland Road
8	Residential (SFH)	45	Near Intersection of Smith Lane & Silver Hill Loop
9	Residential (SFH)	41	Silver Hill Loop
10	Liberty Methodist Church	54	County Route 2
11	Residential (SFH)	52	State Route 376
12	Residential (SFH)	53	State Route 7
15	Residential (SFH)	54	County Route 67
16	Residential (SFH)	54	Off of CR-67 on local road
17	Residential (SFH)	53	County Route 19 (Little Bay Road)
18	St. Paul Cemetery	57	County Route 19 (Little Bay Road)
19	Residential (SFH)	40	County Route 22
20	Residential (MH)	47	County Route 22
21	Residential (SFH & MH)	42	County Route 192
22	Antioch Baptist Church	47	Near Intersection of CR 26 and CR 27
23	Residential (SFH)	43	County Route 26
24	Residential (SFH)	44	Near Intersection of CR 26 and CR 25
27	Residential (SFH)	49	County Route 93
28	Residential (SFH)	46	County Route 141
29	Residential (SFH)	34	County Route 94
31	Residential (SFH)	45	County Route 36
32	Residential (SFH)	57	State Route 160
33	Residential (SFH)	46	County Route 94
34	New Bethel Primitive Baptist Church	50	County Route 177 off of Banks Jersey Road
35	Residential (SFH)	49	Near Intersection of Banks Jersey Road and CR 175
36	Spring Hill Freewill Baptist Church	49	Near Intersection of CR 6 & CR 5N (Lanark-Gravel Ridge Road)
37	Residential (SFH)	54	County Route 6 (Castleberry Crossing)
38	Residential (SFH)	48	County Route 32 (Farmville Road)
39	Packer Prospect Cemetery	53	County Route 25 (Prospect Road)
40	Residential (SFH)	46	County Route 25 (Prospect Road)
42	Residential (SFH & MH)	64	US Route 63
43	Residential (SFH)	45	Off of US Route 63 on private road
44	Residential (SFH)	40	County Route 70

Table 3-10
MEASURED AMBIENT NOISE LEVELS WITHIN PROJECT AREA*

Measurement Location Number	Land Use	L_{eq} (dBA)	General Location
45	Residential (SFH)	44	County Route 360 (Old Monticello Road)
46	Residential (SFH)	46	County Route 360 (Old Monticello Road)
50	Residential (SFH & MH)	48	County Route 111 (Wilmar Loop)
51	Church	38	County Route 111 (Wilmar Loop)
52	Residential (SFH & MH)	45	County Route 57 (Sanderlin Road)
53	Residential (SFH)	50	County Road 359 (Gardner Road)
55	Residential (SFH)	43	County Road 16 (South Allis Road)
56	Residential (SFH)	57	North 7th Street (State Route 133)
58	Residential (SFH)	54	County Route 96 (Barkada Road)
59	Residential (SFH)	45	County Route 96 (Barkada Road)
61	Residential (SFH)	44	Marshall Lane off of CR 21 (Burton Road)
62	Residential (SFH)	52	Lakewood Estates off of SR 35
63	Rose Hill Freewill Baptist Church	63	State Route 35
64	Residential (SFH)	52	Near Intersection of Old Hwy. 13 & CR 90 (Wilson Lane)
65	Residential (SFH)	56	State Route 35
66	Residential (SFH & MH)	48	County Route 21 (Burton Road)
67	Residential (SFH)	60	Near Intersection of US Route 425 & Scenic Drive
68	Residential (SFH)	61	US Route 425
69	Residential (MH)	46	County Route 131 (Hoover Lane)
70	Residential (SFH)	43	County Route 23 (Scrouge Out Road)
71	Residential (SFH)	43	County Route 1816 (Midway Route)
73	Residential (SFH)	47	County Route 46 (Old Troy Road)
74	Residential (SFH)	41	County Route 80 (Florence Road)
75	Residential (SFH & MH)	48	County Route 80 (Florence Road)
76	Residential (MH)	44	Donaldson Drive off of CR 80
77	Residential (SFH)	56	State Route 138
78	Residential (SFH)	63	State Route 35
79	Residential (SFH)	52	State Route 138
80	Residential (SFH & MH)	55	US Route 278
81	Residential (SFH)	46	County Route 74 (Bordeaux Road)
82	Residential (SFH)	48	County Route 75 (North 16th Section Road)
83	Residential (SFH & MH)	38	County Route 401 (Lucas Lane)
86	Residential (SFH)	56	Near Intersection of SR 277 & CR 76
87	Residential (SFH)	58	State Route 159 (Old Tillar Highway)

Note: Only noise measurement locations used in the alignment alternative's noise analysis are presented in the table.
Source: Michael Baker Jr., Inc.

3.19 HAZARDOUS MATERIALS

An initial site assessment was conducted within the preliminary corridors to identify the location of any hazardous materials sites through coordination with the Arkansas Department of Environmental Quality (ADEQ). The ADEQ's Hazardous Waste Division implements Arkansas' Resource Conservation and Recovery Act (RCRA) Subtitle C waste management program governing the management and disposition of hazardous wastes, used oils, and universal wastes. Arkansas also implements the cleanup program for abandoned hazardous waste sites in cooperation with EPA's Superfund program. The ADEQ maintains a list of current hazardous waste generators (RCRA), NPL sites, registered underground storage tanks (UST), registered above ground storage tanks (AST), and facilities that have reported releases from regulated storage tanks. Additionally, the location of known landfill sites was obtained from the ADEQ. No known RCRA, NPL, UST, AST, reported releases or landfills were identified within the Preliminary Corridors.

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Section 4: ENVIRONMENTAL CONSEQUENCES

This section identifies and discusses the beneficial and adverse social, economic, and environmental effects that may result from the construction of the SIU 13 Project in south Arkansas.

4.1 SOCIAL IMPACTS

Due to the rural setting of this project, the presence of a new Interstate highway will result in some community changes regardless of the alignment location. However, the alignment alternatives were specifically developed and located to minimize community, residential, and business impacts while attempting to maximize public access to this new transportation facility. With the exception of Monticello, the alignment alternatives do not pass within the city limits of any communities along the proposed routes.

Due to their close proximity, all highway alignments are expected to have similar social impacts unless otherwise noted. Social impacts associated with the No-Action alternative would be minimal and are described where appropriate.

4.1.1 Land Use and Land Cover Changes

The SIU 13 Project will have direct and secondary impacts to existing land use and land covers. The construction of the highway will result in the direct conversion of land dominated by forest and pasture/cropland to a transportation use. While no secondary development is currently planned, land that has direct access to a new highway may experience indirect or secondary land use/cover impacts resulting from potential new or increased residential, commercial, or industrial development.

Land Use Conversion

Land use was evaluated using 1998-99 Landsat imagery obtained from the University of Arkansas' Center for Advanced Spatial Technologies (CAST). This imagery uses satellites to identify land uses in block sizes of 247 acres. While this level of land use definition does not detect small or individual residential and commercial properties, it is a very useful and efficient tool for general land use evaluation and comparison.

Land directly used for the proposed highway would be converted from its present use to a transportation or highway use as shown in Table 4-1. The majority of the land would be converted from forested lands. Impacts to these land uses and vegetative communities are discussed in Section 4.9. Line 1 would convert the least amount of land to highway use, while Line 2 would convert the greatest.

Impacts to residential areas and properties were identified during the extensive public involvement process as issues of primary concern and were fully considered during alignment development. No portion of any large residential or commercial area (247 acres or greater for the CAST data) would be impacted by the alignments. Individual residential and commercial impacts are discussed in detail in Section 4.1.4.

Table 4-1
SUMMARY OF LAND USE / LAND COVER IMPACTS

Alignment	Land Use			
	Residential / Commercial (Acres)	Forest Land (Acres)	Pasture / Cropland (Acres)	Totals (Acres)
No-Action*	-	-	-	-
Line 1	-	2,817	837	3,654
Line 2	-	3,084	895	3,979
Line 3	-	2,812	870	3,682
Line 4	-	3,128	838	3,966
Preferred (Line 5)	-	3,048	815	3,863

Source: Michael Baker Jr., Inc.
*Land use impacts would occur with widening and passing lane construction activities, although the extent of these impacts is not known at this time.

The No-Action alternative would result in future land use impacts as minor safety improvements and additional widening or passing lane projects are implemented within the Project Area. The size of these impacts is not known at this time as detailed design for future improvements has not been completed. All future projects will include measures to minimize land use impacts, including wetland impacts, to the extent practicable.

Secondary Development

The SIU 13 Project could facilitate secondary development in the Project Area to some extent regardless of the alignment selected. This development could take several forms:

- Commercial development at interchanges
- Industrial development in existing or planned industrial parks, or the formation of new industrial parks
- Single site industrial developments by manufacturing enterprises that locate in the area due to increased access
- Residential development that may result due to community growth and improved access to nearby job markets.

Hartgen and Kim (1998) found that the actual extent and type of commercial development at interchange locations is influenced by many variables including the size of and distance to nearby communities, and the existing local services offered. In general, more development would be expected at interchanges near larger communities and would likely decrease as the interchange location moves further from the population centers. Population size and distance variables are not absolute and exceptions to these general trends can and often do occur. Due to the many variables involved, precise predictions of type and extent of development are not possible.

However, based on this study and on other observations of rural Interstate interchanges, little development would be expected at the majority of the proposed interchanges for this project. Most interchanges are located to provide access to the local highway network, facilitating Interstate travel opportunities for the majority of rural Project Area residents. Proposed interchanges near El Dorado, Warren, and Monticello are close enough to a sizeable population that some secondary development is likely to occur at these locations. However, in Monticello and Warren a variety of services such as gas stations and restaurants currently exist near these proposed interchanges, which could serve to limit secondary development. The interchanges proposed north of El Dorado on S.H. 7 and west on US Highway 82 are close enough to a sizeable population base and far enough away from existing services that light commercial development is likely to occur. Both locations currently are surrounded by undeveloped upland areas that could accommodate some form of limited development.

The planned 413 acre Southeast Arkansas Intermodal Facility will be located south of US Highway 278 in the Wilmar area. If a southern alternative is selected from Wilmar to Monticello (Lines 2, 4 or 5) then it is possible that the I-69 Connector would be extended approximately two miles further south to connect directly to I-69. Regardless of the alternative, the proximity of the proposed highway to this industrial development would provide increased transportation efficiency for this regional facility for the transportation of freight in southeast Arkansas.

Single site industrial development could occur near the proposed highway where land is available. This development would be limited by the services and infrastructure local communities could provide. As the proposed route traverses mostly forested and or agricultural lands, this development would likely be confined to the El Dorado, Warren, and Monticello areas where supporting infrastructure could be available in the future.

The No-Action alternative would not result in any development beyond what the current development trends would indicate. Scattered residential development will continue to occur as land becomes available, particularly in the Monticello area. Plans for commercial and industrial development for the Southeast Arkansas Intermodal Facility will continue and could necessitate further expansion of the existing highway network.

Consistency of Highway and Secondary Development with Land Use Plans

There are no Regional Planning Commissions or Metropolitan Planning Commissions in this portion of Arkansas. Furthermore, formal land use plans have not been developed within the Project Area. However, leaders from all communities have actively participated in the project development

process and have provided information on proposed land uses in their respective communities.

4.1.2 Community Changes

The SIU 13 Project would result in changes to neighborhoods, community access, travel patterns, community services, and property values. These changes would be most evident in communities adjacent to the alignment alternatives. All highway alignments are expected to have similar community impacts.

Neighborhoods and Community Cohesion

The alternatives development process was designed to fully consider potential community impacts at both the corridor and alignment level of study. Corridor location involved an attempt to avoid all area communities and neighborhoods to the greatest extent practicable, and subsequent alignment development focused on avoidance of individual residences and businesses. No established neighborhoods of any size would be crossed by the alignments due to the extensive effort made to minimize residential relocations throughout the project development process. Furthermore, due to the rural nature of the majority of this project, all attempts were made to avoid small clusters of residences in outlying areas. Public outreach efforts determined that many residences of these rural housing clusters have developed a close-knit relationship with their neighbors, who are often extended family members. These areas have been avoided to preserve the cohesive elements of these existing rural neighborhoods. Community cohesion for the more scattered residences in the rural Project Area would be maintained via highway overpasses of the local roadways.

In some areas, such as along US Highway 278 between Monticello and Warren, residences and the community overall could benefit from a diversion of through and heavy truck traffic. This diversion would reduce traffic noise and improve safety for local residents and their families. Rural residents would also benefit as truck traffic could be reduced on state and county highways through diversion to the new Interstate facility.

The No-Action alternative would not directly impact neighborhoods. Widening projects may disrupt individual residents, but would not likely divide any existing neighborhoods.

Community Access and Travel Patterns

Grade separations are proposed for all alignments at all existing US highways, state highways, and the majority of county road crossings via overpass or underpass structures depending on the roadway alignment and terrain. Access within and between communities would not appreciably change as a result of this project. Maintenance of access to individual property parcels would be considered and addressed during the final design of the highway.

Most communities within the Project Area will have reasonable access to the proposed highway via 12 interchanges. Access to the El Dorado and Smackover areas would be available by interchange locations at US Highway 82, S.H. 160, S.H. 7, and C.R. 67. An interchange at US Highway 167 would provide access to Hampton and El Dorado. Smaller communities between El Dorado and Warren (Harrell, Hermitage, and Farmville) would be accessed by interchanges at S.H. 160 and C.R. 32. The most direct and closest access to the proposed highway would be provided at interchange locations along US Highway 63 and US Highway 278 for Warren, US Highway 278 for Wilmar, and US Highway 278, S.H. 35, and S.H. 138 for Monticello. In the far eastern portion of the Project Area, access would be provided to the community of Selma with an interchange at S.H. 277. An interchange at U.S. 65 would provide access to the communities of McGehee, Reed, Tillar, Dumas and other cities in the southeast Arkansas delta area.

The No-Action alternative limits the accessibility to an Interstate highway for many area residents. Most Project Area residents use U.S. 278 and U.S. 63, and to a lesser extent, S.H. 160 and S.H. 172 for east/west travel across southern Arkansas. While these roads are acceptable for community travel, they do not provide the convenience and safety of an Interstate highway such as I-69.

Travel patterns in the Project Area may change as a result of the proposed highway. Depending on their final destinations, residents would have a choice of traveling on existing east/west travel routes or on I-69. Travel time between McGehee and El Dorado would be reduced and safety would be increased through use of the new facility.

Changes in Local Traffic

Changes in local traffic would result from all highway alignments. In general, traffic volumes would tend to increase on highways for which interchanges have been proposed. These traffic increases would result from travelers accessing the proposed highway and travelers exiting the proposed highway to access nearby communities for additional services or recreational activities.

Residents living along these highways would experience the effects of this increased traffic as well as a different mix of trucks and cars. Truck traffic could increase on these highways. Travelers on streets that intersect with these highways near a proposed interchange may experience delays in turning onto these highways, particularly when crossing traffic. Access to businesses and residences along these highways may be similarly affected.

Residents living or traveling along roads such as U.S. 278, U.S. 63, U.S. 167, S.H. 160 and S.H. 172 between McGehee and El Dorado may experience a decrease in traffic volumes, particularly truck

traffic, as through trips are diverted to the new highway facility. Most truck traffic currently traveling these routes within the Project Area would benefit from the increased transportation efficiency provided by an Interstate highway facility.

Community Services and Facilities

Many rural area residents travel along U.S. 278, U.S. 63, or other state and local roads for medical and other professional services available in Warren, Monticello, El Dorado and Camden. Many of these residents would experience improved access to these and other community services from all alignments of the proposed highway. Universities in Monticello and El Dorado would be more accessible expanding higher education opportunities to a greater number of area residents as well as those from neighboring states.

Adequate fire and police services are important for the protection of citizens and property in all communities. Construction of I-69 would benefit the Project Area by reducing emergency response times between communities and by removing through and truck traffic from the local roadway network.

The proposed highway would not adversely affect access to churches, schools, public facilities and parks. Grade separations proposed at all existing U.S. highways, state highways, and the majority of county and local road crossings via overpass or underpass structures would maintain facility access. The No-Action alternative would not improve emergency response times or community service accessibility.

Property Values

Property values could increase near proposed interchange locations as land becomes more desirable for commercial and industrial development. Commercial development and associated increased property values are more likely to occur at interchange locations near existing communities such as Monticello and El Dorado.

The value of residential units adjacent to the proposed highway is difficult to predict. Individual home values are based on each owner's and the potential buyer's perception of the benefits of an adjacent highway and would vary on a case-by-case basis.

Secondary Community Impacts

Secondary development may occur as a result of the proposed highway and could affect the daily lives of residents in nearby communities. Potential secondary development would be similar for all alignments. The degree to which secondary development may occur is dependent on many variables and is difficult to precisely predict. Residential areas may become more densely populated, utility and social service demands may increase, and forest, pasture, and croplands may be converted to residential areas or other forms of land use. This growth is likely to occur over an extended period of time and is likely to follow

current residential growth patterns observed in the Project Area where local community officials, planners, developers, and service providers have provided the basic infrastructure (utilities, roads) conducive to residential development.

Secondary development and potential community change can be perceived as both positive and negative. To some, this change is unwanted and development is undesirable as land is converted to residential and commercial uses and area populations increase. However, for others, new development often means new jobs and increased economic vitality that are important quality of life factors in an area where many median household incomes are lower and unemployment levels higher than the statewide averages.

Development that may occur at interchanges could indirectly affect the residents living along these highways. The land directly adjacent to the proposed interchange could change from solely residential to light commercial use such as restaurants and service stations. While nearby residents may enjoy the convenience of these services, the previous rural character of the area would have changed permanently.

The No-Action alternative would not likely result in secondary development or associated change in communities beyond the current development trends.

Community Mitigation

Mitigation of short-term negative construction impacts on local communities would include the provision of appropriate construction detours, informative signing, and maintenance of access to residences, farms, businesses, and community facilities where practicable. Furthermore, AHTD will hold additional public hearings during the final design process to discuss specific community and landowner concerns prior to construction of the highway.

4.1.3 Safety

The construction of I-69 would have an overall positive impact on Project Area highway and public safety, including bicycle and pedestrian safety. However, additional studies may be required to address safety issues (potential increase in traffic) on local highways where interchanges have been proposed. All highway alignments would have a similar effect on safety.

Highway Safety

Safety improvements would primarily include diversion of truck traffic from local roads to the new highway. Diversion of truck traffic to the proposed highway could reduce the need to pass, thereby reducing the potential number of head-on collisions on existing roadways. In addition, all traffic on the proposed highway would encounter fewer access points than on the existing routes within the Project Area, a factor that correlates to accident rates. Traffic traveling on existing roadways frequently

encounter vehicles turning onto or out of side roads or driveways which can lead to accidents.

The No-Action alternative could result in additional traffic accidents, fatalities, and property damage along the Project Area roadways if there is a future increase in traffic volumes and increased congestion.

Pedestrians and Bicyclists

Pedestrian and bicycle activity exists within the Project Area, but is limited to roadways within local communities. Increased traffic on crossroads connecting to the proposed highway could negatively affect pedestrian and bicycle safety. However, pedestrian and bicycle safety could improve as through traffic and truck traffic are diverted to the proposed highway.

The No-Action alternative could result in decreased pedestrian and bicycle safety along the Project Area roadways. The predicted future increases in traffic volumes, particularly truck traffic, and increased congestion in the communities of Monticello, Warren and El Dorado could increase the likelihood of a pedestrian/bicycle collision with motor vehicles.

4.1.4 Relocations

Structures were initially identified on aerial photographic mapping, field verified, and entered into the project GIS for impact assessment. Revisions and updates were made to this information during the Alignment Study to include all currently existing residences and businesses. An effort to minimize residential, business, and community facility impacts was made during both the Corridor and Alignment Studies.

Minimization of residential relocations was identified as a major issue during public involvement meetings. Structures were identified as impacted if they were within the alignment construction limits. All alignments would displace residences, but would avoid all businesses and community facilities within the Project Area (Table 4-2). The Preferred Alignment (Line 5) would have the least amount of residential impacts while Line 1 and 2 would impact the most.

Based on comments received at the June 2004 Public Hearings, additional efforts were made to locate residential structures that may be impacted by the alignments. Two additional residences were identified in the Monticello area and were added to the project database. Table 4-2 has been updated to reflect these efforts.

The No-Action alternative could result in future relocations as minor safety improvements and additional widening or passing lane projects are implemented within the Project Area. All future projects will include measures to minimize relocations to the extent practicable. Due to the existence of numerous residences along area highways, it is reasonable to assume that some impacts to residences would occur as improvement projects are implemented in the future.

Table 4-2
RELOCATION SUMMARY

Alignment	Structure Type			
	Residences	Business	Community Facilities	Total
No-Action*	-	-	-	-
Line 1	16	0	0	16
Line 2	16	0	0	16
Line 3	14	0	0	14
Line 4	10	0	0	10
Preferred (Line 5)	5	0	0	5

Source: Michael Baker Jr., Inc.
*Relocations could occur with widening construction activities, although the extent of these impacts is not known at this time.

Relocation Mitigation

Further steps to minimize relocations will be considered during the final design of the highway. Where avoidance is not possible, the acquisition and relocation process will be conducted in accordance with the Uniform Relocation Assistance and Real Property Policies Act of 1970. Relocation assistance will be made available to all residential relocatees without discrimination as to race, color, national origin, age, sex, or religion. In all cases, AHTD will assure that decent, safe, and sanitary housing is provided for all relocatees.

The availability of residential real estate was reviewed to determine if adequate replacement housing existed within the Project Area for displaced homeowners. In June 2003, the availability of residential housing was determined from information obtained from the Monticello and El Dorado multi-list real estate services and local newspapers. Over 242 homes were available in the El Dorado area with 82 of those homes priced between $50,000 and $150,000. Approximately 20 homes were available in the Monticello area with nine homes priced between $50,000 and $150,000.

AHTD is committed to locating replacement housing within the occupant's financial means and within the general vicinity of the project and when necessary, providing housing of last resort. Real estate availability will be reassessed once final design of the proposed highway has been completed.

4.2 ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, directs all Federal agencies to determine whether a proposed action would have an adverse and disproportionately high impact on minority and or low-income populations. In addition, elderly populations (>65 years old) were also assessed. The objective of the Environmental Justice policy is not to develop alternatives that simply move the impacts from one affected group to another, but to fully and equitably consider

potential project impacts to minority and low-income populations during the project development process.

4.2.1 Methodology

Thirty-one U.S. Census Bureau Census Tracts were identified within the Project Area and initially examined to determine the presence of minority, low-income, or elderly populations within the Project Area (Table 3-8, Exhibit 3-1). Fifteen of these 31 tracts would be crossed by the proposed I-69 alignments. Further analysis of this Census Tract information was conducted to establish county reference populations for comparative purposes in determining disproportionate project impacts. When possible, county reference populations consisted of only those Census Tracts within the Project Area. For example, the proposed project would potentially affect only the populations of portions of western Desha County. It would not be appropriate to compare populations affected by the proposed highway to the overall county populations, which include large areas outside the Project Area that were not considered for the location of the proposed highway. For Ouachita County, due to the nature of the tract location within the Preferred Corridor, the reference population used was the same as the impacted population.

Table 4-3 presents the minority, low-income, and elderly populations potentially affected by all developed highway alignments compared to the appropriate reference population. The majority of Census Tracts traversed by all alignments showed no indication of disproportionate impacts. The shaded cell in the table represents a value considered substantially different than the reference population values and identified Census Tracts where disproportionate impacts may occur. This area was examined in greater detail to determine the extent of any project impacts, positive or negative.

Drew County Census Tract 9902 was the only tract traversed by the proposed alignments with a substantially higher percentage of minorities (60%) when compared to the reference population (33%). A closer field review of Tract 9902 revealed several sites with small clusters of homes on rural roads. These were identified and avoided by all alignments in order to preserve community cohesion.

In addition to the analysis of Census Bureau data, early public involvement identified small clusters of minority residences potentially impacted by one or more of the proposed alignments near Louann on County Road 63, U.S. 63 south of Warren, Wilmar Loop Road east of Wilmar, and Highway 138 and North Section Sixteen Road between Monticello and McGehee. No alignments would disrupt community cohesion or exclude these areas from broader county community activities and services. Lines 1 and 4 have the greatest potential to disrupt individual residences in the North Section Sixteen Road area.

Table 4-3
CENSUS TRACTS POTENTIALLY AFFECTED BY THE ALIGNMENT ALTERNATIVES

County	Census Tract*	Population	% Minority	% 65 and Older	Median Household Income	% in Poverty (Persons)
Desha	9505	2,256	39	12	26,648	21
	9504	3,630	54	15	19,893	33
Desha County Reference Population		10,938	41	14	25,277	27
Drew	9901	2,756	25	12	31,458	16
	9902	2,621	60	10	26,628	18
	9903	5,752	20	13	31,026	17
	9904	3,352	30	15	25,670	22
	9905	4,242	28	13	30,131	16
Drew County Reference Population		18,723	33	13	28,982	18
Bradley	9501	2,825	28	20	23,682	26
	9503	2,397	47	12	23,490	29
	9504	1,913	34	17	28,125	15
	9505	3,465	40	14	23,026	31
Bradley County Reference Population		12,600	37	16	24,977	24
Calhoun	9801	2,896	29	18	26,579	18
	9802	2,848	18	14	30,466	14
Calhoun County Reference Population		5744	24	16	28,522	16
Ouachita	9503	6,193	28	16	34,669	17
Ouachita County Reference Population		6,193	28	16	34,669	17
Union	9504	6,180	22	13	34,167	11
Union County Reference Population		45,629	35	16	29,613	19

Source: U.S. Department of Commerce - Bureau of the Census - 2000 - Census of Housing and Population
*Shading indicates values substantially different than the reference populations

No transit services to minority groups would be impacted by any of the alignment alternatives. No Project Area communities have citywide bus service and no form of inter-community public transportation exists that would be impacted by this proposed project.

No disproportionate impacts to minority, low-income, or elderly population groups would be expected by any of the alignment alternatives.

4.2.2 Environmental Justice Mitigation

Further steps to minimize relocations will be considered during the final design of the highway. Where avoidance is not possible, the acquisition and relocation process will be conducted in accordance with the Uniform Relocation Assistance and Real Property Policies Act of 1970. Relocation resources are made available to all residents and businesses without discrimination.

4.3 ECONOMIC IMPACTS

Economic impacts related to the development of the SIU 13 Project include a temporary increase in construction related employment, an increase in other employment areas, a reduction in travel costs, and additional local and regional income generation from sources such as transportation related taxes. Economic impacts would be similar for all alignments.

4.3.1 Employment Opportunities

Construction of the proposed highway would positively impact local economies of Project Area communities. New employment opportunities would be generated by highway construction activities, in addition to the services required to support a large-scale construction operation. A recent national FHWA study on employment impacts of highway investment, (*Highway Infrastructure Investment and Job Generation: A Look at the Positive Employment Impacts of Highway Investment*, USDOT, FHWA, 1997) found that every $1 billion in Federal-aid highway investment supported approximately 42,100 total full-time equivalent jobs. Jobs were further classified as:

- Direct or on-site highway construction jobs specifically involved with the highway improvement project such as construction laborers, engineers, and construction managers
- Indirect or supply industry jobs at firms that supply equipment, materials, and administrative support
- Secondary or induced jobs are created when construction-based employees spend their wages on various goods and services throughout the area.

An estimate of the number of jobs potentially created by the proposed highway project is shown in Table 4-4.

Table 4-4
ESTIMATED EMPLOYMENT IMPACTS OF HIGHWAY CONSTRUCTION

Job Category (person-years)	Jobs per $1 billion of Construction Costs[1]	No-Action	Build Alternatives (Average in Billion $)[1]
Average Construction Costs (Billions)		$0.00	$0.800
Direct/On-site Jobs	7,900	0	6,320
Indirect Jobs	19,700	0	15,760
Induced Jobs	14,500	0	11,600
Total Jobs	42,100	0	33,680

Source: Michael Baker Jr., Inc., FHWA, 1997
[1]Does not include Right-of-Way costs.

Individual employment projections were not made for each alignment due to the similarity in estimated construction costs. Based on an estimated project cost, approximately 33,680 temporary jobs could be generated by construction of the proposed highway. Actual employment numbers would vary depending on the timing and staging of construction activities. Given the length of the highway, these economic impacts could continue for several years.

Many Project Area residents would benefit from the proposed highway. Increased accessibility to the Interstate system would allow commuting Project Area residents to reach their employment destinations in a safer and more time efficient manner. Access to the Interstate could also expand potential employment opportunities by reducing commuting times to more distant and larger job markets.

It is possible that some highway-related businesses along U.S. 425, U.S. 278, S.H. 7, U.S. 65, and U.S. 63, and S.H. 167 could experience in decreased sales due to a reduction in local traffic. The amount of lost revenue would be dependent on the type of business, the traffic changes that occur, and the proximity to other traffic generators. Highway related businesses that depend in large part on through traffic might be negatively impacted. Impacts to these businesses would also be dependent on their proximity to proposed interchanges.

The No-Action alternative could have a negative economic impact on the Project Area. The No-Action alternative would not result in construction employment, could limit rural resident employment opportunities, and increase travel and vehicle operating costs through a decreasing level of service on area roadways.

4.3.2 Secondary Economic Impacts

Secondary economic impacts would be tied to potential secondary development throughout the Project Area. Secondary development could

provide improved access to the Southeast Arkansas Intermodal Facility. Improved access and development of this facility could in turn provide increased employment opportunities and additional corporate tax revenues for Monticello and Drew County. Secondary development could improve truck access to serve manufacturing and industrial sites and the timber industry in McGehee, Warren, Monticello, Camden, Magnolia, and El Dorado, and oil fields and bromine fields near El Dorado. This could promote expansion and further development in these communities, including growth in residential development and an increase in the demand for consumer services in retail, banking, healthcare and recreation. Additionally, commercial development at interchanges would have varying economic effects on the local economy depending on the extent of this development.

4.4 VISUAL

The proposed highway would alter the urban and rural setting as it moves from El Dorado to McGehee. Visual impacts would take two forms: views of the proposed highway from various points along the alignments and views from the proposed highway of the surrounding landscape. All alignments would have similar visual impacts. The No-Action alternative would not alter the existing visual resources.

4.4.1 Views of the Proposed Highway

Most of the landscape traversed by the alternative alignments from El Dorado to Monticello is dominated by forestland that would provide limited views of the highway. The exception would be for the scattered rural residential development within these areas. Residents that would not be displaced by the highway facility, but who are within close proximity, would experience the greatest visual impact. Other residents living in the relatively flat terrain between Monticello and McGehee would be less affected by views of the highway except in areas where elevated grade separations occur at area road crossings. These areas include the terrain associated with agricultural activities adjacent to Bayou Bartholomew near Selma and McGehee.

4.4.2 Views from the Proposed Highway

The views of the surrounding southeast Arkansas landscape from the proposed highway could be considered a beneficial impact as travelers pass through a predominantly rural viewshed marked by forestland and scattered agricultural activities. Viewshed opportunities may be enhanced at elevated grade separations that would allow motorists expanded views of cotton and soybean fields, extensive pine forests, and distant rural communities. Scenic views of wetland systems would also occur from bridge crossings at the Ouachita and Saline Rivers.

4.4.3 Visual Mitigation

Where practicable, visual mitigation measures could include naturally vegetated medians, minimizing right-of-way clearing, and promoting roadside native wildflower planting programs. Native plants will be considered for roadside re-vegetation where practicable, to improve the visual aesthetics and to control the introduction and spread of invasive species.

4.5 GEOLOGIC RESOURCES

4.5.1 Oil and Natural Gas Resources

Oil and gas well locations were obtained from Tobin International, Inc. for the Preferred Corridor and entered into the Geographic Information System to determine impacts to each alignment. Wells were identified as impacted if they were within 50 feet of the alignment construction limits.

The proposed highway would impact abandoned and active wells. Abandoned wells are defined as producing or non-producing wells that have been plugged to stop the flow of water, oil, and gas. An active well is defined as a well that is capable of producing oil and gas in commercial quantities. Well impacts are summarized in Table 4-5.

Table 4-5
OIL WELL IMPACTS

Alignment	Abandoned	Active
No-Action	0	0
Line 1	4	0
Line 2	4	1
Line 3	3	0
Line 4	3	0
Preferred (Line 5)	4	0

Source: Michael Baker Jr. Inc. Tobin International, Inc.

Impacts to active and abandoned wells would occur to the west of the Ouachita River. Line 2 would impact one active oil well. All alignments would impact abandoned wells. Line 1, Line 2, and the Preferred Alignment (Line 5) would impact an equal number of and the most abandoned wells while Lines 3 and 4 would impact the least. The No-Action alternative would not impact any wells.

The loss of an active oil well may result in economic impacts to the owner of the well and the surrounding property owner. In conjunction with the property acquisition process, a qualified petroleum engineer would conduct a feasibility study to determine estimated reserves. Results of this study would determine whether the well would be replaced or compensation would be provided to the owner of the well based on estimated reserves.

The Arkansas Oil and Gas Commission (AOGC) would be contacted regarding the impact of any active or abandoned well locations by the proposed highway. All wells would be properly abandoned according to the rules and regulations established by the AOGC.

4.5.2 Bromine

Coordination with the Arkansas Geological Commission (AGC) early in the planning process determined that approximately 1,900 acres of Great Lakes Chemical Corporation's West Brine Unit is located within the Preferred Corridor from U.S. 82 to just south of S.H. 160 (See Exhibit 3-2). The location of pipelines, disposal wells, and supply wells within the brine unit was also provided. Although Line 1 and Line 2 veer westward into land designated for the brine unit north of Bethel Road, no pipelines or wells would be impacted by any alignment.

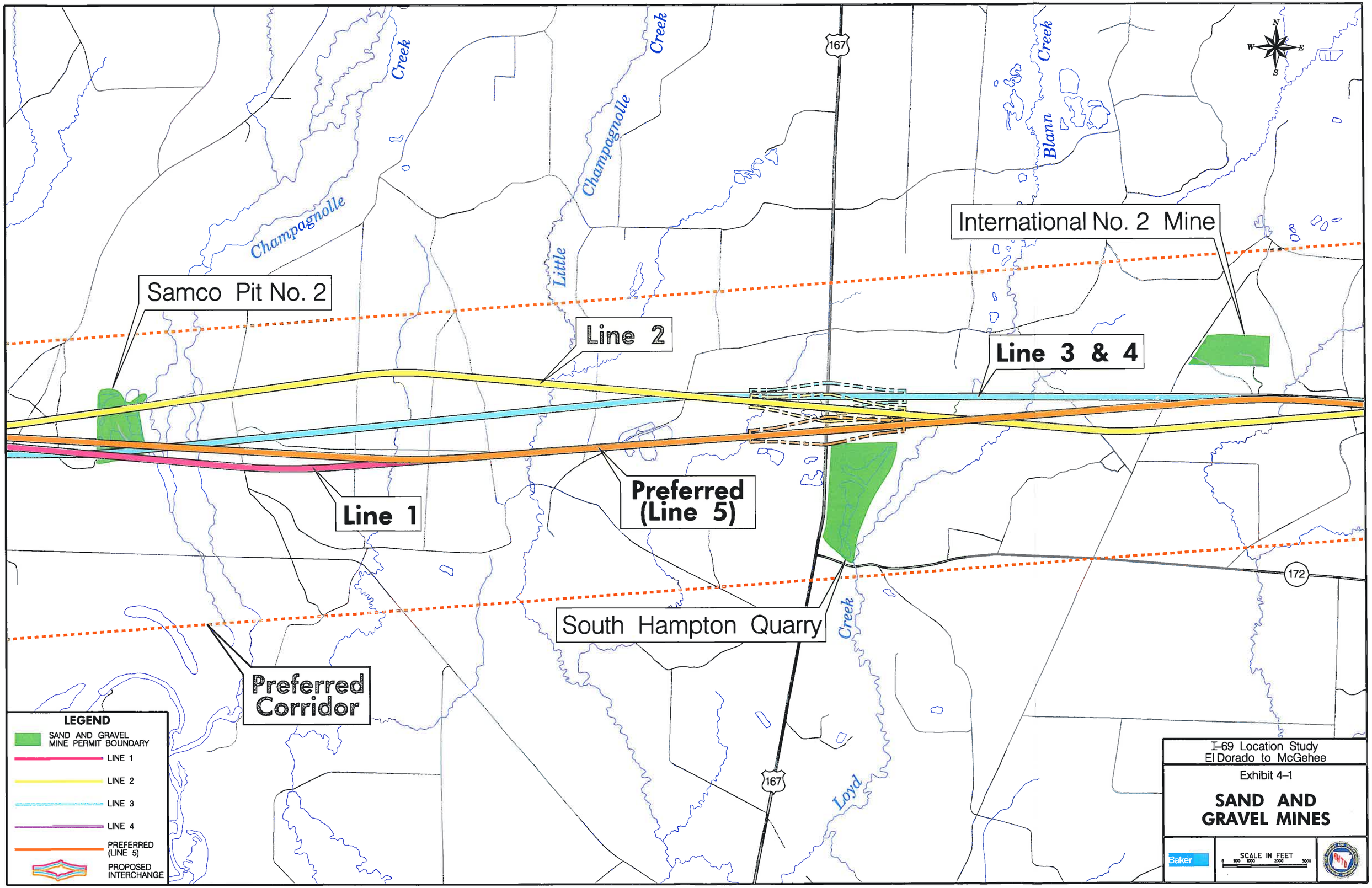
4.5.3 Sand and Gravel

Coordination with the ADEQ's Surface Mining and Reclamation Division identified three sand and gravel mines within the Preferred Corridor near U.S. Highway 167 south of Hampton. Sand and gravel mine permit boundaries are shown on Exhibit 4-1.

All Lines would impact the Samco Pit No. 2 mine located adjacent to Champagnolle Creek. This is an active sand and gravel mine operated by Southern Arkansas Materials Corporation. Line 3 and Line 4 would impact the most land at 8.9 acres while Line 1 would impact the least at 7.4 acres. The Preferred Alignment would impact 8.5 acres of the current operation. If construction begins during the life of this mine, compensation would be provided to the owner based on lost sand and gravel resources.

The South Hampton Quarry mine site, operated by Martin Marietta Minerals, Inc., is located immediately adjacent to U.S. Highway 167 and slightly north of S.H. 172. Line 1 and the Preferred Alignment (Line 5) would impact this site at less than one tenth of an acre. Currently, the South Hampton site is still under reclamation and has not been released by ADEQ. Grading has been completed, but the required vegetative cover has not been established (Stephens, 2003). Adjustments could be made during final design to avoid this reclaimed sand and gravel mine.

The International Mine No. 2 is located approximately 1.3 miles north of S.H. 172 and 3,200 feet east of Loyd Creek. This mine was left abandoned by Jet Asphalt and Rock Company and is still pending reclamation. None of the developed alignments would impact this mine.


Champagnolle Creek
Champagnolle Creek
Little Champagnolle Creek
Blann Creek
167
172
N
W
E
S
Samco Pit No. 2
International No. 2 Mine
Line 2
Line 3 & 4
Line 1
Preferred (Line 5)
Preferred Corridor
South Hampton Quarry
Creek
Loyd
167
LEGEND
SAND AND GRAVEL MINE PERMIT BOUNDARY
LINE 1
LINE 2
LINE 3
LINE 4
PREFERRED (LINE 5)
PROPOSED INTERCHANGE
I-69 Location Study
El Dorado to McGehee
Exhibit 4-1
SAND AND GRAVEL MINES
Baker
SCALE IN FEET
0 1000 2000 3000
AHTD

4.6 WATER QUALITY IMPACTS

4.6.1 Surface Water Resources

Surface water resources crossed by all alignments include perennial and intermittent streams, bayous, and man-made ponds. Perennial streams crossed by the alignments from west to east include, Bert Creek, Camp Creek, Sandy Creek, Smackover Creek, Brushy Creek, Wolf Creek, North Fork Creek, Blackwater Creek, Mayner Branch, Jim Dunn Creek, Champagnolle Creek, Little Champagnolle Creek, Dunn Creek, Moro Creek, L'Aigle Creek, Beech Creek, Brushy L'Aigle Creek, Flat Branch Creek, Langford Creek, Tenmile Creek, Clear Creek, Godfrey Creek, Adcock Creek, Hurricane Creek, Piney Creek, and Cutoff Creek. Intermittent streams crossed by the alignments include Bear Creek, Lloyd Creek, Rocky Branch, Springhill Creek, California Branch, and Carmichael Creek. Additionally, all alignments would cross the Ouachita River, Saline River, and Bayou Bartholomew. Stream resources are shown on Exhibit 4-2.

The Saline River is considered an Ecologically Sensitive Waterbody, Natural and Scenic Waterway, and an Extraordinary Resource Water by the Arkansas DEQ. The Arkansas Department of Environmental Quality's Regulation No. 2 "Regulation Establishing Water Quality Standards For Surface Waters of the State of Arkansas" provides extra protection for Extraordinary Resource Waters. Water bodies with this designation shall be protected by the highest level of pollution prevention, especially for new road and bridge construction, maintenance of natural flow regime, and protection of instream habitat.

Water quality impacts would be similar for all alignment alternatives and likely be confined to the temporary influx of sediment laden surface runoff associated with culvert and bridge placements during construction activities. No long-term adverse impacts would be expected.

Stream Modifications

Preliminary investigations indicate that stream channel realignments and modifications would occur along each alignment under consideration. The extensive meandering of Project Area streams would likely result in several proposed stream channel modifications that would allow more perpendicular stream crossings and would reduce the overall highway bridge lengths. Any channel modifications and resulting stream mitigation measures will be determined during the final highway design process and will be coordinated with the COE, the U.S. Fish and Wildlife Service, and state agencies as appropriate.

Construction Impacts

In general, construction activities would include removal of existing vegetation during clearing and grubbing that would temporarily expose soils adjacent to stream crossings and within the right-

of-way limits. As a result, a temporary increase in stream sedimentation could occur due to stormwater runoff and would be greatest in the immediate vicinity of the crossings. Suspended solids could adversely impact both aquatic invertebrates (aquatic insects, mussels, and zooplankton) and fishes by altering the existing substrate, reducing light penetration and in-stream photosynthesis, reducing dissolved oxygen, and increasing biological oxygen demand within the water column. Elevated suspended sediment concentrations could cause mortality in adult fish by clogging the gill filaments and preventing normal water circulation and aeration of blood. In addition, excess sedimentation could disrupt species productivity by smothering spawning areas, reducing egg viability, and preventing the emergence of fry.

All alignments would cross the same soil types and associated slopes adjacent to impacted streams. The substrate within stream segments crossed is nearly identical from location to location. Therefore, potential construction impacts to the surface water quality would be non-alignment specific and could occur regardless of the alternative selected. Impacts from any of the alignments would be minimized through site specific erosion and sedimentation control measures at all stream and bayou crossings.

Secondary or Operational Impacts

The operation and maintenance of the highway would produce additional sources of surface water pollutants. During highway operation, sources of potential pollutants include vehicles (heavy metals such as copper, lead, and zinc from tire and brake wear, motor oil additives, and vehicle rust) and roadway maintenance practices such as sanding, deicing, and application of herbicides on right-of-way. However, the mild winter climate throughout the Project Area would limit the use of deicing materials. Deicing materials and herbicides have not been found to be significant pollutants in highway runoff (Maestri et. al., 1988).

The rate of deposition and subsequent magnitude of these pollutants in highway runoff are site-specific and are affected by traffic volumes, highway design, maintenance activities, surrounding land use, climate, and accidental spills.

The primary mechanism for removal of highway pollutants from the road surface is stormwater runoff. Highway construction would increase the impervious surface in the watershed and would generate additional runoff to receiving streams. The effects of highway runoff on streams are variable and dependent on the length of time since the last storm event, the quantity of stormwater runoff delivered to the stream, volume of flow in the stream, the duration of the storm event, and traffic volume (Barrett et al. 1993).

Line 1

Line 2

Line 3 & 4

Preferred (Line 5)

Preferred Corridor

Cairo

Lisbon

Liberty

Richland

El-Dorado Field

Union County

Ouachita County

Sandy Creek

Bear Creek

Silver Creek

Camp Creek

Bert Creek

Creek

Creek

Creek

Smackover Creek

82

160

172

82

160

172

Match Line See Sheet 2 of 7

LEGEND

- WETLAND
- FLOODPLAIN
- FLOODWAY
- WETLAND RESERVE PROGRAM
- FARMED WETLAND

I-69 Location Study
El Dorado to McGehee

Exhibit 4-2

WETLANDS AND FLOODPLAINS

Sheet 1 of 7

Baker

SCALE IN FEET

Preferred Corridor

Line 2

Preferred (Line 5)

Line 1

Line 3 & 4

Match Line See Sheet 1 of 7

Match Line See Sheet 3 of 7

376

7

CO 67

160

Brushy Creek

North Fork Wolf Creek

Creek

Louann

Cross Roads

Ouachita River

Bayou Locust

Bayou Mayner

Blackwater Creek

Little Bay Lake

Ben Davis Lake

Cages Lake

Branch

Ouachita County

Union County

Smackover Creek

Smackover

Kenova

Snow Hill

Calhoun

Ouachita County

LEGEND

- WETLAND
- FLOODPLAIN
- FLOODWAY
- WETLAND RESERVE PROGRAM
- FARMED WETLAND

I-69 Location Study
El Dorado to McGehee

Exhibit 4-2

WETLANDS AND FLOODPLAINS

Sheet 2 of 7

Baker

SCALE IN FEET

Preferred (Line 5)

Line 2

Preferred Corridor

Line 1

Line 3 & 4

Hampton

Harrell

Artesian

278

203

274

167

160

172

Champagnolle Creek

Little Champagnolle Creek

Dunn Creek

Jim Creek

Tom Cook Brake

Blann Creek

Rocky Branch

Branch

Loyd Creek

Hurricane Creek

Gilbert Creek

Match Line See Sheet 2 of 7

Match Line See Sheet 4 of 7

N

W E

S

LEGEND

- WETLAND
- FLOODPLAIN
- FLOODWAY
- WETLAND RESERVE PROGRAM
- FARMED WETLAND

I-69 Location Study
El Dorado to McGehee

Exhibit 4-2

WETLANDS AND FLOODPLAINS

Sheet 3 of 7

Baker

SCALE IN FEET

0 1000 2000 4000 6000

Preferred Corridor

Line 1

Line 2

Line 3 & 4

Preferred (Line 5)

Summerville

Farmville

Hermitage

278

160

63

CO 32

Jacks Creek

Dunn Creek

Jolly Creek

Wahl Creek

Branch

Bradley County

Calhoun County

L'Aigle Creek

California Creek

Springhill Creek

Beech Creek

Brushy L'Aigle

Moro Creek

Villum Branch

Match Line See Sheet 3 of 7

Match Line See Sheet 5 of 7

N W E S

LEGEND

- WETLAND
- FLOODPLAIN
- FLOODWAY
- WETLAND RESERVE PROGRAM
- FARMED WETLAND

I-69 Location Study
El Dorado to McGehee

Exhibit 4-2

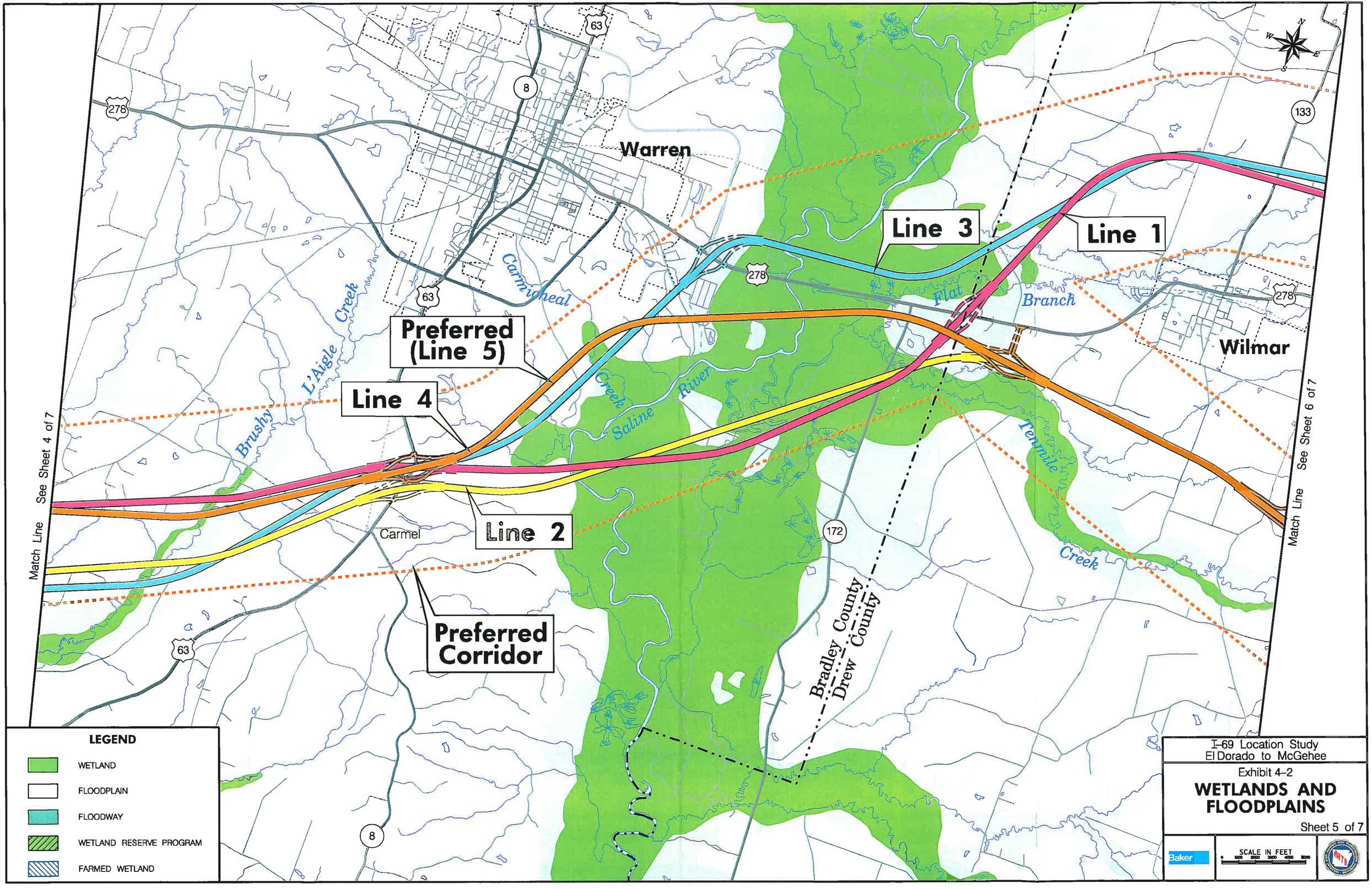
WETLANDS AND FLOODPLAINS

Sheet 4 of 7

Baker

SCALE IN FEET

0 1000 2000 3000 4000 5000


Warren
Carmel
Wilmar
Line 1
Line 2
Line 3
Line 4
Preferred (Line 5)
Preferred Corridor
Bradley County
Drew County
Carmichael Creek
L'Aigle Creek
Brushy Creek
Saline River
Flat Branch
Tenmile Creek
63
8
278
133
172
N
W
E
S
Match Line See Sheet 4 of 7
Match Line See Sheet 6 of 7
LEGEND
WETLAND
FLOODPLAIN
FLOODWAY
WETLAND RESERVE PROGRAM
FARMED WETLAND
I-69 Location Study
El Dorado to McGehee
Exhibit 4-2
WETLANDS AND FLOODPLAINS
Sheet 5 of 7
Baker
SCALE IN FEET
0 1000 2000 3000 4000 5000

Future I-530

Line 3

Proposed Road Alignment by AHTD

Line 1

Preferred Corridor

Line 2

Farmed Wetland

Monticello

Monticello Airport

College Heights

Enon

Proposed I-530 Extension

Line 4

Preferred (Line 5)

Preferred Corridor

Langford Creek

Lower Cutoff Creek

Creek

Godfry Creek

Hurricane Creek

Piney Creek

Tenmile Creek

Clear Creek

Adcock Creek

Sandy Creek

35 425 83 138 278 172

N W E S

Match Line See Sheet 5 of 7

Match Line See Sheet 7 of 7

LEGEND

- WETLAND
- FLOODPLAIN
- FLOODWAY
- WETLAND RESERVE PROGRAM
- FARMED WETLAND

I-69 Location Study
El Dorado to McGehee

Exhibit 4-2

WETLANDS AND FLOODPLAINS

Sheet 6 of 7

Baker

SCALE IN FEET
0 1500 3000 6000 9000

Wetland Reserve Program

Line 2 & 3

Line 4

Line 1 & 4

Preferred Corridor

Preferred (Line 5)

Line 2 & 3

Farmed Wetland

Farmed Wetland

Future I-69 Mississippi River Crossing Alignment

Cutoff Creek

Ables Creek

Bartholomew Bayou

Piney Creek

Casey Jones W.M.A.

Seven Devils Lake

Open Lake

Paw Paw Brake

Austin Brake

Drew County

Desha County

Selma

Tiller

Reed

McGehee

293

277

278

65

Sheet 6 of 7

See Sheet Match Line

LEGEND

- WETLAND
- FLOODPLAIN
- FLOODWAY
- WETLAND RESERVE PROGRAM
- FARMED WETLAND

I-69 Location Study
El Dorado to McGehee

Exhibit 4-2

WETLANDS AND FLOODPLAINS

Sheet 7 of 7

Baker

SCALE IN FEET
0 1000 2000 3000 4000 5000

Highway runoff may adversely affect the water quality through short-term loadings associated with storm events and through chronic effects as a result of long-term accumulation and exposure.

Research indicates that runoff from rural highways would generate few substantial impacts with average daily traffic (ADT) of less than 30,000 vehicles and that toxic effects are limited to urban facilities with ADTs exceeding 50,000 vehicles per day (Maestri et al. 1988). Based on the volume of traffic predicted for this proposed highway of approximately 14,000 (total I-69 build out) vehicles per day, no measurable differences in surface water quality would be expected from highway runoff.

Hazardous or toxic materials spills could occur during construction or operation of the proposed highway and could impact area streams. The reporting of hazardous and toxic materials spills is the responsibility of law enforcement or the AHTD District Engineer. Spills are normally reported to the AHTD Telecommunications Operator. The Office of Emergency Service's hotline is called for official notification and response. Clean-up procedures for hazardous and toxic materials spills related to construction are outlined in Section 110, Abatement of Water Pollution, and AHTD Standard Specifications for Highway Construction (2003).

The No-Action alternative would have limited impacts to water resources. Normal roadway maintenance, minor safety improvements, and programmed widening and passing lane construction may result in the temporary influx of sediment laden runoff to area waters.

Surface Water Mitigation

AHTD will comply with all requirements of the Clean Water Act, as amended, for the construction of the proposed project. This includes Section 401 Water Quality Certification, Section 402 National Pollutant Discharge Elimination System (NPDES), and Section 404 Permits for Dredging or Placement of Fill Material. The Clean Water Act declares the discharge of any pollutants into water of the United States from any point source as unlawful, except under terms and conditions of a permit issued under NPDES.

The NPDES permit is required from ADEQ for stormwater discharge for any construction activity disturbing an area of five acres or more and will require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) prior to construction. This plan will include all specifications and best management practices (BMP's) necessary for control of erosion and sedimentation due to construction related activities. The SWPPP will be prepared during final highway design to best integrate the BMP's with the design process. All highway alignments would have similar impacts to

surface and ground water resources, as well as to public water supplies.

Impacts to Project Area streams and bayous will be avoided by bridging perennial streams where practicable. Bridging would minimize the placement of culverts and/or stream relocations. In addition, transverse crossings of perennial streams would be minimized to reduce the use of culverts and pipes. Horizontal and vertical alignment adjustments to reduce the width of the construction limits at all stream crossings will be considered where practicable.

Avoidance of crossing surface water resources is not possible within the Project Area. The developed highway alternatives run roughly west to east, while the existing drainage patterns of regional streams run mainly north to south. Design and construction considerations will be used to minimize potential impacts. Mitigation measures include, but are not limited to:

- Implementation of an ADEQ approved Erosion and Sedimentation Control Plan
- Use of properly sized and engineered culverts for stream crossings to minimize impacts attributed to flood height and flood duration
- Construction of detention treatment facilities where necessary
- Perpendicular stream crossings where practicable.

In addition, the following measures are examples that could be implemented as part of the design and construction phases of this project to reduce impacts resulting from stormwater runoff. These measures include, but are not limited to, the following:

- Scheduling construction activities to minimize exposed area and duration of exposure
- Prompt re-vegetation of all disturbed areas
- Minimize duration of in-stream work by heavy equipment
- Control runoff within the right-of-way limits using temporary stormwater management ponds before discharging into receiving streams
- Use of gentle slopes and wide shallow channels for grassed swales to remove pollutants through filtration, settling, and infiltration
- Designation of impervious areas for construction equipment, vehicle storage, and refueling areas to contain accidental spills

4.6.2 Groundwater Resources

The construction of the proposed highway and subsequent stormwater runoff would have minimal impacts on groundwater quality. Construction would increase the amount of impervious cover within the local watersheds, which would reduce the amount of infiltration to recharge underlying aquifers. However, because of the remaining

amount of undeveloped land available for groundwater recharge, the change in land use associated with the proposed project would have a negligible effect on recharge.

Highway stormwater runoff could provide a potential source of pollutants to the groundwater system. However, through the implementation of a properly designed erosion and sedimentation control plan, minimal impact to groundwater resources would be anticipated.

The No-Action alternative would not impact groundwater resources.

4.6.3 Public Water Supply

No Lines cross any Wellhead Protection Areas (WHPA) within the Preferred Corridor. The majority of public water supply systems with designated WHPA's from El Dorado to McGehee obtain their source of water from the underlying Sparta Aquifer.

The No-Action alternative would not impact public water supplies.

4.7 FLOODPLAINS AND FLOODWAYS

A floodplain evaluation was conducted in accordance with EO 11988, "Floodplain Management", 23 CFR 650, Subpart A, "Location and Hydraulic Design of Encroachments on Floodplains", and US DOT 5650.2, "Floodplain Management and Protection". The locations of 100-year floodplains for creeks and bayous throughout the Preferred Corridor, as identified on Flood Hazard Boundary Maps and Flood Rate Insurance Maps, are shown on Exhibit 4-2.

4.7.1 Floodplain Impacts

Avoidance of impacts to floodplains was not possible due to the numerous drainages encountered along the proposed project. In order to minimize potential floodplain impacts, all alignments were designed to the greatest extent possible to cross the major watercourses at perpendicular or near perpendicular angles. All alignments would have the same number of floodplain encroachments associated with major stream and river crossings as shown on Exhibit 4-2.

Table 4-6 represents a comparison of impacts by alignment. Line 1 would have the greatest impact on floodplains while Line 4 would have the least.

Table 4-6
FLOODPLAIN IMPACTS

Alignment	Acres
No-Action*	-
Line 1	856
Line 2	850
Line 3	820
Line 4	769
Preferred (Line 5)	778

Source: Michael Baker Jr., Inc.
*Floodplain impacts would occur with widening and passing lane construction activities, although the extent of these impacts is not known at the time.

The greatest floodplain impacts would be associated with the Ouachita River, Saline River, and Bayou Bartholomew and would be similar for all alignments. All alignments would have similar smaller floodplain impacts associated with

perennial and intermittent stream crossings as shown in Exhibit 4-2. No regulatory floodways are impacted by any alignment.

The No-Action alternative could result in future floodplain impacts as minor safety improvements and additional widening or passing lane projects are implemented within the Project Area. All future projects will include measures to minimize floodplain impacts to the extent practicable.

Detailed hydraulic studies will be performed during the final design phase of the project to determine any changes in flood elevations due to construction. AHTD and FHWA will review these studies to confirm that adequate measures have been taken to ensure that floodplain encroachment does not increase the risk of flooding to adjacent properties. When final design is completed, construction plans and hydraulic data will be available to the local communities for review, approval, and permitting as specified by local ordinances.

Mitigation measures will continue to focus on avoidance of and/or reduction of encroachment into floodplains during final design of the highway. In addition, where practicable, larger or multiple culverts could be used to reduce floodwater elevations and durations, and bridges could be lengthened to minimize placing fill within the floodplain.

4.7.2 Secondary Floodplain Impacts

Interchange locations within floodplain areas were analyzed for potential secondary development that could promote incompatible floodplain development. Floodplain areas involved were associated with Wolf Creek, L'Aigle Creek, Saline River, an unnamed tributary to Langford Creek, an unnamed tributary to Tenmile Creek, tributary to Godfrey Creek, Clear Creek and associated tributary, Hurricane Creek and associated tributary, Cutoff Creek, and Bayou Bartholomew. Interchange locations are shown in Exhibit 4-2.

All alignments have an interchange proposed at S.H. 7 that would encroach upon the Wolf Creek floodplain. No secondary development would occur for any of the alignments at this location. This interchange would function as a freeway-to-freeway connection and would not accommodate adjacent secondary development.

All alignments would have an interchange proposed at County Road 32 south of Farmville. Line 3 and Line 4 would encroach upon a floodplain associated with L'Aigle Creek. Sufficient undeveloped land exists to the east and west of County Road 32 outside of the floodplain area that could support secondary development.

Line 1 and Line 3 would have proposed interchanges located at U.S. 278 east of Warren. Line 1 would encroach upon floodplains associated with Flat Branch and Tenmile Creek to the east of

S.H. 172. Very little land would be available for development outside of the floodplain. Secondary floodplain impacts due to interchange development could occur at this location.

Line 3 would have a proposed interchange that would encroach upon the floodplain associated with the Saline River. Sufficient land would be available north of the proposed interchange. Existing residential land could be converted to commercial purposes avoiding incompatible floodplain development.

Line 2, Line 4, and the Preferred Alignment (Line 5) would have an interchange proposed south of U. S. 278 between County Road 361 and the Drew/Bradley County Line. All Lines would encroach upon floodplains associated with Tenmile Creek and Flat Branch. Land suitable for development would exist north of the proposed interchange in the vicinity of County Road 361.

Line 1 and Line 3 would encroach upon floodplains associated with an unnamed tributary to Langford Creek with the intersection of the future I-530 south of the Barkada community west of Monticello. Sufficient land exists in this area for secondary development.

Additionally, Line 1 and Line 3 have a proposed interchange at S.H. 138 east of Monticello that would encroach upon the floodplain of Godfrey Creek. Sufficient undeveloped land is available that could support secondary development east of S.H. 138.

Line 2, Line 4, and the Preferred Alignment (Line 5) would have a proposed interchange with the future I-530 south of the planned Southeast Arkansas Intermodal Facility that would encroach upon the floodplain of an unnamed tributary to Tenmile Creek. Sufficient land is suitable for secondary development at this location.

Line 2, Line 4, and the Preferred Alignment (Line 5) would have a proposed interchange at U.S. 425 that would have a minor encroachment upon a floodplain associated with an unnamed tributary to Clear Creek south of Monticello. Sufficient undeveloped land exists at this location that could support secondary development.

Line 2, Line 4, and the Preferred Alignment (Line 5) would have a proposed interchange at S.H. 35 east of Monticello. Line 2 would encroach upon the floodplains associated with Jordan and Adcock Creeks. Sufficient land is suitable for secondary development west of the interchange along S.H. 35. Line 4 and the Preferred Alignment (Line 5) would encroach upon the floodplain of Adcock Creek. Sufficient undeveloped land would be suitable for secondary development north and south of S.H. 35.

Line 2 would have a proposed interchange at U.S. 278 east of Monticello that would encroach upon a floodplain associated with Hurricane Creek and an

unnamed tributary to Hurricane Creek. Sufficient land is available north of U.S. 278 that would support secondary development.

All alignments would have an interchange proposed at S.H. 293 south of the Selma community that would encroach upon the floodplain of Cutoff Creek. All alignments would have sufficient land outside the floodplain for secondary development.

All alignments have an interchange proposed at U.S. 65 north of McGehee that encroach upon the floodplain associated with Bayou Bartholomew. Avoidance of the Bayou Bartholomew floodplain is not practicable at this location due to the expansive nature of the floodplain. However, suitable land exists on the western side of U.S. 65 that could support secondary development.

4.8 WETLANDS

4.8.1 Methodology

Potential wetland systems were initially identified using color infrared aerial photography (CIR, 1"=2,000') and USDA Soils Survey mapping. Identified wetland systems were entered into the project GIS as part of the environmental inventory conducted during the Corridor Study phase of the project. This information was overlaid on project aerial photography and was used to aid in field verification of potential wetlands.

Soil survey information was obtained from the Ashley, Chicot, Desha, Drew, Bradley, Calhoun, and Ouachita County published USDA Soil Surveys and was reviewed to determine areas containing hydric soils. Soils maps for Union County were reviewed at the NRCS office. Large areas of hydric soils that did not correspond to the photo interpreted wetland information were further investigated in the field.

In addition, NRCS offices were contacted to obtain information on farmed or prior converted wetlands. Farmed wetlands are wetland areas that have been manipulated and used to produce an agricultural commodity prior to December 23, 1985, but continue to be seasonally flooded for at least 15 consecutive days during the growing season at least once every two years. Farmed wetlands still meet the COE wetland delineation criteria and are considered as jurisdictional or regulated wetlands.

Coordination with NRCS identified several potential farmed wetland sites located in Drew County within the Project Area. Most of these sites are associated with agricultural fields near Bayou Bartholomew.

Using the above information, wetland areas potentially impacted by the alignment alternatives were field verified (where reasonably accessible and where landowner permission was granted) using the methods outlined in the Corps of Engineers *Wetlands Delineation Manual* (COE Manual, January, 1987). Where access was

limited, verification of wetlands was based on aerial photography and soil survey information. The Corps of Engineers was involved at all stages of project development, has participated in alignment field reviews, and has been consulted regularly with respect to the wetland issues on this project. The COE has concurred with the methodology employed to date to address wetland resources. This effort provides the necessary detail to consistently compare potential wetland impacts between alternatives and provides a foundation for wetland mitigation requirements and discussions.

Continuing coordination between the COE and AHTD will assure that all regulatory concerns are adequately addressed. During the final design process continued efforts will be made to further avoid and/or minimize wetland impacts through consideration of design alternatives. The Section 404 permit application will be prepared and submitted to the Corps of Engineers for review after the Record of Decision has been signed.

A general wetland function and value assessment was conducted for potentially impacted wetlands using guidance found in the Corps Descriptive Method (CDM) evaluation (COE, 1995) using a "best professional judgment" approach and is presented below. For the majority of the Project Area, functions and values of individual wetlands crossed by each alignment were similar. Most individual wetlands were crossed by all alignments in similar landscape settings and in close proximity to one another.

4.8.2 Impact Assessment

All wetlands identified within the Preferred Corridor were evaluated in accordance with Executive Order 11990 entitled "Protection of Wetlands". Wetland types and boundaries were placed into the GIS to determine total wetland size and encroachment for each alignment. Impacts are based on the wetland area within the alignment construction limits. Due to the relative number and spatial distribution patterns of wetland communities within the Project Area, as well as a thorough consideration of other environmental concerns including existing topography, residential structures, and communities, a practicable alignment that avoids all wetlands is not possible for any of the alignment alternatives. However, throughout alignment development, wetland impacts were minimized to the greatest extent practicable in accordance with the Section 404 b(1) Guidelines.

Wetland impacts are presented in Table 4-7. As individual wetland impacts associated with each alignment occurred in similar landscape positions and had similar functions and values, wetland impacts were compared across the alternatives by calculating and presenting total acreage impacts.

Table 4-7
TOTAL WETLAND IMPACTS (ACRES)

	Forested	Herbaceous	Farmed	Total
No-Action	-	-	-	
Line 1	332	18	0	350
Line 2	314	16	0	330
Line 3	332	17	0	349
Line 4	305	15	0	320
Preferred (Line 5)	256	14	0	270

Source: Michael Baker Jr., Inc.

All alignments would impact wetland resources. The Preferred Alignment (Line 5) would impact the least amount of wetlands (270 acres), while Line 1 and Line 3 would have the greatest impacts (350 and 349 acres respectively). The majority of wetland impacts would be to Palustrine Forested Wetland systems (PFO) adjacent to area streams, bayous, and rivers.

Other construction related impacts could occur including but not limited to erosion and sediment deposition, and altering water regimes and water quality. The majority of these impacts are temporary in nature and their severity can be mitigated during construction through implementation of the following:

- Wetlands outside the construction limits will not be used for construction support activities (borrow sites, waste sites, storage, parking access, etc.)
- Clearing of wetland vegetation will be limited to the minimum required for job completion
- Ensuring that all appropriate measures will be taken to protect the water quality of adjacent wetlands through the use of straw bales, silt fencing, and seeding and mulching.

Wetland impacts could also result from the relocation of utilities (electric, gas, water and sewage transmission lines). These issues were considered during the alignment development process. The proposed highway has been developed on new location and as such, involvement with major utilities has been minimized.

Alternatives Analysis

To more definitively assess and discuss potential wetland impacts, the Project Area was divided into five discrete sections based on wetland geographic location and vegetative and hydrologic characteristics. This provides a more detailed discussion of dominant wetland vegetation and of general wetland functions and values for wetlands in these areas. Wetland impacts by section are provided in Table 4-8.

Section 1: U.S. 82 to S.H. 7

Five separate wetlands would be impacted by all alternatives in this section of the project. Impacted wetlands located between U.S. 82 and S.H. 7 consist of narrow wetland systems associated with minor creeks such as Camp Creek, Sandy Creek, Smackover Creek, and Brushy Creek.

Table 4-8
WETLAND IMPACTS ASSESSMENT

SECTION	LINE	ACRES IMPACTED	COMMENTS
1	*1	22	The Preferred Alignment best minimizes residential and agricultural impacts and wetland impacts in this section.
	2	26	
	3	28	
	4	28	
	Preferred (Line 5)	28	
2	1	92	The Preferred Alignment minimizes wetlands in this section.
	2	78	
	3	120	
	4	120	
	Preferred (Line 5)	78	
3	1	65	The Preferred Alignment minimizes wetland impacts in this section.
	2	69	
	3	75	
	4	75	
	Preferred (Line 5)	65	
4	1	149	The Preferred Alignment minimizes wetland impacts in this section.
	2	134	
	3	103	
	4	75	
	Preferred (Line 5)	75	
5	1	22	Wetland impacts are similar for all alignments in this section.
	2	23	
	3	23	
	4	22	
	Preferred (Line 5)	23	

Source: Michael Baker Jr., Inc.
*Shaded areas represent least impacts for each section.

Dominant overstory species include water oak (*Quercus nigra*), sweetgum (*Liquidambar styraciflua*), green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), and red maple (*Acer rubrum*). Primary functions and values identified for these wetlands include floodflow alteration, nutrient removal/retention, and wildlife habitat. Some functions may be limited due to development and alteration of the surrounding landscape. Impacts are similar for all lines in this section ranging from approximately 22 to 28 acres.

Section 2: S.H. 7 to U.S. 167

Six separate wetlands would be impacted by the alternatives in this section, the vast majority (> 90 percent) located in the Ouachita River floodplain east of the Ouachita River. A narrow band of wetlands occur on the river's west side due

to higher topographic elevations. The Ouachita River Basin wetlands complex is predominantly a forested system that includes a mix of bottomland hardwood forest, pine-hardwood mixed forest, pine flatwoods, and cypress sloughs. Cypress-dominated wetlands were avoided by all alternatives in this river basin. Areas described as part of this complex include all impacted wetlands west of U.S. 167.

Dominant overstory species include loblolly pine (*Pinus taeda*), water oak, willow oak (*Quercus phellos*), nuttall oak (*Quercus nuttallii*), overcup oak (*Quercus lyrata*), sweetgum, red maple, cypress (*Taxodium distichum*), and tupelo (*Nyssa aquatica*). Primary functions and values identified for these wetlands include floodflow alteration, flood storage, nutrient removal/retention, wildlife habitat, recreation, and aesthetics.

Lines 2 and 5 would impact the least wetland acreage in this section. Lines 2 and 5 impact approximately 14 acres less than Line 1 and approximately 42 acres less than Lines 3 or 4.

Section 3: U.S. 167 to U.S. 63

The alignment alternatives in this section impact five wetlands associated with Moro and L'Aigle creeks. Both systems are medium sized with many meandering, thread-like channels. Bottomland hardwood forests are the principal wetland community. Dominant overstory species include water oak, willow oak, nuttall oak, cypress, red maple, river birch (*Betula nigra*), slippery elm (*Ulmus rubra*), and loblolly pine. Primary functions and values identified for these wetlands include floodflow alteration, nutrient removal/retention, wildlife habitat, recreation, and aesthetics.

Impacts in this section vary slightly between alternatives with Lines 1 and 5 taking approximately 65 acres and Lines 3 and 4 taking approximately 75 acres.

Section 4: U.S. 63 to U.S. 425

The major wetland system crossed by all alignments in this section is in the Saline River Basin. Lines 1 and 3 cross this system north of U.S. 278 and do not encounter any other wetlands in this section, while Lines 2, 4, and 5 cross this system south of U.S. 278 and another small wetland area associated with Tenmile Creek. Wetland systems in this area include bottomland hardwoods, bottomland hardwood/pine mixed forests, pine flatwoods, and palmetto scrub/shrub flats. Dominant overstory species include water oak, willow oak, loblolly pine, slippery elm, sycamore (*Platanus occidentalis*), ironwood (*Carpinus caroliniana*), and palmetto (*Sabal minor*). Primary functions and values identified for these wetlands include floodflow alteration, flood storage, nutrient removal/retention, wildlife habitat, recreation, and aesthetics.

Lines 4 and 5 would impact approximately 75 acres of wetlands each, while Lines 1, 2, and 3 impact

149 acres, 134 acres, and 103 acres, respectively. Furthermore, Lines 4 and 5 cross the Saline River as close to U.S. 278 as practicable, minimizing encroachments on this extensive wetland system. Early resource agency coordination had identified this crossing location as the best opportunity to minimize impacts in this area. This was further verified at the June 2003 field review by all participating resource agencies, including the EPA, COE, and Arkansas Natural Heritage Commission.

Section 5: S.H. 425 to U.S. 65

The principal wetland system in this section is Bayou Bartholomew. Additionally, there are several creek systems containing minor impacted wetland acreages between Monticello and McGehee, such as Cutoff Creek and Hurricane Creek. This section has the least impacts of the sections discussed with a maximum of 23 acres of wetlands affected.

Bayou Bartholomew, located on the western reaches of the Mississippi Alluvial Valley has a history of meandering and changing course leaving behind cypress dominated oxbow lakes, cypress brakes, and depressional wetlands. This section is very different from the previous section in that it is flat with rich alluvial soils perfect for row crop agriculture. Consequently most of this area has been developed for farming and few wetlands remain. Great effort was made in the alignment planning process to avoid impacts to these remaining wetlands.

Substantial effort was made to avoid and minimize wetland impacts to the Bayou Bartholomew channel and the surrounding cypress and hardwood wetlands that remain in a dispersed pattern amid the agriculturally dominated landscape.

This is the only section in the Preferred Corridor that has farmed wetlands. These wetlands are primarily located east of Bayou Bartholomew and are not impacted by any of the proposed alignments.

Dominant overstory species include cypress, tupelo, slippery elm, willow oak, sweetgum, and water oak. Primary functions and values identified for these wetlands include flood flow alteration, flood storage, nutrient removal/retention, wildlife habitat, recreation, and aesthetics.

Impacts are very similar in this section with 22 or 23 acres of wetlands affected for all proposed alternatives.

Other than limited water quality and wildlife habitat impacts, no long-term effects on any of the primary wetland functions and values are expected from construction of any of the proposed alignments. In addition, wetland impacts would not substantially affect any area or regional wetland functions and

values. Wetland impacts for this project will be locationally specific, relatively minor in scope, and are not expected to decrease surrounding wetland's functions and values.

The No-Action alternative would likely avoid areas of larger wetlands, but could result in future minor wetland impacts as minor safety improvements and additional widening or passing lane projects are implemented within the Project Area. All future projects will include measures to minimize wetland impacts to the extent practicable.

4.8.3 Post Draft EIS Wetland Activities

Based on DEIS comments received from the U.S. Department of Interior (see Table 7-7 in Section 7), additional investigations where conducted along the Preferred Alignment to identify potential areas for sand hill seep wetlands. This specific type of wetland was identified within the Preferred Corridor by ANHC and USFWS personnel. These ecosystems are rare in Arkansas and can support unique plant communities. A review of the area between the Ouachita River and the Saline River using NRCS soils maps and through consultation with ANHC and USFWS personnel, identified 5 potential wetland seeps near the Preferred Alignment. A field review was conducted in October 2004 with the USFWS and the COE to investigate these sites. No seep wetlands or unique plant communities were observed at any of these 5 locations along the Preferred Alignment.

4.8.4 Wetland Finding

The identification of the Preferred Alignment has followed the multi-step project development approach that allowed avoidance and minimization of potential impacts to waters of the United States including wetlands to avoidance at both the corridor and alignment level.

Based on the wetland analysis conducted to date, it is determined that there is no practicable alternative to the proposed construction of the Preferred Alignment in wetlands. The Preferred Alignment includes all practical measures to minimize harm to wetlands as specified in Executive Order 11990.

4.8.5 Secondary Wetland Impacts

Interchange locations were examined to determine potential wetland impacts due to secondary development. The interchanges for Lines 2 and 4 with U.S. 278 east of Warren were relocated farther east to reduce potential secondary wetland impacts. This relocation required the addition of an access road linking I-69 to U.S. 278. A more efficient approach would have been to place an interchange at S.H. 172, which already provides access to U.S. 278, but the alternative described above was selected to minimize both direct and secondary impacts to wetlands.

With the exception of the U.S. 278 interchanges that include small portions of wetlands, the interchange locations proposed for all alignments do not contain

wetland areas. Land cover adjacent to existing highways that provide direct access to the proposed interchanges was also examined for wetland areas. Studies have found that the majority of interchange development in rural areas occurs within 0.5 miles of the interchange (Hartgen and Kim 1998). With the exception of U.S. 278 and County Road 32 south of Farmville, no wetlands occur along existing highways within one mile of the remaining proposed interchanges, and sufficient non-wetland areas exist to accommodate potential secondary development. Development and subsequent impacts to wetlands at any location would require coordination with the COE and other permitting agencies and would require an Alternatives Analysis documenting avoidance, minimization of impacts and possibly a mitigation plan.

The two proposed interchanges that would connect with the future I-530, one south of U.S. 278 and one north of U.S. 278 do not contain wetlands. Approximately one mile south of the southern proposed interchange there are wetlands associated with Tenmile Creek. However, according to AHTD there are no current plans to extend I-530 farther south, therefore these wetlands should not be impacted by foreseeable future development.

4.8.6 Wetland Mitigation Requirements

Wetland area lost due to construction of the proposed project would be replaced through mitigation activities. Coordination with the COE is on-going. Forested and herbaceous wetlands would be replaced at a ratio to be determined by application of the Charleston methodology for compensatory mitigation. Final mitigation ratios and requirements will be determined in conjunction with the Section 404 Permit process that will be finalized after the issuance of the Record of Decision for this project.

4.9 NATURAL COMMUNITIES

Impacts to terrestrial and aquatic communities would primarily result from the conversion of existing land to highway right-of-way (Table 4-9). Land conversion impacts to seven broad natural communities for each alignment were assessed using 1999 land use data sets in 247 acre blocks developed by University of Arkansas' Center for Advanced Technologies (CAST 100). These communities are described in Section 3.

Impacts are based on the area within the alignment construction limits. Wetland community impacts are described in detail in Section 4.8.

Impacts are similar for all Lines except where discussed. Pine and pine-mixed forest community types would be the most affected by all alignments. This is consistent with the dominant community types in the region.

Table 4-9
NATURAL COMMUNITY IMPACTS

Alignment	Community Types						
	PF (ac)	DAF (ac)	DSF (ac)	DUF (ac)	MF (ac)	PO (ac)	A (ac)
No-Action	0	0	0	0	0	0	0
Line 1	1,675	1,176	440	1,329	2,340	1,727	341
Line 2	1,964	1,114	430	1,178	2,933	1,796	415
Line 3	2,110	1,191	445	1,225	1,977	1,771	375
Line 4	2,100	1,117	477	1,127	2,908	1,692	375
Preferred (Line 5)	1,796	1,050	484	1,216	2,988	1,638	375

Source: Michael Baker Jr., Inc. PF=pine forest; DAF= deciduous alluvial forest; DSF= deciduous swamp forest; DUF= deciduous upland forest; MF= mixed hardwood/pine forest; PO= pasture and open land; A= agricultural land

Aquatic community impacts would be limited to the conversion and filling of several isolated ponds, primarily used for irrigation and cattle production, and increased levels of sedimentation at stream crossings during construction. Increased sedimentation could adversely impact both aquatic invertebrates and fishes and cause temporary habitat degradation for a number of species.

No terrestrial or aquatic species populations would be eliminated due to construction of any of the alignments. Some individual species mortality would occur to less mobile species, such as reptiles and amphibians during initial construction activities. Construction of the alignments would convert existing habitat communities to early successional grassy or shrubby vegetation commonly associated with highway right-of-way.

Potential wildlife impacts would likely follow those observed on other similar existing highways. Wildlife mortality will occur from road construction and collision with vehicles (Trombulak and Frissell 1999, Carr and Fahrig 2001, Gibbs and Shriver 2002). Vehicular traffic can be a major source of mortality for some species, particularly slow moving species such as turtles and amphibian species whose life cycles involve migration between upland and wetland habitats (Gibbs and Shriver 2002, Steen and Gibbs 2004, Fahrig et al. 1995, Hels and Buchwald 2001). In general, mortality increases with traffic volume, but adjacent and median habitat composition are also contributing factors (Tromblak and Frissell 1999).

Many wildlife species including cottontail rabbits, white-tailed deer, red fox, coyotes, a variety of small mammals, and a number of bird species would be able to utilize the new habitat created by the right-of-way and its associated edge. No community types would be extensively impacted based on their overall availability within the Project Area. For example, the greatest impacts would

occur to pine forests, which are the dominant community types comprising thousands of acres in the project and surrounding areas. As such, wildlife species that are unable to adapt to the limited right-of-way environment could relocate to suitable surrounding habitats. However, most species found within the Project Area display a broad habitat distribution and are not restricted to any particular habitat types.

The No-Action alternative would result in future land use impacts as minor safety improvements and additional widening or passing lane projects are implemented within the Project Area. All future projects will include measures to minimize land use impacts to the extent practicable.

4.9.1 Secondary Impacts

Wildlife mortality may result from secondary development as habitat is altered for commercial, industrial, or residential development. Roadway operation would continue to impact wildlife species through mortality resulting from collisions with motor vehicles. For most Project Area wildlife species, vehicle related mortality would not directly impact the overall survival of any species. In general, most wildlife species found within the Project Area are broadly distributed across southern Arkansas. It is unlikely that highway mortality would pose a serious threat to the continued existence of any of these species.

4.10 THREATENED AND ENDANGERED SPECIES

Coordination with the USFWS, the ANHC, and the Arkansas Game and Fish Commission (AGFC) is on-going and has occurred throughout the project development process. Representatives from the COE, USFWS, ANHC, and the AGFC participated in the June 2003 field review of the preliminary alignments and no issues or concerns were raised regarding threatened or endangered species or state species of special concern. The USFWS has reviewed the Project Area in accordance with the Endangered Species Act and the Fish and Wildlife Coordination Act and has identified six federally listed species that may occur within the Project Area; the plant *Geocarpon minimum,* the red-cockaded woodpecker, the pink mucket, the winged mapleleaf, the bald eagle, and the Florida panther. Potential involvement with these species at the Corridor and Alignment phases of study was fully evaluated.

4.10.1 Geocarpon minimum

During the Corridor Study, potential habitat for the plant *Geocarpon minimum* was identified through early coordination with the ANHC and a review of the soil surveys of Drew and Bradley counties for areas of Lafe, Foley, or Bonn soils. The Preferred Corridor avoided these soil types which are known locations for this species, and areas of saline soils southwest of Wilmar in the Warren Praire Natural Area. The ANHC concurred with the Preferred

Corridor location in this area during the June 2003 field review. All alignments avoid known habitat and locations for *Geocarpon minimum* and would not impact this species.

4.10.2 Red-cockaded Woodpecker

Early coordination with the ANHC and large property owning timber companies (Plum Creek, Deltic Timber, and Potlatch) identified all known red-cockaded woodpeckers (RCW) locations and potential red-cockaded woodpecker habitat within the Project Area. This early identification of known RCW locations enabled the development of a corridor and then subsequent alignments that avoid these areas. With the exception of one known RCW location in the Farmville area, all alignments are more than a mile from known RCW locations in the Project Area. Lines 3 and 4 are located less than one-half mile from an established and active RCW location southeast of the Farmville community in Bradley County and Line 2 is within a half mile of an inactive RCW location. Lines 1 and 5 are located north of and more than one mile away from the active site and more than one half mile from the inactive site.

Consideration was also given to identifying potential RCW habitat. Discussions with area RCW biologists determined that all alignments would impact some potential RCW habitat, particularly foraging habitat; however, these impacts were not quantified at this time. Due to the long term nature of this project, unknown future timber harvesting schedules, and the continual flux in RCW populations, conducting more extensive potential habitat or species surveys would not be prudent at this time. A more intensive survey for RCWs and its habitat will be conducted in conjunction with the final design process. Coordination with the FWS will continue to ensure that this issue is adequately addressed and resolved prior to highway construction.

4.10.3 Pink Mucket Mussell

This federally endangered mussel is found in sand and gravel and in shallow riffles and shoals swept free of silt in major rivers and tributaries. Coordination with FWS and ANHC identified no known locations of the pink mucket that would be impacted by any of the highway alignments. If appropriate, a more intensive survey for the pink mucket will be conducted of potential habitat in conjunction with the final design process. Coordination with the FWS will continue to ensure that this issue is adequately addressed and resolved prior to highway construction.

4.10.4 Winged Mapleleaf

This federally endangered mussel was historically found in well preserved large to medium-sized clear-water streams in riffles or on gravel bars. Coordination with the AGFC identified no known locations of the winged mapleleaf that would be directly impacted by any of the highway alignments.

Known locations of this species occur approximately four river miles upstream of the proposed Ouachita River crossing. If appropriate, a more intensive survey for winged mapleleaf will be conducted of potential habitat in conjunction with the final design process. Coordination with the AGFC and FWS will continue to insure that this issue is adequately addressed and resolved prior to highway construction.

4.10.5 Bald Eagle

The proposed project would not impact any known locations of bald eagle nests and would not impact the existing bald eagle population in Arkansas. Coordination with the FWS, ANHC, and the Arkansas Game and Fish Commission located no active nests within the Preferred Corridor. However, potential nesting and foraging habitat does exist and if appropriate, a more intensive survey for bald eagle nests will be conducted in conjunction with the final design process. Coordination with the FWS will continue to ensure that this issue is adequately addressed and resolved prior to highway construction.

4.10.6 Florida Panther

Although historically present in Arkansas, the current population of Florida panthers resides within the state of Florida. The proposed project would have no impact on this species.

4.10.7 Species of Special Concern

No locations of state species of special concern identified by the ANHC would be impacted by any of the alignments. Many of these locations and associated species were found within one or more of the ANHC Natural Areas that were avoided by the Preferred Corridor. Continuing coordination with the AHNC is proposed through the final design stage to avoid, as far is reasonable, impacts to small refugia for important species that may not be currently identified.

The No-Action alternative could impact several locations of state species of special concern within the Project Area that are adjacent to existing roadways through routine state or county maintenance of shoulders and right-of-ways, and in conjunction with widening or passing lane construction projects.

No secondary impacts to state species of special concern would be anticipated from construction or continued use of the proposed highway.

4.11 NATURAL AREAS

Early project coordination with the ANHC identified ANHC natural areas and potential natural areas within and near the Project Area that were considered during both the Corridor and Alignment Studies. The Preferred Corridor and all alignments avoid all of these areas.

In addition to the ANHC natural areas, Bayou Bartholomew was identified by many resource agencies as well as the Bayou Bartholomew Alliance as an important resource within the Project Area. Bayou Bartholomew has been the focus of private, state, and Federal conservation and restoration efforts in recent years and was considered as an important resource in project development.

Bayou Bartholomew is a winding convoluted bayou system for which a straight line crossing east and west often crosses over the bayou as many as three times. The selected alignments cross over the bayou only once, minimizing potential impacts.

4.11.1 Farmland Soils

All alignments would impact soils identified as prime and statewide important farmland (Table 4-10Table 4-10).

Table 4-10
FARMLAND IMPACTS

Alignment	Prime Acres	Statewide Important Acres
No-Action	-	-
Line 1	2138	145
Line 2	2517	299
Line 3	2104	146
Line 4	2353	273
Preferred (Line 5)	2199	259

Source: Michael Baker Jr., Inc.

A Farmland Conversion Impact Rating Form (Form AD-1006) was completed and forwarded to the appropriate NRCS office for review and completion. The completed forms are included in the Appendix.

The NRCS offices have reviewed the alignments to determine whether any are candidates for protection measures. The Farmland Protection Policy Act (FPPA) states that if the site assessment for any project alternative receives a score of 160 points or higher (Form AD-1006), then the site should receive consideration for farmland protection measures. The NRCS has determined that none of the alternatives exceed 160 points or higher in Union, Ouachita, Calhoun and Bradley Counties. Line 2, Line 4, and the Preferred Alignment (Line 5) exceed 160 by 0.8 points in Drew County. All Lines exceed 160 points in Desha County by 15.4 points.

Line 2 would impact the greatest amount of prime farmland and statewide important soils. Line 3 would impact the least amount of prime farmland soils while Line 1 would impact the least statewide important soils. Impacts to farmland soils in active agricultural production were minimized to the extent practicable.

The No-Action alternative would result in farmland impacts associated with widening and passing lane construction activities, although the extent of these impacts is not known at this time.

Secondary development at interchanges may result in additional impacts to farmland soils. These impacts cannot be quantified at this time.

Due to the extensive agricultural activity in this portion of the Project Area in Drew and Desha counties, there is no highway alternative that would avoid impacts to this resource. The alternative alignments were developed to the greatest extent practical to minimize impacts to productive farmland.

4.11.2 Active Farms

Four distinct areas of land are designated for row crop production between Monticello and McGehee. Line 4 and the Preferred Alignment (Line 5) would impact farming operations immediately adjacent to U.S. 278 east of Hurricane Creek. Avoidance of this farming operation is not practicable at this location. Westward avoidance would increase residential impacts along U.S. 278 and eastern avoidance would increase potential wetland impacts associated with Sandy Creek and Piney Creek.

All Lines would impact a large farming operation along S.H. 138 east of Shady Grove Church. Avoidance of this farming operation is not possible at this location. Northern avoidance would encroach upon the floodplains and potential wetlands associated with Cutoff Creek and Godfrey Creek. Southern avoidance would result in potential wetland impacts associated with Cutoff Creek, the Casey Jones Wildlife Management Area and residential impacts along U.S. 278.

All lines would impact farming operations north of U.S. 278 and west of North Sixteenth Section Road. Avoidance of the farming operation is not possible at this location. Northern avoidance by Line 2, Line 3, and the Preferred Alignment (Line 5) would impact another farming operation and an area designated within the Wetland Reserve Program. Additionally, an increase in residential impacts would occur along North Sixteen Section Road. Southern avoidance by Line 1 and 4 would result in increased wetland impacts associated with Cutoff Creek and the Casey Jones Wildlife Management Area.

The easternmost farming operations extend from S.H. 277 east of Selma to U.S. 65. All alignments would have similar impacts. The primary consideration for the location of the alternative alignments in this portion of the Preferred Corridor was for compatibility with the future I-69 Mississippi River crossing alignment. Due to the extensive nature of farming operations and wetlands adjacent to and within Bayou Bartholomew to the north and south, avoidance of farming operations is not possible in this area.

Impacts to this farmland have been minimized to the extent practicable given the number of surrounding residential and environmental

constraints. Final assessments of farm and other property access issues will occur during final design of the proposed highway and as part of any right-of-way acquisition process.

4.12 CULTURAL RESOURCES

The identification and assessment of potential cultural resource impacts within the Project Area was based on a review of available records regarding archeological and historic resources in the region. These records were evaluated with regard to the archeological regions in the State Plan (Davis 1994) and geographical settings that might influence the location of past settlements and sites. Records reviewed included: lists of properties on the National Register of Historic Places (NRHP) and historic structure data; reports, files, and maps pertaining to previous archeological and historic surveys conducted in the Project Area; Automated Management of Archeological Site Data in Arkansas (AMASDA) data files; historic county maps; early Government Land Office plats; early railroad and trail maps; and geographic site reports for early post offices and mail routes. Within the Project Area, 849-recorded sites were located and transferred to project mapping. High probability areas for unrecorded prehistoric archeological sites such as floodplains, terraces, prominent landforms near water, and known sites were also plotted onto Project Area mapping during the Corridor Study.

Within the Preferred Corridor, 77 previously recorded sites (including some recorded historic cemeteries such as Coulter Cemetery), 5 recorded historic structures, and approximately 37,173 acres of high probability areas for prehistoric sites were identified. Based on information from local historical resources and landowner information, three previously unrecorded historic cemeteries within the Preferred Corridor (the Silas Gaddy, Mooty, and Bear Creek Cemeteries) and three historic cemeteries just adjacent to the Preferred Corridor (the Ragland and Ridgel Family Cemeteries and Fannie Yarbrough Grave) were identified and added to the project database. One other previously unrecorded cemetery location north of US 82 was identified by area landowners. This possible location was inspected using walkover survey, ground clearing with leaf blowers, shovel testing, as well as metal detecting on surface and in shovel tests but the presence or absence of the cemetery could not be confirmed. The general boundary of the cemetery as identified by area landowners was added to the project database and the alignment alternatives were shifted to avoid impacts to that area.

Each alignment within the Preferred Corridor was compared with known settlement patterns and historic land use in order to identify "high probability areas" where prehistoric and historic sites and structures were likely to occur. This information was coupled with known site data and local informant knowledge to locate potential site

locations and historic structures that had not been identified during the records review.

4.12.1 Impacts to Cultural Resources

A summary of the cultural resources potentially impacted by the alignments is presented in Table 4-11. No known National Register Properties or known cemeteries would be impacted by the alignments.

Archeological Sites

All alignments would potentially impact known archeological sites. However, all of these sites have been previously surveyed, with half determined not eligible for nomination to the NRHP with no further work recommended and half pending additional investigation. Final design will provide the opportunity to further reduce or avoid impacts to the other known archeological sites with undetermined eligibility.

High Probability Areas were identified for areas that may contain prehistoric archeological resources and provided a rough indication of the potential magnitude of buried resources. An intensive archeological field survey was conducted for the Preferred Alignment and all sites discovered were evaluated for their significance and eligibility for nomination to the National Register of Historic Places (see Section 4.12.2 for more detailed discussions).

Table 4-11
SUMMARY OF CULTURAL RESOURCES WITHIN EACH ALIGNMENT

Alignment	National Register of Historic Places (NRHP) Properties	Historic Structures Evaluated by AHPP as NRHP Eligible	Recorded Archeological Sites		High Probability Area for Archeological Resources in Acres	Known Cemeteries	Historic Bridges
			Not Eligible	Undetermined			
No-Action	-	-	-	-	-	-	-
Line 1	0	1*	2	2	634	0	0
Line 2	0	0	1	1	705	0	0
Line 3	0	1*	2	1	769	0	0
Line 4	0	0	1	1	759	0	0
Preferred (Line 5)	0	0	1	2	693	0	0

*This structure is no longer standing.

Source: Michael Baker Jr., Inc.

Historic Structures

A reconnaissance level windshield survey was conducted within the Preferred Corridor to identify unrecorded historic structures along each alignment, as well as any obvious areas that might warrant avoidance or additional work. A total of 12 previously unrecorded historic structures were photographed and noted during this examination.

Eleven of these photographs and notations were sent to AHPP to determine if any were potentially eligible for NRHP listing (Refer to May 30, 2003 letter). The twelfth structure was found to have been demolished shortly after being noted. AHPP determined one of the eleven structures was eligible for NRHP listing based on its architectural significance (Refer to June 4, 2003 letter). This structure is a residence located along Murphy Road approximately 650 feet to the west of Line 1, Line 2, and the Preferred Alignment (Line 5).

A thorough review of archival records indicated Alignments 1 and 3 would potentially impact a structure listed as potentially eligible in the AHPP historic structures database. This structure, listed as a barn, was built in 1924 on the south side of SH 138 in Drew County. In 1979, it was recorded with an associated farm house on the north side of SH 138. A site visit revealed these two structures were no longer standing and had been demolished by the landowner prior to the initiation of the SIU 13 studies. Historic site potential was noted for these locales and for the historic structure demolished before its eligibility determination with AHPP.

Historic Bridges

A review of the Year 2000 Bridge Inventory at AHTD indicated two bridges listed on the NRHP in the Project Area. The first bridge (Bridge Number 2466) is a steel pratt pony truss which spans the Ouachita River and lies on the northeast edge of Camden. The second bridge (Bridge Number M2642) is a timber truss which spans the Little Cypress Creek and lies on SH 274 approximately 3 miles northeast of East Camden. Neither bridge is located within the Preferred Corridor. A review of the Year 2005 Bridge Inventory indicated two bridges in southern Union County will be eligible for listing to the NRHP in two years. Both of these bridges lie outside of the Project Area.

No-Action Alternative

The No-Action alternative could result in future cultural resource impacts associated with widening and passing lane construction activities. The extent of these impacts is not known at this time as detailed design for these proposed improvements has not been completed. Current levels of looting, vandalism, and non-scientific collecting would likely continue on known and discovered sites.

4.12.2 Cultural Resource Efforts for the Final EIS

An intensive cultural resources survey of the Preferred Alignment was conducted and a report detailing these efforts is in preparation and will be submitted to the SHPO and the consulting Native Tribes for review. This effort was conducted only where land owner access was granted and approximately 90 miles (88%) of the Preferred Alignment was surveyed. In addition, every effort was taken to identify unrecorded historic cemeteries during this effort. The cultural

resources survey included shovel testing and pedestrian reconnaissance to inspect the ground surface to be impacted. Deep subsurface testing and backhoe trenching in areas of potential deep impact were also conducted to inspect site presence in deep alluvium.

All sites and isolates located during the survey and deep testing efforts have been recorded and evaluated for their eligibility for nomination to the National Register of Historic Places. Results of the survey are listed in Table 4.12. A total of 34 sites were identified and recorded within the construction limits of the Preferred Alignment. Of these, 4 sites will be recommended for further testing to determine eligibility for nomination to the National Register of Historic Places. Some locations where deep construction impacts are anticipated in alluvial soils were not accessible by backhoe or landowner access was not granted. These remaining deep testing locations and all remaining areas not previously surveyed, including a small stretch near Champagnolle Creek in Calhoun County, will be recommended for survey and evaluation as outlined in "A State Plan for the Conservation of Archeological Resources in Arkansas" (Davis 1994).

Table 4-12
A Summary of Cultural Resource Sites Within the Preferred Alignment

State Site No.	Temp. Site No.	Cultural Affiliation	NRHP Status*	Recommendation
3DR72	Previously Recorded	Prehistoric – Undetermined (No cultural materials identified in or near ROW. Only a general site location was previously listed by private collector)	Undetermined	NFW
3DR272	Previously Recorded	Prehistoric- Undetermined (Located south of Hwy 278 and I-69 Connector Southern Termini in the Southeast Arkansas Intermodal Facility)	Not Eligible	NFW
3CA338	Previously Recorded	Prehistoric – Late Archaic (General area of site reported to be on parcel with no landowner access at time of current SIU-13 survey)	Undetermined	SURVEY
3DE252	SIU13-1	Prehistoric – Undetermined	Undetermined	TEST
		Historic – Mid 19th to Mid 20th Century	Not Eligible	NFW
3DE253	SIU13-2	Prehistoric – Archaic (one prehistoric feature was found in deep testing)	Undetermined	TEST
		Historic – Early 19th to Mid 20th Century	Not Eligible	NFW
3DE254	SIU13-3	Prehistoric – Undetermined	Not Eligible	NFW
		Historic – Isolate Early 19th Century to Present		
3DE255	SIU13-4	Prehistoric – Isolate Undetermined	Not Eligible	NFW
3DE256	SIU13-5	Prehistoric – Isolate Undetermined	Not Eligible	NFW
3DE292	SIU13-6	Prehistoric – Undetermined (one possible prehistoric feature found in deep testing)	Undetermined	TEST

Table 4-12
A Summary of Cultural Resource Sites Within the Preferred Alignment

State Site No.	Temp. Site No.	Cultural Affiliation	NRHP Status*	Recommendation
		Historic - Undetermined	Not Eligible	NFW
3DE293	SIU13-7	Prehistoric – Isolate Undetermined	Not Eligible	NFW
		Historic – Isolate Undetermined	Not Eligible	NFW
3DE294	SIU13-8	Historic – Late 19th to Early 20th Century	Not Eligible	NFW
3BR131	SIU13-9	Historic - 20th Century	Not Eligible	NFW
3BR132	SIU13-10	Prehistoric – Isolate Undetermined	Not Eligible	NFW
3BR133	SIU13-11	Prehistoric – Isolate Undetermined	Not Eligible	NFW
3OU258	SIU13-12	Historic – Early to Mid 20th Century	Not Eligible	NFW
3OU259	SIU13-13	Historic – Mid to Late 20th Century	Not Eligible	NFW
3OU260	SIU13-14	Historic – Mid to Late 20th Century	Not Eligible	NFW
3CA342	SIU13-15	Historic – Isolate Early to Mid 20th Century	Not Eligible	NFW
3DR295	SIU13-16	Prehistoric – Isolate Undetermined	Not Eligible	NFW
		Historic – Isolate Mid 19th to Mid 20th Century		
3DR289	SIU13-17	Historic – Mid 19th to Mid 20th Century	Not Eligible	NFW
3DR290	SIU13-18	Historic – Late 20th Century	Not Eligible	NFW
3DR291	SIU13-19	Historic – Mid 19th to Mid 20th Century	Not Eligible	NFW
3OU257	SIU13-20	Historic – Mid 19th to Mid 20th Century	Not Eligible	NFW
3CA343	SIU13-21	Historic – Isolate Late 19th to Early 20th Century	Not Eligible	NFW
3OU262	SIU13-22	Historic – Likely Mid to Late 20th Century	Not Eligible	NFW
3OU261	SIU13-23	Historic – Undetermined	Not Eligible	NFW
3OU263	SIU13-24	Historic – Likely Mid to Late 20th Century	Not Eligible	NFW
3UN295	SIU13-25	Prehistoric – Isolate Undetermined	Not Eligible	NFW
Pending	SIU13-26	Prehistoric - Archaic	Not Eligible	NFW
Pending	SIU13-200	Prehistoric – Undetermined	Not Eligible	NFW
Pending	SIU13-201	Prehistoric – Undetermined	Not Eligible	NFW
Pending	SIU13-202	Historic – Late 19th to Mid 20th Century	Not Eligible	NFW
Pending	SIU13-203	Prehistoric – Undetermined	Not Eligible	NFW
		Historic – Late 19th to Mid 20th Century	Not Eligible	NFW
Pending	SIU13-400	Historic – Isolate Late 18th to Mid 19th Century	Not Eligible	NFW
Pending	SIU13-401	Historic – Early 20th Century	Not Eligible	NFW
Pending	SIU13-402	Prehistoric – Isolate Undetermined	Not Eligible	NFW
Pending	SIU13-403	Prehistoric – Woodland to Mississippian (may be associated with 3CA13 which is on NRHP)	Undetermined	TEST
		Historic – Late 19th to Late 20th Century	Not Eligible	NFW

Source: Michael Baker Jr., Inc.
*Pending Arkansas State Historic Preservation Officer Review

4.12.3 Mitigation Measures

Unavoidable adverse effects on cultural resources could be mitigated through strict adherence to the laws and regulations protecting significant sites. Recommendations for a no adverse effect determination include, but are not limited to the following:

- An archeological survey will be conducted on all areas of the Selected Alignment not previously surveyed, borrow pits, access roads, and any other areas to be disturbed by the Interstate type highway will be conducted. The survey will include deep subsurface testing or backhoe trenching in bottomlands where sites may be buried under alluvium.
- Sites identified in the archeological survey will be evaluated for their eligibility for nomination to the NRHP through archival research and/or archeological testing.
- All archeological work will follow standards defined in "A State Plan for the Conservation of Archeological Resources in Arkansas" (Davis 1994).
- The adverse effects would be mitigated for all sites found to be eligible for inclusion in the NRHP. A mitigation plan for properties eligible for inclusion in the NRHP will be submitted for review to AHPP, the Advisory Council on Historic Preservation, Native American Tribes, the Federal Highway Administration, and the Arkansas Highway and Transportation Department. A Programmatic Agreement may be drafted and agreed upon by participating parties.
- All known burials will continue to be avoided. If burials (historic or prehistoric) are encountered during archeological surveys and excavation or project construction, the Native American Graves Protection and Repatriation Act (NAGPRA) and the Arkansas Burial Law (Act 753) will be followed.
- All construction borrow or fill dirt which may be procured outside the right-of- way will be obtained from areas which have been surveyed and given archeological clearance by the Arkansas Historic Preservation Program.
- The area adjacent to the potential historic cemetery north of S.H. 172 in Union County is recommended to be monitored for evidence of historic graves during the clearing and grubbing efforts as well as the initial construction efforts of the Selected Alignment.
- All final bridge locations will be coordinated with the AHPP to evaluate the potential for submerged archeological materials prior to construction.
- If archeological materials are discovered during construction, the land disturbing activities in the immediate area will be halted and the AHTD Environmental Division will be immediately

notified. An archeologist will evaluate the significance of the deposits. If the site is found to be eligible for nomination to the NRHP, a mitigation plan will be submitted for review by the Arkansas Historic Preservation Program (AHPP), the Advisory Council on Historic Preservation, the Federal Highway Administration and the Arkansas Highway and Transportation Department with the Programmatic Agreement.

4.13 AIR QUALITY

The primary mobile source of air pollution emissions associated with the I-69 project are motor vehicles using the proposed highway system. An air quality assessment was performed following the guidelines established by AHTD, FHWA, and EPA. Currently, all Project Area Counties are designated as being in attainment for carbon monoxide (CO) and Ozone (O_3), based on historical monitoring data in the Project Area, therefore, this project is not subject to transportation conformity requirements.

This analysis discusses the assessment methodology, the existing mobile source (traffic-related) air quality in the Project Area, and the predicted impacts to the local air quality from construction of the proposed highway. Construction mitigation measures are discussed in Section 4.18.

4.13.1 Methodology

A microscale analysis was performed to predict the effects of CO changes to local air quality from the implementation of the proposed highway facility. The microscale analysis predicts the generation and transportation of CO in the immediate area. The years 2015 (interim year) and 2030 (design year) were analyzed and compared to the NAAQS. Interim year traffic volumes were developed from straight-lining the existing and design year volumes.

Motor vehicle emission rates were computed using EPA's MOBILE 5.0a emissions model (March, 1993). The emission factors were developed with conservative model inputs to provide a worst-case scenario. Carbon monoxide concentrations from highway vehicles were calculated by using CAL3QHC, a Gaussian dispersion model and extension of the CALINE 3 model.

A realistic worst-case approach was taken for nearly all meteorological conditions. Three hundred sixty (360) wind directions were analyzed at one-degree intervals to determine the maximum CO concentrations. Other factors included a wind speed of one meter per second, a rural stable atmospheric condition (E) based on the Auer technique, a mixing height of 3,280 feet, (1,000 meters) and worst case minimum and maximum temperatures for January of 29.1°F and 49.0°F, respectively.

Modeling was done for the peak one-hour traffic condition. A background concentration of 2.0 parts per million (ppm) for the one-hour concentration was used to account for CO sources outside the Preferred Corridor. Speeds for the existing roadways and the proposed highway were based on the travel demand model inputs.

Receptor sites along the roadway were chosen at locations where the highest CO concentrations could be expected and where the general public would have access during the analysis periods. These were placed at representative points along the proposed right-of-way lines where human activity may occur. The CO concentrations were compiled to include the proposed highway, cross-streets, and background concentrations as necessary. A mesoscale or "regional" analysis was not performed for the project because the Project Area is in attainment for O_3 and will be included in the State's 2030 Transportation Plan.

4.13.2 Impacts

Table 4-13 shows the predicted highest one-hour CO receptor concentrations for the existing year, interim year 2015, and design year 2030.

Table 4-13
PREDICTED HIGHEST 1-HOUR CO CONCENTRATIONS

Receptor Links	Existing Year	Interim Year 2015		Design Year 2030	
		No-Action	All Build Alternatives	No-Action	All Build Alternatives
Worst-Case Existing Route: U.S. 278 located between U.S. 425 and S.H. 83	3.8	4.2	4.3	4.9	5.1
Worst-Case Proposed Intersection: I-69 and U.S. 65 ramps, unsignalized, multiple receptor sites.	3.0	3.0	3.3	3.3	4.1
Worst-Case Proposed I-69 Highway: Site located in Section 4 between U.S. 425 and S.H. 35 at nearest point of R-O-W line.	N/A	N/A	2.4	N/A	2.8

Source: Michael Baker Jr., Inc.
1-hour standard is 35 ppm
8-hour standard is 9 ppm
CO background of 2.0 ppm included in totals (EPA, Region 6)

The highest concentrations (which include a conservative one-hour background level of 2.0 ppm) would be located in areas where the greatest traffic volumes are moving at their slowest probable speed. These locations are:

- The section of U.S. 278, located between U.S.425 and State Highway 83, in Monticello. This is representative of the highest peak-hour traffic volume link for the existing roadway network.
- At the proposed interchange of I-69 with existing U.S. 65, located between Reed and McGehee. This site is representative of the greatest potential queuing condition directly resulting from the proposed project.
- The proposed I-69 highway between U.S. 425 and S. H. 35, at the nearest right-of-way boundary line. This site is representative of the highest peak-hour traffic volume link on the proposed highway.

For the existing year, interim year 2015, and design year 2030 conditions, there are no receptor concentrations above the one-hour NAAQS criteria. Additionally, the predicted one-hour concentrations did not exceed the more stringent eight-hour concentration criteria of nine ppm for CO. As a result, an eight-hour analysis was not performed because 8eight-hour concentrations are typically found to be 60 to 70 percent of the one-hour concentrations and therefore will always be lower than their one-hour counterparts.

Based on the microscale analysis results, no mitigation measures are required for the proposed highway facility. Further, the project is in an area where there are no transportation control measures and is in attainment for the appropriate pollutants.

4.14 NOISE

The noise analysis was performed in accordance with the procedures and provisions of Title 23, Code of Federal Regulations (CFR), Part 772, U.S. Department of Transportation, Federal Highway Administration (FHWA), Procedures for Abatement of Highway Traffic Noise and Construction Noise. This established a requirement for a noise study for any proposed federal or federal-aid project. It is the policy of AHTD that highway traffic noise prediction requirements, analyses, and abatement criteria comply with the noise standards mandated by 23 U.S.C. 109(i).

The noise analysis included:

- Identification of existing activities, developed land, and undeveloped land which is planned, designed, and programmed
- Measurement of existing noise levels
- Prediction of design year No-Action noise levels
- Prediction of design year Build levels for the five alignment alternatives

Comparison of predicted noise levels to noise level guidelines

- Determination of traffic noise impacts, and

- Examination and evaluation of alternative noise abatement measures for reducing or eliminating the noise impacts of all alignments

4.14.1 Prediction of Traffic Noise Levels

Traffic noise calculations were performed for the design year 2030 using the FHWA Traffic Noise Model (TNM) 2.1 model. A speed limit of 70 mph was used for the proposed highway. The vehicle fleet mix for the proposed highway was provided through the traffic analysis and it was comprised of 86.0 percent autos (including pickup trucks, vans, and motorcycles), 2.0 percent medium trucks (including RV's), and 12.0 percent heavy trucks. Additionally, speeds for the pertinent cross streets were based on their current posted limits. Approximately 385 locations were modeled to account for receptor sites most likely affected as a result of the proposed project.

Table 4-14 shows the FHWA Noise Abatement Criteria (NAC) for various land use activity categories. In situations where the FHWA NAC was approached or exceeded at any receptor site, noise abatement must be considered.

Table 4-14
NOISE ABATEMENT CRITERIA*

ACTIVITY CATEGORY	L_{eq} (h)	DESCRIPTION OF ACTIVITY CATEGORY
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 or B above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Title 23 Code of Federal regulations (CFR) Part 772, U.S. Department of Transportation.
*Approach criteria are consistent with AHTD guidelines allowing for consideration of traffic noise impacts one dBA below the FHWA criteria

Activity Category B, representative of residences, schools, churches and parks, was used as the criteria for sensitive receptors identified in this analysis. Additionally, Activity Category C receptors were also noted when commercial establishments were part of a mixed land-use area. The approach criterion is defined as one dBA less than the NAC.

A substantial noise increase criteria established by the AHTD was also considered. Here, abatement must be considered if, as a result of the proposed action, the predicted noise level at a particular site

increased by 10 or more decibels over the existing condition.

4.14.2 Traffic Noise Impacts

Noise impacts are determined on the degree to which the projects noise levels exceed the established noise level activity category criteria and by how much the levels increase over the existing condition as a result of the proposed highway facility. Results of the noise analysis for each receptor group under all conditions modeled are presented in the Appendix.

FHWA Criteria Exceeded

Table 4-15 presents the number of sensitive receptors that would equal or exceed the FHWA criteria. There are currently receptors that approach or exceed the FHWA NAC for the existing condition. In design year 2030 Lines 2, 4, and 5 would have the greatest impacts to sensitive receptors, while Line 1 would have the least.

Exceedance of AHTD Substantial Increase Criteria

Table 4-15 shows the number of sensitive receptors where a substantial increase in noise would occur due to the proposed highway. For this criterion, Line 3 would have the greatest impact on sensitive receptors while Line 4 would have the least. The AHTD Substantial Increase Criteria does not apply for the existing condition.

Table 4-15
NOISE IMPACT SUMMARY

	EXISTING YEAR	2030 DESIGN YEAR No-Action	2030 DESIGN YEAR LINE 1	2030 DESIGN YEAR LINE 2	2030 DESIGN YEAR LINE 3	2030 DESIGN YEAR Line 4	2030 DESIGN YEAR Preferred (Line 5)
Total Number of Sensitive Receptors	492	492	409	339	409	339	339
Approaches or Exceeds FHWA NAC Criteria*	2	5	2	5	4	5	5
Substantial AHTD Noise Increase Criteria**	Not Applicable	0	8	9	17	6	8
Sensitive Receptors Exceeding Both Criteria	0	0	4	2	6	6	2
Total Receptors Impacted	2	5	14	16	27	17	15

Source: Michael Baker Jr., Inc.
* Approach Criteria is 66 dBA for Category B receptors.
** An increase of 10 or more dBA over the existing condition.

Exceedance of Both Criteria

In 2030, the predicted number of exceedances for both criteria would be zero for the No-Action alternative. Lines 3 and 4 receptor locations would have the greatest number of exceedances, while Lines 2 and 5 would have the least.

Total Number of Impacts

The total number of noise impacts is shown in Table 4-15. Line 3 would have the greatest number of total impacts while Line 1 would have the least.

4.14.3 Noise Abatement

Noise abatement must be considered for sites when the FHWA NAC criteria is approached or exceeded at any receptor location. In Arkansas, the approach criterion is 66 dBA for Category B receptors and the substantial increase criterion of 10 dBA or more are used. If a noise impact is identified, the abatement measures listed herein must be considered. When noise abatement measures are being considered, every effort would be made to obtain noise reductions of at least 10 dBA for at least one receptor and other benefited receptors having at least a five dBA insertion loss.

Mitigation measures are not required for the existing conditions or the Design Year No-Action Alternative because these measures are only analyzed for Type I highway noise impacts. Type I noise abatement measures are included as part of highway construction. The alignment study included efforts to avoid or minimize noise impacts to sensitive receptors through alignment shifts and overall avoidance of residential areas.

4.14.4 General Noise Reduction Measures

There are several types of noise reduction measures that could be considered for mitigation of highway noise impacts of the proposed highway. These measures include:

- Existing vegetation
- Alteration of vertical and horizontal alignments
- Acquisition of property rights for construction of noise barriers
- Noise insulation of public use or nonprofit institutional structures.

Existing dense highway vegetation can, under certain conditions, reduce traffic sound levels up to five dBA. This would require a vegetative cover of a minimum 100 feet in depth, 14 feet in height, and of sufficient density that no visual path through it exists between the highway and the adjacent land use area. Much of the Project Area is currently in wooded areas and may provide this benefit. A narrow width of vegetation would not provide any degree of effective sound level reduction. The use of highway plantings and existing vegetation alone would not be an effective solution for substantial noise reduction. However, where desirable vegetation exists between the proposed highway and the adjacent land use areas, efforts could be made to preserve and encourage its propagation.

Traffic management measures include control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, and modified speed limits. The restriction of heavy vehicles or time-use restrictions by prohibitive signing does not serve the need to help reduce congestion on the local roadway system. This restriction would also be difficult to enforce.

Reasonable horizontal and/or vertical realignments were investigated to minimize the impacts. The current Lines were developed to minimize and/or avoid impacts to potentially sensitive areas. Any significant sound level reductions at impacted locations as a result of horizontal modifications may require large shifts in the alignment. This could entail additional property acquisition, require additional environmental studies, and could expose other areas to noise from the proposed project.

Vertical alignment alteration was also not considered to be a feasible noise abatement measure. Depressing the roadway would also entail some of the above impacts such as additional property acquisition. Also, elevating the roadway would only serve to propagate the highway noise farther away from its source and reduce the effects of tree shielding. Additional vertical and horizontal changes are bound by the engineering limitations required with the interchanges.

Noise reduction measures such as earth berms and barrier walls would provide the greatest degree of noise attenuation. A graded, vegetated earth berm that blends with the surrounding topography is one of the more aesthetically pleasing noise barriers. The feasibility of berm construction would be considered as part of the overall grading plan for the project, especially if there is an excess of cut material. There may be instances where an effective earth berm can be constructed within normal right-of-way or with a minimal additional right-of-way purchase. If right-of-way is insufficient to accommodate a full height earth berm, a lower earth berm could be constructed in combination with a wall to achieve the necessary height and attenuation. An earth berm may also provide slightly more attenuation (up to three dBA more) than a vertical barrier wall of the same height because of the better absorptive quality of the earth and ground vegetation.

A solid, acoustically opaque barrier (barrier wall) can theoretically reduce noise exposure to a property by as much as 15 to 20 dBA although a typical reduction is approximately five to ten dBA. The barriers can be constructed from common building materials such as concrete, wood, plastic, and recycled products. The design can range from relatively simple, straight-line walls to complex designs that blend in with local features such as terrain and neighborhood characteristics. The materials should be rigid and sufficiently dense to

provide adequate mitigation and drainage, while at the same time be attractive, durable, and relatively maintenance-free. Both the on-site cost and the degree of noise attenuation must be considered when selecting barrier wall materials.

For maximum effectiveness, barriers should be as close as possible to either the source or the receiver and should be high and long enough to adequately mitigate the site. Additionally, space limitations and public involvement often help in the determination of the type of barrier used. In some cases, the wall may also serve to control access and eliminate the need and cost of right-of-way fencing.

4.14.5 Determination of Reasonableness and Feasibility

The AHTD and FHWA would identify both noise abatement measures which are reasonable and feasible and which are likely to be incorporated in the project. Noise abatement considerations evaluate both feasibility and reasonableness. The feasibility of mitigating noise impacts deals primarily with quantitative elements such as topography, access points, drainage, safety, maintenance requirements, other noise sources, and whether the proposed insertion of a barrier provides minimum sound level reductions by a minimum of ten dBA.

Reasonableness is based on such factors as the cost effectiveness of protecting an isolated or small number of receptors, exposed wall heights, distances to receptors from the mitigated source, a minimum decibel changes of at least five dBA over the existing or future No-Action levels, residential support or desires for noise abatement features, and concerns for physical and visual access to commercial establishments. Where noise abatement considerations are warranted, every reasonable effort will be made to achieve adequate noise level reductions for locations where the levels exceed the NAC or where the projected noise levels exceed the substantial increase criteria.

Preliminary Noise Abatement Analysis

A preliminary analysis addressed the receptors that required noise abatement consideration. Many impacted group areas were eliminated from further noise abatement consideration because of the reasonable and/or feasible criteria issues identified below:

- Isolated or a small number of receptors in any one location would not typically warrant further consideration because of the potential cost of protecting one, two, or a few sites
- Areas where the predicted noise contributions from other roadways would reduce or negate the effectiveness of noise abatement proposed for the alignments.
- Overriding direct access requirements to the local roadways, driveways, ramps, etc.

- Other considerations, such as access to the general public.

A noise barrier meets AHTD criteria for feasibility and reasonableness if:

- The ability to achieve noise reduction is not limited by topography, access requirements for driveways or ramps, the presence of local streets, and other noise sources.
- The reasonableness scale for cost established by AHTD is met. It is unlikely that barriers exceeding $20,000 per benefited receptor will be built.
- "Most" impacted residents that are benefited want noise abatement features.
- The housing development predated the initial highway construction.
- The housing and/or sensitive development has been in place for at least ten years.
- The future noise levels would approach or exceed the dBA $L_{eq}(h)$ established as FHWA's Noise Abatement Criteria for its respective Activity Category.
- The future build noise levels are at least ten dBA $L_{eq}(h)$ greater than the existing noise levels.
- The future build noise levels are at least seven dBA $L_{eq}(h)$ greater than the future No-Action noise levels.
- At least one receptor receives a ten dBA reduction and other benefited receptors receive at least a five dBA reduction.

Locations were analyzed according to the conditions discussed in this section for implementing noise barriers. Preliminary abatement results were obtained by evaluating areas representative of the noise measurement locations, which may warrant noise abatement consideration. These estimates are assumed to be worst-case conditions and, if implemented, would most likely require less than the noise barrier lengths stated.

A final decision on barriers for noise mitigation will be made upon completion of the final design, additional barrier analyses (if necessary), and any public involvement (as required through the process). Any final engineering design and corresponding final noise mitigation analysis will take into account changes to the horizontal and vertical alignments, additional property acquisition, drainage requirements, costs, natural resource and environmental considerations, design criteria constraints, and interchange designs.

4.15 NAVIGATION EVALUATION

The proposed highway will include the construction of a new bridge over the Ouachita River, a navigable waterway. The U.S. Coast Guard regulates bridge construction over such waterways and this project will require a U.S. Coast Guard

Bridge Permit. The U.S. Coast Guard is participating in this project as a Cooperating Agency and has been involved throughout the alternatives development process. The information presented below is intended to assist the Coast Guard with their required evaluation of this proposed river crossing.

The Ouachita River provides a nine-foot deep channel from the Arkansas/Louisiana border upstream approximately 117 miles to Camden, Arkansas. The river is part of the more comprehensive Ouachita-Black Waterway that extends to the Mississippi River near Marksville, Louisiana. In Arkansas, the Ouachita River has two lock and dams operated by the U.S. Army Corps of Engineers, the H.K. Thatcher located at mile point 281.7 and the Felsenthal at mile point 226.8. These lock and dams were constructed in 1984 to control river water levels and provide a stable and viable route for interstate and intrastate commerce.

There are two public ports located on this stretch of the Ouachita River, Crossett Port located at mile point 237.0 and the Port of Camden located at mile point 351.8. The Port of Camden, owned by the Camden Port Authority, has a 30,000 square foot warehouse currently leased by Highland Industrial Park. The warehouse is in operation but the port facility is currently not in use. According to the Camden Port Authority, commercial use of the port is expected by the end of 2005 (Nunnally 2005). The Port of Crossett lies about five miles south of the confluence of the Ouachita and Saline Rivers along the eastern boundary of Union County. The facility is privately owned and consists of a docking peer, a turning basin, a four barge towing system and a 15,000 square foot warehouse. Additional private terminals used for commerce are also located on the river.

The alignments under consideration cross the Ouachita River at or near mile point 315 between Camden and El Dorado. Possible impacts of a bridge crossing at this location have been considered and are addressed in the following sections.

4.15.1 Current Usage

The main commodities transported on the Ouachita River in Arkansas are gasoline, fuel oils, wheat, and limestone. In 2000, the tonnage of materials moved through the H.K.Thatcher Lock and Dam was 279 tons and a total of 270 tons of materials was transported through the Felsenthal Lock and Dam (USCOE, LPMS 2000 data).

Private craft also utilize the river throughout the year primarily for fishing and water sports during the summer and for waterfowl hunting during the late fall and winter. A new large-boat marina (Steamboat Landing) that could handle pleasure crafts having up to a nine-foot draft is being constructed approximately one-quarter mile north

of the Port of Camden. Additionally, vessels involved in emergencies or for maintenance operate on the waterway throughout the year.

4.15.2 Navigation Impacts

The proposed bridge will provide similar horizontal and vertical clearances as the existing Ouachita River bridges (U.S. 167 bridge) and will provide adequate clearances for vessels engaged in emergency operations, national defense activities, or channel maintenance operations. The bridge, as proposed, will not adversely impact the safe passage of any vessels currently using the Ouachita River.

Minimum vertical clearance as required by the Coast Guard in this reach of the Ouachita River is 52 feet above the 2 percent flowline. Continued coordination with the Coast Guard will occur during the design phase of the proposed bridge to insure that clearances are met or exceeded. This will ensure that the necessary horizontal and vertical clearances and pier placement will be provided for the safe, efficient passage of vessels along the Ouachita-Black River Waterway system. When the proposed bridge is no longer used for transportation purposes, it will be removed completely from the waterway, in its entirety or to an elevation established by the Coast Guard. Such removal and clearance will be completed by and at the expense of AHTD using federal funding if available.

The proposed Ouachita River crossing location can be seen in Figure 2-6, sheet 2. While all alignments cross the river at a near perpendicular angle, there is a near 90° bend in the river approximately 2,200 feet (0.4 miles) south of Lines 3 and 4, approximately 3,200 feet (0.6 miles) south of Line 2, and nearly 4,000 feet (0.8 miles) south of Lines 1 and 5.

No other facilities such as existing bridges, repair shops or fueling stations are located near the proposed bridge location that would affect safe passage of vessels.

4.15.3 Hydrologic and Atmospheric Conditions

The average annual stream flow near Camden between 1995 and 2000 was 6,587 ft^3/sec (USGS 2000). The width of the river channel at the proposed bridge locations under normal conditions is between 250 and 300 feet for Lines 2, 3, and 4 and approximately 200 to 250 feet for Lines 1 and 5. Atmospheric conditions in the area would not influence the bridge location. There are no prevailing winds or other normal hydrological events that could create a hazard for passage through the proposed bridge.

4.15.4 Bridge Impact Summary

Prior to issuance of a Coast Guard Permit, all environmental issues associated with the proposed highway between the abutments of the bridge over the Ouachita River must be reviewed by the Coast

Guard. In order to confirm exact clearances, application for this permit would be made during the final design of the bridge. Impacts from abutment to abutment are as follows:

- Fish and wildlife - minor impacts - temporary and confined to construction activities
- Endangered species - none
- Wetlands - minimal – fill associated with pier placement
- Public water supply - none
- Floodplains - minor – fill associated with pier placement
- Air quality - none
- Land use impacts - none
- Hazardous waste - none
- Prime farmland - none
- Social - none
- Economic - none
- Relocatees - none
- Environmental justice issues - none
- Archeological resources - no known sites.

Construction impacts would cause temporary impacts to water quality. As described in Sections 3, 4 and the Appendix, measures to reduce and minimize erosion and sedimentation would be implemented during construction at this site.

Bridge construction could have temporary impacts on river traffic. The construction of falsework, cofferdams or other obstructions, if required, and the scheme for constructing and erecting the proposed bridge will be in accordance with plans submitted to and approved by the Coast Guard prior to construction of the bridge. Construction plans will ensure that free navigation of the waterway is not unreasonably interfered with and the present navigable depths are not impaired. Timely notice of any and all events that may affect navigation will be given to the Coast Guard during construction of the bridge. The channel or channels through the structure will be promptly cleared of all obstructions placed therein or caused by construction of the bridge.

4.16 HAZARDOUS MATERIALS

No known hazardous materials sites would be impacted by the any of the developed alignments within the Preferred Corridor as discussed in Section 3.16. If during subsequent field investigations areas of unknown contamination are identified, appropriate measures would be taken to avoid the site or an environmental investigation would be conducted. Appropriate measures would be employed to remediate these areas prior to construction. If contents are determined to be non-hazardous, the contents would be excavated and disposed of at the nearest landfill facility.

The No-Action alternative could result in impacts to hazardous materials sites in association with widening and passing lane construction activities,

although the extent of these impacts is not known at this time.

4.17 ENERGY

All alignment alternatives, including the No-Action alternative, would require short-term energy consumption during construction activity. Construction related energy consumption would be generally based on the construction cost of the alternative. The amount of energy required for the production and placement of materials (asphalt, structures, cut, fill, etc.) during construction would be a fixed one-time cost. Construction related energy consumption would be short term in nature and could be offset by operational energy efficiencies gained through the use of an improved transportation facility over many decades. Energy impacts are a function of several variables including average running speed, vehicle-miles of travel, and the mix of vehicle types in the system.

The I-69 Location Study would improve fuel efficiencies due to higher levels of service resulting from uniform speeds, less congestion, and free flow of traffic across the Project Area. As traffic is diverted to the proposed highway, previously congested segments of U.S. 278 and U.S. 425 in the Monticello area and other area roadways would experience a decrease in traffic. Consequently, the operating efficiency would likely improve on most of these roads, improving levels of service, reducing travel times between destinations, and in turn, reducing overall fuel consumption.

The No-Action alternative could increase the future use of energy resources due to operating inefficiencies across the Project Area.

4.18 CONSTRUCTION IMPACTS

Highway construction impacts would be limited in duration to the actual construction period. These impacts could affect the residences of the immediate construction area and those traveling in the vicinity of the work in progress. Construction impacts would be similar for all highway alignments. The temporary impacts associated with highway construction activities could include:

- Temporary degradation of air, noise, and water quality.
- Temporary disruption of traffic for residents, businesses, and travelers, including maintenance, control, and safety concerns.
- Stockpiling and disposal of construction materials and waste.
- Use of borrow areas and the construction and use of haul roads.
- Temporary disruption of utilities.

4.18.1 Air Quality Construction Impacts

Construction activities can have a temporary impact on local air quality during periods of site preparation, primarily with particulate matter or

fugitive dust. This impact would occur in association with excavation and earth moving, asphalt aggregate handling, heavy equipment operation, use of haul roads and wind erosion of exposed areas and material storage piles. The effect of fugitive dust would be temporary and would vary in scale depending on local weather conditions, the degree of construction activity, and the nature of the construction activity.

Mitigative dust control measures may include: minimization of exposed erodible earth, stabilization of exposed earth with vegetation, mulch, pavement, or other cover as early as possible, periodic application of stabilizing agents (e.g. water), covering or stabilizing stockpiled material as necessary, and the use of covered haul trucks.

4.18.2 Construction Noise

A temporary increase in noise and vibration is expected during the highway construction period and would be limited to the immediate vicinity of the work in progress. Construction noise and vibration may be associated with ground clearing, demolition of and removal of existing structures, excavation, foundation placement, and finishing, including filling, paving, grading, and clean up. Noise at any given site would depend on the phase of construction and the type of equipment being used.

Noise abatement measures could include muffling all motorized equipment, locating haul roads away from sensitive areas, limiting the hours of operation at the construction sites, and construction of temporary noise barriers around noisy stationary equipment near sensitive areas.

4.18.3 Water Quality Construction Impacts

Water quality impacts are discussed in detail in Section 4.6. In general, construction activities can create temporary water quality impacts through increased sediment loading. An erosion and sediment control plan will be developed and implemented and will include all specifications and best management practices (BMP's) necessary for control of erosion and sedimentation due to construction related activities.

4.18.4 Maintenance and Control of Traffic

The maintenance of traffic, construction sequencing, and detouring will be planned and scheduled to minimize impacts to local residents, businesses, and the traveling public. Access to residences and businesses impacted by construction will be maintained by temporary driveway construction or temporary connections when necessary. Detours may be required at various locations throughout the construction process.

Any disruption to the delivery of community and emergency services during construction will be minimal. Intersections with major local roads will be grade separated or relocated to allow continuous operation and access. Local police and

fire departments and other emergency service providers will be notified in advance of any construction-related activities to allow for proper planning and alternate route identification.

4.18.5 Public Health and Safety

During the course of construction, the contractor will comply with all federal, state, and local laws governing safety, health, and sanitation. All reasonable safety considerations and safeguards necessary to protect the life and health of employees on the job, safety of the public, and the protection of property in connection with roadway construction will be taken.

4.18.6 Other Construction Impacts

Utilities in the Project Area include water, sewer, gas and oil pipelines, telephone, and electrical transmission lines. The contractor will contact the appropriate local officials to coordinate a work schedule that will avoid and minimize any disruption of utility services during construction.

The stockpiling and/or disposal of construction materials generated from clearing, grubbing, and other phases of construction would be conducted in accordance with local and state regulatory agencies permitting the construction operation. The use of borrow areas and construction of haul roads would also be coordinated with the appropriate local, state, or federal regulatory agencies as necessary.

Due to the length of the proposed project, it is likely that this highway would be constructed in stages or discrete segments, the number and location of which will be determined at a later date. Some of these construction projects may result in the temporary detouring of traffic to local roads to provide an interim or temporary connection to U.S. 425, U.S. 63, or other state highways in the Project Area. Appropriate environmental analyses and documentation will be prepared to evaluate the temporary impacts of these projects in accordance with state and federal requirements for the development of transportation projects.

4.19 CUMULATIVE IMPACTS

4.19.1 Methodology

Definition of Cumulative Impacts

Three types of impacts are routinely assessed for proposed federal actions and are defined by the Council on Environmental Quality (CEQ) regulations (40 CFR §§ 1500-1508). Direct impacts are defined as effects that are caused by the action and occur at the same place and time. Indirect impacts, also known as secondary impacts, are defined as effects that are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth induced effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems (40 CFR Sec. 1508.8). An example of a

direct impact is the taking of a wetland within the right-of-way. An indirect impact could be the conversion of forestland or farmland adjacent to an interchange location for commercial development due to new access provided by this proposed action. Direct and indirect impacts have been addressed throughout Section IV –Environmental Consequences.

Cumulative impacts are defined as 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 other action (CFR 40 Sec. 1508.7). Cumulative impacts include the direct and indirect impacts of a project together with the reasonable foreseeable future actions of others. The cumulative impacts that result from an action may be undetectable but can add to other disturbances and eventually lead to a measurable environmental change.

The assessment of cumulative impacts is required by the CEQ regulations and although secondary and cumulative impacts are not specifically defined or referenced in FHWA regulations for preparation of environmental impact statements (23 CFR Part 771), they have been addressed in a FHWA 1992 position paper titled "Secondary and Cumulative Impact Assessment in the Highway Impact Development Process". This paper encourages incorporation of cumulative impact issues into the highway development process in order to fulfill the NEPA mandate of environmentally sensitive decision-making.

Description of Reasonably and Foreseeable Future Actions and Time Line

Three major Federal reasonably and foreseeable future actions have been identified in the vicinity of the SIU 13 Project Area that could induce potential cumulative effects on the social, natural, and cultural environments: the National I-69 Corridor, the Southeast Arkansas I-69 Connector, and the Southeast Arkansas Regional Intermodal Facility. These projects have already been or will be subject to separate environmental analysis; their quantifiable impacts are not included in this discussion.

The National I-69 Corridor was divided into 32 viable sections of independent utility (SIU) so that each can be constructed in a reasonable time frame by the states involved. A given SIU may be in place for several years before an adjacent section is completed and open to traffic (AHTD, 1999). Therefore, adjacent segments, SIU 14 and SIU 12, are considered as reasonable and foreseeable future actions. In December 2000 a Notice of Intent (NOI) was issued by the FHWA to prepare a Supplemental Environmental Impact Statement on a proposal to construct SIU 12 of the National I-69 Corridor. The new facility would

include a new roadway and bridge crossing of the Mississippi River connecting U.S. Highway 65 near McGehee in Arkansas with Mississippi Highway 1 near Benoit, Mississippi. SIU 12 lies to the east of SIU 13. Currently, this project is in the environmental documentation phase of study

In March 2003, a NOI was issued by FWHA to prepare an Environmental Impact Statement on a proposal to construct Section of Independent Utility SIU 14 of the National I-69 Corridor from I-20 near the town of Haughton in Bossier Parish, Louisiana to U.S. Highway 82 near El Dorado in Union County, Arkansas. SIU 14 lies to the south of SIU 13. Currently, this project is in the corridor selection phase of study.

The Selected Alignment for the Southeast Arkansas Project from I-530 at Pine Bluff to U.S. Highway 278 between Monticello and Wilmar (hereafter referred to as the I-69 Connector project), was issued in October 2001. Currently, the project is under final design.

The Southeast Arkansas Regional Intermodal Facility (SARIF) is proposed to be a regional industrial park located on the southern side of U.S. 278 approximately two miles east of Wilmar, Arkansas. The proposed location for SARIF is located within the Project Area of SIU 13. An environmental assessment was conducted for this project in April 2002 that subsequently resulted in a finding of no significant impact (FONSI).

Geographic Limits of the Analysis

The limits of the SIU 13 Project Area are contained within the corridor boundary of the National I-69 Corridor. Therefore, consideration of potential cumulative impacts as the result of the National I-69 Corridor and adjacent SIU's, as well as for the I-69 Connector and SARIF project, is limited to the geographic areas potentially affected by the SIU 13 Project when it becomes connected with, and becomes a part of the fully completed National I-69 Corridor.

4.19.2 Identification of Potential Cumulative Impact Issues

This section discusses the potential cumulative impact to specific human and environmental resources within the SIU 13 Project Area. Human and environmental resources discussed regarding potential cumulative impacts are similar to those that warranted discussion in this section. It should be emphasized that if a project alternative has not resulted in a direct impact to a particular resource, no cumulative impact would be expected to that resource in the SIU 13 Project Area.

Economics

It has been demonstrated previously (AHTD 1995, 1997) that construction of the National I-69 Corridor would provide positive economic benefits primarily derived from an increase in transportation

efficiency via the movement of freight and people. An increase in efficiency would result in time savings, reduced vehicle operating costs, improved safety (lower insurance costs, reduced crashes), and improved access to other regions of the state and country. Moreover, it is estimated that such a facility would result in thousands of additional jobs and billions of dollars in wages. The completion of the National I-69 Corridor would provide markets from beyond the Delta Region direct access to the local economic base. The construction of the SIU 13 Project would additionally help to stimulate the economic growth of the region.

Land Use

The SIU 13 Project would likely have cumulative impacts in terms of land development.. In general, more development would be expected at interchanges near larger communities and would likely decrease as the interchange location moves further from the population centers.. The construction of the National I-69 Corridor, SIU 12, SIU 14, and the I-69 Connector will provide greater opportunity for development which could induce cumulative impacts in these areas. This development may occur in stages as more sections of I-69 are completed. However, the potential for development would depend on the existing land use in the area and is not necessarily due to access to the area by an interchange. For the SARIF, it is expected that industrial and commercial development would occur along the south side of U.S. 278.

Displacements

One of the most important functions of the corridor location study is the identification of homes, churches, schools, businesses, and community centers. This process is undertaken to minimize to the greatest extent possible, impacts to the human environment. The majority of land traversed by the SIU 13 Project is rural consisting of pine, bottomland and hardwood forests, pastures and cropland. Denser residential areas are predominantly located near the larger population centers such as El Dorado, Warren, Monticello, and MeGehee. Scattered residences can be found in rural areas along state and U.S. highways.

Future construction of the National I-69 Corridor, adjacent SIU's, I-69 Connector and SARIF projects could induce additional displacements as the synergy of these large transportation facilities in close proximity to one another serve to draw additional business and industry to the region. However, the location and quantity of such displacements cannot be determined at this time.

Noise

Cumulative noise impacts could occur from the construction and operation of the National I-69 Corridor, the adjacent SIU's, the I-69 Connector, or the SARIF projects. As these projects are completed, traffic volumes could increase on SIU

13 and additional traffic related noise could be generated. However, the noise analysis for SIU 13 found very few receptors that would experience a noise impact due to the rural setting of the Project Area. This trend would be similar for any future cumulative noise.

Environmental Justice

An environmental justice analysis (See Section 4.2) was conducted to insure that the proposed action does not disproportionately impact elderly, low income or minority populations. The analysis conducted for the SIU 13 project showed that no disproportionate impacts to minority, low-income, or elderly population groups would be expected by any of the alignment alternatives; therefore, no cumulative negative impact is anticipated by the identified foreseeable future actions. Future benefits by all socioeconomic classes could be further realized with the completion of the National I-69 and the SARIF as employment opportunities expand.

Farmland, Hazardous Materials, and Cultural Resources

No cumulative impacts to farmland, or hazardous materials are anticipated in the SIU 13 Project Area by the National I-69 Corridor, adjacent SIU, I-69 Connector, or the SARIF projects. No additional right of-way or direct farmland conversion between the projects termini (U.S 82 near El Dorado and U.S. 65 at McGehee) would result from the future construction of these projects. Currently, a cultural resource investigation is underway for the SIU 13 Project Area and a complete assessment cannot be made at this time.

Wetlands and Floodplains

Cumulative wetland and floodplain impacts could near interchange locations from additional development due to the construction of the National I-69 Corridor, adjacent SIU's, the I-69 Connector, or the SARIF projects. The availability of these large transportation facilities in close proximity to one another could serve to draw additional business and industry to the region.

Threatened and Endangered Species

Five federally listed species potentially occur in the SIU 13 Project Area. Known habitat for these species was avoided by this project and by the other projects, therefore no cumulative impacts are anticipated by any of the foreseeable future actions. Coordination will be on-going as these projects develop with FWS, ANHC, and Arkansas Game and Fish Commission to insure compliance with appropriate state and federal requirements

Wild and Scenic Rivers

No wild and scenic rivers are located within the SIU 13 Project Area. However, a portion of the Saline River within the Project Area is on the National Park Service's Nationwide Rivers Inventory list. No cumulative impacts are anticipated.

Surface Water Bodies/Water Quality

The SIU 13 Project Area traverses through portions of the Ouachita River, Saline River, and Bayou Bartholomew Bayou drainage basins. Within these basins exist dozens of intermittent and perennial streams. The operational use of additional traffic from the future construction of the National I-69 Corridor, adjacent SIU's, the I-69 Connector and SARIF projects would not induce additional physical alternations to these surface water bodies. However, future additional traffic could result in cumulative impacts to surface water resources due to additional roadway related pollutants and accidental spills of hazardous materials. Roadway related pollutants are best mitigated through the use of stormwater management practices.

Natural Communities and Wildlife

Future construction of the National I-69 Corridor, adjacent SIU's, I-69 Connector and SARIF projects could induce additional impacts to the natural community as the synergy of these large transportation facilities in close proximity to one another serve to draw additional business and industry to the region. Cumulative impacts to aquatic species and wildlife could occur due to construction of the National Corridor, the I-69 Connector, adjacent SIU's, or the SARIF projects. Additional vehicles could generate more sediment for deposition in area streams. The mortality rate of wildlife could also increase, however, as outlined in Section 4.9, wildlife in the Project Area display a broad habitat distribution and are not restricted to a particular habitat type.

4.20 RELATIONSHIP OF LOCAL SHORT-TERM USES VS. LONG-TERM PRODUCTIVITY

Short-term uses to the human and natural environment are anticipated by the construction of the proposed highway. All build alternatives would have similar impacts. Uses of the human environment would include relocation of homes for residents. Uses of the natural environmental would cause temporary erosion and siltation to local streams and bayous and disruption and displacement of species during construction. Additionally, there would be a considerable amount of resources allocated to construction of the proposed highway that would include such resources as earth, rock, cement, sand and fossil fuels.

The short-term effects would be relatively minor when compared with the positive effects of the proposed highway. The long-term effects will be a safer route of travel from El Dorado to McGehee that would stimulate economic growth as well as long-term employment opportunities. The long-term benefits of the proposed highway outweigh the negative aspects and are consistent with the use of resources and the short- term impacts upon the areas involved.

4.21 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Construction of I-69 will involve the commitment of several resources that include land, manpower, natural resources, and financial resources. The use of these resources is warranted for this proposed highway because construction will produce an overall improved transportation system. Land used for the proposed highway would be considered an irreversible commitment during the life of the facility. Manpower would be used to operate construction equipment and to fabricate construction materials from natural resources. Generally, these materials are not retrievable. The use of these materials would not have an adverse effect on the continued availability of these resources.

Construction of the proposed highway would require funding from federal and state sources. These funds would be committed to the construction and maintenance of the facility and not available for other uses.

4.22 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table 4-16 summarizes the impacts for the developed alignment alternatives discussed in Section 4. Impacts to the social, economic, natural, and cultural environment would result from construction of any of the alignments evaluated in detail in this document. The alignments were developed in a Corridor that allowed impact avoidance and minimization for a number of resources, while addressing the project Purpose and Need and providing feasible engineering alternatives.

It should be noted that due to the project development process, impacts to most resource categories are relatively small for a project over 100 - miles in length. Opportunities were taken at both the corridor and alignment development stages to avoid and/or minimize impacts to all resources to the greatest extent practicable. Further reductions will be investigated based on comments received from the public hearings on this document.

Table 4-16
SUMMARY OF ALIGNMENT ALTERNATIVE ENVIRONMENTAL CONSEQUENCES

Category	ALIGNMENT				
	Line 1	Line 2	Line 3	Line 4	Preferred (Line 5)
Social Impacts					
Land Use *Total Converted to Highway Uses in acres*	3,654	3,979	3,682	3,966	3,863
Relocations					
Number of Impacted Residences	16	16	14	10	5
Number of Impacted Businesses	0	0	0	0	0
Number of Impacted Churches and Community Facilities	0	0	0	0	0
Number of Impacted Cemeteries	0	0	0	0	0
Environmental Justice	No Disproportionate Impacts	No Disproportionate Impacts	No Disproportionate Impacts	No Disproportionate Impacts	No Disproportionate Impacts
Natural Resources					
Floodplain Impacted in acres	856	850	820	769	778
Regulated Floodways Impacted in acres	0	0	0	0	0
Total Wetlands Impacted in acres	350	330	349	320	270
Total Forestland Impacted in acres	2,817	3,084	2,812	3,128	3,048
Total Cropland and Pastureland Impacted in acres	837	895	870	838	815
Impacts to Known Locations of Threatened or Endangered Species	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Impacts to Threatened or Endangered Species Potential Habitat in acres	0	30	34	34	0
Natural Areas	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Impacts to Prime Farmland Soils in acres	2,138	2,517	2,104	2,353	2,199
Impacts to Statewide Important Farmland Soils in acres	145	299	146	273	259
Cultural Resources					
National Register (NR) Properties	0	0	0	0	0
Structures Eligible for the NR	1*	0	1*	0	0
Recorded Archeological Sites	4	2	3	2	3
High Probability Areas in acres	634	704	769	759	690
Total Noise Receptors Impacted	14	16	27	17	15
Hazardous Materials Sites	0	0	0	0	0

Source: Michael Baker Jr., Inc., * Structure no longer standing

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Section 5: LIST OF PREPARERS

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	Randy D. Luketic	GIS Technician
	W. Hal Thompson	Designer

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Section 6: DISTRIBUTION OF STATEMENT

Copies of the Final Environmental Impact Statement have been distributed to the following agencies and organizations:

FEDERAL AGENCIES

U.S. Army Corps of Engineers – Vicksburg, MS

U.S. Department of Housing & Urban Development, Little Rock, AR

U.S. Department of the Interior, Fish & Wildlife Service – Washington, D.C.

U.S. Department of the Interior, Fish & Wildlife Service - Conway, AR

U.S. Department of the Interior, National Park Service

U.S. Environmental Protection Agency - Dallas, TX

U.S. Environmental Protection Agency - Washington, D.C.

U.S. Federal Emergency Management Agency - Denton, TX

Advisory Council on Historic Preservation – Lakewood, CO

STATE AGENCIES

Arkansas Department of Health, Little Rock, AR

Arkansas Department of Parks & Tourism - Little Rock, AR

Arkansas Department of Environmental Quality - Little Rock, AR

Arkansas Forestry Commission - Little Rock, AR

Arkansas Game and Fish Commission - Little Rock, AR

Arkansas Historic Preservation Program - Little Rock, AR

Arkansas Industrial Development Commission - Little Rock, AR

Arkansas Natural and Scenic Rivers Commission - Little Rock, AR

Arkansas Natural Heritage Commission - Little Rock, AR

Arkansas Soil & Water Conservation Commission - Little Rock, AR

Arkansas State Planning and Development Clearinghouse - Little Rock, AR

Arkansas Waterways Commission - Little Rock, AR

Commissioner of State Lands - Little Rock, AR

Office of the Governor - Little Rock, AR

Office of the State Archeologist - Fayetteville, AR

NATIVE AMERICAN TRIBES

Caddo Indian Tribe of Oklahoma

Quapaw Tribe of Oklahoma

Tunica-Biloxi Indians of Louisiana

U.S. SENATORS AND REPRESENTATIVES

Representative Mike Ross - Washington, D.C.

Representative Vic Snyder – Washington, D.C.

Senator Blanche Lincoln - Washington, D.C.

Senator Mark Pryor - Washington, D.C.

STATE SENATORS AND REPRESENTATIVES

Representative Johnnie Bolin – Crossett, AR

Representative Stephanie Flowers – Pine Bluff, AR

Representative Willie Hardy – Camden, AR

Representative Jodie Mahony – El Dorado, AR

Representative Allen Maxwell – Monticello, AR

Representative David Rainey – Dumas, AR

Representative Randy Rankin – Eudora, AR

Representative Gregg Reep – Warren, AR

Senator Bobby Glover - Carlisle, AR

Senator Jerry Taylor - Pine Bluff, AR

Senator Gene Jeffress – Louann, AR

Senator Jimmy Jeffress - Crossett, AR

Senator Percy Malone - Arkadelphia, AR

Senator Hank Wilkins, IV – Pine Bluff, AR

COUNTY JUDGES

Ashley County Judge

Bradley County Judge

Calhoun County Judge

Chicot County Judge

Cleveland County Judge

Desha County Judge

Drew County Judge

Jefferson County Judge

Lincoln County Judge

Ouachita County Judge

Union County Judge

LOCAL COMMUNITY LEADERS

Mayor of Arkansas City

Mayor of Banks

Mayor of Calion

Mayor of Camden

Mayor of Crossett

Mayor of Dermott

Mayor of Dumas

Mayor of Eudora

Mayor of El Dorado

Mayor of Felsenthal

Mayor of Fountain Hill

Mayor of Hamburg

Mayor of Hampton

Mayor of Harrell

Mayor of Hermitage

Mayor of Huttig

Mayor of Lake Village

Mayor of Junction City

Mayor of Magnolia

Mayor of McGehee

Mayor of Monticello

Mayor of Norphlet

Mayor of Pine Bluff

Mayor of Smackover

Mayor of Star City

Mayor of Strong

Mayor of Tillar

Mayor of Warren

Mayor of Wilmar

LOCAL LIBRARIES

Barton Library – El Dorado, AR

Calhoun County Library

Dumas Public Library

Monticello Library

Paul Sullins Public Library - Crossett, AR

Pine Bluff Library

Smackover Public Library

Star City Library

Warren Library

University of Arkansas – Monticello Library

CHAMBERS OF COMMERCE

Bradley County Chamber of Commerce

Camden Area Chamber of Commerce

Crossett Chamber of Commerce

Dumas Chamber of Commerce

El Dorado Chamber of Commerce

Magnolia/ Columbia County Chamber of Commerce

McGehee Area Chamber of Commerce

Monticello/Drew County Chamber of Commerce

Smackover Chamber of Commerce

OTHER ORGANIZATIONS AND PLACES

Arkansas Archeological Survey Station Archeologist – U. of Arkansas Monticello

Arkansas Archeological Survey Station Archeologist – U. of Arkansas Pine Bluff

Arkansas Museum of Natural Resources – Smackover, AR

Felsenthal National Wildlife Refuge – Crossett, AR

Bradley County Industrial Development Corporation

Southeast Arkansas Regional Intermodal Facility

Southeast Economic Development District

Section 7: COORDINATION AND PUBLIC INVOLVEMENT

Involvement and participation by community leaders, state and federal resource agencies, and the public throughout the study process was an integral part of the I-69 Location study. The public involvement program was specifically designed to encourage both written comments and informational visits to the project office in White Hall, Arkansas. This section discusses these efforts from project initiation through the publication and distribution of the Draft EIS. Tables at the end of this section provide information on meeting locations, dates, and the approximate number of attendees. Minutes and attendance records of the meetings are on file at AHTD. Agency and tribal correspondence is included in the Appendix.

7.1 SCOPING PROCESS

The objective of the scoping process was to identify environmental, socioeconomic, engineering, or other issues which should be considered during the study. Federal and state resource agencies and local community leaders were invited to participate in a series of meetings in May 1999. These meetings provided an opportunity for participants to gain an understanding of the study process, discuss project benefits and concerns, and identify key issues to be considered during corridor and alignment development. It was emphasized that early identification of environmental concerns maximized the ability to avoid and minimize impacts during alternatives development. Native American tribes were also contacted and invited to participate in the study process.

On December 7, 2001, a notice of intent was published in the Federal Register (Vol. 66, Number 236) that an Environmental Impact Statement (EIS) would be prepared for a proposed highway project in the Arkansas Counties of Ashley, Bradley, Calhoun, Chicot, Columbia, Desha, Drew, Ouachita, and Union.

7.1.1 Local Community Leader Involvement

Two scoping meetings were held with local community leaders on December 6, 2001 in Monticello and El Dorado, Arkansas. Many area business representatives also attended. The meeting presented an overview of the project study process and the proposed project area. Table 7-1 summarizes the project concerns and benefits discussed at the meeting.

Table 7-1
LOCAL OFFICIALS SCOPING MEETING
SUMMARY OF COMMENTS

Benefits of the Proposed Project
Increase jobs and industry
General economic development
Local impact on economy during construction
Access to metropolitan areas
Cheaper freight rates
Access to markets in Canada and Mexico
Help retain population
Improved delivery time for goods and services
Greater access to educational facilities
Increase tourism through increased accessibility to area
Improved safety by removed truck traffic from local roads
Better marketability for Southeast Arkansas
Greater access into Southeast Arkansas and better connectivity to Interstate system
Greater access to medical centers in Memphis and Shreveport
Increase access to recreation areas/facilities (Felsenthal National Wildlife Refuge)
Hazardous waste movement taken off local roads and put on to I-69
Concerns About the Proposed Project
Impacts to Bayou Bartholomew, Saline River, Ouachita River
Impacts to private property
Time frame for completion
Local community needs due to projected growth
Need for additional law enforcement, fire protection, and utilities
Funding for project

Source: Michael Baker Jr., Inc. December 6, 2002 Local Officials Meeting

7.1.2 Native American Tribe Involvement

Representatives from the Caddo Tribe of Oklahoma, the Tunica-Biloxi Indians of Louisiana, and the Quapaw Tribe of Oklahoma were invited to participate in the December 2001 agency scoping meeting to discuss the I-69 project study process and to identify any issues or areas of traditional religious and cultural importance that should be considered during both the corridor and alignment phases of study. No correspondence was received from any tribe identifying specific concerns. FHWA continues to work with these tribes on a Programmatic Agreement for all I-69 projects in Arkansas.

7.1.3 Resource Agency Involvement

A scoping meeting was held with state and federal resource and regulatory agencies on December 5, 2001 in Little Rock, Arkansas to initiate early agency involvement and cooperation in the study. The objective of this meeting was to discuss the SIU 13 project and to identify key environmental issues to be considered during both the corridor and alignment phases of study. Specific issues identified and discussed included avoiding and/or

minimizing involvement with Federally listed threatened and endangered species, specifically the red-cockaded woodpecker and *Geocarpon minimum* (a small plant species), Bayou Bartholomew, Seven Devil's Swamp, Cut-off Creek Wildlife Management area, Casey Jones Wildlife Management area, Felsenthal National Wildlife Refuge, H.K. Thatcher Lock and Dam on the Ouachita River, Moro Bay State Park, and wetland resources in the project area. Agencies in attendance included representatives from Arkansas Parks and Tourism, Arkansas Natural Heritage Commission, the U.S. Army Corps of Engineers – Vicksburg District, the U.S. Coast Guard, the U.S. Environmental Protection Agency – Region 6, U.S. Fish and Wildlife Service, Arkansas Department of Environmental Quality, Arkansas Department of Economic Development, and the Arkansas Game and Fish Commission.

7.2 CORRIDOR STUDY

Public, local community leader, and resource agency involvement was obtained during the corridor study. This phase of study focused on obtaining input on the corridors developed to aid in the identification of a corridor or corridors that provided the best opportunity to develop specific highway alignments within it that avoid and minimize overall project impacts.

7.2.1 Public Involvement

Open forum public meetings were held in McGehee, Monticello, and El Dorado, Arkansas on March 11-13, 2002. Project flyers announcing the meetings were sent to individuals on the general mailing list, including all local officials and were posted in various business establishments throughout the project area. The public meetings allowed citizens to review the corridor locations at their convenience and talk with project representatives.

The corridors were displayed in two formats. Both visually presented the environmental inventory information contained in the GIS and used for the corridor comparative analysis. Sensitive information such as endangered species locations and known archeological sites were not displayed to the general public. The first format used AHTD county highway mapping background to display the corridors relative to the area road network. The second used a 1998 black and white aerial photograph background (approx. scale of 1"=4,000') where land cover, timber and farming operations, and clusters of residential development were visible.

Several handouts including a corridor location map and comparative analysis table were distributed along with a comment form that encouraged input from the public regarding additional environmental

information, proposed highway usage information, and preferences on corridor locations. Over 100 people attended the public meetings. Public input received centered on potential economic development opportunities, community access, and property impacts.

7.2.2 Community Leader Involvement

Community leaders were invited to participate in corridor study review meetings held on March 12 and 13, 2002 to review the environmental inventory and the preliminary corridors developed. Concerns in the Monticello area focused on providing access to I-69 for the existing and planned industrial development southeast of town to promote further economic development and the possibility of removing truck traffic from local streets through town. Warren representatives believed that Corridor A and Corridor B would serve the community well and were located near the industrial portion of town. Representatives attending the El Dorado meeting, including the Mayors of El Dorado and Camden, supported Corridor A as providing the best economic development opportunities for the communities of El Dorado, Camden, Magnolia, and the surrounding area.

7.2.3 Native American Tribal Involvement

Correspondence inviting tribal participation in the study process and involvement in the Corridor Study was sent to the Quapaw Tribe of Oklahoma, the Tunica-Biloxi Indians of Louisiana, and the Caddo Indian Tribe of Oklahoma. This letter requested the identification of any issues or areas of traditional religious and cultural importance that should be considered during the development of project alternatives. This was followed by a Nation to Nation meeting in June 2002 between FHWA and the tribes discussing project constraints and the corridor study process.

7.2.4 Resource Agency Involvement

Federal and state agencies were invited to participate in a corridor study review meeting held on March 12, 2002 to review the environmental inventory and the preliminary corridors developed. Environmental factors influencing corridor development were discussed and issues of concern continued to focus on avoiding and/or minimizing involvement with Federally listed threatened and endangered species, specifically the red-cockaded woodpecker and *Geocarpon minimum*, Bayou Bartholomew, Seven Devil's Swamp, Cut-off Creek Wildlife Management area, Casey Jones Wildlife Management area, Felsenthal National Wildlife Refuge, the Ouachita River, Moro Bay State Park, and wetland resources in the project area. Agencies in attendance included representatives from the Arkansas Geological Commission, Arkansas Soil and Water Conservation Commission, Arkansas Natural

Heritage Commission, the U.S. Army Corps of Engineers – Vicksburg District, Arkansas Department of Economic Development, and the Arkansas Game and Fish Commission.

7.3 ALIGNMENT STUDY

The Alignment Study meetings were designed to obtain specific comments from meeting participants on the preliminary alignment locations. Many comments were received that resulted in alignment revisions and the development of an additional alignment.

7.3.1 Public Involvement

Open forum public meetings were held in McGehee, Monticello, Warren, and Monticello Arkansas on March 10-13, 2003, respectively (Table 7-2). Information on meeting dates, locations, times, and content was publicized similar to the Corridor Study effort and included area newspapers, radio and television stations. Project flyers announcing the meetings were sent to all citizens on the general mailing list and to local officials and posted in various business establishments and community facilities throughout the project area.

Table 7-2
PUBLIC MEETINGS

DATE	LOCATION	ATTENDANCE
Corridor Study		
March 11, 2002	Council Meeting Room, McGehee Municipal Building	23
March 12, 2002	Monticello Junior High School Cafeteria	61
March 13, 2002	Billy McGehee Building Student Center South Arkansas Community College East Campus	21
Subtotal		**105**
Alignment Study		
March 10, 2003	Council Meeting Room, McGehee Municipal Building	98
March 11, 2003	Monticello High School Cafeteria	226
March 12, 2003	Warren High School Cafeteria	55
March 13, 2003	South Arkansas Community College East Campus	39
Subtotal		**418**
TOTALS		**523**

Source: Michael Baker Jr., Inc.

Preliminary alignments were displayed on a 1998 black and white aerial photographic background at an approximate scale of 1"= 2,000', that enabled those attending to identify individual properties, residences, and businesses. Several handouts including a preliminary alignment location map and comparative analysis table were distributed. Comment forms were distributed that requested alignment preferences, suggested revisions, and additional environmental information. Over 400 people attended the public meetings. Comments received focused on potential impacts to personal property. Requested revisions to the preliminary alignments centered on avoiding or reducing these impacts.

Following the public meetings, laminated alignment alternative maps and handouts were distributed to Crossett City Hall, Camden Chamber of Commerce, Dumas City Hall/Chamber of Commerce, El Dorado Chamber of Commerce, Monticello Economic Development Commission, McGehee City Hall, Smackover Municipal Building, and the Bradley County Industrial Development Corporation in Warren. A complete set of public meeting displays was made available for review at the project office in Whitehall.

7.3.2 Local Community Leader Involvement

Meetings with local community leaders were held in Monticello on March 11 and El Dorado on March 13, 2003 (Table 7-3) prior to public meetings to discuss the alignments in detail. The City of Monticello presented a letter that stated a preference for the southern alternative around Monticello, which was also supported by the Monticello Economic Development Commission. Community leaders in attendance at the El Dorado meeting stated no alignment preference.

Table 7-3
LOCAL COMMUNITY LEADER MEETINGS

Date	Location	Purpose
December 6, 2001	Monticello City Hall	EIS Scoping Process
December 6, 2001	South Arkansas Community College - El Dorado	EIS Scoping Process
March 12, 2002	Monticello Economic Development Commission	EIS Corridor Study Review
March 13, 2002	South Arkansas Community College – El Dorado	EIS Corridor Study Review
March 11, 2003	Monticello Economic Development Commission	EIS Alignment Study Review
March 13, 2003	South Arkansas Community College - El Dorado	EIS Alignment Study Review

Source: Michael Baker Jr., Inc.

7.3.3 Native American Tribal Involvement

Correspondence was sent to the Quapaw Tribe of Oklahoma, the Tunica-Biloxi Indians of Louisiana, and the Caddo Indian Tribe of Oklahoma inviting participation in the alignment study. This letter requested the identification of any issues or areas of traditional religious and cultural importance that should be considered during the development of preliminary alignment alternatives. This was followed by a Nation-to-Nation meeting in May 2003 between FHWA and the Native American Tribes to review the preliminary alignments and discuss a programmatic agreement that each tribe will be invited to sign prior to issuance of the Record of Decision.

7.3.4 Resource Agency Involvement

State and federal resource agencies were invited to participate in a field review of the preliminary alignments with AHTD and FHWA on June 10, 2003 (Table 7-4). The primary focus of the meeting was on the effect of the preliminary alignments on environmental resources and included general discussions of minimization and mitigation efforts. The field review was attended by representatives from the Arkansas Geological Commission, Arkansas Natural Heritage Commission, the U.S. Army Corps of Engineers – Vicksburg District, the U.S. Environmental Protection Agency – Region 6, Arkansas Department of Environmental Quality, the Arkansas Game and Fish Commission, and the USDA Natural Resource Conservation Service.

Table 7-4
RESOURCE AGENCY MEETINGS

Date	Agency	Purpose / Topic
December 5, 2001	Appropriate State and Federal Agencies	Scoping
March 12, 2002	Appropriate State and Federal Agencies	EIS Corridor Study Review
June 27, 2002	FHWA and Native American Tribes	Section 106 Coordination
October 30, 2002	Appropriate State and Federal Agencies	Wetland Mitigation
May 22, 2003	FHWA and Native American Tribes	Section 106 Coordination
June 10, 2003	Appropriate State and Federal Agencies	Preliminary Alignment Field Review

Source: Michael Baker Jr., Inc

7.4 ENVIRONMENTAL DOCUMENTATION

Public hearings were held in El Dorado, Monticello, and McGehee to obtain formal comment of the Draft Environmental Impact Statement. The hearing dates, locations, attendance, and number of individual received is presented in Table 7-5.

Table 7-5
PUBLIC HEARINGS

Date	Location	Attendance*	Number of Oral Comments	Number of Written Comments
June 22, 2004	Parkers Chapel School Gymnasium No. 2	33	0	2
June 23, 2004	Monticello High School Cafeteria	99	8	37
June 24, 2004	McGehee Municipal Building	17	1	0
TOTALS		**149**	**9**	**39**

Source: Michael Baker, Jr. Inc.
*Attendance based on hearing sign-in record

One hundred fifty written comments were received from local citizens and organizations by the close of the comment period on July 19, 2004. Nine oral comments were also received at the public hearings. Comment received on the DEIS have been fully evaluated and considered in the identification of the Preferred Alignment. All comments expressing project concerns have been summarized and a response has been provided in Table 7-5. A public hearing record of comments received through July 19, 2004 is on file at AHTD. State and Federal resource agency comment letters on the DEIS are provided in the Appendix. These comments have been summarized and a response has been provided in Table 7-6.

7.5 PUBLIC NOTIFICATION METHODS

Three types of direct mailing lists were maintained for the study: public, local community leader and resource agencies. The public mailing list was initiated from public meeting sign-in sheets from the corridor meetings. As each additional public meeting was held, or as each phone or written inquiry was received, these persons were added to the mailing list. The current public mailing list contains nearly 500 individuals. The local officials list includes representatives from federal, state, and local government and currently includes nearly 100 individuals. A combination of ten state and federal agencies participated throughout the project either through meeting attendance or through regular mailings regarding on-going project studies and project status. In addition, project information was sent to three representatives of area Native American tribes.

Additionally, notifications of meetings were handled in several other methods:

- Thirteen area newspapers: Ashley News Observer, Advance Monticellonian, Banner News, Camden News, Cleveland County Herald, Fordyce News Advocate, Eagle Democrat, El Dorado News, Lincoln Ledger, McGehee-Dermott Times, Pine Bluff Commercial, South Arkansas Sun, Smackover Journal.

- Nineteen area radio stations: KCAC, KAMD, KCXY, and KMGC in Camden, KAGH and KHMD in Crossett, KBJT and KQEW in Fordyce, KKOL, and KDMS in El Dorado, KVMA in Magnolia, KVSA in McGehee, KGPQ, KHMB, and KXSA in Monticello, KOTN and KTRN in Pine Bluff, KWRF in Warren.
- Four television stations: KARK, KLRT, KTHV, and KATV in Little Rock.
- A project website (http://www.i-69.dina.org/) that was used to display public meeting handouts and notices of future public involvement opportunities.
- Additional copies of announcements sent to local officials for posting in their communities.

7.6 TOPICS OF PUBLIC COMMENT LETTERS ON THE DEIS

One hundred fifty nine comments were received between the publication of the Draft EIS and the close of the comment period on July 19, 2004. Over 75% of the comments received on the Draft EIS were in support of an alignment that would pass south of Monticello. Several citizens were concerned with personal property impacts as the result of the proposed highway. AHTD recognizes property owner concerns and has worked at all stages of the project to minimize the number of homes taken and the number or parcels impacted by the proposed highway. It would not be possible to construct any highway facility without some impact to personal property.

7.7 NATIVE AMERICAN TRIBAL INVOLVEMENT ON THE DEIS

The Draft EIS was sent to the Quapaw Tribe of Oklahoma, the Tunica-Biloxi Indians of Louisiana, and the Caddo Indian Tribe of Oklahoma for their review and comment. No Draft EIS tribal comments were received. All tribal correspondence is included in the Appendix.

Table 7-6
SUMMARY OF COMMENTS RECEIVED ON THE DRAFT EIS

COMMUNITIES AND ORGANIZATIONS	
Crossett Area Chamber of Commerce	
Comment:	Support the proposed location of I-69 south of the City of Monticello
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.
Crossett Economic Development	
Comment:	Prefers to see Interstate 69 come as far south of Monticello as feasible.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.
INDIVIDUAL ORAL COMMENTS	
Comment:	6 citizens prefer the southern alignments around Monticello.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.
Comment:	1 citizen supports the northern alignments around Monticello.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.
Comment:	1 citizen concerned with Line 2 impacts to personal property.
Response:	Efforts have been made throughout the project development process to minimize property impacts to the extent practicable. Further efforts will be made during the final design process to minimize impacts to personal property.
Comment:	Senator Jimmy Jeffress stated that citizens in Ashley County and the southern part of Drew County prefer the southern route around Monticello.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.
INDIVIDUAL WRITTEN COMMENTS	
Comment:	27 citizens prefer the southern route around Monticello and concerned with property impacts for the location of a planned church.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8. The referenced church is north of Monticello and would not be impacted by the Preferred Alignment.
Comment:	1 citizen supports the southern route around Monticello and the bypass from Highway 425 to Highway 35.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.
Comment:	84 citizens support the southern alignments in the Monticello area.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.

Table 7-6 SUMMARY OF COMMENTS RECEIVED ON THE DRAFT EIS	
INDIVIDUAL WRITTEN COMMENTS (cont.)	
Comment:	15 citizens prefer the northern alignments in the Monticello area.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.
Comment:	2 citizens opposed to the southern route of 2, 4, and 5 for the proposed I-69.
Response:	Comment noted.
Comment:	3 citizens prefer the southern route around Monticello and concerned with personal property impacts.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8. Efforts have been made throughout the project development process to minimize property impacts to the extent practicable. Further efforts will be made during the final design process to minimize impacts to personal property.
Comment:	1 citizen stated that this meeting was a waste of time.
Response:	Comment noted.
Comment:	1 citizen states that the southern route would cost more and the northern route is the most cost effective.
Response:	Comment noted.
Comment:	1 citizen opposes the proposed north routes and concerned with residential impacts along the northern routes.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8. Efforts have been made throughout the project development process to minimize property impacts to the extent practicable. Further efforts will be made during the final design process to minimize impacts to personal property.
Comment:	1 citizen supports I-69 through southeast Arkansas.
Response:	Comment noted.
Comment:	1 citizen concerned with cost of I-69
Response:	Comment noted.
INDIVIDUAL EMAILED COMMENTS	
Comment:	1 citizen prefers the southern routes around Monticello and concerned with impact to personal property.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8. Efforts have been made throughout the project development process to minimize property impacts to the extent practicable. Further efforts will be made during the final design process to minimize impacts to personal property.
Comment:	1 citizen supports Line 2, 4, or 5 south of Monticello.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.

Table 7-6 SUMMARY OF COMMENTS RECEIVED ON THE DRAFT EIS	
INDIVIDUAL EMAILED COMMENTS (cont.)	
Comment:	12 citizens prefer Line 1.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.
Comment:	1 citizen prefers Interstate should pass south of Monticello.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8.
Comment:	1 citizen states the northern corridor is the best route to take for the I-69 alignment in the Monticello area.
Response:	Identification of a Preferred Alignment that would pass south of Monticello is detailed in Section 2.6.8. Efforts have been made throughout the project development process to minimize property impacts to the extent practicable. Further efforts will be made during the final design process to minimize impacts to personal property.
Comment:	1 citizen concerned with personal property impacts.
Response:	Efforts have been made throughout the project development process to minimize property impacts to the extent practicable. Further efforts will be made during the final design process to minimize impacts to personal property.
Comment:	On page 2-9 there is a reference to the collection of cultural resources information. This paragraph mentions cemeteries taken from USGS maps and from public involvement. I would like to point out that after aggressively soliciting information on at-risk cemeteries in Arkansas, it is my conclusion that fully 1/2 of the existing historic cemeteries in the state are not on USGS maps. Since south Arkansas has been declining in population and has been taken over in great extent by industrial timber enterprises for many decades, there are innumerable small, isolated historic cemeteries in this part of the state that are not in any database or on any map. There is no indication in your text that many cemeteries, not yet reported to your office, may still be within the corridor.
Response:	Many historic cemeteries in Southern Arkansas are not listed in any database or identified on any map. The project study process was developed to obtain information on important resources such as cemeteries throughout the Corridor and Alignment phases of work. As discussed in Section 2.6.4, an alignment shift was made to avoid a previously unrecorded cemetery based on information obtained during project public meetings. Section 4.12 lists 4 previously unrecorded historic cemeteries within and adjacent to the Preferred Corridor that were added to the project database based on information from local historical resources and landowner information. No additional cemeteries were located during the Phase I cultural resources survey of the Preferred Alignment.

Table 7-6 SUMMARY OF COMMENTS RECEIVED ON THE DRAFT EIS	
INDIVIDUAL EMAILED COMMENTS (cont.)	
Comment:	In addition, there is mention of 'High Probability Areas' in this section and on subsequent maps, but I find no discussion of how these areas have been determined. South Arkansas is woefully under-surveyed for cultural resources, so what we know of current site distribution does not reflect any more than accidents of reporting and modern land management practices. Moreover, this paragraph on page 2-9 mentions high probabilities for prehistoric archeological resources, but doesn't mention historic cultural resources. Historic archeological sites ranging from domestic settlements and small pre-Civil War plantations to Civil War skirmish sites, early trapper and trader caches, early industrial timber and mineral extraction camps, and riverboat landing sites are likely to be situated in the project area. Not all of these kinds of sites are likely to be near streams and on floodplains. It seems like a more robust historic context is necessary if any sort of probabilistic statement about these settlements is made.
Response:	During the data collection process for the entire study area an effort was made to identify high probability areas for unrecorded prehistoric archeological sites. This subjective assessment was based on a number of factors including the general ground slope, amount of previous disturbance, general soil conditions, distance to known water sources, presence of specific land forms, elevation, distance to previously recorded sites, and similarity of the landform and conditions to previously recorded sites. This subjective assessment was done on a quad map by quad map basis across the entire study area. The previously recorded site data was collected from the AMASDA system with some additional input from two of the local AAS station archaeologists and comments from private collectors.
Comment:	The several color maps (exhibit 2-6) showing alignments and other data layers including 'high probability areas for cultural resources' show virtually no high probability areas that I can clearly see. Perhaps because the key color is pale pink on top of the dark aerial photo mosaics I am missing these areas, but it seems like a vanishingly small proportion of the total corridor has been so identified. This is all the more troublesome because the alignment crosses three major streams that include the alluvial valleys of the Saline and the Ouachita Rivers where large tracts of land should be viewed as sensitive.
Response:	Exhibit 2-6 has been revised to more clearly depict these areas.
Comment:	There is no mention of submerged cultural resources at risk where bridges across the above streams, and other major creeks, would be constructed. There is likewise no mention of steps to be taken to search for and evaluate such resources. These could be either historic or prehistoric resources.
Response:	Continued coordination with the Arkansas Historic Preservation Program will continue during the Final Design process to address cultural resources.
Comment:	In the historic context section there is reference to communities growing up 'along trails' in the 19th century (3.15, page 3-40). This is a quaint and romantic notion, but it misrepresents some elements of south Arkansas history. Most communities of significance were at commercial and plantation boat landings, grew up in association with commercial timber and/or railroad development, or were situated near major roads rather than trails. Later, the oil boom sparked the explosive growth of formerly small towns as well. More work devoted to developing the historic context of this project area is recommended.
Response:	Section 3 has been revised to expand on the historical content of the project area.

Table 7-7
SUMMARY OF AGENCY COMMENTS AND RESPONSES ON DRAFT EIS

Agency: United States Department of the Interior, July 12, 2004 **Stephen R. Spencer**	
Issue: General	
Comment:	The draft EIS and planning process provide ample evidence that the project sponsors are making good faith efforts to identify and avoid or minimize adverse impacts to important resources under our jurisdiction. We support continuation of that effort. Based on our understanding, the Department supports selection of the Line 5 alignment location as the preferred alternative. This alignment appears to have the least known adverse effects and avoids many already recognized adverse impacts. Some of the alignments would foreclose beneficial actions planned for the unique and otherwise special habitats and sites in the project area.
Response:	Comment noted
Issue: Section 4(f)	
Comment:	The draft EIS does not identify any properties that would be eligible for consideration under Section 4(f) of the Department of Transportation Act. However, it does appear that all cultural resources (archeological and architectural) have been inventoried. It is possible that historic properties that may be considered 4(f) resources may be found in subsequent work, which would require additional consultation with the Department.
Response:	Comment noted.
Issue: Wetlands	
Comment:	The draft EIS identified a number of wetland types that are found in the project area. However, a number of sand hill seep wetlands were recently identified in the selected corridor. The specific type of wetland is not identified in the draft EIS. Given their high quality, importance in the landscape, the species and ecological processes they support, and their rarity, these seep wetlands could be aquatic resources of national importance.
Response:	Comment noted: Additional investigations where conducted along the Preferred Alignment to identify potential areas for sand hill seep wetlands. A review of the area between the Ouachita River and the Saline River using NRCS soils maps and through consultation with ANHC and USFWS personnel, identified 5 potential wetland seeps near the Preferred Alignment. A field review was conducted in October 2005 with the USFWS and the COE to investigate these sites. No seep wetlands or unique plant communities were observed at any of these 5 locations along the Preferred Alignment. Section 4.8.3 has been added to the document to address this issue.
Issue: Vehicle Safety	
Comment:	The introduction of vehicles with adaptive cruise control systems means that many engineering constraints, such as level of service, and road curvature, either will not apply, or may be less rigidly applied. We encourage the project sponsors to incorporate new vehicle safety criteria with environmental concerns throughout the project area.

Table 7-7
SUMMARY OF AGENCY COMMENTS AND RESPONSES ON DRAFT EIS

Response:	Comment noted.
Agency: United States Department of the Interior, July 12, 2004 (cont.) **Stephen R. Spencer**	
Issue: Endangered Species Act	
Comment:	The draft EIS cites resource agency reports indicating that six federally listed or endangered species may occur in the project area. Continued coordination of plan development and related studies with the Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act should avoid adverse impacts to these species or the habitats they depend on.
Response:	The U.S. Fish and Wildlife Service has been involved throughout the project development process and coordination is ongoing.
Issue: Native American Trust Responsibilities	
Comment:	The draft EIS indicated that a number of Native American tribes have ancestral ties to the project area. We are not currently aware of any culturally sensitive, sacred, or other significant resources claimed by tribes in the proposed project footprint. However, should survey or construction activities uncover or discover culturally sensitive or sacred sites, the appropriate representatives should be notified immediately, and, if warranted, land disturbing activities halted.
Response:	Section 4.12 discusses project activities conducted to identify the cultural resources and Section 4.12.3 discusses specific mitigation measures that would address the above issue.
Agency: Arkansas Soil and Water Conservation Commission, June 3, 2004 **J. Randy Young**	
Issue: Document Evaluation	
Comment:	Staff from the Arkansas Soil and Water Conservation Commission have reviewed the DEIS, and based on Construction Cost, ROW/Utility Cost, Residential Structures, Natural Resource Impacts, and Cultural Resource Impacts, recommend that segments of Alignment 1 (in Sections 1, 2, and 3) and Alignment 3 (in Sections 4 and 5) be moved forward as the Preferred Alignment.
Response:	The identification of the Preferred Alignment is discussed in detail in Section 2.6.8.
Agency: Department of the Army, Corps of Engineers, Vicksburg District, May 25, 2004 **Elizabeth S. Guynes**	
Issue: Document Evaluation	
Comment:	The Corps will need to be included in the list of recipients for the mitigation plan for NHRP eligible properties.
Response:	Comment noted.

Table 7-7
SUMMARY OF AGENCY COMMENTS AND RESPONSES ON DRAFT EIS

Agency: Arkansas Forestry Commission, June 4, 2004 **James L. Northum**	
Issue: Document Evaluation	
Comment:	The project will have some adverse impacts on the forest resources of the area with the loss of acreage to right-of-way clearance and other construction. However, the losses should be more than offset by the economic boost to the region by the improvement in transportation provided by the new roadway.
Response:	Comment noted.
Agency: Arkansas Historic Preservation Program, May 21, 2004 Ken Grunewald	
Issue: Document Evaluation	
Comment:	We agree with the plan to conduct an intensive cultural resources survey of all aspects of this undertaking once a final alignment is selected.
Response:	Results of the intensive cultural resources survey are summarized in Section 4.12.2.
Agency: Arkansas Department of Health, June 1, 2004 **Larry Duncan**	
Issue: Water Distribution Systems	
Comment:	The relocation of rural water distribution systems' lines for clearing right-of-way or highway construction was not addressed.
Response:	The location of rural water distribution system lines will be addressed during final design of the highway.
Comment:	Drawings and Specifications for new and/or relocated water system mains must be submitted to the Arkansas Department of Health, Division of Engineering for review and approval prior to construction.
Response:	Comment noted.
Agency: Arkansas Geological Commission, June 7, 2004 **William Lee Pryor**	
Issue: Document Evaluation	
Comment:	The statement is made on page 3-18, Section 3.6.1, Oil and Natural Gas, that all of Arkansas's natural gas and oil is produced in southern Arkansas. This statement is incorrect as the Arkansas River Valley (Arkoma Basin) also produces natural gas in northwestern Arkansas.
Response:	Section 3.6.1 has been revised.

Table 7-7
SUMMARY OF AGENCY COMMENTS AND RESPONSES ON DRAFT EIS

Agency: Arkansas Natural Heritage Commission, July 21, 2004	
Cindy Osborne	
Issue: Document Evaluation	
Comment:	We feel that a conscientious job has been done of selecting the least damaging corridor. We are pleased at the efforts that have been made to minimize wetland impacts within the Ouachita Pleistocene terraces in Bradley and Calhoun Counties.
Response:	Comment noted.
Issue: Warren Prairie Natural Area	
Comment:	Although alignments have been designed to avoid crossing Warren Prairie Natural Area, we remain concerned about secondary impacts associated with interstate construction. This agency is currently working with timber companies and private landowners to acquire and/or manage lands surrounding Warren Prairie in a way that will promote the unique biological diversity of the area. Alignments 1 and 2 cross the northern edge of this project area. These alignments could compromise the project by encouraging incompatible urban encroachment. This agency prefers the more northern placement presented by alignments 3, 4, and 5.
Response:	Line 5 has been identified as the Preferred Alignment for the I-69 Project and is discussed in detail in Section 2.6.8.
Issue: Rare Plant Species	
Comment:	The area located south of Hampton in Calhoun County is known to support an unusual suite of rare plant species. Most of the know occurrences near the proposed alignments are found along the shared highway/railroad right-of-way located approximately 2.3 miles east of U.S. Highway 167, south of Hampton, and include the following plants (See ANHC letter in Appendix for list of rare plant species). Careful planning will be required in this area to minimize impacts to these known occurrences which include a new state record plant, horned bladderwort (*Utricularia cornuta*), and one of only two locations in the state known to support yellow-eyed grass (*Xyris baldwiniana*).
Response:	Coordination with the ANHC and other resource agencies will continue during final design of the highway to minimize impacts to natural resources to the extent practicable.

Table 7-7
SUMMARY OF AGENCY COMMENTS AND RESPONSES ON DRAFT EIS

Agency: U.S. Environmental Protection Agency, July 29, 2004	
Issue: Document Evalation	
Comment:	EPA has rated the DEIS as LO, Lack of Objections. General and specific comments are enclosed which we believe will help strengthen the impact analysis and NEPA decision-making process.
Response:	The suggested comments are detailed below.
Issue: Effect of Roads on Wildlife	
Comment:	The statements and references on page-47 (2nd column, 1st paragraph) regarding the effects of roads are outdates (i.e. 1075, 1982). There have been many, many studies performed and peer reviewed articles written on the subject (as opposed to the gray literature representing citations on p. 4-47), only some of which are listed below. This section should be updated with current information, most of which suggest that there is some effect on wildlife due to roads. An undated bibliography is offered for your consideration in finalizing the DEIS.
Response:	Section 4.9 has been revised to reflect more current literature on this issue.
Issue: GIS Screening	
Comment:	EPA Region 6 used its GIS Screen Tool (GISST) to perform an analysis of thirteen criteria on Corridor A. EPA hopes that this information will aid AHTD in determining a preferred alignment within this corridor and for identifying opportunities for mitigation, especially for the avoidance and minimization of potential impacts. Socioeconomic criteria can be used as a starting point to assess environmental justice issues and to prepare communications strategies for scoping meetings or public meetings. Environmental criteria can be used as a starting point to determine and prioritize traditional "NEPA" issues. GISS issues GIS coverages and imposes a scoring structure on the data so that issues may be identified and prioritized. Criteria are ranking using a 1 to 5 scale, with 1 representing low concern and 5 representing high concern. Scores of "4" or "5" may need investigated further. Corridor A is converted into 1 kilometer squares and the GISST is applied to each square. The GISST can be used to identify and prioritize singles issues, such as agricultural lands, threatened and endangered species, 500 year flood plains, impaired waters, managed/public lands, hydrography (stream density), wetlands, wildlife habitat, economically stressed populations, minority populations, population density, ozone nonattainment, and regulated pollution sources. Additionally, these criteria can be summed to aid in determining potential cumulative impacts ("Sum of All Criteria" map). GIS-compatible electronic files of this information may be sent to AHTD upon request. For details on databases, references, and specific criteria used, an electronic file of the GISST User's guide as well as other information can be found at www.epa.gov/earth1r6/6en/xp/enxp2a3.htm. The following criteria are highlighted and have areas that scored "high" within the proposed corridor.
Response:	Comment noted.

Table 7-7
SUMMARY OF AGENCY COMMENTS AND RESPONSES ON DRAFT EIS

Agency: U.S. Environmental Protection Agency, July 29, 2004 (cont.)	
Issue: Federal Threatened and endangered (T&E) Species	
Comment:	There are several areas within the corridor where sensitive species may be present. Coordination with the U.S. Fish and Wildlife Service is recommended.
Response:	As discussed in Section 4.10, coordination with the USFWS has been ongoing throughout the project development process. Threatened and endangered species issues have been adequately addressed (See DOI letter dated July 12, 2004 in Appendix).
Issue: Wildlife Habitat	
Comment:	Using land cover GIS coverages, there is a large number of 1 kilometer squares throughout the corridor that contain habitat that could potentially be used by wildlife (wetlands, rangelands, forest lands, woodlands, and/or bottomlands) and may be impacted by the proposed project. These potentially impacted areas may be opportunities for mitigation.
Response:	As discussed in Section 4.1, Landsat imagery was used from the University of Arkansas' Center for Advanced Spatial Technologies (CAST) that identified existing land uses and land cover types in block sizes of 247 acres. Due to the similarity in resolution used by both CAST and the EPA GISST analysis to identify the various wildlife habitats, both methods would have generated similar results. Opportunities for mitigation will continue to be explored during the final design process.
Issues: Agricultural Lands	
Comment:	The eastern portion of the corridor shows a higher density of agricultural land, primarily between Monticello and McGehee, AR.
Response:	Aerial photography from 1996-97 at a scale of 1" = 800 feet was used, in addition to field verification, to identify agricultural lands within the Preferred Corridor. As stated in Section 4.11.2, distinct areas of agricultural land were identified between Monticello and McGehee.
Issue: Hydrography (Density of streams)	
Comment:	The entire length of the corridor is peppered with areas of high stream density. These potentially impacted areas may be opportunities for avoidance or other mitigation opportunities.
Response:	As discussed in Section 4.6.1, perennial streams crossed by the alignments have been identified and any channel modifications and resulting stream mitigation will be determined during the final highway design process and will be coordinated with the COE, U.S. Fish and Wildlife Service, and state agencies as appropriate.

Table 7-7
SUMMARY OF AGENCY COMMENTS AND RESPONSES ON DRAFT EIS

Agency: U.S. Environmental Protection Agency, July 29, 2004 (cont.)	
Issue: Wetlands & 500 Year Floodplain	
Comment:	There are several areas that show a high density of wetlands, the largest one existing between Warren and Wilmar, AR. Additionally, there may be issues concerning the 500 year floodplain near Tillar, AR.
Response:	As discussed in Section 4.8, initially potential wetlands systems were identified using color infrared photography at a scale of 1"=2,000 and subsequently field verified. Section 4.8.2 identifies that the Saline River Basin contains the major wetland systems crossed by all alignments that includes the Warren/Wilmar area. Additionally, Section 3.9 discusses that the limits of 100 year floodplains within the Project Area were identified in accordance with guidance provide by FHWA Technical Advisory document TA6640.8A.
Issue: Minority Populations	
Comment:	There are several areas that show a high percentage of minority population. The largest of these exists west of Wilmar, AR and between Monticello and McGehee, AR. A score of "5" is greater than or equal to two times the state average of minorities (U.S. Census). This situation may factor into communication strategies concerning the project and environmental justice assessments.
Response:	The Environmental Justice assessment methodology is discussed in Section 4.2.1. U.S. Census Tract data identified a tract in Drew County with a substantially higher percentage of minorities which was located in the same general area as identified by the GISST analysis. Early public involvement helped to identified other small clusters of minority populations in the Louann, Warren, Wilmar, Monticello, and Selma areas which were also broadly identified by the GISST analysis.
Issue: Sum of All Criteria	
Comment:	The figure shows the sum for all 13 criteria analyzed using the GISST. The area between Warren and Wilmar, AR is an area identified as having multiple potential concerns or cumulative impacts and may need to be further addressed in the EIS.
Response:	The 13 criteria analyzed by the GISST have been investigated and evaluated throughout the project development process. The data used for the I-69 study was often more detailed than the GISST data and provided more site specific information.

Section 8: REFERENCES

SECTION 1

Arkansas State Highway and Transportation Department. Arkansas Delta Region Transportation Improvement Study. Planning and Research Division. 1993.

Intermodal Surface Transportation Efficiency Act of 1991, Public Law 102-240, Washington, D.C.,: U.S. Government Printing Office. pp 1923-1927, 2031-2037.1991.

I-69 Steering Committee. Corridor 18 Feasibility Study. November 1995.

I-69 Steering Committee. Corridor 18 Special Issues Study. 1997.

I-69 Steering Committee. Corridor 20 Feasibility Study. 1996.

I-69 Steering Committee. I-69 (Corridor 18) Special Environmental Study. Task C Report - Sections of Independent Utility. 1999.

Lower Mississippi Delta Development Commission. The Delta Initiatives. 1990.

Moskowitz, Karl. California Method of Assessing Diverted Traffic to Proposed Freeways. California Division of Highways. 1956.

National Environmental Policy Act. Public Law 91-190. Washington, D.C., U.S., Government Printing Office. 1970.

National Highway System Designation Act. Public Law 104-59. 1995.

Noland, Robert. Relationships Between Highway Capacity and Induced Vehicle Travel. Transportation Board. 1999.

North American Free Trade Agreement, Public Law 103-182, Washington, D.C., U.S. Government Printing Office. 1993.

Transportation Equity Act for the 21st Century. Public Law 105-178. Washington, D.C., U.S. Government Printing Office. 1988.

Transportation Research Board. National Research Council. Highway Capacity Manual Special Report 209. 2000.

U.S. Department of Transportation, Bureau of Transportation Statistics. Commodity Flow Survey. 1999.

U.S. Department of Transportation, Federal Highway Administration. Freight Analysis Network. 2000.

U.S. Department of Transportation, Federal Highway Administration. Guidance on the Development of Logical Project Termini, Memorandum. 1993.

U.S. Department of Transportation, Federal Highway Administration. The Interstate 69 Corridor: The National Perspective (prepared by Wilbur Smith Associates and HNTB Corporation). 2002.

SECTION 2

Transportation Research Board. National Research Council. Highway Capacity Manual –Special Report 209. 2000.

U.S. Department of Transportation, Federal Highway Administration. Guidance for Preparing and Processing Environmental and Section 4(f) Documents. Technical Advisory T 6640.8A. 1987.

SECTION 3

Arkansas Department of Environmental Quality. Integrated Water Quality Monitoring and Assessment Report. 2002.

Arkansas Department of Environmental Quality. Water Quality Inventory Report. 2000

Arkansas Geological Commission. Website. www.state.ar.us/agc/petroleu.htm. 2004.

Arkansas Soil and Water Conservation Commission. Lower Ouachita Basin Report. 1987.

Baker, R.C., Hewitt, F.A., and Billingsley, G.A. Groundwater Resources of the El Dorado area, Union County, Arkansas. University of Arkansas Research Series No. 14. 1948.

Conant, R. and J.T. Collins. A Field Guide to Reptiles and Amphibians. Houghton Mifflin Co., Boston, Massachusetts. 1991.

Cordell, Anna Harmon. Dates and Data of Union County Arkansas 1541-1948. Century Printing and Publishing Company. Monroe, Arkansas. 1984.

Council on Environmental Quality. Environmental Justice Guidance Under the National Environmental Policy Act. 1997.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. Classification of Wetlands and Deepwater Habitats of the United States., Report No. FWS/OBS-79/31. Office of Biological Services, Fish and Wildlife Service, U.S. Department of the Interior,. Washington, D.C. 1979.

Davis, Hester, ed. A State Plan for the Conservation of Archeological Resources in Arkansas. Research Series No. 21. Arkansas Archeological Survey, Fayetteville, Arkansas. 1994.

DeArmond, Rebecca. Old Times Not Forgotten: A History of Drew County. Rose Publishing Co., Little Rock, Arkansas. 1980.

Driscoll, F.G. Groundwater and Wells, Second Edition. Johnson Infiltration Systems. 1989.

Endangered Species Act. 7 U.S.C. 136;16 U.S.C. 460 et seq. 1973.

Executive Order 11988. Floodplain Management. 1977

Executive Order 11990. Protection of Wetlands. 1977.

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." Federal Register. 59 FR 7629, 1994.

Hanson, Gerald T., and Carl H. Moneyhon. Historical Atlas of Arkansas. University of Oklahoma Press, Norman, Oklahoma. 1989.

Hays, P.D. Sustainable Yield Estimation for the Sparta Aquifer in Union County, Arkansas. U.S. Geological Survey Water Resources Investigations Report 99-4274. 2000.

Hays, P.D. and Fugitt, D.T. The Sparta Aquifer in Arkansas' Critical Ground Water Areas – Response of the Aquifer to Supplying Future Water Needs. U.S. Geological Survey Water Resources Investigations Report 99-4075. 1999.

Hays, P.D., Lovelace, J.K., and Reed, T.B. Simulated Response to Pumping Stress in the Sparta Aquifer of Southeastern Arkansas and North-Central Louisiana, 1998-2027. U.S. Geological Survey Water Resources Investigations Report 98-4121. 1998.

Hines, F. Dee and J.S. Vissage. Forest Statistics for Arkansas Counties. U.S. Forest Service, Resource Bulletin so-141. 1988.

Holland, T.W. Water Use in Arkansas, 1995. U.S. Geological Survey Open File Report 99-188, I Sheet. 1995.

Howard, J.M, Colton, G.W., and W.L. Prior. Mineral, Fossil Fuel, and Water Resources of Arkansas. Bulletin 24. Arkansas Geological Commission. 115p. 1997.

James, D.A. and J.C. Neal. Arkansas Birds: Their Distribution and Abundance. University of Arkansas Press, Fayetteville, Arkansas. 1986.

Jeter, Marvin D., Jerome C. Rose, G. Ishmael Williams, Jr., and Anna M. Harmon. Archeology and Bioarcheology of the Lower Mississippi Valley and Trans-Mississippi South in Arkansas and Louisiana. Arkansas Archeological Survey Research Series No. 37. Arkansas Archeological Survey, University of Arkansas, Fayetteville, Arkansas. 1989.

Joseph, R.L. Potentiometric surface of the Sparta aquifer in eastern and south central Arkansas and north central Louisiana and the Memphis aquifer in east central Arkansas October 1997 – July 1997. U.S. Geological Survey Water Resources Investigations Report 97-4282. 1998.

Joseph, R.L. U.S. Geological Survey, written communication. 1999.

Mainfort, Robert C. and Marvin D. Jeter. Arkansas Archaeology: Essays in Honor of Dan and Phyllis Morse. The University of Arkansas Press, Fayetteville, Arkansas. 1999.

Paulson, Alan C. Roadside History of Arkansas. Mountain Press Publishing Company, Missoula, Montana. 1998.

Pittman, A.B. Identification, Survey, and Evaluation of Potential Habitats of *Geocarpon minimum* Mackenzie in Arkansas. Arkansas Natural Heritage Commission. 1988.

Posey, Bill. Arkansas Game and Fish Commission. Phone Communication. January 2004.

Sealander, J.A. and G.A. Heidt. Arkansas Mammals: Their Natural History, Classification and Distribution. University of Arkansas Press, Fayetteville, Arkansas. 1990.

Sidell, W. H. Survey of Routes from the Valley of the Mississippi to the Pacific Ocean. Map of the route surveyed from the Mississippi River at Lake Providence in Louisiana to the Great Bend of Red River at Fulton in Arkansas, under the orders of Co.l J.J. Abert, Chief of the Corps of Topographical Engineers. On file at the Arkansas History Commission, Little Rock, Arkansas. 1850.

Title 7. Code of Federal Regulations, Part 658, "Farmland Protection Policy Act." 1981.

Title 23. Code of Federal Regulations. Part 650, Subpart A. Location and Hydraulic Design of Encroachments on Floodplains.

Title 33. Code of Federal Regulations. Part 328.3. "Definitions of Waters of the United States."

Title 40. Code of Federal Regulations. Part 230.3. "Section 404(B)1 Guidelines For Specification of Disposal Sites for Dredged or Fill Material: Definitions."

U.S. Army Corps of Engineers. Corps of Engineers Wetland Manual. Technical Report Y-87-1. Washington, D.C. 1987.

U.S. Department of Agriculture - Natural Resources Conservation Service. Soil Survey of Bradley County, Arkansas. 1958.

U.S. Department of Agriculture - Natural Resources Conservation Service. Soil Survey of Desha County, Arkansas. 1972.

U.S. Department of Agriculture - Natural Resources Conservation Service. Soil Survey of Ouachita County, Arkansas.1973.

U.S. Department of Agriculture - Natural Resources Conservation Service. Soil Survey of Drew County, Arkansas. 1976.

U.S. Department of Agriculture - Natural Resources Conservation Service. Soil Survey of Calhoun and Dallas County, Arkansas. 1980.

U.S. Department of Commerce - Bureau of the Census - 1990 & 2000, Census of Population and Housing-General Economic Characteristics.

U.S. Department of Commerce - Bureau of the Census – 1990 & 2000, Census of Population and Housing - General Housing Characteristics.

U.S. Environmental Protection Agency. Interim Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses. 1997.

U.S. Department of Transportation 5650.2, Floodplain Management and Protection. April 23, 1979.

U.S. Department of Transportation, Office of the Secretary. "Order to Address Environmental Justice in Minority Populations and Low Income Population." Federal Register, Vol. 62, No. 72. 1997.

Webber, W. A. Railroad Map: New Township Map of the State of Arkansas. Office of the Librarian of Congress. Washington D.C. On file at the Arkansas History Commission, Little Rock, Arkansas. 1875.

SECTION 4

Arkansas Department of Environmental Quality. Regulation No. 2., Regulation Establishing Water Quality for Surface Water of the State of Arkansas. 2002.

Bank, F.G. "Position Paper: Secondary and Cumulative Impact Assessment in the Federal-Aid Highway Project Development Process." Federal Highway Administration, Project Development Branch, HEP-31, Washington, D.C. 1992.

Barrett, M. E., R.D. Zuber, E.R. Collins, J.F. Malina, R.J. Charbeneau, and G.H. Ward. A Review and Evaluation of Literature Pertaining to the Quantity and Control of Pollution From Highway Runoff and Construction. Technical Report CRWR 239. Center For Research in Water Resources, Austin, Texas. 1993.

Burke, R.C. and J.A. Sherburne. "Monitoring wildlife populations and activity along I-95 in northern Maine before, during, and after construction," Transportation Research Record 859:1-8. 1982.

California Department of Transportation. CAL3QHC - A Versatile Dispersion Model for Predicting Air Pollutant Levels Near Highways and Arterial Streets, November, 1979, Latest Addendum. 1995.

Carr, L.W. and L. Fahrig. Effect of road traffic on two amphibian species of differing vagility. Conservation Biology 15:1071-1078. 2001.

Executive Order 11988. Floodplain Management. 1977.

Executive Order 11990. Protection of Wetlands. 1977.

Executive Order 12898. "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." Federal Register. 59 FR 7629. 1994.

Fahrig, L., J.H. Pedlar, S.E. Pope, P.D. Taylor, and J.F. Wenger. Effect of road traffic on amphibian density. Conservation Biology. 73:177-182. 1995.

Federal Highway Administration. Traffic Noise Model, Version 1.0b. July 1999.

Gibbs, J.P. and W.G. Shriver. Estimating the effects of road mortality on turtle populations. Conservation Biology. 16:1647-1652. 2002.

Hartgen, D.T. and Ji Youn Kim. Commercial Development at Rural and Small Town Interstate Exits. Transportation Research Record 1649: 95-104. 1998.

Hels, T., and E. Buchwald. The effect of road kills on amphibian populations. Biological Conservation 99:331-340. 2001

Maestri, B., M.E. Dorman, and J. Hartigan. Managing Pollution from Highway Stormwater Runoff. Transportation Research Record. 1988.

Nunnally, Robert. Camden Port Authority. Phone Communication. July 2005.

Steen D. A. and J.P. Gibbs. Effects of Roads on the structure of freshwater turtle populations. Conservation Biology 18:1143-1148. 2004.

Stevens, J.F. Correspondence with ADEQ Surface Mining and Reclamation Division. 2003.

Title 23. Code of Federal Regulations. Part 650, Subpart A. Location and Hydraulic Design of Encroachments on Floodplains.

Title 23. Code of Federal Regulations. Part 772. Procedures for Abatement of Highway Traffic Noise and Construction Noise.

Title 33. Code of Federal Regulations. Part 328.3. Definitions of Waters of the United States.

Title 40. Code of Federal Regulations. Part 230.3. Section 404(B)1 Guidelines For Specification of Disposal Sites for Dredged or Fill Material: Definitions.

Tombulak, S.C. and C.A. Frissell. Review of ecological effects of roads on terrestrial and aquatic communities. Conservation Biology. 14:18-30. 2000.

Uniform Relocation Assistance and Real Property Policies Act of 1970. Public Law 91-646, 49 CFR, Part 24.

U.S. Army Corps of Engineers. Corps of Engineers Wetland Manual. Technical Report Y-87-1. Washington, D.C. 1987.

U.S. Army Corps of Engineers. "The Highway Methodology Workbook, Supplement, Wetland Functions and Values, A Descriptive Approach." New England Division, November 1995.

U.S. Army Corps of Engineers Navigation Data Center. Summary of Lock Statistics. Internet URL: http://www.iwr.usace.army.mil/ndc/lpms/lpms.htm. 2000.

U.S. Department of Commerce – Bureau of Census. 2000. Census of Housing and Population. General Housing Characteristics.

U.S. Department of Transportation 5650.2, Floodplain Management and Protection. April 23, 1979.

U.S. Department of Transportation. Federal Highway Administration. Highway Infrastructure Investment and Job Generation: A Look at the Positive Employment Impacts of Highway Investment. 1997.

U.S. Environmental Protection Agency, Mobile Source Emissions Model (MOBILE 5.0a). March 1993.

U.S. Environmental Protection Agency. National Ambient Air Quality Standards{Title 42, United States Code, Part 1857 (Section 109, 1970 Clean Air Act)}.

U.S. Geological Survey. Surface Water Data for Arkansas: Calendar Year Streamflow Statistics. Internet URL: http://nwis.waterdata.usgs.gov/ar/nwis/annual/calendar_year. 2000.

APPENDIX

Level of Service Definitions

Agency Correspondence

Tribal Correspondence

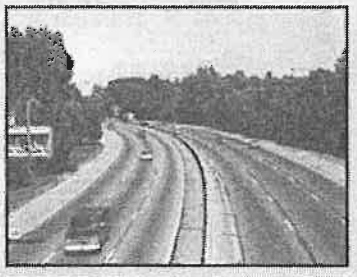
Existing and Predicted Sound Levels

Farmland Conversion Impact Rating Form

Stormwater Runoff Minimization Measures

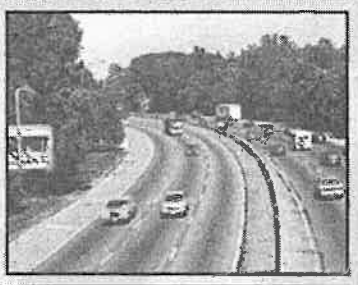
Public Involvement Flyers

LEVEL OF SERVICE DEFINITIONS



LOS A

Represents free-flow conditions. Individual users are virtually unaffected by the presence of others in the traffic stream.



LOS B

The presence of other vehicles begins to be noticeable.



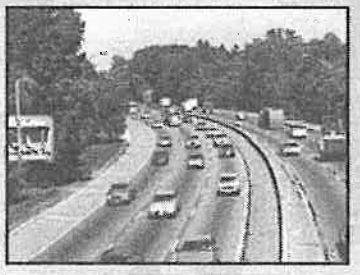
LOS C

Speeds are still near free-flow speed but the freedom to maneuver is noticeably restricted.



LOS D

Speeds begin to decline with still increasing flow. The freedom to maneuver becomes more restricted.



LOS E

Represents conditions at or near capacity. Even minor disruptions to the traffic stream, such as vehicles entering from a ramp or changing lanes, can cause delays as other vehicles yield to allow such maneuvers.



LOS F

Represents a breakdown in vehicular flow and is characterized by the cyclic formation and dissipation of queues. Queues form quickly behind points in the roadway where the arrival flow rate exceeds the departure flow rate.

Source: Highway Capacity Manual (1994)

AGENCY CORRESPONDENCE

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, Louisiana 71107

(318) 222-8110
FAX (318) 222-8102

November 13, 2001

Roger Wiebusch, Bridge Administrator
U.S. Coast Guard
Second Coast Guard District
1222 Spruce Street
St. Louis, MO 63103-2832

RE: I-69 Location Study
El Dorado - McGehee, Arkansas
Job No. 001873
Agency *Scoping Meeting and Cooperating Agency Request*

Dear Mr. Wiebusch:

On behalf of the Arkansas State Highway and Transportation Department (AHTD), Michael Baker Jr., Inc. (Baker) is pleased to invite you to participate in the environmental and location study of I-69 from El Dorado to McGehee, Arkansas. Baker has been retained by AHTD to perform comprehensive environmental and engineering studies and to prepare the necessary environmental documentation for this proposed highway facility. The project area encompasses all or portions of Desha, Chicot, Ashley, Drew, Union, Bradley, Calhoun, Ouachita, and Columbia Counties and is approximately 110 miles in length.

The proposed highway is a portion of the planned improvements to Congressionally-designated High Priority Corridor Number 18, which will link Indianapolis, Indiana to the lower Rio Grande Valley in Texas. This segment of I-69 will connect the Mississippi River crossing of I-69 to U.S. 167 in the El Dorado area and will enhance the transportation services and economic vitality of the project area. As part of this study, Baker will be investigating the environmental, socioeconomic, and engineering issues related to the proposed highway facility. A Scoping Meeting will be held at 1:30 p.m. on December 5, 2001 in Room 1001 of the State Highway Department Building, Little Rock, Arkansas. The purpose of this meeting is to discuss the study process and to identify specific issues you may have relative to your area of expertise.

We are also formally requesting that the U.S. Coast Guard participate as a Cooperating Agency in the Environmental Impact Statement (EIS) for this project. Your agency's involvement will insure that the EIS developed will satisfy your NEPA requirements including those related to project alternatives, environmental consequences, and appropriate mitigation if required.

Your participation in providing current, relevant information will insure the production of a comprehensive Environmental Impact Statement (EIS). We look forward to meeting with you and to your continued input throughout the duration of this project. If you would like to contact us in advance, please do so at (312) 222-8110 or tjsmith@mbakercorp.com.

Sincerely yours,

MICHAEL BAKER JR., INC.

Timothy J. Smith
Project Manager

TJS
Attachment

cc: Dale Loe – AHTD
Randal Looney - FHWA

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, Louisiana 71107

(318) 222-8110
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November 13, 2001

Michael Jansky
Office of Planning and Coordination
U.S. Environmental Protection Agency
Allied Bank Tower
1445 Ross Ave.
Dallas, TX 75202

RE: I-69 Location Study
El Dorado - McGehee, Arkansas
Job No. 001873
Agency *Scoping Meeting and Cooperating Agency Request*

Dear Mr. Jansky:

On behalf of the Arkansas State Highway and Transportation Department (AHTD), Michael Baker Jr., Inc. (Baker) is pleased to invite you to participate in the environmental and location study of I-69 from El Dorado to McGehee, Arkansas. Baker has been retained by AHTD to perform comprehensive environmental and engineering studies and to prepare the necessary environmental documentation for this proposed highway facility. The project area encompasses all or portions of Desha, Chicot, Ashley, Drew, Union, Bradley, Calhoun, Ouachita, and Columbia Counties and is approximately 110 miles in length.

The proposed highway is a portion of the planned improvements to Congressionally-designated High Priority Corridor Number 18, which will link Indianapolis, Indiana to the lower Rio Grande Valley in Texas. This segment of I-69 will connect the Mississippi River crossing of I-69 to U.S. 167 in the El Dorado area and will enhance the transportation services and economic vitality of the project area. As part of this study, Baker will be investigating the environmental, socioeconomic, and engineering issues related to the proposed highway facility. A Scoping Meeting will be held at 1:30 p.m. on December 5, 2001 in Room 1001 of the State Highway Department Building, Little Rock, Arkansas. The purpose of this meeting is to discuss the study process and to identify specific issues you may have relative to your area of expertise.

We are also formally requesting that the U.S. Environmental Protection Agency participate as a Cooperating Agency in the Environmental Impact Statement (EIS) for this project. Your agency's involvement will insure that the EIS developed will satisfy your NEPA requirements including those related to project alternatives, environmental consequences, and appropriate mitigation if required.

Your participation in providing current, relevant information will insure the production of a comprehensive Environmental Impact Statement (EIS). We look forward to meeting with you and to your continued input throughout the duration of this project. If you would like to contact us in advance, please do so at (312) 222-8110 or tjsmith@mbakercorp.com.

Sincerely yours,

MICHAEL BAKER JR., INC.

Timothy J. Smith
Project Manager

TJS
Attachment

cc: Dale Loe – AHTD
Randal Looney - FHWA

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

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November 13, 2001

Allan J. Mueller
U.S. Dept. of Interior
Fish and Wildlife Service
1500 Museum Road
Suite 105
Conway, AR 72032

RE: I-69 Location Study
El Dorado - McGehee, Arkansas
Job No. 001873
Agency *Scoping Meeting and Cooperating Agency Request*

Dear Mr. Mueller:

On behalf of the Arkansas State Highway and Transportation Department (AHTD), Michael Baker Jr., Inc. (Baker) is pleased to invite you to participate in the environmental and location study of I-69 from El Dorado to McGehee, Arkansas. Baker has been retained by AHTD to perform comprehensive environmental and engineering studies and to prepare the necessary environmental documentation for this proposed highway facility. The project area encompasses all or portions of Desha, Chicot, Ashley, Drew, Union, Bradley, Calhoun, Ouachita, and Columbia Counties and is approximately 110 miles in length.

The proposed highway is a portion of the planned improvements to Congressionally-designated High Priority Corridor Number 18, which will link Indianapolis, Indiana to the lower Rio Grande Valley in Texas. This segment of I-69 will connect the Mississippi River crossing of I-69 to U.S. 167 in the El Dorado area and will enhance the transportation services and economic vitality of the project area. As part of this study, Baker will be investigating the environmental, socioeconomic, and engineering issues related to the proposed highway facility. A Scoping Meeting will be held at 1:30 p.m. on December 5, 2001 in Room 1001 of the State Highway Department Building, Little Rock, Arkansas. The purpose of this meeting is to discuss the study process and to identify specific issues you may have relative to your area of expertise.

We are also formally requesting that the U.S. Fish and Wildlife Service participate as a Cooperating Agency in the Environmental Impact Statement (EIS) for this project. Your agency's involvement will insure that the EIS developed will satisfy your NEPA requirements including those related to project alternatives, environmental consequences, and appropriate mitigation if required.

Your participation in providing current, relevant information will insure the production of a comprehensive Environmental Impact Statement (EIS). We look forward to meeting with you and to your continued input throughout the duration of this project. If you would like to contact us in advance, please do so at (312) 222-8110 or tjsmith@mbakercorp.com.

Sincerely yours,

MICHAEL BAKER JR., INC.

Timothy J. Smith
Project Manager

TJS
Attachment

cc: Dale Loe – AHTD
Randal Looney - FHWA

Baker

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

Petroleum Square II
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November 13, 2001

Elizabeth Guynes
Chief Regulatory Branch
USACE
4155 Clay Street
Vicksburg, MS 39183

RE: I-69 Location Study
El Dorado - McGehee, Arkansas
Job No. 001873
Agency *Scoping Meeting and Cooperating Agency Request*

Dear Ms. Guynes:

On behalf of the Arkansas State Highway and Transportation Department (AHTD), Michael Baker Jr., Inc. (Baker) is pleased to invite you to participate in the environmental and location study of I-69 from El Dorado to McGehee, Arkansas. Baker has been retained by AHTD to perform comprehensive environmental and engineering studies and to prepare the necessary environmental documentation for this proposed highway facility. The project area encompasses all or portions of Desha, Chicot, Ashley, Drew, Union, Bradley, Calhoun, Ouachita, and Columbia Counties and is approximately 110 miles in length.

The proposed highway is a portion of the planned improvements to Congressionally-designated High Priority Corridor Number 18, which will link Indianapolis, Indiana to the lower Rio Grande Valley in Texas. This segment of I-69 will connect the Mississippi River crossing of I-69 to U.S. 167 in the El Dorado area and will enhance the transportation services and economic vitality of the project area. As part of this study, Baker will be investigating the environmental, socioeconomic, and engineering issues related to the proposed highway facility. A Scoping Meeting will be held at 1:30 p.m. on December 5, 2001 in Room 1001 of the State Highway Department Building, Little Rock, Arkansas. The purpose of this meeting is to discuss the study process and to identify specific issues you may have relative to your area of expertise.

We are also formally requesting that the U.S. Army Corps of Engineers participate as a Cooperating Agency in the Environmental Impact Statement (EIS) for this project. Your agency's involvement will insure that the EIS developed will satisfy your NEPA requirements including those related to project alternatives, environmental consequences, and appropriate mitigation if required.

Your participation in providing current, relevant information will insure the production of a comprehensive Environmental Impact Statement (EIS). We look forward to meeting with you and to your continued input throughout the duration of this project. If you would like to contact us in advance, please do so at (312) 222-8110 or tjsmith@mbakercorp.com.

Sincerely yours,

MICHAEL BAKER JR., INC.

Timothy J. Smith
Project Manager

TJS
Attachment

cc: Dale Loe – AHTD
Randal Looney - FHWA

I-69 Location Study
El Dorado – McGehee, Arkansas
Meeting Minutes

Subject: Agency Scoping Meeting

Attendees: See Attached List

Time and Place: December 5, 2001, 1:30 p.m.
Arkansas Highway and Transportation Department (AHTD) Headquarters
Rm. 1001
Little Rock, Arkansas

Discussions:

1. Tim Smith led the discussions and presented an overview of the I-69 Corridor from Indianapolis, IN to the Mexican border near McAllen/Brownsville, TX. The development of this corridor has been a multi-state effort. To facilitate further planning and environmental studies, this corridor has been divided into 32 Sections of Independent Utility (SIUs). This particular section of I-69 from US 167 near El Dorado to US 65 near McGehee, Arkansas is SIU 13 and is approximately 85-110 miles in length.

2. The 24 month project study process was discussed (attached). Four main phases of work will be completed; 1) Scoping and Purpose and Need, 2) Corridor Study, 3) Alignment Study, 4) Environmental Documentation.

3. Scoping and Purpose and Need were discussed. It was emphasized that the purpose of the agency scoping meeting was to identify specific issues of concern at the beginning of the project. Early identification of key environmental issues will insure that these concerns are adequately considered and addressed during the project study process. Scoping meetings will also be held with local elected officials and community leaders to obtain input on local purpose and need issues. A traffic analysis will be conducted to evaluate the existing traffic conditions in the project area and to predict future traffic conditions. A Purpose and Need Statement will be developed for the project that will include portions of the previously developed national I-69 purpose and need, but will emphasize the specific purpose and need issues within SIU 13.

4. The Corridor Study was discussed. A project Geographic Information System (GIS) is being developed that will include an environmental inventory of the approximately 3,000 square mile project area (attached). Environmental data collection has been initiated and is on-going. Several 2 mile wide corridors will be developed within the project area that will consider engineering, social, and environmental issues. The developed corridors will avoid and minimize involvement with the environmental resources to the extent practicable. The developed corridors will be presented to the public, resource agencies, participating Native American Tribes, and local elected officials for review and comment. A Corridor Study report will be prepared and distributed to the resource agencies and participating Native American Tribes for comment and concurrence on one Preferred Corridor. This corridor may be one of the corridors originally developed or may be a combination of several corridors. The Preferred Corridor will allow the greatest opportunity to further avoid and minimize environmental impacts during the Alignment Study.

5. The Alignment Study was discussed. Three highway alignments approximately 300 feet in width will be developed within the Preferred Corridor. Detailed field studies will be conducted within the Preferred Corridor to delineate wetlands, conduct noise studies, identify the built environment, identify hazardous materials sites, and confirm oil and gas well locations. The developed alignments will be presented to the public, resource agencies, participating Native American Tribes, and local elected officials for review and comment. A Preferred Alignment will be identified and carried into the Draft Environmental Impact Statement (DEIS).

6. The Environmental Documentation phase of the project will include preparation of the Draft and Final EISs, public hearings on the Draft EIS, and a Phase I cultural resource survey of the Preferred Alignment. Environmental commitments will be finalized and a Record of Decision will be prepared and issued formally completing the environmental process for this project.

7. Public outreach was discussed. A project mailing list will be developed to inform resource agencies, Native American Tribes, local elected officials and community leaders, and the public of upcoming meetings and project status. Baker has a local office in Pine Bluff, Arkansas that can responds to citizen concerns and requests for information. A project web site is being developed. Baker staff is available to attend meetings of and provide updates to any community or civic groups or organizations. Notices of public meetings and hearings will appear in all local newspapers

8. Environmental resource considerations were discussed Information on various environmental resources will be collected during the corridor and alignment studies (see attached table). It was noted that residential and property impacts are the greatest concern of the public. Red-cockaded woodpecker and wetlands were noted as other important resources. Wetland mitigation requirements will be determined through coordination with the Corps of Engineers during the Documentation phase of the study. Opportunities to avoid and minimize impacts to these and other resources are considered at both the corridor and alignment level.

9. Project milestones were discussed. The Corridor Study is on-going and public meeting are anticipated in February/March 2002 to discuss the developed corridors. Alignment outreach is slated for late summer 2002 and the DEIS scheduled for completion in the Spring of 2003.

10. The group was asked to identify specific resources that should be considered during the study process. Philip Hollis stated the COE's concern with avoiding and/or minimizing involvement with Seven Devil's Swamp, Felsenthal National Wildlife Refuge, H.K. Thatcher Lock and Dam on the Ouachita River, Moro Bay State Park, red-cockaded woodpeckers (RCW), and wetlands. Several of these areas have already been entered into the project GIS. Contact has been made with Georgia Pacific, Deltic, and Potlatch timber corporation biologists with respect to RCW locations and habitat. These companies have active monitor programs for this species and have shared this information for our use on other projects. Project area wetlands are being identified through photointerpretation of Color Infra-red photography.

11. Tom Foti suggested clarifying the public versus private lands in the Seven Devil's Swamp area. Tom stated that there would be small but significant habitats that should be considered including habitat for *Geocarpon minimum*. Baker will initiate a request for information from the Natural Heritage Commission to identify these known areas. Seasonally perched wetlands were also discussed. Further studies will be done to identify these areas. Floodplain information is being

obtained from the Federal Emergency Management Agency (FEMA) which will identify 100-year floodplain areas.

12. Craig Uyeda stated that Cut-off Creek Wildlife Management area, Lake Monticello, and other lakes in the area should be considered during project development. The Game Commission also leases timber company lands for recreational hunting throughout the project area.

13. Anita Chouinard stated that Moro Bay State Park and Bayou Bartholomew should be considered during project development. The location of Moro Bay State Park has been entered into the project GIS. Efforts to minimize impacts to Bayou Bartholomew will be considered. This waterbody will be crossed by the highway in the McGehee area. Baker has worked with the Bayou Bartholomew Alliance on a recent project to identify specific areas of concern and on-going bayou restoration efforts. Other groups that may have specific knowledge of this resource will be contacted.

14. Sandy Formica stated that watershed boundaries may be available for the project area. Baker will obtain this information for the project GIS. Sandy suggested contacting local conservation district boards for information and that the Nature Conservancy may have some property set aside for conservation within the project area.

15. Mike Jansky provided a draft guidance document that will be used by EPA for all sections of I-69. This guidance will help maintain some level of consistency with respect to the information provided in the environmental documents across the various states now working on I-69 lines.

16. Bruce McLaren stated that any crossing of the Ouachita River should be as perpendicular and in a straight a stretch of the river as possible. A new bridge crossing will require a new bridge permit. Bruce stated that the EIS should discuss impacts to navigation as well as impacts from the bridge itself. Bruce said that he could provide examples of a recent write up that was accepted by the Coast Guard.

17. Meeting adjourned at 3:00 p.m.

I-69 Location Study
El Dorado - McGehee, Arkansas
Job No. 001873

Agency Scoping Meeting
December 5, 2001

	NAME	AGENCY / DIVISION	PHONE NUMBER	E-MAIL
1	Philip Hollis	Vicksburg District, Corps	601-631-5491	Philip.B.Hollis@usace.army.mil
2	Anita Chouinard	AR. Parks + Tourism	(501) 682-6946	Anita.Chouinard@mail.state.ar.us
3	Tom Foti	Ark. Natural Heritage Comm	501 324-9761	tom@arkansasheritage.org
4	Bill Richardson	AR Hwy + Trans	501-569-2379	bill.richardson@ahtd.state.ar.us
5	CRAIG UYEDA	AR. GAME + FISH COMM	501-219-4310	CKUYEDA@AGFC.STATE.AR.US
6	James Mooney	Michael Baker, Jr. Inc	870-247-3974	JMOONEY@mbakercorp.com
7	BRUCE MCLAREN	U.S. COAST GUARD	314-539-3900 XT 379	BMCLAREN@CGSTL.USCG.MIL
8	Sandi Formica	ADEQ / Environmental Preservation	(501)682-0020	formica@adeq.state.ar.us
9	Gary DalPorto	FHWA - AR	(501) 324-6441	gary.dalporto@fhwa.dot.gov
10	RANDAL LOONEY	FHWA - AR	(501) 324-6430	randal.looney@fhwa.dot.gov
11	MIKE JANSKY	USEPA - Region 6	214-665-7451	JANSKY.MICHAEL@EPA.GOV
12	Marge Harney	US FWS	501-513-4471	margaret_harney@fws.gov
13	LAMAR SMITH	MICHAEL BAKER, JR. INC.	(601) 933-6224	
14	Tom H. Rains	FHWA	(501) 324-6439	

Agency Scoping Meeting
December 5, 2001

	NAME	AGENCY / DIVISION	PHONE NUMBER	E-MAIL
15	Glenn Calloway	Michael Baker Jr.	601-932-8895	gcalloway@mbakercorp.com
16	John Fleming	AHTD/ENV. DIV.	501-569-2085	JTFD177@AHTD.STATE.AR.U
17	STEVE DROWN	ADEQ - WATER DIVISION	501-682-0645	drown@ADEQ.State.AR.US
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I-69 Location Study
El Dorado - McGehee

ENVIRONMENTAL RESOURCE CONSIDERATIONS		
ISSUE	**CORRIDOR STUDIES**	**ALIGNMENT STUDIES**
Air Quality		For developed Alignments
Community Impacts	Community leaders	Evaluation of developed alignments
Cultural Resources Section 106	AMASDA database search for known Sites/Structures Additional AHPP Historic Structures database search	Phase I Cultural Resources Survey on Preferred Alignment plus inventory within developed Alignments
Environmental Justice	Census data, Community leaders	Plus identification within developed alignments
Farmland Soils		NRCS Soil Surveys
Floodplains & Floodways	FEMA FIRM maps	FEMA FIRM maps
Hazardous Waste, USTs, landfills, dump sites	Records Search	Plus identification within developed Alignments
Native American Interests	Coordination with Indian Nations	Coordination with Indian Nations
Noise Analysis		For developed Alignments
Oil and Gas	Coordination with AR Oil and Gas Commission	Plus identification within developed alignments
Ouachita River Crossing/Navigation	Coordination with US Coast Guard Horiz. and Vertical clearance requirements	Coordination with US Coast Guard Horiz. and Vertical clearance requirements
Potential Section 4(f) & Section 6(f) Properties	USGS Quads, Natural Heritage, AR Parks and Tourism	Plus identification within developed Alignments
Protected Species	Natural Heritage Database Coordination with USFWS/Timber Company Biologists	Plus identification of Potential Habitat No species surveys planned at this time.
Public Water Supply	Dept. of Health Data	Plus identification within developed Alignments
Relocations & Community Facilities	USGS Quads, aerial photos/field reconnaissance	Plus inventory within developed Alignments
Surface Water Resources	National or State designations	Plus available water quality and stream classification data
Wetland Reserve Program Lands	NRCS	NRCS – verify and update data
Wetlands	USGS Quads, CIR photointerpretation/Ground truthing	Plus Wetland Delineations within developed Alignments

Arkansas Game & Fish Commission

2 Natural Resources Drive Little Rock, Arkansas 72205

Hugh C. Durham
Director

December 10, 2001

Michael Baker Jr.
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, Louisiana 71107

Dear Mr. Baker:

Biologist from our agency have reviewed the proposed I-69 Highway project study area, which goes from El Dorado to McGehee. Attached are some maps that will help you locate our Wildlife Management Areas, Federal Lands, Leased Lands, Lakes & Ponds, and Rivers & Streams. We hope this will help you locate our areas and other areas that we recommend avoiding when you consider the routing of the proposed highway. Our agency appreciates the opportunity to comment on the proposed project and will be glad to assist you with any other information you may need for this project.

Sincerely,

Robert K. Leonard

Robert K. Leonard, Biologist
River Basins Division

Mike Huckabee
Governor

Jim Pickens
Director

Arkansas Department of Economic Development

December 19, 2001

Timothy Smith
Project Manager
Michael Baker Jr., Inc.
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, LA 71107

Dear Mr. Smith,

I am responding on behalf of Arkansas Economic Development Director, Mr. Jim Pickens, regarding your recent letter concerning the I-69 location study from El Dorado to McGhee, AR. The Arkansas Department of Economic Development will work closely with the cities and counties involved in the study and provide information and assistance necessary to comply with your requests.

The information request you outlined in your letter has been referred to the Department's Research Unit, who will coordinate with our Business and Community Development Staff to respond. Please feel free to contact me if you would like to arrange a meeting with our staff for further discussion. We look forward to working with you and the local areas involved.

Sincerely,

Alan K. McVey

AM/mlm

One Capitol Mall
Little Rock, Arkansas 72201
501.682.1121
FAX 501.682.7394
www.1-800-ARKANSAS.com

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REGION 6
1445 ROSS AVENUE
DALLAS, TEXAS 75202-2733

RECEIVED
DEC 3 0 2001

NOTICE

The Ground Water/UIC Section, Region 6 U.S. Environmental Protection Agency (EPA) has received descriptions of the following project:

Job No. 001873
I-69 Location Study
110 Miles
El Dorado to McGehee, Arkansas

In administering the sole source aquifer (SSA) program under Section 1424 of the Safe Drinking Water Act our Office performs evaluations of project with federal financial assistance which are located over a designated sole source aquifer.

Based on the information provided, we have concluded that the projects do not lie within the boundaries of a designated sole source aquifer and are thus not eligible for review under the SSA program.

For further information on this determination or on the sole source aquifer program, please contact the project evaluator listed below.

cc

Project evaluated by: Clay Chesney
(214) 665-7128.

Date: November 28, 2001

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) 539-3900x379
FAX: (314) 539-3755

16591.1/240.0-330.0 OBL
January 2, 2002

Mr. Timothy J. Smith
Project Manager
Michael Baker Jr., Inc.
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, LA 71107

Subj: PROPOSED NEW I-69 HIGHWAY BRIDGE, MILE 240.0-330.0, OUACHITA-BLACK WATERWAY

Dear Mr. Smith:

This is in reply to your letter of November 13, 2001, inviting the Coast Guard to attend a Scoping Meeting and to act as a Cooperating Agency for the National Environmental Policy Act (NEPA) process on the subject project. We agree to serve as a Cooperating Agency for the project from the navigational standpoint. We should be given the opportunity to review the Draft Environmental Impact Statement. Our review and recommendations on the vertical and horizontal clearance requirements for river traffic will be coordinated with your bridge designers.

As I promised at the meeting, the following comments are offered:

a. The title page for the document should show the U.S. Coast Guard as a Cooperating Agency.

b. Table of Contents, (in the area where you list impacts):

(1) Include a Section entitled Navigational Impacts.

(2) Include a Section entitled Bridge Impacts.

c. Document Text (in the sections where you discuss navigational impacts and bridge impacts):

(1) In the navigation impacts section, discuss the impacts upon navigation caused by the new bridge for the Ouachita-Black Waterway. Use enclosure (1) for a list of items to be considered in the discussion.

Subj: PROPOSED NEW I-69 HIGHWAY BRIDGE, MILE 240.0-330.0, OUACHITA-BLACK WATERWAY

(2) In the bridge impacts section, discuss the impacts the bridge will have upon the items listed in enclosure (2). Limit your discussion to only those impacts between the two bridge abutments. The list is provided as a guide only; it is not intended that you complete the form and return it.

d. Enclosure (3) is an example of a navigational and bridge impacts discussion.

Please contact me at the above telephone number if you have questions regarding our comments or requirements.

Sincerely,

Bruce L. McLaren

BRUCE L. MCLAREN
Project Manager
By direction of the District Commander

Encl: (1) Navigation Evaluation
(2) Environmental Assessment
(3) Sample Navigational and Bridge Impacts discussion

Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000
Fay W. Boozman, MD, MPH, Director
Mike Huckabee, Governor

January 11, 2002

RECEIVED
JAN 14 2002

Mr. David Bednar, Jr.
Senior Environmental Scientist
Michael Baker Jr., Inc.
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, Louisiana 71107

RE: Wellhead Protection Areas, I-69 Location Study, El Dorado-McGehee, Arkansas

Dear Mr. Bednar:

Please find enclosed the Wellhead Protection Areas (WHPA's) for the above referenced study area. Following a brief phone conversation with Mr. Smith (Baker employee) on December 3, 2001, it was determined that ArcView® GIS shapefiles were acceptable by your CAD department. Therefore, shapefiles were created using ArcView® 3.2 GIS software and are enclosed on a 3.5-inch floppy diskette. The diskette contains the public water supply wells and WHPA's that are located within the project area you provided in your letter dated November 14, 2001. Additionally, shapefiles of the project area and the county boundaries have also been included on the diskette.

Furthermore, please feel free to contact me at 501-661-2623 if you have any additional questions or require any additional information.

Sincerely,

Dan Smith
Senior Geologist
Division of Engineering

Enclosures: 3.5-inch diskette

Arkansas Soil and Water Conservation Commission

J. Randy Young, P.E.
Executive Director

101 EAST CAPITOL
SUITE 350
LITTLE ROCK, ARKANSAS 72201

PHONE 501-682-1661
FAX 501-682-3991
www.accessarkansas.org/aswcc

January 11, 2002

RECEIVED
JAN 2 2 2002

Timothy J. Smith, Project Manager
Michael Baker Jr., Inc.
Petroleum Square II
1324 North Hearne Ave., Suite 255
Shreveport, Louisiana 71107

Re: I-69 Location Study, Job # 001873

Dear Mr. Smith:

Regrettably, I was unable to attend the Scoping Meeting for the I-69 Location Study from El Dorado to McGehee, Arkansas, held on December 5, 2001. However, I did notice that you requested any information relating to the corridor and alignment phases of the study. Please be advised that the Arkansas Soil and Water Conservation Commission currently operates the Camp Nine Mitigation Bank located approximately 10 miles southwest of McGehee. The location and legal description of the bank are as follows:

> South one-half (S½) Northeast Quarter (NE¼), Southeast Quarter (SE¼), and South one-half (S½) Southwest Quarter (SW¼) of Section Twenty-six (Sec. 26), Township Fourteen South (T-14-S), Range Three West (R-3-W), Chicot County, Arkansas, more particularly described as follows: commencing at the Northeast corner of said Sec. 26; thence South along section line a distance of 1320.13 feet to a ½" re-bar marking the NE corner of the S½, NE¼, of said Section 26, the point of beginning; thence continue South along section line a distance of 3960.39 feet to a railroad iron marking the SE corner of said Sec. 26; thence S89°33'05"W along section line a distance of 5265.91 feet to a railroad iron marking the SW corner of said Sec. 26.; thence N00°06'21"E along section line a distance of 1320.30 feet to a ½" re-bar marking the NW corner of the S½ SW¼ of said Sec. 26; thence 89°33'11"E along North line of said S½ SW¼ Sec. 26 to a ½" re-bar marking the NE corner of said S½ SW¼ Sec. 26; thence N00°03'10"W along quarter line a distance of 2640.43 feet to a ½" re-bar marking the NW corner of said S½ NE¼ of Sec. 26; thence 89°33'23"E along North line of said S½ NE¼ Sec. 26 a distance of 2629.31 feet to a ½" re-bar marking the NE corner of said S½ NE¼ Sec. 26; T-14-S, R-3-W, the point of beginning and containing 318.995 acres more or less.

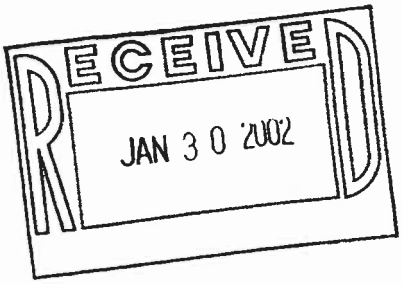
Thank you for the opportunity to review and comment on the corridor and alignment phases of the I-69 Location Study. If you require further assistance, please contact Kenneth Colbert of my staff at 501-682-1608.

Sincerely,

J. Randy Young, P.E.
Executive Director

JRY/kc

USDA
UNITED STATES DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service
419 West Gaines
Monticello, AR 71655



January 28, 2002

Mr. David Bednar, Jr.
Geologist
Petroleum Square II
1324 North Heame Avenue, Suite 255
Shreveport, Louisiana 71107

Mr. Bednar,

Enclosed are the WRP sites that may be affected by construction of I-69 in Desha and Drew Counties, Arkansas.

Please let me know if you have questions or need further assistance.

Chris Avery
Resource Soil Scientist

The Natural Resources Conservation Natural
Service works hand-in-hand with the American people to conserve the natural resources on private lands.

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4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

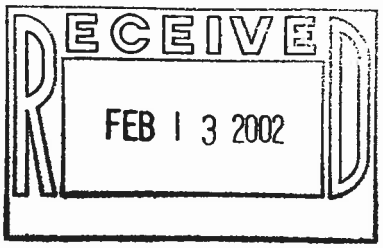
REPLY TO
ATTENTION OF:

http://www.mvk.usace.army.mil/

February 11, 2002

Operations Division
Regulatory

SUBJECT: Cooperating Agency Status, Interstate 69, El Dorado-McGehee, Arkansas



Mr. Timothy J. Smith
Project Manager
Michael Baker Jr., Incorporated
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, Louisiana 71107

Dear Mr. Smith:

I am responding to your letter of November 13, 2001, requesting that the Corps of Engineers be a cooperating agency for the subject project.

We will be happy to act as a cooperating agency by attending meetings when possible, reviewing related documents, including a wetlands determination, and completing a Section 404(b)(1) Guidelines review. Mr. Philip Hollis of my staff will be the point of contact for this action.

If we can be of further assistance, please contact Mr. Hollis, telephone (601) 631-5491, telefax (601) 631-5459.

Sincerely,

Elizabeth S. Guynes
Chief, Regulatory Branch

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The Department of
Arkansas
Heritage

Mike Huckabee, Governor
Cathie Mathews, Director

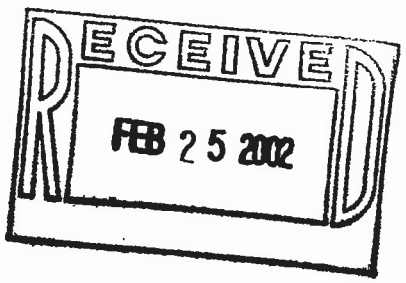
Arkansas Arts Council
▪
Arkansas Historic
Preservation Program
▪
Historic Arkansas Museum
▪
Delta Cultural Center
▪
Old State House Museum

Arkansas Natural
Heritage Commission

1500 Tower Building
323 Center Street
Little Rock, AR 72201
(501) 324-9619
fax: (501) 324-9618
tdd: (501) 324-9811
e-mail: info@arkansasheritage.org
website:
http://naturalheritage.com

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Date: February 22, 2002
Subject: Elements of Special Concern
I-69 Location Study
El Dorado – McGehee, Arkansas
Job No. 001873
ANHC No.: P-CF..-01-134



Mr. Timothy J. Smith
Michael Baker Jr., Inc.
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, LA 71107

Dear Mr. Smith:

Staff members of the Arkansas Natural Heritage Commission (ANHC) have reviewed our files for records indicating the occurrence of rare plants and animals, outstanding natural communities, natural or scenic rivers, or other elements of special concern within the project boundaries for the I-69 Location Study delineated in the ArcView shape file you provided. This data is made available on the enclosed CD. Documentation describing the data is included as "hard copy" and as Microsoft Word files on the CD. It is very important that you carefully review this documentation to appropriately interpret the data provided.

The study area is an ecologically diverse region. Our records indicate 105 different elements (species, natural communities, colonial nesting sites) with 390 occurrences, 2 ANHC System Natural Areas, and 36 potential natural areas recorded in the study boundaries. Ecoregional planning conducted by The Nature Conservancy and its conservation partners have identified eight large conservation sites. The portion of the Saline River bisecting the study area is in the state System of Natural and Scenic Rivers. This river segment also has the following designations under the Arkansas Department of Environmental Quality's Regulation 2 establishing water quality standards for surface waters in Arkansas: Ecologically Sensitive Waterbody, Extraordinary Resource Water, and Natural and Scenic Waterway.

Because of the significant natural resources in this area, it is very important that the planning process include resource and conservation entities in the corridor and alignment development phases. Once GIS layers have been pulled together, it may be appropriate to meet with these organizations to obtain input and assistance with data interpretation. We encourage, and would be happy to participate in such a meeting. We are forwarding a copy of this letter to The Arkansas Field Office of The Nature Conservancy. One of the data layers we are providing was derived through their conservation activities. They may have additional information that will be of use to you in your planning efforts.

I-69 Location Study
El Dorado - McGehee, Arkansas
Job No. 001873

Agency Coordination Meeting
March 12, 2002

	NAME	AGENCY / DIVISION	PHONE NUMBER	E-MAIL
1	J. Michael Howard	AR Geol. Comm	501-296-1877	Mike.Howard@mail.state.AR.US
2	William Lee Prior	Ark Geological Commission	501-296-1877	bill@prior@state.ar.us
3	LAMAR SMITH	BAKER	(601) 933-6224	
4	Tom H. Rains	FHWA	(501) 324-6439	
5	RANDAL LOONEY	FHWA	(501) 324-6430	
6	Kenneth Colbert	ASWCC	501-682-1608	Kenneth.colbert@mail.state.ar.us
7	Bob Leonard	AG&FC	501-219-4312	
8	JAMES MOONEY	BAKER		
9	Susan Mooney	"		
10	Tim SMITH	"		
11	LAMAR SMITH	"		
12	Tom Foti	Ark Natural Heritage	501-324-9761	tom@arkansasheritage.org
13	ADAM HARRIS	MEDC	870 367 3076	
14	Philip Hollis	Corps of Engineers	601-634-5411	

Please keep in mind that the project area may contain important natural features of which we are unaware. Staff members of the Arkansas Natural Heritage Commission have not conducted a field survey of the project site. Our review is based on data available to the program at the time of the request. It should not be regarded as a final statement on the elements or areas under consideration, nor should it be substituted for on-site surveys required for environmental assessments. Because our files are updated constantly, you may want to check with us again at a later time.

Thank you for consulting us. It has been a pleasure to work with you on this study.

Sincerely,

Cindy Osborne

Cindy Osborne
Data Manager

Enclosures: Project Element List and Legend
Summary of data layers and data terms
"Hard copy" Documentation for Data Layers
Data CD
Invoice

CC: Dave Gosse, Arkansas Field Office, The Nature Conservancy

cc: Dale Loe - AHTD
Randal Looney - FHWA

Agency Coordination Meeting
March 12, 2002

	NAME	AGENCY / DIVISION	PHONE NUMBER	E-MAIL
15	Rose Mary Jackson	Ark Dept Econ. Dev.	501 682 7830	rjackson@1800ARKANSAS.com
16	Roger Milligan	Ark. Game & Fish	870-367-3553	rmilligan@agfc.state.ar.us
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Arkansas Soil and Water Conservation Commission

J. Randy Young, P.E.
Executive Director

101 EAST CAPITOL
SUITE 350
LITTLE ROCK, ARKANSAS 72201

PHONE 501-682-1611
FAX 501-682-3991

May 22, 2002

Timothy J. Smith
Michael Baker Jr., Inc.
Petroleum Square II
1324 North Hearne Ave., Suite 255
Shreveport, Louisiana 71107

Re: I-69 Corridor Study Report

Dear Mr. Smith:

Thank you for the opportunity to comment on the I-69 Corridor Study Report (Report). My staff has reviewed the Report, and concur that Corridor A from U.S. 82 near El Dorado to U.S. 167 near Hampton and Corridor B from U.S. 167 to U.S. 65 in McGehee be carried forward into the Alignment Study Phase as the Preferred Corridor.

Therefore, I recommend that the segments of Corridors A and B identified above be carried into the Alignment Study Phase. Also, it was brought to my attention that regardless of which alignment was selected as the Preferred Alignment, wetland impacts will be inevitable once I-69 construction begins.

Although wetland impacts will be compensated for, and interest has been expressed to implement some of the compensation at or near Felsenthal National Wildlife Refuge, I would like to point out that eliminating or reducing wetland functions in one area (through impacts) and relocating them to another, though practicable, may not always be practical as the best alternative. I propose that mitigation banks be considered for establishment in the same areas in which the impacts occur. Not only would this keep the wetland functions in the same area (watershed) the impacts occur, it would reduce the functions lost, eventually replacing the functions over time as the restored area matured.

In regards to State Agencies, the Arkansas Soil and Water Conservation Commission (ASWCC) is in a unique position. ASWCC has been charged with the administration of the State Mitigation Bank Program. Through this program, ASWCC is authorized to purchase and restore wetland areas. It is this unique position that allows us to be of particular assistance when compensatory mitigation is required for any project. I believe this option should be fully explored and considered to potentially be a part of the I-69 Project.

The Department of
Arkansas
Heritage

Mike Huckabee, Governor
Cathie Mathews, Director

Arkansas Arts Council
▪
Arkansas Historic
Preservation Program
▪
Historic Arkansas Museum
▪
Delta Cultural Center
▪
Old State House Museum

Arkansas Natural
Heritage Commission

1500 Tower Building
323 Center Street
Little Rock, AR 72201
(501) 324-9619
fax: (501) 324-9618
tdd: (501) 324-9811
e-mail: info@arkansasheritage.org
website:
http://naturalheritage.com

An Equal Opportunity Employer

Date: June 7, 2002
Subject: I-69 Location Study
Eldorado-McGehee, Arkansas
Job No. 001873
Corridor Study Report
ANHC No.: P-CF..-02-042

RECEIVED
JUN 10 2002

Mr. Tim Smith
Michael Baker Jr., Inc.
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, LA 71107

Dear Mr. Smith:

Staff members of the Arkansas Natural Heritage Commission (ANHC) have reviewed the I-69 Location Study Report. This report presents and discusses several 2-mile wide study corridors and identifies a preferred corridor that will be advanced for alignment study. We have several concerns regarding the preferred corridor.

Of greatest concern to us is the corridor placement between Warren and Wilmar. This corridor includes a portion of Warren Prairie Natural Area. As you are aware, the Arkansas Natural Heritage Commission owns this area. It supports a diverse assemblage of rare plants, including the federally threatened plant, Geocarpon minimum. It is also representative of an unusual saline soil natural community type. Lands surrounding the existing ANHC ownership have been identified as acquisition targets, some of which could provide important habitat for the federally endangered red-cockaded woodpecker (Picoides borealis). Construction of the interstate in close proximity to Warren Prairie could jeopardize the integrity of the Natural Area.

Additionally, the preferred corridor crossing of the Saline River near Warren could have significant adverse impacts. The Saline River is a part of the System of Arkansas Natural and Scenic Rivers and has been placed on the Nationwide Rivers Inventory. The bottomland forests adjacent to the Saline River within the preferred corridor appear to be of high natural quality. It is our recommendation that a crossing closer to the existing Highway 278 crossing be examined. This would limit additional adverse impacts related to road crossings.

We plan to attend the June 12th meeting to discuss these concerns with you in more detail. We appreciate the opportunity to participate in the planning process and look forward to being involved further with the corridor and alignment study.

Sincerely,

Cindy Osborne

Cindy Osborne
Data Manager

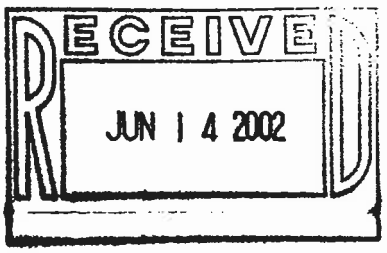
U.S. Department of Transportation
United States Coast Guard

Commander
Eighth Coast Guard District

1222 Spruce Street
St. Louis, MO 63103-2832
Staff Symbol: obr
Phone: (314) 539-3900x2379
FAX: (314) 539-3755

16591.1/240.0-330.0 OBL
June 7, 2002

Mr. Timothy J. Smith
Project Manager
Michael Baker Jr., Inc.
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, LA 71107



Subj: PROPOSED NEW I-69 HIGHWAY BRIDGE, MILE 240.0-330.0, OUACHITA-BLACK WATERWAY

Dear Mr. Smith:

This is in reply to your letter of May 17, 2002, inviting the Coast Guard to attend an I-69 agency coordination meeting on June 12, 2002. The letter also requested our review and comments on the corridor study report.

The corridor study report has been reviewed and we have no objection to the preferred corridor.

I regret that no representative of this office will be able to attend the meeting scheduled for June 12. Please provide us with a copy of the meeting minutes. If you have any questions or need further assistance, please call me at the above telephone number.

Sincerely,

Bruce L. McLaren

BRUCE L. MCLAREN
Project Manager
By direction of the District Commander

Arkansas Game & Fish Commission

2 Natural Resources Drive Little Rock, Arkansas 72205

Hugh C. Durham
Director

June 10, 2002

RECEIVED
JUN 14 2002

Mr. Tim Smith
Michael Baker Jr., Inc.
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, LA 71107

SUBJECT: I-69 Location Study
Eldorado-McGehee, Arkansas
Job No. 001873
Corridor Study Report

Dear Mr. Smith:

Biologists from our agency have reviewed the proposed corridors for I-69 and have the following comments. The preferred corridor appears to be the best alignment to lessen fish and wildlife impacts however, there are two areas in this alignment that we have some concern about.

First is the alignment between the cities of Warren and Wilmar. This corridor takes in the northeast portion of the Warren Prairie Natural Area and our agency has a memorandum of agreement with the Arkansas Natural Heritage Commission to assist with the management of wildlife on this area. We feel that it would be advantageous to wildlife if this area was avoided completely or at least moved as far away from the proposed Highway as possible.

Additionally, the preferred corridor shows a crossing of the Saline River near Warren. Our agency feels that fish and wildlife impacts could be lessened if this crossing were moved near the existing Highway 278 crossing.

We appreciate the opportunity to provide comments on the proposed project.

Sincerely,

Robert K. Leonard

Robert K. Leonard, Biologist
River Basins Division

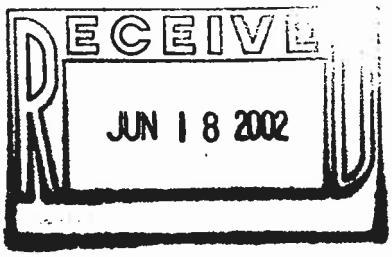
Cc: USFWS, Conway, AR

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1500 Museum Road, Suite 105
Conway, Arkansas 72032
Tel.: 501/513-4470 Fax: 501/513-4480

IN REPLY REFER TO

June 17, 2002



Mr. Tim Smith
Michael Baker Jr., Inc.
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, Louisiana 71107

Dear Mr. Smith:

The Fish and Wildlife Service (Service) has reviewed the I-69 El Dorado to McGehee, Arkansas Corridor Study Report submitted with your letter dated May, 17, 2002. Our comments are submitted in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e).

The Service concurs with the selection of the preferred corridor identified in the document to be carried forward for detailed planning. The preferred corridor consists of a combination of Corridor A from U.S. 82 near El Dorado to U.S. 167 near Hampton and Corridor B from U.S. 167 to U.S. 65 in McGehee and appears to be the corridor which minimizes impacts to wetlands and other fish and wildlife resources. Within this corridor, further efforts should be made to identify an alignment which avoids the Warren Prairie Natural Area and minimizes impacts to wetlands.

We appreciate the opportunity to provide these comments and look forward to work with you as planning for this project proceeds.

Sincerely,

Margaret Harney

Margaret Harney
Acting Field Supervisor

cc:
Arkansas Game and Fish Commission, Little Rock, Arkansas
Attn: Bob Leonard
Arkansas State Highway and Transportation Department, Little Rock, AR
Attn: Bill Richardson

DEPARTMENT OF THE ARMY
VICKSBURG DISTRICT, CORPS OF ENGINEERS
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

http://www.mvk.usace.army.mil/

June 20, 2002

RECEIVED
JUN 24 2002

Operations Division
Regulatory

SUBJECT: Preferred Corridor, Interstate 69, El Dorado-McGehee, Arkansas, Segment of Independent Utility No. 13

Mr. Timothy J. Smith
Project Manager
Michael Baker Jr., Incorporated
Petroleum Square II
1324 North Hearne Avenue, Suite 255
Shreveport, Louisiana 71107

Dear Mr. Smith:

I am responding to your letter of May 15, 2002,requesting concurrence with the Preferred Corridor recommendation for the subject project.

We have reviewed the Interstate 69 Location Study, El Dorado to McGehee, Arkansas and have participated in previous meetings and discussions on this project including the June 12, 2002, meeting in Little Rock, Arkansas. I hereby concur with the selection of the Preferred Corridor.

If we can be of further assistance, please contact Mr. Philip Hollis of this office, telephone (601) 631-5491 or fax (601) 631-5459.

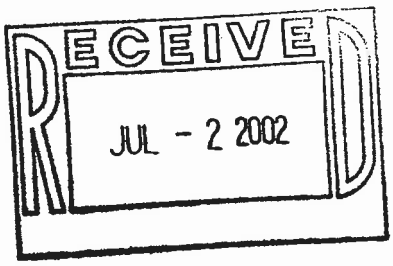
Sincerely,

Elizabeth S. Guynes
Chief, Regulatory Branch

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

June 27, 2002



Timothy J. Smith
Project Manager
Michael Baker Jr., Inc.
1324 N. Hearne Avenue
Shreveport, La 71107

Dear Mr. Smith:

Per your request, we have reviewed the preferred and alternative coRridors proposed for the I-69 segement from El Dorado to McGheee, Arkansas. Based upon our review Corridor A from US 82 at Eldorado to US 167 and then Corridor B from US 167 to US 65 is the Preferred Corridor. We have no objection to the selection of this corridor for further environmental impact analysis.

Thank you for this opportunity to comment. If you have any other questions, please contact me at 214-665-7451 for assistance.

Sincerely yours,

Michael P. Jansky, P.E.
309 Coordinator

:c: Chuck Martin - AHTD
Bill Richardson - AHTD
Randal Looney - FHWA

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Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

7203 Sheridan Road, Suite M
White Hall, AR 71602

(870) 247-3979
FAX (870) 247-5084

May 30, 2003

Ms. Cathie Matthews, Director
Arkansas Historic Preservation Program
1500 Tower Bldg.
323 Center Street
Little Rock, AR 72201

RE: I-69 Location Study
El Dorado – McGehee, Arkansas
Job No. 001873
Request for Technical Assistance

Attention: George McCluskey

Dear Mr. McCluskey,

The cultural resource staff at Michael Baker, Jr., Inc. (Baker) has completed a field review of alignment alternatives for the I-69 Location Study. This effort has resulted in the identification of eleven historic structures that may be impacted by the Proposed Project.

I am requesting technical assistance in determining if any of these structures are potentially eligible for the National Register of Historic Places. Enclosed please find summaries of these eleven structures along with photographs showing at least two angles of each structure, as well as topographic maps showing the location of each structure. As we discussed during previous conversations, structures considered historic for this project include those built prior to 1960.

If you should need any further information before providing technical assistance on this matter, please do not hesitate to contact me at the above address and phone.

Sincerely,

MICHAEL BAKER JR., INC.

Susan Mooney

Susan Moorhead Mooney
Archeologist

Enclosure(s)

The Department of Arkansas Heritage

Mike Huckabee, Governor
Cathie Matthews, Director

Arkansas Arts Council
•
Arkansas Natural Heritage Commission
•
Historic Arkansas Museum
•
Delta Cultural Center
•
Old State House Museum

Arkansas Historic Preservation Program

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(501)324-9880
fax: (501)324-9184
tdd: (501)324-9811
e-mail:
fo@arkansaspreservation.org
website:
ww.arkansaspreservation.org

June 4, 2003

Ms. Susan Moorhead Mooney, Archaeologist
Michael Baker Jr., Inc.
7203 Sheridan Road, Suite M
White Hall, AR 71602

RE: Multi County – General
Section 106 Review – FHWA
I-69 Location Study, El Dorado – McGehee, Job #001873
AHPP Tracking #39715

Dear Ms. Mooney:

This letter is written in response to your inquiry regarding properties of architectural or historical significance in the area of the proposed referenced project. The staff of the Arkansas Historic Preservation Program has reviewed the documents that pertain to this undertaking and determined that Structure #5 is eligible for listing in the National Register of Historic Places. It is eligible under Criterion C for its architectural significance. The remaining structures are not eligible for inclusion in the National Register.

Once the undertaking is further along in the planning stages, we look forward to reviewing the proposed project. If you should have any questions or comments, please do not hesitate to contact Ralph S. Wilcox of my staff at (501) 324-9880.

Yours truly,

Ken Gruenewald
Deputy State Historic Preservation Officer

cc: Federal Highway Administration

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U.S. Department of Homeland Security

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 2379
Fax: (314)539-3755
Email: bmclaren@cgstl.uscg.mil

16591.1/240.0-338.0 OBL
June 5, 2003

Mr. Tim Smith
Michael Baker Jr., Inc.
NEPA/Planning Manager
770 Lynnhaven Parkway, Suite 240
Virginia Beach, VA 23452

Subj: PROPOSED NEW I-69 HIGHWAY BRIDGE, MILE 240.0-338.0, OUACHITA RIVER

Dear Mr. Smith:

Please refer to you letter of May 21, 2003, announcing a meeting and Preliminary Alignment Field Review on June 10, 2003. I regret that due to other commitments we will not be able to attend.

If you have any questions, please call Mr. Bruce McLaren at the above telephone number.

Sincerely,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander

Name: Wanda Boyd Organization: US EPA Address: 1445 Ross Ave (6WQ-EM) Dallas, TX 75202 Phone: 214 665 6696 E-mail: Boyd.Wanda@epa.gov	Name: Lynn P. Malbrough Organization: AHTD - Env. Division Address: P.O. Box 2261 Little Rock, AR 72203 Phone: 501 569-2285 E-mail: Lynn.Malbrough@AHTD.STATE.AR.US	Name: LAMAR SMITH Organization: MICHAEL BAKER, JR INC Address: JACKSON, MISS Phone: (601) 933-6224 E-mail:
Name: Charles Fultz Organization: NRCS Address: 700 W. Capitol Ave Little Rock, AR Phone: 501-301-3114 E-mail: Charles.fultz@ar.usda.gov	Name: RANDAL LOONEY Organization: FHWA - Environmental Address: 700 West Capitol Ave Rm 3130 Little Rock, AR 72201 Phone: 501-324-6430 E-mail: randal.looney@fhwa.dot.gov	Name: TONYA Acuff Organization: CEMVK Vicksburg Dist. Address: 4155 Clay Street Vicksburg MS 39183 Phone: 601 631 7528 E-mail: Tonya.L.Acuff@mvk02.army.mil
Name: J. Michael Howard Organization: Arkansas Geological Comm. Address: 3815 W. Roosevelt Road Little Rock, AR 72204 Phone: (501) 683-0125 E-mail: Mike.Howard@mail.state.ar.us	Name: Tim Smith Organization: Michael Baker Jr. Inc. Address: 770 Lynnhaven Parkway Suite 240 Virginia Beach, VA 23452 Phone: 757 631 5252 E-mail: tjsmith@mbakercorp.com	Name: Joseph Greenleaf Organization: USACE Address: 4155 clay St. Vicksburg, MS 39183 Phone: 601.631.7139 E-mail: joseph.a.greenleaf@mvk02.usace.army.mil
Name: William Lee Prior Organization: Arkansas Geological Comm. Address: 3815 West Roosevelt Phone: 501-683-0117 E-mail: bill.prior@mail.state.ar.us	Name: Susan Mooney Organization: Michael Baker Jr. Inc. Address: 7203 Sheridan Rd, Ste M White Hall, AR 71602 Phone: 870-247-3979 E-mail: smooney@mbakercorp.com	Name: Bill McAbee Organization: BAKER Address: Shreveport Phone: 318 222-8110 E-mail: WMCABEE@MBAKERCORP.COM

Name: Tom Foti Organization: ANHC Address: 323 Center St LRAR 72201 Phone: 501 324-9761 E-mail: tom@arkansasheritage.com	Name: Organization: Address: Phone: E-mail:	Name: Organization: Address: Phone: E-mail:
Name: Robert K. Leonard Organization: AGFC Address: #2 Natural Resources Dr. Little Rock, AR. 72205 Phone: 501 978-7301 E-mail: RK Leonard at AGFC.state.ar.us	Name: Organization: Address: Phone: E-mail:	Name: Organization: Address: Phone: E-mail:
Name: Organization: Address: Phone: E-mail:	Name: Organization: Address: Phone: E-mail:	Name: Organization: Address: Phone: E-mail:
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Arkansas Soil & Water Conservation Commission

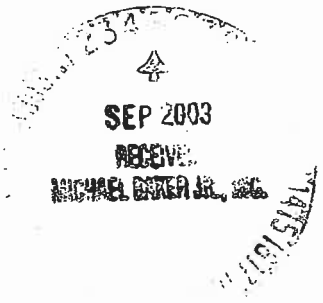
J. Randy Young, PE
Executive Director

101 East Capitol, Suite 350
Little Rock, Arkansas 72201
www.accessarkansas.org/aswcc

Phone: (501) 682-1611
Fax: (501) 682-3991
E-mail: aswcc@mail.state.ar.us

Mike Huckabee
Governor

September 2, 2003



Timothy J. Smith, Project Manager
Michael Baker Jr., Inc.
770 Lynnhaven Parkway, Suite 240
Virginia Beach, Virginia 23452

Re: I-69 Location Study
Job No. 001873
From El Dorado, Arkansas to McGehee, Arkansas

Dear Mr. Smith:

The following comments are based on the information supplied by Michael Baker Jr., Inc. in regards to the proposed alignments for Interstate 69 (I-69). The Arkansas State Highway and Transportation Department (AHTD) is currently accepting final comments concerning this proposal. The area of interest includes proposed alignments from McGehee, Arkansas to El Dorado, Arkansas.

After careful review of the documents by staff at the Arkansas Soil and Water Conservation Commission, efforts were made to locate potential alignments within the designated Corridor Boundary that would minimize impacts. It was soon determined that any new construction limited to the designated Corridor Boundary would result in large amounts of unavoidable impacts. However, if the proposed Corridor Boundary was expanded, it was concluded that existing infrastructure could be upgraded or simply included into the I-69 project, environmental impacts could be greatly reduced, and in some instances, eliminated.

Based on our review, I recommend that the Corridor Boundary be expanded or adjusted to include existing infrastructure when Alignment determinations are made. I recommend that existing U.S. Highway 278 be used from McGehee, Arkansas to Harrell, Arkansas, and that a spur be constructed from Harrell to connect to U.S. 167 at the U.S. 167/Arkansas 172 Intersection. From that point, U.S. 167 be used to El Dorado, Arkansas. This alignment will reduce costs and impacts associated with the project.

Should you require further input or have any questions, please contact Mr. Kenneth Colbert of my staff at 501-682-1608.

Sincerely,

J. Randy Young, P.E.
Executive Director

JRY/kc

Cc: Chuck Martin, Consultant Coordinator
AHTD
Roadway Design
P.O. Box 2261
Little Rock, Arkansas 72203

Randal Looney, Environmental Coordinator Specialist
FHWA
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1500 Museum Road, Suite 105
Conway, Arkansas 72032
Tel.: 501/513-4470 Fax: 501/513-4480

IN REPLY REFER TO:

February 25, 2004



Mr. Timothy Smith
Environmental Project Manager, Michael Baker Jr., Inc.
770 Lynhaven Parkway, Suite 240
Virginia Beach, Virginia 23452

Subject: Job Number 001873, SIU #13 (I-69 Eldorado to McGehee) Draft EIS

Dear Mr. Smith:

This responds to your letter dated February 20, 2004 soliciting our recommendations on the above referenced project. The Service has no additional comments on the draft environmental impact assessment at this time. We are pleased with the efforts of your company to address fish and wildlife concerns to this point and we look forward to cooperative involvement during future alignment selection within the preferred corridor.

Thank you for allowing our agency the opportunity to comment on the proposed project. For future correspondence on this matter, please contact Mitch Wine of this office at (501) 513-4488.

Sincerely,

Margaret Harney

Margaret Harney
Acting Field Supervisor

cc:
John Harris, AHTD
Bill Richardson, AHTD
Randal Looney, FHWA

DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:



March 30, 2004

Operations Division
Regulatory

SUBJECT: Comments on the Draft Environmental Impact Statement, I-69 Section of Independent Utility, El Dorado to McGehee, Arkansas

Mr. Timothy J. Smith
Project Manager
Michael Baker Jr. Inc.
Suite 240
770 Lynnhaven Parkway
Virginia Beach, Virginia 23452

Dear Mr. Smith:

I am responding to your letter of February 20, 2004, concerning the subject project.

You asked for comments concerning the Draft Environmental Impact Statement (DEIS). We have reviewed all the information you provided and offer the following comments. In Section 4: Environmental Consequences, Wetland Mitigation Requirements (4.8.4) requires some changes. Remove the sentence: "Forested and herbaceous wetlands would be replaced at a ratio of at least 1.5:1." Replace the above sentence with: Forested and herbaceous wetlands would be replaced at a ratio to be determined by application of the Charleston methodology for compensatory mitigation. Remove the sentence: "The Charleston method or other appropriate and accepted methodology will be used to aide in determining final mitigation ratios." The above-written sentence will take the place of this sentence, too.

We will need the various agency letters, particularly the letters mentioned in the body of the DEIS. These include the Arkansas Historical Preservation Program (AHPP) letters dated May 30, 2003 and June 4, 2003 (see page 4-38). Also, the Corps will need to be included in the list of recipients for the mitigation plan for NRHP eligible properties (pp 4-39 - 4-40). Please forward a copy of the draft intensive cultural resources survey report that is to be conducted once the preferred alignment is selected and also an indication of how the tribal coordination is progressing.

We are pleased with your efforts in addressing the major concerns of unique wetland areas and the crossings of major other waters of the United States. Please continue your efforts to future avoid and/or minimize wetland impacts and other important issues through consideration of design alternatives. We look forward to participating during future alignment selection within the preferred corridor.

Thank you for the opportunity to comment. If you have any questions, please contact Ms. A. Susan Jarvis of this office, telephone (601) 631-5146, fax (601) 631-5459 or e-mail address: regulatory@mvk02.usace.army.mil. In any future correspondence, please refer to identification No. 200201110.

I am forwarding a copy of this letter to Mr. Bill Richardson, Projector Coordinator, Arkansas Highway Transportation Department, 10324 Interstate 30, Little Rock, Arkansas 72209.

Sincerely,

Elizabeth S. Guynes
Chief, Regulatory Branch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

April 7, 2004



Mr. Timothy J. Smith
Project Manager
Michael Baker Jr., Inc.
770 Lynnhaven Parkway, Suite 240
Virgina Beach, VA 23452

Dear Mr. Smith:

Pursaunt to your request on behalf of the Arkansas State Highway and Transportation Department, we have reviewed the Preliminary Draft Environmental Impact Statement for the I-69 Location Study for El Dorado-McGeehee, Arkansas. Based upon our limited review of this document, it appears the preferred alignment A/B/C is most effective at addressing the transportation issues, purpose and need, and has the greatest ability to avoid significant environmental resources and minimize environmental impact.

Thank you for this early opportunity to comment. We look forward to receiving the Draft EIS.

Sincerely Yours,

Michael P. Jansky, P.E.

Michael P. Jansky, P.E.
Regional EIS Coordinator
Office of Planning and Coordination

U.S. Department of Homeland Security

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 2379
Fax: (314)539-3755
Email: bmclaren@cgstl.uscg.mil

16591.1/315.0 OBL
April 5, 2004



Mr. Timothy J. Smith
Project Manager
Michael Baker, Jr., Inc.
770 Lynnhaven Parkway, Suite 240
Virginia Beach, VA 23452

Subj: PROPOSED I-69 HIGHWAY BRIDGE, MILE 315.0, OUACHITA-BLACK WATERWAY

Dear Mr. Smith:

Please refer to your letter of February 20, 2004. We have completed our review of the PDEIS and offer the following comments:

a. On page 4-50, left column, paragraph three: Recommend you change the first sentence to read: "Minimum vertical clearance as required by the Coast Guard in this reach of the Ouachita River is 52 feet above the 2 percent flowline."

b. Reference to horizontal clearance should not be made in any environmental document because a final decision has not yet been made concerning proper pier placement.

Overall, the Navigation Evaluation section looks good and, with the above change, will support an application for a Coast Guard Bridge Permit.

If you have questions, or need further information, please call Mr. Bruce McLaren at the above telephone number.

Sincerely,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander.

The Department of
Arkansas
Heritage

Mike Huckabee, Governor
Cathie Matthews, Director

Arkansas Arts Council
•
Arkansas Natural Heritage Commission
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Historic Arkansas Museum
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Delta Cultural Center
•
Old State House Museum

Arkansas Historic Preservation Program

1500 Tower Building
323 Center Street
Little Rock, AR 72201
(501)324-9880
fax: (501)324-9184
tdd: (501)324-9811
e-mail:
info@arkansaspreservation.org
website:
www.arkansaspreservation.org

May 21, 2004

Mr. Tim Smith
Michael Baker Jr., Inc.
7203 Sheridan Road, Suite M
White Hall, Arkansas 71602

RE: Multi County - General
Section 106 Review - FHwA
I-69 Section of Independent Utility 13
AHPP Tracking No: 39715

Dear Mr. Smith:

Thank you for the opportunity to review the Draft Environmental Impact Statement I-69 Section of Independent Utility 13 El Dorado to McGehee, Arkansas. We agree with the plan to conduct an intensive cultural resources survey of all aspects of this undertaking once a final alignment is selected. We look forward to reviewing a report of this work at a future date.

Thank you for your interest and concern for the cultural heritage of Arkansas. If you have any questions, please contact George McCluskey of my staff at (501) 324-9880.

Sincerely,

Ken Gruhewald
Deputy State Historic Preservation Officer

cc: Mr. Earl J. Barbry, Tunica-Biloxi Tribe of Louisiana, Inc.
Mr. Marion Butler, Arkansas Highway & Transportation Department
Dr. Ann M. Early, Arkansas Archeological Survey
Ms. Carol Legard, Advisory Council on Historic Preservation
Mr. Randall Looney, Federal Highway Administration
Mr. John Miller, Arkansas Highway & Transportation Department
Ms. Carrie V. Wilson, Quapaw Tribe of Oklahoma

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DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

May 25, 2004

Operations Division
Regulatory

SUBJECT: Comments on the Draft Environmental Impact Statement, I-69 Section of Independent Utility, El Dorado to McGehee, Arkansas



Mr. Timothy J. Smith
Project Manager
Michael Baker Jr., Incorporated
Suite 240
770 Lynnhaven Parkway
Virginia Beach, Virginia 23452

Dear Mr. Smith:

I am responding to your letter of May 17, 2004, concerning the subject project.

You asked for comments concerning the Draft Environmental Impact Statement (DEIS). We have reviewed all the information you provided and offer the following comments.

The Corps will need to be included in the list of recipients for the mitigation plan for NRHP eligible properties (pp 4-55 - 4-56). Please forward a copy of the draft intensive cultural resources survey report that is to be conducted once the preferred alignment is selected and also an indication of how the tribal coordination is progressing.

Thank you for incorporating specific comments offered concerning mitigation and the Charleston method from the Preliminary DEIS. We look forward to participating during future alignment selection within the preferred corridor. If you have any questions, please contact Ms. A. Susan Jarvis, telephone (601) 631-5146, fax (601) 631-5459 or e-mail address: regulatory@mvk02.usace.army.mil. In any future correspondence, please refer to identification No. 200201110.

I am forwarding a copy of this letter to Mr. Bill Richardson, Projector Coordinator, Arkansas Highway Transportation Department, 10324 Interstate 30, Little Rock, Arkansas 72209.

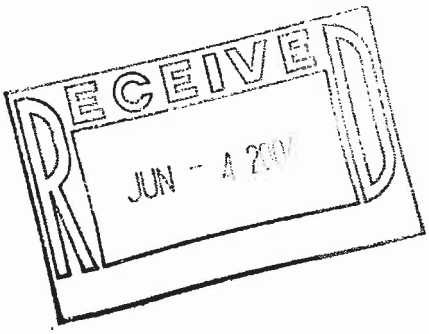
Sincerely,

for Joyce Butler

Elizabeth S. Guynes
Chief, Regulatory Branch

Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000
Fay W. Boozman, MD, MPH, Director
Mike Huckabee, Governor



June 1, 2004

Timothy J. Smith
Michael Baker Jr., Inc.
7203 Sheridan Road, Suite M
White Hall, AR 71602

Re: Draft Environmental Impact Statement
State Job No. 001873
Federal Project: NCPD-NH-0076(24)
I-69 Section of Independent Utility 13
Arkansas Dept. of Health, Division of Engineering, Project No. 04-48101

Dear Mr. Smith:

The Draft Environmental Impact Statement for the above captioned project dated May 17, 2004 and submitted to the Division of Engineering on May 20, 2004 has been reviewed and the following comments are offered:

1. For future reference we have attached a drawing showing the water systems and their service areas that might be affected by the I-69 highway construction. The relocation of rural water distribution systems' lines for clearing right-of-way or highway construction was not addressed. This drawing may not include all the service area of each system. Also, a new water system is presently being installed in Calhoun County, but is not in operation at present, and is not included on the attached drawing.

2. Drawings and Specifications for new and/or relocated water system mains must be submitted to the Arkansas Dept. of Health, Division of Engineering for review and approval prior to construction.

The one copy of the Draft Environmental Impact Statement will be retained for our files. If we can be of any additional assistance you may contact us at 501-661-2623. When submitting correspondence please include our project number ADH# 04-48101.

Sincerely,

Larry Duncan, PE
Engineering Supervisor
Division of Engineering

LD:WH:wch

Attachment-1

Arkansas Soil & Water Conservation Commission

J. Randy Young, PE
Executive Director

101 East Capitol, Suite 350
Little Rock, Arkansas 72201
www.accessarkansas.org/aswcc

Phone: (501) 682-1611
Fax: (501) 682-3991
E-mail: aswcc@mail.state.ar.us

Mike Huckabee
Governor

June 3, 2004

Mr. Timothy J. Smith, Project Manager
Michael Baker Jr., Inc.
7203 Sheridan Road, Suite M
White Hall, Arkansas 71602

Re: Draft Environmental Impact Statement (DEIS)
I-69 Section of Independent Utility 13, El Dorado to McGehee, Arkansas
State Job No 001873
Federal Project: NCPD-NH-0076(24)

Dear Mr. Smith:

Thank you for the opportunity to comment on the proposed alignments under study in the DEIS. The purpose of the DEIS is to solicit comments for consideration in determining the preferred alignment for the I-69 Section of Independent Utility 13, El Dorado to McGehee, Arkansas.

The proposed I-69 Location Study from El Dorado to McGehee, Arkansas represents one section (Section of Independent Utility No. 13) of the nationally designated I-69 Corridor that reaches from Port Huron, Michigan to the Texas/Mexico border. This project (SIU 13) will function as a critical link in the Interstate system that will serve travel, economic development, and commercial demands of not only the Project Area, but also the south-central United States.

Staff from the Arkansas Soil and Water Conservation Commission have reviewed the DEIS, and based on Construction Cost, ROW/Utility Cost, Residential Structures, Natural Resource Impacts, and Cultural Resource Impacts, recommend that segments of Alignment 1 (in Sections 1, 2, and 3) and Alignment 3 (in Sections 4 and 5) be moved forward as the Preferred Alignment.

At this time, I recommend that the segment of Alignment 1 in Sections 1, 2, and 3 and the segment of Alignment 3 in Sections 4 and 5 be carried forward as the preferred alignment.

RECEIVED
JUN - 7 2004

If you have any questions or need further assistance, please contact the Arkansas Soil and Water Conservation Commission at 501-682-1611.

Again, thank you for the opportunity to review and comment on the DEIS for the I-69 Section of Independent Utility 13, El Dorado to McGehee, Arkansas.

Sincerely,

J. Randy Young, P.E.
Executive Director

JRY/kc

ARKANSAS FORESTRY COMMISSION

3821 West Roosevelt Road Little Rock, Arkansas 72204-6396
(501) 296-1940 fax: (501) 296-1949

John T. Shannon, R.F.
State Forester

4 Jun 04

Michael Baker Jr., Inc.
7203 Sheridan Road, Suite M
White Hall AR 71602
Attn: Timothy J. Smith

Subject: State Job No. 001873
Federal Project: NCPD-NH-0076(24)
I-69 Section of Independent Utility 13
Draft Environmental Impact Statement

Dear Mr. Smith:

The above project will have some adverse impacts on the forest resources of the area with the loss of forest acreage to right-of-way clearance and other construction.

However, the losses should be more than offset by the economic boost to the region by the improvement in transportation provided by the new roadway.

If we can be of service, please contact us at any time.

Sincerely,

James L. Northum
Arkansas Forestry Commission
Forest Health
501-296-1863
jim.northum@arkansas.gov

RECEIVED
JUN - 7 2004

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
P.O. Box 26567 (MC-9)
Albuquerque, New Mexico 87125-6567

TAKE PRIDE IN AMERICA

July 12, 2004

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JUL 13 2004

ER 04/0402

Tim Smith
Michael Baker Jr., Inc.
7203 Sheridan Road, Suite M
White Hall, AR 71602

Dear Mr. Smith:

The U.S. Department of the Interior (Department) has reviewed the "Draft Environmental Impact Statement for I-69 Section of Independent Utility 13, El Dorado to McGehee, Arkansas" (draft EIS). In this regard, we are providing the following comments for your use as you prepare the final document.

The draft EIS and planning process provide ample evidence that the project sponsors are making good faith efforts to identify and avoid or minimize adverse impacts to important resources under our jurisdiction. We support continuation of that effort. Based on our current understanding, the Department supports selection of the Line 5 alignment location as the preferred alternative. This alignment appears to have the least known adverse effects and avoids many already recognized adverse impacts. Some of the other alignments would foreclose beneficial actions planned for unique and otherwise special habitats and sites in the project area.

Department of Transportation Act

The draft EIS does not identify any properties that would be eligible for consideration under section 4(f) of the Department of Transportation Act. However, it does not appear that all cultural resources (archeological and architectural) have been inventoried. It is possible that historic properties that may be considered 4(f) resources may yet be found in subsequent work, which would require additional consultation with the Department.

Most public lands and some easements on privately owned lands, that were acquired wholly or in part with Departmental funds, such as wildlife management areas, parks, or fishing access sites, are also protected under section 4(f). Impacts to such lands merit consultation with the Department.

Fish and Wildlife Coordination Act

The draft EIS identifies a number of wetland types that are found in the project area. However, a number of sand hill seep wetlands were recently identified in the selected corridor. This specific

type of wetland is not identified in the draft EIS. Given their high quality, importance in the landscape, the species and ecological processes they support, and their rarity, these seep wetlands could be aquatic resources of national importance. Continued coordination with the Fish and Wildlife Service is warranted to identify, locate, and mitigate impacts to all of the potentially affected wetlands, hydrologically connected areas, and the associated habitats of dependent wildlife. We will provide technical support to ensure that the project design and implementation avoids, to the maximum extent possible, adverse impacts to the sand hill seep wetland habitats. If necessary, we will also provide advice on means of minimizing, and then compensating, for unavoidable impacts.

Road design constraints and interchange locations are primary factors in alignment selection and influence overall project impacts to fish, wildlife, and other impacts. We traditionally focused on identifying and avoiding or mitigating impacts to sensitive or unique aspects of the human and natural environment at the corridor selection and site specific stages of road planning and design. However, the introduction of vehicles outfitted with adaptive cruise control systems means that many engineering constraints, such as level of service, and road curvature, either will not apply, or may be less rigidly applied (see, for example, Davis, (2004) Physical Review E, v 69, 066110). We encourage the project sponsors to incorporate new vehicle safety criteria with environmental concerns throughout this project.

Endangered Species Act

The draft EIS cites resource agency reports indicating that six federally listed threatened or endangered species may occur in the project area [*Geocarpon minimum* (no common name), red cockaded woodpecker, *Picoides borealis*, Florida panther, *Puma concolor coryi*, bald eagle, *Haliaeetus leucocephalus*, pink mucket, *Lampsilis abrupta*, and winged mapleleaf, *Quadrula fragosa*]. Continued coordination of plan development and related studies with the Fish and Wildlife Service in accordance with section 7 of the Endangered Species Act should avoid adverse impacts to these species or the habitats they depend upon.

Native American Trust Responsibilities

The draft EIS indicates that a number of Native American tribes have ancestral ties to the project area. We are not currently aware of any culturally sensitive, sacred, or other significant resources claimed by the tribes in the proposed project footprint. However, should survey or construction activities uncover or discover culturally sensitive or sacred sites, the appropriate representatives should be notified immediately, and, if warranted, land disturbing activities halted.

Conclusion

We appreciate the opportunity to comment on the draft EIS. In addition, effective June 21, 2004, the National Park Service contact has a new address. The contact is Nick Chevance, Regional Environmental Coordinator, Midwest Regional Office, 601 Riverfront Drive Omaha, Nebraska,

68102, (402) 661-1844 (office); (402) 661-1982 (fax). The Fish and Wildlife Service contact is Mitch Wine, Arkansas Ecological Services Office, (501) 513-4488.

Sincerely,

Stephen R. Spencer
Regional Environmental Officer

cc: Randall Looney, Federal Highway Administration, Arkansas Division Office, 700 West Capitol, 3130 Federal Office Building, Little Rock AR 72201

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

July 16, 2004

Michael Baker Jr., Inc.
7203 Sheridan Road, Suite M
White Hall, AR 71602

RE: State Job No. 001873
Federal Project: NCPD-NH-0076(24)
I-69 Section of Independent Utility 13
Draft Environmental Impact Statement

Dear Mr. Timothy Smith :

The State Clearinghouse has received the above document pursuant to the Arkansas Project Notification and Review System.

To carry out the review and comment process, this document was forwarded to members of the Arkansas Technical Review Committee. Resulting comments received from the Technical Review Committee which represents the position of the State of Arkansas are attached.

The State Clearinghouse wishes to thank you for your cooperation with the Arkansas Project Notification and Review System.

Sincerely,

Tracy L. Copeland, Manager
State Clearinghouse

TLC/th
Enclosure
CC: Randy Young, AS&WCC

RECEIVED
JUL 20 2004

Arkansas Soil & Water Conservation Commission

J.Randy Young, PE
Executive Director

101 East Capitol, Suite 350
Little Rock, Arkansas 72201
www.accessarkansas.org/aswcc

Phone: (501) 682-1611
Fax: (501) 682-3991
E-mail: aswcc@mail.state.ar.us

Mike Huckabee
Governor

MEMORANDUM

RECEIVED
JUL 16 2004
INTERGOVERNMENTAL
SERVICES
STATE CLEARINGHOUSE

TO: Mr. Tracy Copeland, Manager
State Clearinghouse

FROM: Mr. J. Randy Young, P.E.
Executive Director

SUBJECT: State Job #001873
Federal Project: NCPD-NH-0076 (24)
I-69 Section of Independent Utility 13
Draft Environmental Impact Statement

DATE: June 29, 2004

Members of the Technical Review Committee have reviewed the above referenced project; A draft environmental impact statement for the I-69 section of Independent utility 13 project. The Committee supports this project. Comments are attached for your review.

The opportunity to comment is appreciated.

JRY/ddavis

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 400
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

#1679

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse

DATE: May 20, 2004

SUBJECT: (DRAFT ENVIRONMENTAL IMPACT STATEMENT)-STATE JOB NO. 00873 FEDERAL PROJECT; NCPD-NH-0076(24) I-69 SECTION OF INDEPENDENT UTILITY 13 – EL DORADO TO MCGEHEE, ARKANSAS

(COPIES WERE SENT DIRECTLY FROM MICHAEL BAKER, JR., INC. TO YOU)

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Your comments should be returned by June 11, 2004 to Mr. Randy Young, Chairman, Technical Review Committee, 101 East Capitol, Suite 350, Little Rock, Arkansas 72203.

IF you have no reply within that time we will assume you have no comments and will proceed with the sign-off.

NOTE: It is imperative that your response be in to the ASWCC office by the date requested. Should your Agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501) 682-1611 or the State Clearinghouse Office.

____	Support	____	Do Not Support (Comments Attached)
✓	Comments Attached	____	Support with Following Conditions
____	No Comments	____	Non-Degradation Certification Issues (Applies to ADEQ Only)

Name (print) Colbert Agency ASWCC Date 7-1-04

Telephone Number _____

Arkansas Soil & Water Conservation Commission

J. Randy Young, PE
Executive Director

101 East Capitol, Suite 350
Little Rock, Arkansas 72201
www.accessarkansas.org/aswcc

Phone: (501) 682-1611
Fax: (501) 682-3991
E-mail: aswcc@mail.state.ar.us

Mike Huckabee
Governor

June 3, 2004

Mr. Timothy J. Smith, Project Manager
Michael Baker Jr., Inc.
7203 Sheridan Road, Suite M
White Hall, Arkansas 71602

Re: Draft Environmental Impact Statement (DEIS)
I-69 Section of Independent Utility 13, El Dorado to McGehee, Arkansas
State Job No 001873
Federal Project: NCPD-NH-0076(24)

Dear Mr. Smith:

Thank you for the opportunity to comment on the proposed alignments under study in the DEIS. The purpose of the DEIS is to solicit comments for consideration in determining the preferred alignment for the I-69 Section of Independent Utility 13, El Dorado to McGehee, Arkansas.

The proposed I-69 Location Study from El Dorado to McGehee, Arkansas represents one section (Section of Independent Utility No. 13) of the nationally designated I-69 Corridor that reaches from Port Huron, Michigan to the Texas/Mexico border. This project (SIU 13) will function as a critical link in the Interstate system that will serve travel, economic development, and commercial demands of not only the Project Area, but also the south-central United States.

Staff from the Arkansas Soil and Water Conservation Commission have reviewed the DEIS, and based on Construction Cost, ROW/Utility Cost, Residential Structures, Natural Resource Impacts, and Cultural Resource Impacts, recommend that segments of Alignment 1 (in Sections 1, 2, and 3) and Alignment 3 (in Sections 4 and 5) be moved forward as the Preferred Alignment.

At this time, I recommend that the segment of Alignment 1 in Sections 1, 2, and 3 and the segment of Alignment 3 in Sections 4 and 5 be carried forward as the preferred alignment.

If you have any questions or need further assistance, please contact the Arkansas Soil and Water Conservation Commission at 501-682-1611.

Again, thank you for the opportunity to review and comment on the DEIS for the I-69 Section of Independent Utility 13, El Dorado to McGehee, Arkansas.

Sincerely,

J. Randy Young, P.E.
Executive Director

JRY/kc

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 400
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

RECEIVED
04 MAY 28 AM 11: 37
SOIL & WATER COMM.

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse TLC

DATE: May 20, 2004

SUBJECT: (DRAFT ENVIRONMENTAL IMPACT STATEMENT)-STATE JOB NO. 00873 FEDERAL PROJECT; NCPD-NH-0076(24) I-69 SECTION OF INDEPENDENT UTILITY 13 – EL DORADO TO MCGEHEE, ARKANSAS
(COPIES WERE SENT DIRECTLY FROM MICHAEL BAKER, JR., INC. TO YOU)

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Your comments should be returned by June 11, 2004 to Mr. Randy Young, Chairman, Technical Review Committee, 101 East Capitol, Suite 350, Little Rock, Arkansas 72203.

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NOTE: It is imperative that your response be in to the ASWCC office by the date requested. Should your Agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501) 682-1611 or the State Clearinghouse Office.

✓	Support		Do Not Support (Comments Attached)
	Comments Attached		Support with Following Conditions
	No Comments		Non-Degradation Certification Issues (Applies to ADEQ Only)

Name (print) JAMES L NORTHCUTT Agency Ark Fin Com Date 25 May 04

Telephone Number 501-256-1863

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 400
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse TLC

DATE: May 20, 2004

SUBJECT: (DRAFT ENVIRONMENTAL IMPACT STATEMENT)-STATE JOB NO. 00873 FEDERAL PROJECT; NCPD-NH-0076(24) I-69 SECTION OF INDEPENDENT UTILITY 13 – EL DORADO TO MCGEHEE, ARKANSAS

(COPIES WERE SENT DIRECTLY FROM MICHAEL BAKER, JR., INC. TO YOU)

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

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✓	Support		Do Not Support (Comments Attached)
	Comments Attached		Support with Following Conditions
	No Comments		Non-Degradation Certification Issues (Applies to ADEQ Only)

Name (print) Steve Jones Agency ADEQ Date 5-28-04

Telephone Number 501-682-7311

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 400
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse TLC

DATE: May 20, 2004

SUBJECT: (DRAFT ENVIRONMENTAL IMPACT STATEMENT)-STATE JOB NO. 00873 FEDERAL PROJECT; NCPD-NH-0076(24) I-69 SECTION OF INDEPENDENT UTILITY 13 – EL DORADO TO MCGEHEE, ARKANSAS
(COPIES WERE SENT DIRECTLY FROM MICHAEL BAKER, JR., INC. TO YOU)

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✓	Support	____	Do Not Support (Comments Attached)
____	Comments Attached	____	Support with Following Conditions
✓	No Comments	____	Non-Degradation Certification Issues (Applies to ADEQ Only)

Name (print) Jerry Bendshadow Agency COSL Date 6/9/04

Telephone Number 683-3310

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MAY 27 2004
Commissioner of State Lands

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 400
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

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04 JUN -9 AM 9:12
STATE CLEARINGHOUSE

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager – State Clearinghouse TC

DATE: May 20, 2004

SUBJECT: (DRAFT ENVIRONMENTAL IMPACT STATEMENT)-STATE JOB NO. 00873 FEDERAL PROJECT; NCPD-NH-0076(24) I-69 SECTION OF INDEPENDENT UTILITY 13 – EL DORADO TO MCGEHEE, ARKANSAS

(COPIES WERE SENT DIRECTLY FROM MICHAEL BAKER, JR., INC. TO YOU)

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___/___	Support	____	Do Not Support (Comments Attached)
___✓___	Comments Attached	____	Support with Following Conditions
____	No Comments	____	Non-Degradation Certification Issues (Applies to ADEQ Only)

Name (print) Bill Price Agency AGC Date 6-8-04
Mac Woodward

Telephone Number 683-0419
683-0113

Arkansas GEOLOGICAL COMMISSION

VARDELLE PARHAM GEOLOGY CENTER • 3815 WEST ROOSEVELT ROAD • LITTLE ROCK, ARKANSAS 72204

Mike Huckabee
Governor

Mac B. Woodward
Director and State Geologist

June 7, 2004

Mr. Randy Young
Chairman, Technical Review Committee
101 E. Capitol, Suite 350
Little Rock, Arkansas 72203

Dear Mr. Young:

This letter is a response to your request for comments on the Final Draft Environmental Impact Statement for I-69 Segment 13. The only comment I have is about a statement made on page 3-18, section 3.6.1 Oil and Natural Gas. The statement is made that all of Arkansas's natural gas and oil is produced in southern Arkansas. This statement is incorrect as the Arkansas River Valley (Arkoma Basin) also produces natural gas in northwestern Arkansas.

If you have any questions about this comment please feel free to contact me.

Sincerely,

William Lee Prior

William Lee Prior
Geologist Supervisor

PHONE: (501) 296-1877; FAX: (501) 663-7360
agc@mail.state.ar.us
www.state.ar.us/agc/agc.htm
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The Department of
Arkansas
Heritage

Mike Huckabee, Governor
Cathie Matthews, Director

Arkansas Arts Council

Arkansas Historic
Preservation Program

Historic Arkansas Museum

Delta Cultural Center

Old State House Museum

Arkansas Natural
eritage Commission

1500 Tower Building
323 Center Street
Little Rock, AR 72201
(501) 324-9619
fax: (501) 324-9618
tdd: (501) 324-9811
ail: info@arkansasheritage.org
website:
http://naturalheritage.com

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ECEIVED
JUL 26 2004

Date: July 21, 2004
Subject: Draft Environmental Impact Statement
I-69 Section of Independent Utility 13
El Dorado to McGehee, Arkansas
State Job NO. 001873, Federal Project: NCPD-NH-0076(24)
ANHC No.: P-CF..-04-043

Mr. Randy Young, Chairman
Technical Review Committee
101 East Capitol, Suite 340
Little Rock, AR 72203

Dear Mr. Young:

Staff members of the Arkansas Natural Heritage Commission have reviewed the Draft Environmental Impact Statement (DEIS) for the I-69 section of Independent Utility 13, El Dorado to McGehee, Arkansas. The project is a proposal to construct a four-lane, divided, fully controlled access highway facility located on new alignment from U.S. 82 near El Dorado, Arkansas to U.S. 65 near McGehee, Arkansas. The DEIS presents five preliminary highway alignments within the selected preferred corridor, summarizes potential impacts, and addresses the No-Action alternative. The Arkansas Natural Heritage Commission has been involved with the project study since initial agency scoping meetings held in 2001. We feel that a conscientious job has been done of selecting the least damaging corridor. We are pleased at the efforts that have been made to minimize wetland impacts within the Ouachita Pleistocene terraces in Bradley and Calhoun Counties. However, there remain two locations of concern to this agency: the Warren Prairie Natural Area vicinity, and an area in southern Calhoun County supporting rare plant species.

Although alignments have been designed to avoid crossing Warren Prairie Natural Area, we remain concerned about secondary impacts associated with interstate construction. This agency is currently working with timber companies and private landowners to acquire and/or manage lands surrounding Warren Prairie in a way that will promote the unique biological diversity of the area. Alignments 1 and 2 cross the northern edge of this project area. These alignments could compromise the project by encouraging incompatible urban encroachment. This agency prefers the more northern placement presented by alignments 3, 4, and 5.

The area located south of Hampton in Calhoun County is known to support an unusual suite of rare plant species. Most of the known occurrences near the proposed alignments are found along the shared highway/railroad right-of-way located approximately 2.3 miles east of U.S. Highway 167, south of Hampton, and include the following plants:

Alophia drummondii, purple pleat-leaf
Asclepias obovata, obovate milkweed
Eriocaulon decangulare, a pipewort
Eryngium integrifolium, an eryngo
Fuirena bushii, umbrella grass
Lycopodiella appressa, southern bog clubmoss
Lycopodiella caroliniana, slender clubmoss
Mitreola sessilifolia, miterwort
Paspalum praecox, early paspalum
Polygala nana, dwarf milkwort
Rhynchospora plumosa, a beak rush
Rhynchospora rariflora, few-flowered, beak-rush
Solidago nitida, a goldenrod
Utricularia cornuta, horned bladderwort
Xyris baldwiniana, a yellow-eyed grass

Careful planning will be required in this area to minimize impacts to these known occurrences, which include a new state record plant, horned bladderwort (*Utricularia cornuta*), and one of only two locations in the state known to support yellow-eyed grass (*Xyris baldwiniana*). Southern Calhoun County is an area of botanical significance. Other sites along the study alignments are likely to support rare plants. Many of the rare upland species are associated with the Savannah soil series, while most of the rare wetland species are found in seepage areas. Careful inventory work will need to be done along the selected alignment in order to avoid and minimize impacts to rare plant populations. Although the project has been routed through the uplands in an effort to minimize wetland impacts, it is important to recognize the significant role these upland areas play in the hydrology of seepage areas. Particular care must be taken to ensure that drainage patterns are not disrupted by road placement. Such disruptions could dramatically impact small wetland seepage areas and their unique species assemblages.

The opportunity to comment is appreciated.

Sincerely,

Cindy Osborne

Cindy Osborne
Data Manager

CC: Timothy Smith, Michael Baker Jr., Inc.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

July 29, 2004

Mr. Randall Looney
Federal Highway Administration
Arkansas Division
700 West Capitol
3130 Federal Office Building
Little Rock, AR 72201

Dear Mr. Looney:

In accordance with our responsibilities under Section 309 of the Clean Air Act (CAA), the National Environmental Policy Act (NEPA), and the Council on Environmental Quality's (CEQ) Regulations for Implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 Office in Dallas, Texas, has completed its review of the Draft Environmental Impact Statement (DEIS) for the I-69 Section of Independent Utility13, El Dorado to McGehee, Arkansas.

EPA has rated the DEIS as **LO, Lack of Objections**. Our classification will be published in the *Federal Register* according to EPA's responsibility under Section 309 of the CAA, to inform the public of our views on proposed federal actions.

General and specific comments are enclosed which we believe will help strengthen the impact analysis and NEPA decision-making process. If you have any questions, please contact me at (214) 665-7451. Please send our office two copies of the Final EIS when it is sent to the Office of Federal Activities, EPA (Mail Code 2252A), Ariel Rios Building, 1200 Pennsylvania Ave, N.W., Washington, D.C. 20460.

Sincerely yours,

Michael P. Jansky, P.E.

Michael P. Jansky, P.E.
Regional EIS Coordinator
Office of Planning and
Coordination (6EN-XP)

Enclosure

GENERAL AND SPECIFIC COMMENTS
ON THE
FEDERAL HIGHWAY ADMINISTRATION
DRAFT ENVIRONMENTAL IMPACT STATEMENT
I-69, SIU 13, EL DORADO TO MCGEHEE, ARKANSAS

COMMENTS:

1. The statements and references on page-47 (2nd column, 1st paragraph) regarding the effects of roads are outdated (i.e., 1975, 1982). There have been many, many studies performed and peer reviewed articles written on this subject (as opposed to the gray literature representing citations on p. 4-47), only some of which are listed below. This section should be updated with current information, most of which suggest that there is some effect on wildlife due to roads. An updated bibliography is offered for your consideration in finalizing the DEIS.

Bhattacharya,M., R.B. Primack, and J. Gerwein. 2003. Are roads and railroads barriers to bumblebee movement in a temperate suburban conservation area? Biological Conservation 109:37-45.

Cain, A. T., V. R. Tuovila, D. G. Hewitt, and M. E. Tewes 2003. Effects of a highway and mitigation projects on bobcats in Southern Texas. Biological Conservation 114:189-197.

Carr, L. W., and L. Fahrig. 2001. Effect of road traffic on two amphibian species of differing vagility. Conservation Biology 15:1071-1078.

Clevenger, A.P., B. Chruszcz, K.E. Gunson. 2003. Spatial patterns and factors influencing small vertebrate fauna road-kill aggregations. Biological Conservation 109:15-26.

Findlay, C. S. and J. Bourdages. 2000. Response time of wetland biodiversity to road construction on adjacent lands. Conservation Biology 14:86-94.

Forman, R. T. T. 2000. The ecological road-effect zone of a Massachusetts (U.S.A. suburban highway. Conservation Biology 14:36-46.

Forman, R. T. T. 2000. Estimate of the area affected ecologically by the road system in the United States. Conservation Biology 14:31-35.

Forman, R. T. T. and L. E. Alexander. 1998. Roads and their major ecological effects. Annual Review of Ecology and Systematics 29:207-231.

Forman, R. T. T., B. Reineking, and A. M. Hersperger. 2002. Road traffic and nearby grassland bird patterns in a suburbanizing landscape. Environmental Management 29:782-800.

Fortin, D. and G. W. Arnold. 1997. The influence of road verges on the use of nearby small

shrubland remnants by birds in the cental wheatbelt of Western Australia. Wildlife Research 24:679-689.

Forys, E.A., C.R. Allen, and D.P. Wojcik. 2002. Influence of the proximity and amount of human development and roads on the occurrence of the red imported fire ant in the lower Florida Keys. Biological Conservation 108:27-33.

Foster, M. L. and S. R. Humphrey. 1995. Use of highway underpasses by Florida panthers and other wildlife. Wildlife Society Bulletin 23:95-100.

Geneletti, D. 2003. Biodiversity Impact Assessment of roads: an approach based on ecosystem rarity. Environmental Impact Assessment Review 23:343-365.

Gibbs, J. P. and W. G. Shriver. 2002. Estimating the effects of road mortality on turtle populations. Conservation Biology 16:1647-1652.

Gutzwiller, K. J. and W. C. Barrow, Jr. 2003. Bird communities, roads, and development: prospects and constraints of applying empirical models. Biological Conservation 113:239-243

Gutzwiller, K. J. and W. C. Barrow, Jr. 2003. Influence of roads and development on bird communities in protected Chihuahuan Desert landscapes. Biological Conservation 113:225-237.

Haskell, D. G. 2000. Effects of forest roads on macroinvertebrate soil fauna of the Southern Appalachian Mountains. Conservation Biology 14:57-63.

Heilman, G. E., Jr., J. R. Strittholt, N. C. Slosser, and D. A. Dellasala. 2002. Forest fragmentation of the coterminous United States: assessing forest intactness through road density and spatial characteristics. BioScience 52:411-422.

Hels, T. and G. Nachman. 2002. Simulating viability of a spadefoot toad Pelobates fuscus metapopulation in a landscape fragmented by a road. Ecography 25:730-744.

Hels, T., and E. Buchwald. 2001 The effect of road kills on amphibian populations. Biological Conservation 99:331-340.

Hourdequin, M. 2000. Introduction to special section: Ecological effects of roads. Conservation Biology 14:16-17.

Huijser, M. P., and P.J.M. Bergers. 2000. The effect of roads and traffic on hedgehog (Erinaceus europaeus) populations. Biological Conservation 95:111-116.

Jones, J. A., F. J. Swanson, B. C. Wemple, and K. U. Snyder. 2000. Effects of roads on hydrology, geomorphology, and disturbance patches in stream networks. Conservation Biology 14:76-85.

Kerley, L. L., J. M. Goodrich, D. G. Miquelle, E. N. Smirnov, H. B. Quigley, and M. G. Hornocker. 2002. Effects of roads and human disturbance on Amur Tigers. Conservation Biology 16: 97-108.

Kuitunen, M. T., J. Viljanen, E. Rossi, and A. Stenroos. 2003. Impact of busy roads on breeding success in Pied Flycatchers Ficedula hypoleuca. Environmental Management 31: 79-85.

Mader, H.-J. 1984. Animal habitat isolation by roads and agricultural fields. Biological Conservation 29:81-96.

Meunier, F. D., C. Verheyden, P. Jouventin. 1999. Bird communities of highway verges: influence of adjacent habitat and roadside management. Acta Oecologia 20:1-13.

Parendes, L. A. and J. A. Jones. 2000. Role of light availability and dispersal in exotic plant invasion along roads and streams in the H. J. Andrews Experimental Forest, Oregon. Conservation Biology 14:64-75.

Ries, L., D. M. Debinski, and M. L. Wieland. 2001. Conservation Value of Roadside Prairie Restoration to Butterfly Communities. Conservation Biology 15: 401-411.

Riiters, K. H. and J. D. Wickham 2003. How far to the nearest road? Frontiers in Ecology and the Environment 3:125-129.

Saunders, S. C., M. R. Mislivets, J. Chen, and D.T. Cleland. 2002. Effects of roads on landscape structure within nested ecological units of the Northern Great Lakes Region, USA. Biological Conservation 103:209-225.

Strittholt, J. R. and D. A. Dellasala. 2001. Importance of roadless areas in biodiversity conservation in forested ecosystems: case study of the Klamath-Siskiyou ecoregion of the United States. Conservation Biology 15:1742-1754.

Switalski, T. A., J. A. Bissonette, T. H. DeLuca, C. H. Luce, and M. A. Madej. 2004. Benefits and impacts of road removal. Frontiers in Ecology and the Environment 2:21-28.

Tinker, D. B., C. A. C. Resor, G. P. Beauvais, K. F. Kipfmueller, C. I. Fernandes, and William L. Baker. 1998. Watershed analysis of forest fragmentation by clearcuts and roads in a Wyoming forest. Landscape Ecology 13:149-165.

Trombulak, S. C. and C. A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. Conservation Biology 14:18-30.

Tyser, R. W. and C. A. Worley. 1992. Alien flora in grasslands adjacent to road and trail corridors in Glacier National Park, Montana (U. S. A.). Conservation Biology 6:253-262.

Van Bohemen, H. D., and W. H. Janssen Van De Laak. 2003. The influence of road

infrastructure and traffic on soil, water, and air quality. Environmental Management 31:50-68

Varchola, J. M. and J. P. Dunn. 1999. Changes in ground beetle (Coleoptera: Carabidae) assemblages in farming systems bordered by complex or simple roadside vegetation. Agriculture, Ecosystems, and Environment 73:41-49.

Vermeulen, H. J. W. 1994. Corridor function of a road verge for dispersal of stentopic heathland ground beetles carabidae. Biological Conservation 69:339-349.

Vermeulen, H. J. W. and P. F. M. Opdam. 1995. Effectiveness of roadside verges as dispersal corridors for small ground-dwelling animals; a simulation study. Landscape and Urban planning 31:233-248.

2. EPA Region 6 used its GIS Screening Tool (GISST) to perform an analysis of thirteen criteria on Corridor A. EPA hopes that this information will aid AHTD in determining a preferred alignment within this corridor and for identifying opportunities for mitigation, especially for the avoidance and minimization of potential impacts. Socioeconomic criteria can be used as a starting point to assess environmental justice issues and to prepare communications strategies for scoping meetings or public meetings. Environmental criteria can be used as a starting point to determine and prioritize traditional "NEPA" issues.

GISST uses GIS coverages and imposes a scoring structure on the data so that issues may be identified and prioritized. Criteria are ranked using a 1 to 5 scale, with 1 representing low concern and 5 representing high concern. Scores of "4" or "5" (darker colors on the enclosed figures) may need to be investigated further. Corridor A is converted into 1 kilometer squares and the GISST is applied to each square. The GISST can be used to identify and prioritize single issues, such as agricultural lands, threatened and endangered species, 500 year floodplain, impaired waters, managed/public lands, hydrography (Stream density), wetlands, wildlife habitat, economically stressed populations, minority populations, population density, ozone nonattainment, and regulated pollution sources. Additionally, these criteria can be summed to aid in determining potential cumulative impacts ("Sum of All Criteria" map). GIS-compatible electronic files of this information may be sent to AHTD upon request. For details on databases, references, and specific criteria used, an electronic file of the GISST User's guide as well as other information can be found at www.epa.gov/earth1r6/6en/xp/enxp2a3.htm

The following criteria are highlighted and have areas that scored "high" within the proposed corridor:

Federal Threatened and endangered (T&E) Species. There are several areas within the corridor where sensitive species may be present. Coordination with the US Fish and Wildlife Service is recommended.

Wildlife Habitat. Using land cover GIS coverages, there is a large number of 1 kilometer squares throughout the corridor that contain habitat that could potentially be used by wildlife (wetlands, rangelands, forest lands, woodlands, and/or bottomlands) and may be impacted by the proposed

project. These potentially impacted areas may be opportunities for mitigation.

Agricultural lands. The eastern portion of the corridor shows a higher density of agricultural land, primarily between Monticello and McGehee, AR.

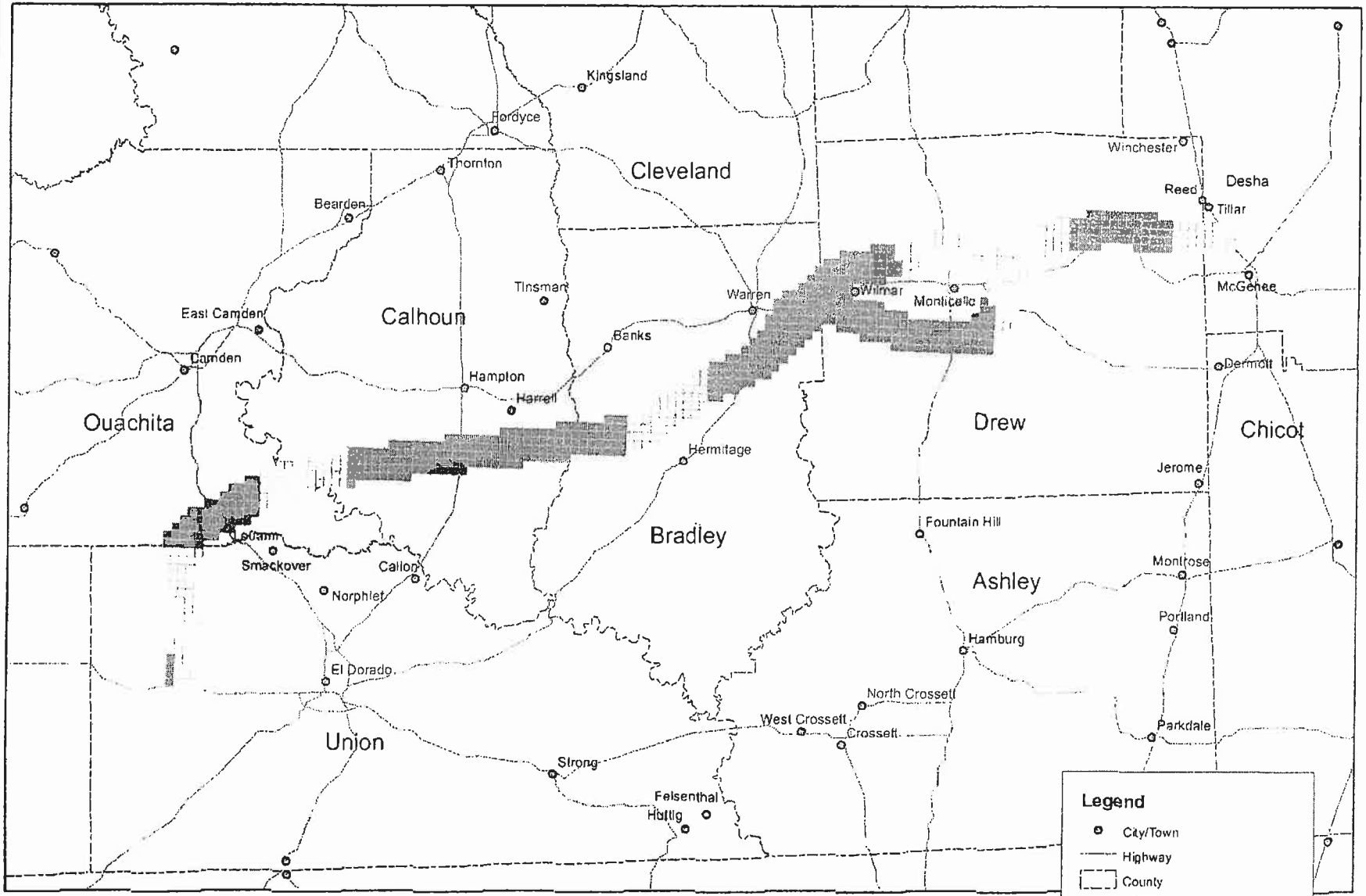
Hydrography (Density of streams). The entire length of the corridor is peppered with areas of high stream density. These potentially impacted areas may be opportunities for avoidance or other mitigation opportunities

Wetlands & 500 year floodplain. There are several areas that show a high density of wetlands, the largest one existing between Warren and Wilmar, AR. Additionally, there may be issues concerning the 500 yr floodplain near Tillar, AR.

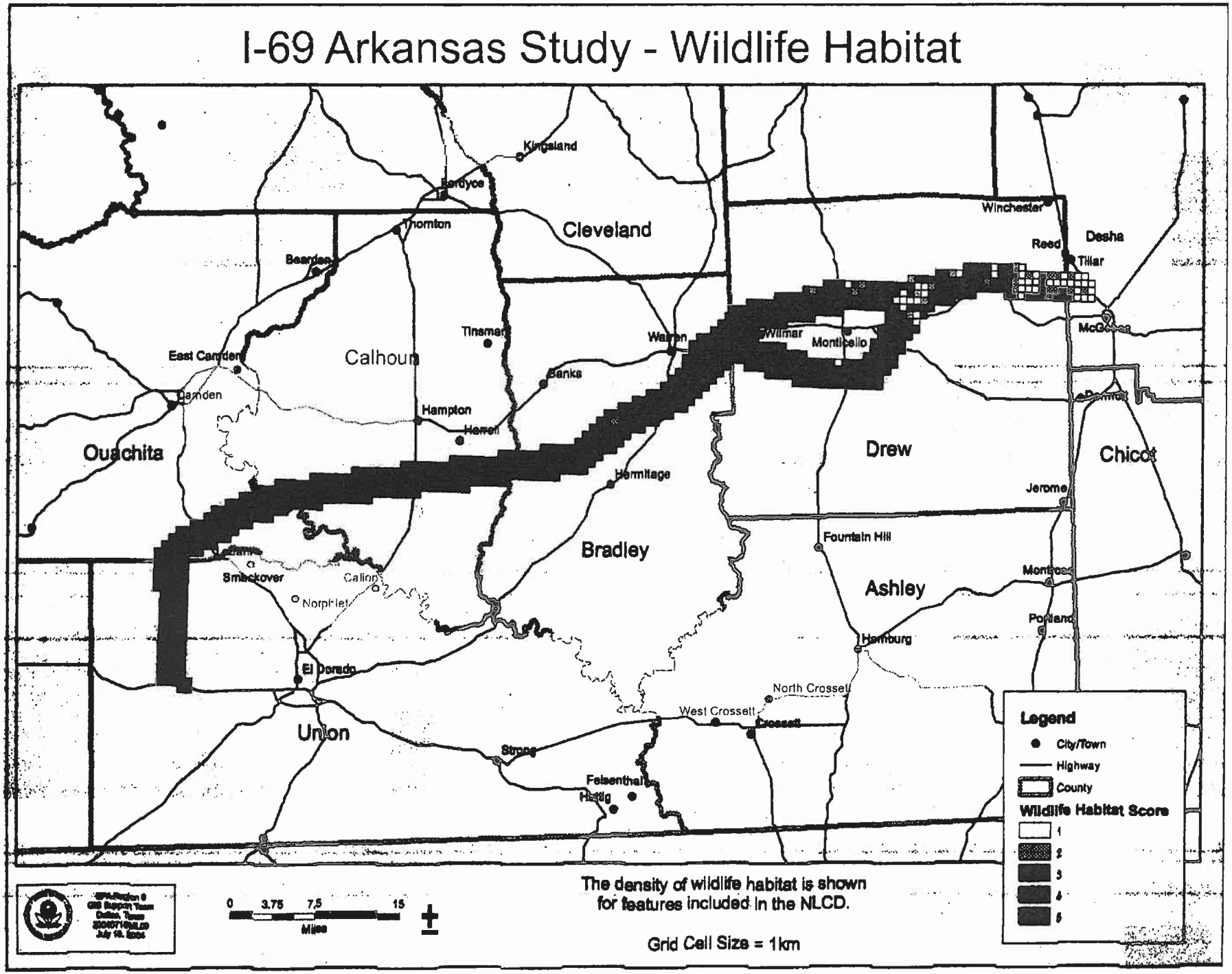
Minority population. There are several areas that show a high percentage of minority population. The largest of these exists west of Wilmar, AR and between Monticello and McGehee, AR. A score of "5" is greater than or equal to two times the state average of minorities (U. S. Census). This situation may factor into communication strategies concerning the project and environmental justice assessments.

Sum of All Criteria. This figure shows the sum for all 13 criteria analyzed using the GISST. The area between Warren and Wilmar, AR is an area identified as having multiple potential concerns or cumulative impacts and may need to be further addressed in the EIS.

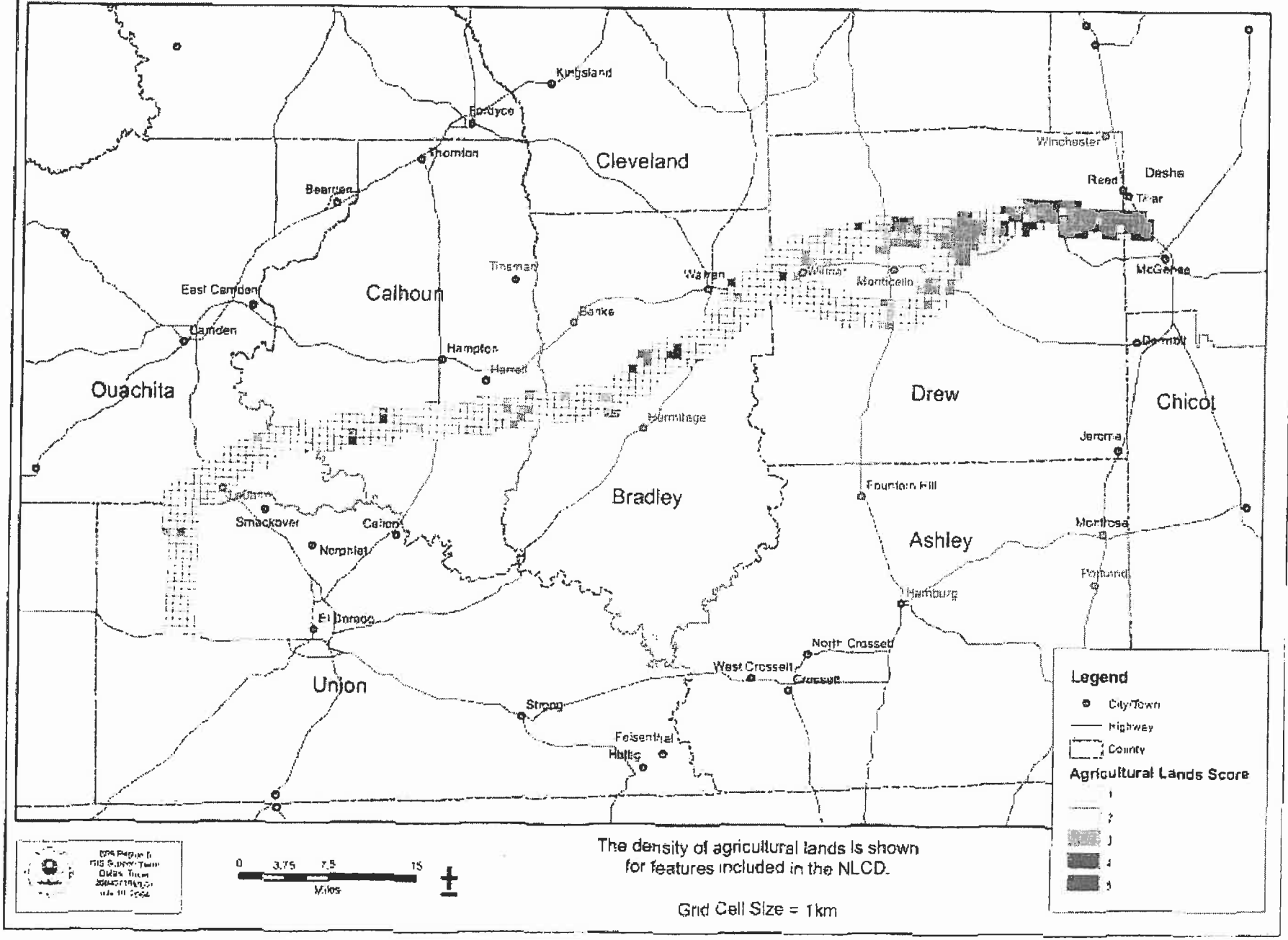
I-69 Arkansas Study - Federal T&E Species



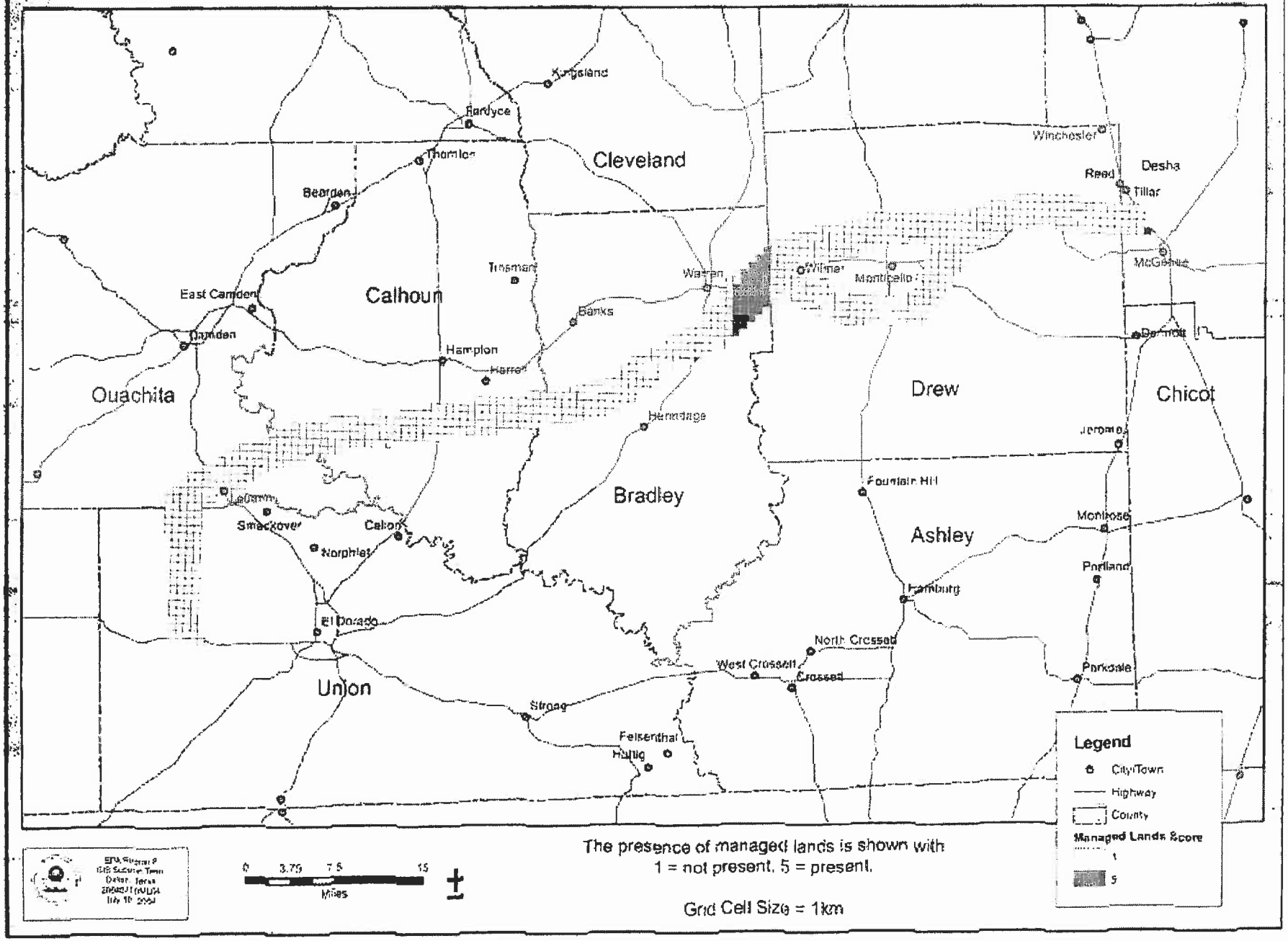
I-69 Arkansas Study - Wildlife Habitat



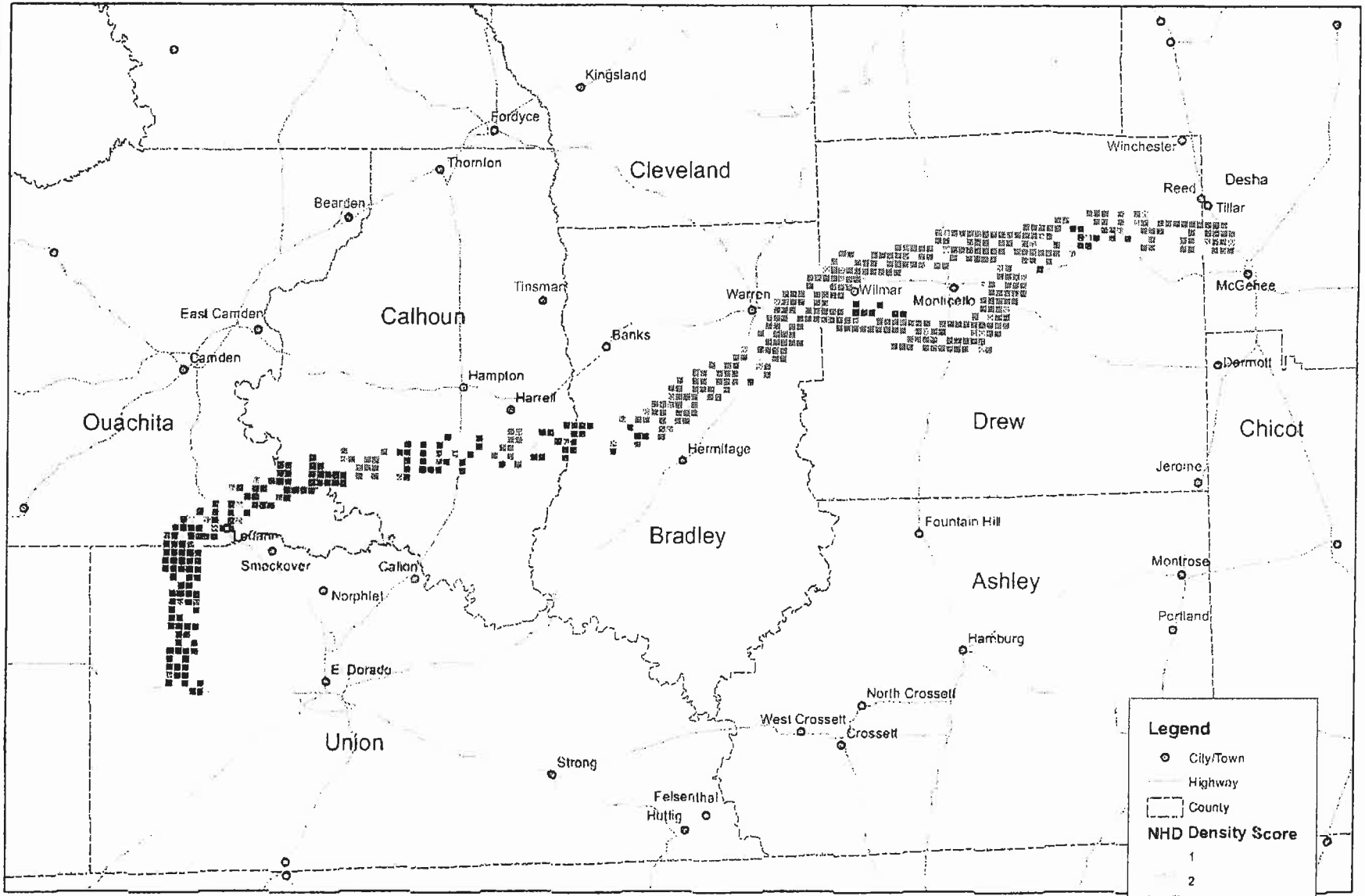
I-69 Arkansas Study - Agricultural Lands



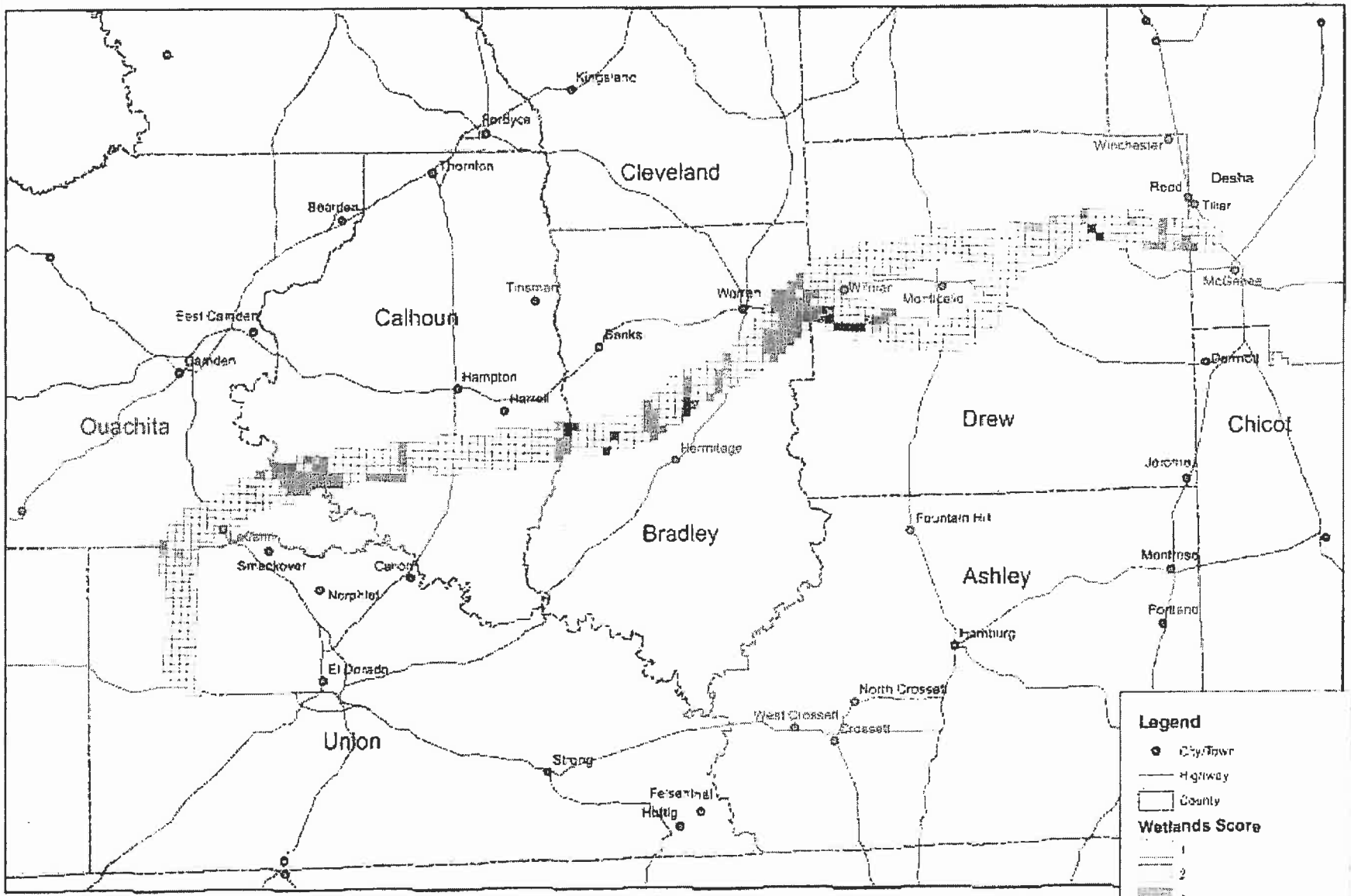
I-69 Arkansas Study - Managed Lands



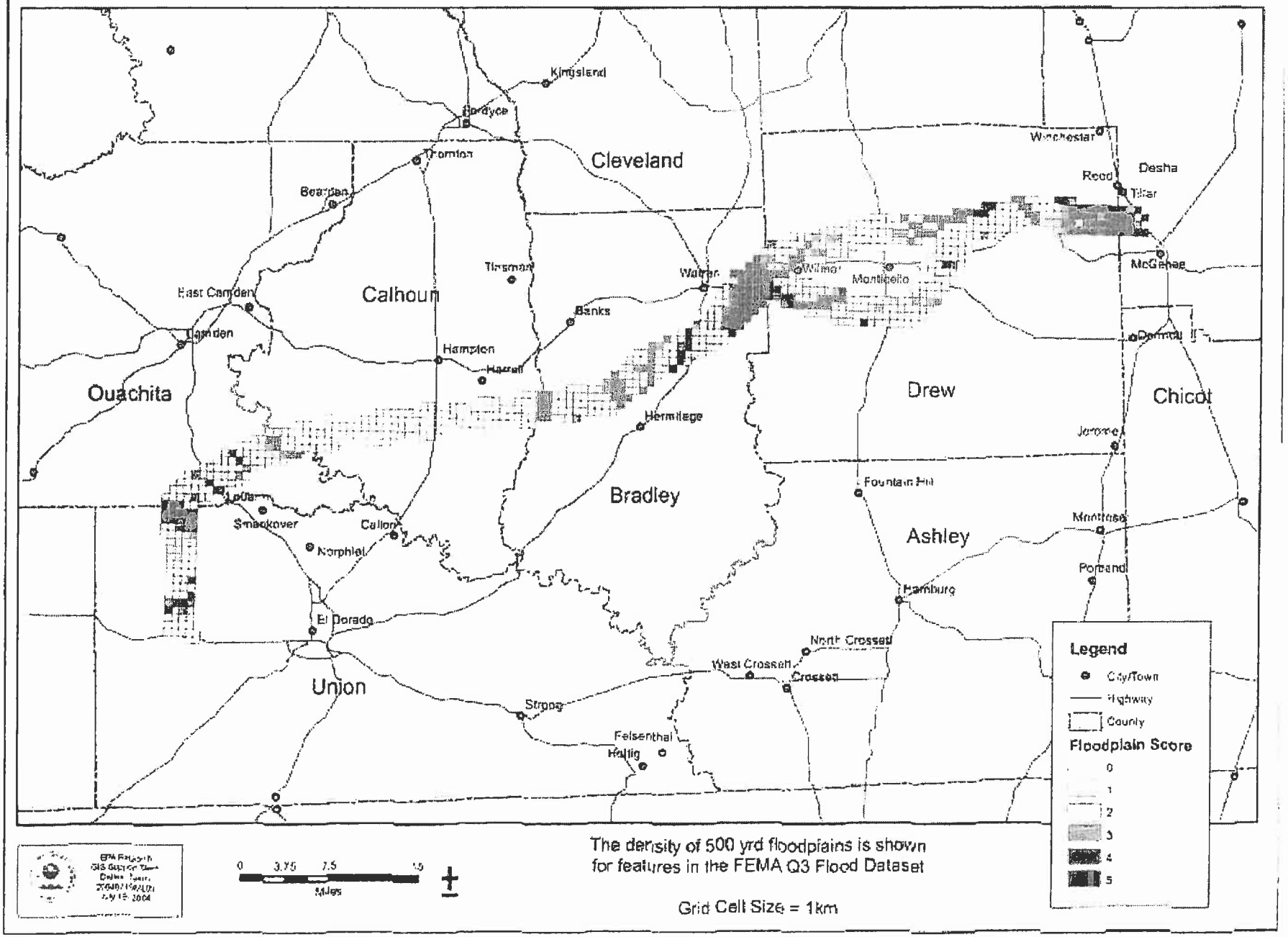
I-69 Arkansas Study - NHD Density



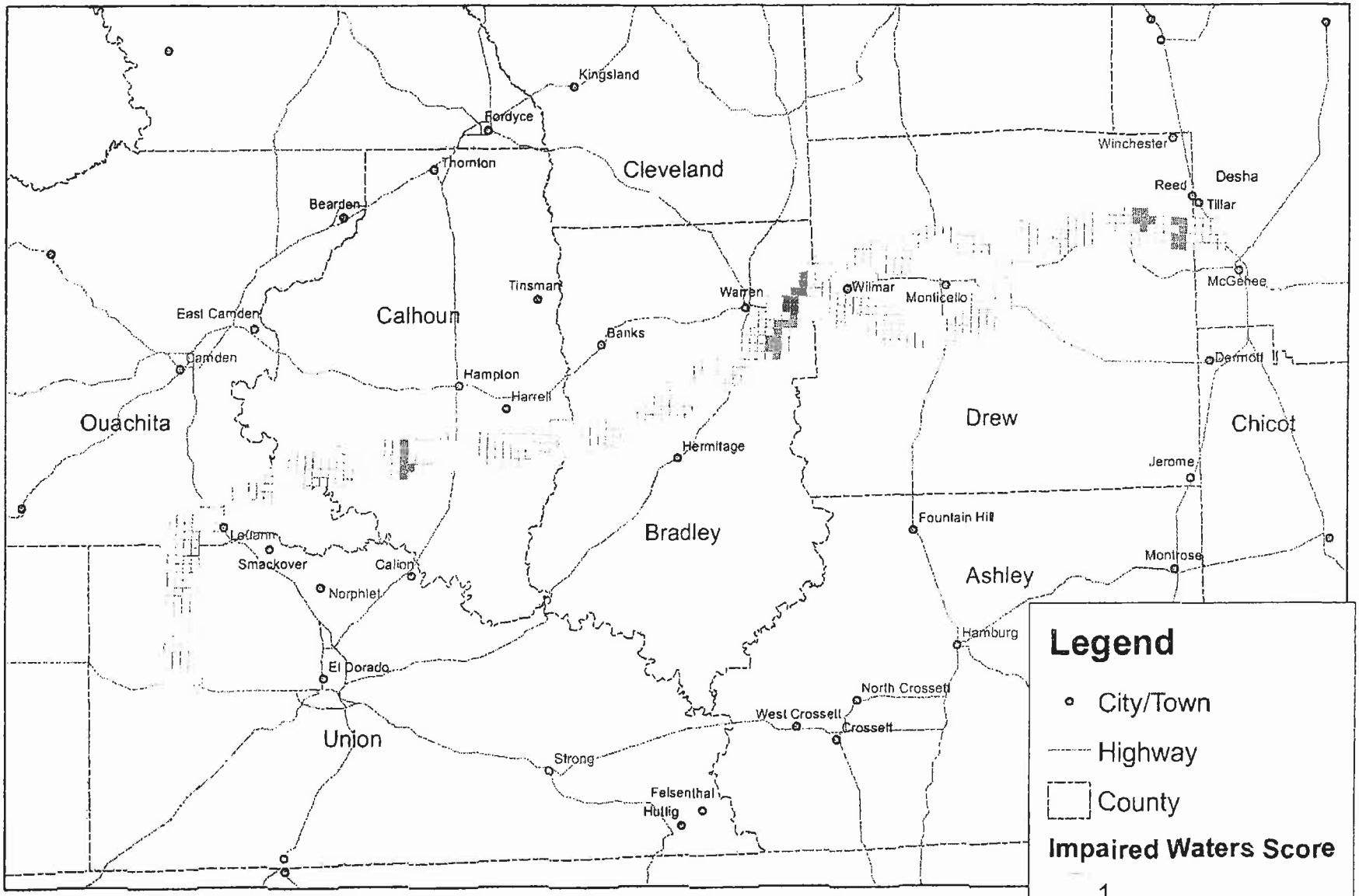
I-69 Arkansas Study - Wetlands



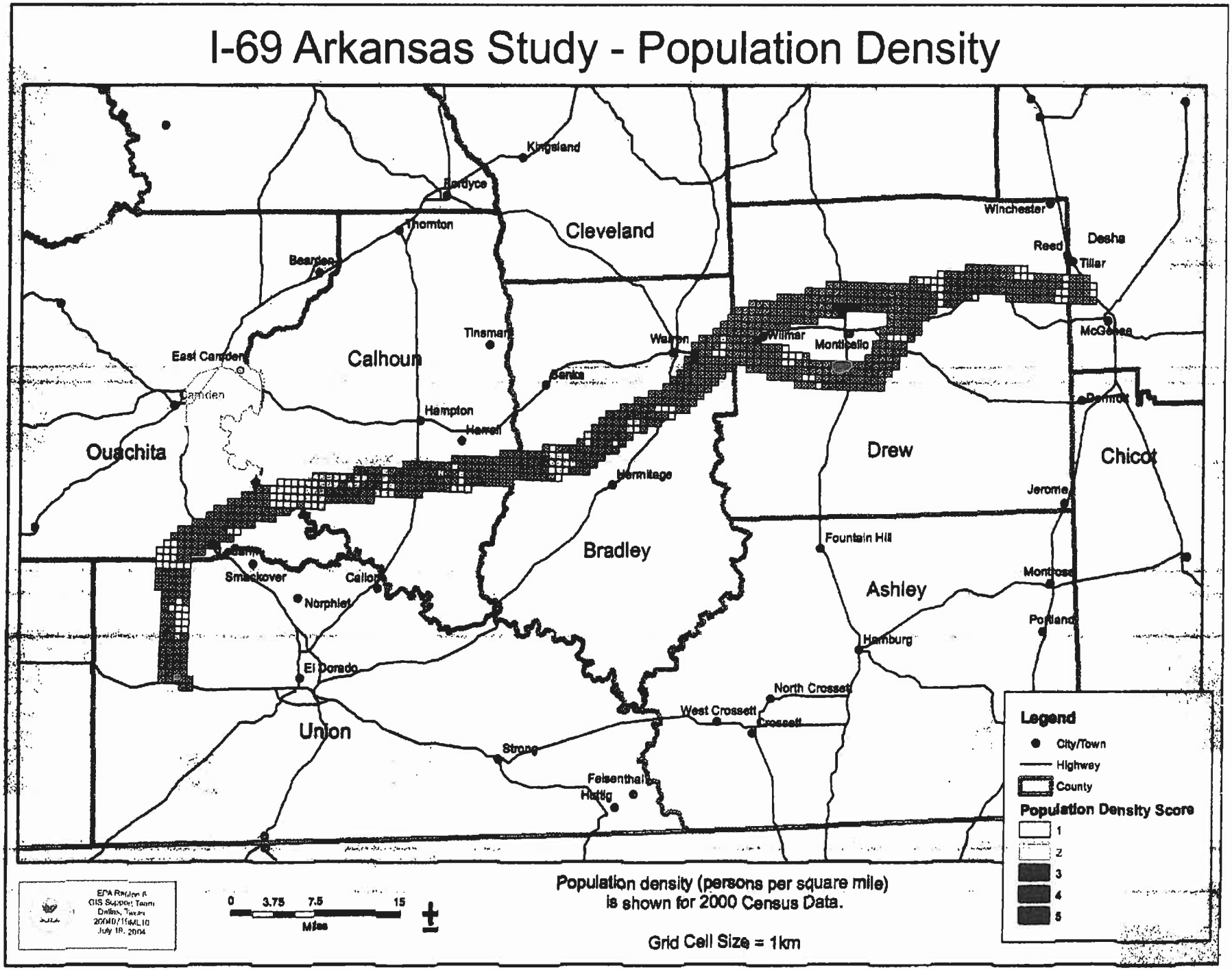
I-69 Arkansas Study - 500 yr Floodplain



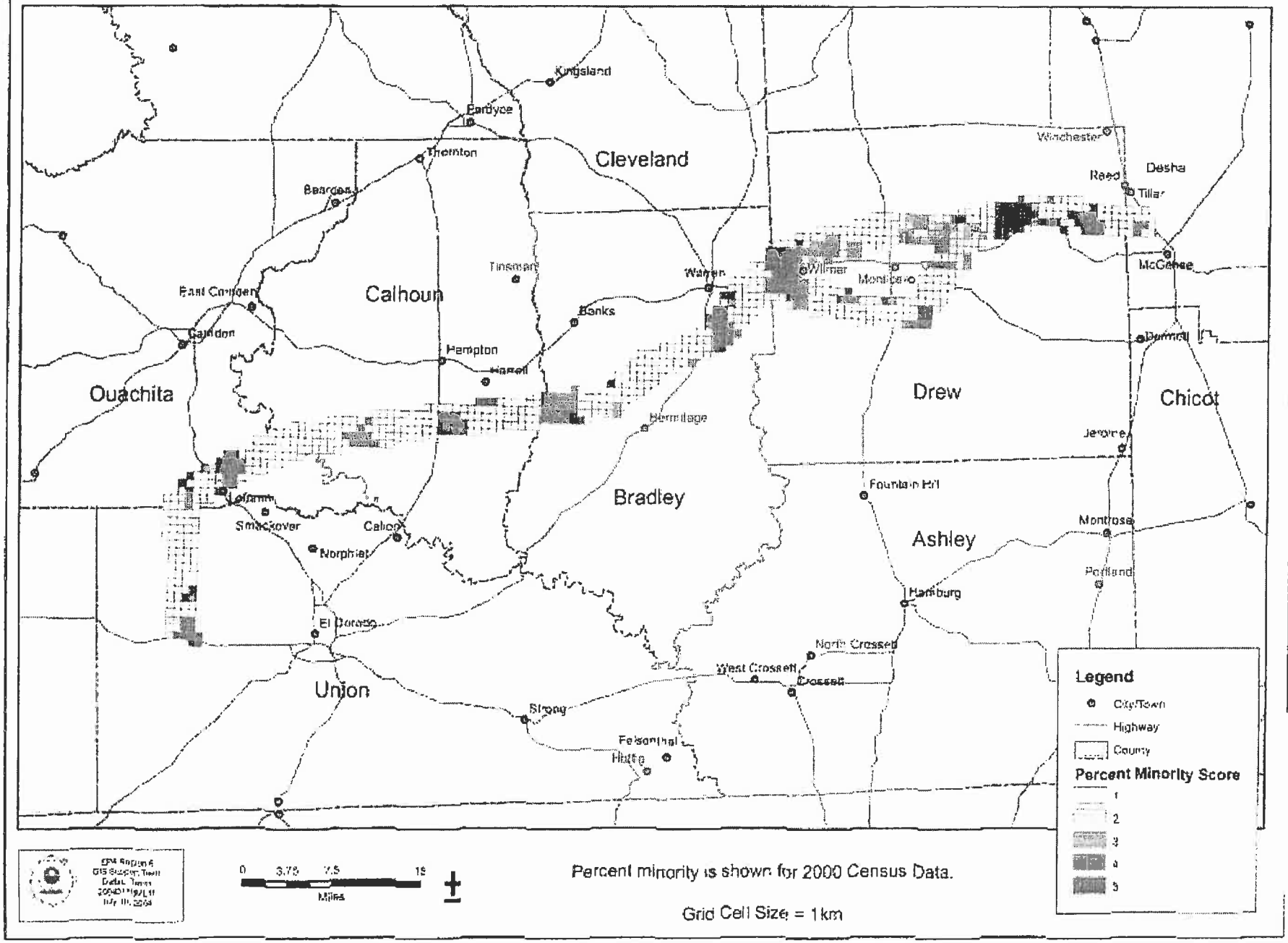
I-69 Arkansas Study - Impaired Waters



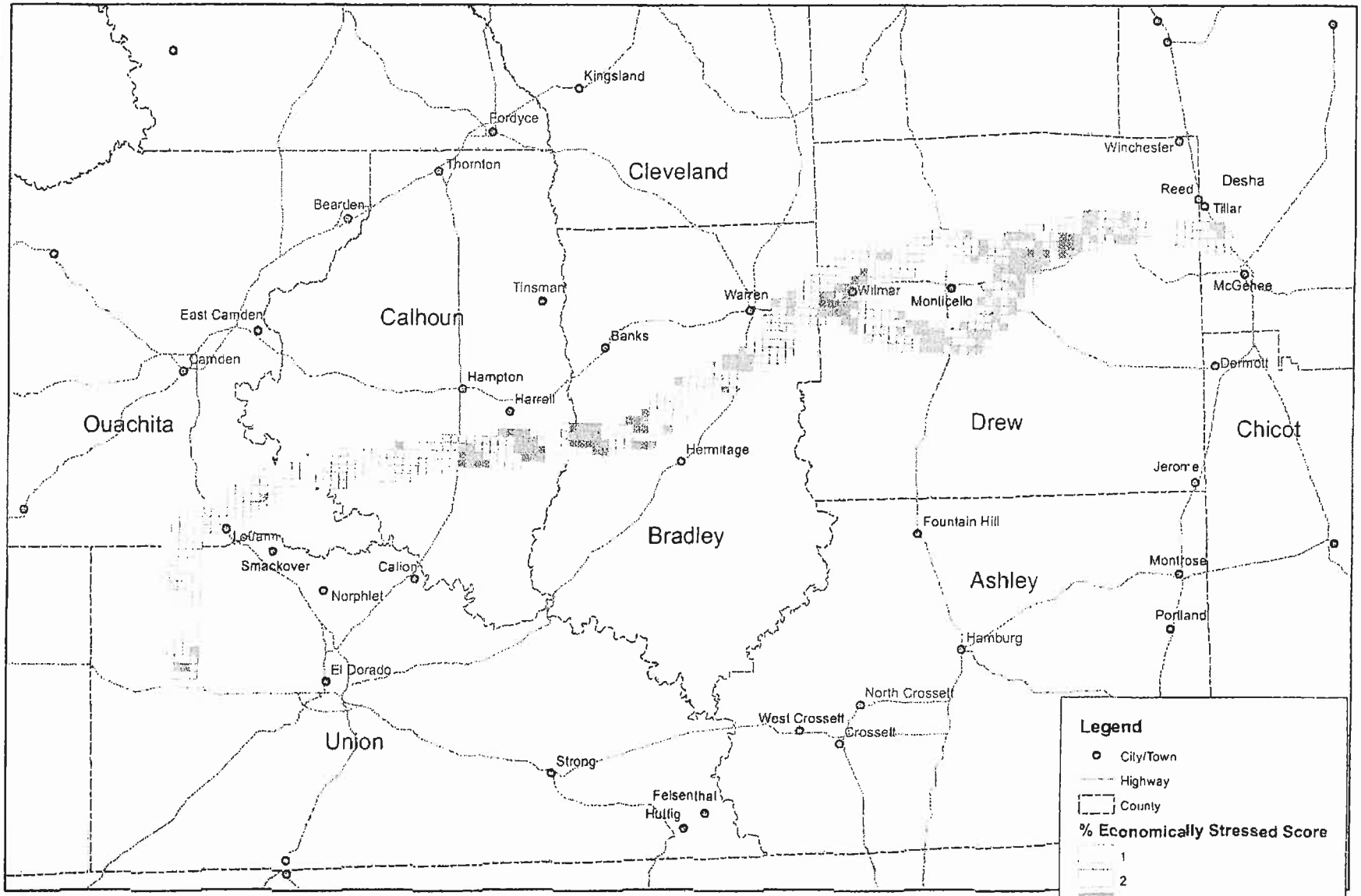
I-69 Arkansas Study - Population Density



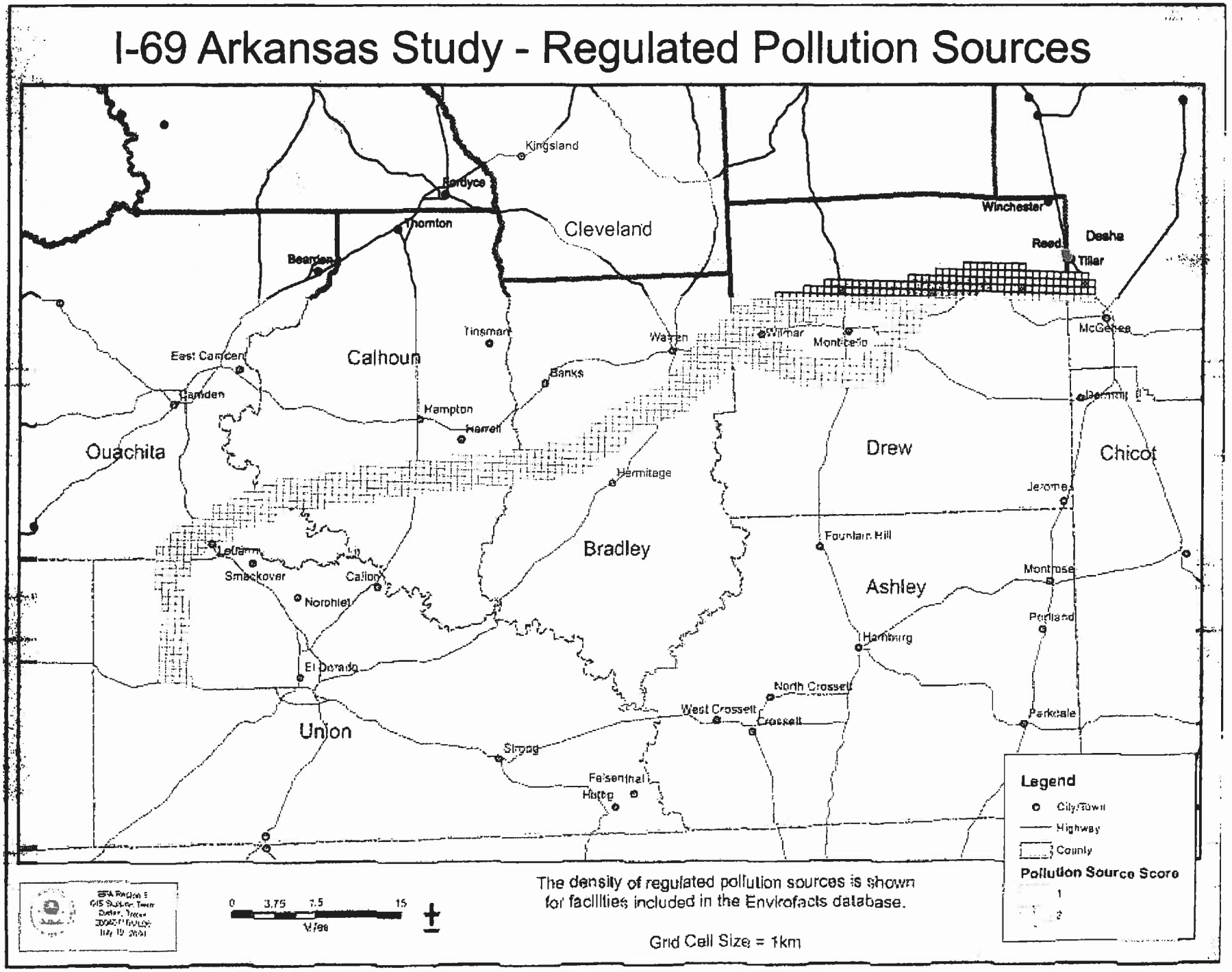
I-69 Arkansas Study - Percent Minority



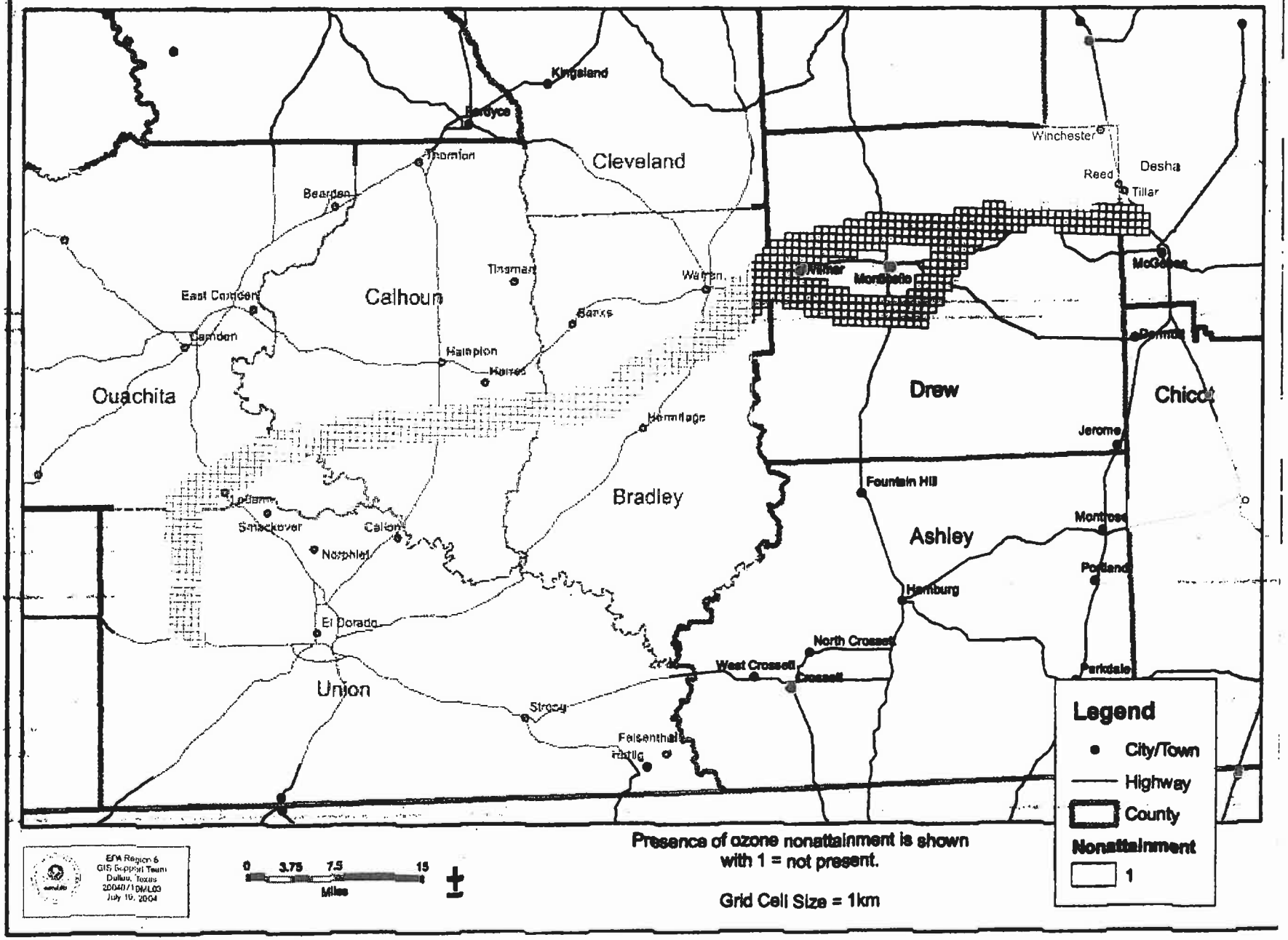
I-69 Arkansas Study - Percent Economically Stressed



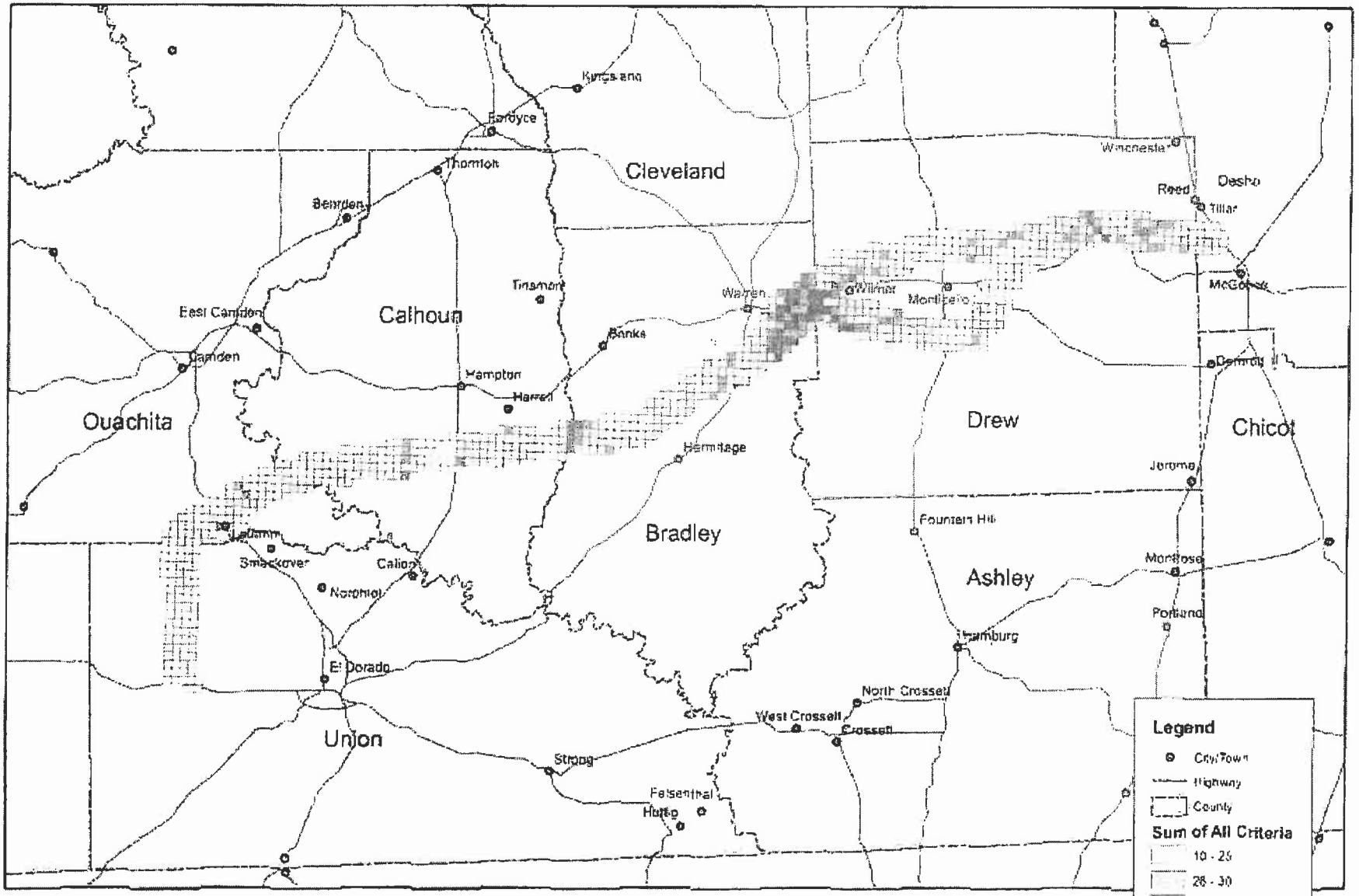
I-69 Arkansas Study - Regulated Pollution Sources



I-69 Arkansas Study - Nonattainment



I-69 Arkansas Study - Sum of All Criteria



TRIBAL CORRESPONDENCE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

November 29, 2001

IN REPLY REFER TO:
I-69 SIU 13

HDA-AR

Robert Cast
Tribal Historic Preservation Officer
Caddo Tribe of Oklahoma
P.O. Box 487
Binger, Oklahoma 73009

Dear Mr. Cast:

The Federal Highway Administration (FHWA), in cooperation with the Arkansas State Highway and Transportation Department (AHTD), is writing to formally invite your participation in the environmental study for the location of I-69 from El Dorado to McGehee, AR. Our consultant, Michael Baker, Jr., Inc., will be conducting comprehensive environmental and engineering studies and will prepare the necessary environmental documentation for this proposed highway facility. The project study area encompasses all or portions of Desha, Chicot, Ashley, Drew, Union, Bradley, Calhoun, Ouachita, and Columbia Counties and is approximately 110 miles (177 kilometers) in length. A map of the proposed study area is attached for your review.

The proposed project will serve as a portion of the Congressionally-designated High Priority Corridor 18 that will link Indianapolis, IN to the lower Rio Grande Valley in Texas. This section of I-69 will connect the Mississippi River Crossing of I-69 to U.S. 167 in the vicinity of El Dorado, and will enhance the transportation services and economic vitality of the project area.

Representatives from the Caddo Tribe are invited to attend a scoping meeting to be held at 1:30 pm on December 5, 2001 in Room 1001 of the AHTD Headquarters Building in Little Rock, AR. The purpose of this meeting is to discuss the study process and to identify specific environmental issues that could be encountered during the study. As a Native American Tribe with ancestral ties to the project area, your input and knowledge of traditional religious or cultural issues or areas is highly regarded as part of the environmental study that will support the project. If you desire, an alternate meeting can be arranged at your convenience that could include a field review of the project area.

As always, your participation in the FHWA environmental decision-making process is greatly appreciated, and we look forward to consulting with the Caddo Tribe on this and other federal-aid highway projects in Arkansas. If you have questions, comments, or wish to further discuss the project, please contact me or Mr. Randal Looney of my staff at (501) 324-5625.

Sincerely yours,

Donell E. Inman

for Sandra L. Otto
Division Administrator

cc: Mr. Dan Flowers, AHTD, encls

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

November 29, 2001

IN REPLY REFER TO:
I-69 SIU 13

HDA-AR

Mr. Earl Barbry, Sr.
Tribal Chairman
Tunica-Biloxi Indians of Louisiana, Inc.
P.O. Box 1589
Marksville, LA 71351

Dear Mr. Barbry:

The Federal Highway Administration (FHWA), in cooperation with the Arkansas State Highway and Transportation Department (AHTD), is writing to formally invite your participation in the environmental study for the location of I-69 from El Dorado to McGehee, AR. Our consultant, Michael Baker, Jr., Inc., will be conducting comprehensive environmental and engineering studies and will prepare the necessary environmental documentation for this proposed highway facility. The project study area encompasses all or portions of Desha, Chicot, Ashley, Drew, Union, Bradley, Calhoun, Ouachita, and Columbia Counties and is approximately 110 miles (177 kilometers) in length. A map of the proposed study area is attached for your review.

The proposed project will serve as a portion of the Congressionally-designated High Priority Corridor 18 that will link Indianapolis, IN to the lower Rio Grande Valley in Texas. This section of I-69 will connect the Mississippi River Crossing of I-69 to U.S. 167 in the vicinity of El Dorado, and will enhance the transportation services and economic vitality of the project area.

Representatives from the Tunica-Biloxi are invited to attend a scoping meeting to be held at 1:30 pm on December 5, 2001 in Room 1001 of the AHTD Headquarters Building in Little Rock, AR. The purpose of this meeting is to discuss the study process and to identify specific environmental issues that could be encountered during the study. As a Native American Tribe with ancestral ties to the project area, your input and knowledge of traditional religious or cultural issues or areas is highly regarded as part of the environmental study that will support the project. If you desire, an alternate meeting can be arranged at your convenience that could include a field review of the project area.

As always, your participation in the FHWA environmental decision-making process is greatly appreciated, and we look forward to consulting with the Tunica-Biloxi on this and other federal-aid highway projects in Arkansas. If you have questions, comments, or wish to further discuss the project, please contact me or Mr. Randal Looney of my staff at (501) 324-5625.

Sincerely yours,

for Sandra L. Otto
Division Administrator

cc: Mr. Dan Flowers, AHTD, encls

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

November 29, 2001

IN REPLY REFER TO:
I-69 SIU 13

HDA-AR

Tamara Martin, Chairperson
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363

Dear Ms. Martin:

The Federal Highway Administration (FHWA), in cooperation with the Arkansas State Highway and Transportation Department (AHTD), is writing to formally invite your participation in the environmental study for the location of I-69 from El Dorado to McGehee, AR. Our consultant, Michael Baker, Jr., Inc., will be conducting comprehensive environmental and engineering studies and will prepare the necessary environmental documentation for this proposed highway facility. The project study area encompasses all or portions of Desha, Chicot, Ashley, Drew, Union, Bradley, Calhoun, Ouachita, and Columbia Counties and is approximately 110 miles (177 kilometers) in length. A map of the proposed study area is attached for your review.

The proposed project will serve as a portion of the Congressionally-designated High Priority Corridor 18 that will link Indianapolis, IN to the lower Rio Grande Valley in Texas. This section of I-69 will connect the Mississippi River Crossing of I-69 to U.S. 167 in the vicinity of El Dorado, and will enhance the transportation services and economic vitality of the project area.

Representatives from the Quapaw Tribe are invited to attend a scoping meeting to be held at 1:30 pm on December 5, 2001 in Room 1001 of the AHTD Headquarters Building in Little Rock, AR. The purpose of this meeting is to discuss the study process and to identify specific environmental issues that could be encountered during the study. As a Native American Tribe with ancestral ties to the project area, your input and knowledge of traditional religious or cultural issues or areas is highly regarded as part of the environmental study that will support the project. If you desire, an alternate meeting can be arranged at your convenience that could include a field review of the project area.

As always, your participation in the FHWA environmental decision-making process is greatly appreciated, and we look forward to consulting with the Quapaw Tribe on this and other federal-aid highway projects in Arkansas. If you have questions, comments, or wish to further discuss the project, please contact me or Mr. Randal Looney of my staff at (501) 324-5625.

Sincerely yours,

for Sandra L. Otto
Division Administrator

cc: Mr. Dan Flowers, AHTD, encls

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

June 26, 2002

IN REPLY REFER TO:
I-69 SIU 13

HDA-AR

Robert Cast
Tribal Historic Preservation Officer
Caddo Tribe of Oklahoma
P.O. Box 487
Binger, Oklahoma 73009

Dear Mr. Cast:

In November 2001, The Federal Highway Administration (FHWA), in cooperation with the Arkansas State Highway and Transportation Department (AHTD), invited the Caddo Tribe to participate in the environmental study for the location of I-69 from El Dorado to McGehee, AR. The project study area encompasses all or portions of Desha, Chicot, Ashley, Drew, Union, Bradley, Calhoun, Ouachita, and Columbia Counties and is approximately 110 miles (177 kilometers) in length.

The proposed project will serve as a portion of the Congressionally-designated High Priority Corridor 18 that will link Indianapolis, IN to the lower Rio Grande Valley in Texas. This section of I-69 will connect the Mississippi River Crossing of I-69 to U.S. 82 in the vicinity of El Dorado, and will enhance the transportation services and economic vitality of the project area.

A corridor study has been completed for the project study area and is attached for your review and comment. The next step in the process is to begin looking at potential alignments for the facility within the preferred corridor described in the attached document.

As a Native American Tribe with ancestral ties to the project area, your input and knowledge of traditional religious or cultural issues or areas is highly regarded as part of the environmental study that will support the project. If you desire, a meeting can be arranged at your convenience that could include a field review of the preferred corridor area.

As always, your participation in the FHWA transportation decision-making process is greatly appreciated, and we look forward to consulting with the Caddo Tribe on this and other federal-aid highway projects in Arkansas. If you have questions, comments, or wish to further discuss the project, please contact me or Mr. Randal Looney of my staff at (501) 324-5625.

Sincerely yours,

Sandra L. Otto
Division Administrator

cc: Mr. Dan Flowers, AHTD, encls

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

June 26, 2002

IN REPLY REFER TO:
I-69 SIU 13

HDA-AR

Mr. Earl Barbry, Sr.
Tribal Chairman
Tunica-Biloxi Indians of Louisiana, Inc.
P.O. Box 1589
Marksville, LA 71351

Dear Mr. Barbry:

In November 2001, The Federal Highway Administration (FHWA), in cooperation with the Arkansas State Highway and Transportation Department (AHTD), invited the Tunica-Biloxi Indians to participate in the environmental study for the location of I-69 from El Dorado to McGehee, AR. The project study area encompasses all or portions of Desha, Chicot, Ashley, Drew, Union, Bradley, Calhoun, Ouachita, and Columbia Counties and is approximately 110 miles (177 kilometers) in length.

The proposed project will serve as a portion of the Congressionally-designated High Priority Corridor 18 that will link Indianapolis, IN to the lower Rio Grande Valley in Texas. This section of I-69 will connect the Mississippi River Crossing of I-69 to U.S. 82 in the vicinity of El Dorado, and will enhance the transportation services and economic vitality of the project area.

A corridor study has been completed for the project study area and is attached for your review and comment. The next step in the process is to begin looking at potential alignments for the facility within the preferred corridor described in the attached document.

As a Native American Tribe with ancestral ties to the project area, your input and knowledge of traditional religious or cultural issues or areas is highly regarded as part of the environmental study that will support the project. If you desire, a meeting can be arranged at your convenience that could include a field review of the preferred corridor area.

As always, your participation in the FHWA transportation decision-making process is greatly appreciated, and we look forward to consulting with the Tunica-Biloxi on this and other federal-aid highway projects in Arkansas. If you have questions, comments, or wish to further discuss the project, please contact me or Mr. Randal Looney of my staff at (501) 324-5625.

Sincerely yours,

Sandra L. Otto
Division Administrator

cc: Mr. Dan Flowers, AHTD, encls

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

June 26, 2002

IN REPLY REFER TO:
I-69 SIU 13

HDA-AR

Tamara Martin, Chairperson
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363

Dear Ms. Martin:

In November 2001, The Federal Highway Administration (FHWA), in cooperation with the Arkansas State Highway and Transportation Department (AHTD), invited the Quapaw Tribe to participate in the environmental study for the location of I-69 from El Dorado to McGehee, AR. The project study area encompasses all or portions of Desha, Chicot, Ashley, Drew, Union, Bradley, Calhoun, Ouachita, and Columbia Counties and is approximately 110 miles (177 kilometers) in length.

The proposed project will serve as a portion of the Congressionally-designated High Priority Corridor 18 that will link Indianapolis, IN to the lower Rio Grande Valley in Texas. This section of I-69 will connect the Mississippi River Crossing of I-69 to U.S. 82 in the vicinity of El Dorado, and will enhance the transportation services and economic vitality of the project area.

A corridor study has been completed for the project study area and is attached for your review and comment. The next step in the process is to begin looking at potential alignments for the facility within the preferred corridor described in the attached document.

As a Native American Tribe with ancestral ties to the project area, your input and knowledge of traditional religious or cultural issues or areas is highly regarded as part of the environmental study that will support the project. If you desire, a meeting can be arranged at your convenience that could include a field review of the preferred corridor area.

As always, your participation in the FHWA transportation decision-making process is greatly appreciated, and we look forward to consulting with the Quapaw Tribe on this and other federal-aid highway projects in Arkansas. If you have questions, comments, or wish to further discuss the project, please contact me or Mr. Randal Looney of my staff at (501) 324-5625.

Sincerely yours,

Sandra L. Otto
Division Administrator

cc: Mr. Dan Flowers, AHTD, encls
Ms. Carrie V. Wilson, encls

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

April 11, 2003

IN REPLY REFER TO:
I-69 SIU 13

HDA-AR

Robert Cast
Tribal Historic Preservation Officer
Caddo Tribe of Oklahoma
P.O. Box 487
Binger, Oklahoma 73009

Dear Mr. Cast:

In November 2001, The Federal Highway Administration (FHWA), in cooperation with the Arkansas State Highway and Transportation Department (AHTD), invited the Caddo Tribe to participate in the environmental study for the location of I-69 from El Dorado to McGehee, AR.

The proposed 110-mile project will serve as a portion of the Congressionally-designated High Priority Corridor 18 that will link Indianapolis, IN to the lower Rio Grande Valley in Texas. This section of I-69 will connect the Mississippi River Crossing of I-69 to U.S. 82 in the vicinity of El Dorado, and will enhance the transportation services and economic vitality of the project area.

The alignment study for the project is now underway. Attached for your review and comment are maps showing four alignment alternatives for the facility within the preferred corridor. Also included is a preliminary alignment comparison table presenting preliminary impacts of each alternative. These materials can also be viewed on the project's website at: http://I-69.dina.org

As a Native American Tribe with ancestral ties to the project area, your input and knowledge of traditional religious or cultural issues or areas is highly regarded as part of the environmental study that will support the project. If you desire, a meeting can be arranged at your convenience that could include a field review of the alignment alternatives.

As always, your participation in the FHWA transportation decision-making process is greatly appreciated, and we look forward to consulting with the Caddo Tribe on this and other federal-aid highway projects in Arkansas. If you have questions, comments, or wish to further discuss the project, please contact me or Mr. Randal Looney at (501) 324-5625.

Sincerely yours,

Sandra L. Otto
Division Administrator

cc: Mr. Dan Flowers, AHTD, encls

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

April 11, 2003

IN REPLY REFER TO:
I-69 SIU 13

HDA-AR

John Berrey, Chairperson
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363

Dear Mr. Berrey:

In November 2001, The Federal Highway Administration (FHWA), in cooperation with the Arkansas State Highway and Transportation Department (AHTD), invited the Quapaw Tribe to participate in the environmental study for the location of I-69 from El Dorado to McGehee, AR.

The proposed 110-mile project will serve as a portion of the Congressionally-designated High Priority Corridor 18 that will link Indianapolis, IN to the lower Rio Grande Valley in Texas. This section of I-69 will connect the Mississippi River Crossing of I-69 to U.S. 82 in the vicinity of El Dorado, and will enhance the transportation services and economic vitality of the project area.

The alignment study for the project is now underway. Attached for your review and comment are maps showing four alignment alternatives for the facility within the preferred corridor. Also included is a preliminary alignment comparison table presenting preliminary impacts of each alternative. These materials can also be viewed on the project's website at: http://I-69.dina.org

As a Native American Tribe with ancestral ties to the project area, your input and knowledge of traditional religious or cultural issues or areas is highly regarded as part of the environmental study that will support the project. If you desire, a meeting can be arranged at your convenience that could include a field review of the alignment alternatives.

As always, your participation in the FHWA transportation decision-making process is greatly appreciated, and we look forward to consulting with the Quapaw Tribe on this and other federal-aid highway projects in Arkansas. If you have questions, comments, or wish to further discuss the project, please contact me or Mr. Randal Looney at (501) 324-5625.

Sincerely yours,

Sandra L. Otto
Division Administrator

cc: Mr. Dan Flowers, AHTD, encls
Ms. Carrie Wilson

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

April 11, 2003

IN REPLY REFER TO:
I-69 SIU 13

HDA-AR

Mr. Earl Barbry, Sr.
Tribal Chairman
Tunica-Biloxi Indians of Louisiana, Inc.
P.O. Box 1589
Marksville, LA 71351

Dear Mr. Barbry:

In November 2001, The Federal Highway Administration (FHWA), in cooperation with the Arkansas State Highway and Transportation Department (AHTD), invited the Tunica-Biloxi Indians to participate in the environmental study for the location of I-69 from El Dorado to McGehee, AR.

The proposed 110-mile project will serve as a portion of the Congressionally-designated High Priority Corridor 18 that will link Indianapolis, IN to the lower Rio Grande Valley in Texas. This section of I-69 will connect the Mississippi River Crossing of I-69 to U.S. 82 in the vicinity of El Dorado, and will enhance the transportation services and economic vitality of the project area.

The alignment study for the project is now underway. Attached for your review and comment are maps showing four alignment alternatives for the facility within the preferred corridor. Also included is a preliminary alignment comparison table presenting preliminary impacts of each alternative. These materials can also be viewed on the project's website at: http://I-69.dina.org

As a Native American Tribe with ancestral ties to the project area, your input and knowledge of traditional religious or cultural issues or areas is highly regarded as part of the environmental study that will support the project. If you desire, a meeting can be arranged at your convenience that could include a field review of the alignment alternatives.

As always, your participation in the FHWA transportation decision-making process is greatly appreciated, and we look forward to consulting with the Tunica-Biloxi Indians on this and other federal-aid highway projects in Arkansas. If you have questions, comments, or wish to further discuss the project, please contact me or Mr. Randal Looney at (501) 324-5625.

Sincerely yours,

Sandra L. Otto
Division Administrator

cc: Mr. Dan Flowers, AHTD, encls

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

May 14, 2004

IN REPLY REFER TO:
NCPD-NH-00076(24)
State Project 001873
I-69 SIU13 DEIS
HDA-AR

Mr. Earl Barbry, Sr.
Tribal Chairman
Tunica-Biloxi Indians of Louisiana, Inc
P.O. Box 1589
Marksville, LA 71351

Dear Mr. Barbry:

The Federal Highway Administration, in cooperation with the Arkansas Highway and Transportation Department has completed a Draft Environmental Impact Statement (DEIS) in support of construction of a fully controlled interstate highway from the vicinity of El Dorado, Arkansas to McGehee, Arkansas. Your tribal organization was notified of the project and initially invited to participate in the study process in April of 2003.

This approximately 100 mile (160 kilometer) study included areas in Ouachita, Union, Calhoun, Bradley, Drew, and Desha Counties. A copy of the DEIS, prepared by our consultant, Michael Baker Jr., Inc., is attached for your review and comment. If you would like to tour the study area, a field trip will be arranged at a time convenient to your schedule.

We look forward to continued coordination with you on this project, and welcome any and all comments you may have concerning the DEIS. Please contact Mr. Randal Looney of our office at (501) 324-6430 if we can answer any questions or provide you with additional information.

Sincerely yours,

Sandra L. Otto
Division Administrator

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

May 14, 2004

IN REPLY REFER TO:
NCPD-NH-00076(24)
State Project 001873
I-69 SIU13 DEIS
HDA-AR

Mr. Robert Cast
Tribal Historic Preservation Officer
Caddo Tribe of Oklahoma
P.O. Box 487
Binger, Oklahoma 73009

Dear Mr. Cast:

The Federal Highway Administration, in cooperation with the Arkansas Highway and Transportation Department has completed a Draft Environmental Impact Statement (DEIS) in support of construction of a fully controlled interstate highway from the vicinity of El Dorado, Arkansas to McGehee, Arkansas. Your tribal organization was notified of the project and initially invited to participate in the study process in April of 2003.

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We look forward to continued coordination with you on this project, and welcome any and all comments you may have concerning the DEIS. Please contact Mr. Randal Looney of our office at (501) 324-6430 if we can answer any questions or provide you with additional information.

Sincerely yours,

Sandra L. Otto
Division Administrator

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Arkansas Division
700 West Capitol Avenue, Room 3130
Little Rock, AR 72201-3298

May 14, 2004

IN REPLY REFER TO:
NCPD-NH-00076(24)
State Project 001873
I-69 SIU13 DEIS
HDA-AR

Mr. John Berrey
Tribal Chairperson
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, Oklahoma 74363

Dear Mr. Berrey:

The Federal Highway Administration, in cooperation with the Arkansas Highway and Transportation Department has completed a Draft Environmental Impact Statement (DEIS) in support of construction of a fully controlled interstate highway from the vicinity of El Dorado, Arkansas to McGehee, Arkansas. Your tribal organization was notified of the project and initially invited to participate in the study process in April of 2003.

This approximately 100 mile (160 kilometer) study included areas in Ouachita, Union, Calhoun, Bradley, Drew, and Desha Counties. A copy of the DEIS, prepared by our consultant, Michael Baker Jr., Inc., is attached for your review and comment. If you would like to tour the study area, a field trip will be arranged at a time convenient to your schedule.

We look forward to continued coordination with you on this project, and welcome any and all comments you may have concerning the DEIS. Please contact Mr. Randal Looney of our office at (501) 324-6430 if we can answer any questions or provide you with additional information.

Sincerely yours,

Sandra L. Otto
Division Administrator

EXISTING AND PREDICTED SOUND LEVELS

PREDICTED NOISE LEVELS

Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
1	Residential dwelling	1SFH		55	58	59	59	59	59	59
2	Residential dwelling	1SFH		64	67	68	67	67	67	67
3	Residential dwellings	2 SFH		61	64	Take	64	64	64	64
4	Residential dwellings	1SFH + 1MH		60	63	Take	63	64	64	63
5	Residential dwelling	1SFH		63	65	65	65	Take	Take	65
6	Residential dwelling	1SFH		63	65	65	65	Take	Take	65
7	Residential dwelling	1SFH		60	63	62	63	63	63	63
8	Residential dwelling	1SFH	M-1	65	67	67	67	67	67	67
9	Residential dwellings	2 SFH		58	60	60	60	60	60	60
10	Residential dwelling	1SFH		61	64	63	64	64	64	64
11	Residential dwelling	1MH		42	42	43	43	43	43	43
12	Residential dwellings	1SFH + 1MH		43	44	45	46	45	45	46
13	Residential dwelling	1SFH		50	51	51	52	51	51	52
14	Residential dwellings	2 MH		46	47	48	48	42	42	48
15	Residential dwelling	1MH	M-2	45	46	47	47	46	46	47
16	Residential dwelling	1SFH		50	51	55	54	51	51	54
17	Residential dwelling	1MH		43	43	47	47	44	44	47
18	Residential dwelling	1SFH		42	43	46	45	44	44	46
19	Residential dwelling	1SFH		49	50	50	50	73	73	50
20	Residential dwelling	1SFH		49	50	51	51	76	76	51
21	Residential dwellings	2 SFH + 2 MH		41	41	42	42	42	42	42
22	Residential dwelling	1SFH		43	43	44	44	44	44	44
23	Yocum Cemetery	1	M-3	44	48	48	48	49	49	49
24	Residential dwellings	1SFH + 1MH	M-4	49	51	51	51	51	51	51
25	Residential dwelling	1SFH		48	49	50	50	50	50	50
26	Residential dwelling	1MH		52	54	56	55	54	54	54
27	Residential dwellings	2 SFH	M-5	48	50	49	50	50	50	50
28	Sweet Canaan Church	1Church	M-6	50	51	51	51	53	53	53
29	Residential dwelling	1MH	M-7	41	41	44	43	42	42	42

PREDICTED NOISE LEVELS										
Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
30	Residential dwelling	1MH		48	50	55	51	50	50	50
31	Residential dwelling	1SFH	M-8	45	46	51	50	47	47	47
32	Residential dwelling	1SFH		41	41	42	46	41	41	41
33	Residential dwelling	1SFH		45	46	48	53	46	46	46
34	Residential dwelling	1SFH		47	48	52	51	48	48	48
35	Residential dwelling	1SFH		41	42	49	46	42	42	42
36	Residential dwelling	1SFH	M-9	44	45	47	47	45	45	45
37	Residential dwelling	1SFH		44	44	46	46	45	45	45
38	Residential dwelling	1SFH		54	56	58	64	Take	Take	58
39	Residential dwelling	1SFH		52	55	55	55	56	56	55
40	Liberty Cemetery	1		57	60	60	60	60	60	60
41	Residential dwelling	1SFH		57	59	59	59	59	59	59
42	Liberty Baptist Church	1Church	M-10	59	61	61	61	61	61	61
43	Residential dwellings	2 SFH + 1MH		58	61	61	61	61	61	61
44	Residential dwellings	2 SFH	M-11	55	56	59	58	60	60	57
45	Residential dwelling	1SFH		48	49	51	50	50	50	50
46	Residential dwelling	1SFH		54	55	58	56	56	56	56
47	Residential dwelling	1MH		51	52	54	53	53	53	53
48	Residential dwellings	3MH		54	55	58	56	56	56	56
49	Residential dwelling	1MH		43	43	45	45	45	45	44
50	Residential dwelling	1MH		42	42	43	44	44	44	43
51	Residential dwelling	1SFH		54	55	57	55	56	56	55
52	Residential dwelling	1SFH		53	56	57	56	56	56	56
53	Residential dwelling	1SFH	M-12	57	60	61	60	61	61	60
54	Residential dwellings	2 SFH		56	58	50	51	50	50	51
55	Residential dwelling	1SFH		48	50	46	45	45	45	46
56	Residential dwelling	1SFH		52	54	48	48	48	48	48
57	Residential dwelling	1SFH		53	55	48	48	48	48	48
58	Residential dwelling	1SFH		51	53	47	47	48	48	47

PREDICTED NOISE LEVELS										
Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
59	Residential dwelling	1SFH		53	56	48	49	49	49	48
60	Residential dwelling	1SFH		55	58	50	50	50	50	50
61	Residential dwelling	1SFH		57	60	60	60	60	60	60
62	Residential dwelling	1SFH		54	57	57	60	Take	Take	58
63	Residential dwelling	1MH		52	54	54	55	55	55	54
64	Residential dwellings	2SFH		50	53	53	53	53	53	53
65	Residential dwelling	1SFH		46	48	48	49	49	49	48
66	Residential dwellings	1SFH + 1 MH		55	58	58	58	58	58	58
67	Residential dwellings	2 SFH		48	50	50	50	51	51	50
68	Residential dwelling	1 SFH		49	51	51	51	51	51	51
69	Residential dwelling	1 SFH		46	48	49	49	49	49	49
70	Residential dwelling	1 SFH		46	48	48	49	48	48	48
71	Residential dwelling	1 SFH	M-15	55	58	58	58	58	58	58
72	Residential dwelling	1 SFH		57	59	59	59	59	59	59
73	Residential dwelling	1 SFH	M-16	41	41	45	44	45	45	45
75	Residential dwelling	1 SFH		40	41	41	41	42	42	41
76	Residential dwelling	1 SFH	M-17	44	46	47	46	48	48	47
77	Residential dwelling	1 SFH		55	57	57	57	57	57	57
78	St. Paul Cemetery	1	M-18	56	59	59	59	59	59	59
79	Residential dwelling	1 SFH		52	55	55	55	55	55	55
80	China Church	1 Church		43	45	45	46	45	45	45
81	St. Paul Church	1 Church		41	41	42	43	42	42	42
82	Residential dwelling	1 SFH		40	40	42	42	42	42	42
83	Residential dwelling	1 SFH		40	40	42	42	42	42	42
84	Comm. – Gravel Pit Operations Trailer	1 trailer		51	53	55	55	55	55	55
85	Residential dwelling	1MH	M-20	49	51	65	51	52	52	65
86	Residential dwelling	1MH		51	54	54	54	54	54	54
87	Residential dwelling	1MH		47	50	50	50	50	50	50

PREDICTED NOISE LEVELS

Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
88	Residential dwelling	1 MH		55	57	57	Take	58	58	57
89	Residential dwelling	1 SFH	M-19	55	57	57	57	57	57	57
90	Residential dwelling	1 SFH		56	59	59	59	59	59	59
91	Residential dwellings	1SFH + 1MH	M-21	48	50	50	50	52	52	50
92	Antioch Baptist Church	1 Church + cem.)	M-22	52	55	55	55	55	55	55
93	Residential dwellings	1SFH + 1MH		41	42	44	43	43	43	46
94	Residential dwelling	1SFH	M-23	41	42	45	46	46	46	45
95	Residential dwellings	2SFH + 1MH	M-24	50	53	59	53	53	53	53
96	Residential dwelling	1MH		44	46	47	48	48	48	47
97	Residential dwelling	1SFH		49	51	51	52	52	52	52
98	Residential dwellings	1SFH + 1MH		42	43	46	46	43	43	47
99	Residential dwelling	1SFH	M-27	51	54	54	54	54	54	54
100	Residential dwelling	1MH		44	46	46	47	46	46	46
101	Residential dwelling	1 SFH		42	42	43	45	43	43	43
102	Hunting Club	1 Bldg.		44	46	47	48	47	47	47
103	Residential dwellings	2 SFH	M-28	44	45	46	46	46	46	46
104	Residential dwelling	1 SFH		43	46	48	49	48	48	48
105	Residential dwelling	1 SFH		42	44	46	48	47	47	46
106	Residential dwelling	1 SFH	M-29	36	37	45	43	43	43	45
107	Residential dwelling	1 SFH		42	45	47	46	46	46	47
108	Residential dwelling	1 SFH		46	49	56	51	52	52	57
109	Residential dwelling	1 SFH		46	48	49	48	49	49	54
110	Residential dwelling	1 SFH		42	44	46	45	45	45	52
111	Residential dwelling	1 SFH	M-31	46	49	51	67	58	58	51
112	Residential dwelling	1MH		36	36	40	44	43	43	40
113	Residential dwelling	1 SFH	M-33	46	45	49	48	48	48	50
114	Residential dwelling	1 SFH		46	48	54	52	52	52	54
115	Residential dwelling	1MH		58	60	60	Take	60	60	60
116	Residential dwelling	1MH		53	55	56	Take	Take	Take	56

PREDICTED NOISE LEVELS										
Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
117	Residential dwelling	1MH		57	58	59	59	59	59	59
118	Residential dwelling	1MH		58	59	59	60	59	59	59
119	Residential dwelling	1MH	M-32	60	61	62	62	62	62	62
120	Deer Hunting Club	1 Bldg.		49	49	50	49	49	49	50
121	Residential dwellings	2 SFH	M-35	49	48	50	48	49	49	50
122	Residential dwelling	1MH		48	48	49	48	49	49	49
123	Residential dwellings	2 MH	M-34	50	49	49	49	49	49	49
124	Primitive Baptist Church	1 Church		49	49	49	49	49	49	49
125	Residential dwelling	1 SFH		48	50	51	54	53	53	51
126	Springhill Freewill Baptist Church	1Church	M-36	55	58	58	60	59	59	58
127	Residential dwelling	1SFH		42	42	45	52	53	53	45
128	Residential dwelling	1SFH		45	46	48	49	52	52	48
129	Residential dwellings	2 SFH	M-37	52	54	55	55	56	56	55
130	Residential dwelling	1SFH		42	42	43	47	48	48	43
131	Residential dwelling	1SFH		43	44	45	Take	53	53	45
132	Residential dwellings	1SFH + 1MH		48	50	53	54	52	52	53
133	Residential dwelling	1 SFH		43	44	46	54	49	49	46
134	Residential dwelling	1 SFH		54	56	59	58	57	57	59
135	Residential dwelling	1 SFH	M-38	47	49	54	51	50	50	54
136	Residential dwelling	1 SFH		42	42	46	47	46	46	46
137	Residential dwelling	1 SFH		43	44	48	49	48	48	48
138	Sleeping Bear Hunting Club	1Bldg.		44	46	46	51	46	46	46
139	Parker Prospect Cemetery	1	M-39	53	56	56	55	55	55	56
140	Residential dwelling	1 SFH	M-40	46	48	53	48	48	48	51
141	Residential dwelling	1 SFH		43	45	49	45	45	45	47
142	Residential dwelling	1 SFH		40	41	52	41	41	41	50
143	Residential dwelling	1 SFH		40	41	52	41	41	41	45
144	Hunting Club	1Bldg.		40	40	45	41	41	41	42

PREDICTED NOISE LEVELS										
Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
145	Hunting/Camp	1Bldg.		41	41	45	43	42	42	43
146	Residential dwellings	1SFH + 1MH		62	65	64	64	64	64	64
147	Residential dwelling	1 SFH		59	62	61	61	62	62	61
148	Residential dwellings	1SFH + 2 MH	M-42	61	64	62	64	62	62	62
149	Residential dwelling	1 SFH	M-44	48	50	50	52	50	50	50
150	Residential dwelling	1MH		47	49	49	50	49	49	49
151	Residential dwelling	1 SFH		41	41	44	44	43	43	44
152	Residential dwelling	1 SFH	M-43	42	43	45	46	44	44	46
153	Residential dwelling	1 SFH		41	42	43	43	46	43	43
154	Residential dwelling	1 MH		39	39	41	41	41	41	41
155	Residential dwelling	1 SFH		39	40	41	41	41	41	41
156	Residential dwellings	1SFH + 1MH		43	45	46	46	46	46	46
157	Residential dwelling	1 SFH		40	42	42	43	43	42	42
158	Residential dwellings	2 SFH + 1MH	M-45	50	53	53	53	53	53	53
159	Residential dwellings	2 SFH		44	46	46	46	46	46	46
160	Residential dwelling	1 SFH		49	51	51	51	51	51	51
161	Camp Houses	1 trailer		39	39	41	41	41	41	41
162	Hunting Club	6 trailers		39	39	42	47	40	40	40
163	Residential dwelling	1SFH		49	51	58	52	51	51	51
164	Residential dwelling	1SFH	M-46	47	49	65	50	50	49	49
165	Residential dwelling	1SFH		38	39	46	42	39	40	40
166	Residential dwellings	2 SFH		39	39	40	40	42	45	45
167	Residential dwelling	1 SFH		39	40	41	41	43	44	44
168	Residential dwelling	1 SFH		51	54	54	54	53	54	54
169	Residential dwelling	1 SFH		47	49	49	49	45	49	49
170	Residential dwelling	1 SFH		43	44	45	45	46	52	52
171	Residential dwelling	1 MH		50	53	53	53	53	66	66
172	Residential dwelling	1 SFH		43	45	45	45	66	46	46
173	Residential dwelling	1 SFH		39	39	40	40	44	43	43

PREDICTED NOISE LEVELS										
Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
174	Residential dwelling	1 SFH		47	49	49	49	Take	45	45
175	Residential dwelling	1 SFH		45	47	47	47	59	45	45
176	Residential dwelling	1 SFH		39	40	40	40	44	42	42
177	Residential dwellings	2 SFH		44	46	46	46	61	51	51
178	Residential dwelling	1 SFH		39	39	40	40	41	44	44
179	Residential dwelling	1MH		39	40	Take	52	41	43	43
180	Residential dwelling	1 SFH		40	41	44	50	41	66	66
181	Residential dwelling	1 SFH		44	46	47	48	45	48	48
182	Residential dwelling	1 SFH		59	62	60	62	60	62	62
183	Residential dwelling	1 SFH		60	63	Take	63	61	63	63
184	Residential dwelling	1 SFH		57	60	Take	60	58	60	60
185	Residential dwelling	1 SFH		58	61	59	61	59	61	61
187	Residential dwelling	1 MH		41	43	43	46	43	45	45
188	Residential dwelling	1MH		48	50	50	48	50	48	48
189	Residential dwelling	1MH		43	45	45	45	45	45	45
190	Residential dwelling	1 SFH		42	44	45	45	44	45	45
191	Residential dwelling	1 SFH		50	52	---	53	---	53	53
192	Residential dwelling	1 SFH		45	46	---	49	---	49	49
193	Residential dwellings	2 SFH	M-53	50	52	---	54	---	54	54
194	Residential dwelling	1 SFH		44	45	---	48	---	48	48
195	Residential dwelling	1MH		44	44	---	49	---	49	49
196	Residential dwelling	1 SFH		45	45	---	47	---	47	47
197	Residential dwelling	1 SFH	M-55	47	49	---	56	---	56	56
198	Residential dwelling	1 SFH		48	50	---	52	---	52	52
199	Residential dwelling	1 SFH		48	50	---	47	---	46	46
200	Residential dwelling	1MH		45	46	---	46	---	46	46
201	Residential dwelling	1 SFH		51	53	---	53	---	53	53
202	Residential dwelling	1 SFH	M-61	43	43	---	46	---	45	45
203	Residential dwelling	1 MH		51	53	---	51	---	51	51

PREDICTED NOISE LEVELS

Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
204	Residential dwelling	1 SFH	M-66	46	47	---	51	---	51	51
205	Residential dwelling	1 SFH		50	53	---	51	---	51	51
206	Residential dwelling	1 SFH		48	50	---	52	---	52	52
207	Residential dwellings	2 MH		66	68	---	68	---	68	68
208	Residential dwelling	1 SFH		48	49	---	51	---	51	51
209	Residential dwelling	1 MH		63	64	---	64	---	64	64
210	Plum Creek Timber Company	Multiple Bldgs.		61	62	---	62	---	62	62
211	Residential dwelling	1 SFH		48	49	---	52	---	52	52
212	Residential dwelling	1 SFH	M-67	60	62	---	62	---	62	62
213	Residential dwellings	2 SFH		48	49	---	52	---	52	52
214	Residential dwellings	2 SFH		55	57	---	56	---	56	56
215	Residential dwelling	1 SFH		57	58	---	58	---	58	58
216	Residential dwelling	1 SFH		58	60	---	60	---	60	60
217	Residential dwelling	1 SFH	M-70	46	47	---	64	---	58	58
218	Residential dwelling	1MH		51	53	---	47	---	48	48
219	Residential dwelling	1 SFH		43	43	---	46	---	46	46
220	Residential dwelling	1 SFH		49	51	---	52	---	52	52
221	Residential dwelling	1 SFH		49	51	---	69	---	Take	Take
222	Residential dwelling	1 SFH	M-71	44	45	---	57	---	54	54
223	Residential dwelling	1 SFH		46	47	---	51	---	53	53
224	Residential dwellings	2MH		45	46	---	46	---	46	46
225	Residential dwelling	1 SFH		51	53	---	53	---	53	53
226	Residential dwelling	1 MH	M-73	45	46	---	50	---	48	48
227	Residential dwelling	1MH		46	46	---	57	---	53	53
228	Residential dwelling	1 SFH		56	57	---	58	---	57	57
229	Residential dwelling	1MH		54	55	---	57	---	55	55
230	Residential dwelling	1 SFH		55	56	---	57	---	55	55
231	Residential dwelling	1 SFH		59	60	---	61	---	60	60
232	Residential dwellings	2 SFH + 1MH	M-78	63	61	---	Take	---	61	61

PREDICTED NOISE LEVELS										
Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
233	Residential dwelling	1 SFH		50	51	---	Take	---	51	51
234	Residential dwellings	2 SFH + 1MH		61	62	---	62	---	62	62
235	Residential dwelling	1 SFH		60	60	---	Take	---	60	60
236	Residential dwellings	2 SFH		59	60	---	Take	---	60	60
237	Residential dwelling	1MH		58	59	---	Take	---	59	59
238	Residential dwelling	1 SFH		61	61	---	Take	---	61	61
239	Residential dwellings	2 SFH		57	58	---	60	---	58	58
240	Residential dwelling	1 SFH		50	51	---	52	---	52	52
241	Residential dwelling	1 SFH		58	59	---	59	---	60	60
242	Residential dwelling	1 SFH		61	61	---	61	---	Take	Take
243	Residential dwelling	1 SFH		52	53	---	52	---	58	58
244	Residential dwelling	1 SFH		53	54	---	54	---	56	56
245	Residential dwelling	1MH		52	52	---	52	---	54	54
246	Residential dwelling	1MH		56	57	---	57	---	57	57
247	Residential dwelling	1 SFH		61	62	---	61	---	62	62
248	Residential dwelling	1MH		58	59	---	59	---	60	60
249	Residential dwelling	1 SFH		52	52	---	52	---	53	53
250	Residential dwelling	1MH		56	59	---	59	---	59	59
251	Residential dwelling	1 SFH		52	55	---	55	---	55	55
252	Residential dwelling	1MH		56	59	---	59	---	59	59
253	Residential dwelling	1 SFH		55	59	---	59	---	59	59
254	Residential dwelling	1MH	M-80	60	64	---	64	---	64	64
255	Residential dwelling	1MH		54	58	---	58	---	59	59
256	Zion Hill Church	1 Church		65	68	---	68	---	68	68
257	Residential dwelling	1MH		56	59	---	59	---	62	62
258	Residential dwelling	1MH		46	49	---	49	---	55	55
259	Residential dwelling	1MH		44	45	---	45	---	50	50
260	Residential dwellings	2MH		44	44	---	45	---	51	51
261	Residential dwelling	1SFH	M-81	46	48	---	45	---	64	64

PREDICTED NOISE LEVELS										
Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
262	Residential dwelling	1SFH		44	46	47	---	47	---	---
263	Church	1Church	M-51	50	52	52	---	52	---	---
264	Residential dwelling	1MH		39	40	48	---	48	---	---
265	Residential dwelling	1SFH		41	43	45	---	46	---	---
266	Residential dwellings	2 MH	M-50	48	51	51	---	51	---	---
267	Residential dwelling	1SFH		48	50	50	---	50	---	---
268	Residential dwelling	1SFH		52	55	55	---	55	---	---
269	Residential dwellings	1 SFH + 1MH		54	57	57	---	57	---	---
270	Residential dwelling	1SFH		43	45	48	---	48	---	---
271	Residential dwellings	2 SFH + 2MH		47	50	52	---	50	---	---
272	Residential dwelling	1SFH		45	47	53	---	50	---	---
273	Residential dwellings	1 SFH + 1MH	M-52	46	48	49	---	47	---	---
274	Residential dwelling	1SFH		48	51	51	---	52	---	---
275	Residential dwellings	2 SFH	M-56	57	42	55	---	46	---	---
276	Residential dwelling	1 MH		45	47	47	---	47	---	---
277	Residential dwelling	1SFH		47	50	56	---	58	---	---
278	Residential dwellings	4 SFH	M-58	54	56	63	---	Take	---	---
279	Residential dwellings	2 SFH		51	53	53	---	53	---	---
280	Residential dwelling	1MH		45	46	47	---	47	---	---
281	Residential dwellings	2 SFH		44	44	45	---	45	---	---
282	Residential dwelling	1SFH	M-59	45	46	46	---	46	---	---
283	Residential dwelling	1MH		44	44	45	---	46	---	---
284	Residential dwellings	1 SFH + 1MH	M-62	52	44	45	---	46	---	---
285	Residential dwelling	1SFH		44	45	45	---	47	---	---
286	Residential dwellings	2 SFH		54	54	54	---	55	---	---
287	Residential dwellings	1 SFH + 1MH		57	58	58	---	58	---	---
288	Residential dwellings	2 SFH		53	53	53	---	55	---	---
289	Rose Hill Freewill Baptist Church and Residence	1SFH + 1 Church)	M-63	54	54	54	---	55	---	---

PREDICTED NOISE LEVELS

Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
290	Residential dwelling	1SFH		54	55	54	---	56	---	---
291	Residential dwelling	1SFH		53	54	54	---	58	---	---
292	Residential dwelling	1SFH		44	45	47	---	47	---	---
293	Residential dwellings	1SFH + 1MH	M-64	46	47	48	---	49	---	---
294	Residential dwelling	1SFH		46	48	49	---	49	---	---
295	Residential dwelling	1SFH		49	51	52	---	52	---	---
296	Residential dwelling	1SFH		44	45	47	---	48	---	---
297	Residential dwelling	1SFH		49	51	52	---	55	---	---
298	Residential dwelling	1SFH		45	45	48	---	51	---	---
299	Residential dwellings	2 MH		48	49	51	---	61	---	---
300	Residential dwelling	1SFH		51	52	55	---	Take	---	---
301	Residential dwelling	1SFH		54	55	59	---	67	---	---
302	Residential dwellings	1 SFH + 1MH		58	58	Take	---	58	---	---
303	Residential dwelling	1SFH		55	56	61	---	60	---	---
304	Residential dwelling	1SFH		53	53	Take	---	57	---	---
305	Residential dwellings	2 SFH		59	60	60	---	59	---	---
306	Residential dwelling	1SFH	M-65	56	56	56	---	56	---	---
307	Residential dwellings	2 SFH		56	56	56	---	56	---	---
308	Residential dwelling	1SFH		62	62	62	---	62	---	---
309	Residential dwelling	1SFH		45	46	47	---	46	---	---
310	Residential dwelling	1SFH		52	53	55	---	53	---	---
311	Residential dwelling	1SFH		45	46	47	---	48	---	---
312	Residential dwelling	1SFH		46	47	49	---	49	---	---
313	Residential dwelling	1SFH		45	46	48	---	48	---	---
314	Residential dwelling	1SFH		46	47	50	---	56	---	---
315	Residential dwelling	1SFH		49	51	53	---	55	---	---
316	Residential dwellings	2 MH		57	58	60	---	60	---	---
317	Residential dwellings	1SFH + 1MH		58	59	60	---	60	---	---
318	Comm. - JNS Equipment Co.	1Bldg.		61	62	63	---	62	---	---

PREDICTED NOISE LEVELS

Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
319	Residential dwellings	1SFH+ 2 MH		62	63	64	---	64	---	---
320	Residential dwelling	1SFH		46	46	58	---	51	---	---
321	Residential dwelling	1SFH		46	47	Take	---	56	---	---
322	Residential dwelling	1SFH		46	47	Take	---	57	---	---
323	Residential dwelling	1SFH		61	63	65	---	65	---	---
324	Residential dwelling	1SFH		52	54	61	---	63	---	---
325	Bates Petro Company	1 Bldg. + 2 trailers	M-69	46	46	53	---	56	---	---
326	Residential dwelling	1SFH		44	45	48	---	48	---	---
327	Residential dwellings	2 SFH		48	49	57	---	53	---	---
328	Residential dwellings	4 SFH		50	51	55	---	53	---	---
329	Residential dwellings	3 SFH		47	48	54	---	51	---	---
330	Residential dwelling	1SFH		46	47	52	---	50	---	---
331	Residential dwelling	1SFH		52	53	55	---	55	---	---
332	Comm. - Linda Nebooker Insurance Co.	1Bldg.		56	57	58	---	58	---	---
333	Residential dwelling	1MH		61	62	63	---	63	---	---
334	Residential dwellings	4 SFH	M-68	61	58	58	---	59	---	---
335	Residential dwellings	4 SFH		63	65	65	---	65	---	---
336	Residential dwellings	2 SFH		59	60	58	---	58	---	---
337	Residential dwelling	1SFH		58	59	58	---	58	---	---
338	Residential dwelling	1SFH		54	54	70	---	66	---	---
339	Residential dwelling	1SFH		53	53	64	---	Take	---	---
340	Residential dwelling	1SFH		48	49	51	---	61	---	---
341	Residential dwelling	1SFH		44	45	50	---	51	---	---
342	Residential dwelling	1SFH	M-74	44	51	53	---	58	---	---
343	Residential dwellings	1SFH + 1MH	M-75	53	56	65	---	67	---	---
344	Residential dwellings	2 MH		52	55	Take	---	Take	---	---
345	Residential dwelling	1SFH		53	56	59	---	58	---	---
346	Residential dwelling	1SFH		49	51	52	---	52	---	---

PREDICTED NOISE LEVELS										
Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
347	Residential dwelling	1SFH		45	46	61	---	60	---	---
348	Residential dwellings	1SFH + 1MH		52	54	60	---	59	---	---
349	Residential dwelling	1SFH		48	50	53	---	53	---	---
350	Residential dwelling	1SFH		58	60	60	---	60	---	---
351	Residential dwelling	1MH	M-76	44	44	46	---	46	---	---
352	Residential dwelling	1MH		53	58	58	---	58	---	---
353	Residential dwellings	2 SFH	M-77	56	58	58	---	58	---	---
354	Residential dwellings	2 SFH		53	58	59	---	59	---	---
355	Residential dwelling	1SFH		53	58	60	---	60	---	---
356	Residential dwelling	1SFH		50	54	Take	---	Take	---	---
357	Residential dwelling	1SFH		47	51	56	---	69	---	---
358	Residential dwelling	1SFH		45	46	51	---	52	---	---
359	Residential dwelling	1SFH		51	56	58	---	61	---	---
360	Residential dwelling	1SFH		47	50	51	---	53	---	---
361	Residential dwellings	2 SFH		50	55	56	---	56	---	---
362	Residential dwelling	1MH		50	55	55	---	55	---	---
363	Residential dwellings	2 SFH		54	60	60	---	60	---	---
364	Residential dwelling	1SFH	M-79	52	58	58	---	58	---	---
365	Residential dwelling	1SFH		47	49	49	49	49	49	49
366	Residential dwelling	1 MH		42	44	45	44	44	45	44
367	Residential dwelling	1SFH		44	46	48	46	46	49	46
368	Residential dwelling	1SFH		47	49	51	50	50	52	50
369	Residential dwelling	1SFH		40	41	67	45	45	67	45
370	Residential dwelling	1SFH		47	49	69	53	53	70	53
371	Residential dwelling	1SFH		52	54	59	56	56	60	56
372	Residential dwelling	1SFH		50	53	56	58	58	56	58
373	Residential dwelling	1SFH	M-82	48	45	55	58	58	55	58
374	Residential dwelling	1 MH		44	46	46	47	47	46	47
375	Residential dwelling	1SFH		44	46	47	48	48	47	48

PREDICTED NOISE LEVELS										
Receptor No.	Description	Units Represented	Meas. No.	Predicted Noise Levels						
				Exist.	No-Action	Line 1	Line 2	Line 3	Line 4	Line 5
376	Residential dwelling	1SFH		42	44	45	47	46	45	47
377	Residential dwelling	1 MH		41	43	44	47	46	45	47
378	Residential dwelling	1 MH		38	39	44	44	44	43	44
379	Residential dwelling	1 MH		42	44	45	46	46	45	46
380	Residential dwelling	1SFH	M-83	39	40	42	44	44	42	44
381	Residential dwelling	1SFH		53	56	58	58	58	58	58
382	Residential dwelling	1SFH	M-86	59	61	61	61	61	61	61
383	Residential dwelling	1 MH		54	56	56	56	56	56	56
384	Residential dwellings	2 MH		46	48	50	51	50	51	51
385	AHTD Bldg.	1Bldg.		61	64	64	65	65	65	65
386	Residential dwellings	1 SFH + 1MH		52	54	56	57	56	57	57
387	Residential dwelling	1SFH		54	56	57	57	57	57	57
388	Residential dwellings	2SFH + 1MH	M-87	53	55	56	56	56	56	56

FARMLAND CONVERSION IMPACT

RATING FORM

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)* Project # 801873

3. Date of Land Evaluation Request: 6/27/03
4. Sheet 1 of _____
1. Name of Project: I-69 Location Study
5. Federal Agency Involved: Federal Highway Administration
2. Type of Project: Construction of Highway
6. County and State: Union County, Arkansas

PART II *(To be completed by NRCS)*

1. Date Request Received by NRCS: 7-21-03
2. Person Completing Form: Alex Winfrey
3. Does the corridor 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 ☐
4. Acres Irrigated: No data | Average Farm Size: 63
5. Major Crop(s): Bermudagrass Pasture
6. Farmable Land in Government Jurisdiction: Acres: 427,826 % 63.3
7. Amount of Farmland As Defined in FPPA: Acres: 427,826 % 63.3
8. Name Of Land Evaluation System Used: LE-SCS
9. Name of Local Site Assessment System: None
10. Date Land Evaluation Returned by NRCS:

PART III *(To be completed by Federal Agency)*	Maximum Points	Alternative Corridor For Segment				
		L1	L2	Line 3	Line 4	Line 5
A. Total Acres To Be Converted Directly		458	455	444	444	441
B. Total Acres To Be Converted Indirectly, Or To Receive Services						
C. Total Acres In Corridor		458	455	444	444	441
PART IV *(To be completed by NRCS) Land Evaluation Information*						
A. Total Acres Prime And Unique Farmland		136.2	129.7	51.5	51.5	43.1
B. Total Acres Statewide And Local Important Farmland		0	0	0	0	0
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		.0318	.0303	.0120	.0120	.0100
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		27.9	27.9	27.9	27.9	27.9
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*		79	84	79	79	79
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points					
1. Area in Nonurban Use	15	15	15	15	15	15
2. Perimeter in Nonurban Use	10	10	10	10	10	10
3. Percent Of Corridor Being Farmed	20	8	8	10	10	9
4. Protection Provided By State And Local Government	20	0	0	0	0	0
5. Size of Present Farm Unit Compared To Average	10	10	10	10	10	10
6. Creation Of Nonfarmable Farmland	25	10	10	10	10	10
7. Availability Of Farm Support Services	5	5	5	5	5	5
8. On-Farm Investments	20	3	3	3	3	3
9. Effects Of Conversion On Farm Support Services	25	5	5	5	5	5
10. Compatibility With Existing Agricultural Use	10	3	3	3	3	3
TOTAL CORRIDOR ASSESSMENT POINTS	160	69	69	71	71	70
PART VII *(To be completed by Federal Agency)*						
Relative Value Of Farmland (From Part V)	100					
Total Corridor Assessment (From Part VI above or a local site assessment)	160	69	69	71	71	70
TOTAL POINTS *(Total of above 2 lines)*	260					

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
			YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)* #001873	3. Date of Land Evaluation Request 6/27/03	4. Sheet 1 of ____
1. Name of Project I-69 LOCATION Study	5. Federal Agency Involved FEDERAL HIGHWAY ADMINISTRATION	
2. Type of Project CONSTRUCTION of HIGHWAY	6. County and State OUACHITA County, ARKANSAS	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 7-21-03	2. Person Completing Form Alex WINfrey
3. Does the corridor 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 ☐		4. Acres Irrigated: No data / Average Farm Size: 166
5. Major Crop(s) Soybeans	6. Farmable Land in Government Jurisdiction Acres: 256394 % 59.4	7. Amount of Farmland As Defined in FPPA Acres: 225772 % 47.4
8. Name Of Land Evaluation System Used LE-SCS	9. Name of Local Site Assessment System None	10. Date Land Evaluation Returned by NRCS 9-17-03

PART III *(To be completed by Federal Agency)*		Alternative Corridor For Segment				
		L1	L2	LINE 3	Line 4	LINE 5
A. Total Acres To Be Converted Directly		410	406	391	391	408
B. Total Acres To Be Converted Indirectly, Or To Receive Services						
C. Total Acres In Corridor		410	406	391	391	408
PART IV *(To be completed by NRCS) Land Evaluation Information*						
A. Total Acres Prime And Unique Farmland		229.7	236.3	233.5	233.5	227.4
B. Total Acres Statewide And Local Important Farmland		1.8	8.1	8.0	8.0	1.8
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		.1599	.1583	.1591	.1524	.1591
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		59.4	59.4	59.4	59.4	59.4
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*		69	69	69	69	69
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points					
1. Area in Nonurban Use	15	15	15	15	15	15
2. Perimeter In Nonurban Use	10	10	10	10	10	10
3. Percent Of Corridor Being Farmed	20	9	9	9	9	9
4. Protection Provided By State And Local Government	20	0	0	0	0	0
5. Size of Present Farm Unit Compared To Average	10	10	10	10	10	10
6. Creation Of Nonfarmable Farmland	25	10	10	10	10	10
7. Availability Of Farm Support Services	5	5	5	5	5	5
8. On-Farm Investments	20	0	0	0	0	0
9. Effects Of Conversion On Farm Support Services	25	0	0	0	0	0
10. Compatibility With Existing Agricultural Use	10	5	5	6	5	5
TOTAL CORRIDOR ASSESSMENT POINTS	160	64	64	64	64	64
PART VII *(To be completed by Federal Agency)*						
Relative Value Of Farmland (From Part V)	100					
Total Corridor Assessment (From Part VI above or a local site assessment)	160	64	64	64	64	64
TOTAL POINTS *(Total of above 2 lines)*	260					

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev 1-91)

FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)* # 001873	3. Date of Land Evaluation Request 6/27/03	4. Sheet 1 of _____
1. Name of Project I-69 LOCATION STUDY	5. Federal Agency Involved FEDERAL HIGHWAY ADMINISTRATION	
2. Type of Project CONSTRUCTION OF HIGHWAY	6. County and State CALHOUN COUNTY, ARKANSAS	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 7-21-03	2. Person Completing Form Alex WINFrey
3. Does the corridor 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 ☐		4. Acres Irrigated 76 / Average Farm Size 157
5. Major Crop(s) Soybeans	6. Farmable Land in Government Jurisdiction Acres: 293,039 % 69.4	7. Amount of Farmland As Defined in FPPA Acres: 279,509 % 72.8
8. Name Of Land Evaluation System Used LE-SCS	9. Name of Local Site Assessment System None	10. Date Land Evaluation Returned by NRCS 9-17-03

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment				
	L1	L2	Line 3	Line 4	Line 5
A. Total Acres To Be Converted Directly	689	700	689	689	690
B. Total Acres To Be Converted Indirectly, Or To Receive Services					
C. Total Acres In Corridor	689	700	689	689	690
PART IV *(To be completed by NRCS) Land Evaluation Information*					
A. Total Acres Prime And Unique Farmland	508.3	540.3	526.3	526.3	469.8
B. Total Acres Statewide And Local Important Farmland	0	0	0	0	0
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	.1733	.1842	.1794	.1794	.1600
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	66.6	66.6	66.6	66.6	66.60
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	74.1	74.1	74.1	74.1	74.1
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points					
1. Area in Nonurban Use — 15	15	15	15	15	15
2. Perimeter in Nonurban Use — 10	10	10	10	10	10
3. Percent Of Corridor Being Farmed — 20	17	17	17	17	17
4. Protection Provided By State And Local Government — 20	0	0	0	0	0
5. Size of Present Farm Unit Compared To Average — 10	10	10	10	10	10
6. Creation Of Nonfarmable Farmland — 25	7	7	7	7	7
7. Availability Of Farm Support Services — 5	5	5	5	5	5
8. On-Farm Investments — 20	10	10	10	10	10
9. Effects Of Conversion On Farm Support Services — 25	0	0	0	0	0
10. Compatibility With Existing Agricultural Use — 10	3	3	3	3	3
TOTAL CORRIDOR ASSESSMENT POINTS — 160	77	77	77	77	77
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V) — 100					
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	77	77	77	77	77
TOTAL POINTS *(Total of above 2 lines)* — 250					

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
			YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

U.S. DEPARTMENT OF AGRICULTURE
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FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)* Project # DO1823

1. Name of Project: I-69 Location Study
2. Type of Project: Construction of Highway
3. Date of Land Evaluation Request: 6/27/03
4. Sheet 1 of ____
5. Federal Agency Involved: Federal Highway Administration
6. County and State: Bradley County, Arkansas

PART II *(To be completed by NRCS)*

1. Date Request Received by NRCS: 7-21-03
2. Person Completing Form: Alex Winfrey
3. Does the corridor 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 ☐
4. Acres Irrigated: 1,242 | Average Farm Size: 116
5. Major Crop(s): Tomatoes
6. Farmable Land in Government Jurisdiction — Acres: 280,165 % 67.4
7. Amount of Farmland As Defined in FPPA — Acres: 247,376 % 59.5
8. Name Of Land Evaluation System Used: LE-SCS
9. Name of Local Site Assessment System: None
10. Date Land Evaluation Returned by NRCS: 9-17-03

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment				
	L1	L2	Line 3	Line 4	Line 5
A. Total Acres To Be Converted Directly	819	775	899	807	819
B. Total Acres To Be Converted Indirectly, Or To Receive Services					
C. Total Acres In Corridor	819	775	899	807	819
PART IV *(To be completed by NRCS) Land Evaluation Information*					
A. Total Acres Prime And Unique Farmland	395.5	443.3	438.9	435.3	337.8
B. Total Acres Statewide And Local Important Farmland	15.0	17.1	21.3	21.2	20.1
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	.1411	.1582	.1566	.1553	.1205
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	64.1	64.1	64.1	64.1	64.1
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	68.3	68.3	68.3	68.3	68.3
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points					
1. Area in Nonurban Use — 15	15	15	15	15	15
2. Perimeter in Nonurban Use — 10	10	10	10	10	10
3. Percent Of Corridor Being Farmed — 20	18	18	18	18	18
4. Protection Provided By State And Local Government — 20	0	0	0	0	0
5. Size of Present Farm Unit Compared To Average — 10	10	10	10	10	10
6. Creation Of Nonfarmable Farmland — 25	7	7	7	7	7
7. Availability Of Farm Support Services — 5	5	5	5	5	5
8. On-Farm Investments — 20	3	3	3	3	3
9. Effects Of Conversion On Farm Support Services — 25	5	5	5	5	5
10. Compatibility With Existing Agricultural Use — 10	5	5	5	5	5
TOTAL CORRIDOR ASSESSMENT POINTS — 160	78	78	78	78	78
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V) — 100	68.3	68.3	68.3	68.3	68.3
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	78	78	78	78	78
TOTAL POINTS *(Total of above 2 lines)* — 260	146.3	146.3	146.3	146.3	146.3

1. Corridor Selected:
2. Total Acres of Farmlands to be Converted by Project:
3. Date Of Selection:
4. Was A Local Site Assessment Used? YES ☐ NO ☐
5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

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FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)* Proj. # 001873	3. Date of Land Evaluation Request 6/27/03	4. Sheet 1 of ____
1. Name of Project I-69 Location Study	5. Federal Agency Involved FEDERAL HIGHWAY ADMINISTRATION	
2. Type of Project CONSTRUCTION OF HIGHWAY	6. County and State DREW COUNTY, ARKANSAS	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 7-21-03	2. Person Completing Form Alex Winfrey
3. Does the corridor 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 ☐	4. Acres Irrigated 49,007	Average Farm Size 358
5. Major Crop(s) Soybeans	6. Farmable Land in Government Jurisdiction Acres: 463,114 % 86.3	7. Amount of Farmland As Defined in FPPA Acres: 443,051 % 82.6
8. Name Of Land Evaluation System Used LE-SCS	9. Name of Local Site Assessment System None	10. Date Land Evaluation Returned by NRCS 9-17-03

PART III *(To be completed by Federal Agency)*		Alternative Corridor For Segment				
		L1	L2	Line 3	Line 4	Line 5
A. Total Acres To Be Converted Directly		1254	1663	1222	1592	1597
B. Total Acres To Be Converted Indirectly, Or To Receive Services						
C. Total Acres In Corridor		1254	1663	1222	1592	1597
PART IV *(To be completed by NRCS) Land Evaluation Information*						
A. Total Acres Prime And Unique Farmland		823.2	1118	804.2	1061.	107
B. Total Acres Statewide And Local Important Farmland		128.1	273.4	116.3	243.5	237.0
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		.2054	.3045	.1998	.2818	.2403
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		70.8	70.8	70.8	70.8	70.8
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*		758	758	75.8	75.8	75.8
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points					
1. Area in Nonurban Use	15	13	13	13	13	13
2. Perimeter in Nonurban Use	10	10	10	10	10	10
3. Percent Of Corridor Being Farmed	20	17	19	17	19	19
4. Protection Provided By State And Local Government	20	0	0	0	0	0
5. Size of Present Farm Unit Compared To Average	10	10	10	10	10	10
6. Creation Of Nonfarmable Farmland	25	10	10	10	10	10
7. Availability Of Farm Support Services	5	5	5	5	5	5
8. On-Farm Investments	20	10	10	10	10	10
9. Effects Of Conversion On Farm Support Services	25	5	5	5	5	5
10. Compatibility With Existing Agricultural Use	10	3	3	3	3	3
TOTAL CORRIDOR ASSESSMENT POINTS	160	83	85	83	85	85
PART VII *(To be completed by Federal Agency)*						
Relative Value Of Farmland (From Part V)	100	75.8	75.8	75.8	75.8	75.8
Total Corridor Assessment (From Part VI above or a local site assessment)	160	83	85	83	85	85
TOTAL POINTS *(Total of above 2 lines)*	260	158.8	160.8	158.8	160.8	160.8

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
			YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

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FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)* Proj. # 001873

3. Date of Land Evaluation Request: 6/27/03
4. Sheet 1 of _____

1. Name of Project: I-69 LOCATION STUDY
5. Federal Agency Involved: FEDERAL HIGHWAY ADMINISTRATION
2. Type of Project: CONSTRUCTION OF HIGHWAY
6. County and State: DESHA COUNTY, ARKANSAS

PART II *(To be completed by NRCS)*

1. Date Request Received by NRCS: 7-21-03
2. Person Completing Form: Alex Winfrey
3. Does the corridor 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 ☐
4. Acres Irrigated: 159,403 | Average Farm Size: 914
5. Major Crop(s): Soybeans
6. Farmable Land in Government Jurisdiction: Acres: 453556 % 88
7. Amount of Farmland As Defined in FPPA: Acres: 453556 %88
8. Name Of Land Evaluation System Used: LE-SCS
9. Name of Local Site Assessment System: None
10. Date Land Evaluation Returned by NRCS: 9-17-03

PART III *(To be completed by Federal Agency)*	Maximum Points	Alternative Corridor For Segment				
		L1	L2	Line 3	Line 4	Line 5
A. Total Acres To Be Converted Directly		45	99	95	95	95
B. Total Acres To Be Converted Indirectly, Or To Receive Services						
C. Total Acres In Corridor		45	99	95	95	95
PART IV *(To be completed by NRCS) Land Evaluation Information*						
A. Total Acres Prime And Unique Farmland		44.52	49.03	44.75	44.59	44.76
B. Total Acres Statewide And Local Important Farmland		0	0	0	0	0
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		.0098	.0108	.0098	.0098	.0098
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		69.7	69.7	69.7	69.7	69.7
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*		90.4	90.4	90.4	90.4	90.4
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*						
1. Area in Nonurban Use	15	15	15	15	15	15
2. Perimeter in Nonurban Use	10	10	10	10	10	10
3. Percent Of Corridor Being Farmed	20	20	20	20	20	20
4. Protection Provided By State And Local Government	20	0	0	0	0	0
5. Size of Present Farm Unit Compared To Average	10	10	10	10	10	10
6. Creation Of Nonfarmable Farmland	25	5	5	5	5	5
7. Availability Of Farm Support Services	5	5	5	5	5	5
8. On-Farm Investments	20	10	10	10	10	10
9. Effects Of Conversion On Farm Support Services	25	5	5	5	5	5
10. Compatibility With Existing Agricultural Use	10	5	5	5	5	5
TOTAL CORRIDOR ASSESSMENT POINTS	160	85	85	85	85	85
PART VII *(To be completed by Federal Agency)*						
Relative Value Of Farmland (From Part V)	100	90.4	90.4	90.4	90.4	90.4
Total Corridor Assessment (From Part VI above or a local site assessment)	160	85	85	85	85	85
TOTAL POINTS *(Total of above 2 lines)*	260	175.4	175.4	175.4	175.4	175.4

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
			YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

STORMWATER RUNOFF MINIMIZATION MEASURES

STORMWATER RUNOFF MINIMIZATION MEASURES

The following measures should be implemented as a part of the design and construction phases of this project to reduce impacts resulting from stormwater.

PLAN DEVELOPMENT

Some basic principles which will be used during the development of the erosion and sediment control plan are:

- ❑ designing slopes consistent with soil properties
- ❑ limiting the area and duration of unprotected soil exposure
- ❑ protecting soil with vegetative cover, mulch, or erosion resistant material
- ❑ controlling concentration of runoff
- ❑ retarding runoff with planned engineering works
- ❑ trapping sediment with temporary or permanent barriers, basins or other measures as close to the source as possible
- ❑ consideration of measures which could also serve as permanent control measures for highway runoff, such as drainage basins.

Erosion and sediment control during construction is highly dependent on the temporary and permanent measures contained in the plans and available to the construction force. The designer will provide measures and guidance through the contract documents to ensure that a well conceived and timely implemented staged erosion and sediment control plan is presented to the contract forces.

HIGHWAY GEOMETRICS AFFECTING EROSION AND SEDIMENTATION

Highway geometrics can be advantageous in minimizing potential soil erosion and sedimentation problems and in selecting appropriate control measures. Project alignment and grade, the design cross section, as well as the number and involvement of stream crossings and encroachments are geometric features which have a range of flexibility. Within this range, adjustments will be made to reduce the damage potential and lessen the requirements and cost of control.

The alignment should be shifted when possible to eliminate or minimize encroachment into a surface water environment. Stream crossings should be made at stable reaches of a stream, avoiding meanders that are subject to rapid shifting and channel profiles that are degrading or aggrading. To reduce the potential for problems, every effort should be made to minimize the number of stream crossings and encroachments.

Roadway embankment or cut slopes vary with the height of cut or fill and directly affect erosion control and revegetation measures. Flat slopes (2:1 or flatter) favor the establishment and maintenance of vegetation and are therefore preferred. Slopes with a greater than 3:1 gradient should have permanent stabilization measures which do not require mowing. Benching (or terracing) is a method of breaking and controlling sheet flow on long steep slopes. Benching will be considered for any gradient with a slope from 2:1 to 3:1. Serrated cut slopes will be considered as an aid in the establishment of vegetative cover on decomposed rock or shale slopes.

SCHEDULING OPERATIONS

Proper planning and scheduling of the construction operations are major factors in controlling anticipated erosion and sediment problems. A schedule should be developed and conformed to which considers the probable weather conditions and the potential occurrence of storms, particularly if work in or adjacent to a stream is involved.

Clearing operations should be scheduled after perimeter controls are installed, and performed to provide for erosion control measures to follow immediately. Construction of permanent drainage facilities should also begin immediately after the area is cleared.

Throughout the construction phase the scheduled operations should provide for either temporary or permanent erosion control measures as soon as practical.

Operations should be scheduled with an individual or several natural drainage courses as a unit. The size of the unit should be determined considering the project earthwork balances, borrow pit locations, erodibility of the soil, number of watercourses and the contractor's ability to keep his finishing and turf establishment operations up with his earthwork operations.

CONTRACTOR'S RESPONSIBILITIES

The contractor will follow the staged erosion and sediment control plan, which sets forth the proposed construction sequences and the accompanying erosion control measures that will be employed.

Adequate inspection and maintenance, which is essential for erosion and sediment control during construction, will be performed.

CLEARING AND GRUBBING

The control of soil erosion is an essential consideration in clearing and grubbing operations. The contract documents should require that the work be performed in a manner which will cause minimum soil disturbance. These documents should also provide a limitation on the amount of erodible surface area which may be exposed at any one time during the performance of the work.

EXCAVATION AND EMBANKMENT CONSTRUCTION

When practical, the excavation and formation of embankments should be performed in such a manner that cut and fill slopes will be completed to final slopes and grade in a continuous operation. Diversion ditches on the high side of cuts will be constructed in the first phase of the grading operation.

CONSTRUCTION IN OR NEAR WATERS OF THE UNITED STATES

Equipment work within stream channels will be kept to a minimum. Specifications or special provisions will include control of the contractor's operation when performing work in streams, particularly requiring conformance with regulations of water resource and fish and wildlife agencies. The contractor will not be permitted to disturb stream banks and beds or destroy vegetation unless it is absolutely necessary, and a commitment for suitable restoration is made. Some types of construction and stream conditions may necessitate the construction of diversion ditches, sediment basins, or other protective measures to avoid sediment problems. Embankment slopes that encroach on stream channels will be adequately protected against erosion. Some form of protective diversion or filter barrier will be installed parallel to the waterway to protect it as much as possible from sediment. Care will be taken in locating these measures to avoid obstructing waterway openings. Where practical, either a protective area of vegetative cover should be left, or established, between the highway embankment and adjacent stream channels.

Excavation from the roadway, channel changes, cofferdams, or other material will not be deposited in or near rivers, streams, impoundments, or wetlands where it might be washed away by high water or run off to the detriment of the general environment.

When work is required in impounded water, a silt curtain or floating silt screen will be used to contain the suspended sediments within a specified area.

Sediment basins in lateral ditches leading to the waterways are essential, but additional features such as check dams may also be needed to slow the velocity of the water before it gets to the waterway. Temporary vegetation in the immediate work site areas can help to minimize surface runoff into the waterway. If it is necessary to pump the working area, the sediment laden effluent will not be discharged directly into a waterway. Sediment laden water will be discharged in a sediment basin or trap prior to release.

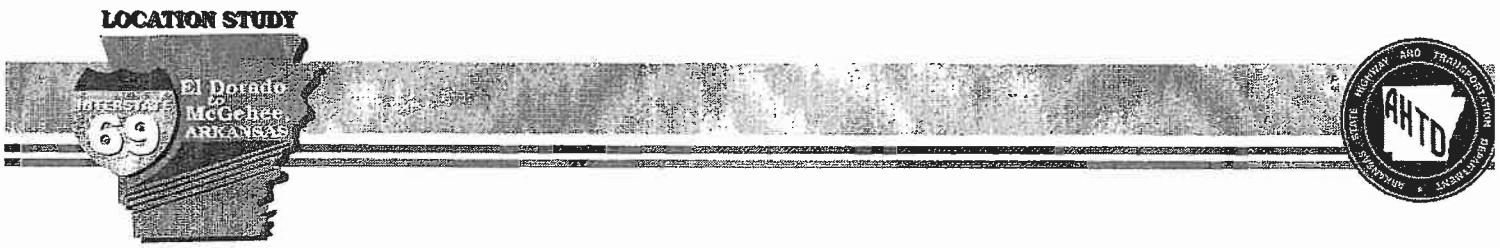
A serious concern exists where bridge construction takes place over an existing waterway. In this event, careful planning of construction operations to limit the disturbance of stream banks is essential. Rock riprap or concrete slope protection placed as soon as practicable will also retard surface erosion.

Whenever practicable, the construction site for a proposed culvert or footings will be located outside the existing stream channel. However, for hydraulic and environmental reasons, it is seldom possible to locate a culvert outside the water way boundaries and some provision must be made to accommodate the stream flow while the structure is being constructed.

For an intermittent stream crossing, construction can at times be scheduled during a dry period. With multiple barrel structures, it may be practicable to construct one barrel outside of the stream bed and divert the flow to the completed segment, while the remainder of the structure is completed.

In some instances, it may be necessary to construct a diversion channel to convey the flow around the construction site while the permanent structure is being constructed.

PUBLIC INVOLVEMENT FLYERS



ANNOUNCING PUBLIC MEETINGS

February 2002

The Arkansas State Highway and Transportation Department (AHTD) has initiated an environmental and location study for Interstate 69 from El Dorado to McGehee, Arkansas. AHTD has contracted with the firm of Michael Baker Jr., Inc. (Baker) to conduct this study.

During the past several months, Baker has developed several two mile-wide corridors within the project area based on a number of environmental and engineering considerations. Future studies will focus on developing specific highway alignments, approximately 300 feet in width, within one or a combination of these corridors. AHTD and Baker will be holding three public meetings to present and discuss the results of the corridor location studies from 4:00 to 7:00 PM in the following communities:

McGehee, Arkansas
Monday, March 11, 2002
Council Meeting Room, McGehee Municipal Building
901 Holly St.

Monticello, Arkansas
Tuesday, March 12, 2002
Monticello Jr. High School Cafeteria
212 Clyde Ross Dr.

El Dorado, Arkansas
Wednesday, March 13, 2002
Billy McGehee Building Student Center
South Arkansas Community College East Campus
3696 East Main Road (off of US 63 / Hwy 15)

The meetings will be informal and will allow attendance at any time throughout the evening. You will have an opportunity to review the corridor locations and talk with representatives from AHTD and Baker. Comment forms will be available to obtain written comments on the corridors presented and to obtain additional environmental information for the project area.

These meetings are an important part of the transportation decision-making process and your involvement is encouraged and appreciated. If you have any questions or concerns regarding these meetings, please contact Michael Baker Jr., Inc., 7203 Sheridan Road, Suite M, White Hall, AR 71602 or call 870-247-3979.

THANK YOU !

LOCATION STUDY

El Dorado to McGehee, ARKANSAS

INTERSTATE 69

September 2002

ANNOUNCING THE PREFERRED CORRIDOR FOR I-69 FROM EL DORADO TO MCGEHEE, ARKANSAS

The Arkansas State Highway and Transportation Department (AHTD) and Michael Baker Jr., Inc. (Baker) are pleased to announce the Preferred Corridor to be studied in detail for the proposed Interstate 69 from El Dorado to McGehee, Arkansas. This announcement is based on several months of engineering and environmental studies, public involvement meetings, and coordination with state and federal resource agencies and Native American Tribes. The Preferred Corridor is shown on the accompanying map.

The original corridors presented at the March 2002 public meetings have been refined to reflect public and state and federal resource agency concerns. In the Monticello area, the Preferred Corridor passes both north and south of town to allow a more detailed study of traffic, environmental issues, and other community concerns before a definitive route is selected.

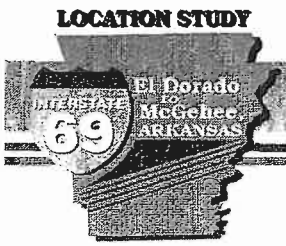
The next phase of the project, the Alignment Study, involves detailed engineering and environmental efforts within the Preferred Corridor. These studies will consist of the development of several highway alignment locations (about 300 feet wide) and comprehensive field evaluations. Public involvement meetings will be held later this year to obtain input on these preliminary alignments.

Please note that while the Preferred Corridor is ***2 miles in width,*** the highway alignments will be ***about 300 feet in width.*** The 2 mile corridor width will allow the development of highway alignments that are able to avoid and minimize residential and business displacements and impacts to other important resources to the greatest extent practicable.

Baker personnel will be evaluating important resources throughout the Preferred Corridor and will request access to private property. Your cooperation with this effort will ensure that all resources are thoroughly evaluated during this phase of study. Detailed maps displaying the Preferred Corridor can be viewed at Baker's White Hall office, or in local communities across the project area.

For additional information or map locations in your area, please contact:

Michael Baker Jr., Inc.
7203 Sheridan Road, Suite M, White Hall, AR 71602
Phone: 870-247-3979
Fax: 870-247-5094
e-mail: smooney@mbakercorp.com



February 2003

ANNOUNCING PUBLIC MEETINGS

The Arkansas State Highway and Transportation Department and the consulting firm of Michael Baker Jr., Inc. will be holding several public meetings to present and discuss the preliminary highway alignments that are being developed within the Preferred Corridor for the Interstate 69 from El Dorado to McGehee, Arkansas project. Four public meetings will be held from **4:00 to 7:00 PM** in the following communities:

McGehee, Arkansas
Monday, March 10, 2003
Council Meeting Room, McGehee Municipal Building
901 Holly St.

Monticello, Arkansas
Tuesday, March 11, 2002
Monticello High School Cafeteria
390 Clyde Ross Dr.

Warren, Arkansas
Wednesday, March 12, 2002
Warren High School Cafeteria
803 North Walnut

El Dorado, Arkansas
Thursday, March 13 , 2003
Billy McGehee Building Student Center
South Arkansas Community College East Campus
3696 East Main Road (off of US 63 / Hwy 15)

The meetings will be informal and will allow attendance at any time throughout the evening. You will have an opportunity to review the preliminary highway alignments and talk with representatives from AHTD and Baker. Comment forms will be distributed to obtain public input on the preliminary alignment locations.

These meetings are an important part of the transportation decision-making process and your involvement is encouraged and appreciated. If you have any questions or concerns regarding these meetings, please contact:

Michael Baker Jr., Inc.
7203 Sheridan Road, Suite M, White Hall, AR 71602
Phone: 870-247-3979
Fax: 870-247-5094
e-mail: smooney@mbakercorp.com



September 2004

PREFERRED ALIGNMENT IDENTIFIED

The Arkansas State Highway and Transportation Department and Michael Baker Jr., Inc. (Baker) are pleased to announce that Line 5 has been identified as the Preferred Alignment for the I-69 Section of Independent Utility 13, El Dorado to McGehee, Arkansas project.

The identification of the Preferred Alignment is based on a review of the impacts outlined in the Draft Environmental Impact Statement, consideration of public comments collected throughout the environmental review process, including the June 2004 public hearings, and consultation with participating state and federal agencies, including the Federal Highway Administration. The Preferred Alignment provides the best opportunity to minimize property impacts (only 5 homes directly impacted over the 103 mile project), would avoid direct impacts to developed communities, provides Interstate access to area residents, and minimizes impacts to the natural environment to the extent practicable.

Baker personnel may request access to your property as they continue to evaluate natural and cultural resources as part of the Final Environmental Impact Statement work being conducted for this project. Your cooperation will ensure that all resources are thoroughly evaluated during this phase of study.

More detailed maps of the Preferred Alignment can be viewed on the project website at http://www.i-69.dina.org/meetings or by contacting:

Michael Baker Jr., Inc.
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001873

RECORD OF DECISION
FEDERAL HIGHWAY ADMINISTRATION – ARKANSAS DIVISION

I-69 SECTION OF INDEPENDENT UTILITY 13
OUACHITA, UNION, CALHOUN, BRADLEY, DREW, AND DESHA COUNTIES, ARKANSAS

FHWA AR-EIS-04-01-F
STATE JOB NUMBER 001873
FEDERAL PROJECT NCPD-NH-0076(24)

1.0 DECISION

This Record of Decision (ROD) selects the Preferred Alignment as described in the Final Environmental Impact Statement (EIS) issued in September 2005, as the Selected Alignment for the Interstate Highway 69 (I-69) Section of Independent Utility (SIU) 13 (hereafter referred to as the SIU 13 Project) from the United States Highway (US) 82 near El Dorado, Arkansas to US 65 near McGehee, Arkansas. Along with the "No-Action" and "upgrading the existing road network" alternatives, the Final EIS studied the proposed construction of a four-lane, divided, fully controlled access highway facility on new location, approximately 100 miles in length passing through the Arkansas Counties of Ouachita, Union, Calhoun, Drew, and Desha. The designation of the Selected Alignment is conditioned upon compliance with the commitments as itemized below and described in the Final EIS (Page S-9). This decision is based on analyses contained in the Draft EIS issued in June 2004; the Final EIS; comments of federal and state agencies, consulting Native American Tribes, the public, and local community leaders; and other information in the record on this matter.

1.1 Selection of the Alignment for Construction

The Selected Alignment designated in this ROD is identical to the Preferred Alignment identified in the Final EIS. The Selected Alignment is shown in Exhibit S-1 of the Final EIS. A summary of project alternative impacts is provided in Table 1. The Selected Alignment combines portions of the four preliminary project alignments to reduce social and environmental impacts and includes minor revisions based on comments received on the Draft EIS. Justification of the Selected Alignment across the project area is summarized in Table 2.

The Selected Alignment decision represents a balance of impacts where environmental and engineering factors have been weighed and considered at each stage of project development to best meet the project Purpose and Need.

TABLE 1
IMPACT SUMMARY

Section	Alignment	Length (miles)	Construction Cost (in millions)	Right of Way/Utility Cost (in millions)	Structures			Cemeteries	Total Noise Impacts	Natural Resources						Cultural Resources			
					Residences	Businesses	Churches/ Community Facilities			Wetlands (acres)	Known Red-Cockaded Woodpecker	100-Year Floodplains (acres)	Prime Farmlands (acres)	Statewide Farmlands (acres)	Active Oil and Gas Wells	Recorded Archeology Sites	Recorded Historic Structures	Arch. High Probability Area	Known Hazardous Waste
1	Line 1	15.5	$108,671	$3,951	4	-	-	-	2	22	-	115	255	-	-	1 UN	-	49	-
	Line 2	15.7	$110,416	$3,797	1	-	-	-	3	26	-	104	261	-	1	-	-	45	-
	Line 3	15.3	$109,129	$3,980	4	-	-	-	4	28	-	96	178	-	-	-	-	84	-
	Line 4	15.3	$109,129	$3,980	4	-	-	-	4	28	-	96	178	-	-	-	-	84	-
	Selected Line	15.2	$109,419	$3,643	1	-	-	-	2	28	-	109	160	-	-	-	-	86	-
2	Line 1	19.2	$164,425	$4,296	-	-	-	-	1	92	-	184	389	2	-	-	-	205	-
	Line 2	19.2	$165,804	$4,338	1	-	-	-	-	78	-	164	394	8	-	-	-	202	-
	Line 3	19.0	$167,183	$4,265	-	-	-	-	-	120	-	174	387	8	-	-	-	201	-
	Line 4	19.0	$167,183	$4,265	-	-	-	-	-	120	-	174	387	8	-	-	-	201	-
	Selected Line	19.3	$165,269	$4,312	-	-	-	-	1	78	-	170	390	2	-	1 UN	-	199	-
3	Line 1	25.2	$163,574	$5,636	-	-	-	-	3	65	-	145	494	12	-	-	-	109	-
	Line 2	24.8	$163,621	$6,021	4	-	-	-	3	69	30	140	586	3	-	-	-	123	-
	Line 3	25.2	$166,164	$5,813	2	-	-	-	3	75	34	152	595	13	-	-	-	178	-
	Line 4	25.2	$166,164	$5,813	2	-	-	-	3	75	34	152	595	13	-	-	-	178	-
	Selected Line	25.2	$163,965	$5,642	-	-	-	-	3	65	-	143	439	12	-	-	-	108	-
4	Line 1	18.2	$168,619	$5,416	8	-	-	-	2	149	-	260	452	57	-	2 NE	-	184	-
	Line 2	17.1	$150,863	$3,624	-	-	-	-	4	134	-	250	615	113	-	1 NE	-	207	-
	Line 3	18.4	$165,925	$4,985	4	-	-	-	11	103	-	236	377	50	-	2 NE	-	218	-
	Line 4	17.4	$148,457	$3,900	-	-	-	-	4	75	-	205	587	92	-	1 NE	-	198	-
	Selected Line	17.4	$149,516	$3,904	-	-	-	-	4	75	-	204	589	91	-	1 NE	-	198	-
5	Line 1	22.3	$148,708	$5,338	4	-	-	-	7	22	-	152	547	73	-	1 UN	1*	87	-
	Line 2	26.1	$175,154	$7,045	10	-	-	-	6	23	-	193	662	175	-	1 UN	-	127	-
	Line 3	22.3	$148,196	$5,662	4	-	-	-	9	23	-	162	567	76	-	1 UN	1*	88	-
	Line 4	25.5	$171,500	$6,128	4	-	-	-	6	22	-	143	607	160	-	1 UN	-	97	-
	Selected Line	25.6	$172,136	$6,159	4	-	-	-	5	23	-	151	621	154	-	1 UN	-	99	-
Totals	Line 1	100.4	$753,997	$24,637	16	-	-	-	15	350	-	856	2,138	145	-	2 UN, 2 NE	1*	634	-
	Line 2	102.9	$765,858	$25,025	16	-	-	-	16	330	30	850	2,517	299	1	1 UN, 1 NE	-	704	-
	Line 3	100.2	$756,597	$24,705	14	-	-	-	27	349	34	820	2,104	146	-	1 UN, 2 NE	1*	769	-
	Line 4	102.4	$762,433	$24,086	10	-	-	-	17	320	34	769	2,353	273	-	1 UN, 1 NE	-	759	-
	Selected Line	102.7	$760,305	$23,560	5	-	-	-	15	270	-	778	2,199	259	-	2 UN, 1 NE	-	690	-

Notes:
The No-Action Alternative would result in environmental impacts associated as minor safety improvements and additional widening or passing lane projects are implemented within the Project Area, although the extent of these impacts is not known at this time.
*This structure is no longer standing.
UN = Undetermined status for eligibility for NRHP, more work needed.
NE = Archeology sites previously surveyed and determined not eligible for nomination to the NRHP.

Source: Michael Baker Jr., Inc.

In summary, the Selected Alignment:

- Impacts the fewest residences (four) over the 103-mile project;
- Impacts the least amount of wetlands (270 acres);
- Avoids known active oil wells;
- Avoids known red-cockaded woodpecker locations;
- Avoids direct impacts to developed communities;
- Avoids known properties on the National Register of Historic Places (NRHP);
- Avoids known hazardous materials sites;
- Best avoids direct impacts to and separation of rural residential housing clusters;
- Best avoids potential environmental justice areas;
- Best avoids the Warren Prairie Natural Area; and
- Best addresses social and environmental issues in the Monticello, Arkansas area.

TABLE 2
JUSTIFICATION FOR THE SELECTED ALIGNMENT

Section	Location	Basis for Preference
1	US 82 to SH 7	▪ Best minimizes residential impacts at the US 82 interchange. ▪ Best avoids brine wells and transmission lines south of US 82. ▪ Provides acceptable connections to SIU 14 alignments under development. ▪ Avoids an unrecorded historic cemetery north of State Highway (SH) 172. ▪ Best avoids residential and agricultural development in the Silver Hill Loop area. ▪ Eliminates the need for extended frontage roads in the Silver Hill Loop area. ▪ Avoids known oil well locations. ▪ Best avoids residential impacts near the communities of Liberty and Kirkland. ▪ Provides the best interchange location at US 82 and SH 160.
2	SH 7 to US 167	▪ Best avoids residential impacts at County Road 67 interchange. ▪ Best minimizes impacts to forested wetlands in the Ouachita River floodplain. ▪ Avoids the need to relocate a timber access road east of the Ouachita River crossing. ▪ Provides the best crossing of the Ouachita River.
3	US 167 to US 63	▪ Best avoids residential impacts at SH 160 interchange. ▪ Avoids residential impacts at all local and county road crossings. ▪ Is located furthest from known red-cockaded woodpecker areas. ▪ Minimizes wetland impacts. ▪ Avoids all known churches and cemeteries.

TABLE 2 (CONT.D)
JUSTIFICATION FOR THE SELECTED ALIGNMENT

Section	Location	Basis for Selection
4	US 63 to US 425	▪ Provides the best crossing of the Saline River closest to US 278 (a state and federal resource agency comment). ▪ Avoids the Warren Prairie Natural Area. ▪ Provides the closest interchange access to Wilmar, a predominantly minority community. ▪ Avoids residential impacts. ▪ Provides the best interchange location at US 425.
5	US 425 to US 65	▪ Avoids a known wetland reserve program property. ▪ Best addresses potential environmental justice concerns east of Monticello. ▪ Best minimizes impacts to farmland and farm operations east of Monticello.

Source: Michael Baker Jr., Inc.

Some unavoidable adverse environmental effects will be associated with the Selected Alignment. However, the Selected Alignment will generate substantial benefits including completing a portion of the Congressionally-designated I-69, expanding interstate linkage between El Dorado and McGehee, Arkansas and the rest of the Nation; supporting the North American Free Trade Agreement by expanding the I-69 trade corridor; improving international and interstate movement of freight and people; facilitating economic development and enhancing economic growth opportunities in the Lower Mississippi Delta Region; improving traffic safety; improving efficiency of travel; improving access to educational facilities; improving access to recreational areas and facilities; improving emergency response times and access to medical facilities; and supporting the locally based needs identified by community leaders. The Selected Alignment for the SIU 13 Project will function as a critical link in the Interstate system that will serve travel, economic development, and commercial demands of not only the project area, but also the south-central United States.

1.2 Selection of a Construction Alternative over the No-Action Alternative

Construction of the Selected Alignment will cause some unavoidable, adverse impacts; however, it is the alternative that best satisfies the identified transportation needs of the project area. The No-Action Alternative provides a benchmark for environmental analysis but does not meet the project Purpose and Need. Therefore, the Selected Alignment is the "environmentally preferred alternative" for purposes of 40 CFR 1502.2(b) because it best meets the project Purpose and Need and balances impacts overall.

2.0 CONSIDERATION OF PROPOSED ACTION AND ALTERNATIVES

The development of alternatives for the SIU 13 Project followed a multi-step study approach that examined and evaluated a full range of alternatives at a broad corridor level and at a more detailed alignment level. Only the most practicable alternatives that met the project Purpose and Need and had the potential to minimize environmental impacts were advanced to the next phase of study. Each phase of study included the participation of federal and state agencies, consulting Native American Tribes, the public, and local community

leaders. The key component of the corridor and subsequent alignment studies was the use of Geographic Information System (GIS) technology and the development of a project specific GIS to manage environmental data for this extensive (over 3,000 square miles) project study area.

2.1 Corridor Study

The Corridor Study evaluated four full-length two-mile wide corridors developed within the project area. Corridor development used the GIS based environmental resources mapping as a guide to avoid and minimize impacts to identified key environmental resources in addition to a thorough consideration of engineering design criteria and local community leader concerns. The corridor advanced to the detailed alignment study as a multi-corridor combination as documented in Section 2.5.8 of the Final EIS. The Preferred Corridor provided the best opportunity to minimize impacts during the alignment study and was consistent with local transportation plans and development objectives.

2.2 Alignment Study

The Alignment Study initially developed four specific highway alignment alternatives approximately 300 feet in width within the Preferred Corridor that would first avoid, and then minimize impacts to sensitive resources, including residential areas. This phase of study also included conducting specific field investigations within the Preferred Corridor to update and refine the project environmental database. The use of the project GIS allowed the concurrent consideration of environmental and engineering design issues. The alignment development phase was particularly rigorous in its consideration of comments from federal and state agencies, Native American Tribes, the public, and local community leaders and resulted in a number of revisions to the four original highway alignments. In addition, a fifth alignment (Line 5) was developed that combined portions of the four preliminary alignments to further reduce social and environmental impacts. Line 5 was identified in Section 2.6.8 of the Final EIS as the Preferred Alignment for the SIU 13 Project.

3.0 MEASURES TO MINIMIZE HARM

The multi-step study approach adopted for this project considered the affected social, natural, and cultural environments during the development of both corridor and alignment alternatives. The alignments were developed in a Preferred Corridor that allowed impact avoidance and minimization for a number of resources, while addressing the project Purpose and Need and providing feasible engineering alternatives. Specifically, avoiding populated areas evident in project mapping and identified during field studies minimized the number of residential relocations. Additionally, efforts were made to minimize property impacts and consider property severance issues. Based on the Final EIS, there is no practicable alternative that will further minimize residential and property impacts. Wetland impacts were minimized to the greatest extent practicable in accordance with the Section 404 (b)(1) Guidelines by avoiding individual wetlands entirely and by project design modifications. The Selected Alignment will have the least amount of total wetland impacts; this is discussed in detail in Section 4.8 of the Final EIS.

4.0 SECTION 106 COMPLIANCE

A Programmatic Agreement (PA) to guide the completion of the Section 106 process with respect to the project's effect on cultural resources is being negotiated among the Arkansas State Highway and Transportation Department (AHTD), FHWA, Arkansas Historic Preservation Program (AHPP), and the consulting Native American Tribes. Coordination with the AHPP has occurred throughout the project study process and included a review of alternatives developed during both the Corridor and Alignment studies. In addition, a report detailing the results of the Phase I cultural resources survey of the Selected Alignment will be submitted to AHPP for review and concurrence. During preparation of the EIS, a Phase I survey of the Selected Alignment was conducted to identify potentially eligible archeology sites. The PA specifies that additional Phase I surveys will be completed for those portions of the project where right-of-entry could not be obtained, or other areas of the Selected Alignment that, for whatever reason, could not be completed prior to execution of this agreement. In addition, the PA stipulates that Phase II testing of sites considered potentially eligible for listing in the NRHP will be conducted, treatment plans for sites determined to be eligible for the NRHP will be prepared, and any additional architectural resources located within the area of potential effect (APE) of the Selected Alignment will be identified and evaluated for National Register eligibility in accordance with 36 CFR 800.4. When possible, avoidance will be the preferred treatment of adversely effected sites.

5.0 DESIGN PUBLIC HEARINGS

Following issuance of the ROD, the AHTD will hold Design Public Hearings to receive public comments on the final design of the highway. Due to the long-term nature of project design and construction, these design public hearings may occur over a period of several years.

6.0 SUMMARY OF MITIGATION MEASURES

6.1 Wetland Encroachment

Wetland encroachment resulting from the project will be mitigated within the geographic area approved during the Section 404 permit process. The Selected Alignment will impact approximately 270 acres of wetlands. Jurisdictional wetlands will be replaced at a ratio to be determined by application of an appropriate assessment methodology for compensatory mitigation. Final mitigation ratios and requirements will be determined in conjunction with the Section 404 Permit process and will be finalized with the U.S. Army Corps of Engineers (USACE) after the issuance of the ROD for this project.

6.2 Noise Impacts

Over the 103-mile length of the project, the Selected Alignment results in 15 total noise receptor impacts, which are primarily single-family residences. A noise analysis was conducted to determine which noise impact areas met the current AHTD criteria for noise abatement. This analysis determined that there are no practical noise abatement measures that would eliminate or reduce the expected highway traffic noise at identified areas. Generally, they are either unreasonable on a cost basis, do not benefit enough receptors, or they would restrict access to local roads and/or driveways. Noise abatement will be considered during the project final design

stage and will be based on additional noise analysis and the involvement of those directly impacted as specified in the current AHTD noise policy.

7.0 COMMENTS ON THE FINAL EIS

A notice of availability of the Final EIS was published in the Federal Register on September 9, 2005 with comments due on October 24, 2005. Comments received are summarized in Attachment A.

8.0 CONCLUSION

Based upon a careful consideration of all the social, economic, and environmental evaluations contained in the Final EIS, the input received from federal and state agencies, consulting Native American Tribes, the public, and local community leaders; it is the decision of the FHWA to approve the Selected Alignment as the proposed action for this project.

May 2, 2006
Date

Federal Highway Administration

Attachment A
Comments on the Final Environmental Impact Statement

Comments received during the Final EIS availability period along with FHWA's response, where applicable, are summarized below. The Environmental Protection Agency (EPA) reviewed the Final EIS in accordance with its responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA. EPA found the document adequate and offered no comments on the Final EIS.

Letters were received from the following state and federal review agencies:

- U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS);
- U.S. Army Corps of Engineers (USACE);
- Arkansas Natural Heritage Commission (ANHC);
- Arkansas Game and Fish Commission (AGFC); and
- State of Arkansas Department of Finance and Administration.

In addition, one public comment was received.

SUMMARY OF COMMENTS RECEIVED ON FINAL EIS

Elizabeth S. Guynes, Chief Regulatory Branch USACE
USACE Comment #1
Jurisdictional wetlands would be replaced at a ratio to be determined by application of an appropriate assessment methodology for compensatory mitigation.
USACE Response #1
Agreed. Final mitigation ratios and requirements will be determined in conjunction with the Section 404 Permit process that will be finalized after the issuance of the Record of Decision for this project.
Cindy Osborne, Data Manager ANHC
ANCH Comment #1
Concerned with mitigation for pine/hardwood flatwoods.
ANCH Response #1
The AHTD will mitigate for impacts to pine flatwoods. The extent and nature of mitigation will be outlined in a cooperative agreement between the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, The Nature Conservancy, Federal Highway Administration, and the Arkansas Highway and Transportation Department.

SUMMARY OF COMMENTS RECEIVED ON FINAL EIS

Robert K. Leonard, Biologist AGFC
AGFC Comment #1
Concerned with mitigation for pine/hardwood flatwoods.
AGFC Response #1
The AHTD will mitigate for impacts to pine flatwoods. The extent and nature of mitigation will be outlined in a cooperative agreement between the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, The Nature Conservancy, Federal Highway Administration, and the Arkansas Highway and Transportation Department.
Mr. Henry W. Langston Scott, AR
Langston Comment #1
Page 3-18: Commercial & Industrial Land "*The Commission has determined the amount of excess surface water available in the Ouachita Basin per year and does not issue diversion of surface water permits beyond this value. In addition, in times of low flow, the Commission can impose restrictions on surface water use.*" Need to state in the document how much daily intake of water the power plant plans on taking from the river. What is the base line flow that was determined for the river beyond which the Commission would impose restrictions? What if the base line limit of flow in the river is reached and the Commission imposes some type of restriction on water use from the river, what is the power company's back up plan for water? Will they switch to well water from an aquifer that is already being depleted? This needs to be outlined in the document.
Langston Response # 1
The operation and permitting of this power plant is outside of the scope of this Environmental Impact Statement.
Langston Comment #2
Page 3-26, Left Column: "*The board implemented a usage fee for groundwater users and began the development of a Water System Master Plan to determine how to best serve the long-term water supply need of the county. One alternative identified as the quickest and most cost-effective was to supply raw water from the Ouachita River to area industries in place of ground water.*" How much more water is being considered being pulled from the river? How much water from the river can be diverted beyond what is already being with pumped by the power plant? What will happen to these industries if the base line flow in the river is reached and restrictions are placed on water taken from the river? What will be their back up plan for water?
Langston Response # 2
The Water System Master Plan for Union County developed by the Union County Water Conservation Board is outside of the scope of this Environmental Impact Statement.

SUMMARY OF COMMENTS RECEIVED ON FINAL EIS

Langston Comment #3

Page 4-49: Bottom of Left Column, Wildlife

"Wildlife mortality may result from secondary development as habitat is altered for commercial, industrial, or residential development. Roadway operation would continue to impact wildlife species through mortality resulting from collisions with motor vehicles."

How about some figures here. How many motor vehicle collisions with deer normally occur within the Union, Calhoun, Bradley, & Ashley County area? In the forestry building on the campus of University of Arkansas at Monticello, they have a poster shown the number of deer/vehicle collisions for the different counties of Arkansas. Construction of this section of I-69 will be through country with some of the highest deer populations. Any idea of how much of an increase can be expected in these types of collisions? Any plans or ideas how such collisions might be reduced?

Langston Response # 3

Deer-vehicle mortality information was obtained and reviewed from Dr. Philip Tappe of the University of Arkansas at Monticello. Based on the only data on deer-vehicle collisions currently available in Arkansas from 1998 to 2001, only Union County fell within the top 25 Arkansas Counties for average annual mean deer-vehicle collisions. The construction of any of the alignment alternatives for I-69 would increase the risk of deer-vehicle collisions. During design and construction, appropriate deer-vehicle crash countermeasures will be considered in areas determined to be potential safety risks.

Langston Comment #4

Page 4-41: Left column, Wetlands

"A general wetland function and value assessment was conducted for potentially impacted wetlands using guidance found in the Corp Descriptive Method (CDM) evaluation (USACE,1995) using a "best professional judgment" approach and is presented below. For the majority of the Project Area, functions and values of individual wetlands crossed by each alignment were similar."

It states that the results of this assessment are presented below. Where, why not have some kind of table showing a comparison of the results for the different alignments. What functions or values were assessed? How were the wetland function and value assessment applied? Were the wetlands assessed differently based on their type and geomorphology setting on the landscape? How many different wetland classes were encountered among the different alignments? If the HGM Model for the Coastal Plains were used would differences in wetland functions and values be detected be the various alignments? After all the system that was used is a fairly liberal system since is based on "best professional judgment" with no way to quantify any of these functions or values.

Langston Response # 4

Wetland functions and values are discussed in Section 4.8.2 of the Final EIS. Wetland communities were described and discussed based on discussion with USACE Vicksburg personnel and are consistent with past EIS documentation reviewed and approved by EPA, USFWS, and other resource agencies.

Langston Comment #5

Page 4-44: Right Column, Section 4: US 63 to US 425

"Wetland systems in this area include bottomland hardwoods, bottomland hardwood/pine mixed forest; pine flatwoods; and palmetto scrub/shrub flats."

The consultant identifies pine flatwoods in this statement. However, in Exhibit 4-2, Figures 4, 5, & 6 there are large areas of pine flatwoods that are not identified. In the total acreage of wetland impacts for each alignment, were these areas included (Table 4-7, Page 4-42? If not, why? Were data sheets completed on plots for these areas in question? If so, what were the results? There appears to be some question among various individuals about whether these flats are indeed wetlands and if so, whether they should be jurisdictional wetlands. While indeed they are dominated by loblolly pine, which is listed at fac. wet, they are saturated to the surface in the spring with water with the soil having a chroma of less than 2, which the USACE's 1987 Wetland Delineation Manual identifies as a hydric soil.

SUMMARY OF COMMENTS RECEIVED ON FINAL EIS

Langston Comment #5 - Continued

So all three criteria to classify them as wetlands are present. These areas are wet enough that the local timber companies spent large amounts of money during site preparation to bed them to get the seedling roots out of the wet zone. Wetlands, not delineated out for the EIS, but are delineated between the issuance of the ROD and the design phase should be mitigated. This even includes the pine flats, regardless of whether the USACE choose to exert jurisdiction over them. Some statement regarding this commitment should be included in the Final EIS (SIU 13) to ensure that problem is addressed since it may be years before this project ever goes to the construction phase.

Langston Response # 5

Wet pine flatwoods and pine-hardwood flatwoods were identified and discussed with resource agency personnel during project field reviews. The identified wetland areas do include pine wetland flats, primarily near the Ouachita and Saline rivers and along Moro and L'Aigle creeks. Field studies and research during the time between the issuance of the Record of Decision and completion of Project Design will be conducted to determine whether these pine flatwood areas meet the criteria for jurisdictional wetlands. The AHTD will mitigate for impacts to wetland flats under guidance issued pursuant to Section 404 of the Clean Water Act and Executive Order 11990 on Protection of Wetlands. The extent and nature of mitigation will be outlined in a cooperative agreement between the Corps of Engineers, United States Fish and Wildlife Service, The Nature Conservancy, Federal Highway Administration and the Arkansas Highway and Transportation Department.

Langston Comment #6

Page 4-46: Post Draft EIS Wetland Activities: Sand Hill Seep Wetlands

"*A review of the area between the Ouachita River and the Saline River using NRCS soil maps and through consultation with ANHC and USFWS personnel, identified five potential wetland seeps near the Preferred Alignment*"

These five seeps that were identified, was their location already known? How much effort was put into actually walking the different alignments in this area? Soil surveys are only so reliable. Many of the soils in these soil surveys are being re-correlated as the surveys are being updated. In many cases, the soils in the surveys are not identified correctly. Using the soil survey may work if you are looking for a particular type of landscape but due to scale of the seeps this will not always work. A classic case being the I-69 Connector. A very nice seep right on the edge of the proposed right-of-way was overlooked by the consultant. At this time without surveys, it is not known whether this site will be impacted or not. However, if you walk the area and become familiar with the landscape, a topo map would be helpful in possibly identify such areas. This site was really unique. Theo Witsell, Botanist for the Arkansas Natural Heritage Commission, identified eight rare species on this site alone: *Eriocaulon decangulare*, *Eleocharis tortillas*, *Carex atlantica ssp. capillacea*; *Fuirena bushii*; *Eryngium integrifolium*; *Scleria reticularis*; *Helianthus simulans* (under consideration for tracking), and *Platanthera* sp. Other seeps, not as nice, and several spring complexes were encountered along this project that were not identified in that EIS. Due to the size of these areas, they would only be encountered by walking the alignment.

Langston Response # 6

As discussed in Section 4.8.3 of the Final EIS, five potential areas for sand hill seep wetlands areas were identified through a coordinated effort between AHTD, the USFWS, and Natural Heritage personnel who have extensive field experience in this area. A field review of these was conducted, and no seep wetlands or unique plant communities were observed at these locations along the Selected Alignment. Additional field investigations for all wetland resources will be conducted between the Record of Decision and the completion of project design in conjunction with the Section 404 permit process for the Selected Alignment.

Langston Comment #7

Page 3-34:

"*Common species include the box turtle (Terrepene carolina), fence lizard (Sceloporus undulates), hog-nosed snake (Heterodon platyrhinos), copper head (Agkistrodon contortrix), and spring peeper (Hyla crucifer).*

SUMMARY OF COMMENTS RECEIVED ON FINAL EIS

Page 4-48:

"Potential wildlife impacts would likely follow those observed on other similar existing highways. Wildlife mortality will occur from road construction and collision with vehicles (Tromblak & Frissell 1999, Carr & Fahrig 2001, Gibbs & Shriver 2002). Vehicular traffic can be a major source of mortality for some species, particular slow moving species such as turtles and amphibian species whose life cycles involve migration between upland and wetland habitats (Gibbs & Shriver 2002, Steen & Gibbs 2002, Fahrig et. al. 1995, Hells & Buchwald 2001). In general, mortality increases with traffic volume, but adjacent and median habitat composition are also contributing factors (Tromblak & Frissell, 1999)".

"Many wildlife species including cottontail rabbits, white-tailed deer, red fox, coyotes, a variety of small mammals, and a number of bird species would be able to utilize the new habitat created by the right-of-way and its associated edge."

These two paragraphs seem to go against each other. The first one states that adjacent and medium habitat composition are contributing factors in increased wildlife mortality along many of the roadways. Then the next paragraph seems to emphasize the habitat created by the new right-of-way is a good thing. It seems that these two paragraphs contradict each other. Most of this section of I-69 will be constructed through a forested landscape. What do you mean, "new habitat created?" This so-called new habitat will not be created with wildlife values in mind. The habitat that is found along the existing right-of-way of the interstate highway in Arkansas is a result of AHTD's maintenance program. While this habitat may serve some value to certain species, particularly in certain parts of the state, is it better than the habitat that was destroyed to create the roadway. After all, in the mentioned paragraph above this type of habitat is described as a contributing factor to wildlife mortality along the highway system.

Langston Response # 7

The first paragraph cites literature that indicated that habitat adjacent to the highway was a factor in wildlife mortality. The second merely discloses that created right of way habitat and the existing edge environment could be used by a number of wildlife species. New habitat would be any vegetative cover that resulted from right of way clearing activities. Since the majority of this facility would be constructed through a forested landscape, it is reasonable to assume that the resulting right of way would be herbaceous cover maintained by AHTD as part of their safety program, and as such would have some value to wildlife species.

Langston Comment #8

Page 4-49: Bottom of Left Column:

"It is unlikely that highway mortality would pose a serious threat to the continued existence of any of these species."

Page4-79: Bottom of Left Column:

"The mortality rate of wildlife could also increase, however, as outlined in Section 4.9, wildlife in the project area display a broad habitat distribution and are not restricted to a particular habitat type."

These two paragraphs are entirely wrong when considering the plight of the eastern box turtle. This species is in current state of decline. Numerous factors are contributing to this decline: lost of habitat, fragmentation of habitat, low reproduction rates, the pet trade market, and small home ranges. There is considerable information available about the decline of this species. The U.S. Fish & Wildlife Service stated that "additional research is required in all range states on the status of the species, availability of habitat, mortality rates (from motor vehicles, increased predation, etc.), and level of collection for the pet trade. Due to the high site fidelity, increased mortality (due to habitat loss or new highway construction) or collection could have significant impact on a population " (U.S. Fish and Wildlife Service's List of High Priority Species or Groups in the Great Plains and Their Management Needs)

"Typical home ranges are small, ranging from 3.7 to 40 acres, although males wander widely which may help to maintain genetic diversity within and between populations (Harding, 1997) (Michigan Natural Features Inventory). The eastern box turtle is listed as a state species of special concern.

Due to the decline of the species, the box turtle in 1994 was added to Appendix II in CITES (The Conservation of International Trade in Endangered Species of Wild Fauna and Flora). This prevents unauthorized exports of box turtles and more closely regulates commercial trade to help prevent them from becoming threatened (Liebermann 1994).

SUMMARY OF COMMENTS RECEIVED ON FINAL EIS

From the Federal Register (Vo. 59, No. 213) Friday, November 4, 1994 – Based on (1) the large number of box turtles exported from the United States since 1988; (2) an apparent increase in the demand for box turtles in the international pet trade, particularly since 1984 when the EU banned trade in Mediterranean land tortoises (*Testudo spp.*); (3) the reported decline in numbers throughout the range of T. ornate and T. Carolina; (4) an increase in fragmentation of box turtles habitat; (5) the difficulties of implementing State protective laws, especially when similar protection is not provided in other states; and (6) the increased negative impact of these factors on species exhibiting low reproduction rates and high site fidelity; the Service has proposed t include all the populations of box turtles in the genus Terrapene in Appendix II of CITES, except T. coahuila, which will remain in Appendix I.

"A number of aspects of box turtle biology make them vulnerable in the world of today. They exhibit what biologist call high "site fidelity," which means that individuals animals occupy a small home range, sometimes only a few acres. Roads, rights-of-ways, and other developments fragment box turtle home ranges so their movements put them at the mercy of speeding cars and ATV's. (Post-Gazette, a Service of the Pittsburgh Post-Gazette).

"It is no secret that roads represent a great hazard to turtles. A single four lane highway cut through prime box turtle habitat could literally eliminate more box turtles in one county than would be removed wild across the entire state by legal hobbyists." (Pennsylvania Fish & Boat Commission).

So the statements in the EIS that this project should have no impact on species numbers or that they were mobile and not restricted to one area is not entirely true when it comes to the box turtle. The proposed I-69 highway will put a major four lane divided highway through some prime box turtle habitat. Currently there is no major four lane divided highway in this area. Most of the highways in the area are two lane state highways with numerous county roads. This roadway network has surely fragmented the turtle's habitat. Construction of this major four lane divided highway will no doubt fragment the area even more. Even though this species has a limited home range, such a highway will surely restrict movement in the area, thus having some effect on genetic diversity. Mortality of the species will surely be increased over what is already experienced on the existing highway system. The potential impacts of such a highway system on this declining species should be addressed in this document. This brings up the point of barrier walls. While these barrier walls are constructed for traffic safety purposes, they impose a major obstacle to the free movement of many wildlife species. There are currently five major barrier walls on highways in the state that restrict the movement of many wildlife species: (1) along highway 1-440 between I-40 and Hwy. 167 in Pulaski County, (2) along I-30 from Geyer Springs Road in Little Rock down to Benton in Saline County, (3) along Hwy. 167 north of the community of Bradford in White County, and (4) along the US 79/278 bypass around Camden, and (5) MLK (Hwy. 270) bypass around Hot Springs. In each of these cases, no effort was made to incorporate any area that would facilitate the movement of wildlife, such as gaps of some type at specified intervals. All one has to do is look back at the incident along Hwy. 167 north of Bradford when it was open for traffic. This roadway was constructed across the floodplain of the White River. This roadway and barrier wall prevent a major obstacle for the movement of turtles in the area. According to reports, there was a tremendous number of turtles killed by traffic in this area as well as numerous turtles destroying their shells resulting from crawling long distances along the concrete pavement looking for some gap in the wall. A statement showing a commitment should be put into the document that in the event that the lanes of the highway have to be pulled together and some type of barrier wall constructed, appropriate measures be taken to incorporate some type of gaps at appropriate intervals to allow the passage of wildlife as well as turtles and amphibians. The statement should also reflect that extra efforts will be taken to funnel wildlife, turtles, and amphibians through wildlife passages such as box culverts designed for wildlife movement when areas of high populations of such species is encountered or normal migration routes or paths or encountered. Such efforts may range from the placement of fences to funnel species through special designed wildlife crossings underneath the highway to placement of fences to keep such wildlife movement off the roadway.

Langston Response # 8

Potential wildlife mortality issues will be considered and addressed in the design phase of the project.

SUMMARY OF COMMENTS RECEIVED ON FINAL EIS

Langston Comment #9
Page 4-78: Wetlands and Floodplains First sentence does not make any sense.
Langston Response # 9
Agreed The sentence is missing a word.
Langston Comment #10
In the EIS, reference is made constantly about projected traffic that will be carried by I-69 as well as projected traffic counts on the different alternatives. See a lot of reference about the Level of Service (LOS) levels for the different alternatives but cannot seem to find a table that shows the different traffic counts for the various alternatives. Is there such a table?
Langston Response # 10
The traffic analysis is discussed in Section 2.6.5 of the Final EIS and presents a range of traffic volumes, which are dependent on the amount of I-69 that is completed locally, regionally, and nationally.

Design Re-evaluation

for

ARDOT JOB NUMBER 020678

FAP NUMBER NHPP-2221(2)

HWY. 278 – HWY 65 (S)

FUTURE I-69

DREW AND DESHA COUNTIES

Submitted Pursuant to 42 U.S.C. 4332(2)

By the

U.S. Department of Transportation

Federal Highway Administration

And the

Arkansas Department of Transportation

March 2021

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APPENDICES

Appendix A: Disposition of Public Comments

Appendix B: Roadway and Right of Way Division Cost Estimates and Supporting Documentation

Appendix C: USFWS Species List

Appendix D: Environmental Checklist

PROJECT BACKGROUND

This Re-evaluation was prepared at the direction of the Arkansas Division office of the Federal Highway Administration (FHWA) in accordance with the National Environmental Policy Act of 1969 (NEPA), and all other applicable Federal and state laws and regulations, specifically 23 CFR § 771.129. Re-evaluations are required to update NEPA documents when there are changes to the project which could affect the prior determination of potential environmental impacts.

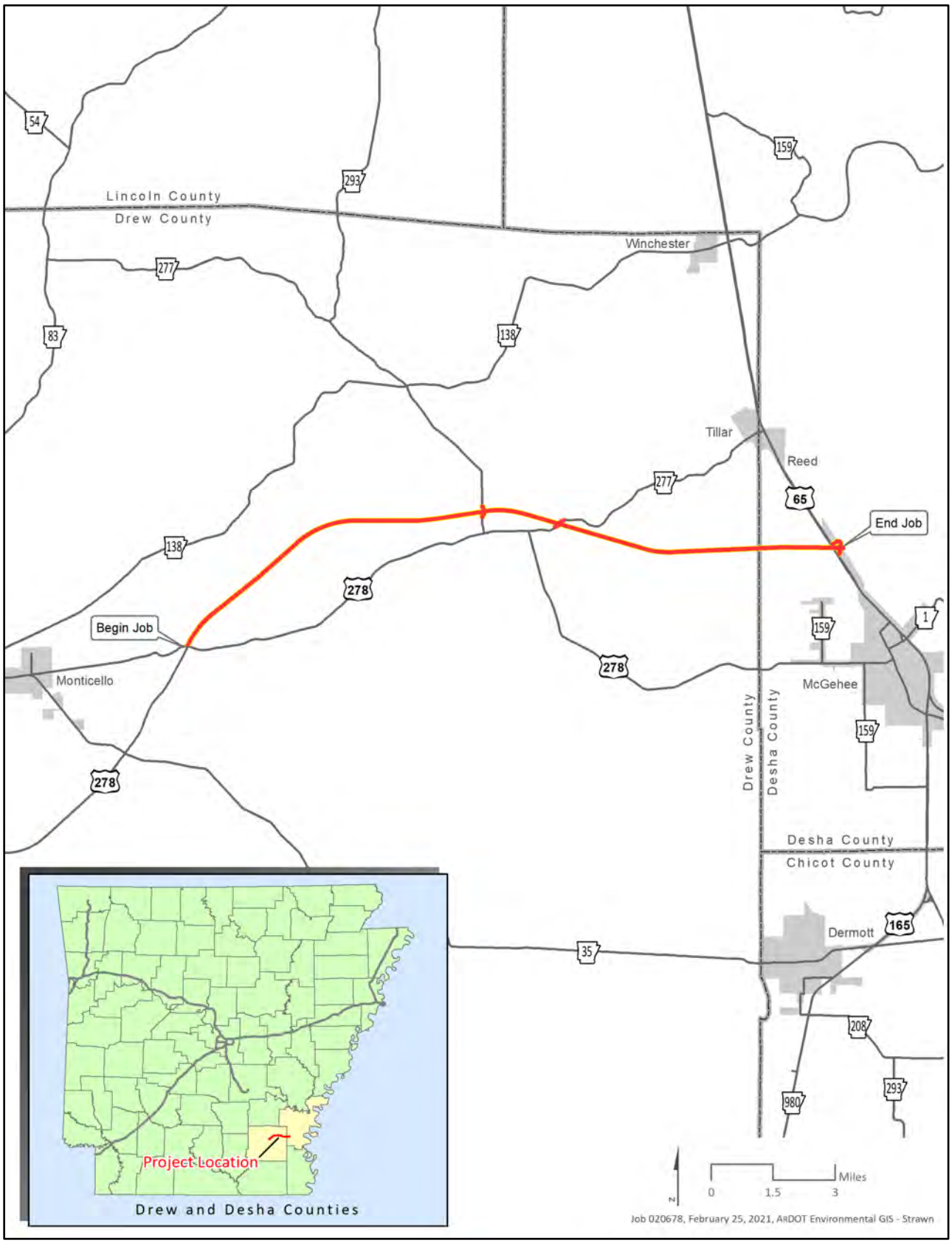
The future Interstate 69 (I-69) corridor is 1,600 miles long and was nationally designated in 1991 to provide an interstate connection from the Mexican Border in Texas to the Canadian Border in Michigan. For a variety of planning and study purposes - including the Arkansas Department of Transportation (ARDOT) NEPA process - the corridor was divided into 32 different sections. The section stretching from El Dorado to McGehee in Arkansas was designated as Section of Independent Utility (SIU) 13.

The Final Environmental Impact Statement (FEIS) for SIU 13 was signed by FHWA in October 2005. In May 2006, FHWA signed the Record of Decision (ROD) identifying the Selected Alternative for the entire corridor. SIU 13 would involve construction of approximately 110 miles of four-lane, divided, fully controlled access highway on new location passing through the counties of Ouachita, Union, Calhoun, Drew, and Desha.

An approximately 17-mile long segment of the Selected Alternative was designated as Job 020678. This project was programmed in the 2016-2020 Statewide Transportation Improvement Program, initiating additional roadway surveying and design activities. It is one of five other ARDOT projects along the future I-69 corridor in various phases of development ranging from construction completed to awaiting further programming.

A Virtual Design Public Hearing (VDPH) was held between September 10 and October 21, 2020 for Job 020678. The VDPH included a public officials meeting and a “live” component on October 6, 2020 during which design engineers and other ARDOT staff were available online to present the preliminary design and answer questions. **Figure 1** provides the project location shown during the VDPH as proposed under Job 020678 (referred to in this Re-evaluation as the Proposed Alternative). Public comments received at the VDPH are addressed in the Disposition of Public Comments, found in **Appendix A**. This Re-evaluation provides updated design and environmental impact information for the Proposed Alternative.

Figure 1. Proposed Alternative Location



PROJECT DESCRIPTION

ARDOT is proposing to construct approximately 17 miles of roadway on new location connecting Hwy. 278, just east of Monticello in Drew County, to Hwy. 65 at McGehee in Desha County. The project would initially provide two 12-foot wide travel lanes with 8-foot wide inside shoulders and 10-foot wide outside shoulders. **Figure 2** shows the proposed cross section, and **Table 1** summarizes design data for the interim two-lane facility. Sufficient right of way would be acquired for future construction of a four-lane divided highway with fully controlled access meeting American Association of State Highway and Transportation Officials Freeway Standards.

The interim project would include constructing: at-grade intersections at Hwys. 278, 293, and 277; a railroad overpass and partial interchange at Hwy. 65; embankments; three bridges for two major stream crossings; and culverts and drainage systems for other crossings (e.g., agricultural ditches, small, intermittent, or ephemeral streams and/or wetlands). Right of way width would vary from 280 feet up to 1,900 feet, depending upon the need to accommodate various facility components.

Figure 2. Cross Section

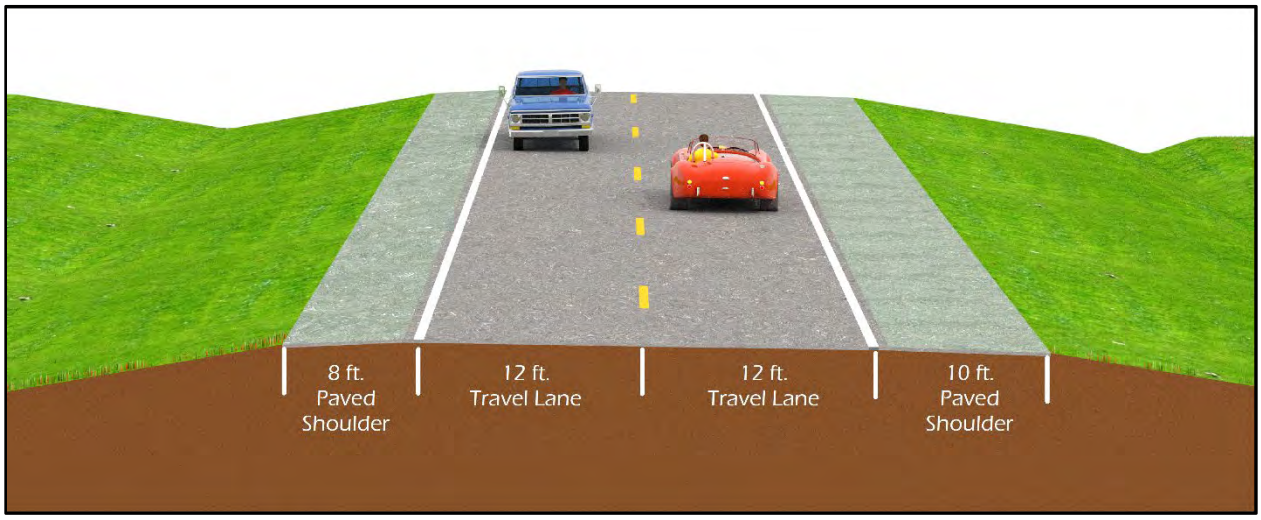


Table 1
Design Data

Design Year	Average Daily Traffic (vpd)	Percent Trucks	Design Speed (mph)
2023	1,700	25	70
2043	4,700		

PROJECT PURPOSE AND NEED

As adopted by the I-69 Steering Committee, for which ARDOT is an administrative agency, the overall purpose of the Future I-69 project is: "To improve international and interstate trade in accordance with national and state goals; to facilitate economic development in accordance with state, regional and local policies and plans; and to improve surface transportation consistent with national, state, regional and local needs and with the Congressional designation of the corridor." Three of the primary needs recognized by the I-69 Steering Committee are:

- More efficient movement of goods, primarily by truck, within the continental U.S.;
- Improving economic development in traditionally depressed regions such as the Mississippi Delta; and
- Improving transportation linkages in areas of the U.S. overlooked in the original Interstate system.

The project will also provide safe and efficient movement of through traffic by directly linking Monticello to McGehee and providing an alternative to Hwy. 278. The project is intended to serve as a critical link in the Interstate system meeting local and regional travel, commercial, and economic development demands.

Completed/Programmed Highway Projects

Other completed and/or programmed future I-69 projects in the area would increase traffic movements and complement implementation of the Proposed Alternative. These projects are summarized below and their locations are shown on **Figure 3**.

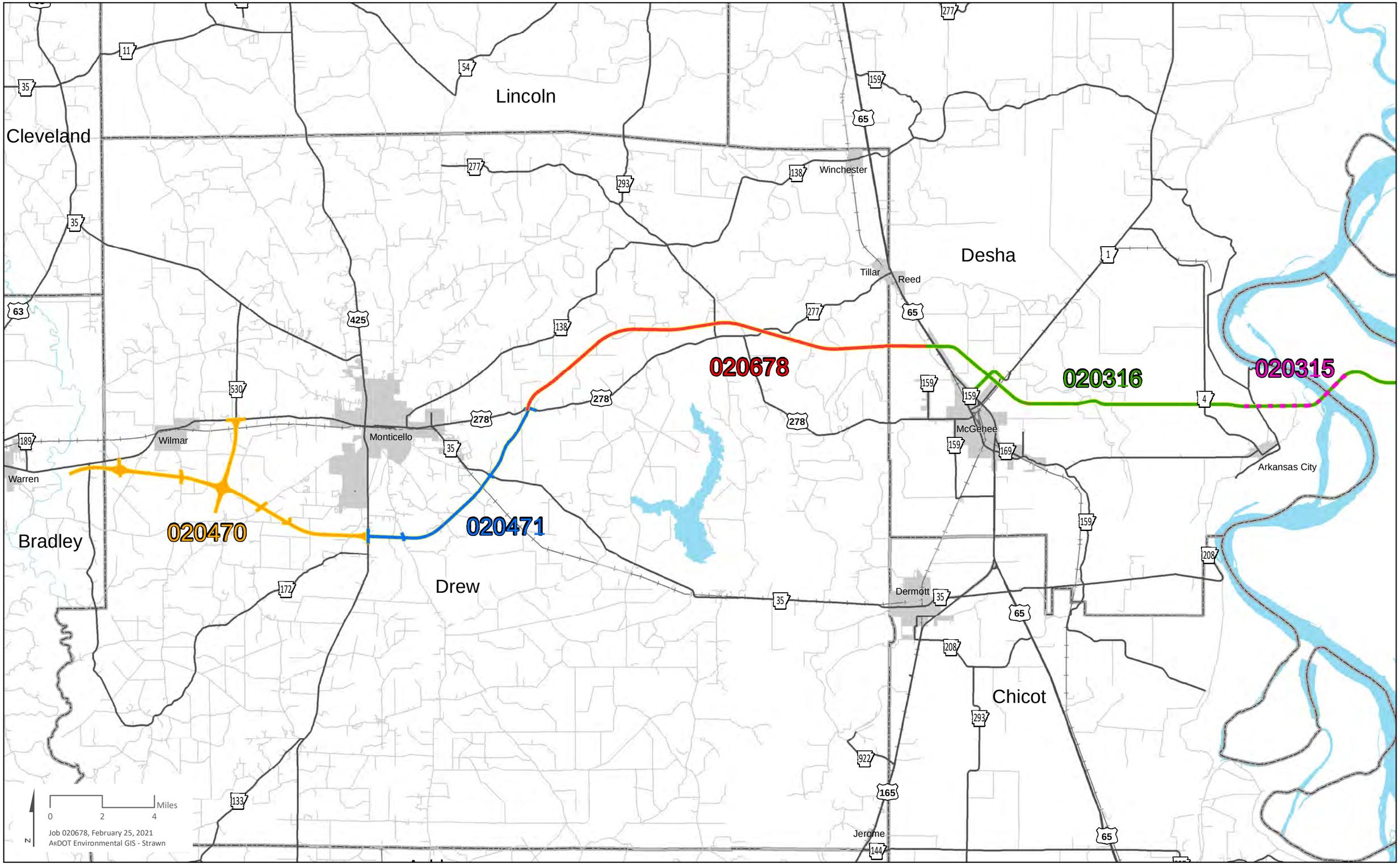
020470 - Hwy. 278 West-Hwy. 425 (Gr & MDS) (Monticello Bypass): Southwest of the Monticello, this currently unfunded project would comprise an approximately 13-mile long section of the future Monticello Bypass.

020471 - Hwy. 425-Hwy. 278 East (Monticello Bypass): Southwest of the Proposed Alternative's western terminus, construction of the east section of the Monticello Bypass has been completed. This project was constructed on the first approximately 8.6 miles of the ROD alignment within Section 5.

020316 - I-69 P.E. (Hwy. 65-Miss. Rt. 1): East of the Proposed Alternative's eastern terminus, this approximately 13-mile section of future I-69 was included in the 2004 FEIS prepared for I-69 SIU 12 and would support the Great River Bridge project described below.

020315 - Great River Bridge P.E. (Ph II): Adjacent to the proposed eastern terminus of Job 020316, this approximately 4-mile long project proposes constructing a cable stay bridge across the Mississippi River from Arkansas City, Arkansas to Benoit, Mississippi.

Figure 3. Completed/Programmed Project Locations



PROJECT DESIGN MODIFICATIONS AND COST INFORMATION

Modifications to the Proposed Alternative were made during the design process for the following reasons:

- To reduce costs and environmental impacts
- In response to local and regional needs and requests
- Programming of other projects in the area related to current and future funding.

The Proposed Alternative was originally part of Section 5 of the Selected Alternative identified in the ROD (referred to in this Re-evaluation as the ROD alignment). Because previous construction of Job 020471 converted approximately 8.7 miles of the ROD alignment within Section 5 to transportation use, its original length was correspondingly reduced. **Figure 4** shows the ROD alignment in relation to the Job 020471 alignment and the Proposed Alternative.

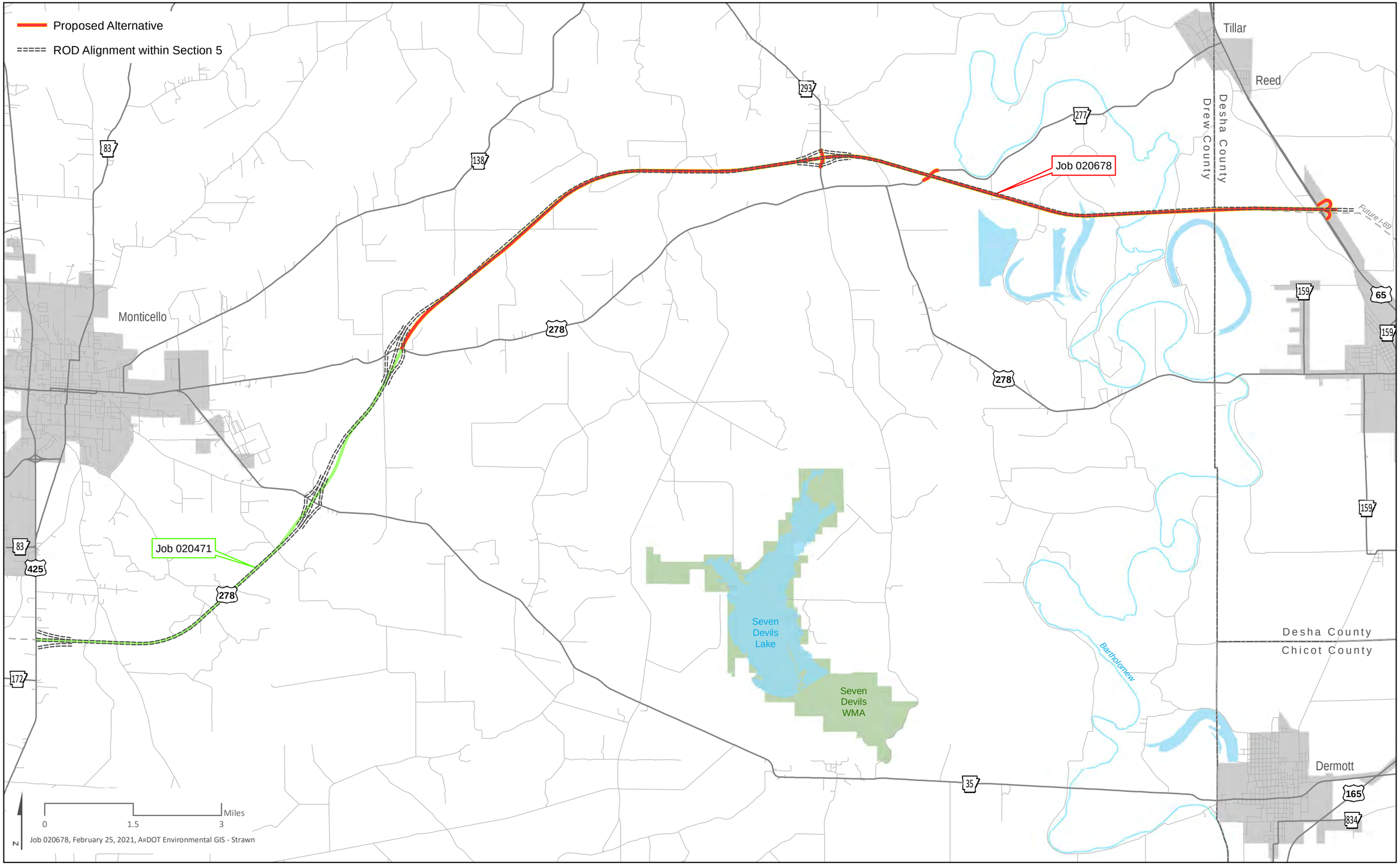
The ROD alignment and impact assessment presumed construction of a future four-lane facility with corresponding right of way (ROW) acquisition, whereas the Proposed Alternative and this Re-Evaluation are predicated on construction of an interim two-lane facility with sufficient ROW acquisition to accommodate the future four-lane facility. A comparison of the design and cost data for the ROD alignment and the Proposed Alternative is shown in **Table 2**. **Appendix B** provides preliminary Roadway and Right of Way Division cost information.

Table 2
Design and Cost Information

	ROD Alignment	Proposed Alternative
Length	25.6 miles	16.9 miles
Roadway Cost	127.5 million*	75.0 million[1]
ROW Cost[2]	8.2 million**	6.5 million
Total Cost	135.7 million	81.5 million

* Preliminary FEIS/ROD alignment estimates based on incomplete information, supplemented by 2018 Cost per Mile worksheet, and provided for general comparison purposes only
** 2005 $ increased to 2020 $ using general inflation calculation between 2005 and 2020 $
[1] The roadway costs reflect the construction of the interim two-lane facility
[2] Includes acquisition sufficient for the future four-lane facility, relocation, and utility costs and assumes purchase of sufficient ROW for future four-lane facility

Figure 3. Completed/Programmed Project Locations



ENVIRONMENTAL IMPACTS

Environmental impacts outlined in this Re-evaluation are limited to those that have changed between the ROD alignment and the Proposed Alternative. The Re-evaluation found that there would not have been a discernable difference in impacts and/or no regulatory updates requiring additional analysis for the following resources/concerns: Economic, Visual, Geologic, Upland and Aquatic Communities, Noise, Navigation, Hazardous Materials, Public Water Supply/Wellhead Protection Areas, and Cultural Resources.

It should be noted that the FEIS included project study areas sufficiently large to accommodate a variety of future alignment configurations, thereby limiting the need for additional impact analysis. For some resources and in certain locations, this approach resulted in an overestimation of impacts relative to the current design plans. Importantly, the shortening of the length of the Proposed Alternative due to construction of Job 020471 also contributed to an overall reduction of impacts. All other impact changes and updates are provided below.

Land Use

Similar as it is what was back in 2005, land use in the area is primarily agricultural, with scattered residences and crop and tree farms located along the Proposed Alternative. Approximately 73 residences are located within 1 mile of the route. Direct impacts to land use would be the conversion of land to transportation ROW. A total of 932 acres of new right of way was associated with the ROD alignment. A total of 725 acres of new right of way was estimated to be converted to transportation use under the Proposed Alternative.

Relocations, Social/Community, Environmental Justice and Title VI

Four residential relocations were associated with the ROD alignment. However, only two residential relocations would be required under the Proposed Alternative. This decrease in the number of relocations is attributable to moving the western terminus of the proposed route further away from Monticello.

The Proposed Alternative has one grade separation for the interim two-lane facility at Hwy. 65. The possibility of the Proposed Alternative resulting in "land locking" or otherwise impeding access to properties on either side of the proposed route was an important concern expressed during the VDPH, particularly near North 16th Section Road. Additional grade separations will be provided for the future four-lane facility. Additionally, a frontage road study is currently planned to help resolve property access concerns.

The Proposed Alternative would not result in any permanent disconnection or division of any community or neighborhood area. Although minority and low-income populations are affected by the project, a determination has been made that the proposed project will not have a disproportionate impact on the Environmental Justice and Title VI populations.

Prime Farmland and Farmland of Statewide Importance

The ROD alignment would impact 621 acres of Prime Farmland and 154 acres of Farmland of Statewide Importance. The Proposed Alternative would impact approximately 532 acres of Prime Farmland and 24 acres of Farmland of Statewide Importance. The reduction in Prime Farmland and Farmland of Statewide Importance is attributable to the reduction in the length of the Proposed Alternative.

Floodways and Floodplains

The ROD alignment estimated that 151 acres of Special Flood Hazard Area (SFHA) would be impacted. The Proposed Alternative would impact 216 acres of SFHA Zone A, primarily in the vicinity of Cutoff Creek and Bayou Bartholomew. The ROD alignment was based on floodplain mapping available in 1977. However, floodplain mapping was updated in 2009, 3 years after the ROD was signed. This floodplain mapping update resulted in the addition of land that was not previously considered floodways or floodplains. The increase of the SFHA under the Proposed Alternative compared to the ROD alignment is therefore attributable to the addition of previously unmapped floodplains.

The Proposed Alternative would involve constructing three bridges, approximately 20 reinforced box or concrete pipe culverts, and three fill areas for stream and/or wetland crossings. The proposed construction would not cause a significant reduction of floodwater storage or retention functions. Bridges and culverts have been sized sufficiently to minimize impacts on natural and beneficial floodplain values. Adjacent properties should not be impacted nor have a greater flood risk than existed before construction of the project. None of the encroachments will constitute a significant floodplain encroachment or a significant risk to property or life.

Wetlands and Waters of the U.S.

Wetlands

Twenty-three acres of jurisdictional wetland impacts were identified for the ROD alignment. Recent field investigations of the Proposed Alternative identified impacts to 18 separate wetland areas for a total of approximately 50 acres of wetlands. Compensatory mitigation for stream and wetland impacts will be debited from the Department's proposed Moro Creek Mitigation Bank or the closest, approved mitigation bank that services the area. ARDOT proposes the use of an estimated 48,113 stream credits and 701 wetland credits as compensatory mitigation to offset the resulting impacts. These calculations are preliminary and will be finalized up receipt of the U.S. Army Corps of Engineers (USACE) Little Rock District approved jurisdictional determinations and during the permitting process. Construction of the proposed project will require the Department to obtain a Standard Individual Section 404 Permit from the U.S. Army Corps of Engineers.

Streams

In the time between the FEIS/ROD and the proposed project, new regulations and guidance from the USACE concerning stream impacts under Section 404 of the Clean

Water Act were implemented. Stream impacts were not discussed in depth in the FEIS/ROD. Recent field investigations of the Proposed Alternative identified impacts to 21 unnamed tributaries and two named streams—Cuttoff Creek and Bayou Bartholomew. Construction of the Proposed Alternative will impact approximately 13,498 linear feet of stream. Stream impact mitigation is described in the wetlands section above. **Figure 5** shows the wetland and stream locations.

Threatened and Endangered Species

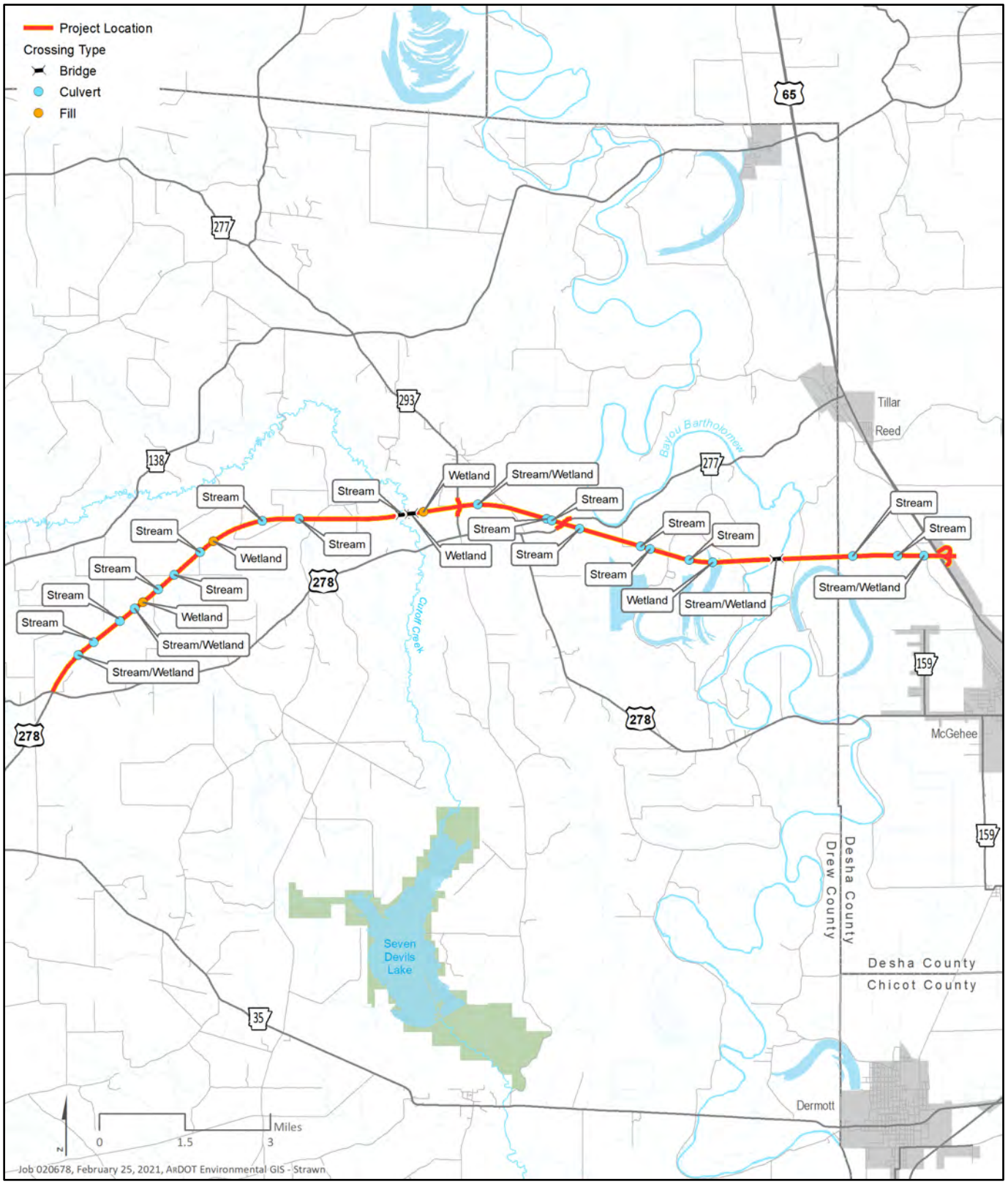
The FEIS/ROD identified six federally listed species occurring within the project area, while the official species list obtained in 2020 from the US Fish and Wildlife Service's (USFWS) Information for Planning and Consultation website identified the following five federally listed species potentially occurring within the project area: Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*); Piping Plover (*Charadrius melodus*); Red Knot (*Calidris canutus rufa*); Red-cockaded Woodpecker (*Picoides borealis*); and Geocarpon (*Geocarpon minimum*). Due to the lack of habitat and distance to known species occurrences, it has been determined that the proposed project will have "no effect" on the threatened and endangered species. The USFWS species list is provided in **Appendix C**, and an environmental impact consideration checklist is provided in **Appendix D**.

COMMITMENTS

ARDOT's standard commitments associated with relocation procedures, hazardous waste abatement, cultural resources discovery, and control of water quality impacts have been made in association with this project. They are as follows:

- If hazardous materials are identified, observed or accidentally uncovered by any ARDOT personnel, contracting company(s) or state regulating agency and found to be within the acquired right of way, it will be ARDOT's responsibility to determine the type, size and extent of contamination. ARDOT will identify the type of contaminant, develop a remediation plan, and coordinate disposal methods to be employed for that particular type of contamination. All remediation work will be conducted in conformance with the Arkansas Department of Environmental Quality (ADEQ), Environmental Protection Agency (EPA), and Occupational Safety and Health (OSHA) regulations.
- An asbestos survey will be conducted by a certified asbestos inspector on any building slated for acquisition and demolition. If the survey detects the presence of any asbestos-containing materials, plans will be developed to accomplish the safe removal of these materials prior to demolition. All asbestos abatement work will be conducted in conformance with ADEQ, EPA, and OSHA asbestos abatement regulations.

Figure 5. Wetland/Stream Impacts



- An intensive cultural resources survey was completed for the ROD alignment, and subsequently reviewed for the Proposed Alternative. Should previously unknown sites be discovered during project implementation, and if any such sites be found to be eligible or potentially eligible for nomination to the National Register of Historic Places and avoidance is not possible, then site-specific treatment plans will be prepared, and data recovery conducted. All borrow pits, waste areas and work roads will be surveyed for cultural resources when locations are requested.
- ARDOT will comply with all requirements of the *Clean Water Act*, as amended, for the construction of this project. This includes Section 401-Water Quality Certification, Section 402-NPDES, and Section 404-Permit for Dredged or Fill Material. Stream and wetland mitigation will be offered at an USACE approved mitigation bank site at a ratio approved by the USACE during the Section 404 permitting process. A Water Pollution Control Special Provision will be incorporated into the contract to minimize potential water quality impacts. 303(d) state requirements for Bayou Bartholomew will also be met.
- Stream and wetland mitigation will be offered at a USACE approved mitigation bank site at a ratio approved by the USACE during the Section 404 permitting process.
- If any permanent impacts to private drinking water sources occur due to this project, ARDOT will take appropriate action to mitigate these impacts.

RE-EVALUATION CONCLUSION

Table 3 compares the overall impacts for the ROD alignment and the Proposed Alternative.

Table 3
Impact Summary

Alternative	Total Project Cost (million)	New ROW (acres)	Prime Farmland & Farmland of Statewide Importance	Wetlands (acres)	SFHA / No. of Stream and/or Wetland Crossings
ROD Alignment	135.7	932	775	23	151 acres / NA
Proposed Alternative	81.5	725	532	50	216 acres / 23 crossings

The FEIS for this project was previously approved in October 2005. A ROD was issued in May 2006. These documents were reviewed for content, accuracy, and overall scope of work regarding the project. This Re-evaluation reviewed the Proposed Alternative and the potentially affected environment since the issuance of the FEIS and the ROD. After a thorough review and reconsideration of these documents based on additional environmental studies and approvals, FHWA determines that all previous findings and decisions remain valid and that no new or additional significant impacts will result from the Proposed Alternative. Based on this determination, the subject project may continue to proceed.

APPROVAL OF RE-EVALUATION

Approving Official: Randal Looney Date: March 10, 2021

Randal Looney
Environmental Coordinator
Federal Highway Administration

Appendix A

Disposition of Public Comments from the Virtual Design Public Hearing

DISPOSITION OF PUBLIC COMMENTS

Job 020678
Hwy. 278 – Hwy. 65 (S)
Drew and Desha County

An Open Forum Design Virtual Public Hearing for this project was held on October 6, 2020. The proposed design was displayed on an aerial photograph, depicting design features on an approximate scale of 1":100'. Representatives of various ARDOT Divisions as well as District 2 were available virtually to explain the proposed design and to answer questions. Copies of the Final Environmental Impact Statement, Record of Decision, and other general project information were available.

Twenty-five (25) written comments were received. Summaries of these comments and responses thereto follow:

COMMENT 1: James Erwin stated, "will any of our property be acquired for the I69 and if so when?"
RESPONSE 1: Roadway Design defers to Right of Way Division for comments pertaining to appraisals and acquisitions.

COMMENT 2: Kathryn Ferguson stated that she is opposed to the closing of North 16th Section Road. She also stated, "a simple cross over at grade with stop signs could be implemented. A bridge as was earlier proposed would be less costly than building up or spanning the flood plain area."
RESPONSE 2: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 3: Joe Miles stated that "I-69 will affect 16 section road north". He wants access to be maintained for emergency responders and forest and agriculture products. He also states that timber and agriculture will be impacted by project. He also has concerns over impacts to Tailwater recovery system for his farm.
RESPONSE 3: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future. Roadway is looking into the feasibility to provide access to either side of the main lanes in order to maintain irrigation of the farm.

COMMENT 4: Bobbie Everett states that "future I-69 will prevent access in and out of the sixteenth section road".
RESPONSE 4: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 5: Sherrie Gillespie requests an "on grade crossing" for the Sixteen-Section Road due to "concern for the residents and their safety when traveling".

DISPOSITION OF PUBLIC COMMENTS
Job 020678
Hwy. 278 – Hwy. 65 (S)
Drew and Desha County

RESPONSE 5: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 6: Joe Miles requests "access for my property" and first responders because of flooding by Cut Off Creek.
RESPONSE 6: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 7: Leo Everett is concerned with flooding and maintaining access.
RESPONSE 7: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future. Mr. Everett accesses his property from N. 16th Section Rd.

COMMENT 8: Ray Everett voiced concerns over Sixteen Section Road not having access.
RESPONSE 8: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 9: Gary Barnard requests access to I-69 at N. 16th Section Road.
RESPONSE 9: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 10: Sonny Jones stated that access is needed for North 16th Section road due to frequent flooding.
RESPONSE 10: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 11: Kenneth Avery stated that creek floods and access is difficult.
RESPONSE 11: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 12: R.D. Jones requests access to I-69 at N. 16th Section Road due to flooding to the north and for first responders.
RESPONSE 12: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

DISPOSITION OF PUBLIC COMMENTS
Job 020678
Hwy. 278 – Hwy. 65 (S)
Drew and Desha County

COMMENT 13: Brown Everett has concerns about not having access to the future I-69 at N. 16th Section Road.
RESPONSE 13: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 14: Gary Lucas stated that he needs access to property at N. 16th Section Road due to flooding to the north of the project.
RESPONSE 14: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 15: Stephen & Jennifer Cockrell stated that access to the south is needed on N. 16th Section Road due to flooding to the north.
RESPONSE 15: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 16: Jason Barnard opposes the loss of access for N. 16th Section Road due to the flooding to the north and the need for emergency personnel to have access.
RESPONSE 16: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 17: Charles Smith has concerns with the flooding to the north on N. 16th Section Road and requests that access be maintained to the south.
RESPONSE 17: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 18: Joe Mae Everett lives on N. 16th Section Road and has concerns about having no access to south.
RESPONSE 18: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 19: Brandon Smith has concerns with flooding to the north on N. 16th Section Road and requests that access be maintained to the south.
RESPONSE 19: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

DISPOSITION OF PUBLIC COMMENTS
Job 020678
Hwy. 278 – Hwy. 65 (S)
Drew and Desha County

COMMENT 20: Patricia Smith has concerns with flooding to the north on N. 16th Section Road and requests that access be maintained to the south.
RESPONSE 20: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 21: Norman Harvill states, “Please don’t cut off access to N. 16th Section Rd. to the south”.
RESPONSE 21: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 22: Frankie Everett states, “there is no way we can get out of here (N. 16th Section Road)” when flooding occurs to north.
RESPONSE 22: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 23: Auther L. Everett is concerned with access being lost to the south on N. 16th Section Road due to the flooding to the north.
RESPONSE 23: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 24: Sammie Everett is concerned with access to N. 16th Section Road when flooding occurs.
RESPONSE 24: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

COMMENT 25: LeAnne Burch requests that an “on grade crossing” is provided at N. 16th Section Road to maintain access for residents and first responders.
RESPONSE 25: Roadway Design will revise the design and provide an at-grade crossing during the interim 2 Lane Facility, and a grade separation (future overpass with no access via interchange) for the Main lanes when the facility is completed in the future.

Appendix B

Roadway and ROW Cost Estimates and Supporting Documentation

ARKANSAS DEPARTMENT OF TRANSPORTATION
ArDOT.gov | IDriveArkansas.com | Lorie H. Tudor, P.E., Director
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2000

INTEROFFICE MEMORANDUM

October 27, 2020

TO: John Fleming, Division Head, Environmental Division

FROM: For Trinity D. Smith, Engineer Roadway Design GWD

SUBJECT: Job Number 020629
FAP Number NHPP-2221(2)
Hwy. 278 – Hwy. 65 (S)
Route 69, Section X
Drew and Desha Counties
Roadway Information Response

As requested:

1) The construction cost estimate for job 020678 is $75 million.

2) Attached is a PDF of the interim Typical Section for 020678.

3) Attached is the Hydraulics Memo for 020678.

If any additional information is required, contact George Davison at (501) 569-2527

TDS/gwd

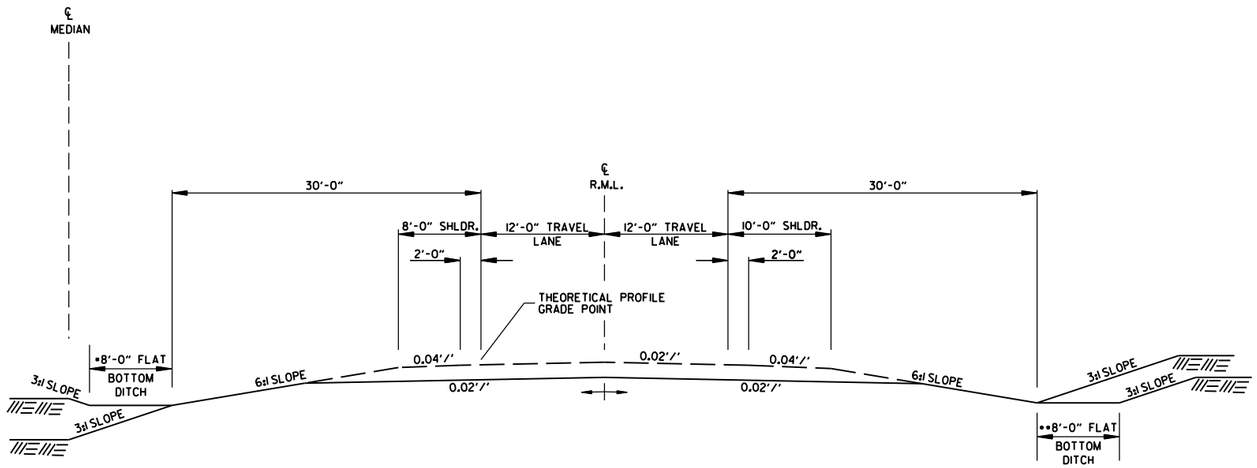
c: Environmental

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		020678		

(2) TYPICAL SECTIONS OF IMPROVEMENT

PRELIMINARY
SUBJECT TO REVISION



RIGHT MAIN LANES - NORMAL CROWN SECTION

10/1/2020

R020678.DGN

ARKANSAS DEPARTMENT OF TRANSPORTATION
ArDOT.gov | IDriveArkansas.com | Scott E. Bennett, P.E., Director
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2000

INTEROFFICE MEMORANDUM

December 5, 2019

TO: Mr. Rick Ellis, Bridge Engineer

FROM: For Trinity D. Smith, Engineer of Roadway Design ME

SUBJECT: Job 020678
Hwy. 278 – Hwy. 65 (S)
Future I-69
Drew and Desha Counties

The Hydraulics Section has completed an analysis of the stream crossing on the above referenced job. Listed below are the pertinent data and results.

Stream Names	Cutoff Creek
Job Station	5109+80
Log Mile	N/A
Bridge Number	N/A

1) Drainage area, mi^2 = 91.6
2) Main channel length, mi = 29.81
3) Main channel slope, ft./mi. = 3.654
4) Local channel slope, ft./ft.= .0002
5) Historical highwater elevation, ft. = N/A
6) Stage/Discharge Relationship

Cutoff Creek/ I-69 New Route							
Frequency	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}
Discharge (cfs)	2130	3320	4180	5300	6145	7000	9070
Unconstricted Stage (ft)	149.00	149.50	149.81	150.16	150.37	150.57	151.07
Preliminary Stage (ft)	149.55	150.17	150.54	150.97	151.27	151.54	152.17

7) Job Path: \\CSD4\Bridge\BRIDGE DIVISION INFO\HEC-RAS_Hyd\020678 (SMS)

The frequency discharge estimates were determined using the U.S.G.S. 2016 regression equations. Stage-discharge relations were determined using the SMS (SRH-2D) computer program. The stages shown above represent the water surface elevations at a section located just upstream from the proposed bridge.

The preliminary bridge structure data:

Preliminary Bridge length 600'			
Bridge begin Station	5108+25.00	Bridge end Station	5114+25.00
Number of spans	6	Skew (deg.)	0°
Span lengths (ft.)	100	Pier width (ft.)	6
Span depth (ft.)	6	Deck profile elevation (ft.)	158.0

Preliminary Relief Bridge length 250'			
Bridge begin Station	5118+52.00	Bridge end Station	5121+02.00
Number of spans	5	Skew (deg.)	0°
Span lengths (ft.)	50	Pier width (ft.)	6
Span depth (ft.)	6	Deck profile elevation (ft.)	158.0

The preliminary information tables represent the parameters used in the hydraulic model. As the bridge design progresses, these values and the hydraulic model will be adjusted for the final layout. The configuration shown should be the minimum opening provided to meet the Department and National Flood Insurance Program requirements. The open area below the structure may be increased without additional modeling for compliance. Significant changes to the location of the structure or a reduction of the open area should be coordinated with the Hydraulics Section. Final water surfaces will be provided once a bridge layout is developed.

This site is located within a Zone A Special Flood Hazard Area as designated by the National Flood Insurance Program and shown on Panel 0225C of the Drew County FIRM. The floodplain extends from STA. 5101+68 – STA. 5139+50.

Stream Names	Bayou Bartholomew
Job Station	5467+00
Log Mile	N/A
Bridge Number	N/A

1) Drainage area, mi^2 = 600
2) Main channel length, mi = 179.1
3) Main channel slope, ft./mi. = 0.48
4) Local channel slope, ft./ft.= .00004
5) Historical highwater elevation, ft. = N/A
6) Stage/Discharge Relationship

Bayou Bartholomew/ I-69 New Route							
Frequency	Q_2	Q_5	Q_{10}	Q_{25}	Q_{50}	Q_{100}	Q_{500}
Discharge (cfs)	3450	4520	5250	6140	6790	7420	8835
Existing Stage (ft)	141.45	143.00	143.95	145.07	145.83	146.51	147.86
Preliminary Stage (ft)	141.47	143.06	144.00	145.12	145.88	146.56	147.94

7) Job Path: \\CSD4\Bridge\BRIDGE DIVISION INFO\HEC-RAS_Hyd\020678 (SMS)

The frequency discharge estimates were determined using data from the Highway 278 Bridge over Bayou Bartholomew. The flow estimates were adjusted based on Bulletin 17C (USGS 2018). Stage-discharge relations were determined using the SMS (SRH-2D) computer program.

The stages shown above represent the average water surface elevations at a section located 184' upstream from the proposed bridge.

The preliminary bridge structure data:

Preliminary Bridge length 500'			
Bridge begin Station	5464+00	Bridge end Station	5469+00
Number of spans	5	Skew (deg.)	40
Span lengths (ft.)	100'	Pier width (ft.)	5'
Span depth (ft.)	6	Deck profile elevation (ft.)	153.00

The preliminary information tables represent the parameters used in the hydraulic model. As the bridge design progresses, these values and the hydraulic model will be adjusted for the final layout. The configuration shown should be the minimum opening provided to meet the Department and National Flood Insurance Program requirements. The open area below the structure may be increased without additional modeling for compliance. Significant changes to the location of the structure or a reduction of the open area should be coordinated with the Hydraulics Section. Final water surfaces will be provided once a bridge layout is developed.

This site is located within a Zone A Special Flood Hazard Area as designated by the National Flood Insurance Program and shown on Panels 135 and 155 of the Union County FIRM. The floodplain extends across the limits of the Job.

The Hydraulics Section has designed cross drains for the planned alignment of the 2-lane section of the futre I-69. Listed below are the pertinent data and results.

Station	DA (ac)	Q_{50} (cfs)	Proposed	FL_{LT}	FL_{RT}	HW_{50}
4768+40	1147	860	TRI 9'x5' RCB	177.4	177.2	182.9
4787+00	71	70	48" RCP	182.8	182.6	186.9
4818+37	136	137	DBL 48" RCP	186.3	185.9	190.4
4836+00	320	309	DBL 8'x4' RCB	182.0	181.0	185.5
4863+10	47	47	42" RCP	184.2	183.8	187.7
4884+23	270	321	DBL 8'x4' RCB	175.8	175.5	180.5
4916+00	174	275	DBL 8'x4' RCB	184.0	183.2	187.2
4981+82	253	364	DBL 8'x4' RCB	171.6	171.4	175.9
4993+70	125	103	DBL 42" RCP	173.3	172.5	176.8
5015+70	500	393	DBL 8'x4' RCB	167.5	167.2	171.7
5084+80	51	58	48" RCP	164.5	165.7	169.1
5098+85	46	67	48" RCP	160.1	160.3	164.3
5173+45	136	95	DBL 42" RCP	174.0	173.3	178.0
5182+10	414	494	DBL 8'x4' RCB	171.9	171.8	177.1
5248+00	87	102	DBL 42" RCP	149.8	149.3	153.3
5253+57	163	180	DBL 48" RCP	142.8	144.0	148.7
5259+60	4	9	24" RCP	151.0	160.0	161.5
5280+20	61	41	42" RCP	151.4	151.3	155.7
5347+59	185	141	DBL 48" RCP	147.8	147.9	152.0
5348+28	137	94	DBL 42" RCP	145.6	145.8	150.2

5385+66	111	108	60" RCP	141.3	141.4	146.4
5407+80	77	67	48" RCP	145.8	145.6	149.8
5445+85	25	22	30" RCP	149.8	149.4	152.3
5481+07	77	41	36" RCP	148.3	148.4	151.9
5501+10	50	34	36" RCP	146.4	146.2	149.5
5537+80	64	43	36" RCP	145.4	145.3	149.1
5550+62	36	24	30" RCP	144.8	144.6	147.6
5579+74	1055	260	DBL 6'x5' RCB	138.7	138.6	145.0
a 86+24	136	62	48" RCP	142.3	142.1	146.1

It appears that the survey needs to be further defined to set the flowlines of the cross drains at Sta. 4768+40 and Sta. 5407+80.

The frequency discharge estimates were determined using the U.S.G.S. 2016 regression equations and the Rational Method. The 50-year headwater elevation upstream of the cross drains were determined using the HY8 computer program.

This job crosses locations within a Zone A Special Flood Hazard Area as designated by the National Flood Insurance Program and shown on Panels 220, 225, and 250 of the Drew County FIRM and Panels 470 and 475 of the Desha County FIRM. The floodplain extends from approximately Sta. 4766+70 to Sta. 4769+25, Sta. 5104+78 to Sta. 5139+74, Sta. 5244+23 to Sta. 5249+86, Sta. 5251+81 to Sta. 5255+31, Sta. 5259+05 to Sta. 5260+62, Sta. 5269+25 to Sta. 5467+93, Sta. 5501+05 to Sta. 5502+99, Sta. 5553+53 to Sta. 5593+52, and from Sta. a 94+04 to the end of the job.

The requirements of a Type VI permit must be satisfied to be in compliance with the NFIP. A copy of the requirements is attached.

If there are any questions concerning this review, please contact Kevin Wang in the Hydraulics Section at 569-2470.

TDS/MSE/kmw

c: Hydraulic Design
file: Job 020678

ARKANSAS DEPARTMENT OF TRANSPORTATION
ArDOT.gov | IDriveArkansas.com | Lorie H. Tudor, P.E., Director
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2000

INTEROFFICE MEMORANDUM

January 14, 2021

TO: John Fleming, Division Head, Environmental Division

FROM: Jennifer R. Williams, Division Head, Right of Way Division

SUBJECT: Job 020678
Hwy. 278 – Hwy. 65 (S)
FAP Number NHPP-2221(2)
Route: 69 Section:
Drew and Desha Counties
Acquisition and Utilities Cost Estimates

Plans on the subject project has been reviewed by the Right of Way Division. The estimated right of way acquisition and utility relocation costs are premised on the following:

- Aerial photography, 60% construction plans and right of way plans
- Cursory visual inspection of the proposed project area
- No owner contact has been made
- Limited market analysis
- No right of way plans were available
- No right of way plans staking was in place
- Access to all affected properties remains
- Landlocked parcels and loss of productive farmland could not be determined
- Estimated total area to acquire is 652 acres
- Estimated displacements: 2 Residential Owners, 5 personal properties
- This is not an appraisal

The preliminary acquisition, relocation, and utility costs are as follows:

Reimbursable Utility Costs	$ 1,495,000	Non-Reimbursable Utility Costs $ 1,080,000
Acquisition Costs	$ 4,900,000	
Relocation Costs	$ 124,000	
Total	**$ 6,519,000**	

See attached for additional cost estimates information.

Attachments

c: Administrative Section

Date: October 29, 2020

Job 020678

FAP NHPP-2221(2)

Hwy. 278 - Hwy. 65 (S)

Route I-69 Section x

Drew & Desha County/Counties

UTILITY COST ESTIMATE

Highway In System N/A

	Reimb. Cost	Nonreimb. Cost
AT&T Arkansas		855,000.00
C&L Electric	450,000.00	
Entergy Distribution	45,000.00	
Entergy Transmission	400,000.00	
McGehee Water	240,000.00	
Selma Water	360,000.00	
Vyve Communication		225,000.00
Sub-Total	1,495,000.00	1,080,000.00

Total Reimbursable Cost $1,495,000.00

This estimate was prepared after a utility field inspection by personnel of the Utilities Section, and using preliminary plans; therefore, the estimate must be considered an approximate and subject to change.

ARKANSAS DEPARTMENT OF TRANSPORTATION
ArDOT.gov | IDriveArkansas.com | Lorie H. Tudor, P.E., Director
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261
Phone: 501.569.2000 | Voice/TTY 711 | Fax: 501.569.2400

November 5, 2020

TO: **Jennifer Williams,** Division Head
Right of Way Division

THROUGH: **Greg L. Davis,** Appraisal Section Head
Right of Way Division

FROM: **Scott Wroten**, Reviewing Appraiser
Appraisal Section, Right of Way Division

SUBJECT: Conceptual Job Cost Estimate
Job 020678
Hwy. 278 – Hwy. 65 (S)
Drew & Desha Counties

Preliminary designs described as Preliminary Construction Plans for the above-referenced project have been reviewed.

Based on information provided by a preliminary design plan and preliminary market research, estimates of right of way costs are provided. These estimates are made subject to the following premises and conditions:

1. No owner contact has been made.
2. No right of way staking was in place.
3. Only a limited market study has been completed.
4. No Right of Way Plans were provided.
5. Total area of acquisition is estimated by the Appraisal Section **to** be 652± acres.
6. This Is Not an Appraisal.
7. No property boundaries were provided therefore parcels that may become land locked or cut off from access could not be determined. Loss of productive farm land due to the proposed acquisition also could not be determined.
8. No personal inspection was made of the project. Google Earth was used to estimate the project route and estimate impacts of the project.

Job: 020678

Considering the above factors, the estimated right of way cost of the proposed route –is:

TOTAL:

$4,900,000.00

Four Million and Nine Hundred Thousand Dollars

Included in the estimated area needed for the project are agriculture and residential areas. The estimated value of the land needed for the project ranges from $1,500 to $5,000 per acre.

Included in the estimated area needed for the project are 2 improvements damaged or relocated. The improvements needed to be relocated are 2 residential. The estimated cost allocated to improvements on this project is: $250,000.

SW

ARKANSAS DEPARTMENT OF TRANSPORTATION
ArDOT.gov | IDriveArkansas.com | Lorie H. Tudor, P.E., Director
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2000

INTEROFFICE MEMORANDUM

November 5, 2020

TO: Jennifer R. Williams, P.E., Right of Way Division Head

FROM: Nathaniel C. Williams, Section Head – Relocation, Right of Way Division

SUBJECT: Job 020678
Hwy. 278 – Hwy. 65 (S)
Drew & Desha Counties
Estimated Relocation Costs

The estimated relocation costs for the above Job and Tracts are premised on the following:

- Preliminary construction plans
- Desktop and online inspections
- No contact has yet been made with the occupants

The estimated number of displaced persons and relocation costs are indicated below:

2 Residential Owners	$ 80,000
5 Personal Properties	25,000
Services	19,000
Total Relocation Costs	**$124,000**

ARKANSAS DEPARTMENT OF TRANSPORTATION
ArDOT.gov | IDriveArkansas.com | Lorie H. Tudor, P.E., Director
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2000

INTEROFFICE MEMORANDUM

October 13, 2020

TO: Jennifer Williams, Division Head, Right of Way Division

FROM: John Fleming, Division Head, Environmental Division

SUBJECT: Job Number 020678
FAP Number NHPP-2221(2)
Hwy. 278 – Hwy. 65 (S)
Route 69, Section X
Drew and Desha Counties
Roadway Information Request

Please provide ROW cost estimates for the subject project. Cost estimates should include acquisition, relocation, and utility costs. A Conceptual Stage Relocation Statement and Inventory Record are also requested.

The attached figure shows the alternative under consideration. The proposed ROW width is estimated to range from 280’ to 1,920’.

Please provide this information by November 12, 2020. If you have any questions concerning this project, contact Mary Pearson at extension 2644.

JF:MP:am

Attachment:
Location Map


Tillar
Little Rd
Little Rd
Ables Creek Rd
Old Military Rd
16th Section Rd
David Rd
Payton Rd
Piney Creek Ln
Bordeaux Rd
Project Design Sheet 1
Project Design Sheet 2
Project Design Sheet 3
Project Design Sheet 4
Project Design Sheet 5
Project Design Sheet 6
Future I-69
Tie to
020484 & 020471
Drew County
Desha County
278
278S
277
65
N
0
0.5
1
Mile
ARDOT - Environmental GIS - Hopkins
Map Date - July 23, 2020
Virtual Public Involvement Exhibit
Job 020678
Highway 278 to Highway 65
(Interstate 69)
Drew & Desha Counties
ARDOT
ARKANSAS DEPARTMENT OF TRANSPORTATION
Project Location
Preliminary
Subject to Revision

Date Sent: May 19, 2020

ROADWAY DESIGN REQUEST

Job Number 020678 FAP No. _____ County Drew & Desha

Job Name Hwy. 278 – Hwy. 65 (S)

Design Engineer George Davison Environmental Staff _____

Brief Project Description New location (two lanes of future four lanes divided)

A. Existing Conditions:

Roadway Width: N/A Shoulder Type/Width: N/A

Number of Lanes and Width: N/A Existing Right-of-Way: N/A

Sidewalks? N/A Location: N/A Width: N/A

Bike Lanes? N/A Location: N/A Width: N/A

B. Proposed Conditions:

Roadway Width: 42’ Shoulder Type/Width: 10’ outside, 8’ inside

Number of Lanes and Width: 2 Proposed Right-of-Way: 280’-1920’

Sidewalks? N/A Location: N/A Width: N/A

Bike Lanes? N/A Location: N/A Width: N/A

C. Construction Information:
If detour: Where: N/A Length: N/A

D. Design Traffic Data:
2023 ADT: 1700 2043 ADT: 4700 % Trucks: 25%
Design Speed: 70 m.p.h.

E. Approximate total length of project: 16.97 mile(s)

F. Justification for proposed improvements: The SIU Project will function as a critical link in the Interstate System.

G. Total Relocatees: _____ Residences: _____ Businesses: _____

H. Have you coordinated with any outside agencies (e.g., FHWA, City, County, etc.)? No

Agency/Official	Person Contacted	Date

Appendix C

USFWS Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480
http://www.fws.gov/arkansas-es

In Reply Refer To: November 04, 2020
Consultation Code: 04ER1000-2021-SLI-0147
Event Code: 04ER1000-2021-E-00401
Project Name: 020678 Hwy. 278 - Hwy. 65 (S) I-69

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies endangered, threatened, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). **This letter only provides an official species list and technical assistance; if you determine that listed species and/or designated critical habitat may be affected in any way by the proposed project, even if the effect is wholly beneficial, consultation with the Service will be necessary.**

If you determine that this project will have no effect on listed species and their habitat in any way, then you have completed Section 7 consultation with the Service and may use this letter in your project file or application.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found on our website.

Please visit our website at http://www.fws.gov/arkansas-es/IPaC/home.html for species-specific guidance to avoid and minimize adverse effects to federally endangered,

threatened, proposed, and candidate species. Our web site also contains additional information on species life history and habitat requirements that may be useful in project planning.

If your project involves in-stream construction activities, oil and natural gas infrastructure, road construction, transmission lines, or communication towers, please review our project specific guidance at http://www.fws.gov/arkansas-es/IPaC/ProjSpec.html.

The karst region of Arkansas is a unique region that covers the **northern third of Arkansas** and we have specific guidance to conserve sensitive cave-obligate and bat species. **Please visit http://www.fws.gov/arkansas-es/IPaC/Karst.html to determine if your project occurs in the karst region and to view karst specific-guidance.** Proper implementation and maintenance of best management practices specified in these guidance documents is necessary to avoid adverse effects to federally protected species and often avoids the more lengthy formal consultation process.

If your species list includes any mussels, Northern Long-eared Bat, Indiana Bat, Yellowcheek Darter, Red-cockaded Woodpecker, or American Burying Beetle, your project may require a presence/absence and/or habitat survey prior to commencing project activities. Please check the appropriate species-specific guidance on our website to determine if your project requires a survey. We strongly recommend that you contact the appropriate staff species lead biologist (see office directory or species page) prior to conducting presence/absence surveys to ensure the appropriate level of effort and methodology.

Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make “no effect” determinations. If you determine that your proposed action will have “no effect” on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take “after-the-fact.” For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to

federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, **the accuracy of this species list should be verified after 90 days.** This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
(501) 513-4470

Project Summary

Consultation Code: 04ER1000-2021-SLI-0147

Event Code: 04ER1000-2021-E-00401

Project Name: 020678 Hwy. 278 - Hwy. 65 (S) I-69

Project Type: TRANSPORTATION

Project Description: New location, construction of 2 lanes of future 4 lanes divided.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/33.66035309897358N91.66419297098417W



Counties: Desha, AR | Drew, AR

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Flowering Plants

NAME	STATUS
Geocarpon minimum	Threatened

No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/ecp/species/7699

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix D

Environmental Checklist

ARDOT ENVIRONMENTAL VERIFICATION CHECKLIST
FOR CONSIDERATION OF POTENTIAL IMPACTS

ARDOT Job Number 020678 **FAP Number** NHPP-2221(2)

Job Title Hwy. 278 – Hwy. 65 (S)

Environmental Resource	None	Minimal	Major	Comments-required for each item
Air Quality	X			No MSAT, in attainment area
Cultural Resources	X			No CR in project footprint
Economic	X			No adverse impacts
Endangered Species	X			No effect determination
Environmental Justice/Title VI	X			EJ populations not identified in area
Fish and Wildlife		X		Temporary during construction
Floodplains		X		Floodplain SP required
Forest Service Property	X			None in the project area
Hazardous Materials/Landfills	X			None in project area
Land Use		X		725.4 acres new ROW
Migratory Birds		X		Temporary during construction
Navigation/Coast Guard	X			None in the project area
Noise Levels		X		Noise re-assessment not required
Prime Farmland		X		531.8 acres PFL and 23.6 Farmland of Statewide Importance converted to transportation use
Protected Waters	X			WPC SP included
Public Recreation Lands	X			None impacted by project
Public Water Supply/WHPA	X			None in project area
Relocatees		X		2 relocations; assistance applicable
Section 4(f)/6(f)	X			4(f)/6(f) resources not in project area
Social	X			No adverse impacts identified
Underground Storage Tanks	X			None identified in project area
Visual	X			No changes/adverse impacts
Streams		X		Approximately 13,498 linear feet impacted; Individual 404 permit
Water Quality		X		Temporary decline during construction
Wetlands		X		Approximately 50 acres of wetlands impacted; Individual 404 permit
Wildlife Refuges	X			None in the project area

Section 401 Water Quality Certification Required? Yes

Short-term Activity Authorization Required? Yes

Section 404 Permit Required? Yes Type: Standard Individual Permit

Remarks:

Bayou Bartholomew- 303d & TMDL for Silt Turbidity

Signature of Evaluator Mary Pearson Date 02/12/21