

ENVIRONMENTAL ASSESSMENT

AHTD JOB NUMBER 100445

FAP NUMBER MGL-9332(8)

**Highway 412 Improvements (Paragould)
Greene County**

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

by the

U.S. Department of Transportation

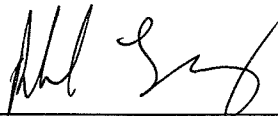
Federal Highway Administration

and the

Arkansas State Highway and Transportation Department

May 2009

May 5, 2009
Date of Approval



Randal Looney
Environmental Specialist
Federal Highway Administration

TABLE OF CONTENTS

PROJECT DESCRIPTION	1
PURPOSE AND NEED	1
PURPOSE OF THE PROPOSED PROJECT	1
NEEDS ANALYSIS	1
EXISTING CONDITIONS.....	1
AVERAGE DAILY TRAFFIC	3
LEVEL OF SERVICE.....	5
SAFETY ANALYSIS	5
SUMMARY	6
ALTERNATIVES	8
NO-ACTION ALTERNATIVE	8
UPGRADE EXISTING HIGHWAY	8
BYPASS ALTERNATIVES.....	8
PROJECTED TRAFFIC AND TRAFFIC ANALYSIS	12
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES	19
RELOCATIONS	19
ENVIRONMENTAL JUSTICE IMPACTS AND TITLE VI COMPLIANCE	20
SOCIAL ENVIRONMENT	20
PUBLIC LAND	20
WILD AND SCENIC RIVERS.....	20
ENDANGERED AND THREATENED SPECIES	21
PRIME FARMLAND.....	22
HAZARDOUS MATERIAL	23
CULTURAL RESOURCES	24
NOISE ANALYSIS.....	25
AIR QUALITY	29
WETLAND AND STREAM IMPACTS	30

WATER QUALITY	36
PUBLIC/PRIVATE WATER SUPPLIES	37
NATURAL AND VISUAL ENVIRONMENT	37
LAND COVER/LAND USE	42
COMMENTS AND COORDINATION	44
COMMITMENTS	45
RECOMMENDATIONS	47
REFERENCES	49

APPENDICES

Appendix A	Purpose and Need Data
Appendix B	Conceptual Stage Relocation Statement
Appendix C	Form NRCS CPA 106-The Farmland Conversion Impact Rating
Appendix D	Hazardous Materials
Appendix E	Public Involvement Synopsis
Appendix F	Agency Coordination

LIST OF FIGURES

<u>Figure</u>	<u>Title</u>	<u>Page</u>
1	Project Study Area	2
2	Current and Projected Traffic	4
3	Alternatives	9
4	Typical Section	11
5	Analysis Sections and Intersection Improvement Locations	13
6	Noise Sample Locations	27
7	Stream and Wetland Locations	31
8	Typical View of Perennial Stream	34
9	Typical View of Intermittent Stream	34
10	Typical View of Herbaceous Wetland	35
11	Typical View of Forested Wetland	35
12	View of Pastureland on Alternative N1	39
13	Secondary-growth Forest on Crowley's Ridge	40
14	Agricultural Property Near Alternative S2	40
15	View of Highway 49 from Alternative S2	41
16	Wastewater Treatment Plant North of Alternative S1	41
17	American Rail Car Industry Plant South of Alternative S1	42

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
1	Crash Analysis Summary	7
2	Projected Traffic and LOS for Upgrade Existing Alternative	15
3	Projected Traffic and LOS for Hwy. 412 with Each Bypass Alternative	16
4	Projected Traffic and LOS for Hwy. 412 and Each Bypass Alternative	17
5	Relocations	19
6	Prime Farmland and Farmland of Statewide Importance Impacts	23
7	Cultural Resources Impacted	25
8	Existing Noise Levels	28
9	Distances to Noise Abatement Criteria Levels for 2028	28
10	Estimated Noise Receptors	29
11	Impact to Waters of the U.S.	33
12	Land Cover/Land Use Conversions to Right of Way	43
13	Alternatives Comparison	48

PROJECT DESCRIPTION

The Arkansas State Highway and Transportation Department (AHTD) is proposing improvements to Highway 412 in the City of Paragould. The proposed project is located in Greene County and consists of five alternatives, including No-Action, Upgrading the Existing Highway, and three new location alternatives. Figure 1 shows the project study area.

PURPOSE AND NEED

Purpose of the Proposed Project

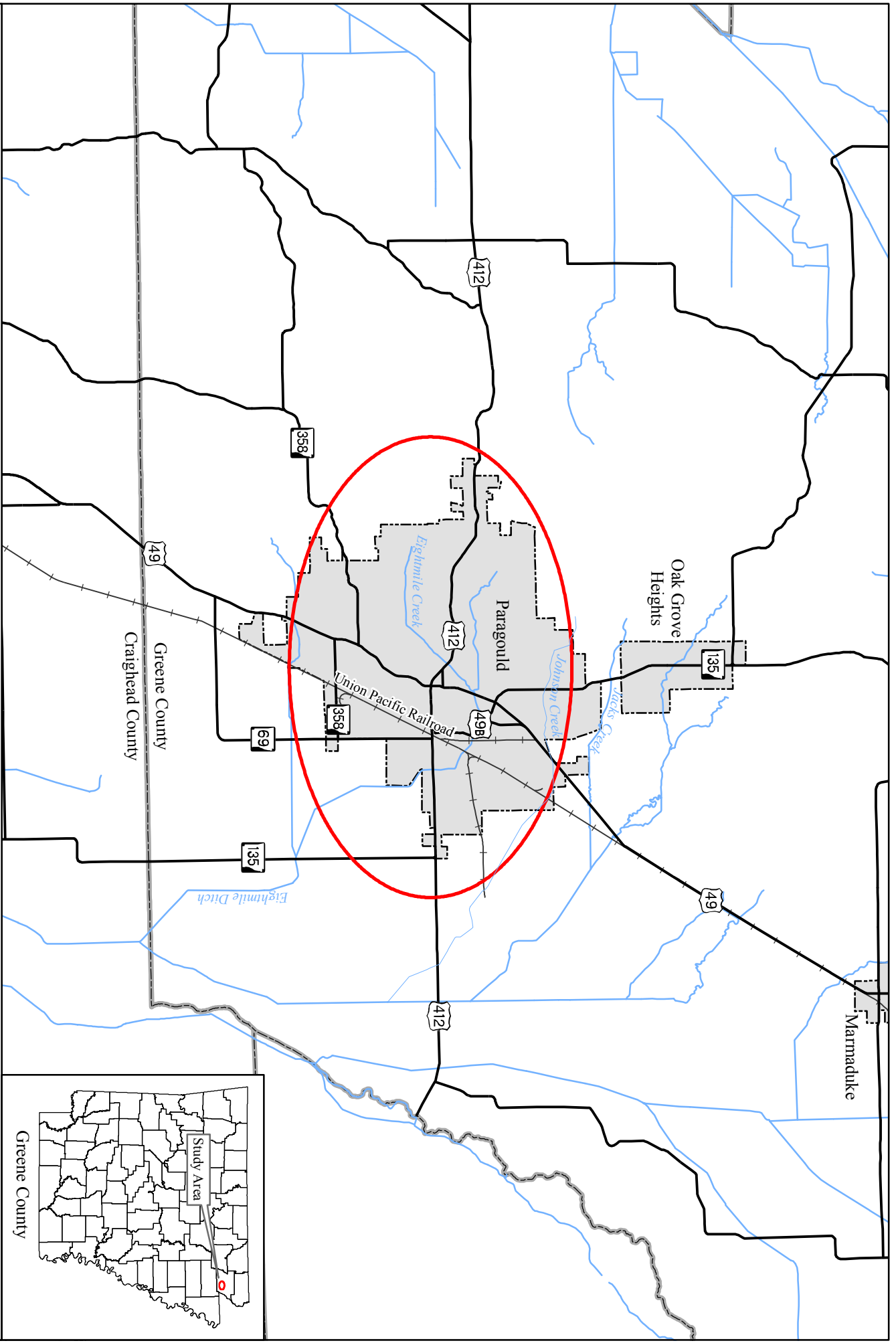
The AHTD, in conjunction with the Federal Highway Administration (FHWA), is proposing improvements to approximately eight miles (4.8 kilometers [km]) of Highway 412 in the vicinity of Paragould. The purpose of the proposed project is to enhance safety and improve traffic operations on Highway 412, thereby providing an improved major east-west transportation facility through the northeast Arkansas region.


Needs Analysis


Paragould is situated at the intersection of Highway 412 and Highway 49 in Greene County and is a major employment center in northeastern Arkansas. Based on the 1990 and 2000 Census, Paragould grew by 18.8 percent from a population of 18,540 in 1990 to 22,017 in 2000. During the same period, the population of Greene County increased 17.4 percent from 31,804 to 37,331. The statewide population growth for the same ten-year period was 13.7 percent. The population growth and commercial developments along Highway 412 have heightened the need for improving east-west traffic flow through Paragould.

Existing Conditions

Highway 412 is a 1,130-mile (1818 km) highway that runs from Columbia, Tennessee to Springer, New Mexico. It is the only east-west National Highway System Route north of Interstate 40 in Arkansas. Regionally, Highway 412 is classified as a principal arterial







 AHTD Environmental GIS - Dudley

 Map Date: January 12, 2009

Figure 1

 Study Area

 Hwy. 412 Improvements (Paragould)

 Job 100445

 Greene County

 Study Area



and serves as the major east-west route through Paragould. This facility consists of four 12-foot (3.6-meter) wide lanes and an 11-foot (3.3-meter) wide continuous, two-way, left-turn lane along most of the study corridor, with posted speed limits ranging from 35 to 45 miles per hour (55-70 km/hour).

Residential and commercial developments are located along the study section, with driveways and side streets intersecting Highway 412. Major traffic generators along Highway 412 include Crowley's Ridge College, Greene County Tech School, Paragould Junior and Senior High Schools, Arkansas Methodist Hospital, the Paragould Historic District, and numerous commercial activities. Within the city limits of Paragould, Highway 412 has traffic signals at the intersections of Rockingchair Road, Reynolds Road/Carroll Road, 23rd Street, Highway 49Y, Highway 49, 10th Street, 7th Street, Highway 49B, and Highway 69 (see Figure 2). A railroad overpass is provided on Highway 412 at the Union Pacific Railroad line near downtown Paragould.

Average Daily Traffic

The current (2008) average daily traffic (ADT) and 20-year traffic forecasts (2028) along selected sections of the existing roadway system within the study area are shown in Figure 2. Currently, traffic volumes on Highway 412 range from 10,900 vehicles per day (vpd) to 24,900 vpd with 6% to 11% trucks. By the year 2028, traffic demands on Highway 412 would range from 14,000 vpd to 37,000 vpd.

Currently, the Greene County Tech School District is planning to relocate the Greene County Tech High School campus to a 90-acre tract on Highway 49 to the south of Paragould. The total enrollment of this high school is expected to be approximately 1,000 students. Based on this known development, it is estimated that the projected traffic on Highway 49 may be as high as 29,000 vpd by the year 2028. Although other commercial and industrial developments have been proposed in the Paragould area, they were not included for traffic forecasting.

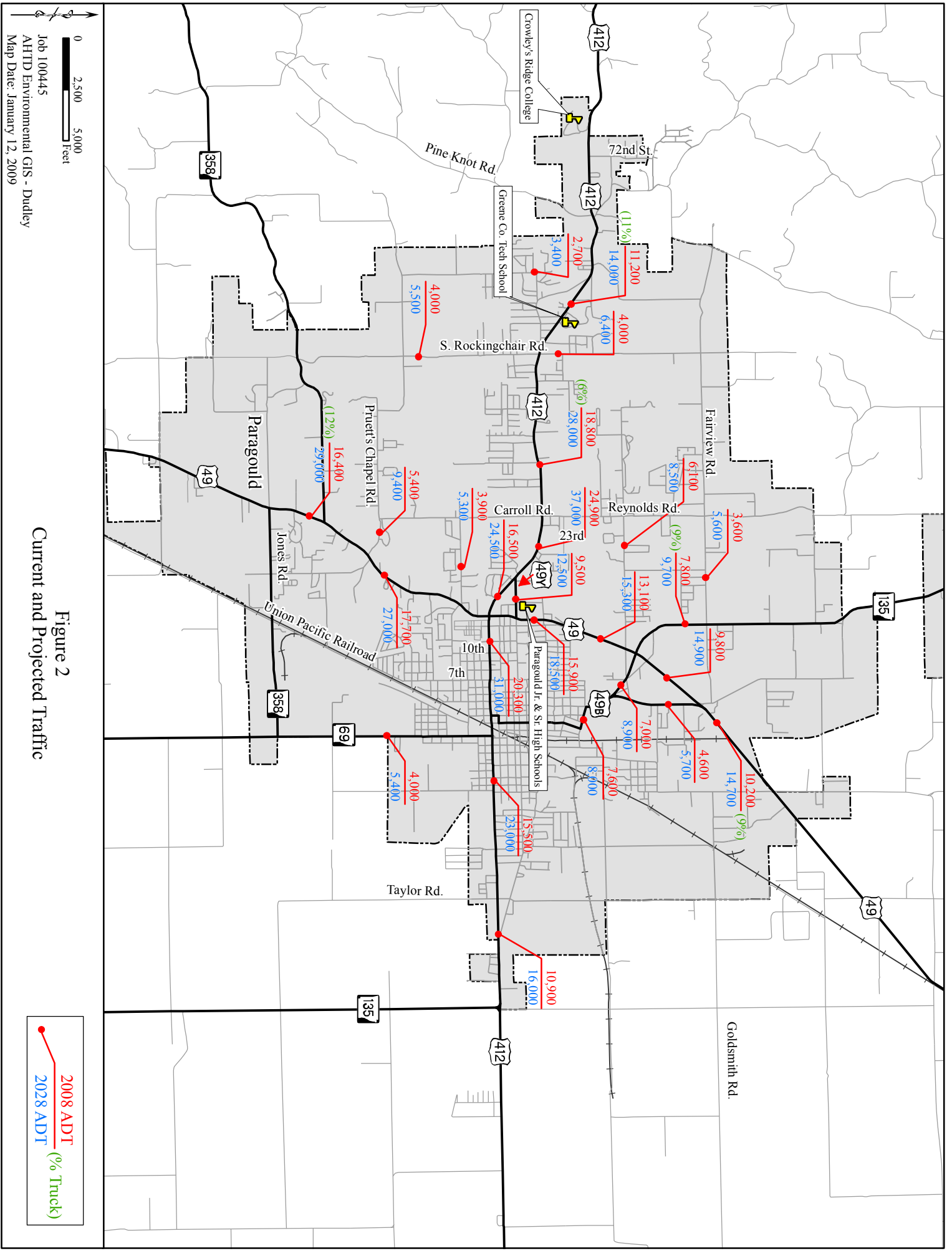


Figure 2
Current and Projected Traffic

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2008 ADT
2028 ADT (% Truck)

Level of Service

Level of service (LOS) is a qualitative measure describing conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service, A through F, are defined and described in Appendix A. For an urban highway such as Highway 412 in Paragould, LOS D is considered acceptable.

The Highway 412 corridor in Paragould is characterized by closely-spaced intersections, relatively dense commercial development with excessive access and inadequate driveway dimensions (relative to spacing, location, geometrics, and number). In addition, none of the signalized intersections are interconnected, coordinated or optimized. Consequently, motorists on Highway 412 encounter frequent stops, recurring delays and interrupted flow. Furthermore, several of the signalized intersections have inadequate approaches from the minor streets. These approaches require a large amount of green time to clear during a signal cycle, thus reducing the amount of green time available for the Highway 412 through traffic and resulting in inadequate capacity and an unacceptable LOS for the corridor.

A traffic analysis conducted using the *2000 Highway Capacity Manual Software* determined that traffic on the section of Highway 412 from Rockingchair Road to Highway 69 is currently operating at LOS D, which is considered acceptable. If no improvements are made, the study section from Rockingchair Road to Highway 49 would decline to LOS F by the year 2028, and the section from Highway 49 to Highway 69 would decline to LOS E by the year 2028. Both of these levels of service are considered unacceptable.

Safety Analysis

The relative safety of a route can be determined by comparing the crash rate and the fatal crash rate of the route to the statewide crash rates for similar routes. Crash rates are based on the number of crashes per million vehicle miles traveled and fatal crash rates are

based on the number of fatal crashes per 100 million vehicle miles traveled. Crash data for the study sections on Highway 412 were analyzed for 2005, 2006, and 2007, which are the most recent years that the data is available. This information is shown in Table 1.

The crash rates shaded in Table 1 were found to be higher than the statewide averages from Rockingchair Road to Highway 69 for all three years. Rear-end and angle collisions were the most common type of crashes reported, which comprised over 75% of the total crashes reported. These collision types are indicators of congestion along the roadway, with stop-and-go conditions and frequent turning maneuvers.

Summary

Congestion along the existing Highway 412 corridor in Paragould is currently at marginally acceptable conditions. Congestion is expected to deteriorate to unacceptable levels within the next 20 years if improvements are not made to increase capacity and/or lower demand on the existing route. Highway 412 is the only National Highway System corridor crossing northern Arkansas and this regional traffic is required to cope with lower speed limits, heavy local traffic, and nine traffic signals in the Paragould area. An improved facility would provide better operating conditions for both local and regional traffic.

Table 1
Crash Analysis Summary
Highway 412

<i>From 72nd Street to Rockingchair Road</i>						
Year	Number Crashes	Crash Rate	Statewide Avg. Crash Rate*	Number Fatalities	Fatal Crash Rate	Statewide Avg. Fatal Crash Rate*
2005	31	5.07	6.43	0	0	1.68
2006	19	2.72	5.98	0	0	1.30
2007	23	3.08	5.65	0	0	1.72
<i>From Rockingchair Road to Highway 49</i>						
Year	Number Crashes	Crash Rate	Statewide Avg. Crash Rate*	Number Fatalities	Fatal Crash Rate	Statewide Avg. Fatal Crash Rate*
2005	162	9.75	6.43	1	6.02	1.68
2006	176	9.61	5.98	0	0	1.30
2007	153	8.35	5.65	0	0	1.72
<i>From Highway 49 to Highway 69</i>						
Year	Number Crashes	Crash Rate	Statewide Avg. Crash Rate*	Number Fatalities	Fatal Crash Rate	Statewide Avg. Fatal Crash Rate*
2005	82	11.80	6.43	0	0	1.68
2006	95	12.98	5.98	0	0	1.30
2007	79	10.24	5.65	0	0	1.72
<i>From Highway 69 to Highway 135</i>						
Year	Number Crashes	Crash Rate	Statewide Avg. Crash Rate*	Number Fatalities	Fatal Crash Rate	Statewide Avg. Fatal Crash Rate*
2005	53	4.61	6.43	0	0	1.68
2006	46	3.86	5.98	0	0	1.30
2007	49	4.08	5.65	0	0	1.72

* Four-lane, two-way undivided (no control of access) urban highways

ALTERNATIVES

Five alternatives, including the No-Action Alternative, were considered for this project.

No-Action Alternative

The No-Action Alternative would provide only routine maintenance for Highway 412. By taking no action other than routine maintenance, the No-Action Alternative would not address traffic safety issues and the unacceptable level of traffic operation within this highway corridor.

Upgrade Existing Highway

To address capacity and safety concerns, improvements to existing Highway 412 would include widening Highway 412 to a six-lane section from the Greene County Tech Campus to east of Highway 69, a distance of 5.3 miles (8.5 kilometers). The typical section would consist of three 12-foot (3.6-meter) wide lanes in each direction with a non-traversable median and provisions for U-turns at regular intervals. An access management plan would be developed to enhance traffic mobility in this corridor.

An environmental review of the existing corridor identified a very large number of potential constraints, including numerous homes and businesses, 13 historic structures, two cemeteries, three churches, two bridge structures along Highway 412, a major school complex, the Union Pacific rail line, the Paragould Municipal Airport, and a portion of the Paragould Historic Business District. Because of the anticipated impacts, widening Highway 412 within this corridor would be excessively disruptive to the community and is not considered a viable alternative.

Bypass Alternatives

The construction alternatives that were studied include three bypass alternatives, including one northern bypass and two southern bypasses. Figure 3 shows the three bypass alternatives.

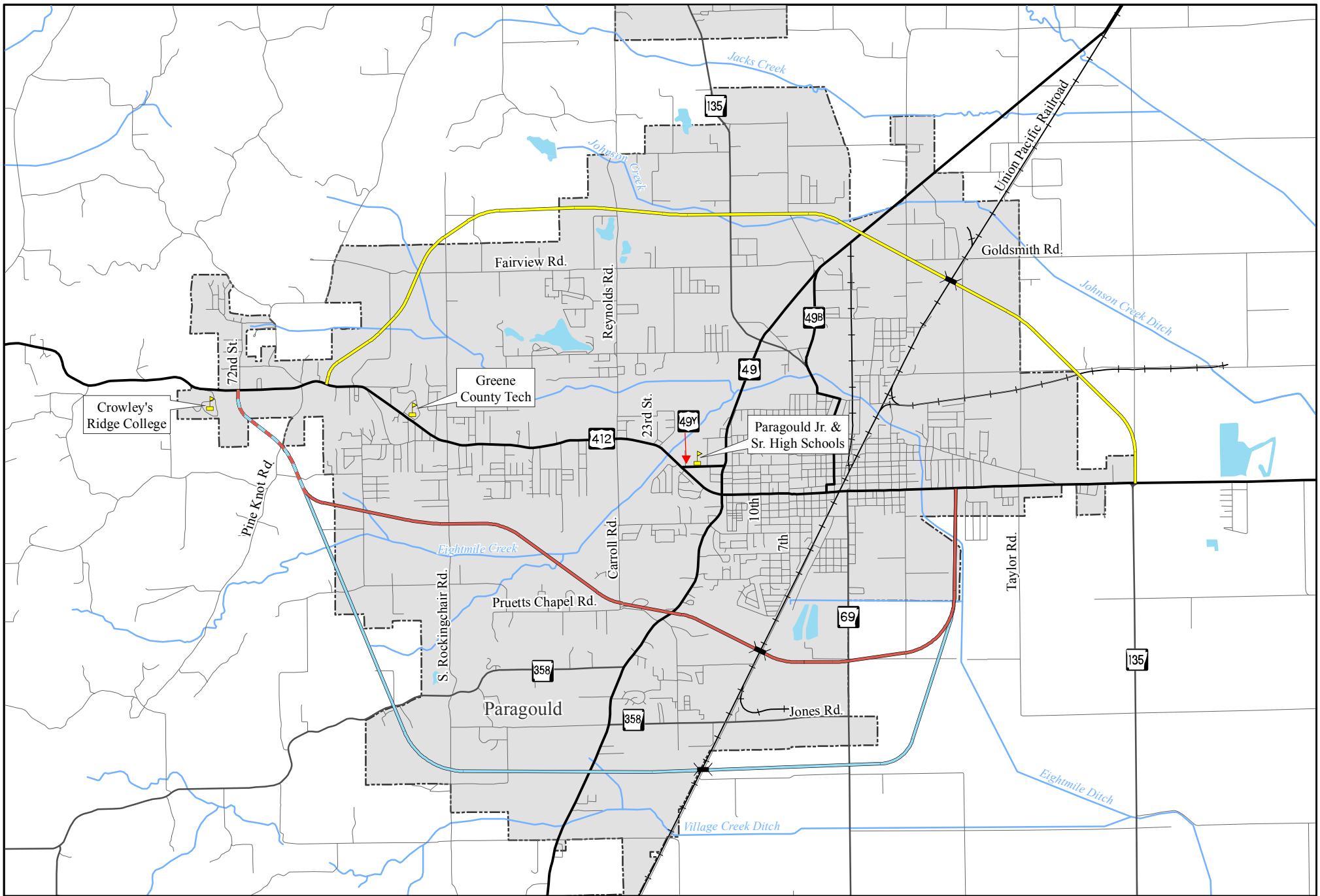


Figure 3
Alternatives

- Grade Separation
- Alternative N1
- Alternative S1
- Alternative S2

0 2,500 5,000
Feet

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The ultimate cross section for the proposed bypass alternatives would include four 12-foot (3.6-meter) wide travel lanes, 8-foot (2.4-meter) wide outside shoulders, 6-foot (1.8-meter) wide inside shoulders, a grass median averaging 50 feet (15.2 meters) wide, and an estimated right of way width of 225 feet (68.6 meters). This typical cross section is displayed in Figure 4, and was used to estimate right of way requirements, cost, and environmental impacts. Initially, right of way would be acquired for the ultimate cross section, but traffic projections were used to recommend roadway cross sections to be constructed for each alternative. There will be partial access control (high type) for the proposed facility that will allow connections from state highways and local roads to the new location section.

Alternative N1

Alternative N1 is the northern bypass alternative and would begin at existing Highway 412 east of Pine Knot Road and rejoin the existing highway at the Highway 135 South intersection. The total length of this alternative is approximately 9.0 miles (14.5 kilometers) with a railroad overpass provided at the Union Pacific Railroad.

This alternative would initially be constructed with a typical cross section of two 12-foot (3.6-meter) wide lanes and 8-foot (2.4-meter) wide shoulders. For the ultimate four-lane cross section, this alternative would require an estimated 254 acres (103 hectares) of right of way with an estimated construction cost of \$95 million (2008 dollars).

Alternative S1

Alternative S1 is a southern bypass alternative that would start at existing Highway 412, approximately 0.6 mile (1.0 kilometer) west of Pine Knot Road, and rejoin the existing highway approximately 1.6 miles (2.6 kilometers) west of the Highway 135 South intersection. It would cross Highway 49 just north of Pruett's Chapel Road. The total length of this alternative is approximately 8.4 miles (13.5 km) with a railroad overpass provided at the Union Pacific Railroad.

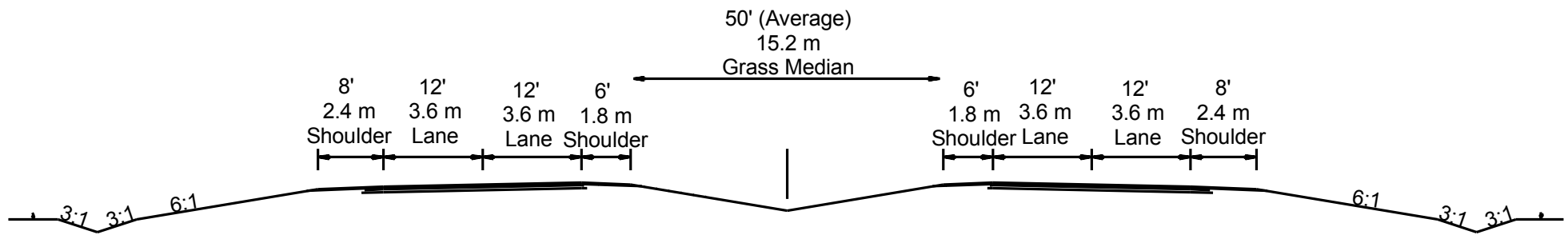


Figure 4
Typical Cross Section

An initial cross section of two 12-foot (3.6-meter) wide lanes and 8-foot (2.4-meter) wide shoulders would be needed from existing Highway 412 west of Pine Knot Road to Rockingchair Road and from Highway 69 to the eastern terminus with existing Highway 412. The center portion of the alternative, from Rockingchair Road to Highway 69, would need a typical cross section of four 12-foot (3.6-meter) wide lanes and 8-foot (2.4-meter) wide shoulders with a center median. For the ultimate cross section, this alternative would require an estimated 237 acres (96 hectares) of right of way with an estimated construction cost of \$91 million (2008 dollars).

Alternative S2

Alternative S2 begins and ends at the same location along Highway 412 as Alternative S1, but it extends further south than Alternative S1. Alternative S2 crosses Highway 49 approximately 1.5 miles (2.4 kilometers) south of Pruett's Chapel Road. The total length of this alternative is approximately 10.4 miles (16.7 kilometers) with a railroad overpass provided at the Union Pacific Railroad.

The typical cross section for Alternative S2 would be two 12-foot (3.6-meter) wide travel lanes with 8-foot (2.4-meter) wide shoulders. For the ultimate cross section, this alternative would require an estimated 293 acres (119 hectares) of right of way and an estimated construction cost of \$111 million (2008 dollars).

Projected Traffic and Traffic Analysis

The alternatives were divided into four sections for projected traffic and LOS analyses (Figure 5). In order to calculate the traffic projections for the alternatives, the origin and destination trip table (Appendix A) was used to develop travel patterns with the respective origin-destination zones. The trip table was used to determine the number of trips that would be diverted to each proposed bypass alternative from existing Highway 412. For the purpose of estimating travel time and trip assignments, it was assumed that the proposed bypass corridors were protected by exercising appropriate

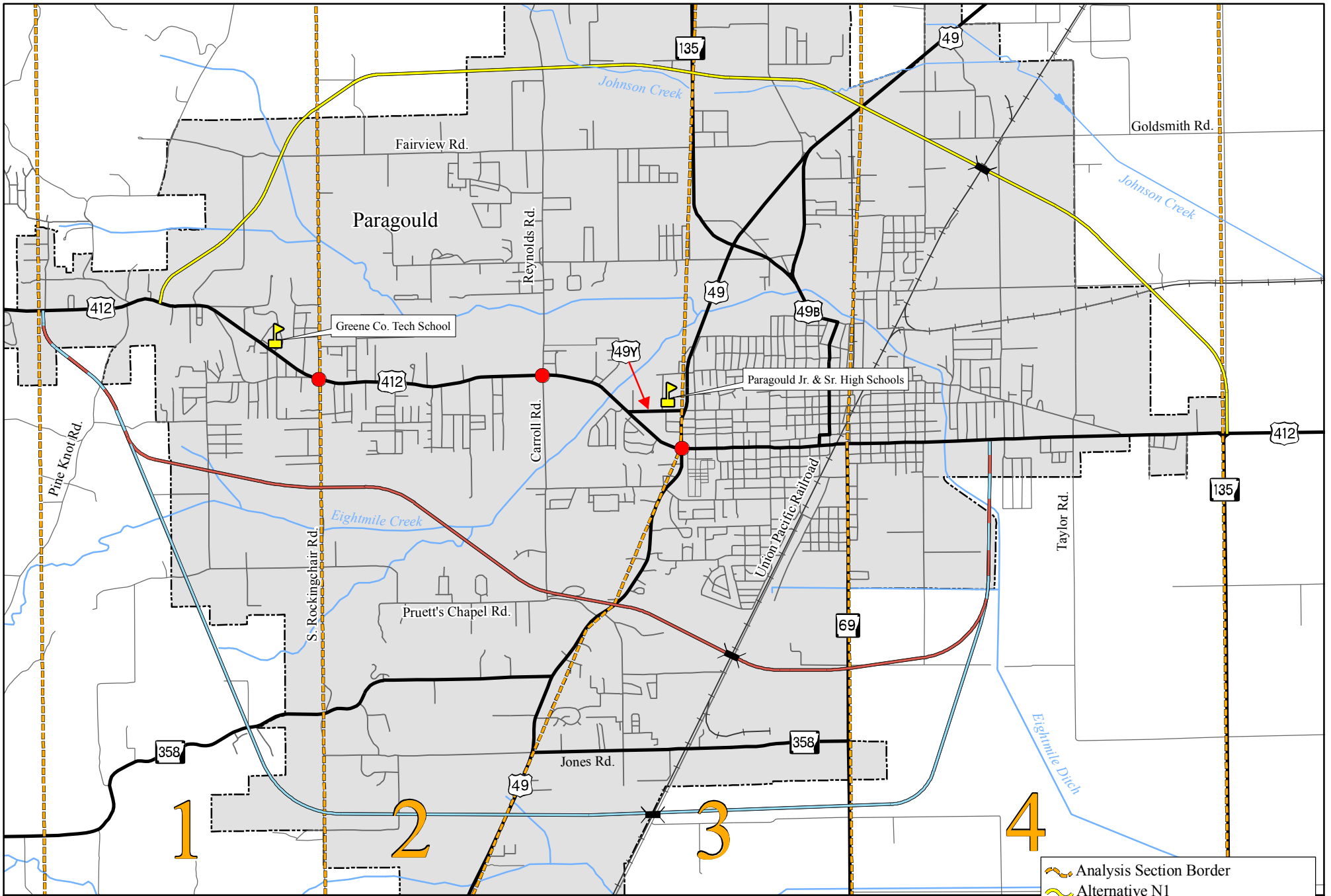


Figure 5
 Alternatives Analysis Sections and
 Intersection Improvement Locations

- Analysis Section Border
- Alternative N1
- Alternative S1
- Alternative S2
- Intersection Improvement Location
- Grade Separation

0 2,000 4,000
 Feet

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access management techniques with limited traffic signals. In addition, the proposed bypass would be expected to serve low volumes of local traffic.

As shown in Table 2, traffic operating conditions on existing Highway 412 could be improved to acceptable levels in 2028 by construction of the Upgrade Existing Highway 412 Alternative. However, as discussed earlier, widening these sections is not considered feasible.

<p style="text-align: center;">Table 2 Projected Traffic and LOS for Upgrade Existing Highway 412 Alternative</p>								
	<i>Section 1</i>		<i>Section 2</i>		<i>Section 3</i>		<i>Section 4</i>	
YEAR	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS
2008	11,200	A	24,900	C	20,300	D	15,500	B
2028	14,000	B	37,000	C	31,000	D	23,000	C

The traffic projections shown in Table 3 illustrate that the construction of any of the bypass alternatives still would not provide an acceptable LOS for traffic on at least one section of the existing Highway 412 route. The principle cause of the unacceptable level of service was the low percentage of green time provided to Highway 412 through traffic at congested intersections.

Further analysis was performed to determine what improvements could be made along Highway 412 during the 20-year planning period that, in conjunction with the bypass alternatives, would retain the LOS of both at acceptable levels. The projected traffic and level of service for Highway 412 and the proposed bypass alternatives are summarized in Table 4.

Table 3 Projected Traffic and LOS for Existing Highway 412 with each Bypass Alternative									
	YEAR	Section 1		Section 2		Section 3		Section 4	
		ADT	LOS	ADT	LOS*	ADT	LOS*	ADT	LOS
with N1	2008	9,400	A	22,300	C	17,500	D	12,600	A
	2028	11,400	A	33,000	F	26,800	E	18,700	B
with S1	2008	7,300	A	21,000	C	16,700	D	12,800	A
	2028	10,400	A	31,000	E	25,500	D	18,500	B
with S2	2008	7,300	A	21,500	C	16,700	D	12,800	A
	2028	10,400	A	32,000	E	25,500	D	18,500	B

*LOS E and LOS F are considered unacceptable and are shown in red.

For both southern bypass alternatives, an acceptable LOS can be achieved on all sections of existing Highway 412 if the bypass alternative was combined with additional improvements along Highway 412, including coordination and optimization of traffic signals along existing Highway 412 and spot improvements at intersections along the existing corridor. These improvements would allow for a greater percentage of green time for through Highway 412 movements by allowing other movements to clear faster. The coordination of traffic signals would require new equipment at some intersections. Some locations along Highway 412 that are likely to require intersection improvements are at Rockingchair Road, Reynolds/Carroll Road, and Highway 49Y (see Figure 5).

To provide an acceptable level of service on Section 2 of the existing corridor with the northern bypass alternative in 2028, a six-lane section would be needed at certain locations on existing Highway 412 in addition to the improvements outlined above.

Table 4
Projected Traffic and LOS for Highway 412 with Each Bypass Alternative

		Section 1		Section 2		Section 3		Section 4	
	YEAR	ADT	LOS	ADT	LOS ¹	ADT	LOS ¹	ADT	LOS
No-Action									
Highway 412	2008	11,200	A	24,900	D	20,300	D	15,500	B
	2028	14,000	B	37,000	F	31,000	E	23,000	C
Alternative N1 – two-lane rural highway									
Bypass	2008	2,400	A	3,600	B	3,400	B	3,500	B
	2028	3,400	B	5,500	C	5,100	C	5,200	C
Improved Highway 412 ²	2008	9,400	A	22,300	C	17,500	D	12,600	A
	2028	11,400	A	33,000	E	26,800	E	18,700	B
Alternative S1 – (Sections 1 & 4) two-lane rural highway / (Sections 2 & 3) four-lane divided rural highway									
Bypass	2008	3,900	B	7,300	A	5,800	A	3,300	B
	2028	5,600	C	12,400	A	9,000	A	5,500	C
Improved Highway 412 ²	2008	7,300	A	21,000	C	16,700	D	12,800	A
	2028	10,400	A	31,000	D	25,500	D	18,500	B
Alternative S2 – two-lane rural highway									
Bypass	2008	3,900	B	3,900	B	4,200	B	3,300	B
	2028	5,600	C	6,000	C	6,500	C	5,500	C
Improved Highway 412 ²	2008	7,300	A	21,500	C	16,700	D	12,800	A
	2028	10,400	A	32,000	D	25,500	D	18,500	B

¹LOS E and LOS F are considered unacceptable and are shown in red.

² Assumes intersection improvements along Highway 412 and optimization and coordination of existing signals.

Upon the implementation of the proposed improvements, acceptable operations could be obtained with the exception of a short duration bottleneck at Rockingchair Road during the AM peak caused primarily by the nearby Greene County Tech School District campuses.

In addition, an access management plan should be considered for the existing Highway 412 corridor to ensure that future development occurs in such a way that traffic operations along the corridor are not substantially disrupted. Potential components of an access management plan include combining closely spaced access points, enacting spacing requirements on new driveways, encouraging connectivity between parking lots of adjacent developments, limiting access points in close proximity to signalized intersections, and restricting turning movements to “right in, right out” at busy points along Highway 412.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Relocations

Relocations occur when residential, business, or non-profit properties fall within the established right of way limits for a proposed project. Until a Preferred Alternative has been identified and the final design has been established, relocation quantities are estimates.

Estimated right of way widths were used in determining potential structures to be relocated. Cost estimates, a Conceptual Stage Relocation Statement, and an available housing inventory are located in Appendix B. The Conceptual Stage Inventory of Relocation Impacts provides the general listing characteristics of residences, businesses, and property affected by each alternative. Results of the Conceptual Stage Relocation Study are provided in Table 5.

Alternative	Residential Owners	Farms	Non-Profit Organizations	Businesses	Total
No-Action	0	0	0	0	0
N1	14	0	1	4	19
S1	21	0	0	1	22
S2	17	1	0	1	19

The No-Action Alternative would not require the relocation of any residences, businesses, or non-profit organizations.

Of the estimated Alternative N1 residential relocations, one family is considered to be elderly. The non-profit organization to be relocated is a healthcare facility. Of the estimated Alternative S1 residential relocations, two families are considered to be elderly. Of the estimated Alternative S2 residential relocations, one family is considered to be elderly.

There are no low-income or minority families that would be relocated as a result of this project.

Environmental Justice Impacts and Title VI Compliance

This proposed project is in compliance with Title VI and Executive Order 12898. The AHTD public involvement process did not exclude any individuals due to income, race, color, religion, national origin, sex, age, or disability. By using the 2000 U.S. Census Data, the Health and Human Services Poverty Guidelines, (Federal Register, February 2000), making field observations, and conducting public involvement meetings, the determination was made that the proposed project will not have any disproportionate or adverse impacts on minorities, low-income, elderly, or disabled populations.

Social Environment

The social environment of the project area refers to the communal setting in which persons live and reflects quality of life. The proposed project study area consists of high density commercial, residential, and agricultural property.

The No-Action Alternative would not have any impacts to the social environment except the frustration and delay created by low levels of traffic service in and around Highway 412. Alternatives N1 and S2 create a more indirect route around the city than Alternative S1; however, S1 results in more relocations.

Public Land

There are no public parks, recreational lands, or wildlife refuges impacted by this project.

Wild and Scenic Rivers

There are no designated wild and scenic rivers in the proposed project area.

Endangered and Threatened Species

A records check of the Arkansas Natural Heritage Commission (ANHC) database of sensitive species indicated that no threatened or endangered species are known to occur within the project area.

In addition to those species that are federally designated as threatened or endangered species, the ANHC tracks those that are considered sensitive species within Arkansas. Although none of the proposed alternatives will impact known locations of any tracked species, six of these species have been identified in the project area and have the potential to be adversely impacted by the project. This includes three plants: black snakeroot (*Sanicula smallii*), corkwood (*Leitneria floridana*), and starry Solomon's seal (*Maianthemum stellatum*) and three snakes: midwest worm snake (*Carphophis amoenus helenae*), northern scarlet snake (*Cemophora coccinea copei*) and Graham's crayfish snake (*Regina grahamii*).

All species except corkwood have a global conservation status ranking of G5 which means that the species is demonstrably widespread, abundant and secure. This ranking would indicate that while this project may adversely impact local populations it is not likely to have deleterious impacts on the species as a whole.

The G3 ranking of corkwood means that the species is vulnerable to extirpation or extinction throughout its range. Corkwood typically occurs in freshwater swamps and thickets. These areas are often characterized as low, moist, or poorly drained areas with sandy soils in full or partial sun (Correll and Johnston 1970, Godfrey and Wooten 1981). Preliminary surveys of the proposed alternatives by AHTD personnel found no corkwood population. A more detailed survey will be completed once a preferred alternative has been identified. Due to the habitat requirements of the species, any areas containing corkwood are likely to be considered wetlands under the jurisdiction of the U.S. Army Corps of Engineers. Thus any construction project that impacts such an area would likely require a permit as defined in Section 404 of the Clean Water Act and be subject to all the

terms and conditions therein, including the process of avoidance, minimization, and/or mitigation.

Prime Farmland

The study area is located on the Mississippi Alluvial Plain in an area favorable to intense agricultural activity because of fertile soil, with the exception of Crowley's Ridge. Greene County is basically rural in nature with agriculture being the main land use and source of employment. Agricultural activities in the area mostly include soybeans, rice, wheat and some corn. Agricultural activities on Crowley's Ridge consist of pastures for grazing cattle and hay production. Right of way acquisitions for the proposed facility will reduce the amount of land held by farmers. Splitting these farms with a new highway will not only convert farmland to highway right of way, but may also result in the disruption of some farm operations. Existing irrigation patterns may be disrupted, systems altered, and pastures split on Crowley's Ridge. Farm roads and haul routes may also be disrupted. Access will be temporarily restored during construction and permanently restored, as feasible, after construction. Equipment sheds and barns may have to be relocated.

The soil survey of Greene County was used to determine the number of acres of Prime Farmland and farmland of statewide importance that would be converted to highway right of way. Form NRCS-CPA-106 "The Farmland Conversion Impact Rating" is located in Appendix C. The estimated amount of prime farmland and farmland of statewide importance that could be converted to highway right of way is shown in Table 6.

The highway improvements would also result in positive impacts. The proposed facility will provide easier farm-to-market access and more efficient transportation of farm supplies.

<p align="center">Table 6 Prime Farmland and Farmland of Statewide Importance Impacts Acres (Hectares)</p>		
Alternative	Prime Farmland	Farmland of Statewide Importance
No-Action	0	0
N1	7.2 (2.9)	28.6 (11.6)
S1	17.0 (6.9)	0
S2	86.0 (34.8)	10.1 (4.1)

Hazardous Material

None of the alternatives would impact hazardous materials. More information concerning the hazardous materials impacts analysis can be found in Appendix D.

Mitigation of Potential Hazardous Materials Impacts

During any construction project there is some potential to encounter contaminated soil or water. If hazardous materials, unknown illegal dumps or underground storage tanks are identified or accidentally uncovered by AHTD personnel or its contracting company(s), the AHTD will determine the type, size, and extent of the contamination according to the AHTD’s response protocol. The AHTD, in cooperation with the Arkansas Department of Environmental Quality (ADEQ), will determine the type of contaminant, remediation method, and disposal methods to be employed for that particular type of contamination. The proposed project will be in compliance with local, state, and federal laws and regulations.

An asbestos survey by a certified asbestos inspector will be conducted on each 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 and their associated

notifications will be conducted in conformance with ADEQ, US Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) asbestos abatement regulations.

Cultural Resources

A preliminary cultural resources review of the alternatives has been conducted. It consisted of a review of site, structure, and property records on file at the Arkansas Historic Preservation Program and the Arkansas Archeological Survey, FHWA initiation of Native American consultation, a comparison of early maps showing historic settlement in the area, a standing structures survey, and a field visit to all public access points along each alternative. It was conducted in order to identify any known archeological sites or obvious historic properties that might be affected by the proposed alternatives.

The review and survey resulted in the identification of 16 previously recorded archeological sites, three cemeteries, a historic district, a historic park, and two previously recorded historic structures near or in the project vicinity. Two of the previously recorded archeological sites are historic; one is based on a General Land Office plat; while the remaining 13 are prehistoric. Eleven standing structures along the existing Highway 412 have been deemed eligible for inclusion to the National Register of Historic Places (NHRP) by the State Historic Preservation Officer (SHPO). The supporting documentation is contained in Appendix F. One of these structures is on the north side of Highway 412 across from where Alternatives S1 and S2 will intersect the highway on the east side of Paragould. Should Alternative S1 or S2 be identified as the selected alternative for the project, accommodations will be made to eliminate the potential for any impacts to this structure during the design phase. General Land Office plats show fields near Alternative N1 and a trace crossing Alternatives S1 and S2. Table 7 summarizes the results of the cultural resources investigations.

Table 7 Cultural Resources Impacted		
Alternative	Archeological Sites	Historic Structures
No-Action	0	0
N1	2	0
S1	6	0
S2	3	0

Once an alignment has been selected, an intensive cultural resources survey will be conducted by AHTD staff archeologists to determine impacts to any resources that cannot be avoided and to determine if unknown archeological sites or features are present. A full report documenting the results of the survey and stating the AHTD's recommendations will be prepared and submitted to the SHPO for review. Should any sites or properties within the project area be determined eligible or potentially eligible for nomination to the NHRP and avoidance is not possible, then resource specific treatment plans will be prepared, approved and carried out at the earliest practicable time.

Noise Analysis

The number of noise receptors was estimated for this project utilizing FHWA's Traffic Noise Model 2.5, existing and proposed roadway information, existing traffic information, and projected traffic levels for 2028.

Traffic noise impacts occur when the predicted traffic noise levels approach or exceed the noise abatement standard or when the predicted traffic noise levels exceed the existing noise level by ten dBA (decibels on the A-scale). The noise abatement standard of 67dBA is used for sensitive noise receptors such as residences, schools, churches, and parks. The term "approach" is considered to be one dBA less than the noise abatement standard.

Existing noise levels were measured at 13 representative locations. The noise sample locations are shown in Figure 6. Table 8 shows the dBA values recorded at those locations. The more densely populated neighborhoods within the project area have an average existing noise level of 54 dBA.

Traffic noise estimates were developed with Traffic Noise Model 2.5 for each of the new location alternatives (Alternatives N1, S1, and S2) utilizing a roadway cross section of four 12-foot (3.6-meter) wide travel lanes with a 50-foot (15.2-meter) wide raised grass median.

These traffic noise estimates result in the establishment of distances necessary to satisfy FHWA's noise abatement criteria standard distances for each alternative and are shown in Table 9. These distances are measured from the centerline of the alternatives. It should be noted that Samples 1 and 5 were not utilized in the analysis of the noise abatement standard distances. Sample 1 was discarded due to an equipment malfunction, while Sample 5 was not utilized because of the proximity of Highway 49 to noise receptors in the area. Table 10 shows the estimated noise receptor count for each alternative.

For areas where noise impacts meet exceed FHWA's noise abatement criteria, noise abatement is considered. Generally, a noise wall is warranted by AHTD's policy for feasibility and reasonableness if: (1) it reduces noise by ten dBA Leq or more for the majority of the affected receptors, (2) the cost of constructing the wall is less than \$36,000 per residence that the wall would effectively protect, (3) the location of the wall will not create a traffic hazard, and (4) the wall is acceptable to the majority of the individuals it will protect.

Any noise abatement effort using barrier walls or berms is not warranted for any of the alternatives. This is due to the relatively low density of development for Alternatives N1, S1 and S2 and to the need to provide direct access to adjacent properties for all of the

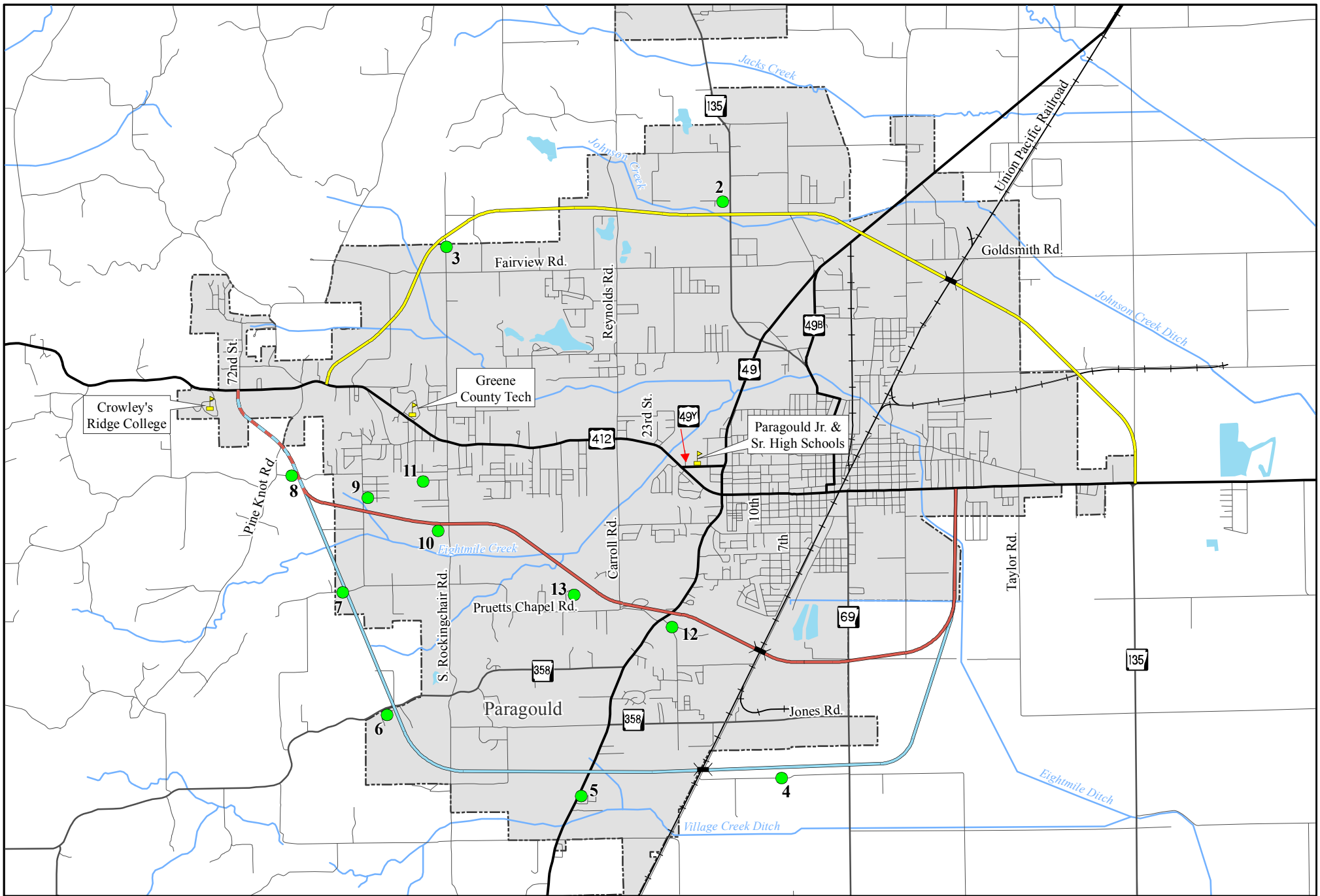


Figure 6
Noise Sample Locations

0 2,500 5,000
Feet

Job 100445
AHTD-Environmental GIS-Perry
December 30, 2008

- Sample Location
- Alternative N1
- Alternative S1
- Alternative S2
- Grade Separation

alternatives, including the No-Action Alternative. In order to provide direct access to the highway from adjacent properties, breaks in the barrier walls or berms would be required. These necessary breaks for highway access would render any noise barrier ineffective.

Table 8		
Existing Noise Levels		
Sample No.	dBA	Location
2	51.2	Shady Grove Road
3	51.1	N. Rockingchair Rd.
4	50.9	Camco Road
5	68.1	Linwood Dr. (Hwy. 49)
6	46.5	Woodberry Ct.
7	50.6	Spring Grove Road
8	57.2	Walcott Road east of Pine Knot Road
9	50.9	Mark Road & Spring Grove Road
10	47.6	South Rockingchair Road
11	44.3	Westview Road
12	55.3	Mockingbird & Smokey Hollow
13	46.9	Enclave Circle

Table 9		
Distances to Noise Abatement Criteria Levels for 2028		
Alternative	> 66 dBA feet (meters)	> 10 dBA Increase over Existing Noise Levels feet (meters)
No-Action	200 (61)	0
N1	0	225 (68)
S1	0	258 (79)
S2	0	244 (74)

Table 10		
Estimated Noise Receptors		
Alternative	> 66 dBA Increase	> 10 dBA Increase over Existing Noise Levels
No-Action	123	0
N1	0	19
S1	0	15
S2	0	8

To avoid noise levels in excess of design levels, any future receptors should be located a minimum of 10 feet (3 meters) beyond the distance that the noise abatement standard is projected to occur. This distance should be used as a general guide and not a specific rule since the noise will vary depending upon the roadway grades and other noise contributions.

Any excessive project noise, due to construction operations, should be of short duration and have a minimum adverse effect on land uses or activities associated with this project area.

In compliance with Federal guidelines, a copy of this analysis will be transmitted to the East Arkansas Planning and Development District for possible use in present and future land use planning.

Air Quality

Utilizing the Mobile Source Emission Factor Model 5.0a and CALINE 3 dispersion model, air quality analysis was conducted on previous projects for carbon monoxide. These analyses incorporated information relating to traffic volumes, weather conditions, vehicle mix, and any vehicle operating speeds to estimate carbon monoxide levels for the design year.

These computer analyses indicate that carbon monoxide concentrations of less than one part per million (ppm) will be generated in the mixing cell for a project of this type. This computer estimate, when combined with an estimated ambient level of 1.0 ppm, would be less than 2.0 ppm and well below the national standards for carbon monoxide.

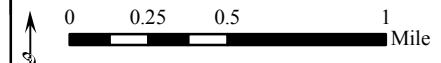
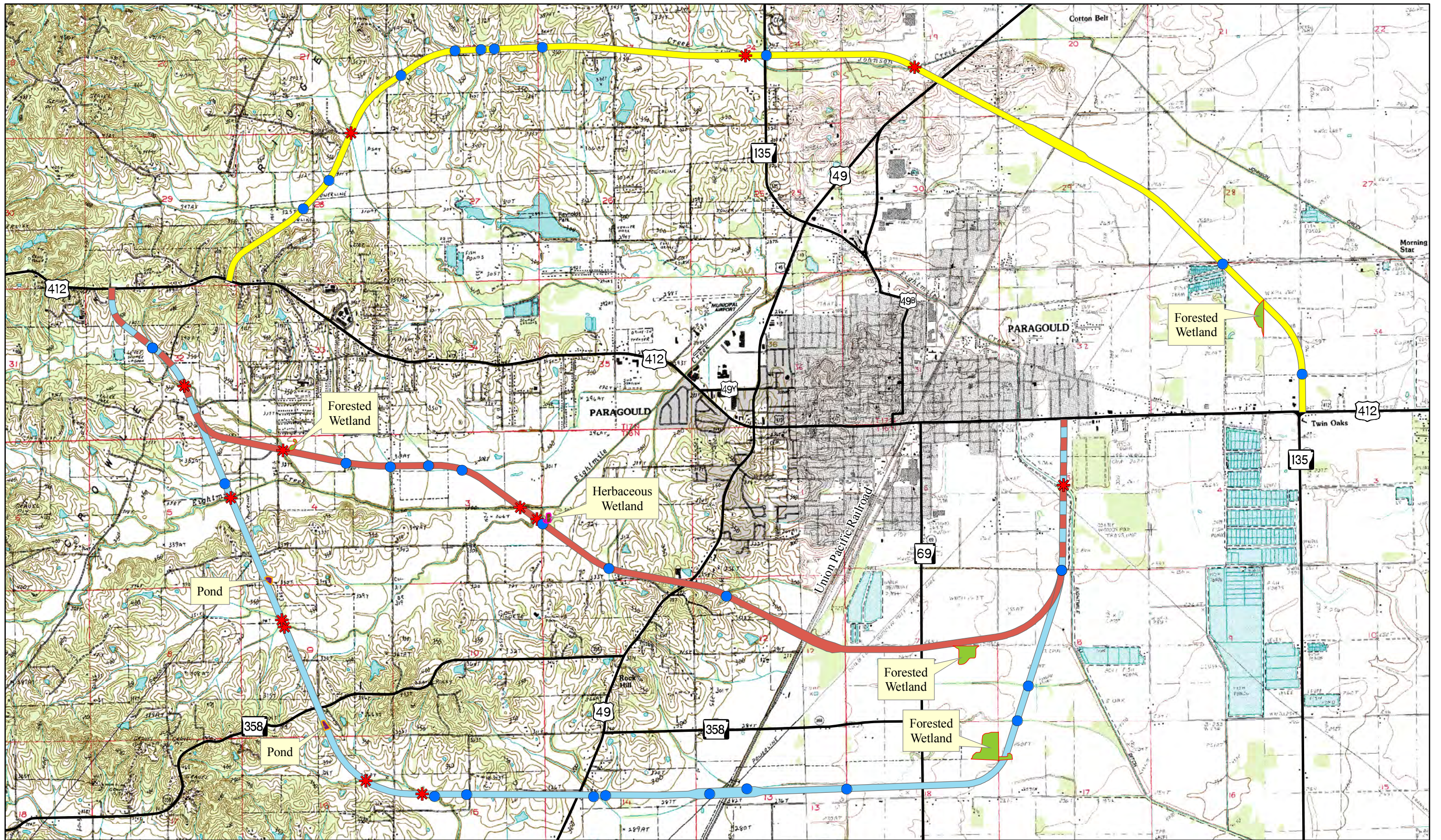
This project is located in an area that is designated as in attainment for all transportation pollutants. Therefore, the conformity procedures of the Clean Air Act, as Amended, do not apply.

Wetland and Stream Impacts

The project area is within the St. Francis Lowlands and Bluff Hills (Crowley's Ridge) Ecoregions. The St. Francis Lowlands Ecoregion consists of wide, flat to irregular alluvial plain containing terraces, undulating sand sheets, sand dunes, depressional sand blow-outs, sunken lands, interfluves, relict channels, and drained wetlands. An extensive network of drainage ditches have been constructed, and the majority of the streams have been channelized. The Bluff Hills Ecoregion can be characterized as steeply to gently sloping narrow ridges that are gullied by intermittent, silt- and sand-bottomed streams (Woods *et al.* 2004).

Preliminary surveys of the three proposed new location alternatives were conducted to assess impacts to streams and associated wetlands. All of the streams within the project area are associated with the Lower St. Francis River Watershed. Streams potentially impacted by the project include Eightmile Creek, Johnson Creek and several unnamed tributaries (Figure 7). All streams discussed in this section have been determined to be Waters of the United States as defined in Section 404 of the Clean Water Act and Section 10 of the River and Harbors Act.

Alternative S2 would have the greatest stream impacts with an estimated 6,828 linear feet (2,081 linear meters) impacted. Alternatives N1 and S1 would have similar amounts of



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 AHTD Environmental GIS - Dudley
 Map Date: December 12, 2008
 USGS Topographic Maps: Paragould East and West 1992

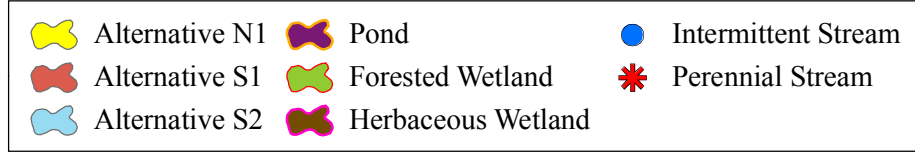


Figure 7
 Stream and Wetland Locations

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total stream impacts. Table 11 summarizes the estimated stream impacts and Figures 8 and 9 show typical views of streams in the project area.

Alternative	Stream linear feet (linear meters)			Wetlands acres (hectares)			Other acres (hectares)
	Intermittent	Perennial	Total	Herbaceous	Forested	Total	Pond
N1	2,823 (860)	1,240 (378)	4,063 (1,238)	0	0.55 (0.22)	0.55 (0.22)	0
S1	3,000 (914)	1,463 (446)	4,463 (1,360)	0.16 (0.06)	0.18 (0.07)	0.34 (0.13)	0
S2	4,434 (1,351)	2,394 (730)	6,828 (2,081)	0	0.83 (0.34)	0.83 (0.34)	1.79 (0.72)

In addition to the stream impacts, the proposed project also has the potential to impact several wetlands (see Figure 7). These include both herbaceous and forested wetlands. The herbaceous wetlands impacted are dominated by *Carex aureolensis* (*Carex frankii* in part), soft rush (*Juncus effuses*) and broom sedge (*Andropogon virginicus*). The herbaceous wetlands can be described as a wetland fringe of a pond located near the Eightmile Creek crossing of the S1 Alternative (Figure 10).

The forested wetlands exist as small wooded tracks surrounded by agricultural fields (Figure 11). The hydrology of these areas has been severely impacted by the construction of the extensive network of ditches within the Lower St. Francis River Basin. They are dominated by willow oak (*Quercus phellos*), American elm (*Ulmus americana*), and sweet gum (*Liquidambar styraciflua*). The forested wetlands are primarily located on the eastern end of the project area. All three alternatives impact forested wetlands. See Table 11 for the breakdown of impacts to the different wetland types.



Figure 8
Typical View of Perennial Stream



Figure 9
Typical View of Intermittent Stream



Figure 10
Typical View of Herbaceous Wetland



Figure 11
Typical View of Forested Wetland

Wetland and stream impacts will be minimized as much as possible during the design of the selected alternative. Temporary and permanent erosion control measures will minimize adverse impacts to streams and adjacent wetlands.

Wetland Findings

The wetland findings are pursuant to Executive Order 11990 and DOT Order 5660.1A on the Protection of Wetlands. All practicable measures to minimize impacts to wetlands and streams will be implemented during design and construction of the selected alternative.

Conclusion

Construction in streams and adjacent wetlands is unavoidable. Impacts have been minimized during the design of each alternative and the functional integrity of the remaining wetlands will be maintained. Wetland mitigation will be offered at the Glaise Creek Mitigation Bank Site at the ratio approved during the Section 404 permitting process.

There are no known stream mitigation sites currently approved for the project area; therefore, the location and ratio of stream mitigation will be determined during the Section 404 permit application process. Construction of any of the proposed alternatives should be allowed under the terms of an Individual Section 404 Permit.

Water Quality

The project area is within the Delta Ecoregion where the turbidity standard set by ADEQ for least-altered streams is 45 Nephelometric Turbidity Units (NTUs), 75 NTUs for channel-altered streams and 25 NTUs for lakes and reservoirs (Regulation 2). Given the existing water quality within the region, additional sediments contributed during construction will likely result in localized, short-term adverse water quality impacts. Temporary exceedances of state water quality standards for turbidity may occur. Other potential sources of water quality impacts include petroleum products from construction

equipment, highway pollutants from the operations of the facility, and toxic and hazardous material spills.

The AHTD 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; National Pollutant Discharge Elimination Permit (NPDES), and Section 404; Permits for Dredged or Fill Material. The NPDES Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will include all specifications and best management practices (BMPs) needed for control of erosion and sedimentation. This will be prepared when the roadway design work has been completed in order to best integrate the BMPs with the project design.

Public/Private Water Supplies

The project area is not within a public drinking water system's Wellhead Protection Area. No impacts to public drinking water supplies are anticipated due to this project.

If any permanent impacts to private drinking water sources occur due to this project, the AHTD will take appropriate action to mitigate these impacts. Impacts to private water sources due to contractor neglect or misconduct are the responsibility of the contractor.

Natural and Visual Environment

The proposed project is located along the east side of Crowley's Ridge and extends eastward onto the very level land of the Mississippi Alluvial Plain.

The land form of Crowley's Ridge in the project area is rolling hills and occasional relatively flat valleys. Elevations in the project area range from about 260 feet (79 meters) above mean sea level (msl) near the eastern termini of the proposed alternatives, to more than 430 feet (131 meters) msl near the western termini on Crowley's Ridge. Local relief varies considerably, from nearly level in the lowlands, to

moderately extreme on Crowley's Ridge, where changes in the elevation range up to 100 feet (30 meters) within a quarter mile (0.8 km).

Water resources in the area include natural and diverted dredged channels of Eightmile Creek, tributaries of Eightmile Creek and Village Creek, and numerous stock ponds and ditches. On the east side of the project area, Eightmile Creek and Village Creek have been channelized and a system of ditches flow southeast toward the St. Francis River, which also consists of a system of manmade channels.

Common native plant species on Crowley's Ridge include shortleaf pine (*Pinus echinata*), white oak (*Quercus alba*), post oak (*Q. stellata*), southern red oak (*Q. falcata*), and eastern red cedar (*Juniperus virginiana*). Most of the original timber was cut early on and the land was used for sustenance farming. Much of this land has been converted to native and modern pastures. The most common native grass is broomsedge (*Andropogon virginicus*). Modern pastures are primarily tall fescue (*Festuca arundinacea*). Abandoned pastures typically become red cedar thickets.

Natural vegetation in the lowlands was historically bottomland hardwoods, generally including overcup oak (*Quercus lyrata*), Nuttall oak (*Q. texana*), willow oak (*Q. phellos*), American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), and sweetgum (*Liquidambar styraciflua*). The wettest areas, depressions and relic braided channels, had bald cypress (*Taxodium distichum*) and water tupelo (*Nyssa aquatica*). Most of this land has been cleared for agriculture. Common crops now include rice (*Oryza sativa*), soy beans, cotton (*Gossypium hirsutum*), and winter wheat (*Triticum aestivum*).

Sustenance farming and hunting were important activities in early settlement days. In the lowlands, sharecropping and tenant farming would eventually replace lumbering as the main occupation on higher ground. Mechanized farming enabled the conversion of nearly all of the remaining woodland in the lowlands to agricultural land, while much of Crowley's Ridge has re-vegetated with mixed pine-oak and oak-hickory forest.

In 1882, two railroad lines were built through Greene County, and they crossed at a point where Paragould was to be built. In 1884, the county seat was moved to Paragould. The 2000 Census lists the population of Greene County at 37,331, of which 22,017 are residents of Paragould.

The visual quality through much of the project area is good, due to the rolling terrain, mixed woodland, and pastures of Crowley's Ridge (Figures 12 and 13). The alternatives do not differ substantially in visual quality as all three alternatives begin on Crowley's Ridge in the western portions and cross flat agricultural property in the eastern portions (Figure 14). Additionally, all three alternatives view numerous residences and some retail businesses (Figure 15). Alternative S1 also views the Paragould Wastewater Treatment Plant (Figure 16). Alternatives S1 and S2 both view some industrial properties including an American Railcar Industry Plant (Figure 17).



Figure 12
View of Pastureland Looking on Alternative N1



Figure 13
View of Secondary-growth Forest on Crowley's Ridge



Figure 14
View of Agricultural Property near Alternative S2



Figure 15
View of Highway 49 from Alternative S2



Figure 16
View of Wastewater Treatment Plant North of Alternative S1



Figure 17
View of American Rail Car Industry Plant South of Alternative S1

Land Cover/Land Use

The principal impact to the natural environment will be the conversion of land to a transportation use and some restructuring of the physical landscape. Table 12 lists quantities of specified land cover categories converted to right of way for the proposed project. Land use categories were analyzed using a Geography Information Systems platform. Land use conversions were calculated using a 225-foot (69-meter) right of way as an estimate over most of each alternative and a 350-foot (107-meter) right of way at the railroad overpass locations.

The category “Miscellaneous” includes empty lots, larger ditches, borrow areas, and utility right of way property that serves no other land use.

Due to the intensive human impacts already inflicted on the local environment, primarily the historical conversion of forested land to agricultural and pasture land, expected impacts to local biodiversity are minor.

<p style="text-align: center;">Table 12 Land Cover/Land Use Conversions to Right of Way Acres (Hectares)</p>			
Land Cover Category	Alternative N1	Alternative S1	Alternative S2
Agricultural	106 (43)	100 (41)	124 (50)
Pasture	64 (26)	60 (24)	68 (27)
Woodland	44 (18)	48 (19)	52 (21)
Residential	20 (9)	15 (6)	33 (13)
Commercial	5.7 (2.3)	1.9 (0.8)	1.9 (0.8)
Roadways	9.8 (4.0)	3.6 (1.4)	5.1 (2.1)
Railroad	1.5 (0.6)	1.2 (0.5)	0.9 (0.4)
Miscellaneous	3.4 (1.4)	6.6 (2.7)	8.9 (3.6)
Totals	254 (103)	237 (96)	293 (119)

Secondary impacts may include the spread of invasive plant species onto new roadside right of way. Invasive species already present on existing roadside right of ways in the project area include Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), and kudzu (*Pueraria lobata*). Direct herbicide applications (i.e., spot spraying) may be necessary to control invasive plant species following construction.

COMMENTS AND COORDINATION

The AHTD provided the opportunity for early public input into the development of the proposed project on September 21, 2006, at the Paragould Senior High School and on February 19, 2008, at the Paragould Junior High School. Proposed corridors and alternatives were available for review, and visitors were given the opportunity to discuss the proposed project with AHTD staff. Approximately 300 citizens attended the meetings. Copies of the Public Involvement Synopses are located in Appendix E.

Agency scoping letters were mailed on September 27, 2006. A listing of the agencies and a summary of responses are included in Appendix F.

COMMITMENTS

The AHTD's standard commitments associated with relocation procedures, hazardous waste abatement, and control of water quality impacts have been made in association with this project. They are as follows:

- See Relocation procedures located in Appendix B.
- If hazardous materials, unknown illegal dumps or underground storage tanks are identified or accidentally uncovered by AHTD personnel or its contractors, the AHTD will determine the type, size, and extent of the contamination according to the AHTD's response protocol. The AHTD in cooperation with the ADEQ will determine the remediation and disposal methods to be employed for that particular type of contamination. The proposed project will be in compliance with local, state, and Federal laws and regulations.
- An asbestos survey will be conducted by a certified asbestos inspector on each 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.
- Once an alignment has been selected, an intensive cultural resources survey will be conducted. If sites are affected, a full report documenting the results of the survey and stating the AHTD's recommendations will be prepared and submitted to the SHPO for review. If prehistoric sites are impacted, consultation led by FHWA with the appropriate Native American Tribe will be conducted and the site(s) evaluated to determine if Phase II testing is necessary. Should any of the sites be found to be eligible or potentially eligible for nomination to the NHRP and avoidance is not possible, then site specific treatment plans will be prepared and data recovery will be conducted at the earliest practicable time. All borrow pits, waste areas and work roads will be surveyed for cultural resources when locations become available.

- Wetland mitigation will be offered at the Glaise Creek Mitigation Bank Site at the ratio approved during the Section 404 permitting process. Stream and wetland mitigation will be coordinated with the USCOE during the permitting process.
- The AHTD 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.
- If any permanent impacts to private drinking water sources occur due to this project, the AHTD will take appropriate action to mitigate these impacts.
- A wildflower seed mix will be included in the permanent seeding for the project.

RECOMMENDATIONS

The environmental analysis of the proposed project did not identify any significant impact to the natural and social environment. Table 13 shows a comparison of the alternative information, impacts, and costs.

Table 13 Alternatives Comparison										
Alternative	Length miles (kilometer)	Construction Cost (2008\$)	Right of Way Cost	Relocations	Noise Receptors	Stream Impacts feet (meter)	Wetlands acres (hectares)	Cultural Resources	Prime Farmland acres (hectares)	
No-Action	5.3 (8.5)	0	0	0	123	0	0	0	0	
N1	9.0 (14.5)	95	11.1	14 Residential 1 Non-profit 4 Business	19	4063 (1238)	0.55 (0.22)	2	35.8 (14.5)	
S1	8.4 (13.5)	91	13.4	21 Residential 1 Business	15	4463 (1360)	0.34 (0.12)	6	17 (6.9)	
S2	10.4 (16.7)	111	9.9	17 Residential 1 Business 1 Farm	8	6828 (2081)	0.83 (0.34)	3	96.1 (38.9)	

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APPENDIX A

Purpose and Need Data

Level of Service Descriptions

The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with level of service F the worst.

In general, the various levels of service are defined as follows for uninterrupted flow facilities.

Two-Lane Highway

LOS A - LOS A represents traffic flow where motorists are able to travel at their desired speed. Passing is rarely affected and drivers are delayed no more than 35% of the time by slower drivers.

LOS B - Traffic speeds in LOS B drop and drivers are delayed up to 50% of the time by other drivers.

LOS C - At LOS C, speeds are slower than at LOS B. Although traffic flow is stable, it is susceptible to congestion due to turning traffic and slow-moving vehicles. Drivers may be delayed up to 65% of the time by slower drivers.

LOS D - LOS D describes unstable flow and passing becomes extremely difficult. Motorists are delayed nearly 80% of the time by slower drivers.

LOS E - At LOS E passing becomes nearly impossible and speeds can drop dramatically.

LOS F - LOS F represents heavily congested flow where traffic demand exceeds capacity and speeds are highly variable.

Multi-Lane Highway

LOS A - LOS A represents free flow conditions where individual users are unaffected by the presence of others in the traffic stream.

LOS B - Traffic flow in LOS B is stable, but other users in the traffic stream are noticeable.

LOS C - At LOS C, maneuverability begins to be significantly affected by other vehicles.

LOS D - LOS D represents dense but stable flow where speed and maneuverability are severely restricted.

LOS E - Traffic volumes approach peak capacity for given operating conditions at LOS E; speeds are low and operation at this level is unstable.

LOS F - Minor interruptions in the traffic stream will cause breakdown in the flow and deterioration to LOS F, which is characterized by forced flow operation at low speeds and an unstable stop-and-go traffic stream.

Origin and Destination Study

An origin and destination (O&D) study was conducted in 2004 to identify the existing travel patterns in and around Paragould. In May 2006, additional O&D information was collected to be combined with the 2004 data. The study was performed by distributing postcard surveys (Figure A-1) to motorists traveling through the intersection of Highway 49 and Highway 412 and stations along southbound Highways 49, 49B and 135. The postcard contained questions pertaining to the origin, destination, and purpose of the trip and a zone map depicting various locations and landmarks within Paragould.

For the purpose of this O&D survey, Paragould and its outlying areas were divided into 13 distinct zones (including nine “internal” zones and four “external” zones) representing the highways that provide access to the City. These zones were divided by geographic areas that are served by common roadway segments, isolated by

physical barriers and/or identified by predominant land uses. The zone map is shown in Figure A-2.



Figure A-1
O&D Survey at Highway 135 Station

Motorists were selected at random in proportion to the targeted sample rate (20 percent) on each approach. Surveys were conducted for eight hours (6:30 to 8:30 a.m., 11:00 a.m. to 1:00 p.m., and 2:00 to 6:00 p.m.), on two separate occasions. Nearly 4,000 postcards were distributed and approximately 33 percent of the postcards were returned. In total, 80 percent of the survey responses were validated, resulting in a survey total of 5.6 percent of the candidate traffic population, exceeding the survey goal of 5 percent.

It should be noted that truck responses were under-represented as a proportion of the survey populations. Two-thirds fewer truck drivers responded to the postcard surveys than did passenger car motorists, so the survey sample for truck traffic was significantly lower than anticipated.

All of the validated survey responses (trucks and passenger vehicles) were ultimately summarized in a trip table. Using the available traffic count data, the responses were expanded to represent average daily traffic (ADT) volumes, as shown in Table A-1.

As shown in the table, the traffic currently using Highway 412 and Highway 49 are mostly local trips within Zone 10, which includes movements traveling to and from the Central Business District, schools, the hospital and major shopping destinations. Only a relatively small portion of the traffic on Highway 412 at Highway 49 is making the east-west through movement. The most prominent travel patterns are shown in Figure A-3.

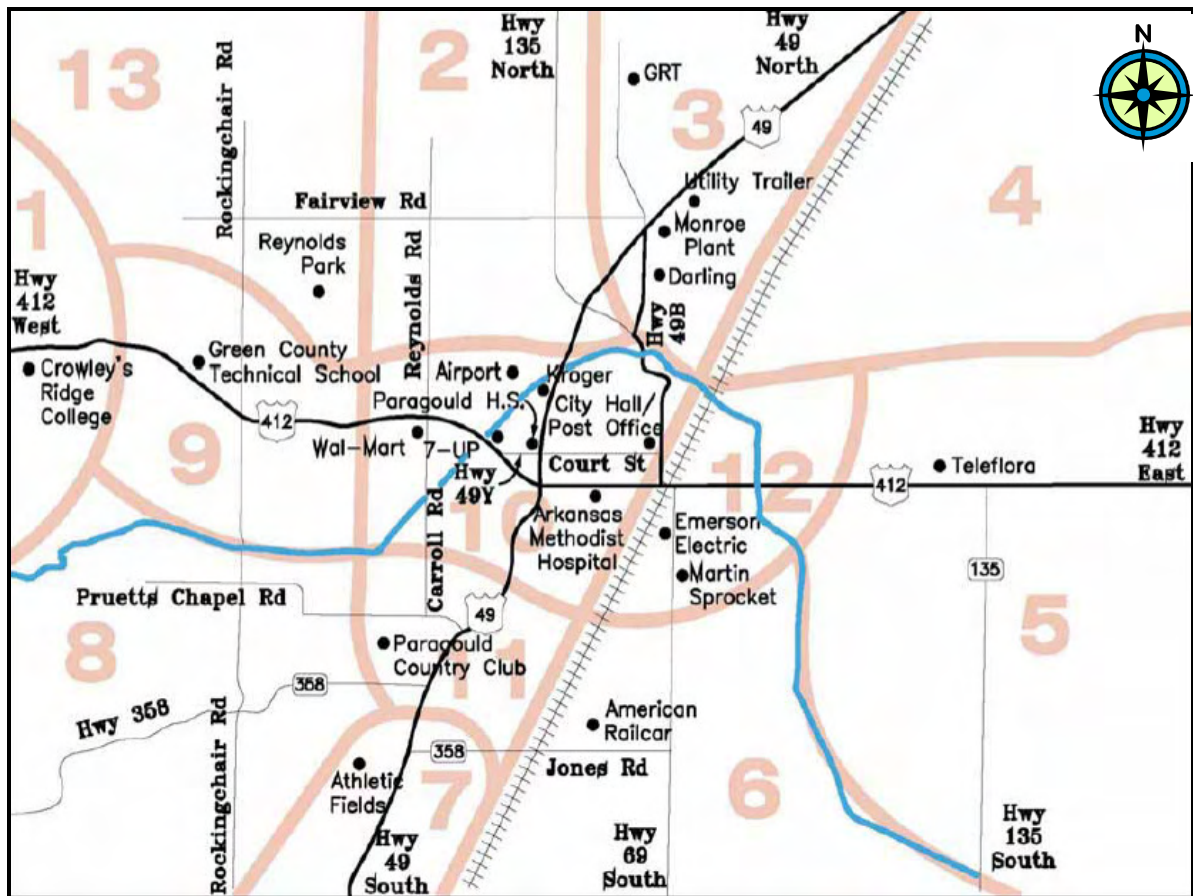


Figure A-2
Origin Destination Zone Map

Table A-1
O&D Trip Table (2006)

		Destination Zone													
		1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Origin Zone	1	0	0	0	232	331	91	196	0	0	706	100	430	0	2,086
	2	116	0	106	62	146	274	503	0	81	1964	136	503	35	3,925
	3	167	106	0	141	106	332	1233	35	132	2972	343	424	71	6,061
	4	102	35	71	0	35	0	156	25	86	234	0	35	0	780
	5	408	31	0	0	0	0	300	76	459	482	0	0	46	1,802
	6	128	10	0	0	0	0	0	0	26	153	0	0	16	333
	7	128	10	66	132	331	0	0	0	26	1080	0	166	16	1,955
	8	0	0	66	0	99	0	0	0	77	340	0	33	0	615
	9	0	0	33	99	397	190	75	77	0	667	25	468	0	2,030
	10	494	223	199	104	634	217	843	374	842	4222	349	323	335	9,158
	11	51	10	0	0	66	0	0	0	51	576	0	132	16	902
	12	255	61	0	0	0	0	199	76	332	417	135	0	92	1,568
	13	16	0	35	146	95	75	190	0	16	651	45	119	0	1,387
Total	1,865	488	576	915	2,239	1,179	3,694	663	2,128	14,463	1,133	2,633	626		

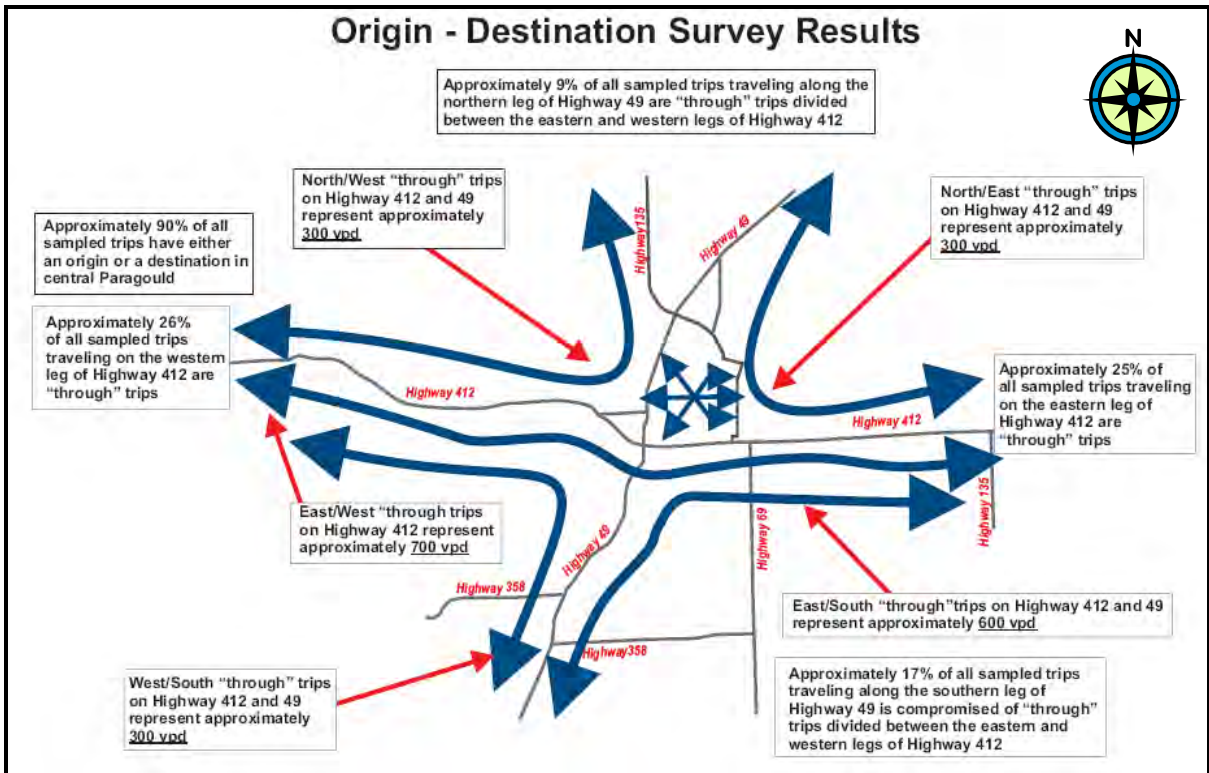


Figure A-3
Predominant Travel Patterns

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APPENDIX B

Conceptual Stage Relocation Statement

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
RIGHT OF WAY DIVISION RELOCATION SECTION

INTER OFFICE MEMORANDUM

TO: Lynn P. Malbrough, Environmental Division Head
FROM: Perry M. Johnston, Right of Way Division Head
DATE: December 1, 2008
SUBJECT: Job 100445
Hwy. 412 Improvements (Paragould) (F)
Greene County
CONCEPTUAL STAGE RELOCATION STATEMENT



GENERAL STATEMENT OF RELOCATION PROCEDURE

Residents in the proposed right of way for the project will be eligible for relocation assistance in accordance with Public Law 91-646, Uniform Relocation Assistance Act of 1970. The Relocation Program provides advisory assistance and payments to help offset expenses incurred by those who are displaced. It is the Department's Policy that adequate replacement housing will be made available, built if necessary, before any person is required to move from their dwelling. All replacement housing must be fair housing and offered to all affected persons regardless of race, color, religion, sex or national origin. Construction of the project will not begin until decent, safe and sanitary replacement housing is in place and offered to all affected persons. No lawful occupant shall be required to move without receiving 90 days advance written notice.

There are two basic types of residential relocation payments: (1) Replacement Housing payments and (2) Moving Expense payments. Replacement Housing payments are made to qualified owners and tenants.

An owner may receive a payment of up to \$22,500.00 for the increased cost of a comparable replacement dwelling. The amount of this payment is determined by a study of the housing market. Owners may also be eligible for payments to compensate them for the increased interest cost for a new mortgage and the incidental expenses incurred in connection with the purchase of a replacement dwelling. A tenant may receive a rental subsidy payment of up to \$5,250.00. Tenants may elect to receive a down payment rather than a rental subsidy to enable them to purchase a replacement dwelling. Replacement housing payments are made in addition to moving expense payments.

All displaced persons, businesses, farms and nonprofit organizations are eligible for reimbursement for actual reasonable moving costs. Businesses, farms and nonprofit organizations are also eligible for reestablishment payments, not to exceed \$10,000.00. A business, farm or nonprofit organization may be eligible for a fixed payment in lieu of the moving costs and reestablishment costs if relocation cannot be accomplished without a substantial loss of existing patronage. The fixed payment will be computed in accordance with the Code of Federal Regulations and cannot exceed \$20,000.00.

If the displacee is not satisfied with the amounts offered as relocation payments, they will be provided a form to assist in filing a formal appeal. A hearing will be arranged at a time and place convenient for the displacee, and the facts of the case will be promptly and carefully reviewed.

Relocation services will be provided until all persons are relocated or their relocation eligibility expires. The Relocation Office will have listing information for available replacement residential properties. Information is also maintained concerning other Federal and State Programs offering assistance to displaced persons.

=====

A visual inspection of each alternative was conducted utilizing an aerial photograph. The three alignments for the subject project were identified on the aerial photograph as Alternative N1, S1, and S2. It is estimated that the three alternatives on the subject project could cause the following displacements and costs:

<u>N-1, Yellow Line</u>	
15 Residential Owners	\$ 375,000.00
4 Businesses	80,000.00
3 Nonprofit Organizations	<u>60,000.00</u>
	\$ 515,000.00
Services	<u>78,000.00</u>
Total	\$ 593,000.00

<u>S-1, Red Line</u>	
21 Residential Owners	\$ 525,000.00
1 Business	<u>20,000.00</u>
	\$ 545,000.00
Services	<u>82,000.00</u>
Total	\$ 627,000.00

<u>S-2, Blue Line</u>	
17 Residential Owners	\$ 425,000.00
1 Business	20,000.00
1 Farm	<u>20,000.00</u>
	\$ 465,000.00
Services	<u>70,000.00</u>
Total	\$ 535,000.00

The general characteristics of the displacees to be relocated are listed on the Conceptual Stage Inventory Record forms in the back of this report. The general characteristics have been determined by a visual inspection of the potential displacees by a Relocation Coordinator. The Relocation Coordinator utilizes past experiences and knowledge in making this determination.

An available housing inventory has been compiled and it indicates there are at least eighty-eight dwellings available for sale and eleven dwellings available for rent within five miles of the project. Sixteen commercial properties are also currently for sale in the project area. A breakdown of the properties is as follows:

Residential (For Sale)	<u>Number Of Units</u>
\$ 0 - 25,000	1
25,001 - 50,000	3
50,001 - 75,000	11
75,001 - 100,000	15
100,001 - 125,000	8
125,001 - 150,000	11
150,001 - 175,000	10
175,001 - 225,000	12
225,001 - 275,000	6
275,001 - 325,000	6
325,001 - 400,000	4
400,001 - 500,000	1
Total	<u>88</u>

Residential (Monthly Rent)	
401.00 - 500.00	1
501.00 - 600.00	3
601.00 - 700.00	3
701.00 - 800.00	1
801.00 - 900.00	0
901.00 - 1,000.00	2
1,001.00 - 1,100.00	1
Total	<u>11</u>

Commercial & Farm Properties (For Sale)	<u>Number Of Units</u>
\$ 0 - 50,000	1
50,001 - 100,000	0
100,001 - 150,000	2
150,001 - 200,000	3
200,001 - 300,000	4
300,001 - 500,000	4
500,001 - 800,000	3
800,001 - 1,200,000	1
Total	<u>18</u>

This is a new location highway project with three alternatives, one northern and two southern alignments. The units contained in the housing inventory are in the Paragould area. The dwellings and number of dwellings are comparable and adequate to provide replacement housing for the families displaced on each alternate. The housing market should not be detrimentally affected and there should be no problems with insufficient housing at this time. In the event housing cannot be found or can be found but not within the displacees' economic means at the time of displacement, Section 206 of Public Law 91-646 (Housing of Last Resort) will be utilized to its fullest and practical extent.

The housing inventory was compiled from data obtained from real estate companies, Web sites, and local newspapers for the subject area. The dwellings contained in the inventory have been determined to be comparable and decent, safe and sanitary. The locations of the comparable dwellings are not less desirable in regard to public utilities and public and commercial facilities, reasonably accessible to the displacees' places of employment, adequate to accommodate the displacees, and in a neighborhood which is not subject to unreasonable adverse environmental factors. It has also been determined that the available housing is within the financial means of the displacees and is fair housing open to all persons regardless of race, color, sex, religion or national origin and consistent with the requirements of Title VIII of the Civil Rights Act of 1968.

A commercial and farm property inventory indicates there are at least eighteen properties available in the subject area at this time. The farm, businesses, and nonprofit organizations affected on each alternate may not be able to relocate in the immediate area of their displacement resulting in termination of the operation. However, in order to assist the displaced farm, businesses, and nonprofit organizations in relocating, the State will explore all possible sources of funding or other resources that may be available to businesses, farms, and nonprofit organizations. Sources that will be considered include: State and Local entities, the Department of Housing and Urban Development, the Economic Development Administration, the Farmers Home Administration, the Small Business Administration and other Federal Agencies. Emphasis will be given in providing relocation advisory services to the farm, businesses, and nonprofit organizations. Appropriate measures will be taken to ensure that each entity displaced is fully aware of their benefits, entitlements, courses of action that are open to it, and any special provisions designed to encourage farms, businesses and nonprofit organizations to relocate within the same community.

All displacees will be offered relocation assistance under provisions in the applicable FHWA regulations. At the time of displacement another inventory of available housing in the subject area will be obtained and an analysis of the market made to ensure that there are dwellings adequate to meet the needs of all displacees. Also, special relocation advisory services and assistance will be administered commensurate with displacees' needs, when necessary. Examples of these include, but are not limited to, Housing of Last Resort as previously mentioned and consultation with local officials, social and federal agencies and community groups.

There are no identified unusual conditions involved with this project.

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONCEPTUAL STAGE INVENTORY RECORD

JOB NO. 100445
FAP NO. _____

Alternate N-1 (Yellow), Revised 1/15/09

Occupant Status	Address of Structure	Income Level	Tenure of Family	Race	Business Status / Est. No. emp.	Vacant Structures	Number in Family	Age of Relocatee
Business	N 35 th Ave.	N/A	N/A	N/A	Craighead Electric Co. 20 employees	None	N/A	N/A
Business	N 35 th Ave.	N/A	N/A	N/A	Trucking Co. 20 employees	None	N/A	N/A
Business	N 35 th Ave.	N/A	N/A	N/A	The Steel Yard 30 employees	None	N/A	N/A
Residential Owner	GR 808	\$40,000.00 - \$50,000.00	5 - 10 yrs.	W	N/A	None	4	30 - 40
Residential Owner	GR 808	\$60,000.00 - \$70,000.00	5 - 10 yrs.	W	N/A	None	4	20 - 30
Residential Owner	Goldsmith Rd.	\$30,000.00 - \$40,000.00	5 - 10 yrs.	W	N/A	None	2	30 - 40
NPO	Goldsmith Rd.	N/A	N/A	N/A	Healthcare Center 20 employees	None	N/A	N/A
Residential Owner	Goldsmith Rd.	\$50,000.00 - \$60,000.00	15 - 20 yrs.	W	N/A	None	4	40 - 50
Residential Owner	Rector	\$30,000.00 - \$40,000.00	1 - 5 yrs.	N/A	N/A	None	3	20 - 30
Residential Owner	Rector	\$40,000.00 - \$50,000.00	5 - 10 yrs.	W	N/A	None	5	30 - 40
Business	Hwy 49	N/A	N/A	N/A	Garage 10 employees	None	N/A	N/A
Residential Owner	Purcell Rd.	\$80,000.00 - \$90,000.00	10 - 15 yrs.	W	N/A	None	4	40 - 50
Residential Owner	Purcell Rd.	\$80,000.00 - \$90,000.00	15 - 20 yrs.	W	N/A	None	4	40 - 50

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONCEPTUAL STAGE INVENTORY RECORD

JOB NO. 100445
FAP NO. _____

Alternate N-1 (Yellow), Revised 1/15/09

Occupant Status	Address of Structure	Income Level	Tenure of Family	Race	Business Status / Est. No. emp.	Vacant Structures	Number in Family	Age of Relocatee
Residential Owner	Hwy. 135	\$40,000.00 - \$50,000.00	5 - 10 yrs.	W	N/A	None	3	30 - 40
Residential Owner	Hwy. 135	\$40,000.00 - \$50,000.00	10 - 15 yrs.	W	N/A	None	4	30 - 40
Residential Owner	Mt. Carmel Rd.	\$50,000.00 - \$60,000.00	5 - 10 yrs.	W	N/A	None	2	30 - 40
Residential Owner	Mt. Carmel Rd.	\$50,000.00 - \$60,000.00	10 - 20 yrs.	W	N/A	None	4	30 - 40
Residential Owner	Rockingchair	\$60,000.00 - \$80,000.00	15 - 20 yrs.	W	N/A	None	2	60 - 70
Residential Owner	Shiloh	\$50,000.00 - \$60,000.00	15 - 20 yrs.	W	N/A	None	4	30 - 40

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONCEPTUAL STAGE INVENTORY RECORD

JOB NO. 100445
FAP NO. _____

Alternate S-1 (Red)

Occupant Status	Address of Structure	Income Level	Tenure of Family	Race	Business Status / Est. No. emp.	Vacant Structures	Number in Family	Age of Relocatee
Residential Owner	W. Kingshighway	\$60,000.00 - \$70,000.00	15 - 20 yrs.	W	N/A	None	2	40 - 50
Residential Owner	W. Kingshighway	\$60,000.00 - \$70,000.00	5 - 10 yrs.	W	N/A	None	4	40 - 50
Residential Owner	GR 724 Rd.	\$90,000.00 - \$100,000.00	1 - 5 yrs.	W	N/A	None	5	30 - 40
Residential Owner	Walcott	\$30,000.00 - \$40,000.00	15 - 20 yrs.	W	N/A	None	2	50 - 60
Residential Owner	Spring Grove Rd.	\$40,000.00 - \$50,000.00	5 - 10 yrs.	W	N/A	None	4	30 - 40
Residential Owner	Spring Grove Rd.	\$40,000.00 - \$50,000.00	15 - 20 yrs.	W	N/A	None	2	60 - 70
Residential Owner	S. Rockingchair	\$30,000.00 - \$40,000.00	5 - 10 yrs.	W	N/A	None	2	50 - 60
Residential Owner	Carroll Rd.	\$80,000.00 - \$90,000.00	5 - 10 yrs.	W	N/A	None	4	40 - 50
Residential Owner	Carroll Rd.	\$90,000.00 - \$100,000.00	5 - 10 yrs.	W	N/A	None	2	50 - 60
Residential Owner	Carroll Rd.	\$60,000.00 - \$70,000.00	15 - 20 yrs.	W	N/A	None	2	50 - 60
Residential Owner	Carroll Rd.	\$60,000.00 - \$70,000.00	10 - 15 yrs	W	N/A	None	2	60 - 70
Residential Owner	Carroll Rd.	\$100,000.00 - \$120,000.00	20 - 25 yrs.	W	N/A	None	2	40 - 50
Residential Owner	Pruett's Chapel Rd.	\$90,000.00 - \$100,000.00	5 - 10 yrs.	W	N/A	None	4	40 - 50

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONCEPTUAL STAGE INVENTORY RECORD

JOB NO. 100445
FAP NO. _____

Alternate S-1 (Red)

Occupant Status	Address of Structure	Income Level	Tenure of Family	Race	Business Status / Est. No. emp.	Vacant Structures	Number in Family	Age of Relocatee
Residential Owner	Pruetts Chapel Rd.	\$80,000.00 - \$90,000.00	5 - 10 yrs.	W	N/A	None	4	40 - 50
Residential Owner	Pruetts Chapel Rd.	\$80,000.00 - \$90,000.00	5 - 10 yrs.	W	N/A	None	6	40 - 50
Residential Owner	Lindwood Dr.	\$30,000.00 - \$40,000.00	1 - 5 yrs.	W	N/A	None	2	40 - 50
Residential Owner	Lindwood Dr.	\$40,000.00 - \$50,000.00	15 - 20 yrs.	W	N/A	None	2	50 - 60
Residential Owner	Lindwood Dr.	\$60,000.00 - \$70,000.00	5 - 10 yrs.	W	N/A	None	4	40 - 50
Residential Owner	Smokey Hollow Rd.	\$90,000.00 - \$100,000.00	15 - 20 yrs.	W	N/A	None	2	50 - 60
Residential Owner	Grant	\$40,000.00 - \$50,000.00	5 - 10 yrs.	W	N/A	None	4	30 - 40
Residential Owner	S. 2 nd Ave.	\$50,000.00 - \$60,000.00	15 - 20 yrs.	W	N/A	None	3	30 - 40
Business	S. 2 nd Ave.	N/A	N/A	N/A	Garage 4 employees	None	N/A	N/A

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONCEPTUAL STAGE INVENTORY RECORD

JOB NO. 100445
FAP NO. _____

Alternate S-2 (Blue)

Occupant Status	Address of Structure	Income Level	Tenure of Family	Race	Business Status / Est. No. emp.	Vacant Structures	Number in Family	Age of Relocatee
Residential Owner	W. Kingshighway	\$60,000.00 - \$70,000.00	15 - 20 yrs.	W	N/A	None	2	40 - 50
Residential Owner	W. Kingshighway	\$60,000.00 - \$70,000.00	5 - 10 yrs.	W	N/A	None	4	40 - 50
Residential Owner	GR 724 Rd.	\$90,000.00 - \$100,000.00	1 - 5 yrs.	W	N/A	None	5	30 - 40
Residential Owner	Walcott	\$30,000.00 - \$40,000.00	15 - 20 yrs.	W	N/A	None	2	50 - 60
Residential Owner	Westbrook	\$80,000.00 - \$90,000.00	5 - 10 yrs.	W	N/A	None	4	40 - 50
Residential Owner	Pruetts Chapel Rd.	\$50,000.00 - \$60,000.00	15 - 20 yrs.	W	N/A	None	2	60 - 70
Unoccupied	GR 750	N/A	N/A	N/A	N/A	Dwelling	N/A	N/A
Residential Owner	GR 750	\$60,000.00 - \$70,000.00	10 - 15 yrs.	W	N/A	None	4	40 - 50
Residential Owner	GR 750	\$60,000.00 - \$70,000.00	10 - 15 yrs.	W	N/A	None	2	40 - 50
Residential Owner	GR 750	\$40,000.00 - \$50,000.00	5 - 10 yrs.	W	N/A	None	4	30 - 40
Residential Owner	Finch Rd.	\$60,000.00 - \$70,000.00	5 - 10 yrs.	W	N/A	None	2	40 - 50
Residential Owner	Hwy. 358	\$60,000.00 - \$70,000.00	10 - 15 yrs.	W	N/A	None	2	40 - 50
Farm	Staller Rd.	N/A	N/A	N/A	Farm 10 employees	None	N/A	N/A

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONCEPTUAL STAGE INVENTORY RECORD

JOB NO. 100445
FAP NO. _____

Alternate S-2 (Blue)

Occupant Status	Address of Structure	Income Level	Tenure of Family	Race	Business Status / Est. No. emp.	Vacant Structures	Number in Family	Age of Relocatee
Residential Owner	Statler Rd.	\$80,000.00 - \$90,000.00	15 - 20 yrs.	W	N/A	None	4	50 - 60
Business	Lindwood	N/A	N/A	N/A	Cycle shop 4 employees	None	N/A	N/A
Residential Owner	GR 907 Rd.	\$30,000.00 - \$40,000.00	5 - 10 yrs.	W	N/A	None	2	40 - 50
Residential Owner	GR 907 Rd.	\$30,000.00 - \$40,000.00	5 - 10 yrs.	W	N/A	None	2	50 - 60
Residential Owner	GR 907 Rd.	\$40,000.00 - \$50,000.00	5 - 10 yrs.	W	N/A	None	4	40 - 50
Residential Owner	GR 907 Rd.	\$40,000.00 - \$50,000.00	10 - 15 yrs.	W	N/A	None	2	40 - 50
Residential Owner	GR 907 Rd.	\$40,000.00 - \$50,000.00	5 - 10 yrs.	W	N/A	None	2	30 - 40

APPENDIX C

Farmland Conversion Impact Rating

FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS

PART I (To be completed by Federal Agency) 100445		3. Date of Land Evaluation Request	1/8/09	4. Sheet 1 of _____
1. Name of Project Hwy 412 improvements (Paragould)		5. Federal Agency Involved FHWA		
2. Type of Project Bypass		6. County and State Greene		
PART II (To be completed by NRCS)		1. Date Request Received by NRCS	2. Person Completing Form	
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 <input type="checkbox"/>	NO <input type="checkbox"/>	4. Acres Irrigated Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction		7. Amount of Farmland As Defined in FPPA	
	Acres: _____ % _____		Acres: _____ % _____	
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System		10. Date Land Evaluation Returned by NRCS	

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment			
	Corridor A	Corridor S1	Corridor S2	Corridor D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	0	0	0	0

PART IV (To be completed by NRCS) Land Evaluation Information	Corridor A	Corridor S1	Corridor S2	Corridor D
A. Total Acres Prime And Unique Farmland	7.23	16.95	85.99	
B. Total Acres Statewide And Local Important Farmland	28.6	None	10.06	
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				

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)

PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points	Corridor A	Corridor S1	Corridor S2	Corridor D
1. Area in Nonurban Use	15	15	15	15	
2. Perimeter in Nonurban Use	10	10	10	10	
3. Percent Of Corridor Being Farmed	20	10	15	15	
4. Protection Provided By State And Local Government	20	0	0	0	
5. Size of Present Farm Unit Compared To Average	10	0	0	0	
6. Creation Of Nonfarmable Farmland	25	0	0	0	
7. Availability Of Farm Support Services	5	5	5	5	
8. On-Farm Investments	20	0	0	0	
9. Effects Of Conversion On Farm Support Services	25	0	0	0	
10. Compatibility With Existing Agricultural Use	10	0	0	0	
TOTAL CORRIDOR ASSESSMENT POINTS	160	0 40	0 45	0 45	0

PART VII (To be completed by Federal Agency)	Maximum Points	Corridor A	Corridor S1	Corridor S2	Corridor D
Relative Value Of Farmland (From Part V)	100	100	100	100	
Total Corridor Assessment (From Part VI above or a local site assessment)	160	0 40	0 45	0 45	0
TOTAL POINTS (Total of above 2 lines)	260	0 140	0 145	0 145	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project: See Part IV	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
-----------------------	--	-----------------------	---

5. Reason For Selection:

Signature of Person Completing this Part: [Signature] DATE: 1/8/09

NOTE: Complete a form for each segment with more than one Alternate Corridor

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APPENDIX D

Hazardous Materials

A survey for hazardous materials was performed to assess the potential of impacting hazardous materials along any of the proposed alternatives. This survey is pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). The investigation was conducted to identify sites within the project study area that have the potential to release environmental contamination by hazardous wastes and substances. Identifying known and potential contamination prior to construction is important because it can substantially reduce the possibility of exposure to people and the environment.

The scope of the preliminary investigation consisted of a review of available federal and state environmental databases, and the performance of a windshield visit to confirm information from the databases and to note additional field observations.

The proposed project traverses residential, commercial and industrial areas. Underground utilities are present along both sides of the Widening Existing Alternative, Alternative N1, S1 and Alternative 2. These underground utilities could serve as potential pathways for contamination to migrate.

Searches via the Internet using Geomedia® 6.0 Professional provided the latest information from the Environmental Protection Agency (EPA), the Arkansas Department of Environmental Quality (ADEQ), the Arkansas Department of Health (DOH) and the Federal Emergency Management Agency (FEMA). This search identified 79 facilities within a specified search distance of one-mile of all alternatives. Of these 79 facilities, a total of 15 sites held ADEQ permits ranging from NPDES permits to landfill permits. None of the sites were located within the immediate study area.

One landfill was identified, between Alternatives S1 and S2. This landfill has been closed for many years and is no longer taking waste. This landfill is approximately ½ mile north of Alternative S2.

One superfund site, the old Monroe Auto Equipment Co., EPA ID#ARD090864110 is within one mile of Alternative S2. This site was listed on the National Priorities List in October 15, 1981 and finally released on August 29, 1990 as meeting EPA cleanup criteria. A second five year review of groundwater samplings is scheduled for the summer of 2009. The latest EPA investigation has determined that the site does not pose an immediate threat to area residents. No further EPA actions were required while the State oversaw the implementation by Monroe Auto of the remedy that is protective of human health and of the ground water.

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APPENDIX E

Public Involvement Synopses

**Highway 412 Improvements (Paragould)
Environmental Study
AHTD Job No. 100445
Public Meeting Summary
September 21, 2006**

An open-house public meeting for the above-referenced project was held September 21, 2006 from 4:00 to 7:00 pm at Paragould Senior High School. AHTD Environmental, Right of Way, and District Ten staff participated in the meeting. Consultant representatives from MACTEC Engineering and Consulting, Inc. (MACTEC) and Crawford, Bunte, Brammeier (CBB) were also present to discuss the project with interested citizens.

The purpose of the meeting was to introduce the Environmental Study to the public and solicit their feedback. Display boards showing the three study alternatives (North, South, and Existing Highway 412), environmental constraints, land use, and traffic study data were available for viewing.

The meeting was advertised to the public as follows:

- A display ad placed in the Paragould Daily Press on September 17, 20, and 21, 2006
- Flyers (English and Spanish) distributed throughout Paragould at City Hall, Greene County Courthouse, Paragould Public Library, Paragould Community Center, Chamber of Commerce, and several businesses including Wal-Mart, Walgreens, Kays Grocery, Country Mart, and Casa Brava Mexican Restaurant
- Spanish flyer provided to the Hispanic Mission of the East Side Baptist Church
- Announcement aired on Paragould cable TV bulletin board channel

A review of U.S. Census data showed very small minority populations (0.1% African American and 1.3% Hispanic) in Paragould and Greene County. A bilingual AHTD Environmental staff member was present to answer questions and discuss the project with Spanish-speaking citizens. Two Hispanic individuals attended the meeting.

One hundred ten (110) people attending the meeting signed the registration form. A total of 46 comment forms were received: 18 were returned at the meeting and 28 were received in the mail during the comment period which ended October 6, 2006. Although they had differing views on the three study alternatives, respondents overwhelmingly agreed that improvements to Highway 412 were needed to improve safety, benefit the community, and improve traffic flow and congestion.

	North Alternative *	South Alternative	Existing US 412 Alternative †	No Preference	Other ♦
At meeting	5	10	1	1	1
In mail	15	8	4	1	
Totals	20	18	5	2	1

* three selected North but disagreed with need for improvements

† three selected Existing US 412 but disagreed with need for improvements

♦ request for maps

North Alternative preference comments:

- Beneficial to industry north of Paragould
- Fewer impacts to established residential areas
- Perceived to be less expensive and shorter
- Traffic data and projections show that traffic is higher north of city
- South Alternative will make Jonesboro more attractive

South Alternative preference comments:

- Will alleviate truck traffic and general congestion on existing 412
- Beneficial to industry and commercial growth in southern part of city

Highway 412 Improvements (Paragould)
Public Meeting Summary
September 21, 2006

- City's growth trend is to the south
- Beneficial to city's and county's economic growth
- Should be moved farther south
- Will create good connection with Jonesboro

Existing US 412 Alternative preference comments:

- Roadway already exists and is adequate
- Less disruptive to community's businesses, homes, and natural environment
- Perception that South alternative will disrupt personal property: "Stay away from my backyard"

PUBLIC INVOLVEMENT MEETING SYNOPSIS

**Job Number 100445
Highway 412 Improvements (Paragould)
Greene County
February 19, 2008**

PUBLIC OFFICIALS' MEETING

A public officials' meeting was held for the proposed Highway 412 Improvements project at the Paragould Community Center from 2:00 – 3:00 p.m. on February 19, 2008.

The following information was available for inspection and comment at the meeting.

- One copy each of an aerial photograph display and a street map display showing the proposed alternatives at a scale of one-inch equals 1,400 feet.

Handouts for the local officials included a comment sheet and a small-scale map that was identical to the aerial map. Copies of these are attached.

Table 1 describes the results of the participation at the meeting.

TABLE 1	
Public Participation	Totals
Attendance at meeting (including AHTD staff)	11
Comment forms received	0

PUBLIC INVOLVEMENT MEETING

An open forum Public Involvement Meeting was held for the proposed Highway 412 Improvements project at the Paragould Junior High School from 4:00 – 7:00 p.m. on February 19, 2008. Media news releases and flyers were utilized to inform the public of the meeting. Efforts to involve minorities and the public in the meeting included:

- Display advertisement placed in The Paragould Daily Press on Sunday, February 10, and Sunday, February 17.
- Public Service Announcement to Super Buena 830 on Saturday, February 16 thru Tuesday, February 19.
- Outreach to Minority Ministers Letters.
- Distribution of flyers in the project area.

The following information was available for inspection and comment.

- Three copies each of an aerial photograph display and a street map display showing the proposed alternatives at a scale of one-inch equals 1,400 feet.

Handouts for the public included a comment sheet and a small-scale map that was identical to the aerial map. Copies of these are attached.

Table 2 describes the results of the public participation at the meeting.

TABLE 2	
Public Participation	Totals
Attendance at meeting (including AHTD staff)	189
Comment forms received	94
Letters about Crowley’s Ridge College	505
E-mail comments about Crowley’s Ridge College	110

AHTD staff reviewed all comments received and evaluated their contents. The summary of comments listed below reflects the personal perception or opinion of the person or organization making the statement. The sequencing of the comments is random and is not intended to reflect importance or numerical values. Some of the comments were combined and/or paraphrased to simplify the synopsis process.

An analysis of the responses received as a result of the public survey is shown in Table 2.

TABLE 2	
Survey Results	Totals
Felt improvements were needed along Hwy. 412 in Paragould	76
Felt improvements were not needed along Hwy. 412 in Paragould	8
In favor of No-Action Alternative	0
In favor of Improvements to Existing	9
In favor of Alternative N1	14
In favor of Alternative N2	8
In favor of Alternative S1	7
In favor of Alternative S2	43
In favor of multiple alternatives	9

Comments concerning issues associated with the proposed project were as follows:

Improvements to Existing

- It would not impact new property and it would cost less.
- It would not have the negative effect on existing businesses that a bypass would.

Alternative N1 and N2

- It would go through more open fields that have less future development potential than the southern routes.
- It would serve the growing industrial areas north of Paragould and in Marmaduke where most of the truck traffic is located.

Alternative S1

- Shorter more direct route that would cost less money and disturb fewer existing homes.

Alternative S2

- It would be the best alternative to serve the new Greene County Tech High School.
- Best route for the future expansion and development of Paragould.

Impacts to Crowley's Ridge College

- All letters and emails related to Crowley's Ridge College were concerned that any proposed route that went through the campus would have a very detrimental impact to the college.

Attachments: Blank comment form
Small-scale aerial photograph display
Small-scale street map display

RJ RS
BP BP

DN:ks

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT (AHTD)
CITIZEN COMMENT FORM**

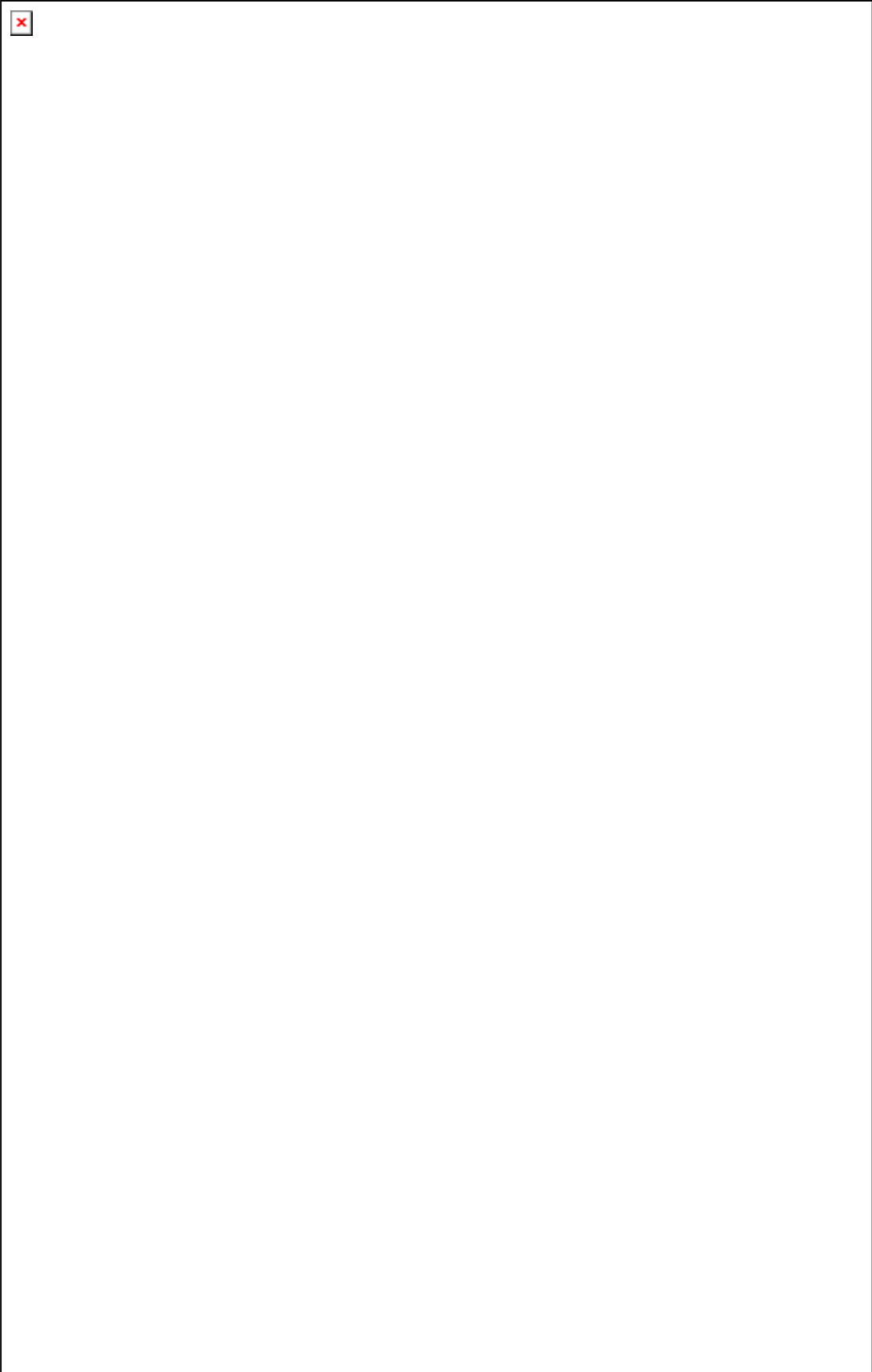
**AHTD JOB NUMBER 100445
HIGHWAY 412 IMPROVEMENTS
(PARAGOULD, AR)
GREENE COUNTY**

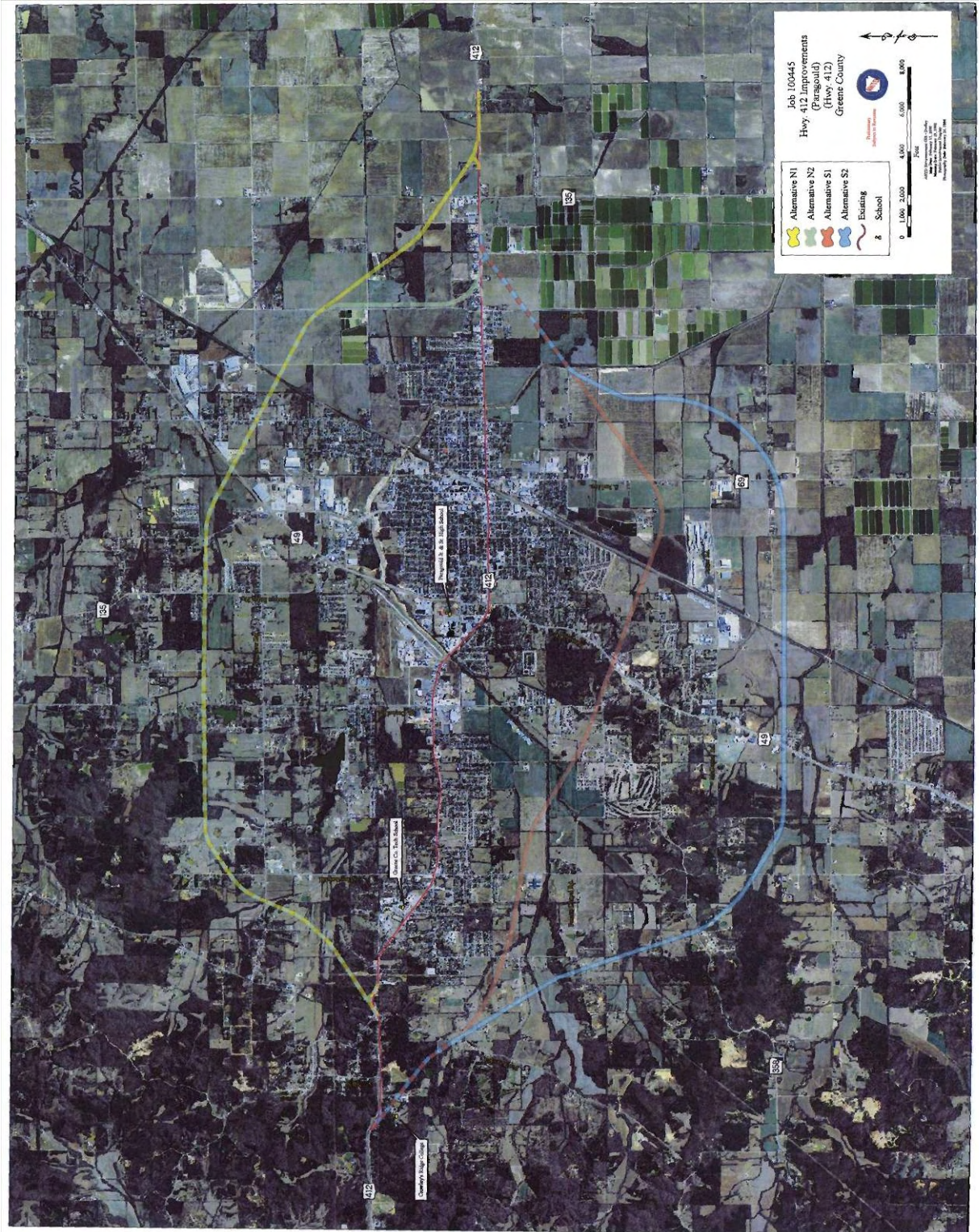
**LOCATION:
PARAGOULD JUNIOR HIGH SCHOOL (CAFETERIA)
1701 West Court Street
PARAGOULD, AR
4:00 – 7:00 P.M.
TUESDAY, FEBRUARY 19, 2008**

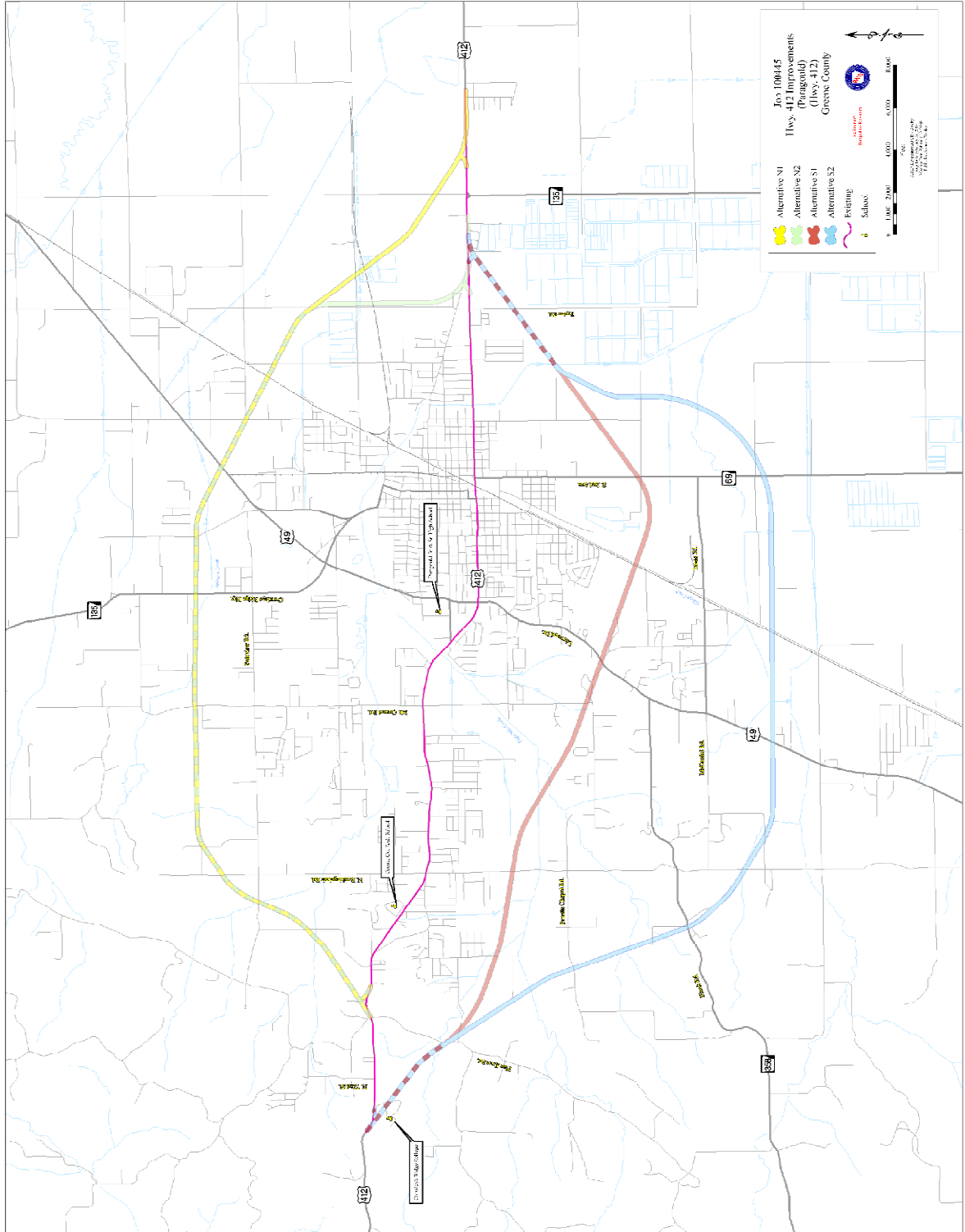
Make your comments on this form and leave it with AHTD personnel at the meeting or mail it in within 15 days to: Arkansas State Highway and Transportation Department, Environmental Division, Post Office Box 2261, Little Rock, Arkansas 72203-2261.

- | | | |
|---------------------------------|--------------------------------|---|
| Yes
<input type="checkbox"/> | No
<input type="checkbox"/> | Do you feel there is a need to decrease congestion and increase safety along Highway 412 in Paragould? Comment (optional)_____ |
| <hr/> <hr/> | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Do you know of any historical sites, family cemeteries, or archaeological sites in the project area? Please note and discuss with staff. _____ |
| <hr/> <hr/> | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Do you know of any environmental constraints, such as endangered species, hazardous waste sites, existing or former landfills, or parks and public lands in the vicinity of the project? Please note and discuss with AHTD staff. _____ |
| <hr/> <hr/> | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Do you feel that the proposed project will have any impacts (<input type="checkbox"/> Beneficial or <input type="checkbox"/> Adverse) on your property and/or community (economic, environmental, social, etc.)? Please explain. |
| <hr/> <hr/> <hr/> | | |

(Continued on back)







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APPENDIX F

Agency Coordination

Paragould Agency Letters and Responses (11.15.06)

Agency	Response
Mr. Scott Henderson Arkansas Game and Fish Commission 2 Natural Resources Drive Little Rock, Arkansas 72205	Received October 6, 2006. No longer conducts T&E reviews; deferred to USFWS
Ms. Karen Smith Arkansas Natural Heritage Commission 323 Center Street 1500 Tower Building Little Rock, Arkansas 72201	No response received.
Mr. Allen Mueller U.S. Fish and Wildlife Service Arkansas Ecological Services Field Office 1500 Museum road, Suite 105 Conway, Arkansas 72032	Received October 20, 2006. Stated no federally listed T&E species have been documented in the project vicinity.
Mr. Marcus C. Devine Arkansas Department of Environmental Quality 8001 National Drive Little Rock, Arkansas 72209	Received November 6, 2006. NPDES stormwater program AST and UST information from ADEQ web site.
Mr. Mike Jansky U.S. Environmental Protection Agency 1445 Ross Avenue, Suite 1200 Dallas, Texas 75202	No response received
Mr. Larry Harrison U.S. Army Corps of Engineers, Little Rock District 700 West Capitol, CESWL-PR P.O. Box 867 Little Rock, Arkansas 72201	No response received
Mr. Kalven Trice Arkansas Natural Resource Conservation Service Room 3416 Federal Building 700 West Capitol Little Rock, Arkansas 72201	Received November 2, 2006. Prime farmland of statewide importance Provided map of prime farmland
Mr. J. Michael Howard Arkansas Geological Commission 3815 West Roosevelt Road Little Rock, Arkansas 72245	Received October 2, 2006. Provided detailed information including a geologic map.
Arkansas Department of Emergency Management P.O. Box 758 Conway, Arkansas 72033	Received October 4, 2006. No additional information is available on project.
Mr. Bob Makin, P.E., Assistant Director Arkansas Department of Health and Human Services, Division of Health, Engineering Section P.O. Box 1437, Slot H-37 Little Rock, Arkansas 72203-1437	Received October 13, 2006. Engineering section has no comments on the submittal.

ARKANSAS STATE HIGHWAY
AND
TRANSPORTATION DEPARTMENT

Dan Flowers
Director
Telephone (501) 569-2000



P.O. Box 2261
Little Rock, Arkansas 72203-2261
Telefax (501) 569-2400

November 24, 2008

Mr. George McCluskey
Section 106 Review Officer
1500 Tower Building
323 Center Street
Little Rock, Arkansas 72201


Subject: Request for Technical Assistance
Job Number 100445
Hwy. 412 Improvements
(Paragould)
Greene County

Dear Mr. McCluskey,

The project proposes to reconstruct Highway 412 for four lanes of traffic on new location or widen existing Highway 412 in the city of Paragould in Greene County. Eighty-four structures that appear to be at least 50 years old were identified in the project vicinity.

Photographs, descriptions and a location map for the structures are included so your staff may evaluate the eligibility of these structures to the National Register. If, in the opinion of the AHPP the structures are eligible, please include any mitigation alternatives in the response letter. If you have any questions about the project, please contact Robert Scoggin of my staff at 569-2077.

Sincerely,


Lynn P. Malbrough
Division Head
Environmental Division

LPM:RS:pb



**The Department of
Arkansas
Heritage**

Mike Beebe
Governor

Cathie Matthews
Director

Arkansas Arts Council

*

Arkansas Natural Heritage
Commission

*

Delta Cultural Center

*

Historic Arkansas Museum

*

Mosaic Templars
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.com

An Equal Opportunity Employer



December 16, 2008

Mr. Lynn P. Malbrough
Division Head
Environmental Division
Arkansas Highway and Transportation Department
PO Box 2261
Little Rock, AR 72203-2261

RE: Greene County – Paragould
Section 106 Review – FHWA
Proposed Widening of Highway 412 in Paragould to Four Lanes.
AHPP Tracking #68199
AHTD Job 100445

Dear Mr. Malbrough:

This letter is written in response to your inquiry regarding properties of architectural, historical, or archeological 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 of the eighty four structures with photo documentation provided with your November 24th, 2008 letter, structures H, K, N, R, U, V, Y, Z, CC, II, JJ, RR, XX and GE0239 as well as GE0240 were eligible for listing on the National Register. Structures GE0167, GE0050, GE0172, GE0255, GE0254, AHTD 100520 and the remaining sixty three structures are not eligible for listing in the National Register of Historic Places

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 Tom Marr at (501) 324-9880.

Yours truly,

Frances McSwain
Deputy State Historic Preservation Officer

cc: Federal Highway Administration
Arkansas State Highway and Transportation Department



U.S. Department
of Transportation
**Federal Highway
Administration**
Arkansas Division

700 West Capitol Avenue
Room 3130
Little Rock, AR 72201-3298

December 3, 2008

Refer To:
AHTD Job 100445
Hwy. 412 Improvements
(Paragould)
Greene County
HDA-AR

Dr. Andrea A. Hunter
Tribal Historic Preservation Officer
Osage Nation
627 Grandview
Pawhuska, Oklahoma 74056

Dear Dr. Hunter:

This letter is written in order to initiate consultation between the Federal Highway Administration, Arkansas Division Office and the Osage Nation regarding a federal-aid highway project that may potentially affect ancestral lands or properties that may be of religious or cultural significance to the Osage Nation.

The Arkansas Highway and Transportation Department (AHTD) plans to improve about 10 miles of Highway 412 near Paragould in Greene County, Arkansas. Currently four alternative alignments are being studied (see attached project location map). To date, a survey of existing site records has been conducted and several previously recorded archeological sites have been identified within or near the project area. Three prehistoric sites (3GE188, 3GE360, and 3GE390), one General Land Office plot (3GE269), and one historic site (3GE389) are recorded near or on Alternative N1. Three prehistoric sites (3GE101, 3GE188, and 3GE317) are recorded near the Existing Alternative. Five prehistoric sites (3GE206, 3GE238, 3GE253, 3GE254, and 3GE319) and one historic site (3GE367) are recorded near or on Alternative S1 and four prehistoric sites (3GE254, 3GE255, 3GE256, and 3GE375) and one historic site (3GE367) recorded near or on Alternative S2.

In an effort to determine impacts to the known sites and to identify the existence of unknown archeological sites within the proposed project area, the AHTD is planning to conduct a cultural



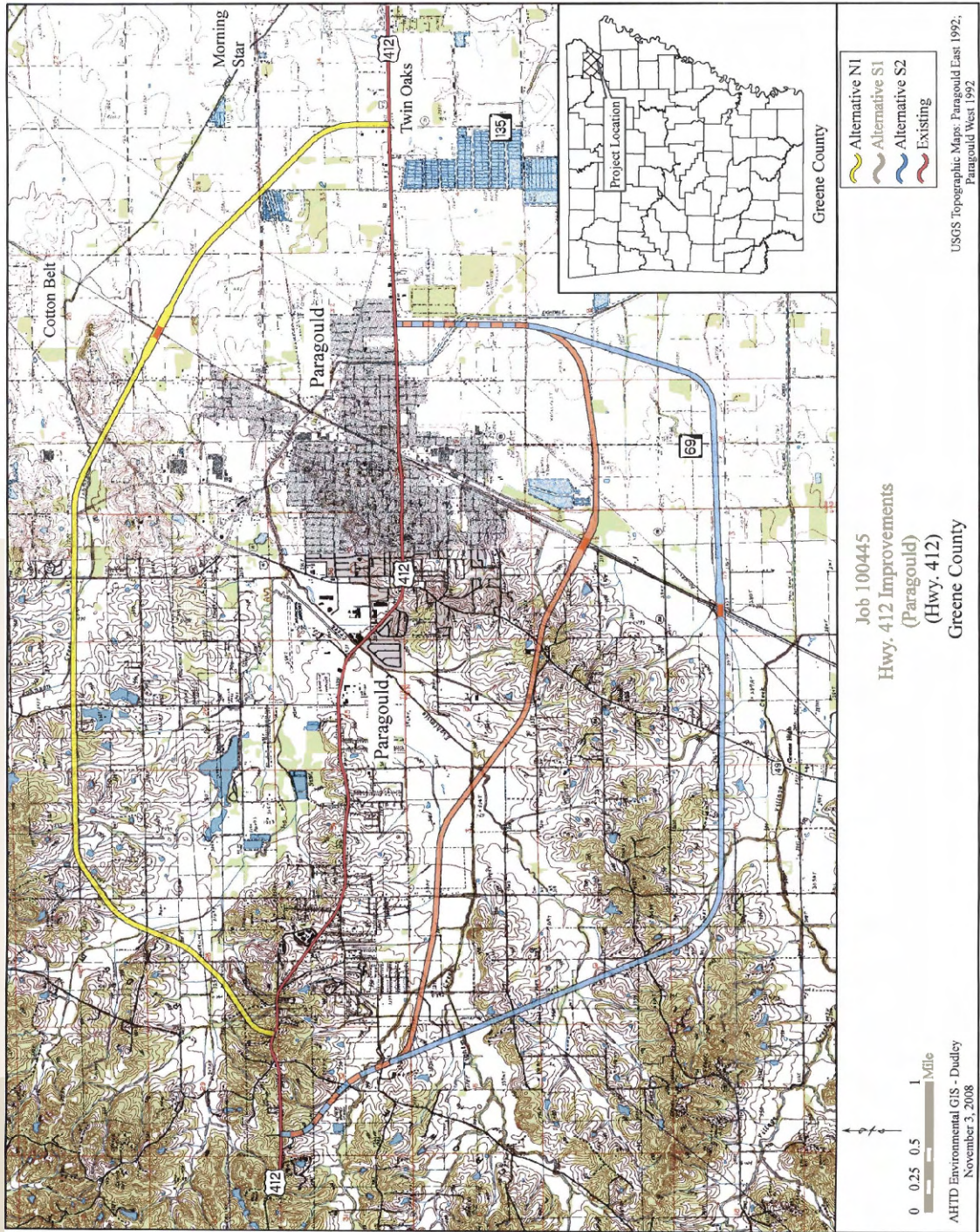
resources survey of the selected alignment. Please review this information and notify us of any constraints or concerns that you may have regarding this undertaking. We would greatly appreciate your input regarding not only this project but also sites or properties in the immediate area that might be of cultural or religious significance to your Tribe. If you have any questions or need additional information, please contact me at (501) 324-6430.

Sincerely,



Randal Looney
Environmental Specialist







U.S. Department
of Transportation
**Federal Highway
Administration**
Arkansas Division

700 West Capitol Avenue
Room 3130
Little Rock, AR 72201-3298

December 3, 2008

Refer To:
AHTD Job 100445
Hwy. 412 Improvements
(Paragould)
Greene County
HDA-AR

Mr. John Berrey
Tribal Chairman
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, Oklahoma 74363

Dear Mr. Berrey:

This letter is written in order to initiate consultation between the Federal Highway Administration, Arkansas Division Office and the Quapaw Tribe regarding a federal-aid highway project that may potentially affect ancestral lands or properties that may be of religious or cultural significance to the Quapaw Tribe.

The Arkansas Highway and Transportation Department (AHTD) plans to improve about 10 miles of Highway 412 near Paragould in Greene County, Arkansas. Currently four alternative alignments are being studied (see attached project location map). To date, a survey of existing site records has been conducted and several previously recorded archeological sites have been identified within or near the project area. Three prehistoric sites (3GE188, 3GE360, and 3GE390), one General Land Office plot (3GE269), and one historic site (3GE389) are recorded near or on Alternative N1. Three prehistoric sites (3GE101, 3GE188, and 3GE317) are recorded near the Existing Alternative. Five prehistoric sites (3GE206, 3GE238, 3GE253, 3GE254, and 3GE319) and one historic site (3GE367) are recorded near or on Alternative S1 and four prehistoric sites (3GE254, 3GE255, 3GE256, and 3GE375) and one historic site (3GE367) recorded near or on Alternative S2.

In an effort to determine impacts to the known sites and to identify the existence of unknown archeological sites within the proposed project area, the AHTD is planning to conduct a cultural



resources survey of the selected alignment. Please review this information and notify us of any constraints or concerns that you may have regarding this undertaking. We would greatly appreciate your input regarding not only this project but also sites or properties in the immediate area that might be of cultural or religious significance to your Tribe. If you have any questions or need additional information, please contact me at (501) 324-6430.

Sincerely,



Randal Looney
Environmental Specialist

Cc: Ms. Carrie Wilson





U.S. Department
of Transportation
**Federal Highway
Administration**
Arkansas Division

700 West Capitol Avenue
Room 3130
Little Rock, AR 72201-3298

December 3, 2008

Refer To:
AHTD Job 100445
Hwy. 412 Improvements
(Paragould)
Greene County
HDA-AR

Mr. Earl J. Barbry, Sr.
Tribal Chairman
Tunica-Biloxi Tribe of Louisiana, Inc.
P.O. Box 1589
Marksville, Louisiana 71351
cc. Mr. Earl j. Barbry, Jr.

Dear Mr. Barbry:

This letter is written in order to initiate consultation between the Federal Highway Administration, Arkansas Division Office and the Tunica-Biloxi Tribe regarding a federal-aid highway project that may potentially affect ancestral lands or properties that may be of religious or cultural significance to the Tunica-Biloxi Tribe.

The Arkansas Highway and Transportation Department (AHTD) plans to improve about 10 miles of Highway 412 near Paragould in Greene County, Arkansas. Currently four alternative alignments are being studied (see attached project location map). To date, a survey of existing site records has been conducted and several previously recorded archeological sites have been identified within or near the project area. Three prehistoric sites (3GE188, 3GE360, and 3GE390), one General Land Office plot (3GE269), and one historic site (3GE389) are recorded near or on Alternative N1. Three prehistoric sites (3GE101, 3GE188, and 3GE317) are recorded near the Existing Alternative. Five prehistoric sites (3GE206, 3GE238, 3GE253, 3GE254, and 3GE319) and one historic site (3GE367) are recorded near or on Alternative S1 and four prehistoric sites (3GE254, 3GE255, 3GE256, and 3GE375) and one historic site (3GE367) recorded near or on Alternative S2.

In an effort to determine impacts to the known sites and to identify the existence of unknown



archeological sites within the proposed project area, the AHTD is planning to conduct a cultural resources survey of the selected alignment. Please review this information and notify us of any constraints or concerns that you may have regarding this undertaking. We would greatly appreciate your input regarding not only this project but also sites or properties in the immediate area that might be of cultural or religious significance to your Tribe. If you have any questions or need additional information, please contact me at (501) 324-6430.

Sincerely,



Randal Looney
Environmental Specialist

