

ENVIRONMENTAL ASSESSMENT

Southern Extension of
State Route 186 and the US 45 Bypass
from
State Route 1 (US 70/Airways Boulevard) to
State Route 5 (US 45/South Highland Avenue)

PIN 109926.00

Jackson, Madison County, Tennessee



Tennessee Department
of Transportation



U.S. Department
of Transportation
Federal Highway
Administration



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

Tennessee Division

May 20, 2013

404 BNA Drive, Suite 508
Nashville, Tennessee 37217
Phone (615) 781-5770

In Reply Refer To:
HPP-TN

Mr. Jim Ozment
Director, Environmental Division
Tennessee Department of Transportation
James K. Polk Building, Suite 900
Nashville, TN 37243-0349

Subject: Environmental Assessment; State Route 186 and US 45 Bypass, Madison Co.

Dear Mr. Ozment:

The Environmental Division of the Tennessee Department of Transportation submitted an Environmental Assessment (EA) for State Route 186 and the US 45 Bypass from State Route 1 (US 70/Airways Boulevard) to State Route 5 (US 45/South Highland Avenue) in Madison County for our review and approval.

The Environmental Assessment adequately addresses the potential impacts of the proposal and is approved for public review. A notice of availability of the assessment should be included in the public hearing notice.

Enclosed is a signed copy of the title sheet. Please call me at (615) 781-5766 if you have any questions.

Sincerely,

Gary Fottrell
Environmental Program Engineer

Enclosure

Southern Extension of State Route 186 and the US 45 Bypass

from State Route 1 (US 70/Airways Boulevard)

to State Route 5 (US 45/South Highland Avenue)

Jackson, Madison County, Tennessee

ENVIRONMENTAL ASSESSMENT


Submitted pursuant to 42 U.S.C. 4332(2) (C)
and
the National Environmental Policy Act of 1969

by the US Department of Transportation,
Federal Highway Administration
and
the Tennessee Department of Transportation

in cooperation with
US Army Corps of Engineers, Memphis District

20 May 2013

Date of Approval



Federal Highway Administration

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SUMMARY

Proposed Project

The Tennessee Department of Transportation (TDOT) proposes a southern extension of State Route (SR) 186 and the US 45/Keith Short Bypass (US 45 Bypass) from SR 1/US 70/Airways Boulevard on the west side of Jackson, Madison County, Tennessee to SR 5/US 45/South Highland Avenue on the south side of Jackson. A project location map is included as Figure S-1. The project is proposed to be assisted with funding from the FHWA and is subject to the requirements of the National Environmental Policy Act (NEPA). This document is prepared to meet NEPA requirements.

Alternatives

Over the past 12 years, a number of alternatives have been evaluated for the Southern Extension of SR 186 and the US 45 Bypass. As part of the NEPA Environmental Assessment, TDOT is studying the No-Build plus one Build Alternative that has an optional alignment on its northern end.

Between 2001 and 2007, the City of Jackson and TDOT studied numerous alternatives, many of which received public and agency opposition. In March 2009, TDOT approved a Transportation Planning Report (TPR) that looked at previously considered alternatives, but focused on the development of corridors intended to address public and agency concerns. The TPR recommended two study corridors to move forward in the NEPA process: one would primarily follow existing US 45 south of Jackson and the other would be centered on the Riverside Drive corridor, connecting with US 45 south of Bemis.

Early in NEPA, supplemental environmental screening was completed and the Project Team met and agreed that improvements along the existing alignment of US 45 did not meet the project purpose and need. Participants in the Tennessee Environmental Streamlining Agreement (TESA) concurred that improving existing US 45 was not a feasible alternative and it was consequently removed from consideration.

Further local government, agency and public involvement resulted in the project being extended southward to the vicinity of Seavers Road on the east side of US 45 and a connection between SR 18 and the bypass was added to the project.

The Build Alternative is divided into two phases. Phase 1 is more likely to be built in the nearer term if funding is identified for construction. Phase 2 is likely farther out in the future than Phase 1 and is also dependent on identification of funding. The two phases are described as follows:

Phase 1: From south to north, the alignment begins on the west side of US 45 north of Edwards Drive and the Bonwood Industrial Park and ends on the north at Airways Boulevard (US 70/SR 1). This phase includes ramps over the railroad connecting the bypass to existing US 45 and a connector to SR 18 in the vicinity of Raines Springs Road. It also includes two optional alignments on the north end of the project. Phase 1 is 5.25 miles long. The proposed SR 18 re-alignment adds an additional 1.53 miles to the project length, for a total length of 6.78 miles.

Phase 2: The southern terminus of Phase 2 is on the east side of US 45, opposite Seavers Road. The new alignment intersects US 45 again north of Edwards Drive and Bonwood Industrial Park, across US 45 from the southern terminus of Phase 1. Phase 2 includes an interchange at this location. Phase 2 is 2.22 miles long.

From the southern end of the project at Seavers Road (Phase 2) north to Boone Lane (Phase 1), the typical section proposed in the near term is a divided roadway with variable median width, two travel lanes in each direction, paved inside shoulders and outside shoulders. The minimum proposed right-of-way is 250 feet. Sufficient right-of-way will be purchased to accommodate six lanes in the future if traffic warrants such an expansion. A six-lane US 45 Bypass Extension is provided for in the High Priority Project (HPP) allocation, so this meets the legislative intent.

From Boone Lane north to Airways Boulevard in Phase 1, a four-lane section is proposed with two lanes in each direction. A center barrier and inside shoulders will separate the travel lanes. To minimize impacts to the wetland areas in this segment of the project, the proposed slope has been reduced from the standard 6:1 slope to a 4:1 slope in the near term. If six lanes are warranted in the future, fill could be placed on the slope to create a 3:1 slope within the four-lane section footprint. The minimum proposed right-of-way is 200 feet.

Raines Springs Road, between SR 18 and the proposed bypass, would be widened from two travel lanes to add a center turn lane. This road will be designated as SR 18 providing a direct connection to US 45. The segment of SR 18 between US 45 and Raines Springs Road will no longer be designated as SR 18 and the responsibility for maintenance of the existing road transferred back to the City. Widening will either be symmetrical or to the east (if feasible) in the vicinity of the residences on Raines Springs Road. Driveways to all residences and at Edwards Road into the Bonwood Industrial Park will remain open. Slight modifications to the alignment at the north and south of this improvement segment would be required. Through the NEPA process with local and state government agencies, and public involvement it was determined there was overwhelming support that the bypass should connect with the SR 18 planned improvements. SR 18 alternative selection recommendations were coordinated with the US 45 alternates.

If Option C-1 is selected at the northern end of the project, from the point where the proposed bypass intersects the existing bypass to the end of the project south of Airways Boulevard, the project will retain the existing lane configuration and right-of-way (4 lane divided within approximately 160' of right-of-way).

Environmental Impacts

The **No-Build Alternative** will have no adverse environmental impacts, however, the level of safety in the area could deteriorate through an increase in crashes as traffic along US 45 increases.

Table S-1 provides a summary of the impacts of the **Build Alternative**.

The primary adverse impacts identified are to:

- Wetlands, streams and other water bodies
- Floodplains
- Farmland
- Residences through displacement or noise
- Hazardous materials

The US Fish and Wildlife Service stated that the project was not likely to affect the federally endangered Indiana bat, but requested that tree cutting be limited to certain months.

Habitat for several state-listed species is present in the project area, but species were not observed during the site visit.

The primary beneficial impacts are to:

- Improvement to emergency vehicle response times
- Safety
- Economy
- Increased level of service for traffic traveling between north and south Jackson

Other resource areas will be impacted, such as Land Use and Historic Resources, but the impacts will not be adverse. No impacts were found to air quality, archaeological sites, recreational resources, Section 4(f) resources or Wild and Scenic Rivers.

The impacts of the **Build Alternative** are summarized in Table S-1.

Table S-1: Potential Impacts of the Build Alternative(s)

	Units	Phase 1, Alternative C	Phase 1, Alternative C with Option C-1	Phase 2, Alternative C
PROJECT FEATURES				
Project Length	miles	6.78	7.08	2.22
Estimated Construction and ROW Costs (2018 – year of expenditure dollars)	\$ millions	162.9	154.0	147.9
IMPACT CATEGORY				
LAND USE				
Land Use		Direct conversion of land to highway ROW.	Direct conversion of land to highway ROW.	Direct conversion of land to highway ROW.
FARMLAND				
Prime and/or Unique	acres	71.9	71.9	21.1
Total Acres in Corridor	acres	174.5	174.5	86.2
Total Acres to be converted Directly or Indirectly	acres	29.8	29.8	12.9
SOCIAL & ECONOMIC				
Social/Community Cohesion		No adverse impacts to established neighborhoods	No adverse impacts to established neighborhoods	No adverse impacts to established neighborhoods
Community Services		No adverse effect, beneficial effect of improved travel time for emergency response vehicles	No adverse effect	No adverse effect
Environmental Justice		No disproportional impact to minority or low income populations	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C

	Units	Phase 1, Alternative C	Phase 1, Alternative C with Option C-1	Phase 2, Alternative C
Residential Relocations	number	29	29	18
Business Relocations	number	4	4	1
Non-Profit Relocations	number	0	0	0
AIR QUALITY				
Air Quality	effect	No impact	No impact	No impact
NOISE				
Noise	Number Sites affected	46	46	Number included in Phase 1
CULTURAL RESOURCES				
Architectural/Historic Resources		No Adverse Effect	NA	NA
Archaeological Sites		No effect	No effect	No effect
RECREATIONAL RESOURCES				
Recreational Resources	NA	No recreational resources present	No recreational resources present	No recreational resources present
SECTION 4(f) RESOURCES				
Section 4(f) Resources	NA	No Section 4(f) use	No Section 4(f) use	No Section 4(f) use
SECTION 6(f)				
Section 6(f)	NA	No impacts to resources developed with Section 6(f) funding	No impacts to resources developed with Section 6(f) funding	No impacts to resources developed with Section 6(f) funding

	Units	Phase 1, Alternative C	Phase 1, Alternative C with Option C-1	Phase 2, Alternative C
NATURAL RESOURCES				
Floodplain	Resource/ estimated impact / type impact	South Fork of the Forked Deer River/57.5 acres/perpendicular Cane Creek/9.75 acres/perpendicular Bond Creek/2.6 acres/Perpendicular	Same as Phase 1, Alternative C	Meridian Creek/ 5 acres/perpendicular
Stream Crossings	number	10	10	5
Wetlands	number/ acres	22 wetlands/38.56 acres	20 wetlands/24.08 acres	Number included in Phase 1
Threatened and Endangered Federal/State Species	Species/ presence	Indiana bat – The USFWS concurred with findings of the habitat assessment that the project was "not likely to adversely affect" the Indiana Bat	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C
Threatened and Endangered State Species	Species/ presence	Habitat present for: Lamance iris,American ginseng, Red starvine ,Inflated bladderwort, Firebelly darter, Left-bank sedge, Chickasaw darter, and Hatchie burrowing crayfish	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C
Invasive Species	NA	No species on the USDA list were found in the ecological field studies	No species on the USDA list were found in the ecological field studies	No species on the USDA list were found in the ecological field studies
Wild & Scenic Rivers	NA	NA	NA	NA

	Units	Phase 1, Alternative C	Phase 1, Alternative C with Option C-1	Phase 2, Alternative C
PERMITS	May be required	<p>NPDES Stormwater General Permit for Construction Activities (TDEC)</p> <p>Individual or Nationwide Permit Number 14 for Linear Transportation projects for the construction, expansion, modification, or improvements in waters of the US (USACE);</p> <p>Individual or General Aquatic Resource Alteration Permit (ARAP) – General Permit for Construction and Removal of Minor Road Crossings less than 200 linear feet of stream length (TDEC);</p> <p>ARAP – Individual or General Permit for Minor Alterations to Wetlands (TDEC);</p> <p>Individual or Nationwide Permit Number 18 for Minor Discharges of Dredged or Fill Material into all waters (USACE); and</p> <p>Nationwide Permit Number 27 for Aquatic Habitat Restoration, Establishment, and Enhancement Activities (USACE).</p>	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C

	Units	Phase 1, Alternative C	Phase 1, Alternative C with Option C-1	Phase 2, Alternative C
GEOLOGICAL AND SOILS	NA	Soft clays and under consolidated material are potentially present Potential perched water table conditions over consolidated clay layers may be present.	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C
ENERGY	NA	The amount of energy required to construct a highway project of this type is substantial, but it is temporary in nature, and generally leads to reduced operating costs once the project is completed.	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C
HAZARDOUS MATERIALS	Number of sites	2	4	None

Areas of Controversy and Unresolved Issues

There are no major areas of controversy or any substantial unresolved issues related to the proposed highway improvement. Agencies have expressed concerns which are included in Appendix D. TDOT and the City of Jackson will continue to work with agencies and the public to identify a project that can move forward to the right-of-way and construction phases, once funding for future phases has been identified.

Other Major Actions

Improvements to SR 18 are planned for south of the project area. No other major actions are planned by any other governmental agency in the project vicinity at this time.

Other Required State/Federal Actions

The following permits may be required:

- NPDES Stormwater General Permit for Construction Activities for coverage of the entire project site (TDEC Water Pollution Control);
- Nationwide Permit Number 14 for Linear Transportation projects for the construction, expansion, modification, or improvements in waters of the US (USACE);
- Aquatic Resource Alteration Permit (ARAP) – Individual Permit (TDEC);
- ARAP – Individual Permit for Alterations to Wetlands (TDEC);
- Individual Section 404 (USACE) permit; and
- Nationwide Permit Number 27 for Aquatic Habitat Restoration, Establishment, and Enhancement Activities of tidal and non-tidal wetlands and riparian areas and the restoration and enhancement of non-tidal streams and other open waters (USACE).
- TDEC Water Pollution Control has issued a general permit for Alteration of Wet Weather Conveyances, so no permit is required (coverage is automatic without notification).

SAFETEA-LU Statute of Limitations

A Federal agency may publish a notice in the Federal Register, pursuant to 23 USC 139(l), indicating that one or more Federal agencies have taken final actions on permits, licenses or approvals for a transportation project. If such notice is published, claims seeking judicial review of those Federal agency actions will be barred unless such claims are filed within 150 days after the date of publication of the notice, or within such shorter time period as is specified in the Federal laws pursuant to which judicial review of the Federal agency action is allowed. If no notice is published, then the periods of time that otherwise are provided by the Federal laws governing such claims will apply.

LIST OF ACRONYMS

AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
APE	Area of Potential Effect
APR	Advance Planning Report
ARAP	Aquatic Resource Alteration Permit
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CFR	Code of Federal Regulations
EA	Environmental Assessment
EPA	Environmental Protection Agency
FCI	Functional Capacity Indices
FPPA	Farmland Protection Policy Act
FHWA	Federal Highway Administration
GIS	Geographic Information System
HPP	High Priority Project
JEA	Jackson Energy Authority
LOS	Level of Service
LRTP	Long Range Transportation Plan
MLS	Multiple Listings Service
MPO	Metropolitan Planning Organization
MSATs	Mobile Source Air Toxics
MW	Monitoring Well
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWSRS	National Wild and Scenic River System
ROW	Right-of-Way
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SHPO	State Historic Preservation Office

SIP	State Implementation Plan
SR	State Route
STIP	State Transportation Improvement Program
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
TESA	Tennessee Environmental Streamlining Agreement
THC	Tennessee Historical Commission
TIP	Transportation Improvement Program
TNM	Traffic Noise Model
TPR	Transportation Planning Report
TWRA	Tennessee Wildlife Resources Agency
UGB	Urban Growth Boundary
USACE	US Army Corps of Engineers
USDA	US Department of Agriculture
USFWS	US Fish and Wildlife Service
UST	Underground Storage Tank
UT	University of Tennessee
VMT	Vehicle Miles Traveled

ENVIRONMENTAL COMMITMENTS

The project will be developed in accordance with the Tennessee Department of Transportation's *Standard Specifications for Road and Bridge Construction*, which addresses sediment and erosion control and siltation; channelization; floodplains; construction impacts; utility relocation; and traffic maintenance and detours. Best Management Practices will be stringently implemented throughout the construction period.

Project-specific environmental commitments are outlined below:

During the design phase, construction methods such as “top-down” or “progressive” construction will be evaluated to minimize impacts to wetlands along Riverside Drive. These methods alleviate the need for a haul road and substantially minimize ground disturbance.

The design selected for areas in which the project encroaches into floodplains, will be supported by analysis of design alternatives with consideration given to: capital costs and risks; and economic, social and environmental concerns. A detailed hydraulic analysis will be completed in the design phase.

During the design phase, to minimize impacts to the wetland areas from Boone Lane north to Airways Boulevard the proposed slope will be reduced from the standard 6:1 slope to a 4:1 slope for a four lane (two lanes in each direction) section. If six lanes are warranted in the future, fill could be placed on the slope to create a 3:1 slope within the four-lane section footprint.

Attempts should be made to only remove trees with a DBH (diameter at breast height) of five inches or greater from October 15 through March 31 to minimize potential for harm to the Indiana bat.

A geotechnical study will be undertaken to identify whether there are soft clays or perched water table conditions above clay and the Falaya soils, known to be present throughout the alignment of the Build Alternative.

During project design, coordination with the West Tennessee Railroad, regarding the crossing of the operational line north of the Bonwood Industrial Park will occur.

During project design, coordination with the CSX Railroad, regarding the crossing of the operational line south of Airways Boulevard will occur.

Phase 2 environmental investigations will be undertaken for the sites impacted by the selected alignment.

Access for bicyclists under Phase 1 and through the interchange under Phase 2 will need to be considered in future project design.

Environmental Assessment

Southern Extension of State Route 186 and the US 45 Bypass
from State Route 1 (US 70/Airways Boulevard)
to State Route 5 (US 45/South Highland Avenue)
Jackson, Madison County, Tennessee

Submitted Pursuant to the
National Environmental Policy Act of 1969
42 U.S.C. 4332(2)(c)

Lead Agencies:

US Department of Transportation
Federal Highway Administration
Tennessee Department of Transportation

Cooperating Agencies:

US Army Corps of Engineers, Memphis District

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1.0 PURPOSE AND NEED FOR ACTION

1.1 Introduction

The City of Jackson, in cooperation with the Office of Local Programs and Environmental Division of the Tennessee Department of Transportation (TDOT) and the Federal Highway Administration (FHWA), is preparing a National Environmental Policy Act (NEPA) Environmental Assessment (EA) for the proposed Southern Extension of State Route (SR) 186 and the US 45 Bypass (US 45 Bypass, hereafter), from SR 1/US 70 (Airways Boulevard, hereafter) to SR 5/US 45/South Highland Avenue (US 45, hereafter) in the City of Jackson and Madison County, Tennessee. A map of the project in its regional context is shown in Figure 1-1, and a project location map is included as Figure 1-2.

The project is proposed to utilize funding from FHWA and thus is subject to the requirements of NEPA. This document is prepared to meet NEPA requirements. Both FHWA and TDOT are lead agencies for the proposed project with the US Army Corps of Engineers (USACE), Memphis District, participating as a cooperating agency.

NEPA requires that projects receiving federal funding or requiring federal actions (e.g., permits) undergo an environmental review process. An EA is prepared if it is unknown whether a project has the potential to significantly impact environmental resources. If the EA identifies potentially significant impacts, then an Environmental Impact Statement (EIS) must be prepared.

An EA is prepared to: 1) identify alternative solutions that meet the project's purpose and need; 2) provide an assessment, both positive and negative, of the effects of the alternatives selected to move forward in NEPA; and 3) identify measures to avoid, minimize, or mitigate negative effects. This assessment allows decision-makers to consider effects on the environment along with other important considerations such as need, feasibility and cost.



What is the National Environmental Policy Act of 1969 (NEPA)?

NEPA established the protection of the environment as national policy. The Act requires federal agencies to consider environmental issues prior to making decisions on projects that have federal involvement (e.g., funding).

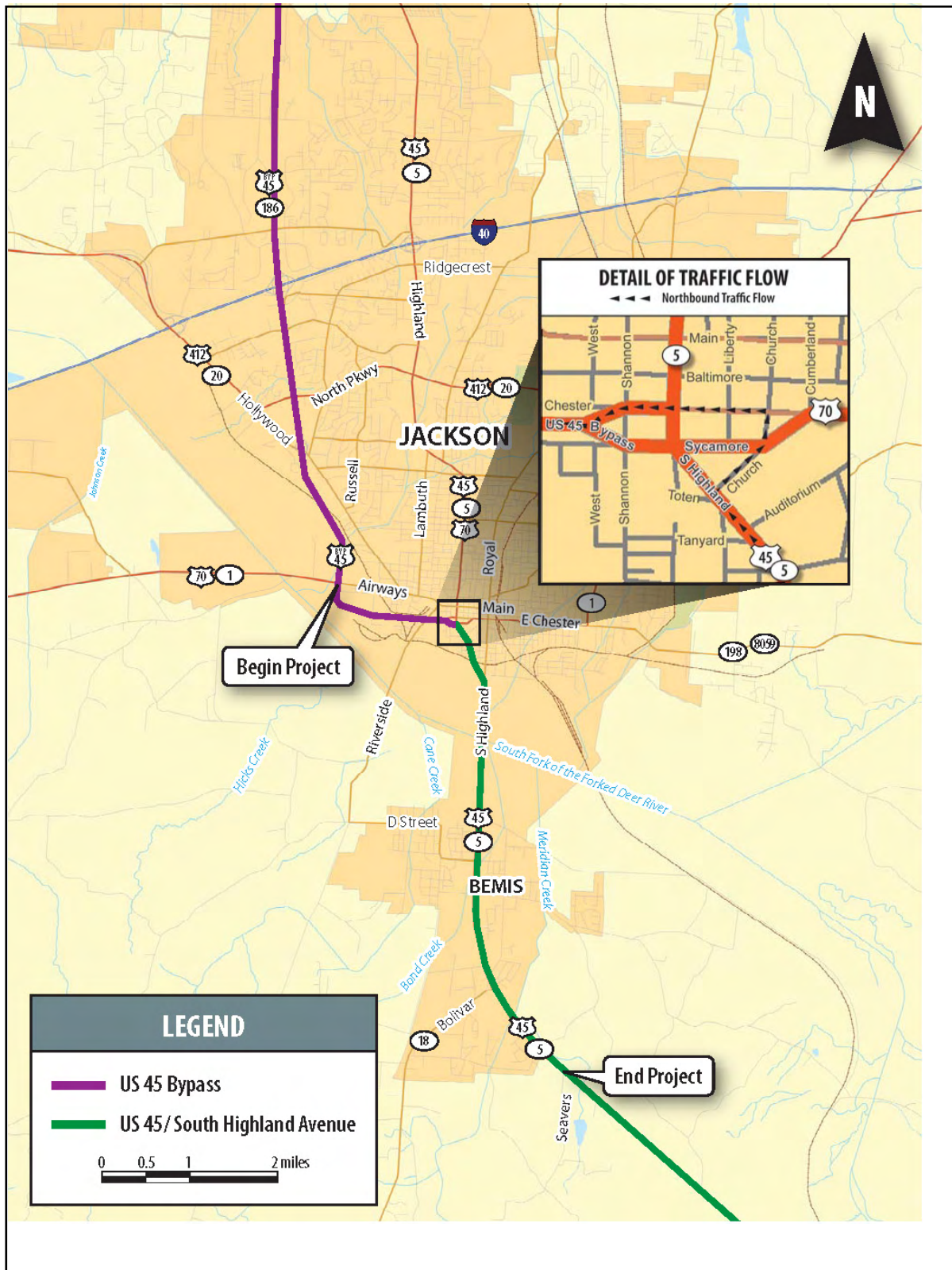
To determine an understanding of the project's benefit or harm to the environment, NEPA requires that impacts be assessed and documented and alternatives be considered, where needed.

This Environmental Assessment is the first of two NEPA documents that will be prepared for the proposed project.

Figure 1-1. General Location Map



Figure 1-2. Project Location Map



The purpose of the EA is to disclose the effects of a project at a stage in the development process when decision-making can still be shaped by the environmental analysis and by the comments of agency, local government and public reviewers. If it is determined the proposed project does not have a significant adverse effect on the environment, the FHWA will issue a Finding of No Significant Impact (FONSI).

1.2 Project Background

The study area, located within the City of Jackson and Madison County, Tennessee, is within the Jackson Area Metropolitan Planning Organization (MPO) district. The project area is between the intersection of US 45 and Seavers Road on the south and the intersection of the US 45 Bypass and Airways Boulevard west of downtown Jackson on the north.

Existing land uses within the study area include sparse residential, commercial, industrial and institutional development along existing US 45 and the US 45 Bypass. Wetlands and scattered commercial and low-density residential uses are found along Riverside Drive, which is parallel and to the west of US 45.

In both 1999 and 2003, tornados left debris blocking US 45 temporarily cutting off access to southern portions of the city and county. Following the 2003 tornado, the City of Jackson, Madison County, and the MPO agreed that a need existed for improved access between north and south Jackson, for both congestion and safety reasons. At this time, the City initiated discussions with TDOT about a possible southern extension of the US 45 Bypass. The bypass would provide an alternate route to and from south Jackson for through traffic and an alternate route in the event of an emergency blocking the major crossing of the South Fork of the Forked Deer River on US 45. Since that time, the City has worked with TDOT to explore options to solve the transportation problems identified.

In 2008, TDOT approved a Transportation Planning Report (TPR) for the Southern Extension of the US 45 Bypass. The TPR presented a preliminary purpose and need for the project, potential corridors into which alternatives could be developed in the NEPA process and environmental screening of the corridors. Coordination with stakeholders was also undertaken and documented. The TPR has served as the basis for the NEPA process, linking NEPA and planning.



What is a TPR?
TDOT's Transportation Planning Report (TPR) process involves developing a purpose and need, evaluating options to meet the identified need, and conducting preliminary environmental screening. This information provides the framework for NEPA and is intended to streamline project development.

1.3 Need for the Project

The project is intended to address transportation needs, which have been identified through research, analysis and coordination with local officials, agencies and the public.

The transportation needs to be addressed by the proposed project are as follows:

- Inadequate crossings of the South Fork of the Forked Deer River;
- Safety issues on the US 45 Bypass and US 45;
- Improved system linkage to accommodate existing and projected traffic;
- Inadequate infrastructure to accommodate growth and economic development; and
- Fulfillment of the legislative mandate to develop an extension of the US 45 Bypass as defined in the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) High Priority Project (HPP) appropriation.

Inadequate Crossings of the South Fork of the Forked Deer River: US 45 serves as the only major north – south crossing of the South Fork of the Forked Deer River, connecting downtown Jackson with residential, commercial and industrial development and the community of Bemis to the south. In both 1999 and 2003, debris from tornadoes that struck the Jackson area caused temporary blockages of US 45, cutting off portions of the city from access to police, fire, hospitals, other emergency services and utility providers. Figure 1-3 illustrates the paths of tornadoes through Jackson.



Temporary US 45 blockage caused by the 2003 tornado

Riverside Drive provides the only additional crossing of the South Fork of the Forked Deer River that connects north with south Jackson. On occasion, Riverside Drive is blocked due to flooding of its lower elevation bridges and roadway. In addition, Riverside Drive does not have the facilities or capacity to serve as an alternate route when incidents close US 45. It has only two narrow lanes and little or no shoulders along the route.

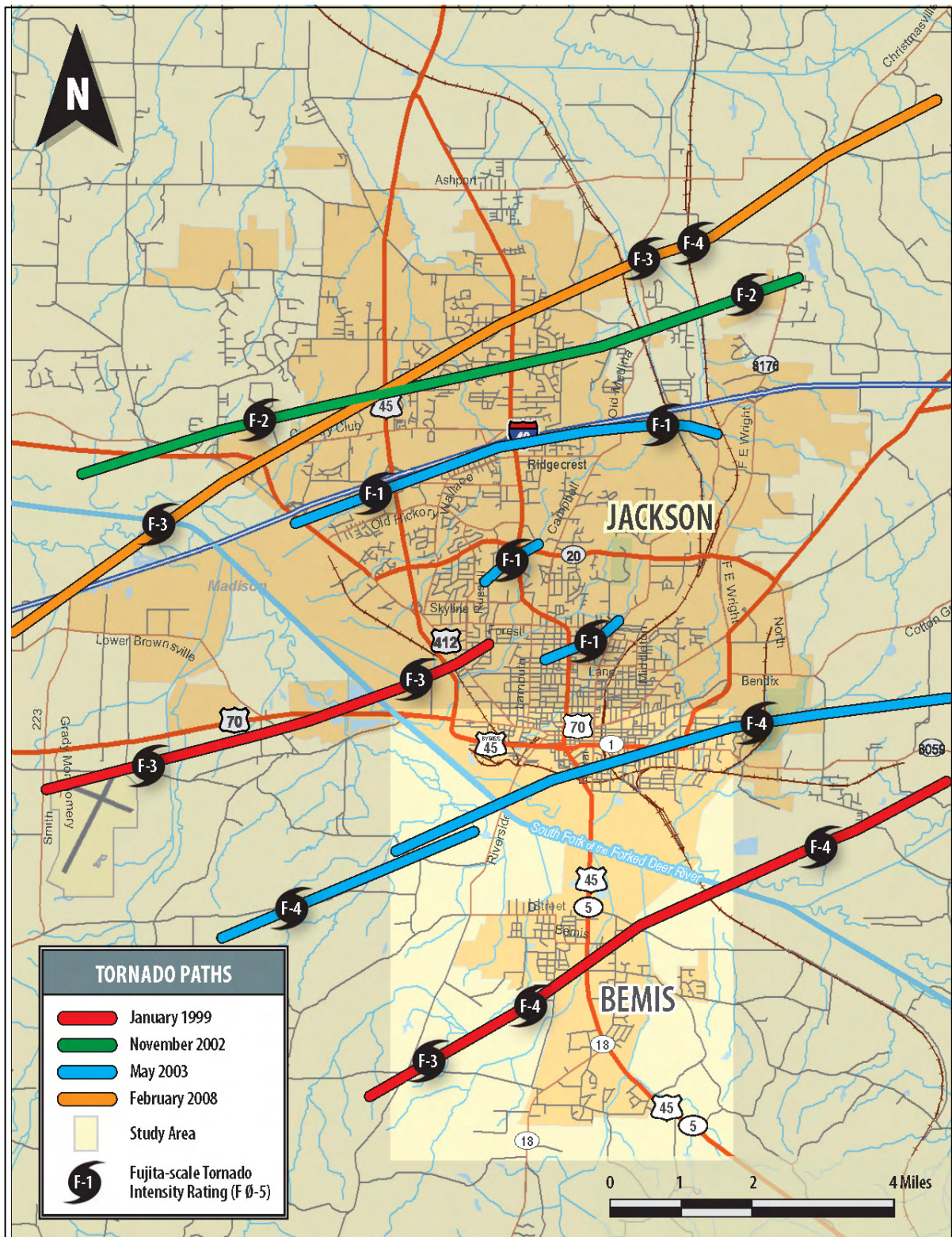


Riverside Drive the only alternate route through south Jackson

Even without the hazards created by natural and man-made disasters, daily traffic congestion on US 45 makes it difficult for police and fire vehicles to respond to calls that come from southern areas of the city. Representatives from both the police and fire department reported that they

Figure 1-3. 1998-2008 Tornado Paths

(Information provided by City of Jackson)



have used Riverside Drive to avoid congestion on US 45, and decrease response time during peak traffic hours even though the Riverside Drive route requires traveling a longer distance. Interviews with representatives of emergency service providers in Jackson revealed the following issues and concerns:

- During past storms in areas where debris blocked US 45, emergency response vehicles had to detour through neighborhoods to respond;
- Police would prefer an alternate route because heavy traffic on US 45 results in delayed response times;
- There are no dispatch hubs for ambulances south of the South Fork of the Forked Deer River bridge crossing;
- Both extraction vehicles owned by the fire department are stored north of the river and the hospital is north of the river;
- A closure on US 45 could result in a delay of 20 minutes to one hour in emergency response time to locations in south Jackson; and
- A closing of the US 45 crossing of the river could prevent the Jackson Energy Authority (JEA) from moving materials and equipment to south Jackson to restore service to customers. In fact, JEA has considered a back-up plan that would use boats to move equipment from their facility to the south side of the river.



Tornado damage along US 45

An improved or additional river crossing is essential for ensuring public safety and access to services both on a daily basis, and particularly in the case of a natural disaster or other emergency. As reported by emergency services providers, Riverside Drive is already utilized, particularly at peak traffic hours, to avoid the US 45 congestion.

Safety Issues: Safety deficiencies currently exist on the subject segments of US 45 and the US 45 Bypass. Crash rates and the types of crashes that have occurred indicate a conflict between local traffic using US 45 to access area businesses and services and through traffic and trucks that make use of US 45 to reach destinations beyond Jackson, including Interstate 40 (I-40). Even with existing turn lanes, the frequent stopping and turning movements made by local traffic impede the flow of traffic moving through the region, creating more potential for crashes. The presence of heavy trucks in the downtown area has resulted in crashes and is not only undesirable for motorists but may

also contribute to the perception that US 45 is unsafe, as expressed by local government representatives, stakeholders and the public at early coordination meetings held for the proposed project.

A crash analysis of US 45 and the US 45 Bypass was conducted utilizing crash data compiled by TDOT between 2005 and 2007. The analysis supports the public and local government concerns expressed about safety on US 45 through southern Jackson. The statewide average crash rate for a roadway of the same functional classification is 2.60, while the actual rate for the section of US 45 from the US 45 Bypass to SR 18 is 3.52. An actual crash rate of three times greater than the statewide average for a similar roadway indicates a safety deficiency. Although higher than the statewide average, the actual rate for this segment of roadway is not high enough to indicate that safety is a concern under that criterion. However, the A/C ratio, the critical accident rate, for the above referenced segment of US 45 is 1.22, which indicates that safety deficiencies may exist. During the resource agency and local stakeholder scoping public meetings held thus far in the NEPA process, attendees have indicated that they believe safety is an issue, primarily due to the mixing of local business traffic with regional through traffic, including heavy trucks.

Figure 1-4 illustrates the crashes reported in the study area over the three-year study period. Of the 804 crashes that occurred between Airways Boulevard and SR 18 (Bolivar Highway) during the three study years, 556 took place at intersections. A total of 194 (24 percent) of the recorded crashes occurred at the convergence of US 45, the US 45 Bypass and US 70 (see Figure 1-5). The large number of crashes within this area confirms a perception held by local officials and the public that having local traffic, heavy trucks, and through traffic converge at a central, downtown location is unsafe. A total of 113 (14 percent) of the crashes involved heavy trucks. The number of crashes and type of vehicles involved suggests a need for an alternate route that would separate some of the through traffic from the local traffic.

An examination of detailed crash data lends credibility to the need for safety improvements. From 2005 to 2007, the most recent years for which data was available at the start of this EA, 804 crashes occurred along the existing US 45 study corridor, four of which had fatalities. The four



What is a Crash Rate?

The crash rate is derived from a formula that takes into account factors such as total number of accidents, length of roadway and the time period over which the crashes occurred. An actual crash rate three times greater than the statewide average for a similar roadway indicates a likely safety deficiency. A critical accident rate (A/C Ratio) in excess of 1.0 also indicates that a safety issue may be present.

Figure 1-4. Crash Locations
Source: TDOT 2005 – 2007 Crash Data

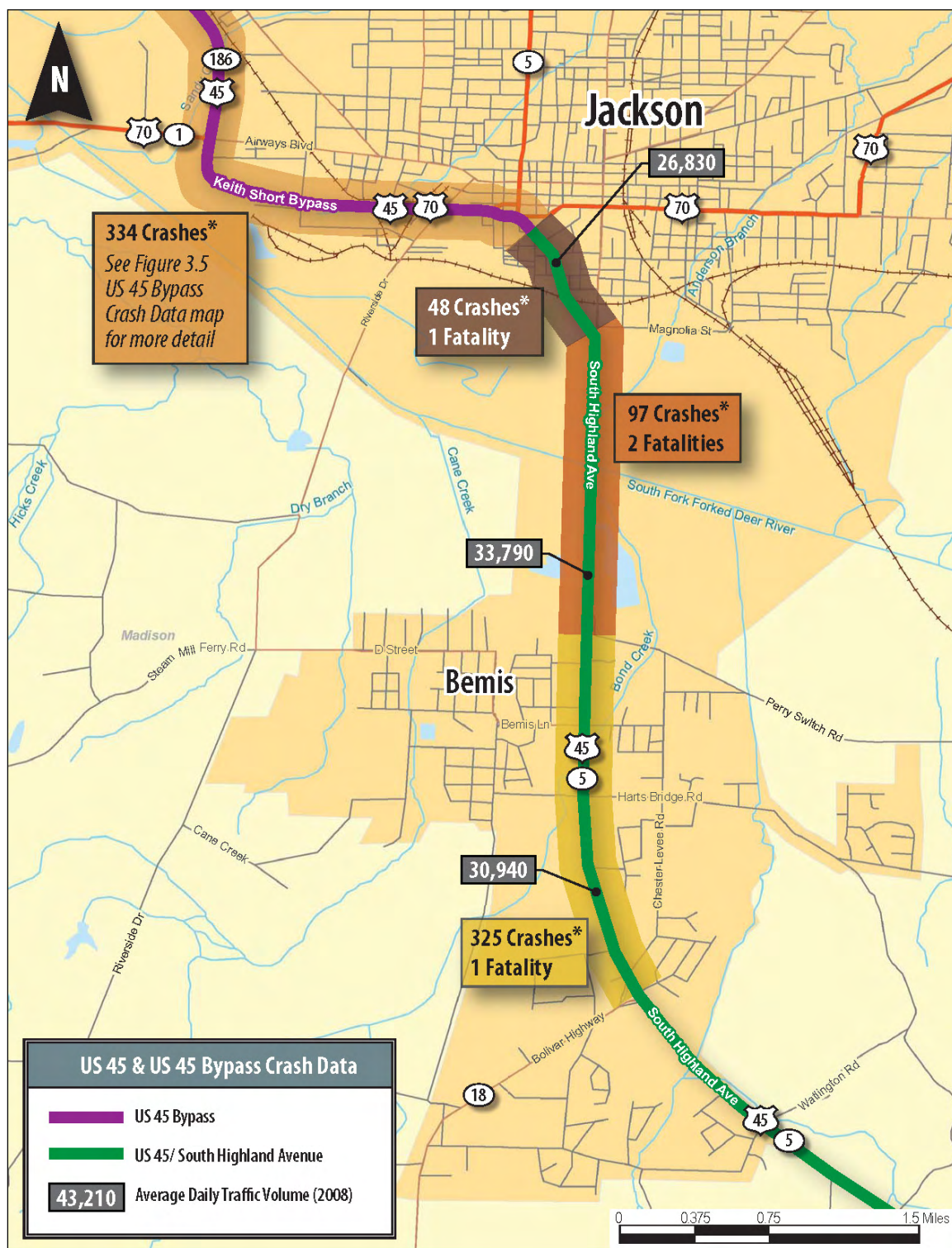


Figure 1-5. Crash Locations in Vicinity of Downtown Jackson**Source: TDOT 2005 – 2007 Crash Data**

fatalities were reported within a two-mile segment of US 45 starting at Beasley Street just south of the US 45 Bypass and US 70 intersection and extending southward to Bond Street which is near the railroad crossing on the north side of Bemis. In 2005, a pedestrian was hit by a speeding driver at the Bond Street intersection with US 45. A second fatality occurred in 2005 when a driver hit a guardrail at the intersection of US 45 and Beasley Street. Two crashes resulting in fatalities occurred in 2006 at the Royal Street intersection with US 45 just south of downtown. Both involved lane departures, one was a single vehicle and the other an angle collision.

Of the total crashes, 116 involved personal injury. Eighteen of those crashes were head-on, 348 were rear end crashes and 223 were angle crashes. The high number of rear end and angle crashes can be attributed in part, to the large numbers of curb cuts (driveways) that allow access from US 45 to businesses in the corridor.

This results in vehicles constantly slowing to turn in and out of driveways and parking lots.

Southside High School is the only school located within the US 45 corridor. It is located on the east side of US 45, across US 45 from the core of the Bemis community. School buses for Southside High School are typically in the area between 6:15 and 7:30 a.m., and again in the afternoons between 2:15 and 3:00 p.m. The school zone begins just north of Rebel Road and extends northward to just north of Harts Bridge Road. There have been 67 crashes within the school zone along US 45, of which 17 involved injuries.

In summary, crash rates and the types of crashes that occurred indicate a conflict between local traffic using US 45 to access area businesses and services and through traffic and heavy trucks that make use of US 45 to reach destinations beyond Jackson. Even with existing turn lanes, the frequent stopping and turning movements made by local traffic impede the flow of traffic moving through the region, creating more potential for crashes. The presence of many heavy trucks in the downtown area is not only unsafe for motorists, as indicated by the crash data, but also provides a potentially unsafe environment for pedestrians as perceived by locals.

Improved System Linkage to Accommodate Existing and Projected Traffic

Traffic data for this project was developed using TDOT count station data, other TDOT traffic data and data from the proposed SR 18 improvement project, which is in the study area for the Southern Extension of the US 45 Bypass project. Based on TDOT's historical traffic data for the project area over the last ten years, it was determined that a growth rate of 2.0 percent would be used to develop the 2011 and 2031 traffic volumes.

As previously stated, in addition to serving as a critical connector in central Madison County, US 45 is a vital link in the regional transportation system. It is a primary north-south transportation corridor that serves western Tennessee, carrying truck and through traffic northward from Mississippi and parts of Tennessee that are south of Jackson northward to I-40 and beyond.

US 45 and the US 45 Bypass are both classified as Urban Principal Arterials within the project area. US 45 is a four-lane divided roadway with a grass median in some locations and five-lanes elsewhere. The US 45 Bypass is also a four-lane divided roadway with a grass median from Airways

Boulevard until it passes over Riverside Drive at which point the median changes to a concrete barrier as the Bypass enters downtown Jackson.

Due to the current configuration of US 45 and the US 45 Bypass, traffic must travel through downtown Jackson, which is operationally undesirable. The current jug-handle intersection configuration at the intersection of US 45/US 45 Bypass/US 70 (as shown in Figure 1-2) is no longer sufficient to accommodate the increased area traffic and projected future traffic. An increase of 48.6 percent is projected between 2011 and 2031. Additionally, truck traffic comprises approximately ten percent of the traffic on US 45 and the US 45 Bypass.

Under the No-Build scenario, Annual Average Daily Traffic (AADT) is as follows:







- 2011 AADT 33,840
- 2031 AADT 50,290

A level of service (LOS) analysis for US 45 and the US 45 Bypass was used to gauge the operational performance of the existing roadway. LOS is a qualitative measure that describes traffic conditions related to speed and travel time, freedom to maneuver and traffic interruptions. There are six levels, ranging from “A” to “F” with “F” being the worst. Each level represents a range of operating conditions. Figure 1-6 illustrates the traffic flow conditions and approximate driver comfort level at each LOS.

The traffic analysis was performed using the Highway Capacity Software (HCS+) for the base year (2011) and the design year (2031), and used procedures from the Highway Capacity Manual 2000 (HCM) for evaluation of multi-lane highway segments. The multi-lane highway methodology estimates measures of traffic operation along a section of highway based on the free-flow speed, lane width and lateral clearance, median type, general terrain characteristics, the number of access points, the percent of heavy vehicles, and traffic data. The traffic data needed to apply the multi-lane highway methodology includes the directional design hour volume, a peak hour factor, as well as the percentage of trucks and recreational vehicles in the traffic stream.

As the name implies, the No-Build Alternative would make no improvements to the existing roadways in the project

Figure 1-6. Definition of Level of Service

A		Free Flow operations. Vehicles can move freely within the traffic stream.
B		Reasonably free flow operations. The ability to move within the traffic stream is only slightly restricted.
C		Flow with speeds at or near free flow. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more effort on the part of the driver.
D		Speeds decline with increasing traffic. Freedom to maneuver within the traffic stream is noticeably limited.
E		The facility has almost reached its capacity. Operations are unstable because there are virtually no gaps in the traffic stream. There is little or no room to move.
F		Breakdowns in traffic flow. The number of vehicles entering the highway section exceeded the capacity.

area aside from regular maintenance and necessary safety improvements. This would not affect or improve the current operational performance of the existing roadway.

The LOS under the No-Build Alternative is:

- 2011 AADT D
- 2031 AADT E

It is important to note that the traffic analysis LOS was determined using HCS multi-lane highway analysis, which does not take into account the traffic signals along the route. Existing US 45 features numerous traffic signals. A representative signalized intersection was analyzed under the No-Build condition and resulted in LOS F.

In summary, improvements are needed to US 45 and the US 45 bypass to accommodate the projected traffic increase that approaches a 50 percent increase from present traffic.

Infrastructure to Accommodate Area Growth and Economic Development: Safe and efficient access to the regional transportation network is essential for movement of freight and goods and to maintaining the region's economic viability. US 45 currently carries approximately ten percent heavy trucks. Congestion on the roadway, as well as the current roadway configuration that forces heavy trucks to travel into downtown Jackson, decreases the efficiency of freight movement through the region. This in turn hinders growth and economic development opportunities.

Toyota has constructed a manufacturing plant in Blue Springs, Mississippi, near Tupelo. The plant will draw on Tier I and II suppliers from within a 100-mile radius of the plant, an area that includes Jackson. Several automotive-related industries in the Jackson area will use US 45 to supply Toyota, including ARJ Manufacturing, Bodine Aluminum, TBDN Tennessee Company and others. The Jackson Area Chamber of Commerce is interested in recruiting additional suppliers to the area and at least one supplier has expressed an interest in locating in the Jackson area. Adequate infrastructure to support on-demand delivery and efficient movement of goods is necessary to attract this sort of supplier. The Chamber reported that while properties remain available in the Bonwood Industrial Park along US 45 south of downtown, interest in these remaining properties is low because of the congestion that heavy trucks encounter at that location. An additional or improved route resulting from an extension



Bonwood Industrial Park located along US 45

of the US 45 Bypass would reduce congestion and increase the appeal of Jackson's available industrial land, enhancing the Chamber's economic development efforts.

Additionally, according to the Jackson Area Chamber of Commerce, between 40 and 50 percent of workers employed in Jackson commute into the city from outlying areas. Much of this commuter traffic is generated in Chester, Hardeman and McNairy Counties south of Jackson, with commuters traveling US 45 into Jackson to reach their jobs. This commuter traffic shares the existing roadway with heavy trucks and local traffic, resulting in increased congestion and LOS. A safe and efficient route for commuting workers is essential for the health of the region's economy.

Fulfillment of Legislative Mandate: In 2005, federal funds were allocated for an extension of the existing US 45 Bypass from Airways Boulevard to US 45 as a part of the SAFETEA-LU HPP Act. The allocation is in Sec. 1701 High Priority Projects Program, which states that "The Secretary is authorized to carry out high priority projects with funds made available to carry out the high priority projects program under this section." Sec. 1702 states that the amount listed in the Highway Projects-High Priority Projects table "shall be available . . . for fiscal years 2005 through 2009 to carry out such project." The table lists the US 45 Bypass project as project No. 4935 in the amount of \$4,000,000, and describes it as a "six lane extension from Airways Boulevard to South Highland Avenue in Jackson [TN]."

A portion of those funds has been allocated to the planning phases of the proposed extension of the US 45 Bypass. While the allocation specifies six lanes, traffic studies have indicated that six lanes are not needed now or 20 years into the future. To meet the legislative intent; however, right-of-way (ROW) for the full six-lane section is planned to be purchased and reserved for future expansion when and if warranted by traffic and development.

1.4 Purpose of the Project

Based on the project need as established above, the purpose of this project is to:

- Provide a second up-to-standard crossing of the South Fork of the Forked Deer River and provide an alternate route for through traffic separate from the developed commercial corridor along existing US 45. An additional route would likely help to

- reduce crashes and improve safety. Separation of local and through traffic under an additional route could also reduce congestion and travel times in the project area, resulting in reduced response times for emergency vehicles and increased community safety;
- Improve safety for travelers on existing US 45 and the section of the US 45 Bypass between Airways Boulevard and the southern project terminus near Seavers Road by removing approximately 50 percent of traffic from existing US 45/South Highland Avenue;
 - Provide additional capacity for the link from US 45 and SR 18 to I-40 to accommodate existing and projected traffic at an acceptable LOS;
 - Improve safety and efficiency of access within the regional transportation network to better facilitate movement of freight and goods; and
 - Develop an extension of the US 45 Bypass as defined in the 2005 SAFETEA-LU HPP appropriation.

1.5 Consistency with Plans

This project is consistent with state, regional, and local planning efforts, as described below.

Jackson Area Transportation Improvement Program (TIP) (for 2011 - 2014) The TIP is a prioritized, fiscally constrained, multi-year list of federally-funded capital and non-capital multimodal transportation projects in the Jackson Area MPO planning area. The MPO included the US 45 Bypass extension in the 2011-2014 TIP as project HPP-4935-20, see Appendix A. The TIP illustration, which the MPO had inserted as a placeholder until a preferred alternative is selected in the NEPA process, is included as Figure 1-7.

Year 2035 Long Range Transportation Plan (LRTP) The Jackson Area MPO published its LRTP on January 25, 2008, which has since been updated. This plan was developed to incorporate continuing, cooperative, and comprehensive transportation planning activities in and around Jackson. Improvements items in the "Future Transportation Needs Plan" include the US 45 bypass as specified in the 2008-2011 TIP, which has been since been updated. The LRTP description of the US 45 improvement project stated: 1) Relocate the US 45 Bypass down abandoned Illinois Central rail corridor (roundhouse and yards) from west of State Street south of

Criminal Justice Complex to existing Highland Avenue and Martin Luther King Jr. Drive as a six-lane divided facility with partial access control and a posted speed of 50 mph and; 2) Widen US 45 (Highland Avenue) from Martin Luther King Jr. Drive to Bolivar Road (SR 18) to six lanes.



Figure 1-7. Illustration of US 45 Bypass Route from 2011 – 2014 TIP

Improvements to SR 18: TDOT is currently preparing a NEPA document for proposed improvements to SR 18 from Bolivar in Hardeman County to Jackson in Madison County. SR 18 is within the study area of the US 45 Bypass project. The SR 18 NEPA process identified a number of residential impacts in the segment of existing SR 18 between Raines Springs Road and US 45. The public also expressed at the early 2010 public meeting for the US 45 Bypass that there should be a better connection from SR 18 to the proposed bypass than traveling the more densely populated section of SR 18 to US 45, and then turning north. The SR 18 and US 45 projects are being closely coordinated to address public and local government comments and concerns.



Existing SR 18

1.6 Logical Termini and Independent Utility

The defined project area is of sufficient size to address environmental concerns on a broad scope. The proposed Southern Extension of the US 45 Bypass has logical termini as its northern terminus would be at the intersection of two major roadways, the existing US 45 Bypass and Airways Boulevard. The southern terminus will be located at US 45 near Seavers Road, south of the more densely-developed areas on the US 45 corridor south of downtown Jackson. The proposed bypass will continue to serve through traffic currently using the proposed bypassed segments of US 45 and the existing US 45.

The study area encompasses a broad area sufficient to ensure adequate assessment of potential environmental impacts and coordination with other regional transportation projects. Therefore, this project is considered to have logical termini. Although the project is being studied as one project for NEPA purposes, it is possible that the improvements could be constructed in phases. The proposed Southern Extension of the US 45 Bypass has independent utility because it does not require the construction of any additional projects to be fully usable as a stand-alone project.



What does Logical Termini and Independent Utility mean?

The project's purpose and need must establish that the project has "logical termini" and "independent utility." "Logical termini" means that the area has rational end points for the transportation improvement and for the environmental review process. "Independent utility" means the project is usable even if no additional future transportation improvements in the area are made.

2.0 ALTERNATIVES

A number of alternatives have been studied over a period of ten years. This section describes the No-Build Alternative and the build alternatives that were considered during the study process.

2.1 No-Build Alternative

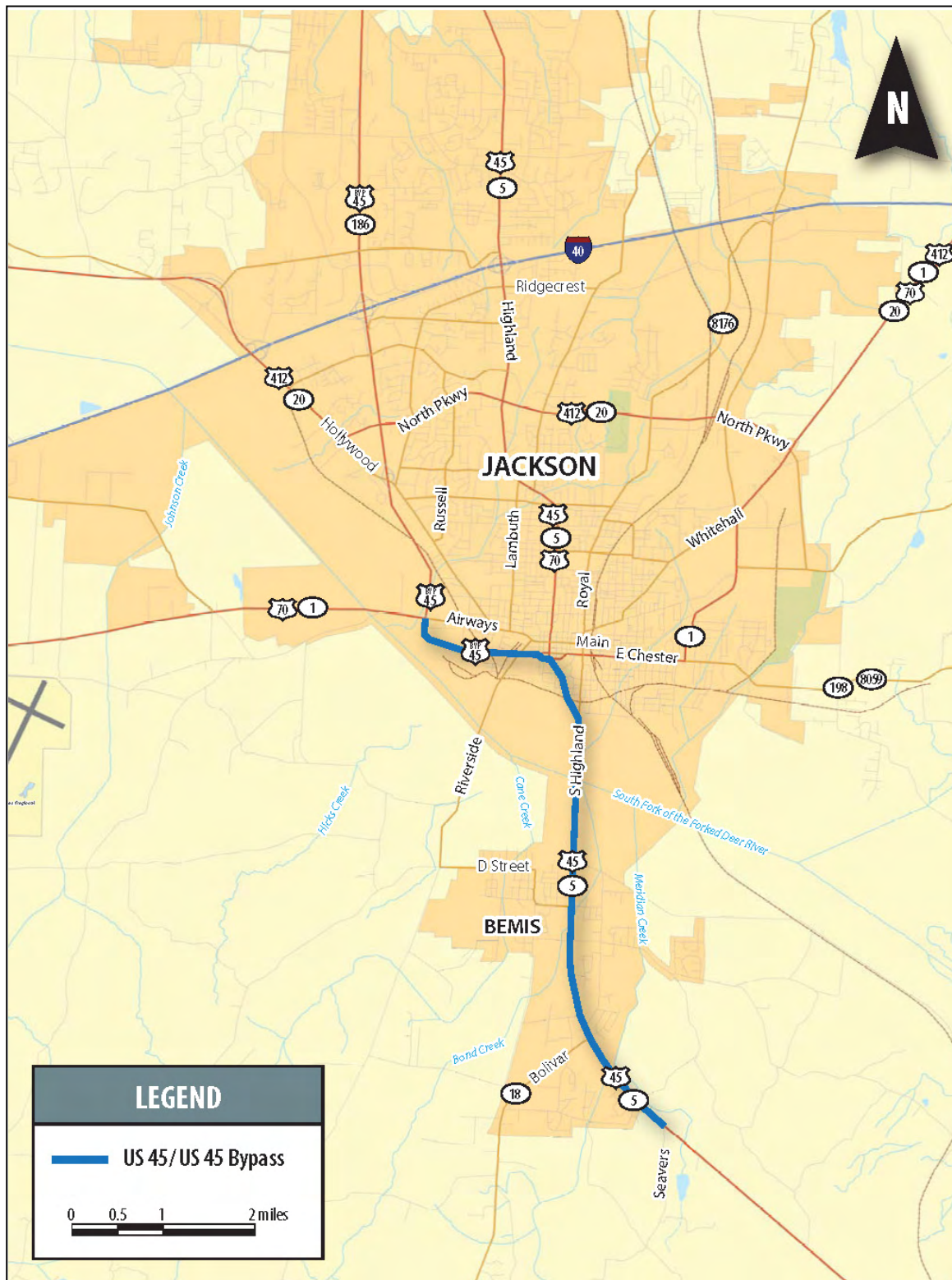
Figure 2-1 depicts the No-Build Alternative. As the name implies, the No-Build Alternative would involve making no improvements to existing US 45 in the project area aside from regular maintenance. This alternative would not affect or improve the current operational performance of the existing roadway. As it does not involve any improvements, the No-Build Alternative would not result in impacts to the natural, social or built environment. The only costs incurred would be those associated with periodic roadway maintenance activities.

The No-Build Alternative does not achieve the project purpose because it does not meet the project needs of providing an additional or improved crossing of the South Fork of the Forked Deer River to protect public safety. It also does not improve the safety and capacity of the existing roadway, which would allow the roadway to accommodate existing and projected traffic and economic development. Lastly, it does not fulfill the legislative mandate for improvements of extension of the bypass between Airways Boulevard and US 45, which are specified in the *Safe, Affordable, Flexible Transportation Equity Act: A Legacy for Users* (SAFETEA-LU) High Priority Projects HPP allocation. This alternative; however, will move forward through the NEPA Phase.

2.2 Alternatives Previously Considered

Between 2001 and the commencement of the NEPA process in 2009, a number of alternatives were evaluated for the Southern Extension of SR 186 and the US 45 Bypass.

This section chronologically describes the history of the alternatives development process for this project, beginning in 2000 and ending with the commencement of the NEPA process. This lengthy discussion is included as it is felt to be important for reviewers to understand all of the alternatives that have been studied and the agency, stakeholder and public coordination that occurred through the alternatives development process.

Figure 2-1. No-Build Alternative

2.2.1 Description of Alternatives Considered in the Early Planning Process

This section presents a chronological summary of the build alternatives examined between 2000 and 2004.

2000: In January of 1999, a tornado crossed US 45 (South Highland Avenue), resulting in extensive destruction and blockage of the City's only major north-south arterial. This caused great obstacles for emergency and utility workers. According to City representatives, it was this event that spurred early planning efforts for a second roadway to connect north and south Jackson. The City of Jackson approached the Tennessee Department of Transportation (TDOT) in 2000 for assistance with preparing a planning study for an eastern bypass for US 45.

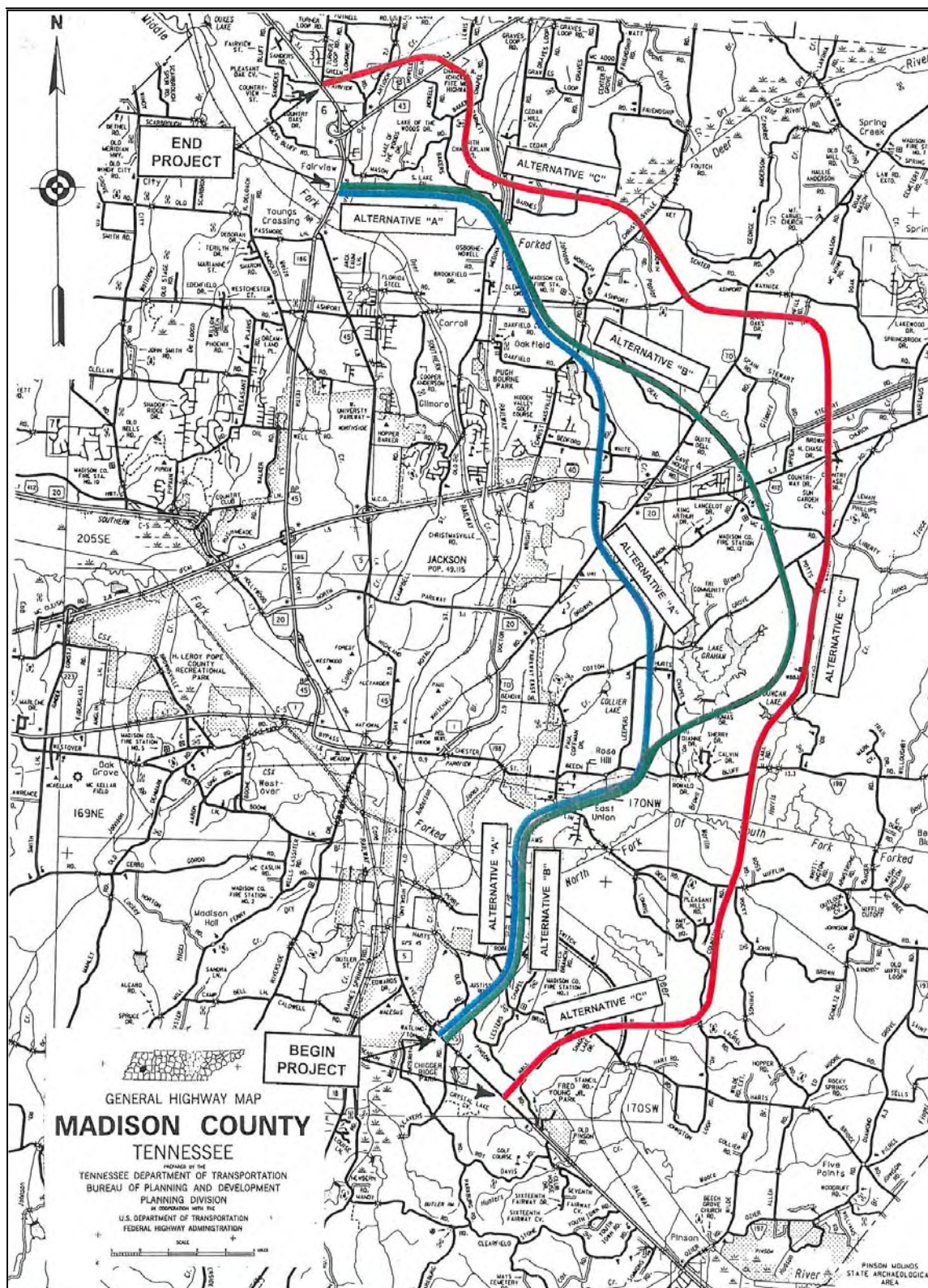
2001: In 2001, TDOT prepared a feasibility study for an eastern bypass route to connect US 45 south of Jackson near SR 18 to US 45 north of I-40. The feasibility study explored three alternatives (see Figure 2-2). These alternatives began south of the US 45 intersection with SR 18, and bypassed the City to the east, crossing I-40 and then ending north of Jackson in the vicinity of the intersection of SR 43 and existing US 45.

A group, "Friends of Harris Creek," formed in opposition to the eastern bypass alternatives and recruited the Sierra Club to support their opposition. The opposition was due to the fact that the alternatives crossed expansive wetlands and numerous streams along the approximate 20-mile route. In 2002, the eastern bypass and two routes to extend the bypass southward from the existing US 45 Bypass were included in the Jackson Metropolitan Planning Organization's (MPO) Long Range Transportation Plan (LRTP).

The very vocal opposition to the eastern bypass routes spurred the inclusion of the project in a 2003 independent review of 15 transportation projects by the University of Tennessee (UT) at TDOT's request. The August 2003 UT study concluded that the area encompassing the proposed alternatives was environmentally sensitive and best avoided. On October 28, 2003, the TDOT Commissioner announced the cancellation of the Eastern Bypass project as a result of the UT 15-project review.

2003: The May 4, 2003, tornados brought to light the problem of insufficient access to South Jackson in the event of an emergency. At this time, emergency services and the Jackson Energy Authority (JEA) could not access

Figure 2-2. 2001 TDOT Feasibility Study - Eastern Bypass



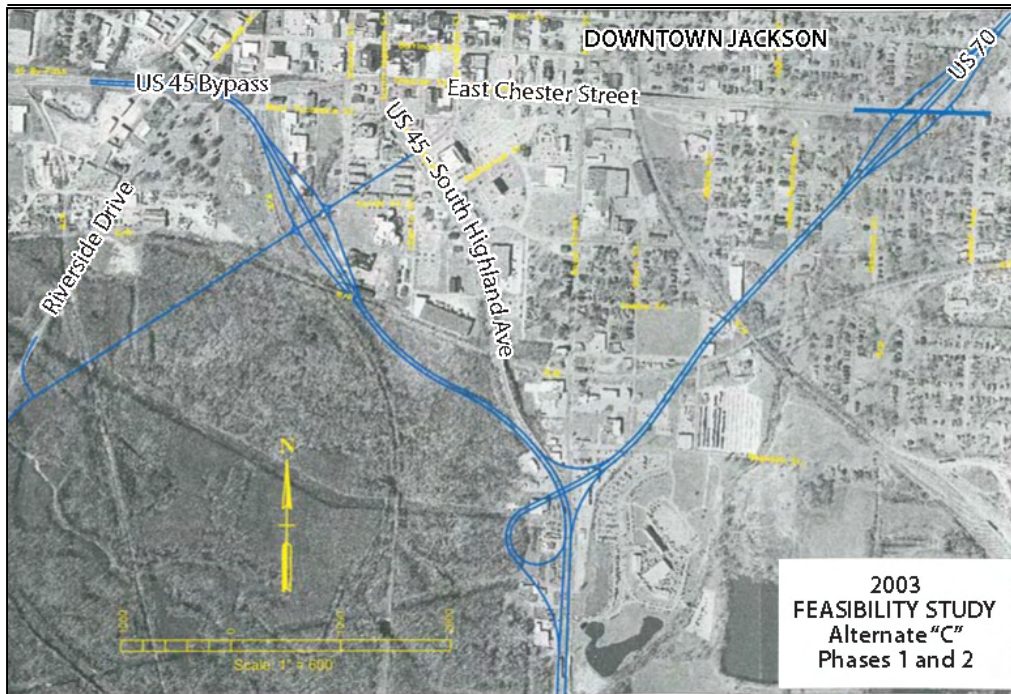
Source: TDOT Project Planning Files

South Jackson due to closed roads, including US 45 north of the South Fork of the Forked Deer crossing, and the fact that US 45 serves as the only arterial route to South Jackson. Following the tornados in 2003, the City contracted with the Urban Land Institute (ULI) to prepare a master plan for the redevelopment of downtown Jackson, which had suffered severe damage from the 2003 tornados. The study recommended the removal of the major north-south traffic flow from the downtown area, where it was seen as incompatible with the desired downtown pedestrian-oriented character. The report recommended moving the intersection of US 45, the US 45 Bypass, and US 70 farther south in order to enhance pedestrian accessibility between the Civic Center and the downtown core.

The City then commissioned a study entitled *Feasibility Study for the Relocation of the US 45/US 45 Bypass/US 70 Junction in Jackson, TN*. The study examined the relocation of this intersection in downtown Jackson as recommended in the ULI report. The intent of the study was to investigate the feasibility of this relocation, and then to recommend alternatives to meet the project need. Figure 2-3 shows Alternative C, which was the study's recommended alternative. While the feasibility study focused heavily on the subject intersection, the report concluded that intersection improvements would do little to address the inadequate capacity along US 45. In addition, the study authors acknowledged that a southern bypass extension would be more effective in diverting traffic from the downtown area.

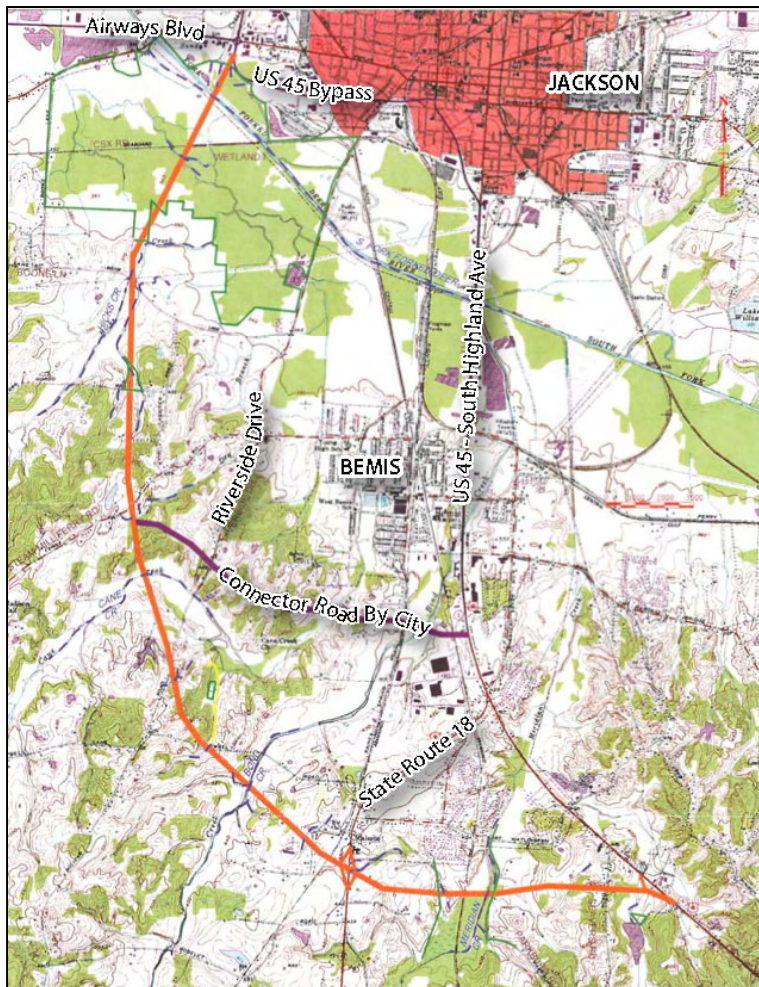
On December 30, 2003, then Madison County Mayor Jerry Gist sent a letter to the TDOT commissioner requesting that TDOT study a potential bypass. The letter was accompanied by a County Commission resolution supporting the concept of a southern bypass route.

2004: In mid-January 2004, TDOT sent the County Mayor a letter acknowledging that TDOT would consider the County Commission resolution. As previously stated, the feasibility study findings had indicated that improvements to the intersection downtown would not solve the transportation problem. TDOT and the City of Jackson continued to coordinate and it was agreed that an Advance Planning Report (APR) examining new options should be prepared. The subject APR was not completed, but TDOT staff developed one alternative (Figure 2-4) for a southern



**Figure 2-3.
Recommended
Alternative C
from 2003
Feasibility
Study**

Source: TDOT
Project Planning
Files



**Figure 2-4.
2004 TDOT Draft APR
Alternative for Southern
Extension of US 45
Bypass**

Source: TDOT Project
Planning Files

bypass which began on the north at the intersection of Airways Boulevard and the US 45 Bypass and ended at US 45 (South Highland Avenue) south of SR 18. In conjunction with the new bypass, the City proposed a new connector road from the new US 45 Bypass west of Bemis to US 45 (South Highland Avenue) south of Bemis.

According to TDOT files, in April of 2004, TDOT invited regulatory agency representatives to review and comment upon the initial southern bypass alternative. Comments on the corridors from representatives of the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), the Tennessee Department of Environment and Conservation (TDEC) and TDOT's Environmental Division were unfavorable due to the wetland and floodplain impacts and the inclusion of a new crossing of the South Fork of the Forked Deer River in all of the project concepts. In a June 2004 memo, an ecologist in TDOT's Environmental Division concluded that "acquiring permits for a new crossing of the Forked Deer River and associated wetlands would be difficult if not impossible."



Wetland area along Riverside Drive

In mid 2004, TDOT, the City and the City's engineering consultant at the time met to discuss agency comments. They acknowledged that agencies had been strongly critical of the alternative that they had reviewed (refer to Figure 2-4). They discussed agency comments, including:

- New crossing of South Fork of the Forked Deer River is possible, but with very high trade rates; finding compensatory wetland acres in region unlikely;
- Consider following Riverside Drive;
- Shift west to around Boone Lane and Westover Road; and
- Shift west to SR 223.

These comments and suggestions were considered in the development of new alternatives (Figure 2-5), which were presented to regulatory agency representatives in August of 2004. One additional proposal, not shown in Figure 2-5, involved a connection to SR 223 as had been requested in one agency comment. This SR 223 proposal was deemed impractical because it would not adequately serve traffic demands and would require additional wetland crossings to connect with US 45 north of Airways Boulevard. It was also felt that traffic would not divert that far and would continue to use the existing roadway system instead, as SR 223 is located approximately five miles west of the

existing US 45 Bypass. TDOT files documenting agency coordination reveal that agency representatives continued to express concerns about wetland and floodplain impacts on the newly-developed alternatives.

In October 2004, representatives from the City and TDOT met with UT, which operates an Agricultural Experiment Station in the northwest quadrant of the US 45 Bypass and Airways Boulevard intersection. TDOT showed UT the alternatives illustrated in Figure 2-5. In a letter dated November 2, 2004 (in TDOT Planning files), UT's Director of Capital Projects expressed that the University could not support the development of the proposed routes due to the immeasurable harm that the routes would cause to the Experiment Station and to taxpayer-financed experiments that had already been underway for many years and were therefore essentially irreplaceable.

As a result of potential impacts to wetlands, floodplains, and to the UT Agricultural Station, as well as the firm stance of permitting agencies opposed to a new crossing of the South Fork of the Forked Deer River, this set of alternatives was dismissed from further study.

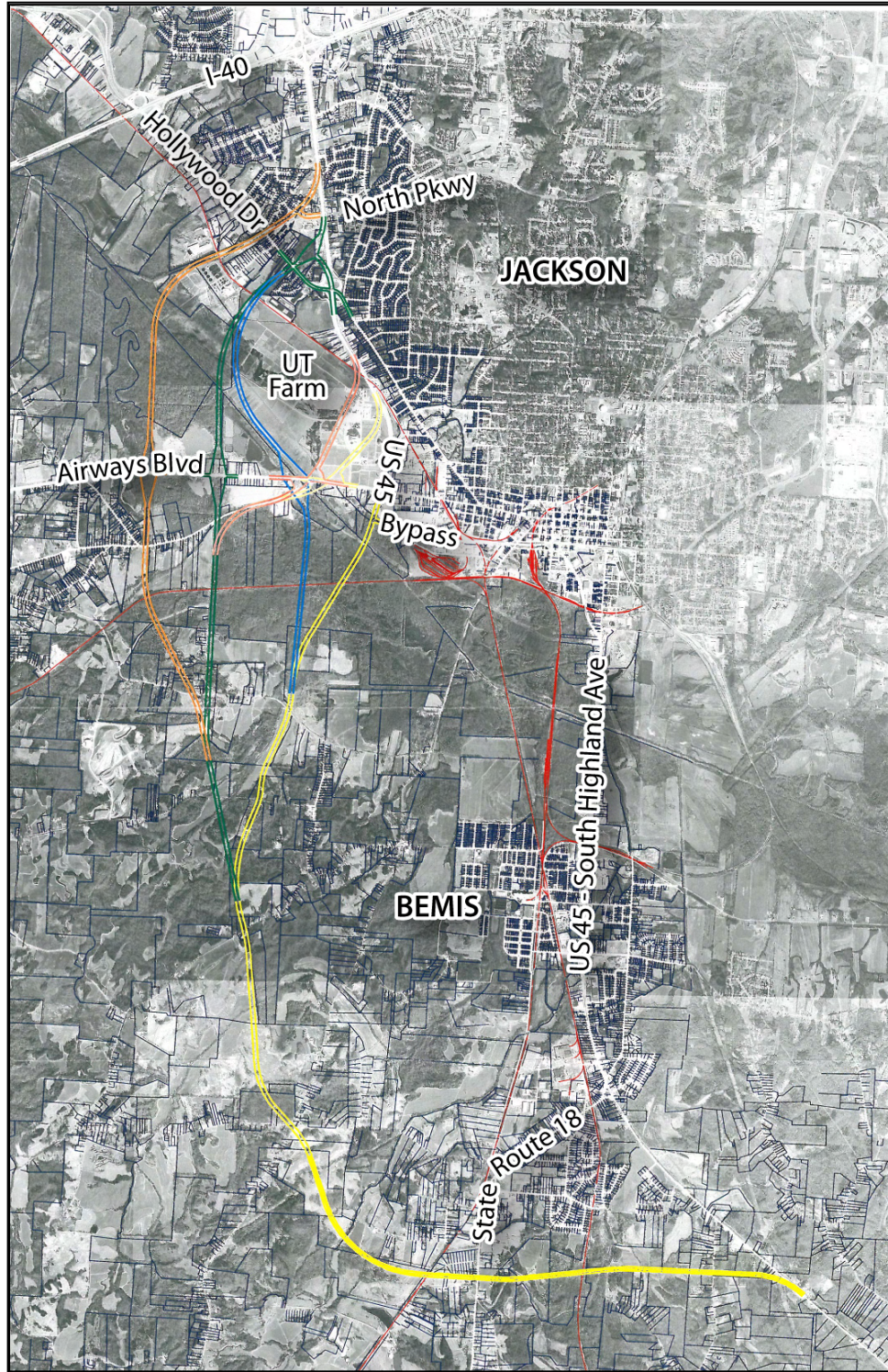
Pre-NEPA Alternatives Summary: Table 2-1 below describes the alternatives evaluated between 2001 and 2004 and provides reasons why they were eliminated from consideration.

Table 2-1. Pre-NEPA Alternatives Studied and Eliminated from Consideration

Year(s)	Name	Reasons for Elimination	Figure #
2001-2003	Eastern Bypass	Major wetland and stream impacts, organized public opposition, UT independent review did not recommend	2-2
2003	Feasibility Study	Study concluded that improvements would not address inadequate capacity on US 45, recommended a southern bypass extension	2-3
Early 2004	TDOT Draft Advance Planning Report	Dropped due to agency comments, including "acquiring permits for a new crossing of the South Fork of the Forked Deer and associated wetlands would be difficult if not impossible"	2-4
August 2004	Address agency comments on early 2004 alternative	Alternatives were not acceptable for one or more of the following reasons: new crossing of the South Fork of the Forked Deer not acceptable, did not meet purpose and need, "immeasurable harm" to UT agricultural farm, effects to low income and/or minority neighborhoods	2-5

Figure 2-5. 2004 Additional Alternatives for Southern Extension of US 45 Bypass (Note: lines on map in red are not alternatives)

Source: TDOT Project Planning Files



2.2.2 Corridors Considered During the TPR Process, 2008-2009 (Pre-NEPA)

This section describes the second phase of alternatives development for the US 45 Bypass Extension. The second phase involved identification of funding and development of a Transportation Planning Report (TPR) that would meet TDOT specifications and subsequently, obtain TDOT approval.

2005-2006: In August 2005, SAFETEA-LU included funding in the HPP Program for a six-lane extension of the US 45 Bypass from Airways Boulevard to US 45/South Highland Avenue in Jackson. In late 2006, TDOT met with the City to discuss how to move the project forward.

2007: In September of 2007, TDOT agreed to match City funds for the project planning phases. In 2008, the TDOT Local Program Office notified the City that they could proceed with the preparation of a TPR and the NEPA process upon TPR approval.

The TPR defined the preliminary purpose and need and examined several previously considered and new corridor options for the southern extension of the existing US 45 Bypass. During the TPR process, a close examination was undertaken of the alternatives evaluated previously. A stakeholder meeting was also held and their input solicited. Given the constraints encountered in earlier studies, the TPR did not consider the previously-studied and dismissed alternatives.

2008 Preliminary TPR Study Corridors: Following review of the past studies and associated coordination and input from the TPR stakeholder meeting, field review, and environmental screening, the Project Team (led by the City and assisted by its engineering consultant for this project and advised by TDOT) began the task of developing TPR study corridors. The team agreed that a new crossing of the South Fork of the Forked Deer River should not be a component of any of the study corridors developed in the TPR process. Since there were two existing crossings in the general study area, planners focused on developing corridors that would utilize these crossings. This constraint limited the number and location of the corridors developed in the TPR.

In August of 2008, the team discussed the three preliminary study corridors, shown as the red, yellow and green corridors in Figure 2-6. The team developed the corridors based on knowledge of past-studied alignments,

environmental constraints, input from the stakeholder meeting, and input from a TDEC representative following the TPR stakeholder meeting.

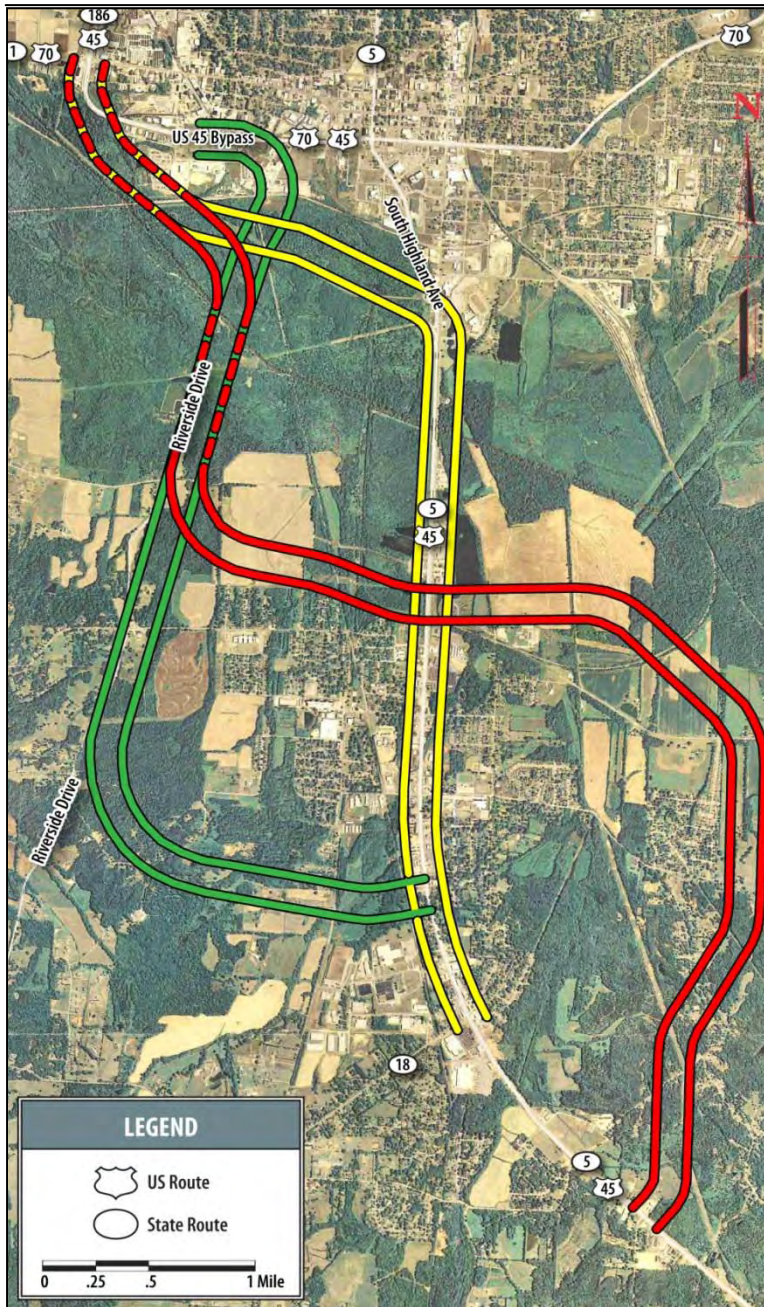


Figure 2-6.
Preliminary TPR Corridors
From TPR, March 2009

Because routes that would meet the purpose and need and avoid a new crossing of the South Fork of the Forked Deer River were very limited, it was determined that one of the corridors should incorporate a section of existing US 45. The corridor developed (i.e., the yellow corridor on Figure 2-6) involved a new location connector that would begin at the south end of the existing US 45 Bypass (just

south of Airways Boulevard) and tie back into US 45 south of downtown near the Fairgrounds. At this point, the corridor followed the existing US 45 ending at SR 18.

It was determined that this corridor did not meet the project need as well as a corridor with a new crossing of the South Fork of the Forked Deer would. Widening the existing roadway and improving the existing river crossing on US 45 would, improve the level of service and safety issues resulting from the jug handle intersection downtown at US 45, US 70 and the US 45 Bypass; however, it would not provide an additional crossing of the river as desired to address public safety concerns.

At an August 2008 meeting of the Project Team, City of Jackson staff expressed the most interest in the green study corridor. This corridor primarily followed the alignment of existing Riverside Drive, turned east in the vicinity of Cane Creek Road south of Bemis, and joined existing US 45 just north of the Bonwood Industrial Park. Discussion by the Project Team concluded that this corridor needed to be shifted or narrowed to avoid impacts to the historic Riverside Cemetery, which is listed on the National Register of Historic Places (NRHP). The City staff preferred the connection to the existing bypass shown in red on Figure 2-6. It was suggested and agreed that this segment of the red corridor become part of the green study corridor. The connector to the bypass at Riverside Drive (shown in green on Figure 2-6) is adjacent to the historic Riverside Cemetery and would be developed as an option to the green corridor.

During discussions of the red study corridor, pertinent information was provided by City staff relating to its viability as a study corridor option. Concern was expressed about the corridor encompassing the old WTJS radio tower and facilities, which are potentially historic and currently in use by the local Optimist Club. Additionally, the red corridor encompassed more of the Falaya soils (poorly drained and indicative of wetlands) than the other study corridor options.

The study team discussed shifting the red corridor farther to the east to more closely parallel the alignment proposed by TDOT in its eastern bypass feasibility study in order to avoid wetlands and the floodplain. This proposal prompted City of Jackson staff to share the general locations of one new commercial development and three planned residential developments. The red study corridor travels through the area for which much of this residential development is planned. Given the anticipated

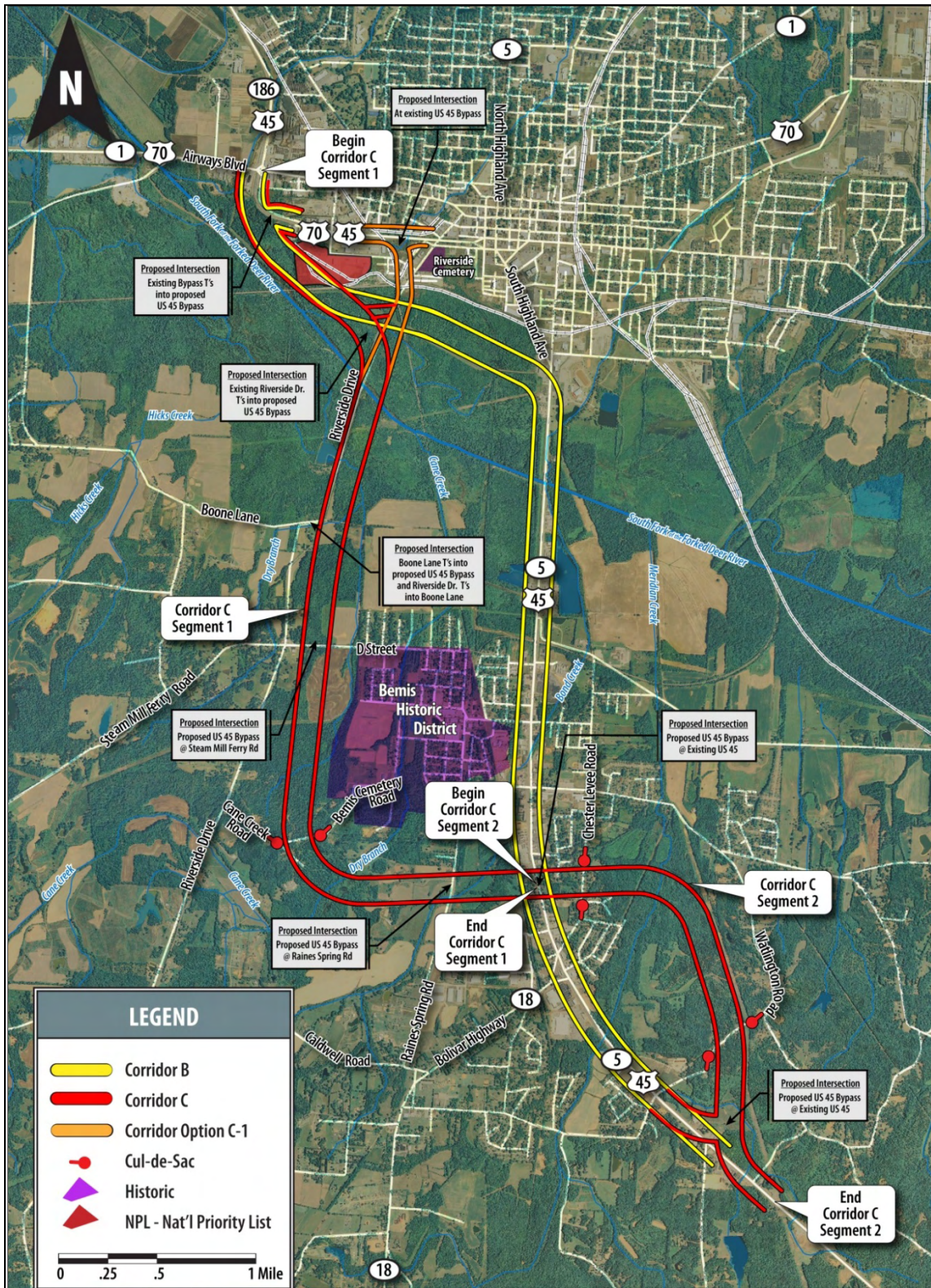
development, the presence of wetlands, poorly drained soils, and the possible historic resource constraints that limit shifts to the existing red study corridor, all agreed that the red study corridor did not appear viable and it was dropped from consideration.

Finally, the team discussed a possible connection between the southern terminus of the green study corridor at US 45 south of Bemis and a short segment in the southern portion of the red study corridor, east of US 45 connecting to US 45 around Seavers Road. This additional piece of the green corridor could help the City accomplish its desire of a connection south of SR 18, while avoiding the pitfalls of the red study corridor. City staff agreed that this connection piece should be added as an option to the green study corridor.

In late August and September 2008, the Project Team worked on refining the two remaining study corridors, yellow and green. These corridors (B, formerly yellow, and C, formerly green) are shown in Figure 2-7. Corridor B, shown in yellow, involved improvements to existing US 45 from Seavers Road south of SR 18 to just south of downtown Jackson, crossing the South Fork of the Forked Deer River using the existing crossing. The corridor included a segment on new location just south of downtown, connecting US 45 south of downtown to the existing US 45 Bypass at Airways Boulevard. This new alignment is similar to the southern bypass extension depicted in Jackson's Transportation Improvement Program (TIP), but is slightly farther south.

Corridor C, shown in red on Figure 2-7, involved extending the existing US 45 Bypass south from Airways Boulevard to US 45 south of the community of Bemis with alignment along existing Riverside Drive and on new location. The Corridor would have begun on new location at Seavers Road south of SR 18 on the east side of US 45 and traveled north then west, crossing Chester Levee Road intersecting US 45 south of Bemis.

Figure 2-7. TPR Corridor Refinements, August – September 2008 (US 45 TPR, March 2009)



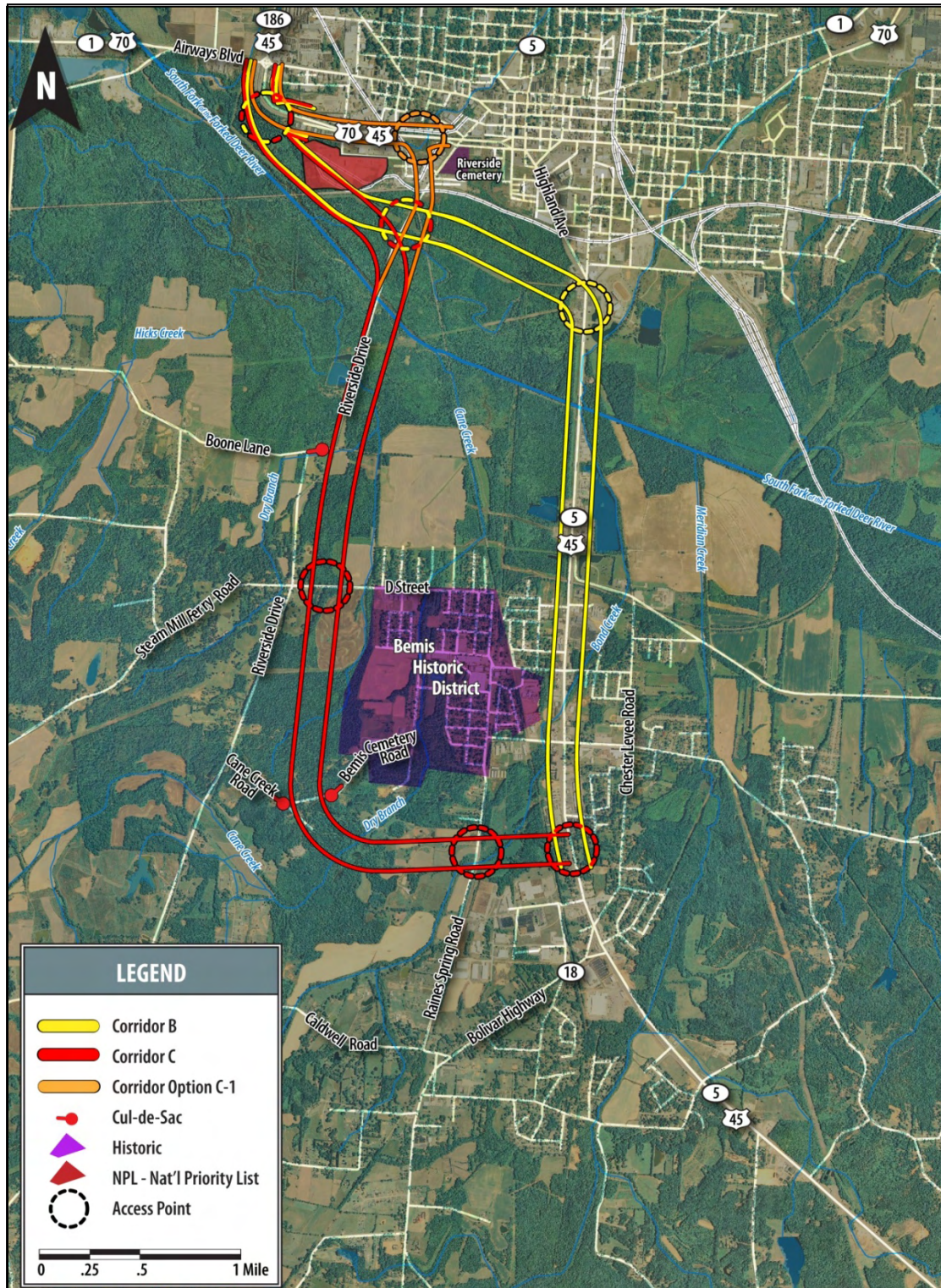
At that point, the corridor continued across US 45 on new location westward. It turned north just south of Cane Creek Road and continued north on new location until it intersected existing Riverside Drive at Boone Lane. It then proceeded north along Riverside Drive, crossing the South Fork of the Forked Deer River within the corridor of the existing crossing. Just north of the river crossing, the corridor turned west to join the US 45 Bypass at Airways Boulevard.

An optional connection on the north end between the US 45 Bypass and Corridor C, known as Corridor Option C-1 and shown in orange on Figure 2-7, was also considered to minimize the length of the bypass extension, to avoid a National Priority List (NPL) hazardous materials site and to provide a more direct connection to the existing US 45 Bypass than Corridor C. The connection ran from the crossing of the South Fork of the Forked Deer River on Riverside Drive north to the US 45 Bypass north of Meadow Street.

Final TPR Study Corridors: The Project Team presented the TPR corridors to TDOT for review. Based on TDOT comments, the Project Team eventually arrived at three alternatives to be fully evaluated in the environmental screening process conducted during the TPR: No-Build Option (A), Corridor B, and Corridor C (shortened to terminate at US 45 south of Bemis per TDOT request). Option A, No-Build, would make no improvements to the existing roadway aside from necessary safety improvements and regular maintenance. The two build study corridors, B and C, are described in more detail below and illustrated in Figure 2-8. These corridors were intended to serve as the basis for the alternative alignments to be developed during the NEPA phase.

Corridor B, shown in yellow on Figure 2-8, consisted of improvements to existing US 45, as well as one connecting segment on new location between US 45 opposite the West Tennessee Fairgrounds and the US 45 Bypass just south of Airways Boulevard. This corridor provided a bypass of the current jug handle at the intersection of US 45 and the US 45 Bypass in downtown. The total length of Corridor B is approximately 4.8 miles. The selection of Corridor B would have added 2.1 miles to the US and State highway systems through the new bypass portion of the corridor between south of Airways Boulevard and US 45 south of downtown.

Figure 2-8. Final TPR Study Corridors (US 45 TPR, March 2009)



In future project planning phases, the TPR stated that it is possible that the 2.1-mile long segment that parallels the existing US 45 Bypass between Airways Boulevard and US 45 just south of downtown could be developed as a stand-alone project. It would partially meet the project need through providing a bypass of downtown, thus improving safety and level of service in the vicinity of the jug handle intersection by allowing through traffic to bypass downtown. It would not; however, provide improvement to traffic safety on existing US 45 south of Jackson, nor would it provide a second adequate crossing of the South Fork of the Forked Deer River. This segment parallels and is slightly south of the bypass shown in the 2011-2014 TIP as project HPP-4935-16. As previously stated, the MPO inserted the illustration as a placeholder until a preferred alternative is selected in the NEPA process.

Corridor C, depicted in red in Figure 2-8, extended from US 45 just south of the community of Bemis to the existing US 45 Bypass at Airways Boulevard. Corridor C would have added 5.3 miles to the US and State highway systems. As previously stated, the section (segment 2) that extended south of Bemis to the east side of US 45 and reconnecting with US 45 around Seavers Road was removed from consideration at the TPR stage at the request of the TDOT Project Planning Division.

Corridor C began at US 45 just north of the intersection of US 45 and Edwards Drive (north of SR 18). A signal would have been required at this location. The TPR stated that in the next study phase when alternatives are developed, consideration would need to be given as to how the new bypass will tie in to existing US 45 at this location. The alignment travels west of US 45, on new location crossing an active West Tennessee Railroad (WTNRR) line that serves and ends at the Bonwood Industrial Park. Research revealed that it carries one train per day. In the next phases of the planning process, the TPR recommended that additional coordination with TDOT and the WTNRR operator should be undertaken to determine if an at-grade crossing is acceptable at this location. West of the WTNRR, the corridor crossed Raines Springs Road. At Cane Creek Road the corridor turned north, passing west of Bemis, crossing D Street, and then intersecting existing Riverside Drive at Boone Lane. This portion of the corridor is approximately 3.15 miles in length. At the Riverside Drive/Boone Lane intersection, the corridor continued north for approximately 0.75 mile, crossing the South Fork of the Forked Deer River within the corridor of the existing roadway bridges on Riverside



At-grade railroad crossing located at the entrance to Bonwood Industrial Park

Drive. At this phase of project planning, it was estimated that one main channel bridge and an indeterminate number of overflow structures would be required to replace the existing bridges. The grade of the new roadway through this area would need to be raised above the existing roadway, as it floods periodically and is within the 100-year floodplain.

North of the River, the corridor had two options to connect to US 45, the main line option (Corridor C), shown as red in Figure 2-8, and Option C-1, shown as orange in Figure 2-8. The main line corridor (C) was on new location, paralleling the river. It joined the existing bypass just south of Airways Boulevard. There the existing bypass would T into the new bypass at a signalized intersection. Partial access control was proposed for the facility. At-grade intersections were recommended for each end of the new bypass (at US 45 and the US 45 Bypass) and at-grade intersections were recommended at D Street and Raines Springs Road along the route.

An optional connection to Riverside Drive is shown on Figure 2-8 (Option C-1). It was agreed that the feasibility of and need for this connection would be studied during the next project phase. Option C-1 followed the existing alignment of Riverside Drive until it reached the CSX Transportation (CSXT) railroad line where it turned slightly northwest to cross Meadow Street and T into the existing US 45 Bypass where a signal would be required. It then followed the existing bypass westward and terminated at Airways Boulevard.

2.3 Development of NEPA Alternatives

The Project Team utilized the TPR corridors, stakeholder input, purpose and need and preliminary environmental screening as a basis for beginning the development of alternatives in the NEPA phase.

2.3.1 Phase 1: Post TPR Research, Coordination and Data Collection

In the first phase of the process to develop NEPA alternatives, the Project Team:

- Conducted environmental screening to supplement the TPR screening: undertook archaeological screening for high probability areas;
- Collected updated information: conducted preliminary field studies to identify location and quality of wetlands near the crossing of South Fork

of the Forked Deer, met with state and federal agencies regarding the National Priority List (hazardous materials) site;

- Undertook data collection to supplement TPR data: collected information from emergency service providers and railroad line usage (WTNRR and CSXT), collected and mapped detailed crash data;
- Held a public meeting and a stakeholder/agency scoping meeting and agency field review: solicited input on the purpose and need and TPR corridors that were slated to serve as basis for NEPA alternatives, analyzed and considered comments received;
- Coordinated with TDOT on the SR 18 selected alternative: Since the City, agencies and the public had stated that SR 18 should have a connection to the US 45 Bypass extension, planners delayed work on the alternative(s) for US 45 pending the SR 18 decision. That decision was made in August, 2010;
- Collected data on the location of the gas main and other utilities on Riverside Drive: JEA had reported the existence of a major gas main on Riverside Drive at the stakeholder meeting and stated that it would be very expensive to move. JEA utility data was acquired and mapped in GIS;
- Confirmed new and planned development in and adjacent to the Study Area; and
- Conducted a preliminary geotechnical analysis: This study was intended to identify geological issues that would need to be considered in the development of project alternatives.

2.3.2 Phase 2: Identify and Develop Alternative(s) to Move Forward In NEPA Process

After completion of Phase 1 of the NEPA alternatives development phase (research, coordination and data collection), the Project Team held a meeting to discuss the findings. Two actions resulted:

- Recommendation to remove TPR Corridor B (consists of new location segment and improving existing US 45 segment) from consideration; and
- Development of a single Build Alternative and a recommendation to move it forward in the NEPA process, along with the No-Build Alternative.

Recommendation to Remove TPR Corridor B from Consideration: The phase 1 tasks produced data that resulted in a recommendation from the Project Team and TDOT to remove TPR Corridor B (part on new location and part along existing US 45—See Figure 2-8) from consideration because it does not fully address the project need, as it does not provide an additional up-to-standard north-south route across the South Fork of the Forked Deer. The alternate route is needed to reduce through traffic on US 45 and is desired by emergency service and utility providers.

The level of service (LOS) analysis conducted for the project found that widening US 45 to six lanes would not accommodate future traffic with an acceptable LOS. Currently, the roadway has an LOS of E; however, the analysis did not take into account traffic signals along the route. The LOS would likely be an F, with the numerous intersections along the route. In the future even if the road was improved to six lanes, a representative intersection analyzed had an LOS of F.

This alternative also was not recommended to move forward because:

- Screening showed that numerous high quality wetlands would be bisected by the new location segment between the existing US 45 Bypass and US 45 just south of downtown;
- The crash analysis showed a high number of crashes along existing US 45 and at the intersection of the bypass and US 45. It was agreed by the Project Team that it is unlikely that improving existing US 45 would reduce the number of crashes and improve safety along the roadway; and
- The City, the public and stakeholders did not support development of an alternative within this corridor.

Participants in the Tennessee Environmental Streamlining Agreement (TESA) accepted this recommendation through the action of signing the TESA Concurrence Point 2 form.

2.3.3 Alternatives Recommended to Move Forward

Two alternatives are recommended to move forward in the NEPA process, the No-Build Alternative (described in Section 2.1) and a single Build Alternative. The build alternative is described in the following section.

2.4 Description of Build Alternative

Using the knowledge gained from reviewing the alternatives development history, the TPR analysis, and the results of Phase 1 of the NEPA alternatives development process, the Project Team developed a single Build Alternative within TPR Corridor C from US 45 just south of Bemis north to Airways Boulevard (Figure 2-9). In addition, to respond to City, public, and agency comments, the corridor has been extended south from the TPR southern terminus north of the Bonwood Industrial Park across US 45 and then southward to again intersect with US 45 in the vicinity of Seavers Road (Phase 2). This option is very similar to one of the TPR corridors (an earlier version of Corridor C, depicted in Figure 2-7) that TDOT did not initially support. However, TDOT, has worked with the Project Team through Phase 1 of the alternatives development process leading to the development of the recommended NEPA Build Alternative and has expressed support for the Build Alternative concept.

Lastly, in response to analysis of how SR 18 traffic would access the proposed bypass, and to public and local government comments at the February 2010 meeting, a segment of re-aligned SR 18 would connect SR 18 to the proposed bypass along the existing alignment of Raines Springs Road.

2.4.1 Traffic Analysis

Figure 2-10 shows the base year (2011) and the design year (2031) projected AADT. Table 2-2 summarizes the AADT and LOS for the Build and No-Build conditions. Under 2031 No-Build conditions, existing US 45 carries a projected volume of 50,290 vehicles per day and operates at LOS E. Under the Build Condition (with Alternative C/C-1), the projected traffic volume is reduced to approximately 25,140 vehicles per day on existing US 45, which corresponds to LOS C. It should be noted, that widening existing US 45 from four to six lanes was also analyzed, and although it results in an acceptable LOS, the signalized intersections along the route would operate at a poor LOS, resulting in long queue lengths. Therefore,



What is the Design Year?

Typically, roadway projects are designed for conditions 20 to 30 years in the future. The future date is known as the design year. The design year is used in planning, environmental studies and engineering evaluations to represent the project's service life. The design year for the US 45 Bypass Extension is 2031.

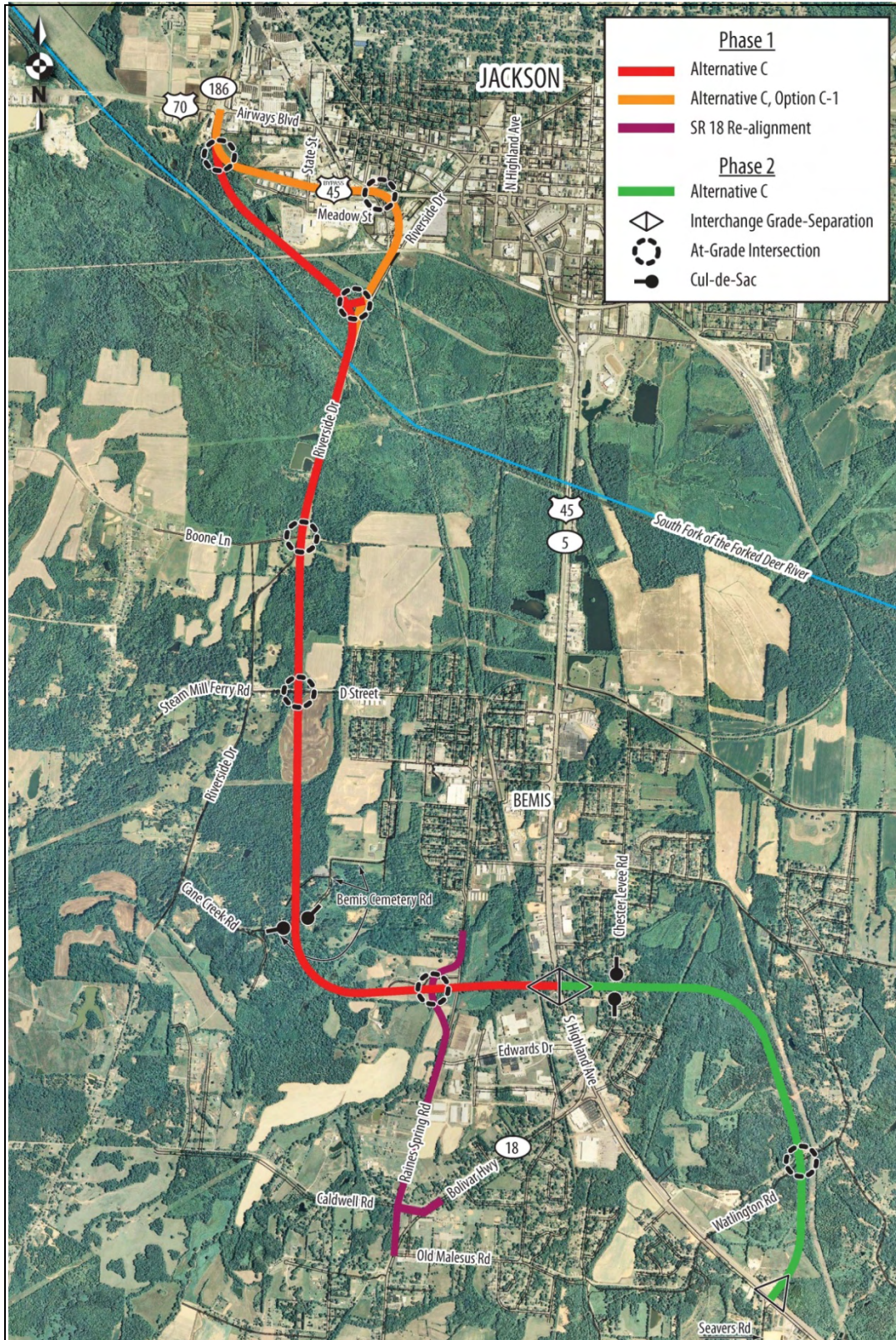
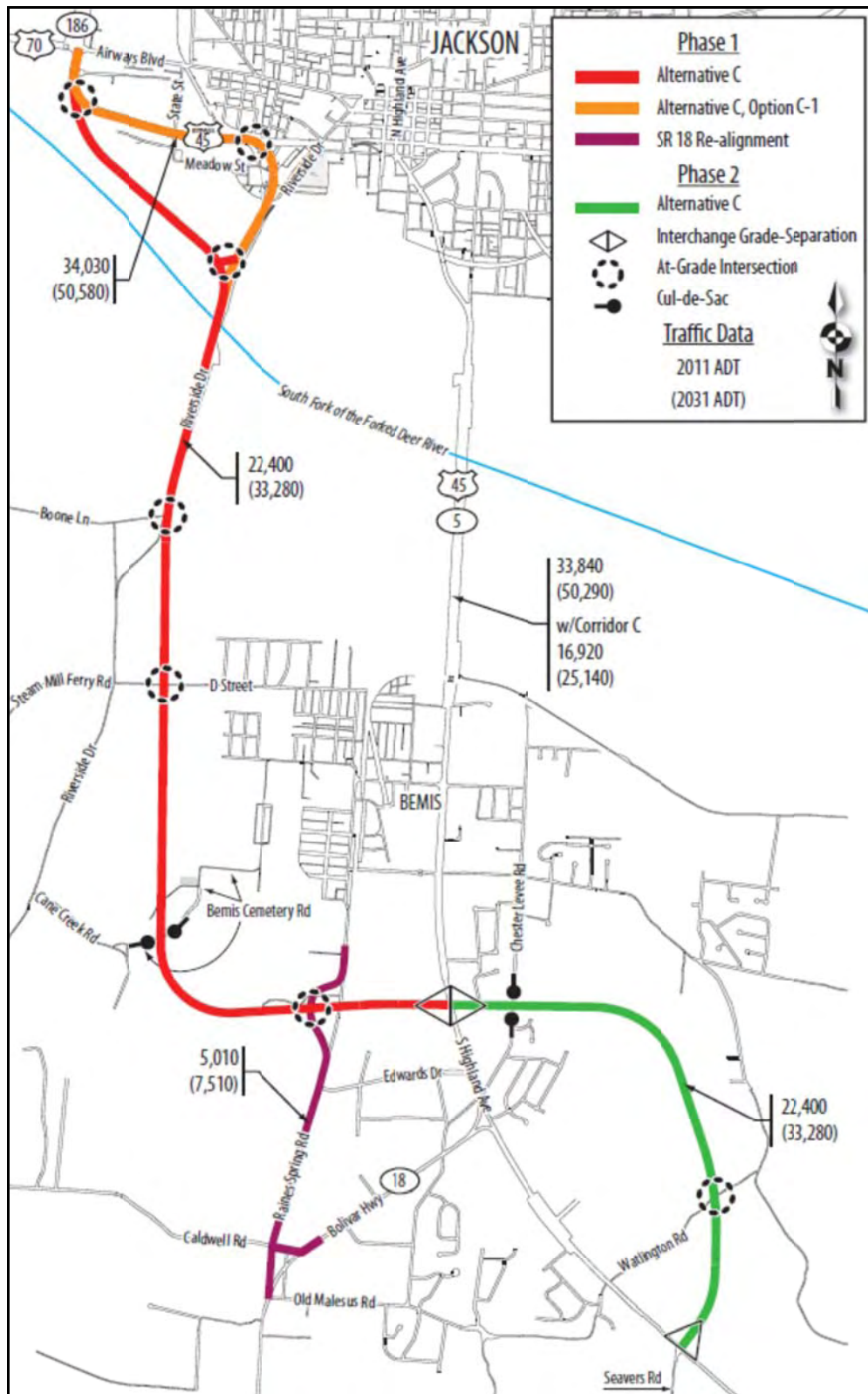
Figure 2-9. Build Alternative

Figure 2-10. 2011 and 2031 AADT Traffic Data



widening the existing US 45 Bypass to six lanes would not accommodate the projected traffic volumes. Alternative C/C-1 was analyzed using ten percent heavy trucks. This was based on historical traffic data for the existing US 45 Bypass. It is anticipated that the through truck traffic will utilize the new corridor (Alternative C/C-1).

Table 2-2. AADT and LOS for No-Build and Build Conditions (Traffic Analysis – US 45 EA Technical Memorandum, April 2011)

Corridor	2011 ADT / LOS		2031 ADT / LOS	
	No-Build	Build	No-Build	Build
Existing US 45 (Build = widen to 6 lanes)	33,840 / D	33,840 / B	50,290 / E*	50,290 / C*
Existing US 45 (Build includes Alternative C/C-1)	33,840 / D	16,920 / B	50,290 / E	25,140 / C
Alternative C	N/A	22,400 / B	N/A	33,280 / C
Alternative C-1	N/A	34,030 / A	N/A	50,580 / C
SR 18 Segment Re-alignment	N/A	5,010 / B	N/A	7,510 / C

*LOS was determined using HCS multi-lane highway analysis, which does not take into account the traffic signals along the route. A representative signalized intersection was analyzed under the build condition and resulted in LOS F.

The data presented in Table 2-1 shows that the US 45 Bypass Extension would take traffic off US 45 and would improve the LOS on that roadway. The proposed bypass has an acceptable LOS under all scenarios.

2.4.2 Project Phases

The Build Alternative is divided into two phases. Phase 1 is more likely to be built in the nearer term if funding is identified for construction. Phase 2 is likely farther out in the future than Phase 1 and is also dependent on identification of funding. The two phases are described below:

Phase 1: From south to north, the alignment begins on the west side of US 45 north of Edwards Drive and the Bonwood Industrial Park and ends on the north at Airways Boulevard (US 70/SR 1). This phase includes ramps over the WTNRR connecting the bypass to existing US 45 and a connector to SR 18 in the vicinity of Raines Springs Road. It also includes two optional alignments on the north end of the project. Phase 1 is 5.25 miles long. The

proposed SR 18 re-alignment adds an additional 1.53 miles to the project length, for a total length of 6.78 miles.

Phase 2: The southern terminus of Phase 2 is on the east side of US 45, opposite Seavers Road. The new alignment intersects US 45 again north of Edwards Drive and Bonwood Industrial Park, across US 45 from the southern terminus of Phase 1. Phase 2 includes an interchange at this location. Phase 2 is 2.22 miles long.

Specific descriptions of Phases 1 and 2 are below.

2.4.3 Phase 1 Build Alternative Description

This alternative is described from south to north. This phase begins on the south at US 45 just north of the intersection of US 45 and Edwards Drive. At this location, the project includes ramps from the proposed bypass to US 45. As the new alignment moves west away from US 45, the ramps would also span the WTNRR west of US 45. (These ramps would become part of a single point urban interchange in Phase 2 of the project.) The bypass alignment continues west intersecting Raines Springs Road just west of the bridge over Bond Creek, which is proposed to become re-aligned SR 18 south of the proposed bypass. This connection is described in more detail at the end of the Phase 1 discussion.

As the project moves west on new location, it crosses Cane Creek on a new bridge then turns north. The alignment then crosses Bemis Cemetery Road. Bemis Cemetery Road would be closed on both sides of US 45, causing both legs of that road to have cul-de-sacs. The alignment travels north on new location between Bemis and Riverside Drive, crosses D Street where an intersection is proposed and continues north to join Riverside Drive just south of Boone Lane where there would also be an intersection. A short, new connector road between Boone Lane and a segment of Riverside Drive that would be bypassed provides a connection for traffic not desiring to use the bypass.

The alignment then follows Riverside Drive, where the roadway grade must be raised above the 100-year floodplain. The roadway will be widened to the west to avoid substantial utility impacts and to allow Riverside Drive to remain open during construction. Along Riverside Drive, a series of bridges and overflow structures are proposed to replace the existing structures as the grade is raised and the roadway widened. This section passes through a large area of floodplain and wetlands adjacent to the South Fork of the Forked Deer.

North of the river, the corridor has two options to connect to US 45, Corridor C (the main line option, which is shown as red in Figure 2-9, and Option C-1, shown as orange in Figure 2-9. The main line corridor (C) is on new location, basically paralleling the north side of the river and crossing the CSXT railroad on a bridge. The road is then proposed to be at-grade or on fill across the NPL hazardous materials site, continuing north to connect with the existing bypass, just south of Airways Boulevard. Option C-1 follows Riverside Drive farther north than C, follows Riverside Drive to the existing US 45 Bypass east of State Street, following it to Airways Boulevard.

Phase 1 Build Alternative, SR 18 Re-Alignment: The NEPA process for improvements to SR 18 identified a number of residential impacts in the segment of existing SR 18 between Raines Springs Road and US 45. The public expressed at the early 2010 US 45 Bypass public informational meeting that there should be a better connection from SR 18 to the proposed bypass than traveling the more densely populated section of SR 18 to US 45 and then turning north. As such, improving Raines Springs Road to serve as a re-aligned segment of SR 18 and to provide a direct connection to the proposed bypass is proposed under Phase 1. Raines Springs Road would be widened from two travel lanes to add a center turn lane. Widening would either be symmetrical or to the east (if feasible) in the vicinity of the residences on Raines Springs Road. Driveways to all residences and at Edwards Road into the Bonwood Industrial Park would remain open. Slight modifications to the alignment at the north and south of this improvement segment would be required.

2.4.4 Phase 2 Build Alternative

The southern terminus of Phase 2, the future extension of the US 45 Bypass, is on the east side of US 45 across from Seavers Road. There, ramps would connect to US 45 and would allow traffic to move north or south. The roadway would be on new location to the northeast of US 45 for approximately 2,500 feet then turns north and follows the west side of the power line easement, intersecting Watlington Road and continuing north for approximately 4,000 feet. It then turns west, passing Chester Levee Road where there would be no connection to the bypass. It then continues west connecting with the south end of Phase 1 at US 45, where a single point urban interchange is proposed.

2.4.5 Build Alternative, Public Meeting #2

The above description of the Build Alternative reflects modifications that were made in response to comments received from governmental officials and the public at the December 14, 2010 public information meeting. At this second public meeting, the Build Alternative concept was presented in large-scale displays to the approximate 175 attendees. From south to north, the changes made to the concept to address public and local government comments are:

1. At the southern terminus of Phase 2, a ramp was added from the proposed bypass to connect with US 45 and allow traffic to travel north.
2. Revised the south end of the realigned segment of SR 18 to align with Caldwell Road.
3. Revised Raines Springs Road/Re-Alignment of SR 18 at proposed bypass to remove the cul-de-sac on the north side, retain roadway continuity and shift the connection location eastward.
4. Provided a connection to the proposed bypass from Boone Lane,.

Respondents did not have an overwhelmingly clear opinion on their preference of C or C-1 at the northern end of the project, but the majority of those that did comment supported C. Comments were also equally divided on Phase 2 (e.g., Is it needed? Should it connect to US 45 farther south? Concern with impacts to the area). Regarding the need for the project, with the exception of one commenter, respondents supported the project need. A summary of both public meetings is included in Chapter 4.

2.4.6 Features of Build Alternative

Access Control: Partial access control is proposed for the proposed US 45 Bypass extension. For Phase 1 (northern segment), access is limited to the following locations, from south to north:

- US 45/South Highland (signalized intersection, ramps to US 45);
- Raines Springs Road (signalized intersection);
- D Street (signalized intersection);
- Boone Lane (non-signalized intersection);
- Riverside Drive north of River (non-signalized intersection); and
- Existing US 45 Bypass (signalized intersection).



What is Access Control?

Full Access Control

Access to the roadway is available only through on/off ramps at grade-separated interchanges. An example of a roadway with full access control is an Interstate.

Partial Access Control

Access to the roadway is limited. For example, at certain locations access to and across the road may be controlled. Land owners would need to obtain permits for new driveways.

No Access Control

Access to and across the roadway is available to every landowner along the roadway.

On Phase 1, cul-de-sacs are proposed at Cane Creek Road and Bemis Cemetery Road.

For the Phase 2 segment, access is proposed on the north and south ends to US 45. The north end would connect to the Phase 1 southern terminus where a single point urban diamond interchange is proposed. On the southern terminus, a flyover would connect the proposed bypass to US 45. A ramp connection would provide access to US 45 northbound across from Seavers Road. An at-grade, non-signalized intersection is proposed at Watlington Road. Chester Levee Road is proposed to become a cul-de-sac on each side of Phase 2 of the proposed bypass.

Typical Section and right-of-way (ROW): On the Build Alternative bypass, four lanes are proposed in the near term. Sufficient ROW would be purchased to accommodate six lanes in the future if traffic warrants such an expansion. A six-lane US 45 Bypass Extension is provided for in the HPP allocation, so this meets the legislative intent.

From the southern end of the project at Seavers Road north to Boone Lane, the typical section proposed in the near term is a divided roadway with variable median width, two travel lanes in each direction, paved inside shoulders and stabilized outside shoulders. Figure 2-11 depicts the typical section. The minimum proposed ROW is 250 feet.

From Boone Lane north to Airways Boulevard, a four-lane section is proposed with two lanes in each direction. A center barrier and inside shoulders would separate the travel lanes. To minimize impacts to the wetland areas in this segment of the project, the proposed slope has been reduced from the standard 6:1 slope to a 4:1 slope in the near term. If six lanes are warranted in the future, fill could be placed on the slope to create a 3:1 slope within the four-lane section footprint. The minimum proposed ROW is 200 feet. Figure 2-12 depicts the typical section.

If Option C-1 is selected at the northern end of the project, from the point where the proposed bypass intersects the existing bypass to the end of the project south of Airways Boulevard, the project would retain the existing lane configuration and ROW.

Bridges: The proposed bridges in Phase 1 and Phase 2 are listed below.

Phase 1 Bridges: Ramps would connect the proposed bypass to US 45 north of the Bonwood Industrial Park, with

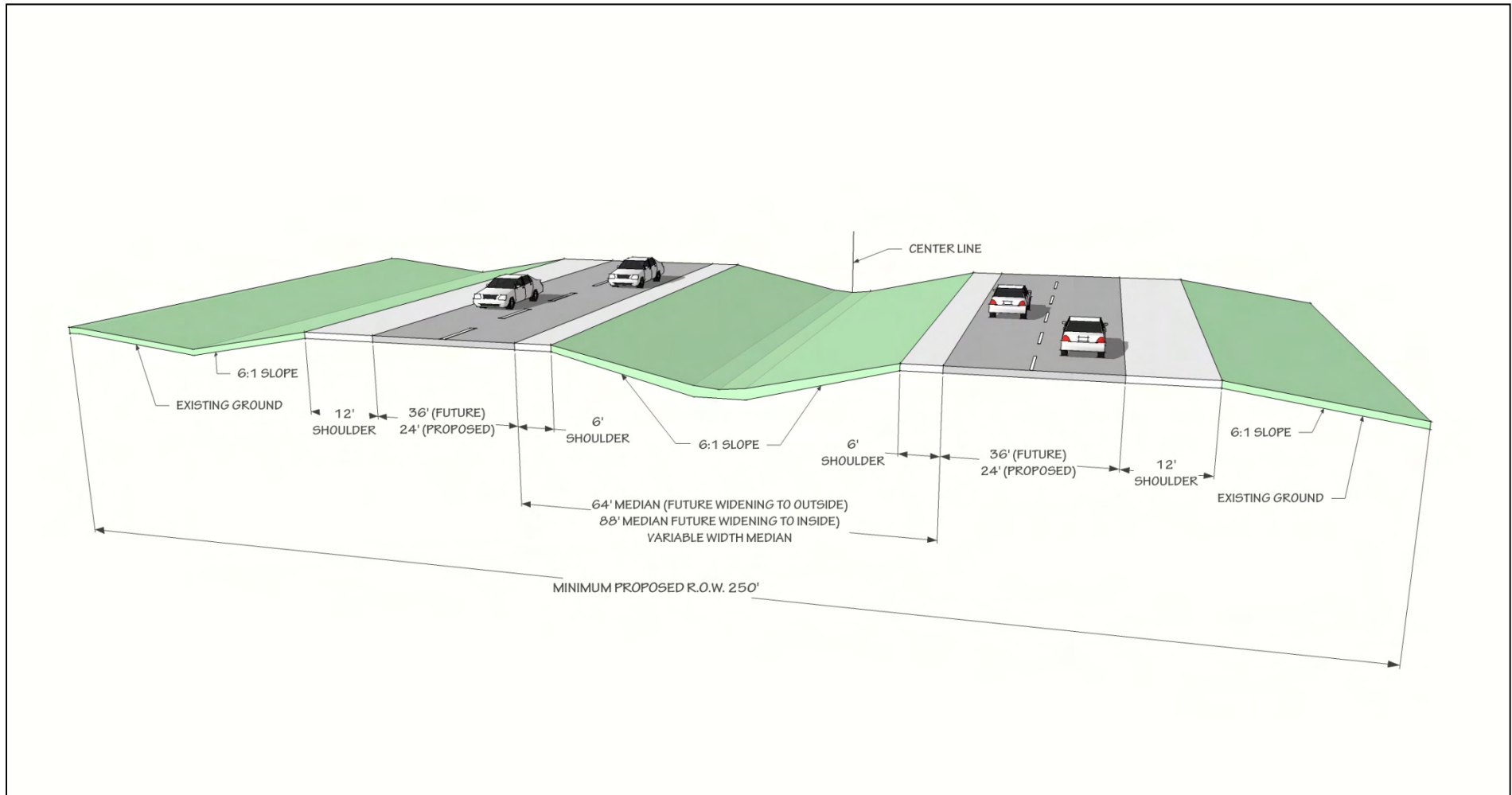
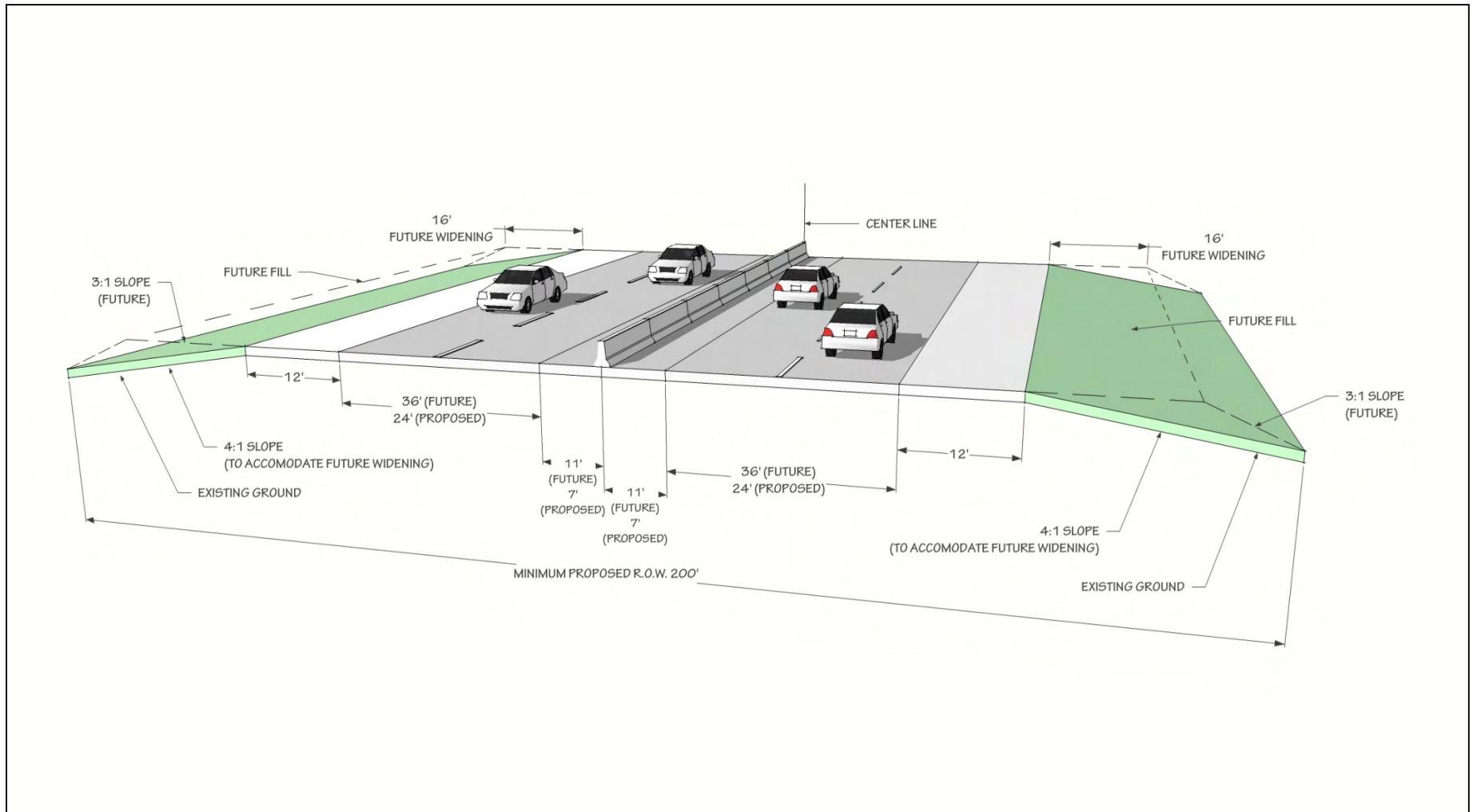
Figure 2-11. Proposed Typical Section, Beginning of Project to South of Boone Lane

Figure 2-12. Proposed Typical Section, South of Boone Lane to Airways Boulevard



the ramps bridging the existing WTNRR line. From US 45 to the south to 2,000 feet north of the South Fork of the Forked Deer River, bridges are proposed at the following locations:

- Bond and Cane Creeks
- Riverside Drive North of Boone Lane—a series of bridges at the locations of six existing structures.

On Alternative C and Option C-1, from approximately 2,000 feet north of the South Fork of the Forked Deer River to Airways Boulevard, the following bridges are proposed:

- Tributary to South Fork of Forked Deer
- CSXT Railroad

On the SR 18 realigned segment, a bridge is proposed over Bond Creek.

Phase 2 Bridges: From near Seavers Road northward to the southern terminus of Phase 1 at US 45, the following bridges/structures are proposed, from south to north:

- Flyover connection to existing US 45 opposite Seavers Road
- Meridian Creek
- Interchange at US 45 north of Bemis Industrial Park (to incorporate Phase 1 ramps)

The Project Team recognizes the sensitivity of the wetland area north and south of the South Fork of the Forked Deer. The bridges are to be replaced at their existing locations on Riverside Drive with widening to occur to the west to avoid substantial utility impacts and allow Riverside Drive to remain open during construction. The new structures must be raised above the 100-year floodplain, as they currently are below that elevation. The team has discussed construction methods such as “top-down” or “progressive” construction to minimize impacts to wetlands along Riverside Drive. These methods alleviate the need for a haul road and substantially minimize ground disturbance.

2.4.7 Other Reasonable Alternatives

Because this project has undergone years of research, analysis and public and agency involvement, the Build Alternative has emerged as the single alternative recommended for evaluation in this NEPA EA. No other options have been identified to date that are expected to be capable of meeting the purpose and need of the

proposed project and to avoid a new crossing of the South Fork of the Forked Deer River. However, if any other ideas or suggestions for alternatives are identified during the alternatives development process that could potentially meet the purpose and need for the project, they would be evaluated in more detail for possible consideration for study in the EA as a reasonable alternative or alternatives.

2.4.8 Costs

The estimated costs of the Build Alternative (2018 year of expenditure dollars) are presented in Table 2-3.

Table 2-3. 2018 Estimated Costs of Build Alternative

	Build Alternative	Build Alternative with Option C-1
Phase 1	\$ 143,068,110	\$ 134,169,121
SR 18 Segment Relocation (Phase 1)	\$ 19,848,397	\$ 19,848,397
Phase 2 Cost	\$ 147,935,056	\$ 147,935,056
Total Cost Phases 1 and 2	\$ 310,851,563	\$ 301,952,574

3.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

This chapter describes the existing conditions and potential environmental impacts of the No-Build and Build Alternative.

3.1 Land Use

3.1.1 Existing Land Uses

The proposed project is located south/southwest of the City of Jackson in Jackson, Madison County, Tennessee. Madison County is part of the Southwest Tennessee Development District (SWTDD), an association of eight counties in the southwest region of Tennessee. Madison County is bordered by Gibson and Carroll Counties to the north, Henderson County to the east, Chester County to the southeast, Hardeman County to the south, Haywood County to the west, and Crockett County to the northwest. The City of Jackson is the County seat.

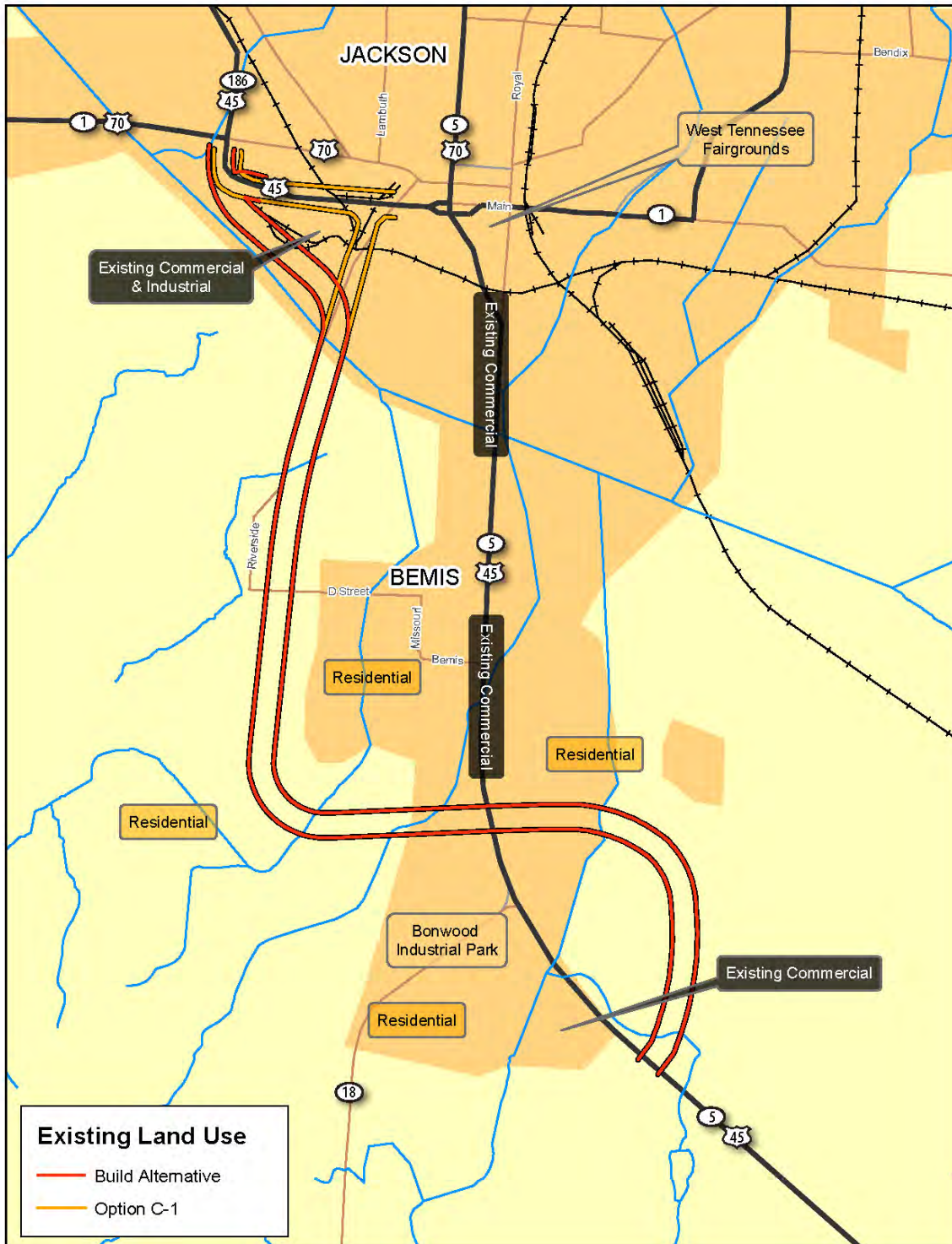
The general land uses in the project area are shown in Figure 3-1. The project area is home to a variety of land uses:

- The area surrounding Phase 2 of the project, beginning at Seavers Road and ending immediately east of existing US 45, consists primarily of undeveloped and low density residential areas. Some light commercial activity is located near the intersection of Seavers Road and US 45.
- The area along the proposed SR 18 realignment (existing Raines Springs Road) consists of low density residential uses. Large amounts of utility infrastructure are located along the eastern portion of the existing roadway. The western entrance to Bonwood Industrial Park is located at the northern terminus of the proposed realignment.



Historic Riverside Cemetery located just south of the US 45 Bypass on Riverside Drive.

Figure 3-1: Existing Land Use



- Beginning at the southern terminus of Phase 1, south of Bemis, land uses adjacent to the corridor are entirely commercial with the exception of a small section of residential just south of Harts Bridge Road. The residential properties were all recently rezoned commercial and are now targets for the type of commercial development already prevalent along the rest of the corridor. The Bonwood Industrial Park, currently occupied by light manufacturing and distribution businesses, also lies just to the west of US 45, just north of US 45's intersection with SR 18.
- As the project turns in a northerly direction, land uses consist of low density residential, some institutional uses (such as churches), and some small areas of agricultural activity.
- The community of Bemis is primarily west of US 45. Land uses in the Bemis area are low density residential with some small commercial sites. The industrial buildings associated with the historic mill are still in place, but are not currently in use. Bemis Intermediate School is located on D Street.
- The project joins Riverside Drive just north of Boone Lane. South of the South Fork of the Forked Deer River, a few houses, a small grocery store, and a pay lake flank the roadway.
- North and south of the South Fork of the Forked Deer River, the corridor is surrounded by undeveloped land that is wooded. The soils in this area are associated with wetlands.
- North of the wetlands and south of Airways Boulevard, the area is lined with primarily industrial uses. The Jackson Energy Authority (JEA) has a number of service and storage facilities located south of the existing bypass between State and Meadow Streets. Dement Construction Company is located adjacent to the JEA. The Riverside Cemetery, a National Register of Historic Places (NRHP)-listed property, is located just south of the bypass at the intersection of Riverside Drive and Sycamore Street. Additional commercial and industrial uses are scattered throughout the area.
- The land immediately west adjacent to the existing US 45 Bypass and US 45 is highly developed with a mix industrial, commercial, residential, and institutional uses.



The West Tennessee Fairgrounds located east of US 45.



Streets within the Bemis Community.

The *Land Use Plan for the City of Jackson, Tennessee* was approved in October of 1965, and included future land use projections with a horizon of 1980. The Tennessee State Planning Office developed the *Madison County Land Use Plan 1973*.

Both documents are still considered valid by the city and county. The City of Jackson has routinely been conducting small area updates to the 1965 land use plan only for areas within the city limits. The City of Jackson also develops Small Area Plans, which are comprehensive land use plans for developing areas. These plans are considered amendments to previous plans, but are only developed for growth areas and annexations.

3.1.2 Land Use Impacts

The No-Build Alternative would have no impacts to land use.

The City of Jackson's Urban Growth Boundary (UGB) covers the entire extent of the proposed project and all of the US 45 corridor from downtown Jackson to the Chester County line. While direct land use impacts along the roadway are expected to be minimal, both city and county officials anticipate growth and potential land use changes within the UGB.

The Build Alternative's primary direct impact to existing land use would be the conversion of farmland to roadway use. While areas of wetlands would also be converted, this land is not now developable. An area in Segment 2 of the Build Alternative just east of existing US 45 and which is proposed for residential development (Meridian Creek Subdivision), would be bisected by the proposed alignment. This may change the proposed land use of this area, but residential development could still occur to each side of the alignment, primarily to the south where a larger developable parcel would remain. This development has been on hold for several years due to economic conditions.

Secondary and cumulative impacts are described in Section 3.18, but direct land use impacts beyond the conversion of farmland and the impact to the proposed future development, are anticipated to be minimal because the proposed road would be access controlled and much of the area that is not farmland is developed or cannot be developed (i.e., wetlands).

3.2 Farmland Impacts

The Build Alternative passes through farmland that is used for livestock grazing and corn, cotton, and soybean cultivation.

Phase 1 of the Build Alternative would acquire 29.8 acres of farmland for right-of-way (ROW). Phase 1 of the Build Alternative would not render any additional acres of farmland unusable by creating small fragments of farmland that are too small to farm or denying access to farm facilities.

Phase 2 of the Build Alternative would acquire 7.5 acres of farmland for ROW. Phase 2 renders an additional 5.4 acres of farmland unusable by creating small fragments of farmland that are too small to farm or denying access to farm facilities.

During the ROW phase, TDOT would assess damages to farm properties and would compensate property owners accordingly. This process would include the assessment of fragments of farmland created by the project.

In accordance with 7 Code of Federal Regulations (CFR), Part 658, Farmland Protection Policy Act, criteria were applied to determine effects to farmland. The site assessment criteria are designed to assess important factors other than the agricultural value of the land, and to protect farmland.

Each factor is assigned a score relative to its importance. Sites that receive a total site assessment score of 160 points or less are given a minimal level of consideration for protection. Sites with a total site assessment score of 160 points or more require the consideration of project alignments that would serve the proposed purpose but would convert either fewer acres of farmland or other farmland that has a relative lower value.

The Jackson Office of the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) determined that Phase 1 and Phase 2 of the Build Alternative would have site assessment scores of 143 and 156, respectively.

The majority of the point totals of each phase were impacted by the large amount of prime soils that underlay the area in general. Based on conditions observed in a subsequent field review and NRCS coordination, it was determined that both point totals fall below 160. Since the



Cotton Field located in the project area.



What is the National Farmland Protection Policy Act (FPPA)?

The aim of the National Farmland Protection Policy Act (FPPA) is to minimize Federal Programs (including technical or financial assistance) contribution to the conversion of important farmland to non-agricultural uses. The act seeks to encourage alternatives, if possible, that would lessen the adverse effects to important farmlands. Important farmlands are lands with soils that are identified as prime and unique or of statewide and local importance.

point totals are within the exemption limit of 160 points, an examination of additional build alternatives is not necessary. The NRCS-CPA-106 form has been completed (see Appendix B).

In summary, the Build Alternative will have no substantial farmland impacts.

3.3 Social Impacts

3.3.1 Existing Social Conditions

The study area lies to the south, southeast and southwest of the City of Jackson in Madison County, Tennessee. In 2010, the City of Jackson had a population of 65,211 people. Between 2000 and 2010, Jackson experienced a 9.3 percent increase in population, as compared to 7.0 percent for Madison County and 11.3 percent in Tennessee as a whole.

Jackson is located approximately 85 miles east of Memphis and 130 miles west of Nashville and is considered a hub of agricultural and industrial production for western Tennessee. Jackson serves as county seat for Madison County, and as an employment, retail, banking, medical and entertainment center for residents of several surrounding counties.

Table 3-1 outlines general population data from the 2000 and 2010 US Census for Madison County and Jackson. The State of Tennessee is also included as a point of comparison.

**Table 3-1: Tennessee, Madison County and Jackson Census Data
Population Growth**

	Population		Percent Change
	2000	2010	10 years
Tennessee	5,689,283	6,346,105	11.3%
Jackson	59,643	65,211	9.3%
Madison County	91,837	98,294	7.0%

Source: US Census Bureau
1990 Populations TN - 4,877,185, Jackson – 48,949, Madison – 77,982

Based on the information presented in Table 3-1 and the additional census data from 1990 listed above, the City of Jackson and Madison County have consistently experienced population growth between 1990 and 2010.

This growth closely correlates with the growth that the State of Tennessee experienced in the same timeframe.

Table 3-2 contains demographic estimates for the project area based on data from the 2010 US Census. According to the 2010 Census of Population and Housing, minorities comprised 50.8 percent of the population of the City of Jackson, 40.8 percent of the population of Madison County, and 22.2 percent of the general project area, which is higher than that of the State of Tennessee's minority population of 22.4 percent. The largest minority group in the City of Jackson and Madison County is African-American. The largest minority group in the project area is African-American. The African-American community comprises 45.7 percent of the City of Jackson's population, 36.3 percent of Madison County's total population, and approximately 20.5 percent of the project area's population. A more detailed discussion of this topic is in the Environmental Justice section (3.3.2).

Table 3-2: 2010 Population Characteristics: Tennessee, Madison County and Jackson

Area	Population					Income	
	Persons	Minority	Under Age 18	Age 65 and Over	High School Graduate or Higher*	Median Household Income 1999	Individuals Below Poverty Level 2009
Tennessee	6,346,105	1,424,157 (22.4%)	1,496,001 (23.6%)	853,462 (13.4%)	3,548,549 (83.6%)	41,461	17.7%
Jackson	65,211	33,119 (40.8%)	16,122 (24.7%)	8,284 (12.7%)	34,319 (86.0%)	38,169	21.6%
Madison County	98,294	40,068 (40.8%)	23,634 (24.0%)	12,932 (13.0)	54,773 (86.4%)	40,438	19.0%
General Project area - estimated	7,201	1,603 (22.2%)	761 (10.6%)	475 (6.6%)	~	~	~

*Population 25 years and over

The percentage of the County and City population under the age of 18 (24.0 and 24.7 percent) was slightly higher than that of the State of Tennessee (23.6 percent). The populations age 65 and over for the County and State of Tennessee (13.0 and 13.4 percent) was basically equivalent, while the City (12.7 percent) was slightly lower. In the general project area, 10.6 percent of the population is under 18, while the population age 65 and over is 6.6

percent. The percentage of the population age 25 and over with a high school diploma or higher in Madison County and Jackson (86.4 and 86.0 percent) was slightly higher than that of the State of Tennessee (83.6 percent).

The median household income in Madison County (\$40,438) is close to the state average (\$41,461), but the median household income in Jackson is lower (\$38,169). This difference is reflected in the percentage of the population living below poverty. The percentage of the Madison County population living below poverty (19.0 percent) is higher than the state average (13.5 percent), but a much higher percentage of Jackson's population is living below the poverty line (21.6 percent). This topic is discussed further in the Environmental Justice section (3.3.2).

3.3.2 Environmental Justice

This project has been developed in accordance with *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, which requires federal agencies to develop a strategy for its programs, policies and activities to avoid disproportionately high and adverse impacts on minority and low-income populations with respect to human health and the environment.

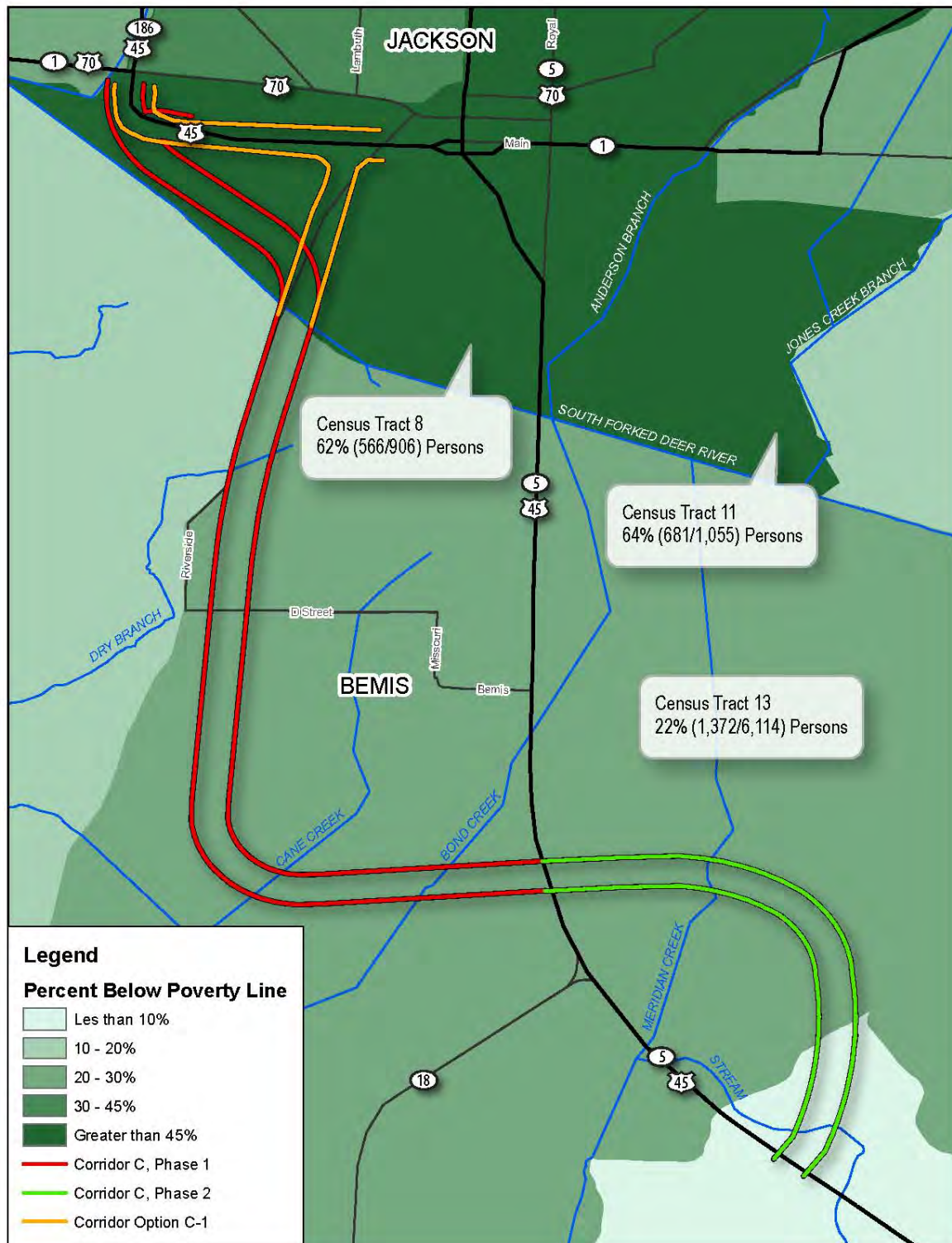
To determine the impacts of the Build Alternatives on minority and low-income populations, project planners reviewed US Census data for the project area, coordinated with local government, and conducted a field review in August of 2011. Based on the information gathered, it has been determined that this project would not have a disproportionately high and/or adverse effect on low income and/or minority populations. While the project may result in the displacement or temporary inconvenience of minority populations, it would also facilitate better emergency response times and ensure that emergency personnel may still access these populations during city-wide emergencies, such as the 2003 tornadoes or a flood event. The project would benefit all community members, regardless of race or income.

The analysis of Environmental Justice impacts is presented in Sections 3.3.2.1 and 3.3.2.2.

3.3.2.1 Low-Income Populations

Figure 3-2 shows the percentage of the population living below poverty in the project area by Census Block Group.

Figure 3-2: Low-Income Populations



The study area is encompassed by seven Census Block Groups. US Census data on poverty status are only provided for the population for which poverty status can be determined. Thus, the percent living below poverty level is calculated using the population for which status can be determined rather than the total population of the census tract in 2010.

The percent of the population living below poverty in 2010 (based on American Community Survey 5-year estimates) within the City of Jackson averages 22.9 percent. This is slightly higher than the county and statewide averages of 18.6 and 16.5 percent, respectively. The percent of the population below poverty in a majority of the census tracts in the project area is comparable to the City and County averages. Two census tracts in the study area have a higher percentage of residents living below poverty level than the City as a whole, with 62 and 64 percent of the population in the census tracts below poverty. These census tracts, Census Tract 8 and Census Tract 11, are highlighted in Figure 3-2. Census Tract 8 is crossed by portions of both Corridor C and Corridor Option C-1. No houses are in or adjacent to the alignment in this Census Tract.

3.3.2.2 Minority Populations

Figure 3-3 illustrates the distribution of the minority population across the study area. Block 2017, Block Group 2, Census Tract 8 has a population that is approximately 80 percent minority. This census block contains a population of 61 individuals. Block 2018, Block Group 2, Census Tract 8 has a population that is approximately 75 percent minority. The residences in both blocks are along McCrory Street and Barr Avenue. Based on noise contours developed for the proposed during a noise analysis, noise levels exceeding the existing noise abatement criteria (NAC) may be experienced. However, noise levels in the area are currently relatively high and the predicted increase over what may occur under the No-Build Alternative is 1 dBA for Build Alternative. Build Alternative with option C-1 is modeled to result in a 1 dBA decrease in noise levels for the area. Block 1011, Block Group 1, Census Tract 13 has a population that is approximately 57 percent minority, with a total population of 28 individuals. The residences are located primarily on the south side of Cane Creek Road, with the exception of two residences located on the northern end of Yoshino Drive. The census block also contains Cane Creek Missionary Baptist Church. This area would experience noise increases, but such impacts are found along the new

location sections of the Build Alternative alignment and they would not be disproportionate.

Two other census blocks in the project area have a 17.8 and 30 percent minority population. These are both below the 51.8 percent minority population for the City of Jackson. Based on the noise contours developed for the proposed project during a noise analysis, noise levels in the area indicate an impact due to substantial increase of 10 dBA or greater, as there is currently minimal traffic noise in the area.

In summary, while residents in Block 1011, Block Group 1, which has a high minority population, would be impacted by noise, the impacts would not be disproportionate to the resident minority population. Other residential areas along the new location segments of the Build Alternative would also experience commensurate noise impacts.

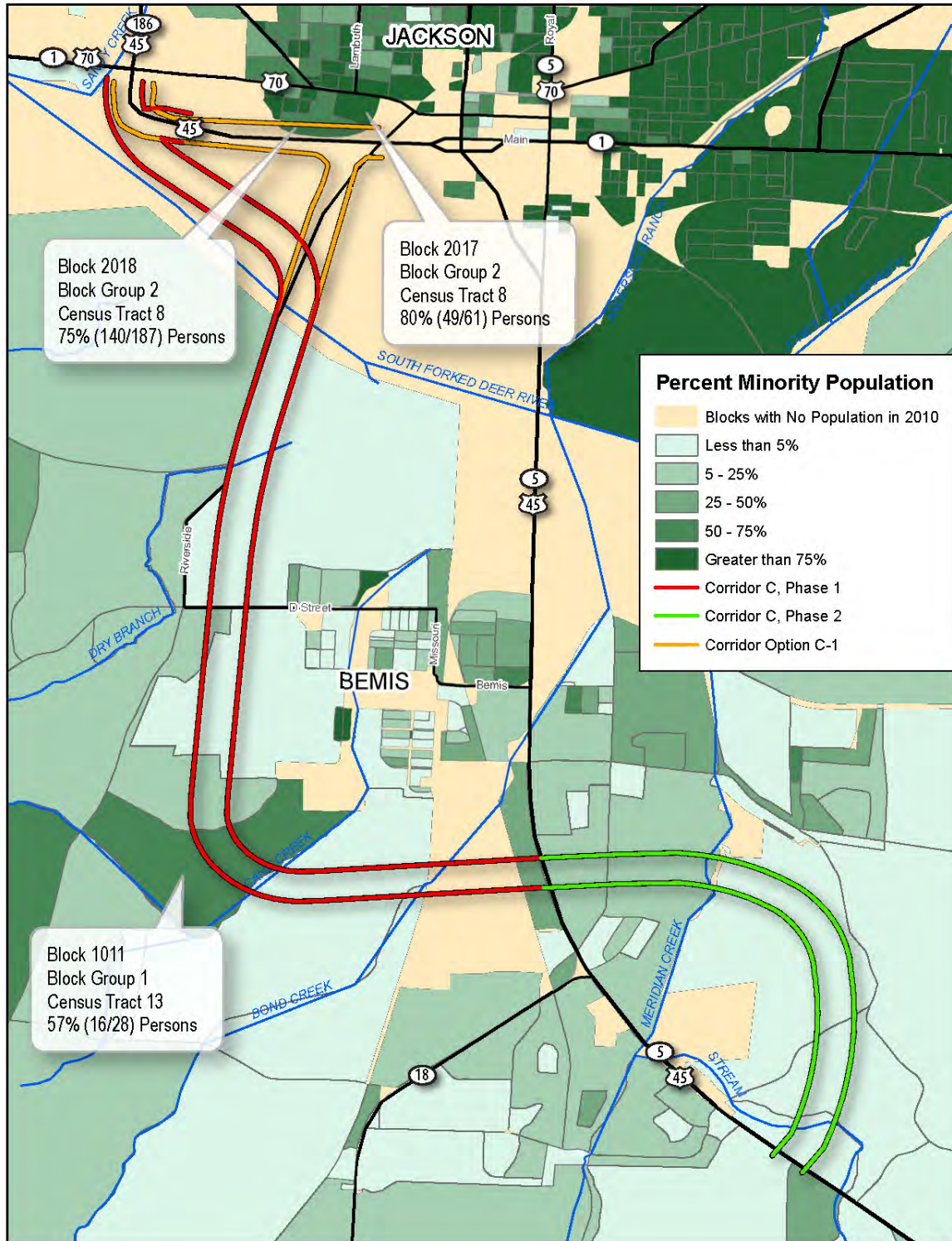
The proposed project would:

- Not have any adverse social or economic effects;
- Not limit access to public or private facilities and services;
- Not reduce property values; and
- Not impact community cohesion.

The project would have the beneficial impact of improving response times for emergency vehicles and increasing access to community facilities thus, benefitting all community members, regardless of race.

The TDOT Civil Rights Division has been provided information on this project. No response to this coordination has been received. In accordance with Title VI of the *Civil Rights Act of 1964*, TDOT would comply with Title VI to ensure that “No person shall be, on the grounds of race, color or national origin, excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving federal assistance.”

Figure 3-3: Minority Populations



3.3.3 Existing Community Services

The study area is home to a number of community resources. There are seven churches in the study area, which are as follows:

- Mother Liberty CME Church, located at the intersection of US 45 and Auditorium Street, just south of downtown;
- Cornerstone Baptist Church located on Boone Lane, just west of Riverside Drive;
- Cane Creek Missionary Baptist Church located on Cane Creek Road just southeast of its intersection with Bemis Cemetery Road;
- Bemis Chapel Missionary Baptist Church located on D Street in Bemis;
- Trinity Baptist Church located on D Street in Bemis;
- Bemis United Methodist Church located on B Street in Bemis; and
- West Bemis Baptist Church located on Bemis Cemetery Road.

Southside High School is located within the project area on Harts Bridge Road. Bemis Intermediate School is located on D Street in Bemis. School buses serving Southside, Bemis Intermediate School, and other area schools travel through the project area along US 45, Riverside Drive, and other residential streets. Buses are typically present in the area between 6:00 and 8:00 AM and again in the afternoons between 2:30 and 4:00 PM.

There are three medical clinics located within the project area. The Tucker Clinic of Bemis, located on US 45, specializes in dermatology. The Bemis Medical Clinic located on Missouri Street in Bemis, and Jackson Clinic Convenient Care located at the intersection of US 45 and Edwards both offer more general medical care services.

The city of Jackson Fire Department maintains a fire station on US 45 just north of Harts Bridge Road.

3.3.4 Community Impacts

The Build Alternative would not represent a barrier to social interaction or community cohesion. As with any major transportation project, it is likely that residents of the

corridor would experience temporary or minor impacts as a result of the construction and operation of the selected Build Alternative. Other than short-term, construction-related impacts (e.g., noise and alterations in access and traffic patterns), this project is not anticipated to have any adverse social impacts.

The proposed project would not present any adverse impacts to established neighborhoods within the project area. Aside from the noise impacts described in Section 5.4, the project would not result in adverse impacts to residents in the project area. Noise impacts would occur in areas where the Build Alternative is proposed for new location.

The project will provide enhanced access to community facilities, commercial establishments, and employment centers. The project will also result in improved response times for emergency responders who serve the area.

Southside High School is located in the project area on Harts Bridge Road. Bemis Intermediate School is located on D Street in Bemis. School buses serving Southside, Bemis Intermediate and other schools travel through the study area along US 45, Riverside Drive, and other residential streets. The project would increase safety for buses and other vehicles who rely on US 45 for transportation to and from school, as traffic diversion from existing US 45 is projected.

The project is expected to yield positive impacts for Bonwood Industrial Park, which is located in the project area. The City of Jackson currently plans for industrial growth in and around the park; the project would provide improved access to the park. Increased industrial occupancy at the park would provide more job opportunities for area residents.

The project would improve access to community facilities along existing US 45 by reducing traffic levels and safety concerns. As stated earlier, the project would improve response times for emergency vehicles, and ensure that flooding or other severe weather events would not disrupt the emergency service vehicles that serve south Jackson.

A single church facility, Cane Creek Baptist Church, has a single access point from Cane Creek Road, within the proposed ROW of the Build Alternative concept. While all reasonable efforts would be made to avoid eliminating the existing access road, if that is not feasible, access would be provided at another location as part of the project.

During the NEPA process, the public is notified about the proposed transportation project and the availability of environmental documents. Comments from the public regarding the proposed transportation project and its impact to the community and/or the environment are solicited. The public outreach plan that was developed for the project is described in greater detail in Chapter 4. To date, two well-attended public meeting have been held.

3.4 Displacements

The Build Alternatives were developed in a manner to minimize community-related impacts. Through the project's design phase, the City of Jackson would continue to work to the maximum extent practicable to avoid and minimize these effects. The City of Jackson would work closely with TDOT during the ROW and design phases to ensure that property losses are compensated in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Act of 1970* and *Tennessee Uniform Relocation Assistance Act of 1972*.

A conceptual stage relocation plan was prepared for this project in 2011. Displacements identified in that plan are summarized in Table 3-3 and are described in more detail below.

Table 3-3: Displacements (as identified during April 5, 2011, field review)

Type of Use	Potential Number of Displacements – Alt. C with Options C and C-1, Phase 1	Potential Number of Displacements - Phase 2
Residence	29	18
Business	4	1
Farm	0	0
Non-profit	0	0

3.4.1 Residential Displacements

The No-Build Alternative would not directly result in any displacements as no ROW would need to be obtained.

Build Alternative C (along with Option C-1) would have 29 potential residential displacements for Phase 1 and 18 for Phase 2.

As previously stated, approximately 47 residences may be impacted as a result of the project's construction (for both Build Alternatives, Phase 1 and 2). Approximately 15 of these residences, located immediately north of Edwards

Drive on the west side of US 45, have been recently rezoned for commercial use. According to local officials, the owners of these residences have endorsed the project.

During development of the project concept, the Project Team attempted to avoid and minimize residential displacements wherever feasible.

3.4.2 Business and/or Non-Profit Displacements

The No-Build Alternative would not result in any business displacements. Five private business properties would be displaced by the proposed Build Alternatives (see Table 3-4).

Table 3-4: Business and/or Non-Profit Displacements (as identified during April 5, 2011, field review)

Business Name (Project Phase)	Location	Description	2010 Market Appraisal Range
Riverside Discount and Music Store (Phase 1)	850 Riverside Drive	Convenience Store/music supplier brick 2,516 sq. ft. building	\$50,000 - \$100,000
Tire Treads, Inc. (Phase 1)	510 Riverside Drive	Two stucco industrial warehouse buildings (10,800 and 1,536 sq. ft.)	\$100,000 - \$150,000
N/A (Phase 1)	461 Riverside Drive	Two concrete block, industrial warehouse buildings (66,268 and 4,468 sq. ft.)	\$150,000 - \$200,000
N/A - currently for sale (Phase 1)	531 Riverside Drive	Concrete yard and 5,000 sq. ft. brick industrial building	\$50,000 - \$100,000
N/A - Industrial warehouses for sale (Phase 2)	2534 US 45 Bypass	3 metal/prefab industrial warehouses (1800, 4000 and 3242 sq. ft.)	\$200,000 - \$250,000

Source: Field review, aerial photography, State of Tennessee Property Assessment Data for Madison County

During an April 2011 field review, it was determined that three of the five potentially-affected business properties are currently not occupied. Therefore, only two active businesses would be displaced. During development of

the project concept, the Project Team attempted to avoid and minimize business displacements wherever feasible.

3.4.3 Replacement Housing Availability

A survey of internet real estate listings was completed to determine the availability of replacement properties. The survey was limited to listings in the City of Jackson. The housing market in the project area indicates a sufficient number of comparable replacement homes are available for sale in the project area at the current time. It is anticipated that the local residential real estate market would have the capacity to adequately absorb the residences displaced by this project.

An internet multiple listings service (MLS) search for one- and two-bedroom homes for sale yielded 50 results under \$190,000. The search revealed that 234 MLS listings featured homes under \$250,000. The potential replacement properties adequately covered the range of the appraised values of the displaced properties. Owners of the homes on large acreage sites might choose to reestablish their dwelling on an unaffected portion of their property.

In addition, a review of the local commercial real estate market indicates that there are replacement sites available to relocate the currently occupied businesses that could be displaced. A search for retail, industrial or vacant land types through an internet commercial real estate search resulted in 69 property listings that are for sale in Jackson. Displacement of these businesses is not expected to have a major economic or otherwise disruptive effect on the community impacted by this project.

3.4.4 Relocation Assistance

The City of Jackson can assure that the relocatees would be offered decent, safe and sanitary housing within their financial means. Within a reasonable amount of time prior to displacement, a comparable replacement dwelling would be available or provided for the displaced family who is the initial occupant, or an adequate replacement dwelling would be available or provided for subsequent occupants. The State Relocation Program is realistic, and the program is adequate to provide orderly, timely and efficient relocation of persons displaced by this project.

To minimize the unavoidable effects of ROW acquisition and displacement of people and businesses, the ROW acquisition and relocation program will be administered in accordance with *Uniform Relocation Assistance and Real*

Property Acquisition Act of 1970 and the Tennessee Uniform Relocation Assistance Act of 1972 (Public Law 91-646), as amended. Relocation resources are available to all residential and business relocatees without discrimination.

The City of Jackson would provide advance notification of impending ROW acquisition and, before acquiring ROW, would have all properties appraised on the basis of comparable sales and land values in the area. Owners of properties from which ROW is necessary would be offered and paid fair market value for their property. Displacees would be interviewed during the acquisition phase, and more specific solutions would be made at the time all the facts are gathered. Because sufficient replacement property appears to be available, the need for Last Resort Housing is not anticipated at this time.

No person lawfully occupying real property would be required to move without at least 90 days written notice of the intended vacation date, and no occupant of residential property would be required to move until decent, safe and sanitary replacement housing is made available. "Made available" means that either the affected person has by themselves obtained and has the right of possession of replacement housing or the City of Jackson has offered the relocatee decent, safe and sanitary housing that is within their financial means and is available for immediate occupancy.

The City of Jackson will assign a relocation agent to the project to carry out the relocation assistance and payments program. The agent would contact the household to be relocated to determine individual needs and desires and to provide information, answer questions and give help in finding replacement property. Relocation services and payments are provided without regard to race, color, religion, sex or national origin. In accordance with Title VI of the Civil Rights Act of 1964, TDOT would ensure that "No person shall be, on the grounds of race, color or national origin, excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving federal assistance."



What is Last Resort Housing?

This is used by TDOT when there is no comparable housing available for sale or rent within TDOT's current limitations. Should Last Resort Housing become necessary, supplemental payments or other housing options, as determined by TDOT, can be implemented through procedures provided for in the Uniform Relocation Assistance and Real Property Acquisition Act of 1970.

3.5 Economic Impacts

3.5.1 Existing Economic Conditions

The Tennessee Department of Labor and Workforce Development estimates that the labor force in Madison County for 2010 was 48,370, of which 43,540 people were employed, and 4,840 people were unemployed. The unemployment rate for Madison County was 10 percent, above the state unemployment rate of 9.6 percent.

The total number of employees working within Madison County in 2009 was approximately 51,750. The largest major industry sector in Madison County was health care and social assistance, with 21 percent of the employment, followed by manufacturing with 19 percent and retail trade with 17 percent. According to the Jackson Area Chamber of Commerce, the three largest employers in Madison County are West Tennessee Healthcare (4,362 employees), Jackson-Madison County School System (1,582 employees), and Proctor & Gamble (824 employees).

3.5.2 Economic Impacts

In 2011, an economic impact study was prepared for this project. The findings of the study are summarized below.

The initial economic impact of either of the Build Alternatives is land being removed from the tax rolls, but the amount of land removed under the Build Alternative is not substantial.

Although two small active businesses will be displaced, the Build Alternative would not result in negative effects to the economic stability of the project area. The project would increase the area's accessibility and may open up land in the south Jackson area for future development by providing enhanced connectivity between I-40 to the north and counties and the State of Mississippi to the south. Local officials support the project as they believe it would result in several positive economic benefits for the area. These benefits include increased viability of the Bonwood Industrial Park, attraction of new suppliers to support the new Toyota facility in Blue Springs, Mississippi, and safe and efficient routes to work for out-of-county commuters.

Businesses along existing US 45 would be affected by the presence of an alternative route created by the Build Alternatives. Many retail businesses are dependent upon opportunity traffic for a significant percentage of their sales. Other retailers; however, are destination businesses.



Bonwood Industrial Park

People travel to the location of these businesses to obtain specialty merchandise or services.

As stated above, a reduction in traffic on existing US 45 would have a negative impact on businesses that are dependent on opportunity traffic. An examination of businesses in the US 45 study corridor shows that 35 percent of the businesses are retailers who may be negatively impacted by a reduction in traffic volume due to the construction of the project. Sixty-five percent of the businesses along the corridor are destination businesses, and may be positively impacted by the improved LOS that allows customers, employees, and vendors to reach them more easily.

The project area is located within the City of Jackson UGB, and the *City of Jackson Small Area Plan* provides for additional development along existing US 45 and within the Bonwood Industrial Park.

The project would increase accessibility for the existing Bonwood Industrial Park. It would improve access and the LOS for vehicles traveling to and from the industrial park, as well as improving access to I-40 to the north. These improvements could increase occupancy of existing buildings and result in construction of new buildings in the park, thus creating additional jobs.

By decreasing commute times for workers in the trade area surrounding Jackson, the project could help spur economic development. Increasing access for transporting goods and a higher LOS for commercial transportation could also help spur economic development.

3.6 Air Quality Impacts

Air pollution is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Air quality describes the amount of pollution in the air. Individual air pollutants degrade the atmosphere by reducing visibility, damaging property, reducing productivity or vigor of crops or natural vegetation, or reducing human or animal health.

This section summarizes the results of an analysis of the potential air quality effects of the project. The purpose of this analysis is, first, to address the potential for the project to affect air quality standards including transportation conformity requirements; and second, to address the potential Mobile Source Air Toxics (MSATs) effects of the project.

3.6.1 National Ambient Air Quality Standards

The United States Environmental Protection Agency (EPA) has established allowable concentrations and exposure limits called the National Ambient Air Quality Standards (NAAQS) for various “criteria” pollutants. These pollutants include carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), sulfur oxides (SO_x), and lead (Pb).

In accordance with the *Clean Air Act Amendments (CAAA) of 1990*, EPA identified those areas that did not meet the NAAQS for the criteria pollutants and designated them as “nonattainment” areas. Once a nonattainment area meets the NAAQS, it is redesignated as a “maintenance” area.

3.6.2 Project Level Transportation Conformity

Transportation conformity is a process required of Metropolitan Planning Organizations (MPOs) pursuant to the CAAA. The CAAA requires that transportation plans, programs, and projects in nonattainment or maintenance areas that are funded or approved by the Federal Highway Administration (FHWA) be in conformity with the State Implementation Plan (SIP), which represents the State’s plan to either achieve or maintain the NAAQS for a particular pollutant.

Projects are in conformity with the SIP if they are included in a fiscally constrained and conforming Long Range Transportation Plan or Transportation Improvement Program (TIP).

The project is located in Madison County which is in attainment for all transportation related criteria pollutants. Therefore, conformity does not apply to this project.

3.6.3 Mobile Source Air Toxics (MSAT)

On February 3, 2006, the FHWA released “*Interim Guidance on Air Toxic Analysis in NEPA Documents*.” This guidance was superseded on September 30, 2009 by FHWA’s “*Interim Guidance Update on Air Toxic Analysis in NEPA Documents*.” The purpose of this guidance is to advise on when and how to analyze MSATs in the NEPA process for highways. The guidance was updated on September 30, 2009. This guidance is interim because MSAT science is still evolving. As the science progresses, FHWA will update the guidance.

Technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions. The qualitative assessment presented below has been prepared in accordance with FHWA's Interim Guidance derived in part from a study conducted by the FHWA entitled "*A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives.*" Additional information regarding MSATs is provided in Appendix E.

FHWA's Interim Guidance groups projects into the following categories:

- Exempt Projects and Projects with no Meaningful Potential MSAT Effects;
- Projects with Low Potential MSAT Effects; and,
- Projects with Higher Potential MSAT Effects.

FHWA's Interim Guidance provides examples of "Projects with Low Potential MSAT Effects." These projects include minor widening projects and new interchanges, such as those that replace a signalized intersection on a surface street or where design year traffic projections are less than 140,000 to 150,000 AADT.

The Build Alternative is divided into two phases. Phase 1 is more likely to be built in the nearer term if funding is identified for construction. Phase 2 is likely farther out in the future than Phase 1 and is also dependent on identification of funding. The two phases are described in detail in Chapter 2

Phase 1 includes both widening and new alignment while Phase 2 includes new alignment only. The design year Annual Average Daily Traffic (AADT) projections for the Build Alternative are expected to be between 33,280 and 50,580 vehicles per day. These volumes are substantially lower than the FHWA criterion. As a result, the project is considered to be a "Project with Low Potential MSAT Effects."

For both the Build and No-Build Alternatives, the amount of MSATs emitted would be proportional to the vehicle miles traveled (VMT) assuming that other variables such as fleet

mix are the same. The VMT for the No-Build and Build Alternatives was determined for the affected roadway network as shown in Table 3-5. The link-by-link VMT analysis is provided in a report titled *Air Quality and Traffic Noise Assessment*, which is available at the Environmental Division of the TDOT headquarters located at 505 Deaderick Street Nashville, Tennessee. As shown, the projected VMT for the No-Build Alternative is 271,566 miles. The projected VMTs for the Build Alternative and the Build Alternative with Option C-1 are 248,602 miles and 291,324 miles respectively. Therefore, it is expected that there would be no appreciable difference in overall MSAT emissions among the alternatives.

Table 3-5: 2031 Design Year VMT Projections on Affected Roadway Network

Alternative	Year 2031 VMT
No-Build	271,566
Build Alternative	248,602
Build Alternative with Option C-1	291,324

Construction of the project would lead to higher MSAT emissions for the Build Alternative along the segments of roadway that would be constructed on new alignment, along with a corresponding decrease in VMTs and MSAT emissions along currently traveled routes including US 45. Emissions increases may be offset somewhat by lower MSAT emission rates due to increased travel speeds for the Build Alternative. Travel speeds in the Build Alternative are expected to be higher than for the No-Build Alternative. According to EPA's MOBILE6 emissions model, emissions of all of the priority MSATs except diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases would offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

Also, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent from year 2000 to year 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures; however, the magnitude of the

EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

The construction of the Build Alternative would have the effect of moving some traffic closer to nearby residential properties; therefore, there may be localized areas where ambient concentrations of MSATs could be higher under the Build Alternative than the No-Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced at locations near the segments of Build Alternative that would be constructed on new alignment and near the segments of Riverside Drive that would be widened. However, as discussed above, the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be accurately quantified due to the inherent deficiencies of current models.

In summary, under the Build Alternative in the design year, it is expected there would be higher MSAT emissions in some areas, relative to the No-Build Alternative, due to increased VMT. There could be slightly elevated but unquantifiable changes in MSATs to residents and others in localized areas where VMT increases, which may be important, particularly to any members of sensitive populations. Conversely, lower MSAT emissions would be expected along the existing roadway network including US 45 due to reduced VMT.

On a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, would over time cause substantial reductions that, in almost all cases, would cause region-wide MSAT levels to be significantly lower than today.

Substantial construction-related MSAT emissions are not anticipated for this project as construction is not planned to occur over an extended building period; however, construction activity may generate temporary increases in MSAT emissions in the project area.

3.7 Noise Impacts

Sound exists in the human and natural environment all of the time. Some sounds are necessary or desirable for communication or pleasure, some are unnoticed, and some are unwanted or disturbing. By definition, unwanted sounds are called noise.

The level of highway traffic noise depends on three things: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of the traffic. Generally, heavier traffic volumes, higher speeds, and larger numbers of trucks increase the loudness of traffic noise.

Vehicle noise is a combination of the noises produced by the engine, exhaust, and tires. The loudness of traffic noise can also be increased by defective mufflers or other faulty equipment on vehicles. Any condition (such as a steep incline) that causes heavy laboring of motor vehicle engines would also increase traffic noise levels. In addition, there are other more complicated factors that affect the loudness of traffic noise. For example, as a person moves away from a highway, traffic noise levels are reduced by distance, terrain, vegetation, and natural and man-made obstacles.

Detailed discussions of the noise analysis are provided in the noise evaluation report for the project. The “Air Quality and Traffic Noise Assessment,” July 24, 2012, is available for review at TDOT’s Environmental Division office located at 505 Deaderick Street in Nashville, Tennessee.

The noise analysis was completed in accordance with FHWA noise standards, *Procedures for Abatement of Highway Traffic and Construction Noise*, 23 CFR 772, and the TDOT’s *Policy on Highway Traffic Noise Abatement* and included the following tasks:

- Identification of noise-sensitive land uses;
- Determination of existing sound levels;
- Determination of future sound levels for the No-Build and Build Alternatives;
- Determination of traffic noise impacts;
- Noise abatement evaluation;
- Discussion of construction noise; and,
- Coordination with local officials.

3.7.1 Criteria for Determining Noise Impacts

Noise impact is determined by comparing future project sound levels: (1) to a set of Noise Abatement Criteria

(NAC) for a particular land use category, and (2) to existing sound levels.

The FHWA noise standards (contained in 23 CFR 772) are included in TDOT's noise policy (Policy on Highway Traffic Noise Abatement, July 2010). The policy states that traffic noise impacts that warrant consideration of abatement occur when worst-hour equivalent sound levels approach or exceed the NAC, which are listed in Table 3-6. TDOT's noise policy defines "approach" as one decibel below the NAC.

Table 3-6: Noise Abatement Criteria in 23 CFR 772

Activity Category	LAEQ (h) (dBA)	Description of Activity
A	57 (Exterior)	Land on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ⁽¹⁾	67 (Exterior)	Residential
C ⁽¹⁾	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structure, radio stations, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structure, radio stations, recording studios, schools, and television studios.
E ⁽¹⁾	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A – D, or F.
F	—	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	—	Undeveloped lands that are not permitted.

(1) Includes undeveloped lands permitted for this activity category. Source: 23 CFR 772, July 2010

The FHWA noise standards and TDOT's policy also define impacts as occurring if there is a substantial increase in design year sound levels above the existing sound levels. Table 3-7 presents TDOT's criteria used to define substantial noise increase.

Table 3-7: TDOT's Criteria Defining Substantial Noise Increase

Existing Noise Level (dBA) ⁽¹⁾	Predicted Design Year Noise Level Increase (db) ⁽²⁾
42 or less	15 or more
43	14 or more
44	13 or more
45	12 or more
46	11 or more
47 or more	10 or more

(1) Worst hour noise level from the combination of natural and mechanical sources and human activity.

(2) Predicted design year noise level minus existing noise level.

3.7.2 Identification of Noise-Sensitive Land Uses

According to FHWA and TDOT noise policies, traffic noise analysis should be performed for 1) developed lands containing noise-sensitive land uses, and for 2) undeveloped lands where noise-sensitive development is permitted.

Land uses that are sensitive to highway noise were identified based on review of project plans, aerial photography, and visual inspection of the project corridor. The municipal planning or codes department was also contacted to determine if any building permits have been issued in the project area.

Table 3-8 describes the noise-sensitive land uses in the project area with common noise environments. Noise receivers were chosen to model these groups of noise sensitive receptors that are exposed to similar noise sources and levels; traffic volumes, traffic mix and speed and topographic features. The location of these Noise Receivers is shown in Figures 3-4A through D.

A total of 175 noise sensitive receptors are located in the project area. Because 32 receptors will be taken by the Build Alternative, they were excluded from the study. One hundred forty-two Active Category B and one Active Category C receptors were analyzed. Although the Bemis and Riverside Cemeteries are located in proximity to the project, these areas were determined not to be noise sensitive.

Table 3-8: Description of Noise Sensitive Land Uses

Noise Receiver	Activity Category	No. of Noise Sensitive Receptors)	Description of Area)
1	B	3	9-33 Lake Avenue
2	C	1	Gospel Assembly Church
3	B	1	1871 US 45, north of Edwards Drive
4	B	1	North of Cane Creek Road
5	B	9	Residence west of Raines Springs Road
6	B	5	Southeast of Riverside Drive and D Street
7	B	3	1211 Riverside Drive, south of Boone Lane
8	B	9	Residences southeast of US 45 and Seavers Road
9	B	5	Southwest of US 45 and Seavers Road
10	B	2	North of US 45 near Seavers Road and west of Build Alternative
11	B	1	289 Watlington Road, west of Build Alternative
12	B	3	228, 244, 278 Watlington Road, west of Build Alternative
13	B	8	Old Pinson Road
14	B	7	580-609 Chester Levee Road and 8 Lake Avenue
15	B	2	517, 520 Chester Levee Road south of Build Alternative
16	B	3	Intersection of Raines Springs Road and SR 18
17	B	3	Cane Creek Spur
18	B	1	23 D Street
19	B	4	Southeast of Riverside Drive and Boone Lane (1202-1208)
20	B	2	164-190 Bemis Cemetery Road, east of Build Alternative
21	B	1	175 McCorry Street
22	B	4	556 – 569 Chester Levee Road, south of Build Alternative
23	B	1	38 Lake Cove Avenue

Noise Receiver	Activity Category	No. of Noise Sensitive Receptors)	Description of Area)
24	B	4	497 – 507 Raines Springs Road, north of Build Alternative
25	E	4	44, 51 – 60 South Dixie Lane
26	B	4	135 Bemis Cemetery Road, east of Build Alternative
27	B	2	South of Cane Creek Road
28	B	2	West of Bemis Cemetery Road near Cane Creek
29	B	1	1165 Riverside Drive, south of Boone Lane
30	B	4	227, 263, 275 Watlington Road, west of Build Alternative
31	B	2	65, 68 South Dixie Lane
32	B	4	477 – 507 Raines Springs Road, north of Build Alternative
33	B	11	Along north side of SR 18
34	B	10	Along south side of SR 18
35	B	1	1374 Riverside Drive, northeast of D Street
36	B	13	2nd row residences on McCorry Street
37	B	2	1846, 1856 US 45, north of Edwards Drive

3.7.3 Determination of Existing Sound Levels

Existing noise levels were measured on May 4 and 5, 2011, at eight locations (Receivers 1, 2, 3A, 4, 4A, 5, 6, and 7). Noise monitoring was performed at each site during peak morning and afternoon traffic volumes as well as one off-peak time. Noise levels were monitored for at least ten minutes during these high traffic volume periods.

Existing traffic measurements were used to model the existing sound level conditions in Traffic Noise Model (TNM 2.5) to validate the model. Noise levels calculated by the model for the observed traffic conditions are compared with the peak measured noise levels. Based on the comparison of measured and predicted sound levels, the model was considered valid.

Existing predicted sound levels at the modeled locations ranged from 45 dBA to 72 dBA. As a number of the noise analysis areas did not experience any traffic during the

study, a number of the lower values represent ambient noise levels (see Figure 3-4A through D, Noise Receiver Locations). With the exception of Site 3A, the existing predicted sound levels at all sites did not approach or exceed the NAC, which is defined by TDOT as 66 dBA for Category B and C receptors and 71 dBA for Category E receptors. At Site 3A the existing predicted noise levels did exceed the NAC. Site 3A is located west of and adjacent to US 45. This site will be taken during construction.

3.7.4 Determination of Future Sound Levels

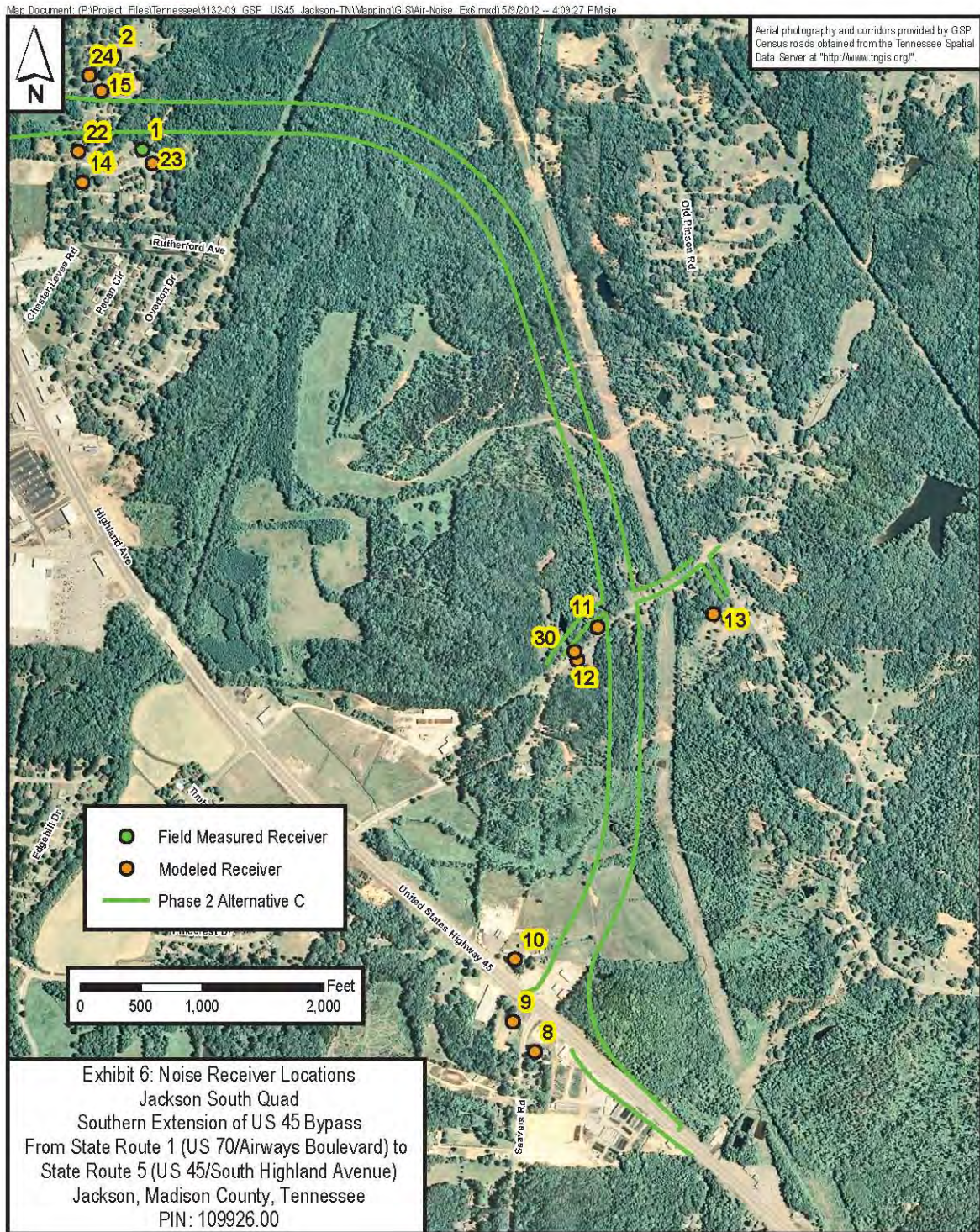
No-Build Alternative

Sound levels for the No-Build Alternative can be reasonably estimated by evaluating existing and future traffic volumes on US 45, Riverside Drive, and the minor arterial and residential streets within the project area. Sound levels for the No-Build Alternative in the Design Year 2031 are predicted to be approximately 1 to 2 dB higher than existing levels, on average.

Build Alternative

Noise modeling of the Build Alternative and the Build Alternative with Option C-1 was completed using TNM 2.5 computer program. The program calculated design year 2031 equivalent sound levels at 37 receivers representing the noise-sensitive land uses in the project area. Predicted design year sound levels for the Build Alternative and the Build Alternative with Option C-1 range from 46 to 72 dBA.

Figure 3-4A: Noise Receiver Locations



3.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

Figure 3-4B: Noise Receiver Locations

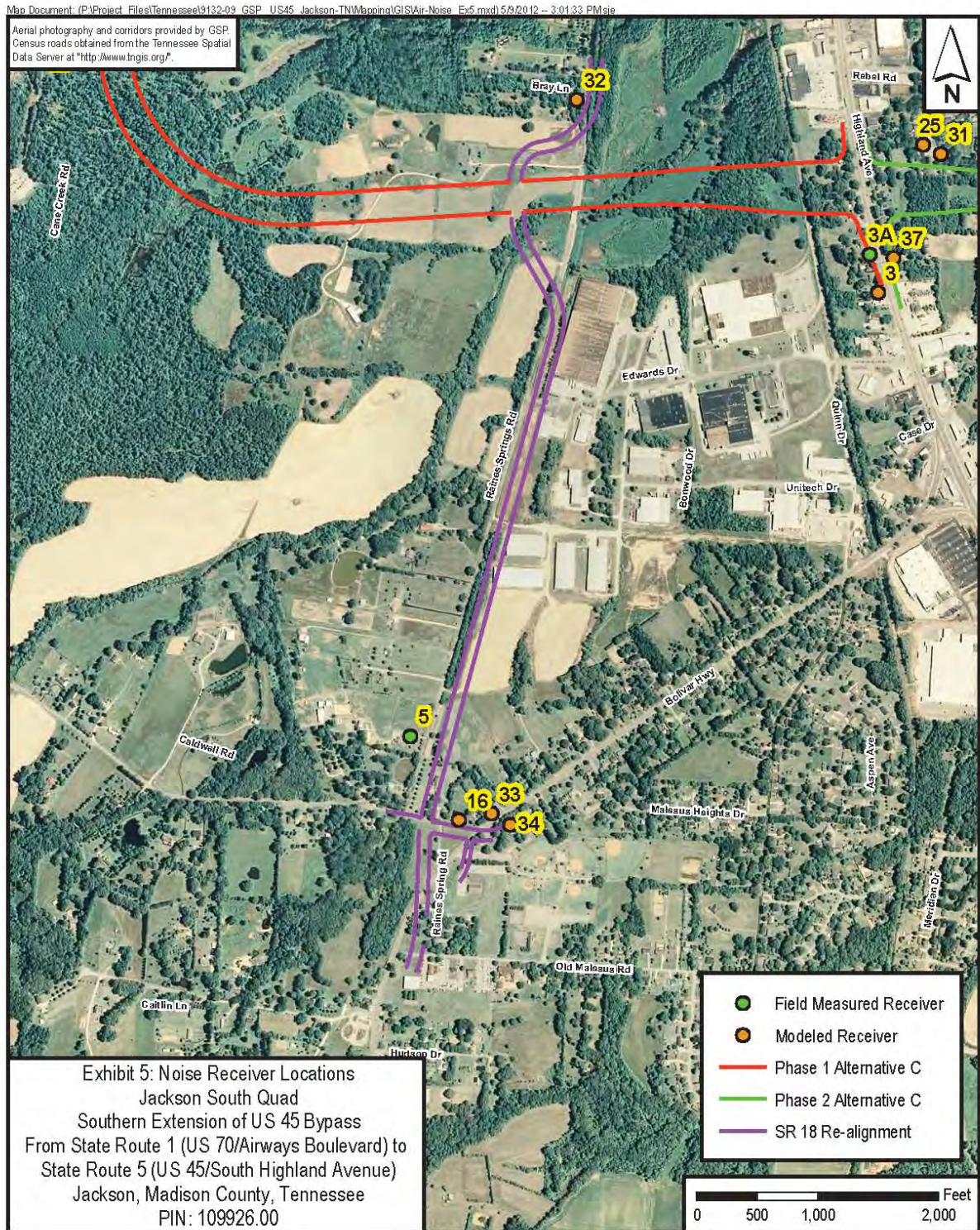


Figure 3-4C: Noise Receiver Locations

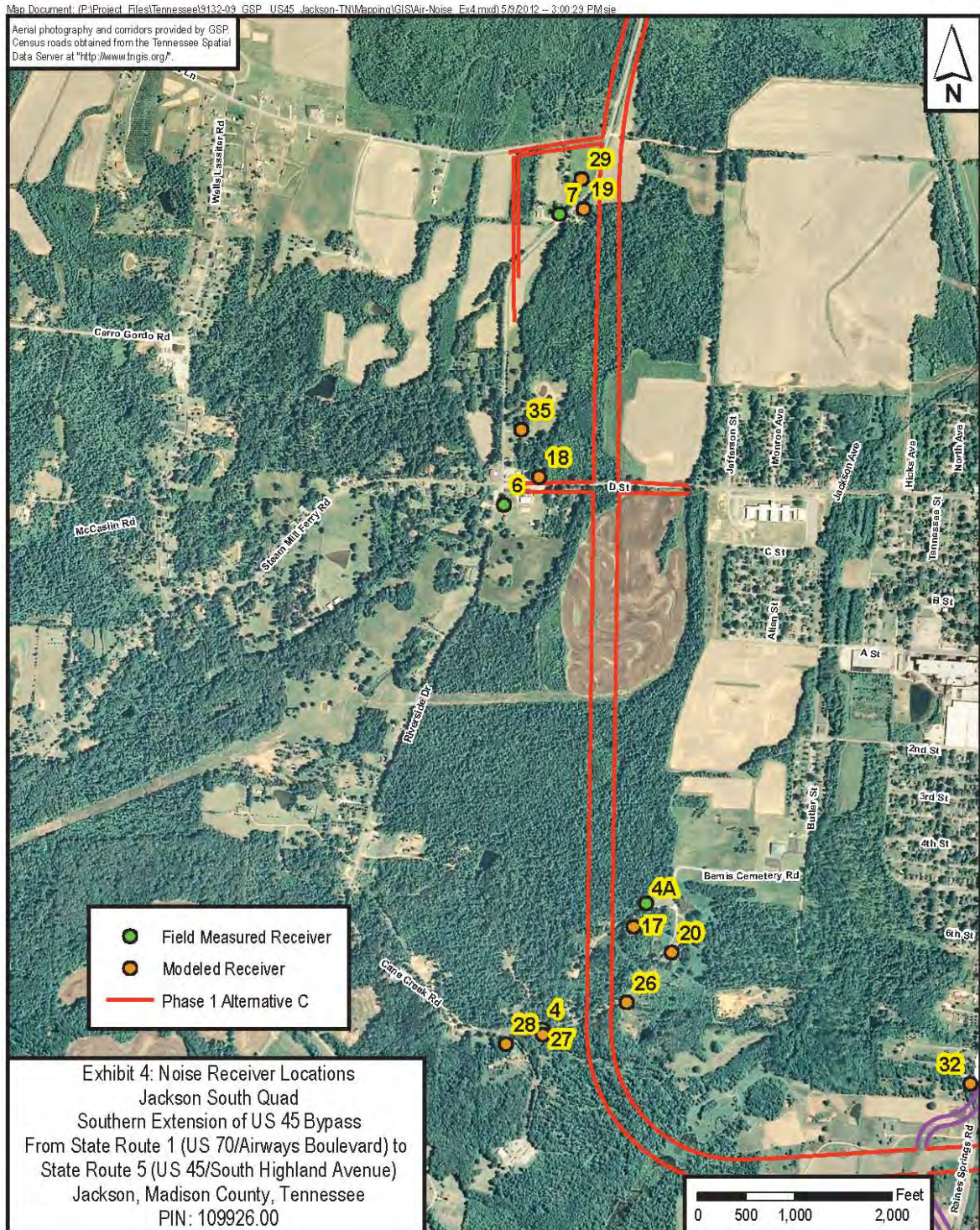
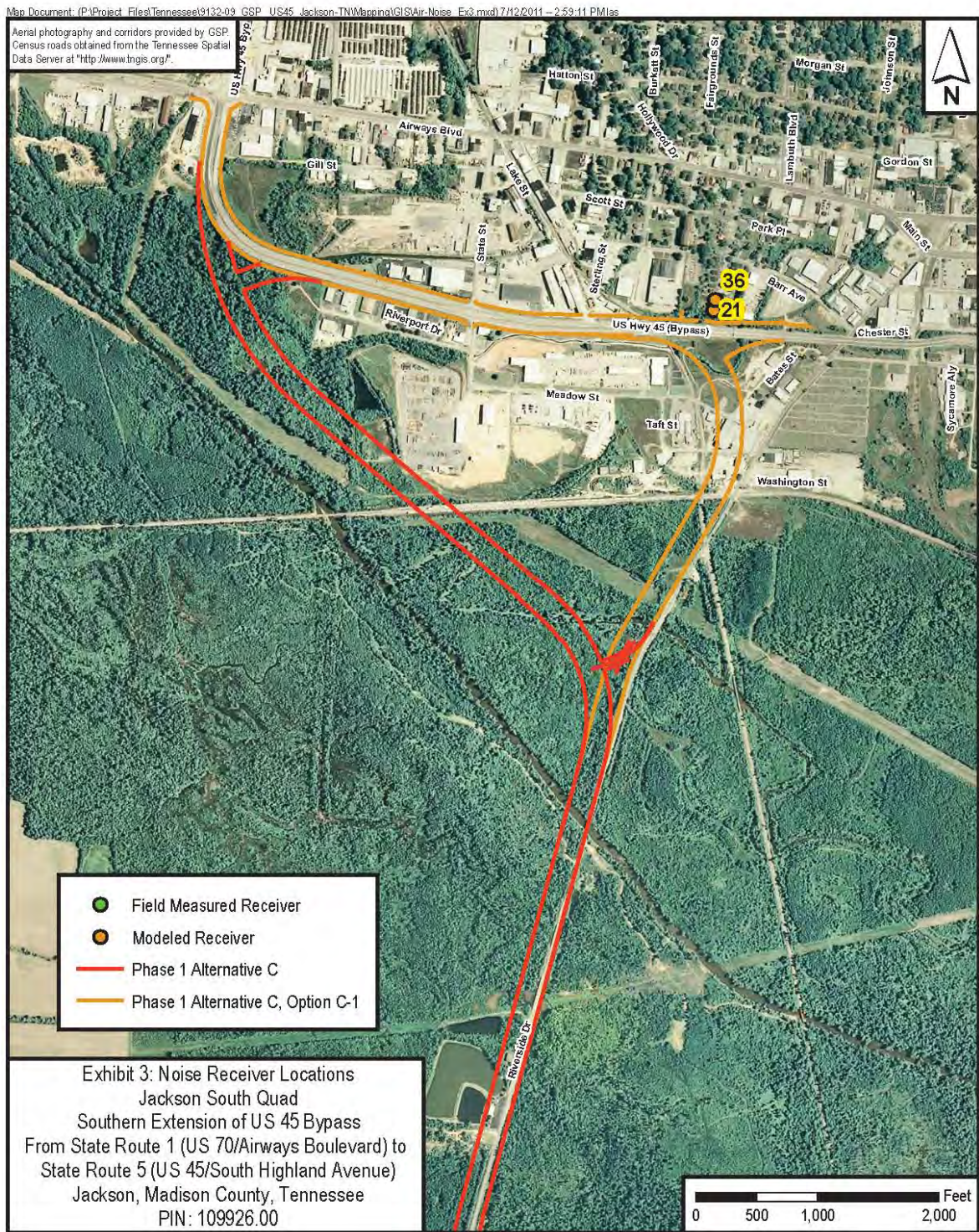


Figure 3-4D: Noise Receiver Locations



3.7.5 Determination of Traffic Noise Impacts

Design year sound levels under the No-Build Alternative are below 66 dBA at all modeled receivers with the exception of Receivers 3 and 37 representing 3 residential receptors along the existing US 45, north of Edwards Drive. The predicted No-Build sound levels were 71 dBA at these locations. These receptors also exceeded the NAC of 67 dBA under Existing 2011 conditions.

Design year sound levels under the Build Alternative and the Build Alternative with Option C-1 are the same at all modeled receivers except for the receivers at 14 residences along McCorry Drive. With the Build Alternative with Option C-1 alignment shifted away from McCorry Drive, sound levels are predicted to be 1 dBA lower than Build Alternative for these receptors.

Design year sound levels under Build Alternative and the Build Alternative with Option C-1 at most of the modeled receivers are predicted to be below 66 dBA. However, design year sound levels at a total of 17 receptors are predicted to approach or exceed the NAC. These receptors are predicted to be impacted by the project. These impacts include the 3 residences located along the existing US 45 north of Edwards Drive (Receivers 3 and 37) impacted under the No-Build Alternative as well as 15 residences located along D Street (Receiver 18), Riverside Drive (Receivers 19 and 29), US 45 near Seavers Road (Receivers 9 and 10), and McCorry Drive (Receiver 21).

Under Build Alternative and the Build Alternative with Option C-1, 46 total noise impacts are predicted for the design year including 45 Category B residences and one (1) Category C church.

3.7.6 Noise Abatement Evaluation

Abatement is generally evaluated when impacts are predicted to occur. Noise abatement measures may include alteration of horizontal and vertical alignment and traffic management measures (such as reducing speed limits, etc.).

The Alteration of Horizontal and Vertical Alignments in some instances can achieve noise reductions. For projects that involve the widening of an existing facility, the modification of the horizontal and vertical alignment is generally not a feasible mitigation strategy; however, the modification of the horizontal and vertical alignment may be a feasible strategy for projects that involve the

construction of a roadway on a new alignment. Phase 1 of the project would be constructed on both new and existing alignment while Phase 2 would be primarily on new alignment. Therefore, there is a potential to alter the vertical and horizontal alignment of Phase 2 of the project as a feasible mitigation strategy.

Traffic management measures, including reducing speed limits, can sometimes reduce sound levels. However, a 20 mile-per-hour reduction in speed is necessary for a readily noticeable (5 dB) decrease in sound levels. This sound level reduction would not be substantial. Therefore, speed reductions are not acoustically feasible as an abatement measure as discussed in Section 3.3.7.

Noise barriers are a method used to mitigate predicted noise impacts. As a result, noise barriers were evaluated.

In order for noise barriers to be included in the project plans, they must be determined to be both feasible and reasonable in accordance with TDOT's noise policy.

According to TDOT's noise policy, noise abatement would generally not be considered reasonable for isolated residences due to the quantity of abatement versus the benefits provided. As a result, noise abatement was not evaluated for receivers along D Street and McCorry Street.

3.7.7 Noise Barrier Feasibility and Reasonableness

Feasibility means that: (1) the construction of a barrier would not be anticipated to pose any major design, construction, maintenance, or safety problems; and, (2) the noise barriers will provide a noise reduction (or insertion loss) of at least 5 dB at the majority of impacted first-row receivers.

Reasonableness generally refers to the cost of the noise barriers weighed against the benefits. However, there are other factors that can result in a determination that noise abatement is not reasonable.

TDOT's noise policy states that noise abatement would not be considered reasonable for impacted land uses that were constructed after initial highway construction unless the project would cause an increase in the future No-Build Alternative sound levels of 3 dB or more.

Noise barriers are generally not feasible along roadways that are not access controlled because they would limit access from adjacent properties. The Build Alternative and

the Build Alternative with Option C-1 involve improvements to existing US 45 north of Edwards Drive and near Seavers Road. Numerous driveway intersections would be maintained along these segments. The four residences along Raines Springs Road north of the proposed US 45 alignment will retain driveway access to Raines Springs Road. As a result, noise barriers are not feasible along those segments.

However, noise barriers would be considered feasible to protect impacted residences where there would not be any future intersections with local roads or driveways or where receptors are not isolated. Review of the project plans and locations of impacted noise-sensitive land uses revealed eight locations where a noise barrier might be feasible and reasonable in accordance with TDOT's policy. Noise barriers for the following areas would be located near the right of way:

1. Chester Levee and Lake Avenue, south of proposed US 45,
2. Chester Levee, north of proposed US 45,
3. Watlington Road,
4. Cane Creek Road, west of alignment,
5. Bemis Cemetery Road, east of alignment,
6. Cane Creek spur, and
7. Riverside Drive and Boone Lane

TNM 2.5 was used to assess whether noise barriers could be designed that would provide a minimum of 5 dB reduction at the majority of impacted first-row residences for each impacted receiver. A reduction of 5 dBA could not be achieved at Chester Levee and Lake Avenue, south of proposed US 45; Watlington Road; Cane Creek Road, west of alignment; Bemis Cemetery Road, east of alignment; or Cane Creek spur. Therefore, noise barriers are neither reasonable nor feasible for this project.

However, 5 dBA reduction could be achieved at Chester Levee, north of proposed US 45 and Riverside Drive and Boone Lane. Therefore, noise barriers for these impacted land uses are acoustically feasible.

However, feasibility alone does not dictate whether a noise barrier will be built, it must also be reasonable. For a noise barrier to be reasonable, the barrier must provide at least 7 dB noise reduction at 60 percent or more of the first-row benefited receptors. At Riverside Drive and Boone Lane (Receivers 19 and 29), 60 percent of the first-row benefited

receptors met the design goal. However, at Chester Levee, north of proposed US 45 (Receivers 2 and 15), neither of the two benefited receptors met the design goal, so therefore a noise barrier is not reasonable for these receivers.

The calculation of the allowable cost per benefited residence was determined for the residences at Riverside Drive and Boone Lane (Receivers 19 and 29). The area per benefitted residence was determined to be above the allowable area per benefitted residence. Therefore, a noise barrier for this area is not reasonable in accordance with TDOT's noise policy.

3.7.8 Construction Noise

Transportation projects result in intermittent and temporary noise above existing ambient noise levels due to construction activities. The sound levels resulting from construction activities would be a function of the types of equipment utilized, the duration of the activities, and the distances between construction activities and nearby land uses.

However, the noise increases would be temporary and would not constitute a noise impact as defined by FHWA Noise Standards and TDOT's Noise Policy.

Construction procedures would be governed by TDOT's *Standard Specifications for Road and Bridge Construction*. The contractor would be bound by Section 107.01 of the *Standard Specifications* to observe any noise ordinance in effect within the project limits. All construction equipment should be maintained, repaired, and adjusted to keep it in full satisfactory condition and detoured traffic should be routed during construction so as to cause the least practicable noise impact upon noise-sensitive areas.

3.7.9 Information for Local Officials

TDOT, in cooperation with the City of Jackson, would encourage developers to practice noise compatible development by making available to local officials information that may be useful to communities for protecting future land development from becoming incompatible with anticipated highway noise levels. TDOT would also advise local officials of the availability of information in its project noise study reports.

Information on Noise Compatible Planning Concepts

Highway traffic noise should be reduced through a program of shared responsibility. Local governments can use their power to regulate land development in such a way that noise sensitive land uses are either prohibited from being located adjacent to a highway or developments are planned, designed and constructed in such a way that noise impacts are minimized.

Federal participation in noise abatement measures will not be considered for lands that are not permitted by the date of public knowledge of the project and TDOT will not analyze or provide noise abatement for these lands. After the date of public knowledge, provision of noise abatement becomes the responsibility of local communities or private developers. The FHWA has produced guidance documents on noise compatible land use planning that may be consulted for additional information including:

- The Audible Landscape: A Manual for Highway Noise and Land Use, FHWA, November 1974.
- Entering the Quiet Zone: Noise Compatibility Land Use Planning, FHWA, May 2002.

Estimates of Design Year Noise Levels

TNM was used to predict design year sound levels at various distances from the proposed centerline of the near lane for these undeveloped areas. The analysis was conducted for an at-grade condition. Table 3-9 shows the sound level at various distances from the edge of pavement along several highway sections in which undeveloped lands are present. Sound levels will vary with changes in terrain and will be affected by the shielding of objects such as houses.

The noise predictions do not represent predicted levels at every location at a particular distance back from the roadway. Sound levels will vary with changes in terrain and will be affected by the shielding of objects such as buildings. This information is being included to make local officials and planners aware of anticipated highway noise levels so that future development will be compatible with these levels.

Table 3-9 – Design Year 2031 Sound Levels with Project – Undeveloped Lands

HIGHWAY SECTION	LEQ BY PERPENDICULAR DISTANCE FROM EDGE OF ROADWAY PAVEMENT ¹				
	100 FT	200 FT	300 FT	400 FT	500 FT
Proposed US 45 Bypass Between Watlington and US 45	67	62	59	56	54
Proposed US 45 Bypass Between Bemis Cemetery Road and D Street	71	66	62	59	57
Proposed US 45 Bypass Between Riverside Drive and US 45	72	68	66	64	62
Along Re-alignment of SR 18	58	54	52	50	48

¹ For at-grade situation

Type II Noise Barrier Program

TDOT currently has a Type II Noise Barrier Program to facilitate the construction of “retrofit” noise barriers along existing highways. To be eligible for a Type II noise barrier, an area must meet the following criteria:

- The neighborhood must be located along a limited-access roadway;
- The neighborhood must be primarily residential;
- The majority (more than 50 percent) of residences in the neighborhood near the highway pre-dated the initial highway construction;
- A noise barrier for the neighborhood must not have been previously determined to be not reasonable or not feasible as part of a new highway construction or through-lane widening study (Type I project);
- Existing noise levels measured in the neighborhood must be above the NAC of 66 dBA;
- A barrier must be feasible to construct and will provide substantial noise reduction; and
- A barrier must be reasonable (barrier cost per benefited residence) in accordance with TDOT’s Noise Policy. A residence is considered “benefited” if the noise barrier will reduce the traffic noise by at least 5 dB.

3.8 Cultural Resource Impacts

Pursuant to the guidelines for *Section 106 of the National Historic Preservation Act*, as outlined in 36 CFR 800, studies were conducted to determine if any historic architectural or archaeological resources exist in the project's Area of Potential Effect (APE) that are listed in or eligible for listing in the NRHP. The project's APE is shown in Figure 3-5. The project has been coordinated with the State Historic Preservation Office (SHPO) and others as required under Section 106. Section 3.8.3 summarizes Section 106 coordination

The NRHP Criteria of Eligibility, outlined in 36 CFR 60, describes what makes a property significant. These criteria were used to evaluate the significance of the surveyed historic architectural and archaeological resources.

3.8.1 Historic/Architectural Resources

A records search was conducted at the Tennessee Historical Commission (THC), Tennessee's SHPO. The search revealed five properties in the APE that had been previously surveyed, and three resources that were listed in or previously determined eligible for the NRHP. A field survey and research were then conducted to determine: 1) if any of the previously surveyed properties were NRHP-eligible; 2) if the NRHP listed resources were still present and still eligible and; 3) if there were any other individual historic architectural resources (e.g., individual buildings or structures, such as bridges) or historic districts in the project's APE that would meet the Criteria of Eligibility for the NRHP.

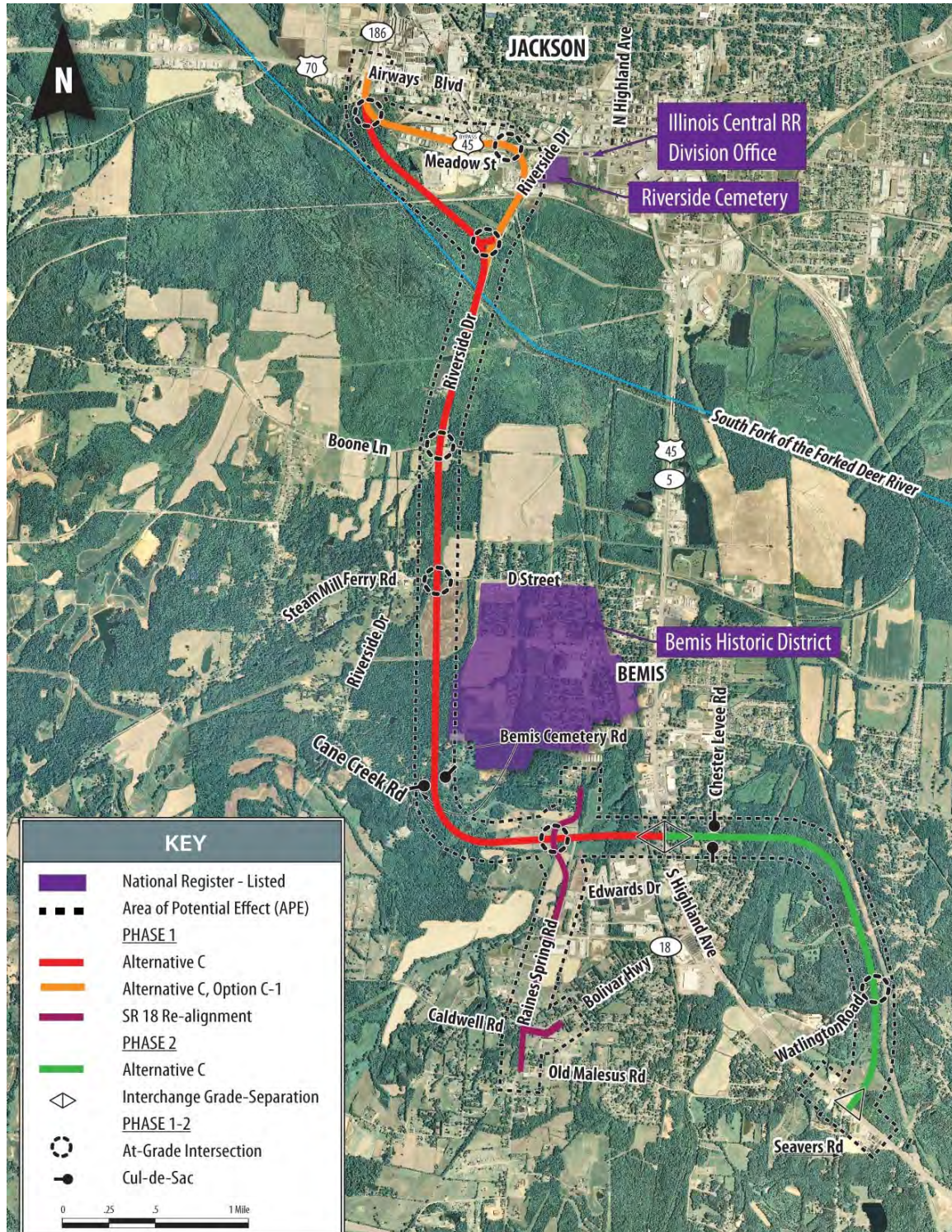
An earlier report entitled *Architectural and Historical Assessment, Proposed Improvements to State Route 18 from State Route 100 to State Route 5 (U.S. 45), Hardeman and Madison Counties* was published in 2007. This document was reviewed prior to the field survey, as the APE for that project overlaps the APE of the proposed project in some areas. Two resources from that report, the Malesus Heights district and the Hammond-Watlington House, were determined to be within the APE of the proposed project. Neither was recommended for NRHP eligibility and the SHPO concurred.



What is an Area of Potential Effect (APE)?

A project's APE is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist." The APE is influenced by the scale and nature of an undertaking.

Figure 3-5: Area of Potential Effect



Note: The APE for archaeological resources is much narrower than that depicted on this map. The archaeological APE generally conforms to the proposed ROW.

The historic and architectural field survey was undertaken in March 2011. At that time, properties were visited, digital photographs taken and residents queried for information. A total of 27 properties within the APE that approach or exceed 50 years of age were surveyed. A 1950 USGS quad map on file at the THC and an examination of the form and style of these buildings, as well as conversations with available owners, assisted in the determination of which buildings should be surveyed and photographed. None of the properties surveyed warranted further evaluation for NRHP eligibility. The properties were found to be common types and styles that do not possess architectural significance or known historical significance. In addition, no areas were identified that would warrant evaluation as a potential historic district.

The following previously listed NRHP properties are located within the APE and were surveyed to determine Section 106 Effects:

- 1) Riverside Cemetery, Intersection of Sycamore Street and Riverside Drive – NRHP, 2003;
- 2) Illinois Central Railroad Division Office, 245 Sycamore Street – NRHP, 1993; and
- 3) Bemis Historic District, Bemis community/west side of US 45 – NRHP, 1991.

The Criteria of Adverse Effect were applied to the three NRHP-listed resources in the project's APE. Table 3-10 summarizes the survey's findings regarding the project's effects under Section 106. In summary, the project would have No Adverse Effect to historic architectural properties. Additionally, the project would not involve a Section 4(f) use from historical architectural properties. No land would be taken from any historic properties for construction of the proposed project.

Table 3-10 Summary of Section 106 Effects

Resource	Section 106 Effect Determination
Riverside Cemetery	No Adverse Effect
Illinois Central Railroad Division Office	No Effect
Bemis Historic District	No Adverse Effect

The SHPO letter, dated October 3, 2011, states that they find that the project as currently proposed would not adversely affect the NRHP-listed resources located in the project area.

3.8.2 Archaeological Resources

Pursuant to Section 106 and other state and federal regulations, the project area was surveyed in April and May 2011 to identify archaeological resources that would meet the NRHP Criteria of Eligibility. A background literature search and records search was also conducted in April 2011.

The survey identified no archaeological resources that were considered eligible for the NRHP. The study also stated that no additional archaeological work was recommended. The SHPO concurred on November 10, 2011 with the finding of no archaeological properties found and no need for additional studies. As such, the project would have no Section 106 effect to archaeological resources. Evidence of SHPO's concurrence is in Appendix C.

The SHPO concurred with the findings regarding eligibility and effects to archaeological resources. They stated that they find no archaeological resources eligible for listing in the NRHP.

3.8.3 Section 106 Coordination

This project has been coordinated with appropriate parties pursuant to Section 106 of the *National Historic Preservation Act (NHPA)*.

During the initial coordination phase, the City of Jackson coordinated with local interested parties and TDOT coordinated with American Indian tribes. In April of 2011, letters were sent to the following local interested parties and tribal representatives, informing them of the project and inviting them to be Section 106 Consulting Parties. Coordination letters were sent to the following pursuant to Section 106:

Local Interested Parties

- City of Jackson CLG/ Historic Commission
- Madison County Historian
- Southwest Tennessee Development District

Native American tribes:

- Alabama-Quassarte Tribal Town
- Chickasaw Nation
- Choctaw Nation of Oklahoma
- Eastern Shawnee Tribe of Oklahoma
- Kialegee Tribal Town
- Muscogee Creek Nation
- Shawnee Tribe
- United Keetowah Band of Cherokee Indians

TDOT received one response from interested parties. The Madison County Historian requested that the City of Jackson and TDOT consider an access ramp from the Build Alternative into the Bemis Mill in order to provide viable, direct industrial access to the Mill. The request was considered but deemed infeasible, as the project funding would not allow such a road to be included in the project cost.

One response was received through tribal coordination, which was undertaken by TDOT. The Choctaw Nation of Oklahoma responded on May 2, 2011, that Madison County is outside the Tribe's area of historical interest and that no further coordination with the Tribe would be necessary.

Copies of the letter sent to Native American tribes and the single response received are included in Appendix C.

3.9 Recreational Resource Impacts

The analysis revealed that the No-Build and Build Alternatives would not involve or impact any recreational resources.

3.10 Section 4(f)

The analysis revealed that the No-Build and Build Alternatives would not involve or impact a Section 4(f) resource because no public parks, recreational lands, wildlife and waterfowl refuges or sites on or eligible for the NRHP exist in the project impact area.



What is Section 4(f)?

Section 4(f) from the Department of Transportation Act of 1966 (Title 49 United States Code Section 303) declares it is national policy that special effort will be made to preserve the natural beauty of the countryside, public park and recreation lands, wildlife and waterfowl refuges, and historic sites. Section 4(f) permits the Secretary of Transportation to approve a project that requires the use of publicly-owned land from a park, recreation area, wildlife refuge, or any land from a historic site of national, state, or local significance only if the following determinations have been made: "there is no feasible and prudent alternative to the use of such land, and all possible planning has been undertaken to minimize harm to the Section 4(f) lands resulting from such use."

3.11 Section 6(f)

The analysis revealed that the No-Build and Build Alternatives would not involve or impact any recreational resources or property developed using Land and Water Conservation Act (Section 6(f)) funds.

3.12 Natural Resources Impacts

The findings of the Ecology Report dated September 8, 2011 prepared for this project, are summarized below. Ecological resources described in the text are illustrated in Figures 3-6 & 3-7.

3.12.1 Terrestrial Resources

Much of the land in the project corridor is forested. There are also several habitats in earlier stages of succession. Industrial, commercial, and residential lands, which have limited habitat value, are infrequent. The northern portion of the project corridor is located in the floodplain forests of the South Fork of the Forked Deer River. This is a large tract of continuous bottomland hardwood wetland, crossed by existing Riverside Drive. The forests are largely composed of oak and bald cypress trees, but also include sweet gum, red maple, willow, and river birch trees.

The forests in the center of the project corridor, near the Bemis Cemetery Road and north of Cane Creek and the forests east of Meridian Creek near the southern terminus of the project are primarily upland forests on short steep hillsides and narrow ridgetops. The narrow ridgetop forests are largely composed of pitch pine with very little understory or groundcover. The narrow valleys within these upland forests are dominated by tulip poplar and hickory with various groundcovers. The riparian forest located near Cane Creek is located in a wetland. It is likely that beaver have impounded Cane Creek creating a forested wetland in this location. Obligate wetland species such as buttonbush, black willow, alder, lizards tail, sedges, and rushes dominate the understory and groundcover. Multiple wet weather springs are common at the base of forested hill slopes along forested wetland margins in this area.

The forest edges throughout the project area are most commonly dominated by blackberry, multiflora rose, and European privet. The wetland forest edges are predominantly sweet gum, maple, boxelder, and green ash.

Figure 3-6: Ecological Resources in the Project Area (Southern Project Area) - Source: Ecology Report, 09/08/2011

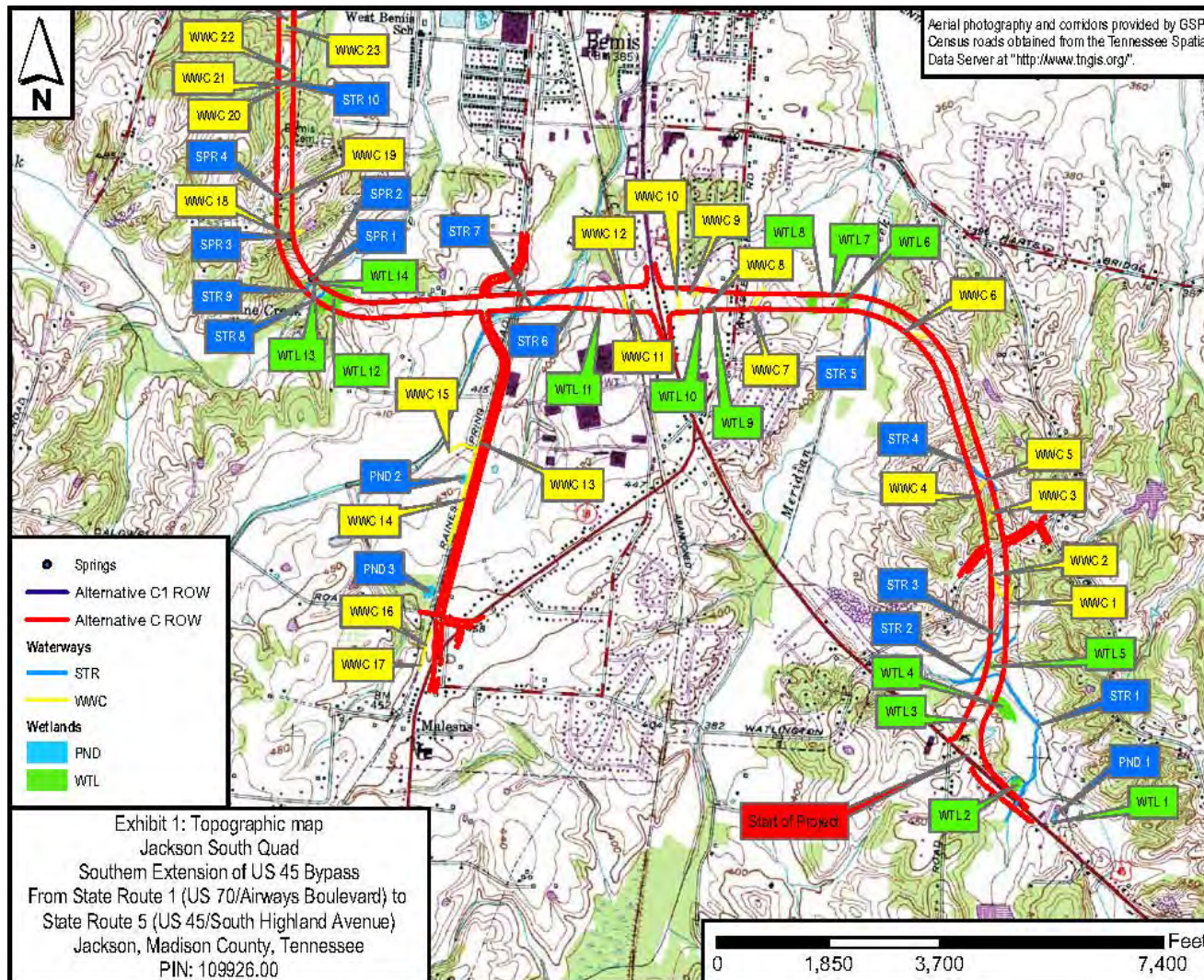
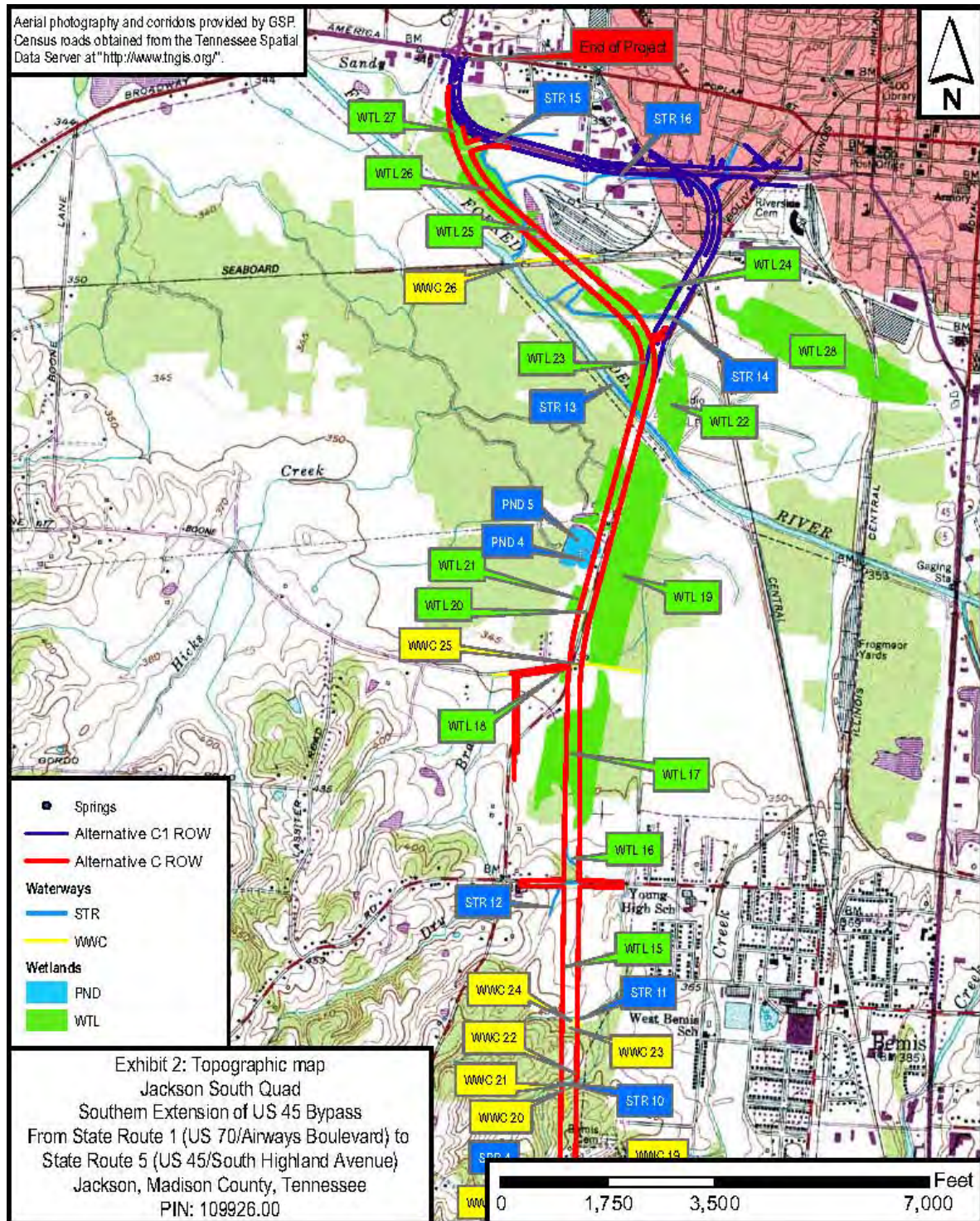


Figure 3-7: Ecological Resources in the Project Area (Northern Project Area) - Source: Ecology Report, 09/08/2011



Both upland and floodplain forested habitats provide food, cover, and nesting opportunities for numerous small mammals, including rabbits, squirrels, and other rodents, as well as numerous reptiles, native birds, spiders and other arachnids, and insects. Species observed during the field surveys include white-tailed deer, rabbit, grey squirrel, raccoon, opossum, box turtle, and numerous turtles, snakes, frogs, and birds.

The industrial, commercial, and residential lands generally have limited wildlife value, as they are usually paved or mowed, except for undisturbed vegetation along fencerows or boundaries.

Recently logged or cleared forests within the project area are frequently dominated by invasive or exotic plant species.

There are no naturally occurring glades, old growth forests or other unique habitats within the project corridor.

Direct Impacts - Short-term impacts to the area's habitat would consist of dust, noise and changes in land use, as the proposed roadway will take land used for agricultural purposes and some wooded areas. Long-term impacts would consist of permanent loss of open and small wooded tracts along the proposed project as a result of the additional ROW needed. The loss of approximately 159 (Alt. C) or 145 (Alt. C-1) acres of forested and old-field habitat is one of the largest impacts of the project. There will be direct long-term adverse impacts when productive forests and old-field areas are converted to roadway. Forest fragmentation will be a direct result of the proposed project.

Mortality of individual wildlife may occur both during construction and highway operation. Although roadway mortality is generally not believed to significantly affect animal populations under normal conditions, if the population is experiencing other sources of stress such as disease or habitat degradation, then traffic-related mortality can contribute to the demise of the population. Highway noise can affect the utilization of habitats by wildlife. Since this is a rural project, portions of which are not located near a major interstate highway, noise is not currently a factor within existing habitats.

In addition, construction and earthmoving activities would create disturbed soil areas that would become susceptible to the invasion of invasive exotic plant species, further depleting suitable habitat for more desirable native plant

species. Kudzu, which is common in recently disturbed habitats in the project area, may be spread during and after the construction of this project. Interior forest animal species, such as many migratory song birds, may lose habitat as large forest blocks are fragmented.

The No-Build Alternative would not cause terrestrial impacts.

3.12.2 Water Quality and Aquatic Resources

The Build Alternative would be designed to avoid major impacts to waters of the state to the extent practicable. Efforts to further minimize impacts would continue throughout the design, permitting, and construction processes. Unavoidable impacts would be mitigated as required by applicable laws and regulations. In an effort to minimize sedimentation impacts, erosion and sediment control plans would be included in the project construction plans. TDOT would also implement its *Standard Specifications for Road and Bridge Construction*, which includes erosion and sediment control standards for use during construction. The State of Tennessee sets water quality criteria for waters of the state; these standards must be met during the construction of the highway improvement.

The status of aquatic resources in the project area is summarized below:

- Meridian Creek is listed on the 303d list for flow alteration. The source of this issue is upstream impoundments. Meridian Creek is classified as a Category 4 stream, meaning the stream impacts are not caused by a pollutant.
- Bond Creek is listed on the 303d list for habitat loss due to alterations in stream side or littoral vegetative cover and escherichia coli. The source of the pollution is discharges from a municipal separate storm sewer system (MS4) area and streambank modifications. Bond Creek is a Category 5 stream, meaning it is impaired, but EPA has approved a pathogen total maximum daily load (TMDL) that addresses some of the known pollutants. The TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards.



What is the 303(d) list?

Section 303(d) of the federal Clean Water Act requires states to develop a list of impaired waters; for example, rivers and lakes. The waters that are included on the list do not meet water quality standards. States are required to develop action plans to improve the water quality of the listed waters.



Bond Creek

- The South Fork of the Forked Deer River is listed on the 303d list for phosphorus, loss of biological integrity due to siltation, physical substrate habitat alterations and escherichia coli. The source of the pollution is discharges from MS4 area, non-irrigated crop production, dredge mining, sand/rock/gravel mining, land development and channelization. The South Fork of the Forked Deer River is a Category 5 stream, meaning one or more uses is not being met; however, EPA has approved a pathogen TMDL that addresses some of the known pollutants.



South Fork of the Forked Deer River

Table 3-11 includes a summary table of the streams, springs, seeps, impoundments and other watercourses and waterbodies, which would be potentially affected by the Build Alternative. The determinations as to which are waters of the State and/or of the US have not been confirmed by the Tennessee Department of Environment and Conservation (TDEC) or the US Army Corps of Engineers (USACE.). All aquatic impacts identified during the design and permitting processes will be avoided, minimized, or mitigated to the extent possible. Commitments made will be incorporated into the project permits.

Direct Impacts - Based on the NEPA concept plans, The Build Alternative would affect 15 streams and 22 wet weather conveyances. The Build Alternative with Option C-1 will affect 15 streams and 21 wet weather conveyances. It appears that the channels would be bridged or placed in culverts and some rechannelization could occur (see following section on channelization). Project impacts to aquatic resources would be mitigated as required by the appropriate permitting agencies.

Table 3-11: Aquatic Resource Impacts - Source: Ecology Report, 09/08/2011

Aquatic Resources	No-Build Alternative	Build Alternative	Build Alternative with Option C-1
Streams (linear feet affected)	0	6,672	6,782
Wet Weather Conveyances (linear feet affected)	0	6,043	5,754
Ponds (Acres affected)	0	0.3	0.3
Springs (Number affected)	0	3	3

For the Build Alternative, increased sediment loadings during construction activities could occur. TDOT's *Standard Specifications for Road and Bridge Construction* would be followed to avoid or minimize project impacts in regard to erosion, siltation and sedimentation.

3.12.3 Wetland Resources

Wetlands are defined by the USACE and the EPA as “those areas that are inundated or saturated by surface or groundwater at a frequency or duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands typically include swamps, marshes, bogs and similar areas” (33 *CFR* 328.3).

Field studies were conducted to confirm the presence of wetlands for the Build Alternative. Approximately 40.82 acres of wetlands have been identified within the impact area of the Build Alternative. Approximately 26.34 acres of wetlands have been identified within the impact area of the Build Alternative with Option C-1. Most of these wetlands are forested with a few emergent and scrub/shrub. Potential wetlands near the Riverside Drive and Boone Lane intersection were reported by the US Fish and Wildlife Service (USFWS) based on National Wetland Inventory Maps. Wetlands were delineated in this area during the field examination. Figures 3-6 and 3-7 indicate the location of the wetlands in relation to the Build Alternative.

Of the 28 wetlands identified during the ecology fieldwork, only eight wetlands (17, 19, 21, 22, 23, 24, 26, & 27) within the floodplain of the South Fork of the Forked Deer River were included in the analysis of wetland function. Nine representative plots were selected within the eight wetlands for analysis. Analysis areas were then defined by distinctions in character (water depth, tree size, species, etc.) or physical divisions (uplands, roads, rivers, etc.).

The Functional Capacity Indices (FCI), which range from 0 to 1.0, was measured for each of the eight functions that were modeled in the analysis for each of the nine plot areas, illustrated in Figure 3-8. The average across all plots and functions is 0.84. The results of the wetland functional analysis indicate that all eight wetlands assessed in the in the project area are supporting high levels of functionality across numerous functions.

Table 3-12 describes the wetlands' size, type, location and acres to be filled or drained.



What is a Wetland Functional Analysis?
It evaluates current wetland functions to predict changes that may result from proposed activities. The wetland is compared to similar wetlands that are relatively unaltered.

Figure 3-8: Functional Wetland Assessment - Source: Ecology Report, 09/08/2011

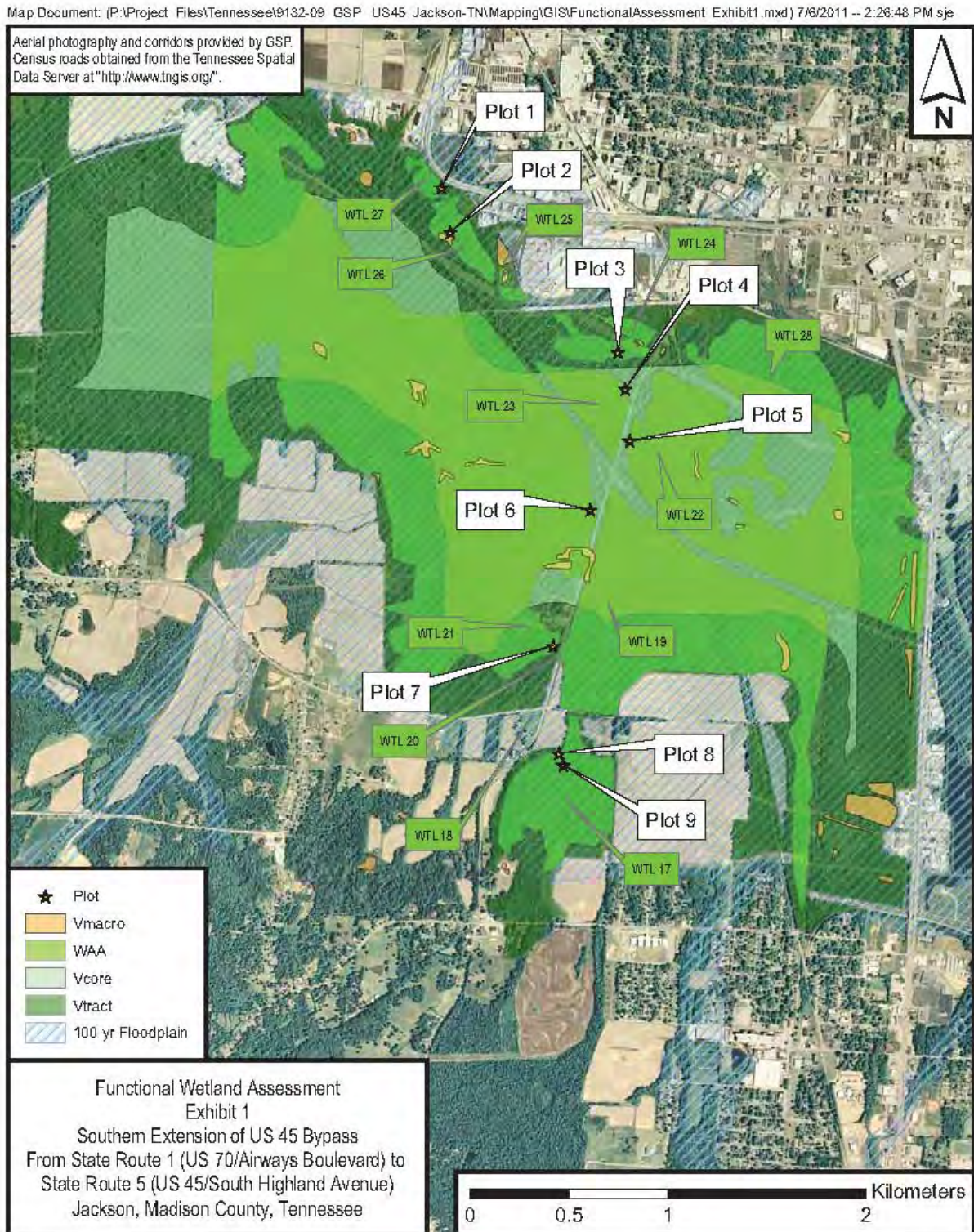


Table 3-12: Wetland Impacts – Source: Ecology Report, 09/08/2011

Wetland #	Wetland Type	Build Alternative	Project Impact on Wetland	Wetland Functional Assessment	Wetland Size (acres)	
					Total	Likely Filled or Drained**
1	Forested	C	None	NA	0.04	0
		C, Option C-1	None			0
2	Forested	C	None	NA	0.70	0
		C, Option C-1	None			0
3	Emergent	C	Fill	NA	0.01	0.1
		C, Option C-1	Fill			0.1
4	Emergent	C	Fill	NA	2.78	0.48
		C, Option C-1	Fill			0.48
5	Scrub-shrub	C	Fill	NA	0.80	0.55
		C, Option C-1	Fill			0.55
6	Forested	C	Fill	NA	1.30	1.03
		C, Option C-1	Fill			1.03
7	Emergent	C	Fill	NA	0.007	0
		C, Option C-1	Fill			0
8	Forested	C	Fill	NA	1.51	0.92
		C, Option C-1	Fill			0.92
9	Scrub-shrub	C	Fill	NA	0.02	0.02
		C, Option C-1	Fill			0.02
10	Scrub-shrub	C	Fill	NA	0.004	0
		C, Option C-1	Fill			0
11	Forested	C	Fill	NA	0.40	0.19
		C, Option C-1	Fill			0.19
12	Forested	C	Fill	NA	4.64	2.04
		C, Option C-1	Fill			2.04
13	Forested	C	Fill	NA	0.02	0.02
		C, Option C-1	Fill			0.02
14	Forested	C	Fill	NA	0.29	0.28
		C, Option C-1	Fill			0.28
15	Scrub-shrub	C	Fill	NA	0.15	0.14
		C, Option C-1	Fill			0.14

3.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

Wetland #	Wetland Type	Build Alternative	Project Impact on Wetland	Wetland Functional Assessment	Wetland Size (acres)	
					Total	Likely Filled or Drained**
16	Scrub-shrub	C	Fill	NA	0.03	0.03
		C, Option C-1	Fill			0.03
17	Forested	C	Fill	Plots 8/9 FCI 1-8	77*	5.85
		C, Option C-1	Fill			5.85
18	Emergent	C	Fill	NA	1.03	0.26
		C, Option C-1	Fill			0.26
19	Forested	C	Fill	Plot 6 FCI 1-8	121*	3.83
		C, Option C-1	Fill			3.83
20	Forested	C	Fill	NA	0.47	0.47
		C, Option C-1	Fill			0.47
21	Forested	C	Fill	Plot 7 FCI 1-8	2.48	0.41
		C, Option C-1	Fill			0.41
22	Forested	C	None	Plot 5 FCI 1-5, 7, 8	279*	0
		C, Option C-1	None			0
23	Forested	C	Fill	Plot 4 FCI 1-8	61*	6.66
		C, Option C-1	Fill			3.95
24	Forested	C	Fill	Plot 3 FCI 1-8	61*	3.46
		C, Option C-1	Fill			0.56
25	Forested	C	Fill	NA	5*	1.92
		C, Option C-1	Fill			0
26	Forested	C	Fill	Plot 2 FCI 1-8	45*	6.95
		C, Option C-1	Fill			0
27	Forested	C	Fill	Plot 1 FCI 1-8	45*	2.95
		C, Option C-1	Fill			2.95
28	Forested	C	Fill	NA	279*	0
		C, Option C-1	Fill			0

* The wetland area acreage was derived from National Wetland Inventory mapping when the subject wetland extended well beyond the limits of the NEPA concept. Complete wetland boundaries were not determined in the field for these large wetlands.

** The impacts were derived from NEPA concept plans, which included the proposed ROW

3.12.4 Avoidance and Minimization of Wetland Impacts

Impacts to wetlands have been minimized as much as possible. Avoiding wetlands in the project area is not practical because avoidance alternatives would require moving the alignment away from the floodplain of the South Fork of the Forked Deer River and would not meet the project purpose and need.

Alternatives that were previously considered include:

1. In 2001, an eastern bypass route to connect US 45 south of Jackson near SR 18 to US 45 north of I-40 was studied. Three alternatives beginning south of the US 45 intersection with SR 18, bypassing the City to the east, crossing I-40 and then ending north of Jackson in the vicinity of the intersection of SR 43 and existing US 45 were studied.

A group, "Friends of Harris Creek," formed in opposition to the eastern bypass alternatives and recruited the Sierra Club to support their opposition. The opposition was due to the fact that the alternatives crossed expansive wetlands and numerous streams along the approximate 20-mile route. An additional study concluded that the area encompassing the proposed alternatives was environmentally sensitive and best avoided.

2. In 2004, TDOT staff developed one alternative for a southern bypass which began on the north at the intersection of Airways Boulevard and the US 45 Bypass and ended at US 45 (South Highland Avenue) south of SR 18. In conjunction with the new bypass, the City proposed a new connector road from the new US 45 Bypass west of Bemis to US 45 (South Highland Avenue) south of Bemis.

According to TDOT files, in April of 2004, TDOT invited regulatory agency representatives to review and comment upon the initial southern bypass alternative. Comments on the corridors from representatives of the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), the Tennessee Department of Environment and Conservation (TDEC) and TDOT's Environmental Division were unfavorable due to the wetland and floodplain impacts and the inclusion of a new crossing of the South Fork of the Forked Deer River in all of the project concepts. In a June 2004 memo, an ecologist in TDOT's Environmental Division concluded that "acquiring



Wetland within the project area

permits for a new crossing of the Forked Deer River and associated wetlands would be difficult if not impossible.”

3. In August of 2004, five new alternatives were developed which were presented to regulatory agency representatives. One proposal involved a connection to SR 223 as had been requested in one agency comment. This SR 223 proposal was deemed impractical because it would not adequately serve traffic demands and would require additional wetland crossings to connect with US 45 north of Airways Boulevard. It was also felt that traffic would not divert that far and would continue to use the existing roadway system instead, as SR 223 is located approximately five miles west of the existing US 45 Bypass. TDOT files documenting agency coordination reveal that agency representatives continued to express concerns about wetland and floodplain impacts on the newly-developed alternatives.

In October 2004, representatives from the City and TDOT met with UT, which operates an Agricultural Experiment Station in the northwest quadrant of the US 45 Bypass and Airways Boulevard intersection. TDOT showed UT the alternatives. In a letter dated November 2, 2004 (in TDOT Planning files), UT's Director of Capital Projects expressed concerns that the University could not support the development of the proposed routes due to the immeasurable harm that the routes would cause to the Experiment Station and to taxpayer-financed experiments that had already been underway for many years and were therefore essentially irreplaceable.

As a result of potential impacts to wetlands, floodplains, and to the UT Agricultural Station, as well as the firm stance of permitting agencies opposed to a new crossing of the South Fork of the Forked Deer River, this set of alternatives was dismissed from further study.

As shown, none of the previously studied alternatives met the project purpose and need and all had wetland and other impacts. Only the No-Build Alternative would preserve all the wetlands in the study area and this does not meet the purpose and need to:

- Provide a second up-to-standard crossing of the South Fork of the Forked Deer River and provide an alternate

route for through traffic separate from the developed commercial corridor along existing US 45;

- Improve safety for travelers on existing US 45 and the section of the US 45 Bypass between Airways Boulevard and the southern project terminus near Seavers Road by removing approximately 50 percent of traffic from existing US 45/South Highland Avenue;
- Provide additional capacity for the link from US 45 and SR 18 to I-40 to accommodate existing and projected traffic at an acceptable LOS;
- Improve safety and efficiency of access within the regional transportation network to better facilitate movement of freight and goods; and
- Develop an extension of the US 45 Bypass as defined in the 2005 SAFETEA-LU HPP appropriation.

A single Build Alternative from Airways Boulevard to US 45 in the vicinity of Seavers Road is being considered in this EA. This alternative also has a connection to SR 18 along the existing alignment of Raines Springs Road. On the northern section of the project, two options (Alternative C and Alternative C, Option C-1) to connect to the existing US 45 are being studied.

The Project Team has recognized the sensitivity of the wetland area north and south of the South Fork of the Forked Deer River. Each wetland was considered for avoidance and minimization. If avoidance was determined not practical, minimization options were studied at each wetland including providing steep roadside slopes, retaining walls and minor shifts in the alignment. The team has discussed construction methods such as “top-down” or “progressive” construction to minimize impacts to wetlands along Riverside Drive and some existing wetland areas will be spanned to preserve the wetlands integrity. These methods alleviate the need for a haul road and substantially minimize ground disturbance.

Approximately 38.56 acres of wetlands have been identified within the impact area of Alternative C. To reduce some of these impacts on the northern portion of the project Alternative C, Option C-1 was developed. Alternative C, Option C-1 impacts approximately 24.08 acres of wetlands. Most of these wetlands are forested.



Wetland # 27 located on the northern end of the project

Avoidance and Minimization Measures

Wetlands 3, 4, 5, 6, 8, 9, 11, 12, 13, 14, 15, and 16: These wetlands totaling 5.8 acres will be impacted. These are all smaller wetlands and are very common in the project vicinity. Shifting the alignment to avoid these wetlands would create more residential and commercial impacts.

Wetland 17: Wetland 17 is south of the intersection of Riverside Drive and Boone Lane where the existing Riverside Drive diverts sharply to the west. Impacts to this wetland are unavoidable. Existing Riverside Drive to the west could not be followed because of geometric criteria that must be kept in place to maintain the 55 mph design speed. Also, there would have been 9 residential, 3 commercial and one community service (fire station) displacements in the area of the intersection of Riverside Drive with Steam Mill Ferry Road.

Two options were compared to evaluate the construction methodology, construction cost and yearly maintenance cost between constructing a roadway or a pair of bridges within Wetland 17. To minimize impacts, the wetland was crossed at the narrowest point.

A narrower roadway cross-section with a median barrier was evaluated through the wetland area, with the transition to a wider median divided roadway section occurring past Wetland 17. During the initial construction, the cross-section will have two 12-foot lanes in each direction, 12-foot outside shoulders, and 11-foot inside shoulders on each side of a median barrier wall. It is anticipated that the roadway fill depth through this area will be kept to a minimum in order to reduce the distance to the toe of the side slopes. When the roadway is widened to three lanes in each direction, the side slopes will be steepened so that the roadway footprint remains the same. By minimizing the roadway footprint, the estimated acreage of wetland impact from roadway construction was reduced from approximately 8.11 acres to approximately 5.85 acres.

The option of constructing dual bridges approximately 1,700 feet long to minimize impacts to Wetland 17 was also evaluated. When evaluating a structural crossing of the wetland, the proposed typical section of three 12-foot lanes in each direction with 12-foot inside and outside shoulders to match the future roadway width were used. The overall bridge width for each direction is approximately 62-feet. For this type of crossing, the most cost effective structure considering seismic influences and construction economics would be concrete bulb t-beams supported by



Wetland # 12



Wetland # 17

pipe pile bents with an optimal span length of 100 feet. Due to the environmental concerns of construction within the wetland, either top down construction or construction of a temporary work bridge may be required.

Based on the preliminary engineering, the two options considered were compared. The estimated construction costs to bridge Wetland 17 is \$22.2 million more than constructing a roadway through the 77 acre wetland. Also, the ongoing average yearly maintenance costs are approximately 25 times higher to maintain a bridge instead of roadway. With only approximately 8 percent of the total Wetland 17 area impacted, TDOT determined that it will be much more cost effective to TDOT and the City to purchase wetland bank credits for mitigation of roadway construction instead of constructing the pair of bridges. This decision was communicated to the USFWS on April 25, 2013. They agreed that the monetary figures provided appeared to justify a roadway design rather than a bridge. The loss of wetland functional value will be addressed during mitigation.

Wetlands 18, 19, 20, 21, 23 and 24: These impacted wetlands total 15.09 acres for Alternative C and 9.48 acres for Alternative C, Option C-1. To minimize impacts in this area, the project will utilize the existing Riverside Drive with additional ROW totaling a maximum of 200 feet. From Boone Lane north to Airways Boulevard, a four-lane section is proposed with two lanes in each direction. A center barrier and inside shoulders would separate the travel lanes. To minimize impacts to the wetland areas in this segment of the project, the proposed slope has been reduced from the standard 6:1 slope to a 4:1 slope in the near term. If six lanes are warranted in the future, fill could be placed on the slope to create a 3:1 slope within the four-lane section footprint.

Wetlands 25, 26 and 27: These three wetlands total 11.82 acres for Alternative C and 2.95 acres for Alternative C, Option C-1. To minimize impacts, two of these wetlands can be avoided with the selection of Alternative C, Option C-1.

The Build Alternative with Option C-1 alignment impacts fewer wetlands and is considered an alternative that would avoid wetlands to the extent possible in the northern portion of the project area. By utilizing existing Riverside Drive, the Build Alternative reduces impacts to wetlands associated with the South Fork of the Forked Deer River to the extent possible.



Wetland # 25

Wetland Quality and Function

Wetlands 3-16 are located outside the floodplain of the South Fork Forked Deer River. These wetlands are a variety of wetland types and sizes, and do not have the connectivity of the wetlands located in the river floodplain. The quality of many of these wetlands has been reduced by human actions, such as logging, mowing, and agriculture. These wetlands provide functions such as storage of surface water, nutrient cycling, removal and sequestering of elements and compounds, retention of particulates, and exportation of organic carbon. Wetland plant community and wildlife habitat function are reduced in wetlands that have been recently disturbed.

Wetlands 17-27 are located within the floodplain of the South Fork Forked Deer River, and are considered to be high quality wetlands. The majority of these wetlands are large and forested with a diverse community of wetland plants. These wetlands are located within an extensive floodplain forest adjacent to the river. A functional assessment of these wetlands indicate that these wetlands support high levels of functionality across numerous functions, including temporary storage of surface water, nutrient cycling, removal and sequestering of elements and compounds, retention of particulates, exportation of organic carbon, maintenance of wetland plant community, and wildlife habitat.



Wetland # 19

Avoidance and Minimization Conclusion

The alternatives have been selected to minimize impacts to the wetlands as much as possible. However some impacts are unavoidable in order to meet the purpose and need of the project. Efforts would be made during the project design and permitting phases to avoid or minimize impacts to as many of these sites as possible. Project impacts to wetlands would be mitigated as required by the appropriate permitting agencies.

3.12.5 Channelization of Streams

The No-Build Alternative would not necessitate any channelization of streams.

The Build Alternative would be constructed in accordance with all applicable rules and regulations regarding channelization as required in TDOT's *Standard Specifications for Road and Bridge Construction*. These provisions implement the requirements of FHWA's Federal

Aid Policy Guide - Chapter 1, Subparagraph G, Part 650, Subpart B.

The Build Alternative has 15 stream crossings with approximately 6,672 linear feet (LF) of impact. The Build Alternative with Option C-1 has 15 stream crossings with approximately 6,782 LF of impact. Construction of the proposed project would include a combination of span bridges, box structures and pipes. Channelization is currently not proposed for the span bridges. Channelization would occur with the box structures and pipes.

3.12.6 Floodplain Impacts

In accordance with *Executive Order 11988: Floodplain Management*, an assessment of impacts to the floodplains associated with the study area streams was conducted. Floodplains are low-lying areas located adjacent to the channel of a river, stream or other type of water body. These areas are subject to periodic flooding during heavy rains and/or long periods of wet weather. Floodplains are important because they:

- Provide temporary storage of flood waters;
- Prevent severe erosion caused by quickly flowing water;
- Provide a vegetative buffer that filters silt and contaminants from runoff before it enters a stream or other water body; and,
- Recharge and protect groundwater.

The No-Build Alternative would not involve any impacts to floodplains.

The Build Alternative would have a perpendicular crossing of four areas of floodplain. Table 3-13 describes the resource crossed and the number of acres impacted. The Build Alternative crosses the 100 year flood plain along Meridian Creek, Bond Creek, Cane Creek and the wide floodplain of the South Fork of the Forked Deer River, which begins south of Boone Lane and continues north to the northern terminus of the project.

The crossing of the South Fork of the Forked Deer River would be perpendicular to the stream flow creating a transverse encroachment of 57.5 acres. The crossing begins south of Boone Lane and continues north to the



What is Executive Order 11988 – Floodplain Management?

The intent of this executive order is to avoid impacts to floodplains and to preserve and/or restore their natural values.

(For more information refer to the Federal Register at www.federalregister.gov.)

northern terminus of the project. The crossing follows existing Riverside Drive for approximately one mile.

While alternatives to this floodplain crossing were considered, the purpose and need for the project clearly states that an alternative crossing of the South Fork of the Forked Deer River is needed for safety reasons. Therefore, the floodplain crossing is necessary and it would be crossed at the existing location of the crossing on Riverside Drive.

The perpendicular crossings at Cane Creek, Bond Creek, and Meridian Creek create transverse encroachments of approximately 17 acres collectively.

Water crossings would be designed to convey floodwaters so that there would be no major risk of property damage or loss of life due to the encroachment in the floodplains. Construction would ensure that an evacuation route is provided for local residents and businesses. Attempts would be made to minimize impacts to all floodplains in project design.

The design selected for areas in which the project encroaches into floodplains, will be supported by analysis of design alternatives with consideration given to local, state and federal regulations; capital costs and risks; and economic, social and environmental concerns.

Table 3-13: Floodplain Impacts

Resource Name	Build Alternative*
South Fork of the Forked Deer River	57.5 acres/perpendicular impact
Cane Creek	9.75 acres/perpendicular impact
Bond Creek	2.6 acres/perpendicular impact
Meridian Creek	5 acres/perpendicular impact

* Estimates were based on the NEPA concept plans, which show a 250-foot ROW

All construction activities would comply with the Madison County floodplain management regulations; TDOT's *Standard Specifications for Road and Bridge Construction* regarding floodplains, the Federal Aid Policy Guide and Executive Order 11988.

A detailed hydraulic analysis has not yet been completed for this project. Once design begins it would be in compliance with the floodplain management criteria set

forth in the National Flood Insurance Regulations of Title 44 of the CFR. The design would also be consistent with requirements of floodplain management guidelines for implementing Executive Order 11988 and Federal Highway Administration guidelines 23 CFR 650A. The general layout of the corridor has been reviewed with the current Flood Insurance Study mapping and coordinated with the City of Jackson. The project is located on the Flood Insurance Rate Maps for Madison County; Panel 277 of 435, Map #47113C0277E; Panel 279 of 435, Map #47113C0279E; Panel 283 of 435, Map #47113C0283E; Panel 287 of 435, Map #47113C0287E; and Panel 291 of 435, Map #47113C0291E. These maps are included in Appendix F.

3.12.7 Threatened and Endangered Species

Pursuant to Section 7 of the *Endangered Species Act*, coordination has been conducted with the USFWS (see letters in Appendices A and C). The agency was asked to comment on any known federally-listed threatened or endangered species within the project corridor. USFWS requested that surveys be conducted along the proposed corridor to determine if the area is being utilized as summer roosting habitat by the federally endangered Indiana bat (*Myotis sodalis*). Information regarding the survey is located at the end of this section.

State protected species listed for Madison County are noted in Table 3-14.

Table 3-14: State Protected Species Listed for Madison County

Common Name	Scientific Name	State Protection Status
Indiana bat	<i>Myotis sodalis</i>	Endangered
Lamance Iris	<i>Iris brevicaulis</i>	Endangered
American ginseng	<i>Panax quinquefolius</i>	Special concern
Red starvine	<i>Schisandra glabra</i>	Threatened
Inflated bladderwort	<i>Utricularia inflata</i>	Special concern
Firebelly darter	<i>Etheostoma pyrrhogaster</i>	Deemed in need of management
Left-bank sedge	<i>Carex lacustris</i>	Threatened
Chickasaw Darter	<i>Etheostoma cervus</i>	Deemed in need of management
Hatchie burrowing crayfish	<i>Fallicambarus hortonii</i>	Endangered

The USFWS lists possible Indiana bat habitat present in the project area. A habitat assessment was required for the federally listed Indiana bat. In support of the assessment, joint mist netting and acoustical studies were performed from August 3 through August 12, 2011 at nine sites determined to contain suitable habitat for the Indiana bat. The acoustical study resulted in the recording of 1,953 bat calls, of which none were identified as Indiana bats. The mist netting efforts resulted in the capture of 23 bats, representing five non-listed species. The assessment concluded that the project is "not likely to adversely affect" the Indiana bat because no Indiana bats were recorded during the surveys.

Due to negative survey results for the Indiana bat, USFWS concurred with TDOT's finding of "not likely to adversely affect" for this species. They requested that consideration be given to the removal of trees with a DBH (diameter at breast height) of five inches or greater from October 15 through March 31 to further minimize potential for harm to the Indiana bat. USFWS stated that the requirements of Section 7 of the Endangered Species Act of 1973, as amended, were fulfilled.

The TDEC Resource Management Division's Natural Heritage files were reviewed in an attempt to identify occurrences of state species recorded in the general vicinity of the project. This information is summarized in the following:

- Habitat for the state-endangered Lamance iris and the state threatened Left-bank sedge is present in the project area wetlands.
- Habitat for the state special concern species, American ginseng and the state threatened Red starvine is present in the upland forest located in the southwestern portion of the project area.
- Habitat for the state special concern species Inflated bladderwort is present in the standing water associated with the wetlands in the floodplain of the South Fork of the Forked Deer River.
- Habitat for the state deemed in need of management Firebelly darter and Chickasaw darter, is present in the South Fork of the Forked Deer River, Meridian Creek, Bond Creek and Cane Creek.

- No state endangered Hatchie burrowing crayfish are known to occur in Madison County; however, habitat for these species may occur in the non-forested portions of the project area, particularly in cleared powerline ROWs and roadsides within the floodplain of the South Fork of the Forked Deer River and other project area streams.

The No-Build Alternative would not involve any direct impacts to threatened and endangered species.

Direct Impacts for the Build Alternative and the Build Alternative with Option C-1 are the same. The USFWS lists the endangered Indiana bat as possibly present in the project area. The assessment, conducted to ascertain their presence, revealed no Indiana bats. The Indiana bat is also listed as an endangered state species.

The project does have the potential to impact the listed state species as well as state deemed in need of management species, outlined previously, as habitat is present in the project area for all.

3.12.8 Invasive Species

Executive Order 13112: Invasive Species calls for the prevention of and control of invasive species (non-native exotics). Construction and earthmoving activities create disturbed soil areas that become susceptible to the introduction of invasive exotic plant species, depleting suitable habitat for more desirable native plant species. Exotic, invasive plant species are determined by the US Department of Agriculture (USDA) and designated by the state on the “Regulated Noxious Weeds” list. No species on the USDA list are anticipated to occur in the area, and none were observed during biological field reviews.

3.12.9 Wild and Scenic Rivers

Neither the No-Build Alternative nor the Build Alternative would have an effect on any watercourse on the National Wild and Scenic River System (NWSRS) or with the potential for inclusion in the NWSRS as none exist in the project area.

3.12.10 Environmental Permits

The No-Build Alternative would not necessitate the acquisition of any state and federal permits.

State and federal environmental permits would be applied for by TDOT after the final alignment is selected and prior to project implementation. The following permits may be required for the implementation of the proposed project:

- NPDES Stormwater General Permit for Construction Activities for coverage of the entire project site (TDEC Water Pollution Control);
- Individual Permit Number 14 for Linear Transportation projects for the construction, expansion, modification, or improvements in waters of the US (USACE);
- Individual Aquatic Resource Alteration Permit (ARAP) – General Permit for Construction and Removal of Minor Road Crossings less than 200 linear feet of stream length (TDEC);
- ARAP – Individual Permit for Minor Alterations to Wetlands (TDEC);
- Individual or Nationwide Permit Number 18 for Minor Discharges of Dredged or Fill Material into all waters (USACE); and
- Nationwide Permit Number 27 for Aquatic Habitat Restoration, Establishment, and Enhancement Activities of tidal and non-tidal wetlands and riparian areas and the restoration and enhancement of non-tidal streams and other open waters (USACE).

TDEC Water Pollution Control has issued a general permit for Alteration of Wet Weather Conveyances, so no permit is required (coverage is automatic without notification).

3.13 Geological and Soil Impacts

The project is located in the West Tennessee Uplands, a sub-unit of the Coastal Plain physiographic province of West Tennessee. The project study area is underlain by three different soil associations based on topographic position and the parent geologic materials. These three soil types are as follows:

- Falaya-Waverly-Collins Association – This soil association is located on the old river bottomlands. These soils are poorly drained to moderately well drained, level, loamy soil on first bottoms with a high water table, water being especially apparent November to June, and generally at or no more than five feet below ground surface. These soils have a high corrosivity potential for concrete and steel.
- Grenada-Calloway-Calhoun-Henry Association – This soil association is found on the slope between the river bottoms and the high ground. It is composed of old river deposits, generally fine to medium sand with silt and some coarser sand and gravel and rare thick layers of pure clay. These soils are moderately well drained to poorly drained, nearly level to gently rolling loamy soils with moderate to high corrosivity to steel and concrete.
- Memphis-Loring-Grenada Association – This soil is located on uplands. These soils are well drained and moderately well drained gently rolling loamy soils with low shrink/swell potential and moderate corrosivity to steel and concrete.

The two potential geological and soil concerns evident in this area are as follows:

- 1) Potential soft clays and under consolidated material in the valley alluvium, generally below the 400 feet mean sea level topographic elevation; and
- 2) Potential perched water table conditions over consolidated clay layers above the Falaya soil contact. Additionally, the potential perched water table conditions over consolidated clay layers of the Falaya soils are of particular concern with the features noted as springs near the Cane Creek Church west of Bemis (approximately 900 feet west of the Build Alternative). These springs may be outlet drainages for extensive clay lenses. This could impact cut and fill within the area. Unguided

filling could cause the blocked springs to stack up the perched water interval with enough force to outlet elsewhere, with potential adverse impacts to slope stability.

A geotechnical investigation would be completed for the selected Build Alternative during the project design phase.

3.14 Visual Impacts

The visual landscape and topography within the project area can be divided into the following:

- Commercial strip development
- Medium Density mix of industrial, commercial, institutional and residential areas
- Low density residential areas
- Low-lying wetlands and South Fork of the Forked Deer River
- Farmland

Viewers of the proposed roadway improvements are those who would drive on the road and those with a view of the roadway from adjacent properties. Viewers from the road are the drivers who use the road for transportation purposes, including local traffic, visitors to the area, and through commercial and other traffic. Groups with a view of the proposed road include residents of adjacent properties, and employees and customers of commercial, institutional and industrial businesses in the vicinity

The project area's landscape components do not have striking characteristics that convey visual excellence. No vistas or scenic corridors exist in the proposed project area, and the visual quality of the project area can be classified as moderate to low.

Because the area lacks high visual quality, the impacts of building this roadway would not be substantial. The roadway would consist of four travel lanes and paved shoulders. Phase 2 features two grade-separated interchanges at US 45, at locations where existing commercial development occurs. Existing vegetation within the ROW would be lost, consisting mostly of grass, brush, and trees. The impacts to residents, business patrons and travelers through the area would be minimal.

3.15 Energy Impacts

The No-Build Alternative would not involve any energy impacts.

The energy used by the Build Alternative can be characterized as follows:

Construction: Energy would be used for the manufacturing and transport of the construction components and by the heavy equipment utilized for roadway construction. Traffic delays could accompany the construction activities and could result in temporary increases in energy use.

Maintenance: The project under the Build Alternative would require routine maintenance that could result in energy use for the maintenance activities. Traffic delays could accompany the maintenance activities and could result in temporary increases in energy use.

Motor Vehicle Use: Under the Build Alternative, improved traffic flow and reduced travel time could result in a decrease from existing energy use.

In summary, the amount of energy required to construct a highway project of this type is substantial, but it is temporary in nature, and generally leads to reduced operating costs once the project is completed. A reduction in costs and energy use could come from improved access, reduced travel time and increased safety (i.e., fewer accidents that delay traffic and require emergency services).

3.16 Hazardous Materials Impacts

Hazardous materials are substances that have, or would have when combined with other materials, a harmful effect on humans or the natural environment. Hazardous materials are primarily regulated under the *Resource Conservation and Recovery Act (RCRA) of 1976*, as amended; the *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980*; and the *Superfund Amendments and Reauthorization Act (SARA) of 1986*.

3.16.1 Potential Hazardous Material Sites

A Phase I Environmental Site Assessment was conducted on April 19, 2011. This survey identified potential hazardous material sites within the Build Alternative that

could be impacted by the project. The project area was reviewed by a site reconnaissance. Interviews were conducted with residents and business owners to determine current and past usage of the properties within the project area. TDEC's underground storage tank (UST) records were reviewed. Environmental Protection Agency (EPA) records for the project area were also reviewed.

At the time of the study, there were five USTs or other hazardous materials sites identified in the potential project impact area. They are as follows:

- 1) Former American Creosote National Priorities List (NPL) Site – This site is located southwest of the intersection of Meadow and State Street. The proposed ROW of the Build Alternative would cross the southwest corner of the site.

This property was formerly owned by The American Creosote Company, which was in the business of treating wooden power poles, railroad ties and other items with creosote. Dement Construction currently owns the property and is in a Brownfield's agreement with TDEC for property re-use and cleanup. The site is approximately 30 acres in size. Approximately eight acres of creosote material were excavated, solidified, placed on-site and capped. Dement was also given permission to add additional fill material on portions of the property to raise the elevation to prevent flooding. They currently use the property for a material storage yard.



*Former American Creosote
NPL Site*

Previously completed subsurface investigations indicate creosote present at depths up to 60 feet below the ground surface. Therefore, excavation of the site for treatment is not cost effective and any future treatment would likely be in-situ (in place). The proposed Build Alternative would traverse the southwest corner of the property.

TDEC indicated that construction of the road on fill over the southwest corner of the property is acceptable. They also indicated that there are 36 groundwater monitoring wells (six clusters of six) along the south and west property boundaries. Any impacted monitoring wells would need to be properly abandoned per TDEC's regulations and replaced at locations specified by TDEC. TDEC also requires that during construction, wells remain accessible for sampling and treatment options.

- 2) Former Jackson Saw Mill Company, Inc. – This site is located at 404 Eureka Street. The proposed ROW for the Build Alternative (with Option C-1) would cross the northern and western property boundaries.

A UST was removed on August 22, 1997 and found to have soil contamination over allowable limits. The site was over excavated and again sampled. Analytical results dated September 24, 1999 from the over excavation did not indicate contamination above the applicable cleanup levels.



The proposed Build Alternative right-of-way will cross the northern and western portion of the Former Jackson Saw Mill, Inc.

- 3) Coca-Cola Company, Inc. - This site is located at 457 Riverside Drive. The proposed ROW for the Build Alternative (with Option C-1) would cross the center of the property.

This site has been under remediation measures since approximately 1992. There were three tanks present at the site when it was operational. Benzene levels have been elevated in groundwater and soil. Currently there is a dual phase extraction system being utilized to pump groundwater to volatize the benzene and lower levels. The system was installed March 25, 2010. In the most recent sampling event in December 2010, the Benzene concentration has decreased since the extraction system has been installed. Plume maps show that the Benzene contamination is contained on the property.



Coca-Cola Company, Inc. is located within the proposed right-of-way of the Build Alternative with Option C-1.

- 4) Tire Treads, Inc. (former Coca-Cola Bottling Works, Inc.) - This site is located at 510 Riverside Drive. The proposed ROW for the Build Alternative (with Option C-1) is adjacent to the western property boundary of Tire Threads, Inc.

A 500-gallon used oil tank was located on the site. In a letter dated December 12, 2000, from TDEC, it states that analytical results do not indicate contamination above the applicable cleanup levels. TDEC stated that based on information available, the tank can be considered closed.



Tire Threads, Inc. is adjacent to the eastern proposed right-of-way of the Build Alternative with Option C-1.

- 5) Verna Littrell's Grocery - This site is located at 850 Riverside Drive. The site is on the west side of Riverside Drive within the proposed ROW of the Build Alternative.

In May of 1996, two 1,000-gallon gasoline USTs and product lines were removed. Soil samples taken from all four corners of the tank pit showed all four samples

exceeded soil cleanup levels for TPH-GRO. Further analysis was conducted and four monitoring wells were installed. The solid sample from Monitoring Well (MW) -1 was the only sample to show a chemical of concern above lab method detection limits. The ground water sample from MW-1 also showed a chemical of concern above lab method detection limits; however, it was still below the cleanup level for Benzene. No hydrocarbons were found in water samples taken from both ponds on site and the surface waters in the area.

A hazardous materials rating system was used to rate the identified sites. The ratings include NO, LOW, and HIGH. They are as follows:

- Former American Creosote NPL Site – This site was assigned a “High” risk classification based on past/previous/current presence of soil/groundwater contamination existing within the Build Alternative ROW.
- Former Jackson Saw Mill Company, Inc. – This site was assigned a “Low” risk classification based on the past/previous presence of soil contamination potentially existing within the proposed ROW for the Build Alternative with Option C-1.
- Coca-Cola Company, Inc. – This site was assigned a “High” risk classification based on the past/previous presence of soil/groundwater contamination existing within the proposed ROW of the Build Alternative with Option C-1.
- Tire Treads, Inc. (former Coca-Cola Bottling Works, Inc.) – The site has been assigned a “No” risk classification. A 500 gallon tank was present on site, this tank has been removed and analytical results did not indicate contamination above the applicable cleanup levels.
- Verna Littrell’s Grocery – This site was assigned a “Low” risk classification based on the past/previous existence of a hazardous material existing in near proximity to the proposed Build Alternative ROW.



Verna Littrell's Grocery is located within the proposed ROW of the Build Alternative.

3.16.2 Potential Hazardous Material Impacts

The No-Build Alternative would not impact any of the identified hazardous materials sites. No additional studies are needed for this alternative.

The Build Alternative alignment impacts the former American Creosote NPL site and Verna Littrell's Grocery. If this alternative is selected, a Phase II assessment is needed to establish the limits of potential soil/groundwater contamination areas prior to the construction of the roadway.

The Build Alternative with Option C-1 alignment impacts the Coca-Cola Company, Inc., the former Jackson Saw Mill Company, Inc. and Tire Treads, Inc. If this alternative is selected, a Phase II assessment is needed to establish the limits of potential soil/groundwater contamination areas prior to the construction of the roadway.

In the event hazardous substances/wastes are encountered within the proposed ROW, their disposition shall be subject to the applicable sections of the *Federal Resources Conservation and Recovery Act*, as amended; and the *Comprehensive Environmental Response, Compensation, and Liability Act*, as amended; and the *Tennessee Hazardous Waste Management Act of 1983*.

3.17 Pedestrian and Bicycle Impacts

TDOT's bicycle and pedestrian policy, as stated in the Bicycle and Pedestrian Element of *Tennessee's Long-Range Transportation Plan*, includes provisions for bicycles and pedestrians in new construction and the reconstruction of roadway projects through design features appropriate for the context and function of the transportation facility. The policy also identifies existing and proposed bicycle routes. Currently, neither US 45 nor any of the roadways to be improved or connecting roads are on the state list of existing or proposed bicycle routes. However, a portion of US 45 is listed as a Priority 2 Bicycle Improvement on the Jackson MPO's Bicycle and Pedestrian Plan – February 2005. This improvement includes the addition of pavement markings, signage and drainage improvements on US 45 from Watlington Road to Harts Bridge Road.

The No-Build Alternative would not change the existing roadway network for bicyclists and pedestrians.

The Build Alternative could have a potential impact on pedestrians and bicyclists using US 45, particularly at the Phase 2 proposed bypass ramps and grade-separated crossing of existing US 45. This interchange could potentially impact the segment of US 45 designated for the future as a Priority 2 bicycle segment. Access through this intersection for bicyclists under Phase 1 and through the

interchange under Phase 2 would need to be considered in future project design.

The Build Alternative would be an access controlled facility with very limited access points, thereby inherently restricting access to pedestrians or bicyclists. Allowing pedestrians and bicyclists access on an access-controlled facility could result in a safety hazard for pedestrians/bicyclists and motorists using the new facility due to the speed of traffic moving through the area and the lack of connectivity to other pedestrian or bicycle facilities. The new corridor would; however, reduce the amount of vehicle traffic on existing US 45 corridor, resulting in a greater degree of safety for bicyclists or pedestrians.

3.18 Indirect and Cumulative Impacts

Sections 3.1 through 3.17 described the project's anticipated direct effects associated with the Build Alternative. This section presents a discussion of the potential indirect and cumulative impacts.

The analysis of indirect effects associated with the Build Alternative began with the identification of the geographic area affected by the project and the resources affected by the project, as described previously in Chapter 3. The actions examined are those reasonably caused by the proposed project and which are reasonably foreseeable.

For this analysis, the spatial boundaries for the consideration of cumulative effects include the project area shown on page (1-3), and downtown Jackson. For water quality issues, the spatial boundary would be the South Fork of the Forked Deer River watershed. Past, present and reasonably foreseeable actions that impact these resources were identified. Reasonably foreseeable actions would extend forward approximately 23 years to the region's planning horizon 2035. The cumulative impacts that could result from the accumulation of these actions was assessed.

Based on this methodology, impacted resources that had the potential for secondary and cumulative impacts were identified and an analysis was conducted. These specific resource areas were evaluated:

- Land Use
- Farmland
- Social



What are the types of NEPA Effects?

Direct effects are caused by the action and occur at the same time and place.

Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate and related effects on air and water and other natural systems, including ecosystems.

Cumulative impact is the impact on the environment, which results from the incremental impact of the action when added to the past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Reference: 40 CFR 1508

- Community
- Economic
- Noise
- Historic Resources
- Natural Resource Impacts (Aquatic, water quality. Wetlands, Threatened and Endangered Species)
- Floodplains

3.18.1 Indirect and Cumulative Impacts to Land Use

Indirect Impacts

The Build Alternative would improve travel convenience, mobility, and access, which could result in growth in the project area. The conversion of farmland, open space and vacant parcels that are adjacent to the proposed roadway to residential, commercial or industrial uses is a potential indirect effect of the proposed project. The project could indirectly spur development at the south end of the project adjacent to the interchange in Phase 2. Land here is underdeveloped and development in South Jackson is already expanding to the south. See Figure 3-9.

One site that has long been proposed for development on the east side of US 45, south of Hart's Bridge Road, (Meridian Creek), may no longer be as desirable for residential development due to the construction of the roadway in Phase 2. The site would be split as described in Section 3.1, but the loss of the appeal of the development of this site for residential could be an indirect effect. The location is shown on Figure 3-9.

The commercial development at Meridian Springs would get improved access under both project phases, as patrons travelling from the north could avoid traffic on US 45 north of the Phase 1 intersection with US 45. Only partially built out, the project could indirectly affect this development by making it more viable for new development due to the improved access.

Other indirect changes in land use could occur at proposed intersections with the Build Alternative, beyond the southernmost interchange discussed above. Many of the intersections would not be suitable for development/re-development, however, a few intersections could experience commercial development expanding or moving

into the project area, such as at D Street. As specified in the *Bemis Small Area Plan*, this area is recommended in the future for commercial uses. At the intersection of US 45 and the Build Alternative, it is possible that different types of development could occur, but the development is still considered to be commercial.

Cumulative Impacts

In addition to the indirect impacts described above, the proposed project would have the cumulative impact of the expansion of Jackson southward, as new developments, such as a Wal-Mart, have recently been built on US 45 south of Jackson. Figure 3-9. Existing and future residential and commercial developments in South Jackson (Source: City of Jackson, 2011).

Cumulative effects will be influenced by the regional economy. Additionally, the extent of land use changes would be the responsibility of the City of Jackson and Madison County government and its local ordinance and land use planning policies.

3.18.2 Indirect and Cumulative Impacts to Farmland

Indirect Impacts

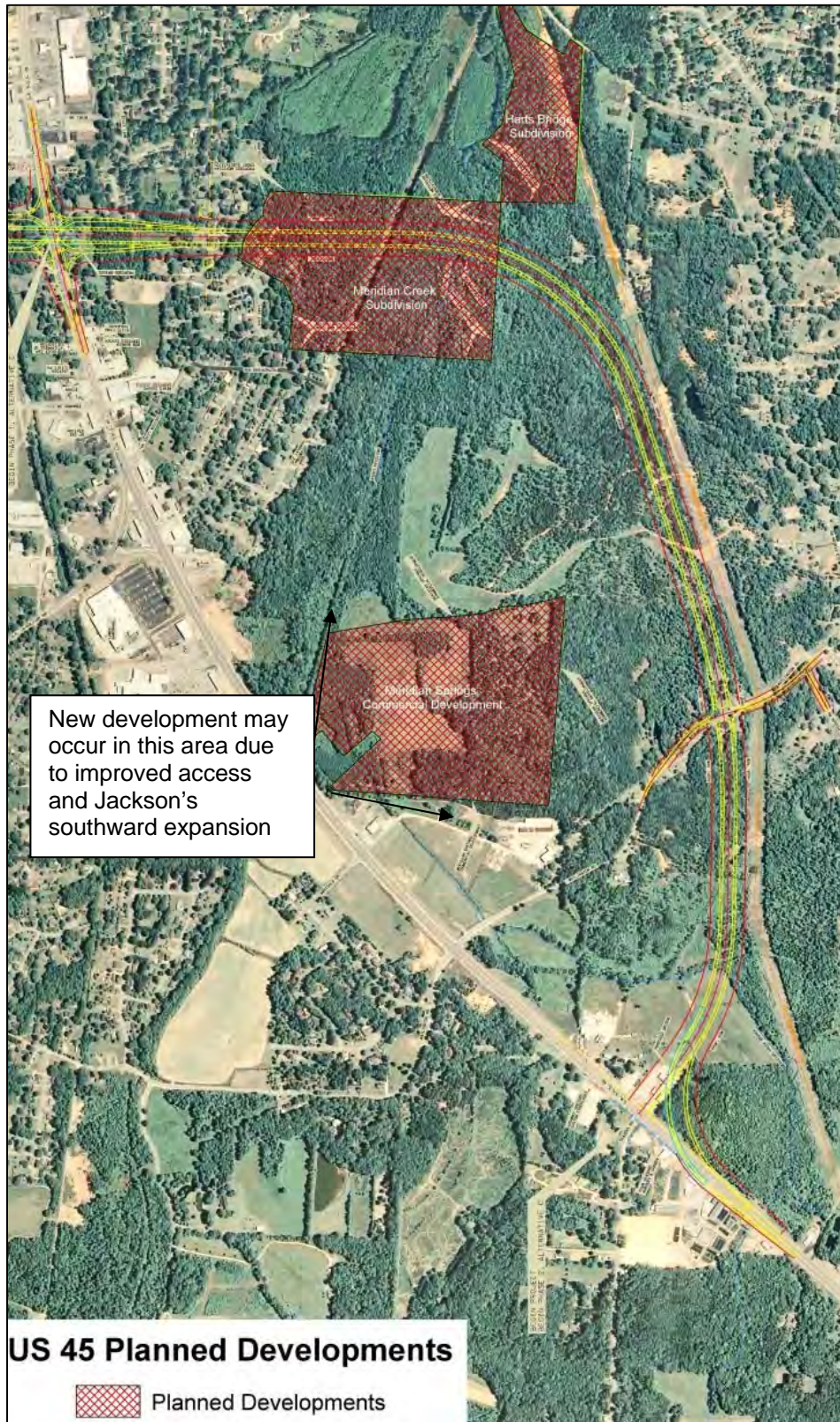
The project would indirectly impact farmland that would not be acquired for ROW by making some parcels currently used for farming unsuitable for farming due to inadequate size or through negative impacts to access.

Additionally, indirect impacts to farmland could result through new development on farmland adjacent to the alignment, such as the impacts described in Section 3.18.1.

Cumulative Impacts

Two residential developments west of US 45 are platted and if constructed could have minor impacts to farmland. Additional impacts to farmland could occur if the area on the west side of Bemis is development for high-density residential use as specified in the *Bemis Small Area Plan*. Other impacts to farmland could occur if areas that are currently farmed, particularly on the south side of Jackson, are developed.

Figure 3-9: US 45 Planned Development – Source: City of Jackson



3.18.3 Indirect and Cumulative Impacts to Social and Community Resources

Indirect Impacts

An indirect project impact could occur to the community as travel routes may need to change. Residents or travelers on roads that are proposed for cul de sacs would need to find an alternate route. Residents may also utilize the new road when they previously used US 45 to access schools, businesses and places of employment. Another indirect impact may occur to the community of Bemis, as the Build Alternative would increase the visibility of and access to the south and west sides of Bemis. This may alter travel routes.

The Build Alternative would decrease travel times for emergency vehicles and provide better access for emergency response vehicles to several areas in southwest and southeast Jackson.

Cumulative Impacts

Cumulative impacts of growth in the area may eventually strain local schools requiring the need for additional school construction.

3.18.4 Indirect and Cumulative Economic Impacts

Indirect Impacts

By improving mobility for truck traffic traveling between Interstate 40, US 64 and Interstate 22 to the south, while also improving access to Bonwood Industrial Park, the proposed improvements could lead to greater occupancy of Bonwood Industrial Park. The Bonwood Industrial Park, which lies immediately south of a proposed grade-separated interchange, contains vacant land and underutilized buildings. Growth in industrial land uses is likely to occur in this park due to the availability of infrastructure and land. Development within the Jackson/Madison County Industrial Park west of Jackson in the vicinity could also increase as access to and from the south is improved.

The project could also indirectly result in some businesses on the segment of existing US 45 that would be bypassed to close, move or change their type of business to one that is less dependent on opportunity traffic.

Cumulative Impacts

Combined with the construction of the Toyota Plant in Blue Springs, Mississippi and their need for suppliers within a 100-mile radius, and other general improvements to the existing economic environment, new development could come to the areas industrial parks (including Bonwood Industrial Park) or other large land parcels south of Jackson on in the vicinity of Interstate 40.

Cumulative impacts of growth in the area may eventually strain local services and budgets.

3.18.5 Indirect and Cumulative Noise Impacts

Indirect Impacts

Implementation of the project could cause some redistribution of traffic on the surrounding roadway network beyond the modeled network. The project could also affect development and land use patterns in the project area, as previously described. These situations could result in higher traffic volumes and indirect noise impacts at locations near roadways beyond the project limits. However, traffic volumes are not anticipated to double as a result of the redistribution of traffic or changes in development so any increases in sound levels beyond the project would be less than 3 dBA and defined as “minor” in accordance with TDOT’s noise policy. As a result, the project is not predicted to cause any indirect noise impacts.

Cumulative Impacts

Construction of additional big box retailers along the US 45 corridor south of Jackson could result in increased traffic and noise adjacent to residential areas.

3.18.6 Indirect and Cumulative Impacts to Historic Resources

Indirect Impacts

The area outside the Bemis Historic District, that historically served as cotton fields that supplied the mills, could be converted to non-agricultural use through new development at/or adjacent to the D Street intersection.

Improved access from the south and in particular from the west at D Street, could increase the viability of Bemis’ now-vacant historic mill buildings by making them more attractive to developers.

Cumulative Impacts

The area along the west side of and outside of the Bemis NRHP listed historic district boundary is included in the *Bemis Small Area Plan*, which the City developed as a tool to protect the historic district. It is shown on the plan as “high-density residential.” Such development there could have a cumulative impact on the historic district as this development would have new buildings and the vast majority of buildings in Bemis are historic.

3.18.7 Indirect and Cumulative Impacts to Natural Resources/Floodplains

Indirect Impacts

Indirect impacts could occur if the project spurs additional development, particularly industrial development at either of the area’s industrial parks. It could also occur through the development of big box retailers or other commercial developments along US 45 south of Jackson as the potential exists for degradation of the water supply. Stormwater runoff from new developments impervious surfaces could contain oil, grease, pesticides and other chemicals that could be carried to water bodies. Run-off from new construction could also result in decreased water quality.

Indirect impacts could also occur at the intersection of the Build Alternative and D Street as this is an undeveloped area that features wetlands nearby and which could incur development in the future.

The project could indirectly impact the hydrology of the wetlands, but all efforts would be made in project design to avoid such indirect impacts.

The roadway sections on new location and the widened sections of existing Riverside Drive (including the section through the large wetland area) would also have the potential for impervious surface run-off into the areas waterways and wetlands; however, the project would be designed using Best Management Practices (BMP)s to minimize the potential for such impacts.

Cumulative Impacts

As described under the land use and economic secondary and cumulative impacts discussion, the project has the potential for such impacts through future development

along or adjacent to the proposed alignment and to existing US 45.

Future development could reduce or degrade habitat for all species, including threatened and endangered species.

3.19 Construction Impacts

A roadway construction project, public or private, is likely to have some level of inconvenience, through disruptions to residents, businesses and travelers. Maintenance of traffic, access to properties adjoining the road and utility relocations are particular construction-related impact issues that must be addressed with this project.

Without proper planning and implementation of controls, traffic disruption, loss of access and utility relocation could adversely affect the comfort and daily life of residents and inconvenience or disrupt the flow of customers, employees and material/supplies to and from businesses. Construction impact controls will be integrated into the project's contract specifications and traffic control plans. The project would be constructed in accordance with all applicable rules and regulations regarding construction impacts, as required in TDOT's *Standard Specifications for Road and Bridge Construction*.

The No-Build Alternative would not have any physical construction-related impacts. However, it is likely that future impacts from maintenance work on the existing road network could occur.

The Build Alternative would have physical construction-related impacts, but with the implementation of appropriate controls, no cumulative or secondary construction impacts are foreseeable.

The following construction issues are addressed below:

- Maintenance of traffic and access;
- Employment benefits;
- Waste disposal;
- Utility relocation;
- Discovery of unknown archaeological sites;
- Erosion control;

- Air quality; and,
- Noise abatement measures.

Maintenance of Traffic and Access: Traffic would be maintained on existing roadways during construction or detours will be developed. Access to all properties would be maintained during construction.

Employment Benefits: The construction activities may result in short-term economic benefits to the local area that would include increased revenue to local businesses through the sale of construction supplies and materials and retail/service purchases by construction personnel. Construction jobs could be available for persons residing in the area. These short-term revenues and jobs are not expected to be locally or regionally substantial.

Construction could result in adverse economic impacts to local businesses but because the Build Alternative would be primarily through an area with minimal commercial development, and the existing US 45 (the major commercial corridor in the area) roadway system would remain open, the impacts would be minimal and short-term.

Waste Disposal: Solid waste could be generated by project construction (e.g., through demolition/removal of structures). The quantity of disposed waste would represent a negligible proportion of the total land directed toward local landfills.

Any toxic and hazardous materials would be handled and used in accordance with package labels and manufacturer's directions. Wastes would be segregated, labeled and stored in a manner that would prevent their release into the environment from an accident or spill. The contractor would dispose of these materials and their containers in accordance with applicable state and federal regulations.

Disposal of excess material would be the responsibility of the contractor who would be contractually required to handle and dispose of the material in accordance with the *TDOT Standard Specifications for Road and Bridge Construction*.

Utility Relocation: The relocation of utilities would be included in final design plans. TDOT and the City would coordinate with the appropriate officials to avoid or minimize damage or disruption of existing service.

Discovery of Unknown Archaeological Sites: If archaeological materials are uncovered during construction, all construction work in the area of the find would cease. The Tennessee Division of Archaeology and recognized American Indian tribes would be immediately contacted so that their representative may have the opportunity to examine and evaluate the materials.

Should earth fill be required for this project, the applicable TDOT borrow provisions would be followed.

Erosion Control: The Build Alternative would disturb land that has a tendency to erode when disturbed. The contractor would be required to employ BMPs to minimize the impacts of point and non-point source pollution resulting from increased siltation and highway runoff. A sediment control plan would be formulated in accordance with the TDOT *Standard Specifications for Road and Bridge Construction* and will include the following measures:

- Temporary erosion control devices such as silt fences, straw bales, burlap, jute matting, grading, seeding and sodding would be used to minimize erosion and sedimentation;
- Removal of vegetation would be minimized; and,
- Fill slopes would be constructed and stabilized during the growing season through the establishment of non-invasive species.

Air Quality: This project would result in the temporary generation of construction-related pollutant emissions and dust that could result in short-term air quality impacts. The emission of air pollutants would be reduced by the use of properly maintained equipment and the use of tarp covers on trucks transporting refuse and construction waste products.

Construction procedures shall be governed by the *Standard Specifications for Road and Bridge Construction* as issued by TDOT and as amended by the most recent applicable supplements. All construction equipment shall be maintained, repaired and adjusted to keep it in full satisfactory condition to minimize pollutant emissions.

Construction Noise Abatement: Noise levels in the project area would be increased during construction. The sound levels resulting from construction activities at nearby noise-sensitive receivers would be a function of the types

of equipment utilized, the duration of the activities, and the distances between construction activities and nearby land uses.

Construction procedures shall be governed by the *Standard Specifications for Road and Bridge Construction* as issued by TDOT and as amended by the most recent applicable supplements. The contractor would be bound by Section 107.01 to observe any noise ordinance in effect within the project limits. Detoured traffic shall be routed during construction so as to cause the least practicable noise impact upon noise-sensitive areas.

3.20 Climate Change (Greenhouse Gas Emissions)

Climate change is an important national and global concern. While the earth has gone through many natural changes in climate in its history, there is general agreement that the earth's climate is currently changing at an accelerated rate and will continue to do so for the foreseeable future. Anthropogenic (human-caused) greenhouse gas (GHG) emissions contribute to this rapid change. Carbon dioxide (CO₂) makes up the largest component of these GHG emissions. Other prominent transportation GHGs include methane (CH₄) and nitrous oxide (N₂O).

Many GHGs occur naturally. Water vapor is the most abundant GHG and makes up approximately two thirds of the natural greenhouse effect. However, the burning of fossil fuels and other human activities are adding to the concentration of GHGs in the atmosphere. Many GHGs remain in the atmosphere for time periods ranging from decades to centuries. GHGs trap heat in the earth's atmosphere. Because atmospheric concentration of GHGs continues to climb, our planet will continue to experience climate-related phenomena. For example, warmer global temperatures can cause changes in precipitation and sea levels.

To date, no national standards have been established regarding GHGs, nor has EPA established criteria or thresholds for ambient GHG emissions pursuant to its authority to establish motor vehicle emission standards for CO₂ under the Clean Air Act. However, there is a considerable body of scientific literature addressing the sources of GHG emissions and their adverse effects on climate, including reports from the Intergovernmental Panel on Climate Change, the US National Academy of

Sciences, and EPA and other Federal agencies. GHGs are different from other air pollutants evaluated in Federal environmental reviews because their impacts are not localized or regional due to their rapid dispersion into the global atmosphere, which is characteristic of these gases. The affected environment for CO₂ and other GHG emissions is the entire planet. In addition, from a quantitative perspective, global climate change is the cumulative result of numerous and varied emissions sources (in terms of both absolute numbers and types), each of which makes a relatively small addition to global atmospheric GHG concentrations. In contrast to broad scale actions such as actions involving an entire industry sector or very large geographic areas, it is difficult to isolate and understand the GHG emissions impacts for a particular transportation project. Furthermore, presently there is no scientific methodology for attributing specific climatological changes to a particular transportation project's emissions.

Under NEPA, detailed environmental analysis should be focused on issues that are significant and meaningful to decision-making.¹ FHWA has concluded, based on the nature of GHG emissions and the exceedingly small potential GHG impacts of the proposed action, that the GHG emissions from the proposed action will not result in "reasonably foreseeable significant adverse impacts on the human environment" (40 CFR 1502.22(b)). The GHG emissions from the project build alternatives will be insignificant, and will not play a meaningful role in a determination of the environmentally preferable alternative or the selection of the preferred alternative. More detailed information on GHG emissions "is not essential to a reasoned choice among reasonable alternatives" (40 CFR 1502.22(a)) or to making a decision in the best overall public interest based on a balanced consideration of transportation, economic, social, and environmental needs and impacts (23 CFR 771.105(b)). For these reasons, no alternatives-level GHG analysis has been performed for this project.

The context in which the emissions from the proposed project will occur, together with the expected GHG emissions contribution from the project, illustrate why the project's GHG emissions will not be significant and will not be a substantial factor in the decision-making. The transportation sector is the second largest source of total

¹ See 40 CFR 1500.1(b), 1500.2(b), 1500.4(g), and 1501.7

GHG emissions in the U.S., behind electricity generation. The transportation sector was responsible for approximately 27 percent of all anthropogenic (human caused) GHG emissions in the U.S. in 2009.² The majority of transportation GHG emissions are the result of fossil fuel combustion. U.S. CO₂ emissions from the consumption of energy accounted for about 18 percent of worldwide energy consumption CO₂ emissions in 2010.³ U.S. transportation CO₂ emissions accounted for about 6 percent of worldwide CO₂ emissions.⁴ However, while the contribution of GHGs from transportation in the U.S. as a whole is a large component of U.S. GHG emissions, as the scale of analysis is reduced the GHG contributions become quite small.

3.20.1 Mitigation for Global GHG Emissions

To help address the global issue of climate change, USDOT is committed to reducing GHG emissions from vehicles traveling on our nation's highways. USDOT and EPA are working together to reduce these emissions by substantially improving vehicle efficiency and shifting toward lower carbon intensive fuels. The agencies have jointly established new, more stringent fuel economy and first ever GHG emissions standards for model year 2012-2025 cars and light trucks, with an ultimate fuel economy standard of 54.5 miles per gallon for cars and light trucks by model year 2025. Further, on September 15, 2011, the agencies jointly published the first ever fuel economy and GHG emissions standards for heavy-duty trucks and buses.⁵ Increasing use of technological innovations that can improve fuel economy, such as gasoline- and diesel-electric hybrid vehicles, will improve air quality and reduce CO₂ emissions in future years.

² Calculated from data in U.S. Environmental Protection Agency, Inventory of Greenhouse Gas Emissions and Sinks, 1990-2009.

³ Calculated from data in U.S. Energy Information Administration International Energy Statistics, Total Carbon Dioxide Emissions from the Consumption of Energy, <http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=90&pid=44&aid=8>, accessed 9/12/11.

⁴ Calculated from data in EIA figure 104: http://205.254.135.24/oiaf/ieo/graphic_data_emissions.html: <http://epa.gov/climatechange/emissions/downloads11/US-GHG-Inventory-2011-Executive-Summary.pdf>

⁵ For more information on fuel economy proposals and standards, see the National Highway Traffic Safety Administration's Corporate Average Fuel Economy website: <http://www.nhtsa.gov/fuel-economy/>.

Consistent with its view that broad-scale efforts hold the greatest promise for meaningfully addressing the global climate change problem, FHWA is engaged in developing strategies to reduce transportation's contribution to GHGs—particularly CO₂ emissions—and to assess the risks to transportation systems and services from climate change. In an effort to assist States and MPOs in performing GHG analyses, FHWA has developed a Handbook for Estimating Transportation GHG Emissions for Integration into the Planning Process. The Handbook presents methodologies reflecting good practices for the evaluation of GHG emissions at the transportation program level, and will demonstrate how such evaluation may be integrated into the transportation planning process. FHWA has also developed a tool for use at the statewide level to model a large number of GHG reduction scenarios and alternatives for use in transportation planning, climate action plans, scenario planning exercises, and in meeting state GHG reduction targets and goals. To assist states and MPOs in assessing climate change vulnerabilities to their transportation networks, FHWA has developed a draft vulnerability and risk assessment conceptual model and has piloted it in several locations.

The project-level mitigation measures will not have a substantial impact on global GHG emissions because of the exceedingly small amount of GHG emissions involved. No GHF mitigation commitments have been made for this project. Standard Best Management Practices will be utilized during construction to have the effect of reducing GHG emissions. These activities are part of a program-wide effort by FHWA and TDOT to adopt practical means to avoid and minimize environmental impacts in accordance with 40 CFR 1505.2(c).

3.20.2 Greenhouse Gas Emissions Summary

This document does not incorporate an analysis of the GHG emissions or climate change effects of each of the alternatives because the potential change in GHG emissions is very small in the context of the affected environment. Because of the insignificance of the GHG impacts, those impacts will not be meaningful to a decision on the environmentally preferable alternative or to a choice among alternatives. As outlined above, FHWA is working to develop strategies to reduce transportation's contribution to GHGs—particularly CO₂ emissions—and to assess the risks to transportation systems and services from climate change. FHWA will continue to pursue these efforts as productive steps to address this important issue. Finally, the construction best practices described above

represent practicable project-level measures that, while not substantially reducing global GHG emissions, may help reduce GHG emissions on an incremental basis and could contribute in the long term to meaningful cumulative reduction when considered across the Federal-aid highway program.

3.21 Future Projects in the Area

TDOT placed funds in their 2010-11 budget to begin the Preliminary Engineering phase for the widening of Interstate 40 from US 412 (Hollywood Drive) west of Jackson to US 70 east of Jackson, a distance of 7.7 miles. The project, with an ADT of 53,000 vehicles per day will add one additional through traffic lane in each direction making the new roadway a six lane facility. Included in the project is the redesign of the Interstate 40 interchanges with US 45 Bypass and US 45 (Highland Avenue) both of which are currently full cloverleaf interchanges. Preliminary work began on the project in early 2012.

TDOT also included funding in the 2010-11 budget for a redesign of the intersection of the US 45 Bypass and Carriage House Drive. It is located just south of the Interstate 40 and US 45 Bypass interchange. The ADT along US 45 Bypass at this location is 46,000 vehicles per day.

3.22 Impacts Summary

Table 3-15 provides a comparison of all potential impacts of the Build Alternative. The Build Alternative has also been split into Phase 1 and 2; Phase 2 being the same for both alternatives. Build Alternatives under consideration are Phase 1; Phase 1 with Option C-1 and Phase 2. As discussed previously, the No-Build Alternative would have minimal to no environmental impacts.

Table 3-15: Impact Summary Table

	Units	Phase 1	Phase 1, with Option C-1	Phase 2
PROJECT FEATURES				
Project Length	miles	6.78	7.08	2.22
Estimated Construction and ROW Costs (2018 – year of expenditure dollars)	\$ millions	162.9	154.0	147.9
IMPACT CATEGORY				
LAND USE				
Land Use		Direct conversion of land to highway ROW.	Direct conversion of land to highway ROW.	Direct conversion of land to highway ROW.
FARMLAND				
Prime and/or Unique	acres	71.9	71.9	21.1
Total Acres in Corridor	acres	174.5	174.5	86.2
Total Acres to be converted Directly or Indirectly	acres	29.8	29.8	12.9
SOCIAL & ECONOMIC				
Social/Community Cohesion		No adverse impacts to established neighborhoods	No adverse impacts to established neighborhoods	No adverse impacts to established neighborhoods
Community Services		No adverse effect, beneficial effect of improved travel time for emergency response vehicles	No adverse effect	No adverse effect
Environmental Justice		No disproportional impact to minority or low income populations	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C

3.0. ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

	Units	Phase 1	Phase 1, with Option C-1	Phase 2
Residential Relocations	number	29	29	18
Business Relocations	number	4	4	1
Non-Profit Relocations	number	0	0	0
AIR QUALITY				
Air Quality	effect	No impact	No impact	No impact
NOISE				
Noise	Number Sites affected	46	46	Number included in Phase 1
CULTURAL RESOURCES				
Architectural/Historic Resources		No Adverse Effect	NA	NA
Archaeological Sites		No effect	No effect	No effect
RECREATIONAL RESOURCES				
Recreational Resources	NA	No recreational resources present	No recreational resources present	No recreational resources present
SECTION 4(f) RESOURCES				
Section 4(f) Resources	NA	No Section 4(f) use	No Section 4(f) use	No Section 4(f) use
SECTION 6(f)				
Section 6(f)	NA	No impacts to resources developed with Section 6(f) funding	No impacts to resources developed with Section 6(f) funding	No impacts to resources developed with Section 6(f) funding

3.0. ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

	Units	Phase 1	Phase 1, with Option C-1	Phase 2
NATURAL RESOURCES				
Floodplain	Resource/ estimated impact / type impact	South Fork of the Forked Deer River/57.5 acres/perpendicular Cane Creek/9.75 acres/perpendicular Bond Creek/2.6 acres/Perpendicular	Same as Phase 1, Alternative C	Meridian Creek/ 5 acres/perpendicular
Stream Crossings	number	10	10	5
Wetlands	number/ acres	22 wetlands/38.56 acres	20 wetlands/24.08 acres	Number included in Phase 1
Threatened and Endangered Federal/State Species	Species/ presence	Indiana bat – The USFWS concurred with findings of the habitat assessment that the project was "not likely to adversely affect" the Indiana Bat	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C
Threatened and Endangered State Species	Species/ presence	Habitat present for: Lamance iris,American ginseng, Red starvine ,Inflated bladderwort, Firebelly darter, Left-bank sedge, Chickasaw darter, and Hatchie burrowing crayfish	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C
Invasive Species	present	No species on the USDA list were found in the ecological field studies	No species on the USDA list were found in the ecological field studies	No species on the USDA list were found in the ecological field studies
Wild & Scenic Rivers	present	NA	NA	NA

3.0. ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

	Units	Phase 1	Phase 1, with Option C-1	Phase 2
PERMITS	May be required	<p>NPDES Stormwater General Permit for Construction Activities (TDEC)</p> <p>Individual or Nationwide Permit Number 14 for Linear Transportation projects for the construction, expansion, modification, or improvements in waters of the US (USACE);</p> <p>Individual or General Aquatic Resource Alteration Permit (ARAP) – General Permit for Construction and Removal of Minor Road Crossings less than 200 linear feet of stream length (TDEC);</p> <p>ARAP – Individual or General Permit for Minor Alterations to Wetlands (TDEC);</p> <p>Individual or Nationwide Permit Number 18 for Minor Discharges of Dredged or Fill Material into all waters (USACE); and</p> <p>Nationwide Permit Number 27 for Aquatic Habitat Restoration, Establishment, and Enhancement Activities (USACE).</p>	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C

3.0. ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

	Units	Phase 1	Phase 1, with Option C-1	Phase 2
GEOLOGICAL AND SOILS	NA	<p>Soft clays and under consolidated material are potentially present</p> <p>Potential perched water table conditions over consolidated clay layers and the potential perched water table conditions over consolidated clay layers may be present.</p>	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C
ENERGY	NA	The amount of energy required to construct a highway project of this type is substantial, but it is temporary in nature, and generally leads to reduced operating costs once the project is completed.	Same as Phase 1, Alternative C	Same as Phase 1, Alternative C
HAZARDOUS MATERIALS	Number of sites	2	4	None

4.0 PUBLIC INVOLVEMENT AND INTERAGENCY COORDINATION

The proposed project is a City of Jackson led project, developed in cooperation with the TDOT and FHWA. The public, local government, state and federal agencies and other stakeholders have been given opportunities to provide input during project development. This section describes the agency coordination process and public involvement activities that were conducted for this project. The key issues that have been identified through the coordination activities are described.

4.1 Project Initiation and Coordination

4.1.1 Project Initiation

On November 9, 2009, TDOT notified the FHWA in writing of its intent to initiate the environmental document for this project: an EA prepared pursuant to NEPA.

4.1.2 Public Involvement Plan

One of the first steps in the NEPA process for this project involved the development of a plan to ensure that the public, agencies and other stakeholders are given the opportunity to provide input into the project's development. A project-specific Public Involvement Plan (PIP) was developed to define the process by which information about the project would be communicated to the cooperating, participating and other agencies and to the public and stakeholders. The PIP also identified how input from agencies and the public would be solicited and considered. This plan was based on TDOT's *Public Involvement Plan — A Complete Guide to Public Involvement in Decision-Making*.

The PIP was developed to ensure that the public, agencies and other stakeholders are given the opportunity to provide input into project development. In December of 2009, the City and TDOT began implementation of the PIP prepared for the US 45 project.

This project was also developed pursuant to the Tennessee Environmental Streamlining Agreement (TESA) for the Environmental and Regulatory Coordination of Major Transportation Projects. The purpose of the agreement is to establish a coordinated planning and project development process for major transportation projects in Tennessee. Ultimately, this streamlined environmental process is intended to achieve the timely



How are lead, participating, and cooperating agencies defined by the National Environmental Policy Act (NEPA)?

Lead Agency: *An agency or agencies responsible for compliance with NEPA.*

Cooperating Agency: *Any Federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative.*

Participating Agency: *Any agency with an interest in the project. The standard for participating agency status is more encompassing than that for cooperating agency status. Therefore, cooperating agencies are, by definition, participating agencies. But not all participating agencies are cooperating agencies.*

and efficient identification, evaluation, and resolution of environmental and regulatory issues. Streamlining would occur through the identification and resolution of issues early in the planning process. TDOT, FHWA, and a number of state and federal agencies have signed on to the agreement and are actively participating in this process.

4.1.3 Coordination Packages

The City, in cooperation with TDOT, prepared an Initial Coordination Package, which was distributed to agencies, organizations and interested parties on December 10, 2009. The package included a transmittal letter, a project summary and project maps. The project summary identified the preliminary purpose and need for the project, potential build alternatives to be considered, traffic counts on specified roadways and examples of environmental concerns that would be considered throughout the environmental documentation process.

Agencies and organizations receiving the coordination package are listed below. Agencies or organizations with a (C) or (P) by their names indicate whether the group is a cooperating or participating agency in the NEPA process for the project.

Federal Agencies

- Federal Highway Administration (FHWA) (Lead)
- Environmental Protection Agency (EPA),
 - Environmental Assessment Office (P)
 - Office of Federal Activities (P)
- Natural Resources Conservation Service (NRCS) (P)
- Department of Housing and Urban Development
- US Fish and Wildlife Service (USFWS) (P)
- Federal Aviation Administration (FAA) Memphis District (P)
- US Department of the Interior
 - US Geologic Survey
 - Office of Surface Mining
- US Army Corps of Engineers (USACE), Memphis District (C, P)
- US Coast Guard
- National Oceanic and Atmospheric Administration (NOAA) Program Planning and Integration, NEPA Coordination and Compliance



The Tennessee Environmental Streamlining Agreement (TESA) was developed to establish a coordinated planning and project development process for transportation projects in Tennessee.

- Federal Railroad Administration (FRA), Office of Railroad Development
- US Geologic Survey, Environmental Affairs Program
- Federal Energy Regulatory Commission
- Federal Emergency Management Agency

State Agencies

- TDOT
 - Civil Rights Division
 - Division of Multimodal Transportation Resources
 - Aeronautics Division
- Tennessee Department of Environment and Conservation (TDEC)(P)
 - Division of Ground Water Protection
 - Division of Remediation
 - Division of Air Pollution Control
 - Division of Solid/Hazardous Waste Management
 - Division of Water Pollution Control
 - Division of Natural Areas
 - Division of Water Supply
 - Tennessee Historical Commission (See Section 106 Consulting Parties)
- Tennessee Wildlife Resources Agency (TWRA) (P)
- Tennessee Department of Economic and Community Development (P)
- Tennessee Department of Education

Local/Regional Agencies

- Madison County Mayor's Office (P)
- City of Jackson Mayor's Office
- Jackson Area Chamber of Commerce
- Jackson Area Metropolitan Planning Organization (MPO)
- Southwest Tennessee Development District

Organizations

- Sierra Club
- Tennessee Chapter of the Sierra Club
- Chickasaw Group – Sierra Club
- The Nature Conservancy
- Tennessee Trails Association

- Tennessee Environmental Council
- World Wildlife Fund
- Tennessee Conservation League

Section 106

- Tennessee Historic Commission (P)
- Native American Tribes:
 - Alabama-Quassarte Tribal Town
 - Chickasaw Nation,
 - Choctaw Nation of Oklahoma
 - Eastern Shawnee Tribe of Oklahoma
 - Kialegee Tribal Town
 - Muscogee Creek Nation
 - Shawnee Tribe
 - United Keetoowah Band of Cherokee Indians
- Madison County Historian
- Historic Preservation Planner, Southwest Tennessee Development District
- Jackson City CLG/Historic Commission



Madison County Court House

4.2 Agency Input

4.2.1 Agency Coordination

Six NEPA Participating Agencies (including the USACE, which is also a cooperating agency) and one other agency provided responses to the Initial Coordination Package. Table 4-1 summarizes the comments received and their responses during early coordination. In addition, copies of the agency responses are found in Appendix B.

Table 4-1: Agency Comments – Coordination

AGENCY	DATE	COMMENT	RESPONSE
Federal Aviation Administration	01/27/10	The closest airport facility to the project is McKellar-Sipes Regional Airport. Given the distance to the proposed project site, impacts to McKellar-Sipes Regional will be minimal. Please keep this office on your contact list as the project moves forward.	No response required.
Federal Railroad Administration	01/05/10	According to the information provided, the FRA would have no action to take regarding this project and does not need to be coordinated further with.	No response required.
US Department of Interior, Office of Surface Mining (OSM)	01/20/10	As a coal regulatory agency, our area of interest is generally limited to the coalfields of East Tennessee and this project lies well outside that area. As such, we request that OSM no longer be considered a participating agency on the project.	No response required.
US Army Corps of Engineers (USACE), Memphis District	01/22/10	Our agency accepts your invitation to be a NEPA Cooperating and Participating Agency in accordance with 40 CFR 1501.6 of the Council of Environmental Qualities Regulations for implementing the Procedural Provision of NEPA.	USACE is considered a Cooperating and Participating Agency for this project.
Tennessee Department of Economic and Community Development	01/06/10	Option C would involve a new separation over the CSX spur which serves several industries in the I-40 Exit 76/Lower Brownsville Road area and has the potential to serve areas proximate to the airport. This spur has been the subject of intense interest with some large industrial projects that have considered sites west of the airport. A complication is that CSX has rights over the spur, West TN Railroad operates over the spur and Norfolk Southern owns the mainline through Jackson and probably the spur. "While I am confident that any separation built will conform to appropriate clearance standards, I believe that it would be prudent for the City of Jackson to include CSX, West TN RR and Norfolk Southern in its list of folks to be notified."	CSX, West Tennessee Railroad and Norfolk Southern Railroad will be added to all future correspondence.

4.0. PUBLIC INVOLVEMENT AND INTERAGENCY COORDINATION

Tennessee Department of Education	01/28/10	Does not intend to submit comments on the project.	No response required.
Tennessee Historic Commission	04/14/10	THC submitted a letter outlining the documents that are required for their Section 106 review.	The requested documents will be prepared and submitted to THC for review and comment.
TDEC TESA Coordinator	02/22/10	TDEC accepts the invitation to be a participating agency.	TDEC is considered a NEPA Participating Agency.
Tennessee Department of Environment and Conservation, Division of Remediation (TDoR)	02/18/10	TDoR and EPA are willing to look at roadway construction plans with TDOT and determine the best course of action at the NPL site. If monitoring wells have to be moved and replaced, then details can be worked out at the appropriate time. Most construction plans (with the exception of those destroying the integrity of the capped and stabilized material in the old process area) may be considered.	Coordination with the TDoR Jackson Field Office has occurred since the beginning of this NEPA process and will continue to occur throughout the project development process.
Tennessee Department of Environment and Conservation, Division of Water Pollution Control	02/19/10	Division of Water Pollution Control does intend on being a participation agency in the development of this project. At this time, we do not have specific comments.	TDEC is included as a NEPA Participating Agency for this project.

4.0. PUBLIC INVOLVEMENT AND INTERAGENCY COORDINATION

Tennessee Department of Environment and Conservation, Water Supply	01/13/10	Drinking Water Program: There are many water distribution lines in the area that are owned by Jackson Energy Authority (JEA) that will need to be addressed and potentially moved during this project. Before any water lines can be constructed the plans must be reviewed by the Plans Review Section.	Coordination with the JEA will occur during the design phase.
		Safe Dams Program: A review was conducted of all registered sites in the Safe dam program and none were found in the project area.	No response required.
		Source Water Protection Program: A portion of proposed corridor B will be within the Jackson South well field and will be extremely close to existing wells in the Jackson water system. Corridor B is not recommended. JEA should be notified before any work begins.	TDEC's concerns with the protection of existing water supplies in the area of Corridor B have been noted. (Corridor B has been eliminated from consideration)
		Water Well Program: Private water supplies are found in the proposed area. Note that not all the water wells in existence are on the state's database and older or hand dug well locations may not have been recorded. Wells encountered during construction should be plugged and abandoned by a licensed well contractor.	A note will be placed on the plans indicating the possible presence of water wells in the area that have not been recorded in TDEC's database.
Tennessee Department of Environment and Conservation, Water Supply, Continued	01/13/10	Underground Injection Control (UIC): No registered UIC sites are within the proposed area. Please be advised that not all old large capacity septic systems or stormwater injection points in existence are in the State's database. All UIC wells encountered should be plugged and abandoned according to approval from the UIC program.	All UIC wells will be closed according to TDEC's requirements.
Tennessee Wildlife Resources Agency	1/14/10	TWRA's concerns are potential environmental impacts associated with streams, wetlands and state-listed species. TWRA accepts the invitation to be a NEPA Participating Agency and encourage continued consultation to reduce impacts to natural resources.	TWRA is included as a NEPA Participating Agency for this project. Coordination with this agency will continue through the NEPA and TESA processes.

4.2.2 Scoping Meeting

In accordance with the spirit and intent of TESA and NEPA, an initial resource agency and local stakeholder scoping meeting was held on February 25, 2010. The objective of the meeting was to discuss the project purpose and need, the TPR corridors that were to serve as the basis for NEPA alternatives, and known environmental constraints. The meeting provided an opportunity for all involved to comment and to gather additional information for consideration prior to reaching concurrence on the Purpose and Need, TESA Concurrence Point 1. (Several permitting agencies had participated in a field review the day before this meeting was held—See Section 4.2.3.)

The City of Jackson and Madison County were well represented at the meeting. The following is a summary of the issues that were identified in the project discussion.

- Limited access is desired.
- Cumulative impacts for ecological resources in the project area; in particular a functional analysis of wetlands is needed.
- Floodplain impacts should be addressed in project design, and wetland connectivity should be retained.
- Wetland mitigation banks are unavailable in West Tennessee; other strategies need to be considered to ensure a permittable project.
- Project should tie in to the proposed SR 18 improvement project.
- Closely coordinate with TDEC and EPA in regard to the National Priorities List hazardous materials site.
- Concern with impacts to Bemis Historic District.
- Concern with utilities along Riverside Drive.



Resource agency and local stakeholder scoping meeting



Numerous wetlands are located within the project area.



National Priorities List hazardous materials site

4.2.3 Coordination Under the Tennessee Environmental Streamlining Agreement

As of 2008, TESA has been signed by TDOT, FHWA, TDEC, USACE (Memphis District), USACE (Nashville District), EPA (Region 4), USFWS, Tennessee Valley Authority, and TWRA. The US Coast Guard and the State Historic Preservation Office have conditionally signed TESA. Signatory agencies are not required to participate in every project; they participate only in those projects that affect their area of jurisdiction, expertise, or interest.

The implementation of TESA is comprised of four concurrence points:

- 1) Purpose and Need and Study Area;
- 2) Project Alternatives to be evaluated in the EA and Methodologies for Conducting Evaluation;
- 3) Adequacy of the Draft EA; and
- 4) Designation of Preferred Alternative and Preliminary Mitigation.

TESA participants are asked to sign a form at each point to signal their concurrence for the project in order to move forward to the next project phase and to provide comments if they chose to do so. Agencies that do not comment within the 45-day comment period are assumed to concur without comments (pursuant to the conditions of the TESA).



An Agency Field Review was held February 24, 2010.

On February 24, 2010, a field review with the TESA participating agencies was held in the project area. Representatives from TDOT, USACE, USFWS, TWRA, TDEC and the City's ecological and engineering consultants for this project participated in the field review. The purpose of the meeting was to orient the agencies to the study area and the preliminary corridors in advance of the scoping meeting planned for the next day and to identify potential issues related to the development of alignments within the corridors.

Concurrence Points 1, 2 and 3 have been completed for this project. The comments from TESA Concurrence Points 1, 2 and 3 have been addressed in the EA.

4.2.4 Section 106 Coordination

This project has been coordinated with parties pursuant to regulations defining Section 106 of the *National Historic Preservation Act* (36 CFR 800). A description of that coordination is also included in Chapter 3, but is briefly described below.

Early coordination letters were sent to Native American tribes, local government (City and County mayors) and the SHPO informing them of the project, and as applicable, inviting them to serve as Section 106 Consulting Parties for this project. Also receiving early coordination letters were the Madison County Historian, the Historic Preservation Planner with the Southwest Tennessee Development District and the City of Jackson CLG/Historic Commission. The SHPO was the only respondent and specified that

studies would need to be completed to comply with Section 106.

A coordination letter was sent on April 26, 2011, to the following Native American tribes: Alabama-Quassarte Tribal Town, Chickasaw Nation, Choctaw Nation of Oklahoma, Eastern Shawnee Tribe of Oklahoma, Kialegee Tribal Town, Muscogee Creek Nation, Shawnee Tribe and United Keetoowah Band of Cherokee Indians. The comment period ended on May 26, 2011. One response from the Choctaw Nation of Oklahoma was received. It stated that Madison County was outside their area of interest and that they would defer to other federally recognized tribes that have been consulted on this project. In the construction plans, the contractor would be instructed to inform TDOT and the State Archaeologist of any finds and to stop work immediately if any such remains are found.

Both the architectural/historical and archaeological reports prepared pursuant to Section 106 have been coordinated with the SHPO. In letters dated October 3, 2011 and November 10, 2011, the SHPO concurred with the findings of the reports that the project would not adversely affect properties under Section 106. Copies of these letters are in Appendix C.

4.3 Public Coordination

Two public meetings were held to introduce the Southern Extension of the US 45 Bypass project to the public and to solicit input. The official public record of these meetings is available at the TDOT Environmental Division Office at 505 Deaderick Street in Nashville, Tennessee.

4.3.1 Public Informational Meeting #1

A summary of Public Information Meeting #1 is in Appendix G. The City of Jackson conducted the first public meeting on Thursday, February 25, 2010, from 5:00 to 7:00 p.m. in Jackson. There were 213 public attendees and representatives from the City of Jackson, the County Mayor, TDOT and the State Senator attended.

Meeting room display maps depicted the project area, previously studied alternatives and the corridor options that were derived from the TPR. The meeting consisted of a PowerPoint presentation and a question and answer session. Attendees could fill out comment cards or provide comments to the court reporter.



TDOT officials meet with City Planner to discuss alignment options.

Before and after the presentation and question and answer session, staff members were available to answer questions and provide information at the displays.

The majority of the comments from the question and answer portion of the meeting related to annexation concerns, whether there is a better location for a new river crossing, impacts to homes and property values; the location of the southern terminus; relationship of the project to SR 18, impacts to the wetlands, streams, and historical sites, how the project would impact properties and the project schedule.

A total of 31 comment cards were received and one statement was made to the court reporter. The comments indicated general support for the proposed project with 27 of the 31 respondents answering “Yes” to the question, “Do you think this project is needed?” Traffic congestion and emergency vehicle response access were the most frequently listed reasons for project support. The most frequently cited concern among the comments was in regard to the impact to existing residences and businesses.

Of the corridor options presented, Build Alternative C, partly following existing Riverside Drive, was the most favored. A general consensus among all attendees who submitted comments was that the project’s completion cannot happen soon enough.

4.3.2 Public Informational Meeting #2

The City of Jackson, with support from TDOT, conducted a second public meeting in Jackson on Tuesday, December 14, 2010, from 5:00 to 7:00 p.m. There were 162 public attendees and representatives from the City of Jackson, Madison County, and TDOT also attended.

The purpose of the meeting was to introduce the build alternative concept to the public and to get their input on this concept. The concept had addressed a number of concerns expressed by the public at the February public meeting.

The meeting was held in an open house format. Attendees were able to view a repeating PowerPoint presentation. Displays depicted the conceptual alignment at a large scale on aerial photography. Project Team members were to provide information, address concerns and answer questions regarding the conceptual alignment. Attendees could also view a display depicting the project



Public Informational Meeting #1



Public Informational Meeting #2

schedule and a full size set of the concept plans that included the proposed roadway typical sections.

A court reporter recorded verbal comments that attendees wished to make part of the official record and attendees were provided comment cards that they could fill out at or after the meeting.

The 46 comment cards were submitted at the meeting or returned by mail. Six verbal comments were made to the court reporter. Three of the comment cards contained no comments—the respondents simply requested to be added to the project database.

Public concerns, in order of number of times expressed, included: 1) potential impacts to existing development; 2) impacts to historic resources; and 3) impacts to the natural environment and noise impacts.

Numerous attendees did not like the fact that there is no access to the Build Alternative C at Boone Lane, that Raines Springs Road southbound is truncated at the Build Alternative C and that there are no northbound traffic ramp from the Phase 2 southern terminus. (These concerns have all since been addressed in revised project plans).

Pertaining to the preferred alignment for the Build Alternative, attendees favored Build Alternative C over Build Alternative C with Option C-1. A general consensus among all attendees who liked the proposed Build Alternative C alignment is that the project's completion cannot happen soon enough.

Several residents of Raines Springs Road did not support the realigned section of SR 18.

4.3.3 Public Hearing

It is anticipated that a public hearing on this NEPA EA will be held in the Spring of 2013 following FHWA's approval of the document for circulation.

Appendix A

“TIP” Page

JACKSON AREA MPO
FISCAL YEARS 2011-2014 TRANSPORTATION IMPROVEMENT PROGRAM

TIP#	HPP-4935-20	TDOT PIN#	109926.00	PRIORITY	2	LEAD AGENCY	TDOT
COUNTY	Madison	LENGTH	0.48 miles	L RTP#	T-2b	CONFORMITY STATUS	
ROUTE/PROJECT NAME		US Highway 45 Bypass		TOTAL PROJECT COST		\$2,799,600	
TERMINI OR INTERSECTION Airways Boulevard to South Highland Avenue (US 45/SR 5)							
PROJECT DESCRIPTION extend 6 lane bypass route							

FISCAL YEAR	TYPE OF WORK	FUNDING TYPE	TOTAL FUNDS	FED FUNDS	STATE FUNDS	LOCAL FUNDS
2011	PE	HPP4935 TN207	\$2,799,600	\$2,239,680	\$559,920	-

AMENDMENT #	ADJUSTMENT #	REMARKS



Appendix B

Initial Coordination Responses

**FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS**

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request: 3/29/2011		4. Sheet 1 of 2	
1. Name of Project: Southern Extension of State Route 186/US 45 Bypass, Jackson, TN		5. Federal Agency Involved: Federal Highway Administration			
2. Type of Project: Extension of existing state and U.S. route		6. County and State: Madison County, TN			
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 4-1-2011		2. Person Completing Form C. DAVIS	
YES NO 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). <input type="checkbox"/> <input checked="" type="checkbox"/> YES		4. Acres Irrigated Average Farm Size N/A		7. Amount of Farmland As Defined in FPPA Acres: % 73%	
5. Major Crop(s) CORN, COTTON & SOYBEANS		6. Farmable Land in Government Jurisdiction Acres: % 244,268: 68%		10. Date Land Evaluation Returned by NRCS 4-19-2011	
8. Name Of Land Evaluation System Used LISA		9. Name of Local Site Assessment System N/A			
PART III (To be completed by Federal Agency)		Alternative Corridor For Segment			
		Phase 1	Phase 2	Corridor C	Corridor D
A. Total Acres To Be Converted Directly		29.8	7.5		
B. Total Acres To Be Converted Indirectly, Or To Receive Services		0	5.4		
C. Total Acres In Corridor		174.5	86.2	0	0
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		71.9	21.1		
B. Total Acres Statewide And Local Important Farmland		N/A	N/A		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		0.04	0.01		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		36	36		
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)		96	100		
PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))		Maximum Points			
1. Area in Nonurban Use	15	11	15		
2. Perimeter in Nonurban Use	10	10	10		
3. Percent Of Corridor Being Farmed	20	2	0		
4. Protection Provided By State And Local Government	20	0	0		
5. Size of Present Farm Unit Compared To Average	10	0	0		
6. Creation Of Nonfarmable Farmland	25	0	25		
7. Availability Of Farm Support Services	5	5	5		
8. On-Farm Investments	20	18	0		
9. Effects Of Conversion On Farm Support Services	25	0	0		
10. Compatibility With Existing Agricultural Use	10	1	1		
TOTAL CORRIDOR ASSESSMENT POINTS	160	47	56		
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	96	100		
Total Corridor Assessment (From Part VI above or a local site assessment)	160	47	56		
TOTAL POINTS (Total of above 2 lines)	260	143	156	0	0
1. Corridor Selected: 2. Total Acres of Farmlands to be Converted by Project:		3. Date Of Selection:		4. Was A Local Site Assessment Used? YES NO <input type="checkbox"/>	
5. Reason For Selection:					



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

December 15, 2011

Mr. Matt Richards
Tennessee Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Subject: FWS# 12-CPA-0049. Proposal to construct a Southern Extension of State Route 186 and the US 45 Bypass from State Route 1/ U.S. Highway 70 (Airways Boulevard) to State Route 5/ U.S Highway 45 (South Highland Street) in Jackson, Madison County, Tennessee.

Dear Mr. Richards:

Thank you for your letter dated December 7, 2011, transmitting acoustic and mist netting survey results for the proposed construction of a Southern Extension of State Route 186 and the US 45 Bypass in Madison County, Tennessee. At the request of our office, surveys were conducted along the proposed corridor to determine if the area is being utilized as summer roosting habitat by the federally endangered Indiana bat (*Myotis sodalis*). Personnel of the U.S. Fish and Wildlife Service have reviewed the information provided and offer the following comments.

Joint mist netting and acoustical studies were performed from August 3 through August 12, 2011, at nine sites determined to contain suitable habitat for the Indiana bat. The acoustical study resulted in the recording of 1,953 bat calls, of which none were identified as Indiana bats. The mist netting efforts resulted in the capture of 23 bats, representing five non-listed species. The Tennessee Department of Transportation (TDOT) has concluded that the project is "not likely to adversely affect" the Indiana bat because the no Indiana bats were recorded during the surveys.

Due to negative survey results for the Indiana bat, we concur with TDOT's finding of "not likely to adversely affect" for this species. Although it is likely that this project would have an insignificant effect on the Indiana bat, we would appreciate consideration given to the removal of trees with a DBH (diameter at breast height) of five inches or greater from October 15 through March 31 to further minimize potential for harm to the Indiana bat. Based on the best information available at this time, we believe that the requirements of section 7 of the

Endangered Species Act of 1973, as amended, are fulfilled. Obligations under the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

If you have any questions regarding our comments, please contact John Griffith of my staff at 931/525-4995 or by email at john_griffith@fws.gov.

Sincerely,

A handwritten signature in cursive script that reads "Mary E. Jennings". The signature is written in dark ink and is positioned above the printed name and title.

Mary E. Jennings
Field Supervisor

FAA_keepincontact.txt

From: Stephen.Wilson@faa.gov
Sent: Wednesday, January 27, 2010 3:26 PM
To: Means, Shawn
Subject: Southern Extension SR 186/US 45 Bypass-City of Jackson

We've reviewed the proposed Southern Extension of State Road 186/US 45 Bypass. Based on the information provided in the project summary and information available in our office, we've determined that the closest airport facility to your project would be McKellar-Sipes Regional Airport.

Given the distance to the proposed project site, impacts to McKellar-Sipes Regional should be minimal. Please keep this office on your contact list as the project moves forward.

Feel free to contact me with any concerns.

Thank you

Stephen Wilson
Community Planner
Federal Aviation Administration
Memphis Airports District Office
2862 Business Park Drive, Bldg. G
Memphis, TN 38118
Ph. 901-322-8185



DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT, CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS, TENNESSEE 38103-1894

REPLY TO

January 22, 2010

Operations Division
Regulatory Branch

Ms. Margaret Slater
Consultant Project Director for City of Jackson
C/O Gresham, Smith and Partners
1400 Nashville City Center
511 Union Street; Suite 1400
Nashville, Tennessee 37219-1733

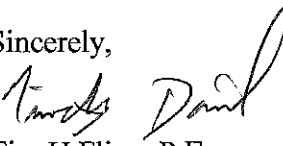
Dear Ms. Slater:

This is in response to initial coordination information for the proposed southern extension of State Route 186/U.S. 45 Bypass from State Route 1 (U.S. 70/Airways Boulevard) to State Route 5 (U.S. 45/South Highland Avenue), City of Jackson, Madison County, Tennessee received in a letter dated January 5, 2010.

As you requested, our agency accepts your invitation to be a NEPA Cooperating and Participating Agency in accordance with 40 CFR 1501.6 of the Council on Environmental Quality's Regulations for Implementing the Procedural Provision of NEPA. We look forward to working with you on the proposed project.

If you have questions, please contact Mitch Elcan at (901) 544-0737 and refer to File No. MVM-2010-023.

Sincerely,

for 
Tim H Flinn, P.E.
Eastern Section Chief
Regulatory Branch

Federal Railroad.txt

From: davi d.val enstei n@dot. gov
Sent: Tuesday, January 05, 2010 3:11 PM
To: Means, Shawn; kdonal dson@ci tyofj ackson. net
Subject: RE: ATTN: NEPA Ini ti al Coordi nati on, US 45 Bypass Extensi on, Jackson, TN

Thanks Kei th.

According to the information you provided, the Federal Railroad Administration (FRA) would have no action to take regarding this project and does not need to be coordinated further with the FRA.

Davi d Val enstei n

From: Means, Shawn [mailto:shawn_means@gspnet.com]
Sent: Tuesday, January 05, 2010 4:03 PM
To: Brian Paddock; Coast Guard; Cristi Reid; Val enstei n, Davi d (FRA); Don Richardson; Gabby Call; Jack Smith; James Devine; John McFadden; Judy Takats; Lauren O'Donnell; Michael Butler; Nancy Ream; Paul Doremus; Paula Shaw; Robert Woods; Steve Kokkinakis; William Straw
Cc: joe.matl ock@tn. gov; kdonal dson@ci tyofj ackson. net
Subject: ATTN: NEPA Ini ti al Coordi nati on, US 45 Bypass Extensi on, Jackson, TN

The following email is being sent on behalf of the City of Jackson by Gresham, Smith and Partners, project consultant to the City.

To whom it may concern:

The City of Jackson, Tennessee, in cooperation with the Federal Highway Administration (FHWA) and the Tennessee Department of Transportation's (TDOT) Office of Local Programs, is preparing an Environmental Assessment (EA) for the proposed southern extension of State Route (SR) 186/US 45 Bypass from SR 1 (US 70/Airways Boulevard) to SR 5 (US 45/South Highland Avenue) in Jackson, Madison County, Tennessee. A Transportation Planning Report (TPR) was prepared for this project and approved by TDOT in March of 2009. The TPR identified two wide study corridors into which the Build Alternatives will be developed during the NEPA process. A No Build Alternative will also be evaluated.

Attached is the Initial Coordination Package for distribution to your agency. The package consists of a Project Summary, including maps of the project area and the TPR study corridors, and, as required, the Project Coordination Plan for this project. This material is intended to initiate the scoping process for the EA.

If for technical reasons this package is blocked or unreadable by your agency, upon your request we would be happy to provide a CD of the attached material.

Thank you in advance for your cooperation in the project development process. We look forward to your input on the proposed project.

Federal Railroad.txt

Keith Donaldson
MPO Coordinator and Transportation Planner
City of Jackson

This E-mail, and any attachments thereto, is intended only for use by the addressee(s) named herein and may contain proprietary, legally privileged, confidential or copyrighted information belonging to the sender. If you are not the intended recipient of this E-mail, you are hereby notified that any use of, reliance on, disclosure, dissemination, distribution or copying of the contents of this email, and any attachments thereto, in whole or in part, is strictly prohibited. If you have received this E-mail in error, please immediately notify me by phone or by return E-mail and permanently delete the original and any copy of any E-mail and any printout thereof. Mail delivered by Gresham, Smith and Partners mail system.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Remediation
401 Church Street
4th Floor, L&C Annex
Nashville, TN 37243

February 18, 2010

Mr. Keith Donaldson
MPO Coordinator, Transportation Planner
CITY OF JACKSON
111 E. Main Street, Suite 201
Jackson, TN 38301

RE: NEPA Initial Coordination, US 45 Bypass Extension, Jackson, Tennessee

Dear Mr. Donaldson:

The Division of Remediation (DoR) has received your environmental assessment request, dated January 5, 2010, regarding the NEPA Initial Coordination, US 45 Bypass Extension, Jackson, Tennessee.

After reviewing your maps/summaries and our project files, we concluded that TDoR and EPA are willing to look at road construction plans with TDOT and determine the best course of action. If monitoring wells have to be moved and replaced, then the parties can work out the details at the appropriate time. Most construction plans with the exception of those destroying the integrity of the capped and stabilized material in the old process area may be considered.

If you have any further questions, do not hesitate to call Ron Sells, the Field Office Manager at our Jackson Field Office at 731.512.1304.

Sincerely,

A handwritten signature in blue ink that reads "Andy Binford".

Andy Binford

RAB:JRS:mdd

cc: Jackson Field Office Files
Central Office Files #57-000
betty.maness@tn.gov



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER POLLUTION CONTROL
7TH FLOOR, L&C ANNEX
401 CHURCH STREET
NASHVILLE, TENNESSEE 37243-1534

February 19, 2010

Ms. Margaret Slater
Consultant Project Director for City of Jackson
C/O Gresham, Smith and Partners
1400 Nashville City Center
511 Union Street; Suite 1400
Nashville, Tennessee 37219-1733

Subject: Coordination Package and Invitation to be a Participating Agency
Southern Extension fo SR 186/US 45 Bypass from SR 1 (US 70/Airways
Blvd.) to SR 5 (US 45/South Highland Ave.)
Jackson, Madison County, Tennessee
PIN 109926.00

Dear Ms. Slater:

We are in receipt of the above referenced material and are hereby advising you that the Tennessee Department of Environment and Conservation does intend to be a participating agency in the development of this project. At this time, we do not have specific comments on the Coordination Plan.

Thank you for the opportunity to participate in the planning of this project.

Sincerely,

A handwritten signature in cursive script that reads 'Daniel C. Eagar'.

Daniel C. Eagar, Manager
Natural Resources Section



United States Department of the Interior

OFFICE OF SURFACE MINING
Reclamation and Enforcement
710 Locust Street, Second Floor
Knoxville, TN 37902

January 20, 2010

Margaret Slater, Consultant Project Director for
City of Jackson
C/O Gresham, Smith and Partners
1400 Nashville City Center
511 Union Street; Suite 1400
Nashville, TN 37219-1733

Subject: State Route 186 / US 45 Bypass Extension, Jackson, Tennessee

On behalf of the Office of Surface Mining (OSM) Knoxville Field Office, I would like to thank the City of Jackson for their e-mail correspondence of January 6, 2010, concerning OSM having been invited to be a participating agency for the above referenced project. In your letter, you also requested that OSM review the material provided and advise you of any comments or concerns we may have.

As a coal regulatory agency, our area of interest is generally limited to the coalfields of East Tennessee and this project lies well outside the coalfield area. This in combination with the fact that mineable coal is not known to exist in the Madison County area and the fact that Federal regulations at 30 CFR Section 707 provide for a broadly based exemption from complying with Federal mining regulations for coal extraction incident to government financed highway construction, make it unlikely that our agency would have any jurisdiction or authority with respect to this proposed project. As such, we must request that OSM no longer be considered a participating agency on the above proposed project.

We appreciate the opportunity to participate in this process and look forward to working with you on future projects that fall within the coalfields area of East Tennessee. If at any time in the future you have questions or need additional information, please don't hesitate to contact us.

Sincerely,

Earl D. Bandy, Jr., Director
Knoxville Field Office





TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

April 14, 2010

Mr. Keith Donaldson
Jackson Planning Department
111 E. Main Street/201
Jackson, Tennessee, 38301

RE: FHWA, SR-186/SR-1 TO SR-5, JACKSON, MADISON COUNTY

Dear Mr. Donaldson:

In response to your request, received on Tuesday, April 6, 2010, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. Under Section 106, this office is reviewing projects such as yours directly through the Tennessee Department of Transportation. Therefore, you will need to provide TDOT with ALL of the following documents:

1. A letter requesting Section 106 review of your undertaking that should include: (a) The name of the undertaking to be reviewed. (b) The name, address, and phone number of the applicant for FHWA funding. (c) A list of Consulting Parties invited to participate in consultation relative to the undertaking. (d) A USGS 7 1/2 minute topographic map (be sure to include the name of the map) clearly indicating the boundary of the undertaking, the location of all undertaking elements, and the undertaking's Area of Potential Effects. You may obtain such a map by contacting the Department of Environment and Conservation, Division of Geology, Maps and Publications Sales Office at (615) 532-1516. Please be sure to give TDOT the name of the quad map.
2. Other suitably scaled maps or site plans as necessary to depict the extent of the undertaking and its locational relationship to its surroundings and environment.
3. A narrative which describes the undertaking in sufficient detail to enable a reader unfamiliar with the undertaking or its location to gain a full understanding of the undertaking and all of its elements and their potential to affect directly and indirectly any historic properties within the Area of Potential Effects.
4. Original chemical or digital photographs of the undertaking Area of Potential Effects that are numbered and clearly keyed to one of the above maps or site plans.
5. Any available information including dates of construction of buildings either inside the undertaking footprint or within view or sound of the undertaking. Be sure to include photographs of buildings within the undertaking's Area of Potential Effects.

Please submit this documentation to:

Mr. Joe W. Matlock
NEPA Documentation Office- Local Programs
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Upon receipt of this documentation, TDOT will review the project, and, if satisfied with your documentation, TDOT will forward the project to this office with its determinations and findings for our review and comment. We will complete our review of this undertaking as quickly as possible and forward our written comments to TDOT for final disposition. Please be advised that until this office has provided TDOT a final written comment on this undertaking, you have not met your Section 106 obligation under federal law. Please direct questions and comments to Joe Garrison (615) 532-1550-103. We appreciate your cooperation

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jyg



TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

June 2, 2010

Mr. Keith Donaldson
Jackson Planning Department
111 E. Main Street/201
Jackson, Tennessee, 38301

RE: FHWA, SR-186/SR-1 TO SR-5, JACKSON, MADISON COUNTY

Dear Mr. Donaldson:

In response to your request, received on Thursday, May 27, 2010, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. Under Section 106, this office is reviewing projects such as yours directly through the Tennessee Department of Transportation. Therefore, you will need to provide TDOT with ALL of the following documents:

1. A letter requesting Section 106 review of your undertaking that should include: (a) The name of the undertaking to be reviewed. (b) The name, address, and phone number of the applicant for FHWA funding. (c) A list of Consulting Parties invited to participate in consultation relative to the undertaking. (d) A USGS 7 1/2 minute topographic map (be sure to include the name of the map) clearly indicating the boundary of the undertaking, the location of all undertaking elements, and the undertaking's Area of Potential Effects. You may obtain such a map by contacting the Department of Environment and Conservation, Division of Geology, Maps and Publications Sales Office at (615) 532-1516. Please be sure to give TDOT the name of the quad map.
2. Other suitably scaled maps or site plans as necessary to depict the extent of the undertaking and its locational relationship to its surroundings and environment.
3. A narrative which describes the undertaking in sufficient detail to enable a reader unfamiliar with the undertaking or its location to gain a full understanding of the undertaking and all of its elements and their potential to affect directly and indirectly any historic properties within the Area of Potential Effects.
4. Original chemical or digital photographs of the undertaking Area of Potential Effects that are numbered and clearly keyed to one of the above maps or site plans.
5. Any available information including dates of construction of buildings either inside the undertaking footprint or within view or sound of the undertaking. Be sure to include photographs of buildings within the undertaking's Area of Potential Effects.

Please submit this documentation to:

Mr. Joe W. Matlock
NEPA Documentation Office- Local Programs
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Upon receipt of this documentation, TDOT will review the project, and, if satisfied with your documentation, TDOT will forward the project to this office with its determinations and findings for our review and comment. We will complete our review of this undertaking as quickly as possible and forward our written comments to TDOT for final disposition. Please be advised that until this office has provided TDOT a final written comment on this undertaking, you have not met your Section 106 obligation under federal law. Please direct questions and comments to Joe Garrison (615) 532-1550-103. We appreciate your cooperation.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jyg



TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

January 14, 2010

Margaret Slater, Consultant Project Director for City of Jackson
C/O Gresham, Smith and Partners
1400 Nashville City Center
511 Union Street; Suite 1400
Nashville, TN 37211733

Re: Invitation to Participate in the Scoping Process for an Environmental Assessment of the
Proposed US 45 Bypass Extension in Madison County, Tennessee

Dear Ms. Slater:

The Tennessee Wildlife Resource Agency has received and reviewed the information your office provided to us regarding the invitation to become a participating agency in the scoping process for an Environmental Assessment of the proposed US 45 Bypass Extension in Madison County, Tennessee. Our current concerns are potential environmental impacts associated with potential stream and wetland impacts, and impacts to state listed species that may occur do to the construction of this project. We accept the invitation to participate in this process and encourage continued consultation with our agency in future phases of this project to further reduce impacts to fish and wildlife resources.

We thank you for the opportunity to comment during the initial coordination process and look forward to working with your firm's personnel in the future to reduce potential impacts to fish and wildlife resources associated with this project.

Sincerely,

Robert M. Todd
Fish and Wildlife Environmentalist

cc: Allen Pyburn, Region I Habitat Biologist
Alan Peterson, Region I Manager

The State of Tennessee

IS AN EQUAL OPPORTUNITY, EQUAL ACCESS, AFFIRMATIVE ACTION EMPLOYER

TN econ dvlpt_email forwarding response.txt

From: Mike Atchison [Mike.Atchison@tn.gov]
Sent: Wednesday, January 06, 2010 12:41 PM
To: KDonaldson@cityofjackson.net
Cc: Means, Shawn; Wilton Burnett
Subject: Re: Fwd: ATTN: NEPA Initial Coordination, US 45 Bypass Extension, Jackson, TN
Attachments: Re: Fwd: ATTN: NEPA Initial Coordination, US 45 Bypass Extension, Jackson, TN

Mr. Donaldson,
Please note the forwarded e-mail comments from Wilton Burnett, P.E., of my staff.

Michael Atchison, Director
Office of Special Projects
TN Dept. of Economic & Community Development
312 Rosa L Parks Ave, 11th Floor
Nashville, TN 37243-1102
Phone: 615-532-9047
Fax: 615-741-5829

comments from TN Econ and Comm Dvlpt.txt

From: Wilton Burnett [Wilton.Burnett@tn.gov]
Sent: Wednesday, January 06, 2010 11:35 AM
To: Mike Atchison
Cc: Jimmy West; Tracey Exum; David Pechin; Mike Philpot
Subject: Re: Fwd: ATTN: NEPA Initial Coordination, US 45 Bypass Extension, Jackson, TN

Mike,

Option C would involve a new separation over the CSX spur which serves several industries in the I-40 Exit 76/Lower Brownsville Road area and has the potential to serve areas proximate to the airport. This spur has been the subject of intense interest with some large industrial projects which have considered sites west of the airport. A complication is that CSX has rights over the spur, West TN RR operates over the spur and Norfolk Southern owns the mainline through Jackson and probably the spur. While I am confident that any separation built will conform to appropriate clearance standards, I believe that it would be prudent for the City of Jackson to include CSX, West TN RR and Norfolk Southern in its list of folks to be notified.

Wilton

>>> Mike Atchison 1/6/2010 9:20 AM >>>

Tracey,

Please find attached a document on a possible US 45 Bypass Extension. David Pechin of our Local Planning was already sent a copy of it directly via e-mail so you might want to look at it together. Of course, I'd be glad to talk about it with you, too, after you've had a chance to look it over. The City of Jackson requests a reply, if any, within 45 days. Mike

DofEduc_nointentcomment.txt

From: Edward Beyman [Edward.Beyman@tn.gov]
Sent: Thursday, January 28, 2010 2:26 PM
To: Means, Shawn
Subject: RE: ATTN: NEPA Initial Coordination, US 45 Bypass
Extension, Jackson, TN

Mr. Means,

The Department of Education does not intend to submit comments on the project pertaining to the US 45 Bypass Extension located in Jackson, TN.

Regards,
Edward Beyman
Office of Operations
Department of Education
710 James Robertson PKWY
6th Floor
Nashville TN 37243
(615) 253-4647

>>> "Means, Shawn" <shawn_means@gspnet.com> 1/15/2010 9:41 AM >>>
Mr. Beyman,
An email will suffice as your notification of acceptance or denial to be a Participating Agency. Thanks
for your quick response, and I'll be on the lookout for your response email.

From: Edward Beyman [mailto:Edward.Beyman@tn.gov]
Sent: Friday, January 15, 2010 9:33 AM
To: Means, Shawn
Subject: Re: ATTN: The Department of Education's participation concerning the project
listed below. I am inquiring if an email would suffice for notification of
acceptance
Mr. Means,

In response to or denial to be a participating Agency.

Best regards,
Edward Beyman
Office of Operations
Department of Education
710 James Robertson PKWY
6th Floor
Nashville TN 37243
(615) 253-4647

>>> "Means, Shawn" <shawn_means@gspnet.com> 1/5/2010 3:02 PM >>>
The following email is being sent on behalf of the City of Jackson by Gresham, Smith
and Partners, project consultant to the City.

To whom it may concern:

The City of Jackson, Tennessee, in cooperation with the Federal Highway
Administration
(FHWA) and the Tennessee Department of Transportation's (TDOT) Office of Local
Programs,
is preparing an Environmental Assessment (EA) for the proposed southern extension of
State

Route (SR) 186/US 45 Bypass from SR 1 (US 70/Airways Boulevard) to SR 5 (US 45/South Highland Avenue) in Jackson, Madison County, Tennessee. A Transportation Planning Report (TPR) was prepared for this project and approved by TDOT in March of 2009. The TPR identified two wide study corridors into which the Build Alternatives will be developed during the NEPA process. A No Build Alternative will also be evaluated.

Attached is the Initial Coordination Package for distribution to your agency. The package consists of a Project Summary, including maps of the project area and the TPR study corridors, and, as required, the Project Coordination Plan for this project. This material is intended to initiate the scoping process for the EA.

If for technical reasons this package is blocked or unreadable by your agency, upon your request we would be happy to provide a CD of the attached material.

Thank you in advance for your cooperation in the project development process. We look forward to your input on the proposed project.

Keith Donaldson
MPO Coordinator and Transportation Planner
City of Jackson

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TESA Participating Agency Invitation Acceptance - Madison US 45 Southern Bypass (PIN 109926.00).txt

From: TDEC TESA [TDEC.TESA@tn.gov]

Sent: Monday, February 22, 2010 9:55 AM

To: Means, Shawn

Cc: Slater, Margaret; Tom Love

Subject: TESA Participating Agency Invitation Acceptance - Madison US 45
Southern Bypass (PIN 109926.00)

Attachments: PAI Acceptance.pdf

TDEC appreciates the opportunity to participate in the development of this project. Attached is TDEC's letter accepting the invitation to be a participating agency. Let me know if additional information is needed. Thanks.

Susannah Kniazewycz
Acting TDEC TESA Coordinator
615-889-6888
TDEC.TESA@tn.gov

Appendix C

Section 106 Coordination



TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

October 3, 2011

Ms. Martha Carver
Tennessee Department of Transportation
505 Deaderick St/900
Nashville, Tennessee, 37243-0349

RE: FHWA, EFFECT DETERMINATION, SR-186/SR-1 TOSR-5, PIN#109926.00, JACKSON,
MADISON COUNTY

Dear Ms. Carver:

Pursuant to your request, received on Wednesday, September 28, 2011, this office has reviewed documentation concerning the above-referenced undertaking. This review is a requirement of Section 106 of the National Historic Preservation Act for compliance by the participating federal agency or applicant for federal assistance. Procedures for implementing Section 106 of the Act are codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739)

Based on the information provided, we find that the project area contains three cultural resources eligible for listing in the National Register of Historic Places: the Bemis Historic District, the Riverside Cemetery, and the Illinois Central Railroad Division Office. We further find that the project as currently proposed will not adversely affect these resources.

Unless project plans change, this office has no objection to the implementation of this project. Should project plans change, please contact this office to determine what additional action, if any, is necessary. Questions and comments may be directed to Joe Garrison (615) 532-1550-103. Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jyg

LINDA J. HIGGINS
Madison County Historian

361 Harts Bridge Rd
Jackson, TN 38301
PHONE: 731-427-6681
FAX: 731-424-4851
e-mail: ljhiggins@charter.net

Oct. 3, 2011

Ms. Holly Barnett
Historic Preservation Specialist
Tennessee Dept. of Transportation
505 Deaderick Street
Ste. 900, James K. Polk Bldg.
Nashville, TN 37243-0349

Dear Ms. Barnett,

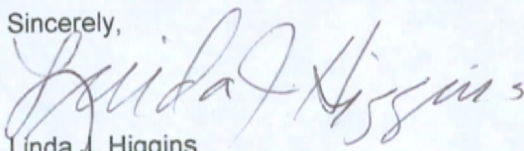
Thank you for giving me another opportunity to comment on the historic impact of the Proposed Southern Extension of the U.S. 45 Bypass.

Your historic context has one major error. In it you copied the statement, "Twenty years after Tennessee acquired statehood, the Chickasaws signed the 1816 treaty..." from the city's online history written by Harbert Alexander. The year the treaty was signed was 1818. This error (perhaps a typo) must be corrected because the Chickasaw Treaty of 1818 is a legal document. Actual legal settlement in the Western District didn't take place until 1819 under the wording of the 1818 Treaty. In addition, the county seat of Madison County was only proposed to be called Alexandria by the local leaders, but the state Legislature denied the use of that name since there was already an Alexandria, Tennessee; the Legislature gave the name Jackson to the town in order to honor Andrew Jackson of recent fame in the War of 1812.

It appears that your plan avoids any major impact on the three historical projects identified in your proposal.

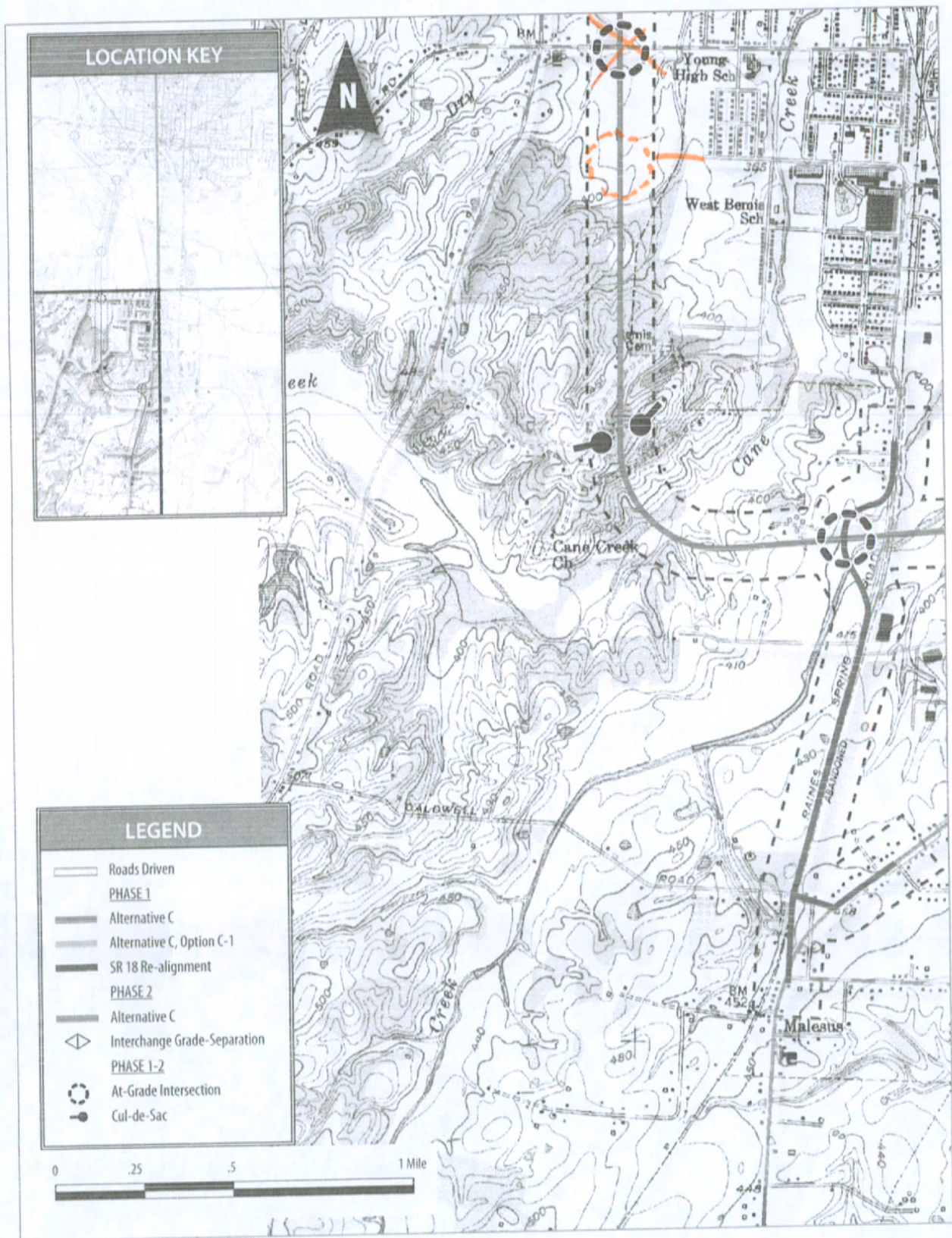
One additional suggestion: Since the Bemis Mill plant was eliminated from the historically zoned Bemis District by the local authorities, the Historic Zoning Board, due to its continuing to be used as a functioning warehouse, your APE could eliminate that portion of the National Register Historic District. This would give you the opportunity to include an At-Grade-Intersection of the Bypass and A Street in the western portion of the Bemis Historic District in order to give a transportation connection to the mill warehouses. This would enable the Mill owners to continue operating the mill profitably and to preserve the century-plus building. The At-Grade Intersection on D Street already dumps a lot more traffic into the Historic District and at the existing school site. So why not eliminate that intersection and put it a little further south to intersect with A Street on the West.

Sincerely,



Linda J. Higgins
Madison County Historian

Cc Keith Donaldson, Jackson Planning Dept.





TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

November 10, 2011

Mr. Gerald Kline
Tennessee Department of Transportation
Environmental Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

RE: FHWA, ARCHAEOLOGICAL ASSESSMENT, SR-186/SR-1 TO SR-5, MADISON,
JACKSON COUNTY, TN

Dear Mr. Kline:

At your request, our office has reviewed the above-referenced archaeological survey report in accordance with regulations codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739). Based on the information provided, we find that the project area contains no archaeological resources eligible for listing in the National Register of Historic Places.

If project plans are changed or archaeological remains are discovered during construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act.

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jmb



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
THE ENVIRONMENTAL DIVISION**

**SUITE 900, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334
(615) 741-5257
Fax (615) 741-1098**

April 26, 2011

Alabama-Quassarte Tribal Town
101 East Broadway
Wetumka, OK 74883

Attn: Ms. Augustine Asbury, Second Chief/NAGPRA Representative

SUBJECT: Section 106 Initial Coordination for the Proposed Southern Extension of SR-186 and US-45 Bypass from SR-1 (U.S. 70/Airways Blvd) to SR-5 (US-45/South Highland Ave), Jackson, Madison County, Tennessee

Dear Ms. Asbury:

The Tennessee Department of Transportation (TDOT) in cooperation with the Federal Highway Administration is proposing to extend SR-186 and US-45 Bypass from SR-1 (US-70/Airways Boulevard) on the west side of Jackson to SR-5 (US-45/South Highlands Ave) on the south side of Jackson (maps attached). The project has one build alternative, which is divided into two phases. The total project length is approximately 10 miles, primarily on new location. Additional right-of-way will be needed.

The National Historic Preservation Act (NHPA) recognizes that federally funded undertakings, like the subject project, can affect historic properties to which your tribe attaches religious, cultural, and historic significance. In accordance with 36 CFR 800 regulations implementing compliance with Section 106 of the NHPA, I would like to know if you have information you could share with me about tribal concerns in the project area and if you wish to be a consulting party on the project? Early awareness of your concerns can serve to protect things of value to the tribe.

If you act as a consulting party you will receive cultural resource assessment reports and related documentation, be invited to attend project meetings with FHWA, TDOT, and the Tennessee State Historic Preservation Office (TN-SHPO), if any are held, and be asked to provide input throughout the process. If you choose to not act as a consulting party at this time, you can do so at a later date simply by notifying me.

Please respond to me via letter, telephone (615-741-5257), fax (615-741-1098), or E-mail (Gerald.Kline@tn.gov). I respectfully request responses (email is preferred) to project reports and other materials within thirty (30) days of receipt if at all possible. Thank you for your assistance.

Sincerely,

Gerald Kline
Transportation Specialist I
Archaeology Program Manager

Enclosure

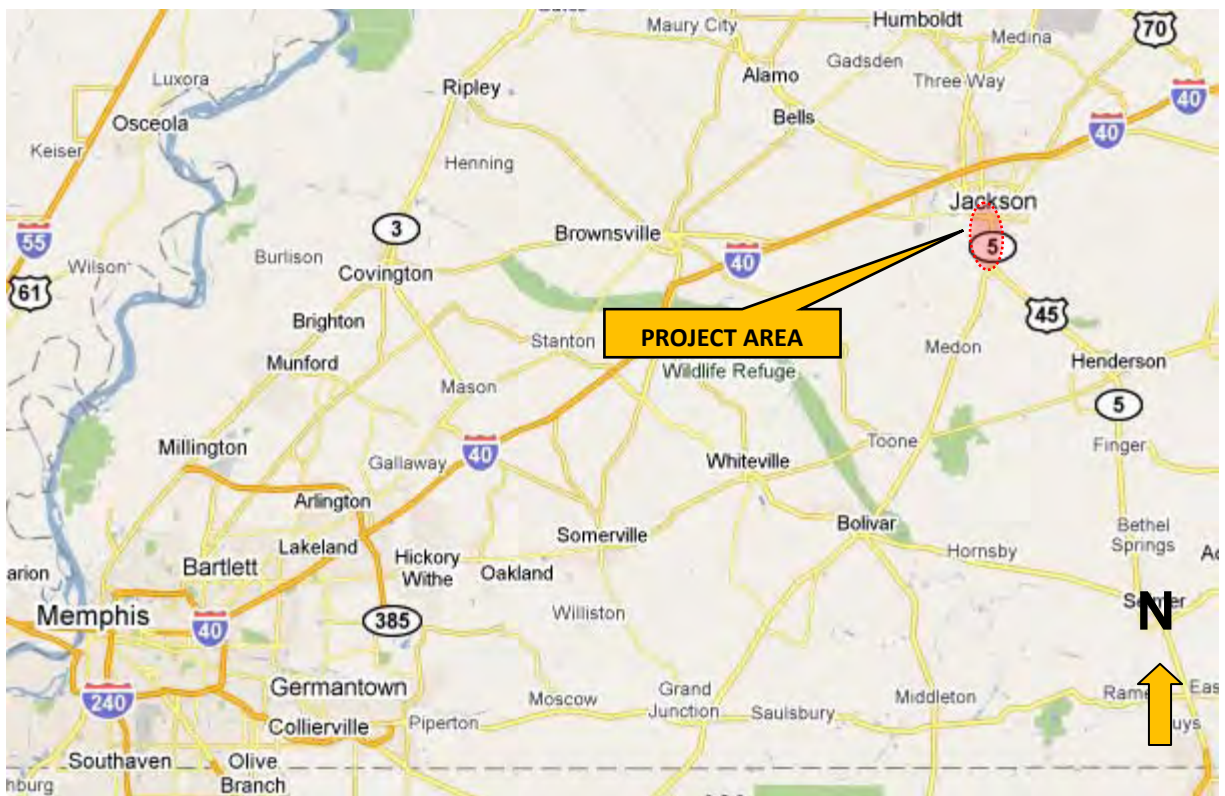
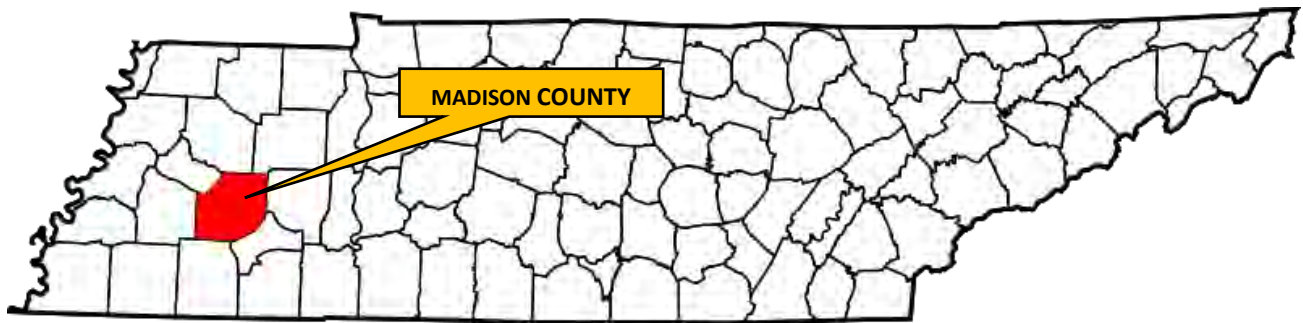
cc Kim Jumper, Shawnee Tribe
Gingy Nail, Chickasaw Nation
Terry Cole, Choctaw Nation of Oklahoma
Robin Dushane, Eastern Shawnee Tribe of Oklahoma
Gary Bucktrot, Kialegee Tribal Town
Emman Spain, Muscogee Creek Nation
Lisa LaRue-Stopp, United Keetoowah Band of Cherokee Indians

TDOT PIN# 109926.00 – Region 4

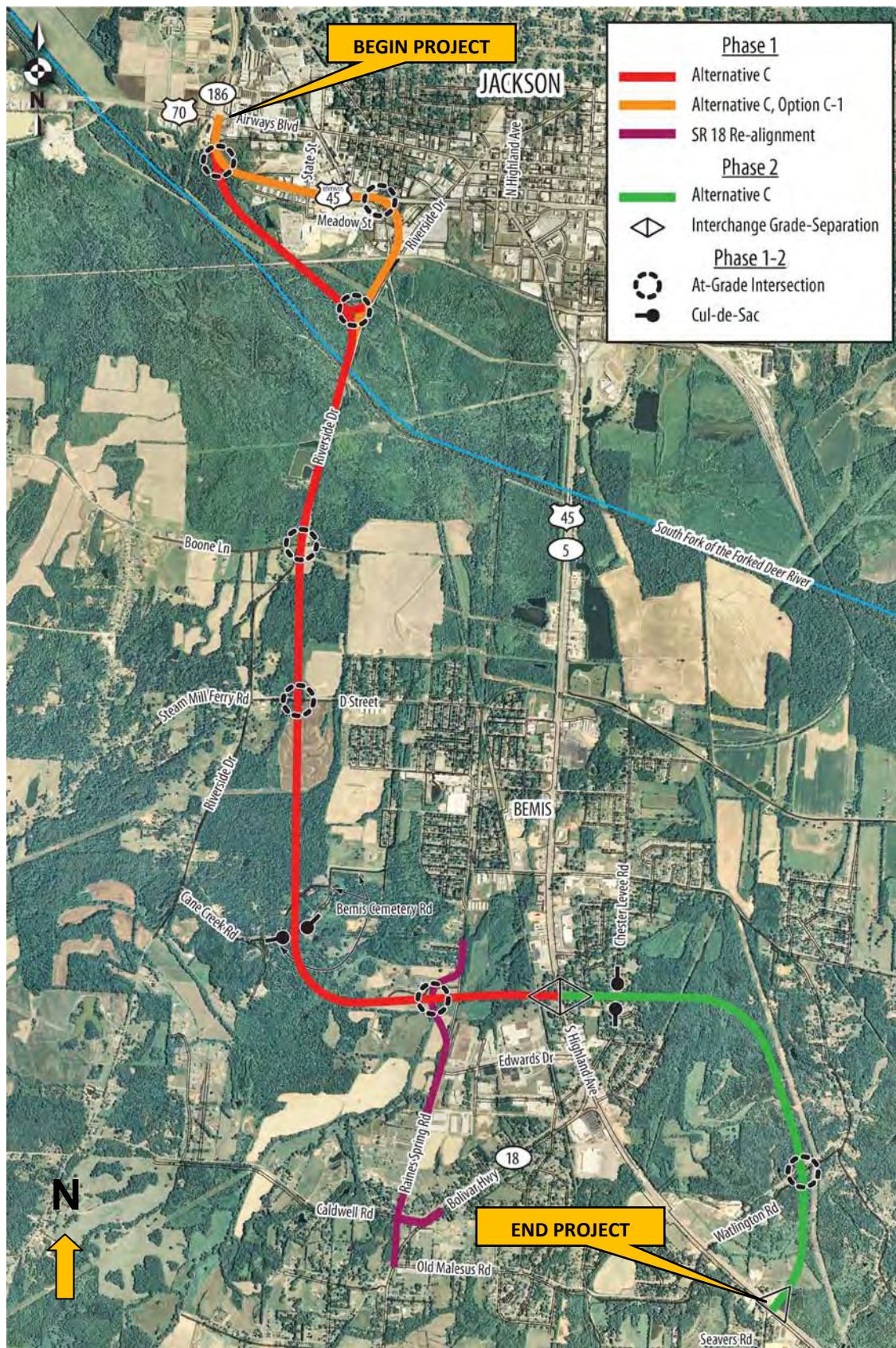
SOUTHERN EXTENSION OF SR-186 AND US-45 BYPASS

FROM SR-1 (US-70/AIRWAYS BLVD) TO SR-5 (US-45/SOUTH HIGHLAND AVE)

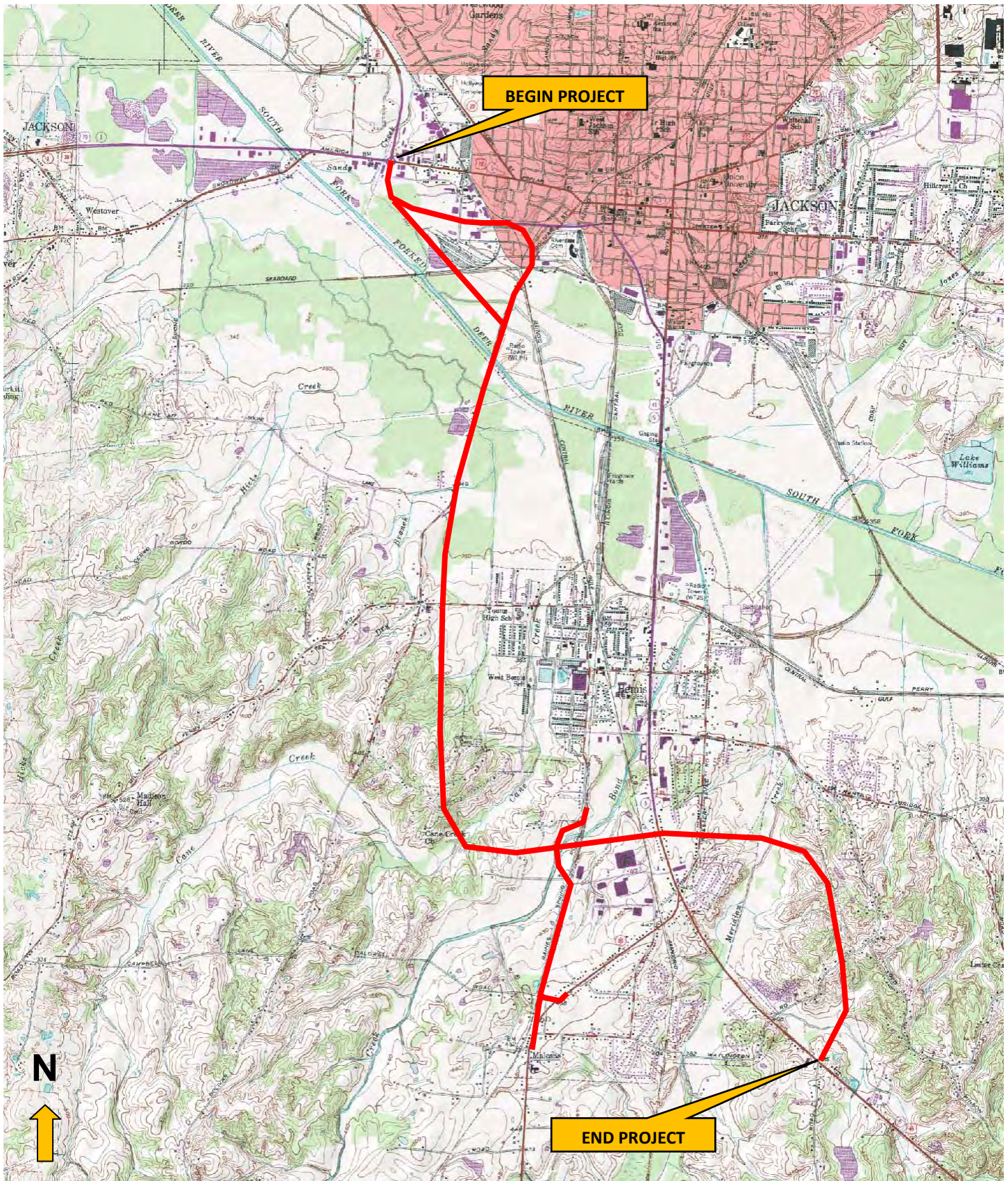
JACKSON, MADISON COUNTY, TENNESSEE



PROJECT VICINITY MAP



PROJECT LOCATION MAP



PROJECT LOCATION MAP - USGS QUAD JACKSON SOUTH 438 SE (1983)

Layne-Sclafani, Sandy

From: Gerald Kline [Gerald.Kline@tn.gov]
Sent: Wednesday, June 08, 2011 11:31 AM
To: Layne-Sclafani, Sandy
Subject: RE: Request for Native American Coordination, US 45 Bypass, Jackson, TN
Attachments: Madison US 45 Bypass NAC Asbury 4.26.11.pdf

Sandy,

The comment period for the tribes ended on the 26th of May. After checking our records I find that we received no responses. An example of the notice sent to the tribes is attached.

Gerald

>>> "Layne-Sclafani, Sandy" <sandy_layne-sclafani@gspnet.com> 6/8/2011 7:45 AM >>>

Gerald,

Good morning! Could you let me know the status of the Native American Coordination for the US 45 Bypass project.

Thanks,

Sandy

From: Gerald Kline [<mailto:Gerald.Kline@tn.gov>]
Sent: Tuesday, April 19, 2011 2:18 PM
To: Slater, Margaret
Cc: Gaskins, Drew; Layne-Sclafani, Sandy
Subject: Re: Request for Native American Coordination, US 45 Bypass, Jackson, TN

M,

Will certainly do so as soon as I've located the project. It's roughly between the "r" in Riverside Dr and the "N" in North Highland Ave in the upper quarter of the map you sent, right?

G

>>> "Slater, Margaret" <margaret_slater@gspnet.com> 4/19/2011 9:59 AM >>>

Pin is 109926.00

Federal Project Number is HPP-NHE1(225)

State Project Number is 57LPLM-F0-005

This is a local program project with City of Jackson. Attached is a map showing the Build Alternative. Can you please conduct NA coordination using this. I've also attached a project description for your use. I will be gone from GS&P in about 2 weeks and Sandy will be taking over this project.

Thanks G.

M

Margaret Slater, AICP
GRESHAM, SMITH AND PARTNERS

Architecture, Engineering, Interiors, Planning

1400 Nashville City Center, 511 Union Street
Nashville, TN 37219-1733

[P] 615.770.8467

[M] 615.517.8184

www.gspnet.com

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From: Ian Thompson <ithompson@choctawnation.com>
To: Robbie.D Jones <Robbie.D.Jones@tn.gov>
CC: Caren Johnson <cjohnson@choctawnation.com>
Date: 5/2/2011 9:12 AM
Subject: RE: Section 106 Coordination - Madison Co., TN
Attachments: Counties of Interest.doc; Counties of Interest.doc

Dear Robby,

Thank you for including the Choctaw Nation of Oklahoma in this consultation. Madison Co., TN is outside our area of historical interest. Accordingly, we respectfully defer to the other federally recognized Tribes that have been consulted on this project. Please find attached a accompanying list of states and counties in which the Choctaw Nation of Oklahoma does have an historical interest. Thank you.

Ian Thompson PhD, RPA
Assistant Director Historic Preservation Dept.,
Tribal Archaeologist, NAGPRA Specialist
Choctaw Nation of Oklahoma
PO Drawer 1210
Durant, OK 74701
1-800-522-6170 ext. 2216

From: Robbie.D Jones [mailto:Robbie.D.Jones@tn.gov]
Sent: Tuesday, April 26, 2011 4:34 PM
To: Ian Thompson; Terry Cole
Cc: Robbie.D Jones
Subject: Section 106 Coordination - Madison Co., TN

Dear Mr. Cole,

I'm sending this email communication on behalf of Gerald Kline, Archaeology Program Manager for the Tennessee Department of Transportation. Please see the attached letters and maps for the following project:

Southern Extension of SR-186 and US-45 Bypass, Jackson, Madison County, Tennessee

If you have any questions or need additional information, please contact Gerald Kline at (615) 741-5257 or Gerald.Kline@tn.gov<mailto:Gerald.Kline@tn.gov>.

Thank you for your assistance in this matter.

Robbie

Robbie D. Jones
Administrative Services
TDOT Environmental Division
Director's Office
Suite 900, J K Polk Bldg.
Nashville, TN 37243-0334
Telephone: 615-741-3655
Fax: 615-741-1098
Robbie.D.Jones@tn.gov<mailto:Robbie.D.Jones@tn.gov>

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Appendix D

Other Agency Coordination

TESA Concurrence Point 1	D-1
TESA Concurrence Point 2	D-16
US Fish and Wildlife Services Coordination.....	D-30
TESA Concurrence Point 3	D-32



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

July 13, 2010

Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, Tennessee 37219

Subject: Concurrence Point 1. Proposal to construct a Southern Extension of State Route 186 and the US 45 Bypass from State Route 1/ U.S. Highway 70 (Airways Boulevard) to State Route 5/ U.S Highway 45 (South Highland Street) in Jackson, Madison County, Tennessee.

Dear Ms. Slater:

The City of Jackson, in cooperation with the Tennessee Department of Transportation (TDOT) and the Federal Highway Administration (FHWA), is proposing to construct a Southern Extension of State Route (SR) 186 and the U.S. Highway (US) 45 Bypass in Madison County, Tennessee. The purpose of the project is to improve system linkage and safety, provide an adequate crossing of the South Fork of the Forked Deer River for emergency response, fulfill a legislative mandate, and provide for economic growth and development. The Transportation Planning Report for this project was approved by TDOT in March of 2009.

The *Purpose and Need Package* was developed by TDOT to justify this project in accordance with the National Environmental Policy Act and the Tennessee Environmental Streamlining Agreement (TESA). In accordance with TESA, TDOT has requested that the U.S. Fish and Wildlife Service review and provide concurrence (or non concurrence) on Concurrence Point 1, *Purpose and Need*.

The Concurrence Point 1 package provides detailed traffic analysis of the project area and other relevant information which establish a purpose and need for the project. It appears that a contributing factor to the existing traffic problems on US 45 is unlimited access. We recommend that any new alignment be designated as a controlled access facility to give preference to through traffic as well as to minimize future environmental impacts. We also note that the southern terminus of Corridor C is proposed to tie into the study area segment of US 45 where the highest number of crashes occurred between 2005 and 2007. Two major intersections in this business district (proposed US 45 bypass and existing SR 18) would likely result in increased congestion and related safety issues. Our office recommends that further consideration be given to a southern terminus at SR 18.

The initial construction of US 45 and Riverside Drive and their South Fork crossings resulted in substantial wetland and floodplain impacts. We agree that any alternative considered should utilize these existing river crossings and stay on previously constructed alignments to the extent possible. At the northern terminus of the project, it appears that Corridor C-1 would be the preferred alternative from an environmental standpoint. It minimizes wetlands and floodplain impacts by following the existing alignment and would not cross the hazmat area south of existing US 45.

We have reviewed the *Purpose and Need Package* and **concur** that it is adequate and that TDOT should proceed to Concurrence Point 2, *Project Alternatives to be Evaluated in the Environmental Document*. Also, a review of our endangered species collection records does not indicate that federally listed or proposed endangered or threatened species occur within the present study area at this time. We note, however, that collection records available to the Service may not be all-inclusive. The signed TESA Concurrence Point 1 for this project is attached.

Thank you for the opportunity to review this document. If you have any questions regarding our comments, please contact John Griffith of my staff at 931/528-6481 (ext. 228) or by email at john_griffith@fws.gov.

Sincerely,



for Mary E. Jennings
Field Supervisor

Enclosure

xc: Tom Love, TDOT, Nashville, TN

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 1**

**Purpose and Need and Study Area for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, has submitted for your review and concurrence summary information for the proposed Southern Extension of SR 186 and the US 45 Bypass project, including a preliminary Purpose and Need Statement and a description and mapping of the proposed Study Area. Once you have had a chance to review the enclosed documents, please sign this form to indicate your concurrence.

Returned the signed form to Ms. Margaret Slater, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of this letter (May 26, 2010):

By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:
Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

If you do not concur with the information provided or need additional time to review it, please contact Ms. Slater by email or in writing prior to the end of the 45 day review period indicating your reasoning for nonconcurrence and/or your request for review time extension. As outlined in the TESA agreement, the City of Jackson and TDOT will assume you concur with the information provided for your review if no response is received.

This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 1 for the above project have been satisfied.

Agency: U.S. FISH & WILDLIFE SERVICE

Concurrence: Broad B. Acting Field Supervisor
(Name and Title)

Date: 7-13-10

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 1**

**Purpose and Need and Study Area for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, has submitted for your review and concurrence summary information for the proposed Southern Extension of SR 186 and the US 45 Bypass project, including a preliminary Purpose and Need Statement and a description and mapping of the proposed Study Area. Once you have had a chance to review the enclosed documents, please sign this form to indicate your concurrence.

Returned the signed form to Ms. Margaret Slater, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of this letter (May 26, 2010):

By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:
Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

If you do not concur with the information provided or need additional time to review it, please contact Ms. Slater by email or in writing prior to the end of the 45 day review period indicating your reasoning for nonconcurrence and/or your request for review time extension. As outlined in the TESA agreement, the City of Jackson and TDOT will assume you concur with the information provided for your review if no response is received.

This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 1 for the above project have been satisfied.

Agency: U.S. Environmental Protection Agency

Concurrence: Jamie Higgins / Jamie Higgins, Life Scientist
(Name and Title)

Date: 6-16-10

Concurrence Point 1 (Purpose and Need and Study Area for the Proposed Southern Extension of SR 186 and the US 45 Bypass from SR 1/US 70(Airways Boulevard) to SR 5/US 45 (South Highland Ave), City of Jackson, Madison County, Tennessee

U.S. Environmental Protection Agency—Advisory Comments:

1. Does the City of Jackson municipality have jurisdiction over the Bemis Historic District? The EA should describe the official relationship between the City of Jackson and Bemis Historic District. Additionally, EPA recommends TDOT provide a brief description of the background/history of Bemis and its relationship to the City of Jackson.
2. Are the residents and business owners within Bemis Historic District supportive of the project? EPA recommends TDOT solicit feedback from residents and businesses of Bemis and describe their comments in the EA.
3. On page 6, Project Purpose and Need, TDOT discusses a public meeting held in February 2010. Future Concurrence Points and the EA should briefly discuss the outcomes of this public meeting.
4. The two alternatives to be considered (Corridor B and C-reference page 4) will both build facilities that will meet standards for a 100 year flood. Given climate change uncertainties and recent 500 year floods in Nashville and Atlanta, shouldn't TDOT evaluate constructing to a higher floodplain standard (i.e. 500 year)? TDOT also states on page 4, Community Profile section that the population of Jackson has grown 29.1 percent between 1990 and 2007. Community growth will lead to more impervious surfaces, which will lead to more volumes of water entering the South fork of the Forked Deer River's watershed. As recent floods have proven, the traditional concept of building to a 100 year flood plain has been ineffective in protecting infrastructure. How much more would it cost to build to a 500 year standard? EPA requests that TDOT and FHWA consider building to higher floodplain standard.
5. Emergency responders interviewed by TDOT (page 7) express concern about travel times to southern suburbs when US 45 is blocked during storms and heavy traffic. They state, "there is no dispatch hubs for ambulances south of the South fork of the Forked Deer River bridge crossing..." Has the City of Jackson considered moving a dispatch hub to the south? How much would it cost to relocate a dispatch hub to the south and how difficult would this be? Given that improving emergency response times is a stated goal of the project, EPA requests TDOT explore the possibility (and costs) of relocating or adding a dispatch hub south of Jackson.
6. On page 8, 1st paragraph, TDOT states, "One hundred thirteen (approximately 14 percent) of the crashes involve heavy trucks. The number of crashes suggests a need for an alternate route that would separate some of the through traffic from the local traffic." Later in the last paragraph, TDOT states, "Separation of local and through traffic under an additional route could also reduce congestion and travel times in the project area, resulting in reduced response times for emergency vehicles and increased community

safety.” TDOT is assuming that the heavy trucks are traveling through Jackson; however, there is no data to substantiate this assumption. The heavy trucks might be traveling to Jackson to make deliveries and their destination might be Jackson. Since this is one of the goals of the project, EPA recommends that TDOT evaluate the destination of the heavy trucks and perhaps, conduct a vehicle destination study.

US 45 Extension Concurrence Pt 1 Form and Comments_EPA.txt
From: Hi ggins, Jami e@epamail . epa. gov
Sent: Wednesday, June 16, 2010 1:42 PM
To: Means, Shawn; Tom Love; Slater, Margaret; hi ggins, jami e@epa. gov
Subject: US 45 Extension Concurrence Pt 1 Form and Comments
Attachments: US 45 extension, Jackson, concurrence pt 1 EPA comments. pdf; TESA
CP1
Concurrence Form. doc; SR186_US45Bypass_CP1_pkg. pdf

Please find attached EPA's signed concurrence point 1 form with attached
advisory comments for US 45 Extension, Jackson, Madison Co, TN.

Thanks,
Jami e

(See attached file: US 45 extension, Jackson, concurrence pt 1 EPA
comments. pdf)

Jami e Hi ggins
EPA, Region 4
NEPA Office
404-562-9681

"Means, Shawn"
<shawn_means@gsp
net. com>

05/26/2010 09:12
AM

To
Jami e Hi ggins/R4/USEPA/US@EPA,
Jerry Gi st
<j gi st@ci tyofj ackson. net>, Mary
Jenni ngs
<mary_e_j enni ngs@fws. gov>, Mi tch
El can
<j ames. m. el can@usace. army. mi l >,
Robert Todd
<Rob. Todd@state. tn. us>, TDEC TESA
<tdec. tesa@state. tn. us>, Ti m
Flinn
<ti m. h. fl i nn@usace. army. mi l >

cc

"j harri s@co. madi son. tn. us"
<j harri s@co. madi son. tn. us>,
"Gary. Fottrel l@fhwa. dot. gov"
<Gary. Fottrel l@fhwa. dot. gov>, Joe
Matl ock <Joe. Matl ock@tn. gov>,
"Lori . Ki rby@tn. gov"
<Lori . Ki rby@tn. gov>, Kei th
Donal dson
<KDonal dson@ci tyofj ackson. net>,
"Sl ater, Margaret"
<margaret_sl ater@gspnet. com>

Subject

Attn: TESA CP1 SR186/US 45 Bypass
EA, Jackson, TN

US 45 Extension Concurrence Pt 1 Form and Comments_EPA.txt

The following email is being sent on behalf of the City of Jackson, Tennessee by Gresham, Smith and Partners, project consultant to the City.

To whom it may concern:

The City of Jackson, Tennessee, in cooperation with the Federal Highway Administration (FHWA) and the Tennessee Department of Transportation's (TDOT) Office of Local Programs, is preparing an Environmental Assessment (EA) for the proposed southern extension of State Route (SR) 186/US 45 Bypass from SR 1 (US 70/Airways Boulevard) to SR 5 (US 45/South Highland Avenue) in Jackson, Madison County, Tennessee.

In accordance with the spirit and intent of the Tennessee Environmental Streamlining Agreement, the City of Jackson, in coordination with TDOT, is providing you information that outlines the preliminary Purpose and Need Statement and a description of the Proposed Study Area for the NEPA Environmental Assessment.

This information is attached as the Concurrence Point 1 package outlined in TESA.

Please review the enclosed information and provide any comments you may have regarding the project. If you concur with the information provided, please sign the attached Concurrence Point 1 signature form included with this transmittal and return it according to the instructions on the form. If you do not concur, please provide us with your reasoning for nonconcurrence in a timely manner so that we can address those comments as soon as possible. We request that all responses be returned within the agreed upon 45 day review period (no later than July 14, 2010).

Thank you in advance for your timely responses and we look forward to coordinating with you throughout the TESA process.

This E-mail, and any attachments thereto, is intended only for use by the addressee(s) named herein and may contain proprietary, legally privileged, confidential or copyrighted information belonging to the sender. If you are not the intended recipient of this E-mail, you are hereby notified that any use of, reliance on, disclosure, dissemination, distribution or copying of the contents of this email, and any attachments thereto, in whole or in part, is strictly prohibited. If you have received this E-mail in error, please immediately notify me by phone or by return E-mail and permanently delete the original and any copy of any E-mail and any printout thereof. Mail delivered by Gresham, Smith and Partners mail system. (See attached file: TESA CP1 Concurrence Form.doc) (See attached file: SR186_US45Bypass_CP1_pkg.pdf)



DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT, CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS, TENNESSEE 38103-1894

REPLY TO

July 8, 2010

Operations Division
Regulatory Branch

Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, Tennessee 37219

Dear Ms. Slater:

This is in response to your TESA Concurrence Point (CP) #1, Environmental Assessment for the proposed Southern Extension of SR186 and the US 45 Bypass project. As you requested, the preliminary purpose and need statement was reviewed and we acknowledge that the information concerning the purpose and need for the project is adequate. Attached is the signature form acknowledging our office's concurrence with CP #1. This information was received by our office on May 26, 2010.

The submitted information also included a written description and mapping of the proposed study area to include two potential corridors for constructing the project. Please be advised that the issuance of a Section 404 permit is, in part, dependent upon satisfying the requirements of Section 404 (b)(1) Guidelines as described in 40 CFR 230.10. If additional practicable alternatives exist and were considered for the project, these alternatives must be included so that our office can determine that this project would be in compliance with Section 404 (b)(1) Guidelines.

If you have questions, please contact Mitch Elcan at (901) 544-0337 and refer to File No. MVM-2010-023.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tim H Flinn", is written over a horizontal line.

Tim H Flinn, P.E.
Eastern Section Chief
Regulatory Branch

Enclosure

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 1**

**Purpose and Need and Study Area for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, has submitted for your review and concurrence summary information for the proposed Southern Extension of SR 186 and the US 45 Bypass project, including a preliminary Purpose and Need Statement and a description and mapping of the proposed Study Area. Once you have had a chance to review the enclosed documents, please sign this form to indicate your concurrence.

Returned the signed form to Ms. Margaret Slater, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of this letter (May 26, 2010):

By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:
Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

If you do not concur with the information provided or need additional time to review it, please contact Ms. Slater by email or in writing prior to the end of the 45 day review period indicating your reasoning for nonconcurrence and/or your request for review time extension. As outlined in the TESA agreement, the City of Jackson and TDOT will assume you concur with the information provided for your review if no response is received.

This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 1 for the above project have been satisfied.

Agency: COE

Concurrence: W. H. S. / Regulatory Branch with comments (attached)
(Name and Title)

Date: 7/2/10

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 1**

**Purpose and Need and Study Area for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, has submitted for your review and concurrence summary information for the proposed Southern Extension of SR 186 and the US 45 Bypass project, including a preliminary Purpose and Need Statement and a description and mapping of the proposed Study Area. Once you have had a chance to review the enclosed documents, please sign this form to indicate your concurrence.

Returned the signed form to Ms. Margaret Slater, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of this letter (May 26, 2010):

By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:
Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

If you do not concur with the information provided or need additional time to review it, please contact Ms. Slater by email or in writing prior to the end of the 45 day review period indicating your reasoning for nonconcurrence and/or your request for review time extension. As outlined in the TESA agreement, the City of Jackson and TDOT will assume you concur with the information provided for your review if no response is received.

This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 1 for the above project have been satisfied.

Agency: TDEC - WPC

Concurrence: Brian Canada, ES 4
(Name and Title)

Date: 8.9.10



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER POLLUTION CONTROL
7TH FLOOR, L&C ANNEX
401 CHURCH STREET
NASHVILLE, TENNESSEE 37243-1534

August 6, 2010

Mr. Tom Love
Environmental Division
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deadrick Street
Nashville, Tennessee 37243-0334

Subject: CP 1 for US 45 Bypass at Jackson, Madison County, Tennessee PIN 109926.00

Dear Mr. Love:

We are in receipt of the above referenced material. The Division requests that in the process of narrowing the potential study corridor that TDOT take care to avoid and/or minimize impacts to wetlands adjacent to the Forked Deer River. The use of existing crossings would likewise be preferable.

At this time, we do not have more specific comments on Concurrence Point 1.

Thank you for the opportunity to participate in the planning of this project.

Sincerely,

A handwritten signature in black ink that reads "Daniel C. Eagar".

Daniel C. Eagar, Manager
Natural Resources Section



TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

July 14, 2010

Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street; Suite 1400
Nashville, TN 37211733

Re: Purpose and Need and Study Area for the Proposed Southern Extension of SR 196 and the US 45 Bypass From SR 1/US 45 (South Highland Avenue); City of Jackson, Madison County, Tennessee

Dear Ms. Slater:

The Tennessee Wildlife Resource Agency has received and reviewed the information your office provided to us regarding the proposed project listed above. Our current concerns are potential impacts to streams, wetlands, floodplains, and listed species that may occur due to the construction of this project.

We concur on Concurrence Point 1 for the purpose and need and study area for the proposed southern extension of SR 196 and the US 45 Bypass from SR 1/US 45 (South Highland Avenue); City of Jackson, Madison County, Tennessee.

We have completed the requested concurrence form, which is attached. We thank you for the opportunity to participate during the coordination process and look forward to working with Tennessee Department of Transportation personnel in the future to reduce potential impacts to fish and wildlife resources associated with this project.

Sincerely,

Robert M. Todd
Fish and Wildlife Environmentalist

cc: Allen Pyburn, Region I Habitat Biologist
Alan Peterson, Region I Manager
Ed Harsson, West Tennessee Biologist

The State of Tennessee

IS AN EQUAL OPPORTUNITY, EQUAL ACCESS, AFFIRMATIVE ACTION EMPLOYER

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 1**

**Purpose and Need and Study Area for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, has submitted for your review and concurrence summary information for the proposed Southern Extension of SR 186 and the US 45 Bypass project, including a preliminary Purpose and Need Statement and a description and mapping of the proposed Study Area. Once you have had a chance to review the enclosed documents, please sign this form to indicate your concurrence.

Returned the signed form to Ms. Margaret Slater, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of this letter (May 26, 2010):

By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:

Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

If you do not concur with the information provided or need additional time to review it, please contact Ms. Slater by email or in writing prior to the end of the 45 day review period indicating your reasoning for nonconcurrence and/or your request for review time extension. As outlined in the TESA agreement, the City of Jackson and TDOT will assume you concur with the information provided for your review if no response is received.

This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 1 for the above project have been satisfied.

Agency: TENNESSEE WILDLIFE RESOURCES AGENCY

Concurrence: ROBERT TODD, FISH AND WILDLIFE ENVIRONMENTALIST
(Name and Title)

Date: 7-14-2010



TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

July 12, 2010

Mr. Keith Donaldson
Jackson Planning Department
111 E. Main Street/201
Jackson, Tennessee, 38301

RE: FHWA, SR-186/US-45 BYPASS/SR-1 TO SR-5, JACKSON, MADISON COUNTY

Dear Mr. Donaldson:

In response to your request, received on Friday, July 2, 2010, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicant for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800. You may wish to familiarize yourself with these procedures (Federal Register, December 12, 2000, pages 77698-77739) if you are unsure about the Section 106 process.

Considering available information, we find that the project as currently proposed MAY ADVERSELY AFFECT PROPERTIES THAT ARE ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES. You should now begin immediate consultation with our office. Please direct questions and comments to Joe Garrison (615) 532-1550-103. We appreciate your cooperation.

Sincerely,

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jyg



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

March 18, 2011

Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, Tennessee 37219

Subject: Concurrence Point 2. Proposal to construct a Southern Extension of State Route 186 and the US 45 Bypass from State Route 1/U.S. Highway 70 (Airways Boulevard) to State Route 5/U.S Highway 45 (South Highland Street) in Jackson, Madison County, Tennessee. (Re: FWS# 11-CPA-0350).

Dear Ms. Slater:

The City of Jackson, in cooperation with the Tennessee Department of Transportation (TDOT) and the Federal Highway Administration (FHWA), is proposing to construct a Southern Extension of State Route (SR) 186 and the U.S. Highway (US) 45 Bypass in Madison County, Tennessee. The purpose of the project is to improve system linkage and safety, provide an adequate crossing of the South Fork of the Forked Deer River for emergency response, fulfill a legislative mandate, and provide for economic growth and development. The Transportation Planning Report for this project was approved by TDOT in March of 2009.

The *Project Alternatives Package* was developed by TDOT to justify this project in accordance with the National Environmental Policy Act and the Tennessee Environmental Streamlining Agreement (TESA). In accordance with TESA, TDOT has requested that the U.S. Fish and Wildlife Service review and provide concurrence (or nonconcurrence) on Concurrence Point 2, *Project Alternatives to be Evaluated in the Environmental Document*.

The maps provided indicate that removal of substantial forested cover would be required for the build alternative. We do not have sufficient information to ascertain whether or not these trees provide summer roost habitat for the federally endangered Indiana bat (*Myotis sodalis*). In the past, our office requested that a tree cutting timeframe restriction be implemented to address potential impacts to this species. However, we no longer believe that a timeframe restriction on tree cutting properly addresses indirect and cumulative impacts to the Indiana bat. A qualified biologist should assess potential impacts and determine if the proposed project may affect this

species. TDOT should submit a copy of their assessment and findings to this office for review and concurrence. A finding of "may affect" could require initiation of formal consultation by the lead Federal agency.

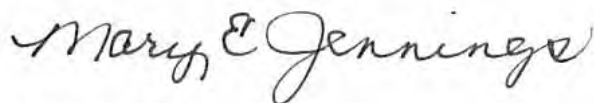
Our National Wetlands Inventory data suggests that two sizeable wetlands exist in proximity to the Riverside Drive/ Boone Lane Intersection and may be hydrologically connected to the South Fork of the Forked Deer River. TDOT is currently proposing to allow access at this intersection (Features of Build Alternative, page 28) which could result in wetland encroachment to the east. To protect these bottomland forested wetlands, it is our recommendation that TDOT limit access at this intersection. According to the Phase 1 Build Alternative Description on page 26, bridges and overflow structures would be installed to raise the roadway grade above the 100-year floodplain in some areas along existing Riverside Drive. However, the Build Alternative is proposed to bisect these two wetlands where Corridor C would leave Riverside Drive on new alignment. Assuming these wetlands are hydrologically connected to the river, we expect hydrogeomorphic analysis to identify them as high quality wetlands. Therefore, we ask that TDOT consider spanning them along with the floodplain and wetlands adjacent to the South Fork of the Forked Deer River.

The initial construction of US 45, Riverside Drive, and the South Fork crossings resulted in substantial hydrologic impacts. We agree with TDOT's decision to minimize further impacts by utilizing existing river crossings and previously constructed alignments to the extent possible. Our office recommends that preference be given to Corridor C-1 as the preferred alternative because it would result in fewer floodplain and wetland impacts and would avoid the National Priority List hazardous materials site.

We have reviewed the *Project Alternatives Package* and **concur** that it is adequate and that TDOT should proceed to Concurrence Point 3, *Draft Environmental Impact Statement*. The signed TESA Concurrence Point 2 form for this project is attached.

Thank you for the opportunity to review this document. If you have any questions regarding our comments, please contact John Griffith of my staff at 931/528-6481 (ext. 228) or by email at john_griffith@fws.gov.

Sincerely,

A handwritten signature in cursive script that reads "Mary E. Jennings".

Mary E. Jennings
Field Supervisor

Enclosure

xc: Ann Andrews, TDOT, Nashville, TN

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 2
February 14, 2011**

**Project Alternatives for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, is submitting for your review and concurrence the information required under the Tennessee Environmental Streamlining Agreement (TESA) for Concurrence Point 2—Alternatives.

Please return the signed form to Ms. Margaret Slater, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of the letter accompanying the CP#2 package. The due date is March 31, 2011. Please submit as follows:

By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:
Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

If you do not concur with the information provided or need additional time to review it, please contact Ms. Slater by email or in writing prior to the end of the 45-day review period indicating your reasoning for nonconcurrence and/or your request for a review time extension. As outlined in the TESA agreement, the City of Jackson and TDOT will assume you concur with the information provided for your review if no response is received.

This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 2 for the above project have been satisfied.

Agency: U.S. FISH AND WILDLIFE SERVICE

Concurrence: Mary E Jennings, Field Supervisor
(Name and Title)

Date: 3/18/11

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 2
February 14, 2011**

**Project Alternatives for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, is submitting for your review and concurrence the information required under the Tennessee Environmental Streamlining Agreement (TESA) for Concurrence Point 2—Alternatives.

Please return the signed form to Ms. Margaret Slater, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of the letter accompanying the CP#2 package. The due date is March 31, 2011. Please submit as follows:

By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:

Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

If you do not concur with the information provided or need additional time to review it, please contact Ms. Slater by email or in writing prior to the end of the 45-day review period indicating your reasoning for nonconcurrence and/or your request for a review time extension. As outlined in the TESA agreement, the City of Jackson and TDOT will assume you concur with the information provided for your review if no response is received.

This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 2 for the above project have been satisfied.

Agency: EPA

Concurrence: Larry Long Physical Scientist
(Name and Title)

Date: 3/17/11

A Hackman

Concurrence Point 2
Project Alternatives for the Proposed Southern Extension of SR186 and the US45 Bypass
From SR1/US70 (Airways Blvd.) to SR 5/US45 (South Highland Ave.)
City of Jackson, Madison County, TN.

Thank you for the opportunity for EPA to provide technical comments on this project. After a review of the information provided EPA has concerns about the project and would like to offer the following suggestions:

1. If the objective for this project is to provide access for emergency response (access to hospitals) would it not be more effective to consider a shorter route resulting on less travel time for emergency vehicles to reach hospital facilities? A shorter route would also decrease the construction cost of the project. A shorter more efficient route would also decrease the amount of air emissions due to the decrease in travel time. A shorter route would also have less impact to Waters of the U.S. from stormwater run-off and pollution transport.
2. With the objective of Emergency vehicle response time, an emergency lane or shared HOV/emergency lane may be advisable if not already considered.
3. During the construction phase of the project a stormwater NPDES permit will be required. Consideration of Best Management Practices (BMP) for stormwater run-off should be designed such that sediment from the construction project does not reach the receiving streams and wetlands associated with the project. BMPs should be constructed in such a way that they may be made permanent after the construction phase is completed, so that they may also restrict stormwater run-off for the life of the project. Permanent BMPs would result in an increase in water quality of the receiving waters.
4. Some of the major concerns of a road project are associated with the cost of construction, maintenance cost and the total cost of the project over its life time. With the advent of recycling of asphalt materials the cost of road projects have been altered. One method of extending the life of the road and decreasing the overall maintenance cost is the use of Rubberized Asphalt. Clemson University has data from research that is worth considering for this project. A fact sheet on Rubberized Asphalt is available at <http://www.clemson.edu/ces/arts/>, case studies are also available at www.fhwa.dot.gov
5. There are many alternatives for providing renewable energy sources for signage along the roadway. The use of alternative energy may provide an additional funding source (www.eerc.energy.gov). Additional information on alternative power sources for road side signs are available at [http://www.solar-wind.co.uk/solar powered sign lights.html](http://www.solar-wind.co.uk/solar_powered_sign_lights.html)
[http://www.wirefreedirect.com/green column.asp](http://www.wirefreedirect.com/green_column.asp),
<http://green.blogs.nytimes.com/2009/07/23/harvesting-clean-energy-along-the-road/>
6. Section 404 of the Clean Water Act (CWA) is an avoidance type regulation. The applicant for a 404 permit is required to demonstrate how the project will avoid impacts to Waters of the U.S. (Waters), EPA would recommend that avoidance and minimization

of impacts from this project to "Water" be considered in greater depth. One way to avoid impacts to Waters is to locate the road in such a way that impacts to Waters are avoided, and a shorter route properly selected may avoid impacts to Waters. Mitigation for impact should be considered at this stage of the project, as mitigation can increase the cost of the overall project. As stated on page 21, criteria 3, "The overall cost of implementing any Build Alternative must not be substantially higher than other reasonable alternatives..." build alternatives that require greater amounts of mitigation have the potential to greatly increase the cost of that alternative.



DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT, CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS, TENNESSEE 38103-1894

REPLY TO

February 28, 2011

Operations Division
Regulatory Branch

Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, Tennessee 37219

Dear Ms. Slater:

This is in response to your TESA Concurrence Point (CP) #2 package, Alternatives for NEPA Environmental Assessment for the proposed Southern Extension of SR186 and the US 45 Bypass project. This information was received by our office on February 14, 2011. As you requested, this information was reviewed and we acknowledge that the information concerning the alternatives is adequate. Attached is the signature form acknowledging our office's concurrence with CP #2.

If you have questions, please contact Mitch Elcan at (901) 544-0337 and refer to File No. MVM-2010-023.

Sincerely,

A handwritten signature in purple ink, which appears to read "Tim H. Flinn", is positioned above the typed name.

Tim H Flinn, P.E.
Eastern Section Chief
Regulatory Branch

Enclosure

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 2
February 14, 2011**

**Project Alternatives for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, is submitting for your review and concurrence the information required under the Tennessee Environmental Streamlining Agreement (TESA) for Concurrence Point 2—Alternatives.

Please return the signed form to Ms. Margaret Slater, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of the letter accompanying the CP#2 package. The due date is March 31, 2011. Please submit as follows:

By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:

Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

If you do not concur with the information provided or need additional time to review it, please contact Ms. Slater by email or in writing prior to the end of the 45-day review period indicating your reasoning for nonconcurrence and/or your request for a review time extension. As outlined in the TESA agreement, the City of Jackson and TDOT will assume you concur with the information provided for your review if no response is received.

This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 2 for the above project have been satisfied.

Agency: USACE

Concurrence: *W. J. E. / c* Permit Manager
(Name and Title)

Date: 2/20/11

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 2
February 14, 2011**

**Project Alternatives for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

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By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:

Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

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This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 2 for the above project have been satisfied.

Agency: USDA - NRCS

Concurrence: John Rosh Acting State Conservationist
(Name and Title)

Date: 4-6-2011

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 2
February 14, 2011**

**Project Alternatives for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
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The City of Jackson, in cooperation with the Tennessee Department of Transportation, is submitting for your review and concurrence the information required under the Tennessee Environmental Streamlining Agreement (TESA) for Concurrence Point 2—Alternatives.

Please return the signed form to Ms. Margaret Slater, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of the letter accompanying the CP#2 package. The due date is March 31, 2011. Please submit as follows:

By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:
Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

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This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 2 for the above project have been satisfied.

Agency: TDEC / WPC

Concurrence: Brian K. Canada, ES4
(Name and Title)

Date: 4.4.2011

TDEC CP 2 e-mail.txt

From: TDEC TESA [TDEC.TESA@tn.gov]
Sent: Monday, April 04, 2011 9:45 AM
To: Jerry Gist; Jamie Higgins; Mary Jennings; Slater, Margaret; Rob Todd; John Rissler; Kevin Brown; Mitch Elcan; Tim Flinn
Cc: Keith Donaldson; jharri@co.madison.tn.us; Gary.Fottrell@dot.gov; Moore, Bill; Layne-Sclafani, Sandy; Joe Matlock; Jonna Leigh Stack; TDOT TESA
Subject: Re: TESA CP#2, Southern Extension of US 45 Bypass, Jackson TN PIN 109926.00

Ms. Slater,

Please find attached the concurrence letter from TDEC/WPC concerning this project. Upon review, the Division agrees with the proposed alternatives selected - build and no build - utilizing the existing crossings of the Forked Deer River. The Division is also pleased by the incorporation of a direct connection with SR-18 prior to its terminus at SR-5. We believe that this project would adequately address both regional and local traffic relief and allow for additional routes for emergency vehicular traffic.

Thank you for the opportunity to comment at every phase of the planning of this project.

Brian

TDEC TESA Coordinator
TDEC.TESA@tn.gov



TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

March 28, 2011

Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street; Suite 1400
Nashville, TN 37211733

Re: Project Alternatives for the Proposed Southern Extension of SR 186 and the US 45 Bypass From SR 1/US 70 (Airways Boulevard to SR5/US 45 (South Highland Avenue); City of Jackson, Madison County, Tennessee

Dear Ms. Slater:

The Tennessee Wildlife Resource Agency has received and reviewed the information your office provided to us regarding the proposed project listed above. Our current concerns are potential impacts to streams, wetlands, floodplains, and listed species that may occur due to the construction of this project. We have concerns regarding potential impacts to the deemed-in-need-of-management species, the Chickasaw darter (*Etheostoma cervus*) and the state endangered Hatchie burrowing crayfish (*Fallicambarus hortoni*) due to the proposed project.

We concur on Concurrence Point 2 for the project alternatives for the proposed southern extension of SR 186 and the US 45 Bypass From SR 1/US 70 (Airways Boulevard to SR5/US 45 (South Highland Avenue); City of Jackson, Madison County, Tennessee.

We have completed the requested concurrence form, which is attached. We thank you for the opportunity to participate during the coordination process and look forward to working with Tennessee Department of Transportation personnel in the future to reduce potential impacts to fish and wildlife resources associated with this project.

Sincerely,

A handwritten signature in cursive script that reads "Robert M. Todd".

Robert M. Todd
Fish and Wildlife Environmentalist

cc: Allen Pyburn, Region I Habitat Biologist
Alan Peterson, Region I Manager
Ed Harsson, Wildlife Biologist/West TN TDOT Liaison

The State of Tennessee

IS AN EQUAL OPPORTUNITY, EQUAL ACCESS, AFFIRMATIVE ACTION EMPLOYER

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 2
February 14, 2011**

**Project Alternatives for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, is submitting for your review and concurrence the information required under the Tennessee Environmental Streamlining Agreement (TESA) for Concurrence Point 2—Alternatives.

Please return the signed form to Ms. Margaret Slater, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of the letter accompanying the CP#2 package. The due date is March 31, 2011. Please submit as follows:

By email to: margaret_slater@gspnet.com

Or if you prefer, by mail:
Ms. Margaret Slater
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

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This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 2 for the above project have been satisfied.

Agency: TENNESSEE WILDLIFE RESOURCES AGENCY

Concurrence: Robert Jodd, FISH AND WILDLIFE ENVIRONMENTALIST
(Name and Title)

Date: 3-28-2011

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 2
February 14, 2011**

**Project Alternatives for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

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By email to: margaret_slater@gspnet.com

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NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

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This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 2 for the above project have been satisfied.

Agency: Jackson Area MPO

Concurrence: Kathleen Coleman, MPO Coordinator
(Name and Title)

Date: 2/24/11



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

November 15, 2011

Mr. Joe W. Matlock
Tennessee Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Subject: FWS# 12-CPA-0049. Proposal to construct a Southern Extension of State Route 186 and the US 45 Bypass from State Route 1/U.S. Highway 70 (Airways Boulevard) to State Route 5/U.S Highway 45 (South Highland Street) in Jackson, Madison County, Tennessee.

Dear Mr. Matlock:

The City of Jackson, in cooperation with the Tennessee Department of Transportation (TDOT) and the Federal Highway Administration (FHWA), is proposing to construct a Southern Extension of State Route (SR) 186 and the U.S. Highway (US) 45 Bypass in Madison County, Tennessee. The purpose of the project is to improve system linkage and safety, provide an adequate crossing of the South Fork of the Forked Deer River for emergency response, fulfill a legislative mandate, and provide for economic growth and development. The Transportation Planning Report for this project was approved by TDOT in March of 2009.

In a letter dated March 18, 2011, we provided Ms. Margaret Slater of Gresham, Smith and Partners, with our response to Concurrence Point 2, *Project Alternatives Package to be Evaluated in the Environmental Document*. The following paragraphs were extracted from this letter. We withhold our section 7 concurrence for this project until federally listed species concerns have been adequately addressed.

The maps provided indicate that removal of substantial forested cover would be required for the build alternative. We do not have sufficient information to ascertain whether or not these trees provide summer roost habitat for the federally endangered Indiana bat (*Myotis sodalis*). In the past, our office requested that a tree cutting timeframe restriction be implemented to address potential impacts to this species. However, we no longer believe that a timeframe restriction on tree cutting properly addresses indirect and cumulative impacts to the Indiana bat. A qualified

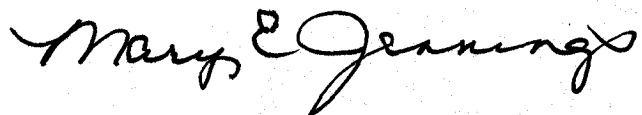
biologist should assess potential impacts and determine if the proposed project may affect this species. TDOT should submit a copy of their assessment and findings to this office for review and concurrence. A finding of "may affect" could require initiation of formal consultation by the lead Federal agency.

Our National Wetlands Inventory data suggests that two sizeable wetlands exist in proximity to the Riverside Drive/Boone Lane Intersection and may be hydrologically connected to the South Fork of the Forked Deer River. TDOT is currently proposing to allow access at this intersection (Features of Build Alternative, page 28) which could result in wetland encroachment to the east. To protect these bottomland forested wetlands, it is our recommendation that TDOT limit access at this intersection. According to the Phase 1 Build Alternative Description on page 26, bridges and overflow structures would be installed to raise the roadway grade above the 100-year floodplain in some areas along existing Riverside Drive. However, the Build Alternative is proposed to bisect these two wetlands where Corridor C would leave Riverside Drive on new alignment. Assuming these wetlands are hydrologically connected to the river, we expect hydrogeomorphic analysis to identify them as high quality wetlands. Therefore, we ask that TDOT consider spanning them along with the floodplain and wetlands adjacent to the South Fork of the Forked Deer River.

The initial construction of US 45, Riverside Drive, and the South Fork crossings resulted in substantial hydrologic impacts. We agree with TDOT's decision to minimize further impacts by utilizing existing river crossings and previously constructed alignments to the extent possible. Our office recommends that preference be given to Corridor C-1 as the preferred alternative because it would result in fewer floodplain and wetland impacts and would avoid the National Priority List hazardous materials site."

If you have any questions regarding our comments, please contact John Griffith of my staff at 931/525-4995 or by email at john_griffith@fws.gov.

Sincerely,

A handwritten signature in cursive script, reading "Mary E. Jennings". The signature is written in dark ink and is positioned above the printed name and title.

Mary E. Jennings
Field Supervisor

for this project be an “Individual Permit” allowing for a greater protection of the natural resources and provide for public comments on 404 permitting issues.

6. Page 3-61 in the right margin there is the question “What is Executive Order 11988-floodplain management? Good question, however the answer provide is lacking in that the reader needs to know;

1. What type of executive order is this? State order by the Governor or Federal by the President?
2. What are the impacts that the order seeks to avoid
3. What does the order mean to preserve and/or restore

The report should be written with the expectations that the readers will not always be technical or legal experts. The question in the right margin has the right intent; however it should be accompanied by a caveat in the form of a foot note that provides an in-depth answer as to the questions stated above. By providing the source (state or federal) the reader is provided with the authority of the order.

7. Page 3-60 section Avoidance and Minimization Conclusion, this paragraph states “Efforts would be made during the project design and permitting phase to avoid or minimize...” This section should explain what the efforts would be and by whom and when these efforts would be taking place. One way to do this is to commit to permitting requirements early in the NEPA process and state the efforts in the report.
8. Page 3-78 section 3.18.3 Indirect and Cumulative Impacts to Social and Community Resources is a good start; however the Cumulative Impacts section could provide more discussion in to what the impacts would beyond the local schools. This paragraph seems to be intended to introduce the topic of cumulative impact as many impacts are discussed later in the report. Therefore this section should provide a short summary of the issues to follow.
9. Page 3-84 section 3.20 Climate Change. The definition of Climate change is not complete. EPA defines Climate Change as: *Climate change* refers to any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer. And *Global warming* refers to the recent and ongoing rise in global average temperature near Earth's surface. It is caused mostly by increasing concentrations of greenhouse gases in the atmosphere. Global warming is causing climate patterns to change. However, global warming itself represents only one aspect of climate change. Feel free to refer to EPA's definition.

Concurrence Point 3
Southern Extension of SR-186 & US 45 Bypass
From SR-1/US 70 to SR-5
City of Jacksonville, Madison County, TN

EPA thanks TDOT and TESA for the opportunity to comment on this project. After a review of the report written by Gresham, Smith and Partners, EPA has the following concerns:

1. §1502.12 provides for the issues to be addressed in the Summary section of the report. The report does address “Areas of Controversy” and “Issues raised by agencies and public”. Page S-x of the Summary in the paragraph titled Areas of “Controversy and Unresolved Issues”, states “There are no major areas of controversy or any substantial unresolved issues...” First the report needs to define the terms “*Controversy and Unresolved issues*” as they relate to this report. This statement is misleading and does not address the concerns by the reviewing agencies. The agencies have expressed their concerns and copies of their letters are found in Appendix D of this report. The report needs to clearly define the agencies concerns with how the report defines major areas of controversy. The report should at the least direct the reader’s attention to Appendix D for more information about the reviewing agencies concerns.
2. Page S-iv of the Summary- Environmental Impacts, is a misleading statement. “The No-Build Alternative will have no environmental impacts, except...” Logic would dictate that if there is an exception then there is at least a perceived impact in the No-build alternative and does not address the build alternatives. The statement should be rewritten to address the exception and leave out the emphatic “no” in environmental impacts.
3. Page S-iv of the Summary-Environmental Impacts directs the reader’s attention to “primary adverse impacts identified are...” for the build alternatives, then provides bullets for areas of concern; however the paragraph above states that the no-build alternatives have no environmental impacts. The difference between the No-build and the build alternatives should be separated by a space and the Build, No-build should be bolded. A table would do a better job to address the differences and table S-1 does provide for more information in a more systematic system.
4. EPA addressed the issue of 404 permitting avoidance issues in CP-2. EPA again recommends a more in depth discussion on the issue of avoidance and in the event that the data demonstrates the resources cannot be avoided a more in-depth discussion with supporting field data as to how the report writer came to this conclusion.
5. The U.S. Army Corps of Engineers (USACOE) provides Nationwide 14 (NW-14) permits for linear transportation projects that are 1/2 acre or less in size and that do not discharge into special aquatic sites. EPA and the USACOE agree that large permitting projects will not be piecemealed and that the project will be reviewed in its’ totality. The totality of this project provides for a greater amount of impacts to wetlands and stream than the NW-14 permit would allow and we therefore request that the 404 related permits

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 3
September 11, 2012**

**Preliminary Draft Environmental Document for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, is submitting for your review and concurrence the information required under the Tennessee Environmental Streamlining Agreement (TESA) for Concurrence Point 3—Draft Environmental Document.

Please return the signed form to Ms. Sandy Layne-Sclafani, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of the letter accompanying the CP#3 package. The due date is **October 25, 2012**. Please submit as follows:

By email to: sandy_layne-sclafani@gspnet.com

Or if you prefer, by mail:
Ms. Sandy Layne-Sclafani
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

If you do not concur with the information provided or need additional time to review it, please contact Sandy by email or in writing prior to the end of the 45-day review period indicating your reasoning for nonconcurrence and/or your request for a review time extension. As outlined in the TESA agreement, the City of Jackson and TDOT will assume you concur with the information provided for your review if no response is received.

This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 3 for the above project have been satisfied.

Agency: _____ EPA

Concurrence: _____ Sandy Long
(Name and Title)

Date: _____ 10/2/12

Attachment



TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

October 19, 2012

Sandy Layne-Sclafani
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

Re: **Concurrence Points 3**, Preliminary Draft Environmental Document for the Proposed Southern Extension of State Route 186 and the US 45 Bypass from State Route 1/US70 (Airways Boulevard) to State Route 5/US45 (South Highland Avenue), City of Jackson, Madison County, Tennessee – Federal Project # HPP-NHE1(226); State Project # 57LPLM-F)-005; PIN 109926.00

Dear Ms. Layne-Sclafani:

The Tennessee Wildlife Resource Agency has received and reviewed the information your office provided to us regarding the proposed project listed above. We concur on Concurrence Point 3 for this road project. We appreciate the mention of the listed species for which we have concerns due to the construction of this project in the Preliminary Draft Environmental Document and commitments to minimize impacts to these species that are included in the language of the document. We have completed the requested concurrence form, which is attached. We thank you for the opportunity to participate during the coordination process for this proposed project.

Sincerely,

Robert M. Todd
Fish and Wildlife Environmentalist

cc: Ed Harsson, Wildlife Biologist/West TN TDOT Liaison
Allen Pyburn, Region I Habitat Biologist
Alan Peterson, Region I Manager
Mary Jennings, USFWS

The State of Tennessee

IS AN EQUAL OPPORTUNITY, EQUAL ACCESS, AFFIRMATIVE ACTION EMPLOYER

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 3
September 11, 2012**

**Preliminary Draft Environmental Document for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
City of Jackson, Madison County, Tennessee**

FEDERAL PROJECT # HPP-NHE1(225); STATE PROJECT # 57LPLM-F0-005; PIN: 109926.00

The City of Jackson, in cooperation with the Tennessee Department of Transportation, is submitting for your review and concurrence the information required under the Tennessee Environmental Streamlining Agreement (TESA) for Concurrence Point 3—Draft Environmental Document.

Please return the signed form to Ms. Sandy Layne-Sclafani, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of the letter accompanying the CP#3 package. The due date is **October 25, 2012**. Please submit as follows:

By email to: sandy_layne-sclafani@gspnet.com

Or if you prefer, by mail:
Ms. Sandy Layne-Sclafani
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

If you do not concur with the information provided or need additional time to review it, please contact Sandy by email or in writing prior to the end of the 45-day review period indicating your reasoning for nonconcurrence and/or your request for a review time extension. As outlined in the TESA agreement, the City of Jackson and TDOT will assume you concur with the information provided for your review if no response is received.

This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 3 for the above project have been satisfied.

Agency: TENNESSEE WILDLIFE RESOURCES AGENCY

Concurrence: Robert Todd, FISH AND WILDLIFE ENVIRONMENTALIST
(Name and Title)

Date: 9-19-2012



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS, TENNESSEE 38103-1894

October 23, 2012

Operations Division
Regulatory Branch

Ms. Sandy Layne-Sclafani
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, Tennessee 37219

Dear Ms. Layne-Sclafani:

This is in response to your TESA Concurrence Point (CP) #3, Preliminary Draft Environmental Document for the proposed Southern Extension of SR186 and the US 45 Bypass from SR 1/US 70 (Airways Boulevard) to SR 5/US 45 (South Highland Avenue) in Jackson, Madison County, Tennessee (PIN 109926.00). As you requested, this information was reviewed and we acknowledge that the information concerning the preliminary draft environmental document is adequate. Attached is the signature form acknowledging our office's concurrence with CP #3.

If you have questions, please contact Mitch Elcan at (901) 544-0737 and refer to File No. MVM-2010-023.

Sincerely,

A handwritten signature in black ink, reading "Tim H. Flinn", is positioned above the typed name.

Tim H Flinn, P.E.
Eastern Section Chief
Regulatory Branch

Enclosure

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 3
September 11, 2012**

**Preliminary Draft Environmental Document for the
Proposed Southern Extension of SR 186 and the US 45 Bypass
From SR 1/US 70 (Airways Boulevard)
To SR 5/US 45 (South Highland Avenue)
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By email to: sandy_layne-sclafani@gspnet.com

Or if you prefer, by mail:
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NEPA Project Manager
Gresham, Smith and Partners
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This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 3 for the above project have been satisfied.

Agency: USACE

Concurrence: Mitch E/can Regulatory Permit Manager
(Name and Title)

Date: 10/22/2012



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

October 19, 2012

Ms. Sandy Layne-Schafani
NEPA Project Manager
Gresham Smith and Partners
1400 Nashville City Center
511 Union Street
Nashville, Tennessee 37219

Subject: FWS# 12-CPA-0815. Concurrence Point 3. Proposal to construct a Southern Extension of State Route 186 and the US 45 Bypass from State Route 1/ U.S. Highway 70 (Airways Boulevard) to State Route 5/ U.S Highway 45 (South Highland Street) in Jackson, Madison County, Tennessee.

Dear Ms. Layne-Schafani:

The City of Jackson, in cooperation with the Tennessee Department of Transportation (TDOT) and the Federal Highway Administration (FHWA), has prepared an Environmental Assessment (EA) for the construction of a Southern Extension of State Route (SR) 186 and the U.S. Highway (US) 45 Bypass in Madison County, Tennessee. The purpose of the project is to improve system linkage and safety, provide an adequate crossing of the South Fork of the Forked Deer River for emergency response, fulfill a legislative mandate, and provide for economic growth and development.

The EA was developed by TDOT to document potential impacts from this project in accordance with the National Environmental Policy Act and the Tennessee Environmental Streamlining Agreement (TESA). In accordance with TESA, TDOT has requested that the U.S. Fish and Wildlife Service (Service) review and provide concurrence (or nonconcurrence) on Concurrence Point 3, *Draft Environmental Assessment*.

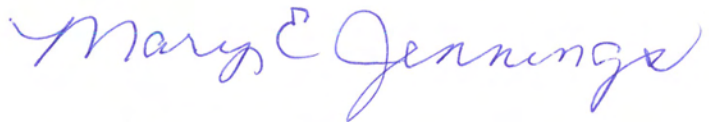
At the request of our office, joint mist netting and acoustical studies were performed from August 3 through August 12, 2011, at nine sites determined to contain suitable habitat for the Indiana bat. The acoustical study resulted in the recording of 1,953 bat calls, of which none were identified as Indiana bats. The mist netting efforts resulted in the capture of 23 bats, representing five non-listed species. Due to negative survey results for Indiana bats, we concurred at that time with TDOT's determination of "not likely to adversely affect" for this species. Unless new information otherwise indicates Indiana bat use of the area, this survey will be valid until April 1, 2014.

The document states in Section 2.4.3 that Riverside Drive passes through floodplains and large wetlands associated with the South Fork Forked Deer River. Under "Environmental Commitments", TDOT proposes to increase the design slope along Riverside Drive from 6:1 to 4:1 using "top-down" or "progressive" construction methods. While these measures have potential to minimize further impacts to floodplains and wetlands along Riverside Drive, they do not address the loss of functionality and value of similar features that would be crossed on new alignment. The wetland analysis under Section 3.0, Wetland Quality and Function, indicates that wetlands 17-27 are primarily forested, high quality wetlands within the floodplain of the South Fork Forked Deer River. Wetland 17 would be bisected on new alignment just south of the intersection at Riverside Drive and Boone Lane. The document concludes that impacts to wetlands are unavoidable in order to meet the project purpose and need, but that the impacts would be minimized to the extent possible and mitigated as required by regulatory agencies. We request that TDOT propose a span of Wetland 17 or provide justification for why this avoidance measure would not be feasible.

We have reviewed the Concurrence Point 3, *Draft Environmental Assessment*, and **concur** that it is adequate and that TDOT should proceed to Concurrence Point 4, *Preferred Alternative and Preliminary Mitigation*. The signed TESA Concurrence Point 3 for this project is enclosed.

If you have any questions regarding our comments, please contact John Griffith of my staff at 931/525-4995 or by email at john_griffith@fws.gov.

Sincerely,



Mary E. Jennings
Field Supervisor

Enclosure

xc: Ann Andrews, TDOT, Nashville, TN

**Tennessee Environmental Streamlining Agreement (TESA) Concurrence
Document for Concurrence Point 3
September 11, 2012**

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Please return the signed form to Ms. Sandy Layne-Sclafani, Gresham, Smith and Partners (serving as NEPA consultant to the City of Jackson) within 45 days of the date of the letter accompanying the CP#3 package. The due date is **October 25, 2012**. Please submit as follows:

By email to: sandy_layne-sclafani@gspnet.com

Or if you prefer, by mail:
Ms. Sandy Layne-Sclafani
NEPA Project Manager
Gresham, Smith and Partners
511 Union Street, Suite 1400
Nashville, TN 37219

RECEIVED
NOV 6 2012
TDOT - ENVIRONMENTAL DIVISION

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This agency feels all provisions of the Tennessee Environmental Streamlining Agreement for Concurrence Point 3 for the above project have been satisfied.

Agency: US Fish & Wildlife Service

Concurrence: Mary E Jennings, Field Supervisor
(Name and Title)

Date: 10/19/12

Layne-Sclafani, Sandy

From: Sagona, Frank - NRCS, Chattanooga, TN <Frank.Sagona@tn.usda.gov>
Sent: Tuesday, October 30, 2012 1:01 PM
To: Layne-Sclafani, Sandy
Subject: RE: TESA CP#3, Southern Extension of SR 186 (US 45 Bypass), Jackson, TN, PIN 109926.00
Attachments: 45_bypass_easement_map.jpg
Follow Up Flag: Follow up
Flag Status: Flagged

Sandy:

Thank you for the information. This helped me determine if USDA has any easements in or along the project routes.

I call your attention to a USDA wetland reserve project (WRP) easement near the intersection of Riverside Drive and Boone Lane along the proposed Phase 1 Alternative C route.

This is a 30-yr WRP easement signed in 1997 (15 years remaining). The attached aerial map of the location of the easement is for your use and planning.

Thank you.

Frank

423-894-1687 Ext 100

From: Layne-Sclafani, Sandy [mailto:sandy_layne-sclafani@gspnet.com]
Sent: Wednesday, October 24, 2012 10:41 AM
To: Sagona, Frank - NRCS, Chattanooga, TN
Cc: Denton, Brad - NRCS, Jackson, TN
Subject: FW: TESA CP#3, Southern Extension of SR 186 (US 45 Bypass), Jackson, TN, PIN 109926.00

Mr. Sagona,

Below is the link to the EA and Appendices:

[EA and Appendices for CP 3 SR 186 \(US 45 Bypass\) 09-11-12](#)

It will be active for 7 days.

I have also attached to this email:

1. CP#3 Transmittal Letter
2. CP#3 Concurrence Form
3. NRCS Form

Please let me know if I can be of further assistance.

Thanks,
Sandy

Sandy Layne-Sclafani, PE, CPESC

GRESHAM, SMITH AND PARTNERS

Architecture, Engineering, Interiors, Planning

1400 Nashville City Center, 511 Union Street

Nashville, TN 37219-1710

[P] 615.770.8100

[d] 615.770.8255

www.gspnet.com

From: Layne-Sclafani, Sandy

Sent: Tuesday, September 11, 2012 11:07 AM

To: mary_e_jennings@fws.gov; Rob Todd; Kevin Brown; John Rissler; Larry Long; Mitch Elcan; Mayor Gist; TDEC TESA; Tim Flinn

Cc: Joe Matlock; Keith Donaldson (kdonaldson@cityofjackson.net); Gary.Fottrell@fhwa.dot.gov; TDOT TESA (TDOT.TESA@tn.gov); Moore, Bill; Holloran, Mark; JonnaLeigh Stack; Drew Gaskins; Mayor Harris

Subject: TESA CP#3, Southern Extension of SR 186 (US 45 Bypass), Jackson, TN, PIN 109926.00

The following email is being sent on behalf of the City of Jackson, Tennessee, by Gresham Smith and Partners, project engineering consultant to the City. (EPA and TN SHPO will be receiving hard copies of the CP#3 documentation.)

To whom it may concern:

The City of Jackson, Tennessee, in cooperation with the Federal Highway Administration (FHWA) and the Tennessee Department of Transportation (TDOT) Office of Local Programs and Environmental Division, are preparing a NEPA Environment Assessment (EA) for the proposed Southern Extension of State Route (SR) 186/US 45 Bypass from SR 1 (US 70/Airways Boulevard) to SR 5 (US 45/South Highland Avenue) in Jackson, Madison County, Tennessee.

In accordance with the spirit and intent of the Tennessee Environmental Streamlining Agreement (TESA), the City of Jackson, in coordination with TDOT, is providing you the attached Concurrence Point 3 package of the Draft Environmental Assessment and other information as specified in TESA. Attached to this email are:

1. CP#3 Transmittal Letter
2. CP#3 Concurrence Form

Because of email size limitations, links are provided below for the following:

1. The Draft Environmental Assessment with Appendices is located at EA and Appendices for CP 3 SR 186 (US 45 Bypass) 09-11-12.zip
2. Technical Studies are located at SR 186 (US 45 Bypass) Technical Studies.zip

Due to the large size of these files, downloading will go more quickly if you click **save before opening**. Also, these links will expire in **7 days**. Please contact me if you need more time.

Please review the information and provide any comments you may have regarding the project. If you concur with the information provided, please sign the attached Concurrence Point 3 signature form included with this transmittal and return it according to the instructions on the form. If you do not concur, please provide us with your reasoning for non-concurrence in a timely manner so that we can address those comments as soon as possible. We request that all responses be returned within the agreed upon 45-day review period (no later than October 25, 2012).

Thank you in advance for your timely responses and we look forward to continuing to coordinate with you through the TESA process.

Sandy Layne-Sclafani, PE, CPESC
Senior Engineer

GRESHAM, SMITH AND PARTNERS
Architecture, Engineering, Interiors, Planning

1400 Nashville City Center, 511 Union Street
Nashville, TN 37219-1710
[P] 615.770.8100
[d] 615.770.8255

www.gspnet.com

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Boone Ln

Riverside Dr.

Easement

Easement

Appendix E

Mobile Source Air Toxics (MSATs)

Mobile Source Air Toxics (MSATs)

Background

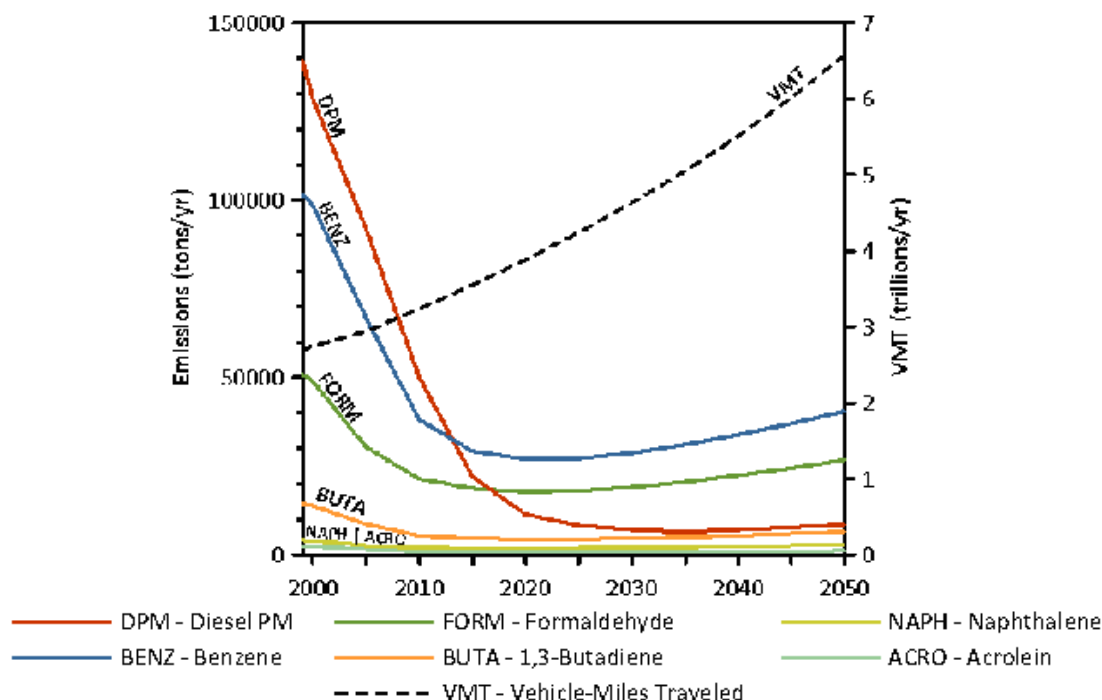
Controlling air toxic emissions became a national priority with the passage of the *Clean Air Act Amendments (CAAA) of 1990*, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the *Control of Hazardous Air Pollutants from Mobile Sources* (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (<http://www.epa.gov/ncea/iris/index.html>). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (<http://www.epa.gov/ttn/atw/nata1999/>). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in Figure D-1.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of the National Environmental Policy Act (NEPA).

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, we are duly expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

**Figure D-1: NATIONAL MSAT EMISSION TRENDS 1999 - 2050
FOR VEHICLES OPERATING ON ROADWAYS
USING EPA's MOBILE6.2 MODEL**



Note:

(1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.

(2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors
Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

Unavailable Information for Project Specific MSAT Impact Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, <http://www.epa.gov/ncea/iris/index.html>). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of

risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of *FHWA's Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents*. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, <http://pubs.healtheffects.org/view.php?id=282>) or in the future as vehicle emissions substantially decrease (HEI, <http://pubs.healtheffects.org/view.php?id=306>).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in an NCHRP study (http://www.epa.gov/scram001/dispersion_alt.htm#hyroad), which documents poor model performance at ten sites across the country - three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (<http://pubs.healtheffects.org/view.php?id=282>). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (<http://www.epa.gov/risk/basicinformation.htm#g>) and the HEI

(<http://pubs.healtheffects.org/getfile.php?u=395>) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

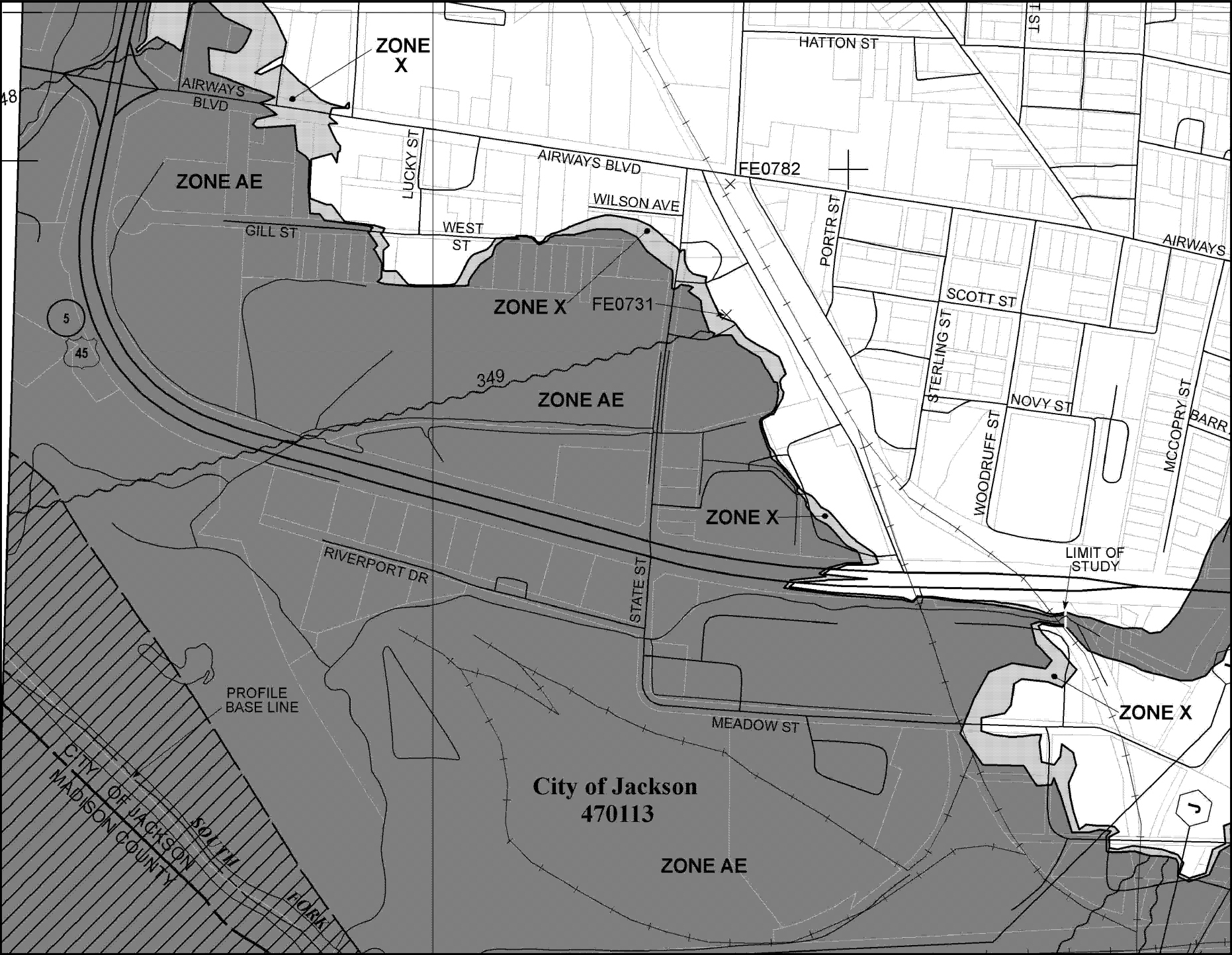
There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.


Due to the limitations cited, a discussion such as the example provided in this Appendix (reflecting any local and project-specific circumstances), should be included regarding incomplete or unavailable information in accordance with Council on Environmental Quality (CEQ) regulations [40 CFR 1502.22(b)]. The FHWA Headquarters and Resource Center staff Victoria Martinez (787) 766-5600 X231, Shari Schaftelein (202) 366-5570, and Michael Claggett (505) 820-2047, are available to provide guidance and technical assistance and support.

Appendix F

FEMA FIRM Maps



and Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET

NFI

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0277E

FIRM

FLOOD INSURANCE RATE MAP

MADISON COUNTY,

TENNESSEE

AND INCORPORATED AREAS

PANEL 277 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JACKSON, CITY OF	470113	0277	E
MADISON COUNTY	470112	0277	E

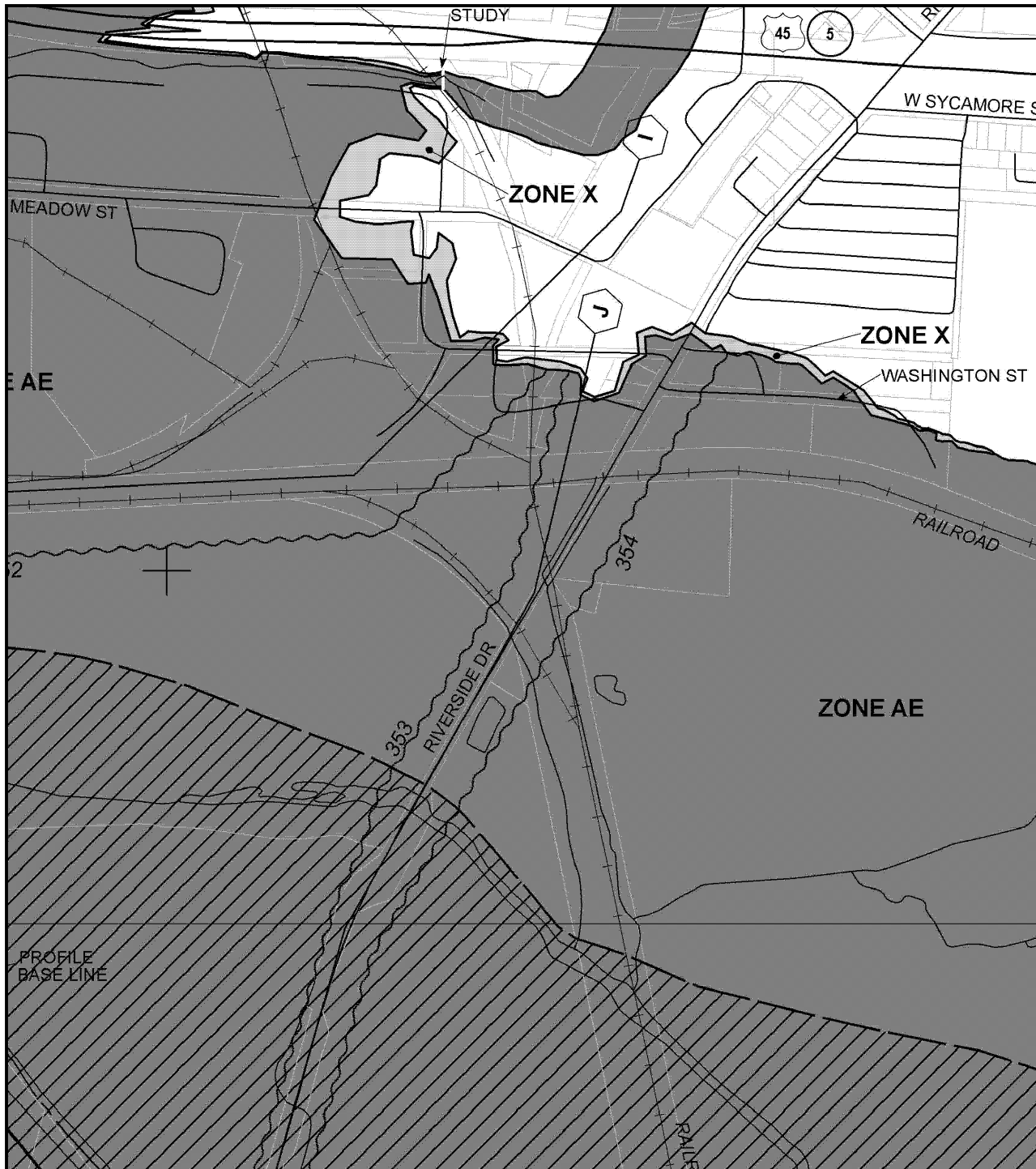
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
47113C0277E

MAP REVISED
AUGUST 3, 2009

Federal Emergency Management Agency

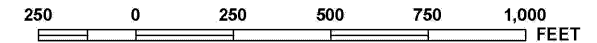
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



and Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'



NFI

PANEL 0277E

FIRM

**FLOOD INSURANCE RATE MAP
MADISON COUNTY,
TENNESSEE
AND INCORPORATED AREAS**

PANEL 277 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JACKSON, CITY OF	470113	0277	E
MADISON COUNTY	470112	0277	E

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**MAP NUMBER
47113C0277E**

**MAP REVISED
AUGUST 3, 2009**

Federal Emergency Management Agency

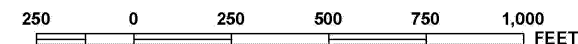
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and Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0277E

FIRM

FLOOD INSURANCE RATE MAP
MADISON COUNTY,
TENNESSEE
AND INCORPORATED AREAS

PANEL 277 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JACKSON, CITY OF	470113	0277	E
MADISON COUNTY	470112	0277	E

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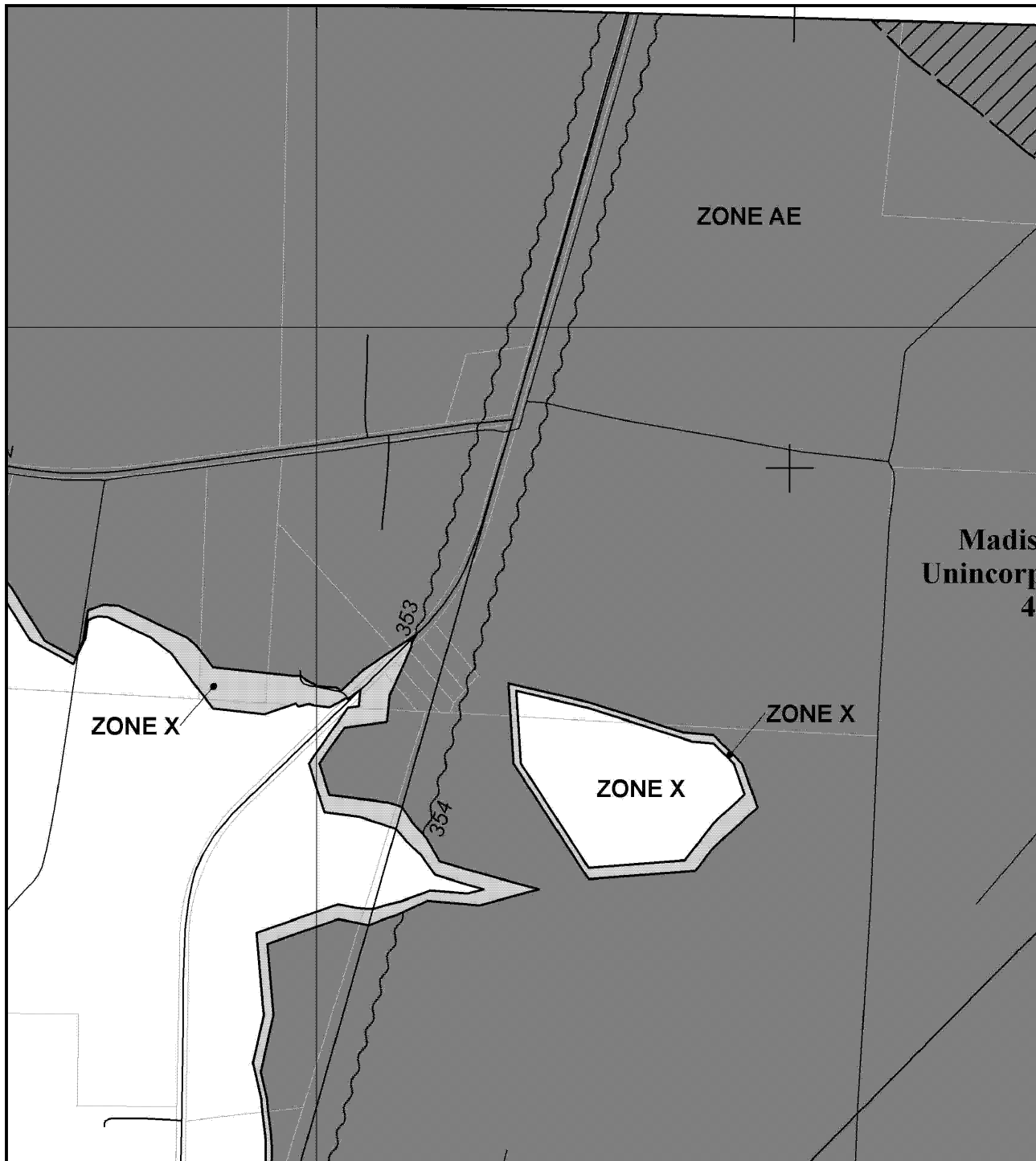


MAP NUMBER
47113C0277E


MAP REVISED
AUGUST 3, 2009

Federal Emergency Management Agency

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and Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET

NFIP

PANEL 0279E

FIRM

FLOOD INSURANCE RATE MAP

MADISON COUNTY, TENNESSEE

AND INCORPORATED AREAS


PANEL 279 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JACKSON, CITY OF	470113	0279	E
MADISON COUNTY	470112	0279	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



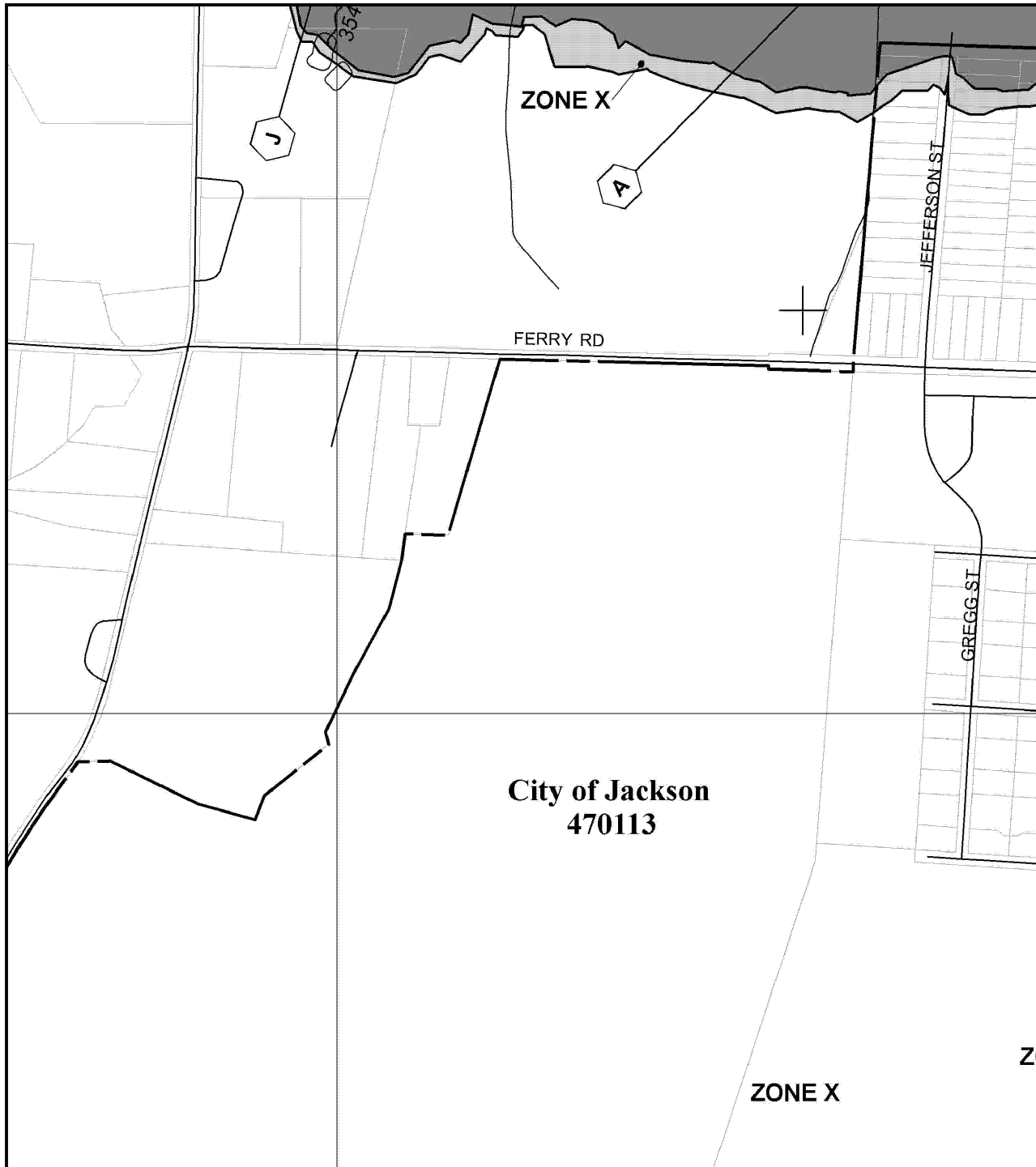
MAP NUMBER
47113C0279E

MAP REVISED
AUGUST 3, 2009

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

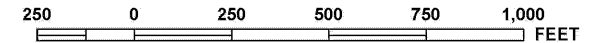
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Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0279E

FIRM

**FLOOD INSURANCE RATE MAP
MADISON COUNTY,
TENNESSEE
AND INCORPORATED AREAS**

PANEL 279 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

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MADISON COUNTY	470112	0279	E

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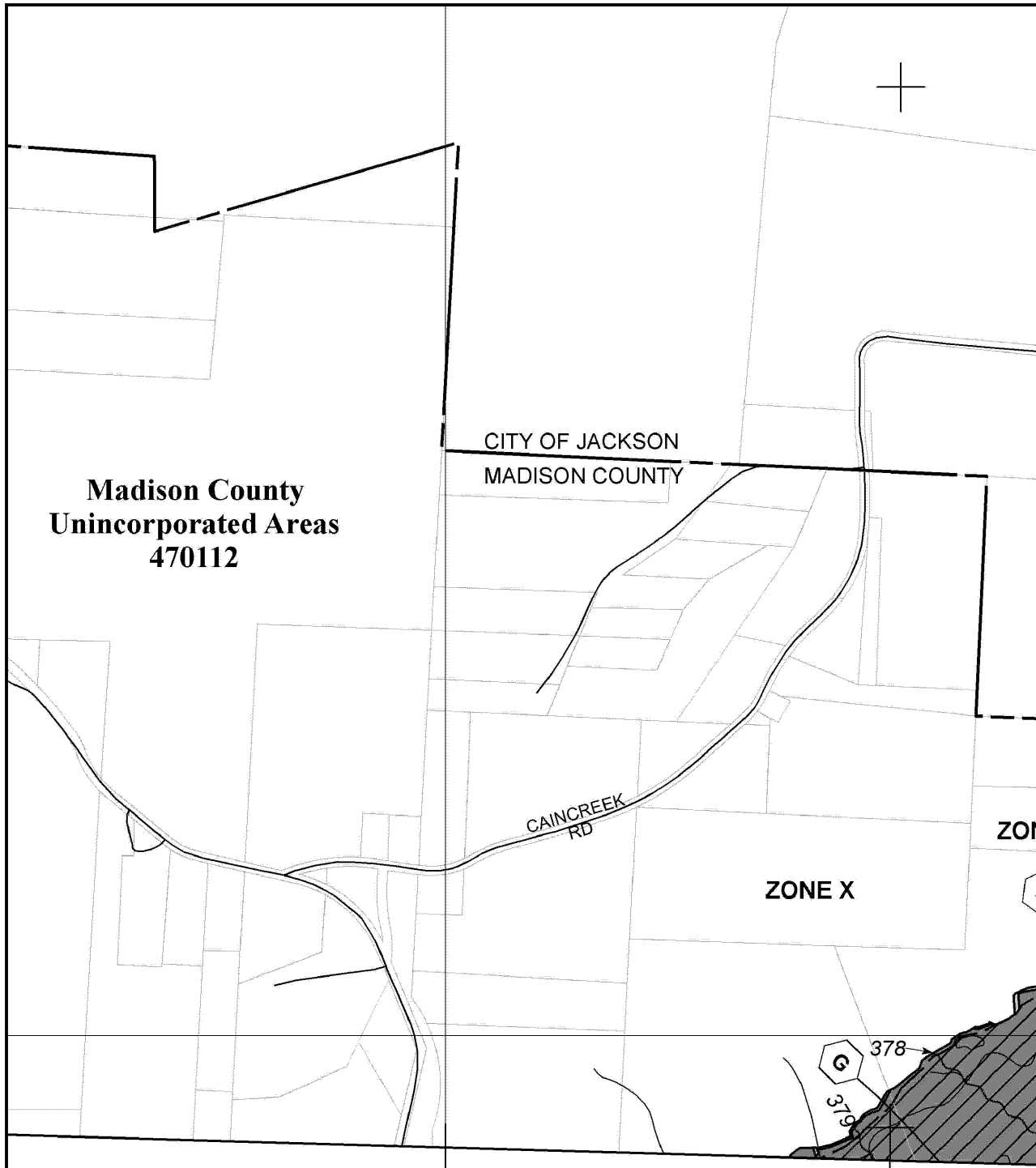


**MAP NUMBER
47113C0279E**

**MAP REVISED
AUGUST 3, 2009**

Federal Emergency Management Agency

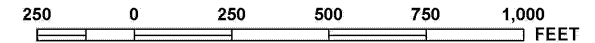
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and Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0279E

FIRM

**FLOOD INSURANCE RATE MAP
MADISON COUNTY,
TENNESSEE
AND INCORPORATED AREAS**

PANEL 279 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
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MADISON COUNTY	470112	0279	E

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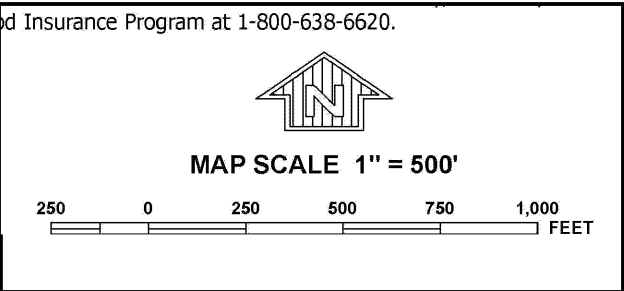
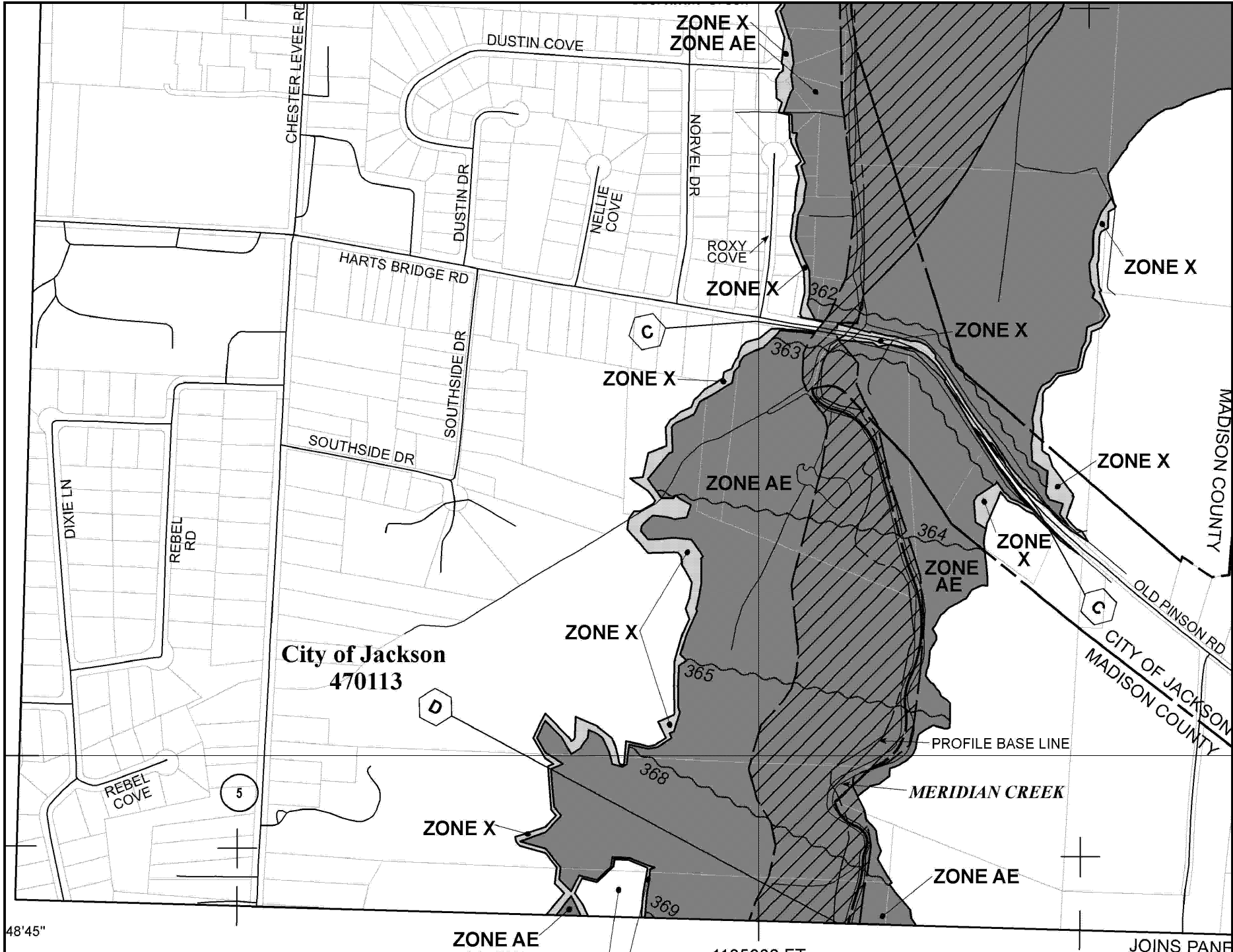


**MAP NUMBER
47113C0279E**

**MAP REVISED
AUGUST 3, 2009**

Federal Emergency Management Agency

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NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0283E

FIRM

FLOOD INSURANCE RATE MAP

MADISON COUNTY,

TENNESSEE

AND INCORPORATED AREAS

PANEL 283 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JACKSON, CITY OF	470113	0283	E
MADISON COUNTY	470112	0283	E

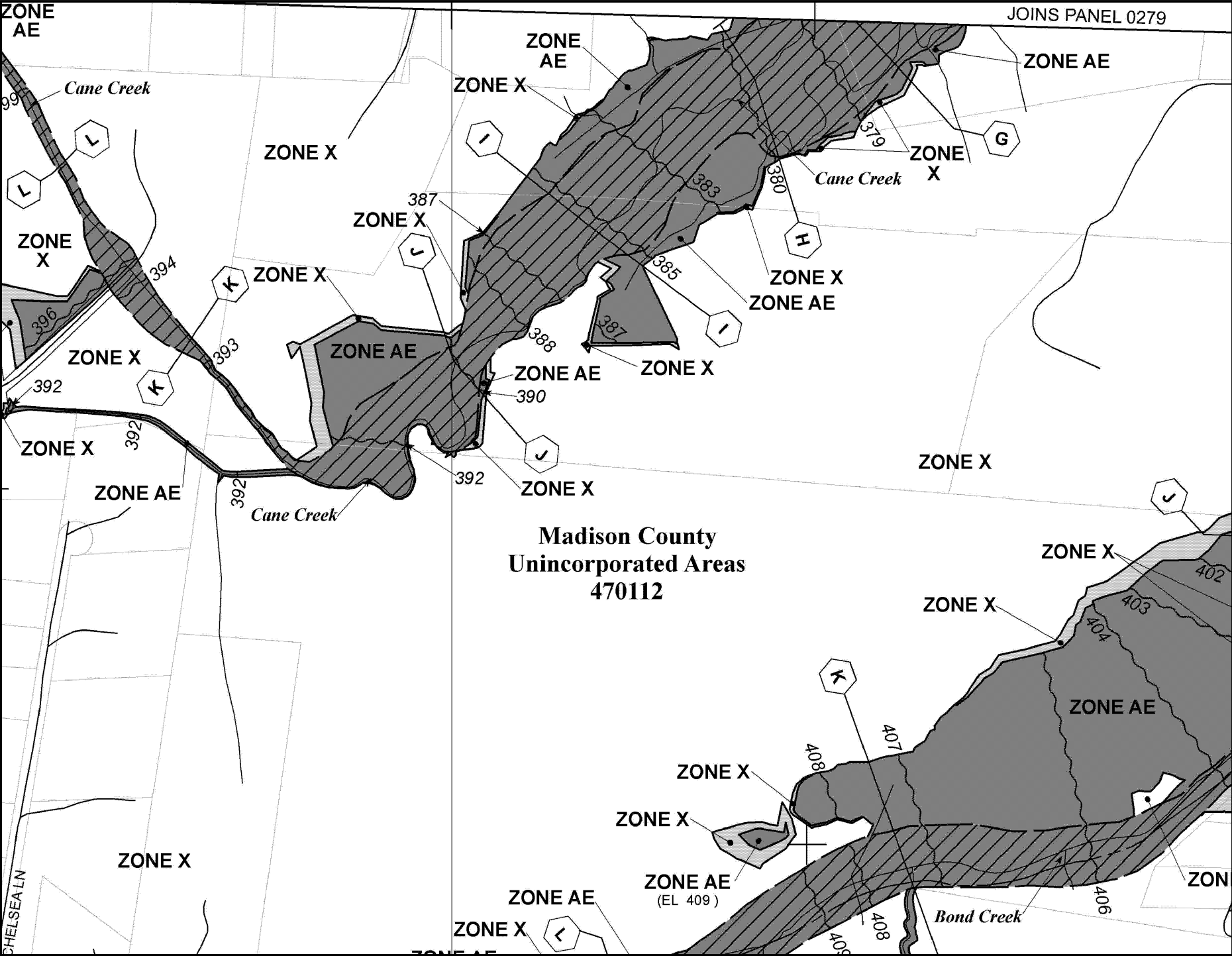
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
47113C0283E


MAP REVISED
AUGUST 3, 2009

Federal Emergency Management Agency

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and Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'

250 0 250 500 750 1,000
FEET

NFIP

PANEL 0287E

FIRM

FLOOD INSURANCE RATE MAP

MADISON COUNTY, TENNESSEE

AND INCORPORATED AREAS

PANEL 287 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)


CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JACKSON, CITY OF	470113	0287	E
MADISON COUNTY	470112	0287	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

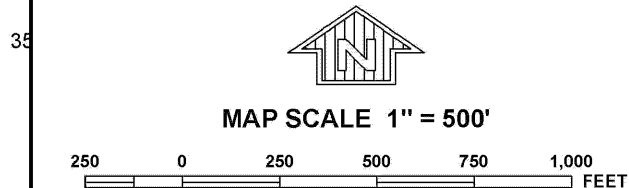
MAP NUMBER
47113C0287E

MAP REVISED
AUGUST 3, 2009



Federal Emergency Management Agency

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PANEL 0287E

**FLOOD INSURANCE RATE MAP
MADISON COUNTY,
TENNESSEE
AND INCORPORATED AREAS**

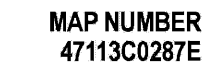
PANEL 287 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
JACKSON, CITY OF	470113	0287	E
MADISON COUNTY	470112	0287	E

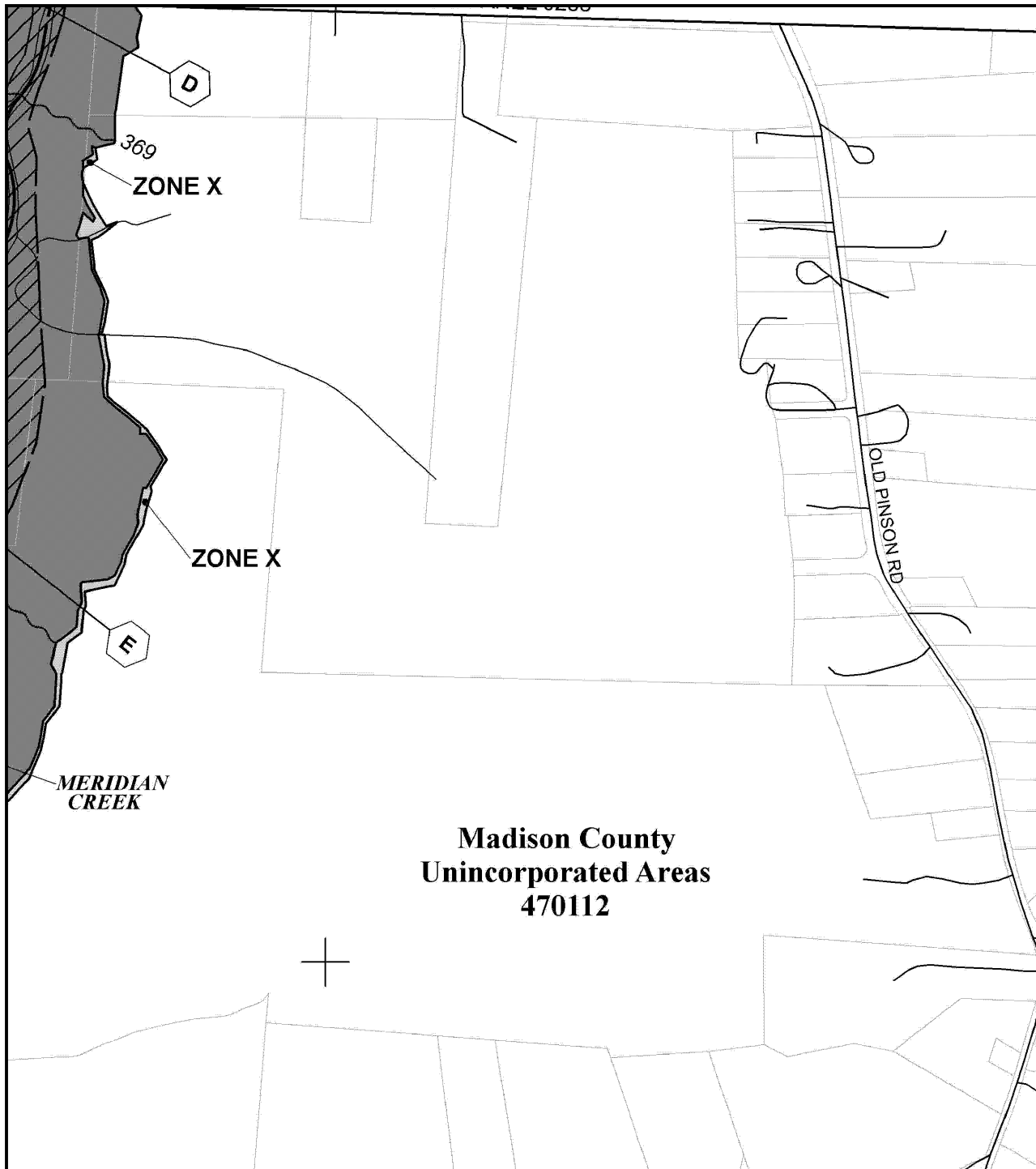
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**MAP REVISED
AUGUST 3, 2009**

Federal Emergency Management Agency

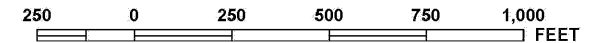
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and Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0291E

FIRM

**FLOOD INSURANCE RATE MAP
MADISON COUNTY,
TENNESSEE
AND INCORPORATED AREAS**

PANEL 291 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JACKSON, CITY OF	470113	0291	E
MADISON COUNTY	470112	0291	E

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**MAP NUMBER
47113C0291E**

**MAP REVISED
AUGUST 3, 2009**

Federal Emergency Management Agency

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**Unincorporated Areas
470112**



and Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'

250 0 250 500 750 1,000
FEET

NFIP

PANEL 0291E

FIRM

**FLOOD INSURANCE RATE MAP
MADISON COUNTY,
TENNESSEE
AND INCORPORATED AREAS**

PANEL 291 OF 435

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
JACKSON, CITY OF	470113	0291	E
MADISON COUNTY	470112	0291	E

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**MAP REVISED
AUGUST 3, 2009**

Federal Emergency Management Agency

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WATLINGTON RD

ZONE X

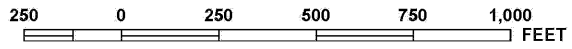
45



and Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 500'



NFIP

PANEL 0291E

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
MADISON COUNTY,
TENNESSEE
AND INCORPORATED AREAS

PANEL 291 OF 435
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

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AUGUST 3, 2009

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Appendix G

Public Information Meeting Summary of Comments



FEBRUARY 25, 2010 PUBLIC MEETING SUMMARY

SOUTHERN EXTENSION OF US 45 BYPASS, JACKSON, MADISON COUNTY, TN

PIN: 109926.00

The City of Jackson conducted a public meeting for the above-listed project on Thursday, February 25, 2010, from 5:00 to 7:00 p.m. at the South Jackson Community Center. There were 213 public attendees. Other attendees included representatives from the City of Jackson; Tennessee Department of Transportation (TDOT); Gresham, Smith and Partners (GS&P), planning and design consultant to the city; Younger Associates, public involvement consultants to the city, the County Mayor and State Senator Lowe Finney. The sign in sheets are attached.

The meeting handout included:

- Description of the NEPA Process;
- Project description;
- Depiction and description of preliminary Study Corridor build options and the No-Build option;
- Preliminary project need and purpose; and
- Potential environmental impacts.



Displays placed in the meeting room depicted a Project Area Map, a map with previously studied alternatives and a map depicting the three Corridor Options currently being studied. (There was also a dot board where attendees could rank their top three needs for the project. However, there was not enough participation in the dot board to get a valid statistical response from those attending.)

After welcoming statements by Keith Donaldson, principal planner with the City of Jackson and MPO coordinator; County Mayor Jimmy Harris, and State Senator Lowe Finney, a brief presentation highlighted the study history, purpose and need and the three proposed study corridor options. A question and answer session followed. A court reporter was present to record the meeting discussion and to take verbal comments from attendees. Before and after the presentation, City of Jackson, GS&P, and TDOT staff members were all present to answer questions at the displays and to provide information.



The majority of the comments from the question and answer portion of the evening related to:

Public Meeting Summary
Southern Extension of US 45 Bypass
Page 2

- Concerns about annexation/development along the bypass extension;
- Why is a third (new) crossing not being considered;
- Impacts of the new bypass on homes and property values;
- Concerns about the location of the bypass' southern termini;
- Relationship of the southern termini and SR 18; and
- Impacts to the wetlands, streams, and historical sites.

Comment cards were provided to the attendees. Summaries of the responses are listed in Tables 1, 2, and 3. A summary of all written comments with responses is attached.

The official record for the public meeting includes a total of 31 comments. Thirty comments were received via the comment cards, which were turned in at the meeting or returned by mail. One verbal comment was made to the court reporter.

The comments reveal general support for the proposed project with 27 of the 31 comments responding "Yes" to the question – "Do you think this project is needed?" Traffic congestion and emergency vehicle response access were the most frequently listed reasons for project support. The most frequently cited concern among the comments was in regard to the impact to existing residences and businesses.



Of the Corridor Options commented on, Corridor C was the most favored. A general consensus among all attendees who submitted comments was that the project's completion cannot happen soon enough.

Table 1: What do you see as the need for this project? (check all that apply)

Need	Number of attendees who selected this need
A. Need for improved crossings of the South Fork of the Forked Deer River	17
B. Need to address safety issues along the existing roadway	14
C. Need to better accommodate existing and projected traffic	25
D. Growth and economic development	17
Other(s) – please describe.	See Attached

**Table 2: What issues and concerns do you have about the project?
(check all that apply)**

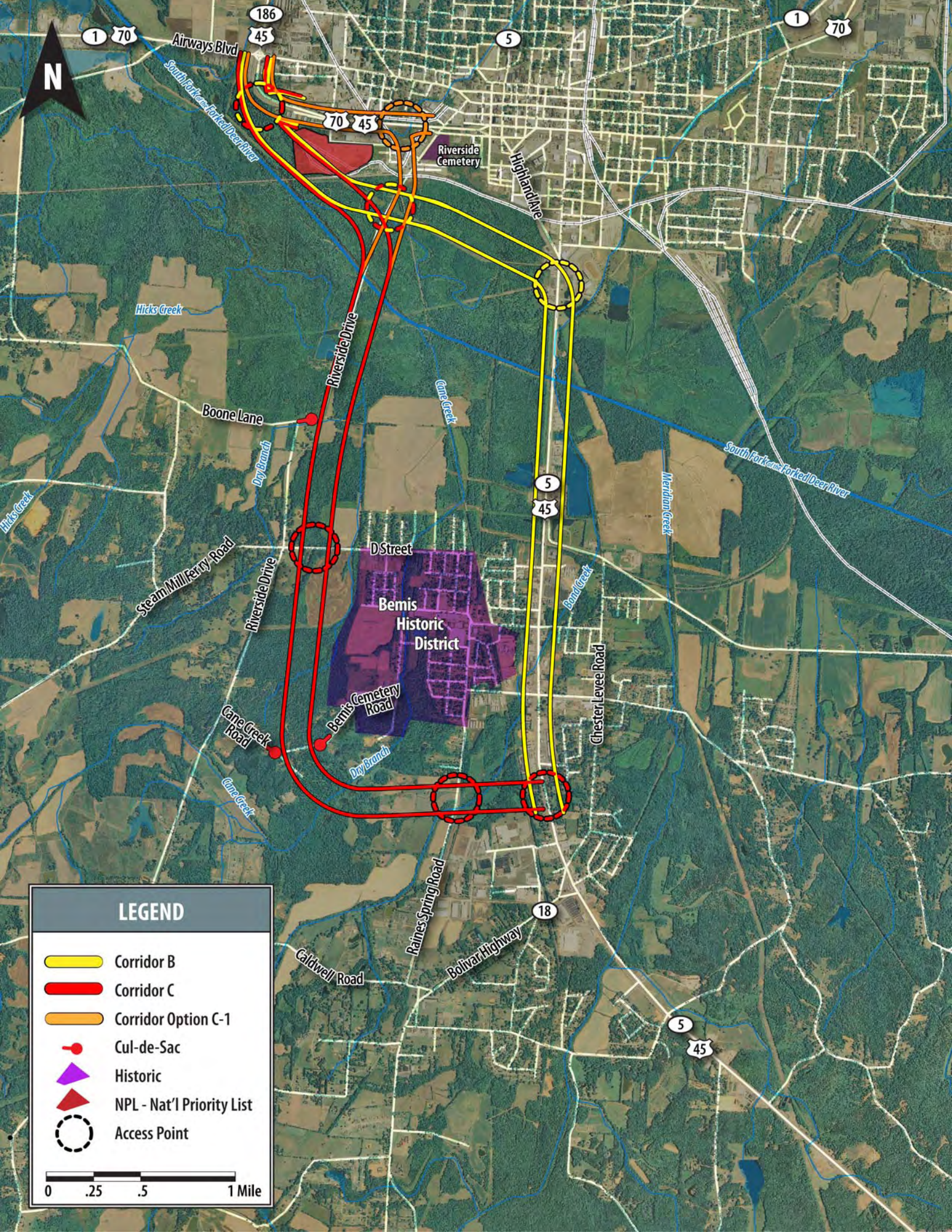
Issues and Concerns	Number of attendees who selected this issue or concern
A. Impacts to the environment (streams, wetlands, sensitive species, recreation)	6
B. Impacts to existing development (homes, businesses, community facilities)	17
C. Air and noise impacts	5
D. Impacts to historic and/or archaeological resources	6
Other(s) – please describe.	See Attached

Table 3: Do you think this project is needed?

Is this project needed:	Number of attendees who selected “yes” or “no”
A. Yes	27
B. No	4
Comments	See Attached

The meeting was adjourned at 7:00 p.m. by Keith Donaldson, City of Jackson.

Prepared by: Sandy Layne-Sclafani and Margaret Slater, GS&P



LEGEND

- Corridor B
- Corridor C
- Corridor Option C-1

Cul-de-Sac

Historic

NPL - Nat'l Priority List

Access Point

0 .25 .5 1 Mile

COMMENT RESPONSE							RESPONSE	2. ISSUES AND CONCERNS					RESPONSE	3. IS PROJECT NEEDED?			RESPONSE	ADDITIONAL COMMENTS	RESPONSE	
1. NEED FOR THIS PROJECT								Impacts to the Environment						Yes						
Improved Crossing of SFDR	Safety	Existing and Projected Traffic	Growth and Economic Dev.	Other				Impacts to Existing Development	Air and Noise Impacts	Impacts to Cultural Resources	No	OTHER								
1		X	X	X	X	Keep it a bypass. Do not allow commercial businesses.	Access will be limited, which will restrict commercial and residential development.		X						X	How will the Bypass affect the wetlands, Cane Creek, Indian artifacts, Boone Lane and the Bemis Intermediate School?	Project effects will be determined during the next project phase.			
2						We do not need this at this time.	A No-Build alternative is being considered.									X	Absolutely not - NO	A No-Build alternative is being considered.		
3		X			X				X	X	X	X				X	A better route to Jackson is needed but wants to know why the east side of town couldn't be used for an east bypass.	This study is for a north/south bypass.		
4					X	If there is an emergency anywhere south of Jackson, and traffic is tied up on 45 with a wreck, there is no way for medical personnel to get through.	Planners are aware of emergency access issues to south Jackson--project solutions will address this need					X	Traffic congestion on the south end of the proposed ramp onto 45S (S Highland). It needs to be further outside of town.	The location of the southern termini is still being studied.		X	It is overdue.	No response needed.	The faster it can be done the better.	No response needed.
5		X	X	X	X	The bypass needs to come out south of Wal-Mart. US 45 is already heavy in traffic.	The location of the southern termini is still being studied.				X		Understands that impacts are a necessary part of growth. We need the bypass.	No response needed.		X	Traffic is bad from Wal-Mart south into Jackson.	Traffic issues are being considered as part of this study.	We need something to redirect traffic on 45.	The Corridor C Alternative provides a route to redirect through traffic.
6		X	X	X						X			Preservation of the Community in Bemis and Malesus	Historic Bemis will be preserved, Malesus is south of the US 45 study area.		X	The lack of crossings has slowed down the development south of Jackson.	No response needed.	Get the work done as soon as possible.	No response needed.
7		X			X	Supports the construction of a new southern bypass along the existing Riverside Drive.	No response needed.									X			Riverside Drive is the better of the two options.	No response needed.
8		X	X	X	X	Following the 1999 tornado, traffic in the vicinity of Caldwell Road and Riverside Drive was bumper to bumper--these roads were not equipped to handle the traffic. The project is definitely needed.	No response needed.		X			X	Request preservation of such sites as Sadie Lou Corner at Riverside Drive and Steam Mill Ferry Road, Cane Creek Cemetery, Churches in the Cane Creek Road area, and Raines Spring.	This project will comply with all state and federal requirements for historic preservation and will strive to avoid impacts to historic properties.		X	We definitely need to improve access from south of the S Fork of the Forked Deer River into Jackson. Would like to see a new crossing, but know environmental concerns prohibit it.	No response needed.	Adopt the Corridor C Alternative with care and concern for the history of southwest Madison County. Would prefer to see terminus at the junction of the improved SR 18 rather than US 45.	This project will comply with all state and federal requirements for historic and ecological preservation. The location of the southern termini is still being studied.

COMMENT RESPONSE							RESPONSE	2. ISSUES AND CONCERNS					RESPONSE	3. IS PROJECT NEEDED?			RESPONSE	ADDITIONAL COMMENTS	RESPONSE	
1. NEED FOR THIS PROJECT								Impacts to the Environment						Yes No OTHER						
		Improved Crossing of SFFDR	Safety	Existing and Projected Traffic	Growth and Economic Dev.	Other		Impacts to the Environment	Impacts to Existing Development	Air and Noise Impacts	Other									
9		X	X	X				X			Detours. Area where bypass ends.	The location of the southern termini is still being studied.		X		Way, way overdue! Jackson needs to compete with other cities our size.	No response needed.	The bypass needs to extend further south. Perhaps closer to Pinson. Current route will cause traffic problems.	The location of the southern termini is still being studied.	
10		X		X	X	Avoid present congested areas. Need third river crossing west of Riverside Drive. Join US 45 at Pinson not Bonwood.	Tennessee Department of Environment and Conservation (TDEC) will not approve an additional crossing of the SFFDR for this bypass. Pinson is outside the limits of the study area.				The wetlands are given priority over people with real needs.	State and Federal government mandate requirements to follow for every project that will impact wetlands. These requirements are being followed for this project.		X		Consider a sweeping arc from Bemis Cemetery Rd to Marigold/Walinton Rd to avoid highway business and join SR 18 interchange.	The selected alternate and termini if a build alternative is selected, will be determined in a future project phase.	The EPA is holding up progress. The Sierra Club does NOT represent Madison County. Take west side of Riverside Dr starting at Airways w/o double curve. Near D St switch to east side of Riverside Dr. Proceed to Cane Creek Road but make a sweeping arc ending at Watlington Rd.	The selected alternate will be determined during a future project phase.	
11								X							X	The bypass proposed needs to cross SR 18 and then connect to US 45 two miles outside city limits, then 4-lane	The chosen alternate and termini will be determined in a future project phase.	SR 18 doesn't need to come out on US 45 bypass. Traffic needs to be diverted.	Determining the location of SR 18 termini is not part of this project.	
12					X	Need to enter the road 3 miles past Wal-Mart.	The location of the southern termini is still being studied.				X	Air and noise (resulting from the project) will not hurt anybody.	No response needed.		X			Recommend Corridor C, Airways Blvd to Riverside Dr to Severs Rd where thru traffic starts to back up.	No response needed.	
13		X	X	X	X	Better traffic flow.	The Corridor C Alternative will improve traffic flow by taking the heavy truck traffic off of US 45.	X	X	X	X	Taking traffic off US 45. Fewer traffic lights. 55 or 65 mph.	A study will be done to determine if there will be any traffic signals on the new bypass if Corridor C is selected. Grade separations could eliminate the need for signals along most or all of the project route		X			Why not put SR 223, to the North and South to come out at 3-way to the north and US 45 south to come out on the south end. This would take a lot of traffic from area of Sam's and Wal-Mart.	SR 223 is located too far west to meet the project purpose and need.	

SUMMARY AND RESPONSE TO COMMENTS FROM FEBRUARY 25, 2010 PUBLIC MEETING, SOUTHERN EXTENSION OF US 45 BYPASS, JACKSON, TN

COMMENT RESPONSE							RESPONSE	2. ISSUES AND CONCERNS					RESPONSE	3. IS PROJECT NEEDED?			RESPONSE	ADDITIONAL COMMENTS	RESPONSE			
1. NEED FOR THIS PROJECT								Impacts to the Environment Impacts to Existing Development Air and Noise Impacts Other						Yes	No	OTHER						
Improved Crossing of SFFDR	Safety	Existing and Projected Traffic	Growth and Economic Dev.	Other																		
14				X	X					X						X				Traffic lights on 45 (proposed bypass) will back up traffic. Provided drawing showing no control lights, interchange instead.	A study will be done to determine if there will be any traffic signals on the new bypass if Corridor C is selected. Grade separations could eliminate the need for signals along most or all of the project route	
15										X	X	X	X	Concerned with impacts to privacy of area residents; that the city will try to annex land; that crime rate will increase from more people being in the area and having easier get-aways.	A No-Build alternative is being considered. If a build alternative is selected, all efforts will be made to minimize impacts to property owners in the project area.			X	Instead of building new roads, easier methods should be tried first to improve emergency response such as marking fire lanes/emergency lanes or issuing fines to vehicles that don't get over.	The project team has interviewed emergency service providers, who feel that a second crossing that is up to current roadway standards is needed. Roadway blockages on US 45 have occurred and are a major concern.	Jackson has too many large roads for a city so small. Increases pollution and forces people to drive. This road crosses private land (including fragile, protected wetlands), and encroaches on many historic areas.	Jackson has numerous roads, but studies have proven that there are insufficient routes to South Jackson. If a build alternative is selected, all efforts will be made to either minimize or avoid impacts to natural and cultural resources.
16				X	X	The single greatest need is for an additional set of bridges over the Forked Deer River and another four lane highway to South Jackson.	Tennessee Department of Environment and Conservation (TDEC) will not approve an additional crossing of the SFFDR for this bypass.						Concern is that planners will settle for just improving existing highway and bridges. A disaster on either existing bridge severs almost all north/south traffic.	Improvement of Riverside Drive will increase capacity in the area by adding an additional northbound and southbound lane.			X			Major work on the existing 45 will bottleneck traffic and hurt businesses that depend on customers from south of the Forked Deer.	If the Riverside Drive Alternate is selected, existing US 45/South Highland Avenue will remain in its current state. The only impact will occur when and where the bypass is connected to US 45.	
17		X	X	X		Get the 18-wheelers off the heavily traveled areas of 45 south between Jackson and counties south of Madison County	The Corridor C Alternative provides an alternate route for these heavy trucks.				X		I am concerned that the proposed bypass will not be a true bypass if it ties into 45 South in the Bonwood Community.	Your concern is noted. A connection to existing US 45/S. Highland farther south will be studied			X		This should have been done more that 30 years ago.	No response needed.	This project is necessary, but terminus should be shifted farther south of the Bonwood area.	The location of the southern termini is still being studied.
18				X	X					X							X					
19																	X					
20		X	X	X	X												X					

SUMMARY AND RESPONSE TO COMMENTS FROM FEBRUARY 25, 2010 PUBLIC MEETING, SOUTHERN EXTENSION OF US 45 BYPASS, JACKSON, TN

COMMENT RESPONSE						RESPONSE	2. ISSUES AND CONCERNS						RESPONSE	3. IS PROJECT NEEDED?			RESPONSE	ADDITIONAL COMMENTS	RESPONSE
1. NEED FOR THIS PROJECT							Impacts to the Environment							Yes	No	OTHER			
	Improved Crossing of SFFDR	Safety	Existing and Projected Traffic	Growth and Economic Dev.	Other		Impacts to the Environment	Impacts to Existing Development	Air and Noise Impacts	Other									
21				X			X							X				Make sure that you have the funds first before you start this project. Do not raise taxes of any kind.	<i>It is anticipated that the work will be done with federal or state funds, with a low percentage local match. Taxes would not be raised for this match.</i>
22		X	X	X	X		X							X				Need to move project as far south as possible to avoid bottleneck at US 45 South in a heavy traffic area. Would be good to connect bypass with SR 18 expansion. Corridor C is best.	<i>Tennessee Department of Environment and Conservation (TDEC) will not approve an additional crossing of the South Fork of the Forked Deer. The location of the southern termini is still being studied. Consideration will be given to the connection of US 45 with SR 18 when its location has been determined.</i>
23			X	X	X		X			Farm property and concerns surrounding the property.	<i>Farm impacts will be determined during the next project phase.</i>		X					I stay off the bypass as much as possible! I am glad to hear that this will be different. The bypass is dangerous.	<i>No response needed.</i>
24		X	X	X	X					I trust the professional planners to adequately address these.	<i>No response needed.</i>		X		Clearly the new west corridor is preferred.			<i>No response needed.</i>	<i>If Corridor C is selected, a greatly improved crossing will result along the Riverside Drive Alignment, a crossing which is currently substandard. The location of the southern termini is still being studied. Consideration will be given to the connection of US 45 with SR 18 when its location has been determined.</i>

[illegible]

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SIGN IN SHEET FOR FEBRUARY 25, 2010 PUBLIC MEETING
Southern Extension of the US 45 Bypass
From SR 1 (US 70/Airways Boulevard) to SR 5 (US 45/South Highland Avenue)
City of Jackson, Madison County, Tennessee

Date/Time: February 25, 2010 / 5 p.m. - 7:00 p.m.
 Location: South Jackson Community Center
 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
A. Mike Pearson	893 Grayson L. Jackson 38305	731-225-7179
Kelly W. Little	1167 Raines Springs Rd Jackson 38301	424.1916 sportsman.kwl@aol.com
Darlene & Jimmy Collins	564 Steam Mill Ferry	424-0189
Kito Hammon	294 Fitzgerald	
Theresa Ray	309 Bolin Hwy	422-1726
ED DUGGER	232 STATE ST	6687667
Bob Barger	35 30 Morton State 38301	4247046
Ashley Keith	9875 MTCarmel Rd.	901-487-2994
Jerry A. Wheeler	24 Seaveris Rd	731-608-3044
Roger Taylor	230 Dorcas Rd Medon 38350	731-658-7705
Anita Miller	26 Watlington Rd 38301	424-0472
Scott Barber	57 Poxburg Rd 38301	427 3701

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Name	Address	Contact Information: phone and/or e-mail
ROBERT MCKNIGHT	566 BOLIVAR HWY.	731-427-5865
Kenneth Sheppard	953 Revere Dr.	731 422-5300
Russell Robinson	39 Wells Lasser	217 8462
John Widdoughby	181 Fitzgerald Rd.	427-0034
Bill Moore	585 Lamhuth Blvd	731-427-0528
Ricky Davis	800 Parkburg Rd	0394-5145
Kim Ellis	2085 Jo Ann Ln	512-1304
Paul Little Jr	167 Raines Spring Rd	695-1524
Elizabeth & Rebecca Stanfield	360 Donnet Cove	427 4135
Robin & Lisa Carnal	336 Parkburg Rd	424 3130
CHARLEY LEWIS	19 Roxy Cove	731 234-4946
MARIA Rond	30 Morton ST	731-424 2414

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Name	Address	Contact Information: phone and/or e-mail
<i>William B. Walker</i>		
Andrew Robinson	341 Spr. Ln Rd Jackson	427-4087
JAMES BUCHANAN	310 Mandy Rd	427-3530
Richard Hutcherson	112 Medon-Morris Medon	424-2751
Judi Garner	59 Raines Spring Pt Jack	424-5859
Troy Sullivan	575 Raines SP Rd Jackson, TN	424-9223
Don Pearson	669 Adair Rd Jackson	664-4746
Joel Jackson	84 Pecan Circle	424-0739
Richard Bryant	400 New Deal Rd	695-8748
Jean Spelling	165 Coldwell Rd	427-9439
Martha Morris	142 Fitzgerald Rd.	424-7563
Holland Hampton	1157 Bear Creek Rd Pinson	
Jane Taylor	219 Parkburg	427-5231

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Name	Address	Contact Information: phone and/or e-mail
Wanette & Robert Colsham	353 Bear Creek Rd Pinson	731 423 2050
Franklin & Peggy Fish	507 Raines Springs Rd	731-424-6014
Dorrie & Fred Adley	404 Belvoir Hwy.	731-424-2498
Diana & [unclear]	18 Douglaswood	731-217-1119
M.E. Nash	291 Samson Rd	731-424-5438
DANNY C. BUTLER	434 STEAM MILL FERRY RD	731-217-3244
Aaron Hamilton	51 Bollemeade Dr.	731-616-4198
Janette Morris	184 Old Pinson Rd.	424-6587
John & Betty Presley	80 Heron Grove Rd	427-4851
Arthur & Malinda Wilson	1222 Hwy 18 Madison TN	422-4597
Larry Benson	141 Benson Lane	427-7400
Val Fluke	691 Hwy 18 Jax	394-5578

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Date/Time: February 25, 2010 / 5 p.m. - 7:00 p.m.
 Location: South Jackson Community Center
 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Jimmy Jordan	276 Caldwell Rd	422-2208
Brad Williams	78 Griffin Ln	422 3462
Jerry Rushing	2502 Riverside Dr	422-6938
Henry Ware	104 Aspen Ave	427-4605
Jackie Warren	762 Dixie Lane	427-3856
William R. Long	30 DIXIE LANE	424-1715 wrlong@plus.net
Eddie Deenacant	741 Independence Loop, Lexington	731-234-4600
Clyde Bennett	1003 Dillard Rd. Pontiac, MS	662-459-3742
James L. Simpson Jr	237 Co Rd 931, Littleport, MS	662-842-2066
Mark W. Samuel	26 Parkburg Rd	731-267-0977
Bill & Frances Simmons	177 Parkburg Rd	662-349-6296
Sherry Melton	1515 Hwy 18	267-2939

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Date/Time: February 25, 2010 / 5 p.m. - 7:00 p.m.
 Location: South Jackson Community Center
 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Johnny Tyler	29012 Jackson	267-8084 427-7028
Ronald M. Montgomery	154 Steam Mill Ferry Rd	225-2872
Bahby Newman	380 Lassiter Rd.	217-1288
Bill Raines	400 Bolivar Hwy	422 6950
Arvind Patel	576 Airways Blvd	695-4010
Mrs + Mrs Gerald Bayl	21 Seavers Rd	427-0798 or 267-8245
Cynthia Woods	651 Chester Levee Rd, City 38311	
H & M Compressors	2405 Hwy 45 S.	427-7848 C Lince
Merle Lipton	59 Steam Mill Ferry	
Louetta Sisk	2767 Hwy 45 South	731 422 5077
Richard Mann	125 Fitzgerald Rd, Jackson	424-5815
Josh WADLEY	329 Parkburg Jackson	988-6222

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Date/Time: February 25, 2010 / 5 p.m. - 7:00 p.m.
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 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Thomas Lewis	1784 S. Highland	731 426 2502
J D Rainer	85 Parkburg Rd	731 817-9184
Cliff Reamer	2090 Highway 64 ³⁸³¹ Adamsville TN	731 1646-0672
Floyd Wattle	1775 S. Highland	
Bobby & Susan Greene	514 Airways	731-616-9491
Robert Johnson Jr	1000 Hwy 18	
Wood, B. Sullivan	260 MAUDY RD	422-5021
Tom DuPree	2 Young St.	422-3818
MILTON PHINNESSOR	2480 Hwy 18, MEDON, TN	731-427-1441
Charles F. Fretwell, Jr.	23 Pinecrest Ln	731-424-8508
JAMES E. PLUNKETT, JR	117 REBEL RD	731-427-5425
WILLIAM V. GORDON	394 POE RD	731-616-6313

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Date/Time: February 25, 2010 / 5 p.m. – 7:00 p.m.
 Location: South Jackson Community Center
 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Virginia Dawson	1940 S. Highland	267-6743
Kathryn M Hays	217 Madon-Malheur Road	423-0942
Ernest Tucker	509 Madon-Malheur Rd	422-5240
Randall Page	218 Pigeon Creek Drive	467-0226
Ste Hainell	309 FREEMAN ST.	731-571-8050
Jerry & Wilma Morrie	91 Owen	
Pgs: Jf w	554 Chester Lane	731-424-5459
Dennis Hornby	33 Southwood Dr.	424-4758
RHODES BARBETTE	3080 US Hwy 45	731-989-5113 x12
Evelyn Keele	604 Potts Chapel	731-423-4868
Mikel Lane	534 Hwy 18	731-394-1963
Larry & Carol Riddell	74 Branch Park	423-2332

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 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Chris Phillips	1760 Parkburg Rd	443-0347
Judea Wattington	82 Meckelle Lane 38304	424-2080
Scree Hale	115 3rd St.	513-1663
John Coley	68 Jennalee Ln.	394-6414
Mike & Raye Cole	537 Caldwell Rd	422-6792
Doris Deaton	36 Watlington Rd	422-5305
JEAN AN WINTERBOTTOM	100 WATLINGTON	423-0244
Marion Gaffney	209 Wiley Parker	664-4985
Lucy Gay Scarborough	471 Steam Mill Ferry	lucy58charter.net
Mark Traver	512 Riverside	424-1157
Donny Byrd	3053 RIVERSIDE DR	423-3442
M. Virginia Bean	415 Chester Lane Rd	427-7636

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 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Marty Clements	1823 Campbell St	731-427-1271
Linda Kruffman	175 Bolivar Hwy	731-425-9423
Blake Potter	853 Bolivar Hwy	731-424-6756
Brenda Alexander	1770 South Highland Hwy.	731-427-0425
James E. Winston Jr & Family	358 Hwy 18	(731) 427-2359
Fred Thompson	790 Cedarfield Rd	731-988-5604
Rosalee Jennings Gibbons	104 Allen St Bemis Jackson	731-427-3823
Mark J. Higgins	361 Hart Bridge Rd	731-427-6681
Michael Yater	514 Airways Blvd.	731-427-2167
RANDY FLANAGAN	3110 MANDY RD.	427-7009
Dorothy & Bonnie Moresco	330 OLDMALESUB RD	424-0277
Jim Wilson	21 Country Look Cv Madon	424-4131-267-6224

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 Location: South Jackson Community Center
 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Richard Baker	2217 Indian Trace Dyersburg TN	richard@bid-bost.com
Alvin Wallyford	167 Parkbury Rd	731-422-1128
David Blackwood	84 Dakota Cove Jackson, TN	d.blackwood@tlmassociates.com
Jerry & Linda West	715 Lower Brownsville Rd	Jackson TN 38301
Patricia Miller	437 Paines Field	Jackson TN 38301
Dale Harris	565 Parkbury Rd	dharris148@charter.net
Jimmy Crews	175 WYNTHURST DR	J. CREWS @ FIRE TREADS @ REVEALS.NET
Chidez Roberson	12 Crystal Lake Dr.	bagducks @ Charter.net
PAUL DUGGAN	302 S. MASSACHUSETTS ST	731-736-0979 / 402-5058
Amy Fritz / Dan Fritz	80 Wells Lassiter	BKmdan061@aol.com
Karl A. Norwood	716 Hwy 18	KarlANorwood@AOL.com
James Smazur	184 Old Pinson S.	Jackson 38301

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Date/Time: February 25, 2010 / 5 p.m. - 7:00 p.m.
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 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Craig N. Matthews	42 D. Street Jackson	217-3557 - 424-4057
Sid Gann	25 Lane Ln.	217-2827
Jim Nash	291 Seavers Rd	424-5438
Dawn Lynne McKe...	73 Winona Oaks Dr	660-8803
Joe B Warren	52 Hundley Ave	+27 2272 - 267 4052
Peter J. Hahn	235 Rockwell Rd	394-3267
Richard Roe	162 Yoshino DR.	423-1083
Teddy Hazlehurst	784 Stern Mill Ferry Rd	bemis@acneqas.net
Tim Dalton	421 Caldwell Rd.	731-217-5545 daltonmcc@e-mail
Willie Hunter	168 Aspen Ave	422-1751
Don Kerbe	225 Elmore	431 825
Mike Jones	325 Fairway Ln.	731-412-7847

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Date/Time: February 25, 2010 / 5 p.m. - 7:00 p.m.
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 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Bill Lander	125 Pope Rd. Mad.	423-2880
Steve Carson	86 Medon Madisons Rd	424-1018
Bob Munk	671 Medon Madisons Rd	424-6119
Georgia Drumwright	22 22 Chipman Cove	423 4940
Robert Drumwright	22 Chipman Cove	423 4940
Jimmy League		
Terry Sanders	368 Madon Madisons Rd	424-4667
Jason Baker	674 Russell Rd. Jackson 38301	935-0340
John Garner	59 Raines Spring Rd	424-5859
Shirley Buens	107 Jhud St.	424-6582
Ann Harms	4952 Sequoia/	908 Kyle1944@aol.com
Chaz	50 Hannah Dr	928-2885

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Date/Time: February 25, 2010 / 5 p.m. - 7:00 p.m.
 Location: South Jackson Community Center
 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Janice Matthews	52 D St	Naconin 1220 old yahoo. 424-4057 vcom
Fred Birmingham	117 Hawthorne	427-3393 jaxtrapol@hotmail.com
Tom & Thong Ho	555 PARKBURG Rd	
Richard & Beuchley	2699 Hwy 45 South h, Jx Tr	422-4948
Clint Ragan	78 Hudson	234-4556
Robert McKee	491 Perryford	608-0-900
Phillip Mullins	35 Donnet Cove 38301	pmullins@eplus.net
Andy Spence	115 Malorus Hgts 38301	fnaspence@mitchellsbodyshop.com
Mike Brooks	175 Mandy rd	precisionprinting@bellsouth.net
Delora Jorh	873 Hwy. 18 Medm	423-0050
Larry Forrest	186 Cane Creek Jackson 7	427-5426
Dill Demonst	403 N. Pkwy, Lubman	424-6306

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Date/Time: February 25, 2010 / 5 p.m. – 7:00 p.m.
 Location: South Jackson Community Center
 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
David Watlington	82 Michelle Ln.	davidw@charter.net
Lowe Finney	2 Mimosa Dr. 38301	lowe@lowefinney.com

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Date/Time: February 25, 2010 / 5 p.m. – 7:00 p.m.
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 Purpose: Public Informational Meeting

Name	Address	Contact Information: phone and/or e-mail
Waring Haglerhurst	79 Woodhewer Dr	668-5088
Douglas Herndon	1940 E. Highland	2252190
James A. Morris	168 Roberts Ln.	695-7340
Robert M. Hayes	317 Medon Medon Rd Medon	695-1887
JOHN NANNEY	101 YOSHINO DR.	JNANNEY @ EPLUS.NET
Lise Andrews	249 Parkburg Rd.	267-9031
Ross Andrews	" " "	866-2562
Bill LILES	550 Airways	571-9070
Jovita Morgan	105 Watlington Rd	424-4078

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Date/Time: February 25, 2010 / 5 p.m. - 7:00 p.m.
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Name	Address	Contact Information: phone and/or e-mail
Jimmy Arnold		
Marybourse Arnold	1145 Hwy 18 Medm	217-1999
Jimmy Harris	162 OLD STAGE	423-6020
Don Pickens	201 Fitzgerald Rd	731-423-4131
James Gammons	52 D street	731-394-7080
Joe Steel	555 Seawen St	731-423-3572
SHAM PATEL	2016 S. Highland Ave	731-444-4014
William Nix Jr.	303 Fitzgerald Rd	731-803-8597
Leslie Carrington	60 Southwood Drive	731-499-0480
Judy Beardsley	2699 Hwy 45 S	731 422-4948
Janice Julian	1310 Deanburg Rd / Henderson	731-616-0273
Jimmy Julian	" " "	731-616-0270
James Dallas	407 Old Malcom Rd	731-554-2343

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 _____ of _____

STAFF SIGN IN SHEET FOR FEBRUARY 25, 2010 PUBLIC MEETING
Southern Extension of the US 45 Bypass
From SR 1 (US 70/Airways Boulevard) to SR 5 (US 45/South Highland Avenue)
City of Jackson, Madison County, Tennessee

Name	Representing	Other Contact Information: phone and/or e-mail (optional)
Margaret Slater	GS+P	
Will REID	GS&P	
Shawn Means	GS+P	
Sandy Scatani	GS&P	
Joe H. King		
Laura Harper	YA	
Sharon Sharon Younger	YA	

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DECEMBER 14, 2010 PUBLIC MEETING # 2 SUMMARY

SOUTHERN EXTENSION OF US 45 BYPASS, JACKSON, MADISON COUNTY, TN

PIN: 109926.00

The City of Jackson, with support from the Tennessee Department of Transportation (TDOT), conducted a public meeting for the above-listed project on Tuesday, December 14, 2010, from 5:00 to 7:00 p.m. at the South Jackson Community Center. There were 162 public attendees. Other attendees included representatives from the City of Jackson, TDOT and the City's engineering consultant (Project Team, hereafter). The sign-in sheets are attached.

Meeting participants were provided with a handout, which included:

- Description of the meeting format;
- Description and a map illustrating the alignment options;
- Next steps; and
- Instructions on how to comment.



The meeting was held in an open house format. Attendees were able to view an eight-minute PowerPoint presentation on the project background that ran throughout the evening.

Displays placed throughout the meeting room depicted the conceptual alignment at a large scale on aerial photography. Project Team members were present at each of the display tables to provide information, address concerns and answer questions regarding the conceptual alignment. Attendees could also view a display depicting the project schedule and a full size set of the concept plans that included the proposed roadway typical sections. The conceptual alignment presented in Figure 1, illustrates the concept that was presented that night and small concept plan modifications made to address the public comments.



A court reporter recorded verbal comments that attendees wished to make part of the official record. Meeting attendees were also provided with a comment card, which they were encouraged to use to document their opinions, concerns and suggestions for the project. The card could be submitted at the meeting or by mail within 21 days following the date of the meeting.

The official record for the public meeting includes a total of 52



comments. The 46 comment cards received were turned in at the meeting or returned by mail. Six verbal comments were made to the court reporter. Three of the comment cards contained no comments—the respondents simply requested to be added to the project database.

Question 1: What issues and concerns do you have about the project? (check all that apply)
See Table 1 below.

Table 1: Summary of Question 1

Issues and Concerns	Number of attendees who selected this issue or concern
A. Impacts to the environment (streams, wetlands, sensitive species, recreation)	11
B. Impacts to existing development (homes, businesses, community facilities)	28
C. Air and noise impacts	11
D. Impacts to historic and/or archaeological resources	16
Other(s)	Length of time between project start and completion; property values could decrease; wildlife impacts

Question 2: What do you like or dislike about the proposed conceptual alignment?

Like: Only six respondents commented on what they liked, whereas thirty-one respondents wrote about what they disliked. Among the respondents who liked the proposed conceptual alignment, the comments generally were focused on the fact that the proposed alignment will preserve the Bemis Historic District and that the Phase 2 alignment will improve traffic flow along South Highland Avenue.

Dislike: Comments are summarized below:

- Sixteen members of the Cornerstone Baptist Church expressed their concern that the concept did not include access to/from Boone Lane off of the proposed Bypass at Riverside Drive [this access has since been added].
- Respondents disliked the cul-de-sac at the intersection of Raines Springs Road and the proposed Bypass [a four-leg, at-grade intersection has been added and Raines Springs Road will remain open].
- Phase 2 of Alternative C was viewed as not economically justified and as a disruption to the natural environment.
- One respondent said that truckers will not change their routing habits unless it is mandated.
- Three of the respondents disliked that the proposed Bypass does not include a northbound ramp on the southern end of the Bypass [this has since been added].
- Two respondents commented that Phase 1 of the proposed Bypass does not extend far enough south.
- One respondent was concerned with wetland impacts.



Question 3: Do you prefer Alternative C (shown in red on map on reverse of handout and included at the end of this summary) or Alternative C, Option C-1 (shown in orange)?

Responses are summarized in Table 2.

Table 2: Summary of Question 3

Alternative C or Alternative C, Option C-1:	Number of attendees who preferred each alignment
A. Alternative C	17
B. Alternative C, Option C-1	5
Other Comments	Modify Alternative C, Option C-1 to add a westbound only exit ramp from the new Bypass to the existing Bypass.

Pertaining to the preferred alignment, Alternative C (shown in red on the handout map) was the most favored over Alternative C, Option C-1 (shown in orange on the handout map). Seventeen respondents preferred the Alternative C concept, while only five preferred the Alternative C, Option C-1 concept. The remainder of the respondents did not answer the question. A general consensus among all attendees who liked the proposed Alternative C alignment is that the project's completion cannot happen soon enough.

Question 4: What do you like or dislike about the proposed realignment of SR 18?

A majority of the eleven dislike comments related to the fact that the proposed realignment is too close to homes on Raines Springs Road, which could affect land, property values and wildlife. In addition, these respondents were concerned that the alignment would increase traffic and noise, and thus, would affect the quiet, "country living" feeling of the neighborhood. Among the five respondents in favor of the proposed realignment of SR 18, comments included that they were pleased that homes between South Highland Avenue and Old Malesus Road would be left undisturbed, and that the realignment would likely reduce the amount of traffic and number of bottlenecks on US 45 (South Highland Avenue).

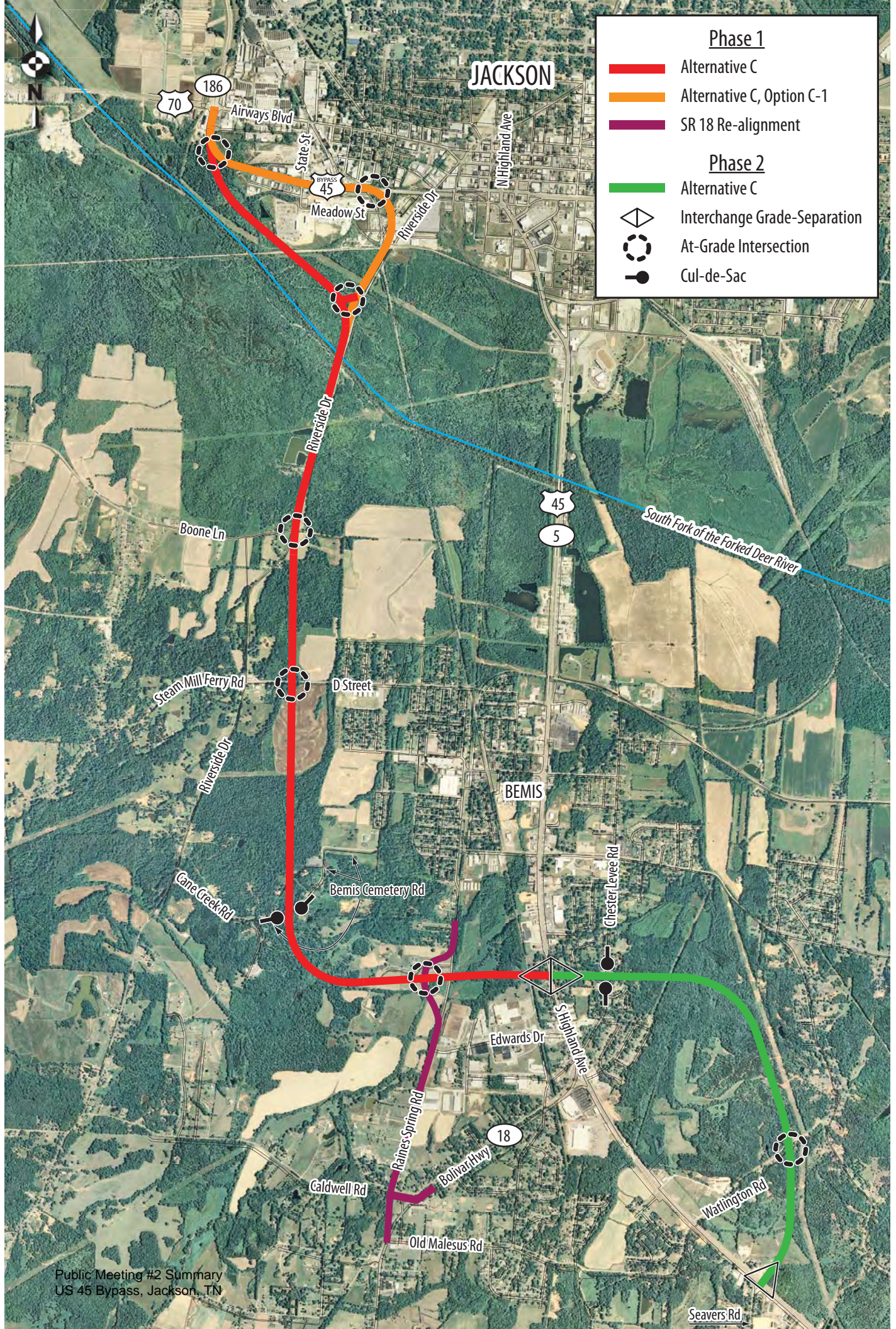
Question 5: Additional comments:

Additional comments received pertained to the overall plan for the Bypass. One respondent said that the City's focus of transportation improvements should be in the Vann Drive area. Another respondent stated that the Bypass would not solve the congestion problem on US 45 (South Highland Avenue) because traffic would continue to use it to access downtown.

The meeting was adjourned at 7:00 p.m.

Prepared by: Margaret Slater and Lindsay Puckett, GS&P





STAFF SIGN IN SHEET FOR DECEMBER 14, 2010 PUBLIC MEETING #2
Southern Extension of the US 45 Bypass
From SR 1 (US 70/Airways Boulevard) to SR 5 (US 45/South Highland Avenue)
City of Jackson, Madison County, Tennessee

Public Meeting #2 Summary
US 45 Bypass, Jackson, TN

Name	Representing	Other Contact Information: phone and/or e-mail (optional)
Shawn Means	Gresham, Smith + Partners	
Sandy Layne-Sclafani	GS&P	
Margaret Slater	GS+P	
Bill Moore	GS+P	
Will Reid	GS+P	
Mark Holloran	GS+P	
Lori Lange	GS+P	
Dowell Squier	GS+P	
Kimberly VanWinkle	TDOT - R.O.W.	
Gena Gilliam	TDOT - Project Planning	
JASON BAKER	TDOT - Project MANAGEMENT	
Keith Donaldson	City of Jackson	
Scott Chandler	CITY OF JACKSON	

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City of Jackson, Madison County, Tennessee

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 Location: South Jackson Community Center
 Purpose: Public Informational Meeting #2

Name	Address	Contact Information: phone and/or e-mail
Joe Atcherson	130 Caldwell Rd	38301
Kenzie Ross	348 Parkview Rd	# 38301 (427-2114)
SCOTTY PLUNK	300 Benchmark Place Jackson TN	731-935-0207 TDOT
SHAM PATEL	2010 S. Highland Ave Jackson	731-506-4241
Wayn William	Wayn William	Jackson
Jimmy Jordan	276 Caldwell Rd	Jackson- 38301
Bob + Dawn Engle	432 Anglin Ln Jackson	(731) 427-6242
Alison Kirk	138 Carriage House Jacks	(731) 668-7367
Charon Younger	138 Carriage House Jackson	(731) 668-7367
T.H. Hazlehurst	784 Steam Mill Ferry Jackson	bemis@acueas.net
Rico G. Bryson	190 Doctor Dr.	RBryson@cityofjackson.net
Jennifer & Patrick Stephenson	111 Cane Creek Rd	731-431-2795

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Name	Address	Contact Information: phone and/or e-mail
Jeff Helms J&H L.P. of Jackson	1A ST. Jackson, TN 38301	424-5300 wsbf@bellsouth.net
Jimmy Arnold	1145 Hwy 18 38356	427-9006
Kelly Little	167 Raines Springs 38301	426.1196 sportsmomkw1@aol.com
CHARLES FUTRELL JR	23 PINECREST DR 38301	424 8508
JOE ROARK	2 FARWELL St 38301	427-3465
ROBERT & NANETTE Folsheim	353 BEAR CREEK RD 38368	423 2050
Tom Marnay	225 Parkburg RD. 38301	422-5889
Iran & Sherry Smith	2391 Hwy. 45 S 38301	427-0464
WILLIAM V. GORDON	384 POPE ROAD MEDON 38356	WGORDON@JAXENERGY.COM
Patricia Whitman	437 Raines Spring Rd.	9215-1637-
RONNIE OAKLEY	404 Bellvue Ave 38301	424-2498
Wade & Alishia Cash	Cornerstone Baptist Church 627 Boone Lane 38301	427-0030

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Name	Address	Contact Information: phone and/or e-mail
Jenny O'Brien	112 Caldwell Rd	
Bill Liles	550 Airways	woliles@aol.com
David Watlington	82 Michelle Ln.	davidw@watlingbrothers.com
Allan Sanders	1646 South Highland 38301	allans@valentims.com
Brad William	78 Caithri Ln 38301	
SCOTT PEARCE	45 WATLINGTON RD. 38301	kd4ozt@genes.net
Dena Lane	208 Caldwell Rd 38301	DenaJohnLane@aol.com.
Bill Moore	535 Lambuth Blvd 38301	427-0520
Buddy Rogers	60 Timberhill	423-0089
Murrell Clarkson	301 Hwy 45 Bypass	38301
Kenneth O. Shupp and	953 Riverside Dr.	38301 422-5300
Jay Beardslee	2699 Hwy 45 South	731-422-4948

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Name	Address	Contact Information: phone and/or e-mail
Arthur D Johnson Jr	1000 Hwy 18 Medon	
Arthur Winda Wilson	1222 " " " TN	
Richard L Beardsley	2699 Hwy 45 South - Jx TN	
Blake Potter	853 Hwy 18 Medon TN.	731-267-3108
Bobby L & Margaret Lindsey	125 Ridgeway Rd Jckn 38305	731-423-0649
David F Graves	137 Rainier Spry Rd Jackson TN 38301	731-427-7805
Tray Sullivan	575 Rainier SR Road	Jackson TN 38301
Anthony A Bell	58 Dixie Lane	Jackson TN 38301
Johnny Moore	10464 Hwy 104 N. Lexington TN 38351	731-968-4811
Jimmy Harris	100 E. Main St 38301	HARRIS@CO.MADISON.TN. US
Brenda Kaye Blalock	59 Caldwell Rd 38301	
Dennis E. Blalock	59 Caldwell Rd 38301	

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Name	Address	Contact Information: phone and/or e-mail
Franklin Luth	507 A. HINES Spring	
Robert & Lisa Carnal	336 Parkburg Rd	
Drac Replogle	21 Hudson Dr.	
Gary Pisk	38356 78855 Hwy 18 N. Medals	
Dennis Spellings	1838 Old Prison Rd. 38301	427-8291
Linda J. Higgins	361 Hats Bridge Rd 38301	l.j.higgins@charter.net
Kira Smith		
Thomas Lewis	1784 S. Highland	TN Trooper wadl.com
ALAN MORRIS	38301 142 FITZGERALD RD.	424-7563 ALANM@WATLINGTONBROTHERS.COM
Jeffrey H. Blackwood	901 John Brown Rd Henderson, TN 38340	jcbkold@bellsouth.net
Billy Lander	125 Pope Rd. Medals	
Joel Jackson	84 Pecan Circle	joeljackson2@aeneas.net
Eddie Ruma	741 Independence Loop 38357	

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Name	Address	Contact Information: phone and/or e-mail
Georgia M Morehead	70 Oakwood Dr. 38301	225-3243
Melinda McCollum	107 Raines Spung Rd 38301	melindamccollum@gmail.com
Dawn W. Waters	PO Box 11593 38308	697-8155
Cynthia L. Lue	2405 Hwy 45 South	731-427-7848
Angela Henderson	184-5. Highland	731 225-2190
Pat O'Neil	44 Raines Sp. Rd.	427-8490
R. K. WEIR	" " " "	" "
Terry L Drumwright	1606 EAST. MAIN ST Humboldt, TN 38343	731-694-9328
Steve Walby	167 Parkhurst Rd - 38301	
Robert (Bob) M. Knight	566 Bolivar Hwy.	Makesas, TN. 38754 566 Bolivar Hwy
Rene Henderson	27 Wong Duck Lane	rhenderson@hmassociates.com
LARRY G. FITZAL	84 Old PINSON RD	Jackson, TN 38301

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Name	Address	Contact Information: phone and/or e-mail
JOHN NANNY	101 YOSHINO DR. JACKSON 38301	JNANNY@JAXENERGY.COM
Loy M Harris	275 Watlington Rd 38301	
W & Joyce Holland		
Mark A. Harrell	300 Beachwood Place ^{Tennessee} 38301	
Ron Hodges	225 Ed Moore Rd ^{Beach Bluff} 38313	THAS@BellSouth.NET
Tr Obeal	555 Bowers Rd. 38301	
John Buckley	21 Nellie Ct 38301	
Sid Spain	1871 South Highland	MSSPAIN@charter.net
Carolyn Kelly	55 Lanier Circle Jackson	
David Kelly	11	
BILL LONG	30 DIXIE LANE JACKSON 38301-7752	wtlong@qplus.net 424 1715
Larry Benson	141 Benson Lane	Jackson TN 38301

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Name	Address	Contact Information: phone and/or e-mail
Judi Garner	59 Raine Spring Rd	424 5859 raarabians@charter.net
John Garner	59 Raines Spring Rd	424 5859
MAURICE KORSHAK	1190 Cotton Grove Rd	935-9935
Gerry WEST	715 L. Brownsville Rd	217-8513
Rich Bryant	400 New Deal Rd. 38305	Poplarcreek@aol.com
Kit Bryant	400 New Deal Rd. 38305	Poplarsand@aol.com
Mike Ross	348 Parkburg Rd 38301	mrross3@charter.net
Bill Raines	400 BOLIVAR Hwy,	
Patricia Harper	478 PARKBURG Rd	731-422-4838
Gene Harper	478 PARKBURG Rd	422-4838
Bohly Newman	380 Lassiter Rd. Jackson 38301	217-1288
Aaron Hamblin	108 Malesus Hts. Dr.	

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Name	Address	Contact Information: phone and/or e-mail
Gandra Morgan Williams	10 Lancelot Dr. 38305	731-427-2450
Richard Hutcherson	112 Meadow Oaks Medon TN 38356	731-424-2751
Larry Fiddell 3801	74 Brenda Lane Jackson TN	731-422-7322
Buddy Branch	166 Fitzgerald Rd.	Jackson TN. 38301
Merita Repton	59 Steam Mill Ferry Rd. 38301	JX, Tenn
Linda Crews	355 Parkburg Rd 38301	731-422-3445
Kelly Holmes	722 Harts Bridge Rd 38301	731 423-4422
James PEARSON	720 S Highland Ave. 38301	731-425-8350
Billy Ard	556 Chester Lock Rd 38301	731-424-5459
Paul Little Jr	167 Raines Spring Rd 38301	731-426-1196
JAMES HANNA	JACKSON	
Jerry Rushing	2502 Riverside Dr, Jackson TN 38301	731-422-6938

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Name	Address	Contact Information: phone and/or e-mail
Karon Jeter	96 Timberhill 38301	
Milton Shumaker	2480 Highway 18 38354	
W.S. Webb	24 Mandy Rd.	616-7720
Harold + Mildred Rayl	21 Seavers Rd	267-8245 or 427-0798
Billy Stone	514 Airways	427-5613
Joe Nelson King	150 Mandy Rd Madison TN	731-422-5897
Nick Trent	7 Clubhouse Dr, Pinson, TN	731 694 2063
Brenda Alexander	1770 South Highland Avenue	394-4099
Dale Flaker	691 Hwy 18 Trax 38301	394-5578
Linda Huffman	175 Bolivar Hwy	731-425-8614 reclady@epus.net
Dee Robinson	39 Webb & Landon 38301	731-424-8697
Russell Brown	97 McCaskey 38301	217 8462

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Name	Address	Contact Information: phone and/or e-mail
Wade Huggins / Cockle-Pet Control	47 Riverport Dr Jackson 38301	731 424 3771 wade@cocklepet.com
Jodi Barker	245 Yoshino Dr 38301	jodicbarker@gmail.com
Peggy Dallas	407 Old Maresus Rd 38301	
Marion B Smother	968 Old Pinson Rd Pinson TN 38366	988-5187
Larry A. Murley	38 LAKE AVE.	City - 38301
Bill Luey	2444 Hwy 18	Medon
Ernie Newbern	509 Medon Makepeace Rd	Medon 38356
Johna Mobley	170 Old Pinson Rd	731-424-2906
Jamie Mobley	" "	" "
Dee Henderson	27 Wood Duck Cv Jackson 38305	731-668-8629
Clara Bennett	1003 Dillard Rd Bartlett MS	662-489-3742
Rebecca & Elizabeth Stansfield	36 Donnet Cove 38301	731 427 4135

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Name	Address	Contact Information: phone and/or e-mail
CHARLES WATKINSON	87 PINECROFT DR 38301	CLWATKINSON@YAHOO.COM
Don Bauling	2489 Hwy 45 S 38301	
Maria Lopez	309 Belling Hwy 38301	
Steve Chipman	35 Chipman Cove Mch 38356	Steve.Chipman@tn.gov
Donald Chiom	207 Steam Mill Ferry Rd	231-217-1540
Martha Morris	142 Fitzgerald Rd	Jackson, TN 424-7523
Jimmy & Darlene Collins	564 Steam Mill Ferry Rd	Jackson TN 38301 424-0189
Renee Rainer	665 Charter Levee Rd	Jackson TN 38301