

**Mine Lick Creek Interchange at Interstate 40 and
Northern Connector Route
from I-40 to US 70N (SR 24)
Putnam County, Tennessee**

Finding of No Significant Impact

Submitted pursuant to 42 U.S.C. 4332(2) (C)
by the
U.S. Department of Transportation
Federal Highway Administration
and the
Tennessee Department of Transportation

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

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The FHWA has determined that Alternative A will have no significant impact on the human environment. This Finding of No Significant Impact (FONSI) is based on the attached Environmental Assessment (EA) which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the needs, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required. The FHWA takes responsibility for the EA, approved on December 14, 2006. This FONSI should not be reviewed independent of the approved Environmental Assessment.

18 APRIL 2008
Date Approved


for FHWA Division Administrator

The following persons may be contacted for additional information concerning this document:

Mr. Charles J. O'Neill
Planning and Program
Management Team Leader
Federal Highway Administration
640 Grassmere Park Road
Suite 112
Nashville, TN 37211
Phone: (615) 781-5772

Mr. Charles J. Bush
Transportation Manager II
Tennessee Department of Transportation
Environmental Division
Suite 900, James K. Polk Bldg.
505 Deaderick Street
Nashville, TN 37245-0334
Phone: (615) 741-3653

Summary

General Project Description

This project calls for the construction of a new interchange with Interstate 40 (I-40) at Mine Lick Creek, and a northern connector to U.S. 70 (State Route 24). The Tennessee Department of Transportation, in cooperation with the Federal Highway Administration, is proposing a new highway facility from I-40 at Mine Lick Creek Road and proceeding in a northeasterly direction to US-70 North (SR-24) in Putnam County.

The project is listed in the Tennessee State Transportation Improvement Program, Fiscal Years 2008-2011. It is included in the City of Cookeville Major Thoroughfare Plan (adopted 2000) and the Comprehensive Future Land Use Plan (2004).

The proposed route will begin with a Mine Lick Creek Road Interchange at I-40 and connect with US-70N (SR-24) approximately 0.89 miles west of the Cookeville City Limits. The proposed project was originally planned as a four-lane divided highway connected by a modified-diamond interchange at I-40/Mine Lick Creek Road and a partial diamond interchange at US-70N (SR-24). It is now proposed that the roadway between the two interchanges, known as the “Northern Connector” will be constructed as a two-lane roadway with sufficient right-of-way to build two additional traffic lanes when traffic demands warrant their construction.

Summary of Alternatives

The alternatives considered in the Environmental Assessment (EA) included the “No-Build” Alternative and two “Build” Alternatives, designated as Alternative A and Alternative B. Alternative A begins as a proposed interchange with I-40, approximately 2.82 miles west of the existing I-40/SR 135 interchange. The alternative extends northeasterly on a new location for approximately 1.63 miles to a diamond interchange at Buffalo Valley Road. From this point the Alternative A continues in a more northerly direction for approximately 1.2 miles before tying into US 70N. The length of Alternative A is approximately 2.87 miles.

Alternative B began with an I-40 interchange, located approximately 0.71 miles west of the existing Mine Lick Creek Road Bridge over I-40. It would have extended northward for approximately 0.80 miles to a typical diamond interchange at Buffalo Valley Road. From this point it will have continued in a northeasterly direction for approximately 2.19 miles, before turning northward. At this point, Alternatives A and B share the same alignment, extending northward for approximately 0.48 miles to the project terminus with US 70. The total length of Alternative B was 3.47 miles.

Selected Alternative – Alternative A

TDOT selected the Alternative A location for the proposed interchange at I-40 and the Northern Connector. This alternative was selected because:

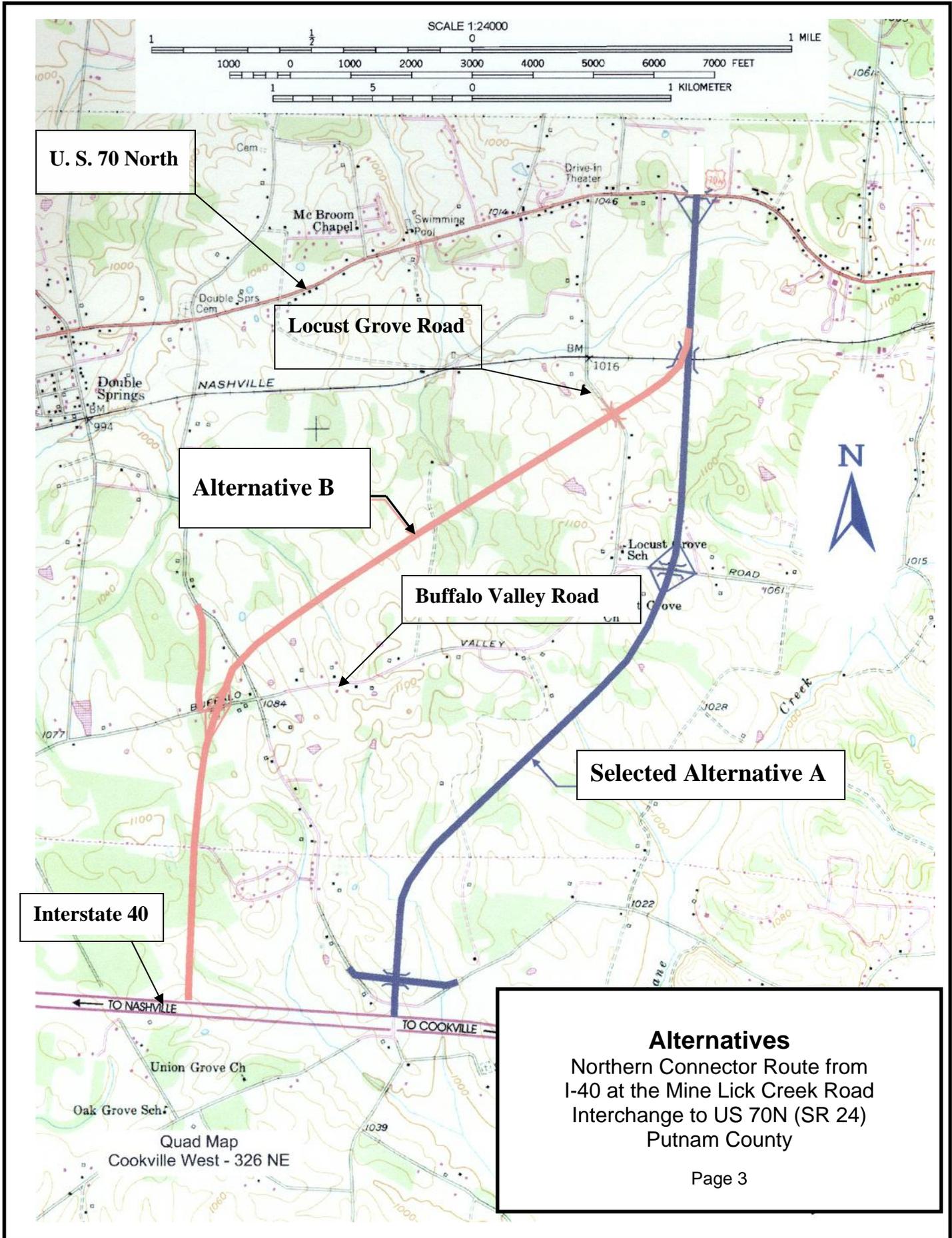
Fewer relocations – Alternative A will relocate 7 homes and 1 business. Alternative B would have relocated 14 homes and 2 businesses. The Conceptual Stage Relocation Plan was updated May 2007 to consider impacts to new homes that have been constructed

since the initial study was completed. This update revealed current numbers which are updated from the approved Environmental Assessment.

No Impacts to wetlands – Alternative B would have impacted 2.72 acres of two wetlands. Alternative A will not impact wetlands.

Public Hearing responses – 101 citizens supported Alternative A, 3 supported Alternative B, 32 supported the Mine Lick Interchange only, and 1 supported a partial interchange only. 104 citizens responded that they preferred the No-Build Alternative.

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Summary of Environmental Impacts

The primary beneficial effects of the proposed project include:

- 1) Improvement of regional and local accessibility;
- 2) Improvement of traffic capacity along SR 56, SR 135 and SR 136;
- 3) Positive short-term and long-term economic benefits resulting from the existing and potential business development in the area surrounding the I-40/Northern Connector interchange.

The primary adverse effects of the proposed project include:

- 1) The displacement of residences and businesses;
- 2) Temporary sedimentation and siltation of project area streams;
- 3) loss of prime and unique farmland.

SAFETEA - LU Statute of Limitations on Filing Claims

A Federal Agency may publish a notice in the Federal Register, pursuant to 23 USC §139(1), indicating that one or more Federal agencies have taken final action 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 180 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.

Mobile Source Air Toxics (MSATs)

A review of potential mobile source air toxics (MSAT) impact from this project indicate that under the build alternative in the design year (2030), it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the no build alternative, due to the reduced VMT associated with more direct routing, and due to EPA's MSAT reduction programs. In comparing various project alternatives, MSAT levels could be higher in some locations than others, but current tools and science are not adequate to quantify them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today. See the MSAT discussion in Appendix A for more details.

Environmental Mitigation Commitments

Following are measures that TDOT proposes to utilize to avoid, minimize and/or mitigate impacts to the human and natural environment associated with the construction and implementation of the proposed project:

- **Threatened and Endangered Species** - In the absence of surveys for endangered bats, presence of the Indiana and Gray bats is presumed. A Biological Assessment was conducted and submitted in September 2004. Following are the environmental mitigation measures:
 - ☑ Tree removal in construction zones must be scheduled between October 15 and March 31 to prevent disturbance to trees that may harbor the Indiana bat summer colonies.
 - ☑ Tree cutting will be limited to areas where construction must occur within 100 feet of stream banks within right of way limits. This will maintain a riparian buffer zone.
 - ☑ Disturbed areas will be re-vegetated to the maximum possible extent with tree species that produce sloughing bark and snags. Species to consider include white oak, northern red oak, white ash, shagbark hickory, slippery elm, black locust, American elm, shellbark hickory, cottonwood and sycamore. This mitigation measure is especially important in areas where project construction activities cause disturbances to riparian vegetation.
 - ☑ Indiana bats forage (hunt) over local waters necessitating preservation of water quality in forage areas. Therefore stream crossings will be limited to direct crossings.
 - ☑ Location of construction equipment in streams will be avoided to the greatest extent possible. Staging, refueling, and cleanup areas will not be allowed alongside streams. All TDOT Best Management Practices for stream protection will be implemented during the construction of the project.
 - ☑ Project construction is not anticipated to contribute to degradation of water quality in area streams.
 - ☑ Avoidance of construction activities within recognized bat habitat areas will occur during periods of known bat activities if bats are identified.
- **Archaeological Resources** - If archeological material is uncovered during construction, all construction will cease in that area and the Tennessee Division of Archaeology and the recognized Native American Tribes will be contacted, so a representative can have the opportunity to examine and evaluate the material.
- **Hazardous Materials and Underground Storage Tanks** - Selected Alternative A will impact one property that contains over 55 drums. A full Phase II site assessment is recommended. If at any time during the construction of this project hazardous materials are detected, all work shall cease until an Environmental Site Assessment is conducted and appropriate mitigation measures can be implemented.
- **Permits** – Selected Alternative A would impact a number of project area streams. If the streams are impacted from filling or excavation activities, a Section 404 Dredge

and Fill Permit will be required from the U.S. Army Corps of Engineers during the final design phase.

- **Construction** - A maintenance-of-traffic plan will be prepared during the design phase. Erosion and sedimentation controls will be used to minimize negative impacts to water quality, wetlands and area streams. Erosion control plans will be developed during the final design phase, best management practices will be implemented during design and construction. Standard noise reducing measures will be implemented during the construction phase. TDOT or its contractors will control fugitive dust. Re-vegetation with native species will be implemented.

Public Hearing Summary

A Public Hearing was held for the project from 6 pm to 8 pm on March 6, 2007, at the cafeteria at the Avery Trace School, 230 Raider Drive, Cookeville, Tennessee. The purpose of the meeting was to address the proposed Mine Lick Creek Road interchange at Interstate 40 and the proposed Northern Connector Road from the Mine Lick Creek Road Interchange to US 70 North (State Route 24) west of Cookeville. TDOT prepared a handout of materials that contained a description of the project purpose and need, a description of related design features, a summary of pertinent information about the subject project, explanations of the relocation assistance procedures, and the potential project benefits and adverse effects. The public was encouraged to provide comments about the proposed project regarding any preferred alternative, issues and concerns, and changes they would like to see considered. A court reporter was present, and a comment card depository was available.

A total of 316 citizens signed the Attendees Sheets and 18 TDOT officials, staff and consultants were in attendance. Oral statements were made by 23 people and 282 written statements were received for a total of 305 statements. Following is a chart comparing the preferences.

Total Comments

Project Preferences	Total Comments
Preferred the No-Build Alternative	140
General Support for Project	28
Support for Alternative A	101
Support for Alternative B	3
Support for Mine Lick Creek Interchange Only	32
Support for Partial Mine Lick Creek Interchange	1
Total Comments	305

The total showed 140 citizens preferred the No-Build Alternative, while 101 preferred Alternative A. A total of 28 people stated general support for the project with no clear preference of an alternative. Three citizens preferred Alternative B. A total of 33 supported the Mine Lick Creek interchange only with only one of those 33 requesting a partial interchange.

Additional details are provided within the individual technical studies that are on file with the Environmental Division of the Tennessee Department of Transportation, Nashville, Tennessee.

Public Hearing comments received include:

Comment: A total of 29 comments were received concerning the loss of the rural setting and farmland within the area.

Response: Location of a new roadway will result in the loss of farmland and loss of wildlife habitat and changes of a rural setting. These are unavoidable impacts with construction activities associated with a roadway on new location.

Comment: Six were received concerning impacts to water quality in the project area. Two were related to wetlands, one comment was about floodplains and 3 pertained to relation to area streams.

Response: TDOT selected Alternative A which avoids impacts to wetlands. TDOT will coordinate with the Tennessee Department of Environment and Conservation (TDEC) and the U.S. Army Corps of Engineers to further define mitigation plans. In addition, TDOT will design the project to allow streams to flow without causing any additional flooding.

Comment: A total of 18 comments were received stating that the Connector Route does not “make sense” as a route between Interstate 40 and US 70 North.

Response: Reviews of existing and future land use plans from the City of Cookeville Planning Office indicate that local commercial growth is planned to occur along US 70 North and the corridor at Interstate 40 on both sides of the project corridor. Figure 2B in the Environmental Assessment illustrates the anticipated developments.

Comment: The Northern Connector is ultimately a segment of a proposed loop road around Cookeville.

Response: The Corridor J alignment has been changed from its original concept. It originally was located west of Cookeville and would have connected the Mine Lick interchange at I-40, continuing to SR 111 in Algood. This would have formed a northern bypass of Cookeville. In 2005, Corridor J was relocated to Clay and Overton Counties. This alignment shift avoids forming a loop with the Northern Connector/Mine Lick interchange project. No plans exist to extend the Northern Connector beyond US 70 North.

Comment: Eight comments were received that the TDOT Needs Assessment study does not justify the Northern Connector/Mine Lick interchange project.

Response: The referred to Needs Assessment study was for a proposal to connect US 70 west of Cookeville to SR 111. That assessment did conclude that traffic volumes did not justify that project. This needs assessment was not the subject of this Environmental Assessment. It was a different project.

Comment: Three comments were made concerning fair market values for affected residences required for relocation. Concerns were made that the project would lessen the values of homes close by that are not relocated.

Response: TDOT will carry out a right of way and relocation process in accordance with federal and state laws. The effects of the project on property values are dependent upon future land uses

and rates of land use changes. It is outside the scope of this environmental document to predict the effects of the project on the values of adjacent parcels.

Comment: Two people expressed concerns about existing and future noise and air quality impacts associated with the project.

Response: TDOT conducted technical studies for traffic noise and air quality in the project area. Although traffic noise and air emissions in the project corridor will increase in the areas adjacent to the new roadway, the increases were not in excess of state noise policies that would require mitigation measures. The construction of the project would also not violate air quality standards.

Comment: Two comments were received concerning traffic impacts to US 70N by constructing a new four-lane connector road from I-40 to a two-lane highway.

Response: Appropriate improvements to the US 70N intersection will be provided to ensure that a safe connection is made to this intersection. Future widening of US 70N would have to be considered as a future project.

Comment: A request was received to change from an Environmental Assessment to an Environmental Impact Statement.

Response: In accordance with 23 CFR 771.119, it was determined that an Environmental Assessment was the appropriate level of documentation for this proposed project. The Environmental Assessment documentation supports this Finding of No Significant Impact as per 23 CFR 771.121.

Comment: Two citizens expressed concern that the project will increase impacts associated with automotive exhaust which contributes to global warming. A report was submitted with statistics and data concerning global warming.

Response: Global warming is a growing concern, and TDOT is abiding by all federal, state and local laws that address air pollutants to ensure that these substances remain below mandated criteria levels. A technical study was prepared to analyze impacts associated with automobile emissions. The Northern Connector/Mine Lick project was found to be in compliance with air quality standards.

Comment: A total of 32 comments were received requesting that TDOT use funds to upgrade problems along existing roadways and/or relocate the interchange instead of constructing a new roadway.

Response: The location of the interchange was evaluated during the interchange justification study. Other alternatives were considered and the location of this interchange was selected after analysis of Alternatives A and B. Many of the existing roads in the area would be likely to have similar environmental impact including relocations, streams and wetlands and floodplains. These impacts would be associated with widening and straightening existing lanes and shoulders, etc. Other road improvement projects should be addressed through the Rural Planning Organization's needs assessment process.

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Comment: The Cookeville Regional Planning Commission supports Alternative A as the location for an interchange, but does not believe a Northern Connector route should be completed at this time but possibly at a later date.

Response: The construction of the project may be implemented in phases.

Comment: One person inquired if TDOT could improve traffic flow while keeping the environment as safe as possible.

Response: TDOT is committed to both improving traffic flow and protecting the environment.

Comment: One person asked if restrictions will be placed on hazardous materials in residential areas.

Response: Vehicles transporting hazardous materials must comply with the Federal hazardous materials transportation law (49 U.S.C. §5101) which regulates hazardous materials transportation in the United States.

Comment: A total of six comments were received that expressed concern that the new connector might not meet expectations for economic development.

Response: The environmental document does not claim that the Northern Connector/Mine Lick interchange project will initiate or be a major means in increasing the pace of economic development in this area. The document does state that the project is in support of, and complementary to, local efforts to bring development activities to this area of Putnam County. The connector would be provided as one component of an infrastructure to support efforts to increase economic activities west of Cookeville.

Appendix A

Mobile Source Air Toxics

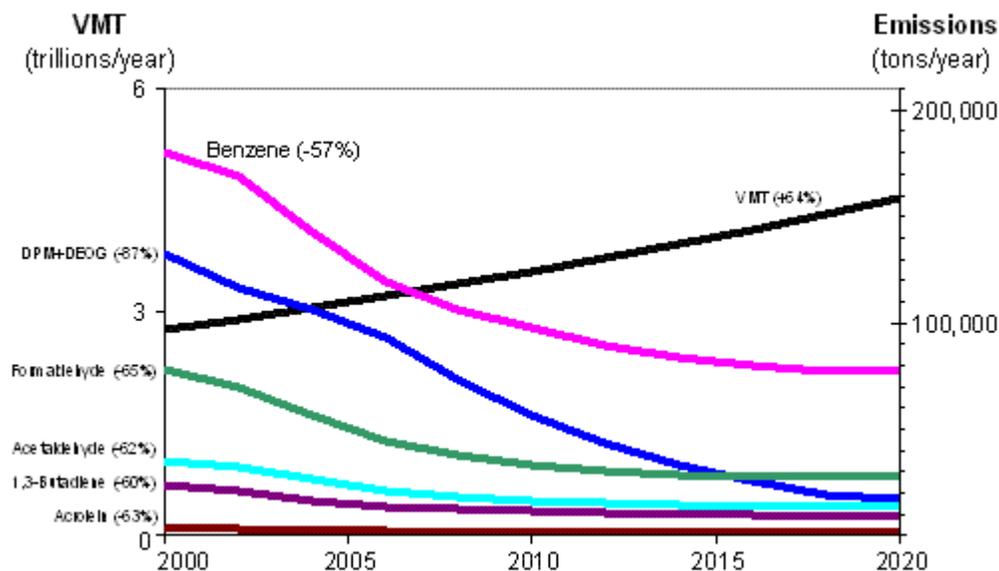
Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards (NAAQS), EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources. 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent, as shown in the following graph:

U.S. Annual Vehicle Miles Traveled (VMT) vs. Mobile Source Air Toxics Emissions, 2000-2020



Notes: For on-road mobile sources. Emissions factors were generated using MOBILE6.2. MTBE proportion of market for oxygenates is held constant, at 50%. Gasoline RVP and oxygenate content are held constant. VMT: Highway Statistics 2000, Table VM-2 for 2000, analysis assumes annual growth rate of 2.5%. "DPM + DEOG" is based on MOBILE6.2-generated factors for elemental carbon, organic carbon and SO₄ from diesel-powered vehicles, with the particle size cutoff set at 10.0 microns.

As a result, EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(l) that will address these issues and could make adjustments to the full 21 and the primary six MSATs.

Unavailable Information for Project Specific MSAT Impact Analysis

This FONSI includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this FONSI. Due to these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information:

Information that is Unavailable or Incomplete. Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps

is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

- **Emissions:** The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model--emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Also, the emissions rates used in MOBILE 6.2 for both particulate matter and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, EPA has identified problems with MOBILE6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

- **Dispersion.** The tools to predict how MSATs disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The NCHRP is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.
- **Exposure Levels and Health Effects.** Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly

because unsupported assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs. Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at <http://www.epa.gov/iris>. The following toxicity information for the six prioritized MSATs was taken from the IRIS database *Weight of Evidence Characterization* summaries. This information is taken verbatim from EPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** (DE) is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.
- **Diesel exhaust** also represents chronic respiratory effects, possibly the primary non-cancer hazard from MSATs. Prolonged exposures may impair pulmonary

function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes -- particularly respiratory problems¹. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of Impacts based upon theoretical approaches or research methods generally accepted in the scientific community. Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

In this document, FHWA has provided a quantitative analysis of MSAT emissions relative to the various alternatives, (or a qualitative assessment, as applicable) and has acknowledged that (some, all, or identify by alternative) the project alternatives may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

The purpose of this project is to improve safety by providing a new alignment which is expected to more effectively distribute traffic volumes within the project area in a more effective manner. The only alternatives are a build scenario and a no-build scenario. The project area included traffic estimated for I-40, US 70N, and SRs 156, 135, and 136. The Connector Road is located between SR 156 and 135, and also I-40 and US 70N.

The project-wide annual average daily traffic (ADT) in the design year (2030) is expected to be 190,350, and 204,900 in the no-build scenario. If the Selected Alternative A is constructed a decrease in project area traffic would decrease from 301,800 to 282,100 for the project area. The project is a new facility and obviously no traffic would be located in the area if the no-build alternative was selected. However the difference in

traffic between the build year and design year would increase from 3,800 to 4,500, and total ADT. The build scenario on the proposed new alignment will be 2.9 miles in length.

The amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative.

The VMT estimated for the no-build alternative is higher than for the build alternative, higher levels of regional MSATs are not expected from the build alternatives compared to the No Build. See Table B-2, below.

Table B-1: Estimated ADT for the No-Build Verses Build Alternatives on Mine Lick Connector and Connecting Roadways.

Roadway Section	2010 No-Build ADT	2010 Build ADT	2030 No-Build ADT	2030 Build ADT
SR-56 from I-40 to US-70	6,300 – 6,950	4,800 – 5,000	9,300 – 10,500	7,000 – 7,700
SR-135 from I-40 to US-70	26,600 – 27,500	24,400 – 24,750	37,700 – 41,200	33,500 – 38,700
SR-136 from I-40 to US-70	26,900 – 30,200	27,000 – 30,200	35,000 – 35,300	34,700 – 35,400
Northern Connector*	NA*	3,800	NA*	4,500
I-40 from SR-56 to SR-135	49,350	49,500	79,000	79,300
I-40 from SR-135 to SR-136	54,000	50,100	86,500	80,400
US-70 between SR-56 & SR-135	6,100 – 16,000	4,600 – 6,800	8300 – 21,000	5,800 – 10,500
US-70 between SR-135 & SR-136	19,800 – 20,900	17,800 – 20,200	25,600 – 28,300	20,900 – 25,600
Total ADTs	189,050 – 204,900	182,000 – 190,350	281,400 – 301,800	266,100 – 282,100

Table B-2: Estimated ADT VMT for the No-Build Verses Build Alternatives on Mine Lick Connector and Connecting Roadways.

Roadway Section and Length	2010 No-Build VMT	2010 Build VMT	2030 No-Build VMT	2030 Build VMT
SR-56 from I-40 to US-70/ 1.8 miles	11,340 – 12,510	8,640 – 9,000	16,740 – 18,900	12,600 – 13,860
SR-135 from I-40 to US-70/2.3 miles	61,180 – 63,250	56,120 – 56,925	86,710 – 94,760	77,050 – 89,010
SR-136 from I-40 to US-70/2.4 miles	64,560 – 72,480	64,800 – 72,488	84,000 – 84,720	83,280 – 84,960
Northern Connector/2.9 miles	NA	11,020	NA	13,050
I-40 from SR-56 to SR-135/4.4 miles	217,140	217,800	347,600	348,920
I-40 from SR-135 to SR-136/1.3 miles	70,200	64,350	112,450	104,520
US-70 between SR-56 & SR-135/5.2 miles	31,720 – 83,200	23,920 – 35,360	43,160 – 109,200	30,160 – 54,600
US-70 between SR 135 and SR 136/0.6 miles	11,880	10,680 – 12,120	15,360	12,540 – 15,360
Total Miles Traveled	468,020 – 530,660	457,330 – 479,063	706,020	682,120 – 724,280

The project area includes three south-north existing facilities, SR 156, 135 and 136, and two west-east facilities, I-40 and US 70N. Traffic figures for each of these facilities have been considered as part of the project area, and the estimated for average daily traffic and vehicle miles traveled have been included in tables B-1 and B-2. Several categories include two figures. These figures indicated the numbers on the southern and northern sections of roadways due to on-off traffic patterns to feeder roads. The higher numbers of traffic within these sections were used in the final totals.

The Build year (2010) for the new facility indicates that the ADT will be 190,350 and the VMT will be 479,036 miles. From data in tables B-1 and B-2, it is shown that the design year and build year ADT (282,100) and VMT (724,280) for the transportation system does not measurably increase. The construction of the proposed facility will result in a redistribution of traffic patterns between I-40 and US 70N. This will provide access to development areas within project area. The project contribution to the area ADT will be 3,800 in the Build Year and 4,500 in the Design Year, and estimated increase of 700 vehicles. This should not add to the present levels of over all MSAT emissions if the project is built. Also, regardless of the alternative chosen, emissions will 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 2000 to 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.

Because of the specific characteristics of the project alternative [i.e. new connector roadway], there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore it is possible that localized increases and decreases in MSAT emissions may occur. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations.

In conclusion, under the build alternative in the design year (2030), it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the no build alternative, due to the reduced VMT associated with more direct routing, and due to EPA's MSAT reduction programs. In comparing various project alternatives, MSAT levels could be higher in some locations than others, but current tools and science are not adequate to quantify them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

**Mine Lick Creek Interchange at Interstate 40 and
Northern Connector Route
from I-40 to US 70N (SR 24)
Putnam County, Tennessee**

Environmental Assessment

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

By the

U.S. Department of Transportation

Federal Highway Administration

And the

Tennessee Department of Transportation



Cooperating Agencies:

U. S. Army Corps of Engineers

Tennessee Valley Authority

ENVIRONMENTAL ASSESSMENT

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12-14-06
Date Approved

Leigh Ann Tribble
(for) FHWA Division Administrator

The following persons may be contacted for additional information concerning this document:

Ms. Leigh Ann Tribble
Environmental Program Engineer
Federal Highway Administration
640 Grassmere Park
Suite 112
Nashville, TN 37211
Phone: (615) 781-5760

Mr. Charles Bush
Transportation Manager II
Tennessee Department of Transportation
Environmental Division
Suite 900, James K. Polk Bldg.
505 Deaderick Street
Nashville, TN 37245-0334
Phone: (615) 741-3653

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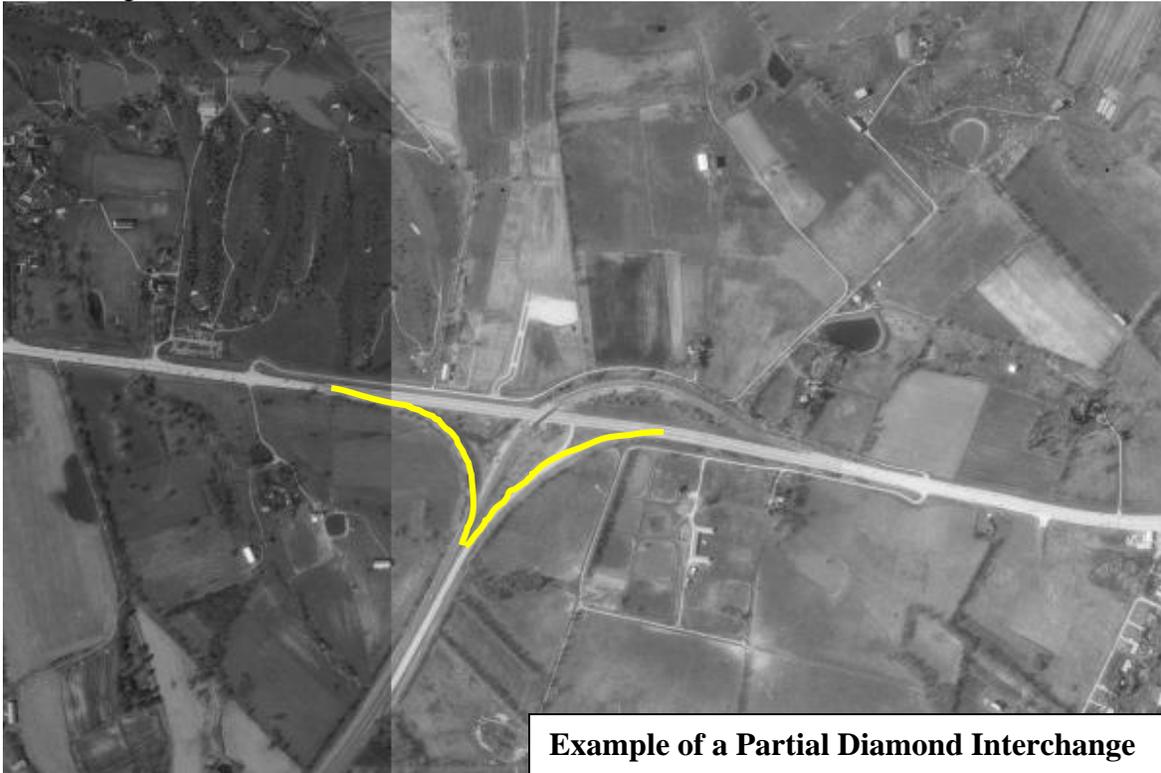
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- Appendix I Correspondence and Coordination
- Appendix II Cultural Resources Appendix
- Appendix III Biological Assessment Appendix

Summary

General Project Description

The Tennessee Department of Transportation and the Federal Highway Administration propose a new highway facility connecting Interstate 40 and US 70 North (US 70N), which is State Route (SR) 24 in Putnam County, just west of the Cookeville City Limits. Please refer to Chapter 1, Figure 1, for a project vicinity map. The proposed route would begin with a Mine Lick Creek Road Interchange on I-40 and extend north and east, connecting with US 70N (SR 24) approximately 0.89 miles west of the Cookeville City Limits. The proposed facility would consist of a four lane divided highway with a modified-diamond interchange with Interstate 40 (I-40), and a partial diamond interchange with US 70N.

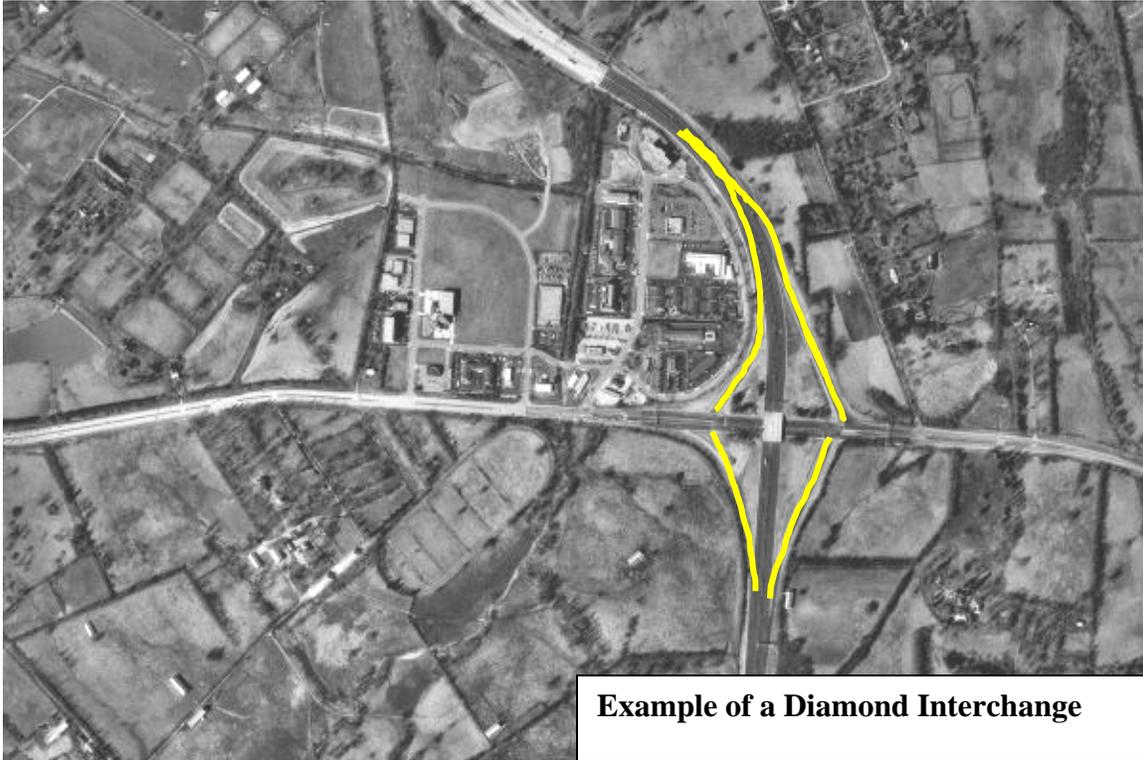


Example of a Partial Diamond Interchange

Summary of Alternatives

The alternatives under consideration in the Environmental Assessment include the “No-Build” Alternative and two “Build” Alternatives, designated as Alternative A and Alternative B. Alternative A would begin at a proposed interchange with I-40, approximately 2.82 miles west of the existing I-40/SR 135 interchange. The proposed alternative extends northeasterly on a new location for approximately 1.63 miles to a typical diamond interchange at Buffalo Valley Road. From this point the alternative continues in a more northerly direction for approximately 1.2 miles before tying into US 70N. Alternative B would also begin with an I-40 interchange, located approximately 0.71 miles west of the existing Mine Lick Creek Road Bridge over I-40.

The proposed alternative would extend northward for approximately 0.80 miles to a typical diamond interchange at Buffalo Valley Road. From this point the proposed alternative would continue in a northeasterly direction for approximately 2.19 miles, before turning northward. At this point, Alternatives A and B share the same alignment, extending northward for approximately 0.48 miles to the project terminus with US 70. The total length of Alternative A is 2.87 miles. The total length of Alternative B is 3.47 miles.



Example of a Diamond Interchange

Summary of Environmental Impacts

The primary beneficial effects of the proposed project include: 1;) Improvement of regional and local accessibility, 2;) Improvement of traffic capacity along SR 56, SR 135 and SR 136, 3;) Positive short-term and long-term economic benefits resulting from the existing and potential business development in the area surrounding the I-40/Northern Connector interchange. The primary adverse effects of the proposed project include: 1) The displacement of residences and businesses, 2) Temporary sedimentation and siltation of project area streams, and 3) loss of wetland habitat.

SAFETEA - LU Statue of Limitations Call

A Federal Agency may publish a notice in the Federal Register, pursuant to 23 USC §139(1), indicating that one or more Federal agencies have taken final action 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 180 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.

Environmental Mitigation Commitments

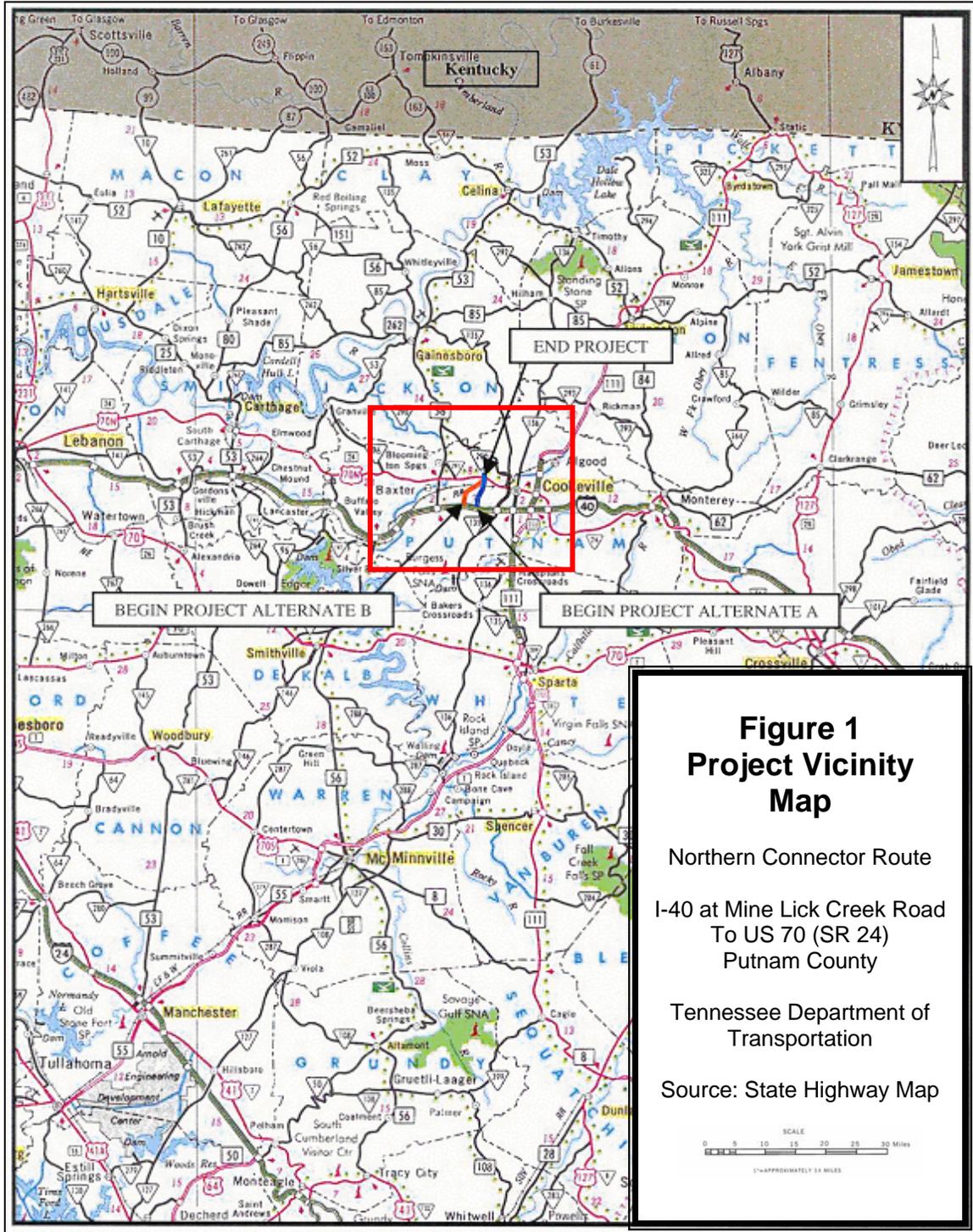
Following are measures that TDOT proposes to utilize to avoid, minimize and/or mitigate impacts to the human and natural environment associated with the construction and implementation of the proposed project:

- **Noise** – Standard noise controls will be implemented during the construction of the project.
- **Wetlands** – Impacts to two wetlands will occur if Alternative B is selected. When possible, wetland replacement should be onsite and in kind with restoration of existing degraded wetlands taking preference over the creation of wetlands. If onsite compensatory mitigation is not practicable, another site will be chosen in as close proximity within the same watershed as possible. There is no wetlands bank in Putnam County, but other impacts in Putnam County have been mitigated using the Coffee County wetland mitigation bank. In order to ensure that thorough restoration occurs, the restored wetlands will be monitored for a number of years as designated through the coordinative efforts with the resource agencies.
- **Relocations** – Relocation needs will be adequately addressed under the standard provisions of the Tennessee Uniform Relocation Assistance of 1972 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources will be available to all residential and business displacees, should such occur, without discrimination, in accordance with the Civil Rights Act of 1964, Title VI.
- **Permits** – A Section 401 permit will be obtained from the Tennessee Department of Environment and Conservation during the design phase. The build alternatives that would impact streams and wetlands which are under U.S Army Corps of Engineers jurisdiction. Such activities are subject to USACE permitting authority under Section 404 of the Clean Water Act. An Aquatic Resource Alteration Permit will be required from the Tennessee Department of Environment and Conservation.
- **Terrestrial Ecosystems** – Inspection and cleaning of construction equipment, use of invasive-free mulches, topsoil and seed mixtures, and eradication strategies to eliminate exotic invasive species will be used to prevent the spread of invasive plant species during construction. Proper selection of construction and landscaping techniques and equipment will decrease the likelihood of spreading invasive species. Methods should include appropriate equipment for steep slopes to minimize soil disturbance during vegetation management activities. In addition, re-vegetation shall occur with the use of native plant species that are consistent with local community plant types.
- **Threatened and Endangered Species** - In the absence of surveys for endangered bats, presence of the Indiana and Gray bats is presumed. A Biological Assessment was conducted and submitted in September 2004. Following are the environmental mitigation measures:

- Tree removal in construction zones must be scheduled between October 15 and March 31 to prevent disturbance to trees that may harbor the Indiana bat summer colonies.
- Tree cutting will be limited to areas where construction must occur within 100 feet of stream banks within right of way limits. This will maintain a riparian buffer zone.
- Disturbed areas will be re-vegetated to the maximum possible extent with tree species that produce sloughing bark and snags. Species to consider include white oak, northern red oak, white ash, shagbark hickory, slippery elm, black locust, American elm, shellbark hickory, cottonwood and sycamore. This mitigation measure is especially important in areas where project construction activities cause disturbances to riparian vegetation.
- Indiana bats forage (hunt) over local waters necessitating preservation of water quality in forage areas. Therefore stream crossings will be limited to direct crossings.
- Location of construction equipment in streams will be avoided to the greatest extent possible. Staging, refueling, and cleanup areas will not be allowed alongside streams. All TDOT Best Management Practices for stream protection will be implemented during the construction of the project.
- Project construction is not anticipated to contribute to degradation of water quality in area streams.
- Avoidance of construction activities within recognized bat habitat areas will occur during periods of known bat activities if bats are identified.
- **Archaeological Resources** - No archaeological sites were discovered during the Phase I survey, which was performed in accordance with criteria established in 36 CFR 60.4.
- **Hazardous Materials and Underground Storage Tanks** - Both Alternatives A and B would impact one property that contains over 55 drums. A full Phase II site assessment is recommended.
- **Construction** - A maintenance-of-traffic plan will be prepared during the design phase. Erosion and sedimentation controls will be used to minimize negative impacts to water quality, wetlands and area streams. Erosion control plans will be developed during the final design phase, best management practices will be implemented during design and construction. Standard noise reducing measures will be implemented during the construction phase. TDOT or its contractors will control fugitive dust. Re-vegetation with native species will be implemented

Chapter I – Purpose and Need

The Tennessee Department of Transportation has proposed a new highway facility connecting Interstate 40 and US 70N (SR 24) in Putnam County, just west of the Cookeville City Limits. Please refer to Figure 1 for a project vicinity map.



The proposed route would begin with a Mine Lick Creek Road Interchange on I-40 and extend north and east, connecting with US 70N (SR 24) approximately 0.89 miles west of the Cookeville City Limits.

Termini are the beginning and ending points for a project. The purpose of this project is to provide an additional north/south route for continually increasing volumes of traffic around Cookeville. In addition, traffic moving between I-40 and US 70N (SR 24) would be provided with a new, efficient route that would improve access to developable areas of Putnam County. Vehicular traffic moving between I-40 and US 70N is currently served mainly by SR-135, SR-136 and SR-56. Please refer to Figure 2 Project Area Detail Map. Ongoing development activities are occurring along I-40 and US 70N. The new north/south connector will provide a roadway to facilitate sustained growth activities in the western area of Cookeville between the downtown commercial business district and State Route 56. An Interchange Justification Study was conducted and approved by the Federal Highway Administration (FHWA) on October 25, 2000.



Figure 2 Project Area Detail Map

Traffic Analysis

SR-135 (South Willow Avenue) is a five-lane, undivided highway fronted on both sides by commercial development. Traffic projections for 2010 indicate that SR-135, between I-40 and US 70N, will carry between 26,600 and 27,500 vehicles per day (vpd). Traffic projections for Design Year 2030 estimate the volumes to increase to between 37,700 and 41,200 vpd for this same area.

SR-136 (South Jefferson Avenue) is a five-lane undivided highway fronted on both sides by commercial development, much like SR-135. Traffic projections for 2010 indicate that SR-136 will carry between 26,900 and 32,000 vpd between I-40 and US 70N. Design Year 2030 traffic projections indicate that vpd within this area will increase to 27,000 and 35,000 vpd.

SR-56 is a two-lane facility connecting I-40 and US 70N approximately 7 miles west of the US 70N/SR 135 intersections. Traffic projections for 2010 indicate SR 56 will carry between 6,300 vpd and 6,950 vpd between I-40 and US 70N. Design Year 2030 traffic projections indicate that volume will increase to between 9,300 and 10,500 vpd in this area.

Table 1 summarizes traffic survey information for segments of State Route (SR) 56, SR 135 and SR 136. Results based on average daily traffic (ADT) counts indicate that substantial amounts of traffic utilize State Routes 135 and 136. These traffic figures do not include estimated traffic from Corridor J. Please refer to pages 10 and 11 for an explanation and exhibit explaining why Corridor J statistics are no longer included in the traffic figures. Large traffic volumes causing congestion have been recorded at the intersections of these two roadways with Interstate 40. Table 1 summarizes and compares estimated figures for 2010 and 2030, the Design Year for the No Build Alternative and for the Build Alternatives. In addition, percentages of truck traffic are included for the No-Build and Build Alternatives.

Table 1: Average Daily Traffic Counts

Road Segments North of Interstate 40	Average Daily Traffic for No Build Alternative in vehicles per day (year of traffic survey) and % of truck traffic	Average Daily Traffic for Build Alternatives A & B in vehicles per day (year of traffic survey) and % of truck traffic
State Route 56	5,300 (2010) 5% 7,500 (2030)	4,600 (2010) 5% 7,300 (2030)
State Route 135	17,700 (2010) 10% 26,300 (2030)	15,000 (2010) 10% 21,700 (2030)
State Route 136	14,700 (2010) 2% 20,200 (2030)	14,300 (2010) 2% 19,600 (2030)
Road Segments South of Interstate 40	Average Daily Traffic No Build Alt. vehicles per day (year of traffic survey) and % of truck traffic	Average Daily Traffic Build Alt. vehicles per day (year of traffic survey) and % of truck traffic
State Route 56	3,300 (2010) 5% 4,900 (2030)	2,500 (2010) 5% 3,800 (2030)
State Route 135	20,250 (2010) 10% 30,900 (2030)	18,650 (2010) 10% 28,500 (2030)
State Route 136	23,800 (2010) 2% 25,200 (2030)	23,800 (2010) 2% 25,200 (2030)

A Level of Service (LOS) capacity analysis was conducted for the above referenced system of existing roadways. Level of Service refers to a method of analysis, which quantifies, or rates, congestion along a roadway. Factors considered in such an analysis include traffic, number of lanes, passing and turning sight distances, and terrain. LOS ratings range from A (best) to F (worst). The levels are as described below:

- A – Describes free flow conditions. Vehicles are unimpeded in their ability to maneuver within the traffic stream.
- B – Represents reasonably free flow. The ability to maneuver in the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is high.
- C – Provides for flow at or near the posted speed limits. Maneuverability within the traffic stream is noticeably restricted, and changing lanes requires more attention on the part of the driver. Traffic will begin to backup and form queues (lines) behind any blockage, such as a disabled vehicle.
- D – Level at which speeds begin to decline slightly with increasing flows and density begins to increase more quickly. Maneuverability is noticeably limited, and drivers experience reduced physical and psychological comfort levels. Minor incidents are expected create queues, due to the limited space to absorb disruptions within the traffic stream.
- E – Describes operation at capacity. Vehicles are closely spaced, leaving little or no room to maneuver within the traffic stream at speeds that exceed 49 miles per hour.
- F – Represents breakdowns in vehicular flow. These conditions generally occur within queues forming behind the breakdown points. These breakdowns in flow occur for a number of reasons, including collisions where more traffic is arriving at the breakdown point than the number of vehicles that can move through it. Points of recurring congestion, such as merge or weaving segments, can also contribute to these conditions where the number vehicles arriving at the point is greater than the number of vehicles discharged.

Table 2 contains a summary of the existing system traffic data and LOS analysis of those roadways. These conditions would exist if the No-Build Alternative is selected.

Table 2 – Level of Service (LOS) Summary – Existing System Traffic Data

Roadway Section	2010 ADT	2010 LOS	2030 ADT	2030 LOS
I-40 west of SR-56	48,600	C	77,800	E
I-40 from SR-56 to SR-135	49,350	C	79,000	E
I-40 from SR-135 to SR-136	54,000	C	86,500	E
I-40 east of SR-136	54,800	C	87,000	E
US-70 west of SR-56	4,600	A	5,700	A
US-70 between SR-56 & SR-135	6,100-16,000	A - C	8,300-21,000	A - D
US-70 between SR-135 & SR-136	19,800-20,900	D	25,600-28,300	E
US-70 east of SR-136	24,300	E	28,200	E
SR-56 south of I-40	3,300	A	4,900	A
SR-56 between I-40 & US-70	6,300-6,950	A	9,300-10,500	B
SR-56 north of US-70	5,300	A	7,500	A
SR-135 south of I-40	20,250	D	30,900	F
SR-135 between I-40 & US-70	26,600-27,500	B	37,700-41,200	D
SR-135 north of US-70	17,700	C	26,300	D
SR-136 south of I-40	23,800	D	25,200	D
SR-136 between I-40 and US-70	26,900-30,200	E	35,000-35,300	E
SR-136 north of US-70	14,700	B	20,200	C

The addition of the proposed route would reduce traffic volumes on existing roadways within the project area. A similar LOS analysis was conducted for the project area traffic system with the addition of the proposed Northern Connector. The results of that analysis are summarized in Table 3 LOS Summary - Proposed System Traffic Data.

As shown above, the proposed project would remove a portion of the traffic currently utilizing the existing system of local roadways. This reduction in the volume of traffic on the existing roadways would have a corresponding reducing effect on the likelihood of crashes occurring. As through traffic begins to utilize the proposed route, the interactions of vehicles on the existing system of roadways would be reduced. Consequently, travel times on these existing roadways would improve.

Table 3 – Level of Service (LOS) Summary – Proposed System Traffic Data*

Roadway Section	2010 ADT	2010 LOS	2030 ADT	2030 LOS
I-40 west of SR-56	48,600	C	77,800	E
I-40 between SR-56 & Connector Rd	49,500	C	79,300	E
I-40 between Connector Rd & SR-135	50,100	C	80,400	E
I-40 from SR-135 to SR-136	54,200	C	87,000	E
I-40 east of SR-136	54,800	A	87,700	E
US-70 west of SR-56	4,600	C	5,700	A
US-70 from SR-56 to Connector Rd	4,800-6,800	C	5,800-10,500	A
US-70 from Connector Rd to SR-135	9,700-16,400	A	15,100-19,500	B - D
US-70 from SR-135 to SR-136	17,800-20,200	C	20,900-25,600	C - D
US-70 east of SR-136	24,300	E	28,200	E
SR-56 south of I-40	2,500	A	3,800	A
SR-56 from I-40 to US-70	4,800-5,000	A	7,000-7,700	A
SR-56 north of US-70	4,600	A	7,300	A
Connector Rd south of I-40	2,400	A	3,500	A
Connector Rd from I-40 to US-70	3,800-4,500	A	5,600-6,400	A
Connector Rd north of US-70	3,800	A	5,400	A
SR-135 south of I-40	18,650	C	28,500	E
SR-135 from I-40 to US-70	24,400-24,750	D	33,500-38,700	E
SR-135 north of US-70	15,000	B	21,700	C
SR-136 south of I-40	23,800	D	25,200	D
SR-136 from I-40 to US-70	27,000-30,200	E	34,700-35,400	E
SR-136 north of US-70	14,300	B	19,600	C

*Corridor J, a project under consideration within Putnam County, was included in the original traffic studies for the Mine Lick Connector. Corridor J would have connected to the Mine Lick project, and continued to Algood at SR 111 to the north which would have formed a northern bypass of Cookeville (See dotted line on Exhibit 2A, page 11).

In late 2005, with concurrence by FHWA and Appalachian Regional Commission (ARC), Corridor J was relocated to Clay and Overton Counties. The new designation will follow State Route 111 from Algood to State Route 52 in Livingston. That section is currently a four-lane facility and needs no improvement. From that point Corridor J will follow State Route 52 from Livingston to State Route 53 in Celina. This route fulfills the mission of the ARC, TDOT's goal of connecting the county seat of Celina to Interstate

40. Figure 2A, below, illustrates the revised and current alignment in yellow. The original corridor is illustrated in purple, and the general area of the Mine Lick Connector project is shaded in light green. Note that the area from Cookeville southward and the area from Celina to the Kentucky State line are still illustrated in purple as these areas are part of the original alignment that did not change.

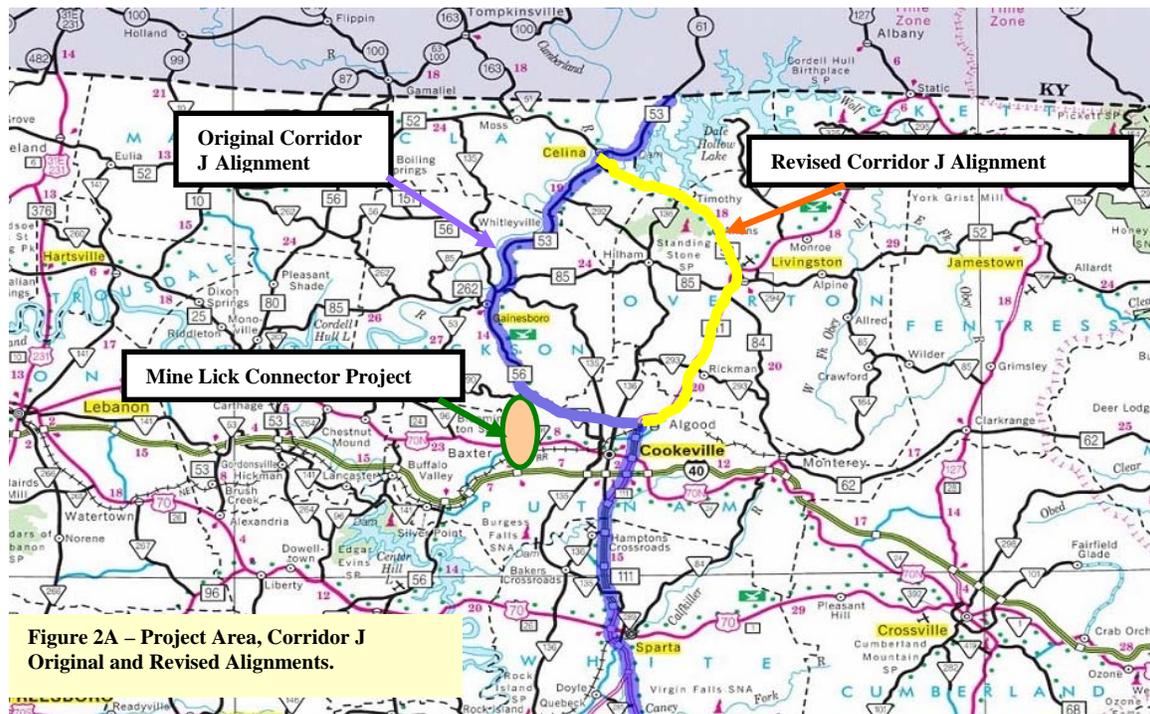


Figure 2A – Project Area, Corridor J Original and Revised Alignments.

Logical Termini Logical termini are defined as the rational end points for a transportation project and for a review of environmental impacts. A project must have independent utility or stand alone (i.e., be usable and reasonable even if no further transportation work is done in an area). A project must not restrict consideration of alternatives for other reasonably foreseeable transportation projects. This project meets all of these considerations as both build alternates provide four lane roadways which connect on both ends with portions of the previously constructed I-40 (that features four lanes) and US 70 North. Interviews and meetings with local officials, population projections and reviews of planning maps have all indicated that the current growth trends in areas west of Cookeville will continue to grow at a rapid pace beyond the Design Year 2030. Reviews of the Cookeville Future Land Use Concept Plan Map indicate that existing and proposed development for commercial/residential mixed land use exists in the areas around the project’s termini. Conversations with the planning office revealed that the development is extending into areas beyond the current Urban Service Boundary. As the development continues along US 70 North and the areas around Interstate 40, traffic will continue to increase in the areas immediately associated with the project termini. Therefore, the termini for this project will provide complementary and logical linkage to the existing roadways in the area.

Local and Regional Planning

The proposed project is complementary with local and regional planning efforts. The project is included in the City of Cookeville Major Thoroughfare Plan, as adopted by the Cookeville Planning Commission and City Council in 2000, and the Comprehensive Future Land Use Plan.

Identified as a priority in the Major Thoroughfare Plan, the project would serve to facilitate planned growth in the area. The City of Cookeville recently annexed lands surrounding the I-40/Mine Lick Creek Road interchange for future industrial and commercial development. This area is located in the western half of the city. (See Figure 2B on page 13).

The Comprehensive Future Land Use Plan identifies obstacles to traffic flow within the City Limits as well as the unincorporated planning areas. The Future Land Use Plan cites four primary obstacles to traffic flow, including traffic congestion at the intersections of major thoroughfares, inadequacies of internal north-south and east-west routes, intense commercial development on major thoroughfares, and a lack of a complete circumferential route around the City of Cookeville. Currently traffic that would bypass the city must travel through internal streets. The proposed project would serve to relieve congestion along the existing north-south routes through the center of, and areas just west of Cookeville.

The City of Cookeville's Planning Department stated that a large, industrial/commercial site is planned for the area on the south side of the proposed new Mine Lick interchange. The city has acquired options to purchase several properties in this location to facilitate development. The Tennessee Valley Authority has developed a preliminary plan for the industrial/commercial area project. In addition, the Cookeville/Putnam County Chamber of Commerce is actively recruiting prospects for this area. The Planning Department stated that, "adequate access to this area is vital. Without the construction of a northern connector traffic, to and from the north, will be forced to use substandard 2-lane county roads."

Positive future impacts include a roadway that is capable of handling additional traffic that will result from the residential, commercial and industrial development currently taking place in and near the project area. The development is anticipated to continue into the future according to reviews of municipal planning reports and interviews and conversations with local officials. If a Build Alternative is selected and the project is constructed, the new bypass will facilitate future traffic flow in this area.

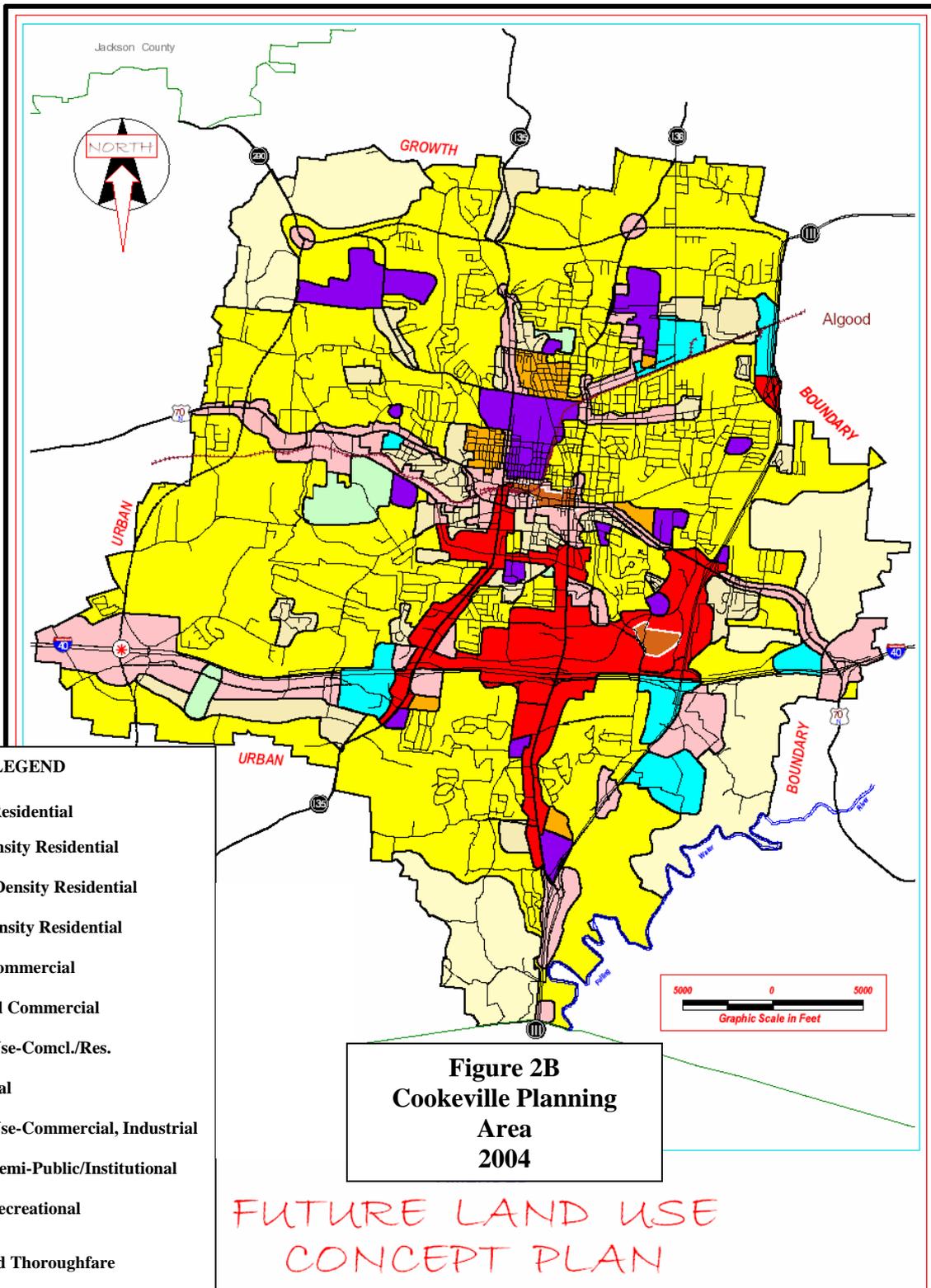


Figure 2B
Cookeville Planning
Area
2004

FUTURE LAND USE
CONCEPT PLAN

COOKEVILLE PLANNING AREA

It should be noted that at one time this project was complementary to a second project, which would have provided connection to a bypass or circumferential route. This route was proposed as part of the Corridor J project which was funded, in part, by the Appalachian Development Highway System (APD) funds. This route, as shown on Figure 2A, above, has been eliminated as a result of a change in concept on the Corridor J project. See page 11 for full explanation and exhibit.

Chapter II – Alternatives

A total of two build alternates and a no-build alternate were considered for the project. The No-Build Alternative and the Build Alternatives are being considered in the decision making process and are described in this chapter.

A. No-Build Alternative

The No-Build Alternative assumes that the facility would be left as is, with no financial expenditures, relocations, or increased environmental concerns. The Tennessee Department of Transportation would continue current cost expenditures and necessary maintenance.

The no-build alternative is a viable option in that it would not involve any additional funds or environmental impacts. However, this alternative does not address the Purpose and Need of the proposed project. This alternative will be used as a baseline, by which all other alternatives are to be compared.

B. Build Alternatives

Two alternatives, identified as A and B, have been proposed for the construction of the Northern Connector between I-40 and US 70N (SR 24) in Putnam County. Originally proposed in the development of a Feasibility Study for the proposed action, these two route locations have been revised where necessary to avoid or minimize potential impacts to sensitive resources, such as existing development, wetlands, historical resources, etc. as well as for design considerations. Please refer to Figure 3 for a map depicting the Build Alternatives.

Alternative A would begin with an I-40 interchange, approximately 2.82 miles west of the existing interchange with SR 135. The proposed alternative extends northeasterly on a new location for approximately 1.63 miles to a typical diamond interchange at Buffalo Valley Road. From this point the alternative continues in a more northerly direction for approximately 1.2 miles before tying into SR 24. A single elevated structure is proposed to connect a relocated section of Mine Lick Creek Road over the proposed facility. Additionally, a single Louisville and Nashville (L&N) rail line would be crossed on parallel, elevated separated structures. The total length of Alternative A is approximately 2.87 miles.

Alternative B would also begin with an I-40 interchange, located approximately 0.71 miles west of the existing Mine Lick Creek Road Bridge over I-40. The proposed alternative would extend northward for approximately 0.80 miles to a typical diamond interchange at Buffalo Valley Road. From this point the proposed alternative would continue in a northeasterly direction for approximately 2.19 miles, before turning northward. At this point, Alternatives A and B share the same alignment, extending northward for approximately 0.48 miles to the project terminus with US 70 (SR-24). Associated with Alternative B is a shift in alignment of approximately 2,900 feet of Hawkins Crawford Road. This shift would allow for an at-grade intersection with Buffalo Valley Road approximately 1680 feet west of the existing intersection and would not require an additional structure to cross Hawkins Crawford Road.

The location of the alignment shift at Hawkins Crawford Road was determined in part to avoid impacts to one wetland (Wetland 2). TDOT explored every opportunity to avoid impacts to the two wetlands within the project corridor. The wetlands are located within the Alternative B corridor (Refer to Figure 7, Aquatic Resources Map, on Page 35). In this particular area of the project, avoidance of Wetland 2 was not possible. Wetland 2 is located on the north side of Locust Grove Road, just west of the proposed interchange between Alternate B and Locust Grove Road. It is approximately 700 feet x 200 feet. Wetland 1 is an estimated 200 feet x 300 feet. The project was unable to avoid taking the Wetland 1 due to the number of residences, 7, that would be required to relocate in the area between Locust Grove and Hawkins Crawford Roads. In order to maintain access to residences situated along the affected section of Hawkins Crawford Road cul-de-sacs (dead-ends) will be constructed, and access road for the western section of Hawkins Crawford Road will tie into Locust Grove Road approximately 825 feet east of the proposed interchange. The junction of the relocated Hawkins Crawford/Locust Grove Roads avoids the larger wetland. As with Alternative A, the single L&N rail line would be crossed on parallel, elevated separated structures. The total length of Alternative B is approximately 3.47 miles.

Both Build Alternatives would provide an additional north/south route for traffic moving between I-40 and US 70. A project involving SR 56, west of the project area near the town of Baxter, is in the early planning stages of a proposed widening. However, this project would not serve to meet the Purpose and Need of this project, which is to provide an additional route that would reduce the volume of traffic on the existing system of local roadways.

Estimated costs for the purchase of right-of-way, utility relocation, construction and preliminary engineering are presented in Table 4 for the alternatives under consideration for the proposed project.

Table 4: 2006 Cost Estimate for the Northern Connector (includes interchange justification study figures)

Alternative	Right of Way	Utility Relocation	Construction	Preliminary Engineering	5-Year Projection (20%)	Total
A	\$2,230,000	\$453,000	\$25,665,000	\$2,335,000	\$5,600,000	\$34,276,000
B	\$2,290,000	\$65,000	\$24,765,000	\$2,250,000	\$5,400,000	\$34,770,000

A comparison of the potential impacts associated with the proposed Build Alternatives is provided in Table 5.

Table 5 Impacts Comparison Matrix

Area of Impact	Alternative A	Alternative B
Wetlands Impacts (Acres)	0.00	2.72
Stream Impacts (Linear feet)	2301	1437
Business Relocations	1	2
Residential Relocations	2	5
Impacted Noise Receivers	2	1
Hazmat Sites	1	1
Historic/ Archaeological	0/0	0/0
Prime-Unique Farmland acres /(LESA Score)*	58.8/(137)	78.8/(143)
Floodplains (Linear Feet)	0	0
Forested Lands	75.22	119.39
Open Areas	102.86	87.67

C. Design Criteria

The proposed project will be located on the west side of the City of Cookeville in Putnam County. Both Build Alternatives will feature four 12-ft. driving lanes, 12-ft. shoulders (outside lane), 6-ft. shoulders (inside lane) and a 48-ft wide depressed, grass median. When ditches are required, they will be located at 16-feet from the edge of the outer shoulder. A design speed of 70 miles per hour will be used for both alternatives, and the access control for the facility will be fully controlled. The average right-of-way limits for the project will be 250 feet in width. The total length of Alternative A is 2.87 miles. The total length of Alternative B is 3.47 miles.

Please refer to Figure 4, page 18, for the proposed Typical Section which illustrates the design criteria information above.

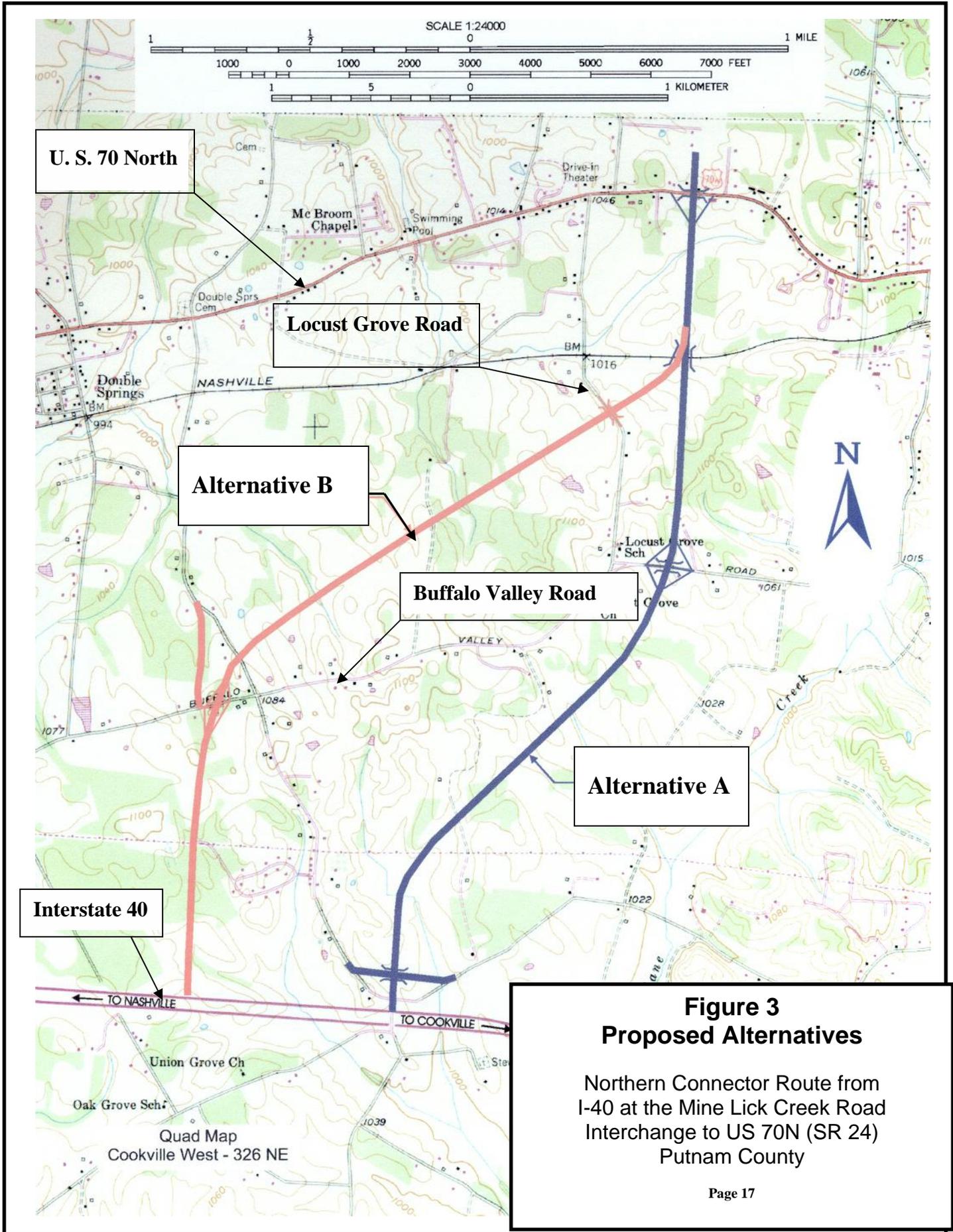


Figure 3
Proposed Alternatives
Northern Connector Route from I-40 at the Mine Lick Creek Road Interchange to US 70N (SR 24) Putnam County

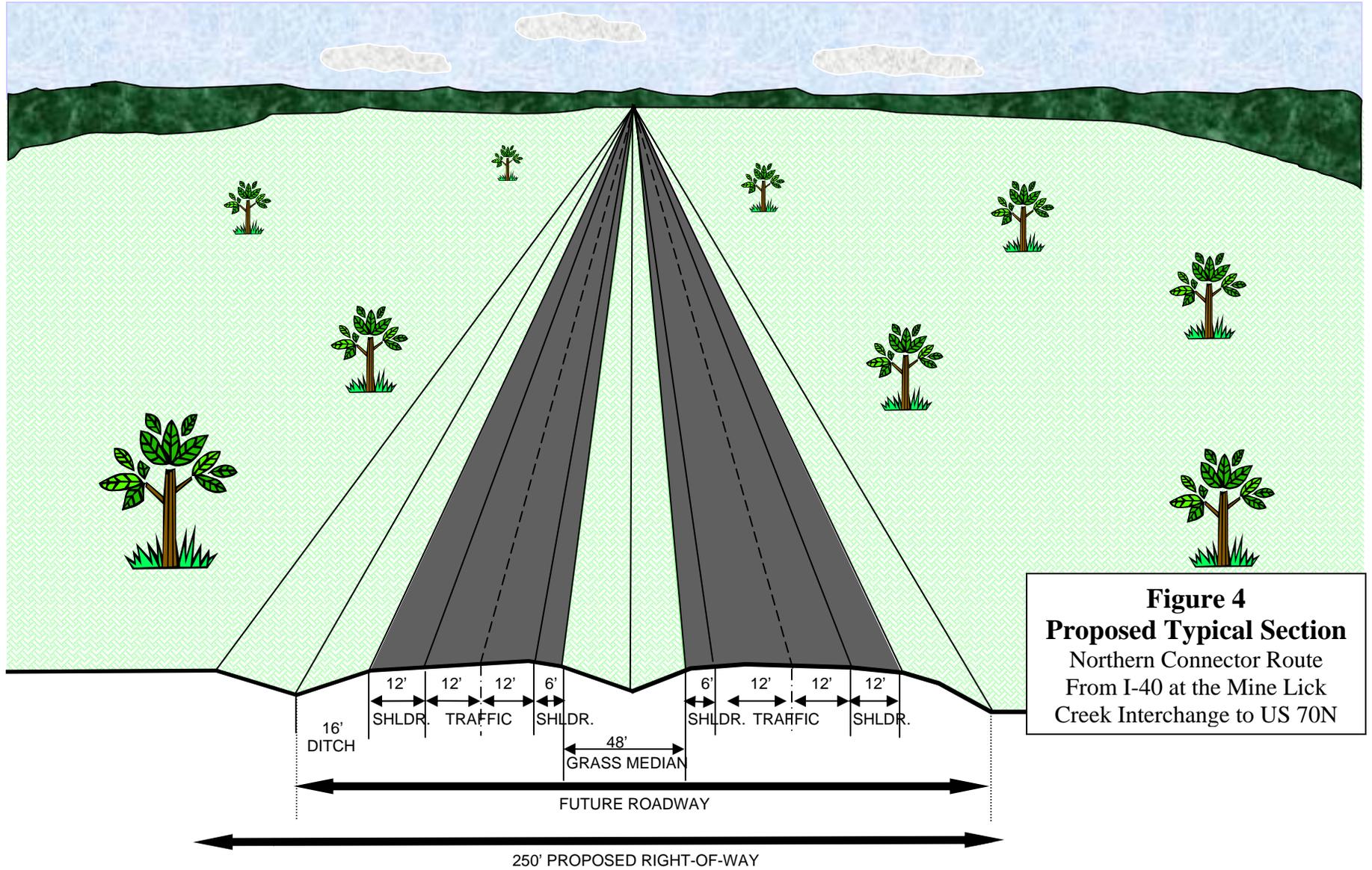


Figure 4
Proposed Typical Section
Northern Connector Route
From I-40 at the Mine Lick
Creek Interchange to US 70N

Chapter III – Impacts

A. Land Use Impacts

Previous impacts that have measurably affected Cookeville are listed below. These impacts have increased land usage incrementally (increasing gradually by regular degrees or additions). They are associated with population increases, and related demands for increased services, infrastructure and job opportunities.

- 1930 – Cookeville Population increases to 3,738.
- 1930 – Highway 70N, first east-west routed modern highway completed.
- 1950 – City population increases to 6,924.
- 1960 – Population increases to 7,805.
- 1960s – Several new industries locate to Cookeville. Annexations are carried out to accommodate residential, commercial and industrial growth. Land has expanded in all directions from the center of town.
- 1960s – Cookeville receives several million dollars from the U.S. Department of Housing and Urban Development through the Model Cities Program.
- 1960s – Tennessee Tech expands operations.
- 1966 – Interstate 40 opens (The implementation of I-40 has been cited by the City as the most significant event affecting development of Cookeville and Putnam County during the second half of the 20th Century.
- 1970 – Cookeville’s population almost doubles to 14,403 from its 1960 total.
- 1980 – Population increases to 21,604.
- 1980 to 2000 – Further impacts to land uses changes are attributed to the implementation of several transportation projects including SH 111 (a segment of Corridor J), which is a segment of the Appalachian Highway System, Interstate Drive, Neal Street, Jeffery Circle and West Jackson Street.
- 2000 – Population increases to 27,120.
- 2000 – Cookeville Comprehensive Future Plan cites major transportation related events as major factors in the city’s attempts for future development. These events include I-40, SR 111, SR 451 and the proposed Northern Connector.

The increasing population and changing land uses have been facilitated by transportation and utility infrastructures needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions (schools, post offices, etc). As populations increase, demands for services, jobs and roadways intensify. The projected figures indicate that 36,337 residents should live within the city limits by 2020.

The study area is situated entirely in Putnam County, just west of the Cookeville City Limits, and is bounded on the south by I-40, and by US 70N (SR-24) to the north. Land use in the study area is primarily agricultural. Rural residential land use with pockets of

development is present, and is concentrated along US 70N. Businesses present in the study area include auto salvage yards, small restaurants and taverns, as well as a motel and several gas stations.

Neither of the alternatives under consideration for this action would impact any publicly owned parks, recreation areas, wildlife or waterfowl refuges, or historic properties listed or eligible for listing to the National Register of Historic Places. Therefore, there will be no Section 4(f) or Section 6(f) impacts as a result of this project. Land areas displaced by the construction of the proposed project are presented in Table 6.

Table 6 – Land Areas Displaced

Habitat Type	Alternative A	Alternative B
Agricultural	103 acres	88 acres
Developed	4 acres	18 acres
Forested	75 acres	119 acres
Total Area	182 acres	225 acres

As stated previously, the proposed facility would feature full access control, which by design directs development to areas that have access to the facility. Therefore, an indirect impact would occur at the proposed interchanges, particularly the interchange with I-40. A continuation of these indirect impacts is the increased potential for land currently in agricultural use, to be converted for commercial and industrial use as the facility improves access to the area making it more valuable to commercial and industrial trade.

Additional, current information from the City of Cookeville’s Planning Department was received July 2005. The City of Cookeville has annexed lands adjacent to the I-40/Mine Lick Creek Road interchange. A large industrial/commercial area is planned for the area on the south side of the proposed new interchange. The city has acquired options to purchase several properties in this area to facilitate the development. The Tennessee Valley Authority has developed a preliminary plan for the development of the industrial/commercial area. The Cookeville/Putnam County Chamber of Commerce is actively recruiting prospects for this area. Local officials have stated that adequate access to this area is vital. Traffic to and from the north would be forced to use substandard two-lane county roads without the construction of the northern connector.

The Cookeville Planning Director stated, “Two of the area’s largest employers, TRW and Russell-Stover have recently announced that they are closing, or are laying off, large numbers of employees. At the same time commercial development is soaring in the city. Additional land for commercial development and industrial development if possible, is very important for the economic wellbeing of Cookeville and Putnam County.”

TRW announced on June 23, 2005, that it will close its Cookeville plant. The plant has approximately 390 employees. It is anticipated that employees will not be impacted until the middle of 2006. Russell Stover is laying off 400 workers at its plant by late summer 2005. Built in the 1970s, the plant has 800 union workers who make candy for the third-

largest American chocolate manufacturer. Both TRW and Russell Stover indicated that the layoffs were not reflective of Putnam County's economic vitality or its workforce's capabilities.

Local officials are increasing their efforts to attract commercial and industrial business to the area to offset these work losses. As evidenced in Chapter 3, Section C, Cookeville/Putnam County's growth rate exceeds that of Tennessee's statewide rate. Putnam County experienced a 17.2% increase in total population between 1990 and 2000, compared to 13.2% for Tennessee. The forecast growth for Putnam County is 11% in the year 2010, and 9.2% in 2020. The state as a whole is forecast to grow at slightly slower rate, with a projected growth of 9.6% in the year 2010, and 8.8% in 2020. The loss of almost 800 jobs could negatively impact population increases and the economic health of the area.

A study, "*Do New Highways Attract Businesses?*" was conducted for the Transportation Research Board (January 2003); Hodge, Daniel J. (Cambridge Systematics, Inc.), Glen Weisbrod (Economic Development Research Group, Inc.), and Arno Hart (Wilbur Smith Associates, Inc.). Included in the study's methodology was a survey to identify key reasons why companies chose not to expand or relocate in their study area. The top concerns included a lack of transportation access/infrastructure, availability of buildings and an available labor force. Furthermore, comments from participants in the survey included that although transportation is not the only concern among land use and planning practitioners, "it is consistently cited as a key consideration among companies contemplating an expansion or relocation and has influenced companies to relocate elsewhere."

Industrial recruiters, private consultants who work with firms who seek to expand or relocate operations, were interviewed for the study. These consultants work with state and local industrial development authorities to locate proper sites for their representative firms. They cited that at least 67 percent of industrial projects require immediate (1 to 2 miles) highway access and the remaining 33 percent of the projects demand one hour access to an interstate.

The new roadway would provide direct and immediate connection of the development sites to I-40 and US 70 N. Recent layoffs will provide the labor force with approximately 800 capable, available employees for immediate hire. In addition to an available workforce, Putnam County's workforce has improved its educational attainment. The 1990 U.S. Census data indicated that 63.2 percent of Putnam County's residents had attained at least high school diplomas, and that 16.8 percent had attained a bachelor's degree or higher. The 2000 Census figures indicated that the percentages had improved to 72.5 percent for high school diplomas and 20.2 percent for bachelor's degrees or higher. The increases can indicate a more capable workforce, which might aid in attracting industry. In addition, if jobs are created, the per capita personal income and total personal incomes will increase with the better wages that accompany industrial jobs. Conversations with local officials have revealed that the development efforts have been initiated and will continue, even if the No-Build Alternative is selected, however, they

believe the new connector will increase the attraction of industrial and commercial companies wishing to relocate or expand operations. The actual amount of industry that could be attracted to relocate or expand in this area would also be dependent upon the ability of local industrial developers, investments in complementary water, sewer, building spaces, and other infrastructure, labor force training and the recruiting and retention efforts of local officials.

Planning has existed in the Cookeville area for several decades and has been used to manage growth. The population patterns and the transition of farmland to residential and commercial land use are consistent with planning and development efforts in the area. The Northern Connector project has been cited as a vital part of the area's future development plans to facilitate economic development.

B. Farmland Impacts

Farmland impacts associated with the proposed construction of the Northern Connector in Putnam County, TN were evaluated in accordance with the Farmland Protection Policy Act of 1981 (FPPA). The purpose of the FPPA is to minimize the extent to which Federal projects contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. Additionally, the Act insures that Federal programs are administered in a manner that, to the greatest extent practicable, will be compatible with state and local government, and private programs and policies to protect farmland. In accordance with the FPPA, a Farmland Conversion Impact Rating (USDA Form AD-1006) has been completed. This form summarizes farmland impacts for Alternatives A and B. Form AD-1006 is provided in Appendix A.

The Natural Resource Conservation Service (NRCS) determined that Alternative A and B would result in the conversion 55.8 acres and 78.8 acres of Prime and Unique Farmland, respectively (Part IV). Based upon other criteria on the AD-1006 form, the NRCS scored the Land Evaluation Criterion for Alternatives A and B at 58 and 64, respectively (Part V). These scores were then combined with the site assessment criteria points (Part VI) for a total score for each proposed alternative. The total points rating for Alternatives A and B were 152 and 158, respectively. However, review of the AD-1006 form revealed that the incorrect form was used. The correct form is NRCS-CPA-106. This form and its criteria is to be used for projects that have a linear or corridor type site configuration connecting two distant points, and crossing several tracts of land. This includes highway projects. The project was analyzed using the correct form, and the net result was a reduction of total points from the original score. Table 7, below, summarizes the point values assigned to each build alternative.

Table 7 Farmland Impacts Summary

Alternative	NRCS Prime Farmland	Land Evaluation Criteria	Site Assessment Points (Original/Corrected Value)	Total Value (Original/Corrected)
A	58.8 acres	58	94/79	152/137
B	78.8 acres	64	94/79	158/143

The Federal Highway Administration Technical Advisory T 6640.8A (*Guidance for Preparing and Processing Environmental and Section 4f documents*) states that when a score is 160 points or greater, avoidance alternatives should be discussed. The alternatives discussed above all scored below the 160-point threshold. Therefore, the investigation of avoidance alternatives would not be required and this project is compliant with the requirements of the Farmland Protection Policy of 1981.

C. Social Impacts

This project would not divide any established neighborhoods present in the project area. Therefore, the construction of either of the proposed alternatives would not have any effect on community structure. Relocations, ranging from 2 to 5 residences and 1 to 2 businesses, associated with the proposed alternatives are relatively minor. Therefore, impacts to the existing social environment of the project area are expected to be minimal. However, the construction of the proposed Northern Connector would involve additional commercial and residential development anticipated for the areas surrounding the proposed interchange locations. Future commercial and residential development would require additional support services, such as police and fire protection, as well as education and health services.

Population Trends and Forecasts

As shown in Table 8, which compares populations and projected growth on the county and state level, population growth for Putnam County is greater than that for the state. Putnam County experienced a 17.2% increase in total population between 1990 and 2000, compared to 13.2% for Tennessee. The forecast growth for Putnam County is 11% in the year 2010, and 9.2% in 2020. The state as a whole is forecast to grow at slightly slower rate, with a projected growth of 9.6% in the year 2010, and 8.8% in 2020.

Table 8 Population and Forecast Growth 1990-2020

Geographic Area	Population			
	1990	2000	2010	2020
Tennessee	4,890,525	5,533,762	6,062,695	6,593,194
Change		13.2%	9.6%	8.8%
Putnam County	51,568	60,452	67,128	73,308
Change		17.2%	11.1%	9.2%

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

Table 8 illustrates the narrowing gap in growth for the state and for Putnam County. The

projected rate of growth is approximately half that of the year 2000, for both Tennessee and Putnam County. As stated in Section A, development is most likely to occur in the areas surrounding the new interchanges. With the added development, increasing populations would be a likely indirect and cumulative impact associated with the construction of a Build Alternative.

Social Groups

According to the 2000 Census, minority population percentages are lower in Putnam County than the overall percentages for the state of Tennessee. The minority population is 19% of the state as a whole, while Putnam County minorities consist of approximately 5.5% of the total population. As shown in Table 9, the project area census tracts, numbered 9 and 11 and depicted in Figure 5, have a lower occurrence of minorities.

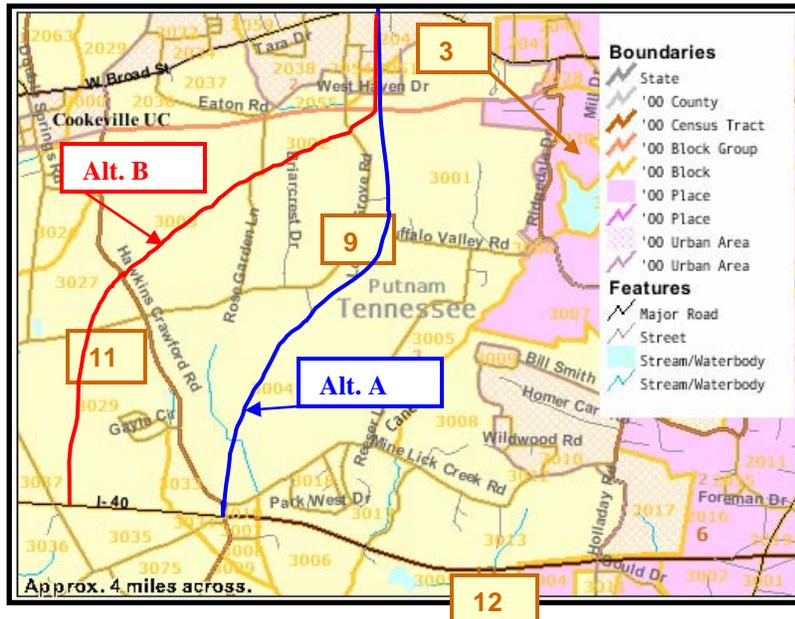


Figure 5 Project Area Census Tracts 3, 9, 11 and 12. See Appendix III for detailed Census Maps and Comparative Charts. 9 represents Census Tracts

Table 9 Population Characteristics by State, County and U.S. Census Tract

Geographic Area	Persons	% Minority	% Age 65 or Older	% Under 18	% High School Graduates (25 Years of Age and Over)
Tennessee	5,689,283	19.8	13.2	24.6	31.6
Putnam County	62,315	5.5	13.2	22.3	32.1
U.S. Census Tract 9	5164	4.2	10.8	26.7	33.6
U.S. Census Tract 11	5753	2.9	14.1	25.0	36.6

Source: Profile of General Demographic Characteristics: U.S. Census Bureau, Census 2000

The percentage of residents over the age of 65 is 13.2% of the total population for both Putnam County and for the state of Tennessee. However, the percent of elderly residents varies in the census tracts, with 10.8% and 14.1% respectively, for tracts 9 and 11. Conversely, the percentage of persons under 18 years of age is not as varied. Tennessee has approximately 24.6% of the total population under 18 years of age, whereas Putnam County has 22.3% of its residents being younger than 18. The percentage for the census

tracts is 26.7 and 25% respectively for tracts 9 and 11.

The percentages for High School graduates do not vary much from the state, county and Tract level. Approximately 31.6% of the state population has received their High School Diploma. That rate is slightly higher for Putnam County (32.6%) as well as the project area census tracts, with 33.6 and 36.6% respectively for tracts 9 and 11.

D. Environmental Justice

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations,” ensures that federal departments and agencies identify and address disproportionately high effects and adverse human health or environmental effects of their policies, programs, and activities on minority populations and low-income populations. Special consideration was given to Executive Order 12898 throughout the planning and evaluation of the proposed project.

Minority and/or low-income populations have been identified in areas near the project corridor. Area roadways which intersect with the Northern Connector would be provided with underpasses or overpasses, as appropriate, to ensure safe and uninterrupted passage for area residents to houses of worship, community services, government assistance offices, and hospitals, and to ensure that social interactions with other communities remain unhindered. The impacts of the project concerning social isolation, segmentation or disruption to these communities are not anticipated. The potential for human health implications or unknown risks from the construction and maintenance of the proposed facility are considered to be remote.

Although no special needs have been identified through previous efforts via field trips, conversations with local officials or from the past public meetings, TDOT acknowledges that these needs may be identified at any time during the project. If such needs are established, TDOT right of way officials would work with social/family clusters, and groups of minority/low income residents to ensure that relocation efforts would be as minimally disruptive as possible. These measures include efforts to locate parcels that would accommodate the relocation of several homes to keep the clusters intact. Efforts will continue through the design phase, the public involvement process, the environmental process and the right of way phase of the project.

The project avoids direct impacts (relocations) and indirect impacts (neighborhood divisions, segmentations) to communities throughout the process. These efforts have included avoidance of minority and low-income communities, and construction of overpasses and underpasses at areas where the Northern Connector would intersect with roadways that provide uninterrupted passage between the communities and regional economic centers, government services, job sites and schools.

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

and all people living in the project area will equally share in the benefits of the proposed project. Alternative A would require the relocation of two single-family homes and no mobile homes. Alternative B would require the relocation of five single-family homes and no mobile homes. All of the homes appear to be occupied by owners. Direct impacts to minority or low-income residents are not disproportionate and communities comprised of these special interest groups will not be divided or segmented by the project.

All people living in the project area will equally share in the benefits of the proposed project. Adverse effects would not be primarily borne by a minority and/or low-income population, and will not be more severe or greater in magnitude, than the adverse effect that will be suffered by the non-minority, and/or non-low income, population.

According to the FHWA's *Actions to Address Environmental Justice* (6640.23), *Adverse Effects* means the totality of meaningful individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness or death; air, noise, and water pollution and soil contamination; destruction or disruption of man-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or meaningful delay in the receipt of, benefits of FHWA programs, policies, or activities.

Disproportionately High and Adverse Effect on Minority and Low-Income Populations means an adverse effect that:

- (1) Population and/or a low-income population; or
- (2) Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or low-income population.

It has been determined that there are no disproportionately high or adverse effects on minority and low-income populations. No divisive impacts will occur to minority or low-income neighborhoods or social/family clusters. It is intended that all people living in the project area will equally share in the benefits of the proposed project. This action complies with Executive Order 12988, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

This document has been sent to the TDOT Civil Rights Division for review. In accordance with Title VI of the Civil Rights Act of 1964, the Department will 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”. Census information, broken down by census tract, is on file at TDOT Headquarters, Nashville. The Department notifies the public of proposed highway projects and the availability of environmental documents. Notices of public hearings and the availability of environmental documents for public inspection are published in local newspapers.

The project is located within the following U.S. Census Tracts/Block Groups – Tract 9, Block Groups 2 and 3, and Tract 11, Block Group 3. Following is a comparative chart of the racial composition of these three Block Groups:

Table 9A: Racial Composition of Project Area Census Tract Block Groups

2000 Racial Composition of Residents within the Project Area	Block Group 2, Census Tract 9, Putnam County, Tennessee	Block Group 3, Census Tract 9, Putnam County, Tennessee	Block Group 3, Census Tract 11, Putnam County, Tennessee
Total:	2,193/100%	1,192/100%	1,896/100%
Not Hispanic or Latino:	2,193/100%	1,170/98.2%	1,880/99.2%
White alone	2,131/97.1%	1,117/93.7%	1,878/99.1%
Black or African American alone	40/1.8%	7/0.6%	0/0%
American Indian and Alaska Native alone	0/0%	0/0%	0/0%
Asian alone	0/0%	13/1.1%	0/0%
Native Hawaiian and Other Pacific Islander alone	0/0%	0/0%	0/0%
Some other race alone	0/0%	0/0%	0/0%
Two or more races	22/1.0%	33/2.8%	2/0.1%

2000 Racial Composition of Residents within the Project Area Continued	Block Group 2, Census Tract 9, Putnam County, Tennessee	Block Group 3, Census Tract 9, Putnam County, Tennessee	Block Group 3, Census Tract 11, Putnam County, Tennessee
Hispanic or Latino:	0/0%	22/1.8%	16/0.8%
White alone	0/0%	22/1.8%	2/0.1%
Black or African American alone	0/0%	0/0%	0/0%
American Indian and Alaska Native alone	0/0%	0/0%	0/0%
Asian alone	0/0%	0/0%	0/0%
Native Hawaiian and Other Pacific Islander alone	0/0%	0/0%	0/0%
Some other race alone	0/0%	14/1.2%	14/0.7%
Two or more races	12/0.5%	0/0%	0/0%

No residents of minority status comprised over 1.8% of the total populations within the U.S. Census Tracts and Blocks within the project area. In comparison to other block groups within Census Tracts 9 and 11, these three areas had some of the lowest percentages of minority residents in the area. Due to the low number of relocations, 2 and 5, for Alternatives A and B, respectively no disproportionate impacts are anticipated for minority residents or communities.

Table 9B: Income Status of Populations for Project Area Census Tract Block Groups

Income Status of Populations within the Project Area, 2000	Block Group 2, Census Tract 9, Putnam County, Tennessee	Block Group 3, Census Tract 9, Putnam County, Tennessee	Block Group 3, Census Tract 11, Putnam County, Tennessee
Total Population within Block Groups:	2,193	1,192	1,894
Income in 1999 below poverty level:	241 (11.0%)	49 (4.1%)	204 (10.8%)
Income in 1999 at or above poverty level:	1,952	1,143	1,690

None of the project area reported poverty levels in excess of 11.0%, and as reported previously, Alternative A would require 2 residential relocations and Alternative B would require 5 residential relocations. The homes assessed during the field visits indicated that none of the sites appeared to contain low-income residents. No disproportional impacts are expected.

E. Relocation Impacts

A Conceptual Stage Relocation Plan (CSRP) has been prepared to estimate relocation impacts associated with the proposed project. Residential properties potentially displaced by the project are summarized in Table 10.

Table 10 Residential Relocations

Relocation Type	Alternative A	Alternative B
Single Family Units	2	5
Mobile Home	0	0
Total	2	5

Table 11 details the availability of replacement housing for those potentially displaced by the project. Table 11 also contains information concerning the rental housing market in the event that those displaced need or desire rental units. Information on available properties was obtained on-line from Realtor.com, a multiple listing service and home of the National Association of Realtors.

F. Economic Impacts

The CSRP indicates that the construction of the proposed project could displace up to two businesses if a Build Alternative is selected as the Preferred Alternative. Alternatives A and B would impact an auto salvage yard located along US 70N. In addition, Alternative B would impact a home-based taxidermy business.

The taxidermy business on Alternative B should pose few problems related to the relocation. As it is a typical “home business”, a combined residential/commercial property should be considered. Ample sites appear to exist within the community, which can serve as replacement locations. However, such is not the case with the auto salvage yard. Typically, salvage yards and/or junkyards require additional effort in finding and obtaining proper permitting for replacement sites. Given the difficulty in obtaining such permits, as well as their “site specific” nature, it is unlikely that a “ready made” replacement site will be available. Relocation assistance personnel should begin to provide referral and advisory services to this particular business as soon as a final alignment is determined. This will ensure that a maximum amount of time is available to accomplish the relocation.

Table 11 Available Housing

For Sale	Price	Number Available
2 Bedroom	\$40,000 to \$100,000	25
3 Bedroom	\$70,000to \$300,000	49
3 BR With Acreage	\$55,000 to \$300,000	51
>3 BR	\$75,000 to \$500,000	5
Mobile Homes	\$12,900 to \$ 42,000	1
For Rent	Price	Number Available
2 Bedroom	\$300 to \$600	15
3 Bedroom	\$300 to \$600	25

Positive economic impacts of the proposed project include both short-term and long-term benefits. Construction activities would require the purchase of local goods and services,

which would cultivate business activity with local merchants. Additionally, construction related jobs could provide opportunities for unemployed laborers. The proposed project would likely generate the development of new businesses, particularly surrounding the proposed interchange locations. These new businesses would generate additional tax revenues, as well as increased employment opportunities, providing long-term benefits to the local economy. Construction of the proposed project would remove land and improvements from the local tax base. However, these losses would be short-term, as anticipated new residential and commercial development would likely offset these impacts in the long term.

It is anticipated the relocation needs will be adequately addressed under the standard provisions of the Tennessee Uniform Relocation Assistance of 1972 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources will be available to all residential and business displacees, should such occur, without discrimination, in accordance with the Civil Rights Act of 1964, Title VI.

G. Considerations Relating to Pedestrians and Bicyclists

The facility, as proposed, would consist of four traffic lanes separated by a fifty-two foot depressed grass median, and it would have a design speed of 70 MPH with full control of access. No at-grade intersections with minor roadways or driveways would be included. Typically, this type of design limits traffic to motorized vehicles, such as cars and trucks. Pedestrian and bicycle traffic would be prohibited. Consequently, the preliminary design for the facility would not include accommodations for non-motorized traffic.

Pedestrians and bicyclists will be able to continue using roadways that are crossed by the proposed project. These roadways include Buffalo Valley Road, Hawkins Crawford Road, Locust Grove Road, Mine Lick Creek Road and US 70-North. Provisions in the design of interchanges, overpasses and underpasses have been made in the design process to ensure safe, uninterrupted passage is available to pedestrian and bicycle traffic.

H. Air Quality Impacts

Based upon the analyses of highway projects with similar meteorological conditions and traffic volumes, the carbon monoxide levels of the subject project will be well below the National Ambient Air Quality Standard. This project will have no appreciable impact on the air quality of the area. Indirect and cumulative impacts to the region's air quality are not anticipated.

I. Noise Impacts

The effects of increased noise levels due to the project have been evaluated according to the guidance of Title 23, Article 772 of the Code of Federal Regulations, "Procedures for Abatement of Highway Traffic Noise and Construction Noise" and the Tennessee Department of Transportation Guidelines on Highway Traffic Noise Abatement. Predicted noise levels have been compared to existing levels and the Federal Noise Abatement Criteria (NAC) to determine the impact of highway generated noise on the community.

Table 12 Noise Abatement Criteria (NAC)

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

The existing and design year (2030) peak-hour levels were predicted at sixteen representative receptors within the project area (Figure 6). The sixteen receivers, representing 42 receivers, were analyzed using existing readings and 2030 projected traffic counts. The number of receivers represented at each site was determined by counting the receivers that were approximately the same distance from the ROW boundary as the analyzed receiver. The analyzed receiver was always the one nearest the proposed alternative.

The results of the analyses are presented in Table 13, which shows the measured existing noise levels for the year 2010 and the predicted noise for the build scenario for the design year (2030). For the receivers chosen for noise analysis, existing values ranged from 42 to 63 dBA Leq. The year 2030 predicted noise levels for the proposed project, for the receivers chosen for noise analysis, ranged from 55 to 67 dBA Leq.

According to the current TDOT Noise Policy, highway traffic noise impacts will occur if there is a substantial increase in future noise levels above existing noise levels when the future noise levels are between 57 and 67 dBA. The criteria for a noise level increase are shown in Table 12A.

Table 12A: Noise Level Increase

<i>Increase in Existing Noise Levels (dB)</i>	<i>Subjective Descriptor</i>
0 – 5	Minor Increase
6 – 9	Moderate Increase
10 or more	Substantial Increase

Table 13 Noise Analysis Summary

Site	Alternative	Existing (dBA)	Year 2030 Build	Increase over existing	Number of Receptors Represented
1	B	47	63	16	2
2	B	57	55	-2	1
3	B	59	60	1	1
4	B	62	61	-1	3
5	B	60	63	3	1
6	B	55	67	12	3
7	B	42	59	17	2
8	B	51	58	7	1
9	B	54	62	7	1
10	A and B	50 ^a	62/63 ^b	12/13 ^b	13 ^a
11	A and B	62 ^a	56 ^a	-5 ^a	1 ^a
12	A and B	63 ^a	63 ^a	0 ^a	3 ^a
13	A	55	63	7	2
14	A	52	61	9	4
15	A	50	63	13	1
16	A	46	63	17	3

All receivers are residences.

^a Values are for both alternatives.

^b Values are listed for Alternative A/Alternative B.

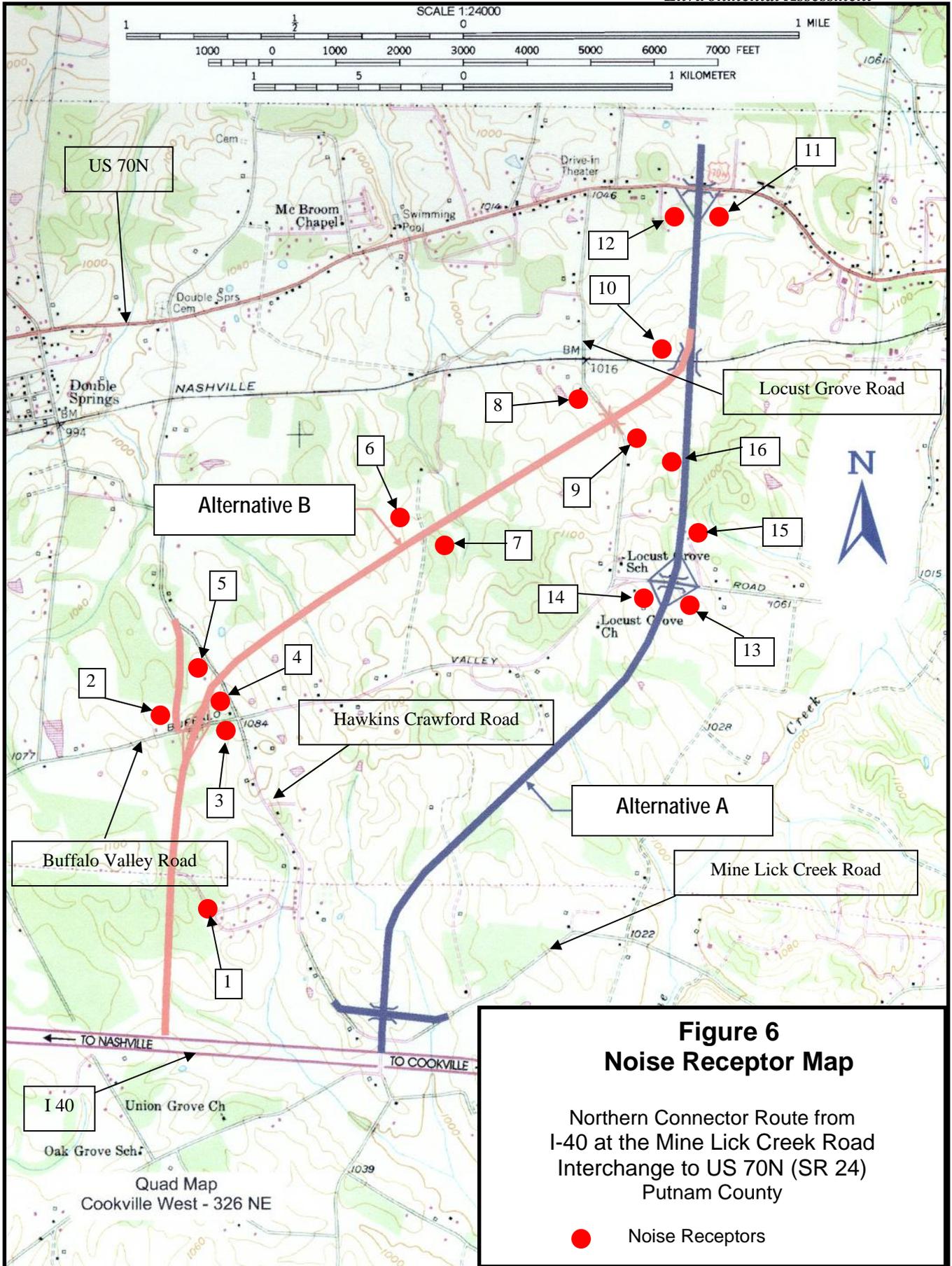
Abatement measures were considered for the sensitive receptors that exceeded criteria. Federal regulation CFR 23 part 772 mandates that abatement measures be both feasible and reasonable. The assessment of barrier mitigation and additional forms of noise reduction are discussed below.

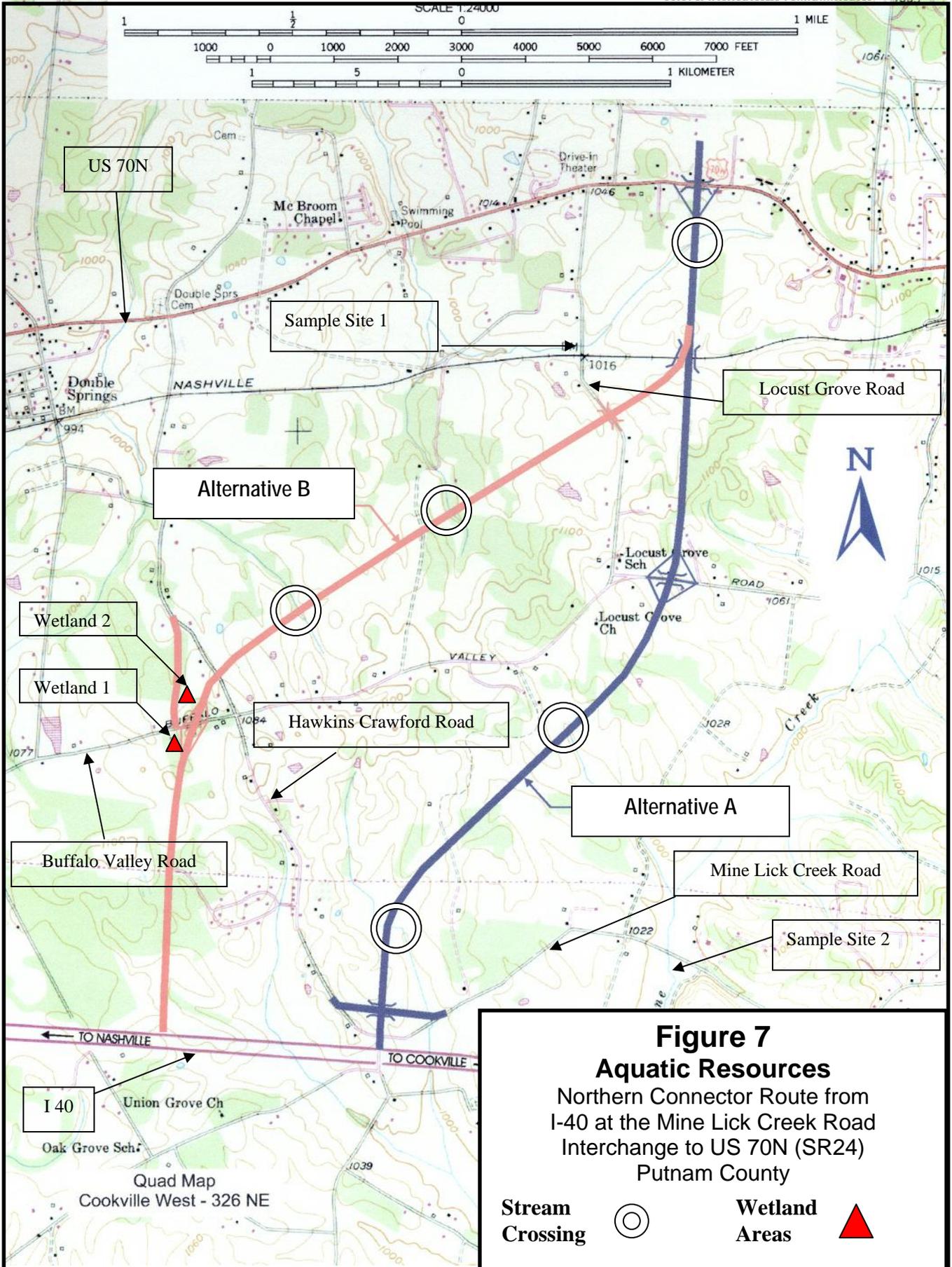
The Noise Levels in Design Year 2030 are predicted to exceed the existing levels by 10 or more dBA for Receptors 1 (2 receptors), 6 (3 receptors), 7 (2 receptors), 10 (13 receptors), 15 (1 receptor) and 16 (3 receptors). Site 14 approaches the criteria with a 9 dBA increase for 4 receptors. Barrier mitigation for all impacted receptors, except those at Site 10, is considered unreasonable due to the limited number of residences that might benefit from barrier abatement.

A total of 13 receptors were predicted to experience increases of 10 dBA or above at Site 10 requiring a barrier analysis. The total predicted noise increases for Site 10 receptors remained under 69 dBA. In order to maximize reduction of noise and minimize cost, the barrier wall was set at a point adjacent to the right of way line of the southbound lane. The four receptors in the row closest to the road were predicted to receive noise reductions of 7dBA and the four sites in the second row of residences were predicted to receive noise reductions of 4.7 to 5.4 dBA. The remaining five receptors were predicted to receive noise reductions of 3.7 to 4.3 dBA and they received a noise reduction of 7

dBA. According to the TDOT Noise Policy (April 2005) considers noise barriers to be reasonable if the cost per benefited residence does not exceed the maximum allowable benefit per residence. Site 10 was determined to neither feasible nor reasonable since all sites exceeded the maximum allowable barrier cost of \$42,000 per benefited residence. The minimum cost per benefited receptor was \$57,250. The total estimated cost of the noise barrier was \$458,334.

Various forms of noise reduction were analyzed, including traffic management measures (such as prohibition of heavy trucks) and alteration of horizontal and vertical alignments. The elimination of truck traffic was determined to be contrary to the major reason for improving the highway, which is to facilitate movement of truck and automobile traffic in the area. Alteration of the horizontal and vertical alignment for the subject project would require undesirable curvature in the alignments or additional construction costs and right-of-way purchases. These methods were found to be neither reasonable nor feasible when compared to any limited noise reduction they could provide. For these reasons, it is unlikely that any form of noise abatement will be incorporated into the design of this project.





J. Water Quality Impacts

Results of the water quality sampling are presented in Table 4 of the Ecological Study prepared for this project, and are on file at TDOT's Environmental Division. This report also presents data of all other parameters investigated, including the aquatic habitat and biosurvey conducted along with the water quality impact analysis.

Site 1 is located along a tributary of West Blackburn Fork at its crossing of Locust Grove Road, downstream of the proposed crossing of both Alternatives A and B. Site 2 is along Cane Creek at its crossing of Mine Lick Creek Road.

Past actions in the project area in Putnam County that may have resulted in impacts to groundwater resources include roadway construction, scattered single family residential and farm property development.

Reasonably foreseeable future actions/development as a result of the project, which is expected to be limited and primarily concentrated at proposed interchange locations, will likely result in additional impacts to groundwater resources in Putnam County. Reasonably foreseeable future impacts to these resources are not quantifiable, but could include such impacts as eventual increases in turbidity and dissolved solids and/or the seepage of fuels, lubricants, fertilizers, herbicides/pesticides or other pollutant materials into unique karst habitats and groundwater. However, cumulative impacts to these resources in the project area are expected to be limited (or minor) along the proposed project corridor, and somewhat offset by the use of Best Management Practices and through mitigation as discussed in the project *Terrestrial and Aquatic Ecological Baseline Report* (HMB, December 2003).

Cumulative impacts to karst and groundwater resources in Cookeville are generally less predictable. Continuing residential, commercial, industrial and roadway development in these areas (which is expected to occur whether or not the project is constructed) is likely to result in some groundwater impacts. However, cumulative impacts to these resources in these areas are not quantifiable due to the limited availability of historic records and land use planning information.

Potential indirect and cumulative effects to water quality associated with the proposed project would include changes in runoff from the facility, including road runoff, siltation, reduced in-stream detritus, and elevated water temperatures. Road runoff, such as de-icing compounds, oil, grease, asbestos and rubber will increase with the increase in vehicular traffic. Additionally, an increased likelihood for spillage of toxic chemicals from trucks into the waterways would occur.

K. Permits

In the event of a Build Alternative being selected as the Preferred, and prior to any construction activities, TDOT would apply for all State and Federal water quality permits required for the project. As noted below in Section L., a Section 404 Permit would be required from the U.S. Army Corps of Engineers for the construction of Alternatives A

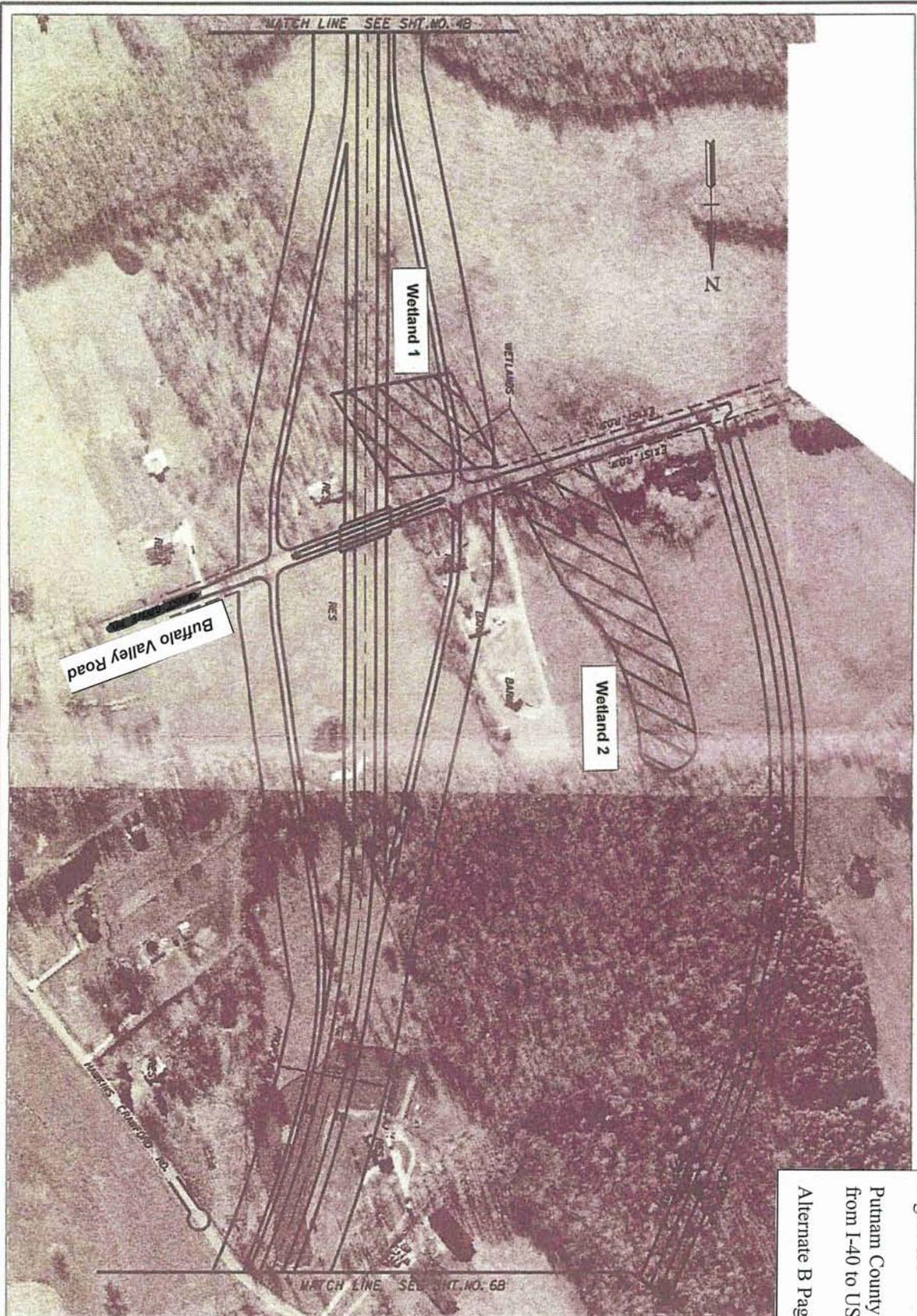


Figure 8A
 Putnam County Northern Connector
 from I-40 to US 70N
 Alternate B Page 36A

STATE OF TENNESSEE
 DEPARTMENT OF TRANSPORTATION
 PUTNAM COUNTY
 STATE ROUTE
 CONNECTION
 FROM INTERSTATE 40
 TO STATE ROUTE 24



ALTERNATE 'B'

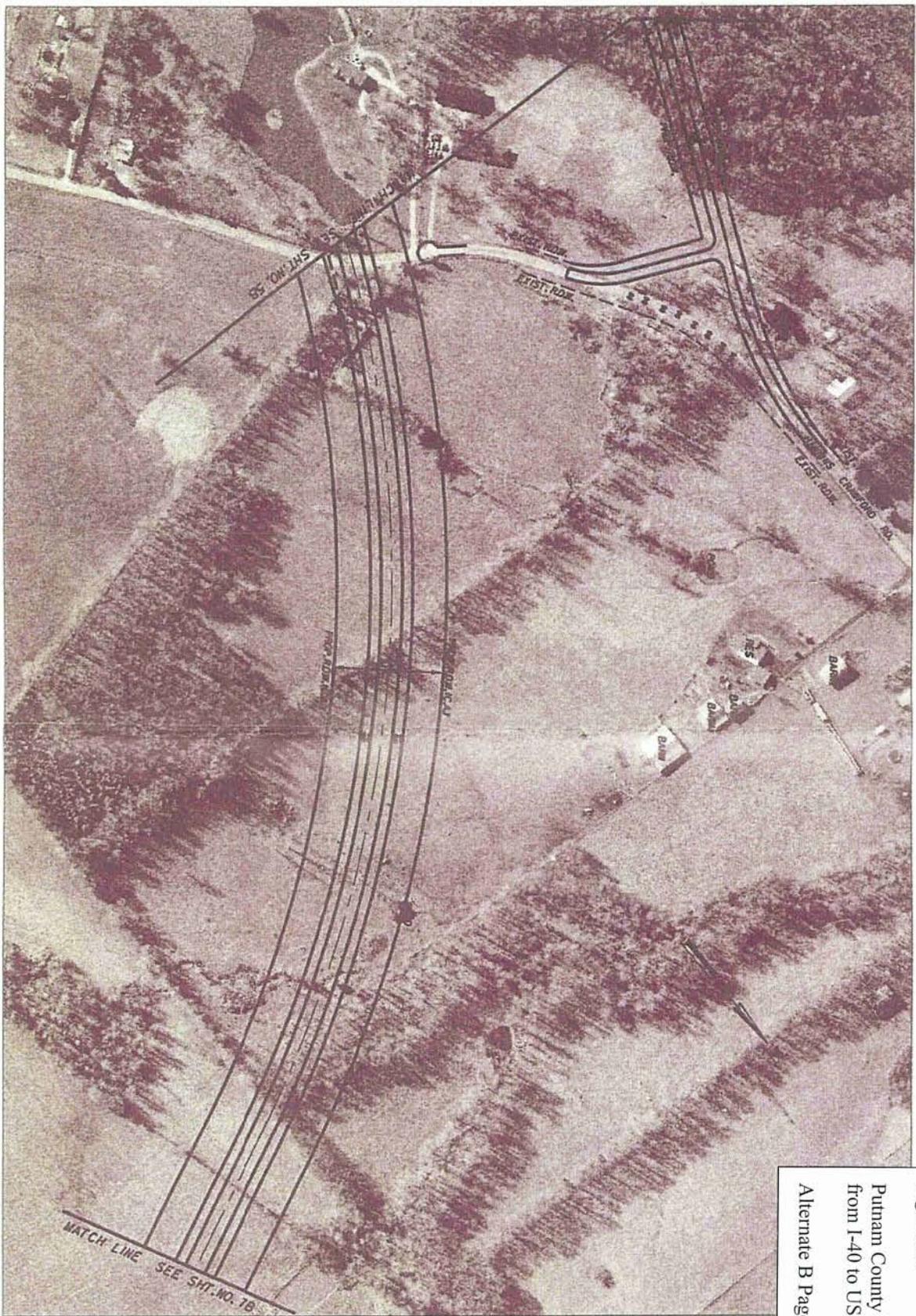


Figure 8B
 Putnam County Northern Connector
 from I-40 to US 70N
 Alternate B Page 36A (cont.)

ALTERNATE - B

0 100 200 300

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION

PUTNAM COUNTY
 STATE ROUTE
 CONNECTION
 FROM INTERSTATE 40
 TO STATE ROUTE 24

and B. Additionally, an Aquatic Resource Alteration Permit for stream crossings would be required from the Tennessee Department of Environment and Conservation (TDEC), prior construction of either alternative selected as the Preferred. As mandated by the Tennessee Water Quality Control Act, a 401 Water Quality Certification would also be required from TDEC.

L. Wetland Impacts

TDOT is required to explore every means of avoiding impacts to wetlands. If impacts are unavoidable, TDOT is to determine a solution that will minimize impacts to wetlands. Two wetlands, 1 and 2 (Figures 8A and 8B, page 36A), were identified within the project corridor. Alignments were investigated to avoid wetlands along Alternative 2. Wetland 1 is located within the interchange and it is not reasonable to move the interchange to the east due to the potential relocation of Hawkins Crawford Road and Locust Grove. Wetland 2 was originally to be acquired, but the ramp was moved to the west to avoid acquisition of this wetland.

No wetlands were found along the Alternative “A” proposed corridor. A comparison of total wetland area within the proposed right-of-way for each Alternative is located in Table 14. Actual wetland impact area may be reduced once roadway design is complete and construction limits are finalized. Wetlands at each wetland site were identified as Palustrine forested wetlands according to the Cowardin classification (Cowardin et al. 1979). Commonly known as swamps, Palustrine forested wetlands are covered by persistent trees greater than 20 feet tall. Forested swamps within the area consist of bottomland hardwoods. These wetlands consist of broad-leaved deciduous trees such as hickories, ash, sycamore, and cottonwood.

All potential wetland sites were delineated in accordance with the “1987 Army Corps of Engineers Wetland Delineation Manual.” Routine Wetland Determination Data Forms were completed in the field for each potential jurisdictional wetland except those areas that contained obvious lacustrine or riverine systems, or palustrine unconsolidated bottom. These areas included sites such as farm ponds, creeks and rivers.

Both wetlands were generally in good condition. However, both were impacted by the presence of exotic invasive species. Wetland 2 had a greater occurrence of exotic invasive species than did Wetland 1, but most of those occurred in one previously disturbed area. Exotic invasive plant species are opportunistic and will quickly invade a disturbed area and continue to spread.

Table 14 - Wetland Impacts

Build Alternative	Acres of Wetland Impact
A	No impacts
B	2.72 acres (Wetland 1)

Potential impacts to wetlands would be avoided, where practicable, minimized by slight alignment modifications in the final design for the interchange, or mitigated on site, or at an approved wetland bank.

Project area wetlands consist mainly of open-water farm ponds that do not have a high degree of functionality. The larger palustrine forested wetland areas, typical of those impacted by Build Alternative B, are located west of the project area. Consequently, any indirect or cumulative impacts to these resources would likely be associated with Alternative B. These impacts would be associated with development efforts. Development efforts are anticipated to occur initially along the intersections of the Northern Connector with area roadways. This initial development would most likely be highway commercial development, which includes gasoline/food stores, motels, restaurants and similar types of commercial applications that serve travelers and commuters. Further development may include residential and/or light industrial activity. Indirect impacts may cause displacement of wetlands that were initially impacted along the Build Alternative B corridor. Cumulative impacts could occur in the area around the new Connector as development continues throughout the next decade. Expansion activities should show sensitivity to wetlands resources as plans are developed. The U.S. Army Corps of Engineers and the Tennessee Department of Environment and Conservation will require coordination if such activities would impact waters of the United States, including wetlands, and would have some control over mitigation measures for expansion activities including erosion and sedimentation control and replacement of wetlands.

Past actions in the project area that may have resulted in impacts to wetlands include development of the present-day local roadway network, including existing I-40, US 70N, State Route 135, State Route 136 and State Route 56, draining and clearing mainly from farm property development and related activities, logging and mining. Based on field studies, most natural wetlands in the project area are found in locations that are generally undesirable for activities such as residential, scattered commercial and farm property development. Though it is presumed that some amount of wetland habitat was impacted as a result of past actions in the project area, the overall impact on project area wetlands is indeterminable.

Reasonably foreseeable future actions/development as a result of the project, which is expected to be limited and primarily concentrated at proposed interchange locations, and other development not associated with the project, will likely result in some additional impacts to wetlands. Reasonably foreseeable future impacts to these resources are not quantifiable, but could include such impacts as limited amounts of draining and clearing from ongoing roadway, bridge and culvert maintenance activities, scattered single family residential and farm property development, and future commercial and possibly light industrial development within the immediate and nearby area surrounding the proposed project.

Cumulative impacts to wetlands in Cookeville are generally less predictable. Continuing residential, commercial, industrial and roadway development in this area, which is expected to occur whether or not the project is constructed, is likely to result in some level of wetland impacts. However, cumulative impacts to this resource in these areas are

not quantifiable due to the limited availability of historic records and land use planning information.

M. Water Body Modifications and Wildlife Impacts

Construction activities would result in temporary impacts to project area streams. Soil erosion and the placement of fill materials would increase stream sedimentation and turbidity, which could potentially impact habitat for aquatic organisms. These potential impacts would be minimized using best management practices including the installation and maintenance of erosion and sedimentation control measures throughout the construction phase of the proposed project.

As currently proposed, no stream channel relocations have been recommended. However proposed Build Alternatives A and B would impact a number of project area streams. If the streams are impacted from filling or excavation activities, a Section 404 Dredge and Fill Permit will be required from the U.S. Army Corps of Engineers during the final design phase. Table 15 provides details on potential impacts to project area streams associated with the proposed Build Alternatives.

Table 15 Stream Impacts

Aquatic Site and Stream Impacted	Length of Impact, Alternative A	Length of Impact, Alternative B
Tributary of West Blackburn Fork at Site 1	251 ft.	271 ft.
Tributary of Cane Creek at Site 2	320 ft.	N/A
Tributary of Cane Creek	253 ft.	N/A
Tributary of Cane Creek	53 ft.	N/A
Tributary of Cane Creek (US 40 crossing)	834 ft.	N/A
Tributary of Cane Creek (US 40 and Local or Rural Rd.)	79 ft.	N/A
Tributary of West Blackburn Fork (Bennett Rd.)	177 ft	N/A
Tributary of Cane Creek (Stewart Cemetery Rd.)	23 ft.	N/A
Tributary of West Blackburn Fork (US 40 crossing)	311 ft.	311 ft.
Tributary of West Blackburn Fork	N/A	299 ft.
Tributary of West Blackburn Fork	N/A	556 ft.
Totals	2301 ft.	1437 ft.

Examining the loss of habitat associated with a project best assesses potential impacts to terrestrial organisms. A summary of Wildlife Habitat Displacements are provided in Table 16, below. Terrestrial habitat types identified within the project impact area include forested, agricultural and developed areas. Alternative A would have fewer impacts to agricultural areas than Alternative B. Alternative B would impact nearly five times more developed area and approximately 1.6 times the forested area as Alternative A.

Table 16 – Wildlife Habitat Displacement by acres (ac)

Habitat Type	Alternative A	Alternative B
Agricultural	104 ac	126 ac
Developed	4 ac	18 ac
Forested	75 ac	119 ac
Total Area	183 ac	263 ac

Indirect and cumulative impacts to wildlife habitat would be associated primarily with the planned development around the proposed interchanges with I-40 and Buffalo Valley Road. These activities could result in further displacement of wildlife habitat. Local and regional development efforts should show sensitivity to these habitats as plans are made change land usage. Loss of habitat will increase pressure on local fauna to relocate. The area immediately surrounding development areas would realize the greatest pressure as animals would initially relocate there. Floral species, especially those that provide food for animals would experience pressure from increased grazing.

N. Threatened and Endangered Species Impacts

The project team’s biologists searched the US Fish and Wildlife Service (USFWS) database and coordinated with US Fish and Wildlife Service biologists to determine if any federally listed endangered or threatened animals and plants occurred in the proposed project area. TDOT sent a letter of coordination to USFWS in Cookeville, TN informing them of the proposed action and requesting information on protected species on January 23, 2003. USFWS responded with a letter dated February 19, 2003, identifying the presence of three federally protected species – the Indiana bat, the gray bat and the American Bald Eagle. The letter has been included in the Appendix III. The federally listed endangered gray bat (*Myotis grisescens*), the Indiana bat (*Myotis sodalis*) and the Bald eagle (*Haliaeetus leucocephalus*) were identified as species known to exist in the Buffalo Valley and Cookeville West Quadrangle USGS topographic maps. A Biological Assessment (BA) was conducted and submitted on September 9, 2006 to TDOT (Appendix III). The following information is based upon results of the field trips and the BA.

The Gray bat has gray or russet fur and is approximately 3 to 4 inches in length. They roost, breed, rear young, and breed in caves continuously. Gray bats migrate between summer and winter caves and will use transient or stopover caves along the way. The bats are totally reliant on a few caves year-round for their survival. Although no known caves that harbor gray bats occur within the project area, potential Gray bat caves do exist within Putnam County. Riparian corridor deforestation within the foraging range of these caves could decrease the suitability of the caves for Gray bats. However, only partial riparian deforestation along portions of Cane Creek is likely to occur. Gray bats were

detected during an endangered bat survey for the formerly proposed SR 451 (Corridor J) just north and east of the project in the summer of 2002. Ament Cave, a known Gray bat summer roost, is located approximately 1.25 miles south-southeast of Cookeville. The Gray bat's foraging range is approximately 10 miles; therefore it can be assumed that Gray bats use the project area as a travel route and for foraging. Definitive statements about Gray bat use of the project area cannot be made without a bat survey. It was a recommendation of the Harvey (2003) study that "since Gray bats forage over water, and since they usually fly close to wooded areas or follow wooded corridors as they travel to foraging sites, as much as possible, streams, lakes, ponds, and wooded areas should be avoided during the time of year that Gray bats are (potentially) present (roughly April through October), and that these habitat types be impacted as little as possible." The gray bat was identified in 2003 in an area just north of the Northern Connector project. As with the Indiana bat, most of the streams in the area are too small and cluttered for foraging and travel corridors. Cane Creek and an unnamed tributary of the West Blackburn Fork are considered moderately suitable as sites for the gray bat's hunting and travel purposes. Appropriate mitigation measures for the Indiana and Gray bat would be followed in accordance with USFWS guidance and consultation, and these measures are listed below.

The Indiana bat is a small bat, less than 2 inches in length, with dark gray to brownish black fur. Indiana bats typically roost under loose bark in the summer and in caves during the winter. Small tracts of forest suitable for Indiana bat summer use exist within the proposed project area. These small, isolated areas are considered to be poor to marginal habitat for this species. Most of the streams within the project corridor are too small and cluttered for use by the Indiana bats for foraging or as a travel corridor. Cane Creek, immediately south and east of Alternative A and an unnamed tributary of West Blackburn Fork, immediately west of Alternative B, were assessed as moderately suitable foraging and travel corridors. No caves suitable for Indiana bat hibernation were located within or near the project area. In the absence of a field study, the presence of the Indiana bat is assumed for the project area. Mitigation measures will be required to avoid adverse impacts, and these measures are listed below.

The project will impact several unnamed tributaries of West Blackburn Fork. Gray bats were documented using West Blackburn Fork in an Endangered bat survey conducted in the summer of 2002 for the formerly proposed SR 451 (Corridor J) (Harvey 2003). Strict erosion control measures must be utilized during construction of this project, especially if Alternative B is selected, to prevent sedimentation of this receiving stream.

Through the use of appropriate mitigation, substantial adverse impacts to the Indiana and gray bat species can be avoided. If a Build Alternative is selected, the following mitigation measures will be implemented:

- ♥ Tree removal in construction zones must be scheduled between October 15 and March 31 to prevent disturbance to trees that may harbor the Indiana bat summer colonies.

- ♥ Tree cutting will be limited to areas where construction must occur within 100 feet of stream banks within right of way limits. This will maintain a riparian buffer zone.
- ♥ Disturbed areas will be re-vegetated to the maximum possible extent with tree species that produce sloughing bark and snags. Species to consider include white oak, northern red oak, white ash, shagbark hickory, slippery elm, black locust, American elm, shellbark hickory, cottonwood and sycamore. This mitigation measure is especially important in areas where project construction activities cause disturbances to riparian vegetation.
- ♥ Indiana bats forage (hunt) over local waters necessitating preservation of water quality in forage areas. Therefore stream crossings will be limited to direct crossings.
- ♥ Location of construction equipment in streams will be avoided to the greatest extent possible. Staging, refueling, and cleanup areas will not be allowed alongside streams. All TDOT Best Management Practices for stream protection will be implemented during the construction of the project.
- ♥ Project construction is not anticipated to contribute to degradation of water quality in area streams.
- ♥ Avoidance of construction activities within recognized bat habitat areas will occur during periods of known bat activities if bats are identified.

The bald eagle is a striking, dark-brownish/black bird with a white head and tail. Juvenile birds are a mottled brown with white blotches. They do not obtain the full distinctive plumage of the adults until they are four or five years old. Bills, legs, and feet are a deep yellow. They dwarf most other North American raptors. Their wingspans range from six and a half to seven and a half feet, while body length varies from about three to three and a half feet. Bald eagles weigh from six to eight pounds. Females are larger than males and have a slightly longer wingspan.

Appropriate bald eagle nesting or roosting habitat does not occur within the project area. Some commonly known nesting trees, including pines, oaks, and poplars occur, but forested areas are fragmented and most are located within proximity to developed areas, including the city of Cookeville, which is approximately five miles from the project area. Two relatively large bodies of water, Center Hill/Caney Fork River, and Cordell Hull Lake/Cumberland River, are located an estimated 11 and 13 miles from the project, respectively. Eagles have been identified within 16 miles of the project area. However, the proposed project is located within an area that is predominately fragmented with suburban development. Some small areas of fairly mature second growth forest occur within the project area, but they are surrounded by residential, agricultural and urban development and are not anticipated to attract foraging eagles. The proposed action is not likely to adversely affect the American bald eagle.

Additionally, the following species of Management Concern may occur within the project area: Rafinesque's big-eared bat (*Plecotus rafinesquii*), Alleghany (Eastern) woodrat (*Neotoma magister*), Bachman's sparrow (*Aimophila aestivalis*), the dirty darter (*Etheostoma olivaceum*), and the Obey crayfish (*Cambarus obeyensis*).

Because bat netting was not performed along stream corridors that constitute potential foraging habitat, the presence of Indiana and gray bats was not confirmed in the area. Assuming presence of these species, it is reasonable to anticipate that these bats would use the forest-lined stream segments as foraging habitat, as well as much of the forested areas along both proposed corridors as Indiana bat maternity roosting habitat and foraging areas.

Potential indirect and cumulative impacts to protected species would include additional habitat loss to the anticipated development in the areas surrounding the proposed interchanges. Past impacts are evident in the area where urban, residential and agricultural land use is situated. Habitat has been removed for these purposes, except for fragments of forested areas. Land use has shifted to commercial and residential use. Additional pressures will be placed on floral and faunal species. Species will be forced to migrate into increasingly crowded conditions. Local development efforts should include sensitivity to biohabitats and the effects of displacement when considering land use changes.

During the review process of the BA, the US Fish and Wildlife Service was notified by the American Speleological Society of the presence of a cave and sinkhole complex containing colonial bats that appeared to be located in the immediate vicinity of the two project alternatives. Based on this information USFWS requested that the BA be deferred until they located and surveyed the cave complex to determine if the presence of gray and/or Indiana bats were occupying the site. The person who identified the cave refused to identify the location of the cave. USFWS attempted through other methods to locate the cave. The agency talked to landowners in the vicinity of the alignments, visited shallow, cave like areas, but found no caves that feature climatic and other conditions that would be suitable habitat for gray or Indiana bats.

Upon conclusion of the field investigations, USFWS withdrew concerns that the project as presented in the BA would adversely affect endangered bats. This satisfies compliance with Section 7. The BA and USFWS letter are included in Appendix III.

A total of 3.5 years had passed since the Threatened and Endangered Species list was consulted. A species search was completed using the TDEC DNA database on June 29, 2006; no species were found within the project area. No further work is necessary.

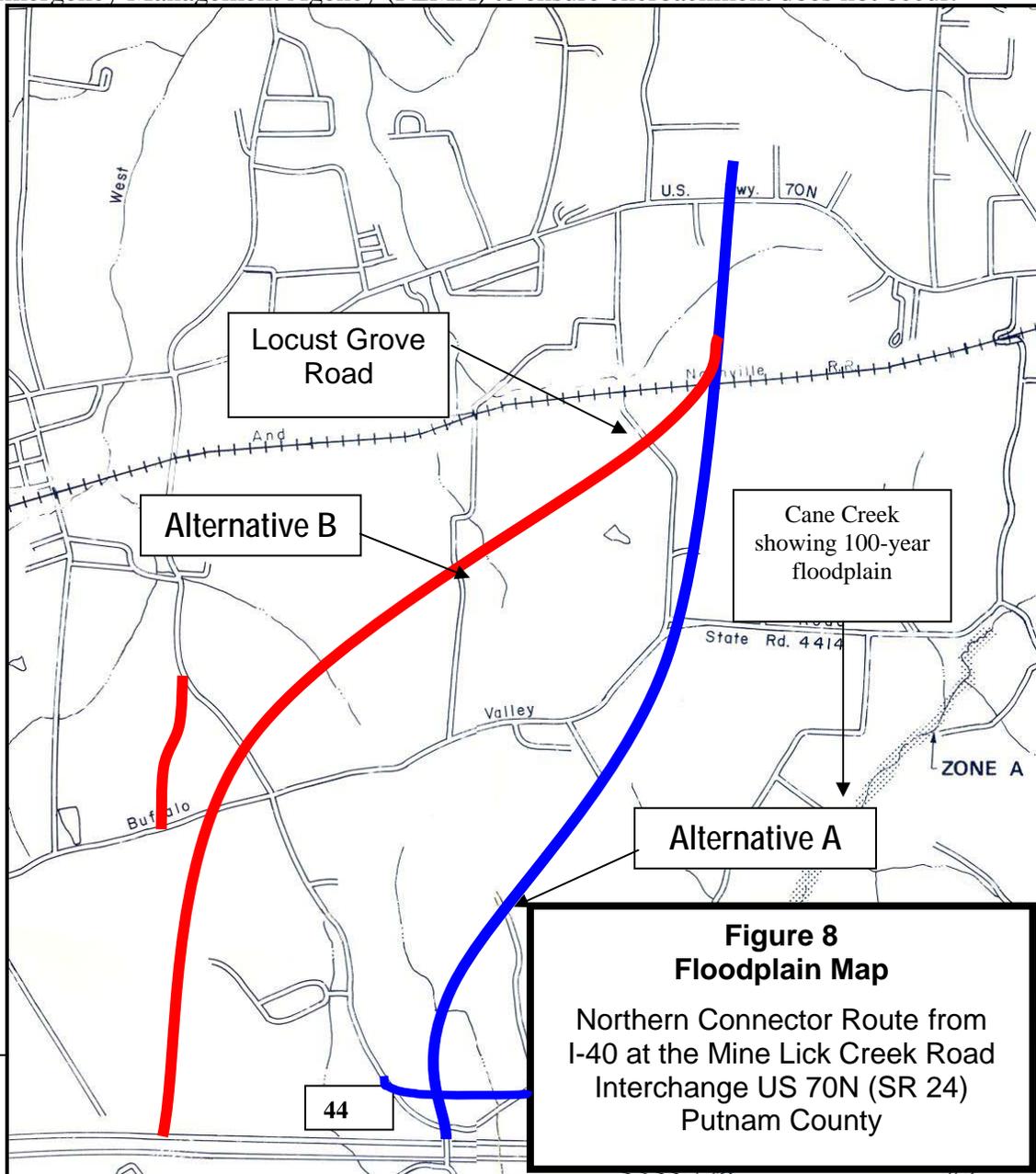
O. Floodplain Impacts

Impacts to project area floodplains were analyzed using Flood Insurance Rate Maps (FIRM), U.S. Geologic Survey (USGS) Topographic Quadrangle Maps and field reviews. Please refer to Figure 7 for a copy of the project area FIRM. Based upon the analysis of these materials, the proposed Build Alternatives A and B would not impact the 100-year floodplain of any project area stream.

Field observations indicate that past floodplain encroachment within the proposed project area has occurred primarily as a result of scattered residential and farm property development and maintenance, and roadway construction. The majority of this encroachment has come in the form of vegetation removal, soil tilling, and grading, and to a lesser extent bank shaping, channeling and other riparian modifications.

Reasonably foreseeable future impacts to 100-year floodplain are not quantifiable, but could include impacts related to continued residential and farm property maintenance and development that includes removal of vegetation, soil tilling and grading, and to a lesser extent bank shaping, channelization, and other riparian modifications. Reasonably foreseeable future impacts as a result of roadway construction are not expected as a FEMA “No Rise” certification would be required for any future transportation projects in the area.

Although the project will not impact floodplains, development activities may unintentionally include construction within or near floodplains. Development efforts within the floodplain areas would require coordination with FEMA and the U.S. Army Corps of Engineers. It is unlikely that these agencies would condone such activity within floodplains. Consequently, indirect and cumulative impacts associated with the proposed project are not anticipated. However, local and regional development activities should include reference to Flood Insurance Rate Maps (FIRM) provided by the Federal Emergency Management Agency (FEMA) to ensure encroachment does not occur.



Cumulative impacts to FEMA 100-year floodplain in Cookeville are less predictable. Cumulative impacts to 100-year floodplain in are expected to include influences from residential, commercial and industrial development mainly as a result of vegetation removal, grading, and to a lesser extent bank shaping, channeling and other riparian modifications. However, cumulative impacts to this resource in these areas are not quantifiable due to the limited availability of historic records and land use planning information.

P. Historic Properties Impacts

In the spring of 2003, historians surveyed and documented structures in the project area in an effort to identify properties listed, or potentially eligible for listing, on the National Register of Historic Places (NRHP). The findings of this report are detailed in the Architectural/Historical Assessment and Documentation of Adverse Effect (Pursuant to 36 CFR 800), which is on file at TDOT Environmental Division. One property, the Union Grove Presbyterian Church, was identified as a concern. The assessment was coordinated with the Tennessee Historical Commission, which issued a response, dated April 9, 2003 and is provided in Appendix II of this document. The Tennessee Historical Commission Executive Director and Deputy State Historic Preservation officer issued a finding of “No Adverse Effect” to any properties eligible for listing in the NRHP, specifically the Union Grove Presbyterian Church. Therefore, this project is found to be compliant with the requirements of Section 106 of the Historic Preservation Act.

Although the project is not anticipated to have measurable direct impacts upon cultural resources, indirect and cumulative impacts are possible. These impacts would be associated with sites located near primary connector roads and interchanges. These interchanges usually experience land use changes. Commercial highway development is typical at these locations and includes gasoline/convenience stores, motels, and restaurants to serve travelers. Indirect effects might include additional noise and visual impacts associated with the construction of these commercial sites and the traffic generated as they become operational. Cumulative impacts include further displacements and additional noise and visual impacts if development is continual over several years or decades. Local and regional development efforts should include sensitivity to historic properties as plans in the project corridor for future growth are considered.

Indirect impacts may also include residential development causing further potential displacement of historic properties or additional visual and noise impacts. Residents from Cookeville may elect to move to areas near the Northern Connector Route if local development efforts include residential developments in the area. Although this area has not experienced rapid land use change or development in past years, a new roadway would provide an efficient route for commuting within and through the region. Cumulative impacts from the possible development include possible removal of historic properties in the area and continued noise and visual. Local and regional developers should show sensitivity to these sites as they consider development plans in the project area.

Q. Archaeological Impacts

In October 2003 a Phase I archaeological survey was conducted on the proposed Northern Connector from I-40 to US 70N (SR 24) in Putnam County. The purpose of this survey was to assess potential archaeological and historical resources that may be affected by the proposed facility. All investigations were conducted in accordance with Section 106 of the Historic Preservation Act of 1966; the “Secretary of the Interior’s Standards and Guidelines for Archaeology and Historic Preservation Activities, as published in the Federal Register on September 29, 1983, Vol. 48 Part No. 190, Part V (48 CFR 800.9 and CFR 800.9 (c) (1).

A review of the site files at the Tennessee Division of Archaeology (TDOA) showed that no sites had been previously recorded within the project area.

No sites were located, and due to the findings of this survey, no further archaeological work is recommended. In the unlikely event that human remains are encountered during construction, operations should cease in the subject area and the State Archaeologist should be notified immediately.

Although the project is not anticipated to have measurable direct impacts upon cultural resources, indirect and cumulative impacts are possible. These impacts would be associated with sites located near primary connector roads and interchanges. These interchanges usually experience land use changes. Commercial highway development is typical at these locations and includes gasoline/convenience stores, motels, and restaurants to serve travelers. Indirect effects might include additional noise and visual impacts associated with the construction of these commercial sites and the traffic generated as they become operational. Cumulative impacts include further displacements and additional noise and visual impacts if development is continual over several years or decades. Local and regional development efforts should include sensitivity to historic properties as plans in the project corridor for future growth are considered.

Indirect impacts may also include residential development causing further potential displacement of historic properties or additional visual and noise impacts. Residents from Cookeville may elect to move to areas near the Northern Connector Route if local development efforts include residential developments in the area. Although this area has not experienced rapid land use change or development in past years, a new roadway would provide an efficient route for commuting within and through the region. Cumulative impacts from the possible development include possible removal of historic properties in the area and continued noise and visual. Local and regional developers should show sensitivity to these sites as they consider development plans in the project area.

Pursuant to Section 106 of the National Historic Preservation act, a letter and a summary of project data were sent to the following Native American Groups: The Eastern Band of Cherokee Indians, the Cherokee Nation of Oklahoma, the Chickasaw Nation, the Choctaw Nation of Oklahoma, the Muscogee (Creek) Nation, the Seminole Nation of Oklahoma, the United Keetoowah Band of Cherokee and the Eastern Shawnee Tribe of

Oklahoma. The information was sent to invite these tribes, and no response was received.

R. Hazardous Materials Impacts

During the course of field investigations related to the proposed project, one property was identified as containing materials that could pose a threat to human health and the environment. This property, an auto salvage yard, is located along US 70N and is impacted by both proposed alternatives that may require relocation. Please refer to Figure 12 for the location of this potential hazardous materials site.



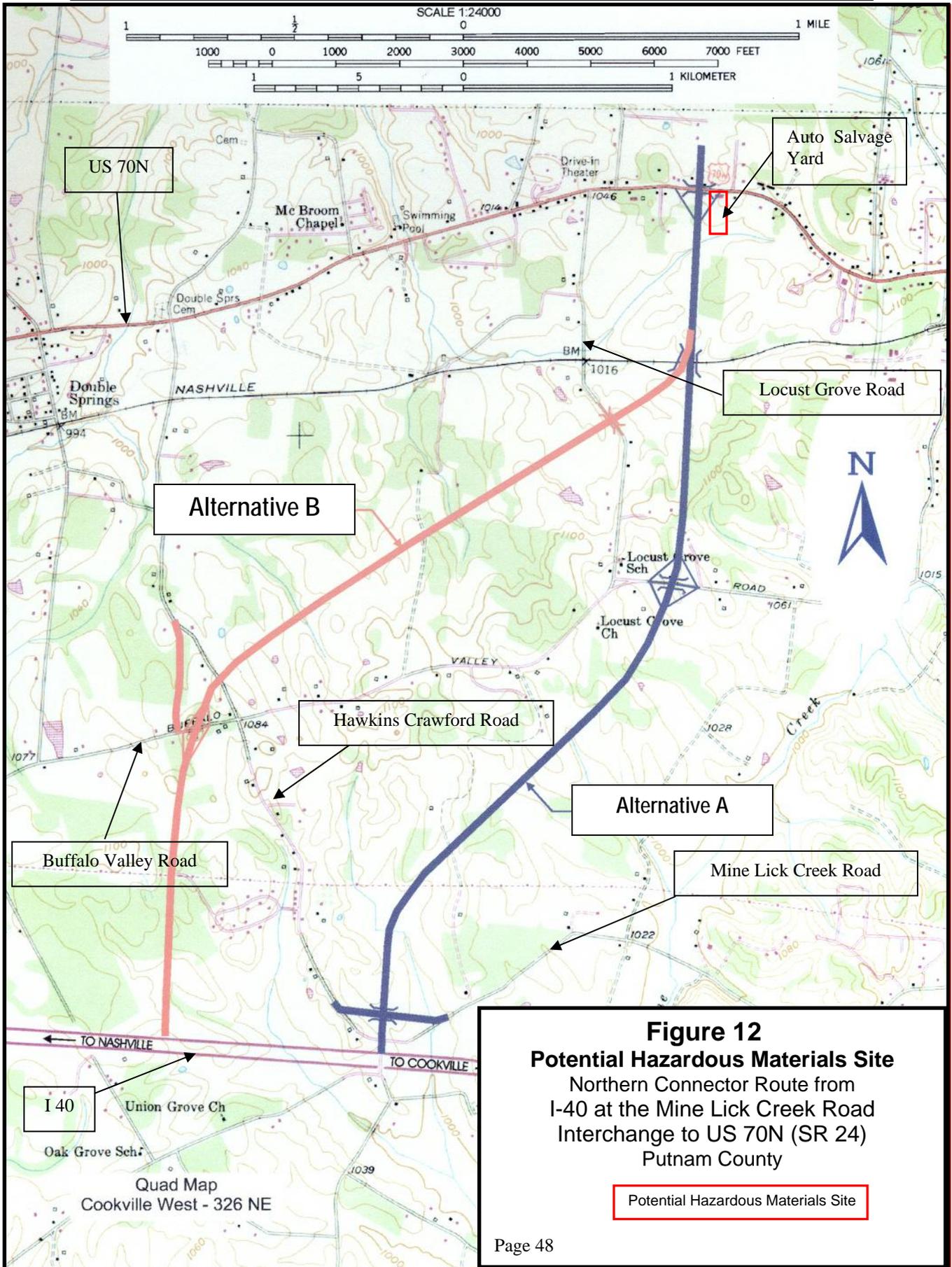
The field investigation of the subject property revealed the presence of more than fifty 55-gallon barrels stacked along the present-day right-of-way for US 70N. Some of the barrels, depicted in Figure 8, appeared to be empty of contents. However, due to safety concerns, none of the barrels were opened or inspected other than visually from a small distance. Several of the barrels were labeled as containing the following compounds: Phosflex® 71B, and 1,4 Butanediol.



Material Safety Data Sheets (MSDS) available on the Internet indicates Phosflex® 71 B is manufactured by AKZO Nobel Chemicals, Inc. of Dobbs Ferry, NY. This compound is utilized as a flame-retardant plasticizer. An Internet search for MSDS information revealed that 1,4 Butanediol is utilized as in the production of industrial cleaners, polyurethane, and Spandex®, as well as abused a recreational drug.

In addition to the barrels described above, the site also contained materials typical of those found in an auto salvage yard. The site contained numerous cars in varying conditions, as well as various parts of automobiles scattered about the site (Figure 10). During the field inspection of this site, runoff from rainfall followed an intermittent stream channel, which bisected the site from east to west. As depicted in Figure 11, this runoff has the potential to carry pollutants from the site onto the adjacent properties. TDOT will investigate avoidance of this site during the design phase.





S. Construction Impacts

Construction activities associated with the proposed project would result in temporary impacts to water, noise, and air quality, as well as the terrestrial habitat in the immediate vicinity of the project. In order to minimize potential adverse effects due to the siltation, soil erosion, or possible pollution of area streams, the contractor would be required to comply with all provisions outlined in the Standard Specifications for Road and Bridge Construction, as issued by TDOT, and as amended by the most recent applicable supplements. These provisions implement the requirements of the FHWA Federal-Aid Policy Guide Chapter 1, Subpart G, Part 650, and Subpart B. When regulations from these two policies conflict, the more stringent of the two would be applied. Additionally, the contractor would be required to schedule and conduct operations according to these provisions, which contain precautionary measures to reduce siltation.

Disposal of surplus materials, as well as solid waste generated by construction activities, would be conducted in accordance with all applicable solid waste rules and regulations. TDOT would be responsible for coordinating all utility relocations with the respective utility providers.

Traffic would be maintained at all times. A maintenance-of-traffic plan will be prepared during the design phase. Access to properties would be maintained during any construction activities.

T. Indirect and Cumulative Impacts

By United States Code of Federal Regulations (CFR) definition, *direct effects (or impacts)* are caused by the action and occur at the same time and place (40 CFR § 1508.8). *Indirect effects (or impacts)*, 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 (40 CFR § 1508.8). *Cumulative effects (or impacts)* are impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR § 1508.7).

An analysis of indirect and cumulative impacts for a project of this nature involves an assessment of the direct and indirect environmental effects of the proposed action, and a discussion of incremental, resource-specific impacts when considering *other past, present and reasonably foreseeable future actions*. Specifically, this consists of: 1) an identification of the environmental resources and features directly and indirectly impacted by the project, as determined in in-depth environmental base studies completed for this study, 2) an identification of other past, present and foreseeable future actions that have impacted (or will impact) the resources affected by the project, 3) an identification of appropriate geographic and temporal limits for the analysis, and 4) an assessment of

cumulative impacts on resources affected by the project when considering resource conditions and all relevant past, present and future actions.

Land Use

The construction of the Northern Connector would not significantly alter the land use by direct impacts. Development activities mentioned in the Cookeville Comprehensive Land Use Plan, 2000, have been identified for the area within and adjacent to the proposed Northern Connector Project. Some development is occurring currently along I-40 and US 70N. These activities will continue even if the project is not constructed.

If selected, Alternate A would require an estimated 104 total acres, and Alternate B would require an estimated 126 acres. The indirect and cumulative impacts associated with land use change would be initially located at interchanges where the Northern Corridor intersects with primary and secondary routes such as Buffalo Valley Road, Hawkins Crawford Road, Locust Grove Road and US 70 North. Initial development will most likely be highway commercial development. Indirect effects associated with this project include development of gasoline/service stations, hotels, restaurants and similar applications that serve travelers and commuters. The indirect effects would be likely to occur within the first five years after implementation of the project.

The area will realize a transition from agricultural activities. Cumulative impacts include the possible development of residential areas and ultimately expanded commercial and light industrial development. These changes would most likely occur over the next two decades.

Farmland Indirect and cumulative impacts to farmland are expected if the No-Build or a Build Alternative is selected. Development activities are occurring adjacent to the project corridor at the present time, and according to local officials, these efforts are anticipated to continue into the foreseeable future. Loss of farmland in the area is reflective of state and national trends. The loss is associated with increasing expenses/diminished profitability of operating farms, and with land use changes. It has become more profitable to sell farmland for changing land uses than to continue operating farms as primary means of income. This trend has been accelerating over the past two decades. The project will complement local development efforts, which will contribute to this trend. If a Build Alternative is selected, the impacts associated with farm loss will be slightly accelerated in relation to the No-Build Alternative, but as mentioned in the Land Use section above, development activities are ongoing in this area. Local and regional development efforts should consider this trend and show sensitivity to loss of farmland and prime and unique soils when considering site locations for future business, residential and industrial development efforts. Indirect effects would be associated with farms that are located near intersections along the proposed Northern Connector. These farms would be likely to sell portions or all of their land to meet the demands for highway commercial development in the near future. Long term, cumulative impacts include further loss of farmland in planned residential, commercial, and industrial land use change. These losses would occur most likely adjacent to or

within corporate city limits and along State and US highways that would intersect with the Northern Connector. If the No-Build Alternative is selected, farm loss will continue to occur, especially within and next to the Urban Service Boundary, but at a slower rate than if a Build Alternative is selected. Development goals should include sensitivity to farms and prime and unique farmlands when planning for expansion in the area.

Economic Positive indirect and cumulative economic impacts of the proposed project consider both short-term and long-term benefits. Indirect effects could be associated with construction activities. These activities would require the purchase of local goods and services, which would cultivate business activity with local merchants. Additionally, construction related jobs could provide opportunities for unemployed laborers. The proposed project would likely generate the development of new businesses, particularly surrounding the proposed interchange locations. These new businesses would generate additional tax revenues, as well as increased employment opportunities, providing long-term benefits to the local economy. Construction of the proposed project would remove land and improvements from the local tax base. However, these losses would be short-term, as anticipated new residential and commercial development would likely overtake these impacts in the long term.

Long term, cumulative impacts would be associated with activities such as population growth, recruitment and construction of industrial and commercial facilities in the area and loss of farmland as an economic factor. These activities are already planned for, and in some cases, activity is already occurring in the areas around US 70 and Interstate 40 as cited earlier in this document. The project is complementary to these efforts and will facilitate (speed up) the efforts of local and regional officials. The new roadway would be complementary to future efforts to bring economic development to this area of Cookeville. The rate of development will be primarily related to the efforts of local and regional development activities.

Population Indirect and cumulative impacts related to population are anticipated for both Build Alternatives and the No-Build Alternative. If the No-Build Alternative is selected, the rate of development activities in western Cookeville is not anticipated to increase. In addition, the lack of adequate roadways in this area would require trucks hauling raw materials and finished products, and commuters, to rely on substandard or remotely located roadways to access business sites. If adequate transportation conditions are not available the Cookeville/Putnam County area would not be likely to attract and retain commercial and industrial activity. If new jobs are not created, the population will be required to travel longer distances or relocate to sustain a living. This could result in an inactive or negative trend in population patterns.

Terrestrial Habitat Indirect and cumulative impacts to terrestrial habitat are associated with the conversion of land use from forested and other types of natural habitat to rural agricultural and eventually to residential, commercial, industrial and infrastructure applications. These improvements have caused loss of habitat to wildlife inhabiting the area. The changes are primarily located within or near the corporate limits of Cookeville.

The new northern connector will cause loss of 104 or 126 acres of land, depending upon which alternative is selected for construction. Although the direct impacts seem to be minimal, development activities are anticipated to cause indirect impacts from additional loss of habitat adjacent to intersections with the new roadway. The area immediately surrounding the new highway is anticipated to cause indirect impacts to terrestrial habitat further displacing faunal species. Cookeville's population is predicted to continue increasing over the next two decades, and pressure for land required for develop new residential and business sites will accompany this trend. Additional loss of habitat will be cumulatively impacted by being pressured to move to outlying areas of Putnam County causing crowding of species. In addition to loss of habitat, indirect and cumulative impacts could include spreading of invasive and exotic plants through the development of agricultural lands. Indirect impacts would be associated with areas disturbed by construction activities within and adjacent to the project's right of way. Cumulative impacts would be associated with additional residential, commercial and industrial activities that might occur near the project corridor. These activities would be related to population increases, residential development activities, and efforts to recruit commercial and industrial business to the area just west of Cookeville. Local and regional officials should show sensitivity and consider plans to reseed disturbed areas with local, non-invasive plants to complement the efforts created by the project.

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

Aquatic Habitat The project would have indirect and cumulative impacts associated with the conversion of land from undeveloped and agricultural applications to initially highway commercial, and ultimately residential, commercial and industrial usage. Although the project is anticipated to accelerate these changes, the impacts would occur if the No-Build is selected because Cookeville is already developing in areas adjacent to the project corridor and will continue to do so whether or not the highway is constructed. Indirect impacts in the area adjacent to project could result in loss of wetlands including fragmentation or division of wetlands, change of water quality or loss of water, creations of barriers to species and processes (including the riffle pool complex), increased sedimentation and shading. Cumulative impacts would include the incremental reduction of base flow of area streams as development occurs on undeveloped lands. The rate of development is dependent upon local efforts.

Local officials are aware of wetlands located within and near the project area, and should consider plans to avoid removal or alteration of these resources by restricting

development activities within these sensitive areas. Sensitivity to floodplains should also be monitored and coordinated with FEMA.

Threatened and Endangered Species Past actions involving roadway construction, residential and commercial developments have resulted in the removal of some preferred habitat or the degradation of areas of preferred habitat by threatened and endangered species of plants and animals. The extent of the combined effects of past and present actions upon these species of concern is not currently evident. Reasonably foreseeable future actions in relation to the project are expected to be limited and would be concentrated mainly upon proposed intersections and developments not associated with the project. These developments could result in additional loss of terrestrial and aquatic habitats that support threatened and endangered species. Continued land use changes are expected to continue whether or not the project is constructed. In activities adjacent to urban areas, measurable indirect and cumulative impacts are not anticipated, but they should be monitored in undeveloped areas. Local and regional development efforts should show sensitivity toward threatened and endangered species as development efforts continue to push beyond the existing boundaries between urban and rural areas. Consultation with TDEC, the USFWS and the Nature Preserves Commission would ensure that sensitive habitats could be avoided.

Air Quality and Noise Impacts Land use changes are anticipated along US 70 North and Interstate 40 if construction and implementation of the Northern Corridor occur. However, these changes would occur even if the No-Build Alternative is selected. Officials have indicated that development efforts are ongoing, and are reflective of past practices, which have been primarily contained within the urban service limits of Cookeville. The new highway would accelerate the changes, but it is difficult to predict the rate of change because it is dependent upon local and regional efforts to attract and retain commercial and industrial business. If the Northern Connector is implemented, and these developments become operational, additional traffic would use the new roadway and the connecting routes in the area for commuting, shopping, access to public services and recreational travel. The additional vehicles would generate additional air pollutants and traffic noise. The pollutants are not anticipated to alter the air quality attainment status of Putnam County, however local and regional development officials should include efforts to ensure air pollutant noise standards are not exceeded. In addition, local and regional efforts should be continued to ensure that noise levels do not provide short- or long-term impacts to area residents and businesses. Predicted future noise impacts will be mitigated where determined to be feasible and reasonable within the guidelines set forth by TDOT and FHWA. If the No-Build Alternative is selected, development activities and land use changes are ongoing in the area resulting in additional traffic along US 70N, Interstate 40 and area roadways.

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

cumulative impacts attributed to the losses of historic and archaeological resources.

Indirect impacts could result from the development efforts along the project corridor, primarily at intersections and along US 70N. Land use changes resulting from the conversion of farm property to residential and commercial use could result in cumulative impacts associated with further loss of historic and archaeological resources. Indirect impacts could result from development along the areas immediately associated with the new connector including acquisition and demolition of historic structures and their associated lands, and/or removal of archaeologically significant sites (burial sites, religious or occupationally significant sites). Additional noise and visual impacts would also be likely from developments in proximity to the resources. Local and regional officials should show sensitivity when considering land use changes in respect to historic and cultural resources.

Indirect and Cumulative Benefits As noted, indirect and cumulative impacts in past, present and future contexts, have affected and will continue to impact environmental resources associated with the Northern Connector corridor. Some of these actions have or would result in loss of modification of the area's resources. However, notable benefits have been associated with the project.

Improved community and regional connectivity between businesses and residents could be realized. These improvements would contribute to the economic improvement efforts and quality of life improvement goals as set forth by local and regional officials. These efforts are being made to reduce poverty and unemployment rates, and to improve income. The Northern Connector project is considered by the City of Cookeville to be complementary to its plans to provide improved linkage in the western Cookeville and Putnam County area to reinforce efforts to sustain economic vitality. The Northern Connector roadway would provide support in alleviating anticipated traffic pressures associated with ongoing development activities from existing roadways in the area.

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

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

Chapter IV – Interagency Review

On January 23, 2003, a description of the proposed project and a project data summary sheet were sent to the various Federal, State and local agencies and officials. These agencies and officials were requested to review the materials provided them and to submit comments outlining any concerns they may have concerning any effects the proposed action may have upon programs being planned or executed by their organization. The purpose of the solicitation of comments concerning the proposed actions was to address areas of specific concern the agencies may have during the development of the environmental and location studies. In this Chapter, Section A lists the agencies and organizations that received this information and indicates if a response was provided, Section B provides a summary and disposition of these comments, and Section C lists all Cooperating Agencies.

A. Agencies and Organizations

<u>Federal Agencies</u>	<u>Response</u>
Tennessee Valley Authority Environmental Policy and Planning	X
U.S. Army Corps of Engineers, Nashville District, Regulatory Branch (CELRN-OP-F)	X
U.S. Department of Agriculture Natural Resources Conservation Service	X
Appalachian Regional Commission	X
Department of Housing and Urban Development	
U.S. Department of the Interior National Park Service Planning and Compliance Division	
U.S. Department of the Interior U.S. Geological Survey Office of Environmental Affairs	
U.S. Department of the Interior U.S. Geological Survey Water Resources Division	
U.S. Department of the Interior Office of Surface Mining	

U.S. Department of the Interior
U.S. Fish and Wildlife Service X

Department of Commerce
National Oceanic and Atmospheric Administration

U.S. Department of the Interior
Great Smoky Mountains National Park

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Environmental and Engineering Review

Federal Railroad Administration
Office of Economic Analysis (RRP-32)

Environmental Protection Agency
Environmental Assessment Office
EIS Review Section

State Agencies

Response

Tennessee Department of Environment and
Conservation

Tennessee State Planning Office
Upper Cumberland Section X

Department of Economic and Community Development
TDECD NEPA Contact X

Tennessee Department of Environment and Conservation
Tennessee Division of Natural Heritage X

Tennessee Department of Environment and Conservation
Division of Water Pollution Control X

Tennessee Department of Environment and Conservation
Division of Water Supply

Tennessee Department of Environment and Conservation
Division of Ground Water Protection X

TN Department of Environment and Conservation

Division of Solid/Hazardous Waste Management	X
TN Department of Environment and Conservation Division of Air Pollution Control	X
Tennessee Wildlife Resources Agency	
Tennessee Historical Commission Deputy State Historic Preservation Officer	X
Tennessee Department of Agriculture	
Tennessee Department of Education	

Indian Tribes

Response

Eastern Band of Cherokee Indians
Qualla Boundary

Cherokee Nation of Oklahoma

Chickasaw Nation

Choctaw Nation of Oklahoma

Muscogee (Creek) Nation

Seminole Nation of Oklahoma

United Keetoowah Band of Cherokee

Eastern Shawnee Tribe of Oklahoma

Other Organizations

Response

Tennessee Trails Association

Sierra Club

Tennessee State Chapter of the Sierra Club

The Nature Conservancy

Tennessee Conservation League

World Wildlife Fund

Tennessee Environmental Council

Local Agencies

Response

Putnam County Historian

Putnam County Executive

Upper Cumberland Development District

Cookeville Planning and Codes

X

Cookeville Public Works and Engineering Department

B. Summary and Disposition of Comments

U.S. Department of the Army (Army Corps of Engineers) – Project could impact several area streams that are considered Waters of the US, as well as associated wetlands, that fall under their regulatory control.

Disposition – TDOT will acquire all required permits, including a Section 404 Permit, prior to any construction activities.

Appalachian Regional Commission – project would not have any adverse effect on the Appalachian Development Highway System.

Disposition – None required.

Tennessee State Planning Office – Putnam County Regional Planning Commission supports Alternative A due to fewer impacts to properties, lesser amount of required right-of-way and construction materials.

Disposition – None required.

TDEC Division of Water Pollution Control – Agency was delegated authority from the U.S. Environmental Protection Agency to administer certain portions of the Clean Water Act. The Act requires the acquisition of permits for activities involving area streams.

Disposition – TDOT will acquire all required permits, including storm water discharge permits, prior to any construction activities.

TDEC Division of Solid Waste Management – concerns include proper disposal of solid/hazardous wastes generated by the project. States project could have a positive effect on the transportation of waste materials in the area.

Disposition – None required.

U.S. Fish and Wildlife Service – three listed or proposed endangered or threatened species may occur in the project area. Request a copy of biological assessment for review and concurrence in the event project “may effect” listed or proposed species.

Disposition – Potential impacts to federally protected species will be analyzed, and further coordination, if required, will be completed.

Natural Resource Conservation Service – project will result in the conversion of Prime Farmland as defined in the Farmland Protection Policy Act. Farmland Conversion Impact Rating Form AD-1006 provided for completion.

Disposition – Form AD-1006 Farmland Conversion Impact Rating has been completed and is provided in Appendix A, of this document. See Chapter 3, Section B, for additional information.

City of Cookeville Department of Planning – Supports Alternative A, and recommends construction occur in two distinct phases beginning with the completion of the Mine Lick Creek Road/I-40 interchange, and ending with the completion of the proposed Northern Connector Route.

Disposition – None required.

Tennessee Valley Authority (TVA) – no TVA approvals or other involvement required. If project involves the relocation of any TVA transmission lines, notify TVA.

Disposition – None required.

Tennessee Department of Economic and Community Development (TDECD) – supports proposed Alternative A due to the better access and lesser impacts to large tracts of property.

Disposition – None required.

TDEC Historical Commission – project may affect properties that are eligible for listing to the National Register of Historic Places.

Disposition – Impacts to properties listed or eligible for listing to the National Register of Historic Places have been evaluated and are included in Chapter 3, Sections P and Q, of this document.

TDEC Division of Natural Heritage – concerns include impacts to protected species, streams.

Disposition – impacts to protected species have been evaluated and included in Chapter 3, Section N, of this document.

TDEC Division of Ground Water Protection – project is likely to impact subsurface sewage disposal (SSD) systems located along the length of the proposed facility.

Disposition – impacts to project area utilities would be addressed in the final engineering phase.

TDEC Air Pollution Control Division – concerns include emissions of fugitive dust, exhaust from construction equipment, assurance of removal of asbestos from structures requiring demolition, compliance with regulations controlling the practice of open burning.

Disposition – None required.

C. Cooperating Agencies

A preliminary Environmental Assessment has been sent to TVA and the Army Corps of Engineers (ACOE) for their review and comment.

TVA – Chapter 1, Purpose and Need, Local and Regional Planning, page 9, last paragraph, last sentence. Change the last sentence to read, “If a Build Alternative is selected and the project is constructed, the new bypass would facilitate future traffic flow in this area.

Disposition – The statement has been included on what is now page 11.

Chapter III.N. Threatened and Endangered Species, page 39, last paragraph, last sentence. It is noted that Section 7 consultation requirements have been satisfied (page 40, third paragraph). Therefore we suggest that the first sentence be modified. One suggested rewording: “Because bat netting was not performed along stream corridors that constitute potential foraging habitat, the presence of Indiana and gray bats was not confirmed in the area. Assuming presence...”

Disposition – The suggested wording was added verbatim and is not located on page 42.

USACOE – Summary (page 2): At Item 1, under “Permits Required for the Proposed Project,” delete the phrase “for the construction of Alternative B.”

Disposition – The phrase has been deleted.

**Cooperating Agencies
Responses to Draft Environmental Assessment**

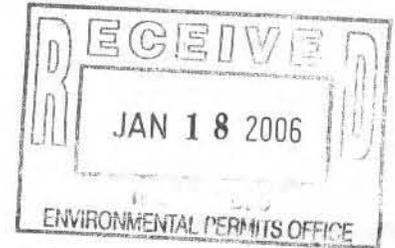


DEPARTMENT OF THE ARMY
NASHVILLE DISTRICT, CORPS OF ENGINEERS
Regulatory Branch
3701 Bell RD
Nashville, TN 37214
January 12, 2006

Regulatory Branch

SUBJECT: File No. 200300193; Proposed Northern Connector Route from I-40 to US-70N (SR-24), in Putnam County, Tennessee

Mr. Charles E. Bush
Tennessee Department of Transportation
Environmental Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334



Dear Mr. Bush:

Thank you for the opportunity to review the Preliminary Environmental Assessment (PEA) for the Northern Corridor. Please refer to File No. 200300193 in any future communication with us concerning this matter. As a cooperating agency, we are glad to offer our comments and suggested changes to the PEA.

Comments.

- a. The purpose and need statement is adequately stated.
- b. The "Build" alternatives have logical termini.
- c. The "Build" alternatives would result in highway construction activities that would impact streams and wetlands under U.S. Army Corps of Engineers jurisdiction. As indicated in our previous correspondence, such activities are subject to our permitting authority under Section 404 of the Clean Water Act (33 USC 1344).
- d. Although Alternative A would result in greater stream channel impacts than Alternative B, we prefer Alternative A to B because it would have no impacts on wetlands (a scarcer resource). We believe that stream channel impacts can be adequately mitigated on- and offsite. An appropriate method of accomplishing off-site mitigation is through the Tennessee in-lieu-fee stream mitigation program.

Suggested Changes.

- a. Summary (Page 2): At item 1, under "Permits Required for the Proposed Project", delete the phrase "for the construction of Alternative B".

b. Chapter III, Section K (Page 33): In the last sentence, replace "Alternative A" with "**Alternatives A and B**".

c. Chapter IV (Page 52): A more accurate description of our agency is as follows: **U.S. Army Corps of Engineers, Nashville District, Regulatory Branch (CELRN-OP-F)**.

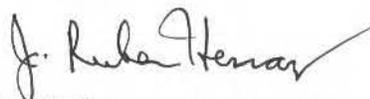
We are available to participate in on-site inspections or attend pre-application meetings to discuss our permitting requirements with you as well as practicable aquatic resource mitigation efforts.

Our specific permitting requirements for road crossings of streams and/or wetlands would depend on the specific installation method and associated stream impacts. We encourage attempts to avoid and minimize aquatic resource impacts to the extent practicable. Road crossings that would not involve substantial stream alterations or fills may qualify for authorization under our Nationwide Permit (NWP) program. Those activities that do not qualify for authorization under our NWP program would require authorization by a standard Department of the Army permit.

We will appreciate your giving us the opportunity to review the Final Environmental Assessment before it becomes available to the public.

If you have any questions or wish to discuss our permit requirements in detail, you can reach me at (615) 369-7519 or jose.r.hernandez2@us.army.mil.

Sincerely,

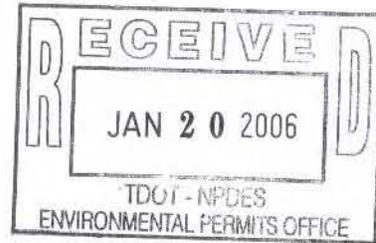


J. Ruben Hernandez
Project Manager
Operations Division



Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1401

January 12, 2006



Mr. Charles E. Bush
Transportation Manager II
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Dear Mr. Bush:

PRELIMINARY ENVIRONMENTAL ASSESSMENT (EA), NORTHERN CONNECTOR ROUTE FROM I-40 TO US 70N (SR 24), PUTNAM COUNTY, TENNESSEE

Thank you for the opportunity to review the preliminary EA for the proposed new location construction of the Northern Connector Route near Cookeville. It appears that the major environmental issues have been addressed. TVA has the following comments and suggestions:

- Chapter I, Purpose and Need, Local and Regional Planning, page 9, last paragraph, last sentence. Change the last sentence to read: "If a Build Alternative is selected and the project is constructed, the new bypass would facilitate future traffic flow in this area."
- Chapter III.N. Threatened and Endangered Species, page 39, last paragraph. It is noted that Section 7 consultation requirements have been satisfied (page 40, third paragraph). Therefore, we suggest that the first sentence be modified. One suggested rewording: "Because bat netting was not performed along stream corridors that constitute potential foraging habitat, the presence of Indiana and gray bats was not confirmed in the area. Assuming presence..."

Should you have any questions, please contact Harold M. Draper at (865) 632-6889 or hmdraper@tva.gov.

Sincerely,

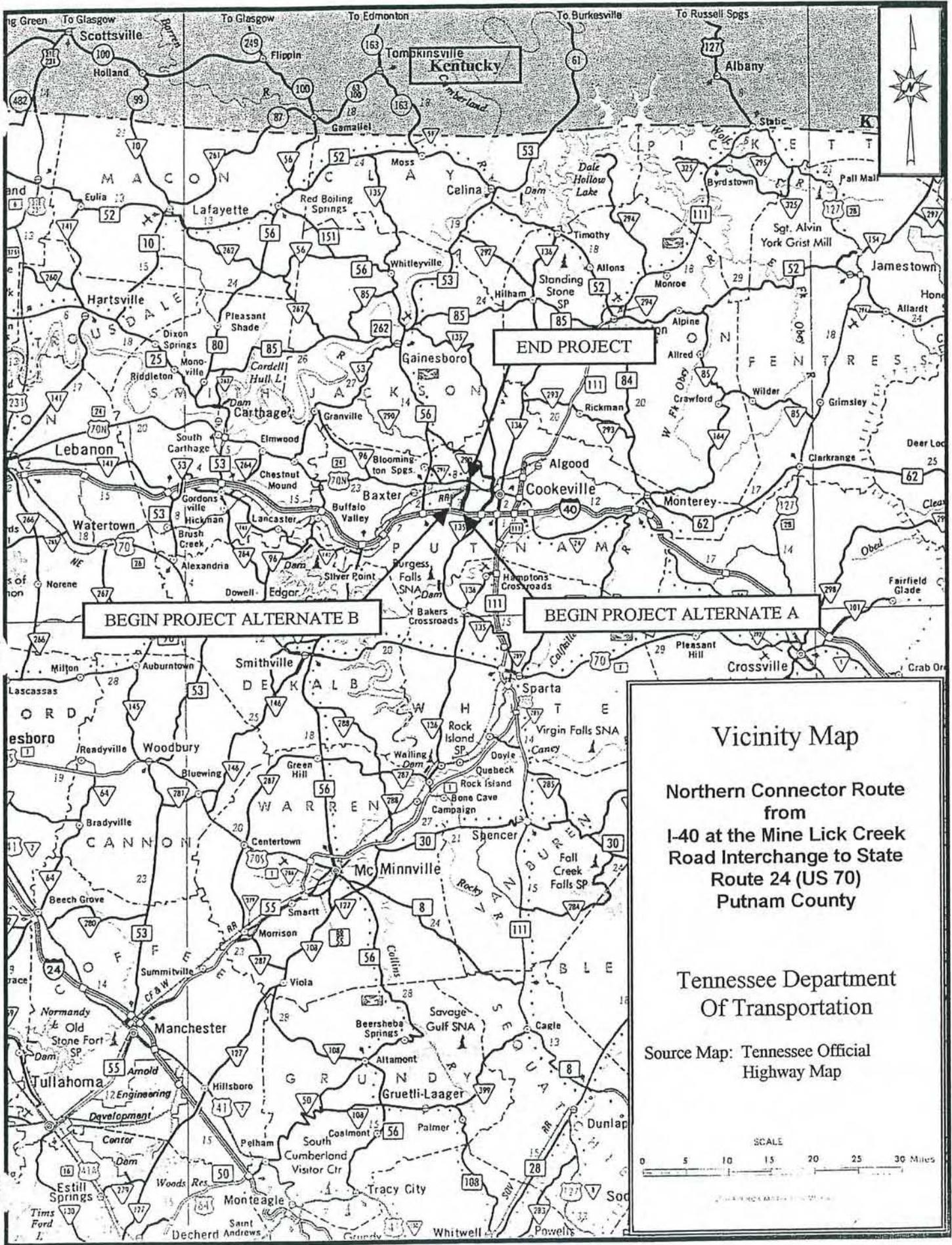
Jon M. Loney, Manager
NEPA Administration
Environmental Policy and Planning

cc: Mr. Bobby Blackmon
Federal Highway Administration
640 Grassmere Park, Suite 112
Nashville, Tennessee 37211

**Appendices
Northern Connector Route
Putnam County**

Appendix I
Correspondence and Coordination

**Initial Coordination Information Packet
And
List of Recipients**



Vicinity Map

Northern Connector Route
 from
 I-40 at the Mine Lick Creek
 Road Interchange to State
 Route 24 (US 70)
 Putnam County

Tennessee Department
 Of Transportation

Source Map: Tennessee Official
 Highway Map

SCALE



Proposed Northern Connector

Project Data Summary Sheet

Project Route

The Proposed Northern Connector Route from Interstate 40 to State Route 24, Putnam County, Tennessee.

General Project Description

The project begins at the proposed Mine Lick Creek Road Interchange on Interstate 40 and extends north and east, connecting with State Route 24 approximately 0.89+ miles west of the Cookeville City limits.

Project Purpose

The purpose of the project is to alleviate future traffic congestion along SR-56, SR-135 and SR-24, and increase operational efficiency for roadway facilities throughout the area.

Traffic

The base year 2007 Average Daily Traffic (ADT) will be 3,700 vehicles per day (vpd) with the design year 2027 traffic at 5,600 vpd.

Alternatives

Alternatives to be considered in the environmental document will include: the No-Build, and two Build Alternatives. The No-Build Alternative will mean that the proposed connector will not be constructed.

Alternative "A" begins at the northern limits of the proposed Interstate 40/Mine Lick Creek Road interchange. This interchange was proposed to be located approximately 2.82+ miles west of the existing SR-135 interchange. The proposed connector extends to the northeast on new location for approximately 1.63+ miles to a diamond-type interchange at Buffalo Valley Road. The alignment then turns due north and continues approximately 1.24+ miles to the project terminus at SR-24. The total length of Alternate "A" is approximately 2.87+ miles.

Alternate "B" also begins at Interstate 40. The location of the proposed Alternate "B" interchange with I-40 is approximately 0.71+ miles west of the existing Mine Lick Creek Road bridge and a minimum of 2.09+ miles from any existing interchange. From this point the Alternate "B" continues north approximately 0.80+

miles to a proposed diamond-type interchange at Buffalo Valley Road. The alignment then turns in a northeastern direction and continues for approximately 2.19+ miles before turning due north. At this point, Alternate "B" becomes the same alignment as Alternate "A" and extends north for 0.48+ miles to the project terminus at SR-24. The total length of Alternate "B" is approximately 3.47+ miles.

The typical cross-section for the Build Alternative will consist of four 3.6 meter (12') traffic lanes divided by a 15 meter (48') grass median, two 3.6 meter (12') shoulders and 5.5 meter (18') ditches within a minimum 75 meter (250') right-of-way width.

Summary of Environmental Concerns

Land Use

Residential development tends to be scattered along the length of the project. Housing takes the form of farm houses with adjacent cultivated land, and single family dwellings in a rural-residential setting. Residential housing is more concentrated near the Buffalo Road and State Route 24 interchanges. Commercial establishments are mostly non-existent along the entire length of the project with the exception of an auto salvage yard located along State Route 24. There is open land and forest covered areas all along the project's length. The project is located approximately 0.89+ miles west of the City of Cookeville.

Air Quality

Air Quality studies will be conducted for the study area. The results of these studies will be analyzed to determine the project's impacts on the air quality of the area.

Noise Evaluation

Noise studies will be conducted on the project. The results of these studies will be analyzed to determine the impact of the project on noise sensitive receptors.

Hydrological Impacts

The construction of the project will require the crossing of streams in the area. These streams are unnamed tributaries of Cane Creek and West Blackburn Fork. Structures will be required to be built over these streams. The location and design of the project will consider the impacts on any floodplains in the area.

and will be constructed in accordance with Executive Order 11988 and all local and federal regulations.

The project will be designed and constructed to minimize harm to the environment. During the construction of the project, strict adherence to all applicable provisions of the Department's Standard Specifications for Road and Bridge Construction and FHWA Best Management Practices for Erosion and Sediment Control (June 1995) will be followed.

Ecological Impacts

Detailed terrestrial and aquatic studies will be conducted to determine the project's impact on the ecological environment. Studies will be done to determine the presence of any endangered or threatened species or unique wildlife habitat that could be affected by the construction of the project. Studies will be done to determine if wetlands will be impacted by the project. Attempts will be made first to avoid adverse ecological impacts and secondly, mitigation measures will be developed to minimize those impacts that cannot be avoided.

Cultural Impacts

Historical and Archaeological studies will be done to determine if there are any sites or properties in the project impact area eligible for or included in the National Register of Historic Places. The studies will determine if the proposed project will affect any sites or properties in the area. Avoidance and mitigation efforts will be studied for adverse impacts to these sites or properties.

Farmland Impacts

Studies will be done to assess the project's impacts on farmland or farmable land. A Farmland Impact Rating Form has been sent to the Department of Agriculture for their input.

Proposed Northern Connector Route from
I-40 at the Mine Lick Creek Road Interchange to State Route 24 (US 70)
Putnam County, Tennessee

Coordination List

Note: This is a comprehensive list of all early coordination. This list was not circulated.

Cooperating Agencies (2)

Mr. Jon Loney
Environmental Manager
Environmental Policy and Planning
Tennessee Valley Authority
400 West Summit Hill Drive, Suite WT8C
Knoxville, Tennessee 37902-1499

District Engineer
Regulatory Functions Branch (ORNOP-F)
U.S. Army Corps of Engineers
3701 Bell Road
Nashville, Tennessee 37214-2660

Farmland letter (1)

Mr. James Ford, State Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
U.S. Courthouse - Room 675
Nashville, Tennessee 37203

Sent special letter for State Conservationist. Sent Farmland Conversion Impact Rating form. Two copies of entire package sent.

Native Americans (8)

Mr. Leon Jones, Principal Chief
Eastern Band of Cherokee Indians
Qualla Boundary
P.O. Box 455
Cherokee, NC 28719

Mr. Chadwick Smith
Principal Chief
Cherokee Nation of Oklahoma
P.O. Box 948
Tahlequah, OK 74464

Mr. Bill Anoatubby
Governor
Chickasaw Nation
P.O. Box 1548
Ada, OK 74821

Mr. Gregory E. Pyle
Chief
Choctaw Nation of Oklahoma
P.O. Drawer 1210
Durant, OK 74702

Mr. R. Perry Beaver
Principal Chief
Muscogee (Creek) Nation
P.O. Box 580
Okmulgee, OK 74447

Mr. Jerry G. Haney
Principal Chief
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Mr. Archie Mouse
Chief
United Keetoowah Band of Cherokee
P.O. Box 746
Tahlequah, OK 74465

Mr. Charles D. Enyart
Chief
Eastern Shawnee Tribe of Oklahoma
P.O. Box 350
Seneca, MO 64865

Local Agencies (3)

Mr. Don Martin, Executive Director
Upper Cumberland Development District
1225 South Willow Road
Cookeville, Tennessee 38506

Mr. Jeff Littrell, Director
Cookeville Planning and Codes
45 East Broad Street
Cookeville, TN 38501

Mr. Greg Brown, Director
Cookeville Public Works and Engineering Department
45 East Broad Street
Cookeville, TN 38501

State and Federal agencies (39)

Division Administrator
Federal Highway Administration
640 Grassmere Park, Suite 112
Nashville, Tennessee 37211

Addressed letter from HMB ALABAMA. Sent a copy of the coordination list, and a sample letter.

Mr. Edward A. Terry, Jr.
Senior Transportation Advisor
Appalachian Regional Commission
1666 Connecticut Avenue, NW
Washington, DC 20235

Mr. Harry Walls, Environmental Officer
Department of Housing and Urban Development
Five Points Plaza Building, 4th Floor
40 Marietta Street
Atlanta, Georgia 30303

Planning and Compliance Division
National Park Service
U.S. Department of the Interior
1924 Building
100 Alabama Street
Atlanta, Georgia 30303

Two copies of entire package sent.

Office of Environmental Affairs
U.S. Geological Survey
U.S. Department of the Interior
USGS National Center, MS-423
12201 Sunrise Valley Drive
Reston, Virginia 20192

District Chief, Water Resources Division
U.S. Geological Survey
U.S. Department of the Interior
640 Grassmere Park, Suite 100
Nashville, Tennessee 37211

Mr. George C. Miller, Director
Office of Surface Mining
U.S. Department of the Interior
530 Gay Street, S.W., Suite 500
Knoxville, Tennessee 37902

U.S. Fish and Wildlife Service
U.S. Department of the Interior
446 Neal Street
Cookeville, Tennessee 38501

Ms. Susan Fruchter, Coordinator
National Oceanic and Atmospheric Administration
Department of Commerce
14th and Constitution Avenue, N.W., Room 5805
Washington, DC 20230

Mr. Phil Francis, Superintendent
Great Smoky Mountains National Park
U.S. Department of the Interior
107 Park Headquarters Road
Gatlinburg, Tennessee 37738

Mr. Jerold W. Gotzmer
Regional Director
Division of Environmental and Engineering Review
Office of Energy Projects
Federal Energy Regulatory Commission
3125 Presidential Parkway
Atlanta, Georgia 30340

Federal Railroad Administration
Office of Economic Analysis (RRP-32)
400 Seventh Street, SW
Washington, DC 20590

Mr. Heinz J. Mueller, Chief
Environmental Assessment Office
EIS Review Section
Environmental Protection Agency
61 Forsyth Street, SW
Atlanta, Georgia 30303
Sent registered mail.

Commissioner.
Tennessee Department of Environment and
Conservation
L & C Tower, 12th Floor
401 Church Street
Nashville, Tennessee 37243-0454
Sent copy of coordination list.

Mr. Don Martin
Urban and Regional Director
Upper Cumberland Section
Tennessee State Planning Office
621 East 15th Street, Suite C
Cookeville, Tennessee 38501-1820

Mr. Wilton Burnett, Jr.
Director of Special Projects
TDECD NEPA Contact
Department of Economic and Community Development
W.R. Snodgrass Tower, 11th Floor
312 8th Avenue North
Nashville, Tennessee 37243

Mr. Reggie Reeves
Director
Tennessee Division of Natural Heritage
Tennessee Department of Environment and Conservation
L & C Tower, 14th Floor
401 Church Street
Nashville, Tennessee 37243-0447

Mr. Paul E. Davis, Director
Division of Water Pollution Control
Tennessee Department of Environment and Conservation
L & C Annex, 6th Floor
401 Church Street
Nashville, Tennessee 37243-1534

Mr. David Draughon, Director
Division of Water Supply
Tennessee Department of Environment and Conservation
L & C Tower, 6th Floor
401 Church Street
Nashville, Tennessee 37243-1549

Mr. Kent Taylor, Director
Division of Ground Water Protection
Tennessee Department of Environment and Conservation
L & C Tower, 10th Floor
401 Church Street
Nashville, Tennessee 37243-1540

Mr. Mike Apple, Director
TN Department of Environment and Conservation
Division of Solid/Hazardous Waste Management
L & C Tower, 5th Floor
401 Church Street
Nashville, Tennessee 37243-1535

Mr. Barry R. Stephens, Director
Division of Air Pollution Control
TN Department of Environment and Conservation
L & C Annex, 9th Floor
401 Church Street
Nashville, Tennessee 37243-1531

Mr. Dan Sherry, NEPA Contact
Tennessee Wildlife Resources Agency
Ellington Agricultural Center
P. O. Box 40747
Nashville, Tennessee 37204
Four copies of entire package sent.

Mr. Herbert L. Harper
Deputy State Historic Preservation Officer
Tennessee Historical Commission
Clover Bottom Mansion
2941 Lebanon Road
Nashville, Tennessee 37243-0442
Two copies of entire package sent.

Deputy Commissioner
NEPA Contact
Tennessee Department of Agriculture
Ellington Agricultural Center
Nashville, Tennessee 37204

Mr. Tom Fusco
Executive Administrative Assistant
Department of Education
Andrew Johnson Tower, 6th Floor
710 James Robertson Parkway
Nashville, Tennessee 37243-0376

Mr. Ben Smith, Director
Public Transportation, Waterways, and Rail Division
TN Department of Transportation
James K. Polk Building, 18th Floor
505 Deaderick Street
Nashville, Tennessee 37243

Dr. A. Dexter Samuels, Director
Title VI Program
Civil Rights Office
Tennessee Department of Transportation
505 Deaderick Street
James K. Polk Building, Suite 1800
Nashville, Tennessee 37243-0347
Sent copy of coordination list.

Mr. Robert (Bob) V. Woods, Director
Tennessee Aeronautics Division
Tennessee Department of Transportation
484 Knapp Boulevard, Building 4219
Nashville, Tennessee 37217

Tennessee Trails Association
P. O. Box 41446
Nashville, Tennessee 37204

Ms. Liz Dixon
Sierra Club
10417 Victoria Drive, #C
Knoxville, Tennessee 37922

Mr. Clark A. Buchner
Tennessee State Chapter of the Sierra Club
975 North Graham
Memphis, Tennessee 38122

Ms. Gabby Call
The Nature Conservancy
2021 21th Avenue South
Suite C-400
Nashville, TN. 37212

Mr. Marty Marina
Tennessee Conservation League
300 Orlando Avenue
Nashville, Tennessee 37209-3257

Ms. Judy A. Takats
World Wildlife Fund
2021 21st Avenue, South
Nashville TN. 37212

Tennessee Environmental Council
One Vantage Way, Suite D-105
Nashville, Tennessee 37228-1587

Pat Franklin
Putnam County Historian
1009 West Cemetery Road
Cookeville, TN 38501

Putnam County Executive
Putnam County Courthouse
Cookeville, TN 38501

Randal Williams
Historic Preservation Specialist/Planner
Upper Cumberland Development District
1225 South Willow Avenue
Cookeville, TN 38506

EARLY COORDINATION LIST

Proposed Northern Connector Route from
I-40 at the Mine Lick Creek Road Interchange to State Route 24 (US 70)
Putnam County, Tennessee

State and Federal agencies

Mr. Jon Loney, Environmental Manager
Environmental Policy and Planning
Tennessee Valley Authority

District Engineer
Regulatory Functions Branch (ORNOP-F)
U.S. Army Corps of Engineers

Mr. James Ford, State Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture

Mr. Edward A. Terry, Jr., Senior Transportation Advisor
Appalachian Regional Commission

Mr. Harry Walls, Environmental Officer
Department of Housing and Urban Development

Planning and Compliance Division
National Park Service
U.S. Department of the Interior

Office of Environmental Affairs
U.S. Geological Survey
U.S. Department of the Interior

District Chief, Water Resources Division
U.S. Geological Survey
U.S. Department of the Interior

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Office of Surface Mining
U.S. Department of the Interior

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

Ms. Susan Fruchter, Coordinator
National Oceanic and Atmospheric Administration
Department of Commerce

Mr. Phil Francis, Superintendent
Great Smoky Mountains National Park
U.S. Department of the Interior

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Federal Energy Regulatory Commission

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Environmental Protection Agency

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Tennessee State Planning Office

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Tennessee Division of Natural Heritage
Tennessee Department of Environment and Conservation

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Division of Water Pollution Control
Tennessee Department of Environment and Conservation

Mr. David Draughon, Director
Division of Water Supply
Tennessee Department of Environment and Conservation

Mr. Kent Taylor, Director
Division of Ground Water Protection
Tennessee Department of Environment and Conservation

Mr. Mike Apple, Director
TN Department of Environment and Conservation
Division of Solid/Hazardous Waste Management

Mr. Barry R. Stephens, Director
Division of Air Pollution Control
TN Department of Environment and Conservation

Mr. Dan Sherry, NEPA Contact
Tennessee Wildlife Resources Agency

Mr. Herbert L. Harper, Deputy State Historic Preservation Officer
Tennessee Historical Commission

Deputy Commissioner, NEPA Contact
Tennessee Department of Agriculture

Mr. Tom Fusco, Executive Administrative Assistant
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Tennessee State Chapter of the Sierra Club

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Mr. R. Perry Beaver, Principal Chief
Muscogee (Creek) Nation

Mr. Jerry G. Haney, Principal Chief
Seminole Nation of Oklahoma

Mr. Archie Mouse, Chief
United Keetoowah Band of Cherokee

Mr. Charles D. Enyart, Chief
Eastern Shawnee Tribe of Oklahoma

Local Agencies

Mr. Don Martin, Executive Director
Upper Cumberland Development District

Mr. Jeff Littrell, Director
Cookeville Planning and Codes

Mr. Greg Brown, Director
Cookeville Public Works and Engineering Department

Agency Responses to Initial Coordination

RECEIVED MAY 19 2003

1065

JWS
DST
File



DEPARTMENT OF THE ARMY
NASHVILLE DISTRICT, CORPS OF ENGINEERS
3701 Bell Road
NASHVILLE, TENNESSEE 37214-2660

February 19, 2003

REPLY TO
ATTENTION OF:

Regulatory Branch

SUBJECT: File No. 200300193; Preliminary Review for the Proposed Northern Connector Route from I-40 at the Mine Lick Creek Road Interchange to State Route 24 (US 70), Putnam County, Tennessee

Mr. Charles E. Bush
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

Dear Mr. Bush:

This is in response to your January 23, 2003, letter requesting our agency's comments on the subject highway project. We appreciate the opportunity to be included in your project review. Please refer to File No. 200300193 in future correspondence with us concerning this proposal.

Our agency has regulatory responsibilities pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). The Clean Water Act prohibits the discharge of dredged or fill material into waters of the United States including wetlands without a Section 404 permit. The Rivers and Harbors Act requires Section 10 permit for work in navigable waters of the United States.

Based upon a map review, the proposed route identified as Alternate A appears to cross two unnamed tributaries to Cane Creek and one unnamed tributary to West Blackburn Fork. The proposed route identified as Alternate B appears to cross three unnamed tributaries to Blackburn Fork. Activities associated with the proposed routes have the potential to involve the discharge of dredged or fill material into these unnamed tributaries.

Our preliminary determination is that these waterways are waters of the United States. Discharge of dredged or fill material into these waters or their adjacent wetlands would be subject to our permitting authority under Section 404 of the Clean Water Act (33 U.S.C. 1344). A Notification of Applicant Options (NAO) that explains available options regarding this determination is enclosed.

Our concerns center on potential construction activities in waters of the United States. The potential corridors should be surveyed for the presence of waters of the United States and their adjacent wetlands. Potential impacts to these areas should be identified.

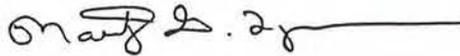
Our permitting requirements for road crossings and attendant features would depend on the specific installation method and associated stream impacts. We encourage a construction plan that would avoid and minimize aquatic resource impacts to the extent practicable. Road crossings that would not involve substantial stream alterations or fills may be authorized under our Nationwide Permit (NWP) program. Activities that do not qualify for authorization under our NWP program would require authorization by a standard Department of the Army (DA) permit.

If the potential project includes work requiring a DA permit, please submit a permit application, plans, proposed mitigation plans, and supporting environmental documentation to this office in a timely manner. Please note that the project may also require a permit from the Tennessee Department of Environment and Conservation.

We are available to participate in any onsite inspections of the potential construction corridors to identify waters of the United States subject to our regulatory authority and attend preapplication meetings to discuss our particular permitting requirements and potentials for avoiding and minimizing aquatic impacts.

Thank you for including us in your review process. If you wish to discuss DA involvement in greater detail, you can reach me at (615) 369-7514, or at marty.g.tyree@lrn02.usace.army.mil.

Sincerely,



Marty G. Tyree
Project Manager
Operations Division

Copies Furnished:

Mr. Rob Tawes
USFWS
446 Neal Street
Cookeville, TN 38501

CELRN-MCA-CEN/R

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: TDOT	File Number: 2003 00193	Date: 2/19/03
Attached is:		See Section below
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input checked="" type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

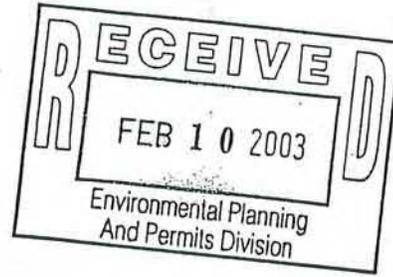
- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.



APPALACHIAN
REGIONAL
COMMISSION

*A Proud Past,
A New Vision*



January 31, 2003

Mr. Charles E. Bush
Transportation Manager II
Tennessee Department of Transportation
James K. Polk Building, Suite 900
505 Deaderick Street
Nashville, Tennessee 37243 - 0334

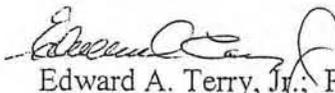
Dear Mr. Bush:

Thank you for your January 23, 2003 letter offering the Appalachian Regional Commission an opportunity to comment on the proposed Northern connector route from I - 40 to SR 24 (US 70) in Putnam County.

The proposed project will not have any adverse effect on the Appalachian Development Highway System.

Should you have any questions please do not hesitate to contact me at (202) 884 7706.

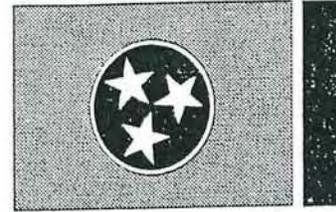
Sincerely:


Edward A. Terry, Jr., P.E.
Senior Transportation Advisor

Cc: Mr. Gary D. Corino, Acting Division Administrator, FHWA

Department of Economic
and Community Development
Local Planning Assistance Office

Upper Cumberland Region
621 E. 15th Street, Suite C
Cookeville, Tennessee 38501-1820
931-528-1577 Fax 931-526-5230



TENNESSEE

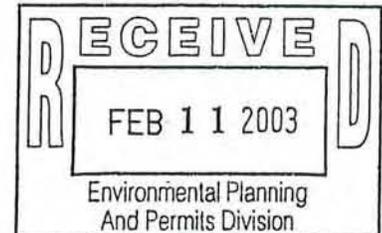
MEMORANDUM

TO: Attn: Charles E. Bush, Transportation Manager
Tennessee Department of Transportation,
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN. 37243-0334

FROM: Joe Barrett, Staff Planner,
Putnam County Regional Planning Commissioners

DATE: January 10, 2003

SUBJECT: PROJECT COMMENTS: NORTHERN CONNECTOR ROUTE



The members of the Putnam County Regional Planning Commission reviewed and discussed the project plans and data for the "Northern Connector Route" from Interstate-40 to U.S. 70. The members reviewed two alternatives for the proposed connector route. Based on the project plans, the "Alternative A" route was the overwhelmingly favored configuration for the northern connector route.

The support for this particular alternative was derived from a review of the design pattern of the more direct route of "Alternative A" that was depicted on the project map, which will disrupt less properties and require less right-of-way acquisition and construction materials than the configuration of "Alternative B". Moreover, "Alternative A" will afford more efficient access to area residents within the general proximity of Mine Lick Creek Road and facilitate a more efficient traffic flow than "Alternative B" will evidently provide. Lastly, the county is considering preliminary long-range planning options for industrial development within the general vicinity of the "Northern Connector" for future industrial activities. Accordingly, this transportation proposal can provide convenient access to the interstate for such activities.

The members of the Putnam County Regional Planning Commission compiled these observations in an effort to provide public comments for the "Northern Connector" proposal from the Tennessee Department of Transportation. If there is any further information or assistance needed, please contact me at the Local Planning Assistance Office at 931-528-1577.

Joe Barrett
Staff planner

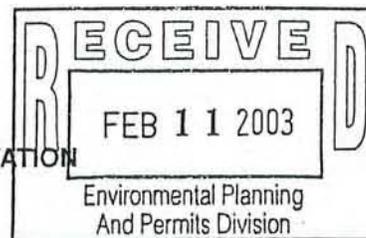
cc: Special Projects Director Wilton Burnett, Department of Economic and Community Development
Putnam County Regional Planning Commission Chairman Greg Brown

JB *JB*



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Water Pollution Control
401 Church Street
7th Floor, L & C Annex
Nashville, TN 37243-1534



February 5, 2003

Mr. Charles E. Bush, Transportation Manager II
State of Tennessee Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Re: Northern Connector Route, From I-40 to State Route 24 (US 70)
Putnam County

Dear Mr. Bush:

This letter responds to your letter of January 23, 2003, regarding proposed construction of a northern connector from I-40 at Mine Lick Creek Road to SR 24 in Putnam County (two alternate routes are shown) and your request for comments relative to any potential environmental impacts or concerns the Division of Water Pollution Control (Division) may have. The Division of Water Pollution Control has delegated authority from the U.S. Environmental Protection Agency to administer certain portions of the *Clean Water Act*. This Division also administers requirements of the *Tennessee Water Quality Control Act of 1977* ("ACT"). Please understand that there may be other regulatory programs applicable to this project that are administered by other divisions of the Department of Environment and Conservation.

The programs administered by this Division that may be applicable to the described project include programs promulgated by Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control including *General Water Quality Criteria, Chapter 1200-4-3, Use Classification for Surface Waters, Chapter 1200-4-4, and Aquatic Resource Alteration, Chapter 1200-4-7 (ARAP), and the Tennessee Construction General Permit for Storm Water Discharges from Construction Activities (TNCGP)*. In addition, in cases where §401 certification under the *Federal Water Pollution Control Act* is required or an individual permit is required, rules 1200-4-7-.04(3)(b) and 1200-4-7-.04(5)(b) of the *Aquatic Resource Alteration* rules states that a practicable alternatives evaluation for the proposed activity shall be performed. Further, the description of the project included in your January 23, 2003, letter indicates that the ARAP and TNCGP programs are directly applicable. The applicant is responsible to determine if other regulatory programs apply.

The "ACT" requires that permits be acquired to perform certain activities. Permit conditions are placed on activities proposed by the applicant. These conditions are intended to protect water

quality. Specifically, Section 69-3-108(a) of the "ACT" requires acquisition of permits prior to initiation of activities listed in Section 69-3-108(b). The listed activities must be conducted in accordance with conditions of the permit(s).

A number of issues should be addressed as early in the project development as possible. First, identification and assessments of all watercourses in the area must be completed to determine those that are considered waters of the state and, further, those streams that require special consideration, Tier II, Tier III, and 303(d) listed streams. The Division can assist you with this effort, if needed. All "waters of the state" determinations will be evaluated during the permit review process. Second, a detailed ecological study must be completed to identify any unique wildlife habitat or endangered species present in the study area affected by the proposed project. Third, stream mitigation and sediment control should be considered early in the design stage to allow for acquisition of sufficient right-of-way. Completed applications will be reviewed by Division personnel for completeness, accuracy, and adequacy. Incomplete applications will be returned.

In regards to this specific project and information you have provided, several streams shown as "blue line" streams on US Geological Survey (USGS) topographical maps are present in the project area. These include tributaries to Cane Creek and tributaries to West Blackman Fork. State records show that Roaring River including its headwaters, which includes West Blackman Fork and its tributaries, are Tier II waters. Therefore, special consideration must be given to these streams during design. (Each of the alternate routes crosses a tributary of West Blackman Fork.) Further, other "waters of the state" that are not shown on the USGS maps may be present. A field investigation is required to properly identify all streams and other "waters of the state". We expect that a more thorough investigation will precede submittal of applications for ARAPs and a construction activity storm water permit. Division personnel can assist you with other determinations, if needed.

If you have any questions regarding these issues or require additional information, please call Doug Ezell at (615) 532-0648.

Sincerely,



Dan Eagar, Manager, Natural Resources Section
Division of Water Pollution Control

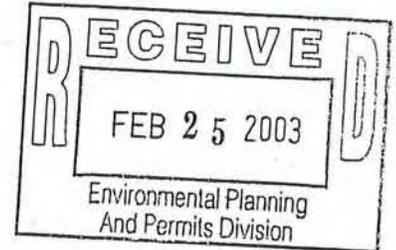
CC: Jerry M. Shoemake, Assistant Director
Saya Qualls, Manager, Permits Section
Doug Ezell, Policy Office



ENVIRONMENTAL ASSISTANCE CENTER
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
1221 SOUTH WILLOW AVENUE
COOKEVILLE, TENNESSEE 38506
PHONE (931) 432-4015 STATEWIDE 1-888-891-8332 FAX (931) 432-6952

February 24, 2003

Charles Bush, Transportation Manager II
Office of Environmental Planning and Permits
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334



Subject: Proposed Northern Connector Route from
I-40 at the Mine Lick Creek Road Interchange to State Route 24 (US 70)
Putnam County, Tennessee

Dear Mr. Bush:

The Tennessee Division of Solid Waste Management has completed a brief review of the above noted proposal. We recognize the early stage of consideration of this project and welcome the opportunity to provide additional input as the project develops.

Our fundamental concern for this road construction project is that environmental planning includes consideration for the proper disposal of solid/hazardous wastes generated by the project. Planning should also consider the potential impact of construction activities on the normal transportation of wastes in the area. When completed, this project could potentially have a positive impact on the ease of transportation of waste materials in the area.

Please call if you need additional information or clarification from this office.

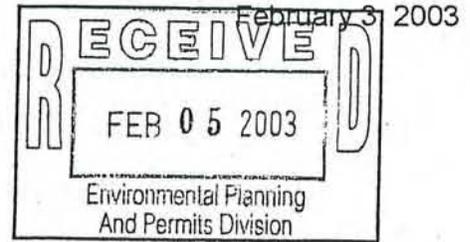
Sincerely,

Barry Atnip
Tennessee Division of Solid Waste Management

xc: Mike Apple - Dir. TDEC-SWM
TDEC-SWM Nashville Central Office Files



751 Millers Point Road, Sparta TN 38583



Charles E. Bush
Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Dear Mr. Bush:

I have reviewed the documents you recently submitted regarding identification of prime farmland that may be converted by the proposed Northern Connector Route from I-40 to State Route 24 (US 70) in Putnam County, Tennessee.

The extent and conversion of areas of prime farmland was determined from the documents you submitted and soil atlas sheets and data of Putnam County, Tennessee.

This project will result in the conversion of prime farmland as defined in the Farmland Protection Policy Act. Prime farmland is land that has the best combination of physical and chemical characteristics, growing season, and moisture supply for producing agricultural crops. Generally, land may be pasture, forestland, or cropland, but may not be urban built-up land or waterways.

The Farmland Conversion Impact Rating Form AD-1006 is enclosed.

Sincerely,



JERRY L. PRATER
Soil Scientist

Enclosure

FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 01-21-2003	4. Sheet 1 of 1
1. Name of Project LESA Northern Connector I-40 to US 70 N		5. Federal Agency Involved Federal Highway Administration	
2. Type of Project Transportation - New Highway		6. County and State Putnam County, TN	
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 01-27-03	2. Person Completing Form Jerry L. Prater
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form.)		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	4. Acres Irrigated Average Farm Size NA 100 acres
5. Major Crop(s) Corn	6. Farmable Land in Government Jurisdiction Acres: 130,705 % 53	7. Amount of Farmland As Defined in FPPA Acres: 56,745 % 22	
8. Name Of Land Evaluation System Used Putnam Co. TN	9. Name of Local Site Assessment System None	10. Date Land Evaluation Returned by NRCS 02-03-2003	

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	104	126		
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0	0		
C. Total Acres In Corridor	104	126		

PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	55.8	70.8		
B. Total Acres Statewide And Local Important Farmland	NA	NA		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.001	0.001		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	21.6	20.9		

PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)				
	58	64		

PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))		Maximum Points			
1. Area in Nonurban Use	15	15	15		
2. Perimeter in Nonurban Use	10	10	10		
3. Percent Of Corridor Being Farmed	20	10	16		
4. Protection Provided By State And Local Government	20	0	0		
5. Size of Present Farm Unit Compared To Average	10	7	7		
6. Creation Of Nonfarmable Farmland	25	4	4		
7. Availability Of Farm Support Services	5	5	5		
8. On-Farm Investments	20	10	10		
9. Effects Of Conversion On Farm Support Services	25	2	2		
10. Compatibility With Existing Agricultural Use	10	10	10		
TOTAL CORRIDOR ASSESSMENT POINTS	160	79	79		

PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	58	64		
Total Corridor Assessment (From Part VI above or a local site assessment)	160	79	79	0	0
TOTAL POINTS (Total of above 2 lines)	260	137	143	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project: 104 or 126 (A) (B)	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>
-----------------------	--	-----------------------	--

5. Reason For Selection:
Corridor will not be selected until a Public Hearing is conducted

Signature of Person Completing this Part: *Jerry L. Prater* DATE: 08-04-2005

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

CITY OF
COOKEVILLE

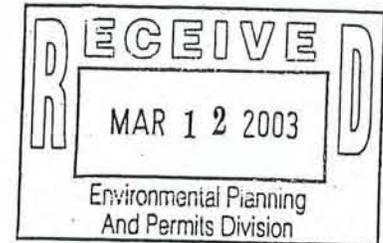
TENNESSEE
"Where good things happen"

Department of Planning

PO Box 998
45 East Broad Street
Cookeville, TN 38503-0998
(931) 520-5271 Fax (931) 528-3649

March 11, 2003

Mr. Charles E. Bush, Transportation Manager II
Tennessee Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334



RE: Proposed Northern Connector Route from I-40 at the
Mine Lick Creek Road Interchange to State Route 24 (US 70)
City of Cookeville, Putnam County, Tennessee

Dear Mr. Bush:

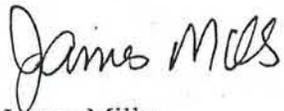
Enclosed please find a Resolution of the City of Cookeville Regional Planning Commission conditionally supporting Alternate "A" as the location of an Interstate 40 Interchange and Northern Connector Route to State Route 24 (US 70N).

The proposed construction of the interchange and northern connector route are identified as priority thoroughfare improvements in the City of Cookeville Major Thoroughfare Plan as adopted by the Cookeville Planning Commission and City Council in 2000. The construction of the interchange is vital to the future economic development of the City of Cookeville and Putnam County. The City of Cookeville has in fact annexed several hundred acres of property in the vicinity of the proposed interchange as reflected in Alternate "A" for the purpose of providing property for industrial and commercial development.

As reflected in the enclosed resolution, the Cookeville Planning Commission recommends that the proposed project be constructed in two phases, with the first phase being the interchange and the second phase being the northern connector. The Commission is concerned that the proposed design of the northern connector (full access control, 4 lane divided highway with 250 of right-of-way) is not appropriate. A lesser design (partial access control, 3 lane highway with 100 to 150 of right-of-way) is recommended. This would be less expensive and have a smaller impact on property owners and the environment.

The opportunity to comment on this project is appreciated. If you have any questions or need further information please contact me at your convenience.

Sincerely,

A handwritten signature in cursive script that reads "James Mills".

James Mills
Planning Director

Enclosure

CC: Jim Shipley, City Manager

RESOLUTION OF THE COOKEVILLE REGIONAL PLANNING COMMISSION

A RESOLUTION OF THE COOKEVILLE REGIONAL PLANNING COMMISSION CONDITIONALLY SUPPORTING AND ENDORSING ALTERNATE "A" AS THE LOCATION OF AN INTERSTATE 40 INTERCHANGE AT MINE LICK CREEK ROAD.

WHEREAS, The construction of an interchange on Interstate 40 in the vicinity of Mine Lick Creek Road and a connector route to State Route 24 has been identified as a priority transportation need in the City of Cookeville *Comprehensive Future Land Use Plan 1999-2020*, which was adopted by the Cookeville City Council by Resolution No. R00-10-29 on October 5, 2000; and

WHEREAS, The development of this interchange will provide access to Interstate 40 for properties identified in the *Future Land Use Plan* for much needed industrial and commercial development; and

WHEREAS, The State of Tennessee Department of Transportation is in the early stages of planning for the construction of this northern connector route from Interstate 40 at the Mine Lick Creek Interchange to State Route 24 (US 70) and has developed alternatives for the location of this route.

NOW THEREFORE BE IT RESOLVED BY THE REGIONAL PLANNING COMMISSION OF THE CITY OF COOKEVILLE, TENNESSEE:

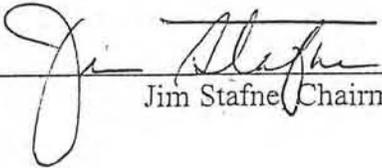
Section 1: That the Cookeville Regional Planning Commission does hereby support and endorse Alternate "A" as the best location of an interchange on Interstate 40 at Mine Lick Creek Road subject to the following conditions:

- Construction of the northern connector route not be completed at this time but be considered as a second phase for completion at a later date or as needed.
- Access to the interchange from existing roads to the north and south of Interstate 40 is provided.

Section 2: This Resolution shall be effective after its adoption.

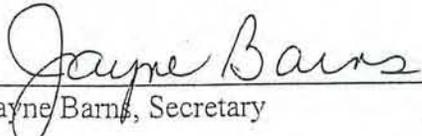
ADOPTED THIS THE 24TH DAY OF FEBRUARY 2003.

COOKEVILLE REGIONAL PLANNING COMMISSION



Jim Stafne, Chairman

ATTEST:



Jayne Barns, Secretary



Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902-1499

March 5, 2003

Mr. Charles E. Bush
Transportation Manager II
Environmental Planning Office
Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Dear Mr. Bush:

PROPOSED NORTHERN CONNECTOR FROM I-40 AT THE MINE LICK CREEK ROAD INTERCHANGE TO STATE ROUTE (SR) 24 (US 70N), PUTNAM COUNTY, TENNESSEE

TVA has reviewed information provided in your letter of January 23, 2003 on alternative routes for the Cookeville Northern Connector between I-40 and US 70N. From the project description, it appears that there would be no TVA approvals or other involvement with this project. However, there is a TVA transmission line in the area. If it appears that the transmission line would need to be modified, please contact TVA and consider including TVA as a Cooperating Agency.

Should you have any questions, please contact Harold M. Draper at (865) 632-6889 or hmdraper@tva.gov.

Sincerely,

A handwritten signature in black ink that reads 'Jon M. Loney'.

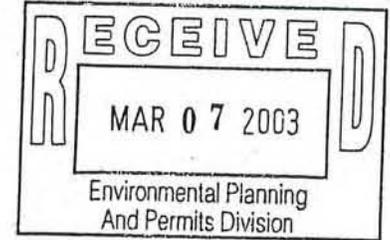
Jon M. Loney, Manager
NEPA Administration
Environmental Policy and Planning

cc: Mr. Charles S. Boyd
Division Administrator
Federal Highway Administration
640 Grassmere Park, Suite 112
Nashville, Tennessee 37211



State of Tennessee
Department of Economic and Community Development
Office of Special Projects
312 Eighth Avenue North, WRS Tennessee Tower Building, 11th Floor, Nashville, TN 37243-0405
Wilton Burnett, Jr.: 615-532-9054 Mike Atchison: 615-532-9047
U.S. WATS: 1-877-768-6374 FAX: 615-741-5829

March 6, 2003



Mr. Charles E. Bush
TN Dept. of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Bldg.
505 Deaderick Street
Nashville, TN 37243-0334

SUBJECT: Proposed Northern Connector Route
I-40 at Mine Lick Creek Road to SR24 (US70)

Dear Mr. Bush:

The Department of Economic and Community Development appreciates the opportunity to comment on the above proposed project and is pleased to see such a potential development. For a number of years we have been of the opinion that Cookeville's best opportunity for developing a sizeable rail and interstate served industrial site was in this particular area. I have recently been upgrading my data on industrial site potentials in the area. This work leads me to favor your Alternate "A" as providing the best access while minimizing the partitioning of large tract potentials. I believe that you have already received comments from our Local Planning Assistance Office in Cookeville to the same effect but with some slightly different reasons.

I would appreciate, if possible, some idea of any future plans TDOT may have for extending this connector further to the north.

Should you have any questions on these comments, please do not hesitate to contact my office.

Sincerely,

Wilton Burnett, Jr., P.E.
Director of Special Projects

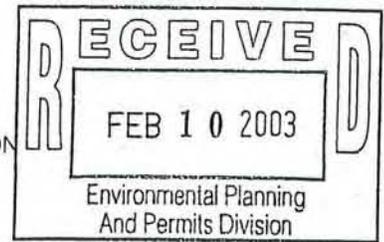
/wb

cc: Eldon Leslie, Cookeville Area Chamber of Commerce
Joe Barrett, TN ECD Local Planning Assistance Office



February 4, 2003

TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550



Mr. Charles E. Bush
Environmental Planning Office
Dept of Transportation
Nashville, Tennessee, 37243-0330

RE: FHWA, NORTHERN CONNECTOR/I-40/MINE LICK CREEK ROAD
INTERCHANGE TO SR-24, UNINCORPORATED, PUTNAM COUNTY

Dear Mr. Bush:

In response to your request, received on Monday, January 27, 2003, 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 AFFECT PROPERTIES THAT ARE ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES. You should continue consultation with our office, designated consulting parties and invite them to participate in consultation, and provide us with appropriate survey documentation for review and comment. Please direct questions and comments to Joe Garrison (615) 532-1550-103. We appreciate your cooperation.

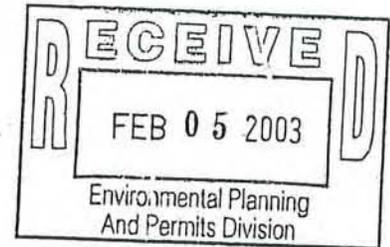
Sincerely,

Herbert L. Harper
Executive Director and
Deputy State Historic
Preservation Officer

HLH/jyg



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION



February 3, 2003

Mr. Charles Bush
Tennessee Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deadrick Street
Nashville TN 37243-0334

Subject: Project review; *Proposed Northern Connector Route, from I-40 at the Mine Lick Creek Road Interchange to State Route 24 (US 70), near Cookeville, Putnam County Tennessee*

Dear Mr. Bush:

We are appreciative of the opportunity to review the **Initial Coordination** for the subject project. We have reviewed the document and attached information and offer the following general comments:

1. Please be advised that a review of our Departmental data bases indicate recorded rare, threatened and/or endangered species near the project boundaries and within a one mile radius of the proposed project. Based upon the information provided, we believe that a survey of the project area would provide valuable information concerning the protection of species known to occur within a one mile radius of the project. These species have very specific or rare habitat. Please be advised, however, that this information is sensitive to the protection of rare habitat, threatened or endangered species, and ecological sites, which our Department has the responsibility to protect. Therefore, we would request that this information **only** be used as a research tool by professional staff and not be made available to the public or anyone outside of your office/Department. Please see the attached county records (**Attachment I**) and/or habitat listing for further information.
2. In order to comply with the National Environmental Policy Act consideration should be given to the comprehensive and *cumulative* impacts associated with the project actions. Based upon the information provided, it is probable that any proposed in-stream construction will impact instream flow, aquatic habitat, and riparian habitat as part of the project implementation. We would encourage stream bank restoration and *bioengineering* design as part of the overall project planning.

Mr. Bush, TDOT-Environmental Planning
Page 2.
February 3, 2003

3. Additionally, the use of bioengineering techniques should be used for reducing stream-crossing impacts. Other best management practices should be discussed, as well as the overall strategy the TDOT will implement to reduce impacts to streams.

4. Any restoration activities should include the use of native plant species. Restoration should be accomplished by using native plant species consistent with local community types. Techniques for sediment retention and streamside reconstruction are outlined in the following documents prepared by our Department:

1. **Tennessee Erosion Control Handbook, July 1992.**
2. **Reducing Nonpoint Source Water Pollution by Preventing Soil Erosion and Controlling Sediment on Construction Sites, March 1992.**
3. **Riparian Restoration and Streamside Erosion Control Handbook, November 1994 (Revised April 1998).**

Please refer to these documents when planning measures to lessen any project or construction impacts.

We appreciate the opportunity to assist you with your pre-project planning. Should you need any additional information regarding a specific species, species habitat requirements, or species breeding season, natural resources information, etc. please contact me. If we can be of further assistance with your project please contact our office in Nashville, telephone 615/532-0431.

Respectfully,



Andrew N. Barrass Ph. D.,
Environmental Review Coordinator
Division of Natural Heritage

Attachments: (1)

cc:

Gary T. Myers, TWRA
Lee A. Barclay, Ph. D., U. S. Fish and Wildlife

Attachment I

LIST OF RARE, THREATENED, AND ENDANGERED SPECIES BY TENNESSEE COUNTY

Putnam County

18 DEC 2002

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** ALL PLANTS					
AGERATINA LUCIAE-BRAUNIAE	LUCY BRAUN'S WHITE SNAKEROOT		T	S2	G3
BOTRYCHIUM JENMANII	ALABAMA GRAPEFERN		T	S1	G3G4
CAREX CHAPMANII	CHAPMAN'S SEDGE		T	S1	G3
DIAMORPHA SMALLII	SMALL'S STONECROP		E	S1S2	G4
DRABA RAMOSISSIMA	BRANCHING WHITLOW-GRASS		S	S2	G4
ELEOCHARIS EQUISETOIDES	HORSE-TAIL SPIKE-RUSH		E	S1	G4
ELYMUS SVENSONII	SVENSON'S WILD-RYE		E	S1S2	G2G3
ERIOGONUM LONGIFOLIUM VAR HARPERI	HARPER'S UMBRELLA-PLANT		E	S1	G4T2
ERYSIMUM CAPITATUM	WESTERN WALLFLOWER	(PS)	E	S1	G5
EUONYMUS OBOVATUS	RUNNING STRAWBERRY-BUSH		S	S3	G5
HEXASTYLIS CONTRACTA	SOUTHERN HEARTLEAF		S	S3	G3
HYDRASTIS CANADENSIS	GOLDENSEAL		S-CE	S3	G4
JUGLANS CINEREA	BUTTERNUT		T	S3	G3G4
LILIUM CANADENSE	CANADA LILY		T	S2	G5
LONICERA DIOICA	MOUNTAIN HONEYSUCKLE		S	S2	G5
MUHLENBERGIA CUSPIDATA	PLAINS MUHLY		E	S1	G4
POTAMOGETON AMPLIFOLIUS	LARGE-LEAF PONDWEED		T	S1	G5
RHYNCHOSPORA PERPLEXA	OBSCURE BEAK-RUSH		T	S2	G5
SPIRAEA ALBA	NARROW-LEAVED MEADOW-SWEET		E	S1	G5
THUJA OCCIDENTALIS	NORTHERN WHITE CEDAR		S	S2	G5
TRILLIUM PUSILLUM VAR PUSILLUM	LEAST TRILLIUM		E	S1S2	G3T2

Page 2.
Putnam County

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** INVERTEBRATES - MOLLUSC					
CYPROGENIA IRRORATA	EASTERN FAN SHELL	LE	E	S1	G1
	PEARLY MUSSEL				
DROMUS DROMAS	DROMEDARY	LE	E	S1	G1
	PEARLYMUSSEL				
EPIOBLASMA BREVIDENS	CUMBERLANDIAN	LE	E	S1	G1
	COMBSHELL				
EPIOBLASMA CAPSAEFORMIS	OYSTER MUSSEL	LE	E	S1	G1
LAMPSILIS ABRUPTA	PINK MUCKET	LE	E	S2	G2
PLEUROBEMA CLAVA	CLUBSHELL	LE	E	SH	G2
VILLOSA TRABALIS	CUMBERLAND BEAN	LE	E	S1	G1
** INVERTEBRATES - INSECTS					
BATRISODES PANNOSUS	A CAVE OBLIGATE BEETLE			S1S2	G1G2
** INVERTEBRATES - CRUSTACEANS					
ORCONECTES AUSTRALIS	A CRAYFISH			S3	G4
ORCONECTES INCOMPTUS	TENNESSEE CAVE CRAYFISH	MC	E	S1	G1G2
** INVERTEBRATES - CHELICERATES					
KLEPTOCHTHONIUS STYGIUS	A CAVE OBLIGATE PSEUDOSCORPION			S1S2?	G1G2
** VERTEBRATES - BIRDS					
AIMOPHILA AESTIVALIS	BACHMAN'S SPARROW	MC	E	S2	G3
IXOBRYCHUS EXILIS	LEAST BITTERN		D	S2B	G5
** VERTEBRATES - MAMMALS					
CORYNORHINUS RAFINESQUII	EASTERN BIG-EARED BAT		D	S3	G3G4
MYOTIS GRISESCENS	GRAY BAT	LE	E	S2	G3
NEOTOMA MAGISTER	EASTERN WOODRAT		D	S3	G3G4
SOREX CINEREUS	COMMON SHREW		D	S4	G5
SOREX FUMEUS	SMOKY SHREW		D	S4	G5
SOREX LONGIROSTRIS	SOUTHEASTERN SHREW		D	S4	G5
ZAPUS HUDSONIUS	MEADOW JUMPING MOUSE	(PS)	D	S4	G5
** VERTEBRATES - REPTILES					
PITUOPHIS MELANOLEUCUS	NORTHERN PINE SNAKE	MC	T	S3	G4T4
MELANOLEUCUS					
** VERTEBRATES - AMPHIBIANS					
HEMIDACTYLIUM SCUTATUM	FOUR-TOED SALAMANDER		D	S3	G5

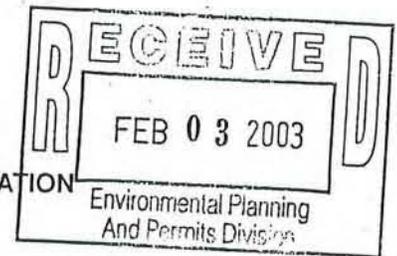
Page 3.
Putnam County

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	STATE RANK	GLOBAL RANK
** VERTEBRATES - FISH					
ETHEOSTOMA OLIVACEUM	SOOTY DARTER (=DIRTY DARTER)		D	S3	G3
NOTROPIS RUPESTRIS	BEDROCK SHINER		D	S2	G2
TYPHLICHTHYS SUBTERRANEUS	SOUTHERN CAVEFISH	MC	D	S3	G4

Note: Should the project require further environmental program permits from our Department, please attach a complete copy of this review or assessment to the permit application.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Ground Water Protection
10th Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243-1540



January 30, 2003
Mr. Charles E. Bush
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Re: Request for comments to preliminary to Draft Environmental Impact Statement, for proposed Northern Connector route from I-40 at the Mine Lick Road Interchange to State Route 24 (US 70), Putnam County, Tennessee

Dear Mr. Bush:

The Division of Ground Water Protection regulates all aspects of the subsurface sewage disposal (SSD) program in the State of Tennessee. In this regard, division staff has worked closely with TDOT on those construction projects where it is anticipated that the project will potentially impact existing SSD systems.

Regarding the above referenced project, the Division of Ground Water Protection (GWP) anticipates that it is likely the project will impact existing SSD systems that are located along the length of the proposed Northern Connector route from I-40 at the Mine Lick Creek Road Interchange to Route 24 (US 70), in Putnam County.

If you have any questions or think that assistance will be requested on this project, you should contact Mr. Jim Teeple at (931) 432-7614 when assistance is needed.

Sincerely,

Kent D. Taylor
Director
Division of Ground Water Protection

KDT/gau

cc: Mr. Jim Teeple, Cookeville Environmental Assistance Center

TDOTresponse57.doc



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Tennessee Air Pollution Control Division
9th Floor L&C Annex, 401 Church Street
Nashville, Tennessee 37243-1531

January 29, 2003

Mr. Charles E. Bush
Department of Transportation
Environmental Planning and Permits Division
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, TN 37243-0334

Dear Mr. Bush:

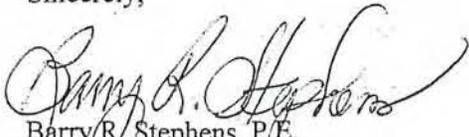
The Division of Air Pollution Control has reviewed your project summary for the proposed improvement of the Northern Connector Route from I-40 at the Mine Lick Creek Road Interchange to State Route 24 (US 70) in Putnam County, Tennessee. This project is in an area designated as attainment/unclassified for the National Ambient Air Quality Standards (NAAQS), so a Conformity determination is not required.

This agency's other interests, above what would be addressed through the standard NEPA process, concerns the control of fugitive dust and equipment exhaust emissions during the construction phase, and the assurance that any structures requiring demolition are asbestos free, as per the requirements of Chapter 1200-3-11, Hazardous Materials. I would also like to point out that the open burning regulations have changed dramatically. Before burning any wood waste, please refer to Chapter 1200-3-4, Open Burning rules at: <http://www.state.tn.us/environment/air.htm> under the regulations link. We also suggest contacting other applicable regulatory agencies.

We appreciate the chance to comment on this, and we would also appreciate the chance to review the Environmental Impact Statement when it becomes available.

If you have any questions or comments, please feel free to call me at (615) 532-0554.

Sincerely,


Barry R. Stephens, P.E.
Director

cc: Amanda Sluss

APPENDIX II

HISTORIC AND ARCHAEOLOGICAL CONCURRENCE



TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

April 9, 2003

Ms. Martha Carver
TDOT Environmental Planning Office
505 Deaderick Street/900
Nashville, Tennessee, 37243-0334

RE: FHWA, I-40 INTERCHANGE/SR-24/MINE LICK C, UNINCORPORATED, PUTNAM COUNTY

Dear Ms. Carver:

In response to your request, received on Friday, April 4, 2003, 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 will NOT ADVERSELY AFFECT ANY ARCHITECTURAL PROPERTY THAT IS ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES, specifically the Union Grove Presbyterian Church. Therefore, this office has no objection to the implementation of this project. Please direct questions and comments to Joe Garrison (615) 532-1550-103. You may find additional information concerning the Section 106 process and the Tennessee SHPO's documentation requirements at www.state.tn.us/environment/hist/sect106.htm. We appreciate your cooperation.

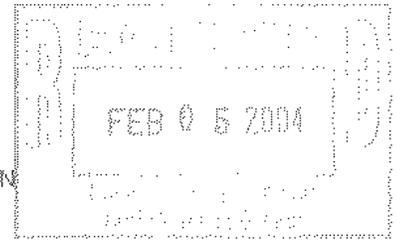
Sincerely

Herbert L. Harper
Executive Director and
Deputy State Historic
Preservation Officer

HLH/jyg



TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550



February 3, 2004

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

RE: FHWA, ARCHAEOLOGICAL ASSESSMENT, MINE LICK CREEK ROAD INTERCHANGE,
UNINCORPORATED, PUTNAM 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 concur that the project area contains no archaeological resources eligible for listing in the National Register of Historic Places.

We further concur that the draft report needs editing prior to presentation of a final version. In addition to multiple grammatical and typographical errors throughout the text, the report is also missing a title page, and figures 4-18 need to include a north arrow. Upon completion of the revised report, please submit it to this office for our review and comment.

This office has no objection to the implementation of this project. 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,

Herbert L. Harper
Executive Director and
Deputy State Historic
Preservation Officer

HLH/jmb

APPENDIX III

BIOLOGICAL ASSESSMENT

&

COORDINATION LETTERS

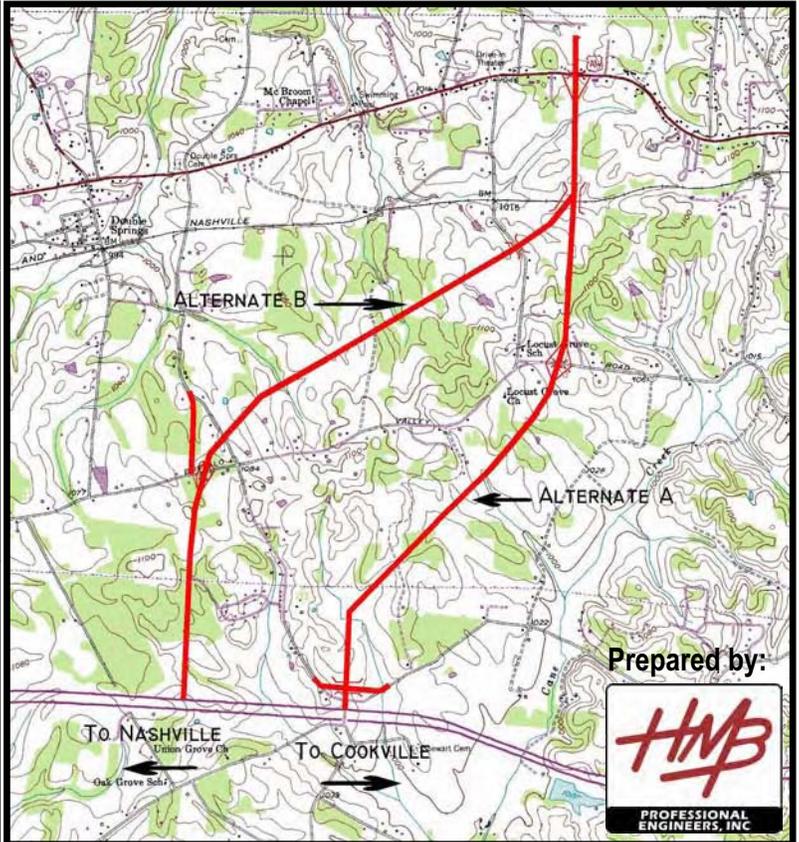
Biological Assessment

For the Indiana bat (*Myotis sodalis*), the gray bat (*Myotis grisescens*),
and the bald eagle (*Haliaeetus leucocephalus*)

Northern Connector
Putnam County, Tennessee

Submitted September 2004

Prepared for:



Prepared by:
HMB
PROFESSIONAL
ENGINEERS, INC.

I. HISTORY OF ENDANGERED SPECIES COORDINATION

Tennessee Department of Transportation (TDOT) sent a letter of coordination to the U.S. Fish and Wildlife Service (USFWS) Cookeville, TN Field Office informing them of the proposed action and requesting information on protected species & wetlands on January 23, 2003. USFWS responded with a letter dated February 19, 2003 identifying the potential presence of three federally protected species (Indiana bat, gray bat, and bald eagle). In addition to these species, four Species of Management Concern were also identified as having the potential to occur within the project area. The USFWS response letter is included in this document in the appendix.

II. STATUS OF SPECIES REPORTED

A. Indiana Bat

The Indiana Bat (*Myotis sodalis*) was officially listed as an endangered species on September 24, 1976. Its range includes a large portion of the eastern United States. Historically, the species range extended through the southeastern and central United States. The species migrates seasonally between winter and summer habitat, though in some cases these lie in close proximity to one another (Butchkoski 2001). It is known to hibernate in caves in winter and to raise its young in trees in forested areas during summer months. Maternity colonies (groups of mothers and young utilizing the same roost site) typically use a number of trees for roosting including one or more primary tree(s) and several secondary trees. Primary roost trees selected are typically large older trees and are often dead snags with sloughing bark under which the bats shelter themselves & raise young. Primary roost trees typically have substantial solar exposure at the location of the roost site. In rare cases, Indiana Bats have been found to use man-made structures as maternity roost sites (Bryan & Libby 2004, Butchkoski & Hassinger 2002). Pregnant females give birth to single young, typically in June or July. Maternity colonies are generally found in close proximity to water. Summer habits of the male Indiana bats are less known. Males appear to be more variable in their summer roost selection. Males are known to roost individually or to group together and form bachelor colonies. Like females, male Indiana bats often roost under sloughing bark, although males are less particular in roost selection (Kiser 1998). Indiana Bats have highly specific temperature and humidity needs for winter hibernation. The limited numbers of winter caves used by the Indiana bat suggests that few caves meet the rigid requirements. At the present, half of all known hibernating Indiana bats winter in Indiana. Indiana bats exhibit site fidelity to both their summer (Gumbert 2001) and winter habitat.

In the past, Indiana bat populations drastically declined because of alterations to cave entrances. Improper gating of caves has restricted the bats from winter roosts and altered the air flow and temperature in the caves. Vandalism and commercialization of caves have also had an impact. Destruction of summer habitat appears to be the other

major cause for decline with impoundment of waterways, stream channelization and pesticide applications also being probable contributors.

B. Gray Bat

The Gray Bat was listed as endangered on 28 April 1976. The Gray bat is a year-around resident of caves, but may migrate seasonally between hibernaculum and maternity caves. Caves selected by gray bats must meet certain temperature and environmental criteria; thus all caves are not suitable habitat. The bats are extremely loyal to particular home territories. Maternity caves are typically located within a kilometer of streams or reservoirs. Summer colonies may occupy a traditional area with several roosting caves. Adult pregnant females give birth to a single young in late May to early June. During this time the lactating females and their young amass in one specific traditional maternity cave. Males and non-reproductive females cluster in other caves within the colony home range. The primary population centers for the Gray bat are the southern Appalachian and the Ozark areas. Gray bats occur nearly statewide in Tennessee.

Because gray bats are year-round residents of caves and often inhabit particular caves in large numbers, they are highly vulnerable to human disturbance. Major disturbance events at one major hibernaculum or maternity colony could potentially impact a substantial percentage of the total population. The major cause of decline of gray bats appears to be disturbance of caves (both hibernaculum and maternity sites) by humans. Accumulation of toxins ingested through feeding and drinking (particularly insecticides) has been shown to cause mortality in gray bats. Other probable negative impacts to gray bat populations are siltation and other pollution of streams, which affect a major food component (insects with aquatic larva), and destruction of foraging habitat.

Recovery efforts for the gray bat have been fairly successful. The protection of caves through the use of appropriately designed cave gates as well as reduction in cave disturbance through signs and education is largely credited with the recent increases in the gray bat population. (Tuttle 1986)

C. Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) was listed as endangered on February 14, 1978 in the lower 48 states except for five states within which it was listed as threatened. As populations of the species began to increase it was downlisted to threatened, effective August 11, 1995, which is the status it retains today in the lower 48 states. (USFWS 2004b). It has a “vulnerable” State/Province Conservation status in the state of Tennessee (NatureServe 2004). Known to occur throughout many parts of Tennessee, the bald eagle breeds from September, when the breeding pair begin nest building, through June when the young are fledged. It is known to overwinter in Tennessee (NatureServe 2004) in areas with appropriate habitat.

The population of bald eagles in the lower United States is estimated to have been about 100,000 before European settlement (USFWS 2004b); however, the bird was close to extinction just 30 years ago due to loss of habitat, hunting, poisoning (intentional and unintentional) and, perhaps the biggest threat of all, the use of the pesticide, Dichloro-diphenyl-trichloroethane (DDT) (USFWS 2004b). A toxic, bioaccumulative chemical, DDT was widely used in the late 1940's in the battle against malaria, typhus, and other insect-borne human diseases (EPA 2002). The pesticide interfered with bird reproduction by reducing calcium concentrations in their eggshells, rendering the shells thinner and weaker. Surveys conducted in 1973-1974 indicated that just 791 breeding pairs of bald eagles occurred in the lower 48 states (USFWS 2004b); however, the eagle made a tremendous recovery due to the banning of DDT by the EPA in 1972, and the subsequent weakening of its effects upon the bird's ecosystems (USFWS 2004b). While no breeding pairs were known to occur within the state of Tennessee in 1982, by the year, 2000, 43 pairs of bald eagles were identified in the state (USFWS 2004a).

Bald eagle breeding habitat generally consists of tall trees or steep cliffines within about 2.5 mi (4 km) of a large body of water such as a bay, river, or lake (NatureServe 2004). They are also found around estuaries, reservoirs, coastal areas, and occasionally prairie lands (USFWS 2004b), and avoid developed areas or areas with nearby human activity (NatureServe 2004). Typical nest trees include pines, spruce, firs, cottonwoods, oaks, poplars, and beech (NatureServe 2004). While fish are their primary prey items, they also feed on rodents, snakes, gulls, waterfowl, and carrion (USFWS 2004b). Winter roosting habitat is usually within about 20.5 mi (33 km) of food resources, and is often associated with concentrations of waterfowl or dead fish. The bald eagle often roosts communally in trees where it has overwintered in successive years (NatureServe 2004).

III. METHODOLOGY

The project area was assessed for the potential Indiana bat, gray bat, and bald eagle habitat. Qualified biologists surveyed for habitat by windshield sampling and walking the alternative corridors.

IV. IMPACTS

Small tracts of forest suitable for Indiana bat summer use exist in the proposed project area; however, these areas are small and isolated and are considered to be poor to marginal habitat for this species. Most streams within the project area are too small and cluttered to be used by Indiana bats for foraging or a travel corridor, however Cane Creek, immediately south and east of alternative A and an unnamed tributary of West Blackburn Fork immediately west of Alternative B were assessed to be moderately suitable for this purpose. No caves suitable for Indiana bat hibernation occur within or near the project area. In the absence of a field study, the presence of

the Indiana bat is assumed for the project area. Areas of potential habitat are identified on project mapping in Exhibit 1. Mitigation measures will be required to avoid adverse impacts to this species.

Based largely on the findings of a 2003 study by Michael Harvey Ph.D. which identified gray just north of the Northern Connector project area and by the close proximity of the project to a known gray bat bachelor colony in Ament Cave, it is anticipated that the presence of gray bats within the project area is likely. Most streams within the project area are too small and cluttered to be used by gray bats for foraging or a travel corridor, however Cane Creek, immediately south and east of alternative A and an unnamed tributary of West Blackburn Fork immediately west of Alternative B were assessed to be moderately suitable for this purpose. In the absence of a field survey the presence of gray bats is assumed for the project impact area. Mitigation measures will be required to avoid adverse impacts to the gray bat.

Appropriate bald eagle nesting or roosting habitat does not occur within the project area. Although some commonly known nesting trees, such as pines, oaks, and poplars occur, forested areas are fragmented, and most are located in close proximity to developed areas. The city of Cookeville lies within approximately five miles of the project area (HMB Professional Engineers, Inc. 2003).

Two relatively large bodies of water, Center Hill Lake/Caney Fork River, and Cordell Hull Lake/Cumberland River are located approximately 11 and 13 miles from the project area respectively and eagles have been sighted within 16 miles of the project. However, the proposed project lies within an area that has been largely fragmented with suburban development. Although a few small areas of fairly mature second growth forest do occur within the project area they are surrounded with residential, agricultural and urban development and are not anticipated to attract foraging eagles. The proposed action is "not likely to adversely affect" the bald eagle.

Four USFWS Species of Management Concern were reported during project coordination. These are the Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), Alleghany woodrat (*Neotoma magister*), Bachman's sparrow (*Aimophila aestivalis*), and the Dirty darter (*Etheostoma olivaceum*). No suitable habitat for these species occurs within the project impact area and these species were not observed during field investigations conducted during the NEPA studies.

V. MITIGATION

Mitigative measures will be necessary to avoid, minimize and mitigate impacts to the Indiana bat and gray bat that are assumed to be within the project area. As the two species have some overlap in habitat requirements, mitigation measures for both species are included together.

The following mitigation measures will be implemented if the project is constructed.

- Tree removal in construction zones must be scheduled between October 15 and March 31 to prevent disturbance to trees that may harbor the Indiana bat summer colonies.
- In order to maintain a riparian buffer zone, tree cutting will be limited to that absolutely necessary in areas where construction must occur within 100 feet of stream banks within the right-of-way.
- Disturbed areas will be re-vegetated to the maximum extent possible with tree species that produce sloughing bark and snags. Species to consider include white oak, northern red oak, white ash, shagbark hickory, slippery elm, black locust, American elm, shellbark hickory, cottonwood and sycamore. This mitigation measure is especially important where project construction causes disturbance to riparian vegetation.
- Because the Indiana bat forages over local waters it is important to preserve water quality in forage areas. Therefore, stream crossings will be limited to direct construction limits.
- The placing of construction equipment within streams should be avoided to the greatest extent practicable. Staging, re-fueling and clean-up areas will not be allowed along-side streams. All TDOT BMP's for stream protection will be in place during project construction.
- Project construction should not contribute to water quality degradation of area streams.

VI. CONCLUSION

The presence of Indiana bats and gray bats is assumed within the project area during the summer months, and poor to marginal habitat for these species exists within the project impact area. It is believed that through the use of appropriate mitigation measures, substantial adverse impacts to these species can be avoided.

Implementation of the mitigation measures specified within this document, this project is "not likely to adversely affect" the federally endangered Indiana bat or gray bat.

As no suitable habitat for the bald eagle exists within the project area, the project is "not likely to adversely affect" the federally threatened bald eagle.

VII. REFERENCES

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<http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Haliaeetus+leucocephalus>
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U.S. Environmental Protection Agency (EPA). June 11, 2002. EPA Press Release, December 31, 1972: DDT Ban Takes Effect. Available at:
<http://www.epa.gov/history/topics/ddt/01.htm>

U.S. Fish and Wildlife Service. 2004a. Region Three: Great Lakes-Big Rivers. Bald Eagle Pairs in the Lower 48 States 2000. Available at:
<http://midwest.fws.gov/eagle/population/2000mapofprs.html>

U.S. Fish and Wildlife Service. 2004b. Bald Eagle Species Account. Available at:
<http://endangered.fws.gov/i/b/msab0h.html>.

VIII. Exhibits

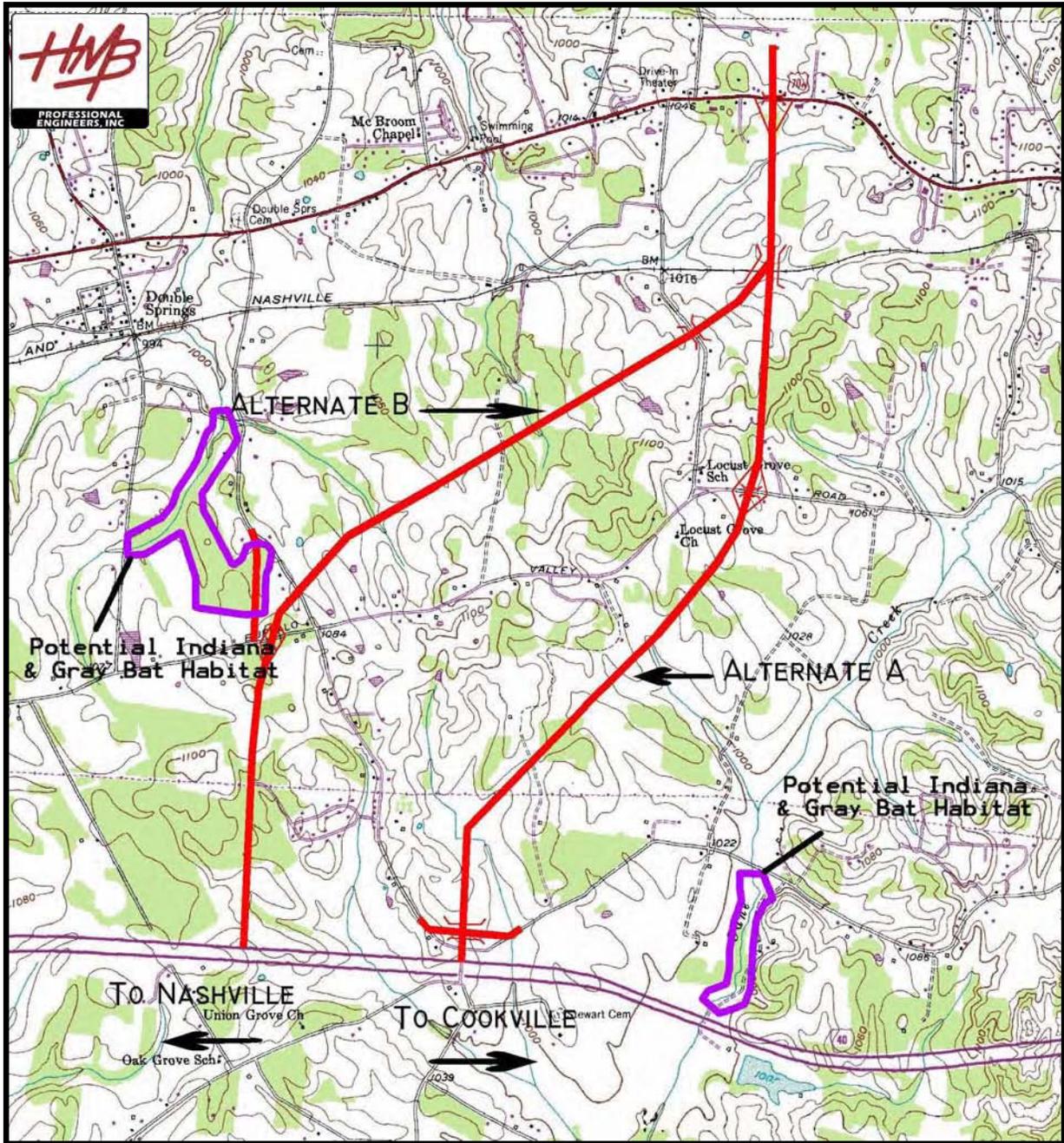


Exhibit 1:
Potential Indiana & Gray Bat Habitat
Northern Connector
Putnam County, Tennessee
Cookeville West Topographic Quadrangle

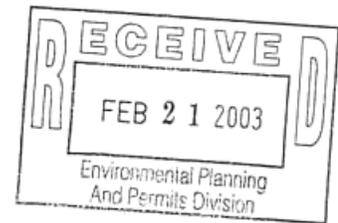
IX. APPENDICES



United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

February 19, 2002



Mr. Charles E. Bush
Transportation Manager II
Tennessee Department of Transportation
Suite 900, James K. Polk Building
505 Deaderick Street
Nashville, Tennessee 37243-0334

Dear Mr. Bush:

Thank you for your letter and enclosures of January 23, 2003, regarding the Proposed Northern Connector Route from I-40 to SR-24 (US-70) in Putnam County, Tennessee. Fish and Wildlife Service (Service) personnel have reviewed the information submitted and offer the following comments.

Information available to the Service does not indicate that wetlands exist in the vicinity of the proposed project. However, our wetlands determination has been made in the absence of a field inspection and does not constitute a wetlands delineation for the purposes of Section 404 of the Clean Water Act. The Corps of Engineers should be contacted if other evidence, particularly that obtained during an on-site inspection, indicates the potential presence of wetlands.

According to our records, the following federally listed or proposed endangered or threatened species may occur in the project impact area:

- Gray bat (*Myotis grisescens*)
- Indiana bat (*Myotis sodalis*)
- Bald eagle (*Haliaeetus leucocephalus*)

You should assess potential impacts and determine if the proposed project may affect the species. A finding of "may affect" could require initiation of formal consultation. We recommend that you submit a copy of your assessment and finding to this office for review and concurrence.

In addition to the aforementioned federally listed species, there are several Species of Management Concern that may occur in the project impact area. These include Rafinesque's big-eared bat (*Plecotus rafinesquii*), Alleghany (Eastern) woodrat (*Neotoma magister*), Bachman's sparrow (*Aimophila aestivalis*), and the dirty darter (*Etheostoma olivaceum*). Although not currently afforded

protection under the Endangered Species Act, these species are being considered for listing as threatened or endangered species and we would appreciate any actions that you can take in project planning and implementation to avoid adversely affecting them.

Thank you for the opportunity to comment on this action. If you have any questions, please contact me at 931/528-6481, ext. 212.

Sincerely,



Lee A. Barclay, Ph.D.
Field Supervisor

xc: Bill Carwile, HMB Alabama, LLC, Montgomery, AL
Reggie Reeves, TDEC, Nashville, TN
Dan Sherry, TWRA, Nashville, TN



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

July 29, 2005

Mr. Gerald Nicely
Commissioner
Tennessee Department of Transportation
James K. Polk Building, Suite 900
505 Deaderick Street
Nashville, Tennessee 37243-0334

Attention: Tom Love, Environmental Division

Dear Commissioner Nicely:

I am writing to close the loop regarding concerns that this office raised when reviewing the Biological Assessment (BA) prepared for the proposed I-40 Interchange at Mine Lick Creek Road in Putnam County (PE No. 71001-1195-44; PIN No. 101577.00). In a December 22, 2004, letter to Mr. Brian Brasher of the Federal Highway Administration's Tennessee Division Office in Nashville, we noted that American Speleological Society members had reported to us the presence of a cave and sinkhole complex containing colonial bats as occurring in the immediate vicinity of the two alternative highway corridors under evaluation in the subject BA. Based on that information, we asked that approval of the BA be deferred until we could locate and survey this cave complex to determine if it was being used by gray or Indiana bats, both listed as endangered species under the Endangered Species Act.

Regrettably, the person who initially reported the cave's presence to us subsequently refused to identify the location of the cave. We pursued other leads, talked to numerous landowners in the vicinity of the alternative project alignments, and visited the few shallow "caves" that were identified. However, we have not found any caves that have the climatic and other conditions suitable for supporting either gray or Indiana bats. Accordingly, I am hereby withdrawing our concerns over the possibility that construction of the subject interchange within the corridors evaluated in the BA might adversely affect endangered bats.

I apologize for the delay to the project evaluate caused by the bat issue. I was convinced that the person who told us about bat-supporting caves in the project area was (1) honest and sincere, and (2) knowledgeable. I am now convinced that I was wrong on at least one of these counts.

Thank you for your patience. If you have questions or comments, please advise.

Sincerely,

A handwritten signature in black ink, appearing to read "Lee A. Barclay". The signature is written in a cursive style with a large initial "L".

Lee A. Barclay, Ph.D.
Supervisor
Tennessee Field Office

xc: Deedee Kathman, TDOT
Brian Brasher, FHWA
Leigh Ann Tribble, FHWA